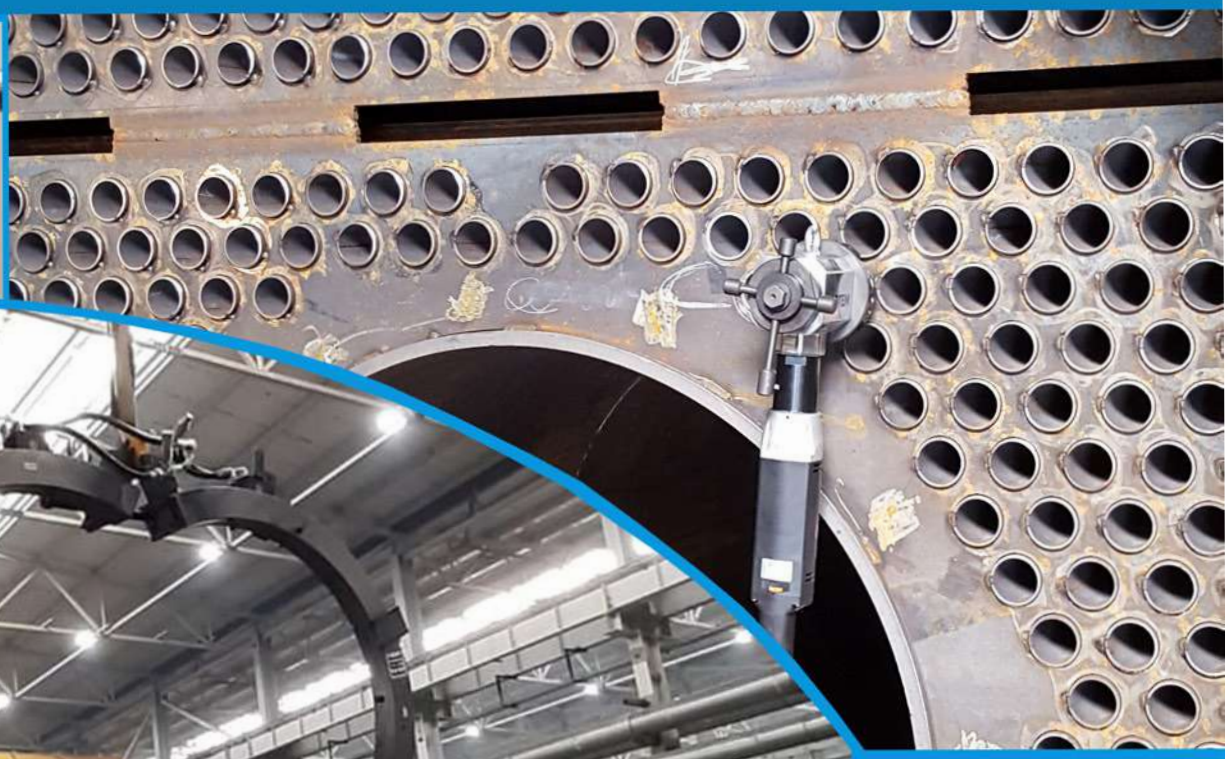
PROTEM

A CUT ABOVE THE REST







Experience,
Expertise,
Know-how,
Innovative
solutions







www.protem.fr

www.protemusa.com

www.protem-gmbh.de

PROTEM OFFERS AN EXTENSIVE RANGE OF MACHINING EQUIPMENT

PROTEM also offers proven expertise to help their customers around the world achieve their goals.

In this way, PROTEM equipment enables our customers to:

- Cut their operation and maintenance costs.
- Achieve their objectives both in terms of quality, project requirements and deadlines.
- Extend the lifetime of components.
- Reduce the exposure time spent in hazardous environments.
- Improve their overall performance

Our engineers and technicians will provide you with optimal, individualized solutions for all your maintenance and repair operations.









PROTEM GMBH
Am Hambiegel 27
76706 Dettenheim | DE
Phone: +49 (0) 7247 9393 – 0
info@protem-gmbh.de
www.protem-gmbh.de

PROTEM USA LLC
29340 Industrial way # 402
Evergreen CO 80439| USA
Phone: +1 303-955-4862
contact@protemusa.com
www.protemusa.com

PROTEM SAS
ZI Les Bosses
45, Chemin du Pont du Maroc
26800 Etoile-sur-Rhône | FR
Phone: +33 (0) 4 75 57 41 41
contact@protem.fr
www.protem.fr

4 A Rue des Artisans
68280 Sundhoffen | FR
Phone: +33 (0) 3 69 85 05 78
contact@protem.fr
www.protem.fr

SERCO SAS
2 Rue de l'Artisanat
ZA du Meyrol
26200 Montélimar | FR
Phone: +33 (0) 4 7501 4298
contact@serco-tools.com
www.serco-tools.com

MORE THAN 50 YEARS OF WORLDWIDE EXPERIENCE AND TECHNICAL EXPERTISE

Worldwide Leader in the Design and Manufacture of Machining Equipment

Our goal is to play a lead role in assisting operators with weld end preparation applications for their construction, maintenance and repair solutions, including those associated with nuclear, fossil fuels, wind power, hydro power, oil and gas, chemical, tube processing, aerospace, shipbuilding and high purity applications.

This requires an excellent knowledge and understanding of the technical requirements and constraints that are present during component replacement projects or emergency shutdown operations.

To meet the technological challenges of the coming years, we are laying foundations to take research and development to new heights.

Key Dates

PROTEM designs and manufactures equipment used for the construction, maintenance and dismantling of tubular components. PROTEM also designs special equipment used for projects including waste processing operations.

1971

Design and manufacture of the first portable pipe beveling machine: The S 28.



1980

Trademark PROTEM is recorded and patented. PROTEM means PROfessionalism, Technical know how, and Expertise in Mechanical Engineering.

PROTEM
A CUT ABOVE THE REST

1985

Design and manufacture of the first specialty machine. This machine is operated in a nuclear power plant and ensures the maintenance of tubular components.



1987

PROTEM GmbH is set up in Germany.



1997

A branch office is opened in Ukraine.

2002

PROTEM is awarded the contract for the dismantling of the KNKII reactor (sodium cooled reactor), the first in the World.



2003

PROTEM is awarded the contract for the supply of machining, welding equipment and engineering assistance for the EURODIF (AREVA) Gas and Diffusion Plant (uranium enrichment).



2004

A branch office is opened in Spain.

Key Dates

1990

Pilot project for the dismantling of a reactor in a Belgian nuclear power plant.

Establishment in the USA Development of tube squaring machines for the High-Purity sector (Semiconductors, Pharmaceuticals, Cosmetics, Food processing)



1991

Design of a milling machine for nuclear submarine hulls. World Premiere. Awarded the prize for best technological innovation by the French Navy



1994

Creation of the business unit specifically for OIL & GAS and the design of equipment for the installation and maintenance of pipelines.

1995

PROTEM is awarded a contract on machines for Power Plant Maintenance, worth several million Euros, from a South American customer.



2005

PROTEM enters into a collaborative contract with the nuclear research centers of Mol in Belgium and Karlsruhe in Germany. Establishment of a European competencies association. Links with the IAEA in Vienna and owners of the EDF (Nuclear Operators) in France.

Acquisition of the SERCO company, manufacturer of equipment for machining of flanges and valves
Expansion of the production workshop

2006

PROTEM enters into a collaborative contract with the CEA; research, development and implementation of cutting processes for the dismantling and clean up operations of nuclear power plants in France.

DE LA RECHERCHE À L'INDUSTRIE
cea

2007

PROTEM enters the German Nuclear Council.

2008

PROTEM delivers more than 50 machines to the nuclear power plant Atucha in Argentina.



Key Dates

2009

PROTEM supplies machining equipment for the prefabrication yards of Qatar Petroleum.

2012

Establishment in Eastern Europe
Recruitment of engineers and technicians

2013

Warehouse and offices are enlarged to meet the requirements that have occured because of the growth and expansion of PROTEM. Many new jobs are created as a result of this expansion.

2014

Design of a debris dismantling process for Japan (Fukushima)





2019

Partnership with World Leading Manufacturers of Welding Equipment



2020

Launch of the construction of new buildings -
Protem is awarded the contracts for the design and manufacturing of special machining equipment, completely telemanipulated, for the maintenance of large nuclear components by the majors of the French nuclear industry

Opening of a subsidiary in Colmar, 68000 France

2021

Launch of a training center offering trainings and specializations in the machining technologies for people dealing with welding preparations works

2022

Construction of new buildings in Alsace, Grand Est, France.
Recruitment of engineers and technicians dedicated to the design and manufacture of machining equipment for the nuclear industry



Key Dates

2015

Design and development of specific dismantling procedures for European and Asian nuclear operations.

2016

Launch of a new range of Orbital Cutting Saws.

2017

Launch of a new range of Saddle Beveling Machines.

2018

Extension of the Oil & Gas Business Unit in the USA, ,China, Russia, Middle East.







2023

Support for actors of the nuclear industry:
-Operators training
-Development of fully remote-controlled tools for dismantling of large components

2024

Establishment in Canada

Supply of several high-speed cutting and beveling benches for pipe fabrication factories in the USA

2025

Construction of new buildings dedicated to the Oil & Gas industry: production of machining equipment for prefabrication workshops and offshore yards



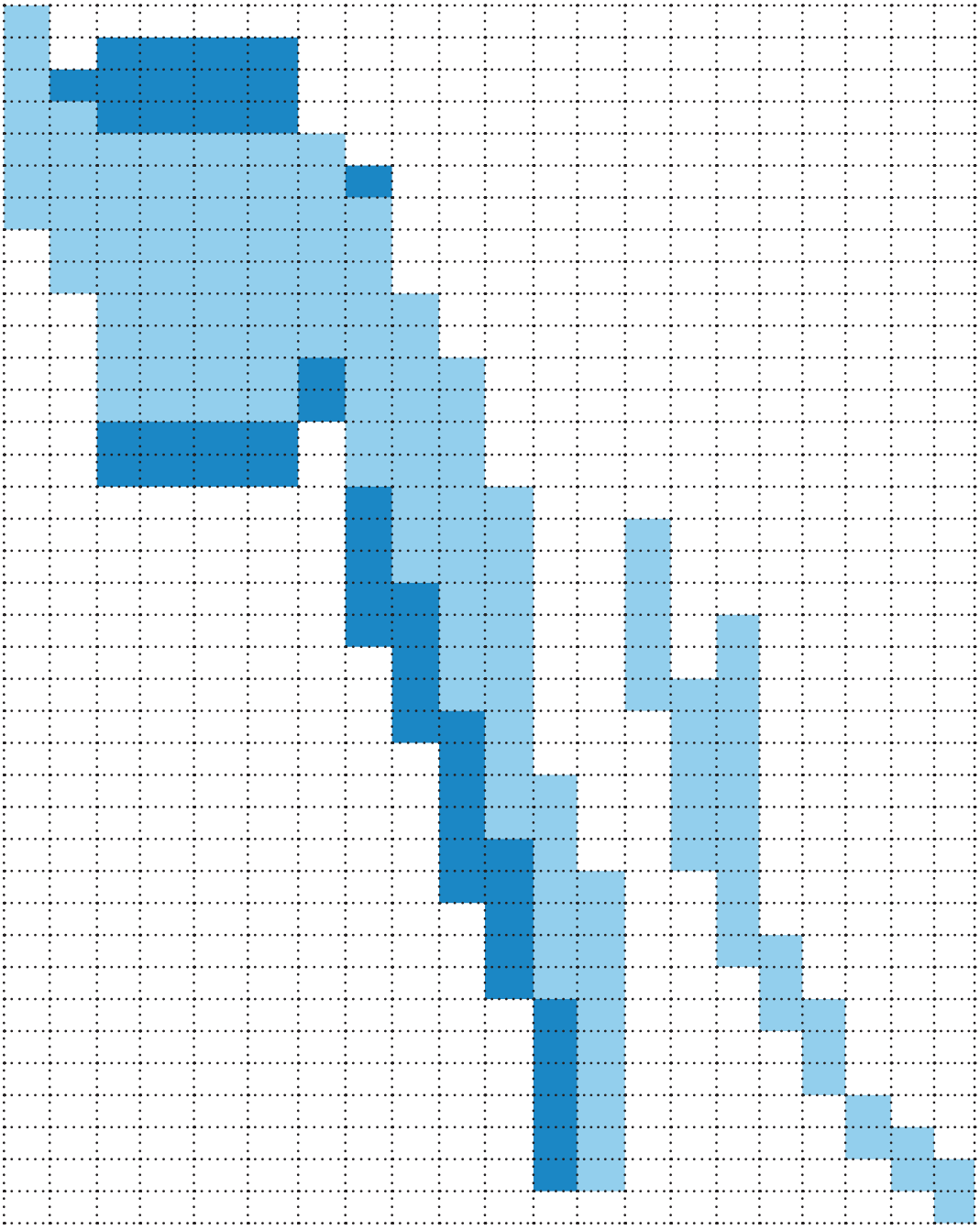


ID Mounted Equipment

Please refer to the data sheet of each equipment which indicates for each machine its standard capacity and its extended capacity if it is fitted with additional toolings.

Machines	SM8	S18	US25CH	US25	US25CA	US25TA	US25GL	US30CH	US40	US80	US150	US450	US600R	PFM414	PFM1222	PFM1030	PFM3038	PFM3848	PFM-US1020HSB	PFM-US1220HSB	PFM-US1420HSB
Facing	x	x	x	x	x	x	-	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Beveling	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Counterboring	-	x	x	x	x	x	-	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cutting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surfacing	-	-	x	x	-	-	-	x	x	x	x	x	-	-	-	-	-	-	-	-	-
Portable	x	x	x	x	x	x	x	x	x	x	x	-	-	-	-	-	-	-	-	-	-
Transportable	-	-	-	-	-	-	-	-	-	-	-	x	x	x	x	x	x	x	x	x	x

1” = 25.4 mm	Ø in mm
0.315	8
0.492	12.5
0.551	14
0.709	18
0.984	25
1.181	30
1.260	32
1.315	33.4
1.654	42
1.693	43
2.374	60.3
3.150	80
3.543	90
4.500	114.3
4.700	120
5.906	150
6.626	168.3
8.622	219
10.630	270
10.752	273.1
12.752	323.9
14.000	355.6
16.000	406
16.535	420
17.992	457
20.000	508
22.000	558.8
24.016	610
28.000	711.2
30.000	762
36.000	914.4
38.000	965.2
40.000	1016
48.000	1219.2
50.000	1270
56.000	1422.4
60.000	1524
1828	72.000



Working Ø standard

Working Ø extended with options

OD Mounted Equipment

Please refer to the data sheet of each equipment which indicates for each machine its standard capacity and its extended capacity if it is fitted with additional toolings.

Machines	SE25	SE65	SE-2T	SL-Serie	SE-NG Serie	BMFM	US1	US3	US6	US12	GR	TTS-NG	TTS-RD	TTNG-LW	TTNG-HD	TNO	MF	OCM	BB	CTA	OHSB
Facing	x	x	x	x	x	x	-	-	-	-	x	x	-	x	x	x	x	x	x	x	x
Beveling	x	x	x	x	x	x	-	-	-	-	x	x	-	x	x	x	x	x	x	x	x
Counterboring	-	-	-	x	x	x	-	-	-	-	-	x	-	x	x	x	x	-	x	-	x
Cutting	-	-	-	-	-	-	x	x	x	x	-	x	x	x	x	x	x	x	-	x	-
Portable	x	x	x	x	x	x	x	x	-	-	x	x	x	x	x	-	-	-	-	-	-
Transportable	-	-	-	-	-	-	-	-	x	x	-	-	-	x	x	x	x	x	x	x	x

1" = 25.4 mm	Ø in mm	min = Ø ID / max = Ø OD
0.078	2	
0.118	3	
0.196	5	
0.394	10	
0.406	10.3	
0.500	12.7	
0.709	18	
0.839	21.3	
1.000	25.4	
1.315	33.4	
1.496	38	
1.654	42	
1.693	43	
2.374	60.3	
3.070	78	
3.500	88.9	
4.500	114.3	
4.724	120	
6.626	168.3	
8.626	219.1	
10.752	273.1	
12.752	323.9	
14.000	355.6	
16.000	406.4	
20.000	508	
22.000	558.8	
24.016	610	
28.000	711.2	
30.000	762	
36.000	914.4	
48.000	1219.2	
50.000	1270	
56.000	1422.4	
1524	60.000	
1828.8	72.000	
2032	80.000	

Working Ø standard

Table of Contents

ID Mounted Machining Equipment:

SM8  Page 13

S18  Page 17

S18CA  Page 20

US25CH  Page 24

US25CA  Page 28

US25TP  Page 29

US25TA  Page 30

US25GL  Page 32

US30CH  Page 36

US40  Page 42

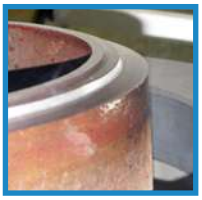
US40CA  Page 45

US80  Page 48

US150  Page 54

US450  Page 61

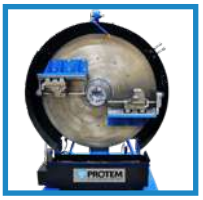
Single Point Machining  Page 66

Copying Carriage  Page 68

Elbow Mandrel assembly  Page 70

ID & OD Tracker  Page 74

PFM  Page 77

US600R  Page 96

OD Mounted Machining Equipment:

FBB Series  Page 75

OHSB Series  Page 89

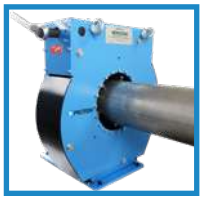
UG1  Page 100

Ultimate Split Series  Page 106

SE Series  Page 112

SL Series  Page 121

SE-NG Series  Page 128

BMFM Series  Page 136

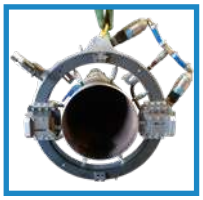
GR Series  Page 141

TTS-NG Series  Page 148

TTS-RD Series  Page 156

TTS-CSB Series  Page 162

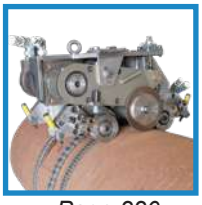
TTS-ROD Series  Page 170

TTNG-LW Series  Page 175

TTNG-HD Series  Page 183

TNO Series  Page 207

MF Series  Page 214

OCM  Page 220

BB Series  Page 225

Elbow Beveling Machine  Page 235

CTA Series Page 237

Table of Contents

Accessories & Tool Bits:

Hydraulic Power Units



Page 246

Micro Lubrication System



Page 249

Accessories



Page 250

Tool Bits & Tool Inserts



Page 251

Dissolvo - Water Soluble Paper and Tape



Page 259

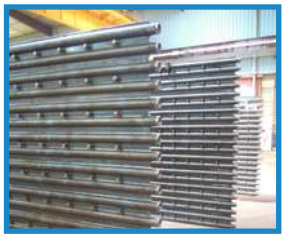
Alutape



Page 267

Industries:

Boiler Tubes - Heat Exchanger Tubes



Page 268

Nuclear



Page 270

Oil & Gas



Page 272

Tube Processing



Page 274

Shipbuilding



Page 276

High Purity



Page 278

Green energies



Page 280

Chemical



Page 282

Cryogenics



Page 284

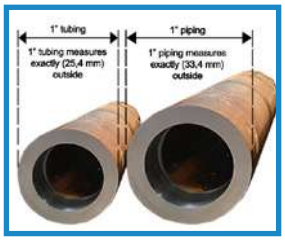
Defense



Page 286

Editorials:

Should we talk about Tubes or Pipes?



Page 288

The Different Types of Bevels



Page 294

Socket Weld - What does it mean



Page 298

Ten Tips to Achieve Perfect On-site Weld End Preparations



Page 301

Materials used to manufacture pipes and their machinability



Page 303

Other:

Nuclear Applications



Page 306

Serco - Flange and Valve machining



Page 314





ID MOUNTED MACHINING EQUIPMENT

Ø 0.315” – 102”
Ø 8 mm - 2590.8 mm







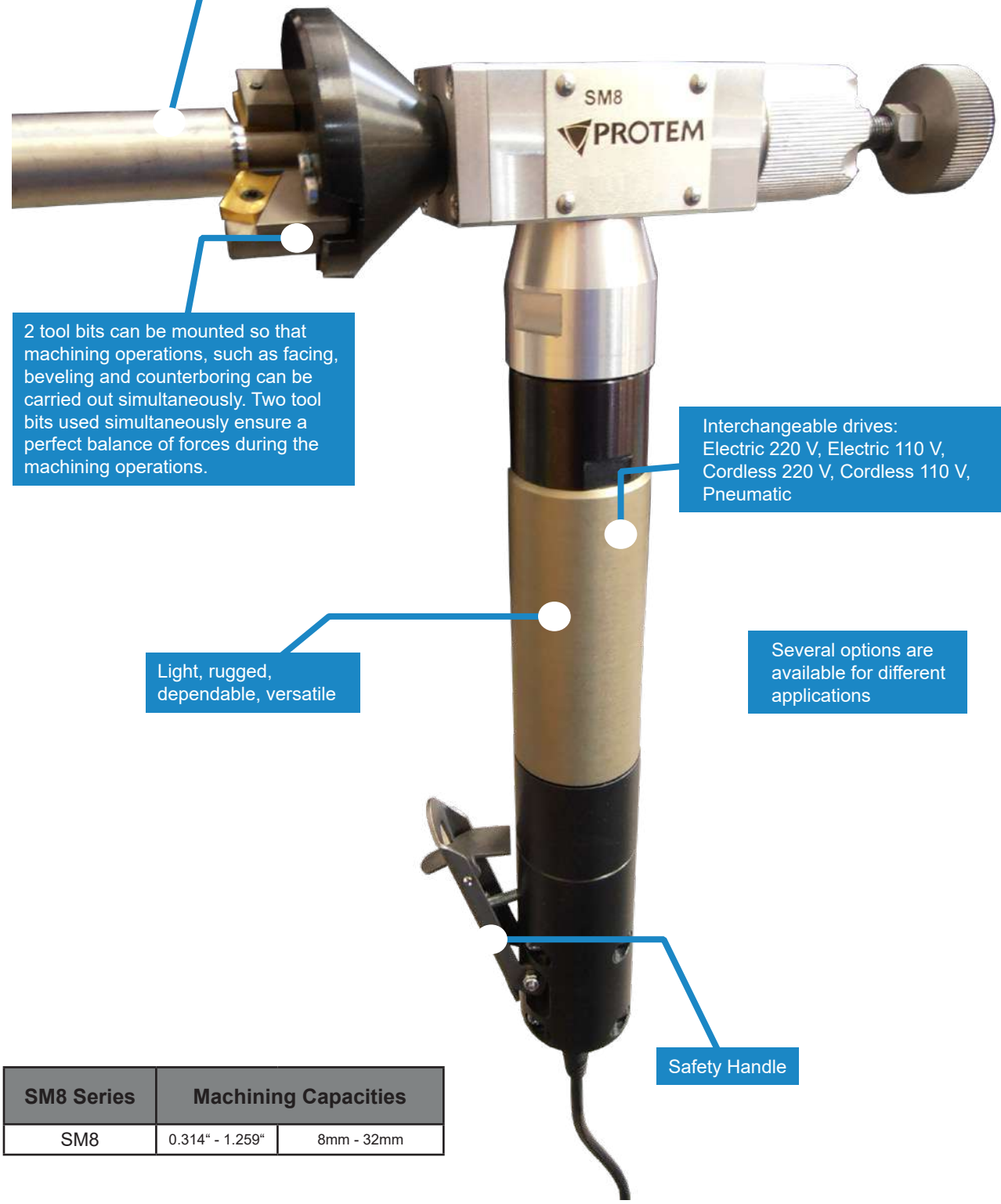
INDUSTRIES:

Shipbuilding	Boiler	Chemical
Nuclear	Oil & gas	Renewable energies

SM8 Pipe Beveling Machine

The PROTEM SM8 will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys..

Clamping collets are available in long and short lengths. Clamping is perfectly concentric.



2 tool bits can be mounted so that machining operations, such as facing, beveling and counterboring can be carried out simultaneously. Two tool bits used simultaneously ensure a perfect balance of forces during the machining operations.

Interchangeable drives:
Electric 220 V, Electric 110 V,
Cordless 220 V, Cordless 110 V,
Pneumatic

Light, rugged, dependable, versatile

Several options are available for different applications

Safety Handle

SM8 Series	Machining Capacities	
SM8	0.314“ - 1.259“	8mm - 32mm

SM8 Pipe Beveling Machine

Standard Capacity: 0.314“ - 1.259“ (8mm - 32mm)



SM8 with pneumatic drive

The air powered SM8 mini Tube Beveler is a very robust and reliable portable weld-end preparation machine. It allows to perform repeatable quality weld preps on tubes.

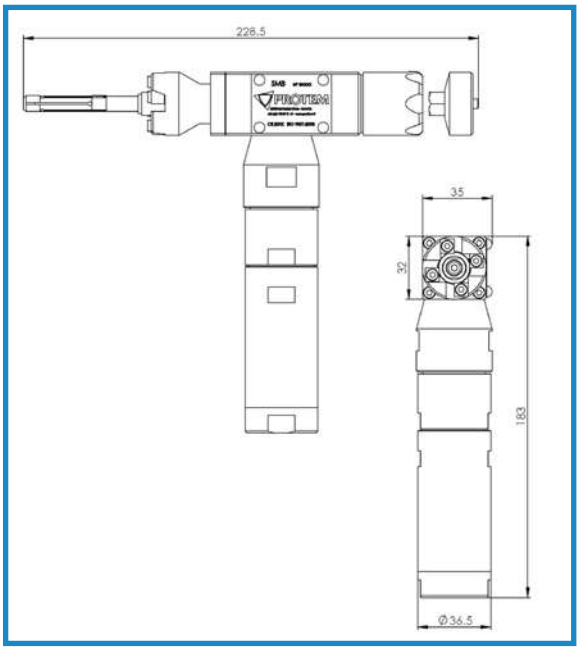
The cutting head will bevel, face, flush pipes, remove weld joints individually or in a simultaneous operation.

The SM8 is very easily installed on all tubes and completely torque accepting (no holding of the machine is necessary during the machining operation)

The SM8 mini beveler needs only 0.689“ (17.5mm) clearance and can be used in very tight spaces.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✓	✗	✗	✗

ID Mounted



Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- Perfect and repeatable welding preparation
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



SM8 with electric drive



SM8 with cordless drive

SM8 Pipe Beveling Machine

Technical Features:

Specific shapes & angles	I, V, Other on request
Clamping	Manual
Feed stroke	0.394" (10mm)
Cutting head gear drive	120 rpm off-load speed, 60 rpm nominal speed
Pneumatic drive	370 W, 6 bar (87 psi), 350 l/min (12.36 cfm)
Electric drive	110 V or 220 V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

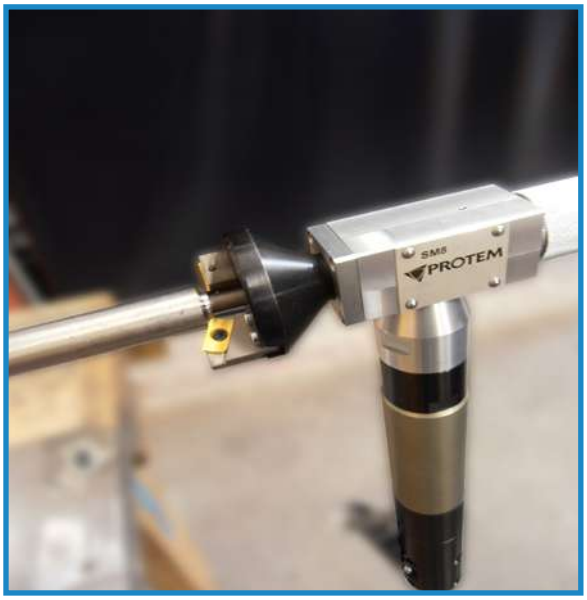
Order No.	Description
SM8-1000	Tube Beveling Machine SM8 with pneumatic drive for Ø 0.314"-1.259" (8mm-32mm)
SM8-1001	Tube Beveling Machine SM8 with pneumatic drive and vernier for Ø 0.314"-1.259" (8mm-32mm)
SM8-1020	Tube Beveling Machine SM8 with electric drive 220V for Ø 0.314"-1.259" (8mm-32mm)
SM8-1021	Tube Beveling Machine SM8 with electric drive 220V with vernier for Ø 0.314"-1.259" (8mm-32mm)
SM8-1022	Tube Beveling Machine SM8 with cordless drive 220V for Ø 0.314"-1.259" (8mm-32mm)
SM8-1024	Tube Beveling Machine SM8 with cordless drive 220V with vernier for Ø 0.314"-1.259" (8mm-32mm)
SM8-1040	Tube Beveling Machine SM8 with electric drive 110V for Ø 0.314"-1.259" (8mm-32mm)
SM8-1042	Tube Beveling Machine SM8 with cordless electric drive 110V for Ø 0.314"-1.259" (8mm-32mm)
SM8-K02	Transport Box for SM8 pneumatic, electric or battery

Applications:





Use On-Site or in Workshop:





ID Mounted

SM8 Pipe Beveling Machine Options & Accessories

SM8 Expansion Collets:

Order No.	Description	Picture
SM8-1510	Short collet for SM8, length 0.98" (25mm) steel (Please specify the required Ø)	
SM8-1550	Short collet for SM8, length 0.98" (25mm) stainless steel (Please specify the required Ø)	
SM8-1610	Collet for SM8, length 1.57" (40mm) steel (Please specify the required Ø)	
SM8-1650	Collet for SM8, length 1.57" (40mm) stainless steel (Please specify the required Ø)	
SM8-1715	Collet for SM8, length 1.97" (50mm) steel (Please specify the required Ø)	
SM8-1755	Collet for SM8, length 1.97" (50mm) stainless steel (Please specify the required Ø)	

SM8 Socket Rods:

Order No.	Description	Picture
SM8-1410	Socket rod A for Ø 0.314“-0.472“ (8mm-12mm)	
SM8-1412	Socket rod B for Ø 0.472“-1.189“ (12mm-30.2mm)	
SM8-1421	Short socket rod A for Ø 0.314“-0.472“ (8mm-12mm)	
SM8-1422	Short socket rod B for Ø 0.472“-1.189“ (12mm-30.2mm)	
SM8-1427	Short socket rod for Ø 0.275“ (7mm)	

SM8 Socket Holders:

Order No.	Description	Picture
SM8-1411	Socket holder No. 3 for Ø 0.669“-1.188“ (17mm-30.2mm)	
SM8-1413	Socket holder No. 1 for Ø 0.315“-0.472“ (8mm-12mm)	
SM8-1414	Socket holder No. 2 for Ø 0.472“-0.669“ (12mm-17mm)	
SM8-1423	Short socket holder No. 3 for Ø 0.669“-1.201“ (17mm-30.5mm)	
SM8-1425	Short socket holder No. 0 for Ø 0.276“ (7mm)	

SM8 Tool bits:

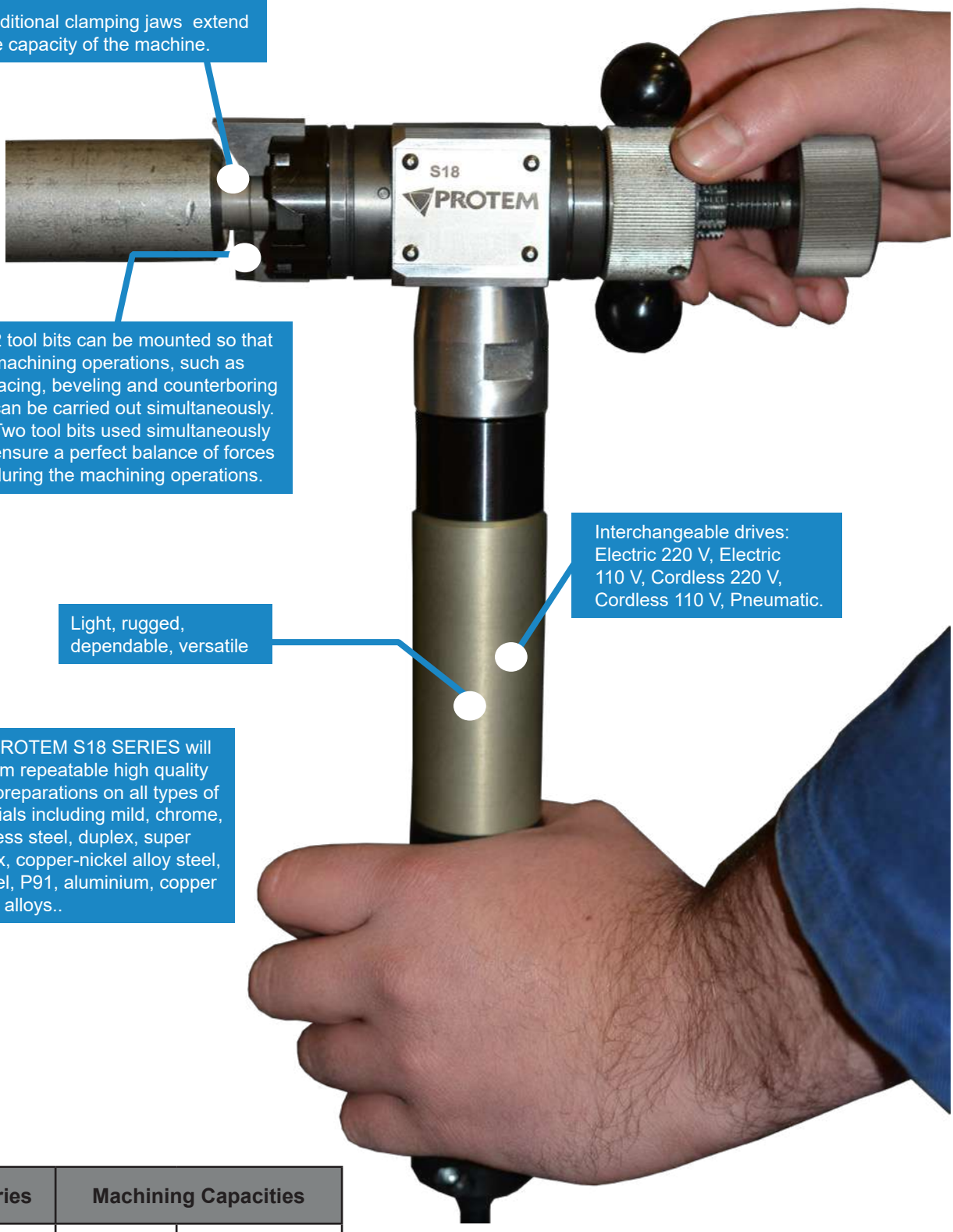
Order No.	Description	Picture
O-SM8-M0-4-H-74	Facing tool bit 90° for SM8 for 0.354“-0.590“ (9mm-15mm)	
O-SM8-M1-4-H-70	Facing tool bit 90° for SM8	
O-SM8-M2-4-H-71	Beveling tool bit 30° for SM8	
O-SM8-M2INV-4-H-75	Beveling tool bit cut off 30° for SM8	
O-SM8-M3-4-H-72	Beveling tool bit 37°30 for SM8	
O-SM8-M4-4-H-73	Beveling tool bit 45° for SM8	

S18 Tube Beveling Machine

Several clamping options are available for particular applications. For example, the clamping can be done automatically.

Clamping jaws are available in several different configurations. Clamping jaws for expanded tubes are also available. Clamping is perfectly concentric.

Additional clamping jaws extend the capacity of the machine.



2 tool bits can be mounted so that machining operations, such as facing, beveling and counterboring can be carried out simultaneously. Two tool bits used simultaneously ensure a perfect balance of forces during the machining operations.

Interchangeable drives: Electric 220 V, Electric 110 V, Cordless 220 V, Cordless 110 V, Pneumatic.

Light, rugged, dependable, versatile

The PROTEM S18 SERIES will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys..

S18 Series	Machining Capacities	
S18	0.551“ - 1.653“	14mm - 42mm
S18CA	0.551“ - 1.653“	14mm - 42mm
S18TP	0.689“ - 1.772“	17.5mm - 45mm

Different configurations are possible to suit different types of applications.

S18 Tube Beveling Machine

Standard Capacity: 0.708“ - 1.653“ (18mm - 42mm)

Extended Capacity: 0.551“ - 1.653“ (14mm - 42mm)



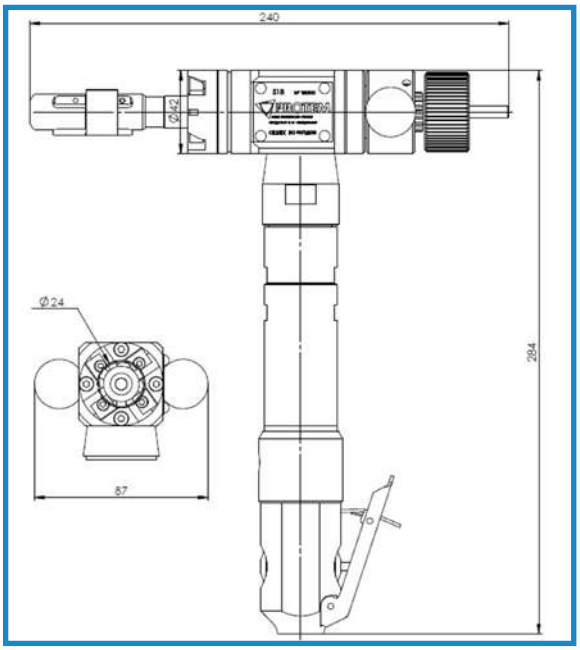
S18 with pneumatic drive

The S18 is a powerful beveling and facing machine. The standard tool-holder plate will accept multiple tool bits, allowing several simultaneous machining operations.

Such operations may include beveling, facing, counterboring, compound beveling, od chamfering, removal of weld joints on heat exchanger tubes, flush pipes of heat exchanger tubes. The S18 features a self-accepting torque system and an integral drive motor.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

ID Mounted



Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- Versatile Cutting Head: the tool-holder plate can accept up to 2 tool bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



S18 with electric drive



S18 with cordless drive

S18 Tube Beveling Machine

Technical Features:

Specific shapes & angles	I, V, Other on Request
Clamping	Manual
Feed stroke	1.377“ (35mm)
Cutting head gear drive	300 rpm off-load speed, 150 rpm nominal speed
Pneumatic drive	370 W, 6 bar (87 psi), 350 l/min (12.36 cfm)
Electric drive	110 V or 220 V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

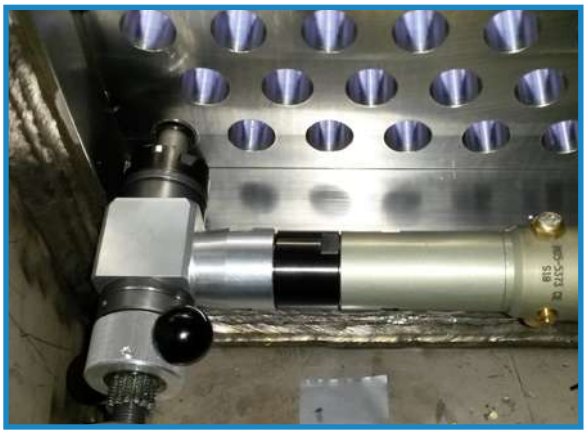
Order No.	Description
S18-1000	Tube Beveling Machine S18 with pneumatic drive for Ø 0.708“-1.653“ (18mm-42mm)
S18-1002	Tube Beveling Machine S18 with pneumatic drive and reduced shaft for Ø 0.708“-1.653“ (18mm-42mm)
S18-1004	Tube Beveling Machine S18 with pneumatic drive and feed lever for Ø 0.708“-1.653“ (18mm-42mm)
S18-1022	Tube Beveling Machine S18 with cordless drive 220V for Ø 0.708“-1.653“ (18mm-42mm)
S18-1023	Tube Beveling Machine S18 with electric drive 220V for Ø 0.708“-1.653“ (18mm-42mm)
S18-1040	Tube Beveling Machine S18 with electric drive 110V for Ø 0.708“-1.653“ (18mm-42mm)
S18-1042	Tube Beveling Machine S18 with cordless electric drive 110V for Ø 0.708“-1.653“ (18mm-42mm)

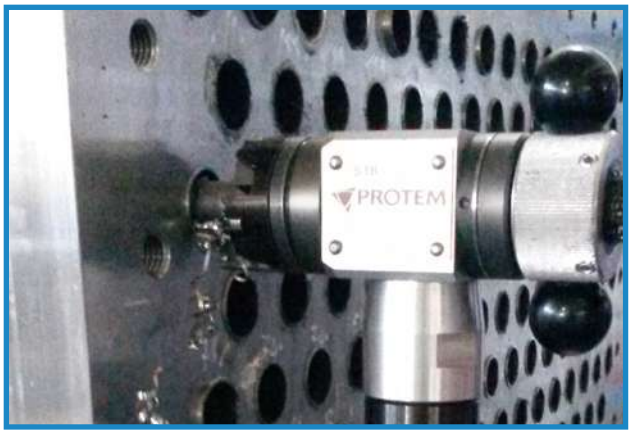
Applications:





Use On-Site or in Workshop:





S18CA Boiler and Heat Exchangers Tube Machining Unit

Standard Capacity: 0.708“ - 1.653“ (18mm - 42mm)

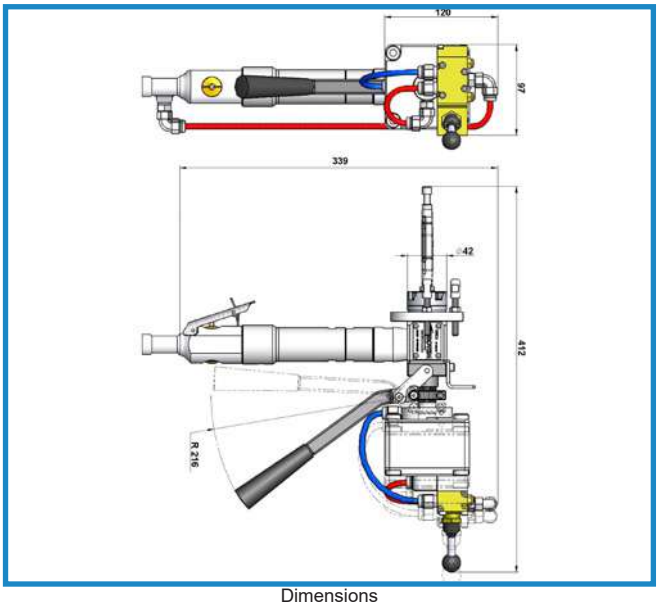
Extended Capacity: 0.551“ - 1.653“ (14mm - 42mm)



The S18CA is a powerful beveling and facing machine with automatic clamping. The standard tool-holder plate will accept multiple tool bits, allowing several simultaneous machining operations.
Such operations may include beveling, facing, counterboring, compound beveling, od chamfering, removal of weld joints on heat exchanger tubes, flush pipes of heat exchanger tubes.
The S18CA features a self-accepting torque system and an integral drive motor.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

ID Mounted



Dimensions

Technical Features:

Specific shapes & angles	I, V, Other on Request
Clamping	Automatic
Feed stroke	1.377“ (35mm)
Cutting head gear drive	300 rpm off-load speed, 150 rpm nominal speed
Pneumatic drive	370 W, 6 bar (87 psi), 350 l/min (12.36 cfm)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

S18CA On-Site:

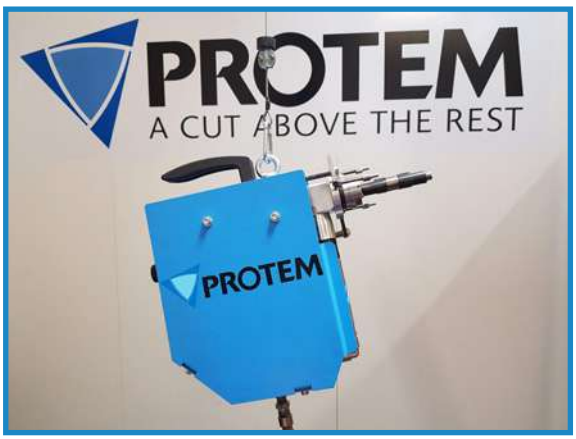




Order No.	Description
S18CA-1000	ID Mount Beveling Machine with pneumatic drive and clamping - Milling Cutter
S18CA-1002	Tube Beveling Machine S18CA with automatic clamping, pneumatic drive, for Ø 0.708“-1.653“ (18mm-42mm)
S18CA-1004	Tube Facing & Beveling machine S18CA with pneumatic drive and automatic clamping system for Ø 0.708“- 0.866“ (18mm-22mm), fitted with milling tool and reduced clamping shaft
S18CA-1006	Tube Facing & Beveling machine S18CA with pneumatic drive and automatic clamping system for Ø 0.708“- 0.866“ (18mm-22mm), fitted with tool holder and reduced clamping shaft
S18CA-1317	Milling Cutter 0.47" - 0.94" (12mm - 24mm)
S18CA-1318	Milling Cutter 0.71" - 1.5" (18mm - 38mm)
S18CA-1800	Limit Stop
210-0002	Balancer for S18CA

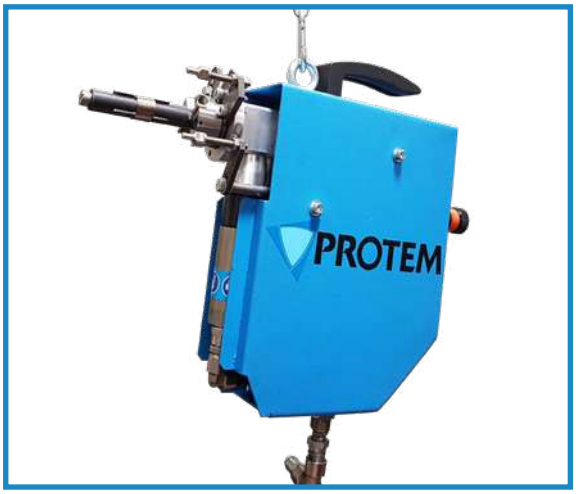
S18TP Heat Exchanger Tubes Machining Unit

Standard Capacity: 0.689“-1.772“ (17.5mm - 45mm)



The S18TP is a powerful beveling and facing machine with automatic feed and automatic clamping system. The standard tool-holder plate will accept multiple tool bits, allowing several simultaneous machining operations.
Such operations may include beveling, facing, counterboring, compound beveling, od chamfering, removal of weld joints on heat exchanger tubes, flush pipes of heat exchanger tubes.
The S18TP features a self-accepting torque system and an integral drive motor.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗



Technical Features:

Specific shapes & angles	I, V, Other on Request
Clamping & Feed	Automatic
Feed stroke	0.629“ (16 mm)
Cutting head gear drive	450 rpm off-load speed, 150 rpm nominal speed
Pneumatic drive	370 W, 6 bar (87 psi), 350 l/min (12.36 cfm)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

ID Mounted

Order No.	Description
S18TP-1000	Tube Beveling Machine S18TP with automatic clamping, pneumatic drive, for Ø 0.689“-1.772“ (17.5mm - 45mm)
S18TP-1112	Insert Holder / Milling Cutter
S18CA-1800	Adjustable limit stop
210-0004	Balancer for S18TP

S18 Pipe Beveling Machines Options & Accessories

S18 Crates:

Order No.	Description
S18-K02	Transport crate for S18 pneumatic, electric and cordless drive
S18CA-K02	Transport crate for S18CA
S18TP-K01	Transport crate for S18TP

S18 Options:

Order No.	Description
S18-1200	Monobloc Clamping shaft sub-assembly
S18-1500	Optional mandrel for Ø 0.55" - 0.86" (14 - 22mm)
S18-1600	Feed lever for S18
S18-1602	Limit Stop + feed Lever
210-0002	Balancer

S18TP Clamping Blades:

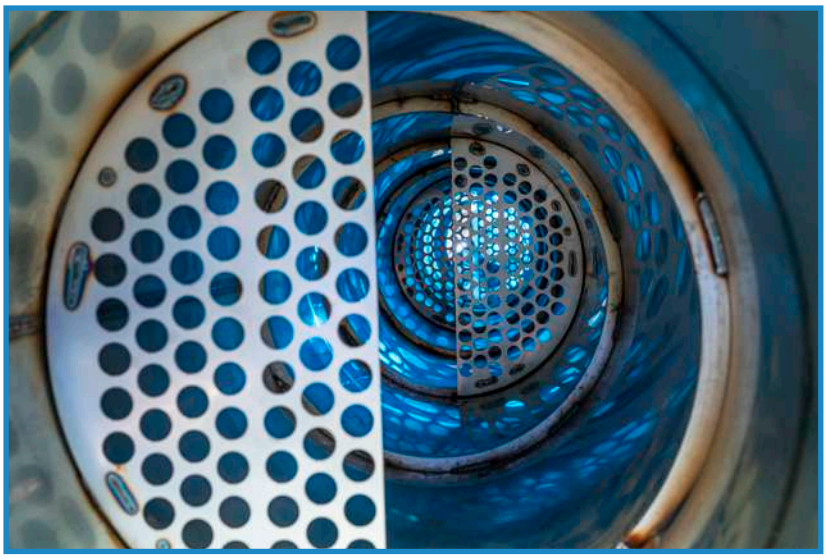
Order No.	Description
S18-1219-1	Clamping blades for Ø 0.689" - 0.93" (17.5 - 23.69mm)
S18-1219-2	Clamping blades for Ø 0.87" - 1.12" (22.24 - 28.56mm)
S18-1214-1	Clamping blades for Ø 1.08" - 1.33" (27.45 - 33.85mm)
S18-1214-2	Clamping blades for Ø 1.27" - 1.52" (32.40 - 38.80mm)
S18-1214-3	Clamping blades for Ø 1.47" - 1.72" (37.35 - 43.75mm)

S18TP Further Options:

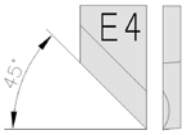
Order No.	Description
S18CA-1800	Adjustable limit stop
210-0004	Balancer for S18TP

S18TP Milling Heads:

Order No.	Description
S18TP-1112	Milling head for shaft Ø 1.81" (46mm)
S18TP-1122	Milling head for shaft Ø 1.41" (36mm)



S18 Pipe Beveling Machine Tool bits

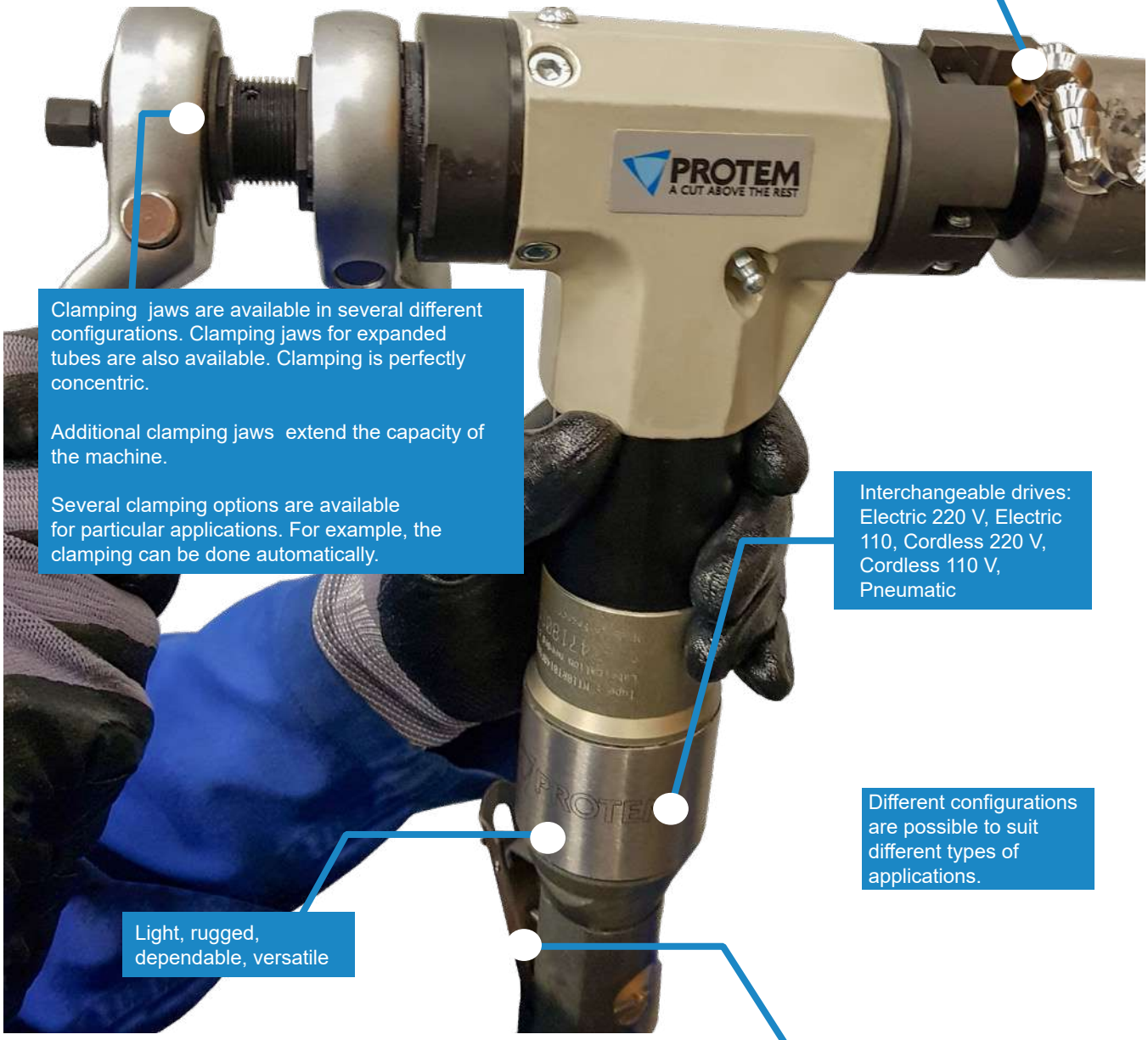
Order No.	Description	Picture
O-S18-E1-4-H-50	Facing tool bit 90° for S18	
O-S18-E2-4-H-52	Beveling tool bit 30° for S18	
O-S18-E2INV-4-H-55	Beveling tool bit cut off 30° for S18, for weld removal jobs	
O-S18-E3-4-H-51	Beveling tool bit 37°30 for S18	
O-S18-E4-4-H-53	Beveling tool bit 45° for S18	
O-S18-E4-4-H-F-53	Beveling tool bit 45° for S18	

ID Mounted

US25CH Tube Beveling Machine

ID Mounted

Up to four tool bits can be mounted so that machining operations, such as facing, beveling and counterboring can be carried out simultaneously. Two or more tool bits used simultaneously ensure a perfect balance of forces during the machining operations.



Clamping jaws are available in several different configurations. Clamping jaws for expanded tubes are also available. Clamping is perfectly concentric.

Additional clamping jaws extend the capacity of the machine.

Several clamping options are available for particular applications. For example, the clamping can be done automatically.

Interchangeable drives: Electric 220 V, Electric 110, Cordless 220 V, Cordless 110 V, Pneumatic

Different configurations are possible to suit different types of applications.

Light, rugged, dependable, versatile

Safety Handle

US25 Series	Machining Capacities	
US25CH	0.5“ - 4.724“	12.7mm - 120mm
US25	0.5“ - 4.724“	12.7mm - 120mm
US25CA	0.5“ - 4.724“	12.7mm - 120mm
US25TP	1.023“ - 2.559“	26mm - 65mm
US25TA	0.5“ - 4.724“	12.7mm - 120mm
US25GL	1“ - 3.543“	25.4mm - 90mm

The PROTEM US-SERIES will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys..

US25CH Boiler & Heat Exchanger Tubes Beveling Machine

Standard Capacity: 0.944“ - 3.543“ (24mm - 90mm)

Extended Capacity: 0.5“ - 4.724“ (12.7mm-120mm)

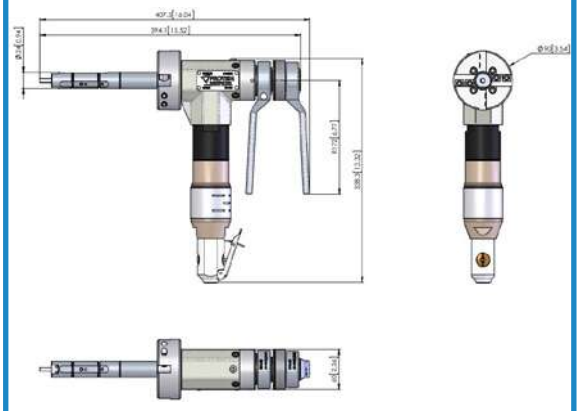


US25CH with pneumatic drive

The PROTEM US25CH will perform repeatable high quality weld end preparations on virtually all materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper, exotic alloys, etc...

The ID mount and portable US25CH is adapted for the maintenance and repair of Boiler and Heat Exchanger Tubes. It features a modified torque, the tool-holder plate features 2 grooves to mount standard HSS tool bits, 2 grooves with locking wedges to mount insert holders, the addition of a double-lip seal to prevent chips from entering into the machine when working on ceiling mounted panels/components, the addition of a sintered guide ring to replace the needle bearing, the addition of a bushing (protection against chips) , a specific longer clamping shaft (specifically designed to clamp after flared parts) basic blades with a 8° angle

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓



Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- Versatile Cutting Head: the tool-holder plate can accept up to 4 tool bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



US25CH Boiler & Heat Exchanger Tubes Beveling Machine

ID Mounted

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Manual with a key
Feed stroke	1.378“ (35mm)
Expansion	0.394” (10mm)
Cutting head gear drive	150 rpm off-load speed 70 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
US25CH-1010	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.362“ (60mm) and pneumatic drive.
US25CH-1012	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and pneumatic drive.
US25CH-1014	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.952“ (75mm) and pneumatic drive.
US25CH-1016	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 4.724“ (120mm) and pneumatic drive.
US25CH-1030	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.362“ (60mm) and electric drive 220V.
US25CH-1031	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.362“ (60mm) and cordless electric drive 220V.
US25CH-1032	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and electric drive 220V.
US25CH-1033	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and cordless electric drive 220V.
US25CH-1034	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.952“ (75mm) and electric drive 220V.
US25CH-1035	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.952“ (75mm) and cordless electric drive 220V.
US25CH-1036	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 4.724“ (120mm) and electric drive 220V.
US25CH-1052	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and electric drive 110V.
US25CH-1056	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 4.724“ (120mm) and electric drive 110V.

Applications:

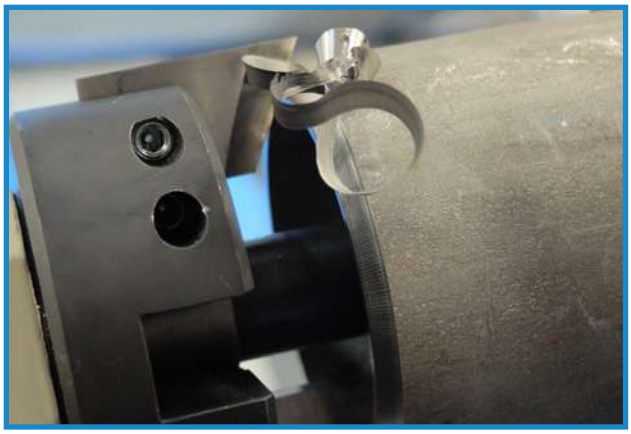






Use On-Site or in Workshop:





US25 Tube Beveling Machine

Standard Capacity: 1“ - 3.543“ (25mm - 90mm)

Extended Capacity: 0.5“ - 4.724“ (12.7mm - 120mm)



US25 with pneumatic drive

The PROTEM US25 is a powerful, durable, reliable and versatile portable tube and pipe beveling and facing machine.

The PROTEM US25 will perform repeatable high quality weld end preparations on virtually all materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper, exotic alloys, etc...

The versatile cutting head accepts up to four cutting bits. Four machining operations can be carried out simultaneously or individually. The tool bits can be changed and adjusted very quickly. Carbide tool inserts can also be used.

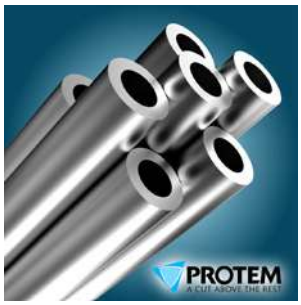
Beveling	Squaring	Counter-boring	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Manual with a key
Feed stroke	35 mm (1.378“)
Expansion	10 mm (0.394”)
Cutting head gear drive	150 rpm off-load speed 70 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
US25-1002	Pipe Beveling Machine with pneumatic drive. fitted with tool-holder plate Ø 3.543“ (90mm)
US25-1004	Pipe Beveling Machine with pneumatic drive, fitted with tool-holder plate Ø 2.362“ (60mm)
US25-1006	Pipe Beveling Machine with pneumatic drive, fitted with tool-holder plate Ø 4.724“ (120mm)
US25-1020	Pipe Beveling Machine with electric drive 220V. fitted with tool-holder-plate Ø 3.543“ (90mm)
US25-1022	Pipe Beveling Machine with electric drive 220V, fitted with tool-holder plate Ø 2.362“ (60mm)
US25-1024	Pipe Beveling Machine with cordless drive 220V, fitted with tool-holder-plate Ø 4.724“ (120mm)
US25-1030	Pipe Beveling Machine with cordless drive. fitted with tool-holder-plate Ø 3.543“ (90mm)
US25-1032	Pipe Beveling Machine with cordless drive, fitted with tool-holder plate Ø 2.362“ (60mm)
US25-1040	Pipe Beveling Machine with electric drive 110V. fitted with tool-holder-plate Ø 3.543“ (90mm)
US25-1042	Pipe Beveling Machine with electric drive 110V, fitted with tool-holder plate Ø 2.362“ (60mm)
US25-1044	Pipe Beveling Machine with electric drive 110V, fitted with tool-holder plate Ø 4.724“ (120mm)

ID Mounted



US25CA Boiler Tube Beveling Machine

Standard Capacity: 1“ - 3.543“ (25mm - 90mm)

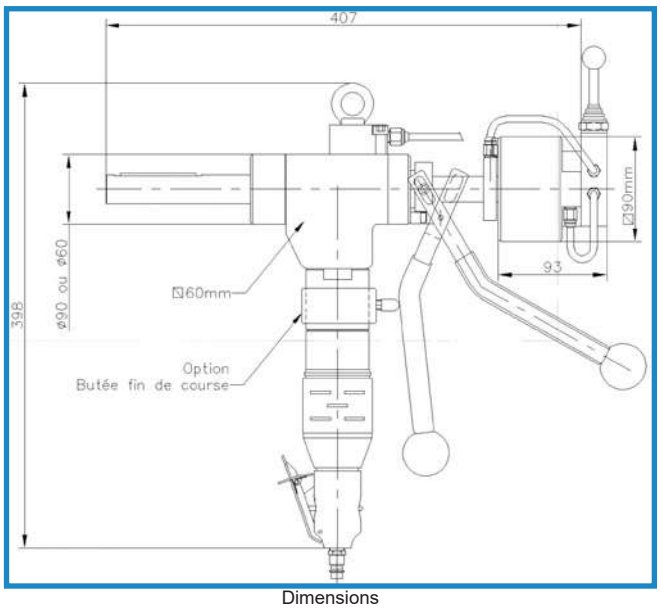
Extended Capacity: 0.5“ - 4.724“ (12.7mm-120mm)



The US25CA is a powerful. durable. reliable and versatile portable tube and pipe beveling & facing machine. The PROTEM US25CA will perform repeatable high quality weld end preparations on virtually all materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper, exotic alloys, etc...
The US25CA features an integrated automatic clamping device.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

ID Mounted



Dimensions

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Automatic
Feed stroke	1.378“ (35mm)
Expansion	0.394” (10mm)
Cutting head gear drive	150 rpm off-load speed 70 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

US25CA On-Site:



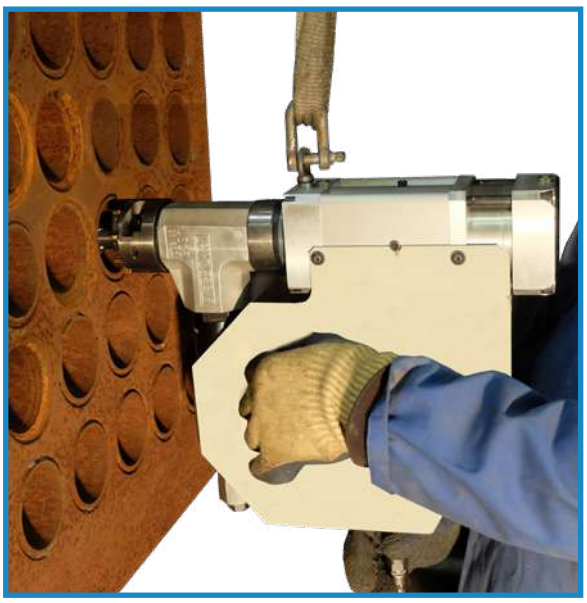


Order No.	Description
US25CA-1006	Pipe Beveling Machine US25 pneumatically driven with automatic clamping for Ø 1“-3.543“ OD (25mm-90mm)
US25CA-1008	Pipe Beveling Machine US25, pneumatically driven with automatic clamping and mandrel for Ø 1“-3.543“ OD (25mm-90mm)

US25TP Boiler Tubes Beveling Machine Full Automatic Version

Standard Capacity: 1.023“ - 2.559“ (26mm - 65mm)

Extended Capacity: On Request



The US-TP series are fully automated beveling machines integrating the clamping mandrel with the tool holders of the US Series.

The clamping and the feeds are automatic and adjustable. The US-TP series are suited for serial jobs on heat exchangers tubes (flush pipes, weld joint removal, beveling operations).

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗





Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Automatic Clamping and Feed
Feed stroke	1.378“ (35mm)
Expansion	0.394” (10mm)
Cutting head gear drive	560 rpm off-load speed, 400 rpm nominal speed. Approximate rotation speed according to air pressure and air flow.
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

ID Mounted

US25TP On-Site:



Order No.	Description
US25TP-1000	ID Clamp Pipe Beveling Machine US25TP pneumatically driven with automatic clamping and automatic feed system for diameters 1“-3.543“ OD (25mm-90mm OD).
US25TP-1112	Milling tool with tool-inserts
O-SE-P1-3.-C-F-20A	Carbide tool-insert
210-0008	Balancer
US25TP-2113	Limit Stop

US25TA Pipe Beveling Machine for Fin Tubes

Standard Capacity: 1“ - 3.543“ (25mm - 90mm)

Extended Capacity: 0.5“ - 4.724“ (12.7mm-120mm)



The TA option replaces the tool holder of the US series machines through a milling head. This option is designed to perform weld preps and to excavate membrane walls. Both operations, beveling and excavating, can be performed simultaneously. The machine is clamped inside the tube for perfectly concentric clamping.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

ID Mounted

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Manual with a key
Feed stroke	1.378“ (35mm)
Expansion	0.394” (10mm)
Cutting head gear drive	150rpm off-load speed, 70rpm nominal speed. Approximate rotation speed according to air pressure and air flow.
Pneumatic drive	1460 W, 6 bar (87 psi), 1800 l/min (63 cfm)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
US25TA-1000	ID Mounted Machining Unit US25TA for the simultaneous beveling of fin tubes and the removal of membranes for diameters Ø 3.543“ (90mm) with pneumatic drive 1 HP 0,745 W, equipped with one milling-head including 2 inserts.
US25TA-1002	ID Mounted Machining Unit US25TA for the simultaneous beveling of fin tubes and the removal of membranes for diameters Ø 3.543“ (90mm) with pneumatic drive 1 HP 0,745 W, equipped with one milling-head including 3 inserts.
US25TA-1004	ID Mounted Machining Unit US25TA for the simultaneous beveling of fin tubes and the removal of membranes for diameters Ø 3.543“ (90mm) with pneumatic drive 2 HP 1,5 W, equipped with one milling-head including 2 inserts.
US25TA-1006	ID Mounted Machining Unit US25TA for the simultaneous beveling of fin tubes and the removal of membranes for diameters Ø 3.543“ (90mm) with pneumatic drive 2 HP 1,5 W, equipped with one milling-head including 3 inserts.





US25CH Tube Beveling Machines Options

Standard Capacity: 1“ - 3.543“ (25mm - 90mm)

Extended Capacity: 0.5“ - 4.724“ (12.7mm-120mm)

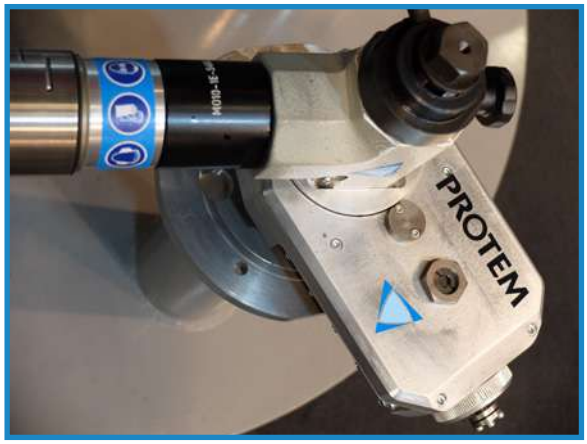
US25-EMA Elbow Mandrels



This new generation of elbow mandrel assembly allows the positioning of a US-type machine on all types of elbows. The mounting system has a precise concentric positioning of the machine in the elbow which provides a very precise alignment that leads to a high quality weld-end preparation on all types of elbows and materials including stainless steel and high nickel alloys.

Order No.	Description
US25PR/C-1000	Elbow mandrel assembly for US25 Ø 1.574" - 2.519" (40mm - 64mm)
US25PR/C-1001	Elbow mandrel assembly for US25 Ø 2.519" - 3.543" (64mm - 90mm)
US25PR/C-1002	Elbow mandrel assembly for US25 Ø 3.543" - 4.685" (90mm - 119mm)

US25-ACC Flange Facing



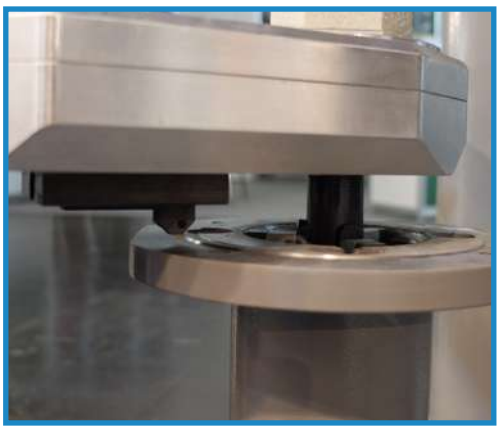
Flange facing attachment for flanges with Ø up to 11.023“: This flange attachment resurfaces any type of flange welded on pipes of any material directly on-site or in the workshop. This system is reliable, accurate, rugged, lightweight and very easy to use and operate. The clamping is made directly inside the flange ID via the clamping shaft of the US machines and their additional expansion blades, or with a spider elbow mandrel kit.

Order No.	Description
US25-1008	Pipe Beveling Machine with pneumatic drive with flange resurfacing attachment Ø 1.575" - 10.866" (40 - 280mm)
US25-1028	Pipe Beveling Machine with electric drive 220V with flange resurfacing attachment Ø 1.575" - 10.866" (40 - 280mm)
US25ACC-1002	Flange resurfacing module for US25 Ø 1.575" - 10.866" (40 - 280mm)

US25-EMA On-Site:



US25-ACC On-Site:

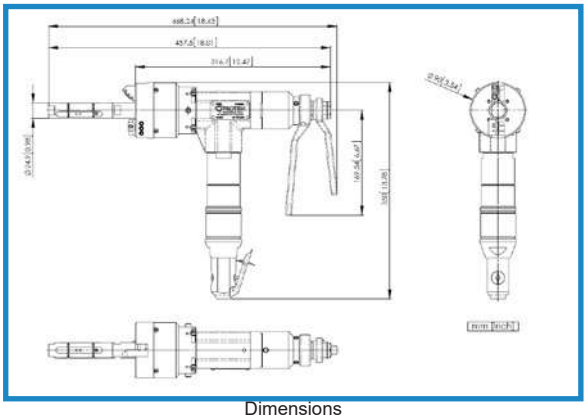


US25GL Saddle Beveling Machine

Standard Capacity: 1“ - 2.441“ (25.4mm - 62mm)

Extended Capacity: 1“ - 3.543“ (25.4mm - 90mm)





Dimensions

The saddle type tappings allow the perpendicular connection of laterals sections on main pipes. Saddle type tappings are located on collectors and boiler superheaters. These tappings are mainly carried out on stationary machines or with oxy fuel cutting or grinding machines.

The US25GL saddle pipe beveling machine is a portable, powerful, robust, reliable and versatile beveling machine.
PROTEM offers a portable machining tool to perform such saddle type tappings. This cold machining process does not create any heat affected zone and produces repeatable high quality machinings.

The robust US25GL will perform repeatable high quality weld preparations on all types of materials including carbon steel, stainless steel, various alloys such duplex, super duplex, inconel, aluminum, copper, exotic alloys, etc...
A template is necessary per tube diameter and collector.
Please consult us for more information.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✗	✗	✓	✓	✗	✓	✗

ID Mounted

Technical Features:

Specific shapes & angles	Saddles
Clamping	Manual with key
Feed stroke	1.378“ (35mm)
Expansion	0.394” (10mm)
Cutting head gear drive	150 rpm off-load speed 70 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
US25GL-1000	Saddle Beveling Machine with pneumatic drive
US25GL-1020	Saddle Beveling Machine with electric drive 220V
US25GL-1040	Saddle Beveling Machine with electric drive 110V
US25GL-1311	Adapting set, one is necessary for each diameter

US25GL Saddle Beveling Machine

Example of use On-Site:





Saddle Type Tappings:





ID Mounted

Applications:





US25CH Tube Beveling Machines Options & Accessories

US25CH Crates:



Order No.	Description
US25CH-K02	Transport Crate for US25CH electric
US25CH-K04	Transport Crate for US25CH pneumatic
US25Ch-K06	Transport Crate for US25CH electric

US25CH Mandrels:

ID Mounted

Order No.	Description	Picture
US25CH-2902	Optional mandrel for Ø 0.492“-0.708“ (12.5-18mm)	
US25CH-3000	Optional mandrel for Ø 0.708“-1.181“ (18-30mm)	

US25CH Tool Holders:

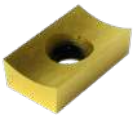

Tool-holder Plate 60mm


Tool-holder Plate 75mm


Tool-holder Plate 90mm


Tool-holder Plate 120mm

US25CH Tube Beveling Machines Tool bits

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30° for US25CH	
O-US-PP375-9-14007	Insert-holder 37.5° for US25CH	
O-US-PP45-9-14008	Insert-holder 45° for US25CH	
O-US-PP90-9-11066	Insert-holder 90° for US25CH	
O-VIS-V5	Screw for tool insert P2	
O-US-P2-6-H-T	Tool-insert for US25CH-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US25CH-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US25CH-TIH-90	

Order No.	Description	Picture
O-US-A1-6-H-18	Facing tool bit 90°	
O-US-A2-6-H-17	Beveling tool bit for 30° bevel	
O-US-A3-6-H-19	Beveling tool bit for 37°30 bevel	
O-US-A4-6-H-16	Beveling tool bit for counterboring 15°	
O-US-A5-6-H-85	Beveling tool bit for 45°	
O-US-B6-6-H-55	Facing tool bit - notched 90°	
O-US-B7-6-H-57	Beveling tool bit - notched 30°	
O-US-B8-6-H-58	Beveling tool bit - notched 37°30	
O-US-B9-6-H-60	Beveling tool bit for counterboring - notched 15°	
O-US-B11-6-H-24	Beveling tool bit for counterboring and squaring	
O-US-C5-6-H-62	Beveling tool bit for 7° R6 j-bevels	
O-US-C6-6-H-64	Beveling tool bit for 12.5° R6 j-bevels	
O-US-C7-6-H-66	Notched tool bit for 7° R6 j-bevels	
O-US-C8-6-H-68	Notched tool bit for 12.5° R6 j-bevels	
O-US-C9-6-H-20	Beveling tool bit for 10° R1.5 j-bevels	
O-US-C10-6-H-71	Beveling tool bit for 20° R4 j-bevels	
O-US-SO-303-1-6	Tool bit for detubing - weld removal	
O-US-SO-303-2-6	Tool bit for detubing - weld removal	
O-US-SO-303-3-6	Tool bit for detubing - weld removal	

ID Mounted

US30CH Pipe Beveling Machine

Up to four tool bits can be mounted so that machining operations, such as facing, beveling and counterboring can be carried out simultaneously. Two or more tool bits used simultaneously ensure a perfect balance of forces during the machining operations.

The PROTEM US-SERIES will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys..



Clamping jaws are available in several different configurations. Clamping jaws for expanded tubes are also available. Clamping is perfectly concentric.

Additional clamping jaws extend the capacity of the machine.

Several clamping options are available for particular applications. For example, the clamping can be done automatically.

Different configurations are possible to suit different types of applications.

Interchangeable drives:
Electric 220 V, Electric 110, Cordless 220 V, Cordless 110 V, Pneumatic

Light, rugged, dependable, versatile

Safety Handle

US30CH Series	Machining Capacities	
US30CH	1.259“ - 6.626“	32mm - 168.3mm
US30CHCA	1.259“ - 6.626“	32mm - 168.3mm

US30CH Pipe Beveling Machine

Standard Capacity: 1.259“ - 4.488“ (32mm - 114mm)

Extended Capacity: 1.259“ - 6.626“ (32mm - 168.3mm)



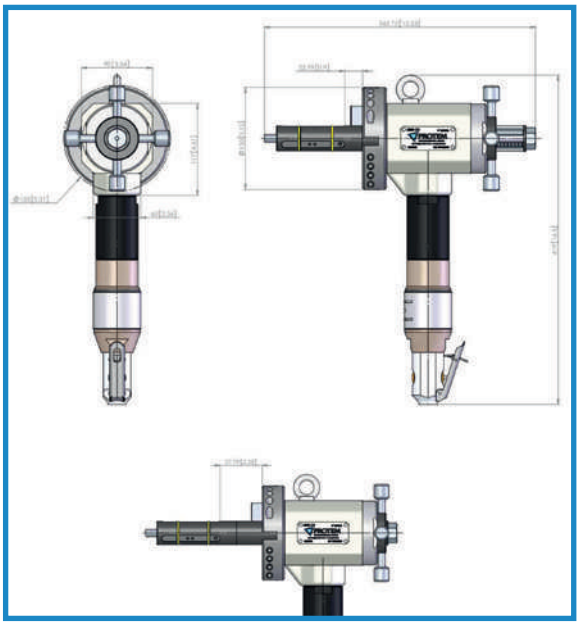
US30CH with pneumatic drive

The US30CH portable pipe beveling machine is durable, reliable, versatile and light weighted. The standard tool-holder plate will accept multiple tool bits, allowing up to four simultaneous machining operations. Such operations may include: 30°, 37°30, 45° bevels, J-bevels, compound bevels, facing, counterboring, OD chamfering, removal of weld joints and/or cutting tubes to length of heat exchanger and boiler tubes.

The tool bits can be changed and adjusted very quickly. Carbide tool-inserts may also be used. The US30CH features a self-accepting torque system and an integral drive motor.

This very powerful pipe beveler will perform repeatable high quality weld preparations on all types of materials including mild steel, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91. aluminium, copper and virtually all exotic alloys.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓



Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- Versatile Cutting Head: the tool-holder plate can accept up to 4 tool bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



US30CH with electric drive



ID Mounted

US30CH Pipe Beveling Machine

ID Mounted

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Manual with a key
Feed stroke	1.378“ (35mm)
Expansion	0.354” (9mm)
Cutting head gear drive	max 30rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

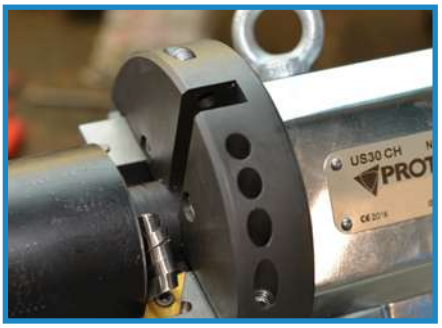
Order No.	Description
US30CH-1000	Pipe Beveling Machine US30CH for Ø 1.259“ - 4.488“ (32mm - 114mm) with pneumatic drive
US30CH-1002	Pipe Beveling Machine US30CH for Ø 1.259“ - 4.488“ (32mm - 114mm) with speed regulated pneumatic drive
US30CH-1010	Pipe Beveling Machine US30CH New Generation for boilers with option 11bis - longer mandrel for boiler works, for Ø 1.259“ - 4.488“ (32mm - 114mm) with pneumatic drive
US30CH-1012	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 6.625“ (32mm - 168.3mm) with pneumatic drive. Machine fitted with extended tool-holder plate.
US30CH-1030	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 4.488“ (32mm - 114mm) with electric drive 220V, 1500W.
US30CH-1032	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 4.488“ (32mm - 114mm) with electric drive and with option 11bis, longer mandrel for boiler works.
US30CH-1034	Pipe Facing Machine US30CH for Ø 1.259“ - 6.625“ (32mm - 168.3mm) with electric drive 220V. Machine fitted with extended tool-holder plate
US30CH-1040	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 4.488“ (32mm - 114mm) with electric drive 110V, 1500W.
US30CH-1042	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 4.488“ (32mm - 114mm) with electric drive 110V, 1500W and with option 11bis, longer mandrel for boiler works.
US30CH-1044	Pipe Beveling Machine US30CH for Ø 1.259“ - 6.625“ (32mm - 168.3mm) with electric drive 110V. Machine fitted with extended tool-holder plate.
US30CH-1046	Pipe Beveling Machine US30CH for Ø 1.259“ - 6.625“ (32mm - 168.3mm) with right angle Electric Drive 110V. Machine fitted with extended tool-holder plate.

Applications:






Use On-Site or in Workshop:





US30CHCA Boiler & Heat Exchanger Tubes Beveling Machine

Standard Capacity: 1.259“ - 4.488“ (32mm - 114mm)

Extended Capacity: 1.259“ - 6.626“ (32mm - 168.3mm)

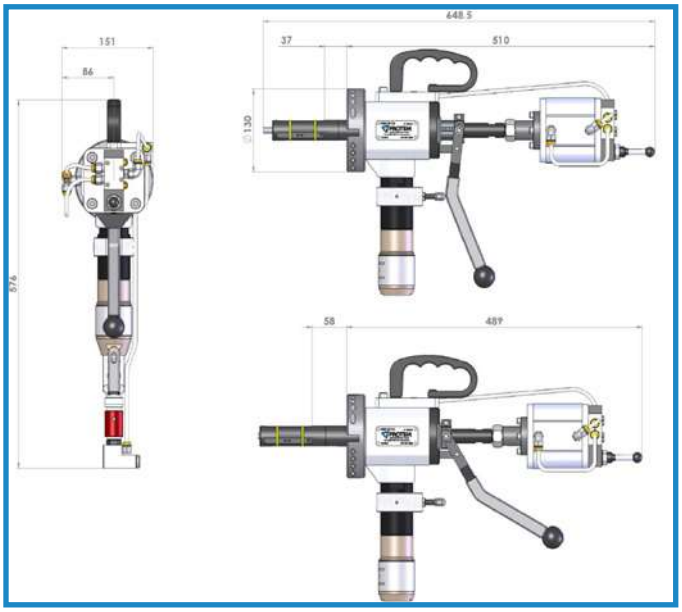


The US30CHCA portable pipe beveling machine is durable, reliable, versatile and light weighted. The standard tool-holder plate will accept multiple tool bits, allowing up to four simultaneous machining operations. Such operations may include: 30°, 37°30, 45° bevels, J-bevels, compound bevels, facing, counterboring, OD chamfering, removal of weld joints and/ or cutting tubes to length of heat exchanger and boiler tubes.

The tool bits can be changed and adjusted very quickly. Carbide tool-inserts may also be used. The US30CHCA features a self-accepting torque system and an integral drive motor.

This very powerful pipe beveler will perform repeatable high quality weld preparations on all types of materials including mild steel, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91. aluminium, copper and virtually all exotic alloys.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗



Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Automatic
Feed stroke	1.378“ (35mm)
Expansion	0.354” (9mm)
Cutting head gear drive	max 30rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

ID Mounted

US30CHCA On-Site:





Order No.	Description
US30CHCA-1000	Pipe Beveling Machine US30CH for Ø 1.259“ - 4.488“ (32mm - 114mm) with pneumatic drive and automatic clamping

US30CH Crates:

Order No.	Description
US30CH-K01	Transport crate for US30CH pneumatic
US30CH-K02	Transport crate for US30CH/E MS10
US30CH-K04	Transport crate for US30CH/E MS15
US30CH-K05	Transport crate for US30CH pneumatic + option 3302
US30CHCA-K01	Transport crate for US30CHCA pneumatic

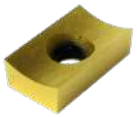
US30CH Elbow Mandrels:

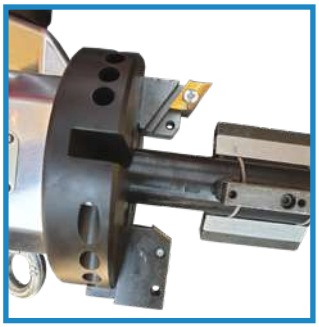
Order No.	Description
US30CHPR/C-1000	Option elbow mandrel assembly EMA for US30CH for Ø 2.165“-3.133“ (55mm-79.6mm)
US30CHPR/C-1001	Option elbow mandrel assembly EMA for US30CH for Ø 3.087“-4.785“ (78.43mm-121.54mm)

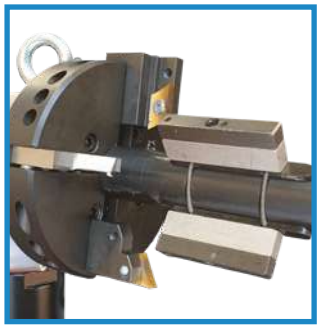
US30CH Further Options:

Order No.	Description
US30CH-1500	US30CH beveling machine with electric drive for diameters up to 6.626” (168.3mm) mm ID , delivered with 1 tool holder plate Ø 7.087“ (180 mm)
US30CH-1800	Bench mounting device for US30CH

US30CH Pipe Beveling Machine Tool bits

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30° for US30CH	
O-US-PP375-9-14007	Insert-holder 37.5° for US30CH	
O-US-PP45-9-14008	Insert-holder 45° for US30CH	
O-US-PP90-9-11066	Insert-holder 90° for US30CH	
O-VIS-V5	Screw for tool insert P2	
O-US-P2-6-H-T	Tool-insert for US30CH-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US30CH-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US30CH-TIH-90	





US30CH Tool-insert

Order No.	Description	Picture
O-US-A1-9-H-27	Facing tool bit 90°	
O-US-A2-9-H-26	Beveling tool bit for 30° bevel	
O-US-A3-9-H-28	Beveling tool bit for 37°30 bevel	
O-US-A4-9-H-25	Beveling tool bit for counterboring 15°	
O-US-A5-9-H-86	Beveling tool bit for 45°	
O-US-B6-9-H-54	Facing tool bit - notched 90°	
O-US-B7-9-H-56	Beveling tool bit - notched 30°	
O-US-B8-9-H-59	Beveling tool bit - notched 37°30	
O-US-B9-9-H-61	Beveling tool bit for counterboring - notched 15°	
O-US-B11-9-H-15	Beveling tool bit for counterboring and squaring	
O-US-C5-9-H-63	Beveling tool bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Beveling tool bit for 12.5° R6 j-bevels	
O-US-C7-9-H-67	Notched tool bit for 7° R6 j-bevels	
O-US-C8-9-H-69	Notched tool bit for 12.5° R6 j-bevels	
O-US-C9-9-H-29	Beveling tool bit for 10° R1.5 j-bevels	
O-US-C10-9-H-70	Beveling tool bit for 20° R4 j-bevels	
O-US-SO-303-1-9	Tool bit for detubing - weld removal	
O-US-SO-303-2-9	Tool bit for detubing - weld removal	
O-US-SO-303-3-9	Tool bit for detubing - weld removal	

ID Mounted

US40 Pipe Beveling Machine

ID Mounted

Different configurations are possible to suit different types of applications.

Several clamping options are available for particular applications. For example, the clamping can be done automatically.

Light, rugged, dependable, versatile

Clamping jaws are available in several different configurations. Clamping jaws for expanded tubes are also available. Clamping is perfectly concentric.

Additional clamping jaws extend the capacity of the machine.



Interchangeable drives:
Electric 220 V, Electric 110 V,
Cordless 220 V, Cordless 110 V,
Pneumatic and hydraulic

Up to four tool bits can be mounted so that machining operations, such as facing, beveling and counterboring can be carried out simultaneously. Two or more tool bits used simultaneously ensure a perfect balance of forces during the machining operations.

The PROTEM US-SERIES will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys..

US40 Series	Machining Capacities	
US40	1.629“ - 10.748“	43mm - 273mm
US40CA	1.629“ - 10.748“	43mm - 273mm

US40 Pipe Beveling Machine

Standard Capacity: 1.692“ - 8.622“ (43mm - 219mm)

Extended Capacity: 1.629“ - 10.748“ (43mm - 273mm)

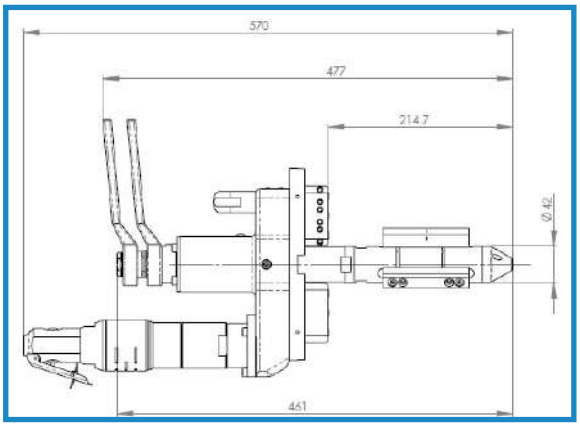


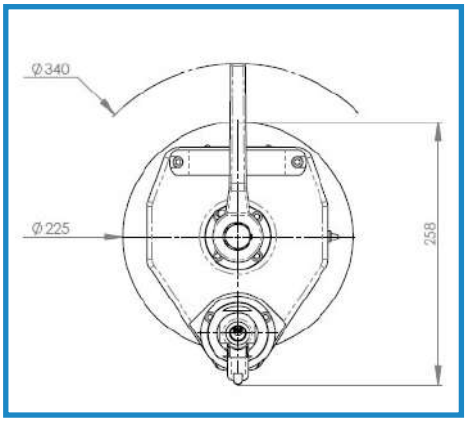
US40 with pneumatic drive

The portable id mount PROTEM US40 tube and pipe beveling machine is powerful, durable, reliable and versatile. The US40 covers Ø ranging from 1.692" (43mm) to 8.622" (219mm). The standard tool plate will accept multiple tool bits, allowing up to four simultaneous machining operations which may include 30°, 37°30, 45° bevels with or without land, J-bevels, compound bevels, facing, counterboring operations,cutting tubes to length and removal of weld joints on boiler panels.

The tool bits can be changed and adjusted very quickly. Carbide tool inserts may also be used. The US40 features a self-accepting torque system and an integral drive motor. It can be either pneumatically or electrically or hydraulically driven. The PROTEM US40 will perform repeatable high quality weld preparations on all types of materials including mild steel, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91. aluminium, copper and exotic alloys.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓





Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- Versatile Cutting Head: the tool-holder plate can accept up to 4 tool bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process

ID Mounted



US40 electric with remote trigger handle



US40 with electric drive

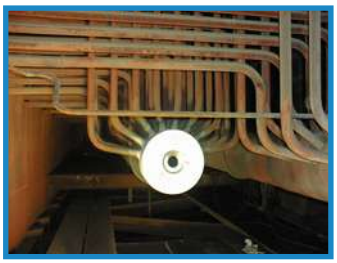
US40 Pipe Beveling Machine

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Manual with a key
Feed stroke	1.968“ (50mm)
Expansion	0.590” (15mm)
Cutting head gear drive	25 rpm off-load speed 16 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
US40-1000	Pipe Facing Machine PROTEM US40 with pneumatic drive, for Ø 1.692“ - 8.622“ (43mm - 219mm)
US40-1002	Pipe Facing Machine PROTEM US40 with right angle pneumatic drive, for Ø 1.692“ - 8.622“ (43mm - 219mm)
US40-1022	Pipe Facing Machine PROTEM US40 with electric drive 220V MS15. for Ø 1.692“ - 8.622“ (43mm - 219mm)
US40-1024	Pipe Facing Machine PROTEM US40 with right angle electric drive 220V MS15. for Ø 1.692“ - 8.622“ (43mm - 219mm)
US40-1040	Pipe Facing Machine PROTEM US40 with electric drive 110V, for Ø 1.692“ - 8.622“ (43mm - 219mm)
US40-1060	Pipe Facing Machine PROTEM US40 with single hydraulic drive and regulation valve, for Ø 1.692“ - 8.622“ (43mm - 219mm)
US40-1062	Pipe Facing Machine PROTEM US40 with single hydraulic drive, for Ø 1.692“ - 8.622“ (43mm - 219mm)

Applications:







Use On-Site or in Workshop:

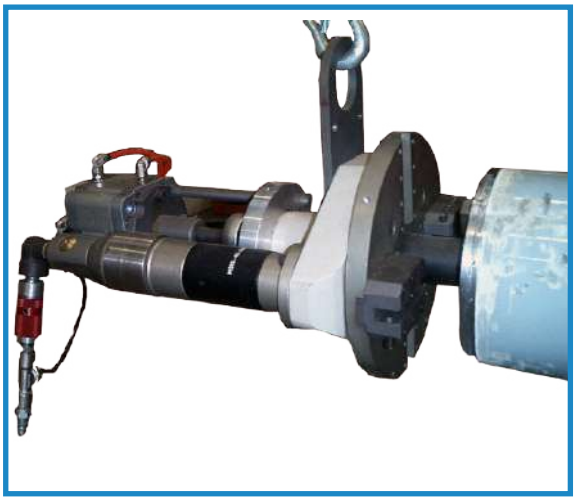




US40CA Beveling Machine with automatic clamping System

Standard Capacity: 1.692“ - 8.622“ (43mm - 219mm)

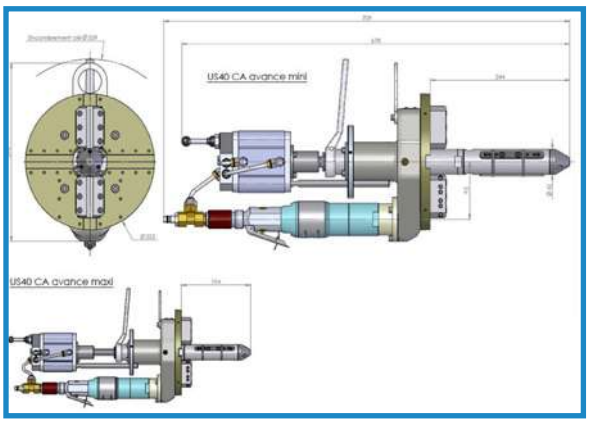
Extended Capacity: 1.629“ - 10.748“ (43mm - 273mm)



The portable id mount PROTEM US40CA tube and pipe beveling machine is powerful, durable, reliable and versatile.The US40CA covers Ø ranging from 1.692" (43mm) to 8.622" (219mm). The standard tool plate will accept multiple tool bits, allowing up to four simultaneous machining operations which may include 30°, 37°30. 45° bevels with or without land, J-bevels, compound bevels, facing, counterboring operations,cutting tubes to length and removal of weld joints from heat exchanger tubes.

The tool bits can be changed and adjusted very quickly. Carbide tool inserts may also be used. The US40CA features a self-accepting torque system and an integral drive motor. It can be either pneumatically or electrically or hydraulically driven. The PROTEM US40CA will perform repeatable high quality weld preparations on all types of materials including mild steel, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91. aluminium, copper and exotic alloys.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗



Dimensions

Technical Features:

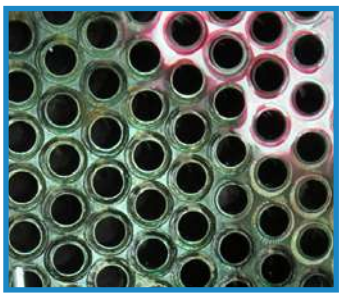
Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Automatic
Feed stroke	1.968“ (50mm)
Cutting head gear drive	25 rpm off-load speed 16 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

ID Mounted

Order No.	Description
US40CA-1000	Pipe Facing Machine PROTEM US40 with single pneumatic drive, for Ø 1.692“ - 8.622“ (43mm - 219mm). The US40CA features an integrated automatic clamping system.

US40CA On-Site:





US40 Pipe Beveling Machines — Options & Accessories

US40 Crates:

Order No.	Description
US40-K01	Transport crate for US40 pneumatic
US40-K02	Transport crate for US40 with right angled drive pneumatic
US40-K03	Transport crate for US40 hydraulic
US40-K05	Transport crate for US40E (MS10-MS15)
US40-K06	Transport crate for US40 pneumatic + bench
US40-K10	Transport crate for US40 copying carriage
US40-K11	Transport crate for US40-ASB
US40-K12	Transport crate for US40E MS15 + RA
US40CA-K01	Transport crate for US40CA pneumatic
US40PR/C-K01	Transport crate for US40PR/C-1000 Elbow mandrel assembly
US40PR/C-K02	Transport crate for US40PR/C-1001 Elbow mandrel assembly

US40 Elbow Mandrels:

Order No.	Description
US40PR/C-1000	Elbow mandrel assembly EMA for US40 for Ø 3.543“-7.087“ (90mm-180mm)
US40PR/C-1001	Elbow mandrel assembly EMA for US40 for Ø 5.709“ - 8.622“ (145mm - 219mm)



US40 Further Options:

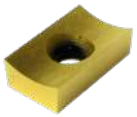
Order No.	Description
US40-1115	Additional tool-holder
US40-2400	Bench mounting device for US40
US40-2500	ID Tracker for US40 for Ø 4.724“ - 8.622“ (120mm - 219mm)
US40-3000	Copying carriage Ø 2.32”-16.3” (59mm-414mm)
US40-3100	Flange facing attachment, for flange diameters ranging from 2.32”-16.3” (59mm-414mm)
US40-3800	Tool-holder for diameter up to 10.748“ (273 mm)





Bench mounting device for US40

US40 Pipe Beveling Machine — Tool bits

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30° for US40	
O-US-PP375-9-14007	Insert-holder 37.5° for US40	
O-US-PP45-9-14008	Insert-holder 45° for US40	
O-US-PP90-9-11066	Insert-holder 90° for US40	
O-VIS-V5	Screw for tool insert P2	
O-US-P2-6-H-T	Tool-insert for US40-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US40-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US40-TIH-90	

Order No.	Description	Picture
O-US-A1-9-H-27	Facing tool bit 90°	
O-US-A2-9-H-26	Beveling tool bit for 30° bevel	
O-US-A3-9-H-28	Beveling tool bit for 37°30 bevel	
O-US-A4-9-H-25	Beveling tool bit for counterboring 15°	
O-US-A5-9-H-86	Beveling tool bit for 45°	
O-US-B6-9-H-54	Facing tool bit - notched 90°	
O-US-B7-9-H-56	Beveling tool bit - notched 30°	
O-US-B8-9-H-59	Beveling tool bit - notched 37°30	
O-US-B9-9-H-61	Beveling tool bit for counterboring - notched 15°	
O-US-B11-9-H-15	Beveling tool bit for counterboring and squaring	
O-US-C5-9-H-63	Beveling tool bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Beveling tool bit for 12.5° R6 j-bevels	
O-US-C7-9-H-67	Notched tool bit for 7° R6 j-bevels	
O-US-C8-9-H-69	Notched tool bit for 12.5° R6 j-bevels	
O-US-C9-9-H-29	Beveling tool bit for 10° R1.5 j-bevels	
O-US-C10-9-H-70	Beveling tool bit for 20° R4 j-bevels	
O-US-SO-303-1-9	Tool bit for detubing - weld removal	
O-US-SO-303-2-9	Tool bit for detubing - weld removal	
O-US-SO-303-3-9	Tool bit for detubing - weld removal	

ID Mounted

US80 Pipe Beveling Machine

ID Mounted

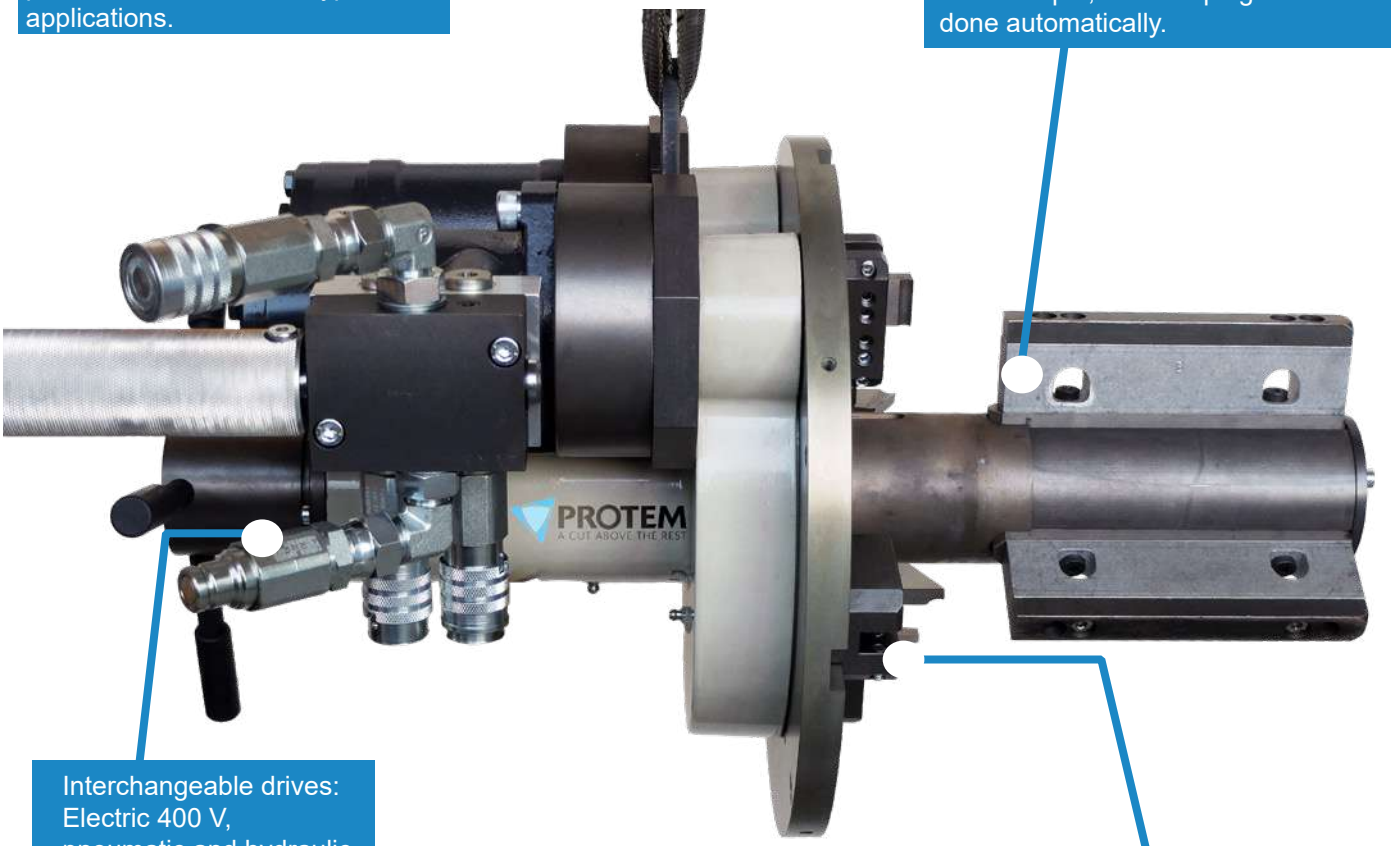
Rugged, dependable, versatile

Different configurations are possible to suit different types of applications.

Clamping jaws are available in several different configurations.

Additional clamping jaws extend the capacity of the machine.

Several clamping options are available for specific applications. For example, the clamping can be done automatically.



Interchangeable drives: Electric 400 V, pneumatic and hydraulic

Up to four tool bits can be mounted so that machining operations, such as facing, beveling and counterboring can be carried out simultaneously.

The PROTEM US-SERIES will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys..

US80 Series	Machining Capacities	
US80	3.149“ - 16“	80mm - 406.4mm

US80 Pipe Beveling Machine

Standard Capacity: 3.149“ - 13.976“ (80mm - 355mm)

Extended Capacity: 3.149“ - 16“ (80mm - 406.4mm)



US80 with hydraulic drive

The US80 portable tube and pipe heavy duty beveler combines durability, reliability, efficiency and versatility in one machine, providing a safe and easy use for all operators. The standard tool-plate will accept multiple tool bits, allowing up to four simultaneous machining operations. Such operations may include 30°, 37°30, 45° bevels with or without land, J-bevels, compound bevels, facing, counterboring operations, etc.

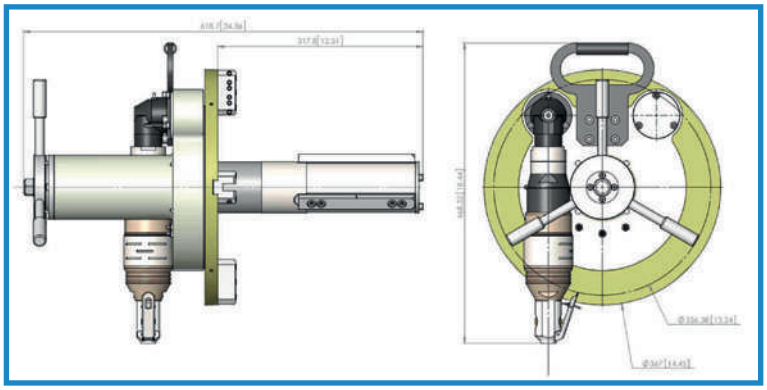
The US80 heavy duty beveler will perform repeatable high quality weld preparations on all types of materials including mild steel, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper and exotic alloys. It can be either pneumatically, electrically or hydraulically driven. The tool bits can be changed and adjusted very quickly. Carbide tool inserts may also be used.

Beveling	Squaring	Counterboring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓

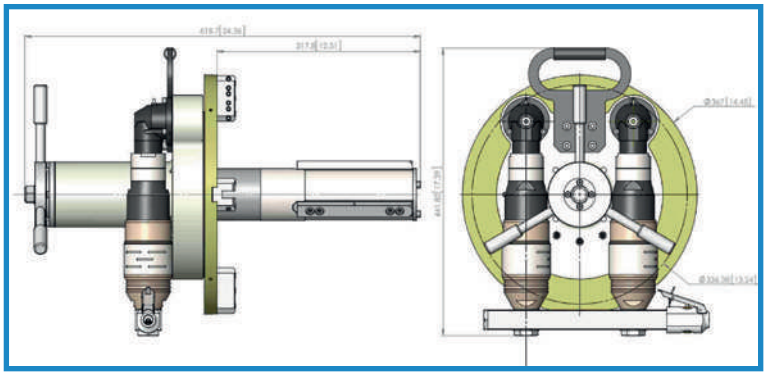
ID Mounted

Advantages:

- Transportable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- Versatile Cutting Head: the tool-holder plate can accept up to 4 tool bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



Dimensions single pneumatic drive



Dimenions dual pneumatic drive

US80 Pipe Beveling Machine

ID Mounted

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, other on request
Clamping	Manual with a key
Feed stroke	2.362“ (60mm)
Expansion	0.984” (25mm)
Cutting head gear drive	16 rpm off-load speed 11 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Single pneumatic drive	1,47 kW, 6 bar (87 psi), 1800 l/min (63 cfm)
Double pneumatic drive	2 x 1,47 kW, 6 bar (87 psi), 2 x 1800 l/min (2 X 63 cfm)
Electric drive	400 V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
US80-1000	Heavy Duty Pipe Facing Machine with dual pneumatic drive, for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80-1002	Heavy Duty Pipe Facing Machine with single pneumatic drive, for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80-1004	Heavy Duty Pipe Facing Machine with dual pneumatic drive, for Ø 3.149" - 16" (80mm - 406.4mm)
US80-1040	Heavy Duty Pipe Facing Machine with electric drive 400V, for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80-1060	Heavy Duty Pipe Facing Machine with dual hydraulic drive and regulation valve, for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80-1062	Heavy Duty Pipe Facing Machine with dual hydraulic drive, for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80-1064	Heavy Duty Pipe Facing Machine with single hydraulic drive and regulation valve, for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80-1066	Heavy Duty Pipe Facing Machine with single hydraulic drive, for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80-1068	Heavy Duty Pipe Facing Machine with dual hydraulic drive, for Ø 3.149" - 16" (80mm - 406.4mm)
US80-1080	Heavy Duty Pipe Facing Machine with brushless electric drive --Three-Phase Motorization-- Please indicate the required voltage and frequency for your application. For Ø 3.149“ - 13.976“ (80mm - 355mm)
US80DSB-1000	Heavy Duty Pipe Facing Machine with dual pneumatic drive, regulation valve and dual bearing (higher accuracy) for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80DSB-1060	Heavy Duty Pipe Facing Machine with dual hydraulic drive, regulation valve and dual bearing (higher accuracy) for Ø 3.149“ - 13.976“ (80mm - 355mm)

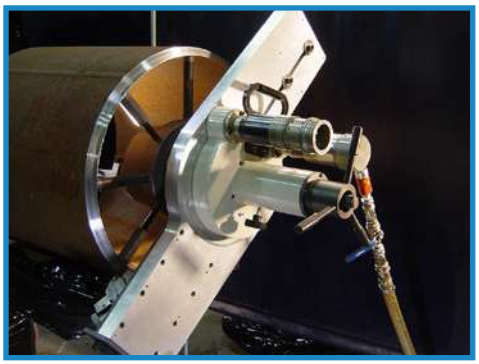
According to the Ø and wall thickness to consider for your application, some additional and optional devices might be required.
Please indicate us all information related to your application.
If your application does include elbow, please be aware that a double motorisation might be required (US80, US150).
If your application does include the machining of flanges, the DSB version of the machine shall be preferred.
If thin wall thicknesses are to be considered, specific envelopping jaws might be required (wall thickness <8mm).
If the clamping jaws shall be from stainless steel, please indicate. The content of this document will be updated accordingly.

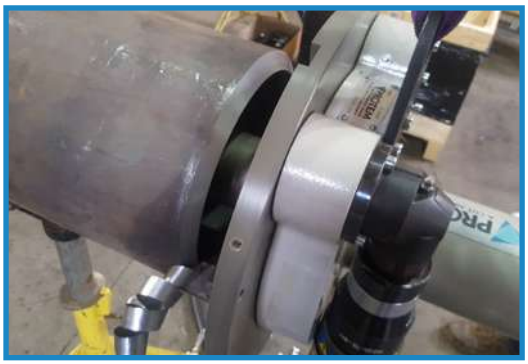
Applications:





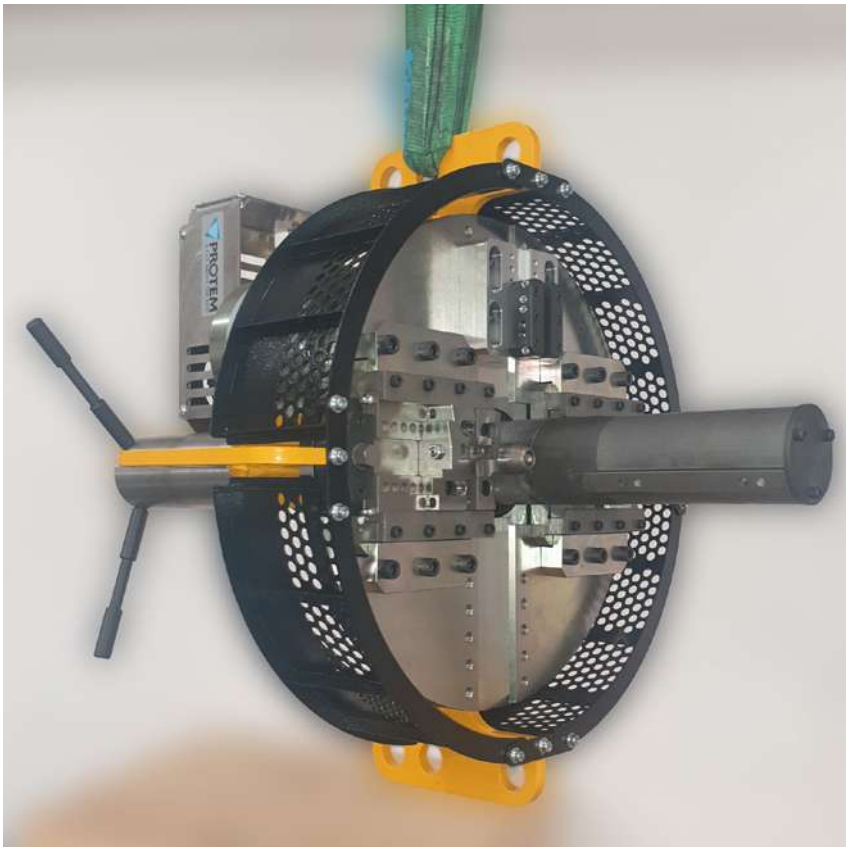
Use On-Site or in Workshop:

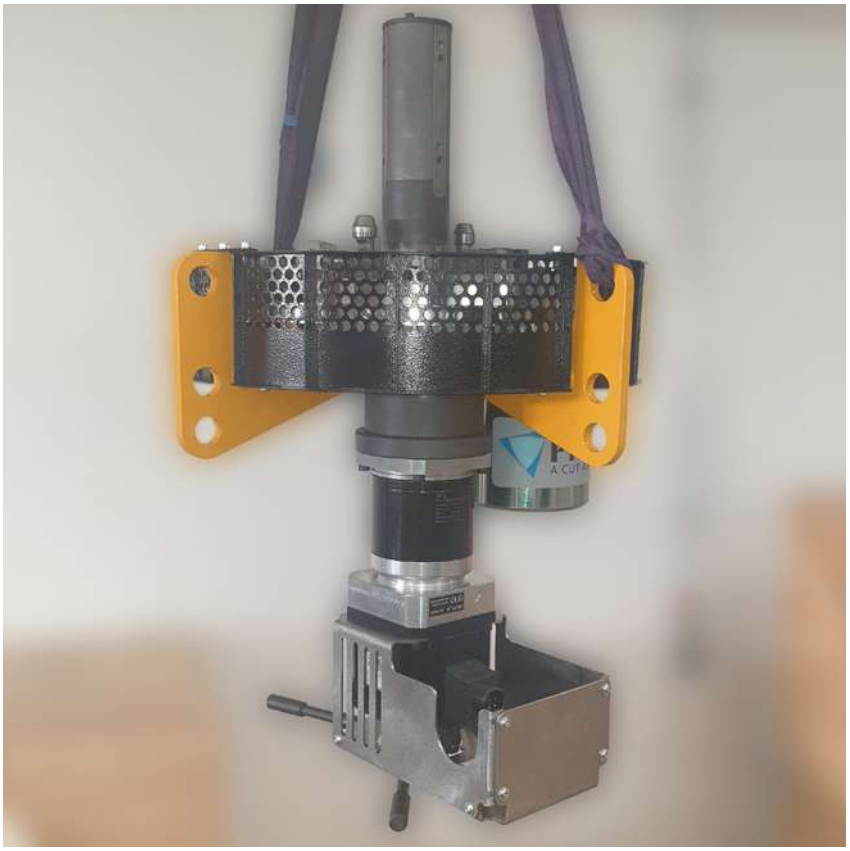




US80 Pipe Beveling Machine

Pipe beveling machine US150 double hydraulic motorization with HSB ID trackers and vertical support up and down with safety guard. Offshore application

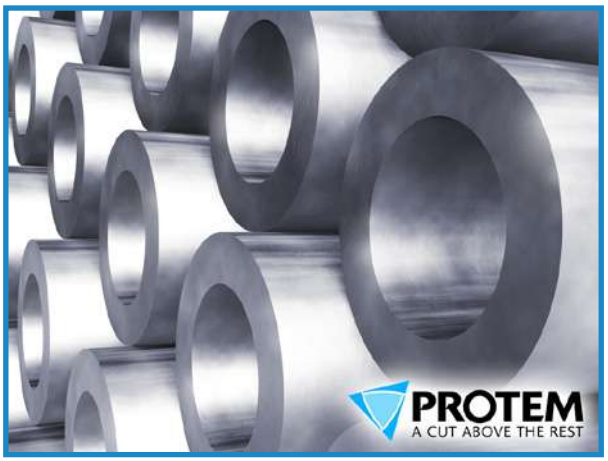




US80 Pipe Beveling Machines Options & Accessories

US80 Crates:

Order No.	Description
US80-K01	Transport crate for US80 pneumatic / hydraulic
US80-K02	Transport crate for US80 pneumatic / hydraulic + cover
US80-K03	Transport crate for US80E
US80-K04	Transport crate for US80E-BRUSHLESS
US80-K05	Transport crate for US80 in stainless steel for pneumatic / hydraulic
US80-K06	Transport crate for US80-ASB
US80-K07	Transport crate for copying carriage for US80
US80PR/C-K01	Transport box for US80-EMA-NG N°1



ID Mounted

US80 Elbow Mandrels:

Order No.	Description
US80PR/C-1000	Elbow mandrel assembly EMA for US80 for Ø 3.937"-7.087" (100mm-180mm)
US80PR/C-1001	Elbow mandrel assembly EMA for US80 for Ø 6.693"-14.016" (170mm-356mm)



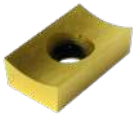
US80 Further Options:

Order No.	Description
US80-2400	Flange resurfacing module for flanges from 3.74“ - 24.69“ (95 mm - 627 mm) OD. Implementation of a flange facing attachment on a US80 to resurface damaged flat and raised faced flanges in-place. Single Point Machining
US80-2700	Bench mounting device for US80
US80-2800	ID Tracker for US80 for Ø 5.906“ (150mm)
US80-3000	Copying carriage for US80 Stroke 2.952“ (75mm)
US80-3100	Electric motorisation brushless, Three phase motorisation, please indicate the required voltage and frequency
US80-3202	Tool-holder for diameter up to 16" (406.4 mm)



US80-2400 Flange Facing Attachment

US80 Pipe Beveling Machine — Tool bits

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30° for US80	
O-US-PP375-9-14007	Insert-holder 37.5° for US80	
O-US-PP45-9-14008	Insert-holder 45° for US80	
O-US-PP90-9-11066	Insert-holder 90° for US80	
O-VIS-V5	Screw for tool insert P2	
O-US-P2-6-H-T	Tool-insert for US80-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US80-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US80-TIH-90	

Order No.	Description	Picture
O-US-A1-9-H-27	Facing tool bit 90°	
O-US-A2-9-H-26	Beveling tool bit for 30° bevel	
O-US-A3-9-H-28	Beveling tool bit for 37°30 bevel	
O-US-A4-9-H-25	Beveling tool bit for counterboring 15°	
O-US-A5-9-H-86	Beveling tool bit for 45°	
O-US-B6-9-H-54	Facing tool bit - notched 90°	
O-US-B7-9-H-56	Beveling tool bit - notched 30°	
O-US-B8-9-H-59	Beveling tool bit - notched 37°30	
O-US-B9-9-H-61	Beveling tool bit for counterboring - notched 15°	
O-US-B11-9-H-15	Beveling tool bit for counterboring and squaring	
O-US-C5-9-H-63	Beveling tool bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Beveling tool bit for 12.5° R6 j-bevels	
O-US-C7-9-H-67	Notched tool bit for 7° R6 j-bevels	
O-US-C8-9-H-69	Notched tool bit for 12.5° R6 j-bevels	
O-US-C9-9-H-29	Beveling tool bit for 10° R1.5 j-bevels	
O-US-C10-9-H-70	Beveling tool bit for 20° R4 j-bevels	
O-US-SO-303-1-9	Tool bit for detubing - weld removal	
O-US-SO-303-2-9	Tool bit for detubing - weld removal	
O-US-SO-303-3-9	Tool bit for detubing - weld removal	

ID Mounted

US150 Pipe Beveling Machine

ID Mounted

Clamping jaws are available in several different configurations.

Additional clamping jaws extend the capacity of the machine.

Several clamping options are available for particular applications. For example, the clamping can be done automatically.

Rugged, dependable, versatile

Different configurations are possible to suit different types of applications.



Up to four tool bits can be mounted so that machining operations, such as facing, beveling and counterboring can be carried out simultaneously.

Interchangeable drives: Electric 380 V, pneumatic and hydraulic

The PROTEM US-SERIES will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys..

US150 Series	Machining Capacities	
US150	5.906“ - 24.015“	150mm - 610mm

US150 Pipe Beveling Machine

Standard Capacity: 5.906“ - 20“ (150mm - 508mm)

Extended Capacity: 5.906“ - 24.015“ (150mm - 610mm)



US150 with pneumatic drive

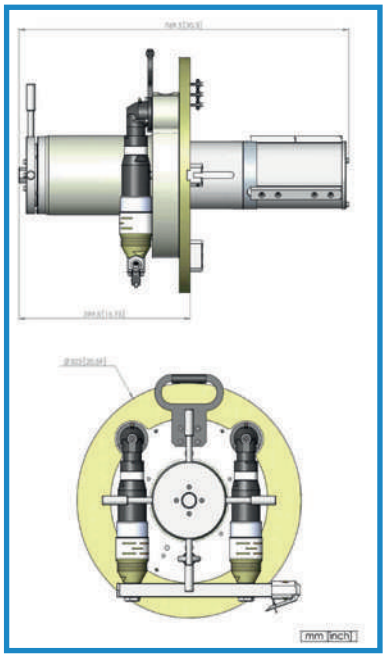
The US150 heavy duty beveler is a reliable and powerful machine that performs repeatable, high quality weld end preparation operations on all metal pipes including mild steel, chrome, stainless steel, duplex, super duplex, coppernickel alloy steel, inconel, P91, aluminium, copper and exotic alloys. The US150 covers Ø ranging from 5.905" (150mm) ID to 20" (508mm) OD. This machine can also be delivered with its 610mm (24.015”) tool-holder plate. It can be either pneumatically, electrically or hydraulically driven.

The standard tool-plate will accept multiple tool bits, allowing up to four simultaneous machining operations. Operations may include 30°, 37°30, 45° bevels with or without land, J-bevels, compound bevels, facing, counterboring operations, etc.
The tool bits can be changed and adjusted very quickly. Carbide tool-inserts may also be used. Easy to use, dependable and versatile, the US150 will allow you to drastically optimize your tube and pipe welding preparation works.

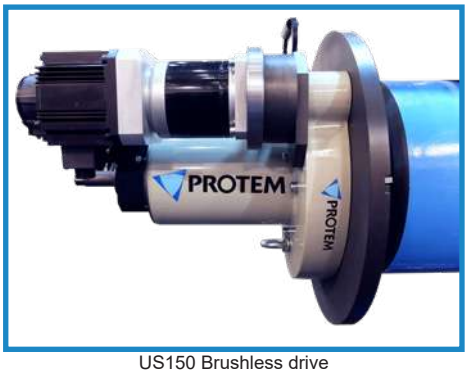
Beveling	Squaring	Counterboring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓

Advantages:

- Transportable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- Versatile Cutting Head: the tool-holder plate can accept up to 4 tool bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



Dimensions



US150 Brushless drive

ID Mounted

US150 Pipe Beveling Machine

ID Mounted

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, other on request
Clamping	Manual with a key
Feed stroke	3.937“ (100mm)
Expansion	1.181” (30mm)
Cutting head gear drive	7-10 rpm off-load speed 5-7 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Single pneumatic drive	1,47 kW, 6 bar (87 psi), 1800 l/min (63 cfm)
Double pneumatic drive	2 x 1,47 kW, 6 bar (87 psi), 2 x 1800 l/min (2 X 63 cfm)
Electric drive	380 V (2200 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
US150-1000	Heavy Duty Pipe Facing Machine with dual pneumatic drive, for Ø 5.905" - 20" (150mm - 508mm)
US150-1002	Heavy Duty Pipe Facing Machine with dual pneumatic drive, for Ø 5.905" - 24.015" (150mm - 610mm)
US150-1022	Heavy Duty Pipe Facing Machine with single electric drive - 2.2 kw power - 380 V with dual direction of rotation, speed regulator, emergency stop & Three-phase motorization. Please indicate the required voltage and frequency. Fitted with extension Kit24" for Ø 5.905" - 24.015" (150mm - 610mm)
US150-1040	Heavy Duty Pipe Facing Machine with single electric drive - 2.2 kw power - 380 V with dual direction of rotation, speed regulator, emergency stop & Three-phase motorization. Please indicate the required voltage and frequency, for Ø 5.905" - 20" (150mm - 508mm)
US150-1060	Heavy Duty Pipe Facing Machine with dual hydraulic drive and regulation valve. For Ø 5.905" - 20" (150mm - 508mm)

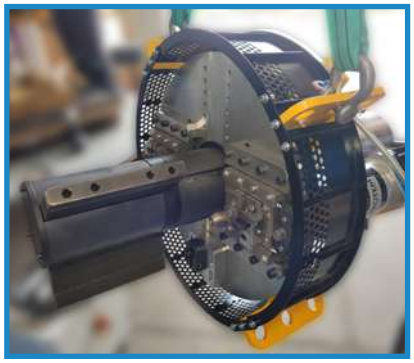
Order No.	Description
US150-1062	Heavy Duty Pipe Facing Machine with dual hydraulic drive, for Ø 5.905" - 20" (150mm - 508mm)
US150-1063	Heavy Duty Pipe Facing Machine with dual hydraulic drive, for Ø 5.905" - 24.015" (150mm - 610mm)
US150-1064	Heavy Duty Pipe Facing Machine with single hydraulic drive and regulation valve. For Ø 5.905" - 20" (150mm - 508mm)
US150-1066	Heavy Duty Pipe Facing Machine with single hydraulic drive, for Ø 5.905" - 20" (150mm - 508mm)
US150-1068	Heavy Duty Pipe Facing Machine with dual hydraulic drive and regulation valve. Fitted with extension Kit24" for Ø 5.905" - 24.015" (150mm - 610mm)
US150-1080	Heavy Duty Pipe Facing Machine with brushless electric drive & Three-Phase Motorization. Please indicate the required voltage and frequency for your application. For Ø 5.905" - 20" (150mm - 508mm)
US150DSB-1000	Heavy Duty Pipe Facing Machine with dual pneumatic drive and dual bearing for higher accuracy. For options US150-3000, US150-3100, US150-3200, for Ø 5.905" - 20" (150mm - 508mm)
US150DSB-1002	Heavy Duty Pipe Facing Machine with dual pneumatic drive and dual bearing for higher accuracy. Fitted with extension Kit 24" for Ø 5.905" - 24.015" (150mm - 610mm)
US150DSB-1060	Heavy Duty Pipe Facing Machine with dual hydraulic drive and dual bearing for higher accuracy. For Ø 5.905" - 20" (150mm - 508mm)
US150DSB-1062	Heavy Duty Pipe Facing Machine with dual hydraulic drive. For Ø 5.905" - 20" (150mm - 508mm)
US150DSB-1064	Heavy Duty Pipe Facing Machine with single hydraulic drive and dual bearing and regulation valve for higher accuracy. For options US150-ASB, US150-KS75-30, US150-KS75-36, for Ø 5.905" - 20" (150mm - 508mm)
US150DSB-1066	Heavy Duty Pipe Facing Machine with single hydraulic drive. For Ø 5.905" - 20" (150mm - 508mm)
US150DSB-1068	Heavy Duty Pipe Facing Machine with dual hydraulic drive, dual bearing and regulation valve. Fitted with extension Kit24" for Ø 5.905" - 24.015" (150mm - 610mm)

According to the Ø and wall thickness to consider for your application, some additional and optional devices might be required.
Please indicate us all information related to your application.
If your application does include elbow, please be aware that a double motorisation might be required (US80, US150).
If your application does include the machining of flanges, the DSB version of the machine shall be preferred.
If thin wall thicknesses are to be considered, specific envelopping jaws might be required (wall thickness <8mm).
If the clamping jaws shall be from stainless steel, please indicate. The content of this document will be updated accordingly.

Use On-Site or in Workshop:







US150 Pipe Beveling Machine

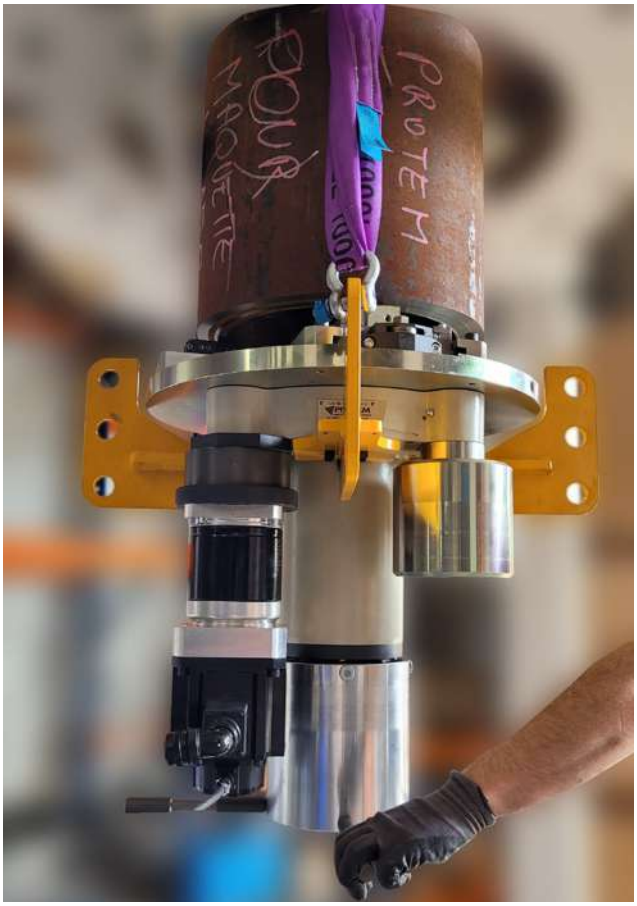
Pipe beveling machine US150 double hydraulic motorization with HSB ID trackers and vertical support up and down with safety guard. Offshore application.

Pipe beveling machine US150 Brushless motorization with HSB ID trackers and vertical support up and down with safety guard. Offshore application.









US150 Pipe Beveling Machines — Options & Accessories

US150 Crates:

Order No.	Description
US150-K01	Transport crate for US150 pneumatic / hydraulic
US150-K02	Transport crate for US150 pneumatic / hydraulic with US150-Kit24"
US150-K03	Transport crate for US150 pneumatic / hydraulic + cover
US150-K04	Transport crate for US150 pneumatic / hydraulic with US150-Kit24" + cover
US150-K05	Transport crate for US150E
US150-K06	Transport crate for US150E with Kit24"
US150-K08	Transport crate for US150E-BRUSHLESS
US150-K09	Transport box for US150-ASB
US150-K10	Transport crate for copying carriage 30" for US150
US150-K11	Transport crate for copying carriage 36" for US150
US150PR/C-K01	Transport box for US150-EMA-NG N°1



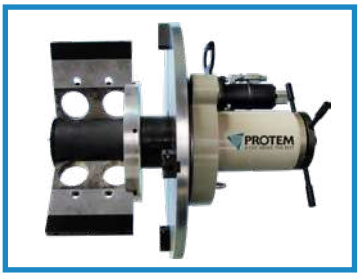
US150 Elbow Mandrels:

Order No.	Description
US150PR/C-1000	Elbow mandrel assembly EMA for US150 for Ø 10.276“ - 20“ (261mm - 508mm)



US150-Kit24":

Order No.	Description
US150-2702	Tool-holder for diameter up to 24.015" (610mm)



US150ASB Flange Facing Attachments:

Order No.	Description
US150ASB-1223	Tool-holder OD for flange facing attachment ASB
US150ASB-1224	Tool-holder ID for flange facing attachment ASB
US150-3000	Flange resurfacing module for US150 (Arm Surfacing Belt). Clamping capacity: 6.496" - 34.433" (165 mm - 900 mm). Surfacing with continuous feed (in connection with the rotation speed). Constant surface finish. 5 different feed rates are available which allows to get various surface finishes. Recommended to be used with a US150 DSB type machine.



US150 Pipe Beveling Machines — Options & Accessories

US150 Copying Carriage:

Order No.	Description
US150-3100	Copying carriage for US150 Stroke 2.953" (75mm) for pipe Ø up to 30" (762mm)
US150-3200	Copying carriage for US150 Stroke 2.953" (75mm) for pipe Ø up to 35.433" (900mm)



US150 Mounting device:

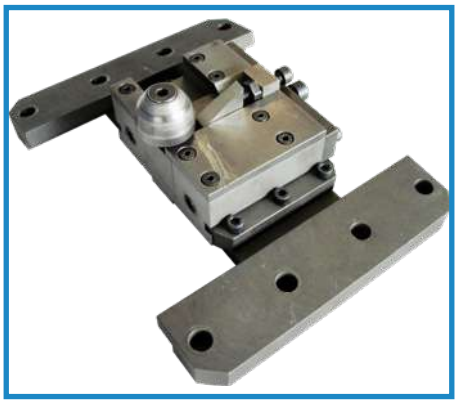
Order No.	Description
US150-2500	Bench mounting device for US150





US150 ID & OD Tracker:

Order No.	Description
US150-3400	ID-Tracker (to keep a constant land when tube is oval; 5 mm at the radius. Can be used from 8.662" (220 mm) ID to 16.457" (418 mm) OD, limited tube wall thickness according to material and bevel type)
US150-3500	OD-Tracker (to keep a constant land when tube is oval. Can be used from 12.78" (324.6 mm) ID to 19.27" (489.6 mm) OD, limited tube wall thickness according to material and bevel type)



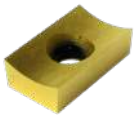
US150 Spider Assembly:

Order No.	Description
US150PR/C-1001	Spider assembly ranging from 20" to 30" (508 mm to 762 mm) (to be used with copying / flange facing carriages US150-3100 and US150-3000
US150PR/C-1002	Spider assembly ranging from 20" to 35.985" (508 mm to 914 mm) (to be used with copying / flange facing carriages US150-3200 and US150-3000



US150 Pipe Beveling Machine — Tool bits

ID Mounted

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30° for US150	
O-US-PP375-9-14007	Insert-holder 37.5° for US150	
O-US-PP45-9-14008	Insert-holder 45° for US150	
O-US-PP90-9-11066	Insert-holder 90° for US150	
O-VIS-V5	Screw for tool insert P2	
O-US-P2-6-H-T	Tool-insert for US150-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US150-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US150-TIH-90	

Order No.	Description	Picture
O-US-A1-9-H-27	Facing tool bit 90°	
O-US-A2-9-H-26	Beveling tool bit for 30° bevel	
O-US-A3-9-H-28	Beveling tool bit for 37°30 bevel	
O-US-A4-9-H-25	Beveling tool bit for counterboring 15°	
O-US-A5-9-H-86	Beveling tool bit for 45°	
O-US-B6-9-H-54	Facing tool bit - notched 90°	
O-US-B7-9-H-56	Beveling tool bit - notched 30°	
O-US-B8-9-H-59	Beveling tool bit - notched 37°30	
O-US-B9-9-H-61	Beveling tool bit for counterboring - notched 15°	
O-US-B11-9-H-15	Beveling tool bit for counterboring and squaring	
O-US-C5-9-H-63	Beveling tool bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Beveling tool bit for 12.5° R6 j-bevels	
O-US-C7-9-H-67	Notched tool bit for 7° R6 j-bevels	
O-US-C8-9-H-69	Notched tool bit for 12.5° R6 j-bevels	
O-US-C9-9-H-29	Beveling tool bit for 10° R1.5 j-bevels	
O-US-C10-9-H-70	Beveling tool bit for 20° R4 j-bevels	
O-US-SO-303-1-9	Tool bit for detubing - weld removal	
O-US-SO-303-2-9	Tool bit for detubing - weld removal	
O-US-SO-303-3-9	Tool bit for detubing - weld removal	

US450 Heavy Duty Pipe Beveling Machine

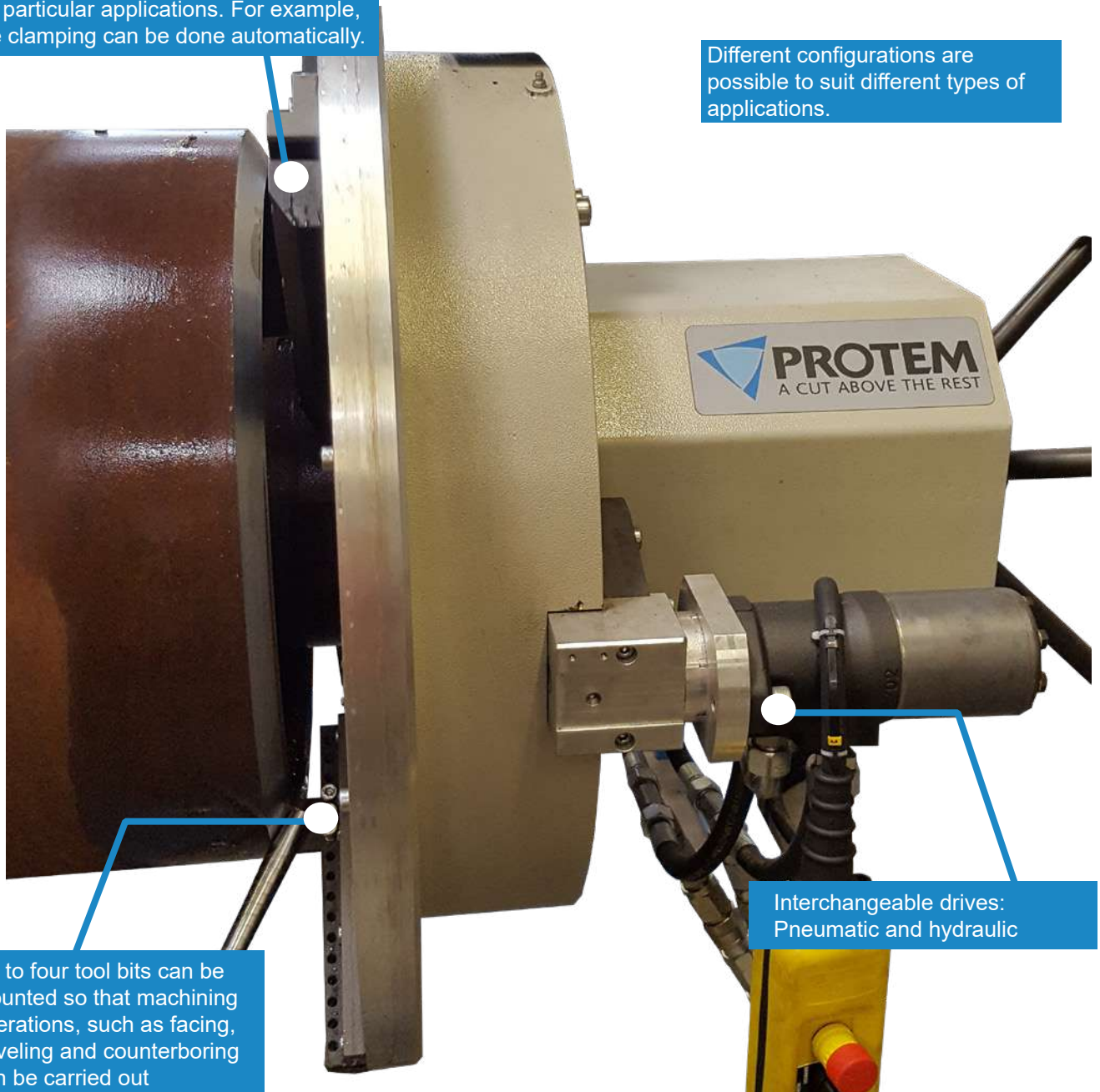
Clamping jaws are available in several different configurations.

Additional clamping jaws extend the capacity of the machine.

Several clamping options are available for particular applications. For example, the clamping can be done automatically.

Mobile, rugged, dependable, versatile

Different configurations are possible to suit different types of applications.



Interchangeable drives: Pneumatic and hydraulic

Up to four tool bits can be mounted so that machining operations, such as facing, beveling and counterboring can be carried out simultaneously.

The PROTEM US-SERIES will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys..

US450 Series	Machining Capacities	
US450	18“ - 56“	457.2mm - 1422.4mm

ID Mounted

US450 Heavy Duty Pipe Beveling Machine

Standard Capacity: 18" - 36“ (457.2mm - 914.4mm)

Extended Capacity: 18“ - 56“ (457.2mm - 1422.4mm)



US450 with hydraulic drive

Ultimate end machining solution for tubes and pipes with Ø ranging from 18" (457.2mm) to 56" (1422.4mm) for numerous applications. Very powerful, versatile and reliable heavy duty beveler for demanding weld-end preparation applications. Unique capabilities for construction, maintenance and repair works on-field or in the assembly workshop.

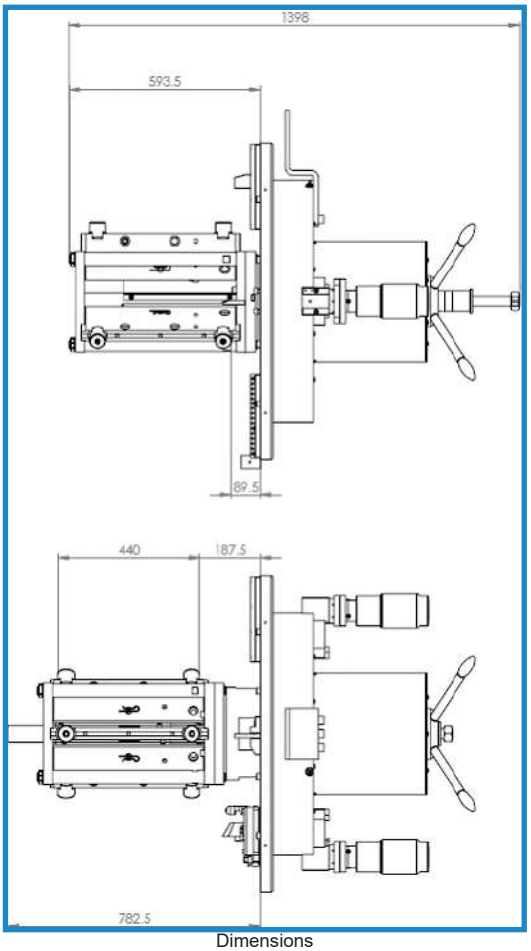
Strong ID clamping mandrel provides safe and secured mounting and fixing. Cold machining process and no Heat Affected Zone. For unmatched results! Available with dual pneumatic drive or dual hydraulic drive (to be used with a 22KW hydraulic power unit) The durability, reliability and capacity of the US450 earned this mobile machining unit the excellent reputation it enjoys wherever it is used in the world.

Beveling	Squaring	Counterboring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓

ID Mounted

Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- The machine can be used in all positions: vertical, horizontal, over head
- Versatile Cutting Head: the tool-holder plate can accept up to 4 tool bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



Dimensions

US450 Heavy Duty Pipe Beveling Machine

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, other on request
Clamping	Manual
Feed stroke	3.858“ (98mm)
Expansion	1.102” (28mm)
Cutting head gear drive	5-6 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Single pneumatic drive	2,3 kW, 6 bar (87 psi), 3100 l/min (109 cfm)
Double pneumatic drive	2 x 2,3 kW, 6 bar (87 psi), 2 x 3100 l/min (2 X 109 cfm)
Double hydraulic drive	2 x hydraulic drives (recommended HPP: 22kW)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
US450-1000	Heavy Duty Beveling Unit PROTEM US450 for Ø 18" - 36" (457.2mm - 914.4mm) with powerful pneumatic drive.
US450-1062	Heavy Duty Beveling Unit PROTEM US450 for Ø 18" - 36" (457.2mm - 914.4mm) with powerful hydraulic drive.
US450-1064	Heavy Duty Beveling Unit PROTEM US450 Kit56" for Ø 18" - 56" (457.2mm - 1422.4mm) with powerful dual hydraulic drive.
US450-1082	Heavy Duty Beveling Unit PROTEM US450 for Ø 18" - 40" (420mm - 1016mm) with brushless electric drive



Use On-Site or in Workshop:





US450 Crates:

Order No.	Description
US450-K01	Crate for US450
US450-K02	Crate for US450-Kit56"
US450-K03	Crate for US450 copying carriage



US450 ID & OD Tracker:

Order No.	Description
US450-3400	ID-Tracker (to keep a constant land when tube is oval; 5 mm at the radius. Limited tube wall thickness according to material and bevel type)
US450-3500	OD-Tracker (to keep a constant land when tube is oval. Limited tube wall thickness according to material and bevel type)

ID Mounted

US450 Pads:

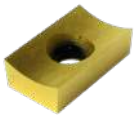
Order No.	Description
US450-1313	Pad height 0.985" (25 mm) set of 6 units
US450-1314	Pad height 1.97" (50 mm) set of 6 units
US450-1315	Pad height 2.95" (75 mm) set of 6 units
US450-1316	Pad height 3.94" (100 mm) set of 6 units



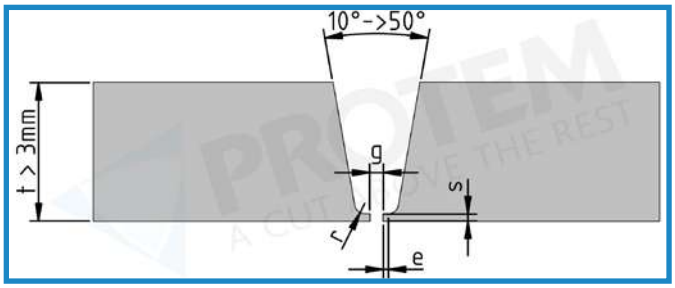
US450 Copying Carriage:

Order No.	Description
US450-3202	Copying carriage for US150 Stroke 2.952" (75mm) for pipe Ø up to 20 - 48" (508mm - 1219.2mm)

US450 Heavy Duty Pipe Beveling Machine — Tool bits

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30° for US450	
O-US-PP375-9-14007	Insert-holder 37.5° for US450	
O-US-PP45-9-14008	Insert-holder 45° for US450	
O-US-PP90-9-11066	Insert-holder 90° for US450	
O-VIS-V5	Screw for tool insert P2	
O-US-P2-6-H-T	Tool-insert for US450-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US450-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US450-TIH-90	

Order No.	Description
O-US-ST-12-H-F-87	TICN-coated 30° beveling tool L= 3.54'' (90mm)
O-US-ST-12-H-F-88	TICN-coated facing tool
O-US-ST-12-H-F-89	TICN-coated 30° beveling tool L= 2.75'' (70mm)
O-US-ST-12-H-F-90	TICN-coated 37.30° beveling tool L= 3" (76mm)
O-US-ST-12-H-F-91	TICN-coated 30° beveling tool L= 4" (102mm)
O-US-ST-12-H-F-101	TICN-coated 14° counterboring tool



ID Mounted

Single Point Machining

Flange Facing Attachments



For US Machines

Optional flange facing attachment from the US25 to the US450 model.

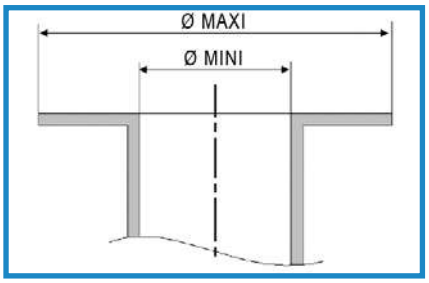
This flange attachment resurfaces all the different flanges welded on pipes, of all materials, directly on-site or in the workshop.

This system is reliable, accurate, rigid, lightweight and very easy to use and operate.

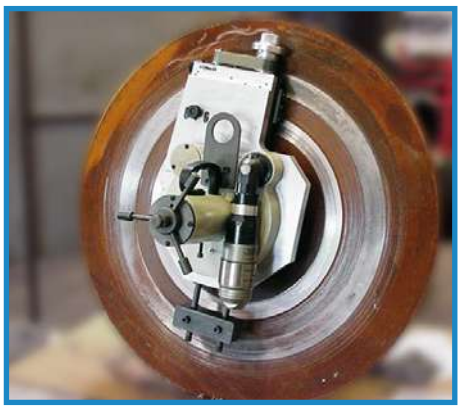
Clamping is made directly inside the flange ID via the clamping shaft of the US machines and their additional expansion blades, or with a spider elbow mandrel kit.

It is recommended to use the spider elbow mandrel kit to get an optimal adjustment of the machine with the flange (squareness and concentricity). For materials: mild steel, stainless steel, alloy steels, aluminium, duplex, super duplex, inconel, P91.

Machining Capacity:



Applications:

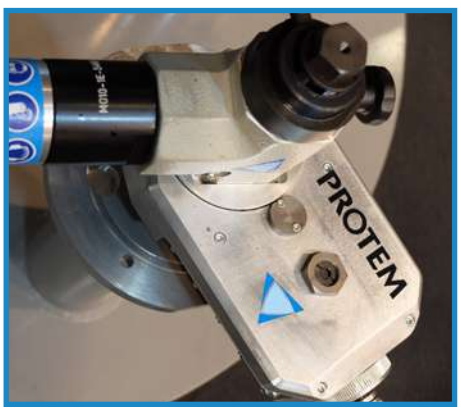












Single Point Machining

US25CH-ACC

Order No.	Description
US25ACC-1002	Flange resurfacing module for US25 Ø 1.575" - 10.866" (40 - 276mm)

Technical Features:

Clamping capacity	1.575" - 10.866" (40 - 276mm)
Machining capacity Ø A	1.575" (40 mm)
Machining capacity Ø B	10.866" (276 mm)

US30CH-ACC

Order No.	Description
US30CH-1002	Flange resurfacing module Ø 1.772"-12.717" (45 - 323 mm)

Technical Features:

Clamping capacity	1.772"-12.717" (45 - 323 mm)
Machining capacity Ø A	1.772" (45 mm)
Machining capacity Ø B	12.717" (323 mm)

US40-ACC

Order No.	Description
US40-3100	Flange facing attachment, for flange diameters ranging from 2.32"-16.3" (59mm-414mm)

Technical Features:

Clamping capacity	2.32"-16.3" (59mm-414mm)
Machining capacity Ø A	2.32" (59 mm)
Machining capacity Ø B	16.3" (414 mm)

US80-ACC

Order No.	Description
US80-2400	Flange resurfacing module for flanges from 3.74“ - 24.69“ (95 mm - 627 mm) OD. Implementation of a flange facing attachment on a US80 to resurface damaged flat and raised faced flanges in-place. Single Point Machining

Technical Features:

Clamping capacity	3.74“ - 24.69“ (95 mm - 627 mm)
Machining capacity Ø A	3.74" (95 mm)
Machining capacity Ø B	24.69" (627 mm)

US150-ACC

Order No.	Description
US150-3000	Flange resurfacing module for US150 (Arm Surfacing Belt). Clamping capacity: 6.496" - 34.433" (165 mm - 900 mm); Surfacing with continuous feed (in connection with the rotation speed). Constant surface finish. 5 different feed rates are available which allows to get various surface finishes. Recommended to be used with a US150 DSB type machine.

Technical Features:

Clamping capacity	6.496" - 34.433" (165 mm - 900 mm)
Machining capacity Ø A	6.496" (165 mm)
Machining capacity Ø B	34.433" (900 mm)

US450-ACC

Order No.	Description
US450-3000	Flange facing attachment, for the remachining and resurfacing of worn or damaged flanges with diameters ranging from 17.717“ - 56“ (450mm - 1422mm)

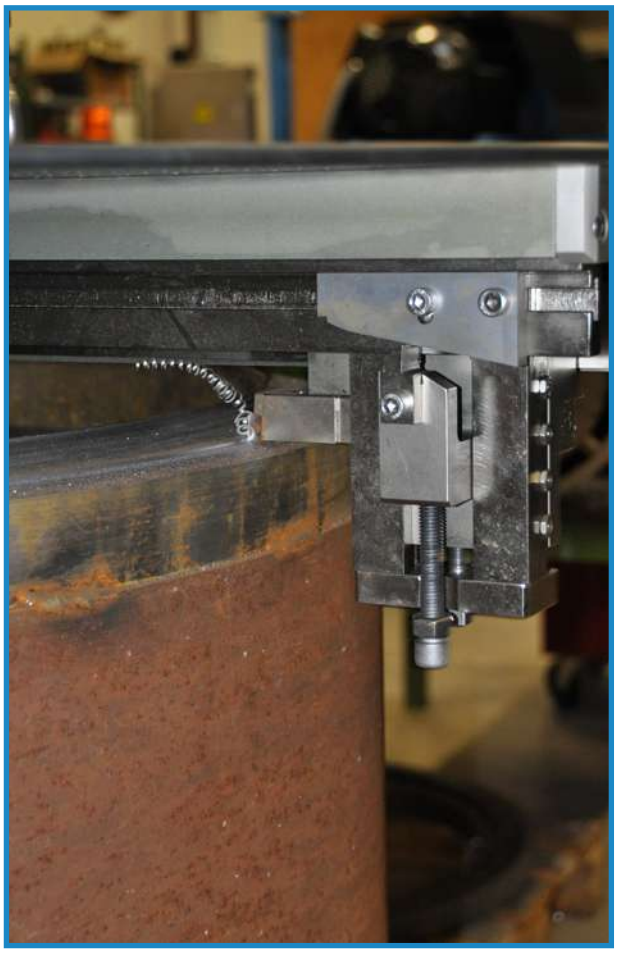
Technical Features:

Clamping capacity	17.717" - 56" (450mm - 1422mm)
Machining capacity Ø A	17.717" (450 mm)
Machining capacity Ø B	56" (1422 mm)

Copying Carriage Option
To Perform Compound Bevels on Heavy Pipes

ID Mounted

Copying Carriage



For US & TT Machines

The copying carriage option was design to perform compound bevels for wall thicknesses over 1.968" (50mm).

The use of a compound bevel provides a reduction in the amount of weld metal that needs to be deposited in the weld bead. The aim is to avoid welding operations that are too long and too costly from a labor and consumables point of view.

The Copying Carriage option is made for PROTEM beveling machines in the US40 to US450 range and PROTEM cutting and beveling machines in the TTNG-HD series.

Using HSS or carbide inserts allows machining on metal pipes including mild steel, chrome, stainless steel, duplex, super duplex, coppernickel alloy steel, inconel, P91, aluminium, copper, exotic alloys and more.

To implement the copying carriage system, simply remove the tool plate from the unit and fit the copying arm on the machine. This implementation is fast and easy to do. Once it has been completely equipped with its copying arm, the machine is ready to perform beveling operations

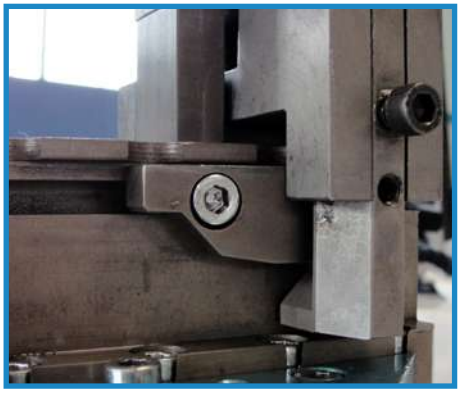
During the machining operation, the operator's safety is ensured by the safety cover which is situated over the copying arm during rotation.Reliable and accurate, the copying carriage system performs machining operations by using a copying cam. The copying cam is connected to the tool holder by a ''follower finger'' which provides radial movement to the carriage.

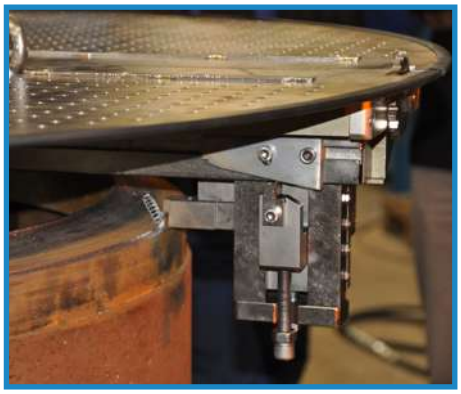
In order to guarantee that the land or root face has a constant width over the whole circumference of the pipe, a counterboring tool may be added on the copying carriage.

Applications:













Copying Carriage Option
To Perform Compound Bevels on Heavy Pipes

US40

Order No.	Description
US40-3000	Copying carriage Ø 2.32"-16.3" (59mm-414mm)

US80

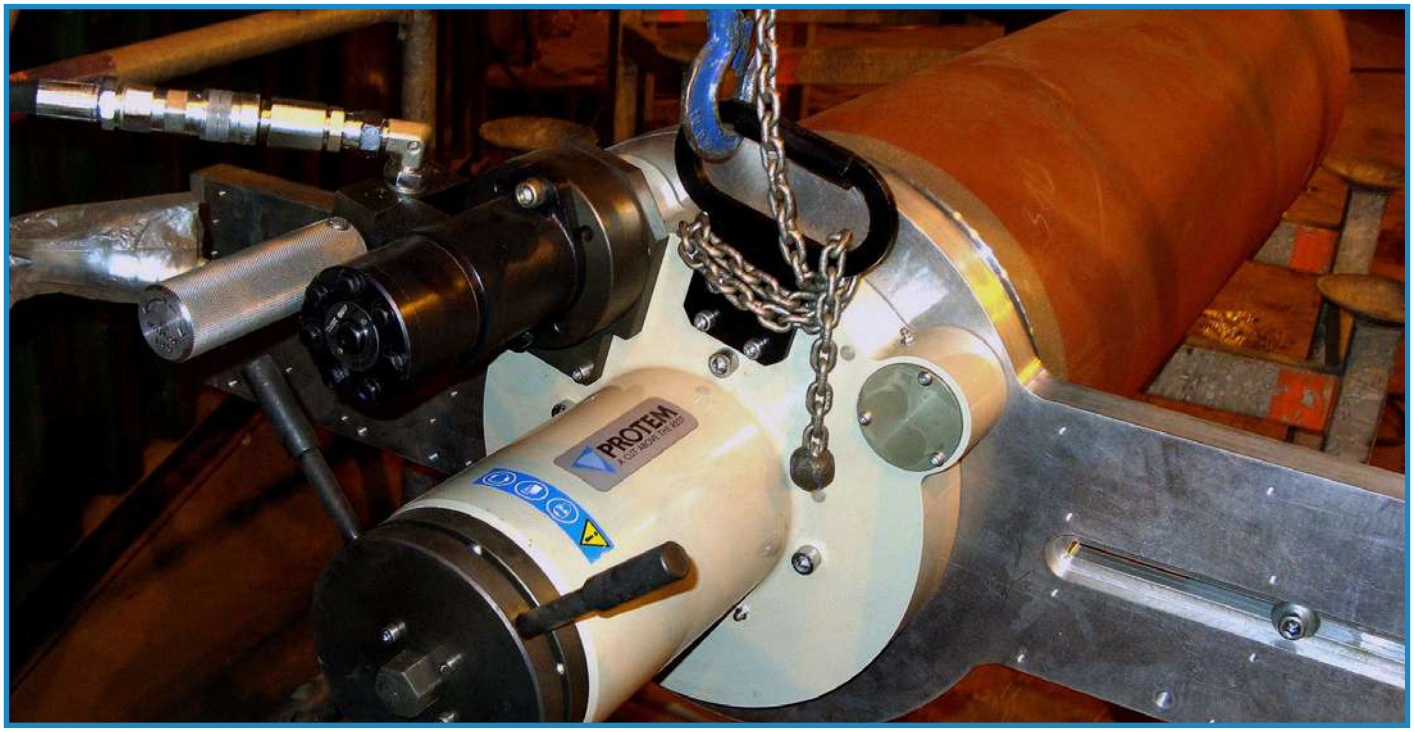
Order No.	Description
US80-3000	Copying carriage for US80 Stroke 2.953" (75mm)

US150

Order No.	Description
US150-3100	Copying carriage for US150 Stroke 2.953" (75mm) for pipe Ø up to 30" (762mm)
US150-3200	Copying carriage for US150 Stroke 2.953" (75mm) for pipe Ø up to 35.433" (900mm)

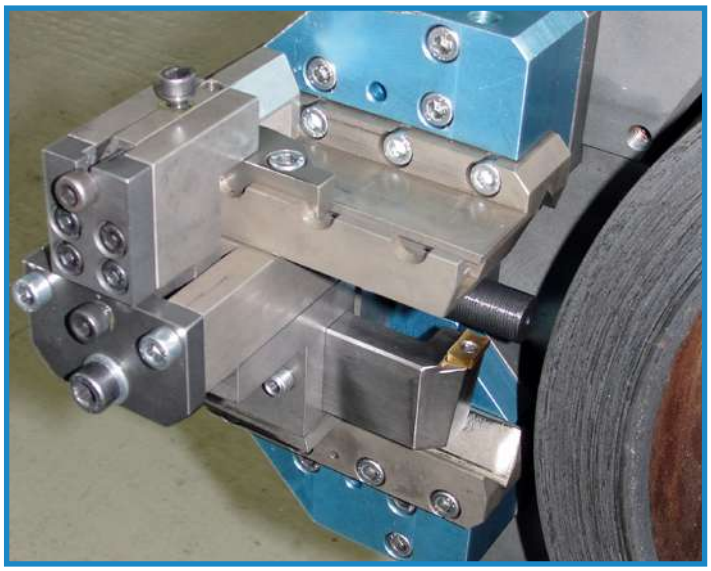
US450

Order No.	Description
US450-3202	Copying carriage for US450 Stroke 2.953" (75mm) for pipe Ø up to 20 - 48" (508mm - 1219.2mm)



TTNG-HD

Order No.	Description
TTNG-HD-4200	Copying Carriage, stroke 1.968" (50mm)
TTNG-HD-4300	Copying Carriage, stroke 3.937" (100mm)



Elbow Mandrel Assembly

EMA

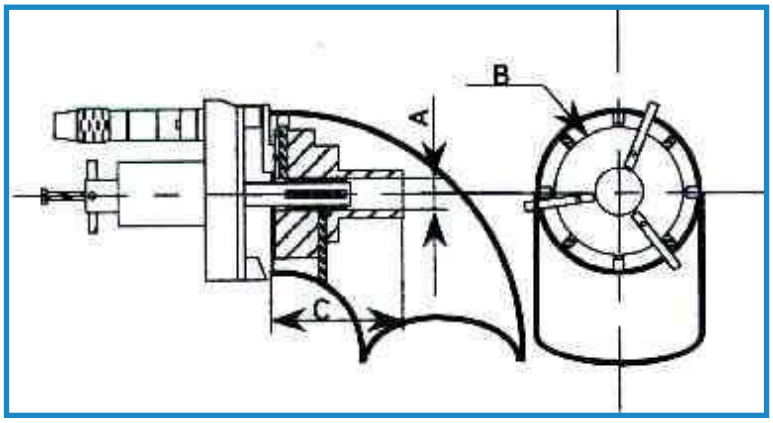


For US Machines

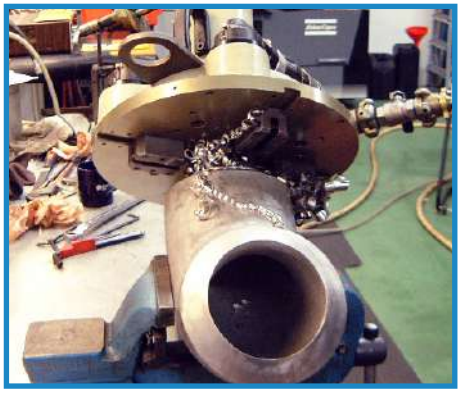
This new generation of elbow mandrel assembly allows the positioning of a US type machine on all types of elbows.

The mounting system provides precise concentric positioning of the machine in the elbow which creates an extremely precise alignment that leads to a high quality weld-end preparation on all types of elbows and materials including stainless steel and high nickel alloys.

Dimensions:



Applications:









Elbow Mandrel Assembly

US25CH-EMA

Order No.	Description
US25PR/C-1000	Elbow mandrel assembly for US25 Ø 1.575"-2.520" (40mm-64mm)
US25PR/C-1001	Elbow mandrel assembly for US25 Ø 2.520" - 3.543" (64mm - 90mm)
US25PR/C-1002	Elbow mandrel assembly for US25 Ø 3.543" - 4.685" (90mm - 119mm)

US30CH-EMA

Order No.	Description
US30CHPR/C-1000	Option elbow mandrel assembly EMA for US30CH for Ø 2.165“-3.133“ (55mm-79.6mm)
US30CHPR/C-1001	Option elbow mandrel assembly EMA for US30CH for Ø 3.087“-4.785“ (78.43mm-121.54mm)

Dimensions:

Ø A	Ø B	C
-	1.496” (38 mm)	1.575” (40 mm)
-	2.402” (61 mm)	1.575” (40 mm)
-	3.445” (87.5 mm)	1.575” (40 mm)

Dimensions:

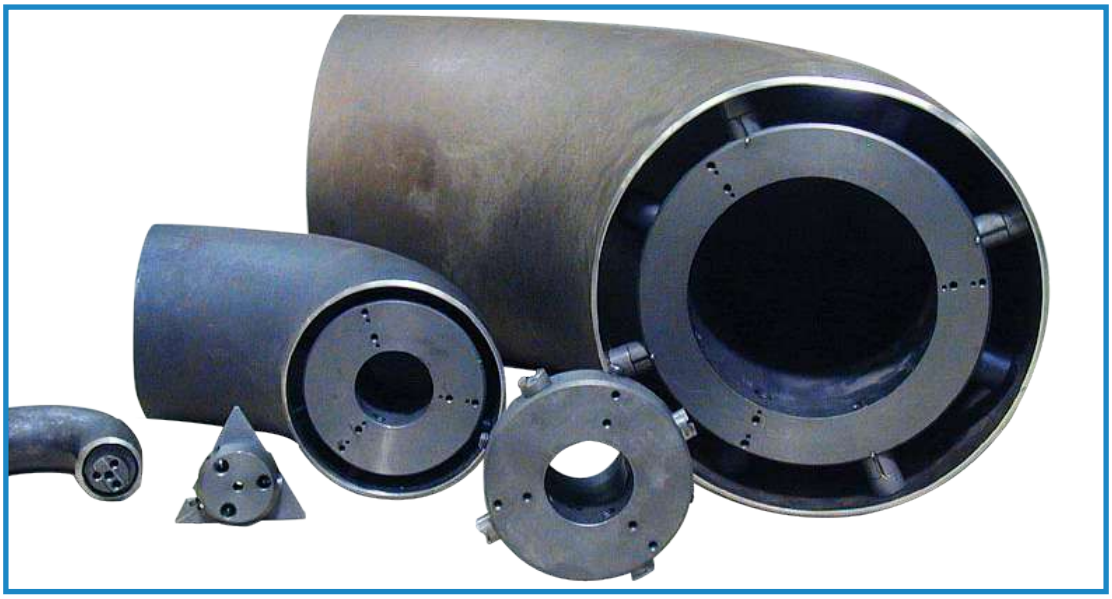
Ø A	Ø B	C
1.378" (35 mm)	2.362” (60 mm)	3.94” (100 mm)

Technical Features:

ID Clamping Ø	OD Clamping Ø
1.496” (38 mm)	2.697” (68.5 mm)
2.44” (62 mm)	3.622” (92 mm)
3.465” (88 mm)	4.646” (118 mm)

Technical Features:

ID Clamping Ø	OD Clamping Ø
2.559” (65 mm)	6.299” (160 mm)



Elbow Mandrel Assembly

US40-EMA

Order No.	Description
US40PR/C-1000	Elbow mandrel assembly EMA for US40 for Ø 3.543“-7.087“ (90mm-180mm)
US40PR/C-1001	Elbow mandrel assembly EMA for US40 for Ø 5.709“ - 8.622“ (145mm - 219mm)

Dimensions:

Ø A	Ø B	C
-	3.150” (80 mm)	1.575” (40 mm)
2.362” (60 mm)	5.472” (139 mm)	3.94” (100 mm)

Technical Features:

ID Clamping Ø	OD Clamping Ø
3.169” (80.5 mm)	7.205” (183 mm)
5.709” (145 mm)	8.622” (219 mm)

US80-EMA

Order No.	Description
US80PR/C-1000	Elbow mandrel assembly EMA for US80 for Ø 3.937"-7.087" (100mm-180mm)
US80PR/C-1001	Elbow mandrel assembly EMA for US80 for Ø 6.693"-14.016" (170mm-356mm)

Dimensions:

Ø A	Ø B	C
-	3.150” (80 mm)	1.968” (50 mm)
3.36” (85.4 mm)	6.535” (166 mm)	5.512” (140 mm)

Technical Features:

ID Clamping Ø	OD Clamping Ø
3.543” (90 mm)	7.087” (180 mm)
6.728” (170.9 mm)	14.016” (356 mm)

US150-EMA

Order No.	Description
US150PR/C-1000	Elbow mandrel assembly EMA for US150 for Ø 10.275“ - 20“ (261mm - 508mm)

Dimensions:

Ø A	Ø B	C
6.10” (155 mm)	10.039” (255 mm)	5.51” (140 mm)
7.087” (180 mm)	12.598” (320 mm)	8.189” (208 mm)

Technical Features:

ID Clamping Ø	OD Clamping Ø
3.543” (90 mm)	7.086” (180 mm)
6.728” (170.9 mm)	14.016” (356 mm)



Concentric Clamping Device for Elbows

ECM



For Protem US-Series Machines

The new generation of the elbow clamping device was designed to clamp the US-Series Machines onto any type of elbow. The main benefit of this technology is the possibility to machine elbows onsite precisely and fast.

The most significant innovation of the clamping device is the set-up time. The jaws move all at the same time when clamping.

It guarantees perfect positioning of the machine on the tube. During the set-up, a triangular plate is set on the device to ensure flatness.

The device is extremely durable and provides highprecision machining.

US25CH-ECM

Order No.	Description
US25-3801	Concentric Elbow Mandrel Assembly for US25CH Ø 1" - 1.316" (25.4 - 33.45 mm)
US25-3802	Concentric Elbow Mandrel Assembly for US25CH Ø 1.259" - 1.807" (32 - 45.91 mm)
US25-3803	Concentric Elbow Mandrel Assembly for US25CH Ø 1.653" - 3.085" (42 - 79.37 mm)

US30CH-ECM

Order No.	Description
US30CH-1901	Concentric Elbow Mandrel Assembly for US30CH Ø 1.260" - 1.807" (32 - 45.91 mm)
US30CH-1902	Concentric Elbow Mandrel Assembly for US30CH Ø 1.653" - 2.653" (42 - 67.4 mm)
US30CH-1903	Concentric Elbow Mandrel Assembly for US30CH Ø 3.020" - 4.775" (76.71 - 121.31 mm)

US40-ECM

Order No.	Description
US40-2701	Concentric Elbow Mandrel Assembly for US40 Ø 1.653" - 3.124" (42 - 79.37 mm)
US40-2702	Concentric Elbow Mandrel Assembly for US40 Ø 3.020" - 5.956" (76.71 - 151.29 mm)

US80-ECM

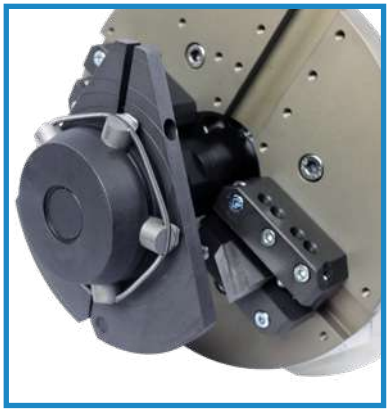
Order No.	Description
US80-3301	Concentric Elbow Mandrel Assembly for US80 Ø 3.149" - 6.224" (80 - 158.11 mm)
US80-3302	Concentric Elbow Mandrel Assembly for US80 Ø 5.905" - 10.111" (150 - 256.83 mm)
US80-3303	Concentric Elbow Mandrel Assembly for US80 Ø 9.922" - 14.244" (252.02 - 361.79 mm)

US150-ECM

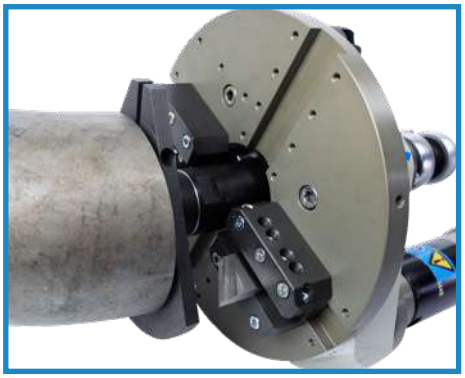
Order No.	Description
US150-3801	Concentric Elbow Mandrel Assembly for US150 Ø 5.906 - 10.111" (150 - 256.83 mm)
US150-3802	Concentric Elbow Mandrel Assembly for US150 Ø 9.922" - 15.897" (252.02 - 403.78 mm)
US150-3803	Concentric Elbow Mandrel Assembly for US150 Ø 14.961" (380mm)

3 Step Set-Up:

Step 1: Switching the standard mandrel to the elbow clamping device.



Step 2: Machine clamping: No adjustments needed. The device is self-centering because of the concentric jaws.



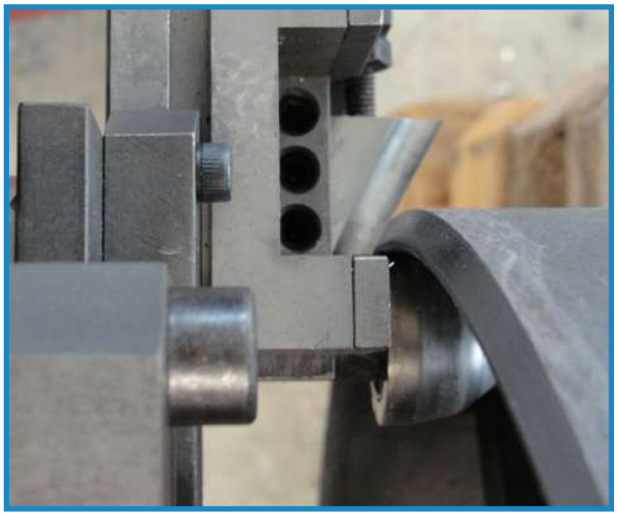
Step 3: Removing the triangular plate. the machine is now ready for machining.



ID Mounted

Tracker Option
To Optain a Precise Machining Geometry

ID & OD Tracker



For US, TTNG-HD & PFM Machines

The tracker option was designed to maintain a precise root face or land independent of the pipe ovality or wall thickness variations.

When the tube is not perfectly round it's necessary to compensate for this defect in order to achieve a perfect weld. The tracker option meets this need. The end result will be a precise root face.

The tracker option is made for PROTEM beveling machines in the US40 to US450 range, PROTEM cutting and beveling machines in the TTNG-HD series and for the pipe facing, PFM machines.

The tracker is very easy to set up based on a following roller in contact with the tube to ensure a precise root face. The ID-Tracker (IDT) is set inside the tube unlike the OD-tracker (ODT). The tracker is fixed on the tool holder. This option is used mainly for J Bevel preparation.

The tracker option is essential to achieve a perfect welding preparation necessary for automatic welding.

OD Mounted

US40

Order No.	Description
US40-2500	ID Tracker for US40 for Ø 4.724" - 8.622" (120mm - 219mm)

US80

Order No.	Description
US80-2800	ID Tracker for US80 for Ø 5.906" - 10.315" (150mm - 262mm)

US150

Order No.	Description
US150-3400	ID-Tracker (to keep a constant land when tube is oval; 5 mm at the radius. Can be used from 8.662" (220 mm) ID to 16.457" (418 mm) OD, limited tube wall thickness according to material and bevel type)
US150-3500	OD-Tracker (to keep a constant land when tube is oval. Can be used from 12.78" (324.6 mm) ID to 19.27" (489.6 mm) OD, limited tube wall thickness according to material and bevel type)

US450

Order No.	Description
US450-3400	ID-Tracker (to keep a constant land when tube is oval; 5 mm at the radius. Limited tube wall thickness according to material and bevel type)
US450-3500	OD-Tracker (to keep a constant land when tube is oval. Limited tube wall thickness according to material and bevel type)

PFM

Order No.	Description
US-HSB-R-PO-1200	Tracking roller, diameter 28 set on reference 5000
US-HSB-R-PO-1300	Tracking roller, diameter 36 set on reference 5000
US-HSB-R-PO-1400	Tracking roller, diameter 40 set on reference 5000
US-HSB-R-PO-5000	Enhanced version of the roller tracking carriage without eccentric roller

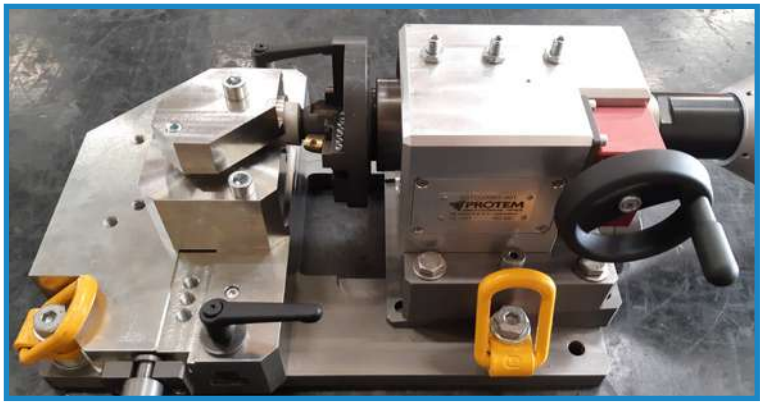
TTNG-HD

Order No.	Description
TTNG-HD-ODT-1000	OD Tracker for TTNG-HD219 - TTNG-HD610
TTNG-HD-ODT-1002	OD Tracker for TTNG-HD762
TTNG-HD-ODT-1004	OD Tracker for TTNG-HD900 - TTNG-HD1016



FBB1-3 Elbow Bench Beveling Machine

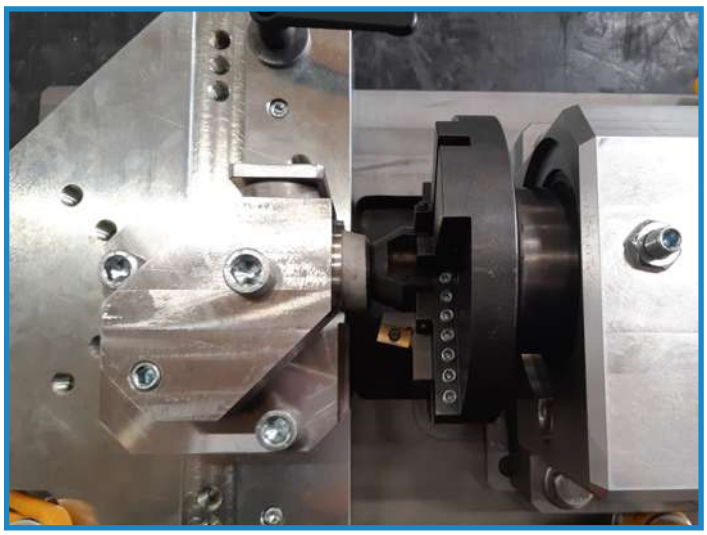
Standard Capacity: 1.315“ - 3.5“ (33.4mm - 88.9mm)

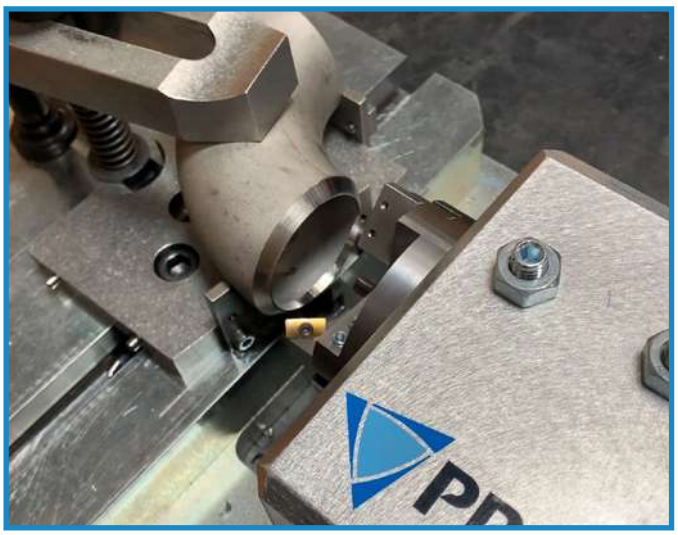


This mobile machine has been designed for the machining of elbows from 1.315“ - 3.5“ (33.4mm - 88.9mm). It can perform beveling, facing and counterboring operations simultaneously. Based on the standard SE90NG design, the machining spindle is equipped with a standard plate with 4 tool holder plates in which the insert holders can be adjusted according to the requested angles.

The drive power can be pneumatic or electric. The height adjustment allows a very precise setting of the elbow and spindle axes. (+/- 0.078", 2mm)

The other part of the machine is dedicated to the clamping of the elbows. The principle of a cross table is used for the axes adjustments (+/- 0.19’’, 5mm). The clamping is made manually. For each elbow, a small table equipped with a clamping system comes into position automatically on the cross table. This small table orientates itself according to the face of the elbows. (90° rotation). Depending on the elbows Ø, a frame system with V pods clamps the elbows.





OD Mounted

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel. Other on request
Clamping	Manual
Feed stroke	1.181’’ (30mm)
Pneumatic drive	730W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110V (1500W) or 220V (1500W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

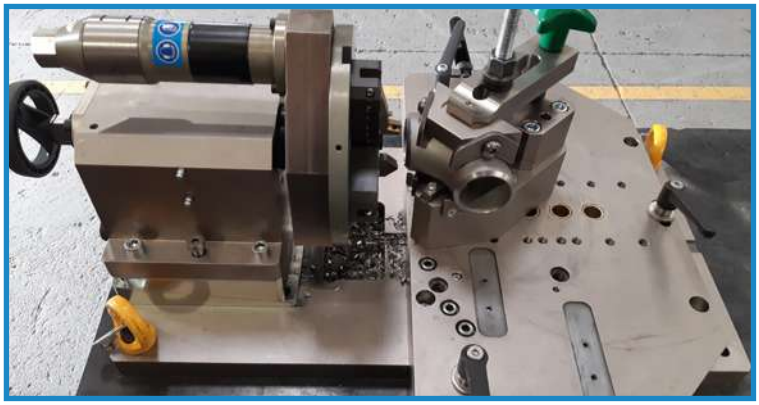
Order No.	Description
FBB-1-3-1000	Fittings beveling bench for Ø 1.315“ - 3.5“ (33.4mm - 88.9mm) with pneumatic drive
FBB-1-3-1020	Fittings beveling bench for Ø 1.315“ - 3.5“ (33.4mm - 88.9mm) in electric 1500W - 220V

FBB1-3 Accessories:

Order No.	Description
EHB-1-3-1410	1" (25.4 mm) Elbow support block for FBB-1-3 machine
EHB-1-3-1420	2" (50.8 mm) Elbow support block for FBB-1-3 machine
EHB-1-3-1425	2.5" (63.5 mm) Elbow support block for FBB-1-3 machine
EHB-1-3-1430	3" (76.2 mm) Elbow support block for FBB-1-3 machine

FBB2-6 Elbow Bench Beveling Machine

Standard Capacity: 2.374" - 6.626" (60.3mm - 168.3mm)

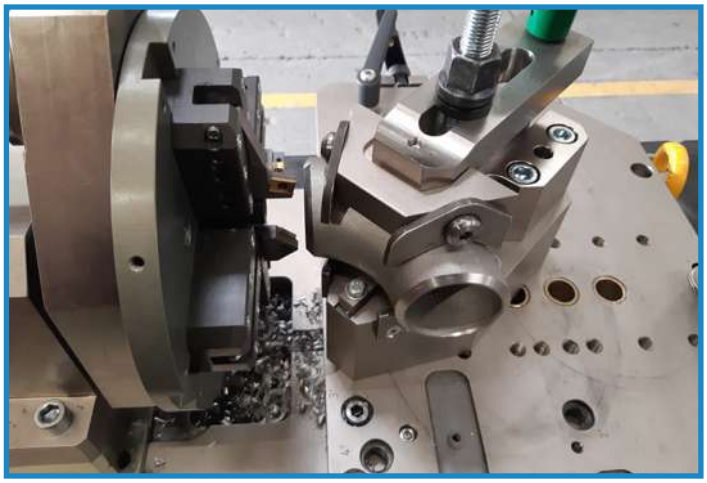


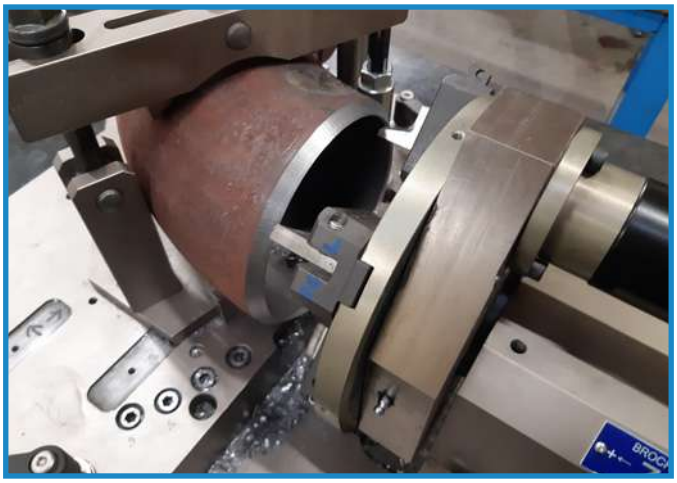
This mobile machine has been designed for the machining of elbows from 2.374" - 6.626" (60.3mm - 168.3mm). It can perform beveling, facing and counterboring operations simultaneously.

Based on the standard US40 design, the machining spindle is equipped with a standard plate with 4 tool holder plates in which the insert holders can be adjusted according to the requested angles. The feed stroke of the machine is 1.181" (30 mm) (manually operated). The drive power can be pneumatic or electric. The height adjustment allows a very precise setting of the elbow and spindle axes. (+/- 0.078", 2mm)

The other part of the machine is dedicated to the clamping of the elbows. The principle of a cross table is used for the axes adjustments (+/- 0.19'', 5mm). The clamping is made manually. For each elbow, a small table equipped with a clamping system comes into position automatically on the cross table. This small table orientates itself according to the face of the elbows. (90° rotation). Depending on the elbows diameters, a frame system with V pods clamps the elbows. Max weight without the elbow: 200 kg. Dimensions: length 29.92" (760mm) x width 26.67" (652mm) x height 13.78" (350mm).

OD Mounted





Technical Features:

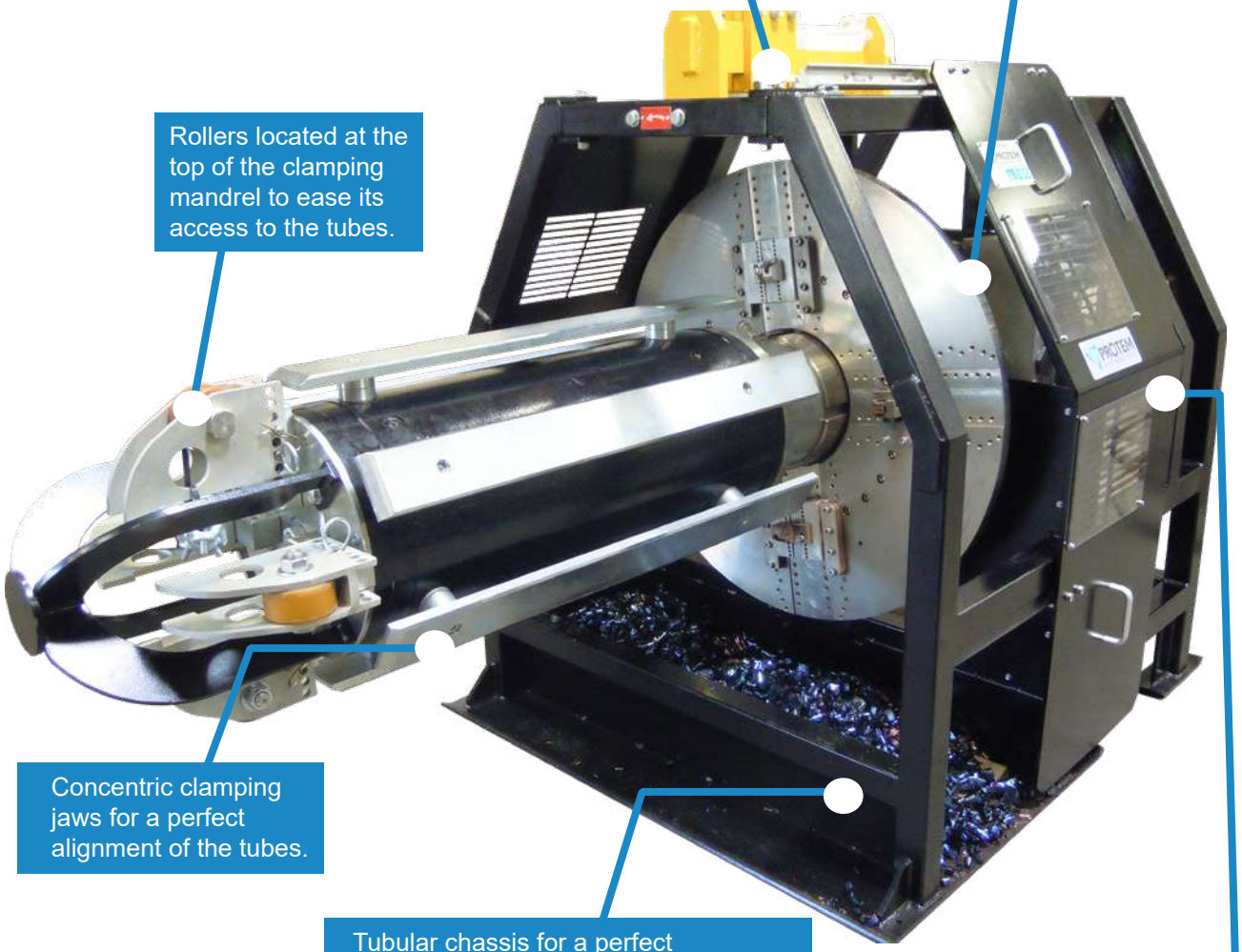
Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel. Other on request
Clamping	Manual
Feed stroke	1.181'' (30mm)
Pneumatic drive	730W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110V (1500W) or 220V (1500W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
FBB-2-6-1000	Fittings beveling bench for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with pneumatic drive
FBB-2-6-1020	Fittings beveling bench for Ø 2.374" - 6.626" (60.3mm - 168.3mm) in electric 1500W - 220V
FBB-2-6-1040	Fittings beveling bench for Ø 2.374" - 6.626" (60.3mm - 168.3mm) in electric 1500W - 110V

FBB2-6 Accessories:

Order No.	Description
EHB-2-6-1402	2" (50.8 mm) Elbow support block for FBB-2-6 machine
EHB-2-6-1403	3" (76.2 mm) Elbow support block for FBB-2-6 machine
EHB-2-6-1404	4" (101.6 mm) Elbow support block for FBB-2-6 machine
EHB-2-6-1405	5" (127 mm) Elbow support block for FBB-2-6 machine
EHB-2-6-1406	6" (152.4 mm) Elbow support block for FBB-2-6 machine

PFM Series High Speed Beveling Machines



ID Mounted

PFM Series	Machining Capacities	
PFM-414	4“ - 14“	101.6mm - 355.6mm
PFM-1222	12.75“ - 22“	323.9mm - 558.8mm
PFM-1030	10.75“ - 30“	273.1mm - 762mm
PFM-3038	30“ - 38“	762mm - 965mm
PFM-3648	34“ - 48“	863.6mm - 1219.2mm
PFM-4656	46“ - 56“	1168.4mm - 1422.4mm
PFM-5464	54“ - 64“	1371.6mm - 1625.6mm
PFM-6272	62“ - 72“	1574.8mm - 1828.8mm
PFM-7282	72“ - 82“	1828.8mm - 2082.8mm
PFM-8292	82“ - 92“	2082.8mm - 2336.8mm
PFM-92102	92“ - 102“	2336.8mm - 2590.8mm

PFM Series Pipeline Machinery - Pipe Facing Machines

Standard Capacity: 4“ - 102“ (101.6mm - 2590.8mm)



Pipeline Machinery: The PROTEM PFM HSB are reliable and very powerful portable Pipe Facing Machines for diameters ranging from 4” to 102” (101.6mm-2590.8mm). The PFM - HSB serve all industries where the weld quality is critical and projects must stay on schedule. The machines are easy to install and quickly adjustable to any size within the machine’s range. They will machine the pipe ends in one smooth pass in just a few seconds! For your Oil and Gas engineering and construction projects: Pipe Facing Machines for the most demanding and challenging pipeline applications: Offshore - Onshore - Deep Water - Spool Bases. They allow to maximize your production and to minimize your downtime.

Beveling	Flush pipes	Weld joint removal	Coating Removal	Squaring	Surfacing	Cutting
✓	✓	✓	✗	✗	✗	✗

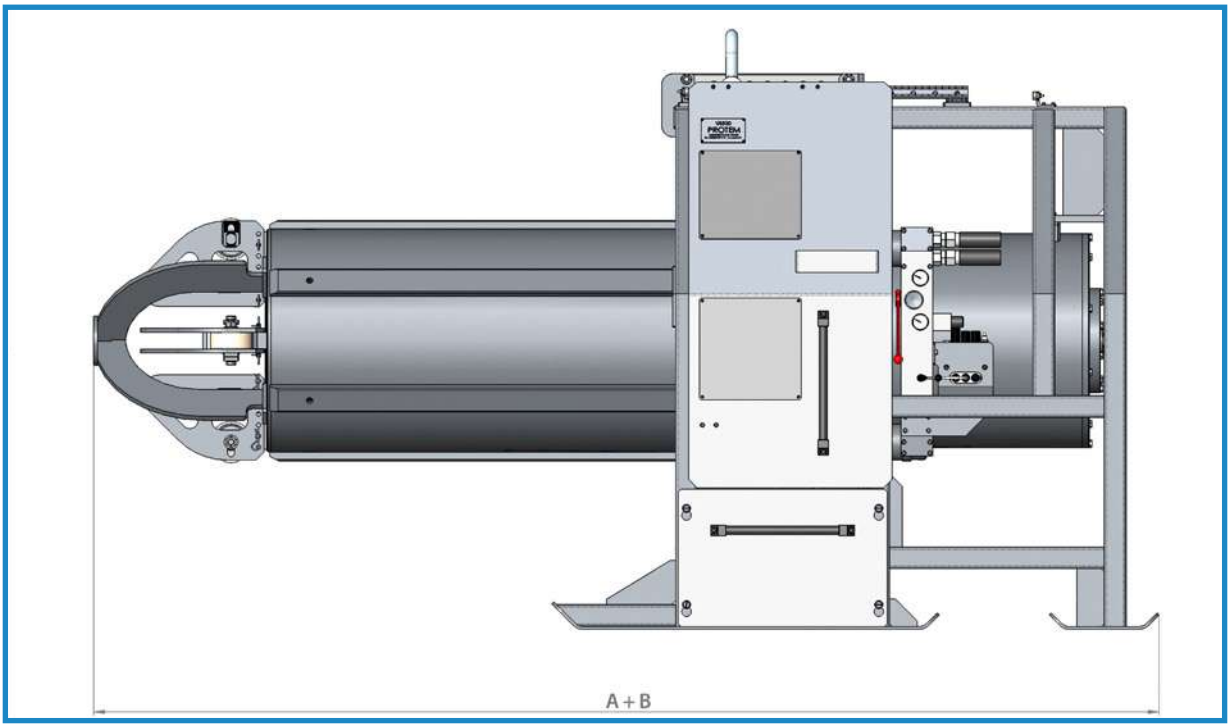
ID Mounted

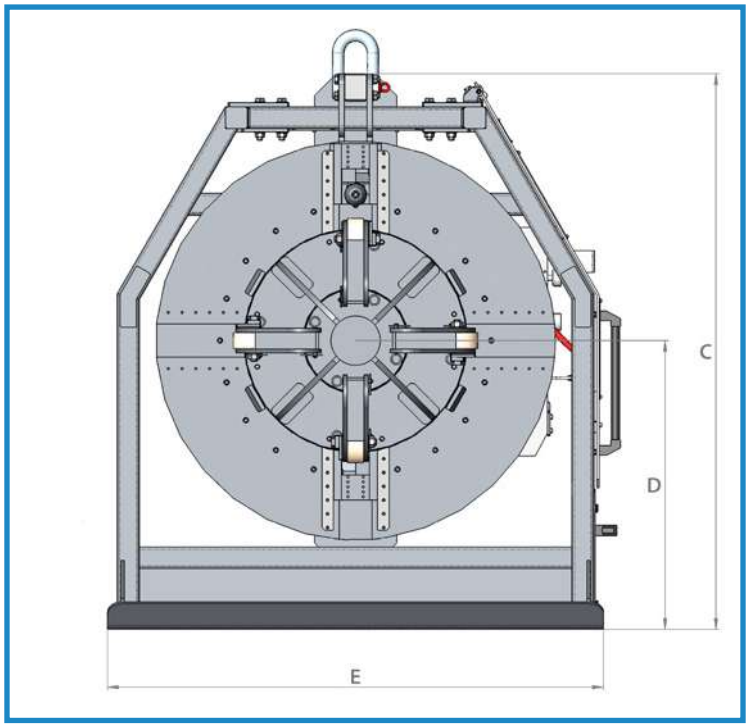
Advantages:

- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool-bits can be changed and adjusted very quickly
- The tool-holder plate can accept up to 4 tool-bits for facing, beveling and counterboring for simultaneous machining operations
- Tubular chassis for a perfect mechanical rigidity and safe machining operations
- Powerful hydraulic motor suitable for the machining of large wall thicknesses



PFM Series Pipeline Machinery - Pipe Facing Machines Dimensions





Model PFM	A	B	C	D	E	Weight
US80HSB	45.275" 1150 mm	1.25" 32 mm	34.291" 871 mm	16.693" 424 mm	31.496" 800 mm	350 kg 771 lbs
US150HSB	51.575" 1310 mm	1.25" 32 mm	34.291" 871 mm	16.693" 424 mm	31.496" 800 mm	350 kg 771 lbs
US220HSB	79.921" 2030 mm	3.15" 80 mm	55.512" 1410 mm	25.197" 640 mm	49.212" 1250 mm	1150 kg 2535 lbs
US420HSB	105.196" 2672 mm	3.15" 80 mm	70.708" 1796 mm	32.677" 830 mm	53.543" 1360 mm	2000 kg 4409 lbs
US620HSB	121.023" 3074 mm	5.906" 150 mm	60.787" 1544 mm	29.724" 755 mm	51.968" 1320 mm	2700 kg 5952 lbs
US820HSB	152.637" 3877 mm	5.906" 150 mm	79.52" 2020 mm	41.33" 1050 mm	70.86" 1800 mm	4900 kg 10802 lbs

PFM-414 Pipeline Machinery - Pipe Facing Machine

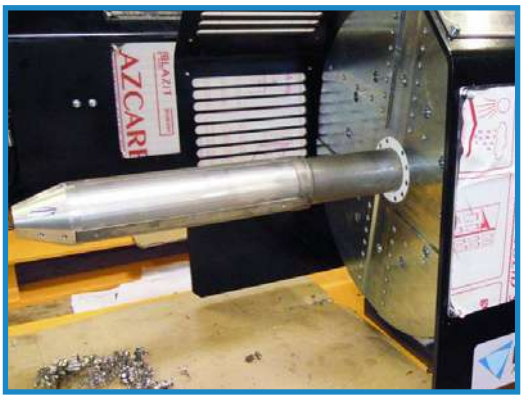
Standard Capacity: 4“ - 14“ (101.6mm - 355.6mm)



ID Mounted

Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request	
Clamping	Automatic	
Feed stroke	Automatic	
Tool plate feed stroke	1.25" (32mm)	
Mandrel expansion stroke	0.826" (21mm)	
	Minimum	Maximum
Advance speed of plate tool holder	20 rpm	150 rpm
Tool plate feed stroke	0.05 mm/rev.	0.3 mm/rev.
Mandrel supply pressure	75 bar (1087 psi)	150 bar (2175 psi)
Tool plate rotation supply pressure	65 bar (942 psi)	130 bar (1885 psi)
Tool plate feed supply pressure	45 bar (652 psi)	120 bar (1740 psi)
Wall thickness on X42 material bevel 30°	10 mm (0.375")	30 mm (1.180")





Order No.	Description
US150HSB-AR-1060	Pipeline Machinery, Pipe Facing Machine for Ø 4" - 14" (101.6mm - 355.60mm) with hydraulic drive.

PFM-1222 Pipeline Machinery - Pipe Facing Machine

Standard Capacity: 12.75“ - 22“ (323.9mm - 558.8mm)



Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request	
Clamping	Automatic	
Feed stroke	Automatic	
Tool plate feed stroke:	3.149" (80mm)	
Mandrel expansion stroke:	1.736" (44.1 mm)	
	Minimum	Maximum
Advance speed of plate tool holder:	22 rpm	100 rpm
Tool plate feed stroke:	0.05 mm/rev.	0.3 mm/rev.
Mandrel supply pressure:	75 bar (1087 psi)	150 bar (2175 psi)
Tool plate rotation supply pressure:	65 bar (942 psi)	130 bar (1885 psi)
Tool plate feed supply pressure:	45 bar (652 psi)	120 bar (1740 psi)
Wall thickness on X42 material bevel 30°:	10 mm (0.375")	30 mm (1.180")

Order No.	Description
US220HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 12.75" - 22" (323.9mm - 558.8mm) hydraulic drive.

PFM-1030 Pipeline Machinery - Pipe Facing Machine

Standard Capacity: 10.75“ - 30“ (273.1mm - 762mm)



ID Mounted

Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request	
Clamping	Automatic	
Feed stroke	Automatic	
Tool plate feed stroke:	3.149" (80mm)	
Mandrel expansion stroke:	1.921" (48.8mm)	
	Minimum	Maximum
Advance speed of plate tool holder:	12 rpm	55 rpm
Tool plate feed stroke:	0.05 mm/rev.	0.3 mm/rev.
Mandrel supply pressure:	60 bar (870 psi)	120 bar (1740 psi)
Tool plate rotation supply pressure:	60 bar (870 psi)	120 bar (1740 psi)
Tool plate feed supply pressure:	55 bar (797 psi)	110 bar (1595 psi)
Wall thickness on X42 material bevel 30°:	10 mm (0.375")	32 mm (1.250")

Order No.	Description
US420HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 10.75" - 30" (273.1mm - 762mm) with hydraulic drive.

PFM-3038 Pipeline Machinery - Pipe Facing Machine

Standard Capacity: 30“ - 38“ (762mm - 965mm)



Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request	
Clamping	Automatic	
Feed stroke	Automatic	
Tool plate feed stroke:	5.905" (150mm)	
Mandrel expansion stroke:	1.921" (48.8mm)	
	Minimum	Maximum
Advance speed of plate tool holder:	12 rpm	50 rpm
Tool plate feed stroke:	0.05 mm/rev.	0.3 mm/rev.
Mandrel supply pressure:	75 bar (1087 psi)	150 bar (2175 psi)
Tool plate rotation supply pressure:	65 bar (942 psi)	130 bar (1885 psi)
Tool plate feed supply pressure:	55 bar (797 psi)	110 bar (1595 psi)
Wall thickness on X42 material bevel 30°:	10 mm (0.375")	35 mm (1.375")

Order No.	Description
US620HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 30" - 38" (762mm - 965.2mm) with hydraulic drive.

ID Mounted

PFM-3848 Pipeline Machinery - Pipe Facing Machine

Standard Capacity: 34“ - 48“ (863.6mm - 1219.2mm)



ID Mounted

Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request	
Clamping	Automatic	
Feed stroke	Automatic	
Tool plate feed stroke:	5.905" (150mm)	
Mandrel expansion stroke:	1.921" (48.8mm)	
	Minimum	Maximum
Advance speed of plate tool holder:	10 rpm	42 rpm
Tool plate feed stroke:	0.05 mm/rev.	0.3 mm/rev.
Mandrel supply pressure:	75 bar (1087 psi)	150 bar (2175 psi)
Tool plate rotation supply pressure:	65 bar (942 psi)	130 bar (1885 psi)
Tool plate feed supply pressure:	55 bar (797 psi)	110 bar (1595 psi)
Wall thickness on X42 material bevel 30°:	10 mm (0.375")	30 mm (1.180")

Order No.	Description
US820HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 34“ - 48“ (863.6mm - 1219.2mm) with hydraulic drive.

PFM Pipeline Machinery - Pipe Facing Machines

PFM-4656



Standard Capacity: 46“ - 56“ (1168.4mm - 1422.4mm)

Order No.	Description
US1020HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 46" - 56" (1168.4mm - 1422.4mm) with hydraulic drive.

PFM-5464



Standard Capacity: 54“ - 64“ (1371.6mm - 1625.6mm)

Order No.	Description
US1220HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 54" - 64" (1371.6mm - 1625.6mm) with hydraulic drive.

PFM-6272



Standard Capacity: 62“ - 72“ (1574.8mm - 1828.8mm)

Order No.	Description
US1420HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 62" - 72" (1574.8mm - 1828.8mm) with hydraulic drive.

PFM Pipeline Machinery - Pipe Facing Machines

ID Mounted

PFM-7282



Standard Capacity: 72“ - 82“ (1828.8mm - 2082.8mm)

Order No.	Description
US1620HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 72“ - 82“ (1828.8mm - 2082.8mm) with hydraulic drive.

PFM-8292



Standard Capacity: 82“ - 92“ (2082.8mm - 2336.8mm)

Order No.	Description
US1820HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 82“ - 92“ (2082.8mm - 2336.8mm) with hydraulic drive.

PFM-92102



Standard Capacity: 92“ - 102“ (2336.8mm - 2590.8mm)

Order No.	Description
US2020HSB-1060	Pipeline Machinery - Pipe Facing Machines PFM for Ø 92“ - 102“ (2336.8mm - 2590.8mm) with hydraulic drive.

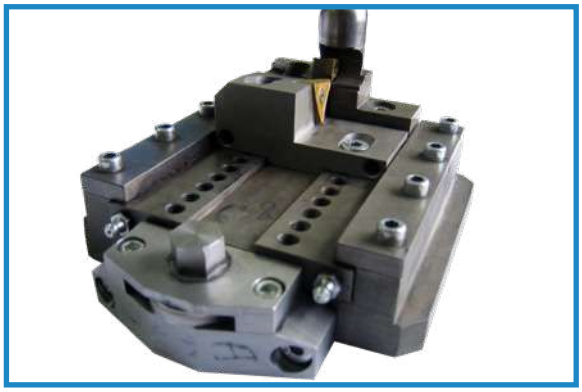
PFM Series Pipeline Machinery - Pipe Facing Machines Options

ID-Tracker



Order No.	Description
US-HSB-R-PO-1200	Tracking roller, diameter 28 set on reference 5000
US-HSB-R-PO-1300	Tracking roller diameter 36 set on reference 5000
US-HSB-R-PO-1400	Tracking roller, diameter 40 set on reference 5000
US-HSB-R-PO-5000	Enhanced version of the roller tracking carriage without eccentric roller

Tool-Holder



Order No.	Description
US-HSB-R-PO/3014	Outside beveling carbide insert holder 10°
US-HSB-R-PO/3018	Outside beveling carbide insert holder 37°5
US-HSB-R-PO/3032	Outside beveling carbide insert holder 20°
US-HSB-R-PO/3039	Outside beveling carbide insert holder 30°
O-HSB-C-PO/3005	Counterboring carbide insert holder 15°
O-HSB-C-PO/3026	Tracking Roller Carriage 30°

Brush kit



Order No.	Description
US-HSB-R-PO-2300	Brush Kit (only suitable for the tracking carriage)

PFM Series Pipeline Machinery - Pipe Facing Machines Tool-Bits

Order No.	Description
US-HSB-R-PO/40C	US-HSB-R-PO/40C Carbide insert triangular 27x27(xx following radius, material, reverse or no)
US-HSB-R-PO/45C01	US-HSB-R-PO/45C01 Carbide insert rhomb shape 9,52x9,52 (xx following radius, material, reverse or no)

OD MOUNTED MACHINING EQUIPMENT

Ø 0.118” – 120”
Ø 3 mm - 3048 mm







INDUSTRIES :

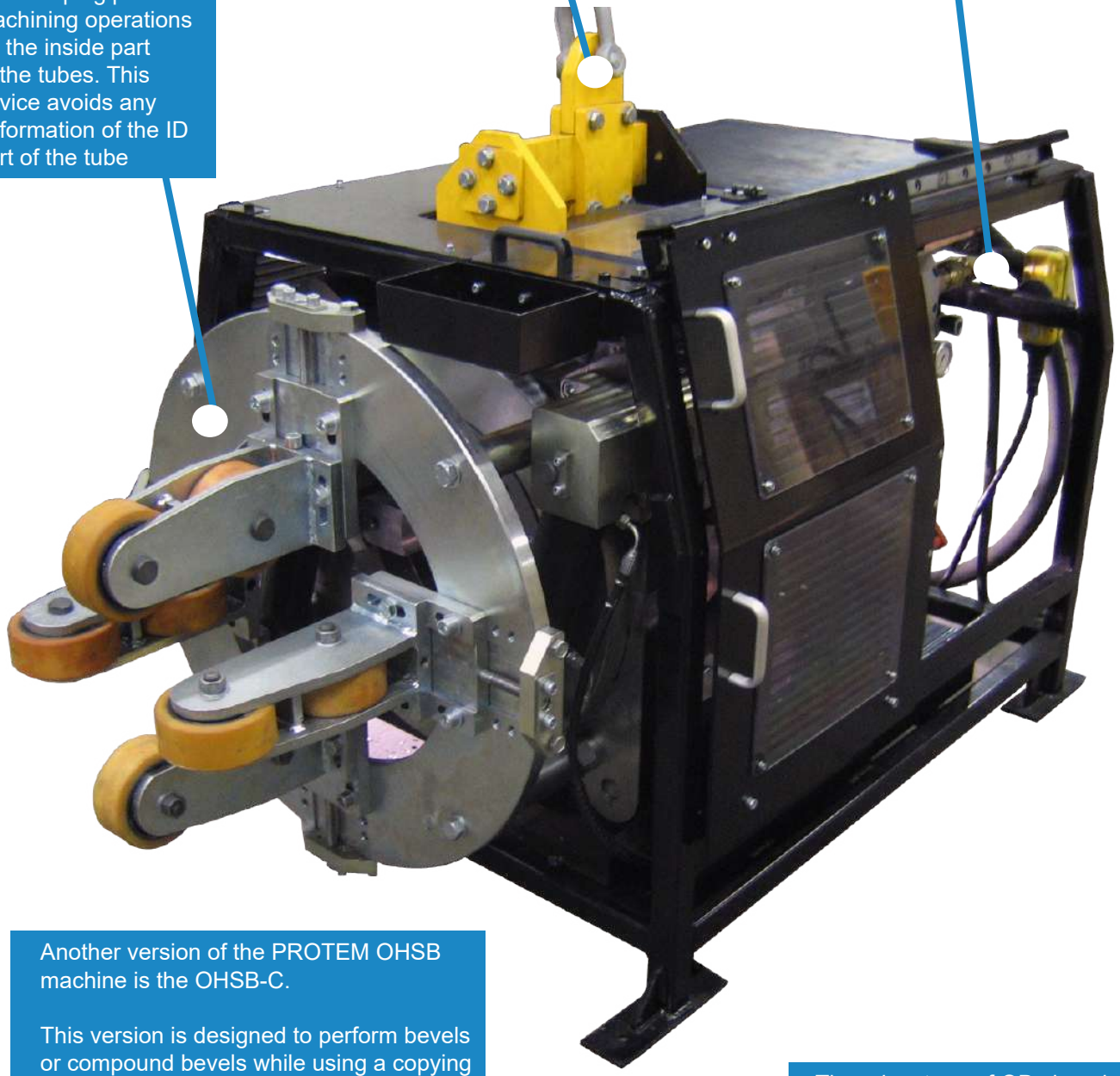
Shipbuilding	Boiler	Chemical
Nuclear	Oil & gas	Renewable energies

OHSB Series Heavy Duty Pipe Beveling & Facing Machine

Easy to move from one working place to another, the OHSB machines can also be used as stationary machines. Handling and setup are simple and easy

Powerful hydraulic motors suitable for the machining of large wall thicknesses

OD clamping performs machining operations on the inside part of the tubes. This device avoids any deformation of the ID part of the tube



Another version of the PROTEM OHSB machine is the OHSB-C.

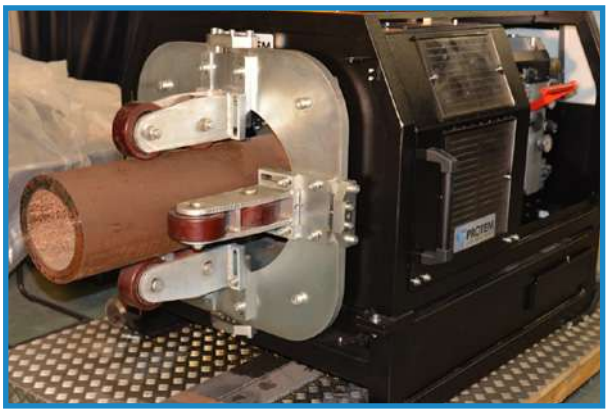
This version is designed to perform bevels or compound bevels while using a copying machining process. A carriage with radial hydraulic movement, mounted on the tool holder, performs beveling operations while using a copying cam.

The advantage of OD clamping is the ability to implement an inline boring bar and to machine tubes to a depth ranging from 0 to 350 mm (8.890")

OHSB Series	Machining Capacities	
OHSB	6“ - 14“	152.4 mm - 355.6 mm
OHSB406-C350	6“ - 16“	152.4 mm - 406.4 mm
OHSB-C	6“ - 14“	152.4 mm - 355.6 mm

OHSB Heavy Duty Pipe Beveling & Facing Machine

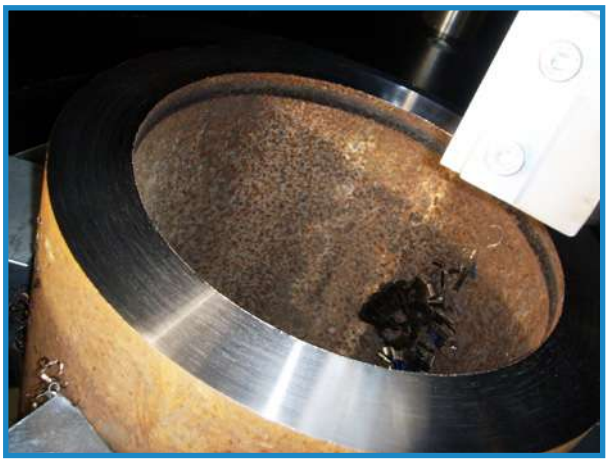
Standard Capacity: 6“ - 14“ (152.4mm - 355.6mm)



The OHSB is a mobile Pipe Beveling and Facing machine. It features an OD Clamping system for machining pipes with diameters ranging from 6" - 14’’ (152.4 mm - 355.6 mm) OD with wall thicknesses up to 2.362" (60 mm). The advantage of OD Clamping is the ability to implement an inline boring bar and to machine tubes to a depth ranging from 0” - 7.874" (0 - 200 mm). OD Clamping performs machining operations on the inside part of the tubes. This device avoids any deformation of the ID part of the tube. Easy to move from one working place to another, the OHSB machines can also be used as stationary machines. Handling and setup are simple and easy. The machine is fitted with powerful hydraulic motors suitable for the machining of large wall thicknesses. The machine is perfect for use for following operations: Facing, Beveling: I, V, J, X shapes or compound bevels, Counterboring. Repeatable high quality surface finish, High performance, Perfectly suitable for manual or automated welding works.

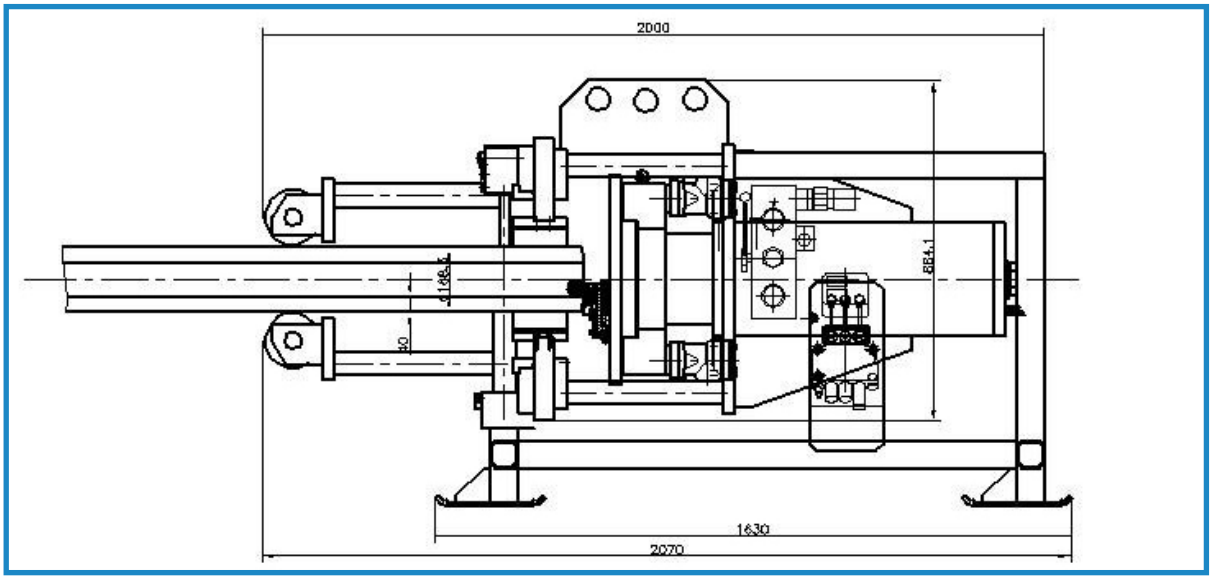
Beveling	Cutting	Counterboring	Severing	Coating Removal	Facing	Weld joint removal	Surfacing
✓	✗	✓	✗	✗	✓	✓	✗

OD Mounted



Advantages:

- Mobile
- Powerful
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System



OHSB Heavy Duty Pipe Beveling & Facing Machine

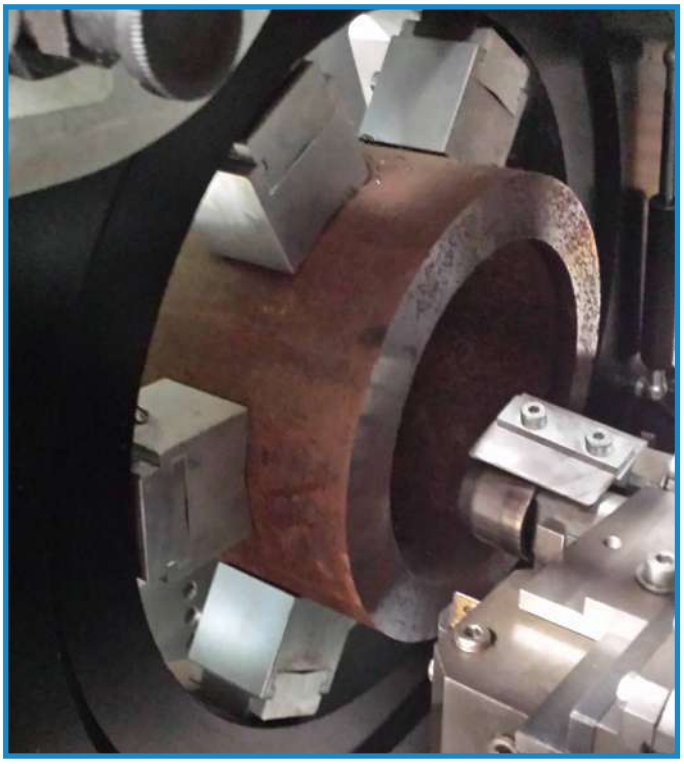
Technical Features:

Mechanical tool plate feed movement	7.874" (200mm)	
Gripping jaw movement	1.968" (50mm)	
Clamping jack movement	4.921" (125mm)	
	Minimum	Maximum
Tool plate rotation speed	10 RPM	230 RPM
Speed advance of tool plate holders	0.002"/rev. 0.05 mm/rev.	0.012"/rev. 0.3 mm/rev.
Clamping jack supply pressure	-	1595 psi 110 bars
Plate rotation drive supply pressure	-	1160 psi 80 bars
Inside boring capacity	5" (127mm)	8.6" (218.44mm)
Length of bore	0	6" (152.4mm)

Order No.	Description
O-HSB-6-14	OHSB Outside clamping beveling and facing unit for pipes ranging from Ø 6“ - 14“ (152.4 mm - 355.6 mm)



Use On-Site or in Workshop:



OHSB equiped with Cam profile copying device



OHSB equiped with Boring Bar

OD Mounted

OHSB406C350 Heavy Duty Pipe Beveling & Facing Machine

Standard Capacity: 6“ - 16“ (152.4mm - 406.4mm)



The OHSB406C350 is a mobile Pipe Beveling and Facing machine. It features an OD Clamping system for machining pipes with diameters ranging from 6" - 16’’ (152.4 mm - 406.4 mm) OD with wall thicknesses up to 2.362" (60 mm). The advantage of OD Clamping is the ability to implement an inline boring bar and to machine tubes to a depth ranging from 0’’ - 8.890" (0 - 350 mm). OD Clamping performs machining operations on the inside part of the tubes. This device avoids any deformation of the ID part of the tube. Easy to move from one working place to another, the OHSB406C350 machine can also be used as stationary machines. Handling and setup are simple and easy. The machine is fitted with powerful hydraulic motors suitable for the machining of large wall thicknesses. The machine is perfect for use for following operations: Facing, Beveling: I, V, J, X shapes or compound bevels, Counterboring. Repeatable high quality surface finish, High performance, Perfectly suitable for manual or automated welding works.

Beveling	Cutting	Counterboring	Severing	Coating Removal	Facing	Weld joint removal	Surfacing
✓	✗	✓	✗	✗	✓	✗	✗

OD Mounted

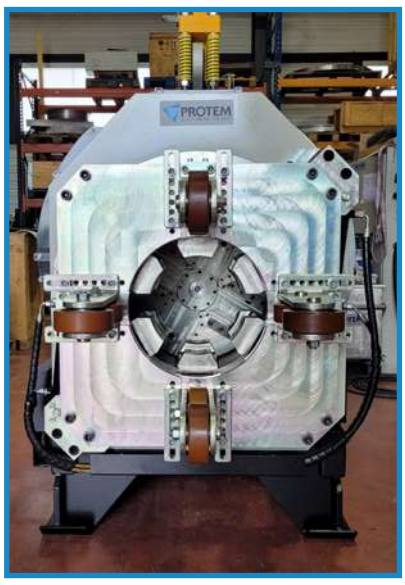


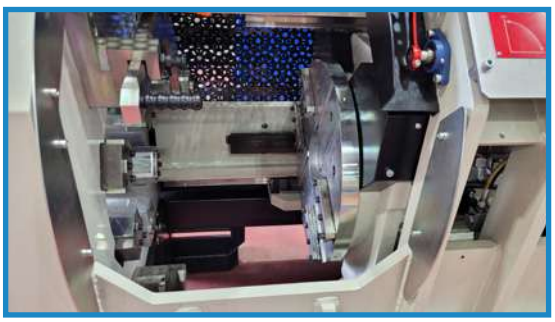
Control panel

Advantages:

- Mobile
- Powerful
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System







OHSB406C350 Heavy Duty Pipe Beveling & Facing Machine

Technical Features:

Mechanical tool plate feed movement	8.890" (350mm)	
Gripping jaw movement	1.968" (50mm)	
Clamping jack movement	4.921" (125mm)	
	Minimum	Maximum
Tool plate rotation speed	0 RPM	150 RPM
Speed advance of tool plate holders	0.002"/rev. 0.05 mm/rev.	0.012"/rev. 0.2 mm/rev.
Clamping jack supply pressure	-	435 psi 30 bars
Plate rotation drive supply pressure	-	2900 psi 200 bars
Inside boring capacity	0" (0mm)	8.890" (350mm)

Order No.	Description
OHSB406C350	Outside clamping beveling and facing unit for pipes ranging from Ø 6“ - 16“ (152.4 mm - 406.4 mm) with boring bar from 0" - 8.890" (0 mm - 350 mm)



10" x 52.7 mm WT + boring 8.890 " (350mm)

Use On-Site or in Workshop:



2x range of boring bar with tool insert accessories.

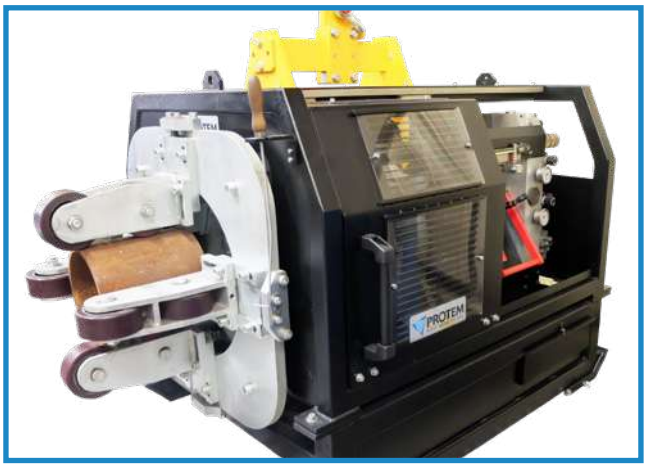


OHSB406C350 beveling a X65 10" pipe x 52.7 mm WT

OD Mounted

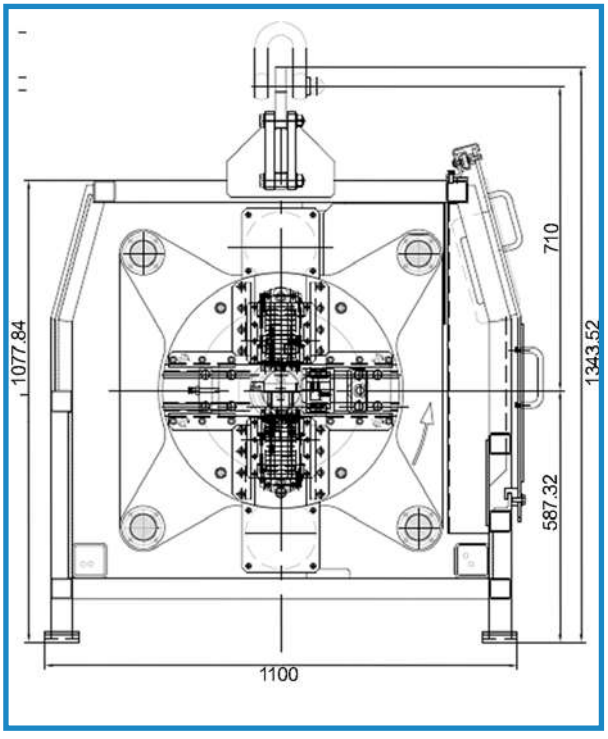
OHSB-C Heavy Duty Pipe Beveling & Facing Machine

Standard Capacity: 6“ - 14“ (152.4mm - 355.6mm)



Another version of the PROTEM OHSB is the PROTEM- OHSB-C. This version is designed to perform bevels or compound bevels by copying. A carriage with hydraulic radial movement, mounted on the tool holder plate performs beveling operations while using a copying cam. The tool holder is equipped with carbide tips.
Maximum wall thickness of the tube: 2.362" (60 mm) on a height of chamfer lower than 1.181" (30 mm) and a maximum angle of 37°. The carriage is provided with a copying roller acting on the internal diameter of the tube.
Minimum inside copying Ø: 3.937" (100 mm)
Maximum inside copying Ø: 10.039" (255 mm)

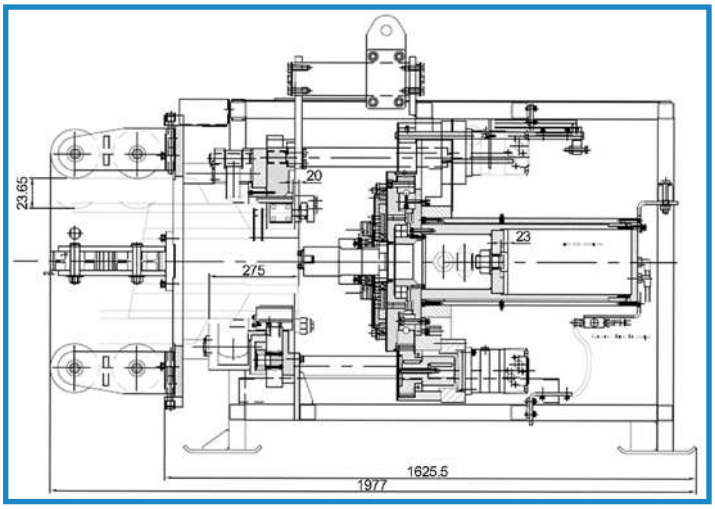
Beveling	Cutting	Counterboring	Severing	Coating Removal	Facing	Weld joint removal	Surfacing
✓	✗	✓	✗	✗	✓	✓	✗



OD Mounted

Technical Features:

Mechanical tool plate feed movement	7.874" (200mm)	
Gripping jaw movement	1.968" (50mm)	
Clamping jack movement	4.921" (125mm)	
	Minimum	Maximum
Tool plate rotation speed	10 RPM	230 RPM
Advance speed of tool plate holders	0.002"/rev. 0.05 mm/rev.	0.012"/rev. 0.3 mm/rev.
Clamping jack supply pressure	-	1595 psi 110 bars
Plate rotation drive supply pressure	-	1160 psi 80 bars
Inside boring capacity	5" (127mm)	8.6" (218.44mm)
Length of bore	0	6" (152.4mm)



Order No.	Description
O-HSB-C-6-14	Outside clamping beveling and facing unit for pipes for Ø 6“ - 14“ (152.4 mm - 355.6 mm) with copying carriage

OHSB-C Heavy Duty Pipe Beveling & Facing Machine

Use On-Site or in Workshop:





OHSB Series Heavy Duty Pipe Beveling & Facing Machine Options

Order No.	Description
OHSB-K01	One way Wooden crate
OHSB-K02	Wooden crate for several uses
OHSB-K03	Wooden Crate with shrink wrapping (Recommended for shipment by boat)
OHSB-C-6-14-ME	Enveloping jaws (set of 4 jaws) (1 set is necessary for each different Ø)
OHSB-C-6-14-BA	Boring bar + accessories L = 7.874" (200 mm)
O-HSB-C-PO/3005	Counter boring carbide insert holder 15°
O-HSB-C-PO/3026	Copying carbide insert holder 30°
O-HSB-C-PO/3726	Copying carbide insert holder 37°30

OD Mounted

OHSB Series Heavy Duty Pipe Beveling & Facing Machine Tool bits

Order No.	Description
US-HSB-R-PO/40C	Carbide insert triangular 27x27 (xx following radius, material, reverse or no)
US-HSB-R-PO/45C01	Carbide insert rhomb shape 9,52x9,52 (xx following radius, material, reverse or no)



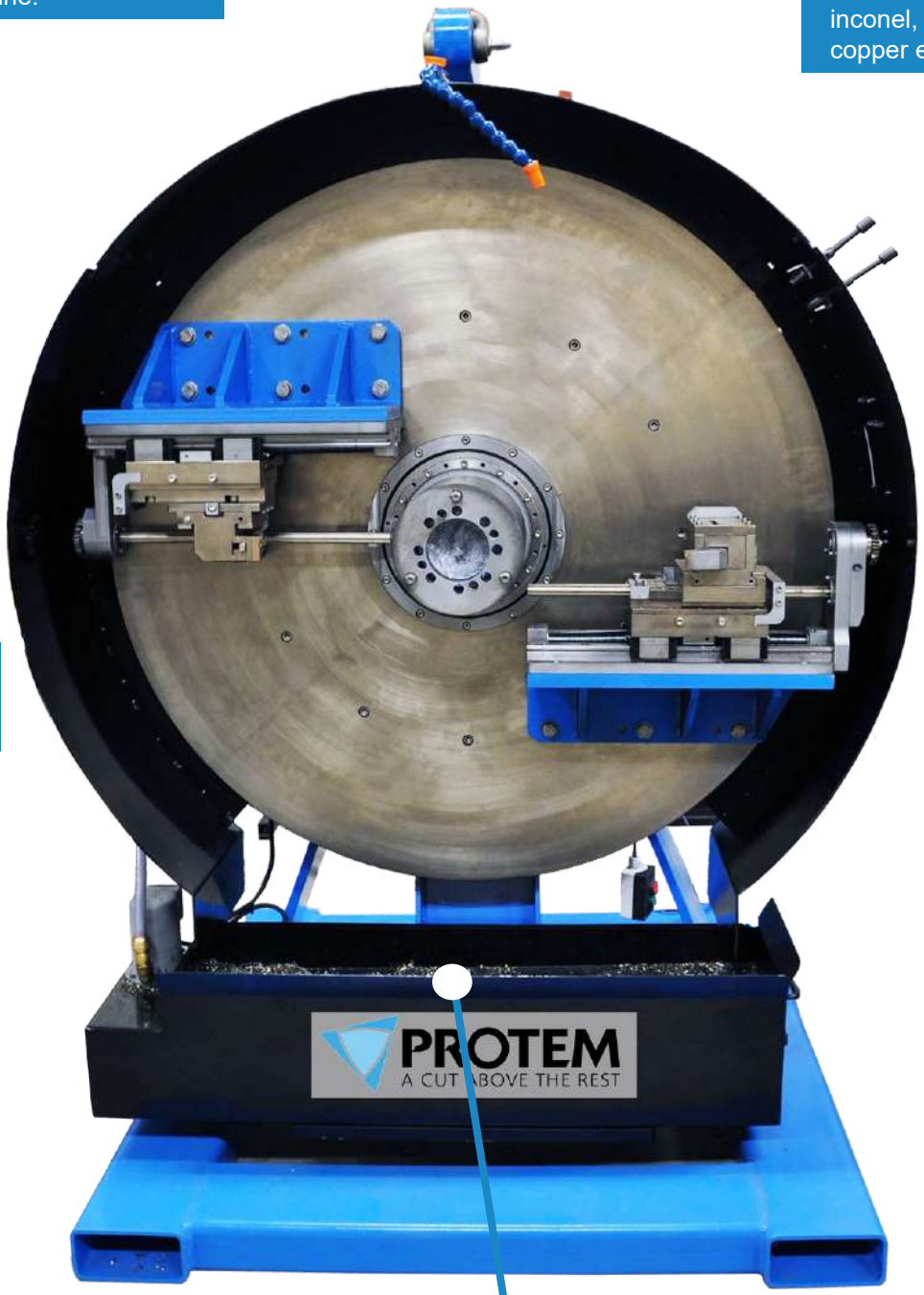
US600R Series Heavy Duty Pipe Beveling Machine

The Protem US600-R can be fixed with a spider clamping kit which is designed to adjust the concentricity and squareness between the tube and the machine.

Our R&D engineers can adapt the machine to any type of welding preparation and material upon request

The PROTEM US600R-SERIES will perform repeatable high quality weld preparations on all types of materials including mild, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper exotic alloys, etc.

OD Mounted



No Heat Affected Zone

Mobile, rugged, dependable, versatile

Tubular chassis for a perfect mechanical rigidity and safe machining operations. Possibility to collect the chips produced during the machining process

US600R Series	Machining Capacities	
US600R Version 1	23.622" - 39.370"	600 mm - 1000 mm
US600R Version 2	39.370" - 59.055"	1000 mm - 1500 mm

US600R Series Heavy Duty Pipe Beveling Machine

Standard Capacity: 23.622" - 59.055" (600mm - 1500mm)



The Protem US600-R is a mobile machine that performs custom bevels from 23.622" (600 mm) up to 39.370" (1000 mm) (version 1) or 39.370" (1000 mm) up to 59.055" (1500 mm) (version 2).

It is designed to perform bevels on rough tubes and pipes by using standard carbide inserts and can easily perform beveling jobs on wall thicknesses up to 4" wall pipe. The machine is hydraulically driven and connected to a 30 kW power pack.

Accuracy is the keyword of the Protem US600-R whether for clamping or for the perfect beveling geometry.

Beveling	Squaring	Counter-boring	Flush pipes	Coating Removal	Cutting	Weld joint removal	Surfa-cing
✓	✓	✓	✓	✗	✗	✓	✗

OD Mounted

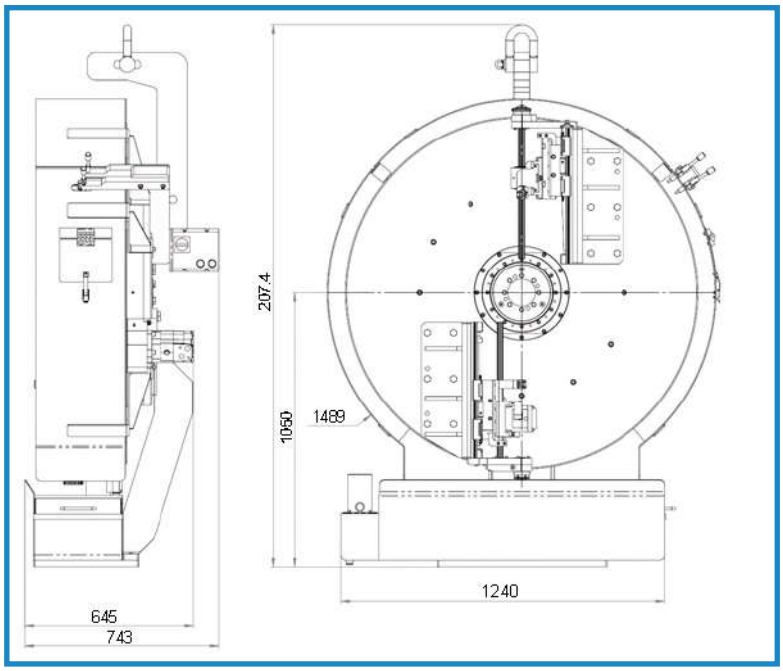
Advantages:

- Mobile
- Wide size range
- For heavy wall thicknesses
- Copying carriage available for custom bevels
- High beveling accuracy
- Clamping accuracy with the spider clamping kit
- Premium weld end preparation
- Powerful hydraulic supply
- Easy to use
- Reliable machine in any situation due to its basic design
- Versatile
- Modular design
- Safe use on-site and in your workshop

Technical Features:

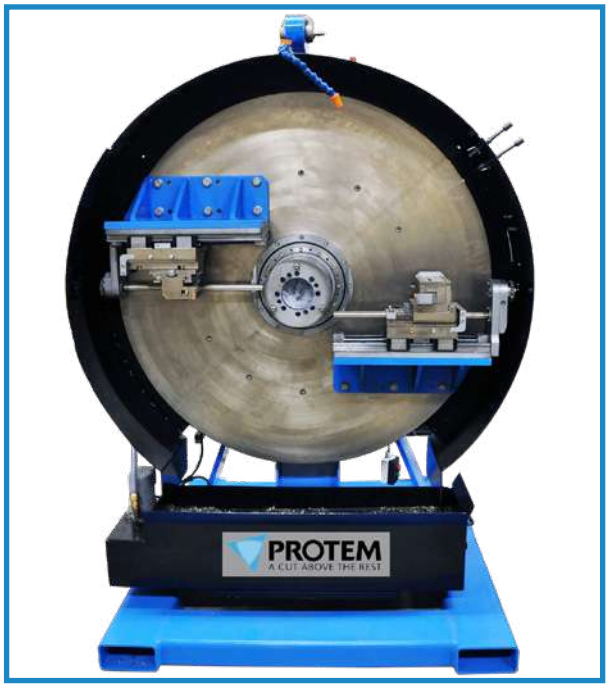
Specific shapes & angles	I, V, X, J, other on request
Tool Feed	Adjustable
Tool rotation	Up to 50 rpm
Motor	Dual hydraulic drive





US600R Series Heavy Duty Pipe Beveling Machine (Version 1)

Standard Capacity: 23.622” - 39.370” (600mm - 1000mm)



Order No.	Description
US600R-1060	Heavy Duty Pipe Beveling Machine for Ø 23.622" - 39.370" (600mm - 1000mm) with copying carriage and spider clamping kit



OD Mounted

US600R Series Heavy Duty Pipe Beveling Machine (Version 2)

Standard Capacity: 39.370" - 59.055" (1000mm - 1500mm)

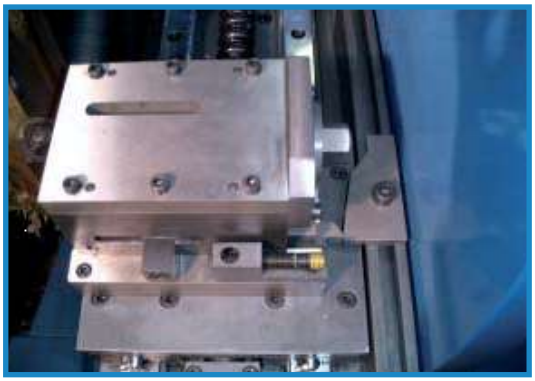


Order No.	Description
US600R-1062	Heavy Duty Pipe Beveling Machine for Ø 39.370” - 59.055” (1000 mm - 1500 mm) with copying carriage and spider clamping kit



US600R Series Heavy Duty Pipe Beveling Machine — Options

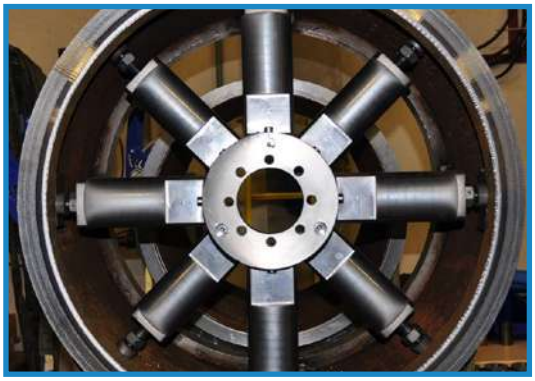
Copying carriage



The main feature of the Protem US600-R is its copying carriage, which allows the US600-R to perform any type of weld preparation such as, I-bevel, J-bevel, V-bevel, compound bevel, etc. with accuracy and repeatability.

The US600-R can also machine any type of material, for instance; carbon steel, stainless steel, alloy, inconel, duplex or super-duplex, etc. Our R&D engineers can adapt the machine to any type of welding preparation and material upon request

Spider clamping kit



The Protem US600-R is fixed with a spider clamping kit which is designed to adjust the concentricity and squareness between the tube and the machine. This system is extremely accurate even for large diameter tubes.

Order No.	Description
US600-R-SS	Small spider clamping kit for diameters from Ø 23.622" - 39.370" (600mm - 1000mm) included in the price of the US 600 R
US600-R-BS	Big spider clamping kit for diameters from Ø 39.370" - 59.055" (1000 mm - 1500 mm) included in the price of the US 600 R

Order No.	Description
US600-R-K01	Wooden crate
US600-R-K02	Wooden crate for several uses
US600-R-K03	Wooden Crate with shrink wrapping (Recommended for shipment by boat)
US600-R-POSUI	ID tracking carriage to compensate the pipe's ovality
US600-R-PODEL	Counterboring carriage
US600-R-OA	Optional adjustment arm
US600-R-LUB	Lubrication kit

OD Mounted

US600R Series Heavy Duty Pipe Beveling Machine — Tool-bits

On Request



UG1 Tungsten Electrode Sharpener & Grinder



GTAW (Gas tungsten arc welding), also called TIG (tungsten inert gas) welding, is an arc welding process that uses a non-consumable tungsten electrode to produce the weld. When it comes to GTAW/TIG welding, tungsten electrodes are the most important part of the application.

The tungsten electrode is the crucial carrier in the welding process and must be ground and cut properly. An improperly prepared electrode leads to arc wander, splitting, shedding and inconsistencies. Properly ground and cut electrodes improve drastically arc starting and stability.



OD Mounted

Technical Features:

Motor	Electric 220V or 110V
Power	720W; 1HP; 3.2A
Motor Speed (unload)	40 000 rpm.
Feed	Manual
Electrodes Ø	0.04" (1mm) 0.062" (1.6mm) 0.08" (2mm) 0.094" (2.4mm) 0.125" (3.2mm) 0.157" (4mm)
Sharpening Angles	15°, 18°, 22.5°, 30°
Diamond Wheels	Diameter 1.97" (50mm)
Cable	2m (6.5ft)
Noise Level	83db

Order No.	Description
UG-1-1020	Electrode grinder with 220V electric drive
UG-1-1022	Electrode grinder with 220V battery electric drive
UG-1-1040	Electrode grinder with 110V electric drive
UG-1-1042	Electrode grinder with 110V battery electric drive
UG-1-K01	Transport Case

UG1 Options



Device to plug a vacuum cleaner



Diamond Wheel



Machine Bench



Collet



Clamping Collet

Order No.	Description
UG-1-1115	Diamond wheel
UG-1-1123	Device to plug a vacuum cleaner
UG-1-1212	Machine Bench
UG-1-1300	Pencil
UG-1-1310	Sub-assembly electrode holder
UG-1-13C01	Clamping Collet - 0.04" (1mm) diameter
UG-1-13C02	Clamping Collet - 0.062" (1.6mm) diameter
UG-1-13C03	Clamping Collet - 0.08" (2mm) diameter
UG-1-13C04	Clamping Collet - 0.094" (2.4mm) diameter
UG-1-13C05	Clamping Collet -0.125" (3.2mm) diameter
UG-1-13C06	Clamping Collet - 0.157" (4mm) diameter
UG-1-1510	Collet-30°
UG-1-1511	Collet-15°
UG-1-1512	Collet-22.5°
UG-1-1513	Collet-18°

ULTIMASTER Series
Ultimate Split Orbital Tube Cutting Saws

ULTIMASTER orbital pipe cutting Saws are the ideal solution for your on-site jobs. These machines are also perfectly suited for prefabrication workplaces and they can be used under severe conditions (extreme temperatures, high humidity, ionizing radiations)

Suitable for all types of steel: mild steel, stainless steel, duplex, super duplex, inconel, hastelloy, aluminium, copper, titanium, etc.

Pneumatic or electric drives are available for all machines in the Ultimate Split series.



Robust and reliable, it can be used on-site, in the workshop or in extreme environments.

Cold Cutting Process.
No Heat Affected Zone

OD Mounted

US1 Orbital Tube Cutting Saw

Standard Capacity: 0.5” - 6.6” (12.7mm - 168mm)



The Ultimate Split 1 has been engineered to fit tube cutting applications in a fabrication workshop or at the job site. This wireless machine can also be bench mounted onto the ULTIMASTER Bench Unit System (B.U.S) along with a 110V or 220V battery adaptor. Our engineering office paid specific attention to the design of the equipment in order to achieve a unique orbital cutting machine using a saw blade.

The US1 is fully portable. It features a cordless drive, a split frame housing and, therefore, it can be directly mounted onto a tube.

Beveling	Cutting	Counter-boring	Severing	Squaring	Weld joint removal	Surfacing
✗	✓	✗	✓	✗	✗	✗

OD Mounted



Technical Features:

Machining Capacity	0.5" - 6.6" (12.7 mm - 168 mm)
Clamping capacity	0.5" - 6.6" (12.7 mm - 168 mm)
Clamping	Manual with key
Feed stroke	1.181" (30 mm)
RPM Engine	0 to 1700 rp/min
Electric drive	700 W

Order No.	Description
US1-1020	Orbital Cutting Saw US1 for Ø 0.5"-6.626" (12.7mm-168.3mm) with electric drive 220V
US1-1022	Orbital Cutting Saw US1 for Ø 0.5"-6.626" (12.7mm-168.3mm) with cordless electric drive 220V
US1-1040	Orbital Cutting Saw US1 for Ø 0.5"-6.626" (12.7mm-168.3mm) with electric drive 110V
US1-1042	Orbital Cutting Saw US1 for Ø 0.5"-6.626" (12.7mm-168.3mm) with cordless electric drive 110V

US1 Orbital Tube Cutting Saw

The ULTIMATE SPLIT orbital tube cutter features many advantages:

- A perfectly perpendicular cut
- Auto centering on the tube
- Quick clamping
- Compact design
- Burr free
- No vibration during the cutting process
- Reliable
- Durable
- No heat-affected zones
- Perfect preparation for orbital welding
- Lightweight, easy-to-use, versatile
- Powerful cordless drive

ULTIMASTER orbital pipe cutting units are the ideal solution for your on-site jobs. These machines are also perfectly suited for prefabrication workplaces and they can be used under severe conditions (extreme temperatures, high humidity, ionizing radiations)









Ultimate Split 3 Orbital Tube Cutting Saw

Standard Capacity: 0.196" - 3.5" (5 mm - 88.9 mm)



The Ultimate Split 3 orbital cutting machine is used for cutting tubes made of virtually all materials having diameters ranging from 0.196“ (5 mm) to 3.5“ (88.9 mm) and wallthicknesses ranging from 0.04“ (1 mm) to 0.27“ (7 mm).

It enables the cutting of pipes without any deformation thanks to its concentric clamping system. The cut is absolutely perpendicular and burr-free. The adjustment to the different diameters is very simple and fast.

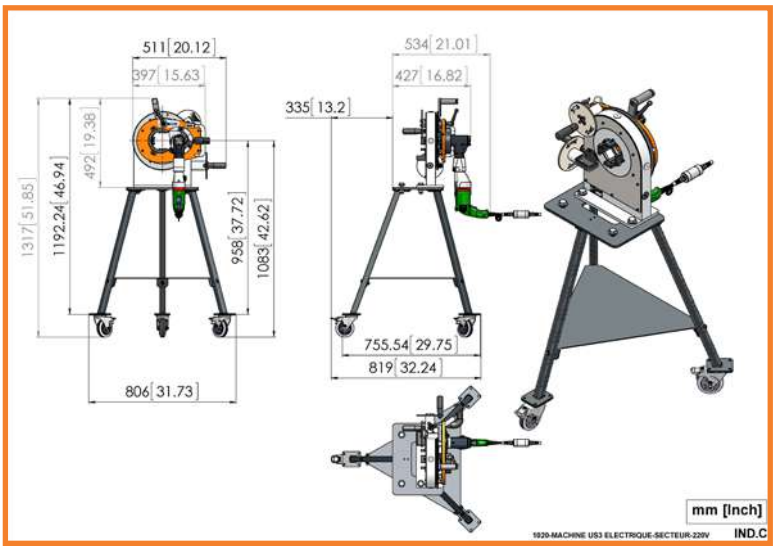
The Ultimate Split 3 is the orbital cutting saw you need for all your welding preparation works on-site or in the workshop.

Beveling	Cutting	Counterboring	Severing	Facing	Weld joint removal	Surfacing
✗	✓	✗	✓	✗	✗	✗

OD Mounted

Advantages:

- Perpendicular cut
- Automatic centering onto the pipe
- Perfect concentric clamping
- Burr-free cut
- No Vibration during the cutting process
- Excellent preparation for mechanised welding processes
- Rigidity, ergonomic design, flexibility, reliability
- Mobile
- Easy and Safe use for the Operators
- No distorsion of the tubes & pipes during the machining process, even the thinest ones







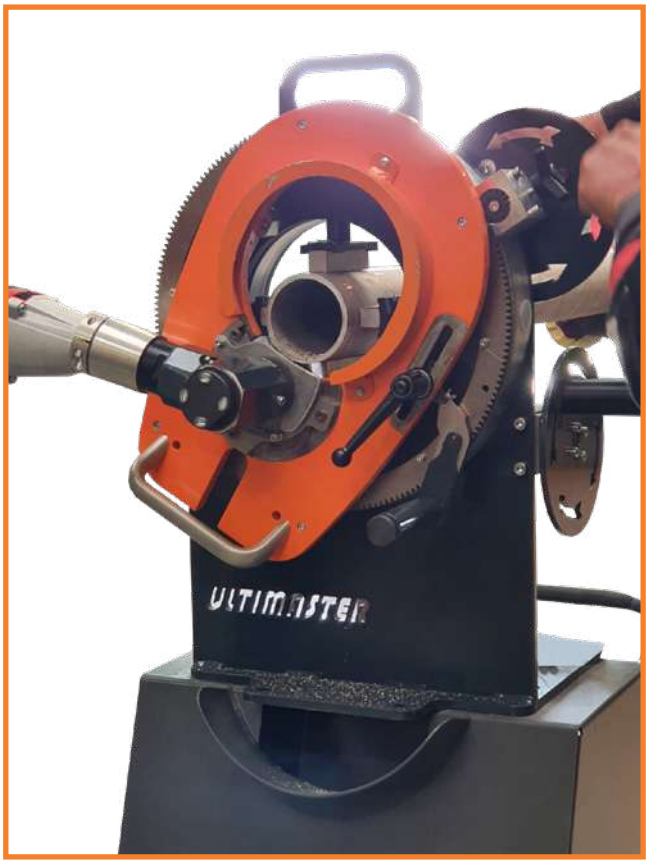
Ultimate Split 3 Orbital Tube Cutting Saw

Technical Features:

Clamping	Expansion by manual clamping
Power	220V (780W)
Motor	Electric or pneumatic
Rotation Speed	Motor on speed 1: 21.5 - 71.5 rpm
Weight	43 kg (94.8lb)

Order No.	Description
US3-1000	Orbital Cutting Saw with Pneumatic Drive and with Clamping Jaws for Ø 0.196"-3.5" (5mm-88.9mm)
US3-1025	Orbital Cutting Saw with Electric Drive 220V for Ø 0.196" -3.5" (5mm-88.9mm)
US3-1026	Orbital Cutting Saw with cordless Electric Drive 220V for Ø 0.196" -3.5" (5mm-88.9mm)
US3-1040	Orbital Cutting machine with Electric Drive 110V for Ø 0.196" -3.5" (5mm-88.9mm)









OD Mounted

Ultimate Split 6 Orbital Tube Cutting Saw

Standard Capacity: 0.5" - 6.626" (12.7 mm - 168.3 mm)



The Ultimate Split 6 orbital cutting machine is used for cutting tubes made of virtually all materials having diameters ranging from 0.5“ (12.7 mm) to 6.626“ (168 mm) and wallthicknesses ranging from 0.04“ (1 mm) to 0.59“ (15 mm).

It enables the cutting of pipes without any deformation thanks to its concentric clamping system. The cut is absolutely perpendicular and burr-free. The adjustment to the different diameters is very simple and fast.

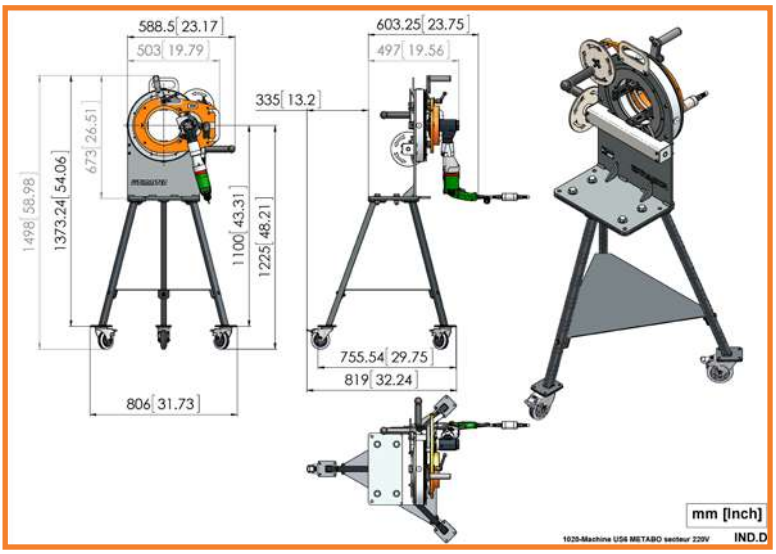
The Ultimate Split 6 is the orbital cutting saw you need for all your welding preparation works on-site or in the workshop.

Beveling	Cutting	Counterboring	Severing	Facing	Weld joint removal	Surfacing
✗	✓	✗	✓	✗	✗	✗

OD Mounted

Advantages:

- Perpendicular cut
- Automatic centering onto the pipe
- Perfect concentric clamping
- Burr-free cut
- No Vibration during the cutting process
- Excellent preparation for mechanised welding processes
- Rigidity, ergonomic design, flexibility, reliability
- Mobile
- Easy and Safe use for the Operators
- No distorsion of the tubes & pipes during the machining process, even the thinest ones







Ultimate Split 6 Orbital Tube Cutting Saw

Technical Features:

Clamping	Manual expansion clamping
Power	220V (1300W) 110V (1100W)
Motor	Electric or pneumatic
Rotation Speed	Motor on Speed 1: 13-70 rpm
Weight	70 kg (154,32lb)

Order No.	Description
US6-1000	Orbital Cutting Saw US6 for Ø 0.5" - 6.626" (12.7mm - 168.3mm) with pneumatic drive.
US6-1024	Orbital Cutting Saw US6 for Ø 0.5" - 6.626" (12.7mm - 168.3mm) with electric drive 220V.
US6-1026	Orbital Cutting Saw US6 for Ø 0.5" - 6.626" (12.7mm - 168.3mm) with cordless electric drive 220V.
US6-1044	Orbital Cutting Saw US6 for Ø 0.5" - 6.626" (12.7mm - 168.3mm) with electric drive 110V.









OD Mounted

Ultimate Split 12 Orbital Tube Cutting Saw

Standard Capacity: 6“ - 12“ (168.3 mm - 323.9 mm)



The Ultimate Split 12 orbital cutting machine is used for cutting tubes made of virtually all materials having diameters ranging from 6“ (168.3 mm) to 12“ (323.9 mm) and wallthicknesses ranging from 0.04“ (1 mm) to 0.59“ (15 mm). It enables the cutting of pipes without any deformation thanks to its concentric clamping system.

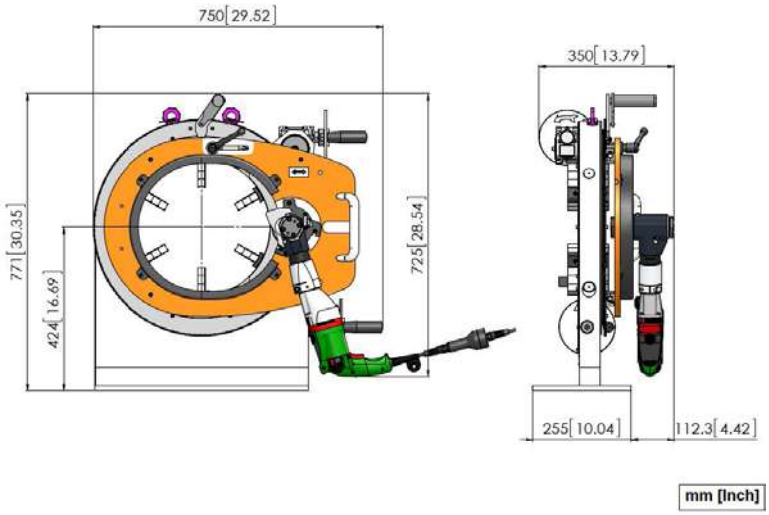
The cut is absolutely perpendicular and burr-free. The adjustment to the different diameters is very simple and fast. The Ultimate Split 12 is the orbital cutting saw you need for all your welding preparation works on-site or in the workshop.

Beveling	Cutting	Counterboring	Severing	Facing	Weld joint removal	Surfacing
✗	✓	✗	✓	✗	✗	✗

OD Mounted

Advantages:

- Perpendicular cut
- Automatic centering onto the pipe
- Perfect concentric clamping
- Burr-free cut
- No Vibration during the cutting process
- Excellent preparation for mechanised welding processes
- Rigidity, ergonomic design, flexibility, reliability
- Mobile
- Easy and Safe use for the Operators
- No distorsion of the tubes & pipes during the machining process, even the thinest ones







Ultimate Split 12 Orbital Tube Cutting Saw

Technical Features:

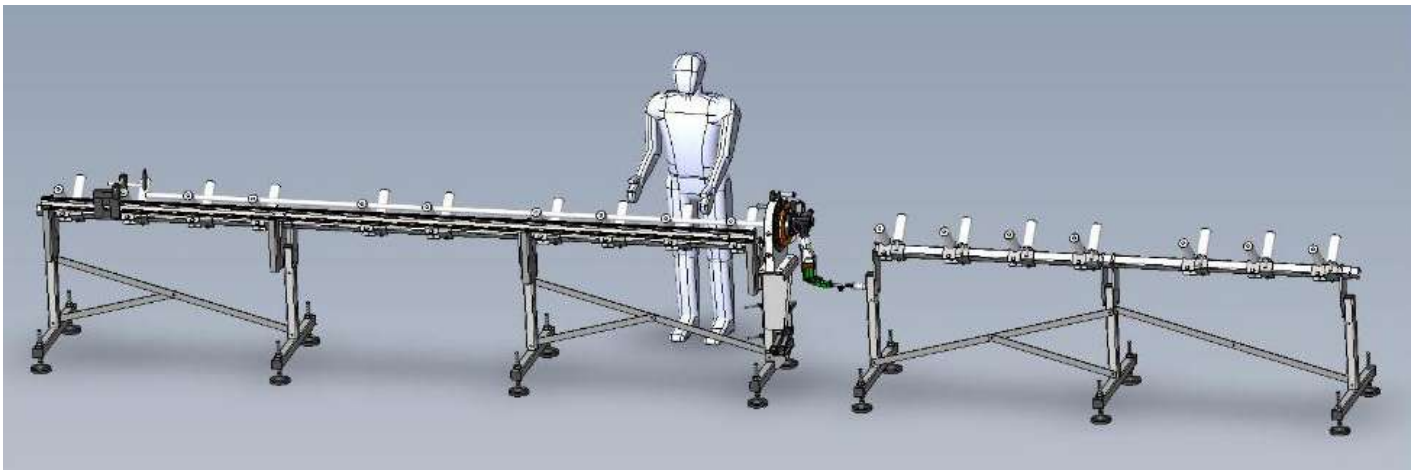
Clamping	Manual
Power	220V (1300W) 110V (1100W)
Motor	Electric
Rotation Speed	13-70 rpm
Weight	87 kg (191,8lb)

Order No.	Description
US12-1000	Orbital Cutting Saw US12 for Ø 6“ - 12“ (168.3 mm - 323.9 mm) with pneumatic drive
US12-1020	Orbital Cutting Saw US12 for Ø 6“ - 12“ (168.3 mm - 323.9 mm) with electric drive 220V.
US12-1040	Orbital Cutting Saw US12 for Ø 6“ - 12“ (168.3 mm - 323.9 mm) with electric drive 110V.





Ultimate Split US3, US6 & US12 Orbital Cutting Saw Options



1. Roller conveyor - downstream module

- Length 1500 mm
- Maximum load capacity of 200 kg
- Height adjustable for different pipe diameters
- Manual screw operating system
- Simple installation

Order No.	Description
US6-3100	Roller conveyor - downstream module

OD Mounted

2. Roller conveyor - upstream module

- Length 1500 mm
- Maximum load capacity of 200 kg
- Fixed height
- Simple installation

Order No.	Description
US6-3200	Roller conveyor - upstream module

3. Roller conveyor - additional module

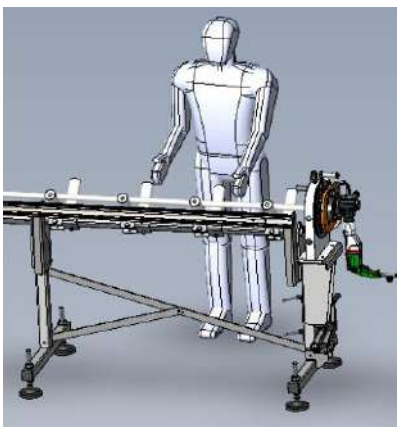
- Length 1500 mm
- Maximum load capacity of 200 kg
- Fixed height
- Simple installation

Order No.	Description
US6-3400	Roller conveyor - additional module

4. Adjustment stop

Different types of rollers possible depending on the configuration of the tubes to be cut:
- Steel rollers (basic version)
- Urethane coated rollers

Order No.	Description
US6-3300	Cylindrical steel roller for conveyor
US6-3301	Cylindrical roller steel coated. Urethane for conveyor
US6-2400	Adjustment stop





Ultimate Split US3, US6 & US12 Orbital Cutting Saw Options

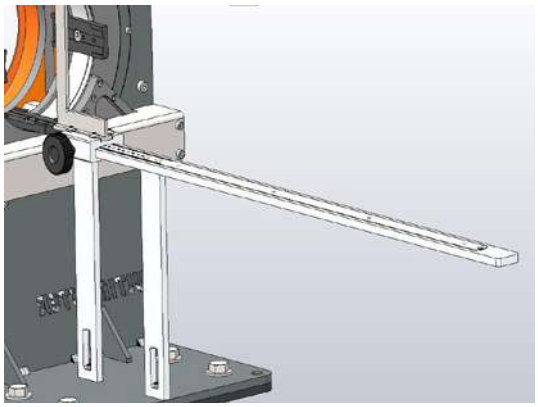
Cutting Blades:

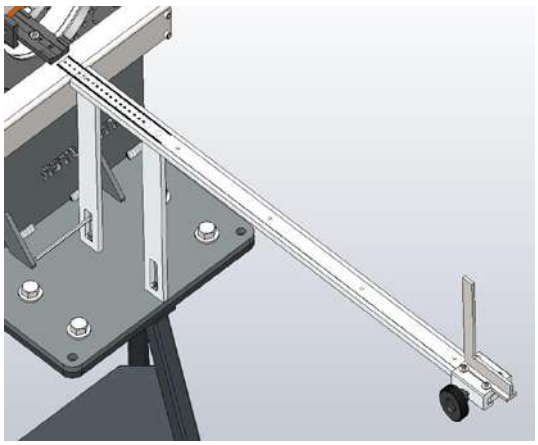
Order No.	Description
US-LC-1803	Saw blade - 80 teeth for wallthickness 0.039" - 0.118" (1-3mm)
US-LC-1804	Saw blade - 54 teeth for wallthickness 0.078" - 0.275" (2-7mm)
US-LC-1805	Saw blade - 34 teeth for wallthickness 0.196" - 0.393" (5-10mm)
US-LC-2101	Saw Blade - 100 teeth for wallthickness 0.02"-0.059" (0.5-1.5mm)
US-LC-2102	Saw Blade - 70 teeth for wallthickness 0.039"-0.118" (1mm-3mm)
US-LC-2103	Saw Blade - 64 teeth for wallthickness 0.118"-0.276" (3mm-7mm)
US-LC-2104	Saw Blade - 44 teeth for wallthickness 0.276"-0.472" (7mm-12mm)
US-LC-2105	Saw Blade - 34 teeth for wallthickness 0.472"-0.591" (12mm-15mm)



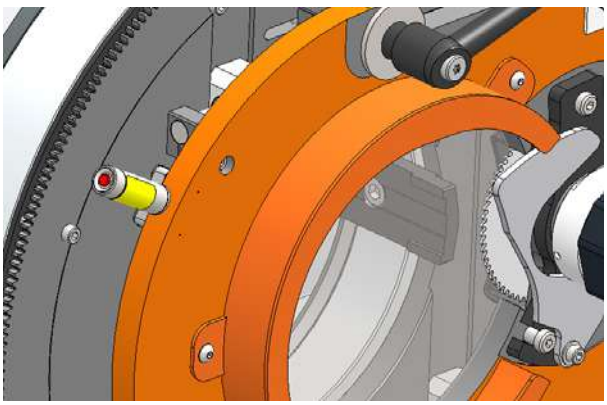
Further Options:

Order No.	Description
US6-1119-1	Set of Clamping Jaws Nr. 1 for 3.405" - 5.204" (86.5mm - 132.2mm)
US6-1119-2	Set of Clamping Jaws Nr. 2 for 1.787" - 3.562" (45.4mm - 90.5mm)
US6-1119-3	Set of Clamping Jaws Nr. 3 for 0.177" - 1.956" (6mm - 49.7mm)
US6-1320	Chips Collector Hood, Vacuum System Inlet not included
US3-2100	Bench Mounting Device for US3 and US6
US6-2200	Laser Sight
US6-2300	Length Limit Stop
US6-2400	Adjustment stop
US6-6000-EJAL	Aluminium envelopping jaws subassembly for 0.25" (6.35 mm) for US3 and US6
US6-6001-EJAL	Aluminium envelopping jaws subassembly for 1" (25.4 mm) for US3 and US6
SSTD2006A	Spiral Cable and Emergency Stop for US6
WSEMISTDCO	Pipestand for US6 machine
US12-1119-1	Set of Clamping Jaws Nr. 1 for 9.56“ - 11.45“ (242.92mm - 290.9mm)
US12-1119-2	Set of Clamping Jaws Nr. 2 for 7.91“ - 9.8“ (201mm - 248.9mm)
US12-1119-3	Set of Clamping Jaws Nr. 5 for 6.34“ - 8.23“ (161.1mm - 209mm)
US12-1320	Chips Collector Hood, Vacuum System Inlet not included
US12-2100	Bench Mounting Device for US12
US12-2200	Laser Sight
US12-2300	Length Limit Stop
US12-2400	Adjustment stop





US6-2300 Length Limit Stop



US6-2200 Laser Sight

OD Mounted

SE Series Tube Squaring Machines

OD Mounted

Precise feed set-up with indexed barrel

The OD mount tube squaring machine is clamped onto the OD diameter of the tube with clamping collets. One collet is necessary for every different diameter which enables a perfect concentric clamping. No deformation of tubes, even for the thinnest ones.

Interchangeable machining heads: easy set-up for different diameters

Interchangeable carbide inserts with different coatings



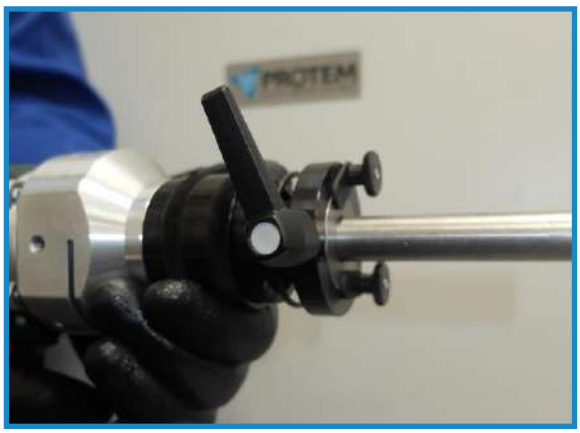
Modular design, portable and lightweight for several different applications in many industries such as:

High Purity:
›› Semi-conductors
›› Pharmaceuticals
›› Clean Rooms
›› Food Processing
›› Aerospace
›› Shipbuilding
›› Nuclear
›› Oil and Gas
›› Cryogenics
›› Defence
›› Green Energies
›› Chemicals

SE Series	Machining Capacities	
SE25	0.118“ - 1“	3mm - 25.4mm
SE65	0.5“ - 2.5“	12.7mm - 63.5mm
SE2T	0.118“ - 2.5“	3mm - 63.5mm
SE25RA	0.118“ - 1“	3mm - 25.4mm
SE65RA	0.5“ - 2.5“	12.7mm - 63.5mm

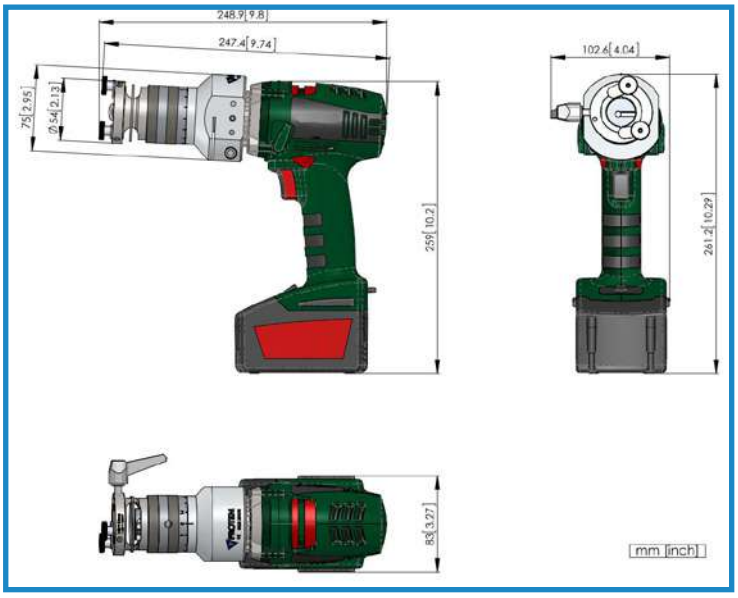
SE25 Tube Squaring Machine

Standard Capacity: 0.118“ - 1“ (3mm - 25.4mm)



The OD Mounted Facing machine SE25 clamps on the outside Ø of the tube with clamping collets. One collet per Ø is necessary.
No distortion of the tubes, even for the thinnest ones.
Powered: Electrically or with cordless electric drive.
The tube facing machine SE25 can be mounted onto a bench support.

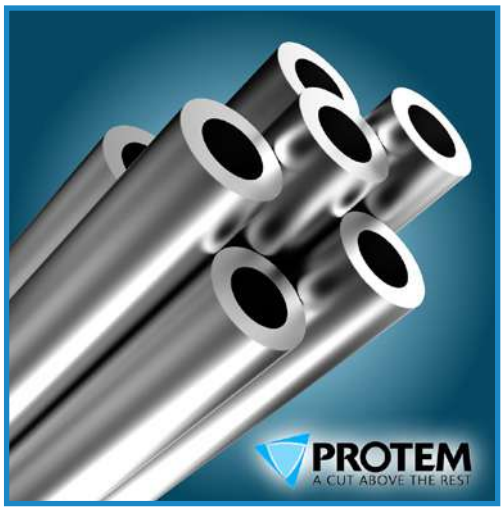
Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗



Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- Perfect and repeatable welding preparation
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- The Tool-Inserts can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



SE25 Tube Squaring Machine

Technical Features:

Specific shapes & angles	I and V
Clamping	Manual
Feed stroke	0.394“ (10mm)
Gear drive	1. Level 500 rpm 2. Level 1700 rpm
Electrical or Cordless drive	110 V (1100 W) or 220 V (1300 W)

Order No.	Description
SE25-1020	Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive 220V.
SE25-1021	Tube Squaring Machine PROTEM SE25 for long collets for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive 220V.
SE25-1022	Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive 220V + bench.
SE25-1026	Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive 220V to bevel 30°
SE25-1028	Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive 220V to bevel 45° only
SE25-1030	Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with electric drive 220V.
SE25-1040	Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive 110V.
SE25-1050	Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with electric drive 110V.

OD Mounted

Applications:









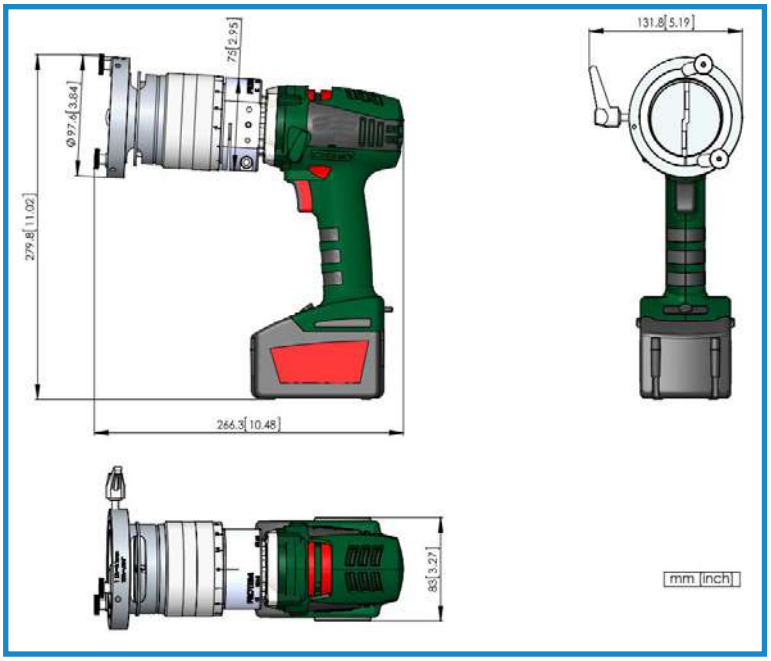
SE65 High Purity Tube Squaring Machine

Standard Capacity: 0.5“ - 2.5“ (12.7mm - 63.5mm)



The OD Mounted Facing machine SE65 clamps on the outside Ø of the tube with clamping collets. One collet per Ø is necessary. No distortion of the tubes, even for the thinnest ones.
Powered: Electrically or with cordless electric drive. The tube facing machine can be mounted onto a bench support.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗



Dimensions

Technical Features:

Specific shapes & angles	I
Clamping	Manual
Feed stroke	0.394“ (10mm)
Gear drive	1. Level 500 rpm 2. Level 1700 rpm
Electrical or Cordless drive	110 V (1100 W) or 220 V (1300 W)

OD Mounted

Order No.	Description
SE65-1020	Tube Squaring Machine PROTEM SE65 for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with electric cordless drive 220V.
SE25-1021	Tube Squaring Machine PROTEM SE25 for long collets for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with cordless drive 220V.
SE25-1022	Tube Squaring Machine PROTEM SE25 for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with cordless drive 220V + bench.
SE25-1026	Tube Squaring Machine PROTEM SE25 for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with cordless drive 220V to bevel 30°
SE25-1028	Tube Squaring Machine PROTEM SE25 for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with cordless drive 220V to bevel 45° only
SE65-1030	Tube Squaring Machine PROTEM SE65 for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with electric drive 220V.
SE65-1040	Tube Squaring Machine PROTEM SE65 for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with electric cordless drive 110V.
SE65-1050	Tube Squaring Machine PROTEM SE65 for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with electric drive 110V.

SE2T OD Mounted Tube End Squaring Machine

Standard Capacity: 0.118“ - 2.5" (3mm - 63.5mm)



SE2T with a SE25 Machining Head



SE2T with a SE65 Machining Head

2 Machines in one! SE2T= SE25+SE65
The OD Mounted Facing machine SE2T clamps on the outside Ø of the tube with clamping collets. One collet per Ø is necessary. No distortion of the tubes, even for the thinnest ones.
Powered: Electrically or with cordless electric drive. The tube facing machine can be mounted onto a bench support.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗

Technical Features:

Specific shapes & angles	I and V
Clamping	Manual
Feed stroke	0.394“ (10mm)
Gear drive	1. Level 500 rpm 2. Level 1700 rpm
Electrical or Cordless drive	110 V (1100 W) or 220 V (1300 W)

Order No.	Description
SE2T-1020	Tube End Squaring Machine PROTEM SE2T for Ø 0.118“ - 2.5" (3mm - 63.5mm) with electric cordless drive, 220V.
SE2T-1030	Tube End Squaring Machine PROTEM SE2T for Ø 0.118“ - 2.5" (3mm - 63.5mm) with electric drive 220V
SE2T-1040	Tube End Squaring Machine PROTEM SE2T for Ø 0.118“ - 2.5" (3mm - 63.5mm) with electric cordless drive, 110V.
SE2T-1050	Tube End Squaring Machine PROTEM SE2T for Ø 0.118“ - 2.5" (3mm - 63.5mm) with electric drive 110V

SE25RA Tube Squaring Machine with Angle Drive

Standard Capacity: 0.118“ - 1“ (3mm - 25.4mm)



The OD Mounted Facing machine SE25RA clamps on the outside Ø of the tube with clamping collets. One collet per Ø is necessary. No distortion of the tubes, even for the thinnest ones.
Powered: Electrically or with cordless electric drive. The tube facing machine can be mounted onto a bench support.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗



Technical Features:

Specific shapes & angles	I
Clamping	Manual
Feed stroke	0.394“ (10mm)
Gear drive	700 rpm
Electrical or Cordless drive	110 V (1100 W) or 220 V (1300 W)

OD Mounted

Order No.	Description
SE25RA-1020	Tube Squaring Machine PROTEM SE25RA for Ø 0.118“-1“ (3mm-25.4mm) with right angle cordless drive 220 V
SE25RA-1040	Tube Squaring Machine PROTEM SE25RA for Ø 0.118“-1“ (3mm-25.4mm) with right angle cordless drive 110 V
SE25DASH-1020	Tube Squaring Machine PROTEM SE25 DASH for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive.
SE25DASH-1030	Tube Squaring Machine PROTEM SE25 DASH for Ø 0.118“-1“ (3mm-25.4mm) with electric drive.
SE25RADASH-1020	Tube Squaring Machine PROTEM SE25RA-DASH for Ø 0.118“-1“ (3mm-25.4mm) with right angle cordless drive.

SE65RA Tube End Squaring Machine with Angle Drive

Standard Capacity: 0.5“ - 2.5“ (12.7mm - 63.5mm)



The OD Mounted Facing machine SE65RA clamps on the outside Ø of the tube with clamping collets. One collet per Ø is necessary. No distortion of the tubes, even for the thinnest ones.
Powered: Electrically or with cordless electric drive. The tube facing machine can be mounted onto a bench support.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✗	✗	✗	✗	✗

OD Mounted



Technical Features:

Specific shapes & angles	I and V
Clamping	Manual
Feed stroke	0.394“ (10mm)
Gear drive	700 rpm
Electrical or Cordless drive	110 V (1100 W) or 220 V (1300 W)

Order No.	Description
SE65RA-1020	Tube Squaring Machine PROTEM SE65RA for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with right angle cordless drive 220V
SE65RA-1040	Tube Squaring Machine PROTEM SE65RA for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with right angle cordless drive 110V
SE65DASH-1020	Tube Squaring Machine PROTEM SE65 DASH for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with cordless drive.
SE65RADASH-1020	Tube Squaring Machine PROTEM SE65RA-DASH for Ø 0.5“ - 2.5“ (12.7mm - 63.5mm) with right angle cordless drive.

SE Crates:



Order No.	Description
SE25-K04	Transport box for SE25 with cordless electric drive
SE25-K05	Transport box for SE25
SE65-K03	Transport box for SE65 with battery
SE65-K04	Transport box for SE65
SE2T-K01	Transport box for SE-2T

SE25 Insert Holders:

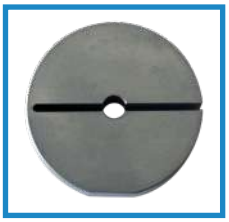
Order No.	Description	Picture
SE25-3102	37,30° spindle subassembly	
SE25-3202	30° spindle subassembly	
SE25-3302	45° spindle subassembly	
SE65-3102	37,30° spindle subassembly	
SE65-3111	37°30 insert holder	
SE65-3202	30° spindle subassembly	
SE65-3211	30° insert holder	
SE65-3302	45° spindle subassembly	
SE65-3311	45° insert holder	
SE65-3010	facing insert holder	

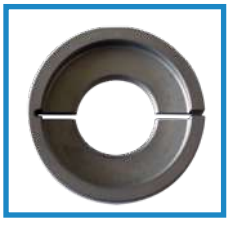
OD Mounted

SE Collets:

Order No.	Description
SE25-2000-(Please specify the required Ø)	Stainless Steel short clamping collet for SE25 and SE2T (Please specify the required Ø)
SE25-2100-(Please specify the required Ø)	Stainless Steel long clamping collet for SE25 and SE2T (Please specify the required Ø)
SE25-2300-(Please specify the required Ø)	Stainless Steel extra short clamping collet for SE25 and SE2T for Micro Fittings (Please specify the required Ø)
SE65-2000-(Please specify the required Ø)	Stainless Steel short clamping collet for SE65 and SE2T (Please specify the required Ø)
SE65-2100-(Please specify the required Ø)	Stainless Steel long clamping collet for SE65 and SE2T (Please specify the required Ø)
SE65-2300-(Please specify the required Ø)	Stainless Steel extra short clamping collet for SE65 and SE2T Micro Fittings (Please specify the required Ø)

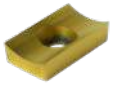
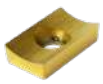
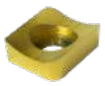
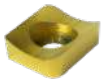
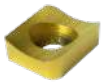
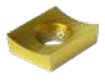
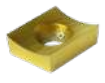
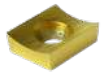
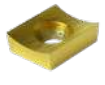
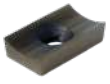








SE Tube Squaring Machines Tool bits

Order No.	Description	Picture
O-SE-P0-3.-H-T-24	HSS Short insert (Tin Coating)	
O-SE-P1-3.-H-F-20	Tool bit, material HSS, coating: TiALN	
O-SE-P1-3.-C-T-20A	Tool bit, material carbide, coating: TiN	
O-SE-P1-3.-H-T-20	Tool bit, material HSS, coating: TiN	
O-SE-P1-3.-C-F-20A	Tool bit, material carbide, coating: TiALN	
O-SE-P1-3.-H-HC-20	Tool bit, material HSS, coating: TiSiN	
O-SE-P2-3.-H-T-25	Insert, right, material HSS with TiN coating	
O-SE-P2-3.-H-F-25	Insert, right, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25A	Insert right for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P3-3.-H-F-25A	Insert right for J-prep with radius 1.5, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25C	HSS Insert, Right, J-Bevel with Radius 2	
O-SE-P4-3.-H-T-26	Insert, left, material HSS with TiN coating	
O-SE-P4-3.-H-F-26	Insert, left, material HSS with TiALN coating	
O-SE-P5-3.-H-T-26A	Insert, left for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P5-3.-H-F-26A	Insert, left, for J-prep with radius 1.5, material HSS with TiALN coating	
SE65-1121	HSS Insert 12,5X8 for collet Ø >61-Hardcut Material	

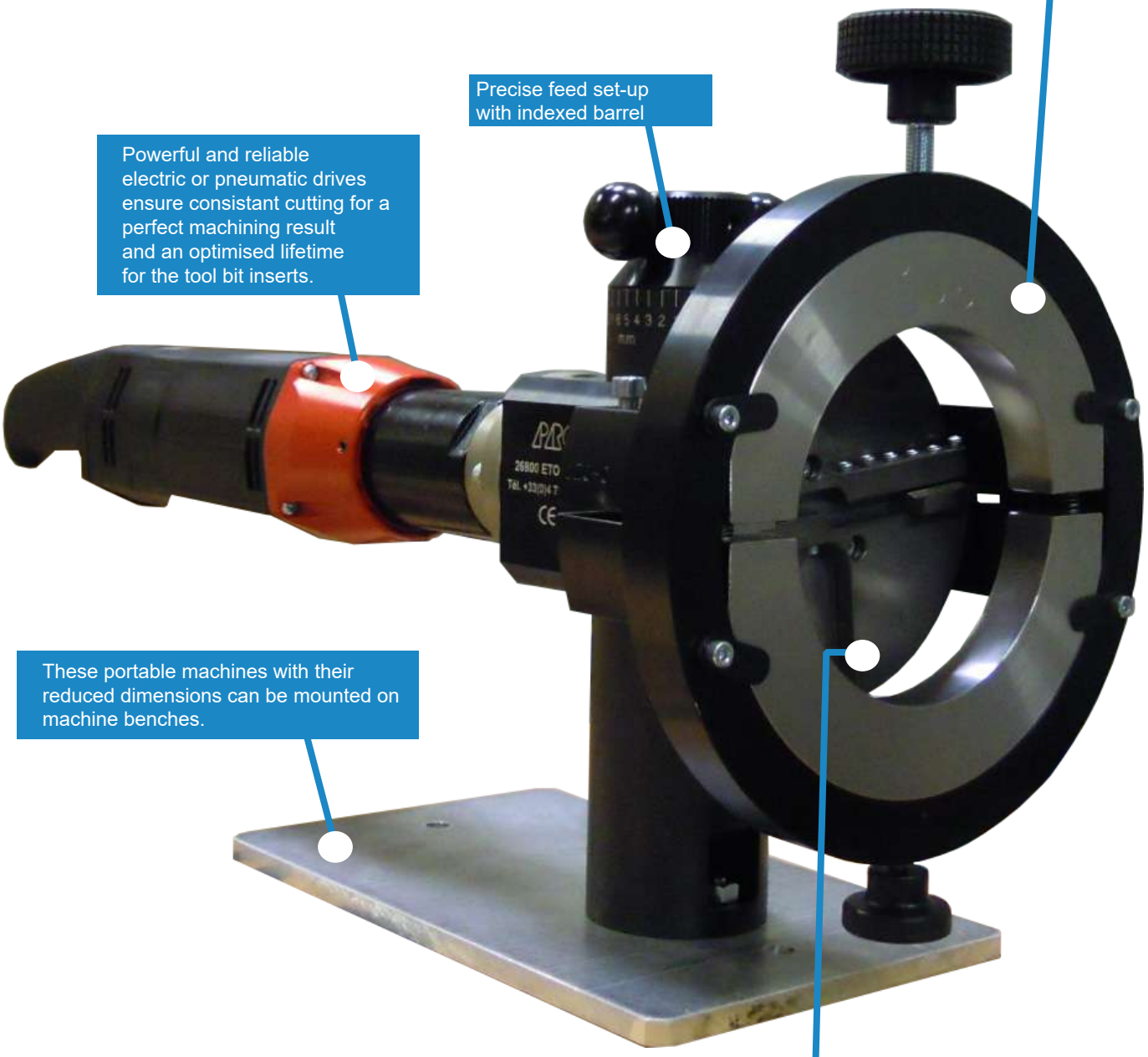
SL Series Tube Squaring Machines

Cold Machining

Clamping collets enable a perfect concentric clamping without any deformation of the tubes. Short collets for fittings and micro fittings available.

Precise feed set-up with indexed barrel

Powerful and reliable electric or pneumatic drives ensure consistant cutting for a perfect machining result and an optimised lifetime for the tool bit inserts.



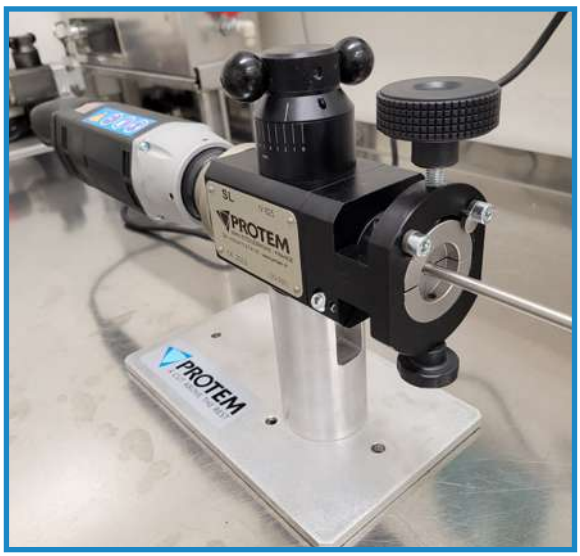
These portable machines with their reduced dimensions can be mounted on machine benches.

Tool-holder plates enable the facing and beveling of tubes, fittings, micro fittings and tee fittings. Machining can be performed on all types of materials (mild steels, stainless steels, alloys). Chips are contained and easily collected in order to avoid altering the integrity of the tube.

SL Series	Machining Capacities	
SL30	0.118“ - 1.181“	3mm - 30mm
SL60	0.393“ - 2.374“	10mm - 60.3mm
SL120	1.968“ - 4.724“	50mm - 120mm

SL30 Tube and Pipe Beveling Machine

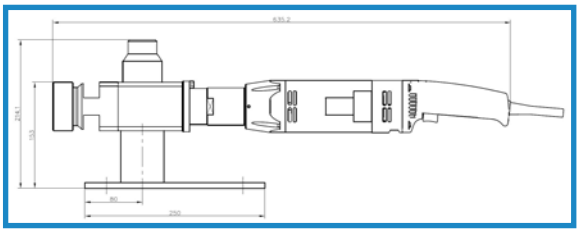
Standard Capacity: 0.118“ - 1.181“ (3mm - 30mm)



The tube end squaring machine PROTEM SL30 is designed to square tubes, fittings, micro-fittings and tees (short clamping head available) on all metal tubes with Ø 0.118“-1.181“ (3mm-30mm) including mild, stainless steel, exotic alloys such as inconel, P91, hastelloy, copper etc..
Its clearance, capacities and design have been engineered along with the end users. This machine is ideal for applications within the high-purity field: food and beverage industry, semiconductors, cleanrooms, pharmaceuticals etc. It minimises the risk of contamination since it produces collectible ribbon-like chips and no particulates. Its small dimension allows it to be portable or bench mounted.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗

OD Mounted



Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- Perfect and repeatable welding preparation
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- The Tool-Inserts can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process



SL30 Tube and Pipe Beveling Machine

Technical Features:

Specific shapes & angles	I, V, Other on Requests
Clamping	Clamping heads and collets long or short
Feed stroke	0.394“ (10mm)
Gear drive	95 rpm to 280 rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
SL30-1000	Tube & Pipe Beveling and Facing Machine PROTEM SL30 for Ø 0.118“-1.181“ (3mm-30mm) with pneumatic drive
SL30-1002	Tube & Pipe Beveling and Facing Machine PROTEM SL30 for Ø 0.118“-1.181“ (3mm-30mm) version with short clamping head for microfittings, with pneumatic drive
SL30-1004	Tube & Pipe Beveling and Facing Machine PROTEM SL30 for Ø 0.118“-1.181“ (3mm-30mm) with pneumatic drive and automatic clamping device
SL30-1020	Tube & Pipe Beveling and Facing Machine PROTEM SL30 for Ø 0.118“-1.181“ (3mm-30mm) with electric drive 220V.
SL30-1022	Tube & Pipe Beveling and Facing Machine PROTEM SL30 for Ø 0.118“-1.181“ (3mm-30mm) version with short clamping head for microfittings, with electric drive 220V.
SL30-1040	Tube & Pipe Beveling and Facing Machine PROTEM SL30 for Ø 0.118“-1.181“ (3mm-30mm) with electric drive 110V MS10.
SL30-1042	Tube & Pipe Beveling and Facing Machine PROTEM SL30 for Ø 0.118“-1.181“ (3mm-30mm) version with short clamping head for microfittings, with electric drive 110V MS10.

Applications:









SL60 Tube and Pipe Facing Machine

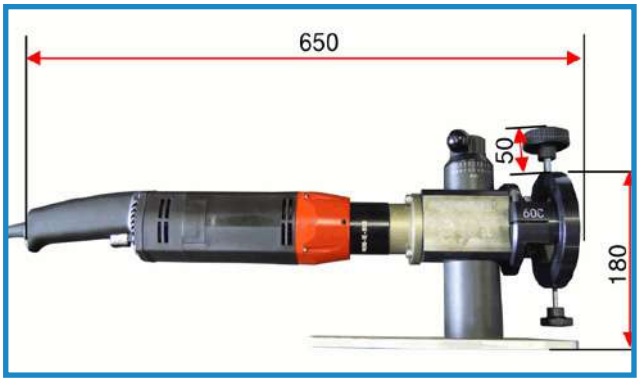
Standard Capacity: 0.393“ - 2.374“ (10mm - 60.3mm)



The tube end squaring machine PROTEM SL60 is designed to square tubes, fittings, micro-fittings and tees (short clamping head available) on all metal tubes with Ø 0.393“-2.374“ (10mm-60.3mm) including mild, stainless steel, exotic alloys such as inconel, P91, hastelloy, copper etc..
Its clearance, capacities and design have been engineered along with the end users. This machine is ideal for applications within the high-purity field: food and beverage industry, semiconductors, cleanrooms, pharmaceuticals etc. It minimises the risk of contamination since it produces collectible ribbon-like chips and no particulates. Its small dimension allows it to be portable or bench mounted.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗

OD Mounted



Dimensions

Technical Features:

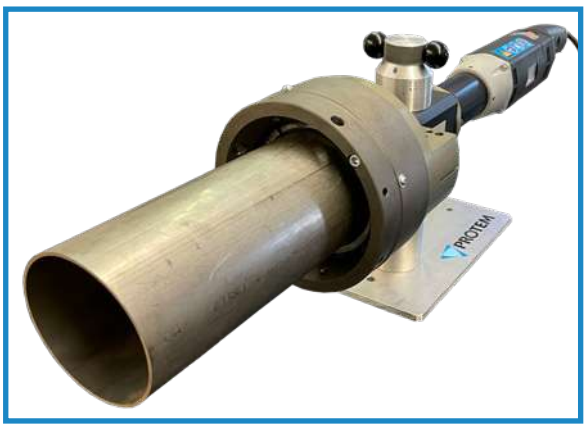
Specific shapes & angles	I, V, Other on Requests
Clamping	Clamping heads and collets long or short
Feed stroke	0.394“ (10mm)
Gear drive	120 rpm to 360 rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
SL60-1000	Tube & Pipe Beveling and Facing Machine PROTEM SL60 for Ø 0.393“-2.374“ (10mm-60.3mm) with pneumatic drive
SL60-1002	Tube & Pipe Beveling and Facing Machine PROTEM SL60 for Ø 0.393“-2.374“ (10mm-60.3mm) version with short clamping head for microfittings, with pneumatic drive
SL60-1004	Tube & Pipe Beveling and Facing Machine PROTEM SL60 for Ø 0.393“-2.374“ (10mm-60.3mm) with pneumatic drive and automatic clamping device
SL60-1020	Tube & Pipe Beveling and Facing Machine PROTEM SL60 for Ø 0.393“-2.374“ (10mm-60.3mm) with electric drive 220V.

Order No.	Description
SL60-1022	Tube & Pipe Beveling and Facing Machine PROTEM SL60 for Ø 0.393“-2.374“ (10mm-60.3mm) version with short clamping head for microfittings, with electric drive 220V.
SL60-1040	Tube & Pipe Beveling and Facing Machine PROTEM SL60 for Ø 0.393“-2.374“ (10mm-60.3mm) with electric drive 110V MS10.
SL60-1042	Tube & Pipe Beveling and Facing Machine PROTEM SL60 for Ø 0.393“-2.374“ (10mm-60.3mm) version with short clamping head for microfittings, with electric drive 110V MS10.

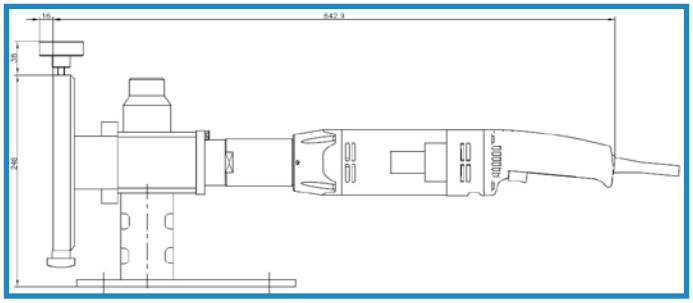
SL120 Tube Squaring Machine

Standard Capacity: 1.968“ - 4.724“ (50mm - 120mm)

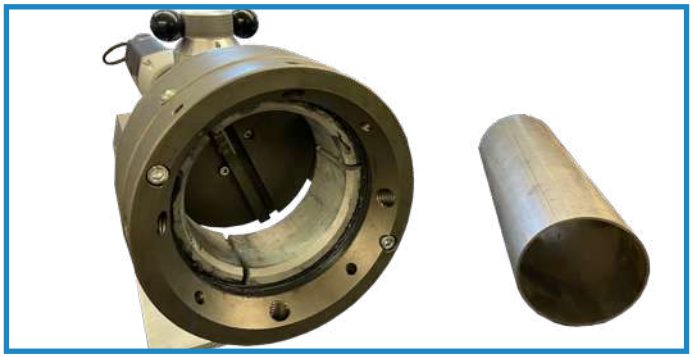


The tube end squaring machine PROTEM SL120 is designed to square tubes, fittings, micro-fittings and tees (short clamping head available) on all metal tubes with Ø 1.968“-4.724“ (50mm-120mm) including mild, stainless steel, exotic alloys such as inconel, P91, hastelloy, copper etc..
Its clearance, capacities and design have been engineered along with the end users. This machine is ideal for applications within the high-purity field: food and beverage industry, semiconductors, cleanrooms, pharmaceuticals etc. It minimises the risk of contamination since it produces collectible ribbon-like chips and no particulates. Its small dimension allows it to be portable or bench mounted.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗



Dimensions



Technical Features:

Specific shapes & angles	I, V, Other on Requests
Clamping	Clamping heads and collets long or short
Feed stroke	0.394“ (10mm)
Gear drive	20 rpm - 60 rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

OD Mounted

Order No.	Description
SL120-1000	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with pneumatic drive
SL120-1001	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with right angle pneumatic drive
SL120-1002	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) version with short clamping head for microfittings, with pneumatic drive
SL120-1003	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) version with short clamping head for microfittings, with right angle pneumatic drive
SL120-1004	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with pneumatic drive and automatic clamping device
SL120-1020	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with electric drive 220V.

Order No.	Description
SL120-1021	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with right angle electric drive 220V.
SL120-1022	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) version with short clamping head for microfittings, with electric drive 220V.
SL120-1023	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) version with short clamping head for microfittings, with right angle electric drive 220V.
SL120-1040	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with electric drive 110V MS10.
SL120-1041	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with right angle electric drive 110V MS10.
SL120-1042	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) version with short clamping head for microfittings, with electric drive 110V MS10.
SL120-1043	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) version with short clamping head for microfittings, with right angle electric drive 110V MS10.

SL Tube Squaring Machines Options & Accessories

SL Crates:

Order No.	Description
SL30-K01	Transport box for SL30 pneumatic or electric
SL60-K01	Transport box for SL60 pneumatic or electric
SL120-K01	Transport box for SL120 pneumatic or electric
SL120-K02	Transport box for SL120 electric + RA

SL Insert Holders:

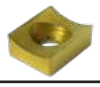
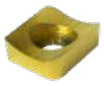
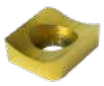
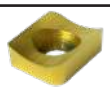
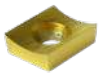
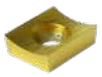
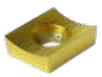
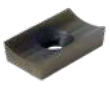
Order No.	Description
SL-1300	Machine support suitable for SL30, SL60, SL120
SL1410	Insert-holder 90° to be ordered with item ref. SL-1810, suitable for SL30, SL60, SL120
SL-1411	Insert-holder 30° to be ordered with item 1810, suitable for SL30, SL60, SL120
SL-1412	Insert holder 37°30 to be ordered with item ref. 1810, suitable for SL30, SL60, SL120
SL-1414	Insert-holder 45° to be ordered with item 1810, suitable for SL30, SL60, SL120
SL-1810	Tool holder plate for SL30
SL-2310	Tool holder plate for SL60
SL-3310	Tool holder plate for SL120

SL Collets:

Order No.	Description
SL-1900-(Please specify the required Ø)	Clamping collet for SL30 with standard clamping head (Please specify the required Ø)
SL-2100-(Please specify the required Ø)	Clamping collet, short version for SL30 with short clamping head (Please specify the required Ø)
SL-2400-(Please specify the required Ø)	Clamping collet for SL60 with standard clamping head (Please specify the required Ø)

Order No.	Description
SL-2610-(Please specify the required Ø)	Clamping collet, short version for SL60 with short clamping head (Please specify the required Ø)
SL-3410-(Please specify the required Ø)	Clamping collet for SL120 with standard clamping head (Please specify the required Ø)
SL-3610-(Please specify the required Ø)	Clamping collet, short version for SL120 with short clamping head (Please specify the required Ø)

SL Tube Squaring Machines Tool-Inserts

Order No.	Description	Picture
O-SE-P2-3.-H-T-25	Insert, right, material HSS with TiN coating	
O-SE-P2-3.-H-F-25	Insert, right, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25A	Insert right for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P3-3.-H-F-25A	Insert right for J-prep with radius 1.5, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25C	HSS Insert, Right, J-Bevel with Radius 2	
O-SE-P4-3.-H-T-26	Insert, left, material HSS with TiN coating	
O-SE-P4-3.-H-F-26	Insert, left, material HSS with TiALN coating	
O-SE-P5-3.-H-T-26A	Insert, left for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P5-3.-H-F-26A	Insert, left, for J-prep with radius 1.5, material HSS with TiALN coating	
SE65-1121	HSS Insert 12,5X8 for collet Ø >61-Hardcut Material	

SE-NG Series Tube Facing & Beveling Machines

OD Mounted

These machines obtain repeatable high quality weld preparations on tubes & pipes of all materials, including mild, stainless steel or exotic alloys.

The tool-holder plate can perform facing and beveling operations individually or simultaneously. It can integrate up to four tool bit inserts

The machines are fixed on the tube by a reinforced collet that enables a very precise and burr free machining surface to be achieved.

Powerful and reliable electric or pneumatic drives ensure constant machining process for a perfect machining result and an optimal lifetime for the tool bit inserts.



The tool-holder can be removed very easily so that the operator is able to save time when changing tools. He can just change the complete tool-holder plate.

Machine bench

The machines entering the SE-NG range cover diameters, according to the model, ranging from 0.393“ (10mm) - 8.622“ (219mm)

SE-NG Series	Machining Capacities	
SE60NG	0.393“ - 2.374“	10mm - 60.3mm
SE90NG	0.393“ - 3.543“	10mm - 90mm
SE120NG	1.968“ - 4.724"	50mm - 120mm
SE219NG	2.374“ - 8.622“	60.3mm - 219mm

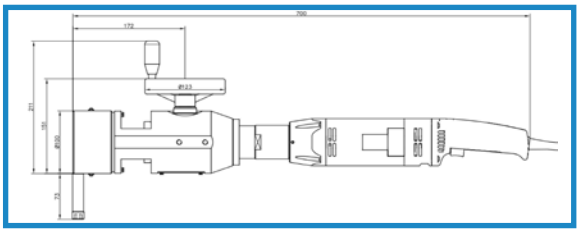
SE60NG Tube Facing & Beveling Machine

Standard Capacity: 0.393“ - 2.374“ (10mm - 60.3mm)



The pneumatic or electric powered Tube & Pipe end preparation machine PROTEM SE60NG is lightweighted and portable. It will perform repeatable perfect quality weld preps on all metal tubes and pipes including mild, stainless steel, exotic alloys such as inconel, P91, hastelloy, copper etc.. The SE60NG allows to cover diameters ranging from 0.393“ to 2.374“ (10mm-60.3mm). The cutting head will face, bevel and counterbore individually or in a simultaneous operation. The tool-holder plate can hold up to 4 tool blocks. The tool-holder plate is easily removable and thus allows the operator to save time once the tool blocks have been adjusted by exchanging the whole plate. The SE60NG machine is available with either pneumatic or electric (220 V or 110 V) drives. It clamps to the tubes and pipes by means of a heavy clamping collet and thus provides a chatterfree accurate finish.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗



Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- Perfect and repeatable welding preparation
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- The tool-Inserts can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process





SE60NG Tube Facing & Beveling Machine

Technical Features:

Specific shapes & angles	I, V, J-bevel, Other on Requests
Clamping	Manual
Feed stroke	0.98“ (25mm)
Gear drive	60 rpm to 90 rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
SE60NG-1000	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with pneumatic drive
SE60NG-1002	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with pneumatic drive and automatic clamping.
SE60NG-1004	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with integrated pneumatic automatic clamping and feed device
SE60NG-1006	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with pneumatic drive and automatic feed.
SE60NG-1020	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with electric drive 220V.
SE60NG-1022	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with electric right angle drive 220V.
SE60NG-1023	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with electric drive 220V and automatic clamping
SE60NG-1030	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with electric drive 220V and automatic feed & clamping
SE60NG-1040	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with electric drive 110V.
SE60NG-1042	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with electric right angle drive 110V.
SE60NG-1043	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with electric drive 110V and automatic clamping

Applications:





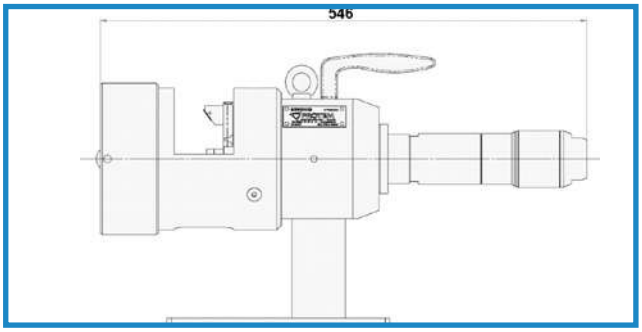
SE90NG Tube Facing & Beveling Machine

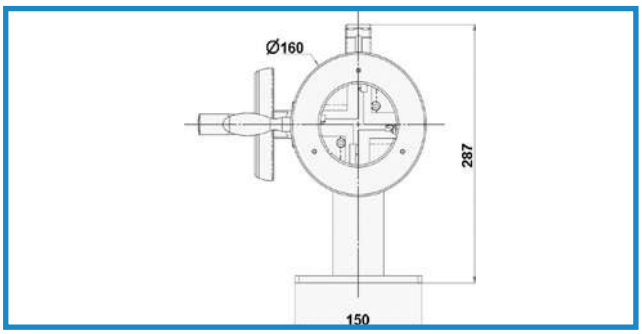
Standard Capacity: 0.393“ - 3.543“ (10mm - 90mm)



The pneumatic or electric powered Tube & Pipe end preparation machine PROTEM SE90NG is lightweighted and portable. It will perform repeatable perfect quality weld preps on all metal tubes and pipes including mild, stainless steel, exotic alloys such as inconel, P91, hastelloy, copper etc.. The SE90NG allows to cover diameters ranging from 0.393“ to 3.543“ (10mm-90mm). The cutting head will face, bevel and counterbore individually or in a simultaneous operation. The tool-holder plate can hold up to 4 tool blocks. The tool-holder plate is easily removable and thus allows the operator to save time once the tool blocks have been adjusted by exchanging the whole plate. The SE90NG machine is available with either pneumatic or electric (220 V or 110 V) drives. It clamps to the tubes and pipes by means of a heavy clamping collet and thus provides a chatterfree accurate finish.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗





Dimensions

Technical Features:

Specific shapes & angles	I, V, J-bevel, Other on Requests
Clamping	Manual
Feed stroke	1.18“ (30mm)
Gear drive	75 rpm to 90 rpm
Pneumatic drive	1500 W, 6 bar (87 psi), 2800 l/min (100 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

OD Mounted

Order No.	Description
SE90NG-1002	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with pneumatic drive and automatic clamping.
SE90NG-1004	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with pneumatic drive and automatic clamping and feed device
SE90NG-1010	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with pneumatic drive
SE90NG-1012	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with pneumatic drive and automatic clamping

Order No.	Description
SE90NG-1014	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with pneumatic drive and automatic feed & clamping
SE90NG-1030	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with electric drive 220V.
SE90NG-1035	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with electric drive 220V and automatic feed & clamping
SE90NG-1050	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with electric drive 110V.

SE120NG Tube Facing & Beveling Machine

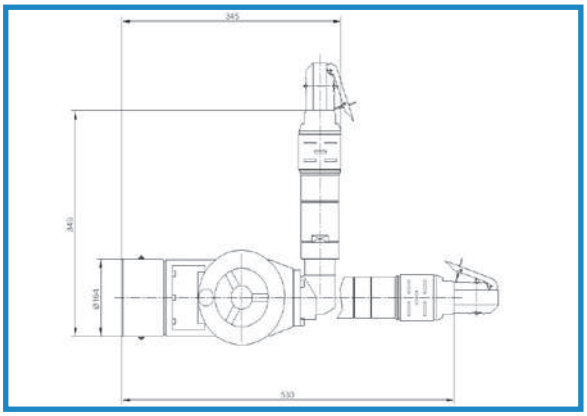
Standard Capacity: 1.968“ - 4.724“ (50mm - 120mm)



The pneumatic or electric powered Tube & Pipe end preparation machine PROTEM SE120NG is lightweighted and portable. It will perform repeatable perfect quality weld preps on all metal tubes and pipes including mild, stainless steel, exotic alloys such as inconel, P91, hastelloy, copper etc.. The SE120NG allows to cover diameters ranging from 1.968“ to 4.724“ (50mm-120mm). The cutting head will face, bevel and counterbore individually or in a simultaneous operation. The tool-holder plate can hold up to 4 tool blocks. The tool-holder plate is easily removable and thus allows the operator to save time once the tool blocks have been adjusted by exchanging the whole plate. The SE120NG machine is available with either pneumatic or electric (220 V or 110 V) drives. It clamps to the tubes and pipes by means of a heavy clamping collet and thus provides a chatterfree accurate finish.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗

OD Mounted



Dimensions

Technical Features:

Specific shapes & angles	I, V, J-bevel, Other on Requests
Clamping	Manual
Feed stroke	1.18“ (30mm)
Gear drive	60 rpm to 75 rpm
Pneumatic drive	1500 W, 6 bar (87 psi), 2800 l/min (100 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
SE120NG-1000	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with pneumatic drive
SE120NG-1002	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with pneumatic drive and automatic clamping.
SE120NG-1004	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with integrated pneumatic automatic clamping and feed device

Order No.	Description
SE120NG-1020	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with electric drive 220V.
SE120NG-1040	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with electric drive 110V.

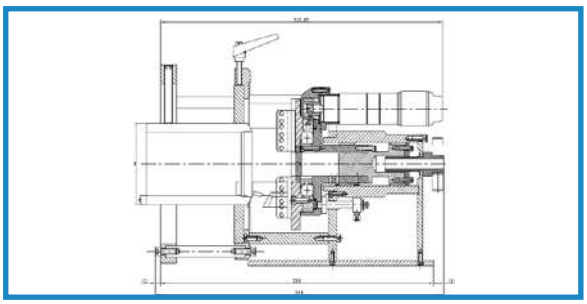
SE219NG Tube Facing & Beveling Machine

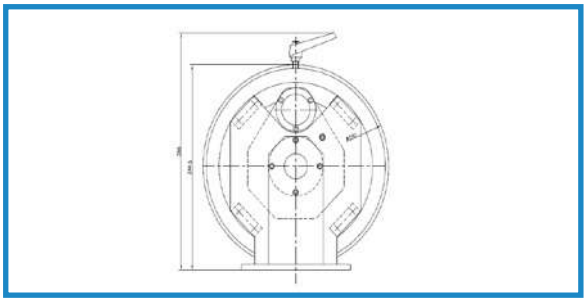
Standard Capacity: 2.374“ - 8.622“ (60.3mm - 219mm)



The PROTEM SE219NG is especially designed and engineered to face and bevel tubes with Ø 2.374“-8.622“ (60.3mm-219mm) OD. Its design and unique working range makes it the best tool in its class. The stainless steel or aluminium collet and its front support allow a perfect clamping and squareness without deformation for orbital welding. 4 standard HSS tool bits can be mounted on the tool-holder plate to work simultaneously. This tool is ideal for sanitary tubing, food processing and chemical and pharmaceutical applications. The SE219NG can be mounted either with an electric or a pneumatic drive.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗





Dimensions

Technical Features:

Specific shapes & angles	I, V, J-bevel, Other on Requests
Clamping	Manual
Feed stroke	0.9“ (23mm)
Gear drive	33 rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

OD Mounted

Order No.	Description
SE219NG-1000	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with pneumatic drive
SE219NG-1020	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with electric drive 220V MS10.

Order No.	Description
SE219NG-1022	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with electric drive 220V MS15.
SE219NG-1040	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with electric drive 110V.

SE-NG Series Tube Facing & Beveling Machines Options & Accessories

SE-NG Crates:

Order No.	Description
SE60NG-K01	Transport crate for SE60
SE60NG-K02	Transport crate for SE60E
SE60-K03	Transport crate for SE60-RA
SE90NG-K01	Transport crate for SE90
SE90NG-K02	Transport crate for SE90E
SE120NG-K01	Transport crate for SE120
SE120NG-K02	Transport crate for SE120E
SE219-K01	Transport crate for SE219
SE219-K02	Transport crate for SE219E



OD Mounted

SE60NG Tool-holders:

Order No.	Description
SE60NG-1310	Tool-holder plate
SE60PP-30-41	Tool-holder 30°
SE60PP-37-10	Tool-holder 37°30
SE60PP-45-11	Tool-holder 45°
SE60PP-90-09	Tool-holder 90°
SE60PPD-14-16	Tool-holder for counterboring works 14°

Order No.	Description
SE60PPD-15-12	Tool-holder for counterboring works 15°
SE60PPJ-15-43	Tool-holder for J-bevels 15°
SE60PPJ-20-44	Tool-holder for J-bevels 20°
SE60PPJ-20-45	Tool-holder for J-bevels 20° R=0
SE60PPJ-20-47	Tool-holder for J-bevels 20° R=2
SE60PPJ-30-46	Tool-holder for J-bevels 30°

SE90NG Tool-holders:

Order No.	Description
SE90NG-1310	Tool-holder plate
SE90NG-1311	Tool-holder 30°
SE90NG-1312	Tool-holder for inside machining works 5°
SE90NG-1313	Tool-holder 90°

Order No.	Description
SE90NG-1314	Tool-holder 37°30
SE90NG-1315	Tool-holder 45°
SE90NG-1316	Tool-holder for inside machining works 15°

SE-NG Series Tube Facing & Beveling Machines Options & Accessories

SE120NG Tool-holders:

Order No.	Description
SE120-68	Tool-holder plate
SE60PP-30-41	Tool-holder 30°
SE60PP-37-10	Tool-holder 37°30
SE60PP-45-11	Tool-holder 45°
SE60PP-90-09	Tool-holder 90°



SE-NG Collets:

Order No.	Description
SE60NG-1200-(Please specify the required Ø)	Clamping collet, aluminium. One collet necessary per Ø. Please specify the required Ø
SE60NG-1204-(Please specify the required Ø)	Clamping collet, stainless steel. One collet necessary per Ø. Please specify the required Ø
SE90NG-1200-(Please specify the required Ø)	Clamping collet, aluminium. One collet necessary per Ø. Please specify the required Ø
SE90NG-1202-(Please specify the required Ø)	Clamping collet, steel. One collet necessary per Ø. Please specify the required Ø

Order No.	Description
SE90NG-1204-(Please specify the required Ø)	Clamping collet, stainless steel. One collet necessary per Ø. Please specify the required Ø
SE120NG-1200-(Please specify the required Ø)	Clamping collet. One collet necessary per Ø. Please specify the required Ø
SE219-1200-(Please specify the required Ø)	Clamping collet, stainless steel. One collet necessary per Ø. Please specify the required Ø
SE219-1202-(Please specify the required Ø)	Clamping collet, aluminium. One collet necessary per Ø. Please specify the required Ø

SE-NG Series Tube Facing & Beveling Machines Tool-Inserts

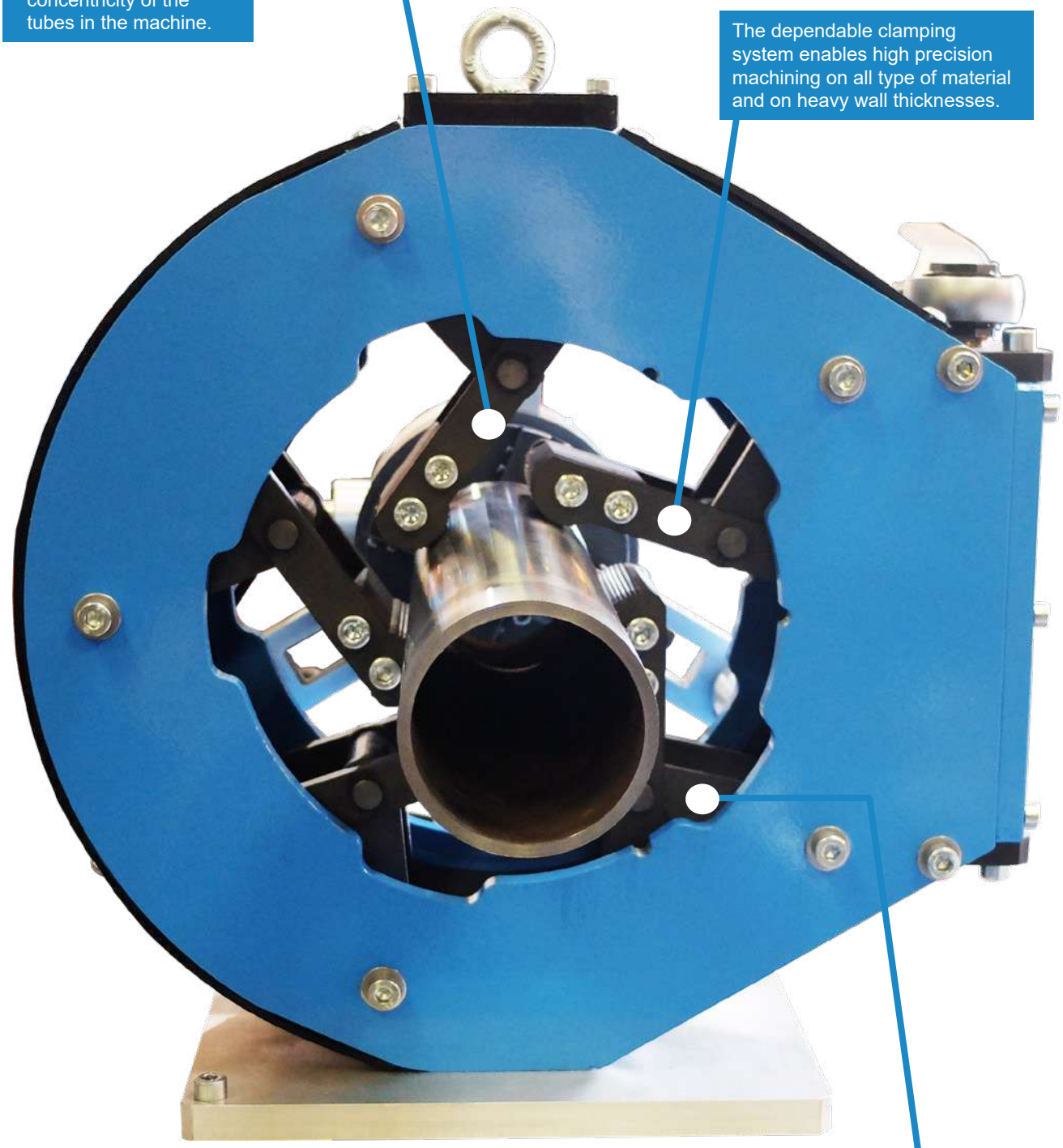
Order No.	Description	Picture
O-SE-P2-3.-H-T-25	Insert, right, material HSS with TiN coating	
O-SE-P2-3.-H-F-25	Insert, right, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25A	Insert right for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P3-3.-H-F-25A	Insert right for J-prep with radius 1.5, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25C	HSS Insert, Right, J-Bevel with Radius 2	
O-SE-P4-3.-H-T-26	Insert, left, material HSS with TiN coating	
O-SE-P4-3.-H-F-26	Insert, left, material HSS with TiALN coating	
O-SE-P5-3.-H-T-26A	Insert, left for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P5-3.-H-F-26A	Insert, left, for J-prep with radius 1.5, material HSS with TiALN coating	
SE65-1121	HSS Insert 12,5X8 for collet Ø >61-Hardcut Material	

BMFM Series Tube & Pipe Beveling and Facing Machines

These machines minimize the risk of contamination since they produce collectible ribbon-like chips and no particles.

The jaws move together while clamping and guarantee a perfect concentricity of the tubes in the machine.

The dependable clamping system enables high precision machining on all type of material and on heavy wall thicknesses.



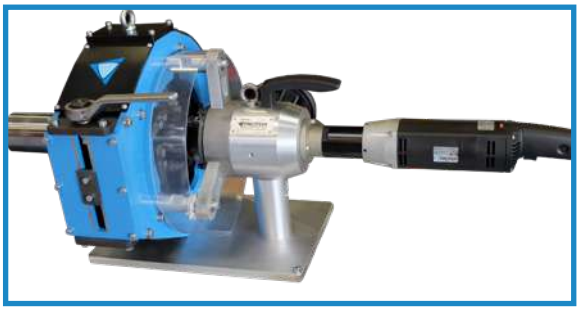
OD Mounted

BMFM Series	Machining Capacities	
BMFM114	0.78“ - 4.5“	20mm - 114.3mm
BMFM219	1“ - 8.622“	25.4mm - 219.1mm

The outside clamping system prevents all inside contamination of the inside of the tube. Such contamination would be considered hazardous or critical for high purity applications.

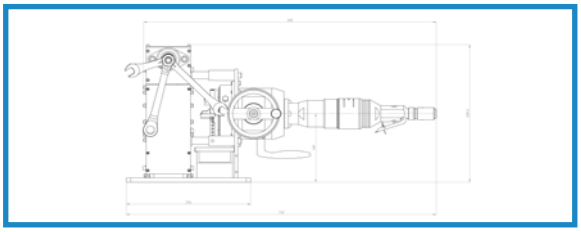
BMFM114 Tube and Pipe Beveling Machine

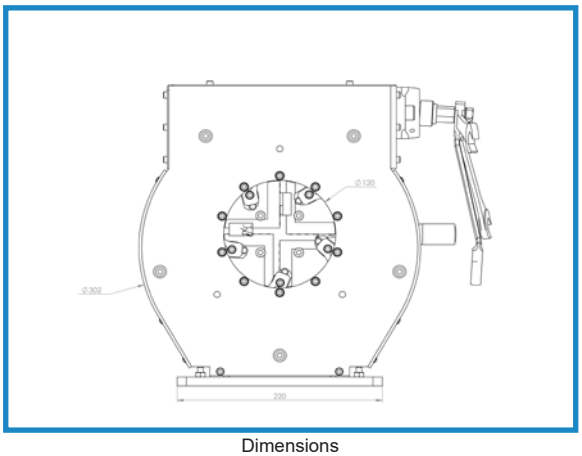
Standard Capacity: 0.78“ - 4.5“ (20mm - 114.3mm)



The new od mounted and concentric clamping machine Protem BMFM114 is designed to perform weld preparations on tubes with diameters 0.78“ - 4.5“ (20mm - 114.3mm). The machine can bevel, face and counterbore separately or in a simultaneous operation. The tool-holder plate can hold up to four tool blocks. The new generation of PROTEM BMFM features the possibility to machine several tube diameters without changing the clamping system. Collets are not necessary. The concentric clamping system enables a perfect preparation of tubes for manual or automated welding operations. Mounted on a bench, just one operator is necessary to machine tubes with the BMFM114.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗



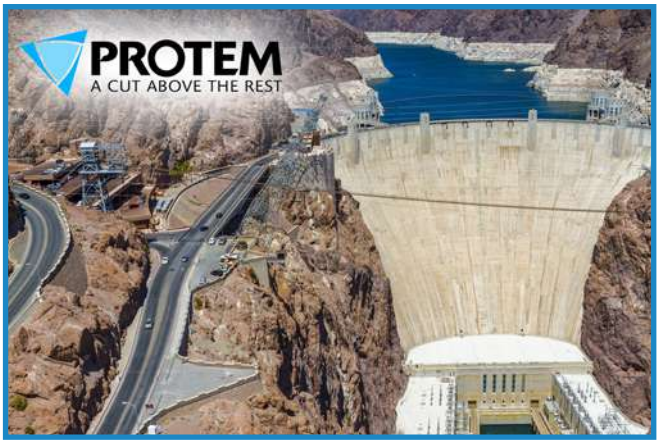


Dimensions

Advantages:

- Portable
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- Perfect and repeatable welding preparation
- Adapted for works in tight spaces
- The machine can be used in all positions: vertical, horizontal, over head
- The Tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process

OD Mounted



BMFM114 Tube and Pipe Beveling Machine

Technical Features:

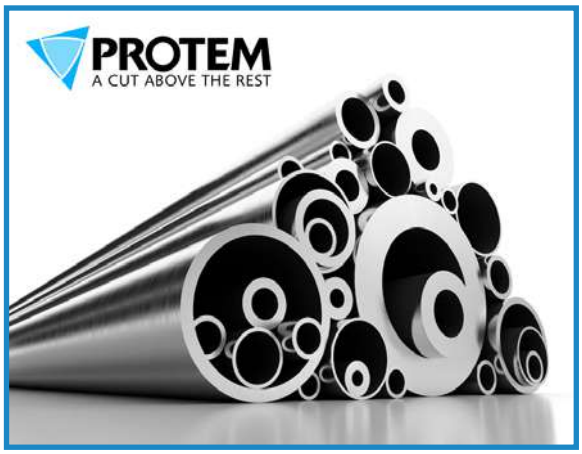
Specific shapes & angles	I, V, X and J-bevel, Other on Requests
Clamping	Manual with a key
Feed stroke	1.181“ (30mm)
Gear drive	75 rpm to 90 rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
BMFM114-1000	Tube & Pipe Beveling and Facing Machine PROTEM BMFM114 for Ø 0.78“ - 4.5“ (20mm - 114.3mm) with pneumatic drive
BMFM114-1004	Tube & Pipe Beveling and Facing Machine PROTEM BMFM114 for Ø 0.78“ - 4.5“ (20mm - 114.3mm) with pneumatic drive and automatic clamping.
BMFM114-1022	Tube & Pipe Beveling and Facing Machine PROTEM BMFM114 for Ø 0.78“ - 4.5“ (20mm - 114.3mm) with electric drive 220V.
BMFM114-K01	Transport crate for BMFM114

Applications:



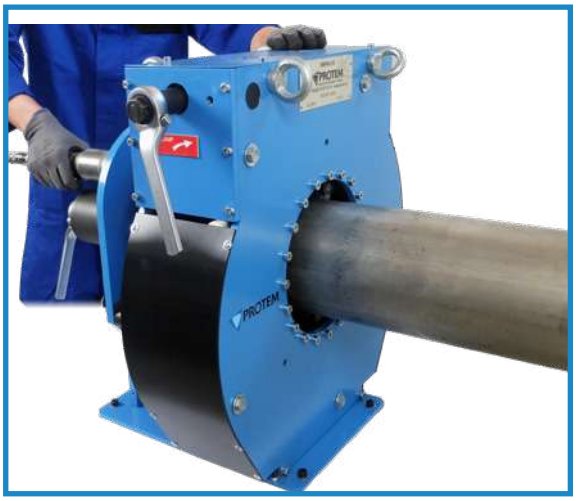






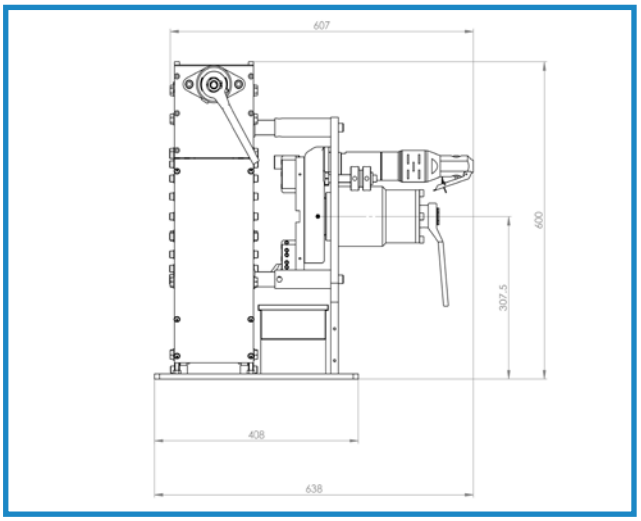
BMFM219 Tube and Pipe Facing Machine

Standard Capacity: 1“ - 8.622“ (25.4mm - 219.1mm)



With a very robust and reliable design and very easy to use, the BMFM219 can perform repeatable quality weld preps on all metal pipes and tubes including mild and stainless steel, duplex and super duplex, inconel etc. The benefit of this machine is the possibility to machine several tube diameters without changing the clamping system. The jaws move together while clamping and ensure a perfect concentricity of the tubes in the machine. This machine minimize the risk of contamination since it produces collectible ribbon-like chips and no particles. Moreover the outside clamping system prevents all contamination of the inside of the tube. Such contamination would be considered hazardous or critical for high purity applications.

Beveling	Squaring	Counter-boring	Flush pipes	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗



Dimensions

Technical Features:

Specific shapes & angles	I, V, X and J-bevel, Other on Requests
Clamping	Manual with a key
Feed stroke	0.905" (23mm)
Gear drive	34 rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

OD Mounted

Order No.	Description
BMFM219-1000	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“ - 8.622“ (25.4mm - 219.1mm) with pneumatic drive
BMFM219-1002	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“ - 8.622“ (25.4mm - 219.1mm) with pneumatic drive and automatic clamping.
BMFM219-1004	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“ - 8.622“ (25.4mm - 219.1mm) with integrated pneumatic automatic clamping and feed device
BMFM219-1020	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“ - 8.622“ (25.4mm - 219.1mm) with electric drive 220V.
BMFM219-1040	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“ - 8.622“ (25.4mm - 219.1mm) with electric drive 110V.
BMFM219-K01	Transport crate for BMFM219

BMFM219 On-Site:



BMFM Tube Squaring Machine Tool bits

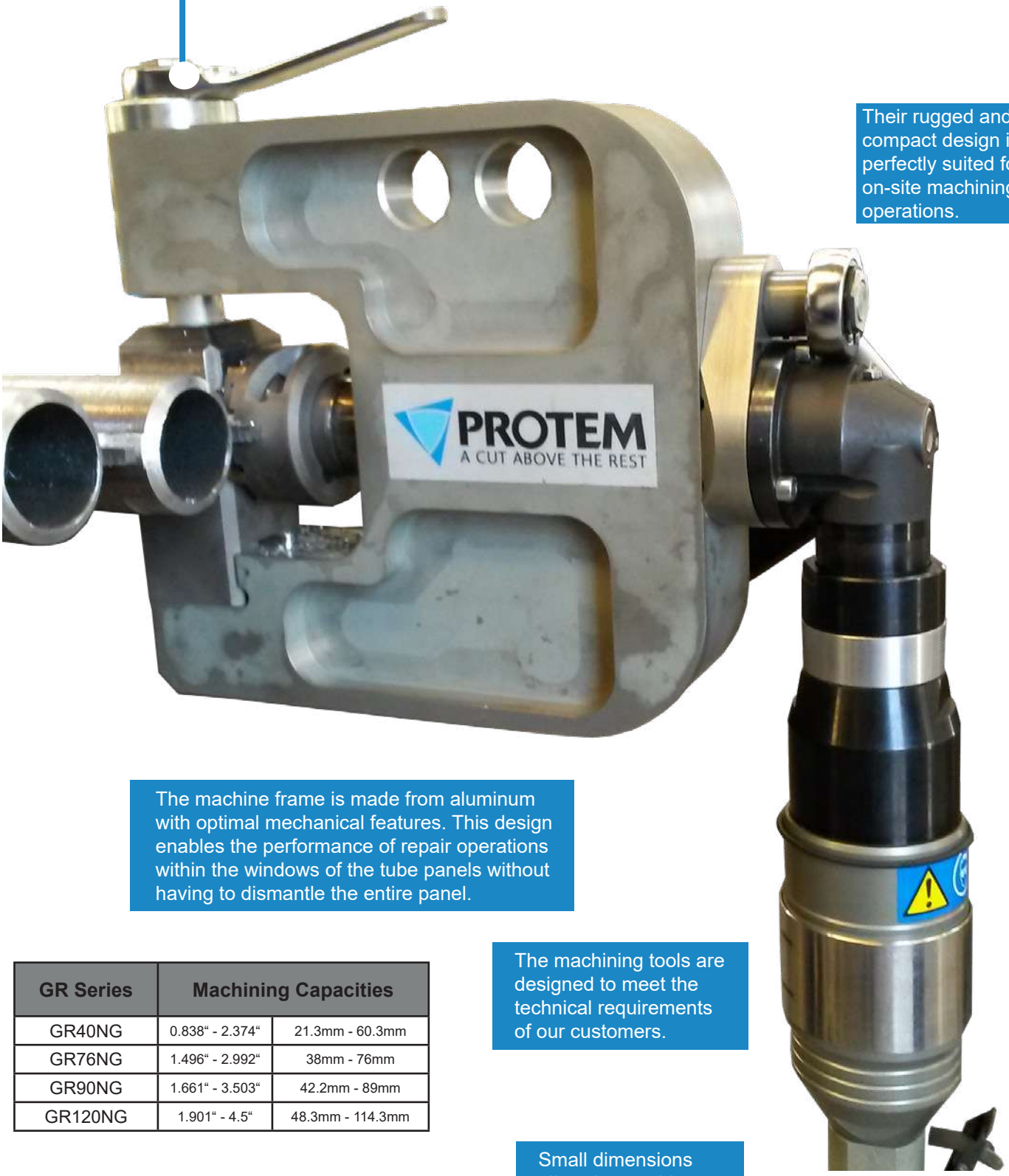
Order No.	Description	Picture
O-US-A1-6-H-18	Tool bit 90°	
O-US-A2-6-H-17	Tool bit for 30° bevel	
O-US-A3-6-H-19	Tool bit for 37°30 bevel	
O-US-A4-6-H-16	Tool bit for counterboring 15°	
O-US-A5-6-H-85	Tool bit for 45° bevel	
O-US-B6-6-H-55	Tool bit 90°, with disalignment	
O-US-B7-6-H-57	Tool bit 30°, with disalignment	
O-US-B8-6-H-58	Tool bit 37°30, with disalignment	
O-US-B9-6-H-60	Tool bit for counterboring 15°, with disalignment	
O-US-B11-6-H-24	Tool bit for counterboring and squaring	
O-US-C5-6-H-62	Tool bit for 7° R6 j-bevels	
O-US-C6-6-H-64	Tool bit for 12.5° R6 j-bevels	
O-US-C7-6-H-66	Tool bit for 7° R6 j-bevels, with disalignment	
O-US-C8-6-H-68	Tool bit for 12.5° R6 j-bevels, with disalignment	
O-US-C9-6-H-20	Tool bit for 10° R1.5 j-bevels	
O-US-C10-6-H-71	Tool bit for 20° R4 j-bevels	
O-US-SO-303-1-6	Tool bit for detubing - weld removal	
O-US-SO-303-2-6	Tool bit for detubing - weld removal	
O-US-SO-303-3-6	Tool bit for detubing - weld removal	

GR Series Portable Beveling and Waterwall Machine for Boiler Tubes

The clamping system consists of a fixed clamping jaw and a mobile clamping jaw. Both are activated manually with a ratchet.

The GR machines perform simultaneously, the welding preparation of the tubes and excavation of the membrane walls of the tube panels.

Their rugged and compact design is perfectly suited for on-site machining operations.



The machine frame is made from aluminum with optimal mechanical features. This design enables the performance of repair operations within the windows of the tube panels without having to dismantle the entire panel.

GR Series	Machining Capacities	
GR40NG	0.838“ - 2.374“	21.3mm - 60.3mm
GR76NG	1.496“ - 2.992“	38mm - 76mm
GR90NG	1.661“ - 3.503“	42.2mm - 89mm
GR120NG	1.901“ - 4.5“	48.3mm - 114.3mm

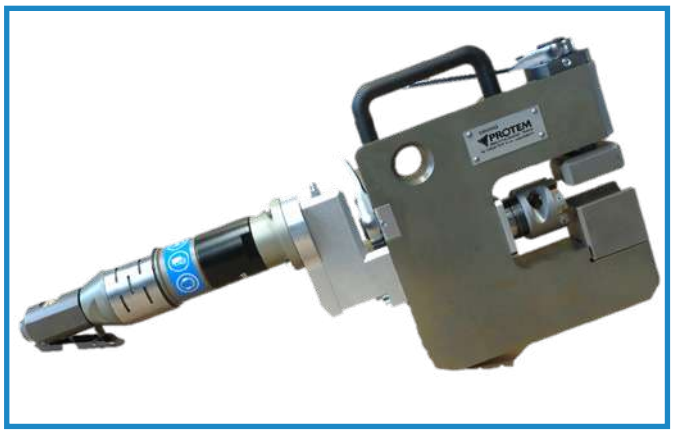
The machining tools are designed to meet the technical requirements of our customers.

Small dimensions allow the machine to be used in confined spaces.

OD Mounted

GR40NG Portable Beveling and Waterwall Machine for Boiler Tubes

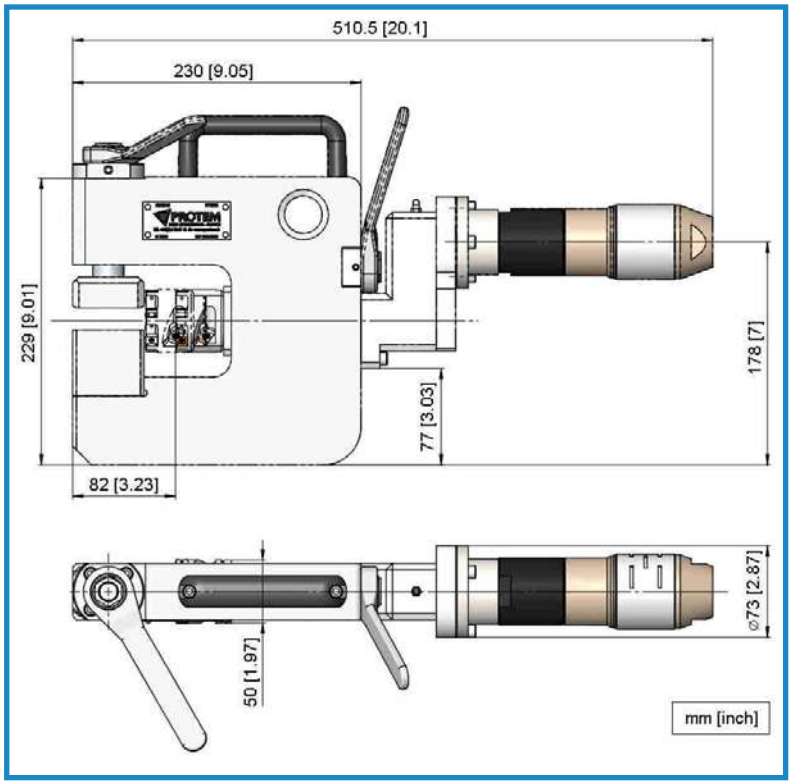
Standard Capacity: 0.838“ - 2.374“ (21.3mm - 60.3mm)



The Protem GR Series are OD clamping machines specially designed for the simultaneous machining and beveling of membrane wall panels.
The body is designed to fit in the gap of a membrane wall panel avoiding the disassembly of the whole panel. The machine is mainly made of aluminum for lightness and strength. That’s why the GR machines are particularly adapted for onsite operations. The clamping system and the feed rate are operated by a ratchet. The Protem GR machines are equipped with a special milling cutter with carbide inserts for high quality machining of any type of material.

Beveling	Surfacing	Flush pipes	Weld joint removal	Coating Removal	Squaring	Cutting
✓	✓	✓	✓	✓	✓	✗

OD Mounted



Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Adapted for works in tight spaces

GR40NG Portable Beveling and Waterwall Machine for Boiler Tubes

Technical Features:

Specific shapes & angles	I, V, other on request
Clamping	Manual
Feed stroke	0.945" (24mm)
Cutting head gear drive	170 rpm. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	1.47 kW, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110V and 220V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
GR40NG-1000	Portable Beveling and Waterwall Machine for boiler tubes PROTEM GR40 for Ø 0.838" - 2.374" (21.3mm - 60.3mm) with pneumatic drive
GR40NG-1020	Portable Beveling and Waterwall Machine for boiler tubes PROTEM GR40 for Ø 0.838" - 2.374" (21.3mm - 60.3mm) with electric drive 220V



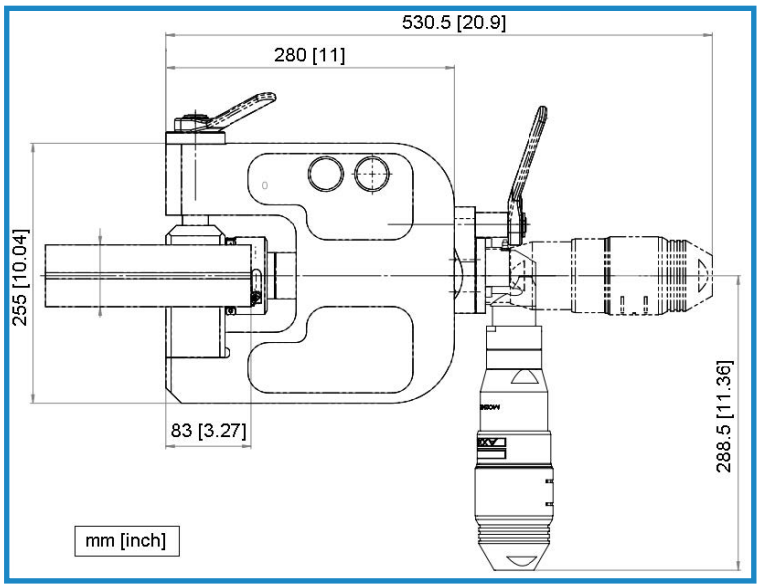
GR76NG Portable Beveling and Waterwall Machine for Boiler Tubes

Standard Capacity: 1.496“ - 2.992“ (38mm - 76mm)



Beveling	Surfacing	Flush pipes	Weld joint removal	Coating Removal	Squaring	Cutting
✓	✓	✓	✓	✓	✓	✗

OD Mounted

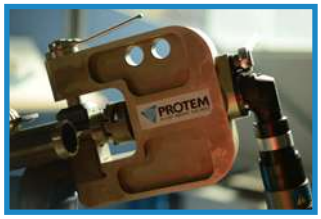


Technical Features:

Specific shapes & angles	I, V, other on request
Clamping	Manual
Feed stroke	1.06" (27mm)
Cutting head gear drive	148 rpm. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	1.47 kW, 6 bar (87 psi), 1800 l/min (63 cfm)
Electric drive	110V and 220V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

GR76NG On-Site or in Workshop:





Order No.	Description
GR76NG-1000	Portable Beveling and Waterwall Machine for boiler tubes PROTEM GR76 for Ø 1.496" - 2.992" (38mm - 76mm) with pneumatic drive
GR76NG-1020	Portable Beveling and Waterwall Machine for boiler tubes PROTEM GR76 for Ø 1.496" - 2.992" (38mm - 76mm) with electric drive 220V

GR90NG Portable Beveling and Waterwall Machine for Boiler Tubes

Standard Capacity: 1.661“ - 3.503“ (42.2mm - 89mm)

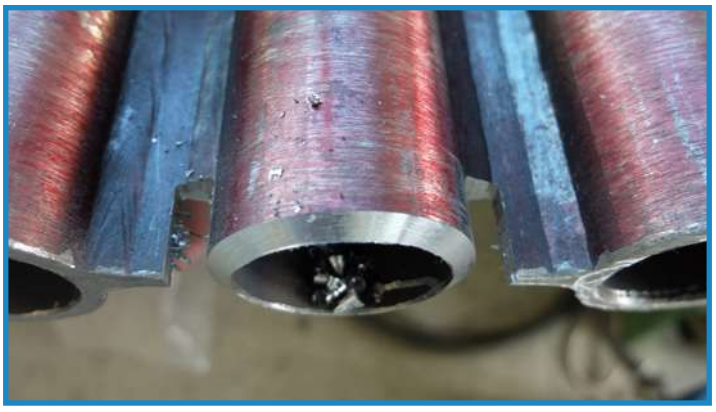


Beveling	Surfacing	Flush pipes	Weld joint removal	Coating Removal	Squaring	Cutting
✓	✓	✓	✓	✓	✓	✗

Technical Features:

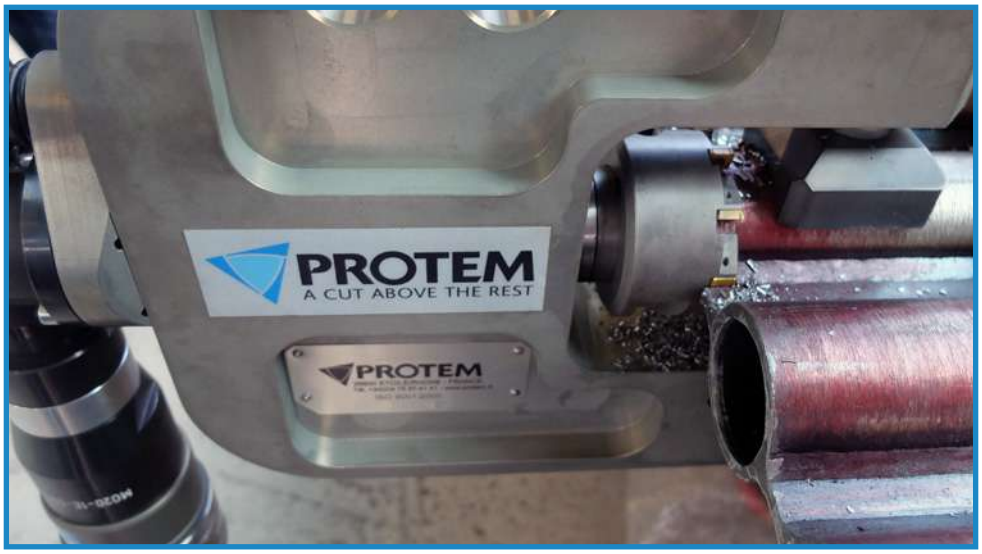
Specific shapes & angles	I, V, other on request
Clamping	Manual
Feed stroke	1.06" (27mm)
Cutting head gear drive	90 rpm. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	1.47 kW, 6 bar (87 psi), 1800 l/min (63 cfm)
Electric drive	110V and 220V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
GR90NG-1000	Portable Beveling and Waterwall Machine for boiler tubes PROTEM GR90 for Ø 1.661" - 3.508" (42.2mm - 89mm) with pneumatic drive



GR120NG Portable Beveling and Waterwall Machine for Boiler Tubes

Standard Capacity: 1.901“ - 4.5“ (48.3mm - 114.3mm)



Beveling	Surfacing	Flush pipes	Weld joint removal	Coating Removal	Squaring	Cutting
✓	✓	✓	✓	✓	✓	✗

OD Mounted

Technical Features:

Specific shapes & angles	I, V, other on request
Clamping	Manual
Feed stroke	1.06" (27mm)
Cutting head gear drive	50 rpm. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	1.47 kW, 6 bar (87 psi), 1800 l/min (63 cfm)
Electric drive	110V and 220V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
GR120NG-1000	Portable Beveling and Waterwall Machine for boiler tubes PROTEM GR120 for Ø 1.901" - 4.5" (48.3mm - 114.3mm) with pneumatic drive



GR Series Portable Waterwall Machine for Boiler Tubes — Options

Order No.	Description
GR40NG-1500	Milling tool for GR40NG - one for each diameter
GR40PP-45-11	Tool holder 45°
GR40PP-90-09	Tool holder 90°
GR40PPD-1316	Tool holder for inside machining operations
GR40NG-68	Tool holder plate
GR40NG-K01	Transport crate

Order No.	Description
GR76NG-1500	Milling tool for GR76NG - one for each diameter
GR76PP-45-11	Tool holder 45°
GR76PP-90-09	Tool holder 90°
GR76PPD-1316	Tool holder for inside machining operations
GR76NG-68	Tool holder plate
GR76NG-K01	Transport crate

Order No.	Description
GR90NG-1500	Milling tool for GR90NG - one for each diameter
GR90PP-45-11	Tool holder 45°
GR90PP-90-09	Tool holder 90°
GR90PPD-1316	Tool holder for inside machining operations
GR90NG-68	Tool holder plate
GR90NG-K01	Transport crate

Order No.	Description
GR120NG-1500	Milling tool for GR120NG - one for each diameter
GR120PP-45-11	Tool holder 45°
GR120PP-90-09	Tool holder 90°
GR120PPD-1316	Tool holder for inside machining operations
GR120NG-68	Tool holder plate
GR120NG-K01	Transport crate

GR Series Portable Waterwall Machine for Boiler Tubes — Tool bits

Order No.	Description
O-GR-P1-4-H-F	Beveling tool insert for GR machines
O-GR-P2-3.-H-T	Pointed tool insert for GR machines
O-GR-P3-3.-H-T	Flat tool insert for GR machines

TTS-NG Series Orbital Tube Severing & Beveling Machines

OD Mounted

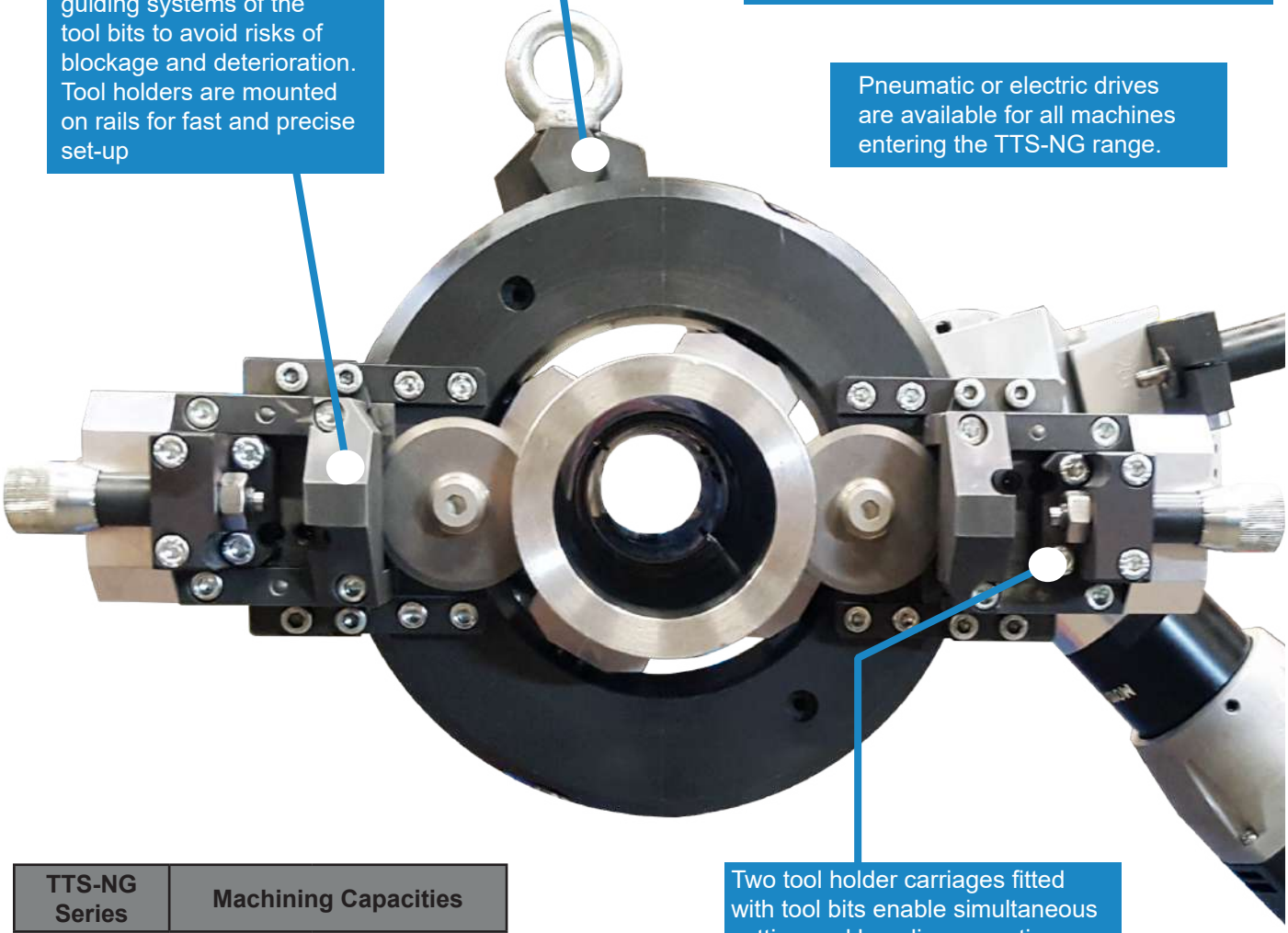
Splitframe design for a use on existing tubular beams

V guiding rollers; the V design of the guiding elements compensates for the axial and radial forces in order to ensure a very high machining accuracy and less wear.

Machine frame in aluminum: Light weight and rugged design for all your machining operations, including those performed on large wall thicknesses.

Hermetic tool holders protect against chips and preserve the gear and guiding systems of the tool bits to avoid risks of blockage and deterioration. Tool holders are mounted on rails for fast and precise set-up

Pneumatic or electric drives are available for all machines entering the TTS-NG range.



Two tool holder carriages fitted with tool bits enable simultaneous cutting and beveling operations. Two feed speeds can be selected by the operator. The machine can be operated in all positions.

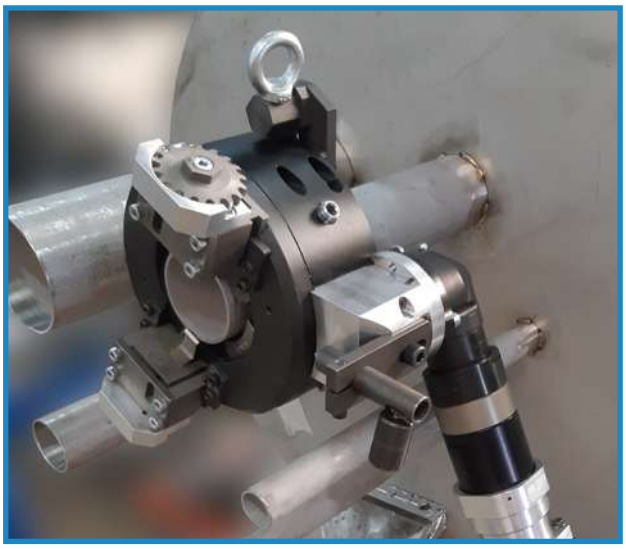
TTS-NG Series	Machining Capacities	
TTS-NG 27	0.405" - 1.051"	10.3 mm - 26.7 mm
TTS-NG 33	0.405“ - 1.315“	10.3 mm - 33.4 mm
TTS-NG 42	0.405“ - 1.661“	10.3 mm - 42.2 mm
TTS-NG 48	0.405“ - 1.902“	10.3 mm - 48.3 mm
TTS-NG 60	0.839“ - 2.374“	21.3 mm - 60.3 mm
TTS-NG 73	0.839“ - 2.874“	21.3 mm - 73 mm
TTS-NG 88	1.315“ - 3.5“	33.4 mm - 88.9 mm
TTS-NG 101	1.902“ - 4“	48.3 mm - 101.6 mm
TTS-NG 114	2.374“ - 4.5“	60.3 mm - 114.3 mm
TTS-NG 127	2.374“ - 5“	60.3 mm - 127 mm
TTS-NG 141	2.874“ - 5.563“	73 mm - 141.3 mm
TTS-NG 168	3.5“ - 6.626“	88.9 mm - 168.3 mm
TTS-NG 193	4.5“ - 7.598“	114.3 mm - 193 mm
TTS-NG 219	5.563“ - 8.626“	141.3 mm - 219.1 mm

The machines in the TTS-NG series are available with numerous options and in different configurations with standard or specific optional tooling.

TTS-NG Machines are delivered with 4 enveloping jaws carbone steel, Ø 13.7 mm (0.54"), 17.1 mm (0.67"), 21.3 mm (0.84") and 26.7 mm (1.05")

TTS-NG Series Orbital Tube Severing & Beveling Machines

Standard Capacity: 0.405" - 8.626“ (10.3mm - 219.1mm)



The TTSNG Series perform accurate cutting and/or beveling of tubes of all schedules from 0.406" (10.3mm) up to 8.626" (219.1mm) in one simultaneous operation. Their reduced weight and overall dimensions enable these machines to work in areas where there is a shortage of space.
The special design of the machines features:
• Split frame configuration, opening in two half-shells
• Manual clamping using four independent adjustable jaws.

Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗

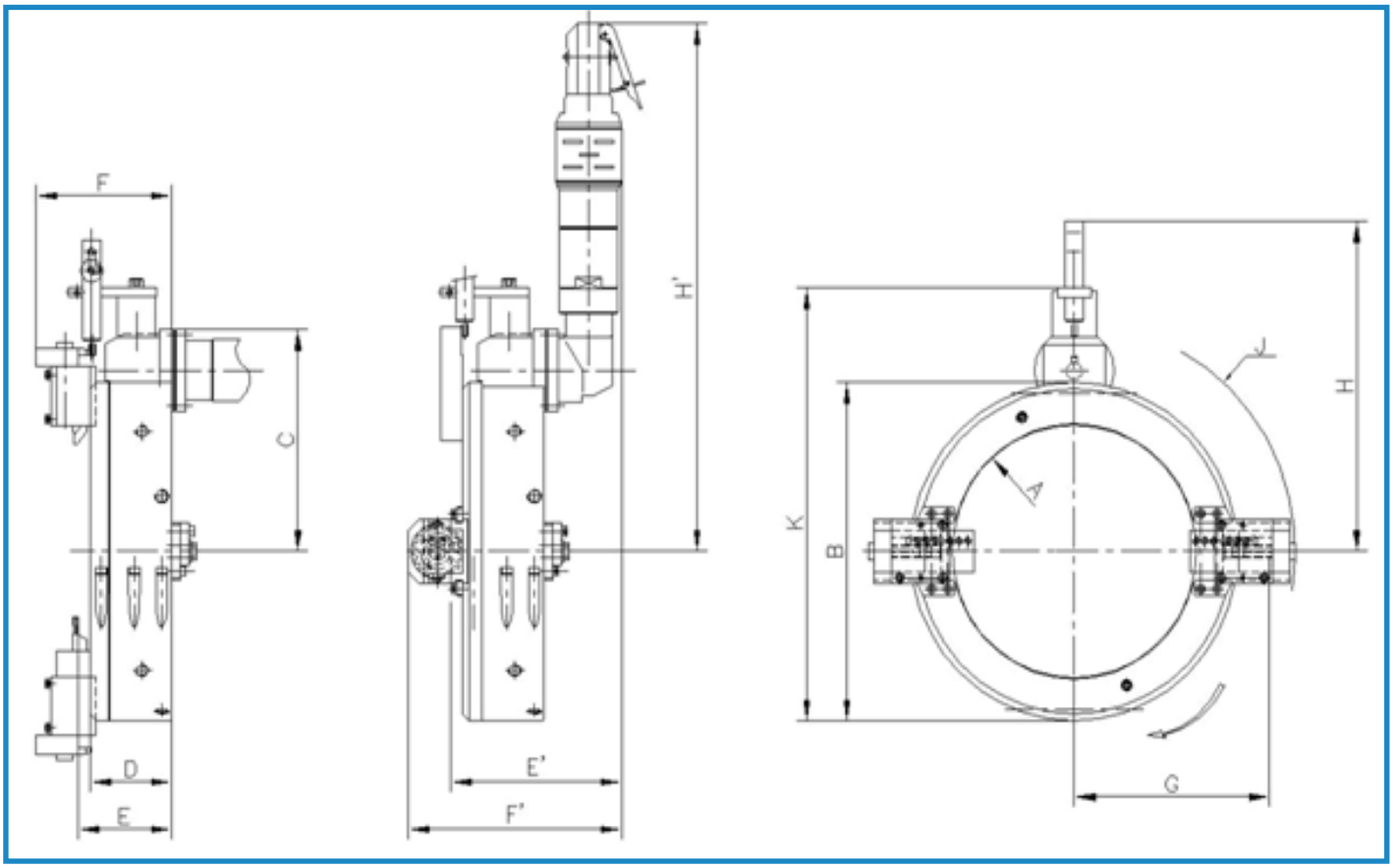
Advantages:

- Mobile
- Powerful
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool-bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Splitframe Configuration
- Adapted for works in tight spaces



TTS-NG Series Orbital Tube Cutting Machines — Dimensions

OD Mounted



Model TTS-NG	ØA	B	C	D	E	E'	F	F'	G	H	H'	ØJ	K
TTS-NG27	1.18" 30 mm	4.17" 106 mm	3.93" 100 mm	3.38" 86 mm	3.83" 97.5 mm	6.14" 156 mm	5.33" 135.5 mm	7.63" 194 mm	3.21" 81.5 mm	6.91" 175.5 mm	14.5" 368.5 mm	6.89" 175 mm	6.06" 154 mm
TTS-NG33	1.42" 36 mm	4.4" 112 mm	4.05" 103 mm	3.38" 86 mm	3.83" 97.5 mm	6.14" 156 mm	5.33" 135.5 mm	7.63" 194 mm	3.33" 84.5 mm	7.03" 178.5 mm	14.62" 371.5 mm	7.15" 181 mm	6.3" 160 mm
TTS-NG42	1.77" 45 mm	4.76" 121 mm	4.23" 107.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	3.5" 89 mm	7.22" 183.5 mm	14.8" 376 mm	7.36" 187 mm	6.65" 169 mm
TTS-NG48	2" 51 mm	5" 127 mm	4.35" 110.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	3.62" 92 mm	7.34" 186.5 mm	14.92" 379 mm	7.64" 194 mm	6.9" 175 mm
TTS-NG60	2.48" 63 mm	5.47" 139 mm	4.58" 116.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	3.85" 98 mm	7.58" 192.5 mm	15.15" 385 mm	8.11" 206 mm	7.36" 187 mm
TTS-NG73	2.95" 75 mm	5.94" 151 mm	4.82" 122.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	4.09" 104 mm	7.81" 198.5 mm	15.39" 391 mm	8.8" 223.5 mm	7.87" 199 mm
TTS-NG88	3.54" 90 mm	6.53" 166 mm	5.11" 130 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	4.39" 111.5 mm	8.09" 205.5 mm	16.22" 412 mm	9.15" 232.5 mm	8.43" 214 mm
TTS-NG101	4.13" 105 mm	7.12" 181 mm	5.41" 137.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	4.69" 119 mm	8.39" 213 mm	15.98" 406 mm	9.86" 250.5 mm	9.01" 229 mm
TTS-NG114	4.6" 117 mm	7.6" 193 mm	5.65" 143.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	4.92" 125 mm	8.62" 219 mm	16.22" 412 mm	10.21" 259.5 mm	9.49" 241 mm
TTS-NG127	5.07" 129 mm	8.07" 205 mm	5.89" 149.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	5.16 131 mm	8.86" 225 mm	16.45" 418 mm	10.69" 271.5 mm	9.96" 253 mm
TTS-NG141	5.66" 144 mm	8.66" 220 mm	6.18" 157 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	5.45" 138.5 mm	9.15" 232.5 mm	16.75" 425.5 mm	11.28" 286.5 mm	10.55" 268 mm
TTS-NG168	6.73" 171 mm	9.72" 247 mm	6.71" 170.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	5.98" 152 mm	10.45" 265.5 mm	17.28" 439 mm	13.84" 351.5 mm	12.99" 330 mm
TTS-NG193	7.67" 195 mm	10.6" 271 mm	7.18" 182.5 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	6.46" 164 mm	10.92" 277.5 mm	17.75" 451 mm	14.78" 375.5 mm	13.94" 354 mm
TTS-NG219	8.74" 222 mm	11.7" 298 mm	7.72" 196 mm	2.91" 74 mm	3.36" 85.5 mm	6.14" 156 mm	4.86" 123.5 mm	7.63" 194 mm	6.99" 177.5 mm	11.46" 291 mm	18.28" 464.5 mm	15.85" 402.5 mm	15" 381 mm

Model TTS-NG	TTS-NG27	TTS-NG33	TTS-NG42	TTS-NG48	TTS-NG60	TTS-NG73	TTS-NG88	TTS-NG101	TTS-NG114	TTS-NG127	TTS-NG141	TTS-NG168	TTS-NG193	TTS-NG219
Weight*	4 kg 8.8 lbs	4.5 kg 9.9 lbs	5 kg 11 lbs	5.5 kg 12 lbs	5.8 kg 12.8 lbs	6 kg 13.2 lbs	6 kg 13.2 lbs	7 kg 15.4 lbs	7.5 kg 16.5 lbs	8 kg 17.6 lbs	9 kg 19.8 lbs	11 kg 24.3 lbs	12 kg 26.5 lbs	13 kg 28.6 lbs

*Weights for machines equipped with motors and tool-carriages.
Please contact us for further details.

TTS-NG Series Orbital Tube Severing & Beveling Machines

Technical Features:

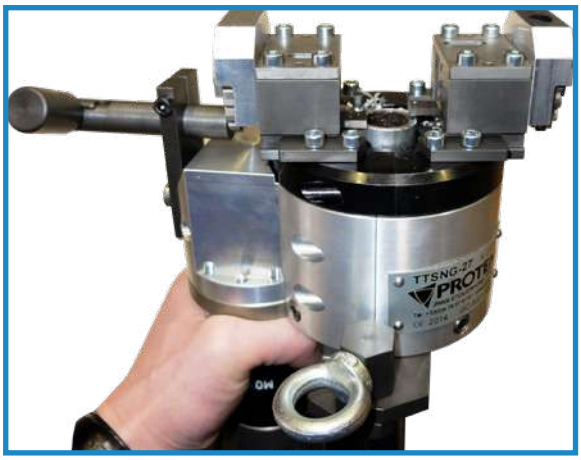
Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping	Manual with key
Feed	Automatic with clutch
Cutting head gear drive	No-load speed 316 rpm Nominal speed 155 rpm Approximate rotation speed according to air pressure and air flow
Pneumatic drive	1.47 kW, 6 bar (87 psi), 1400 l/min (50 cfm)
Electric drive	110 V, 220 V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	



TTS-NG27 Orbital Tube Severing & Beveling Machine

OD Mounted

Standard Capacity: 0.405" - 1.051" (10.3mm - 26.7mm)



Order No.	Description
TTSNG27-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG27 Splitframe Design - for Ø 0.405" - 1.051" (10.3mm - 26.7mm) with pneumatic drive
TTSNG27-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG27 Splitframe Design - for Ø 0.405" - 1.051" (10.3mm - 26.7mm) with right angle electric drive 220V
TTSNG27-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG27 Splitframe Design - for Ø 0.405" - 1.051" (10.3mm - 26.7mm) with right angle electric drive 110V

TTS-NG33 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.405“ - 1.315“ (10.3mm - 33.4mm)



Order No.	Description
TTSNG33-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG33 Splitframe Design - for Ø 0.405" - 1.315" (10.3mm - 33.4mm) with pneumatic drive
TTSNG33-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG33 Splitframe Design - for Ø 0.405" - 1.315" (10.3mm - 33.4mm) with right angle electric drive 220V
TTSNG33-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG33 Splitframe Design - for Ø 0.405" - 1.315" (10.3mm - 33.4mm) with right angle electric drive 110V

TTS-NG42 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.405“ - 1.661“ (10.3mm - 42.2mm)



Order No.	Description
TTSNG42-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG42 Splitframe Design - for Ø 0.405" - 1.661" (10.3mm - 42.2mm) with pneumatic drive
TTSNG42-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG42 Splitframe Design - for Ø 0.405" - 1.661" (10.3mm - 42.2mm) with right angle electric drive 220V
TTSNG42-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG42 Splitframe Design - for Ø 0.405" - 1.661" (10.3mm - 42.2mm) with right angle electric drive 110V

TTS-NG48 Orbital Tube Severing & Beveling Machine

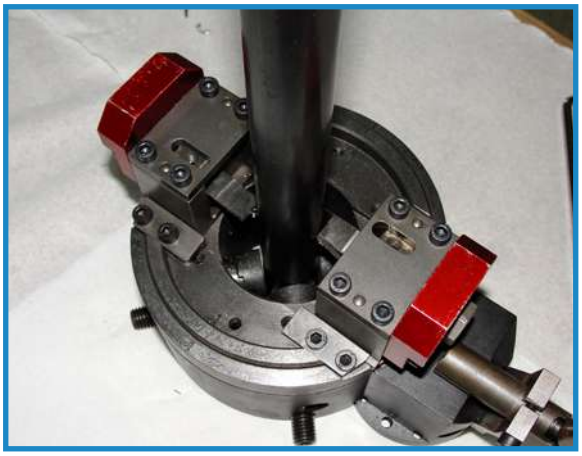
Standard Capacity: 0.405“ - 1.902“ (10.3mm - 48.3mm)



Order No.	Description
TTSNG48-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG48 Splitframe Design - for Ø 0.405" - 1.902" (10.3mm - 48.3mm) with pneumatic drive
TTSNG48-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG48 Splitframe Design - for Ø 0.405" - 1.902" (10.3mm - 48.3mm) with right angle electric drive 220V
TTSNG48-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG48 Splitframe Design - for Ø 0.405" - 1.902" (10.3mm - 48.3mm) with right angle electric drive 110V

TTS-NG60 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.839“ - 2.374“ (21.3mm - 60.3mm)



Order No.	Description
TTSNG60-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG60 Splitframe Design - for Ø 0.839" - 2.374" (21.3 mm - 60.3mm) with pneumatic drive
TTSNG60-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG60 Splitframe Design - for Ø 0.839" - 2.374" (21.3 mm - 60.3mm) with right angle electric drive 220V
TTSNG60-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG60 Splitframe Design - for Ø 0.839" - 2.374" (21.3 mm - 60.3mm) with right angle electric drive 110V

TTS-NG73 Orbital Tube Severing & Beveling Machine

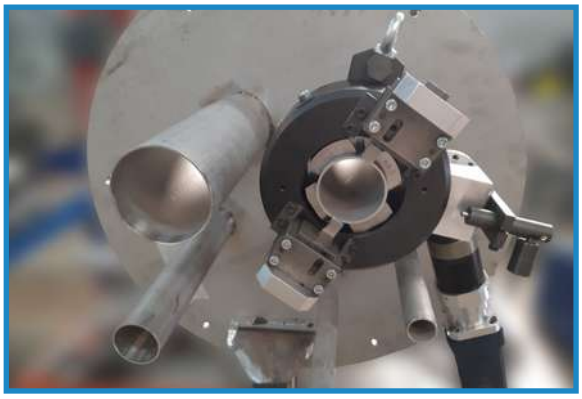
Standard Capacity: 0.839“ - 2.874“ (21.3mm - 73mm)



Order No.	Description
TTSNG73-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG73 Splitframe Design - for Ø 0.839" - 2.874" (21.3 mm - 73mm) with pneumatic drive
TTSNG73-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG73 Splitframe Design - for Ø 0.839" - 2.874" (21.3 mm - 73mm) with right angle electric drive 220V
TTSNG73-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG73 Splitframe Design - for Ø 0.839" - 2.874" (21.3 mm - 73mm) with right angle electric drive 110V

TTS-NG88 Orbital Tube Severing & Beveling Machine

Standard Capacity: 1.315“ - 3.5“ (33.4mm - 88.9mm)



Order No.	Description
TTSNG88-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.315" - 3.5" (33.4mm - 88.9mm) with pneumatic drive
TTSNG88-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.315" - 3.5" (33.4mm - 88.9mm) with right angle electric drive 220V
TTSNG88-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.315" - 3.5" (33.4 mm - 88.9mm) with right angle electric drive 110V

TTS-NG101 Orbital Tube Severing & Beveling Machine

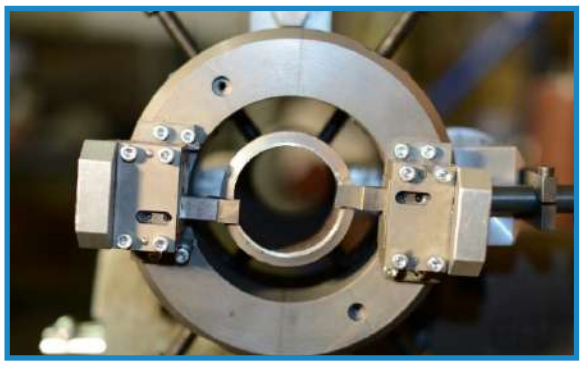
Standard Capacity: 1.902“ - 4“ (48.3mm - 101.6mm)



Order No.	Description
TTSNG101-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG101 Splitframe Design - for Ø 1.902" - 4" (48.3mm - 101.6mm) with pneumatic drive
TTSNG101-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG101 Splitframe Design - for Ø 1.902" - 4" (48.3mm - 101.6mm) with right angle electric drive 220V
TTSNG101-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG101 Splitframe Design - for Ø 1.902" - 4" (48.3mm - 101.6mm) with right angle electric drive 110V

TTS-NG114 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.374“ - 4.5“ (60.3mm - 114.3mm)



Order No.	Description
TTSNG114-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG114 Splitframe Design - for Ø 2.374" - 4.5" (60.3mm - 114.3mm) with pneumatic drive
TTSNG114-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG114 Splitframe Design - for Ø 2.374" - 4.5" (60.3mm - 114.3mm) with right angle electric drive 220V
TTSNG114-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG114 Splitframe Design - for Ø 2.374" - 4.5" (60.3mm - 114.3mm) with right angle electric drive 110V

TTS-NG127 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.374“ - 5“ (60.3mm - 127mm)



Order No.	Description
TTSNG127-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG127 Splitframe Design - for Ø 2.374" - 5" (60.3 mm - 127mm) with pneumatic drive
TTSNG127-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG127 Splitframe Design - for Ø 2.374" - 5" (60.3 mm - 127mm) with right angle electric drive 220V
TTSNG127-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG127 Splitframe Design - for Ø 2.374" - 5" (60.3 mm - 127mm) with right angle electric drive 110V

OD Mounted

TTS-NG141 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.874“ - 5.563“ (73mm - 141.3mm)



Order No.	Description
TTSNG141-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSNG141 Splitframe Design - for Ø 2.874" - 5.563" (73mm - 141.3mm) with pneumatic drive
TTSNG141-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSNG141 Splitframe Design - for Ø 2.874" - 5.563" (73mm - 141.3mm) with right angle electric drive 220V
TTSNG141-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSNG141 Splitframe Design - for Ø 2.874" - 5.563" (73mm - 141.3mm) with right angle electric drive 110V

TTS-NG168 Orbital Tube Severing & Beveling Machine

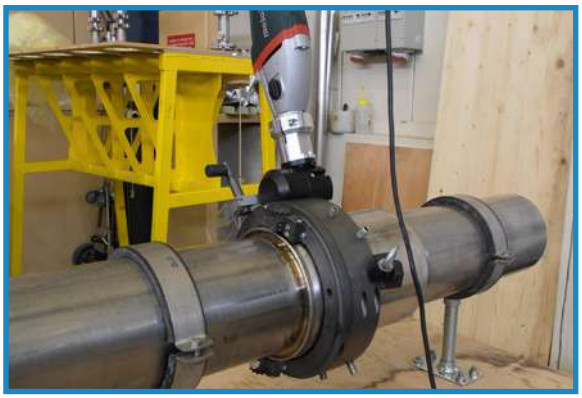
Standard Capacity: 3.5“ - 6.626“ (88.9mm - 168.3mm)



Order No.	Description
TTSNG168-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSNG168 Splitframe Design - for Ø 3.5" - 6.626" (88.9mm - 168.3mm) with pneumatic drive
TTSNG168-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSNG168 Splitframe Design - for Ø 3.5" - 6.626" (88.9mm - 168.3mm) with right angle electric drive 220V
TTSNG168-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSNG168 Splitframe Design - for Ø 3.5" - 6.626" (88.9mm - 168.3mm) with right angle electric drive 110V

TTS-NG193 Orbital Tube Severing & Beveling Machine

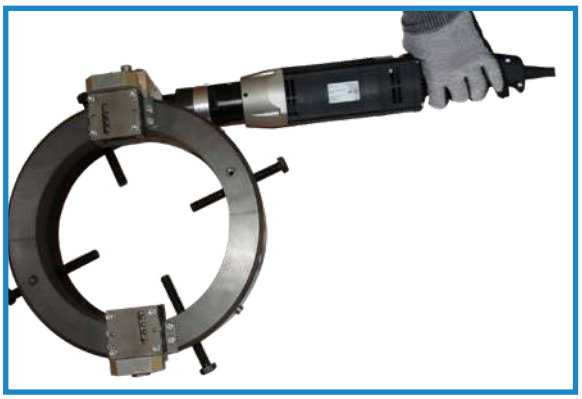
Standard Capacity: 4.5“ - 7.598“ (114.3mm - 193mm)



Order No.	Description
TTSNG193-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG193 Splitframe Design - for Ø 4.5“ - 7.598“ (114.3mm - 193mm) with pneumatic drive
TTSNG193-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG193 Splitframe Design - for Ø 4.5“ - 7.598“ (114.3mm - 193mm) with right angle electric drive 220V
TTSNG193-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG193 Splitframe Design - for Ø 4.5“ - 7.598“ (114.3mm - 193mm) with right angle electric drive 110V

TTS-NG219 Orbital Tube Severing & Beveling Machine

Standard Capacity: 5.563“ - 8.626“ (141.3mm - 219.1mm)

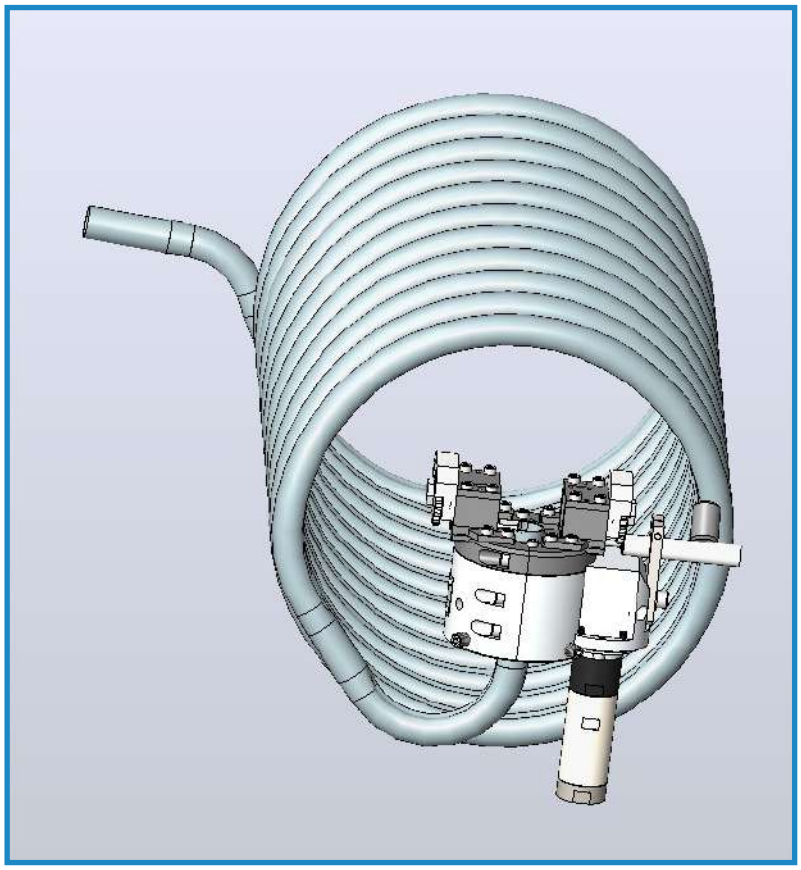


Order No.	Description
TTSNG219-1000	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG219 Splitframe Design - for Ø 5.563“ - 8.626“ (141.3mm - 219.1mm) with pneumatic drive
TTSNG219-1020	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG219 Splitframe Design - for Ø 5.563“ - 8.626“ (141.3mm - 219.1mm) with right angle electric drive 220V
TTSNG219-1040	Orbital Tube Severing & Beveling Machine PROTEM TTS-NG219 Splitframe Design - for Ø 5.563“ - 8.626“ (141.3mm - 219.1mm) with right angle electric drive 110V

TTS-NG Orbital Tube Severing & Beveling Machines
Options & Tool-Bits

Order No.	Description
TTSNG-6000-EJA	Envelopping jaws aluminum (please specify for which machine)
TTSNG-6000-EJSS	Envelopping jaws stainless steel (please specify for which machine)
TTSNG-6000-EJCS	Envelopping jaws steel (please specify for which machine)
Coffret-CDE-5000	Pneumatic remote control unit
TTSNG-4400	Pneumatic clutch sub-assembly

TTS - Coiled Tubes



Order No.	Description
O-TTS-D2D-12-H-12	Standard pointed cutting tool-bit
O-TTS-D1D-12-H-11	Standard flat cutting tool-bit right
O-TTS-D4-12-H-18	Beveling tool-bit 30°
O-TTS-D4-12-H-13	Beveling tool-bit 37°30 (up to 0.5" (12.7mm) wallthickness
O-TTS-D1G-12-H-10	Standard flat cutting tool-bit left

TTS-RD Series Orbital Tube Severing & Beveling Machines

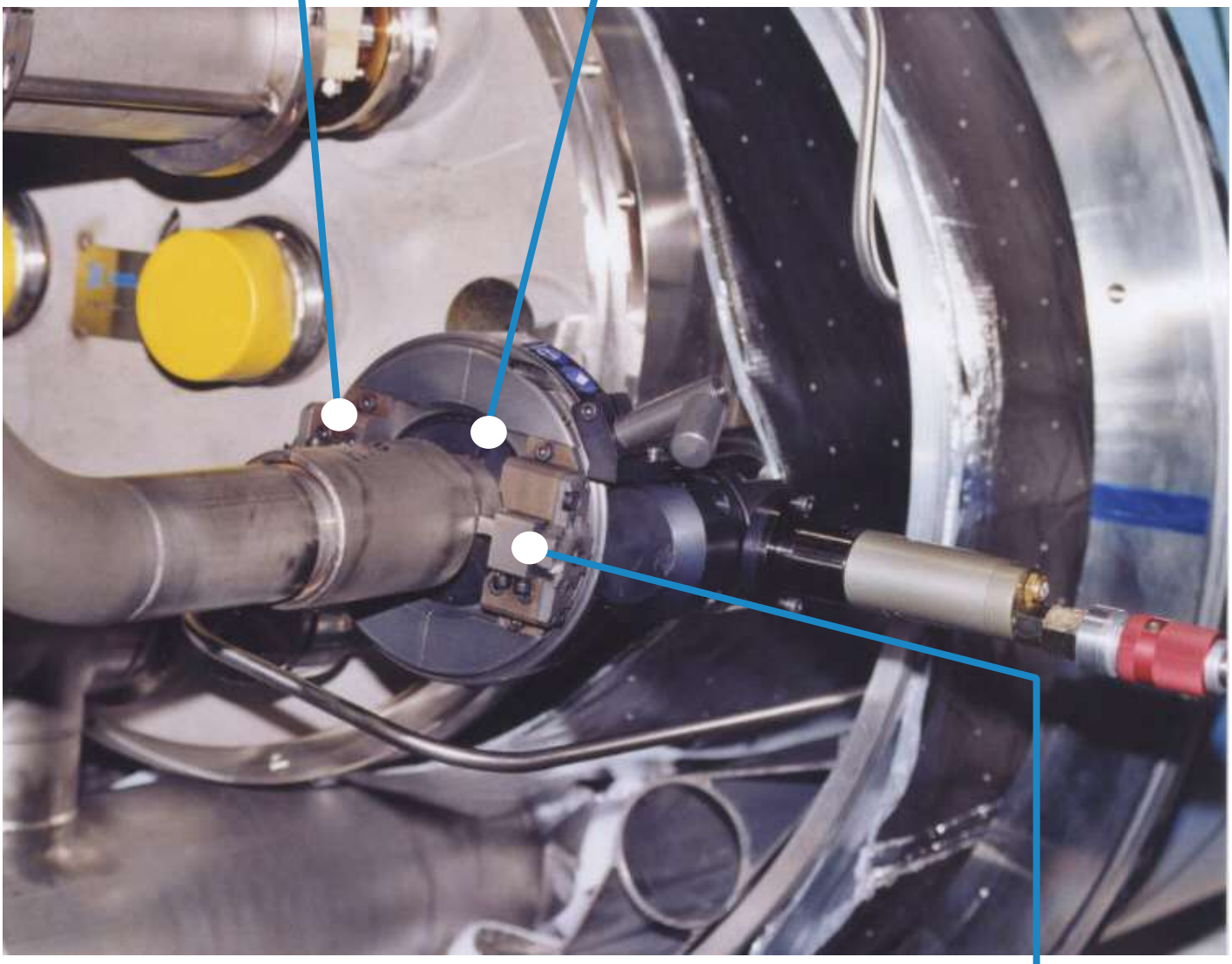
OD Mounted

Hermetic tool holders protect against chips and preserve the gear and guiding systems of the tool bits to avoid risks of blockage and deterioration. Tool holders are mounted on rails for fast and precise set-up

Splitframe design for a use on existing tubular beams

The machines in the TTS-RD series are available with numerous options and in different configurations with standard or specific optional tooling.

The collet clamping system of the TTS-RD series allows for quick set-up and an easy concentricity adjustment



Two tool holder carriages fitted with tool bits enable simultaneous cutting and beveling operations. Two feed speeds can be selected by the operator. The machine can be operated in all positions.

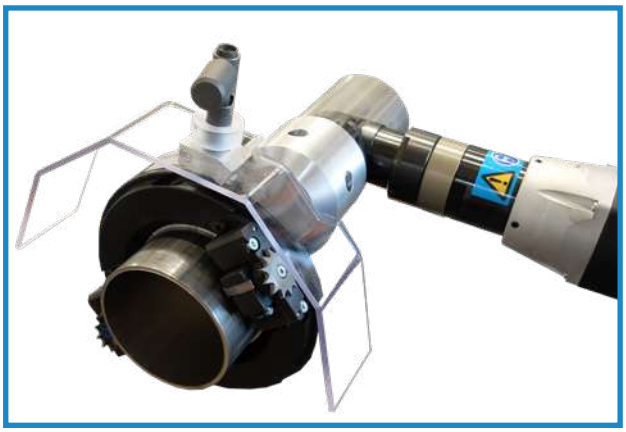
TTS-RD Series	Machining Capacities	
TTS-RD 60	0.839“ - 2.374“	21.3 mm - 60.3 mm
TTS-RD 73	0.839“ - 2.874“	21.3 mm - 73 mm
TTS-RD 88	1.315“ - 3.5“	33.4 mm - 88.9 mm
TTS-RD 101	1.902“ - 4“	48.3 mm - 101.6 mm
TTS-RD 114	2.374“ - 4.5“	60.3 mm - 114.3 mm
TTS-RD 127	2.374“ - 5“	60.3 mm - 127 mm
TTS-RD 141	2.874“ - 5.563“	73 mm - 141.3 mm

Pneumatic drives are available for all machines in the TTS-RD series. Other motorisations on request

Cold Cutting Process. No Heat Affected Zone

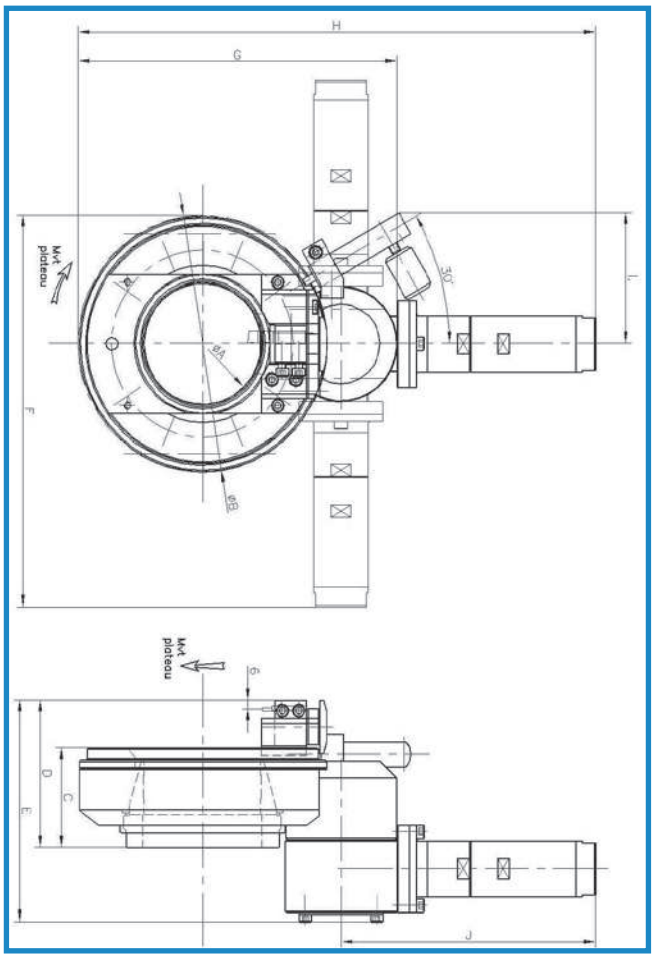
TTS-RD Series Orbital Tube Severing & Beveling Machines

Standard Capacity: 0.839" - 5.563“ (21.3mm - 141.3mm)



The TTS-RD cutting machines are designed to cut and bevel all types of tubes, individually or simultaneously.
The collet clamping system of the TTS-RD series allows for quick set-up and an easy concentricity adjustment. This clamping method is particularly suited to small wall thicknesses in order to avoid tube distortion. These machines have the lowest clearance of the series.
Splitframe design. All gears are protected for increased protection of the operators. They can be controlled remotely for operations being done in ionizing areas.

Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗



Dimensions on request

Advantages:

- Mobile
- Powerful
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Splitframe Configuration
- Adapted for works in tight spaces

Technical Features:

Clamping	Manual with a key
Feed	Automatic with clutch
Rotation	Up to 30 rpm off-load-speed
Drive Power	Pneumatic
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

OD Mounted

TTS-RD Series Orbital Tube Severing & Beveling Machines

Assembly Operation:

Operation 1:
Implementation of nut + collet



The two parts of the nut have to be positioned on the tube. Then, the collet is positioned on the outside diameter of the tube. Then the machine is positioned on the tube.





OD Mounted

Operation 2:
Implementation and assembly of the two half-shells on the tube



The TTSRD machines are portable and designed to perform orbital tube cutting works. These machines can be opened in two half-shells.

This allows for cuts to be made very accurate. The Spilt-frame configuration allows for fast set up on the outside diameter of the tube.

Operation 3:
Clamping of the machine nut on the tube



Clamping with a pin wrench and immediate centering on the tube. The tool holder modules have an automatic feed and a manually adjustable carriage.

Each round, due to the clutch pin, moves the tool carriage forward. (0.002" (0.04 mm) /rev)
Two drive designs are available; straight or angle drive version (only for the pneumatic drive)

A clutch system stops and restarts the machining process at any time. This system is very safe due to the incrementation system.

TTS-RD Series Orbital Tube Severing & Beveling Machines

Operation 4: Incrementation of the tool bit



Operation 5: Cutting



TTS-RD60 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.839“ - 2.374“ (21.3mm - 60.3mm)



Order No.	Description
TTSRD60-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W for Ø 0.839“ - 2.374“ (21.3 mm - 60.3 mm)

TTS-RD73 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.839“ - 2.874“ (21.3mm - 73mm)



Order No.	Description
TTSRD73-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W for Ø 0.839“ - 2.874“ (21.3 mm - 73 mm)

TTS-RD88 Orbital Tube Severing & Beveling Machine

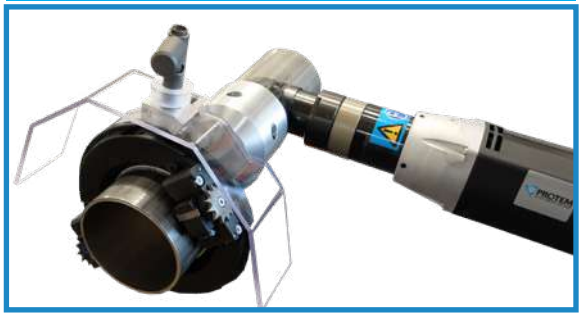
Standard Capacity: 1.315“ - 3.5“ (33.4mm - 88.9mm)



Order No.	Description
TTSRD88-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W for Ø 1.315“ - 3.5“ (33.4 mm - 88.9 mm)

TTS-RD101 Orbital Tube Severing & Beveling Machine

Standard Capacity: 1.902“ - 4“ (48.3mm - 101.6mm)



Order No.	Description
TTSRD101-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W for Ø 1.902“ - 4“ (48.3 mm - 101.6 mm)

OD Mounted

TTS-RD114 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.374“ - 4.5“ (60.3mm - 114.3mm)



Order No.	Description
TTSRD114-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W for Ø 2.374“ - 4.5“ (60.3 mm - 114.3 mm)

TTS-RD127 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.374“ - 5“ (60.3mm - 127mm)



Order No.	Description
TTSRD127-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W for Ø 2.374“ - 5“ (60.3 mm - 127 mm)

TTS-RD141 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.874“ - 5.563“ (73mm - 141.3mm)



Order No.	Description
TTSRD141-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W for Ø 2.874“ - 5.563“ (73 mm - 141.3 mm)

TTS-RD Series Orbital Tube Severing & Beveling Machines Tool bits

Order No.	Description
O-TTS-D2D-12-H-12	Standard pointed cutting tool bit
O-TTS-D1D-12-H-11	Standard flat cutting tool bit right
O-TTS-D4-12-H-18	Beveling tool bit 30°
O-TTS-D4-12-H-13	Beveling tool bit 37°30 (up to 0.5" (12.7 mm) wallthickness
O-TTS-D1G-12-H-10	Standard flat cutting tool bit left



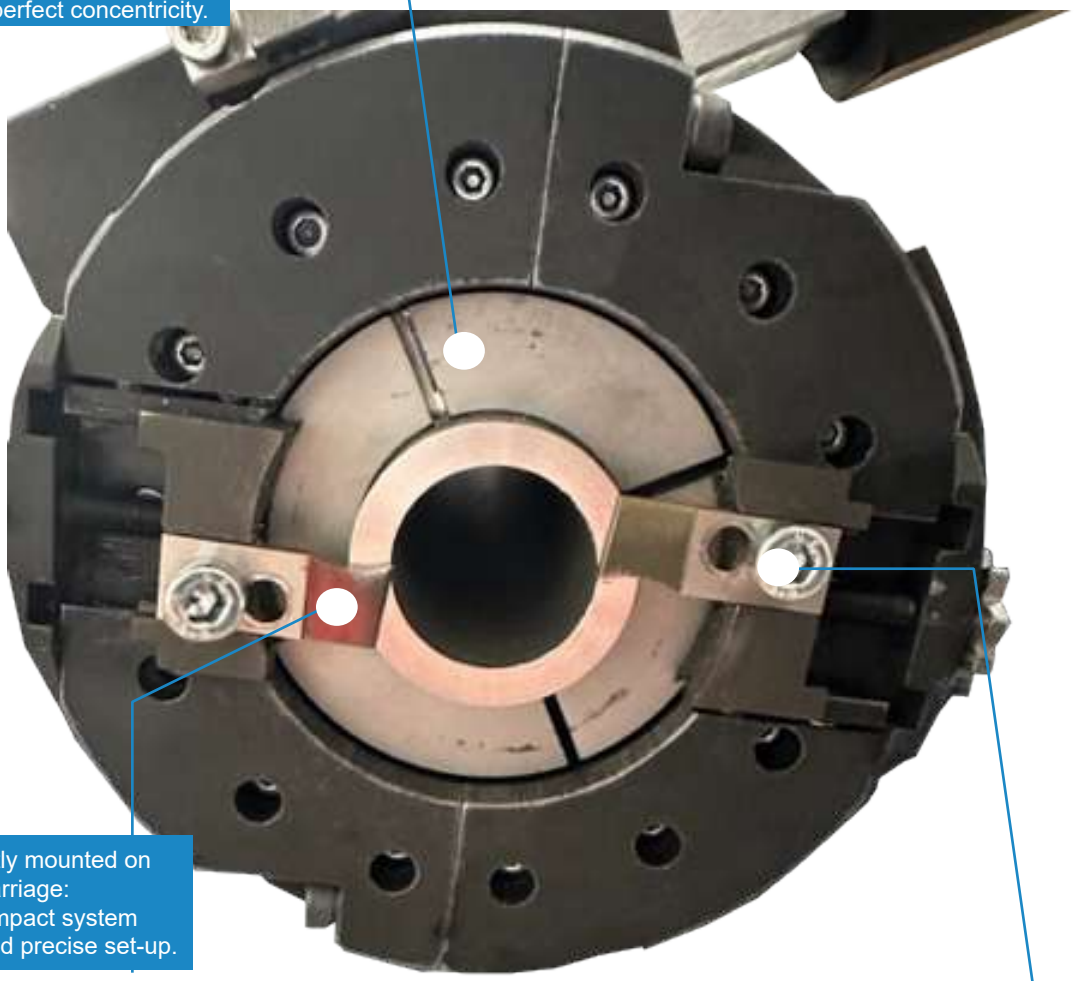


TTS-CSB Series Orbital Tube Severing & Beveling Machines

Splitframe design for a use on existing tubular beams

Machines in the TTS-CSB range are available in numerous configurations with standard or special accessories such as tools, cutting wheels, wrap-around jaws, etc.

The TTS-CSB is tightened with a sleeve. This enables fast adjustment and perfect concentricity.



Tool directly mounted on the tool carriage:
- Ultra-compact system
- Quick and precise set-up.

TTS-CSB Series	Machining Capacities	
TTS-CSB 26	0.295" - 1.051"	7.5mm - 26.7mm
TTS-CSB 33	0.405“ - 1.315“	10.3 mm - 33.4 mm
TTS-CSB 42	0.405“ - 1.661“	10.3 mm - 42.2 mm
TTS-CSB 48	0.405“ - 1.902“	10.3 mm - 48.3 mm
TTS-CSB 60	1.043“ - 2.374“	26.5mm - 60.3mm
TTS-CSB 73	0.839“ - 2.874“	21.3 mm - 73 mm
TTS-CSB 88	1.315“ - 3.5“	33.4 mm - 88.9 mm
TTS-CSB 101	1.901“ - 4“	48.3 mm - 101.6 mm
TTS-CSB 114	2.374“ - 4.5“	60.3 mm - 114.3 mm
TTS-CSB 127	2.374“ - 5“	60.3 mm - 127 mm
TTS-CSB 141	2.874“ - 5.563“	73 mm - 141.3 mm
TTS-CSB 168	3.5“ - 6.626“	88.9 mm - 168.3 mm
TTS-CSB 193	4.5“ - 7.598“	114.3 mm - 193 mm
TTS-CSB 219	5.563“ - 8.626“	141.3 mm - 219.1 mm

Two tool carriages equipped with the suitable tools perform a single cut or a cut and bevel simultaneously. The machine can be used in any position.

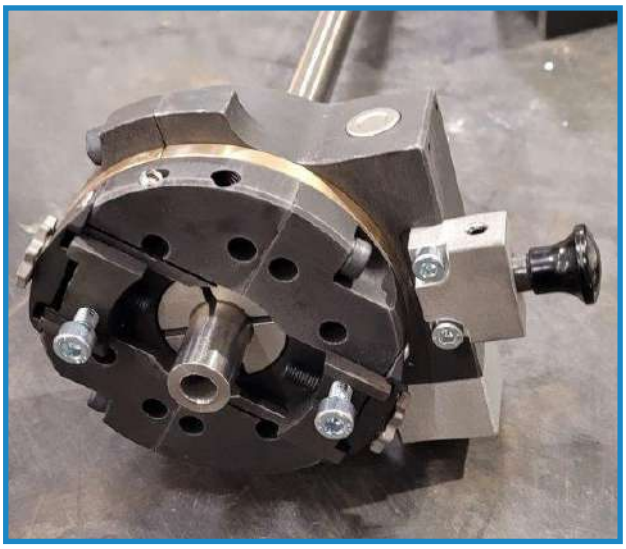
The machines in the TTS-CSB range are ideal for machining high-quality tubes from all types of material, including mild steels, stainless steels, inconel, etc.

Interchangeable drives: battery, remote-control battery, Other motorizations on request

Cold machining.
No heat affected zones

TTS-CSB Series Orbital Tube Severing & Beveling Machines

Standard Capacity: 0.295" - 8.626“ (7.5mm - 219.1mm)



TTS-CSB tube cutting machines are designed for cutting and bevelling tubes of all types. Clamping is performed with a sleeve. This enables rapid adjustment and perfect concentricity.
This type of clamping is particularly suitable for thin tubes, to avoid deformation.

These machines have the smallest footprint in the range. Their configuration enables them to be opened in 2 half-shells.
TTS-CSB machines are fully enclosed for operator safety. They can also be remotely controlled for operations carried out in areas subject to ionizing radiation.

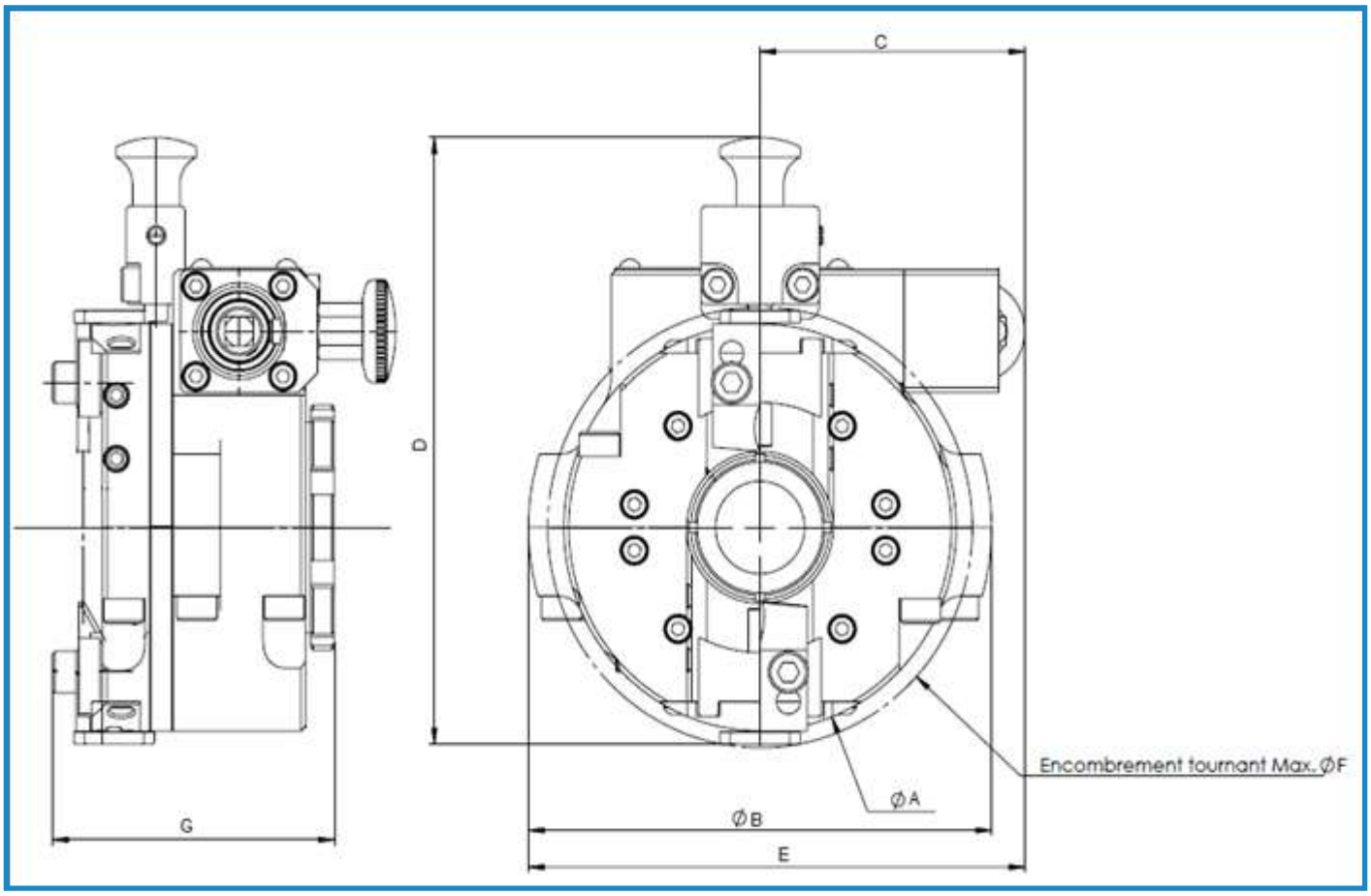
Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗

Advantages:

- Portable
- Powerful machine
- Simple, safe use for the operator
- No heat-affected zones
- High precision
- Quick and easy assembly
- Quick, concentric clamping without bush marking
- Tools can be changed and adjusted very quickly
- Smooth, burr-free surface after machining
- No vibration during machining
- Configured for opening in two half-shells
- Machine suitable for work in hard-to-reach areas (restricted areas (restricted environment, tube drilling)



TTS-CSB Series Orbital Tube Severing & Beveling Machines



OD Mounted

Model TTS-CSB	ØA	ØB	C	D	E	ØF	G	Weight*
TTS-CSB26	3.267" 83 mm	3.858" 98 mm	2.205" 56 mm	4.87" 123.7 mm	4.134" 105 mm	3.539" 89.9 mm	2.346" 59.6 mm	1.8 kg 4 lbs
TTS-CSB60	4.449" 113 mm	5.039" 128 mm	2.6" 66 mm	6.051" 153.7 mm	5.118" 130 mm	4.705" 119.5 mm	2.346" 59.6 mm	2.9 kg 6.4 lbs

*Weights given are those of machines fitted with non-motorized carriages.

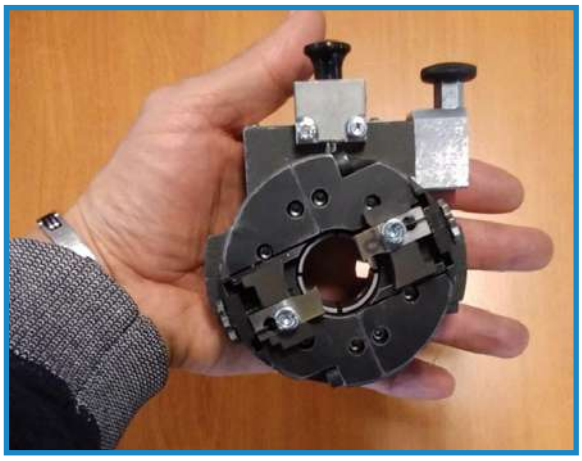
Technical Features:

Specific shapes & angles	I, V, Y, others on request
Clamping	Manual with wrench
Feed	Automatic with clutch
Feed stroke	0.393" (10mm)
Motorization	Battery, Electric, Pneumatic, Remote control option
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	



TTS-CSB26 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.295" - 1.051" (7.5mm - 26.7mm)



Order No.	Description
TTSCSB26-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB26 Splitframe Design - for Ø 0.295" - 1.051" (7.5mm - 26.7mm) with pneumatic angle drive
TTSCSB26-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB26 Splitframe Design - for Ø 0.295" - 1.051" (7.5mm - 26.7mm) with right angle electric drive 220V
TTSCSB26-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB26 Splitframe Design - for Ø 0.295" - 1.051" (7.5mm - 26.7mm) with 220V battery motorization
TTSCSB26-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB26 Splitframe Design - for Ø 0.295" - 1.051" (7.5mm - 26.7mm) with right angle electric drive 110V

TTS-CSB33 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.405“ - 1.315“ (10.3mm - 33.4mm)



Order No.	Description
TTSCSB33-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB33 Splitframe Design - for Ø 0.405“ - 1.315“ (10.3mm - 33.4mm) with pneumatic angle drive
TTSCSB33-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB33 Splitframe Design - for Ø 0.405“ - 1.315“ (10.3mm - 33.4mm) with right angle electric drive 220V
TTSCSB33-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB33 Splitframe Design - for Ø 0.405“ - 1.315“ (10.3mm - 33.4mm) with 220V battery motorization
TTSCSB33-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB33 Splitframe Design - for Ø 0.405“ - 1.315“ (10.3mm - 33.4mm) with right angle electric drive 110V

TTS-CSB42 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.405“ - 1.661“ (10.3mm - 42.2mm)



Order No.	Description
TTSCSB42-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB42 Splitframe Design - for Ø 0.405“ - 1.661“ (10.3mm - 42.2mm) with pneumatic angle drive
TTSCSB42-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB42 Splitframe Design - for Ø 0.405“ - 1.661“ (10.3mm - 42.2mm) with right angle electric drive 220V
TTSCSB42-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB42 Splitframe Design - for Ø 0.405“ - 1.661“ (10.3mm - 42.2mm) with 220V battery motorization
TTSCSB42-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB42 Splitframe Design - for Ø 0.405“ - 1.661“ (10.3mm - 42.2mm) with right angle electric drive 110V

TTS-CSB48 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.405“ - 1.902“ (10.3mm - 48.3mm)

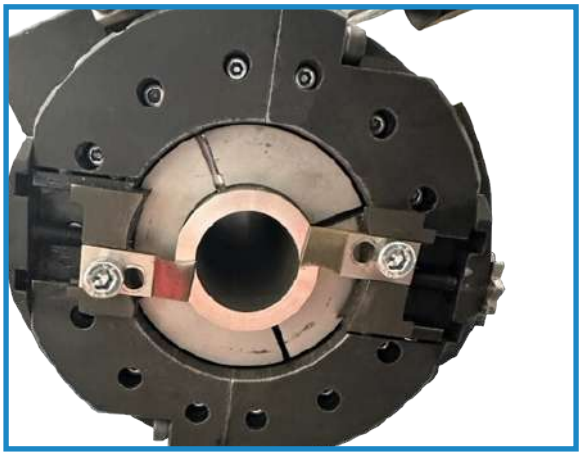


Order No.	Description
TTSCSB48-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB48 Splitframe Design - for Ø 0.405“ - 1.902“ (10.3mm - 48.3mm) with pneumatic angle drive
TTSCSB48-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB48 Splitframe Design - for Ø 0.405“ - 1.902“ (10.3mm - 48.3mm) with right angle electric drive 220V
TTSCSB48-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB48 Splitframe Design - for Ø 0.405“ - 1.902“ (10.3mm - 48.3mm) with 220V battery motorization
TTSCSB48-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB48 Splitframe Design - for Ø 0.405“ - 1.902“ (10.3mm - 48.3mm) with right angle electric drive 110V

OD Mounted

TTS-CSB60 Orbital Tube Severing & Beveling Machine

Standard Capacity: 1.043“ - 2.374“ (26.5mm - 60.3mm)



Order No.	Description
TTSCSB60-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB60 Splitframe Design - for Ø 1.043“ - 2.374“ (26.5mm - 60.3mm) with pneumatic angle drive
TTSCSB60-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB60 Splitframe Design - for Ø 1.043“ - 2.374“ (26.5mm - 60.3mm) with right angle electric drive 220V
TTSCSB60-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB60 Splitframe Design - for Ø 1.043“ - 2.374“ (26.5mm - 60.3mm) with 220V battery motorization
TTSCSB60-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB60 Splitframe Design - for Ø 1.043“ - 2.374“ (26.5mm - 60.3mm) with right angle electric drive 110V

TTS-CSB73 Orbital Tube Severing & Beveling Machine

Standard Capacity: 0.839“ - 2.874“ (21.3mm - 73mm)



Order No.	Description
TTSCSB73-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB73 Splitframe Design - for Ø 0.839“ - 2.874“ (21.3mm - 73mm) with pneumatic angle drive
TTSCSB73-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB73 Splitframe Design - for Ø 0.839“ - 2.874“ (21.3mm - 73mm) with right angle electric drive 220V
TTSCSB73-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB73 Splitframe Design - for Ø 0.839“ - 2.874“ (21.3mm - 73mm) with 220V battery motorization
TTSCSB73-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB73 Splitframe Design - for Ø 0.839“ - 2.874“ (21.3mm - 73mm) with right angle electric drive 110V

TTS-CSB88 Orbital Tube Severing & Beveling Machine

Standard Capacity: 1.315“ - 3.5“ (33.4mm - 88.9mm)



Order No.	Description
TTSCSB88-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB88 Splitframe Design - for Ø 1.315“ - 3.5“ (33.4mm - 88.9mm) with pneumatic angle drive
TTSCSB88-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB88 Splitframe Design - for Ø 1.315“ - 3.5“ (33.4mm - 88.9mm) with right angle electric drive 220V
TTSCSB88-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB88 Splitframe Design - for Ø 1.315“ - 3.5“ (33.4mm - 88.9mm) with 220V battery motorization
TTSCSB88-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB88 Splitframe Design - for Ø 1.315“ - 3.5“ (33.4mm - 88.9mm) with right angle electric drive 110V

TTS-CSB101 Orbital Tube Severing & Beveling Machine

Standard Capacity: 1.902“ - 4“ (48.3mm - 101.6mm)



Order No.	Description
TTSCSB101-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB101 Splitframe Design - for Ø 1.902“ - 4“ (48.3mm - 101.6mm) with pneumatic angle drive
TTSCSB101-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB101 Splitframe Design - for Ø 1.902“ - 4“ (48.3mm - 101.6mm) with right angle electric drive 220V
TTSCSB101-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB101 Splitframe Design - for Ø 1.902“ - 4“ (48.3mm - 101.6mm) with 220V battery motorization
TTSCSB101-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB101 Splitframe Design - for Ø 1.902“ - 4“ (48.3mm - 101.6mm) with right angle electric drive 110V

TTS-CSB114 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.374“ - 4.5“ (60.3mm - 114.3mm)



Order No.	Description
TTSCSB114-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB114 Splitframe Design - for Ø 2.374“ - 4.5“ (60.3mm - 114.3mm) with pneumatic angle drive
TTSCSB114-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB114 Splitframe Design - for Ø 2.374“ - 4.5“ (60.3mm - 114.3mm) with right angle electric drive 220V
TTSCSB114-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB114 Splitframe Design - for Ø 2.374“ - 4.5“ (60.3mm - 114.3mm) with 220V battery motorization
TTSCSB114-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB114 Splitframe Design - for Ø 2.374“ - 4.5“ (60.3mm - 114.3mm) with right angle electric drive 110V

TTS-CSB127 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.374“ - 5“ (60.3mm - 127mm)



Order No.	Description
TTSCSB127-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB127 Splitframe Design - for Ø 2.374“ - 5“ (60.3mm - 127mm) with pneumatic angle drive
TTSCSB127-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB127 Splitframe Design - for Ø 2.374“ - 5“ (60.3mm - 127mm) with right angle electric drive 220V
TTSCSB127-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB127 Splitframe Design - for Ø 2.374“ - 5“ (60.3mm - 127mm) with 220V battery motorization
TTSCSB127-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB127 Splitframe Design - for Ø 2.374“ - 5“ (60.3mm - 127mm) with right angle electric drive 110V

OD Mounted

TTS-CSB141 Orbital Tube Severing & Beveling Machine

Standard Capacity: 2.874“ - 5.563“ (73mm - 141.3mm)



Order No.	Description
TTSCSB141-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB141 Splitframe Design - for Ø 2.874“ - 5.563“ (73mm - 141.3mm) with pneumatic angle drive
TTSCSB141-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB141 Splitframe Design - for Ø 2.874“ - 5.563“ (73mm - 141.3mm) with right angle electric drive 220V
TTSCSB141-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB141 Splitframe Design - for Ø 2.874“ - 5.563“ (73mm - 141.3mm) with 220V battery motorization
TTSCSB141-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB141 Splitframe Design - for Ø 2.874“ - 5.563“ (73mm - 141.3mm) with right angle electric drive 110V

TTS-CSB168 Orbital Tube Severing & Beveling Machine

Standard Capacity: 3.5“ - 6.626“ (88.9mm - 168.3mm)



Order No.	Description
TTSCSB168-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB168 Splitframe Design - for Ø 3.5“ - 6.626“ (88.9mm - 168.3mm) with pneumatic angle drive
TTSCSB168-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB168 Splitframe Design - for Ø 3.5“ - 6.626“ (88.9mm - 168.3mm) with right angle electric drive 220V
TTSCSB168-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB168 Splitframe Design - for Ø 3.5“ - 6.626“ (88.9mm - 168.3mm) with 220V battery motorization
TTSCSB168-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB168 Splitframe Design - for Ø 3.5“ - 6.626“ (88.9mm - 168.3mm) with right angle electric drive 110V

TTS-CSB193 Orbital Tube Severing & Beveling Machine

Standard Capacity: 4.5“ - 7.598“ (114.3mm - 193mm)



Order No.	Description
TTSCSB193-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB193 Splitframe Design - for Ø 4.5“ - 7.598“ (114.3mm - 193mm) with pneumatic angle drive
TTSCSB193-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB193 Splitframe Design - for Ø 4.5“ - 7.598“ (114.3mm - 193mm) with right angle electric drive 220V
TTSCSB193-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB193 Splitframe Design - for Ø 4.5“ - 7.598“ (114.3mm - 193mm) with 220V battery motorization
TTSCSB193-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB193 Splitframe Design - for Ø 4.5“ - 7.598“ (114.3mm - 193mm) with right angle electric drive 110V

TTS-CSB219 Orbital Tube Severing & Beveling Machine

Standard Capacity: 5.563“ - 8.626“ (141.3mm - 219.1mm)



Order No.	Description
TTSCSB219-1000	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB219 Splitframe Design - for Ø 5.563“ - 8.626“ (141.3mm - 219.1mm) with pneumatic angle drive
TTSCSB219-1020	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB219 Splitframe Design - for Ø 5.563“ - 8.626“ (141.3mm - 219.1mm) with right angle electric drive 220V
TTSCSB219-1026	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB219 Splitframe Design - for Ø 5.563“ - 8.626“ (141.3mm - 219.1mm) with 220V battery motorization
TTSCSB219-1040	Orbital Tube Severing & Beveling Machine PROTEM TTSCSB219 Splitframe Design - for Ø 5.563“ - 8.626“ (141.3mm - 219.1mm) with right angle electric drive 110V

TTS-CSB Series Orbital Tube Severing & Beveling Machines Tool-Bits

Order No.	Description
TTSCSB-1617	30° bevelling tools
TTSCSB-1620	Standard severing tools
TTSCSB-1621	Standard point cutting tools
TTSCSB-1631	45° bevelling tools

TTS-ROD Series Mobile unsocketing units

During preventive maintenance operations or during interventions relating to repairs of certain components, it is necessary to be able to separate tubular elements which are fitted into each other in order to be able to replace or even repair them.

To do this, it is necessary to remove the welds connecting the fittings by proceeding the elimination of welding thanks to cutting of this weld, without altering the integrity of the materials.

The machining module for machines TTS-ROD thus makes it possible to machine the welds of Socket Welding (SW) type pipe fittings as part of such maintenance or repair work. It is particularly on the pressurizers that such operations are the most frequent.



The TTS-ROD machines are designed to allow such work to be carried out in very tight spaces and very restrictive environments.
For machining operations, the TTS-ROD mobile machining units are equipped with modules:

OD Mounted

- The module is composed of a carriage and a clutch finger
- Two carriages are available depending on the type of application : a carriage equipped with an ovality tracking system of the tube and a carriage without tracking
- An HSS or insert tool, if necessary with coating, allows machining to be carried out by moving axially along the tube
- The axial travel of the carriage is 20 mm
- Machining up to a thickness of 10 mm (weld bead thickness)
- Automatic disengagement system if the truck reaches the front stop
- Depending on the height of the weld, machining is done in succession of passes by adjusting the position of the tool or the insert tool in the insert/tool-holder

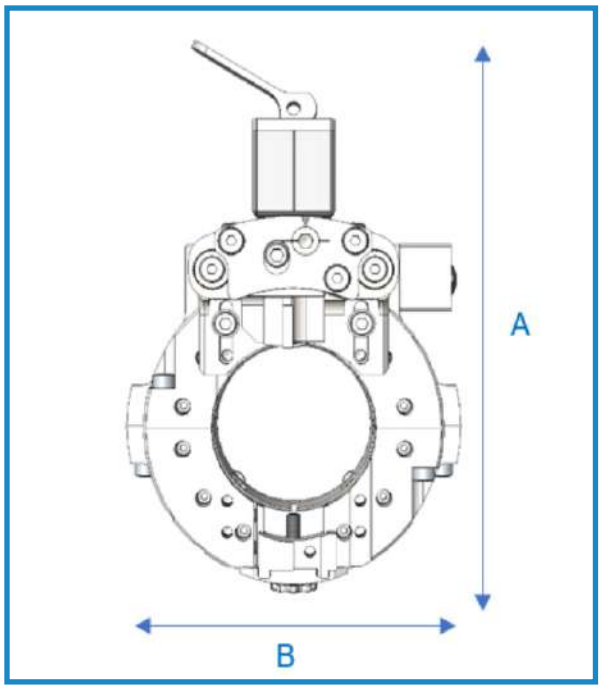
TTS-ROD Series	Machining Capacities	
TTS-ROD 27	0.405" - 1.051"	10.3 mm - 26.7 mm
TTS-ROD 60	0.839“ - 2.374“	21.3 mm - 60.3 mm
TTS-ROD 88	1.315“ - 3.5“	33.4 mm - 88.9 mm
TTS-ROD 101	1.901“ - 4“	48.3 mm - 101.6 mm
TTS-ROD 114	2.374“ - 4.5“	60.3 mm - 114.3 mm

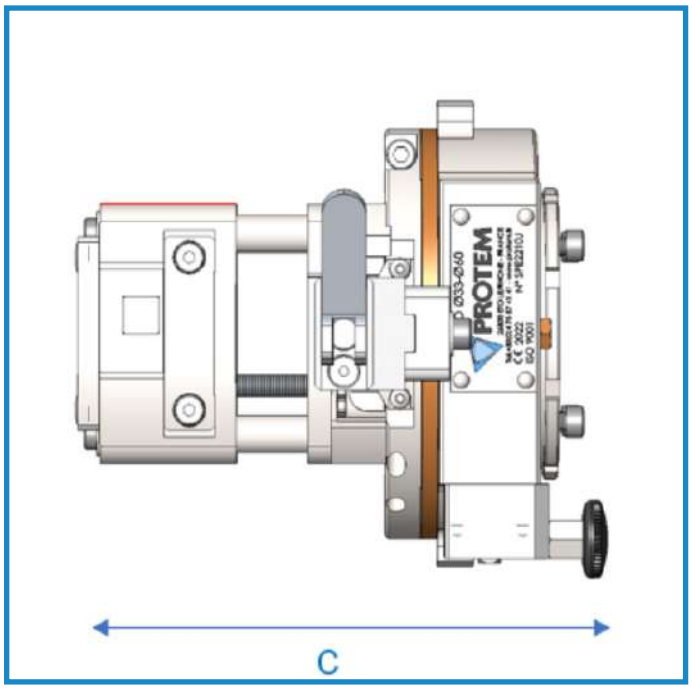
Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✗	✗	✗	✗	✓	✗

Advantages:

- Machining only of the weld, integrity of the tube preserved.
- Repeatability of machining quality
- Portable, lightness of the mobile machining unit
- Rigidity and tightening allowing direct contact with the piping
- Simple and secure use for the operator
- Reduction in intervention time and therefore reduction in the duration of exposure to ionizing radiation
- Compact machine, suitable for work on site in areas that are very difficult to access.
- Quick and simple assembly
- Motorizations adapted according to the desired machining configurations: in-line or with angle transmission, wired or wireless electric, pneumatic
- Precise and qualitative machining (welding of the tube without additional preparation after machining)
- No heat affected zones during machining (absence of HAZ), simplified intervention procedures
- No dust or splashing
- Dry machining
- The machine receiving the module keeps its basic functions (cutting and beveling)

TTS-ROD Series Mobile unsocketing units



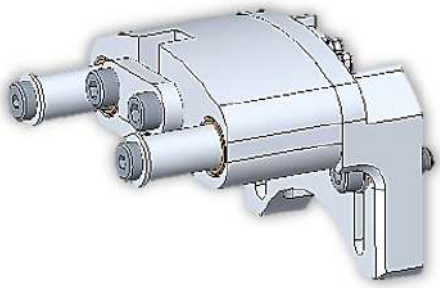


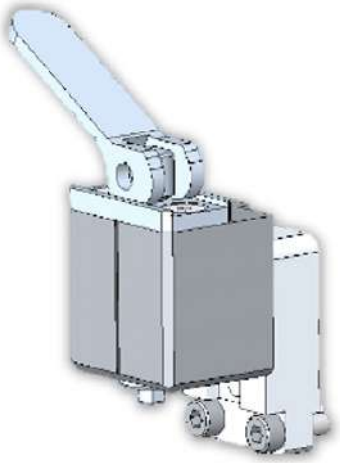
Model TTS-ROD	A	B	C	Weight*
TTS-ROD27	6.417” 163 mm	3.937” 100 mm	5.905” 150 mm	3 kg 6.613 lbs
TTS-ROD60	7.874” 200 mm	4.921” 125 mm	5.905” 150 mm	4.2 kg 8.818 lbs

*Weights given are those of machines fitted with non-motorized carriages.

Technical Features:

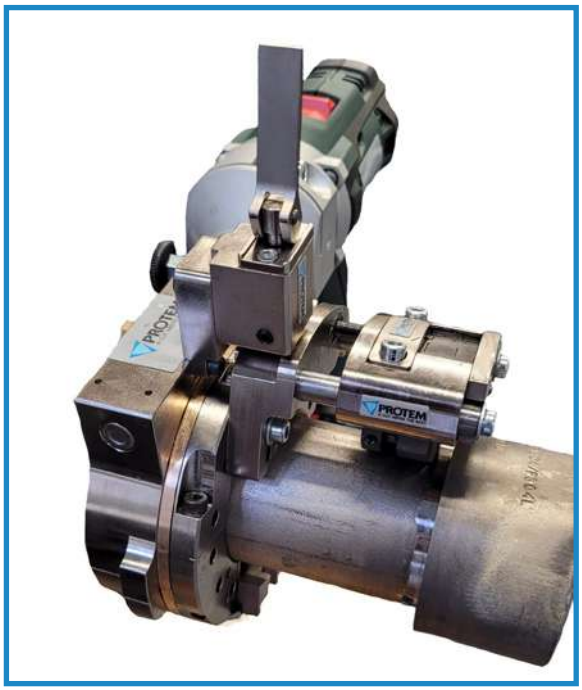
Clamping	Manual with key
Feed	Automatic feed with clutch if carriage arrives to front limit-stop
Copying axial movement	0.787” (20mm)
Motorization	Battery, Electric, Pneumatic
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	





TTS-ROD27 Mobile unsocketing unit

Standard Capacity: 0.405" - 1.051" (10.3mm - 26.7mm)

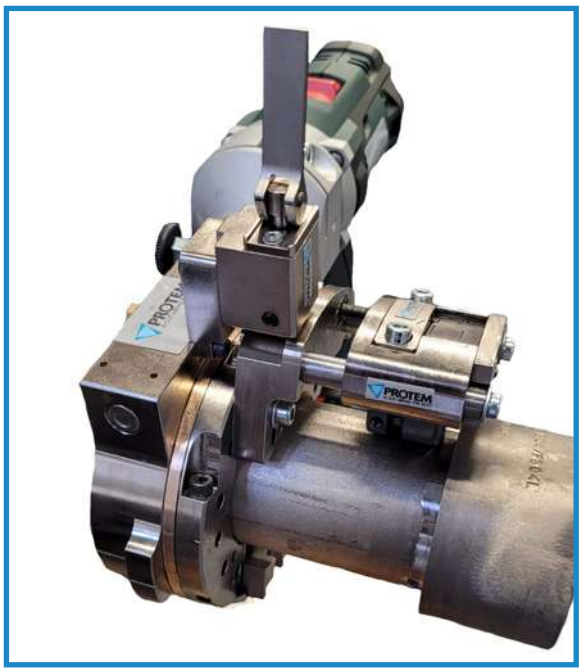


Order No.	Description
TTSROD27-1002	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with pneumatic drive
TTSROD27-1004	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with right angle pneumatic drive
TTSROD27-1022	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with battery drive 220V
TTSROD27-1024	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with electric drive 220V
TTSROD27-1026	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with right angle battery drive 220V
TTSROD27-1028	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with right angle electric drive 220V
TTSROD27-1042	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with battery drive 110V
TTSROD27-1044	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with electric drive 110V
TTSROD27-1046	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with right angle battery drive 110V
TTSROD27-1048	Cutting & Beveling Machine with weld removal module PROTEM TTSROD27 Ø 0.405" - 1.051" (10.3 mm - 26.7 mm) with right angle electric drive 110V

OD Mounted

TTS-ROD60 Mobile unsocketing unit

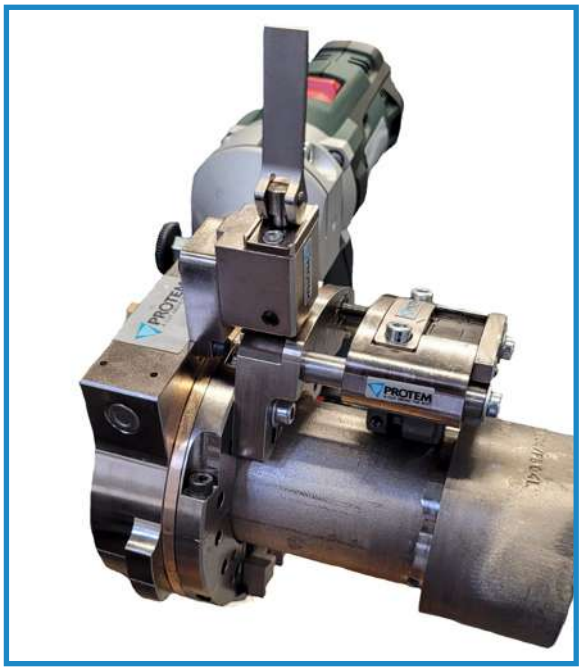
Standard Capacity: 0.839“ - 2.374“ (21.3mm - 60.3mm)



Order No.	Description
TTSROD60-1002	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with pneumatic drive
TTSROD60-1004	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with right angle pneumatic drive
TTSROD60-1022	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with battery drive 220V
TTSROD60-1024	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with electric drive 220V
TTSROD60-1026	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with right angle battery drive 220V
TTSROD60-1028	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with right angle electric drive 220V
TTSROD60-1042	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with battery drive 110V
TTSROD60-1044	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with electric drive 110V
TTSROD60-1046	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with right angle battery drive 110V
TTSROD60-1048	Cutting & Beveling Machine with weld removal module PROTEM TTSROD60 Ø 0.839“ - 2.374“ (21.3mm - 60.3mm) with right angle electric drive 110V

TTS-ROD88 Mobile unsocketing unit

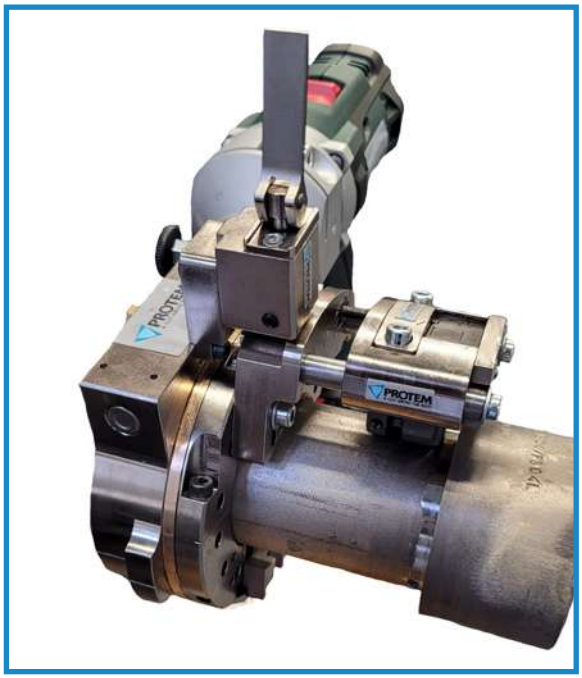
Standard Capacity: 1.315" - 3.5" (33.4 mm -88.9 mm)



Order No.	Description
TTSROD88-1002	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with pneumatic drive
TTSROD88-1004	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with right angle pneumatic drive
TTSROD88-1022	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with battery drive 220V
TTSROD88-1024	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with electric drive 220V
TTSROD88-1026	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with right angle battery drive 220V
TTSROD88-1028	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with right angle electric drive 220V
TTSROD88-1042	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with battery drive 110V
TTSROD88-1044	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with electric drive 110V
TTSROD88-1046	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with right angle battery drive 110V
TTSROD88-1048	Cutting & Beveling Machine with weld removal module PROTEM TTSROD88 Ø 1.315" - 3.5" (33.4 mm -88.9 mm) with right angle electric drive 110V

TTS-ROD101 Mobile unsocketing unit

Standard Capacity: 1.901" - 4" (48.3 mm -101.6 mm)



Order No.	Description
TTSROD101-1002	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with pneumatic drive
TTSROD101-1004	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with right angle pneumatic drive
TTSROD101-1022	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with battery drive 220V
TTSROD101-1024	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with electric drive 220V
TTSROD101-1026	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with right angle battery drive 220V
TTSROD101-1028	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with right angle electric drive 220V
TTSROD101-1042	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with battery drive 110V
TTSROD101-1044	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with electric drive 110V
TTSROD101-1046	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with right angle battery drive 110V
TTSROD101-1048	Cutting & Beveling Machine with weld removal module PROTEM TTSROD101 Ø 1.901" - 4" (48.3 mm -101.6 mm) with right angle electric drive 110V

TTS-ROD114 Mobile unsocketing unit

Standard Capacity: 2.374" - 4.5" (60.3 mm -114.3 mm)



Order No.	Description
TTSROD114-1002	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with pneumatic drive
TTSROD114-1004	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with right angle pneumatic drive
TTSROD114-1022	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with battery drive 220V
TTSROD114-1024	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with electric drive 220V
TTSROD114-1026	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with right angle battery drive 220V
TTSROD114-1028	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with right angle electric drive 220V
TTSROD114-1042	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with battery drive 110V
TTSROD114-1044	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with electric drive 110V
TTSROD114-1046	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with right angle battery drive 110V
TTSROD114-1048	Cutting & Beveling Machine with weld removal module PROTEM TTSROD114 Ø 2.374" - 4.5" (60.3 mm -114.3 mm) with right angle electric drive 110V

OD Mounted

TTS-ROD Series Mobile unsocketing units — Tool-Bits

Order No.	Description
TTSROD-2120	DSOK HSS Tool
TTSROD-2121	DSOK Insert Holder
O-SE-P1-3.-C-F-20A	Tool bit, material carbide, coating: TiALN



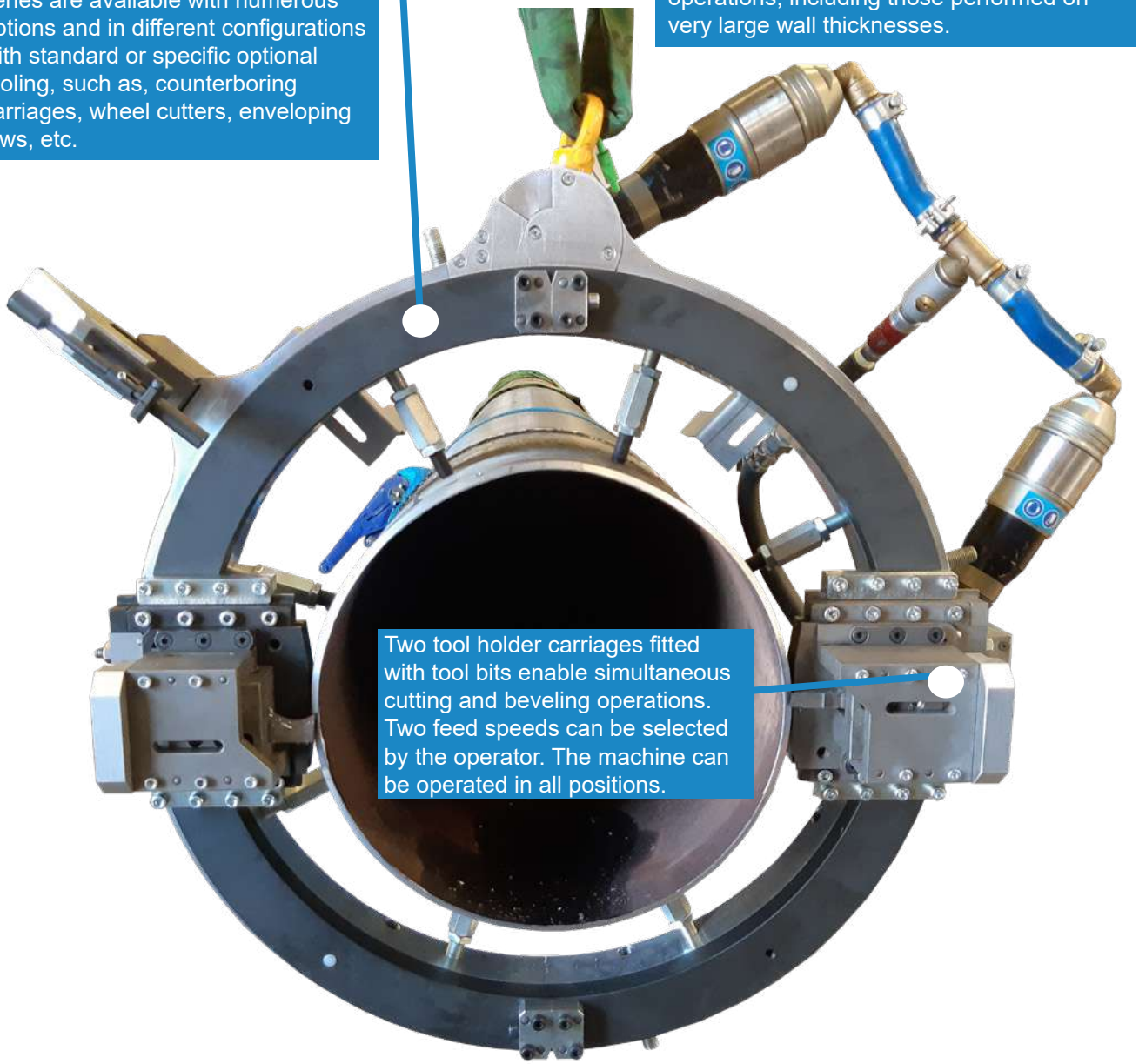
TTNG-LW Series Splitframe Orbital Pipe Cutting & Beveling Machines

Splitframe design for a use on existing tubular beams

V guiding rollers; the V design of the guiding elements compensates for the axial and radial forces in order to ensure a very high machining accuracy and less wear.

Machine frame in aluminum: Light weight and rugged design for all your machining operations, including those performed on very large wall thicknesses.

The machines in the TTNG-LW series are available with numerous options and in different configurations with standard or specific optional tooling, such as, counterboring carriages, wheel cutters, enveloping jaws, etc.



Two tool holder carriages fitted with tool bits enable simultaneous cutting and beveling operations. Two feed speeds can be selected by the operator. The machine can be operated in all positions.

OD Mounted

TTNG-LW Series	Machining Capacities	
TTNG-LW 168	2.374“ - 6.626“	60.3 mm - 168.3 mm
TTNG-LW 219	4.5“ - 8.626“	114.3 mm - 219.1 mm
TTNG-LW 273	6.626“ - 10.751“	168.3 mm - 273.1 mm
TTNG-LW 323	8.626“ - 12.751“	219.1 mm - 323.9 mm
TTNG-LW 406	10.751“ - 16“	273.1 mm - 406.4 mm
TTNG-LW 508	12.751“ - 20“	323.9 mm - 508 mm
TTNG-LW 610	16“ - 24“	406.4 mm - 610 mm

Hydraulic, pneumatic or electric drives are available for all machines in the TTNG-LW series.

Cold Cutting Process.
No Heat Affected Zone

TTNG-LW Series Splitframe Orbital Pipe Cutting & Beveling Machines

Standard Capacity: 2.374“ - 24“ (60.3mm - 610mm)

The machines in the TTNG-LW series cut and bevel tubes simultaneously using two tool-holder plates that are incremented by the finger of a mechanical clutch. The main advantages of the TTNG-LW are:**Light weight**Rugged construction**Fast and easy mounting on tubes and pipes**Suited for in-line piping systems**Safe operation**Modular design**Ideal for tight spaces**Dependable orbital cutting and beveling**Cold Cutting Process, no heat affected zone. These machines are the low profile version of the TTNG-HD series. They are transportable and can be opened in two halfshells. According to the diameters and wall thicknesses to consider, they can be equipped with pneumatic, electric or hydraulic drive. The turning ring is rolling on adjustable bearings. The TTNG-LW can perform a cut up to a 1” (25.4mm) wall on any material and cut and bevel up to 0.787" (20mm). A variety of weld joint designs can be performed including cut, bevel, double bevel, J-bevel, counterbore, compound bevel and socket weld removal. Adapted for virtually all environments : Irradiated areas (remote control device on request), Subsea, Very high or very low temperatures...

Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

OD Mounted

Advantages:

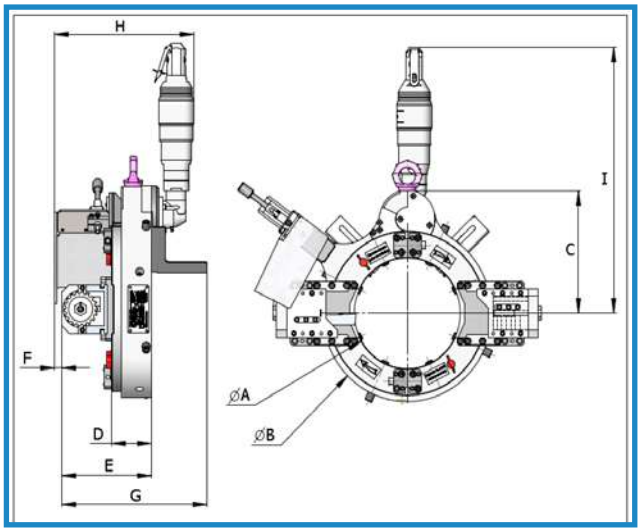
- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Splitframe Configuration

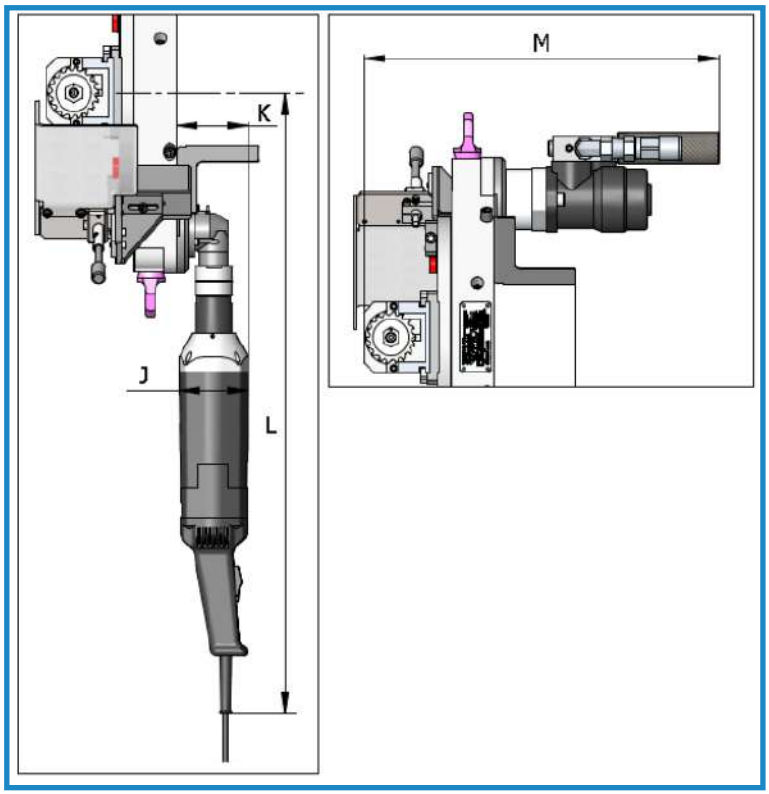
Technical Features:

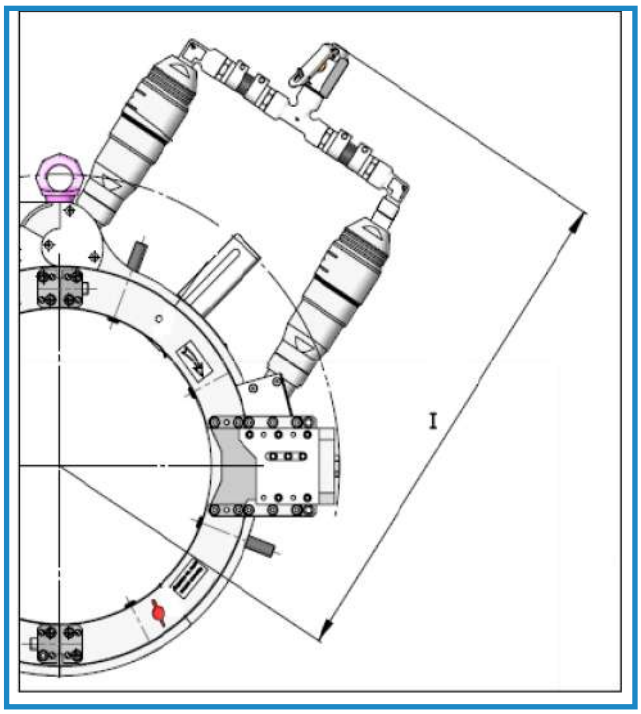
Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping	Manual
Feed stroke	Automatic
Cutting head gear drive	140 rpm. Approximate rotation speed according to air pressure and air flow
TTNG-LW pneumatic drive	1.47 kW, 6 bar (87 psi), 1800 l/min (63 cfm)
Electric drive	110V, 240V and 380V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	



TTNG-LW Series Splitframe Orbital Pipe Cutting & Beveling Machines







OD Mounted

Model TTNG-LW	ØA	ØB	C	D	E	F	G	H	I	J	K	L	M	Weight*
TTNG-LW 168	6.889" 175 mm	12.244" 311 mm	8.88" 225.5 mm	3.35" 85.25 mm	7.588" 192.75 mm	0.63" 16 mm	12.31" 312.75 mm	8.956" 227.5 mm	20.65" 524.5 mm	4.02" 102 mm	4.13" 105 mm	33.49" 850.58 mm	20.66" 524.75 mm	27 kg 59.5 lbs
TTNG-LW 219	8.779" 229 mm	14.37" 365 mm	9.94" 252.5 mm	3.35" 85.25 mm	7.588" 192.75 mm	0.63" 16 mm	12.31" 312.75 mm	10.019" 254.5 mm	21.63" 549.5 mm	4.02" 102 mm	4.13" 105 mm	34.55" 877.58 mm	20.66" 524.75 mm	31 kg 68.3 lbs
TTNG-LW 273	11.142" 283 mm	16.496" 419 mm	11" 279.5 mm	3.35" 85.25 mm	7.588" 192.75 mm	0.63" 16 mm	12.31" 312.75 mm	11.023" 280 mm	22.74" 577.5 mm	4.02" 102 mm	4.13" 105 mm	35.61" 904.58 mm	20.66" 524.75 mm	35 kg 77.2 lbs
TTNG-LW 323	13.031" 331 mm	18.385" 467 mm	11.95" 303.6 mm	3.35" 85.25 mm	7.588" 192.75 mm	0.63" 16 mm	12.31" 312.75 mm	12.027" 305.5 mm	23.69" 601.6 mm	4.02" 102 mm	4.13" 105 mm	36.56" 928.68 mm	20.66" 524.75 mm	39 kg 86 lbs
TTNG-LW 406	16.338" 415 mm	21.692" 551 mm	13.66" 346.9 mm	3.35" 85.25 mm	7.588" 192.75 mm	0.63" 16 mm	12.31" 312.75 mm	13.657" 346.9 mm	26.4" 670.51 mm	4.02" 102 mm	4.13" 105 mm	38.61" 980.75 mm	20.66" 524.75 mm	45 kg 99.2 lbs
TTNG-LW 508	20.354" 517 mm	25.708" 653 mm	15.67" 398.1 mm	3.35" 85.25 mm	7.588" 192.75 mm	0.63" 16 mm	12.31" 312.75 mm	15.688" 398.5 mm	27.38" 695.57 mm	4.02" 102 mm	4.13" 105 mm	40.63" 1031.95 mm	20.66" 524.75 mm	53 kg 116.8 lbs
TTNG-LW 610	24.37" 619 mm	29.724" 755 mm	17.5" 444.7 mm	3.35" 85.25 mm	7.588" 192.75 mm	0.63" 16 mm	12.31" 312.75 mm	18.75" 476.25 mm	27.05" 687.08 mm	4.02" 102 mm	4.13" 105 mm	42.64" 1083.05 mm	20.66" 524.75 mm	59 kg 130 lbs

* Weight for the Machines without the motors and tool holders.
For more information please contact us

TTNG-LW168 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 2.374“ - 6.626“ (60.3mm - 168.3mm)



Order No.	Description
TTNG-LW168-1010	Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with right angle pneumatic drive
TTNG-LW168-1011	Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with pneumatic drive
TTNG-LW168-1030	Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with right angle electric drive MS15, 220V
TTNG-LW168-1031	Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with electric drive MS15, 220V
TTNG-LW168-1050	Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with right angle electric drive MS15, 110V.
TTNG-LW168-1051	Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with electric drive MS15, 110V.
TTNG-LW168-1070	Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with single hydraulic drive and regulation valve.
TTNG-LW168-1072	Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with single hydraulic drive.
TTNG168-K11	Wooden crate TTNG-LW168 pneumatic /hydraulic
TTNG168-K12	Wooden crate TTNG-LW168 electric
TTNG168-K14	Aluminum crate TTNG-LW168 pneumatic /hydraulic
TTNG168-K15	Aluminum crate TTNG-LW168 electric

OD Mounted

TTNG-LW219 Splitframe Orbital Pipe Cutting & Beveling Machine

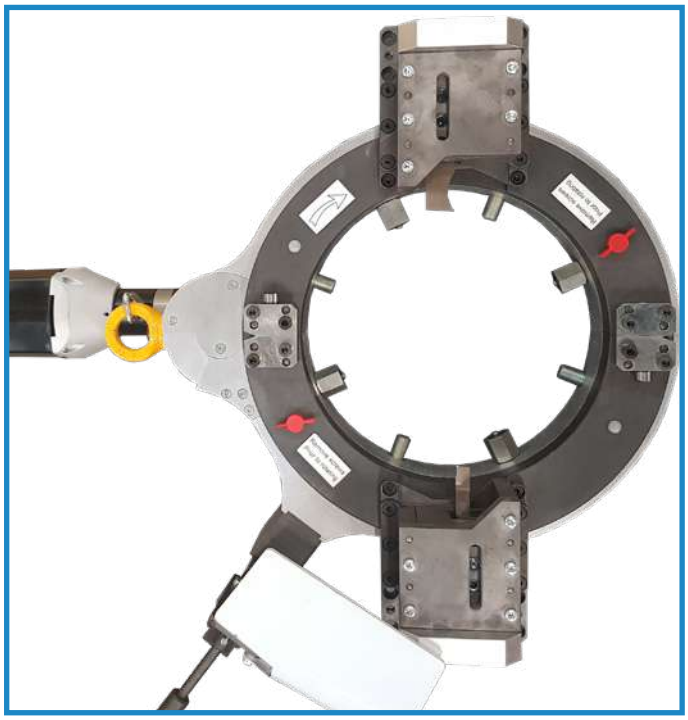
Standard Capacity: 4.5“ - 8.626“ (114.3mm - 219.1mm)



Order No.	Description
TTNG-LW219-1010	Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with right angle pneumatic drive
TTNG-LW219-1011	Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with pneumatic drive
TTNG-LW219-1030	Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with right angle electric drive MS15, 220V
TTNG-LW219-1031	Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with electric drive MS15, 220V
TTNG-LW219-1050	Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with right angle electric drive MS15, 110V.
TTNG-LW219-1051	Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with electric drive MS15, 110V.
TTNG-LW219-1070	Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with single hydraulic drive and regulation valve.
TTNG-LW219-1072	Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with single hydraulic drive.
TTNG219-K11	Wooden crate TTNG-LW219 pneumatic /hydraulic
TTNG219-K12	Wooden crate TTNG-LW219 electric
TTNG219-K14	Aluminum crate TTNG-LW219 pneumatic /hydraulic
TTNG219-K15	Aluminum crate TTNG-LW219 electric

TTNG-LW273 Splitframe Orbital Pipe Cutting & Beveling Machine

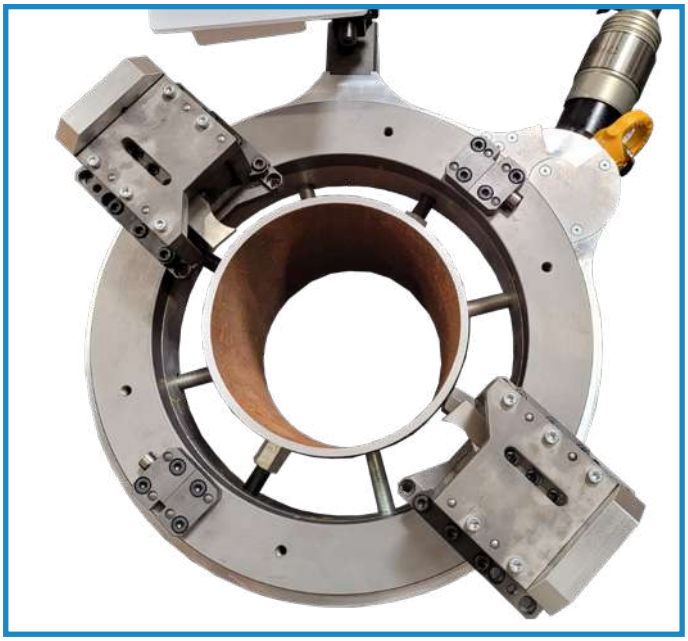
Standard Capacity: 6.626“ - 10.751“ (168.3mm - 273.1mm)



Order No.	Description
TTNG-LW273-1010	Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with right angle pneumatic drive
TTNG-LW273-1011	Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with pneumatic drive
TTNG-LW273-1030	Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with right angle electric drive MS15, 220V
TTNG-LW273-1031	Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with electric drive MS15, 220V
TTNG-LW273-1050	Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with right angle electric drive MS15, 110V.
TTNG-LW273-1051	Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with electric drive MS15, 110V.
TTNG-LW273-1070	Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with single hydraulic drive and regulation valve.
TTNG-LW273-1072	Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with single hydraulic drive.
TTNG273-K11	Wooden crate TTNG-LW273 pneumatic /hydraulic
TTNG273-K12	Wooden crate TTNG-LW273 electric
TTNG273-K14	Aluminum crate TTNG-LW273 pneumatic /hydraulic
TTNG273-K15	Aluminum crate TTNG-LW273 electric

TTNG-LW323 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 8.626“ - 12.751“ (219.1mm - 323.9mm)



Order No.	Description
TTNG-LW323-1010	Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.626" - 12.751" (219.1mm - 323.9mm) with right angle pneumatic drive
TTNG-LW323-1011	Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.626" - 12.751" (219.1mm - 323.9mm) with pneumatic drive
TTNG-LW323-1030	Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.626" - 12.751" (219.1mm - 323.9mm) with right angle electric drive MS15, 220V
TTNG-LW323-1031	Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.626" - 12.751" (219.1mm - 323.9mm) with electric drive MS15, 220V
TTNG-LW323-1050	Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.626" - 12.751" (219.1mm - 323.9mm) with right angle electric drive MS15, 110V.
TTNG-LW323-1051	Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.626" - 12.751" (219.1mm - 323.9mm) with electric drive MS15, 110V.
TTNG-LW323-1070	Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.626" - 12.751" (219.1mm - 323.9mm) with single hydraulic drive and regulation valve.
TTNG-LW323-1072	Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.626" - 12.751" (219.1mm - 323.9mm) with single hydraulic drive.
TTNG323-K11	Wooden crate TTNG-LW323 pneumatic /hydraulic
TTNG323-K12	Wooden crate TTNG-LW323 electric
TTNG323-K14	Aluminum crate TTNG-LW323 pneumatic /hydraulic
TTNG323-K15	Aluminum crate TTNG-LW323 electric

TTNG-LW406 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 10.751“ - 16“ (273.1mm - 406.4mm)



Order No.	Description
TTNG-LW406-1010	Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with right angle double pneumatic drive
TTNG-LW406-1011	Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double pneumatic drive
TTNG-LW406-1030	Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with right angle electric drive MS15, 220V
TTNG-LW406-1031	Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with electric drive MS15, 220V
TTNG-LW406-1050	Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with right angle electric drive MS15, 110V.
TTNG-LW406-1051	Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with electric drive MS15, 110V.
TTNG-LW406-1070	Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double hydraulic drive and regulation valve.
TTNG-LW406-1072	Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double hydraulic drive.
TTNG406-K11	Wooden crate TTNG-LW406 pneumatic /hydraulic
TTNG406-K12	Wooden crate TTNG-LW406 electric
TTNG406-K14	Aluminum crate TTNG-LW406 pneumatic /hydraulic
TTNG406-K15	Aluminum crate TTNG-LW406 electric

OD Mounted

TTNG-LW508 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 12.751“ - 20“ (323.9mm - 508mm)



Order No.	Description
TTNG-LW508-1010	Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with right angle double pneumatic drive
TTNG-LW508-1011	Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with double pneumatic drive
TTNG-LW508-1030	Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with right angle electric drive MS15, 220V
TTNG-LW508-1031	Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with electric drive MS15, 220V
TTNG-LW508-1050	Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with right angle electric drive MS15, 110V.
TTNG-LW508-1051	Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with electric drive MS15, 110V.
TTNG-LW508-1070	Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with double hydraulic drive and regulation valve.
TTNG-LW508-1072	Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with double hydraulic drive.
TTNG508-K11	Wooden crate TTNG-LW508 pneumatic /hydraulic
TTNG508-K12	Wooden crate TTNG-LW508 electric
TTNG508-K14	Aluminum crate TTNG-LW508 pneumatic /hydraulic
TTNG508-K15	Aluminum crate TTNG-LW508 electric

TTNG-LW610 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 16“ - 24“ (406.4mm - 610mm)



Order No.	Description
TTNG-LW610-1010	Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with right angle double pneumatic drive
TTNG-LW610-1011	Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with double pneumatic drive
TTNG-LW610-1030	Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with right angle electric drive MS15, 220V
TTNG-LW610-1031	Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with electric drive MS15, 220V
TTNG-LW610-1050	Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with right angle electric drive MS15, 110V.
TTNG-LW610-1051	Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with electric drive MS15, 110V.
TTNG-LW610-1070	Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with double hydraulic drive and regulation valve.
TTNG-LW610-1072	Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with double hydraulic drive.
TTNG610-K11	Wooden crate TTNG-LW610 pneumatic /hydraulic
TTNG610-K12	Wooden crate TTNG-LW610 electric
TTNG610-K14	Aluminum crate TTNG-LW610 pneumatic /hydraulic
TTNG610-K15	Aluminum crate TTNG-LW610 electric

TTNG-LW610 with TTS tool holders





OD Mounted

TTNG-LW Orbital Cutting & Beveling Machines — Tool-Bits

Order No.	Description
O-TTN-TT1-5-H-PL	Severing tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT1-5-H-PT	Pointed tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT2-12-H-2	Beveling tool-bit 30°, wall thickness 1.063" (27mm)
O-TTN-TT3-12-H-3	Beveling tool-bit 37°30, wall thickness 0.787" (20mm)
O-TTN-TT4-12-H-4	Beveling tool-bit 45°, wall thickness 0.590" (15mm)
O-TTN-TT5-12-H-5	Beveling tool-bit 30°, reversed, wall thickness 0.905" (23mm)
O-TTN-TT6-12-H-6	Beveling tool-bit 37°30, reversed, 0.826" (21mm)
O-TTN-TT7-25-H-7	Beveling tool-bit 30°, wall thickness 1.377" (35mm)
O-TTN-TT8-25-H-8	Beveling tool-bit 37°30, wall thickness 1.377" (35mm)
O-TTN-TT9-25-H-9	Beveling tool-bit for double bevel, wall thickness 1.220" (31mm)
O-TTN-TT10-12-H-10	Beveling tool-bit 37°30, double bevel, wall thickness 0.708" (18mm)
O-TTN-TT11-5-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT11-5-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT12-25-H-12	Beveling tool-bit for double bevel, wall thickness 1.811" (46mm)

Order No.	Description
O-TTN-TT13-25-H-13	Beveling tool-bit for double bevel, wall thickness 1.535" (39mm)
O-TTN-TT14-25-H-14	Beveling tool-bit 37°30, wall thickness 1.968" (50mm)
O-TTN-TT15-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT15-8-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT16-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 0.315" (8mm)
O-TTN-TT16-8-H-PT	Pointed tool-bit, max. wall thickness 90mm, width 0.315" (8mm)
O-TTN-TT17-25-H-17	Beveling tool-bit for compound bevel, wall thickness 1.299" (33mm) 37°30 / 10°
O-TTN-TT18-25-H-18	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 37°30 / 10°
O-TTN-TT19-25-H-19	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 37°30 / 10°
O-TTN-TT20-25-H-20	Beveling tool-bit for compound bevel, wall thickness 1.377" (35mm) 30° / 10°
O-TTN-TT21-25-H-21	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 30° / 10°
O-TTN-TT22-25-H-22	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 30° / 10°
O-TTN-TT23-25-H-23	Beveling tool-bit for double bevel, wall thickness 1.968" (50mm) 30°
O-TTN-TT24-12-H-24	Beveling tool-bit for double bevel, wall thickness 0.866" (22mm) 30°

TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines



OD Mounted

PROTEM SAS
ZI Les Bosses
45, Chemin du Pont du Maroc
26800 Étoile-sur-Rhône | France
Phone: +33 4 75 57 41 41
E-Mail: contact@protem.fr
Web: www.protem.fr

4 A Rue des Artisans
68280 Sundhoffen | France
Phone: +33 (0) 3 69 85 05 78
E-Mail: contact@protem.fr
Web: www.protem.fr

PROTEM GmbH
Am Hambiegel 27
76706 Dettenheim | Germany
Phone: +49 7247 93 93 0
E-Mail: info@protem-gmbh.de
Web: www.protem-gmbh.de

PROTEM USA LLC
29340 Industrial way #402
Evergreen CO 80439 | USA
Phone: +1 303 955 4862
E-Mail: contact@protemusa.com
Web: www.protemusa.com

TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines

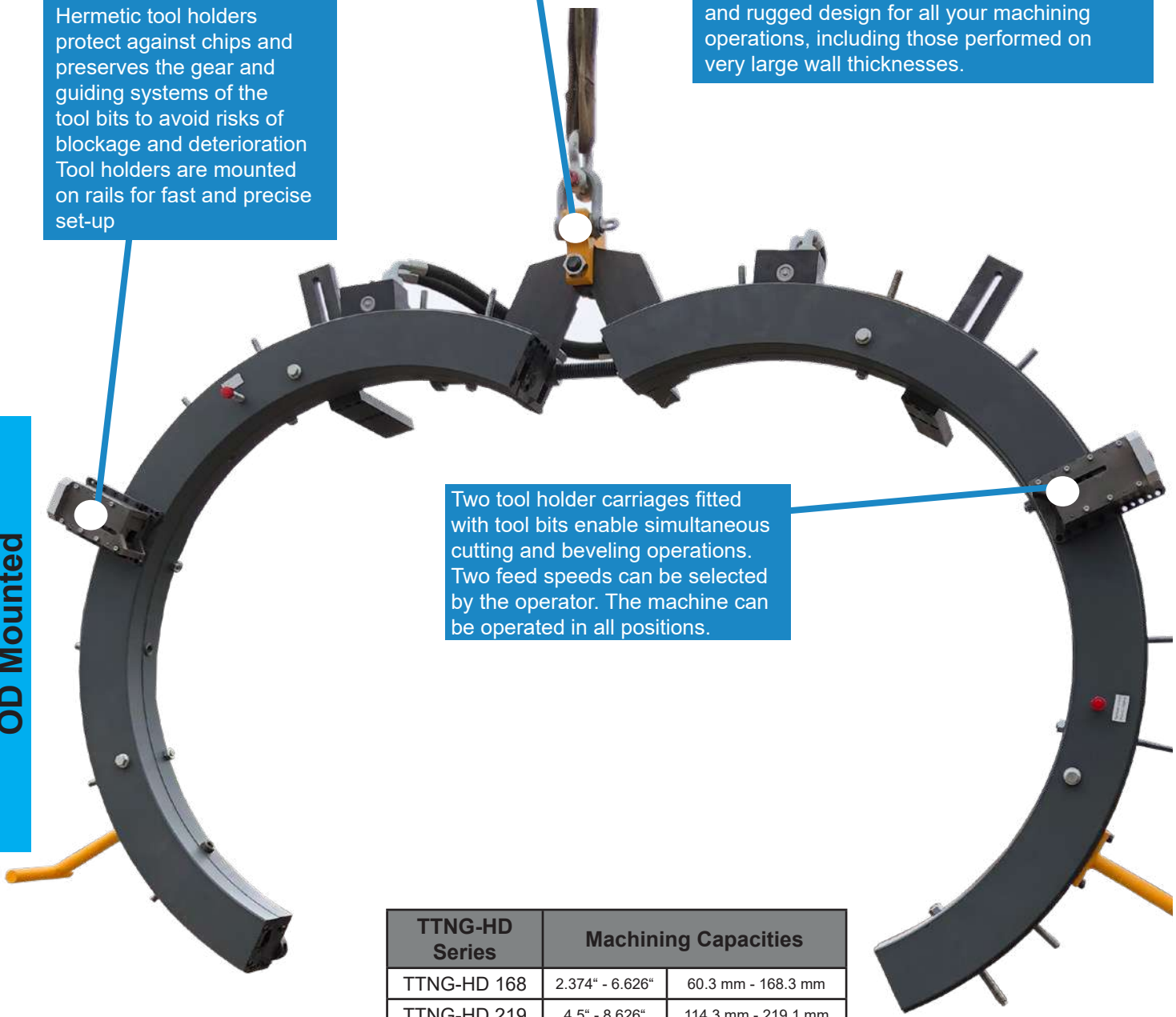
OD Mounted

Splitframe design for a use on existing tubular beams

V guiding rollers; the V design of the guiding elements compensates for the axial and radial forces in order to ensure a very high machining accuracy and less wear.

Machine frame in aluminum: Light weight and rugged design for all your machining operations, including those performed on very large wall thicknesses.

Hermetic tool holders protect against chips and preserves the gear and guiding systems of the tool bits to avoid risks of blockage and deterioration Tool holders are mounted on rails for fast and precise set-up



Two tool holder carriages fitted with tool bits enable simultaneous cutting and beveling operations. Two feed speeds can be selected by the operator. The machine can be operated in all positions.

TTNG-HD Series	Machining Capacities	
TTNG-HD 168	2.374“ - 6.626“	60.3 mm - 168.3 mm
TTNG-HD 219	4.5“ - 8.626“	114.3 mm - 219.1 mm
TTNG-HD 273	6.626“ - 10.751“	168.3 mm - 273.1 mm
TTNG-HD 323	8.626“ - 12.751“	219.1 mm - 323.9 mm
TTNG-HD 406	10.751“ - 16“	273.1 mm - 406.4 mm
TTNG-HD 508	12.751“ - 20“	323.9 mm - 508 mm
TTNG-HD 610	16“ - 24“	406.4 mm - 610 mm
TTNG-HD 762	22“ - 30“	558.8 mm - 762 mm
TTNG-HD 900	26“ - 36“	660.4 mm - 914.4 mm
TTNG-HD 1016	32“ - 40“	812.8 mm - 1016 mm
TTNG-HD 1200	36“ - 48“	914.4 mm - 1219.2 mm
TTNG-HD 1400	44“ - 56“	1117.6 mm - 1422.4 mm

Hydraulic, pneumatic or electric drives are available for all machines in the TT series.

Cold Cutting Process. No Heat Affected Zone

The machines in the TT series are available with numerous options and in different configurations with standard or specific optional tooling, such as, counterboring carriages, wheel cutters, enveloping jaws, etc.

TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines

Standard Capacity: 2.374“ - 168“ (60.3mm - 4267.2mm)

TTNG-HD are engineered to serve all industries where the weld quality is critical and projects must stay on schedule. TTNG-HD series machines are available in many configurations with standard or customised accessories and options. All the devices provided with the TTNG-HD series machines are built based on 50 years of knowledge and expertise of PROTEM to provide enhanced performance and job specific solutions. They are built to cut and bevel tubes up to 3.937” (100mm) thick (larger upon request) in the field, in prefabrication workshops.

Their low clearance design of rotating parts is highly appreciated by all operators worldwide. To mount the machine on the pipe, the two half-shells connected with a hinge can be opened. The alignment of concentricity is done by separately adjustable clamping jaws. The perpendicularity is adjusted in the same time. Additional clamping screws allow to bear the axial forces.

Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

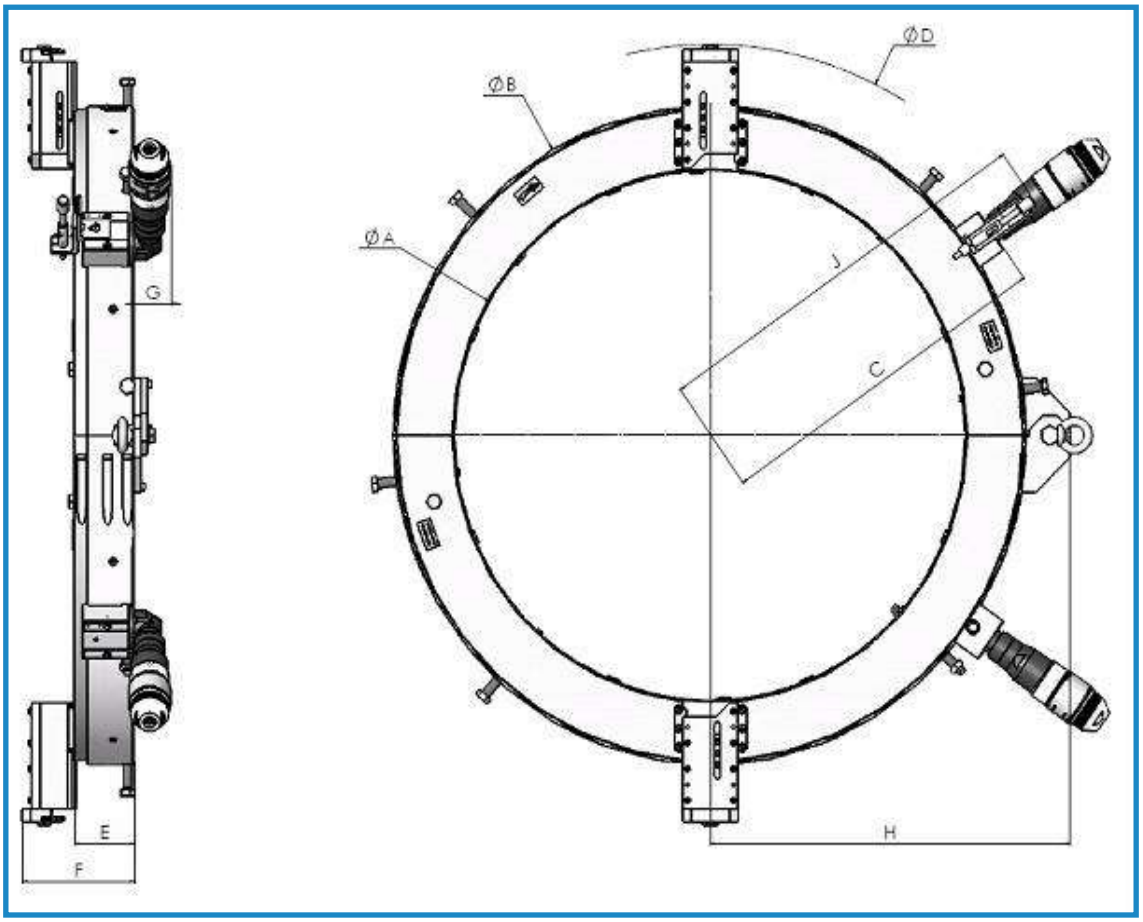
Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Splitframe Configuration

Tool carriages with covered spindles enable to ensure a protection against chips. The main advantage of the TTNG-HD machines are: cut and bevel individually or simultaneously, Perfect Weld End Preparation suited for manual welding operations and for advanced orbital welding systems, V track and rollers: The V shape design compensates for axial and radial forces to ensure maximum precision and less wear. Aluminium body: Light weight and durable for limitless machining jobs! Split frame design with hinge: Easier to set up on continuous or long length pipes. Fully enclosed tool-holder design: Protects the feed system from chips and prevents damage during machining.

Sliding tool-holders: Easier and faster to set up. Machine design permits cutting and beveling operation simultaneously, maximizes productivity! Large diameter machines delivered with two standard configuration motors allowing more power for highly demanding jobs, Cold cutting process, no heat affected zone, Dependability, Versatility, Durability, Rapidity, High Accuracy, Rigidity, Compact design, dimensions adapted for works in areas of tight clearances. For any material: mild, stainless steel, alloys, hastelloy, Inconel, duplex, super duplex, P91

TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines



Model TTNG-HD	ØA	ØB	C	ØD	E	F	G	H	J	Weight*
TTNG-HD 168	6.889" 175 mm	12.795" 325 mm	8.543" 217 mm	18.56" 471.32 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	8.504" 216 mm	16.024" 407 mm	44 kg 97 lbs
TTNG-HD 219	8.779" 223 mm	14.685" 373 mm	9.488" 241 mm	20.55" 522.04 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	9.449" 240 mm	16.968" 431 mm	51 kg 113 lbs
TTNG-HD 273	11.142" 283 mm	17.047" 433 mm	10.669" 271 mm	22.68" 575.97 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	10.629" 270 mm	18.189" 462 mm	56 kg 124 lbs
TTNG-HD 323	13.031" 331 mm	18.937" 481 mm	11.614" 295 mm	24.67" 626.71 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	11.574" 294 mm	19.134" 486 mm	60 kg 133 lbs
TTNG-HD 406	16.338" 415 mm	22.244" 565 mm	13.267" 337 mm	27.92" 709.14 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	13.228" 336 mm	20.512" 521 mm	74 kg 163 lbs
TTNG-HD 508	20.354" 517 mm	26.259" 667 mm	15.275" 388 mm	31.92" 810.67 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	15.236" 387 mm	22.519" 572 mm	86 kg 190 lbs
TTNG-HD 610	24.370" 619 mm	31.023" 788 mm	17.677" 449 mm	41.09" 1043.57 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	18.622" 473.5 mm	24.566" 624 mm	96 kg 212 lbs
TTNG-HD 762	30.512" 775 mm	37.165" 944 mm	20.708" 526 mm	47.244" 1200 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	21.692" 551.5 mm	30.551" 776 mm	123 kg 272 lbs
TTNG-HD 900	36.457" 926 mm	45.118" 1146 mm	24.488" 662 mm	53.307" 1354 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	25.669" 652.5 mm	33.622" 854 mm	196 kg 433 lbs
TTNG-HD 1016	40.945" 1040 mm	49.606" 1260 mm	26.929" 684 mm	57.401" 1458 mm	4.252" 108.6 mm	7.952" 202.6 mm	2.598" 66 mm	27.913" 709.5 mm	35.669" 906 mm	355 kg 783 lbs
TTNG-HD 1200	49.685" 1262 mm	60.629" 1540 mm	32.519" 826 mm	65.984" 1676 mm	4.724" 120.6 mm	8.976" 228 mm	5.039" 128 mm	34.448" 875 mm	39.960" 1015 mm	650 kg 1433 lbs
TTNG-HD 1400	58.504" 1486 mm	68.110" 1730 mm	35.827" 910 mm	73.779" 1874 mm	4.645" 118.1 mm	8.385" 213 mm	6.693" 170 mm	37.204" 945 mm	43.858" 1114 mm	730 kg 1610 lbs

Larger capacities up to 168" on request

*Weights for machines equipped with motors and tool-carriages.
Please contact us for further details.

TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines

Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping	Manual
Feed stroke	3.937“ (100mm)
Cutting head gear drive	174 rpm. Approximate rotation speed according to air pressure and air flow
TTNG-HD168-TTNG-HD323 1 pneumatic drive	1.47 kW, 6 bar (87 psi), 1800 l/min (63 cfm)
TTNG-HD406-TTNG-HD900 2 pneumatic drives	1.47 kW, 6 bar (87 psi), 3600 l/min (128 cfm)
TTNG-HD1016 hydraulic drive	0 - 5.7 rpm (speed to be adjusted according to the diameter, the thickness and the material of the pipe to be machined)
TTNG-HD1200 hydraulic drive	0.4 - 6 rpm (speed to be adjusted according to the diameter, the thickness and the material of the pipe to be machined)
TTNG-HD1400 hydraulic drive	0.5 - 5.2 rpm (speed to be adjusted according to the diameter, the thickness and the material of the pipe to be machined)
Electric drive	110V, 220V and 380V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	





OD Mounted

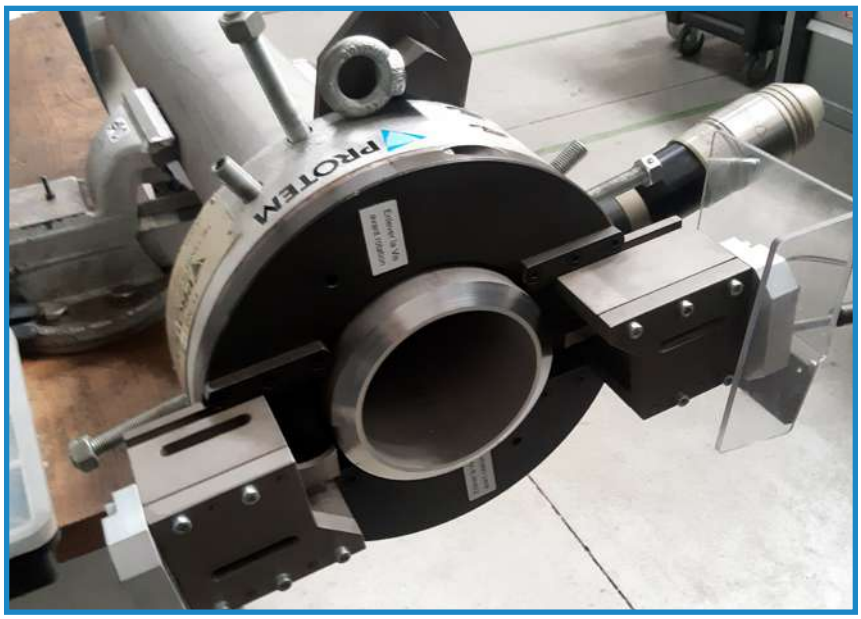
Several options available: Enveloping jaws can be optionally proposed, they are designed to clamp the machine onto even the thinnest tubes without any distortion. Remote control available on request for works in hazardous areas (under water, explosive areas, areas submitted to ionizing radiations etc) Counterboring carriages, cam-copying operations and wheel cutting are possible within the wide range of diameters covered by each model in the TTNG-HD series.

The OD tracker ensures consistent machining, regardless of the tube’s ovality. Its roller follows the tube’s OD profile and adjusts the position of the tool-holder. Radial Copying carriage. Copying carriage allows the user to machine any geometry of bevel thanks to a cam-following system. This technology of single point machining is particularly suited for heavy wall machining. Axial copying carriage: Performs special shape machining on the inner or outer diameter. Counterboring tool-holder: Performs special shape machining on the inner or outer diameter.

Counterboring operations ensure consistent thickness all around the tube by machining the inside diameter. Operations of this type are essential when automatic welding machines are used - Cutting wheel. The cutting wheel accessory allows the user to cut the tube without producing chips. The wheel is very useful when cleanliness standards require that no chips can be introduced inside the tube during machining.

TTNG-HD168 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 2.374“ - 6.626“ (60.3mm - 168.3mm)

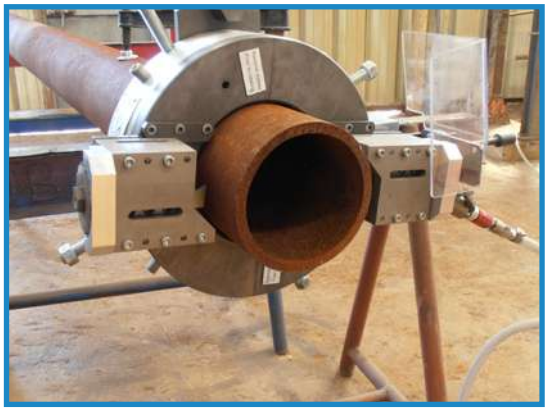


OD Mounted

Order No.	Description
TTNG-HD168-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with single right angle pneumatic drive
TTNG-HD168-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with right angle electric drive ME25 - 220V
TTNG-HD168-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with electric drive MS15 - 220V
TTNG-HD168-1040	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with right angle electric drive MS15 - 110V

Order No.	Description
TTNG-HD168-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with 1 hydraulic Motor and reversing valve
TTNG-HD168-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with 1 hydraulic Motor
TTNG-HD168-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD168-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.626" (60.3mm - 168.3mm) with Brushless Electric Drive (2HP-1,5KW) 110V

TTNG-HD168 On-Site or in Workshop:





TTNG-HD219 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 4.5“ - 8.626“ (114.3mm - 219.1mm)



Order No.	Description
TTNG-HD219-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with single right angle pneumatic drive
TTNG-HD219-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with right angle electric drive ME25 - 220V
TTNG-HD219-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with electric drive MS15 - 220V
TTNG-HD219-1040	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with right angle MS15 - 110V electric drive

Order No.	Description
TTNG-HD219-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with 1 hydraulic Motor and reversing valve
TTNG-HD219-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with 1 hydraulic Motor
TTNG-HD219-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD219-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.626" (114.3mm - 219.1mm) with Brushless Electric Drive (2HP-1,5KW) 110V



TTNG-HD273 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 6.626“ - 10.751“ (168.3mm - 273.1mm)



OD Mounted

Order No.	Description
TTNG-HD273-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with single pneumatic drive
TTNG-HD273-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with right angle electric drive ME25 - 220V
TTNG-HD273-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with electric drive MS15 - 220V
TTNG-HD273-1040	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with right angle MS15 - 110V electric drive

Order No.	Description
TTNG-HD273-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with 1 hydraulic Motor and reversing valve
TTNG-HD273-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with 1 hydraulic Motor
TTNG-HD273-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD273-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.626" - 10.751" (168.3mm - 273.1mm) with Brushless Electric Drive (2HP-1,5KW) 110V



TTNG-HD323 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 8.626“ - 12.751“ (219.1mm - 323.9mm)



Order No.	Description
TTNG-HD323-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.626" - 12.751"(219.1mm - 323.9mm) with single right angle pneumatic drive
TTNG-HD323-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.626" - 12.751"(219.1mm - 323.9mm) with right angle electric drive ME25 - 220V
TTNG-HD323-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.626" - 12.751"(219.1mm - 323.9mm) with electric drive MS15 - 220V
TTNG-HD323-1040	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.626" - 12.751"(219.1mm - 323.9mm) with right angle MS15 - 110V electric drive

Order No.	Description
TTNG-HD323-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.626" - 12.751"(219.1mm - 323.9mm) with 1 hydraulic Motor and reversing valve
TTNG-HD323-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.626" - 12.751"(219.1mm - 323.9mm) with 1 hydraulic Motor
TTNG-HD323-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.626" - 12.751"(219.1mm - 323.9mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD323-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.626" - 12.751"(219.1mm - 323.9mm) with Brushless Electric Drive (2HP-1,5KW) 110V

TTNG-HD323 On-Site or in Workshop:





TTNG-HD406 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 10.751“ - 16“ (273.1mm - 406.4mm)

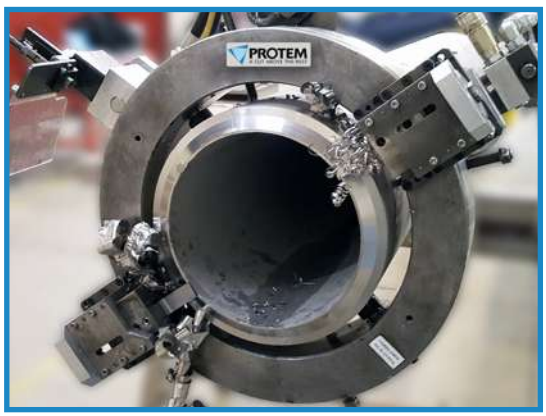


OD Mounted

Order No.	Description
TTNG-HD406-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 right angle pneumatic drives
TTNG-HD406-1004	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 pneumatic drives
TTNG-HD406-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with right angle electric drive 220V - ME25
TTNG-HD406-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with electric drive 220V - MS15
TTNG-HD406-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives and reversing valve

Order No.	Description
TTNG-HD406-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives
TTNG-HD406-1063	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives waterproof motors
TTNG-HD406-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD406-1081	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD406-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with Brushless Electric Drive (2HP-1,5KW) 110V

TTNG-HD406 On-Site or in Workshop:





TTNG-HD508 Splitframe Orbital Pipe Cutting & Beveling Machine

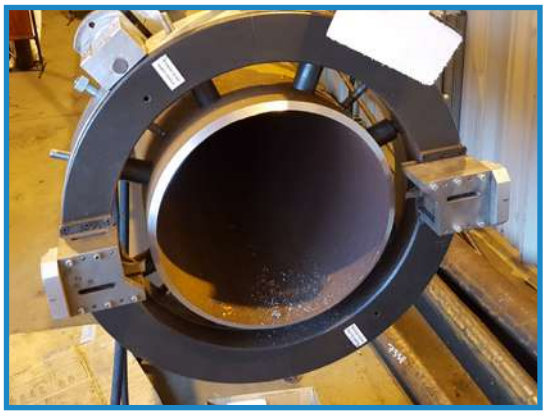
Standard Capacity: 12.751“ - 20“ (323.9mm - 508mm)



Order No.	Description
TTNG-HD508-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 right angle pneumatic drives
TTNG-HD508-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with right angle electric drive 220V - ME25
TTNG-HD508-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 hydraulic drives and reversing valve
TTNG-HD508-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 hydraulic drives
TTNG-HD508-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD508-1081	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with double Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD508-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with Brushless Electric Drive (2HP-1,5KW) 110V

TTNG-HD508 On-Site or in Workshop:





TTNG-HD610 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 16“ - 24“ (406.4mm - 610mm)



OD Mounted

Order No.	Description
TTNG-HD610-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 2 right angle pneumatic drives
TTNG-HD610-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with right angle electric drive 220V - ME25
TTNG-HD610-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 2 hydraulic drives and reversing valve
TTNG-HD610-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 2 hydraulic drives
TTNG-HD610-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD610-1081	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with double Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD610-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with Brushless Electric Drive (2HP-1,5KW) 110V

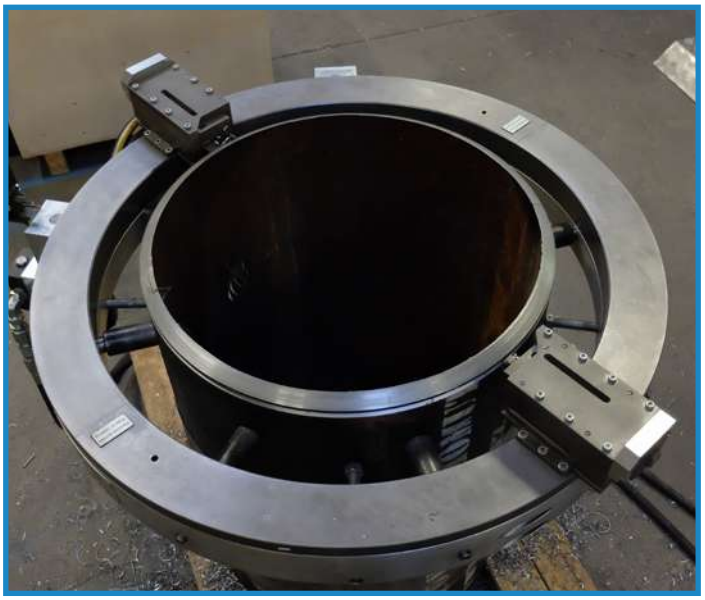
TTNG-HD610 On-Site or in Workshop:





TTNG-HD762 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 22“ - 30“ (558.8mm - 762mm)



Order No.	Description
TTNG-HD762-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 2 right angle pneumatic drives
TTNG-HD762-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with right angle electric drive 220V - ME25
TTNG-HD762-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 2 hydraulic drives and reversing valve
TTNG-HD762-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 2 hydraulic drives
TTNG-HD762-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD762-1081	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with double Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD762-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with Brushless Electric Drive (2HP-1,5KW) 110V

TTNG-HD762 On-Site or in Workshop:





TTNG-HD900 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 26“ - 36“ (660.4mm - 914.4mm)



OD Mounted

Order No.	Description
TTNG-HD900-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 right angle pneumatic drives
TTNG-HD900-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with right angle electric drive 220V - ME25
TTNG-HD900-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 hydraulic drives and reversing valve
TTNG-HD900-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 hydraulic drives
TTNG-HD900-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD900-1081	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with double Brushless Electric Drive (2HP-1,5KW) 220V
TTNG-HD900-1090	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with Brushless Electric Drive (2HP-1,5KW) 110V

TTNG-HD900 On-Site or in Workshop:



TTNG-HD1016 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 32“ - 40“ (812.8mm - 1016mm)



Order No.	Description
TTNG-HD1016-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 right angle pneumatic drives
TTNG-HD1016-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 hydraulic drives and reversing valve
TTNG-HD1016-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 hydraulic drives
TTNG-HD1016-1081	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with double Brushless Electric Drive (2HP-1,5KW) 220V



TTNG-HD1200 Splitframe Orbital Pipe Cutting & Beveling Machine

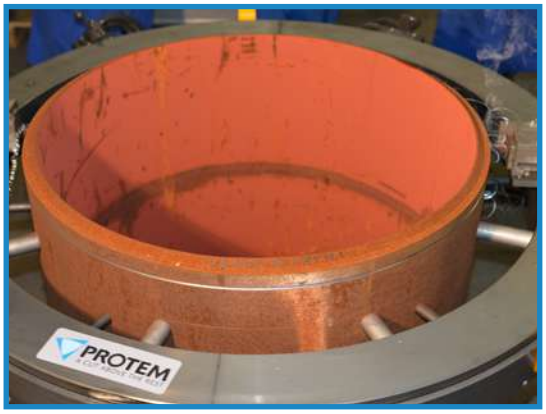
Standard Capacity: 36“ - 48“ (914.4mm - 1219.2mm)



OD Mounted

Order No.	Description
TTNG-HD1200-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 pneumatic drives
TTNG-HD1200-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 hydraulic drives and reversing valve
TTNG-HD1200-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 hydraulic drives
TTNG-HD1200-1081	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with double Brushless Electric Drive (2HP-1,5KW) 220V

TTNG-HD1200 On-Site or in Workshop:





TTNG-HD1400 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 44“ - 56“ (1117.6mm - 1422.4mm)



Order No.	Description
TTNG-HD1400-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 pneumatic drives
TTNG-HD1400-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 hydraulic drives and reversing valve
TTNG-HD1400-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 hydraulic drives
TTNG-HD1400-1081	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with double Brushless Electric Drive (2HP-1,5KW) 220V

TTNG-HD1400 On-Site or in Workshop:



TTNG-AF Splitframe Orbital Pipe Cutting & Beveling Machine

Cutting of Pipe Sections

TTNG-AF have especially been engineered for applications in the field of Oil & Gas Industry. They allow to cut a section of pipe where the weld joint shows defects. The machine allows to cut or to cut and bevel a section of pipe. This section can then be reused. TTNG-AF series machines are designed to meet the requirements of the Oil & Gas Industry in term of repeatable machining quality, reliability and rigidity. All the devices provided with the TTNG-AF series machines are built based on 50 years knowledge and expertise of PROTEM to provide enhanced performance and job specific solutions. They are built to cut and bevel tubes up to 3.937" (100mm) thick (larger upon request) on the field or in workshops.

Order No.	Description
TTNG323-3102	Cutting kit - 4 x Carriage for TTNG-HD323
TTNG406-3102	Cutting kit - 4 x Carriage for TTNG-HD406
TTNG508-3102	Cutting kit - 4 x Carriage for TTNG-HD508
TTNG610-3102	Cutting kit - 4 x Carriage for TTNG-HD610
TTNG762-3102	Cutting kit - 4 x Carriage for TTNG-HD762
TTNG900-3102	Cutting kit - 4 x Carriage for TTNG-HD900



TTNG-HD Pipe Cutting & Beveling Machines - Positioning Hoop

This equipment ensures effective clamping of the TTNG-HD orbital pipe cuting and beveling machine, which is particularly suitable for machining elbows, where the straight section is too short to clamp the machine properly. The two-parts design allows it to be fitted to existing in line pipes.

It can also be used to facilitate the installation of the TTNG-HD (clamping and adjustment) on pipes in a vertical position, with the positioning ring serving as a reference.

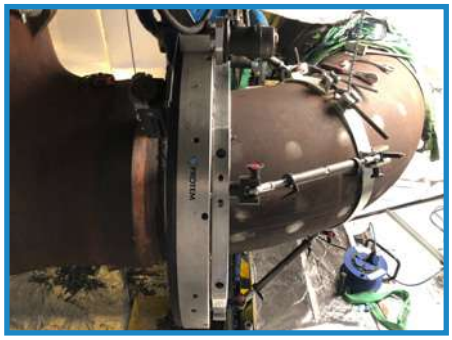
The elbow clamp sub-assembly consists of the following components

- 1 positioning ring
- 4 clevises
- 1 hoop
- 2 short tensoniers
- 2 long clamps

A modification of the TTNG-HD body is required for its attachment to the positioning ring.







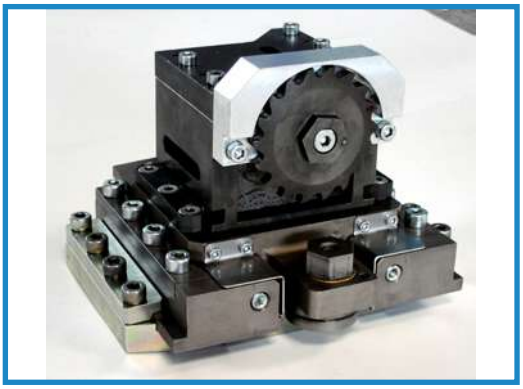
Order No.	Description
TTNG406-5100	Positioning hoop for TTNG-HD406
TTNG508-5100	Positioning hoop for TTNG-HD508
TTNG610-5100	Positioning hoop for TTNG-HD610
TTNG762-5100	Positioning hoop for TTNG-HD762
TTNG900-5100	Positioning hoop for TTNG-HD900
TTNG1016-5100	Positioning hoop for TTNG-HD1016



OD Mounted

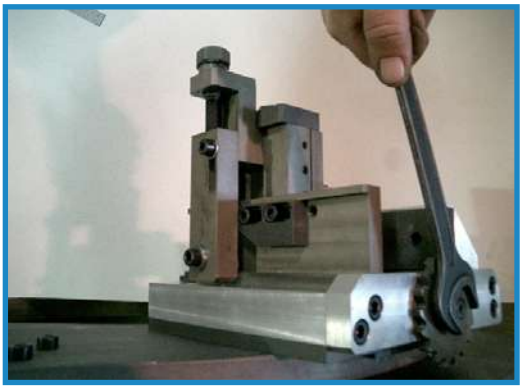
TTNG-HD OD Tracker:

Order No.	Description
TTNG-HD-ODT-1000	OD Tracker for TTNG-HD219 - TTNG-HD610
TTNG-HD-ODT-1002	OD Tracker for TTNG-HD762
TTNG-HD-ODT-1004	OD Tracker for TTNG-HD900 - TTNG-HD1016



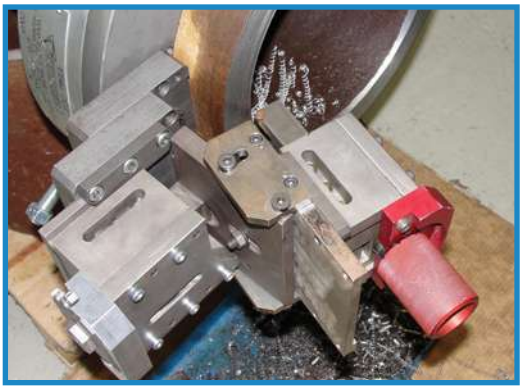
TTNG-HD Copying Carriage:

Order No.	Description
TTNG-HD-4200	Copying Carriage, stroke 1.968" (50mm)
TTNG-HD-4300	Copying Carriage, stroke 3.937" (100mm)



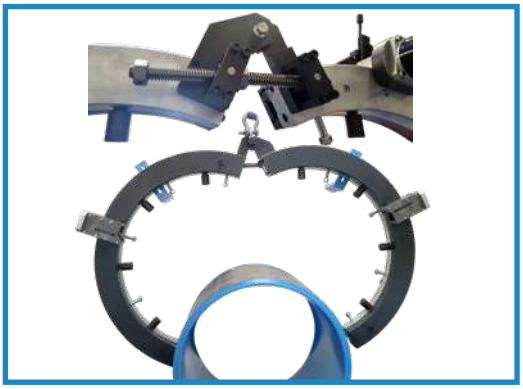
TTNG-HD Counterboring Carriage:

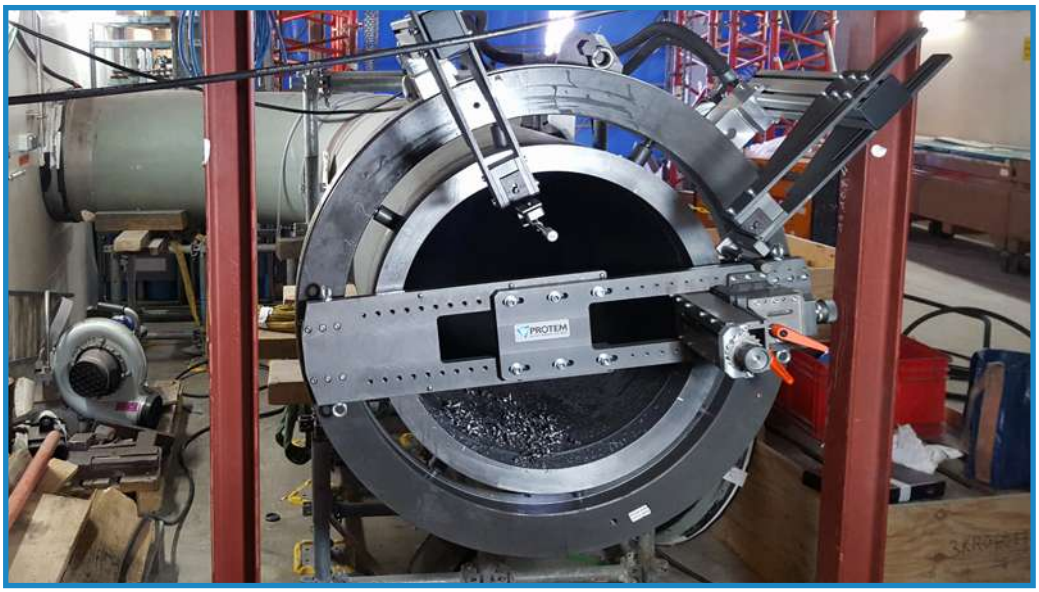
Order No.	Description
TTNG-HD-2700	Counterboring Carriage, stroke 1.968" (50mm) with tool bit holder
TTNG-HD-2800	Counterboring Carriage, stroke 1.968" (50mm) with insert holder
TTNG-HD-2900	Counterboring Carriage, stroke 3.937" (100mm) with tool bit holder
TTNG-HD-3000	Counterboring Carriage, stroke 3.937" (100mm) with insert holder



TTNG-HD Further Options:

Order No.	Description
TTNG-HD-3600	Adjustment bracket for TTNG-HD168, TTNG-HD219, TTNG-HD273, TTNG-HD323, TTNG-HD406 price per set of 2 units
TTNG-HD-3602	Adjustment bracket for TTNG-HD508, TTNG-HD610, TTNG-HD762, TTNG-HD900, TTNG-HD1016 price per set of 2 units
TTNG-HD-3604	Adjustment bracket for TTNG-HD1200, TTNG-HD1400, price per set of 2 units
TTNG-HD-3700	Opening assisted device for TTNG-HD168, TTNG-HD219, TTNG-HD273, TTNG-HD323, TTNG-HD406, TTNG-HD508
TTNG-HD-3702	Opening assisted device for TTNG-HD610, TTNG-HD762, TTNG-HD1016
TTNG-HD-3704	Opening assisted device for TTNG-HD900
TTNG-HD-3708	Opening assisted device for TTNG-HD1200
TTNG-HD-4100	Carriage with clutch feed for machining of grooves (eg for vitolic joints)

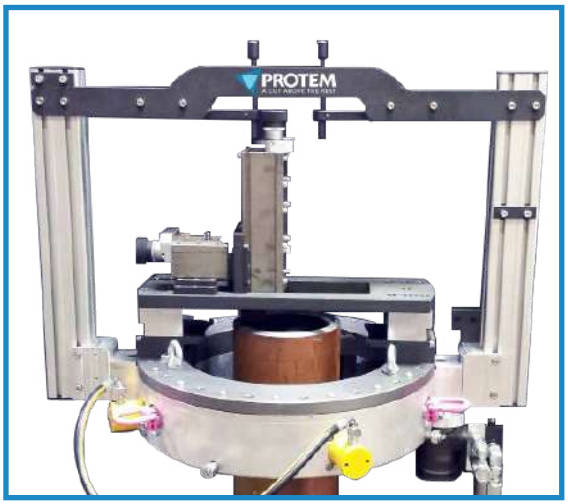




When heavy counterboring lengths are imposed, they are often associated to tight tolerances that are similar to boring operations. Protem has developed some solutions for the TTNG-HD orbital cutting machines, so as to meet the requests of the most demanding users.

Two examples of applications are shown below: The first is more « classic » with a simpler design, the second one performs more difficult shapes and its design is more compact.

TTNG-HD: System with extended counterboring/boring carriage



This system reproduces the function of the standard counterboring carriage but with an extended tool holder carriage (stroke 7"-8" (180-200mm)), a stiffening beam between the tool holder and an axial clutch finger for an automatic feed. In order to get a high degree of rigidity, the holder square of the extended tool holder is stationary.

The entire system offers increased reliability compared to the standard counterboring system, in order to ensure the boring tolerances over a great length (no bending at the end of the tool).

The machining is performed with tool bits or inserts. This is also possible to implement two clutch fingers so as to reduce the cycle times, and a steel rule or a digital gauge on the extended tool holder so as to control the depth of the tool.

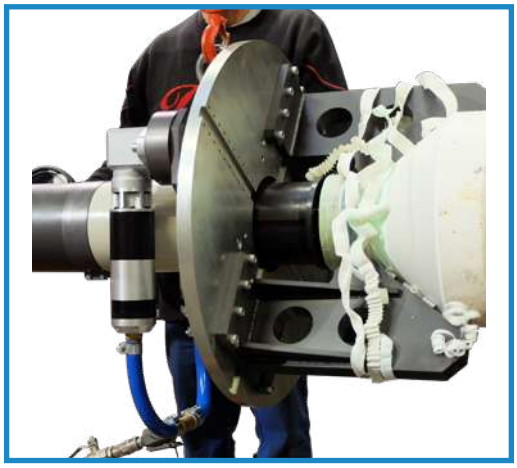
TTNG-HD: System with an automatic boring bar through copying



This system is a variation of the copying carriage for heavy wall. It is designed to perform boring operations. The tool holder carriage follows a cam that was machined according to the profile of the required boring. A cam is necessary for each boring configuration. The machining is performed by straight turning with an insert.

The entire system offers a holder beam, a copying device and incrementation with right angle for the use of a finger side clutch. This system, with reduced dimensions, machines difficult boring profiles without manual intervention (angle adjustment or others).

For TTNG-HD and US machines



PROTEM US with coating removal option

The PROTEM TTNG-HD Cold Cutting and Beveling Machines and the US ID Clamping Beveling Machines can be equipped with optional accessories capable of machining the plastic coating of pipe, up to 5.118” (130 mm) wall thickness. All maintenance operations (cutting and beveling) can be performed at any place along the pipeline, removing the coating to provide space for the welding equipment.

Heating the coating at high temperature and removing it manually with a blade, or using machines with a waterjet cutting system (which damages the pipes) is no longer necessary. The machining of the coating with PROTEM equipment is the ideal solution. PROTEM offers you professional solutions to perform machining operations on the job site safely, while getting perfect results.

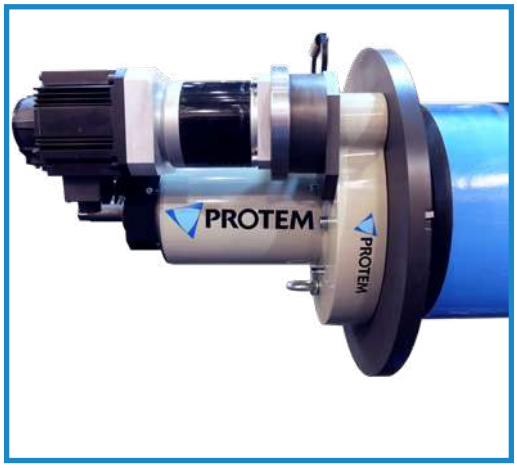




PROTEM TTNG-HD Orbital cutting machine with coating removal option

TTNG-HD Pipe Cutting & Beveling Machines — Brushless Motor

For TTNG-HD and US machines



Protem US beveling machine with Brushless Motor

Protem has implemented the brushless motor technology on their US (portable beveling machines) and TT machines (orbital pipe cutting & beveling machines). The brushless motors offer numerous advantages. Compared to classical DC motors, the brushless motors are light and compact. It is a significant benefit for machines mainly used on-site and very often in harsh environments. The lifetime of these motors is approximately four times longer than DC motors.

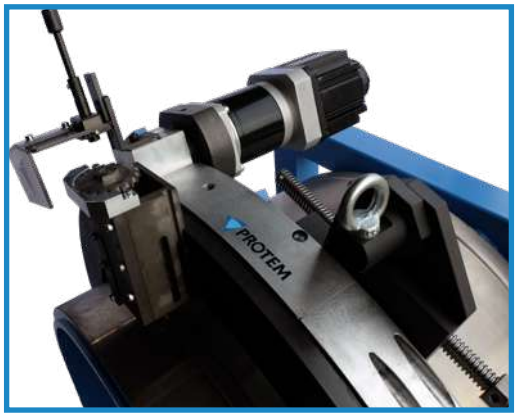
Any issues related to friction with the brushes have been rectified. The mechanical wear is almost non-existent. Consequently, the reliability of the equipment is greatly improved. The electrical efficiency is higher than what a DC motor is able to provide. Moreover, the thermal heating of a brushless motor is very low compared to a traditional motor.

The speed adjustment is far smoother and the torque stays constant during the use of the motor (no modification is needed for the input voltage) Lastly, the brushless motor is not vibrating, and the low noise level of the running motor guarantees a positive ergonomic experience for the operators using the equipment.

Order No.	Description
US80-1080	Heavy Duty Pipe Facing Machine with brushless electric drive & Three-Phase Motorization. Please indicate the required voltage and frequency for your application. For Ø 3.149“ - 13.976“ (80mm - 355mm)
US150-1080	Heavy Duty Pipe Facing Machine with brushless electric drive & Three-Phase Motorization. Please indicate the required voltage and frequency for your application. For Ø 5.905" - 20" (150mm - 508mm)

Order No.	Description
TTNG-HD168-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TTNG-HD219-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TTNG-HD273-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TTNG-HD323-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TTNG-HD406-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TTNG-HD508-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TTNG-HD610-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TTNG-HD762-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TTNG-HD900-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V





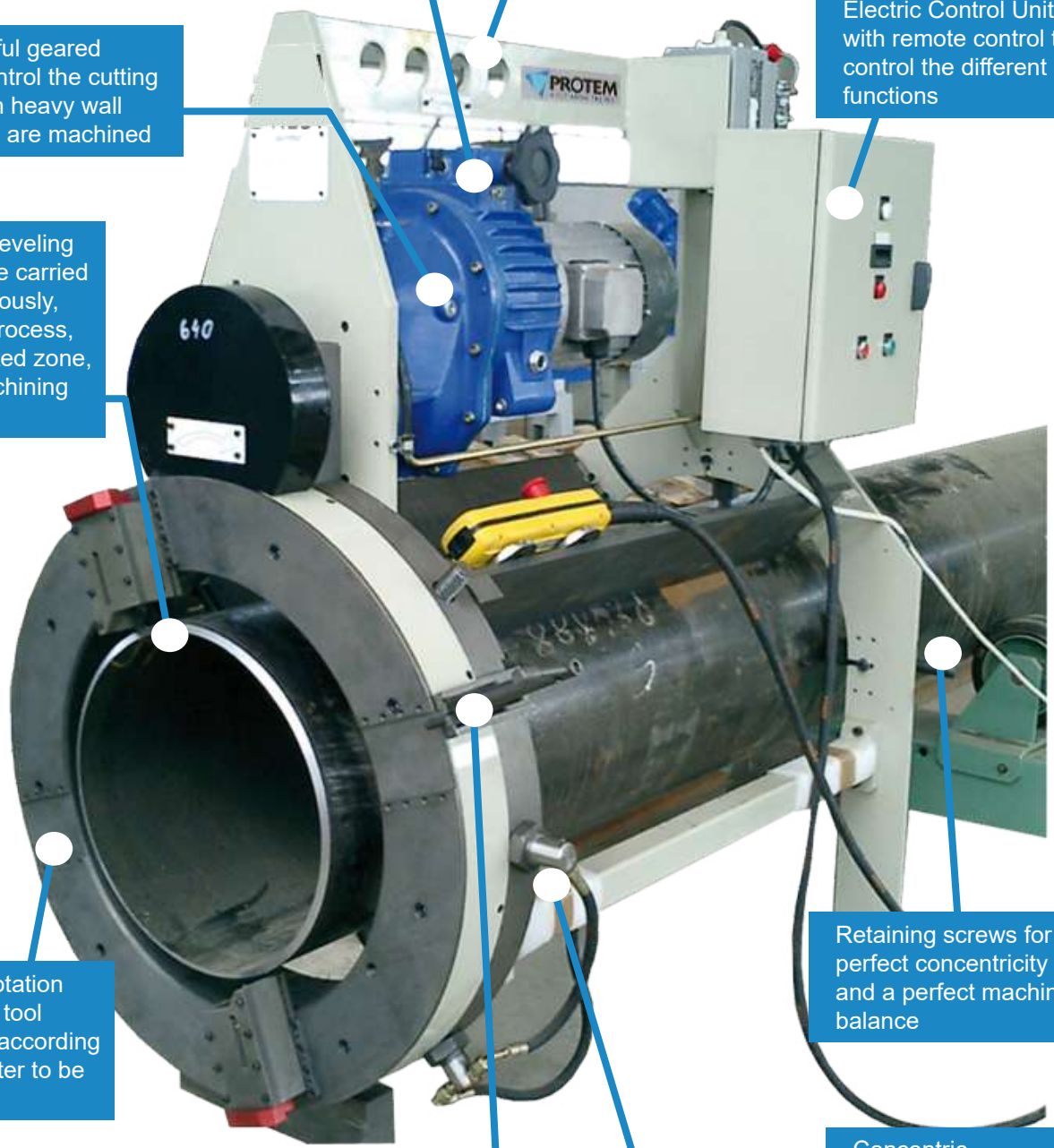
Protem TTNG-HD orbital cutting machine with Brushless Motor

OD Mounted

Order No.	Description
O-TTN-TT1-5-H-PL	Severing tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT1-5-H-PT	Pointed tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT2-12-H-2	Beveling tool-bit 30°, wall thickness 1.063" (27mm)
O-TTN-TT3-12-H-3	Beveling tool-bit 37°30, wall thickness 0.787" (20mm)
O-TTN-TT4-12-H-4	Beveling tool-bit 45°, wall thickness 0.590" (15mm)
O-TTN-TT5-12-H-5	Beveling tool-bit 30°, reversed, wall thickness 0.905" (23mm)
O-TTN-TT6-12-H-6	Beveling tool-bit 37°30, reversed, 0.826" (21mm)
O-TTN-TT7-25-H-7	Beveling tool-bit 30°, wall thickness 1.377" (35mm)
O-TTN-TT8-25-H-8	Beveling tool-bit 37°30, wall thickness 1.377" (35mm)
O-TTN-TT9-25-H-9	Beveling tool-bit for double bevel, wall thickness 1.220" (31mm)
O-TTN-TT10-12-H-10	Beveling tool-bit 37°30, double bevel, wall thickness 0.708" (18mm)
O-TTN-TT11-5-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT11-5-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT12-25-H-12	Beveling tool-bit for double bevel, wall thickness 1.811" (46mm)

Order No.	Description
O-TTN-TT13-25-H-13	Beveling tool-bit for double bevel, wall thickness 1.535" (39mm)
O-TTN-TT14-25-H-14	Beveling tool-bit 37°30, wall thickness 1.968" (50mm)
O-TTN-TT15-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT15-8-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT16-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 0.315" (8mm)
O-TTN-TT16-8-H-PT	Pointed tool-bit, max. wall thickness 90mm, width 0.315" (8mm)
O-TTN-TT17-25-H-17	Beveling tool-bit for compound bevel, wall thickness 1.299" (33mm) 37°30 / 10°
O-TTN-TT18-25-H-18	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 37°30 / 10°
O-TTN-TT19-25-H-19	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 37°30 / 10°
O-TTN-TT20-25-H-20	Beveling tool-bit for compound bevel, wall thickness 1.377" (35mm) 30° / 10°
O-TTN-TT21-25-H-21	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 30° / 10°
O-TTN-TT22-25-H-22	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 30° / 10°
O-TTN-TT23-25-H-23	Beveling tool-bit for double bevel, wall thickness 1.968" (50mm) 30°
O-TTN-TT24-12-H-24	Beveling tool-bit for double bevel, wall thickness 0.866" (22mm) 30°

TNO Series OD Mount Pipe Cutting & Beveling Machines



An integrated hydraulic power unit with high pressure operates the clamping jacks

Rugged design and easy transport of the machine for integration of the machine into a production line

Very powerful geared motor to control the cutting forces when heavy wall thicknesses are machined

Electric Control Unit with remote control to control the different functions

Cutting and beveling operations are carried out simultaneously, cold cutting process, no heat affected zone, very high machining precision

Adjustable rotation speed of the tool holder plate according to the diameter to be machined

Retaining screws for perfect concentricity and a perfect machine balance

Concentric hydraulic external clamping that is automated

Automatic and adjustable feed between two speeds due to the mechanical incrementation

TNO Series	Machining Capacities	
TNO4-12	4.5“ - 12.751“	114.3 mm - 323.9 mm
TNO12-24	12.75“ - 24"	323.9 mm - 610 mm
TNO24-36	24.015“ - 36“	610 mm - 914.4 mm
TNO36-48	36" - 48"	(914.4mm - 1219.2mm)
TNO48-60	48“ - 60“	(1219.2mm - 1524mm)
TNO60-72	60“ - 72“	(1524mm - 1828.8mm)

TNO Series OD Mount Pipe Cutting & Beveling Machines

Standard Capacity: 4.5“ - 72“ (114.3mm - 1828.8mm)



The TNO are high speed cutting and beveling machines, specially designed to fit your piping or tubing prefab applications on-site or in workshops. These machines cut and bevel heavy wall pipes faster than any other machine!
The TNO machines save space in your workshops and can be integrated into your production lines for unmatched results.
They save man hours by avoiding grinding operations, flame cutting, difficult handling and the setting of pipes on a lathe.
They are transportable, rigid, fast and accurate.
The TNO machines are electrically driven and equipped with a hydraulic power unit for the automatic clamping system.
Clamping screws located on the front and on the rear of the machine adjust the concentricity and allow a perfect alignment and a perfect squaring.
The TNO are OD clamping orbital cutting and beveling machines. The cutting tools rotate around the tube.
The automatic incremental feed system controls the two tool carriages with two feed speeds.
The rotation speed of the tool holder plate is adjustable according to the tube Ø.

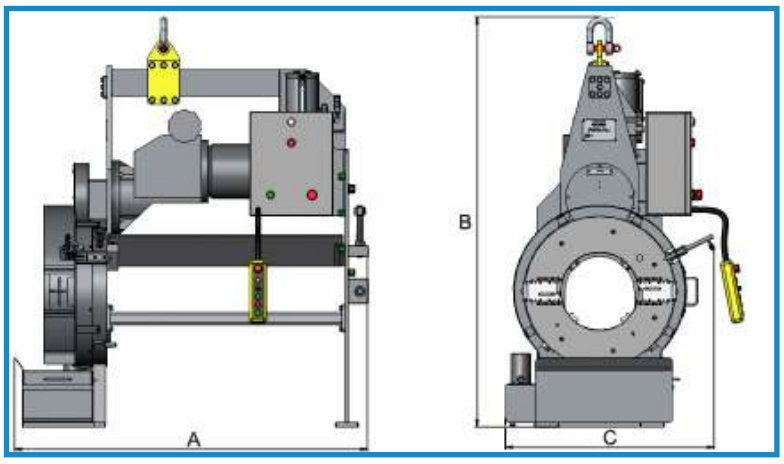
SPECIFIC WELD PREPARATIONS ON REQUEST

Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗

OD Mounted

Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System



Model TNO	A	B	C
TNO 4-12	66.929" 1700 mm	77.322" 1964 mm	39.370" 1000 mm
TNO 12-24	66.929" 1700 mm	83.385“ 2118 mm	47.637“ 1210 mm
TNO 24-36	66.929" 1700 mm	99.015“ 2515 mm	59.448“ 1510 mm

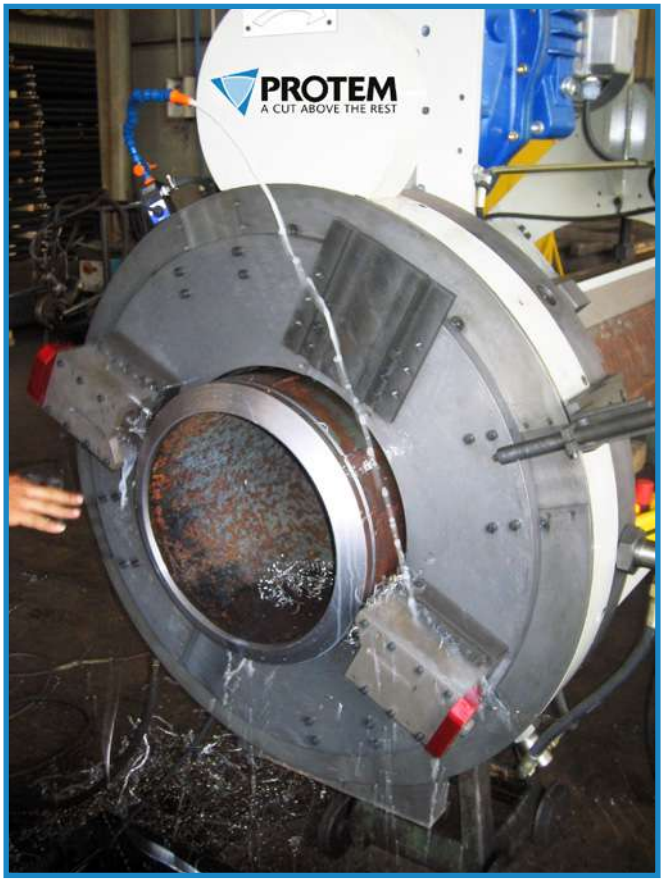
TNO4-12 OD Mount Pipe Cutting & Beveling Machine

Standard Capacity: 4.5“ - 12.75“ (114.3mm - 323.9mm)



Technical Features:

Cutting carriage stroke	3.93” (100mm)	
Effective stroke of cutting and bevelling tool bits	2.36” (60mm)	
Clamping jack movement	3.93” (100mm)	
	Minimum	Maximum
Cutting head gear drive	5.5 RPM	30 RPM
Tool-holder plate feed speed	0.0032"/rev. 0.08 mm/rev.	0.0063"/rev. 0.16 mm/rev.
Clamping jack normal pressure	1450 psi 100 bars	2900 psi 200 bars
Pipe OD range	4.5" 114.3 mm	12.75" 323.9 mm
Electricity supply	50-60 Hz / 400 V 3-phase + earth	
Installed capacity	11 Kw	
Power consumption under full load	19 A	



Order No.	Description
TNO_FAB-4/12-1020	Heavy Duty Pipe Cutting & Beveling Machine TNO 4-12 for Ø 4.5" - 12.751" (114.3 mm - 323.9 mm) with electric drive 220V



OD Mounted

TNO12-24 OD Mount Pipe Cutting & Beveling Machine

Standard Capacity: 12.75“ - 24“ (323.9mm - 610mm)

OD Mounted



Technical Features:

Cutting carriage stroke	3.93” (100mm)	
Effective stroke of cutting and bevelling tool bits	2.36” (60mm)	
Clamping jack movement	3.93” (100mm)	
	Minimum	Maximum
Cutting head gear drive	4.2 RPM	21.5 RPM
Tool-holder plate feed speed	0.0032"/rev. 0.08 mm/rev.	0.0063"/rev. 0.16 mm/rev.
Clamping jack normal pressure	1450 psi 100 bars	2900 psi 200 bars
Pipe OD range	12.75" 323.9 mm	24" 610 mm
Electricity supply	50-60 Hz / 400 V 3-phase + earth	
Installed capacity	11 Kw	
Power consumption under full load	19 A	

Order No.	Description
TNO_FAB-24-1020	Heavy Duty Pipe Cutting & Beveling Machine TNO12-24 for Ø 12.751" - 24.015" (323.9 mm - 610 mm) with electric drive 220V

Use On-Site or in Workshop:





TNO24-36 OD Mount Pipe Cutting & Beveling Machine

Standard Capacity: 24.015“ - 36“ (610mm - 914.4mm)



Technical Features:

Cutting carriage stroke	3.93” (100mm)	
Effective stroke of cutting and bevelling tool bits	2.36” (60mm)	
Clamping jack movement	3.93” (100mm)	
	Minimum	Maximum
Cutting head gear drive	2.2 RPM	11.9 RPM
Tool-holder plate feed speed	0.0032"/rev. 0.08 mm/rev.	0.0063"/rev. 0.16 mm/rev.
Clamping jack normal pressure	1450 psi 100 bars	2900 psi 200 bars
Pipe OD range	24" 610 mm	36" 914.4 mm
Electricity supply	50-60 Hz / 400 V 3-phase + earth	
Installed capacity	11 Kw	
Power consumption under full load	19 A	

Order No.	Description
TNO_FAB-36-1020	Heavy Duty Pipe Cutting & Beveling Machine TNO24-36 for Ø 24.015" - 36.023" (610 mm - 914.4 mm) with electric drive 220V

OD Mounted

TNO36-48 OD Mount Pipe Cutting & Beveling Machine

Standard Capacity: 36" - 48" (914.4mm - 1219.2mm)

Order No.	Description
TNO_FAB-48-1020	Heavy Duty Pipe Cutting & Beveling Machine TNO36-48 for Ø 36" - 48" (914.4mm - 1219.2mm) with electric drive 220V

TNO48-60 OD Mount Pipe Cutting & Beveling Machine

Standard Capacity: 48“ - 60“ (1219.2mm - 1524mm)

Order No.	Description
TNO_FAB-60-1020	Heavy Duty Pipe Cutting & Beveling Machine TNO48-60 for Ø 48“ - 60“ (1219.2mm - 1524mm) with electric drive 220V

TNO60-72 OD Mount Pipe Cutting & Beveling Machine

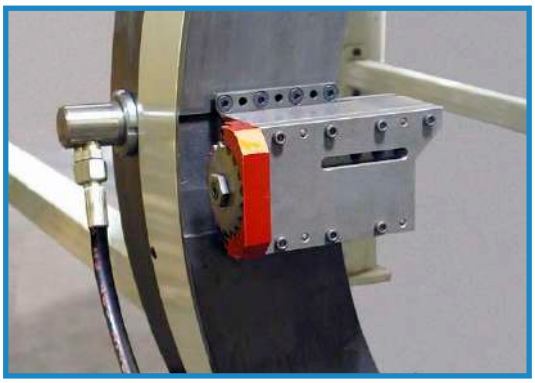
Standard Capacity: 60“ - 72“ (1524mm - 1828.8mm)

Order No.	Description
TNO_FAB-72-1020	Heavy Duty Pipe Cutting & Beveling Machine TNO60-72 for Ø 60“ - 72“ (1524mm - 1828.8mm) with electric drive 220V

LARGER MODELS ON REQUEST

TNO Series OD Mount Pipe Cutting & Beveling Machines Options

Tool block carriage



3.937" (100 mm) stroke carriages or two ovality tracking carriages are necessary. Depending on the application, a wide range of cutting or beveling tool bits are available to perform the majority of the required machining applications.

Order No.	Description
TTNG-2200	Carriage, Stroke 1.968" (50 mm)
TTNG-2400	Carriage, Stroke 3.937" (100 mm)
TNO_FAB-1002	Carriage for ovalization tracking with kit intermediate plates and clutch holder

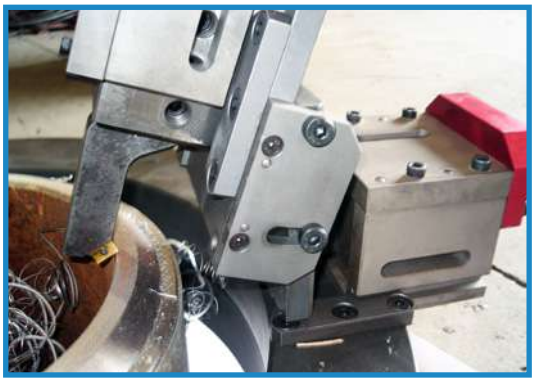
Lubrication device



In order to increase the lifetime of the inserts and to reduce the noise level during the machining operations a lubrication device must be used. This lubrication device is made up of a cutting fluid tank, covered by a chip container and a pump for circulating the cutting fluid . A flexible piping kit for aiming the fluid at the cutting point is also supplied together with a tank support plate. This option is activated through a push button.

Order No.	Description
TNO_FAB-24-LUB	Lubrication Kit
TNO_FAB-36-LUB	Lubrication Kit

Counterboring carriage



The counterboring carriage performs an ID bevel in order to obtain a regular land.

Order No.	Description
TTNG-2700	Counterboring carriage, stroke 1.968" (50 mm) with tool bit holder
TTNG-2800	Counterboring carriage, stroke 1.968" (50 mm) with insert holder
TTNG-2900	Counterboring carriage, stroke 3.937" (100 mm) with tool bit holder
TTNG-3000	Counterboring carriage, stroke 3.937" (100 mm) with insert holder

Chipguard



The whole range of TNO units is fitted with a protective housing which covers the tool-plate. The housing represents a safety system for the operators. It has a slot to be able to adjust the posit ion of the clutch pin that moves the tool carriage forward.

Order No.	Description
TNO_FAB-2400	Safety housing

TNO Series OD Mount Pipe Cutting & Beveling Machines Tool bits

Order No.	Description
O-TTN-TT1-5-H-PL	Severing tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT1-5-H-PT	Pointed tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT2-12-H-2	Beveling tool-bit 30°, wall thickness 1.063" (27mm)
O-TTN-TT3-12-H-3	Beveling tool-bit 37°30, wall thickness 0.787" (20mm)
O-TTN-TT4-12-H-4	Beveling tool-bit 45°, wall thickness 0.590" (15mm)
O-TTN-TT5-12-H-5	Beveling tool-bit 30°, reversed, wall thickness 0.905" (23mm)
O-TTN-TT6-12-H-6	Beveling tool-bit 37°30, reversed, 0.826" (21mm)
O-TTN-TT7-25-H-7	Beveling tool-bit 30°, wall thickness 1.377" (35mm)
O-TTN-TT8-25-H-8	Beveling tool-bit 37°30, wall thickness 1.377" (35mm)
O-TTN-TT9-25-H-9	Beveling tool-bit for double bevel, wall thickness 1.220" (31mm)
O-TTN-TT10-12-H-10	Beveling tool-bit 37°30, double bevel, wall thickness 0.708" (18mm)
O-TTN-TT11-5-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT11-5-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT12-25-H-12	Beveling tool-bit for double bevel, wall thickness 1.811" (46mm)

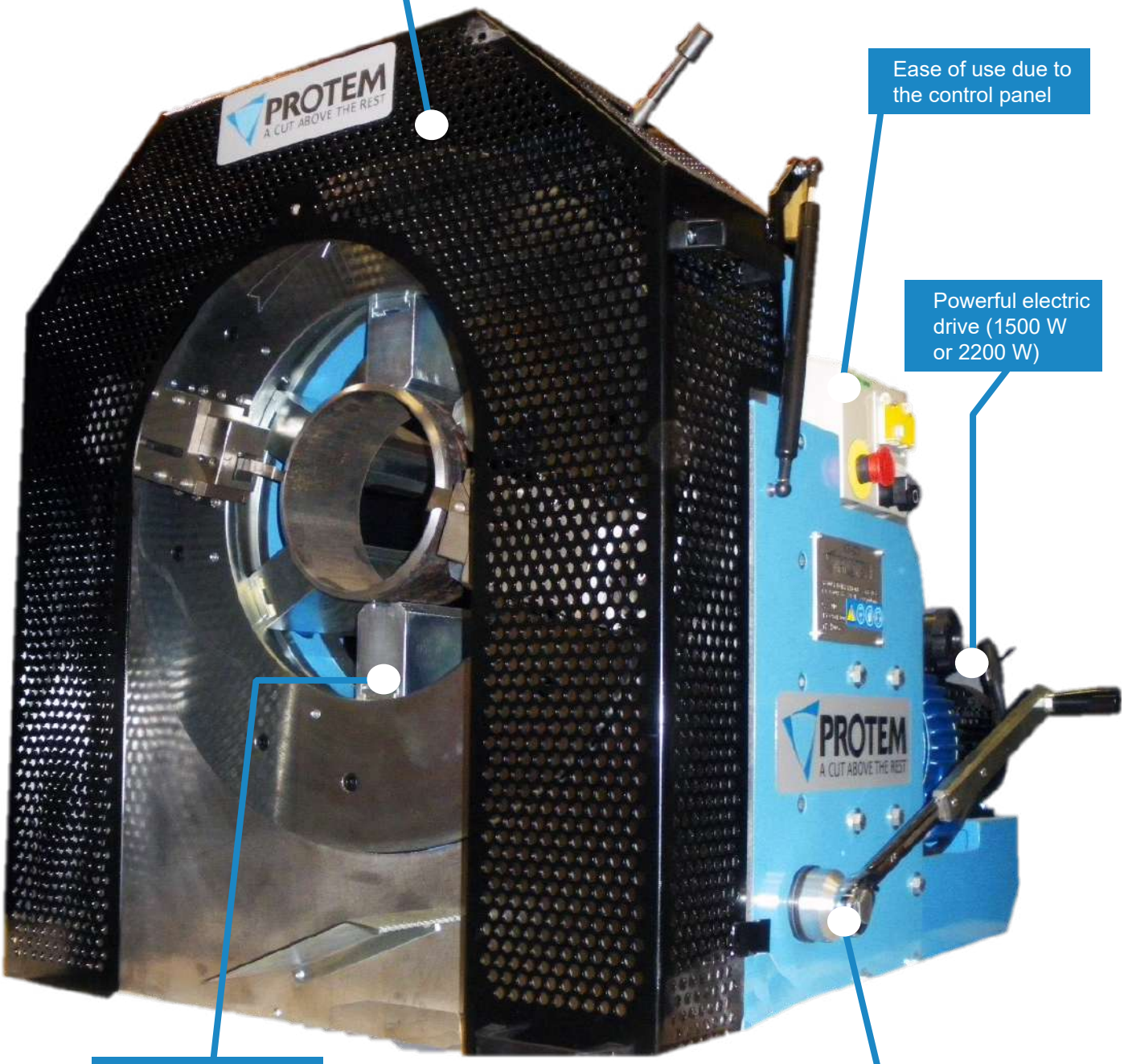
Order No.	Description
O-TTN-TT13-25-H-13	Beveling tool-bit for double bevel, wall thickness 1.535" (39mm)
O-TTN-TT14-25-H-14	Beveling tool-bit 37°30, wall thickness 1.968" (50mm)
O-TTN-TT15-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT15-8-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT16-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 0.315" (8mm)
O-TTN-TT16-8-H-PT	Pointed tool-bit, max. wall thickness 90mm, width 0.315" (8mm)
O-TTN-TT17-25-H-17	Beveling tool-bit for compound bevel, wall thickness 1.299" (33mm) 37°30 / 10°
O-TTN-TT18-25-H-18	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 37°30 / 10°
O-TTN-TT19-25-H-19	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 37°30 / 10°
O-TTN-TT20-25-H-20	Beveling tool-bit for compound bevel, wall thickness 1.377" (35mm) 30° / 10°
O-TTN-TT21-25-H-21	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 30° / 10°
O-TTN-TT22-25-H-22	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 30° / 10°
O-TTN-TT23-25-H-23	Beveling tool-bit for double bevel, wall thickness 1.968" (50mm) 30°
O-TTN-TT24-12-H-24	Beveling tool-bit for double bevel, wall thickness 0.866" (22mm) 30°

MF Series Transportable Cutting & Beveling Machines

OD Mounted

Machine guard ensures safe use

Hermetic tool holders protect against chips and preserve the gear and guiding systems of the tool bits to avoid risks of blockage and deterioration. Tool holders are mounted on rails for fast and precise set-up



Ease of use due to the control panel

Powerful electric drive (1500 W or 2200 W)

Fast and perfect concentric clamping with a ratchet

Very rugged design for fast and precise machining of tubes with large wall thicknesses

Automatic feed with clutch

MF Series	Machining Capacities	
MF170	0.5“ - 6.626“	12.7 mm - 168.3 mm
MF420	6.626“ - 16.535"	168.3 mm - 420 mm

MF Series Transportable Cutting & Beveling Machines

Standard Capacity: 2.374" - 16.535“ (60.3mm - 420mm)

Extended Capacity: 0.5" - 16.535“ (12.7mm - 420mm)



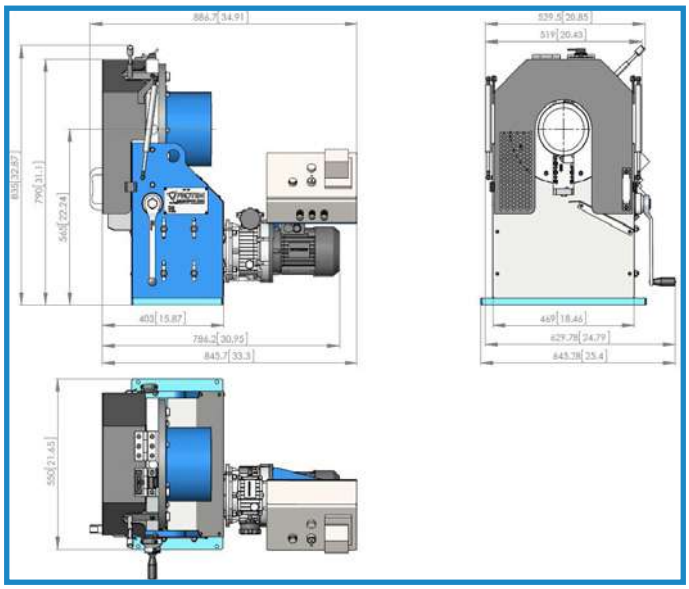
The PROTEM MF Series machines are orbital cutting & beveling machines designed to cut and bevel tubes & pipes from 1" - 16.535" (25.4 mm – 420 mm), in one operation!
The concentric clamping system allows for quick and easy tube tightening and automatic adjustment.
The machines are equipped with very strong motors that have adjustable speed. The machining plate is equipped with two tool carriages that provide automatic feed by means of a mechanical clutch.
A protective cage ensures safety and security for the operator.

Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗



Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System
- No distorsion of the tubes & pipes during the machining process, even the thinest ones



OD Mounted

MF170 Transportable Cutting & Beveling Machine

Standard Capacity: 2.374" - 6.626“ (60.3mm - 168.3mm)

Extended Capacity: 0.5" - 6.626“ (12.7mm - 168.3mm)

Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping	External clamping with 4 jaws
Feed	Automatic with clutch
Motor speed	Minimum speed: 18 rpm Maximum speed: 90 rpm
Electric drive	400 V (1500 W)

Order No.	Description
MF-170-1020	Stationary & Mobile Cutting and Beveling machine (CE Standard) for Ø 2.374" - 6.626“ (60.3mm - 168.3mm)
MF-170-1040	Stationary & Mobile Cutting and Beveling machine (UL Standard) for Ø 2.374" - 6.626“ (60.3mm - 168.3mm)
MF-170TC-1040	Stationary & Mobile Cutting and Beveling machine (UL Standard) dual clamping for Ø 2.374" - 6.626“ (60.3mm - 168.3mm)

Use On-Site or in Workshop:

OD Mounted



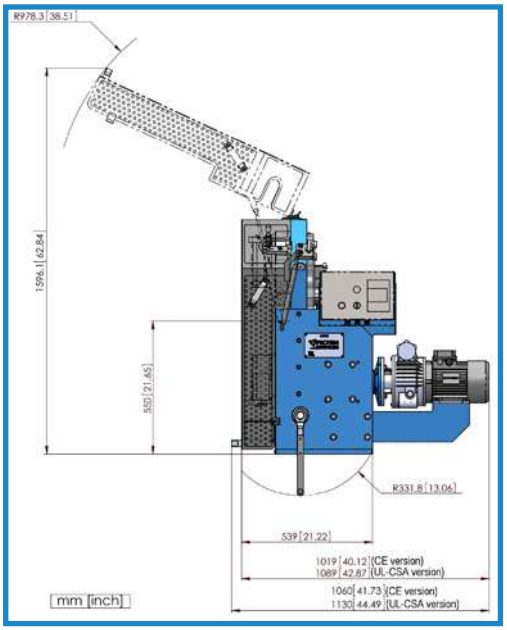


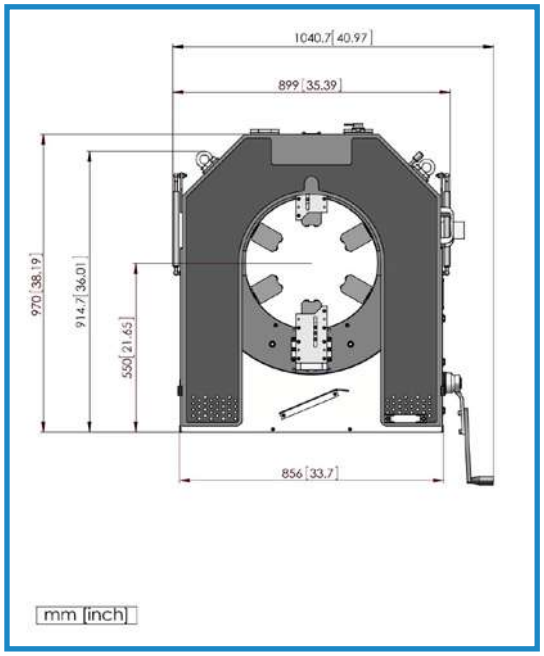


MF420 Transportable Cutting & Beveling Machine

Standard Capacity: 6.626" - 16.535“ (168.3mm - 420mm)







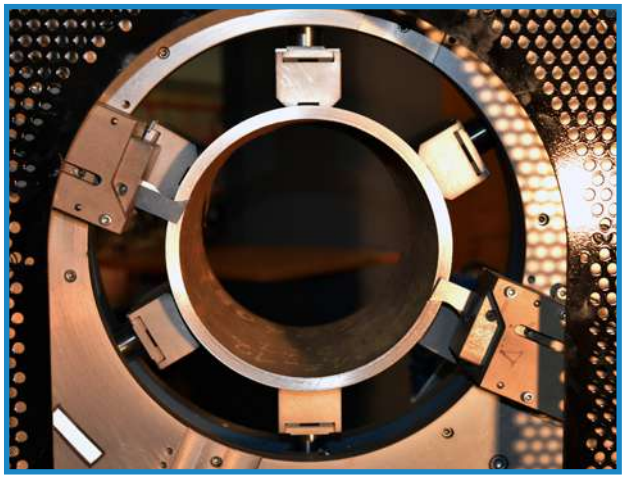
Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping	External clamping with 6 jaws
Feed	Automatic with clutch
Motor speed	Minimum speed: 12 rpm Maximum speed: 56 rpm
Electric drive	400 V (2200 W)

Order No.	Description
MF-420-1020	Stationary & Mobile Cutting and Beveling machine (CE Standard) for Ø 6.626" - 16.535" (168.3mm - 420mm)
MF-420-1040	Stationary & Mobile Cutting and Beveling machine (UL Standard) for Ø 6.626" - 16.535" (168.3mm - 420mm)
MF-420TC-1040	Stationary & Mobile Cutting and Beveling machine (UL Standard) dual clamping for Ø 6.626" - 16.535" (168.3mm - 420mm)

Use On-Site or in Workshop:





OD Mounted

MF620 Transportable Cutting & Beveling Machine

Standard Capacity: 16" - 24" (406.4m - 610mm)

Order No.	Description
MF-620-1020	Stationary & Mobile Cutting and Beveling machine (CE Standard) for Ø 16" - 24" (406.4m - 610mm)
MF-620-1040	Stationary & Mobile Cutting and Beveling machine (UL Standard) for Ø 16" - 24" (406.4m - 610mm)
MF-620TC-1040	Stationary & Mobile Cutting and Beveling machine (UL Standard) dual clamping for Ø 16" - 24" (406.4m - 610mm)

MF920 Transportable Cutting & Beveling Machine

Standard Capacity: 24" - 36" (610mm - 914.4mm)

Order No.	Description
MF-920TC-1040	Stationary & Mobile Cutting and Beveling machine (CE Standard) dual clamping for Ø 24" - 36" (610mm - 914.4mm)





MF Series Transportable Cutting & Beveling Machines Options & Tool bits

MF170 Options:

Order No.	Description
MF170-K01	Wooden crate for MF170
MF-170-1705	37°50 double beveling tool assembly
MF-170-1710	Right Hand Insert-Holder 30°
MF-170-1711	Right Hand Insert-Holder 37.5°
MF-170-1712	Left Hand Insert-Holder 37.5°
MF-170-1713	Left Hand Insert-Holder 30°
MF-170-1714	Shim under Cutting-tool bit 0.211" (5.35mm)
MF-170-1715	Shim under Cutting-tool bit 0.191" (4.85mm)
MF-170-2200	Kit for Ø 1"-2.48" (25.4mm-63mm)
MF-170-2400	Lifting Table, électric
MF-170-13C00	Visual speed indicator
MF170-1400	Carriage, Stroke 2.362" (60 mm)

MF420 Options:

Order No.	Description
MF420-K01	Caixa de madeira para MF420
MF-420-1133-1	Garra alargada H= 2,441“ (62 mm)
MF-420-1133-2	Garra alargada H= 4,213“ (107 mm)
MF-420-2000	Kit de lubrificação para máquinas tipo MF
MF-420-3000	Mesa elevatória elétrica
O-MF-SO-20014	Porta-inserções à esquerda de 30° para MF420 (espessura máxima de 0.5"" (12.7mm)) sem talão
O-MF-SO-20015	Porta-inserções à direita de 30° para MF420 (espessura máxima de 0.5" (12.7mm)) sem talão
MF-420-13C00	Indicador de velocidade visual
TTNG-2200	Carro, curso de 1.968" (50mm)
TTNG-2400	Carro, curso de 3.937" (100mm)

MF Series Tool bits:

Order No.	Description
O-MF-P1-3-H	Cutting tool (2 cutting edges) with shim
O-MF-P2-4-H	Tool inserts for 30° and 37.5°
O-TTN-TT1-5-H-PL	Severing tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT1-5-H-PT	Pointed tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT2-12-H-2	Beveling tool-bit 30°, wall thickness 1.063" (27mm)
O-TTN-TT3-12-H-3	Beveling tool-bit 37°30, wall thickness 0.787" (20mm)
O-TTN-TT4-12-H-4	Beveling tool-bit 45°, wall thickness 0.590" (15mm)
O-TTN-TT5-12-H-5	Beveling tool-bit 30°, reversed, wall thickness 0.905" (23mm)
O-TTN-TT6-12-H-6	Beveling tool-bit 37°30, reversed, 0.826" (21mm)
O-TTN-TT7-25-H-7	Beveling tool-bit 30°, wall thickness 1.377" (35mm)
O-TTN-TT8-25-H-8	Beveling tool-bit 37°30, wall thickness 1.377" (35mm)
O-TTN-TT9-25-H-9	Beveling tool-bit for double bevel, wall thickness 1.220" (31mm)
O-TTN-TT10-12-H-10	Beveling tool-bit 37°30, double bevel, wall thickness 0.708" (18mm)
O-TTN-TT11-5-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT11-5-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT12-25-H-12	Beveling tool-bit for double bevel, wall thickness 1.811" (46mm)

Order No.	Description
O-TTN-TT13-25-H-13	Beveling tool-bit for double bevel, wall thickness 1.535" (39mm)
O-TTN-TT14-25-H-14	Beveling tool-bit 37°30, wall thickness 1.968" (50mm)
O-TTN-TT15-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT15-8-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT16-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 0.315" (8mm)
O-TTN-TT16-8-H-PT	Pointed tool-bit, max. wall thickness 90mm, width 0.315" (8mm)
O-TTN-TT17-25-H-17	Beveling tool-bit for compound bevel, wall thickness 1.299" (33mm) 37°30 / 10°
O-TTN-TT18-25-H-18	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 37°30 / 10°
O-TTN-TT19-25-H-19	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 37°30 / 10°
O-TTN-TT20-25-H-20	Beveling tool-bit for compound bevel, wall thickness 1.377" (35mm) 30° / 10°
O-TTN-TT21-25-H-21	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 30° / 10°
O-TTN-TT22-25-H-22	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 30° / 10°
O-TTN-TT23-25-H-23	Beveling tool-bit for double bevel, wall thickness 1.968" (50mm) 30°
O-TTN-TT24-12-H-24	Beveling tool-bit for double bevel, wall thickness 0.866" (22mm) 30°

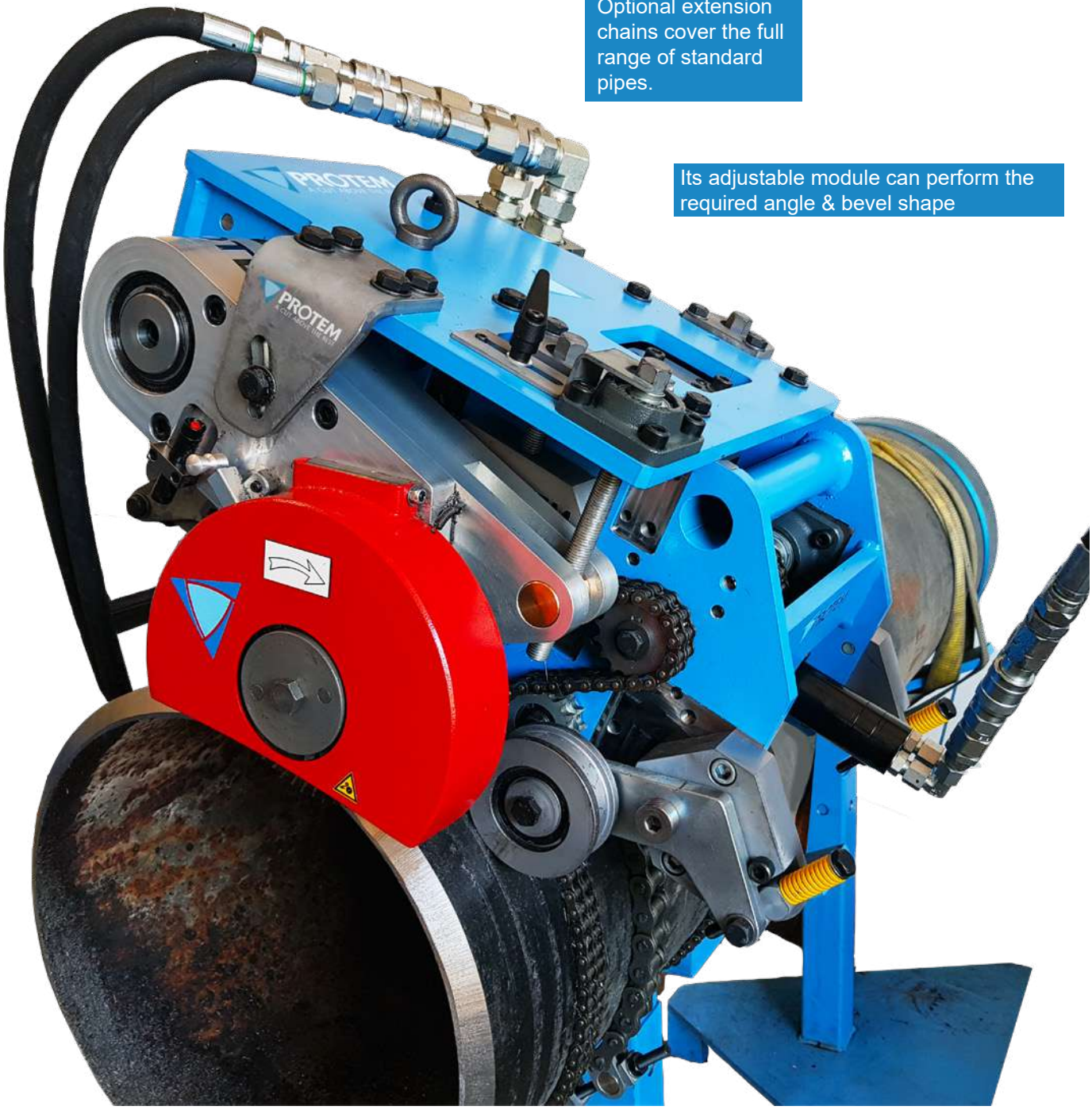
OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine

The OCM mobile pipe lathe machine is designed to cut and bevel pipes with min. Ø 6.6" (Ø168.3 mm) OD and for wall thicknesses up to 2" (50.8 mm).

Robust and reliable, it can be used on-site, in the workshop or in extreme environments.

Optional extension chains cover the full range of standard pipes.

Its adjustable module can perform the required angle & bevel shape



OD Mounted

OCM Series	Machining Capacities	
OCM	6.6" - 120"	168.3 mm - 3048 mm

Designed for all types of materials; mild steel, chromium, stainless steel, duplex, super duplex, copper-nickel alloys, inconel, P91, aluminum, exotic alloys, etc...

OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine

Standard Capacity: 6.6" - 120" (168.3 - 3048mm)



The OCM mobile cold milling and severing machine is designed to cut and bevel pipes with min. Ø 6.6'' (168.3 mm) OD and for wall thicknesses up to 2'' (50.8 mm). Its independent Milling module is entirely adjustable and performs bevels from 0° to 90° without changing accessories. It is designed to be easy to use; Robust and reliable, it can be used on-site, in the workshop or in extreme environments. The OD mount chain milling and severing machine enables to fit any OD while using additional chains.

- Mobile (OD clamping).
- Severing and milling modules available.
- Perfect weld preparation.
- Ability to perform I and V bevels from 0 to 90°.
- For construction, maintenance and repair of Pipes & Pipelines
- On-site or in the workshop.
- No Heat-Affected Zone!
- Designed for all types of materials; mild steel, chromium, stainless steel, duplex, super duplex, copper-nickel alloys, inconel, P91, aluminum, exotic alloys, etc...

Milling	Cutting	Counterboring	Severing	Coating Removal	Facing	Weld joint removal	Surfacing
✓	✓	✗	✓	✗	✓	✗	✗

OD Mounted

Advantages:

- Mobile
- Powerful
- Fast & accurate
- Easy and Safe use
- No Heat Affected Zone
- Rugged
- Easy & fast mounting
- Powerful pneumatic or hydraulic drives
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System
- Suited for hostile environment and very tight working spaces
- All pipes and pipelines Ø including Tanks
- Machine surface ready for welding
- Cold Cutting

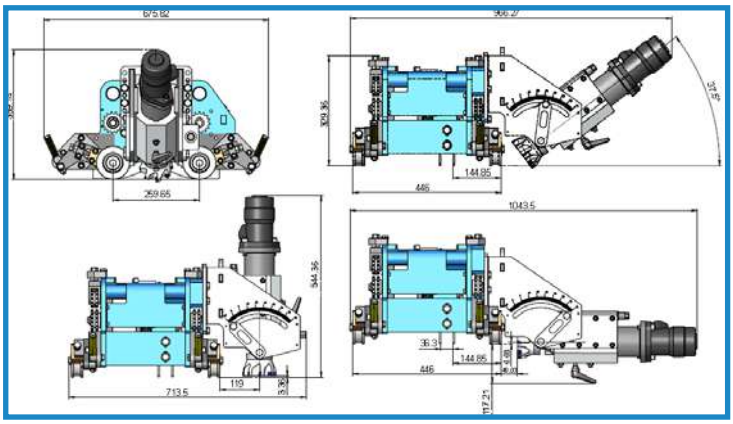


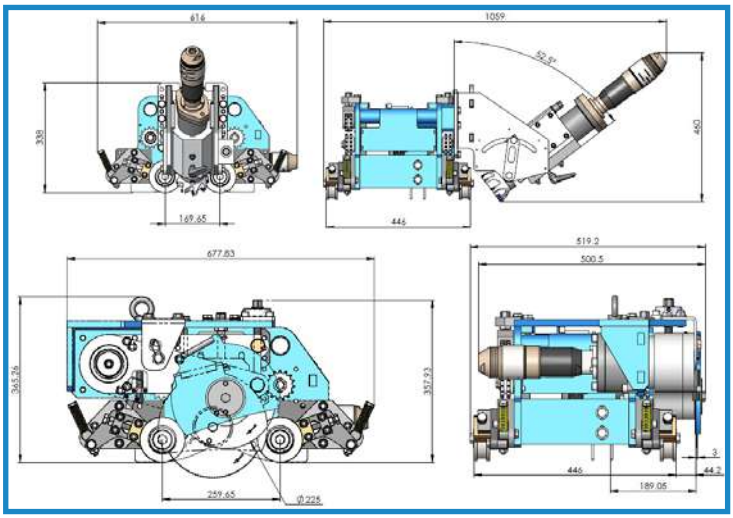


OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine

OD Mounted

Dimensions





Technical Features:

Machining Capacity	The OCM mobile pipe lathe machine is designed to cut and bevel pipes with min. Ø 6.6" (Ø168.3 mm) OD and for wall thicknesses up to 2" (50.8 mm). Optional extension chains cover the full range of standard pipes & pipelines. Milling can be performed on wall thicknesses up to 2" (50.8 mm) in several passes. Its adjustable module can perform the required angle & bevel shape.
Carriage feed	200 rpm
Clamping capacity	From 6.6" (168.3 mm) OD According to the length of the chain.
Shapes and bevel angles	I, V bevels from 0° to 90°
Clamping	Manual
Feed stroke	Manual
Feed and rotation	Automatic

Machine	OCM
Hydraulic Motor	Feed motor nominal speed: 95 rpm (before gear reduction) Cutting motor nominal speed: from 10 to 50 rpm Milling motor nominal speed: from 160 to 255 rpm (adjustable rotation speed according to oil pressure and flow) Feed motor power: 1.1 kW Cutter saw motor power: 35.4 kW Milling motor power: 10 kW

Machine	OCM
Pneumatic Motor	Feed motor nominal speed: 95 rpm (before gear reduction) Cutting motor nominal speed: from 10 to 50 rpm (after gear reduction) Milling motor nominal speed: from 160 to 255 rpm (after gear reduction) (adjustable rotation speed according to pressure and flow – mini recommended air supply: 6 bars- adjustable speed) Feed motor power: 1 kW Cutter saw motor power: 2 kW Milling motor power: 2 kW

** Other Motors are available on Request*





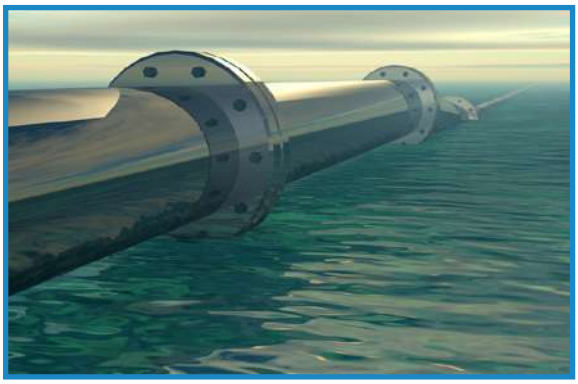
OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine

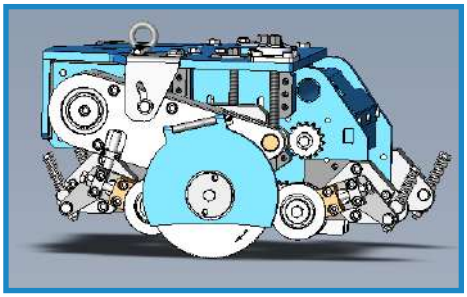
Order No.	Description
OCM-1006	OCM with pneumatic motor and Severing module 2 kW
OCM-1062	OCM with 2 kW hydraulic motor and 35.4 kW Severing module and 12 kW Milling module - Weight 486 LB ~ 220 kg
OCM-1064	OCM with Hydraulic Drive and Carriage + beveling module
OCM-1100	OCM - Milling machine for pipes & pipelines. Carriage only - Weight 212 LB ~ 96 kg, hydraulic
OCM-1102	OCM - Milling machine for pipes & pipelines. Carriage only, pneumatic
OCM-2200	OCM with 2 kW hydraulic motor and Milling module for beveling - Weight 309 LB ~ 140 kg
OCM-2202	OCM with 1 kW pneumatic motor and Milling module for beveling

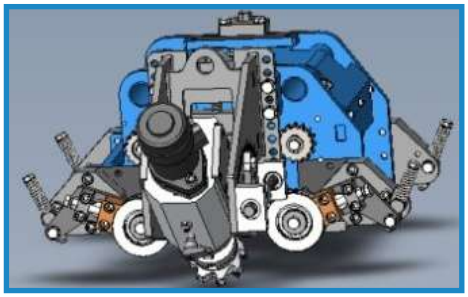


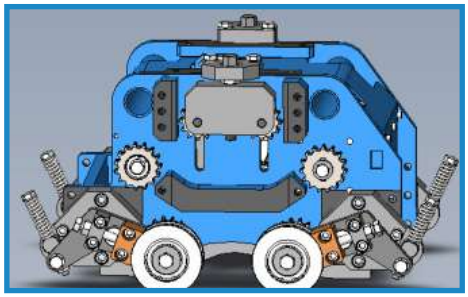
OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine Options

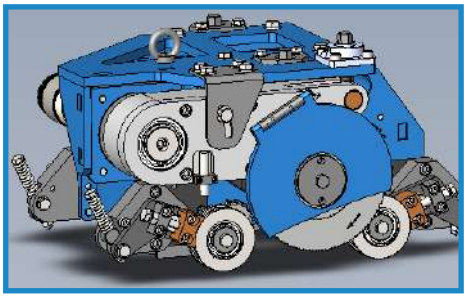
Order No.	Description
OCM-18C06	Quick Links for Chain type 16B1
OCM-18C07	Chain Windages for Chain type 16B-1
OCM-22C20	Tool holder - Milling cutter Ø 3.149" (80 mm)
OCM-24C02	Quick Links for Chain type 08B2
OCM-24C03	Chain Windages for Chain type 08B2
OCM-1814	48" to 80" Guiding Chain 16B1 type 48" - 80" (1200 mm - 2032 mm)
OCM-2300	Chain Assembler Kit type 08B2
OCM-2302	Chain Assembler Kit type 16B1
OCM-2411	48" TO 80" Feed Chain 08B2 type 48" - 80" (1200 mm - 2032 mm)
OCM-2501	Pneumatic connection

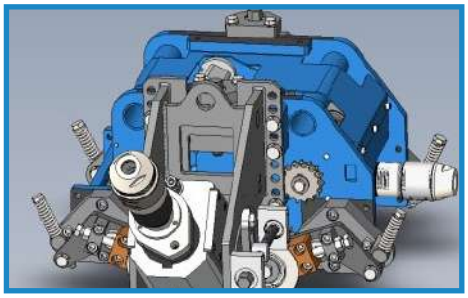


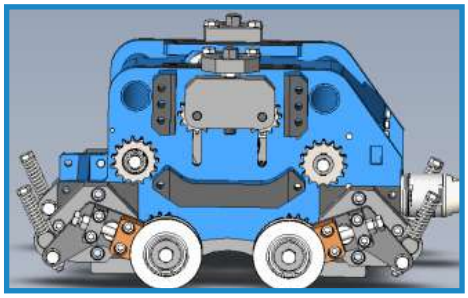

OCM-1060


OCM-1064


OCM-1100


OCM-1005


OCM-1004


OCM-1102

OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine Tool Bits

Order No.	Description
OCM-2138	Milling Cutter 3T Ø 160x3x42 - 52 teeth
OCM-2139	Milling Cutter 3T Ø 225x3x32 - 60 teeth
OCM-2148	Milling Cutter 3T Ø 210x3x42 - 60 teeth
OCM-2152	Milling Cutter 3T Ø 177,8x4,8x31,8 for 30° Bevel
OCM-2153	Left Milling Cutter for 30° Bevel
OCM-2154	Right Milling Cutter for 30° Bevel
OCM-22C21	Box of 10 Inserts











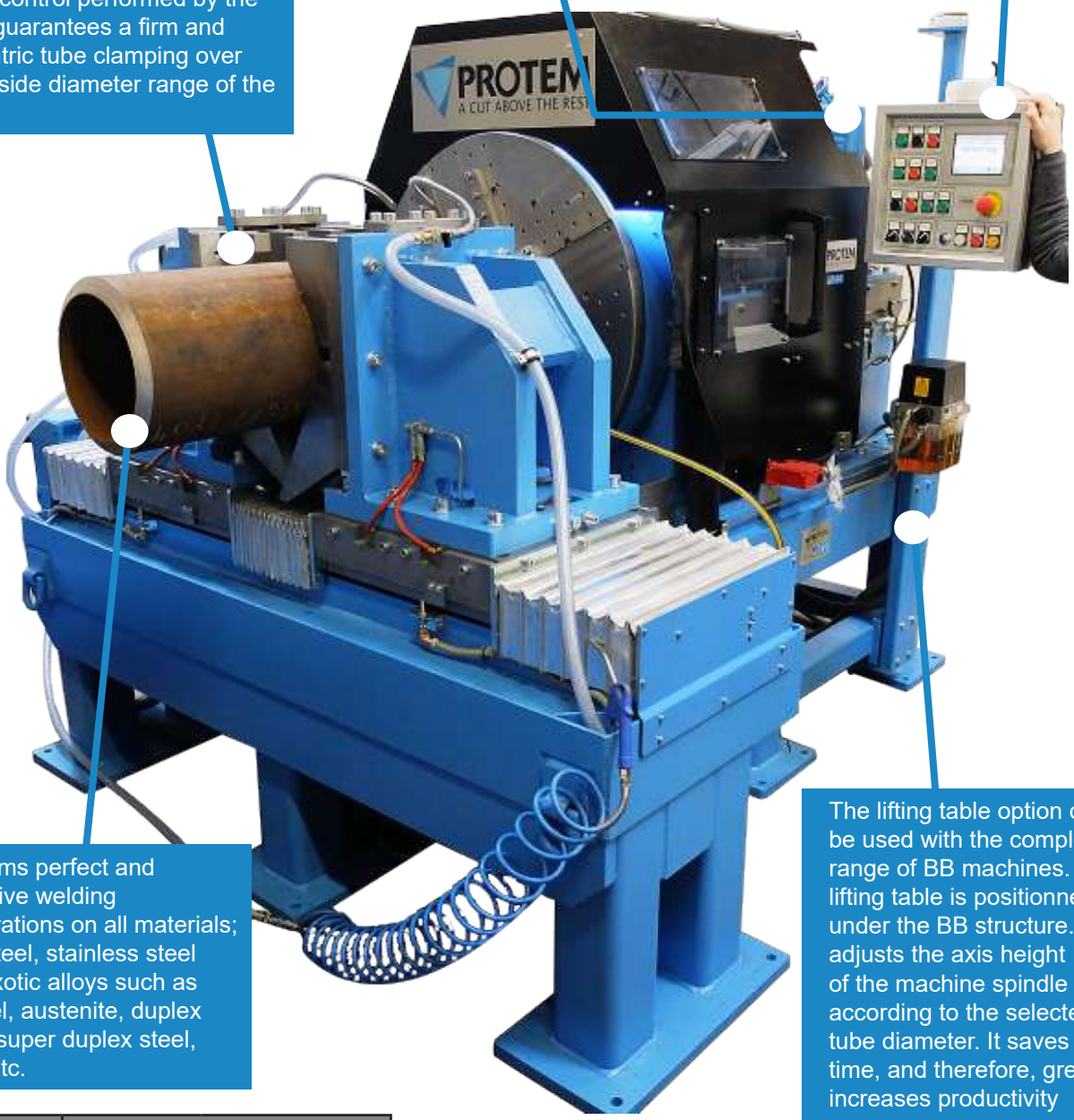
OD Mounted

BB Series High Speed Pipe Beveling Bench

The machine is designed with an outside clamping system in order to guarantee perfect guidance of the tube inside the machine. The torque control performed by the motor guarantees a firm and concentric tube clamping over the outside diameter range of the BB.

The "Brushless" motors used by PROTEM guarantee very high accuracy and control the cutting speeds and feed as required.

The machine is delivered with a panel equipped with push buttons for the main functions, as well as, a touch screen that operates all the other modes and parameters. The user machine interface is particularly user friendly and does not require any computer knowledge.



Performs perfect and repetitive welding preparations on all materials; mild steel, stainless steel and exotic alloys such as inconel, austenite, duplex steel, super duplex steel, P91, etc.

The lifting table option can be used with the complete range of BB machines. The lifting table is positionned under the BB structure. It adjusts the axis height of the machine spindle according to the selected tube diameter. It saves time, and therefore, greatly increases productivity

OD Mounted

BB Series	Machining Capacities	
BB1-6	1“ - 6.6“	25.4 mm - 168 mm
BB3-16	3“ - 16“	76.2 mm - 406.4 mm
BB12-24	12.7“ - 24“	323 mm - 610 mm
BB24-36	24“ - 36“	610 mm - 914 mm
BB36-48	36“ - 48“	914 mm - 1219 mm
BB48-60	48“ - 60“	(1219.2mm - 1524mm)
BB60-72	60“ - 72“	(1524mm - 1828.8mm)

The PROTEM conveyors are designed to be adapted to all the BB machines. The tubes can be conveyed manually or with motorized rollers. The rollers are zinc treated in order to avoid any pollution of the tubes during transport. If requested, they can be rubber coated.

BB Series High Speed Pipe Beveling Bench

Standard Capacity: 1“ - 72“ (25.4mm - 1828.8mm)



The electric BB machines can be used either on-site or in the workshop. These heavy duty bevelers will bevel, face and counterbore, individually or simultaneously, heavy walled pipes.

The BB machines are high speed bench bevelers. If required, they can be attached to the floor, are easily installed and clamp onto the OD diameter of the tubes and pipes.

They can be easily operated by a sole operator. Used with the optional profile tracking device, they will machine oval pipes, leaving a root face of a consistent width, which is required when using orbital welding processes.

Beveling	Cutting	Counterboring	Severing	Coating Removal	Facing	Weld joint removal	Surfacing
✓	✗	✓	✗	✗	✓	✓	✗

OD Mounted

Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System



BB1-6 High Speed Pipe Beveling Bench

Standard Capacity: 1“ - 6.6“ (25.4mm - 168mm)



Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping process	Manual, Semi-automatic, Automatic
Feed	Manual & Automatic
Feed stroke	3.937“ (100mm)
Machining Time	A few seconds
Motor Power	30 kW
Machining	Carbide insert

Order No.	Description
BB-1-6-V1-1020	Beveling Bench PROTEM BB 1-6 with manual clamping & feed for Ø 1“ - 6.6“ (25.4mm - 168mm)
BB-1-6-V4-1020	Beveling Bench PROTEM BB 1-6 with automatic clamping & feed for Ø 1“ - 6.6“ (25.4mm - 168mm)

BB3-16 High Speed Pipe Beveling Bench

Standard Capacity: 3“ - 16“ (76.2mm - 406.4mm)



Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping process	Manual, Semi-automatic, Automatic
Feed	Manual & Automatic
Feed stroke	3.937“ (100mm)
Machining Time	A few seconds
Motor Power	30 kW
Machining	Carbide insert

Order No.	Description
BB-3-16-V1-1000	Beveling Bench PROTEM BB3-16-V1 for Ø 3" - 16" (76.2mm - 406.4mm) (maximum wallthickness 0.748" (19 mm), électrical rotation and Manual Clamping and Feed)
BB-3-16-V3-1004	Beveling Bench PROTEM BB3-16-V3 for Ø 3" - 16" (76.2mm - 406.4mm) (maximum wallthickness 1" (25.4 mm), électrical rotation and automatic Clamping and Feed)
BB-3-16-V4-1006	Beveling Bench PROTEM BB3-16-V4 for Ø 3" - 16" (76.2mm - 406.4mm) (maximum wallthickness 1.417" (36 mm), électrical rotation and automatic Clamping and Feed)

BB12-24 High Speed Pipe Beveling Bench

Standard Capacity: 12.7“ - 24“ (323mm - 610mm)



Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping process	Manual, Semi-automatic, Automatic
Feed	Manual & Automatic
Feed stroke	3.937“ (100mm)
Machining Time	A few seconds
Motor Power	37 kW
Machining	Carbide insert

Order No.	Description
BB-12-24-V1-1020	Beveling Bench PROTEM BB12-24-V1 for Ø 12.7" - 24" (323mm - 610mm) (maximum wallthickness 0.984" (25 mm), electrical rotation and Manual Clamping and Feed)
BB-12-24-V4-1020	Beveling Bench PROTEM BB12-24-V4 for Ø 12.7" - 24" (323mm - 610mm) (maximum wallthickness 1.378" (35 mm), electrical rotation and automatic clamping and feed)

OD Mounted

BB24-36 High Speed Pipe Beveling Bench

Standard Capacity: 24“ - 36“ (610mm - 914mm)



Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping process	Manual, Semi-automatic, Automatic
Feed	Manual & Automatic
Feed stroke	5.906“ (150mm)
Machining Time	A few seconds
Motor Power	50 kW
Machining	Carbide insert

Order No.	Description
BB-24-36-V4-1020	Bench Beveling Machine with outside clamping device Ø 24“ - 36“ (610mm - 914mm)

BB36-48 High Speed Pipe Beveling Bench

Standard Capacity: 36“ - 48“ (914mm - 1219mm)



Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping process	Manual, Semi-automatic, Automatic
Feed	Manual & Automatic
Feed stroke	7.874“ (200mm)
Machining Time	A few seconds
Motor Power	50 kW
Machining	Carbide insert

Order No.	Description
BB-36-48-V4-1020	Bench Beveling Machine with outside clamping device Ø 36“ - 48“ (914mm - 1219mm)

BB48-60 High Speed Pipe Beveling Bench

Standard Capacity: 48“ - 60“ (1219.2mm - 1524mm)



Order No.	Description
BB-48-60-V4-1020	Bench Beveling Machine with outside clamping device Ø 48“ - 60“ (1219.2mm - 1524mm)

OD Mounted

BB60-72 High Speed Pipe Beveling Bench

Standard Capacity: 60“ - 72“ (1524mm - 1828.8mm)



Order No.	Description
BB-60-72-V4-1020	Bench Beveling Machine with outside clamping device Ø 60“ - 72“ (1524mm - 1828.8mm)

Larger Models and Options for larger wall thickness on Request

BB Series High Speed Pipe Beveling Bench — Options

OD Mounted

Multifunctional Control Panel



The machine is delivered with an electric panel in accordance with the EC Standards. On the face of the panel are several switches and a screen to operate the machine. The end user can use the manual mode. The control panel allows the user to control all essential functions: Clamp /Unlock - Slow / Fast Machining - Start / Stop Machine - Manual / Automatic - Stop feed - Lubrication - Chip conveyor - Emergency stop button



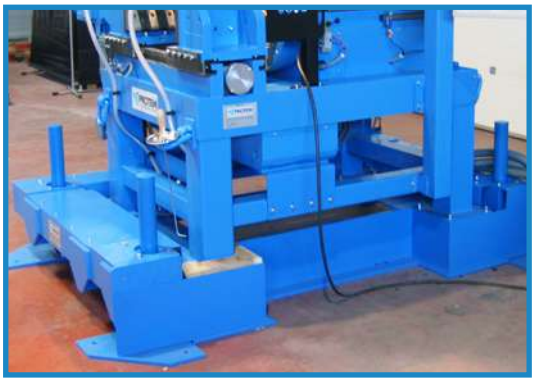
Tube Storage Table



All the feeding tube conveyors or storage tube conveyors can be easily connected to any BB machine entering the BB range.
The length of the feeding or storage tube conveyor is adapted to the length of the tube conveyor.



Lifting Table



The optional lifting table can be used with all versions of the BB. The lifting table is positioned under the BB structure. Its purpose is to align the axis tool holder plate with the tube to be machined which must be set on a fixed tube conveyor. This option saves time and increases productivity. It also makes the BB very easy to use due to the alignment between the axis of the tube set on a tube conveyor and the axis of the tool holder plate of the BB.

BB Series High Speed Pipe Beveling Bench — Options

Chips Conveyor



The optional chips conveyor can be used on all versions of the BB. This option increases productivity as all the chips produced during a machining cycle are removed automatically. This option makes the machining process much easier for the operator, as it is not necessary to stop the production operations to remove the chips.

Order No.	Description
BB-3-16-1010	Chips Conveyor with integrated Lubrication

Machining Table for Elbows

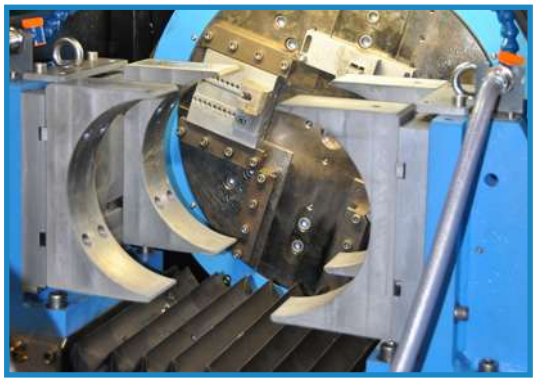


Designed for machining elbows, this option allows to quickly and easily machine elbows of all sizes.

Order No.	Description
BB-3/16-TC	Elbow Table to machine Elbow and piping accessories (fittings, T, etc,)



Enveloping Clamping Jaws



To avoid deformation of tubes with thin wall thicknesses during the clamping operation, the aluminum enveloping clamping jaws are recommended. One set of enveloping clamping jaws is necessary for each different OD.

BB Series High Speed Pipe Beveling Bench — Options

Lubrication Device



Increases the lifetime of the inserts and reduces the noise level.
A lubrication system is integrated into the chips conveyor (for chips removal). A pump sprays oil mixed with water during the cut. A tank replaces the standard chips box and a filter insures a closed circuit with the pump. This option is activated through a push button.



OD Mounted

Tube conveyors



The tube conveyor can be supplied in various configurations to meet the customer's application requirements. The tube conveyor can be supplied with different lengths, 6 meters (20 feet), 8 meters (26 feet), 10 meters (33 feet) or 12 meters (39 feet). The height adjustment ensures a very precise positioning of the tube into the mandrel. The tubes can be manually conveyed or be driven by motorized rollers. The rollers are zinc treated, and therefore, able to accept stainless steel tubes while avoiding any risk of pollution to the transported tubes.

Order No.	Description
CONVF	fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Roller (V form) (please specify for which machine)
CONVFRM	fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Motorized Roller (bobbin shape) (please specify for which machine)
CONVFRV	fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with bobbin shape Roller (please specify for which machine)
CONVMBRV	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system and bobbin shape Rollers (please specify for which machine)
CONVMBRM	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system & Motorized Roller (Bobbin shape) (please specify for which machine)

ID-Tracker



The ID tracking carriage maintains a constant machining geometry.

Order No.	Description
US-HSB-R-PO-5001	stronger ID Tracking Carriage, with Excentric,
US-HSB-R-PO-5201	ID Tracking Carriage long version (Smallest OD)
US-HSB-R-PO-1401	Follower Roller Ø 40 set on reference 5001
US-HSB-R-PO-2301	Brush Kit (only used with ID Tracking Carriage)

BB Series High Speed Pipe Beveling Bench — Options

Prism Clamping System



The prism clamps the pipe. Accuracy and repetitive perfect weld end preparations are achieved within a few seconds. The clamping can be done manually or automatically

Shims

Order No.	Description
US-HSB-R-PO/3300	Shim for Counterboring Carbide Insert-Holder wall 0.004" (0.1mm)
US-HSB-R-PO/3301	Shim for Counterboring Carbide Insert-Holder wall 0.008" (0.2mm)
US-HSB-R-PO/3302	Shim for Counterboring Carbide Insert-Holder wall 0.019" (0.5mm)
US-HSB-R-PO/3303	Shim for Counterboring Carbide Insert-Holder wall 0.039" (1mm)
US-HSB-R-PO/3304	Shim for Counterboring Carbide Insert-Holder wall 0.078" (2mm)
US-HSB-R-PO/3305	Shim for Counterboring Carbide Insert-Holder wall 0.118" (3mm)
US-HSB-R-PO/3310	Shim for Counterboring Carbide Insert-Holder wall 0.004" (0.1mm)
US-HSB-R-PO/3311	Shim for Counterboring Carbide Insert-Holder wall 0.008" (0.2mm)
US-HSB-R-PO/3312	Shim for Counterboring Carbide Insert-Holder wall 0.019" (0.5mm)
US-HSB-R-PO/3313	Shim for Counterboring Carbide Insert-Holder wall 0.039" (1mm)
US-HSB-R-PO/3314	Shim for Counterboring Carbide Insert-Holder wall 0.078" (2mm)
US-HSB-R-PO/3315	Shim for Counterboring Carbide Insert-Holder wall 0.118" (3mm)
US-HSB-R-PO/3320	Shim for Beveling Carbide Insert-Holder wall 0.004" (0.1mm)
US-HSB-R-PO/3321	Shim for Beveling Carbide Insert-Holder wall 0.008" (0.2mm)
US-HSB-R-PO/3322	Shim for Beveling Carbide Insert-Holder wall 0.019" (0.5mm)
US-HSB-R-PO/3350	Shim between Beveling Holder/Roller wall 0.004" (0.1mm)
US-HSB-R-PO/3351	Shim between Beveling Holder/Roller wall 0.008" (0.2mm)
US-HSB-R-PO/3352	Shim between Beveling Holder/Roller wall 0.019" (0.5mm)
US-HSB-R-PO/3353	Shim between Beveling Holder/Roller wall 0.039" (1mm)
US-HSB-R-PO/3354	Shim between Beveling Holder/Roller wall 0.078" (2mm)
US-HSB-R-PO/3355	Shim between Beveling Holder/Roller wall 0.157" (4mm)
US-HSB-R-PO/3356	Shim between Beveling Holder/Roller wall 0.196" (5mm)



BB Series High Speed Pipe Beveling Bench — Tool bits

Order No.	Description
US-HSB-R-PO/1015	Bed plate for Counterboring block (3601)
US-HSB-R-PO/3001	Outside Beveling Carbide Insert-Holder 30° bottom (wall<0.748" (19mm))
US-HSB-R-PO/3002	Outside Beveling Carbide Insert-Holder 30° top (please consider reference 3001 for wall >0.748" (19mm))
US-HSB-R-PO/3014	Outside Beveling Carbide Insert-Holder 10°
US-HSB-R-PO/3017	Outside Beveling Carbide Insert-Holder 37°5 (wall<0.748" (19mm))
US-HSB-R-PO/3018	Outside Beveling Carbide Insert-Holder 37°5+ ref 3504 (wall>0.748" (19mm))
US-HSB-R-PO/3025	Outside Beveling Carbide Insert-Holder 20° (wall<0.748" (19mm))
US-HSB-R-PO/3032	Outside Beveling Carbide Insert-Holder 20°+ ref 3001 (wall>0.748" (19mm))
US-HSB-R-PO/3101	Counterboring Carbide Insert-Holder 4°
US-HSB-R-PO/3210	Facing tool holder block
US-HSB-R-PO/3211	Facing Carbide Insert-Holder
US-HSB-R-PO/3213	Tool holder Adapter plate for Facing tool holder block
US-HSB-R-PO/3216	Tool holder Adapter plate for Facing tool holder block for Small Ø
US-HSB-R-PO/3220	Disaligned tool holder support
US-HSB-R-PO/3504	Inside Beveling Carbide Insert-Holder 30° bottom (wall<0.748" (19mm))
US-HSB-R-PO/3505	Inside Beveling Carbide Insert-Holder 30° top (associated to reference 3504 when wall >0.748" (19mm))
US-HSB-R-PO/3600	Counterboring tool holder block set on bed plate 1010
US-HSB-R-PO/3601	Insert-Holder for Counterboring mounted on bed plate (ref, 1015)
O-cléCL5	Tork Key to Screw all Carbide Insert Screw



Elbow Beveling Machine



Beveling of rough elbows after manufacturing.

It is the most complete version of the BB high speed beveling benches. It is adapted for elbow machining for mass production operations.

This machine is exceptionally handy to use because of the automation of all its mechanical elements.

The machining head moves automatically from one table to the other. This reduces the waiting time due to elbow loading and unloading operations.

This machine is equipped with a complete control panel allowing control of all the movements by pressing buttons or by adjusting the various parameters on the touch screen.

Beveler	Cutting	Facing	Counterboring	Surfacing
✓	✗	✓	✓	✗



Technical Features:

Elbow diameters included between 16" (406.4 mm) and 42" (1066.8 mm) for a maximum wall thickness of 2" (50.8 mm) on carbon steel type XC45.

Four tool holder carriages with profile tracking are mounted onto the rotating plate. Thanks to a roller located on the inside diameter, this device allows the tools to follow the ovality of the elbow.

Machining of the bevel (30°,37.5°, compound), land and inside counterboring in one simultaneous operation.

Hydraulic system for elbow clamping (reduced loading and unloading times).



Elbow Beveling Machine



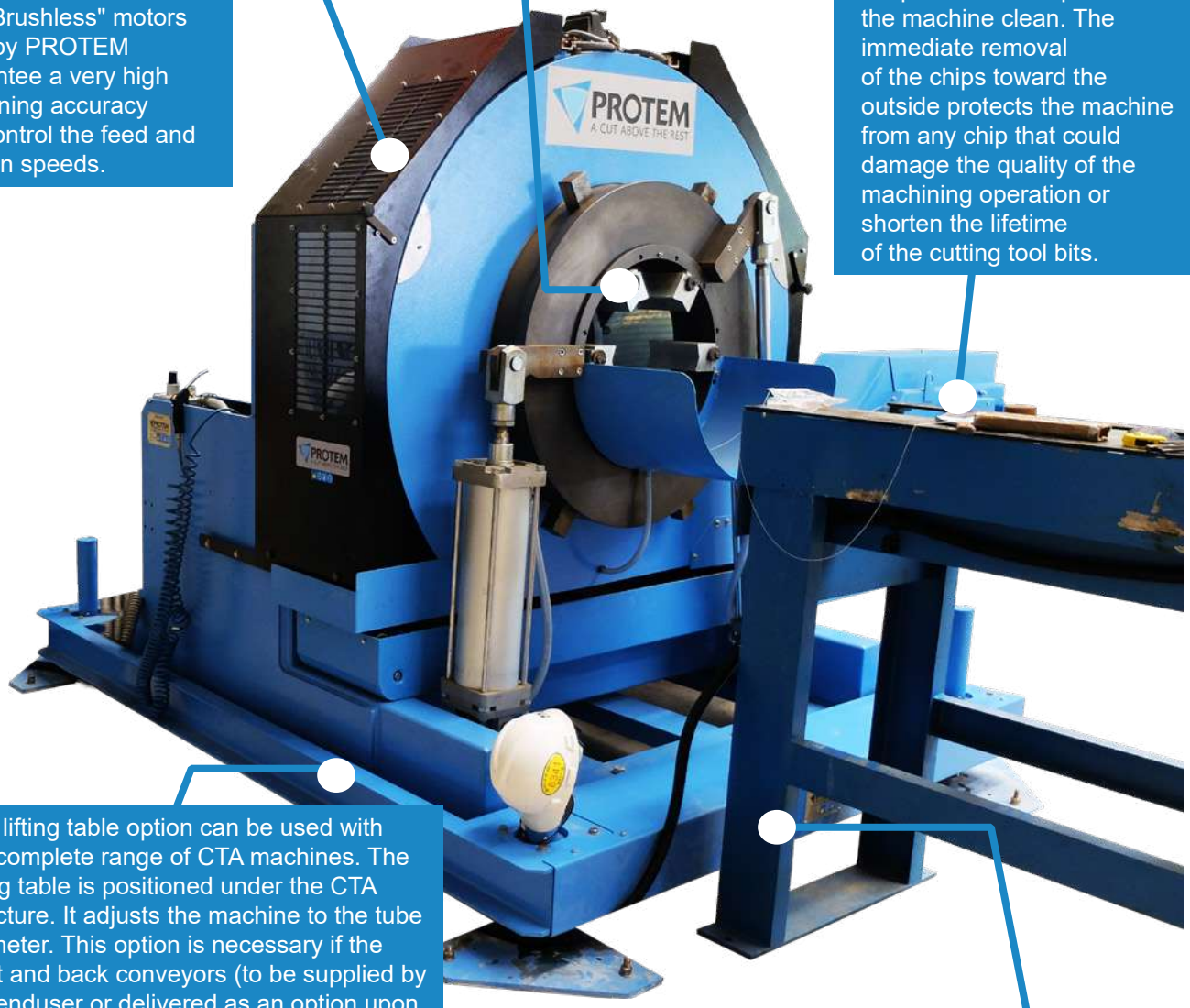


CTA Series High Speed Cutting and Beveling Machines

The electric motors, up to 50 kW for large diameters, supply the necessary power to cut and bevel tubes with heavy wall thicknesses.
The "Brushless" motors used by PROTEM guarantee a very high machining accuracy and control the feed and rotation speeds.

The machine is designed with a double external clamping of the tubes upstream and downstream of the internal part of the machine. The jack thrust and clamping system design provide a firm and concentric clamping on the outside diameter of the tube.

The chips conveyor is automatically operated by the CTA control system. As soon as the tool holder plate starts rotating, the chips conveyor start to operate.
The chips conveyor keeps the internal part of the machine clean. The immediate removal of the chips toward the outside protects the machine from any chip that could damage the quality of the machining operation or shorten the lifetime of the cutting tool bits.



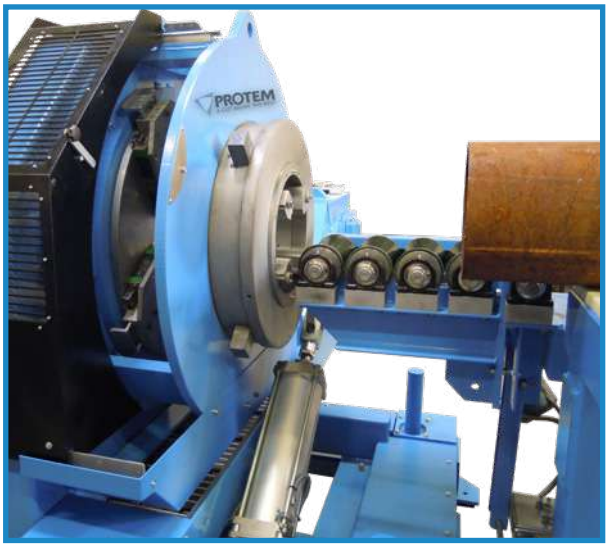
The lifting table option can be used with the complete range of CTA machines. The lifting table is positioned under the CTA structure. It adjusts the machine to the tube diameter. This option is necessary if the front and back conveyors (to be supplied by the enduser or delivered as an option upon request) are not equipped with a height adjustment system.

CTA Series	Machining Capacities	
CTA1-4	1“ - 4.5“	25.4 mm - 114 mm
CTA2-6	2.374“ - 6.626“	60.3 mm - 168.3 mm
CTA2-12	2.374“ - 12.75“	60.3 mm - 323.9 mm
CTA6-16	6.626“ - 16“	168.3 mm - 406.4 mm
CTA12-24	12.75“ - 24“	323.9 mm - 610 mm
CTA16-30	16“ - 30“	406.4 mm - 762 mm
CTA24-36	24“ - 36“	610 mm - 914 mm
CTA30-42	30“ - 42“	(762mm - 1066.8mm)
CTA42-56	42“ - 56“	(1066.8mm - 1422.4mm)
CTA56-72	56“ - 72“	(1422.4mm - 1828.8mm)

All the front / back conveyors can be used with the complete range of CTA machines. The height adjustment conveyor is designed to align the different diameters of tubes with the cutting machine axis. It can be supplied with different lengths; 6 meters (20'), 8 meters (26'), 10 meteres (33') or 12 meters (39'). The tubes can be conveyed manually or with motorized rollers.

CTA Series High Speed Cutting and Beveling Machines

Standard Capacity: 1“ - 72“ (25.4mm - 1828.8mm) depending on the model



The Protem CTA machines are the equipment you will need for your production and prefabrication requirements. The PROTEM CTA – High speed cutting and beveling machines save space in your workshops and can be integrated on your production lines for unmatched results.
Tubes and pipes with OD Ø ranging from 1“ - 72“ (25.4mm - 1828.8mm) will be cut and beveled within just a few seconds. Larger models are available upon request. The machining unit is made of a welded structure with:
• One tool holder plate
• Two OD clamping systems for the pipe

Cutting principle
The tube to cut and bevel is stationary. It is immobilized in the machines OD clamping devices. The tool bits mounted on the rotating plate are put into rotation around the tube to perform the cut. The feed and back up of the tool bits are performed entirely mechanically during the rotation of the tool holder plate. While cutting, the machine performs beveling on both ends.
The tool holder carriages mounted on the rotating plate are equipped with housings which can accept several types of tool blocks.

Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✓	✓	✗	✓	✓	✗

OD Mounted

Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- High-speed machining operation
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System
- Adapted for extreme conditions



CTA1-4 High Speed Cutting and Beveling Machine

Standard Capacity: 1“ - 4.5“ (25.4mm - 114.3mm)



Technical Features:

Cam movement	1.06” (27mm)
Maximum machining thickness	0.394” (10mm)
Clamping jaw Ø	Min = Ø 1" (25.4mm) Max = Ø 4.5" (114.3mm)
Number of jaws	4 per Set
Tool-plate rotation speed	Min = 60 rpm Max = 370 rpm
Rotation motor drive power	ASYNCHRONOUS, 15 KW
Machining tool feed speed	0.007” (0.17mm) per rev.
Pneumatic cylinders	Ø 4.92” (125mm) - movement 7.87” (200mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380/415Volts 50Hz

Order No.	Description
CTA-1-4-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 1" - 4.5" (25.4mm - 114.3mm)
CTA-1-4-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 1" - 4.5" (25.4mm - 114.3mm)

OD Mounted

CTA2-6 High Speed Cutting and Beveling Machine

Standard Capacity: 2.374“ - 6.626“ (60.3mm - 168.3mm)



Technical Features:

Cam movement	0.59" (15mm)
Maximum machining thickness	0.47" (12mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø < 11.02” (280 mm) Max = Ø > 18.5” (470 mm) Additional jaw diameters Min = Ø < 5.9” (150 mm) Max = Ø > 13.38” (340 mm)
Number of jaws	4 per Set
Rotation motor drive power	ASYNCHRONOUS, 15 KW
Pneumatic cylinders	Ø 6.3” (160mm) - movement 17.72” (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380/415 Volts 50Hz

Order No.	Description
CTA-2-6-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 2.374" - 6.626" (60.3mm - 168.3mm)
CTA-2-6-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 2.374" - 6.626" (60.3mm - 168.3mm)

CTA2-12 High Speed Cutting and Beveling Machine

Standard Capacity: 2.374“ - 12.75“ (60.3mm - 323.9mm)



Technical Features:

Cam movement	0.748” (19mm) - 1.14” (29mm)
Maximum machining thickness	0.591” (15mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø 6" (173mm) Max = Ø12" (323mm) Additional jaw diameters Min = Ø 2" (50.8mm) Max = Ø8" (212mm)
Number of jaws	4 per Set
Tool-plate rotation speed	Min = 50 rpm Max = 200 rpm
Rotation motor drive power	ASYNCHRONOUS, 30 KW
Machining tool feed speed	0.007” (0.17 mm) per rev.
Pneumatic cylinders	Ø 6.3” - (160mm) movement 17.72” (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380/415Volts 50Hz

Order No.	Description
CTA-2-12-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 2.374" - 12.75" (60.3mm - 323.9mm)
CTA-2-12-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 2.374" - 12.75" (60.3mm - 323.9mm)

OD Mounted

CTA6-16 High Speed Cutting and Beveling Machine

Standard Capacity: 6.626“ - 16“ (168.3mm - 406.4mm)



Technical Features:

Cam movement	2.04” (52mm)
Maximum machining thickness	1” (25.4mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø < 11.02” (280 mm) Max = Ø > 18.5” (470 mm) Additional jaw diameters Min = Ø < 5.9” (150 mm) Max = Ø > 13.38” (340 mm)
Number of jaws	6 per Set
Tool-plate rotation speed	Min = 35 rpm Max = 150 rpm
Rotation motor drive power	ASYNCHRONOUS, 55 KW
Machining tool feed speed	Min = 0.004” (0.1mm) per rev. Max = 0.015” (0.4mm) per rev.
Pneumatic cylinders	Ø 6.3” (160mm) - movement 17.72” (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380 Volts 50Hz

Order No.	Description
CTA-6-16-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 6.626" - 16" (168.3mm - 406.4mm)
CTA-6-16-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 6.626" - 16" (168.3mm - 406.4mm)

CTA12-24 High Speed Cutting and Beveling Machine

Standard Capacity: 12.75“ - 24“ (323.9mm - 610mm)



Technical Features:

Cam movement	0.767” (19.5mm) - 1.16” (29.5mm)
Maximum machining thickness	0.591” (15mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø 20" (508mm) Max = Ø 24" (610mm) Additional jaw diameters Min = Ø 12" (323mm) Max = Ø 20" (508mm)
Number of jaws	8 per Set
Tool-plate rotation speed	Min = 17 rpm Max = 80 rpm
Rotation motor drive power	ASYNCHRONOUS, 30 KW
Machining tool feed speed	0.007” (0.17mm) per rev.
Pneumatic cylinders	Ø 6.3” (160mm) - movement 17.72” (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380/415Volts 50Hz

Order No.	Description
CTA-12-24-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 12.75" - 24" (323.9mm - 610mm)
CTA-12-24-1022	High Speed Cutting & Beveling Machine (CE Standard) with dual drive for Ø 12.75" - 24" (323.9mm - 610mm)
CTA-12-24-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 12.75" - 24" (323.9mm - 610mm)
CTA-12-24-1042	High Speed Cutting & Beveling Machine (UL Standard) with dual drive for Ø 12.75" - 24" (323.9mm - 610mm)

CTA16-30 High Speed Cutting and Beveling Machine

Standard Capacity: 16“ - 30“ (406.4mm - 762mm)



Technical Features:

Cam movement	2.04” (52mm)
Maximum machining thickness	1” (25.4mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø < 26” (660 mm) Max = Ø > 32.28” (820 mm) Additional jaw diameters Min = Ø < 14.5” (370 mm) Max = Ø > 27.1” (690 mm)
Number of jaws	8 per Set
Tool-plate rotation speed	Min = 25 rpm Max = 75 rpm
Rotation motor drive power	ASYNCHRONOUS, 55 KW
Machining tool feed speed	Min = 0.002” (0.5mm) per rev. Max = 0.039” (1mm) per rev.
Pneumatic cylinders	Ø 6.3” (160mm) - movement 17.72” (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 400 Volts 50Hz

Order No.	Description
CTA-16-30-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 16" - 30" (406.4mm - 762mm)
CTA-16-30-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 16" - 30" (406.4mm - 762mm)

OD Mounted

CTA24-36 High Speed Cutting and Beveling Machine

Standard Capacity: 24“ - 36“ (610mm - 914.4mm)



Order No.	Description
CTA-24-36-1020	High Speed Cutting & Beveling Machine for Ø 24" - 36" (610mm - 914.4mm)

CTA30-42 High Speed Cutting and Beveling Machine

OD Mounted

Standard Capacity: 30“ - 42“ (762mm - 1066.8mm)



Order No.	Description
CTA-30-42-1020	High Speed Cutting & Beveling Machine for Ø 30“ - 42“ (762mm - 1066.8mm)

CTA42-56 High Speed Cutting and Beveling Machine

Standard Capacity: 42“ - 56“ (1066.8mm - 1422.4mm)



Order No.	Description
CTA-42-56-1020	High Speed Cutting & Beveling Machine for Ø 42“ - 56“ (1066.8mm - 1422.4mm)

CTA56-72 High Speed Cutting and Beveling Machine

Standard Capacity: 56“ - 72“ (1422.4mm - 1828.8mm)



Order No.	Description
CTA-56-72-1020	High Speed Cutting & Beveling Machine for Ø 56“ - 72“ (1422.4mm - 1828.8mm)

LARGER MODELS ON REQUEST

CTA Series High Speed Cutting and Beveling Machines Options

Multifunctional Control Panel



The machine is delivered with an electric panel in conformity with the EC Standards. On the face of the panel, several switches and a screen to operate the machine are available. The end user can use the manual mode. The control panel allows the user to control all essential functions: Clamp /Unlock, Slow / Fast Machining, Start / Stop Machine Manual / Automatic, Emergency Stop.



Automatic clamping system



The automatic and pneumatic clamping systems set the concentricity of the tube. The machining is performed between both clamping systems.



Tube conveyors



All tube conveyors can be used with the CTA machine range. The tube conveyor can be supplied in various configurations to meet the application requirements. The tube conveyor can be supplied with different lengths 6 meters (20 feet), 8 meters (26 feet), 10 meters (33 feet) or 12 meters (39 feet). The height adjustment ensures a very precise positioning of the tube in the mandrel. The tubes can be manually conveyed or be driven by motorized rollers. The rollers are zinc treated and therefore able to accept stainless steel tubes while avoiding any risk of pollution to the transported tubes.

Order No.	Description
CONVF	Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Roller (V form) (please specify for which machine)
CONVFRM	Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Motorized Roller (bobbin shape) (please specify for which machine)
CONVFRV	Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with bobbin shape Roller (please specify for which machine)
CONVMB	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system (V form) (please specify for which machine)
CONVMBRV	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system and bobbin shape Rollers (please specify for which machine)
CONVMBRM	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system & Motorized Roller (Bobbin shape) (please specify for which machine)
CONVMBRMV	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system & Motorized bobbin shape & V form Rollers (please specify for which machine)

OD Mounted

Tube Storage Table



All the feeding tube conveyors or storage tube conveyors can be easily connected to any machine in the CTA series. The length of the feeding or storage tube conveyor is adapted to the length of the tube conveyor.



Lifting table



The optional lifting table can be used with any version of the CTA machine. The lifting table is positioned under the CTA structure. Its purpose is to align the axis tool holder plate with the tube to be machined which must be set on a fixed tube conveyor. This option saves time and helps to increase productivity. It also makes the CTA very easy to use due to the alignment between the axis of the tube set on a tube conveyor and the axis of the tool holder plate of the CTA.

Order No.	Description
CTA-MB-1000	Lifting Table (please specify for which machine)



Chips conveyor



The optional chips conveyor can be used on all versions of the CTA. This option increases productivity as all the chips produced during a machining cycle are removed automatically. This option makes the machining process much easier for the operator, as it is not necessary to stop the production operations to remove the chips, which it is the case with the chips tank delivered with the standard version.

Order No.	Description
CTA-CONVCOLUB	Lubrication and Chips Conveyor (please specify for which machine)

Order No.	Description
CTA-PO/PO106	Beveling tool bit 30°
CTA-PO/PO107	Beveling tool bit 37,5°
CTA-PO/PO108	Beveling tool bit 37,5° sym.
CTA-PO/PO109	Beveling tool bit 10° for bevel 30°
CTA-PO/PO110	Cutting and Beveling tool bit 10° for double bevel 37°30
CTA-PO/PO111	Cutting tool bit 30°
CTA-PO/PO113	Cutting and Beveling tool bit 10° double for bevel 30°
CTA-PO/PO131	37°30 insert holder
CTA-PO/PO133	30° insert holder
CTA-PO/PO142	Cutting tool holder for 30° beveling
CTA-PO/OT106	Tool bit holder 30°
CTA-PO/OT107	Tool bit holder 37°30
CTA-PO/OT108	Tool bit holder 37°30 sym.
CTA-PO/OT109	Tool bit holder 10°
CTA-PO/OT110	Cutting blade holder + Beveling 10° for double bevel 37°30
CTA-PO/OT111	Cutting blade holder
CTA-PO/OT112-01	Shim for cutting blade holder 0.004" (0.1 mm)
CTA-PO/OT112-02	Shim for cutting blade holder 0.008" (0.2 mm)
CTA-PO/OT112-2	Shim for cutting blade holder 0.079" (2 mm)
CTA-PO/OT113	Cutting blade holder + Beveling 10° for double bevel 30°
CTA-PO/OTC34	Cutting blade (PO142)
CTA-PO/OTC35	Insert for PO131-PO133
CTA-PO/OTC36	Screw axis for PO131-PO133



Hydraulic Power Units

Protem Hydraulic Power Pack units feature the new generation of hydraulic power packs while taking into consideration the real working conditions for operators. The hydraulic power packs are easy to set up and operate. They can be used for a lot of different applications on-site or in a workshop. The framework and assembly methods of the hydraulic power pack unit components are designed to enable easy access during maintenance operations, while also protecting them against shock which may affect the external components (manometer, colmation indicator, manifold distributor, hoses, etc.). The hydraulic units are equipped with the following features: Eye bolts, Filter clogging indicator, Power on indicator, Pressure gauge, Reset button, Emergency stop button, Oil-air cooler with fan, Operating hour indicator, Remote control.

Hydraulic Power Unit 3 kW



Order No.	Description
GH-HPP3KW	Hydraulic power pack 3 kW, two senses of rotation, flow regulation manual, without hoses

Technical Features:

Oil capacity	30 l (7.925 gal)
Range adjustable flow	30 l/min (7.925 gal/min)
Maximum Pressure	60 bar (870 psi)
Low and High Pressure	-
Power	Electrical Motor 3 kW

Length	Width	Height
23.622“ (600 mm)	22.047“ (560 mm)	45.275“ 1150 mm)

≈ 130 kg
≈ 286 lbs

Hydraulic Power Unit 5.5 kW



Order No.	Description
GH-HPP5.5KW	Hydraulic power pack 5.5 kW, two senses of rotation, flow regulation manual, without hoses

Technical Features:

Oil capacity	60 l (15.850 gal)
Range adjustable flow	29 l/min (7.661 gal/min)
Maximum Pressure	90 bar (1 305 psi)
Low and High Pressure	Yes
Power	Electrical Motor 5.5 kW

Length	Width	Height
18.7“ (475 mm)	27.953“ (710 mm)	44.685“ (1135 mm)

≈ 205 kg
≈ 452 lbs

Hydraulic Power Unit 11 kW



Order No.	Description
GH-HPP11KW	Hydraulic power pack 11 kW, two senses of rotation, flow regulation manual, without hoses

Technical Features:

Oil capacity	80 l (21.133 gal)
Range adjustable flow	65 l/min (17.171 gal/min)
Maximum Pressure	90 bar (1 305 psi)
Low and High Pressure	Yes
Power	Electrical Motor 11 kW

Length	Width	Height
37.401“ (950 mm)	59“ (1500 mm)	49.212“ (1250 mm)

≈ 500 kg
≈ 1102 lbs

Hydraulic Power Units

Hydraulic Power Unit 15 kW



Order No.	Description
GH-HPP15KW	Hydraulic power pack 15 kW (1 pump) and 15 m hydraulic hoses

Technical Features:

Oil capacity	120 l (31.7 gal)
Range adjustable flow	69 l/min (18.227 gal/min)
Maximum Pressure	140 bar (2 030 psi)
Low and High Pressure	-
Power	Electrical Motor 15 kW

Length	Width	Height
38.582“ (980 mm)	57.874“ (1470 mm)	47.244“ (1200 mm)

≈ 500 kg
≈ 1102 lbs

Hydraulic Power Unit 30 kW



Order No.	Description
GH-HPP30KW	Hydraulic power pack 30 kW (1 pump) and 15 m hydraulic hoses

Technical Features:

Oil capacity	180 l (47.55 gal)
Range adjustable flow	80 l/min (21.133 gal/min)
Maximum Pressure	180 bar (1 450 psi)
Low and High Pressure	-
Power	Electrical Motor 30 kW

Length	Width	Height
38.582“ (980 mm)	58“ (1470 mm)	47.244“ (1200 mm)

≈ 650 kg
≈ 1433 lbs

Hydraulic Power Unit 55 kW



Order No.	Description
GH-HPP55KW	Hydraulic power pack 55 kW

Technical Features:

Oil capacity	350 l (92.46 gal)
Range adjustable flow	240 l/min (63.401 gal/min)
Maximum Pressure	120 bar (1 740 psi)
Low and High Pressure	Yes
Power	Electrical Motor 55 kW

Length	Width	Height
77.559“ (1970 mm)	43.3“ (1100 mm)	70.866“ (1810 mm)

≈ 1800 kg
≈ 3968 lbs

Hydraulic Power Units

Hydraulic Power Unit 75 kW



Order No.	Description
GH-HPP75KW	Hydraulic power pack 75 kW

Technical Features:

Oil capacity	350 l (92.46 gal)
Range adjustable flow	240 l/min (63.401 gal/min)
Maximum Pressure	160 bar (2320 psi)
Low and High Pressure	Yes
Power	Electrical motor 75 kW

Length	Width	Height
77.559“ (1970 mm)	43.3“ (1100 mm)	70.866“ (1810 mm)

≈ 1900 kg
≈ 4188 lbs

Hydraulic Power Unit Diesel 15 kW



Order No.	Description
GH-HPP-TD15	Hydraulic power pack with Diesel motor, 15 kW

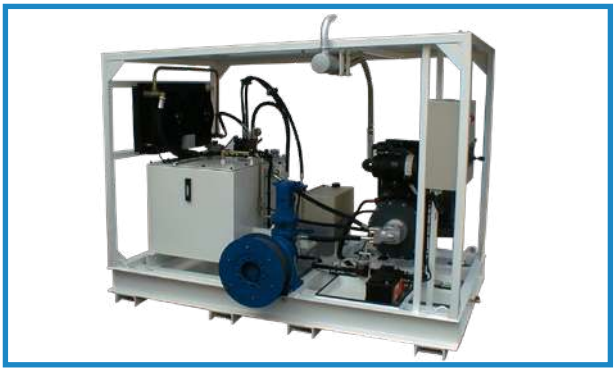
Technical Features:

Oil capacity	120 l (31.7 gal)
Range adjustable flow	69 l/min (18.227 gal/min)
Maximum Pressure	120 bar (1 740 psi)
Low and High Pressure	-
Power	Diesel motor 14.7 kW

Length	Width	Height
59.055“ (1500 mm)	39.37“ (1000 mm)	39.37“ (1000 mm)

≈ 400 kg
≈ 881 lbs

Hydraulic Power Unit Diesel 85 kW



Order No.	Description
GH-HPP-TD85	Hydraulic power pack with Diesel motor, 85 kW

Technical Features:

Oil capacity	350 l (92.460 gal)
Range adjustable flow	240 l/min (63.401 gal/min)
Maximum Pressure	160 bar (1 740 psi)
Low and High Pressure	Yes
Power	Diesel Motor 83 kW

Length	Width	Height
110.236“ (2800 mm)	74.803“ (1900 mm)	74.803“ (1900 mm)

≈ 2000 kg
≈ 4409 lbs

Micro Lubrification System



This system of lubrication provides HSS and carbide tools with the correct quantity of lubricant. This extends the lifetime of these tool bits.

It can supply lubrication points precisely and irrespective of temperature. The dispensing times can be set individually.

It can be used either with the cutting and beveling PROTEM machines (series TTNG-HD, TTNG-LW, MF, etc.) or with any other type of these machines.

The system of micro-lubrication is completely independent of the machine with which it can be associated.

Order No.	Description
MICRO_LUB-1002	Lubrification device
MICRO_LUB-K01	Transport box

It can be positioned under the tube to be cut and/or beveled on ground level.

The base is held by two cross-pieces which allows it to be moved by forklift or through any other adapted means of handling.

It can be positioned directly on the tube while fixed with removable tension belts (ref. 2) which are provided for adjustment in height and the desired leveling (with pawl).

It also has four handles (ref. 3) which allow it to be used in areas where a forklift could not be maneuvered.

The tension belts are provided with hooks and locks fixed on the lifting eye (ref. 4).

Delivery without plugs.



Accessories

Lubricating filter FRL200

Order No.	Description
FRL200-1000	Maintenance unit for pneumatically operated machines with pressure adjustment.



Lubricating filter FRL300

Order No.	Description
FRL300-1000	Maintenance unit for pneumatically operated machines with dual motor pack.



Kits 01

Order No.	Description
FK-1000	Flexible tubing set



Kits 02

Order No.	Description
FK-1002	Flexible tubing set



Regulation Valve

Order No.	Description
RP-1000	Regulation Valve



Chip hook

Order No.	Description
103-0001	Chip hook



Oil for filters

Order No.	Description
FL-1000	Oil for filters, 0,5 L
FL-1001	Oil for filters, 1 L
FL-1003	Oil for filters, 5 L

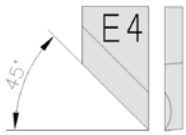


Tool Bits & Inserts

SM8

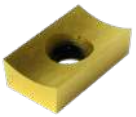
Order No.	Description	Picture
O-SM8-M0-4-H-74	Facing tool bit 90° for SM8 for 0.354“-0.590“ (9mm-15mm)	
O-SM8-M1-4-H-70	Facing tool bit 90° for SM8	
O-SM8-M2-4-H-71	Beveling tool bit 30° for SM8	
O-SM8-M2INV-4-H-75	Beveling tool bit cut off 30° for SM8	
O-SM8-M3-4-H-72	Beveling tool bit 37°30 for SM8	
O-SM8-M4-4-H-73	Beveling tool bit 45° for SM8	

S18

Order No.	Description	Picture
O-S18-E1-4-H-50	Facing tool bit 90° for S18	
O-S18-E2-4-H-52	Beveling tool bit 30° for S18	
O-S18-E2INV-4-H-55	Beveling tool bit cut off 30° for S18, for weld removal jobs	
O-S18-E3-4-H-51	Beveling tool bit 37°30 for S18	
O-S18-E4-4-H-53	Beveling tool bit 45° for S18	
O-S18-E4-4-H-F-53	Beveling tool bit 45° for S18	

Tool Bits & Inserts

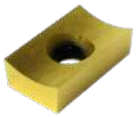
US25CH

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30° for US25CH	
O-US-PP375-9-14007	Insert-holder 37.5° for US25CH	
O-US-PP45-9-14008	Insert-holder 45° for US25CH	
O-US-PP90-9-11066	Insert-holder 90° for US25CH	
O-VIS-V5	Screw for tool insert P2	
O-US-P2-6-H-T	Tool-insert for US25CH-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US25CH-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US25CH-TIH-90	

Order No.	Description	Picture
O-US-A1-6-H-18	Facing tool bit 90°	
O-US-A2-6-H-17	Beveling tool bit for 30° bevel	
O-US-A3-6-H-19	Beveling tool bit for 37°30 bevel	
O-US-A4-6-H-16	Beveling tool bit for counterboring 15°	
O-US-A5-6-H-85	Beveling tool bit for 45°	
O-US-B6-6-H-55	Facing tool bit - notched 90°	
O-US-B7-6-H-57	Beveling tool bit - notched 30°	
O-US-B8-6-H-58	Beveling tool bit - notched 37°30	
O-US-B9-6-H-60	Beveling tool bit for counterboring - notched 15°	
O-US-B11-6-H-24	Beveling tool bit for counterboring and squaring	
O-US-C5-6-H-62	Beveling tool bit for 7° R6 j-bevels	
O-US-C6-6-H-64	Beveling tool bit for 12.5° R6 j-bevels	
O-US-C7-6-H-66	Notched tool bit for 7° R6 j-bevels	
O-US-C8-6-H-68	Notched tool bit for 12.5° R6 j-bevels	
O-US-C9-6-H-20	Beveling tool bit for 10° R1.5 j-bevels	
O-US-C10-6-H-71	Beveling tool bit for 20° R4 j-bevels	
O-US-SO-303-1-6	Tool bit for detubing - weld removal	
O-US-SO-303-2-6	Tool bit for detubing - weld removal	
O-US-SO-303-3-6	Tool bit for detubing - weld removal	

Tool Bits & Inserts

US Series (US30CH to US150)

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30° for US30CH-US150	
O-US-PP375-9-14007	Insert-holder 37.5° for US30CH-US150	
O-US-PP45-9-14008	Insert-holder 45° for US30CH-US150	
O-US-PP90-9-11066	Insert-holder 90° for US30CH-US150	
O-VIS-V5	Screw for tool insert P2	
O-US-P2-6-H-T	Tool-insert for US30CH-TIH-90 - US150-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US30CH-TIH-30 - US150-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US30CH-TIH-90 - US150-TIH-90	

Order No.	Description	Picture
O-US-A1-9-H-27	Facing tool bit 90°	
O-US-A2-9-H-26	Beveling tool bit for 30° bevel	
O-US-A3-9-H-28	Beveling tool bit for 37°30 bevel	
O-US-A4-9-H-25	Beveling tool bit for counterboring 15°	
O-US-A5-9-H-86	Beveling tool bit for 45°	
O-US-B6-9-H-54	Facing tool bit - notched 90°	
O-US-B7-9-H-56	Beveling tool bit - notched 30°	
O-US-B8-9-H-59	Beveling tool bit - notched 37°30	
O-US-B9-9-H-61	Beveling tool bit for counterboring - notched 15°	
O-US-B11-9-H-15	Beveling tool bit for counterboring and squaring	
O-US-C5-9-H-63	Beveling tool bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Beveling tool bit for 12.5° R6 j-bevels	
O-US-C7-9-H-67	Notched tool bit for 7° R6 j-bevels	
O-US-C8-9-H-69	Notched tool bit for 12.5° R6 j-bevels	
O-US-C9-9-H-29	Beveling tool bit for 10° R1.5 j-bevels	
O-US-C10-9-H-70	Beveling tool bit for 20° R4 j-bevels	
O-US-SO-303-1-9	Tool bit for detubing - weld removal	
O-US-SO-303-2-9	Tool bit for detubing - weld removal	
O-US-SO-303-3-9	Tool bit for detubing - weld removal	

Tool Bits & Inserts

US450

Order No.	Description
O-US-ST-12-H-F-87	TICN-coated 30° beveling tool L= 3.54'' (90mm)
O-US-ST-12-H-F-88	TICN-coated facing tool
O-US-ST-12-H-F-89	TICN-coated 30° beveling tool L= 2.75'' (70mm)
O-US-ST-12-H-F-90	TICN-coated 37.30° beveling tool L= 3" (76mm)
O-US-ST-12-H-F-91	TICN-coated 30° beveling tool L= 4" (102mm)
O-US-ST-12-H-F-101	TICN-coated 14° counterboring tool

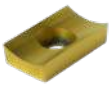
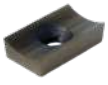
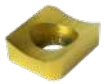
PFM

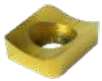
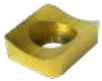
Order No.	Description
US-HSB-R-PO/40C	Carbide insert triangular 27x27(xx following radius, material, reverse or no)
US-HSB-R-PO/45C01	Carbide insert rhomb shape 9,52x9,52 (xx following radius, material, reverse or no)

OHSB

Order No.	Description
US-HSB-R-PO/40C	Carbide insert triangular 27x27(xx following radius, material, reverse or no)
US-HSB-R-PO/45C01	Carbide insert rhomb shape 9,52x9,52 (xx following radius, material, reverse or no)

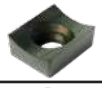
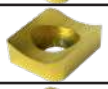
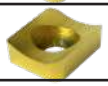
SE25 & SE65 & SE2T

Order No.	Description	Picture
O-SE-P0-3.-H-T-24	HSS Short insert (Tin Coating)	
O-SE-P1-3.-H-F-20	Tool bit, material HSS, coating: TiALN	
O-SE-P1-3.-C-T-20A	Tool bit, material carbide, coating: TiN	
O-SE-P1-3.-H-T-20	Tool bit, material HSS, coating: TiN	
O-SE-P1-3.-C-F-20A	Tool bit, material carbide, coating: TiALN	
O-SE-P1-3.-H-HC-20	Tool bit, material HSS, coating: TiSiN	
O-SE-P2-3.-H-T-25	Insert, right, material HSS with TiN coating	
O-SE-P2-3.-H-F-25	Insert, right, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25A	Insert right for J-prep with radius 1.5, material HSS with TiN coating	

Order No.	Description	Picture
O-SE-P3-3.-H-F-25A	Insert right for J-prep with radius 1.5, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25C	HSS Insert, Right, J-Bevel with Radius 2	
O-SE-P4-3.-H-T-26	Insert, left, material HSS with TiN coating	
O-SE-P4-3.-H-F-26	Insert, left, material HSS with TiALN coating	
O-SE-P5-3.-H-T-26A	Insert, left for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P5-3.-H-F-26A	Insert, left, for J-prep with radius 1.5, material HSS with TiALN coating	
SE65-1121	HSS Insert 12,5X8 for collet Ø >61-Hardcut Material	

Tool Bits & Inserts

SL & SE-NG Series

Order No.	Description	Picture
O-SE-P2-3.-H-T-25	Insert, right, material HSS with TiN coating	
O-SE-P2-3.-H-F-25	Insert, right, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25A	Insert right for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P3-3.-H-F-25A	Insert right for J-prep with radius 1.5, material HSS with TiALN coating	
O-SE-P3-3.-H-T-25C	HSS Insert, Right, J-Bevel with Radius 2	
O-SE-P4-3.-H-T-26	Insert, left, material HSS with TiN coating	
O-SE-P4-3.-H-F-26	Insert, left, material HSS with TiALN coating	
O-SE-P5-3.-H-T-26A	Insert, left for J-prep with radius 1.5, material HSS with TiN coating	
O-SE-P5-3.-H-F-26A	Insert, left, for J-prep with radius 1.5, material HSS with TiALN coating	
SE65-1121	HSS Insert 12,5X8 for collet Ø >61-Hardcut Material	

GR Series

Order No.	Description
O-GR-P1-4-H-F	Beveling tool insert for GR machines
O-GR-P2-3.-H-T	Pointed tool insert for GR machines
O-GR-P3-3.-H-T	Flat tool insert for GR machines

TTS-NG & TTS-RD Series

Order No.	Description
O-TTS-D2D-12-H-12	Standard pointed cutting tool-bit
O-TTS-D1D-12-H-11	Standard flat cutting tool-bit right
O-TTS-D4-12-H-18	Beveling tool-bit 30°
O-TTS-D4-12-H-13	Beveling tool-bit 37°30 (up to 0.5" (12.7 mm) wallthickness)
O-TTS-D1G-12-H-10	Standard flat cutting tool-bit left

TTS-CSB Series

Order No.	Description
TTSCSB-1617	30° bevelling tools
TTSCSB-1620	Standard severing tools
TTSCSB-1621	Standard point cutting tools
TTSCSB-1631	45° bevelling tools

TTS-ROD Series

Order No.	Description
TTSROD-2120	DSOK HSS Tool
TTSROD-2121	DSOK Insert Holder
O-SE-P1-3.-C-F-20A	Tool bit, material carbide, coating: TiALN

TTNG-HD, TTNG-LW & TNO Series

Order No.	Description
O-TTN-TT1-5-H-PL	Severing tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT1-5-H-PT	Pointed tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT2-12-H-2	Beveling tool-bit 30°, wall thickness 1.063" (27mm)
O-TTN-TT3-12-H-3	Beveling tool-bit 37°30, wall thickness 0.787" (20mm)
O-TTN-TT4-12-H-4	Beveling tool-bit 45°, wall thickness 0.590" (15mm)
O-TTN-TT5-12-H-5	Beveling tool-bit 30°, reversed, wall thickness 0.905" (23mm)
O-TTN-TT6-12-H-6	Beveling tool-bit 37°30, reversed, 0.826" (21mm)
O-TTN-TT7-25-H-7	Beveling tool-bit 30°, wall thickness 1.377" (35mm)
O-TTN-TT8-25-H-8	Beveling tool-bit 37°30, wall thickness 1.377" (35mm)
O-TTN-TT9-25-H-9	Beveling tool-bit for double bevel, wall thickness 1.220" (31mm)
O-TTN-TT10-12-H-10	Beveling tool-bit 37°30, double bevel, wall thickness 0.708" (18mm)
O-TTN-TT11-5-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT11-5-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT12-25-H-12	Beveling tool-bit for double bevel, wall thickness 1.811" (46mm)

Order No.	Description
O-TTN-TT13-25-H-13	Beveling tool-bit for double bevel, wall thickness 1.535" (39mm)
O-TTN-TT14-25-H-14	Beveling tool-bit 37°30, wall thickness 1.968" (50mm)
O-TTN-TT15-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT15-8-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT16-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 0.315" (8mm)
O-TTN-TT16-8-H-PT	Pointed tool-bit, max. wall thickness 90mm, width 0.315" (8mm)
O-TTN-TT17-25-H-17	Beveling tool-bit for compound bevel, wall thickness 1.299" (33mm) 37°30 / 10°
O-TTN-TT18-25-H-18	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 37°30 / 10°
O-TTN-TT19-25-H-19	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 37°30 / 10°
O-TTN-TT20-25-H-20	Beveling tool-bit for compound bevel, wall thickness 1.377" (35mm) 30° / 10°
O-TTN-TT21-25-H-21	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 30° / 10°
O-TTN-TT22-25-H-22	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 30° / 10°
O-TTN-TT23-25-H-23	Beveling tool-bit for double bevel, wall thickness 1.968" (50mm) 30°
O-TTN-TT24-12-H-24	Beveling tool-bit for double bevel, wall thickness 0.866" (22mm) 30°

Tool Bits & Inserts

MF Series

Order No.	Description
O-MF-P1-3-H	Cutting tool (2 cutting edges) with shim
O-MF-P2-4-H	Tool inserts for 30° and 37.5°
O-TTN-TT1-5-H-PL	Severing tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT1-5-H-PT	Pointed tool-bit, max. wall thickness 1.377" (35mm)
O-TTN-TT2-12-H-2	Beveling tool-bit 30°, wall thickness 1.063" (27mm)
O-TTN-TT3-12-H-3	Beveling tool-bit 37°30, wall thickness 0.787" (20mm)
O-TTN-TT4-12-H-4	Beveling tool-bit 45°, wall thickness 0.590" (15mm)
O-TTN-TT5-12-H-5	Beveling tool-bit 30°, reversed, wall thickness 0.905" (23mm)
O-TTN-TT6-12-H-6	Beveling tool-bit 37°30, reversed, 0.826" (21mm)
O-TTN-TT7-25-H-7	Beveling tool-bit 30°, wall thickness 1.377" (35mm)
O-TTN-TT8-25-H-8	Beveling tool-bit 37°30, wall thickness 1.377" (35mm)
O-TTN-TT9-25-H-9	Beveling tool-bit for double bevel, wall thickness 1.220" (31mm)
O-TTN-TT10-12-H-10	Beveling tool-bit 37°30, double bevel, wall thickness 0.708" (18mm)
O-TTN-TT11-5-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT11-5-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm)
O-TTN-TT12-25-H-12	Beveling tool-bit for double bevel, wall thickness 1.811" (46mm)

Order No.	Description
O-TTN-TT13-25-H-13	Beveling tool-bit for double bevel, wall thickness 1.535" (39mm)
O-TTN-TT14-25-H-14	Beveling tool-bit 37°30, wall thickness 1.968" (50mm)
O-TTN-TT15-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT15-8-H-PT	Pointed tool-bit, max. wall thickness 3.543" (90mm), width 1.181" (30mm)
O-TTN-TT16-8-H-PL	Severing tool-bit, max. wall thickness 3.543" (90mm), width 0.315" (8mm)
O-TTN-TT16-8-H-PT	Pointed tool-bit, max. wall thickness 90mm, width 0.315" (8mm)
O-TTN-TT17-25-H-17	Beveling tool-bit for compound bevel, wall thickness 1.299" (33mm) 37°30 / 10°
O-TTN-TT18-25-H-18	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 37°30 / 10°
O-TTN-TT19-25-H-19	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 37°30 / 10°
O-TTN-TT20-25-H-20	Beveling tool-bit for compound bevel, wall thickness 1.377" (35mm) 30° / 10°
O-TTN-TT21-25-H-21	Beveling tool-bit for compound bevel, wall thickness 1.771" (45mm) 30° / 10°
O-TTN-TT22-25-H-22	Beveling tool-bit for compound bevel, wall thickness 1.968" (50mm) 30° / 10°
O-TTN-TT23-25-H-23	Beveling tool-bit for double bevel, wall thickness 1.968" (50mm) 30°
O-TTN-TT24-12-H-24	Beveling tool-bit for double bevel, wall thickness 0.866" (22mm) 30°

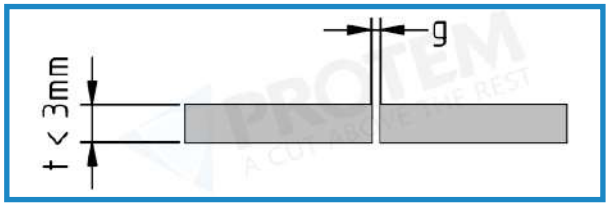
CTA Series

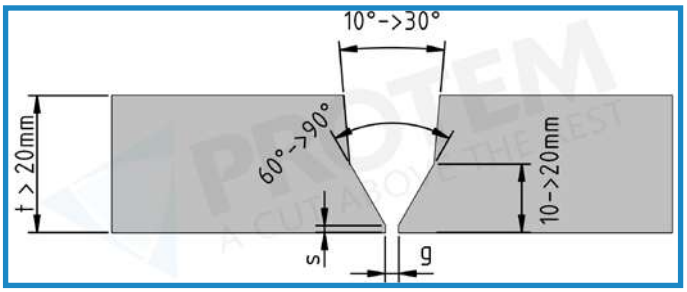
Order No.	Description
CTA-PO/PO106	Beveling tool bit 30°
CTA-PO/PO107	Beveling tool bit 37,5°
CTA-PO/PO108	Beveling tool bit 37,5° sym.
CTA-PO/PO109	Beveling tool bit 10° for bevel 30°
CTA-PO/PO110	Cutting and Beveling tool bit 10° for double bevel 37°30
CTA-PO/PO111	Cutting tool bit 30°
CTA-PO/PO113	Cutting and Beveling tool bit 10° double for bevel 30°
CTA-PO/PO131	37°30 insert holder
CTA-PO/PO133	30° insert holder
CTA-PO/PO142	Cutting tool holder for 30° beveling
CTA-PO/OT106	Tool bit holder 30°
CTA-PO/OT107	Tool bit holder 37°30
CTA-PO/OT108	Tool bit holder 37°30 sym.
CTA-PO/OT109	Tool bit holder 10°
CTA-PO/OT110	Cutting blade holder + Beveling 10° for double bevel 37°30
CTA-PO/OT111	Cutting blade holder
CTA-PO/OT112-01	Shim for cutting blade holder 0.004" (0.1 mm)
CTA-PO/OT112-02	Shim for cutting blade holder 0.008" (0.2 mm)
CTA-PO/OT112-2	Shim for cutting blade holder 0.079" (2 mm)
CTA-PO/OT113	Cutting blade holder + Beveling 10° for double bevel 30°
CTA-PO/OTC34	Cutting blade (PO142)
CTA-PO/OTC35	Insert for PO131-PO133
CTA-PO/OTC36	Screw axis for PO131-PO133

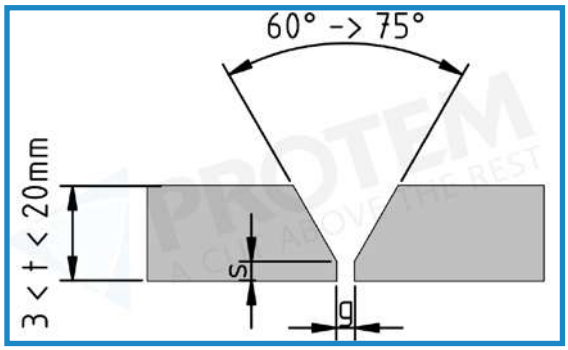
Tool Bits & Inserts

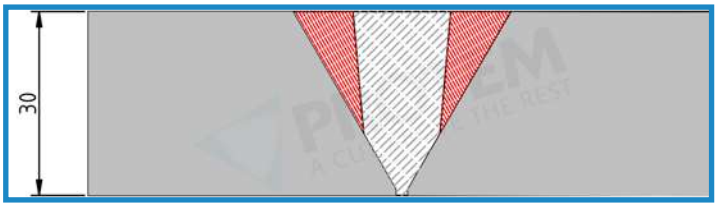
BB Series

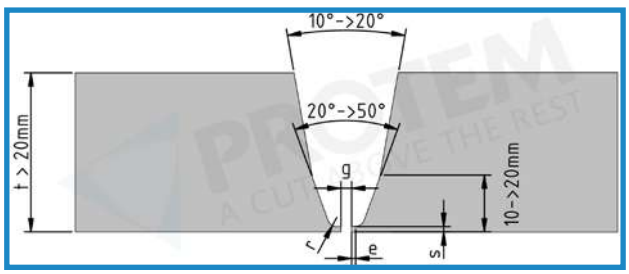
Order No.	Description
US-HSB-R-PO/1015	Bed plate for Counterboring block (3601)
US-HSB-R-PO/3001	Outside Beveling Carbide Insert-Holder 30° bottom (wall<0.748" (19mm))
US-HSB-R-PO/3002	Outside Beveling Carbide Insert-Holder 30° top (please consider reference 3001 for wall >0.748" (19mm))
US-HSB-R-PO/3014	Outside Beveling Carbide Insert-Holder 10°
US-HSB-R-PO/3017	Outside Beveling Carbide Insert-Holder 37°5 (wall<0.748" (19mm))
US-HSB-R-PO/3018	Outside Beveling Carbide Insert-Holder 37°5+ ref 3504 (wall>0.748" (19mm))
US-HSB-R-PO/3025	Outside Beveling Carbide Insert-Holder 20° (wall<0.748" (19mm))
US-HSB-R-PO/3032	Outside Beveling Carbide Insert-Holder 20°+ ref 3001 (wall>0.748" (19mm))
US-HSB-R-PO/3101	Counterboring Carbide Insert-Holder 4°
US-HSB-R-PO/3210	Facing tool holder block
US-HSB-R-PO/3211	Facing Carbide Insert-Holder
US-HSB-R-PO/3213	Tool holder Adapter plate for Facing tool holder block
US-HSB-R-PO/3216	Tool holder Adapter plate for Facing tool holder block for Small Ø
US-HSB-R-PO/3220	Disaligned tool holder support
US-HSB-R-PO/3504	Inside Beveling Carbide Insert-Holder 30° bottom (wall<0.748" (19mm))
US-HSB-R-PO/3505	Inside Beveling Carbide Insert-Holder 30° top (associated to reference 3504 when wall >0.748" (19mm))
US-HSB-R-PO/3600	Counterboring tool holder block set on bed plate 1010
US-HSB-R-PO/3601	Insert-Holder for Counterboring mounted on bed plate (ref, 1015)
O-cléCL5	Tork Key to Screw all Carbide Insert Screw

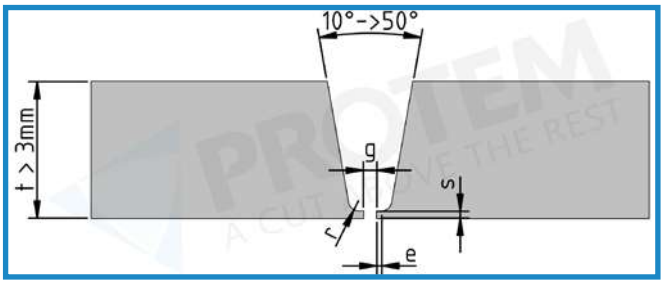












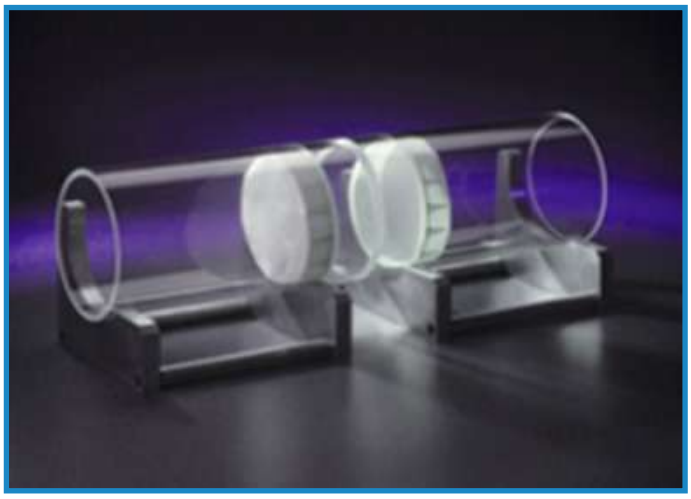
PROTEM
A CUT ABOVE THE REST

Dissolvo®

WATER SOLUBLE PAPER AND TAPE



THE PROVEN ECOLOGICALLY FRIENDLY PURGING SOLUTION



About

Dissolvo Water Soluble Paper is the proven, efficient and ecologically friendly purging solution.
Used to retain inert gas during TIG welding of stainless steel and aluminum pipes, Dissolvo can be constructed into purge dams fitting all diameters and placed within close proximity to the weld zone.

Dissolvo provides an excellent barrier to create the ideal purge environment by trapping inert gas within the weld zone, while preventing oxygen from entering and causing contamination. Thus, Dissolvo is cost effective, reducing the amount of expensive inert gas needed to create a superior purge.

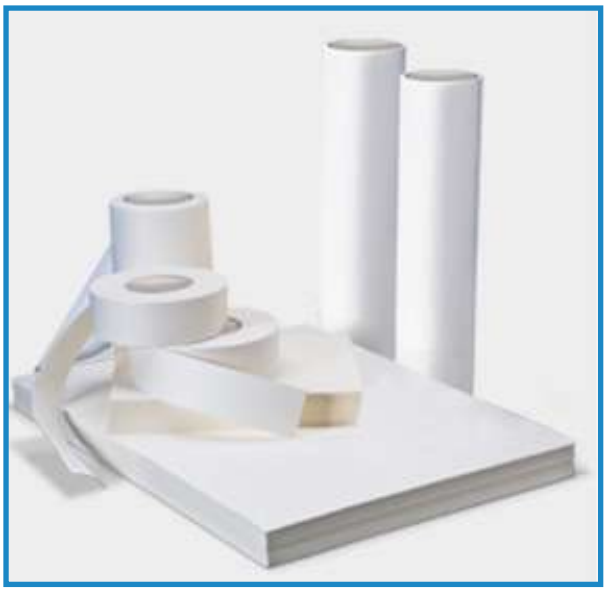


Comprised of 100% biodegradable sodium carboxyl methyl, cellulose and wooden pulp, Dissolvo quickly disperses when introduced to water and most aqueous solutions, leaving no residue behind in the pipeline.

Dissolvo is available in a wide range of grades and sizes and is non-toxic, making it ideal for the nuclear, petrochemical, and food and beverage industries.

Features and Benefits

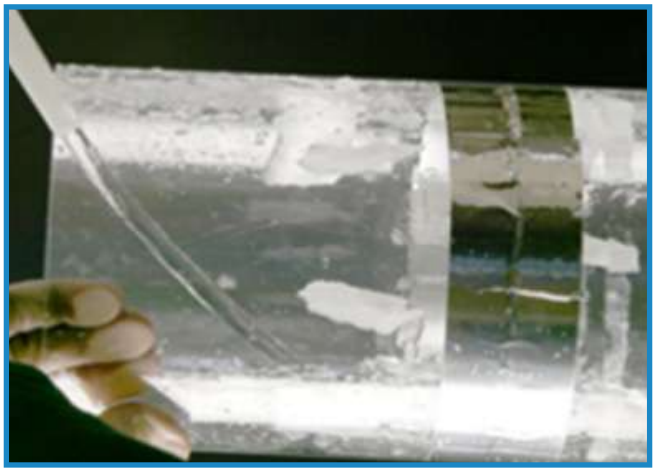
Purge Gas Barrier for any Pipe Diameter



- Fast and easy construction into purge dam that fits any pipe schedule and size
- Retains inert gas, while preventing oxygen contamination
- Can be placed near weld zone, reducing amount of expensive inert gas used to create purge environment
- Create an air tight seal by securing dam to pipe wall with Dissolvo Water SolubleTape

Green, Non-toxic and Eco-friendly

- 100% biodegradable
- Made of sodium carboxy methyl cellulose & wooden pulp
- Ideal for nuclear, petrochemical, food and beverage industries



Effortless Removal Process

- Disperses when introduced to water and most aqueous solutions
- Eliminates post weld process
- Nothing remains in the pipeline
- Eliminates extra labor associated with device removal, saving time and money.

Versatile

- Available in wide range of sizes, grades and forms

How Dissolvo Works



Trace and Impress

Trace pipe's inner diameter by pressing paper along pipe edge, creating an impression. Then fold to form a 90° angle.





Cut

Cut in a circle around the impression, approximately one-third times greater than pipe diameter.





Slit

Slit approximately 1″ to 2″ segments perpendicular to impression on paper making first slit at 12 o'clock position followed by 3 o'clock, 6 o'clock and so on.



How Dissolvo Works



Position Inside Pipe and Tape in Place

Cut Dissolvo Water Soluble Tape into pieces. Position slit Dissolvo Water Soluble Paper dam inside pipe. Secure dam with tape pieces along the entire circumference.

ACTIVATE WATER SOLUBLE TAPE



Moisten Sponge

Moisten an ordinary sponge with water and squeeze out excess water until the sponge is damp.

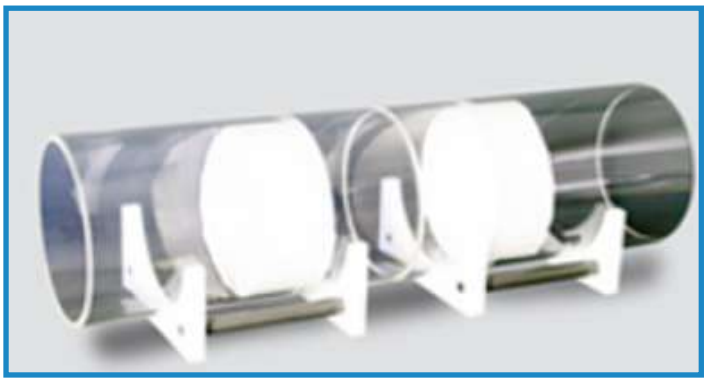




Lightly Dab

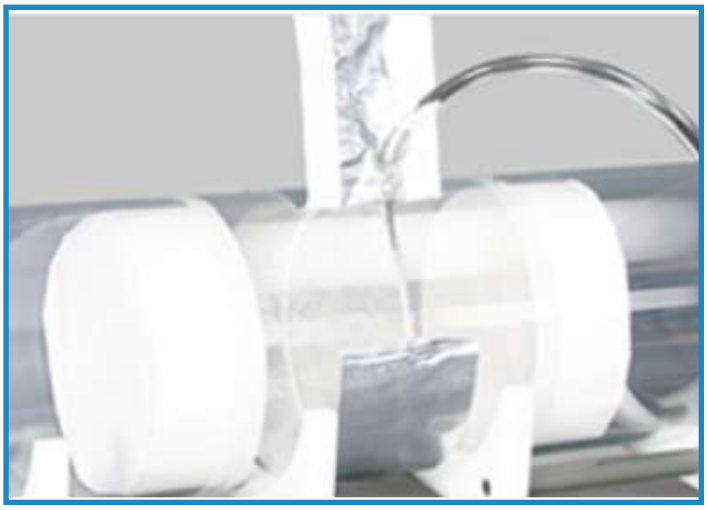
Lightly dab sponge along the water soluble tape portion of the dam. The dampened sponge will reactivate the adhesive to ensure low air permeability.

How Dissolvo Works



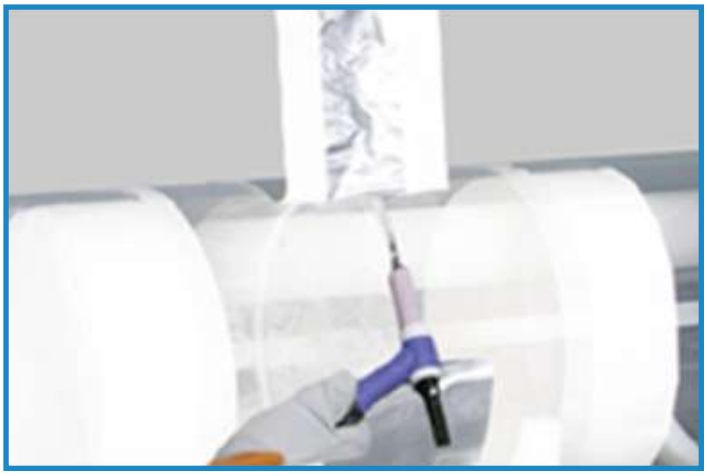
Repeat

Repeat process on the opposite side of the pipe to define purge chamber



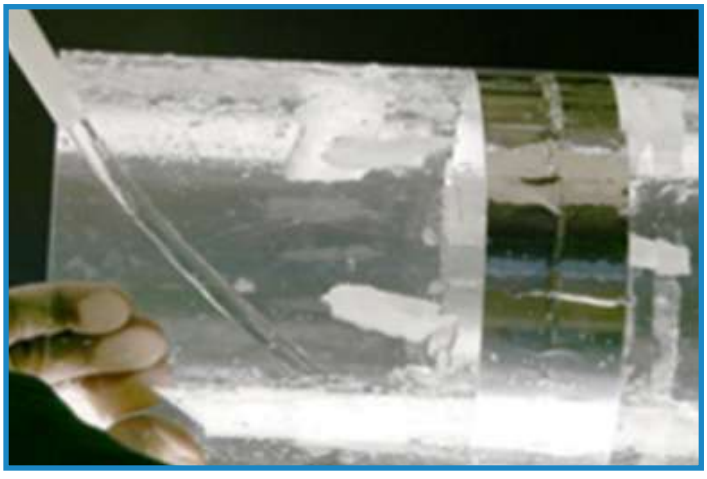
Introduce Gas

Insert purge gas needle into root gap and introduce noble gas, while ensuring connection to gas line.



Weld

Carry out the welding process.



Dissolve

Introduce Water to Dissolvo Water Soluble Paper and Tape and watch them disperse, clearing the pipeline.

Types & Sizes

Dissolvo Purge Paper and Purge Tape

Item Nr.	Description	Dimensions		Type	Case Pack
		Inch	Metric		
D01S	WLD35	8 1/2“ x 11“	22 cm x 28 cm	Sheet	1000 sheets/ ream
D02S	WLD35	8 1/2“ x 14“	22 cm x 36 cm	Sheet	1000 sheets/ ream
D03S	WLD35	17“ x 22“	43 cm x 56 cm	Sheet	500 sheets/ ream
DW209165	WLD35	9“ x 165“	23 cm x 50 m	Roll	4 rolls/case
DW215165	WLD35	15 1/2“ x 165“	39 cm x 50 m	Roll	4 rolls/case
DWAC320	WLD40C	20 1/2“ x 165“	52 cm x 50 m	Roll	4 rolls/case
DW615022	WLD60	15 1/2“ x 22“	39 cm x 56 m	Sheet	250 Sheets/ ream
DW615165	WLD60	15 1/2“ x165“	39 cm x 50 m	Roll	4 rolls/case
DW631165	WLD60	31“ x 165“	79 cm x 50 m	Roll	4 rolls/case
DW14K	Tape WAT	1“ x 300“	2.5 cm x 92 m	Roll	24 rolls/case
DW10K	Tape WAT	2“ x 300“	5 cm x 92 m	Roll	12 rolls/case



FAQ (Frequently asked Questions)



Dissolvability

Dissolvo Water Soluble Paper and Tape dissolves in most aqueous solutions or steam.

Dissolve in Oil

Dissolvo Water Soluble Paper and Tape will not dissolve in oil or fuel, however both can be flushed water, steam or an aqueous solution.

Dissolvability In Solvents

Dissolvo Water Soluble Paper and Tape cannot dissolve in solvents such as MEK or acetone. The products must be flushed water, steam or an aqueous solution.

Dissolve in Hot and Cold Water Temperatures

Dissolvo Water Soluble Paper and Tape will dissolve in either hot or cold water. However, the rate of dissolvability increases as the temperature of the water increases.



FAQ (Frequently asked Questions)

Flash Point

Dissolvo Water Soluble Paper and Tape have a flash point equivalent to ordinary paper, which is 450°F (232°C).

Safe Components

Dissolvo Water Soluble Paper and Tape are 100% biodegradable and eco-friendly. Both are non-toxic products that do not cause reactions or adverse effects when used.

Dry Tape

Dissolvo Water Soluble Tape is designed to allow the user to place the dam in the proper position before maximizing the adhesion of the seal. The strength of the “tack” or “stickiness” of the adhesive allows the user to have control and reposition the dam if not properly placed on the first attempt. Once the dam is in place, the user can increase adhesion by reactivating the adhesive on the tape portion of the dam with a damp sponge. A tight seal will be formed as it dries.









Aluminium adhesive tape



A 50 micron aluminium foil, coated one side with a dispersion acrylic, pressure sensitive adhesive. The tape is backed with a strong, polyethylene coated release paper.

Features and benefits:

- Flame retardant
- Good resistance to high and low temperatures
- Easy to unroll and cut
- Waterproof
- EDF PMUC approved for use in nuclear power plants

Technical Features:

Thickness	0.09 mm
Breaking Load	35 N/cm
Elongation	11%
Adhesion Steel	4.0 N/cm
After water immersion	4.0 N/cm
RoHS compliant	Yes
Service temperature	-40 °C to +110 °C
Application temperature	-20 °C to +40 °C
Storage temperature	+12 °C to +25 °C

Order No.	Description
ALUtape50	PMUC aluminium adhesive tape 50mmx50m (1.968"x1968.5")



Boiler Tubes - Heat Exchanger Tubes



Description:

PROTEM was founded in the 1970s with the aim to design and manufacture mobile machining equipment which meet the technical and quality requirements of the operators of the Boiler industry. Since the 1970s, PROTEM has been the primary innovator of portable beveling, cutting, severing, facing, squaring, counterboring equipment. Thanks to its capability, capacity, experience and expertise, PROTEM has gained international recognition for its commitment to providing reliable solutions for the welding preparation. The machines were designed together with field operators. They allow to bevel, face, counterbore, flush pipes, remove welded joints from heat exchanger panels, to cut and bevel simultaneously or individually heavy walled tubes and pipes, remove the membrane of fin tubes and simultaneously bevel the fin tubes. These machines can be operated in all positions : vertically, horizontally, over head. In extreme temperatures and environment conditions (high humidity, saline areas...), in very tight spaces. They can be remote controlled for works performed under ionized areas.

Different versions are available according to the ranges of diameters to cover, to the preferred motorisation type -pneumatic, electric, hydraulic, cordless...-, to the preferred degree of automation - manual feed and/or clamping, semi automatic or full automatic version. The PROTEM mobile machining units are either id mounted or od mounted and self centered in the tubes or pipes. They are fitted with HSS tool bits or with tool inserts enabling to perform I, V, J, compound bevels. Suitable for all materials : mild steel, stainless steel, exotic alloys (inconel, austenitic steels, duplex, super duplex, copper etc.)

Applications:

- Machining of boiler tubes, heat exchanger tubes, waterwall cutout windows, condensers etc.
- Cutting tubes to length
- Removal of wall membranes and simultaneous beveling of fin tubes
- Removal of weld joints on heat exchanger plates
- Facing of tubes
- ID cut of heat exchanger tubes









Boiler Tubes - Heat Exchanger Tubes



PROTEM has always been known for being innovative and is offering a large range of portable machines specially designed for Boiler Manufacturers.


SM8


S18


S18TP


US25TP


US25CA


US25TA


US30CH


US30CHCA


US40CA


GR76NG

Nuclear Industry



Description:

Our equipment is known for its capability, quality, precision, sturdiness and ease of use. The design is able to perform varied operations including; cutting, beveling, detubing and inside tube cutting of tubular plates.

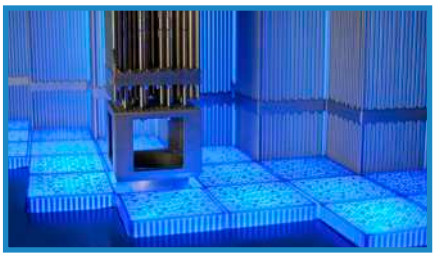
PROTEM equipment is used during all the stages of a nuclear power station's life; construction, maintenance, dismantling and nuclear waste processing.

PROTEM supplies equipment to nuclear facilities all over the world. Our techncial expertise and experience have made us a world leader in the design and manufacture of equipment to the Nuclear Industry.

Our engineers have mastered the processes and implemented the necessary techniques to satisfy the requirements and regulations inherent in the nuclear industry. They are perfectly aware of the unique requirements necessary when machines are used within environments subject to ionizing radiation. The design of equipment dedicated to operations within such conditions is systematically done taking into account all essential safety requirements. Our engineers are also alert to the cost of waste processing. The machining procedures they propose reduce waste production greatly and also optimize the filling of waste drums.

Applications:

- Cutting
- Wheel cutting
- V, X, J bevel
- Compound bevel for heavy wall thicknesses
- Counterboring
- Surfacing, facing
- Heat exchangers
- Flanges resurfacing
- Valves maintenance



Nuclear Industry



For more than 50 years PROTEM equipment has been used successfully by nuclear operators.



TTNG-HD



US 40



US 80



US 150



US 450



F9 - Sodium Reactor Decommissioning



US 3000 R - Cladding equipment on VVER 1100



US 480 R – Machining and Cladding Equipment on Steam Generator

Oil and Gas Industry



Description:

PROTEM offers industrial operators involved in the field of Oil and Gas integrated solutions for prefabrication work, manufacturing and maintenance.

This equipment is designed to provide the essential qualities expected by our customers:

Sturdiness, reliability, ease of use, ergonomic design, wide range of capabilities, machinings that can be done within a very short time and perfect welding preparation.

Adapted to all environments, including the most restrictive ones, the equipment designed by PROTEM can be used in fabrication workshops, on the job site, onboard ships, onshore or offshore platforms, spoolbases, etc.

The proposed range of equipment includes:

- High speed beveling machines type PFM HSB and US600R
- High speed cutting and beveling machines, CTA Series
- Beveling benches, BB Series
- Portable cutting and beveling machines, TT and TNO Series
- Portable beveling machines, US Series
- Coating machining equipment for pipelines, US and TT Series

Applications:

- Prefabrication
- Manufacture of pipelines
- Pipelines Maintenance
- Under water machining



Oil and Gas Industry



Subsea - Extreme Temperatures - Barges - Onshore - Offshore - Spoolbase



PFM



TTNG-HD



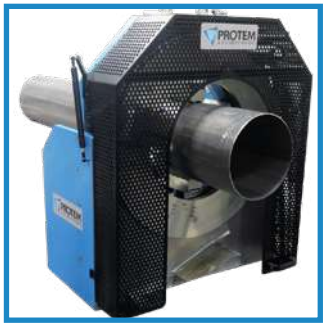
BB



Elbow Beveling Machine



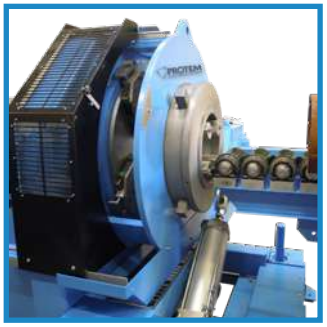
OHSB



MF



TNO



CTA

Tube Processing



Description:

Energy industries, in particular, have an increasing need for tubes to transport raw materials and sources of energy.

Tube and elbow manufacturers supply these industries with a large range of tubes in all diameters, materials and wall thicknesses.

Each tube or elbow to weld requires an end machining operation. This operation ranges from the simple facing of the end to the most complex bevel forms.

PROTEM equipment is integrated before and after the manufacturing process, creating very substantial gains in productivity.

PROTEM is a world leader in the manufacture of portable machining equipment for tubes, elbows and pipelines. Our machines are used daily by the Majors of the industry worldwide.

Applications:

- Construction, Maintenance, Repair, Dismantling of Piping systems





Tube Processing

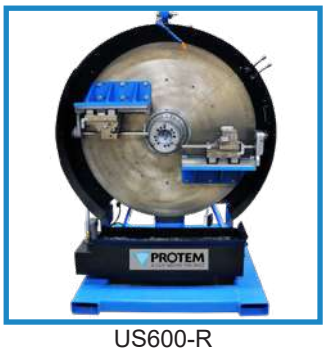


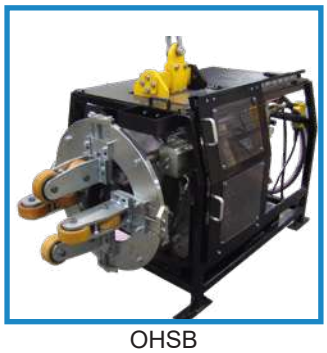
Equipment designed by PROTEM is integrated into the manufacturing processes of Tube and Pipeline Manufacturers for substantial gains in productivity.

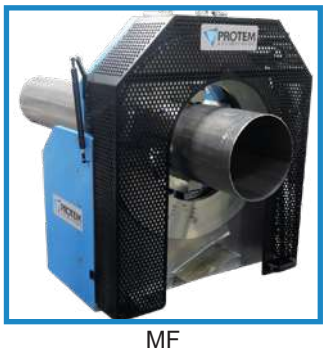

US450


TTNG-HD

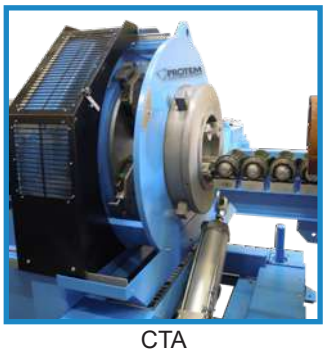

BB


US600-R


OHSB


MF


TNO


CTA

Shipbuilding Industry



Description:

PROTEM equipment is used in the shipbuilding industry for the manufacturing and repair of ships.

PROTEM offers a very large range of machines and tools to meet any application requirements for both the military (submarines, aircraft and carriers) and private sectors (cargo ships, ferries, passenger liners,etc) of the industry. Our equipment is known for quality, ease of use, lightness, reliability and their varied capabilities.

They provide great gains in productivity and ensure perfect quality of welded assemblies. SERCO machines are used in the repair of diesel motors because of their boring stroke and the quality of the machining finish. Thus they extend the duration of the life of the motor increasing savings and profits.

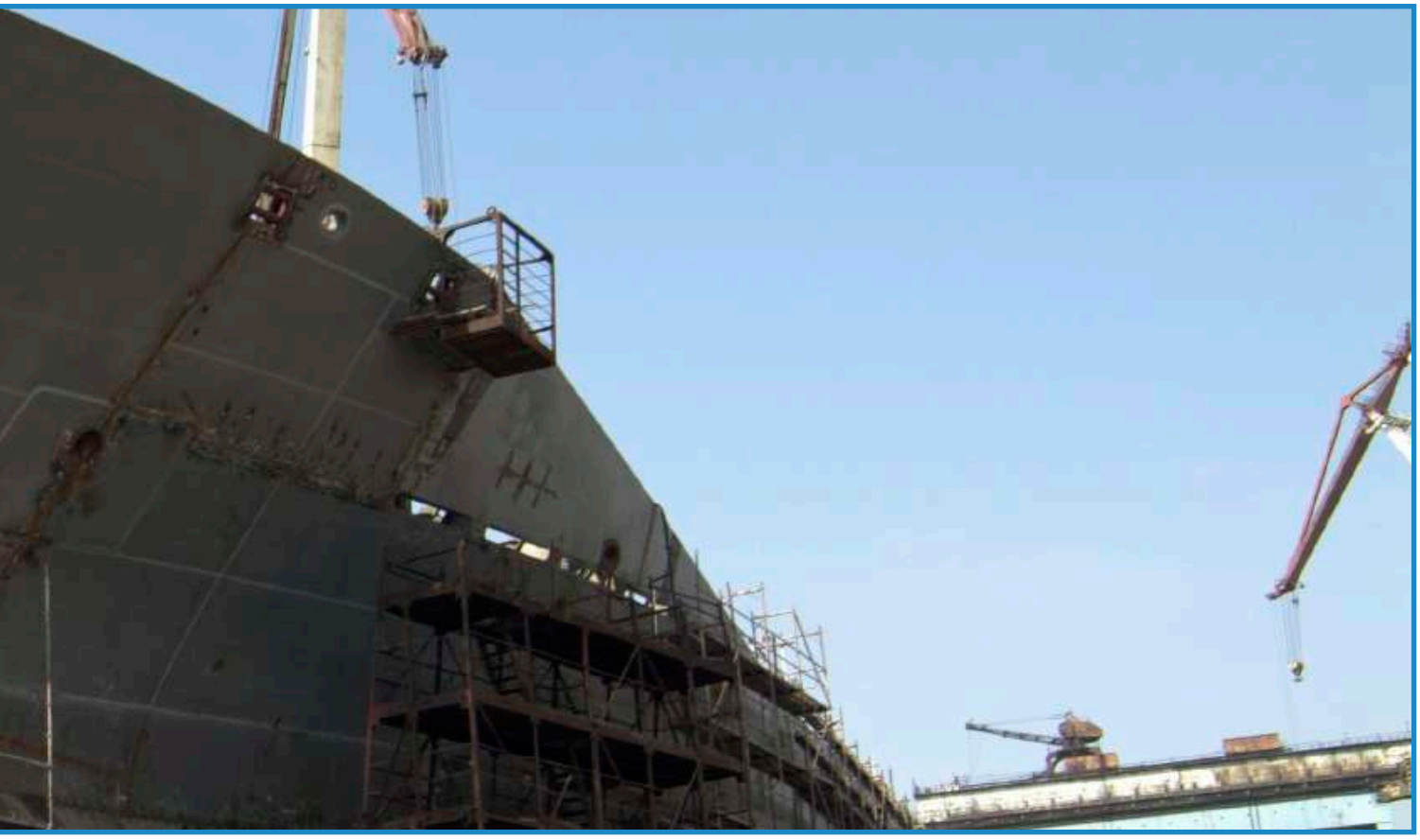
Applications:

- Tubes facing prior to welding
- Weld beam removal
- Valve and Flange repair
- Cutting of pipings damaged by corrosion
- Repair of diesel motors





Shipbuilding Industry



Equipment designed and manufactured by PROTEM can be used in confined spaces, extreme temperatures and saline environments.


SM8


S18


SL30


SE25


US25CH


US30CH


SL120


TTS-NG

High Purity Industry



Description:

Most of these industries operate in clean rooms during their manufacturing processes. In clean rooms, parameters such as temperature, humidity and relative pressure are maintained at a precise level. In addition, particular attention is paid to the concentration of particulates.

PROTEM equipment performs manufacturing or maintenance operations (tube cutting, facing, beveling, counterboring) while keeping the creation of particles resulting from machining operations to a minimum. The chips produced during machining are easy to collect and no particlulates are released into the environment.

PROTEM equipment that is dedicated to high purity industries features a clamping on the outside of the tube to avoid contamination inside the tubes to be machined. Furthermore, the OD collets are manufactured in the same material as the tube, (stainless steel, aluminum, etc).

PROTEM equipment is able to be used on electropolished tubing, provides perfectly concentric clamping without deformation due to clamping sleeves, and achieves perfectly perpendicular cuts.

Applications:

- Tube Facing
- Tube Cutting
- Facing for Fittings
- Facing for T Fittings
- Facing for Elbows





High Purity Industry



Including, but not limited to, the Pharmaceutical, Cosmetics, Semi-conductor, Biotechnology, and Food Processing industries.



SE25


SE25RA


SL30


SE-NG Series


SE65


SE65RA


SL120


SE219


TTS-NG

Green Energies



Description:

The energy transition from fossil fuels to renewable energies, is creating ever greater investments in these new energy industries for construction and maintenance.

PROTEM is a key partner in this transition offering a large choice of machines and tools designed for wind power, hydraulic, solar, biofuels, biogas and for congeneration.

PROTEM machines and tools are used for on-site machining needs necessary during construction, maintenance or repair of these new installations.

Applications:

- Re-machining of flanges and valves in Hydro-electric power stations
- Maintenance and construction of Biogas - Biofuel power stations and refineries
- Heat exchangers for Cogeneration and Solar energy





Green Energies



Machining times are reduced, while maintaining high precision and accuracy.


SM8


S18

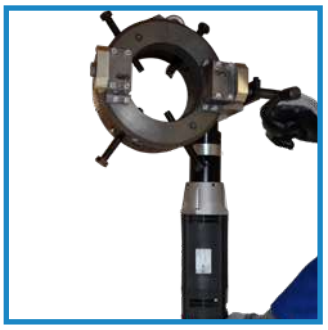

SL30


SE25


US25CH


US30CH


SL120


TTS-NG

Chemical Industry



Description:

Pipelines are omnipresent in the chemical, petrochemical, phytosanitary chemical, pharmaceutical, polymer or paints manufacturing and oleochemical industries.

These pipelines have to be very resistant to corrosion. The use of stainless steels and other alloys is unavoidable.

For nearly 50 years, PROTEM has offered integrated solutions for construction and maintenance of these pipelines with machines and tools adapted to the features of the tubes. They perform any machining operations that are needed; beveling, cutting, facing, etc.

Their versatility and sturdiness are a perfect match for any project; factory construction, routine maintenance or decommissioning.

In addition to solutions proposed by PROTEM equipment, SERCO also manufactures equipment for the maintenance of flanges and valves that can be found on the SERCO web site (www.Serco-tools.com).

Applications:

- Manufacturing of pipelines
- Cutting, removal or repair of parts damaged by corrosion
- Re-machining of valve seats and seal surfaces





Chemical Industry



For more than 50 years, PROTEM has been offering integrated solutions for the construction and maintenance of pipelines.


US25CH


US30CH

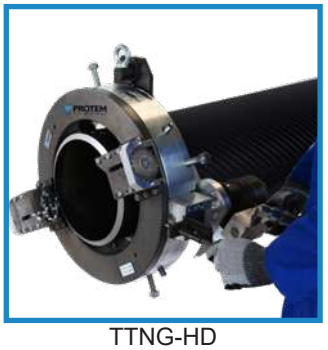

SE Series


SL Series


SE-NG Series


TTS-RD


TTS-NG


TTNG-HD

Cryogenics Industry



Description:

The branches of physics and engineering that study very low temperatures, lower than 150° C how to produce them, and how materials behave at those temperatures.

Used for research purposes:

- Measures at very low temperatures
- materials, solid physics
- instrumentation development
- accelerators and particle physics
- magnets, cavities, detectors
- magnetic confinement
- astrophysics
- earth and space military sensors

Use in the industry:

- Electronics (detectors, components)
- Electrotechnical industry (storage, transport, alternators, limiters)
- Transport
- Liquefaction and cooling
- Storage of fluid
- Insulation
- Space industry
- Propellers (fuel and engine)
- Medical
- Cryosurgical, cryopreservation

Applications:

- Tubes maintenance
- Cutting, removal or repair of parts damaged by corrosion
- Weld beam removal
- Re-machining of valve seats and seal surfaces



Cryogenics Industry



For more than 50 years, PROTEM has been offering integrated solutions for the construction and maintenance of pipelines.


US25CH


US30CH


US40


SL Series


SE-NG Series


TTS-RD


TTS-NG


TTNG-HD

Defense Industry



Description:

The defense industry is a leading economic and technological sector.

The defense industry brings a very wide variety of players of different sizes together, from the contracting authority down to small and medium-sized companies that possess specific knowledge and expertise.

PROTEM equipment is used by leading companies in the defense industry throughout the world, especially those working in nuclear power, ship-building and aeronautics.

Applications:

- Tubes maintenance
- Cutting, removal or repair of parts damaged by corrosion
- Weld beam removal
- Re-machining of valve seats and seal surfaces







Defense Industry



For more than 50 years, PROTEM has been offering integrated solutions for the construction and maintenance of pipelines.


US25CH


US30CH


US40


SL Series


SE-NG Series


TTS-RD


TTS-NG

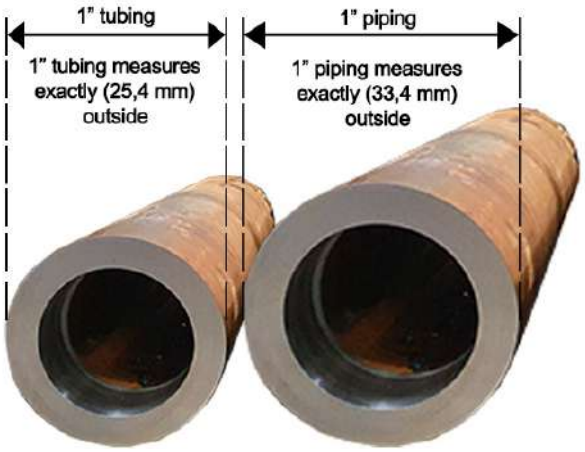

TTNG-HD

Should we talk about Tubes or Pipes?

Remember that the terms Tube and Pipe are often used interchangeably. Not just in English.

Let's start by remembering that a tube can have different shapes: square, rectangular, cylindrical. A pipe is always round.
Often both terms can be used. However, depending on how they are tolerated and ordered, differences must be taken into account.
When we talk about tubes, we are talking about applications that we would describe as structural. From then on, their external diameter becomes an element determining their precision.

Indeed, in certain sectors of activity, the external diameter is an essential element. This is particularly the case in the high purity industry: pharmacy, food processing, semiconductors, where the external diameter makes it possible to determine how many stability factors it can have.



Pipes, for their part, generally allow fluids to be transported: gases or liquids. It is then necessary to control the transport capacity of these pipes, the circular shape of which makes it possible to uniformly distribute the pressure forces. The thicker a pipe is, the more it resists the pressures to which it is subjected.

Is there a classification of Tubes and Pipes?

Pipes are classified by considering what is called a program (thickness) and their nominal diameter (tube size)
We can thus have a program number which will be identical for pipes of different sizes but whose wall thicknesses will be different.
In our field of activity, when we talk about the dimensions of a pipe, we mention its OD and its ID (outer diameter and inner diameter) or its OD and its thickness.

For tubes, we consider more the outer diameter and the thickness of the wall. But we also talk about OD and ID or even OD and thickness.

The thickness of a pipe is defined by its gauge number. Smaller gauge references indicate larger outside diameters. The inside diameter is theoretical.

Pipes accommodate larger applications with sizes ranging from ½ inch to several feet. Tubes are generally used in applications where smaller diameters are required.



Should we talk about Tubes or Pipes?

What other Elements allow us to distinguish a Tube from a Pipe?

Their shape
A pipe is always round.
A tube can be square, rectangular, round

How to measure them
For a pipe, we dimension it by considering its external diameter and its thickness. Pipes are generally subject to greater tolerance constraints than those required for tubes.
To measure a pipe, we use its nominal diameter and the program (thickness)

Telescoping capability
The tubes can telescope together.

Rigidity
A pipe is an element which is rigid and whose shape cannot be modified without the use of suitable equipment. However, some bronze or brass pipes can be “deformed” manually.
The shape of the tubes can be changed without excessive effort. They can be bent without distortion or without excessive twisting or even fracture.

The size
Pipes are used for applications requiring larger dimensions. Tubes are used when small diameters are required.

Materials
The tubes are rolled cold and hot. The tubes are only rolled hot. Both pipes and tubes can be galvanized.

Hardness
Pipes are stronger than tubes. The pipes provide better performance in applications requiring strength and durability.



USA and EU standards

ASTM ASME ANSI standards	Title
ANSI B1.20.1	Pipe threads general purposes (INCH)
ASME B16-5	Pipe Flanges and Flanged Fittings NPS 1/2 through NPS 24
ASME B16-11	Forged Steel Fittings, Socket- Welding and Threaded
ASME B16.34	Valves-flanged, threaded, and welding end
ASME B16.47	Large Diameter Steel Flanges: NPS 26 Through NPS 60
ASTM A 213	Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
ASTM A 269	Seamless and selded Austenitic stainless steel tubing for general service
ASTM A 312	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
ASTM A 450	Standard Specification for General Requirements for Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes
ASTM A 778	Seamless and welded Austenitic stainless steel tubing for general service
ASTM A 999	Standard Specification for General Requirements for Alloy and Stainless Steel Pipe

European standards	Title
EN 10216-5	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 5 : Stainless steel tubes
EN 10217-7	Welded steel tubes for pressure purposes - Technical delivery conditions - Part 7 : Stainless steel tubes
EN 10028-1	Flat products made of steels for pressure purposes - Part 1: General requirements
EN 10028-7	Flat products made of steels for pressure purposes - Part 7: stainless steels
EN 10056-1	Structural steel equal and unequal leg angles - Part 1: Dimensions
EN 10056-2	Structural steel equal and unequal leg angles. Part 2: Tolerances on shape and dimensions
EN 10058	Hot rolled flat steel bars and steel wide flats for general purposes - Dimensions and tolerances on shape and dimensions
EN 10088-1	Stainless steels - Part 1: List of stainless steels
EN 10088-2	Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes
EN 10088-3	Stainless steels - Part 3 : technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resistant steels for general purposes
EN 1092-1	Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 1: steel flanges.
EN 12516-1	Industrial valves - Shell design strength - Part 1 : tabulation method for steel valve shells
EN 12516-2	Industrial valves - Shell design strength - Part 2 : calculation method for steel valve shells
EN 12516-3	Valves - Shell design strength - Part 3: Experimental method
EN 12982	Industrial valves - End-to-end and centre-to-end dimensions for butt welding end valves
EN 558	Industrial valves - Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems - Part 1: PN-designated valves
EN 10222-5	Steel forgings for pressure purposes - Part 5: Martensitic, austenitic and austenitic-ferritic stainless steels
EN 10213-4	Technical delivery conditions for steel castings for pressure purposes - Part 4: Austenitic and austenitic-ferritic steel grades
EN 10253-3	Butt-welding pipe fittings - Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements
EN 10253-4	Butt-welding pipe fittings - Part 4 : Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements
EN 10272	Stainless steel bars for pressure purposes
EN 10278	Dimensions and tolerances of bright steel products of stainless and other special steels
EN 10279	Hot rolled steel channels - Tolerances on shape, dimensions and mass
EN 10296-2	Welded circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel
EN 10297-2	Seamless steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel
EN 10305-1	Steel tubes for precision applications - Technical delivery conditions - Part 1: Seamless cold drawn tubes
EN 10305-2	Steel tubes for precision applications - Technical delivery conditions - Part 2: Welded cold drawn tubes
EN 10305-5	Steel tubes for precision applications - Technical delivery conditions - Part 5: Welded and cold sized square and rectangular tubes
EN 10204	Metallic products - Types of inspection documents

List of dimensional standards

Standard	Dimensional standard	Description	Application	Sizes (OD x WT)
API	API 5CT	Specification for casing and tubing	- casing and tubing	26.7 x 2.87 - 114.3 x 8.56 mm [1.050 x 0.113 - 4.500 x 0.337 in]
API	API 5L	Specification for line pipe	- line pipe	10.3 x 1.7 - 114.3 x 13.49 mm [0.405 x 0.068 - 4.500 x 0.531 in] [1/8 - 4 1/2 NSD]
ASME	B36.10	Welded and seamless wrought steel pipe	for low temperature pressure services	10.3 x 1.24 - 114.3 x 13.49 mm [0.405 x 0.049 - 4.500 x 0.531 in] [1/8 - 4 NPS]
ASME	B16.9	Factory-made wrought buttwelding fittings	elbows for low temperature	33.4 x 3.38 - 168.3 x 4.37 mm [1.315 x 0.133 - 6.625 x 0.172 in] [1 - 6 NPS]
ASME	SA334	Seamless and welded carbon and alloy-steel tubes for low-temperature service	for low temperature pressure services	31.75 x 2.34 - 139.7 x 12.7 mm [1.250 x 0.088 - 5.500 x 0.500 in] [13 - 7/0 GA]
ASME	SA53	Pipe, steel, black and hot-dipped, zinc-coated, welded seamless	suitable for welding or threading	10.3 x 1.24 - 114.3 x 13.49 mm [0.405 x 0.049 - 4.500 x 0.531 in] [1/8 - 4 NPS]
ASTM	A161	Seamless low-carbon and carbon-molybdenum steel tubes for refinery service	for heat exchangers	12.70 x 0.89 - 76.20 x 5.59 mm [0.500 x 0.035 - 3.000 x 0.220 in] [20 - 5 BWG]
ASTM	A179	Seamless cold drawn low-carbon steel heat exchanger and condenser tubes	for heat exchangers	12.70 x 0.89 - 76.20 x 5.59 mm [0.500 x 0.035 - 3.000 x 0.220 in] [20 - 5 BWG]
ASTM	A192	Seamless carbon steel boiler tubes for high-pressure service	for high-pressure service - boiler	31.75 x 2.34 - 139.7 x 12.7 mm [1.250 x 0.088 - 5.500 x 0.500 in] [13 - 7/0 GA]
ASTM	A199	Seamless cold drawn intermediate alloy steel heat exchanger and condenser tubes. General requirements for carbon, ferritic alloy and austenitic alloy steel tubes	for heat exchangers	12.70 x 0.89 - 76.20 x 5.59 mm [0.500 x 0.035 - 3.000 x 0.220 in] [20 - 5 BWG]
ASTM	A209	Seamless carbon-molybdenum alloy-steel boiler and superheater tubes	for high-pressure service - boiler	31.75 x 2.34 - 139.7 x 12.7 mm [1.250 x 0.088 - 5.500 x 0.500 in] [13 - 7/0 GA]
ASTM	A210	Seamless medium-carbon steel boiler and superheater tubes	for high-pressure service - boiler	31.75 x 2.34 - 139.7 x 12.7 mm [1.250 x 0.088 - 5.500 x 0.500 in] [13 - 7/0 GA]
ASTM	A213	Seamless ferritic and austenitic alloy-steel boiler, superheater and heat-exchanger tubes	for high-pressure service - boiler	31.75 x 2.34 - 139.7 x 12.7 mm [1.250 x 0.088 - 5.500 x 0.500 in] [13 - 7/0 GA]
ASTM	A334	Seamless and welded carbon and alloy-steel tubes for low-temperature service	for low temperature pressure services	31.75 x 2.34 - 139.7 x 12.7 mm [1.250 x 0.088 - 5.500 x 0.500 in] [13 - 7/0 GA]
ASTM	A335	Seamless ferritic alloy-steel pipe for high-temperature service	for high-pressure service - boiler	31.75 x 2.34 - 139.7 x 12.7 mm [1.250 x 0.088 - 5.500 x 0.500 in] [13 - 7/0 GA]
ASTM	A519	Seamless carbon and alloy steel mechanical tubing	for standard use	6.35 x 0.51 - 120.65 x 9.53 mm [0.250 x 0.020 - 4.750 x 0.375 in] [25 - 3/8 GA]
ASTM	A53	Pipe steel, black and hot-dipped, zinc-coated, welded seamless	suitable for welding or threading	10.3 x 1.24 - 114.3 x 13.49 mm [0.405 x 0.049 - 4.500 x 0.531 in] [1/8 - 4 NPS]
ASTM	A556	Seamless cold drawn carbon steel feedwater heater tubes	for high-pressure service - boiler	31.75 x 2.34 - 139.7 x 12.7 mm [1.250 x 0.088 - 5.500 x 0.500 in] [13 - 7/0 GA]
ASTM	A795	Black and hot-dipped zinc-coated (galvanized) welded and seamless steel pipe for fire protection use	suitable for welding or threading	10.3 x 1.24 - 114.3 x 13.49 mm [0.405 x 0.049 - 4.500 x 0.531 in] [1/8 - 4 NPS]
ASTM	A822	Seamless cold drawn carbon steel tubing for hydraulic system service	for pressure hydraulic and pneumatic lines - HPL	6.35 x 0.51 - 120.65 x 9.53 mm [0.250 x 0.020 - 4.750 x 0.375 in] [25 - 3/8 GA]
BS	7416	Precision finished seamless cold drawn low carbon steel tubes for use in hydraulic fluid power systems.	for pressure hydraulic and pneumatic lines - HPL	4.0 x 0.5 - 80.0 x 12.5 mm

List of dimensional standards

Standard	Dimensional standard	Description	Application	Sizes (OD x WT)
ČSN	132.385	Reducers DN 20 - DN 500, PN 40 - PN 100	butt welding reducers	26.9 x 2.3 - 114.3 x 3.60 mm [20 - 100 DN] [3/4 - 4 NPS]
ČSN	425.710	Steel tubes suitable to screwing. Medium series	suitable for welding or threading	9.8 x 2.0 - 113.1 x 5.40 mm [1/8 - 4 NPS] [6 - 100 DN]
ČSN	425.711	Steel tubes suitable for screwing. Heavy series	suitable for welding or threading	9.8 x 2.0 - 113.1 x 5.40 mm [1/8 - 4 NPS] [6 - 100 DN]
ČSN	425.715	Hot formed seamless steel tubes	for room temperature pressure service	10.2 x 0.5 - 139.7 x 16.0 mm
ČSN	425.716	Hot formed seamless steel tubes with smaller tolerances	for structural purposes	10.2 x 0.5 - 139.7 x 16.0 mm
ČSN	426.710	Cold drawn seamless tubes with normal tolerances from steel class 11 - 16	for heat exchangers	4.0 x 0.5 - 125.0 x 13.0 mm
ČSN	426.711	Precision seamless steel tubes	ready to use - HP	48.0 x 4.0 - 130.0 x 10.0 mm
ČSN	426.712	Precision seamless steel tubes with increased accuracy	ready to use - HP	48.0 x 4.0 - 130.0 x 10.0 mm
ČSN	by customers specification		for bearings	22.0 x 3.0 - 70.0 x 8.0 mm
DIN	2391	Seamless precision steel tubes, for lines, construction and riveting, cold drawn, unalloyed; dimensions	ready to use - HP	48.0 x 4.0 - 130.0 x 10.0 mm
DIN	2445-1	Seamless steel tubes for dynamic loads - Part 1: Hot finished tubes in fluid systems, PN 100 to PN 500	for pressure hydraulic and pneumatic lines - HPL	
DIN	2445-2	Seamless steel tubes for dynamic loads - Part 2: Steel tubes for precision application in fluid systems PN 100 to PN 500	for pressure hydraulic and pneumatic lines - HPL	4.0 x 0.5 - 80.0 x 12.5 mm
DIN	2460	Steel water pipes and fittings	suitable for welding or threading	9.8 x 2.0 - 113.1 x 5.40 mm [1/8 - 4 NPS] [6 - 100 DN]
DIN	28180	Seamless steel tubes for tubular heat exchangers	for heat exchangers	16.0 x 1.2 - 51 x 5 mm
DIN	by customers specification		for bearings	22.0 x 3.0 - 70.0 x 8.0 mm
EN	10210-2	Hot finished steel structural hollow sections - Part 2 : tolerances, dimensions and sectional properties	for structural purposes	10.2 x 0.5 - 139.7 x 16.0 mm
EN	10216-1	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 1 : non-alloy steel tubes with specified room temperature properties	for room temperature pressure service	10.2 x 0.5 - 139.7 x 16.0 mm
EN	10216-2	Seamless steel tubes for pressure purposes - Technical conditions - Part 2 : non-alloy and alloy steel tubes with specified elevated temperature properties	for high-pressure service - boiler	10.2 x 0.5 - 139.7 x 16.0 mm
EN	10216-3	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 3 : alloy fine grain steel tubes	from fine grain steel	10.2 x 0.5 - 139.7 x 16.0 mm
EN	10216-4	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 4 : non-alloy and alloy steel tubes with specified low temperature properties	for low temperature pressure services	10.2 x 0.5 - 139.7 x 16.0 mm
EN	10220	Seamless and welded steel tubes. Dimensions and masses per unit length	for mechanical treatment - machine parts and general use	
EN	10224	Non-alloy steel tubes and fittings for the conveyance of water and other aqueous liquids - Technical delivery conditions	suitable for welding or threading	10.2 x 0.5 - 139.7 x 16.0 mm
EN	10253-1	Butt-welding pipe fittings - Part 1 : Wrought carbon steel for general use and without specific inspection requirements	butt welding reducers	26.9 x 2.3 - 114.3 x 3.60 mm [20 - 100 DN] [3/4 - 4 NPS]
EN	10253-2	Butt-welding pipe fittings - Part 2 : non alloy and ferritic alloy steels with specific inspection requirements	elbows for room temperature service	21.3 x 2.0 - 610.0 x 12.50 mm [15 - 600 DN] [1/2 - 24 NPS]
EN	10255	Non-alloy steel tubes suitable for welding and threading - Technical delivery conditions	suitable for welding or threading	9.8 x 2.0 - 113.1 x 5.40 mm [1/8 - 4 NPS] [6 - 100 DN]
EN	10294-1	Hollow bars for machining - Technical delivery conditions - Part 1 : non alloy and alloy steels	for mechanical treatment - machine parts and general use	10.2 x 0.5 - 139.7 x 16.0 mm

List of dimensional standards

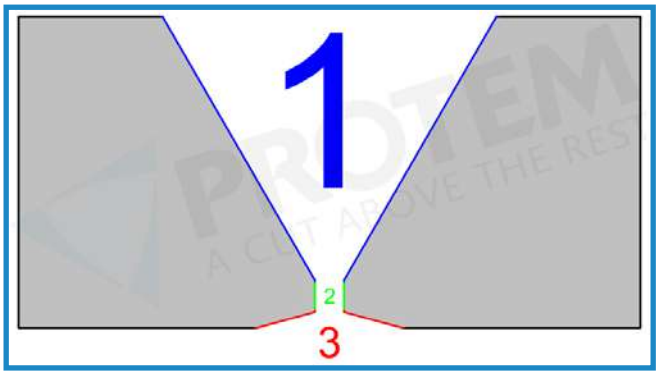
Standard	Dimensional standard	Description	Application	Sizes (OD x WT)
EN	10297-1	Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 1 : non-alloy and alloy steel tubes	for mechanical treatment - machine parts and general use	10.2 x 0.5 - 139.7 x 16.0 mm
EN	10305-1	Steel tubes for precision applications - Technical delivery conditions - Part 1: Seamless cold drawn tubes	ready to use - HP	48.0 x 4.0 - 130.0 x 10.0 mm
EN	10305-4	Steel tubes for precision applications - Technical delivery conditions - Part 4 : seamless cold drawn tubes for hydraulic and pneumatic power systems	for pressure hydraulic and pneumatic lines - HPL	4.0 x 0.5 - 80.0 x 12.5 mm
ISO	7-1	Pipe threads where pressure tight joints are made on the threads - Part 1: Taper external threads and parallel internal threads - Dimensions, tolerances and designation		
ISO	228-1	Pipe threads where pressure-tight joints are not made on the threads - Part 1 : dimensions, tolerances and designation		
ISO	1129	Steel tubes for boilers, superheaters and heat exchangers. Dimensions, tolerances and conventional masses per unit length	for heat exchangers	
ISO	3183	Petroleum and natural gas industries - Steel pipe for pipeline transportation systems	line pipe	10.2 x 0.5 - 139.7 x 16.0 mm
ISO	4200	Plain end steel tubes, welded and seamless. General tables of dimensions and masses per unit length	for mechanical treatment - machine parts and general use	
ISO	6759	Seamless steel tubes for heat exchangers	for heat exchangers	
ISO	6363	Wrought aluminium and aluminium alloys - Cold-drawn rods/bars, tubes and wires - Part 3: Tolerances on form and dimensions for drawn rods/bars and wires	suitable for welding or threading	
JIS	G3445	Carbon steel tubes for machine structure	for standard use	15.9 x 1.2 - 114.3 x 9.5 mm
JIS	G3454	Carbon steel pipes for pressure service	for room temperature pressure service	10.5 x 1.7 - 114.3 x 9.5 mm
JIS	G3455	Carbon steel pipes for high pressure service	for room temperature pressure service	10.5 x 1.7 - 114.3 x 9.5 mm
JIS	G3456	Carbon steel pipes for high temperature service	for high-pressure service - boiler	10.5 x 1.7 - 114.3 x 9.5 mm
JIS	G3458	Alloy steel pipes	for high-pressure service - boiler	10.5 x 1.7 - 114.3 x 9.5 mm
JIS	G3461	Carbon steel tubes for boiler and heat exchanger	for high-pressure service - boiler	15.9 x 1.2 - 114.3 x 9.5 mm
JIS	G3462	Alloy steel tubes for boiler and heat exchanger	for high-pressure service - boiler	15.9 x 1.2 - 114.3 x 9.5 mm
JIS	JOHS-102	Carbon steel precision tubes for hydraulic line service	for pressure hydraulic and pneumatic lines - HPL	10.5 x 1.7 - 114.3 x 9.5 mm
PN	ŽP 42 5760	Butt-welding elbows	elbows for water and gas pipe line	21.3 x 2.0 - 610.0 x 12.50 mm [15 - 600 DN] [1/2 - 24 NPS]
STN	425.710	Threaded steel tubes. Medium series. Dimensions	suitable for welding or threading	9.8 x 2.0 - 113.1 x 5.40 mm [1/8 - 4 NPS] [6 - 100 DN]
STN	425.711	Steel tubes, threaded. Heavy series. Dimensions	suitable for welding or threading	9.8 x 2.0 - 113.1 x 5.40 mm [1/8 - 4 NPS] [6 - 100 DN]
STN	425.715	Hot-formed seamless steel tubes. Dimensions	for room temperature pressure service	10.2 x 0.5 - 139.7 x 16.0 mm
STN	425.716	Hot-formed seamless steel tubes with smaller tolerances	for room temperature pressure service	10.2 x 0.5 - 139.7 x 16.0 mm
STN	426.710	Cold-drawn seamless tubes with normal tolerances of steel of grades 11 to 16. Dimensions	for low temperature pressure services	4.0 x 0.5 - 125.0 x 13.0 mm
STN	426.711	Precision seamless steel tubes	ready to use - HP	48.0 x 4.0 - 130.0 x 10.0 mm
STN	426.712	Precision seamless steel tubes with increased accuracy	ready to use - HP	48.0 x 4.0 - 130.0 x 10.0 mm
STN	by customers specification		for bearings	22.0 x 3.0 - 70.0 x 8.0 mm

Assembling Pipes by Butt-Welding: The different types of Bevels and how to make them

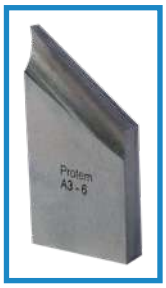
Welding thick parts together (plates and pipes) requires the weld be made over the total thickness of the part in order to guarantee the assembly's mechanical continuity. To achieve this, a bevel is made on the end surfaces of the elements to be assembled prior to welding them together. Butt-welding on pipes is special in as much as the welder does not generally have access to the inner face of the joint. Therefore, all the welding operations must be done from the outside. For this reason, the edges must be prepared accordingly.

The different welding standards (ASME, AWS, ISO, EN, etc.) generally give the instructions to be followed in terms of bevel geometry. This article describes the preparations most frequently encountered in the industry, depending on the wall thickness of the pipes to be welded together.

1. Formation of a Bevel on a Pipe End

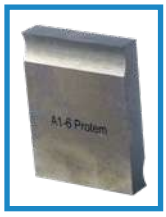


1.1 Beveling



Beveling is the operation for creating a flat angled surface on the end of the pipe. The opening created by the beveling operation gives the welder access to the pipe wall's total thickness, and enables him to make a uniform weld that will guarantee the assembly's mechanical continuity.
A root pass is made at the base of the bevels, which forms the base for filling the groove angle formed by the two bevels by successive welding passes.

1.2 Facing



Facing is the term used for the operation to create a land, which consists of making a flat surface on the end of the pipe. Correct facing makes it easier to put the pipes in line with each other before welding and also contributes to having a constant root opening between parts. These are both essential parameters for maintaining a correct welding puddle and for ensuring that the root pass has penetrated the joint completely.

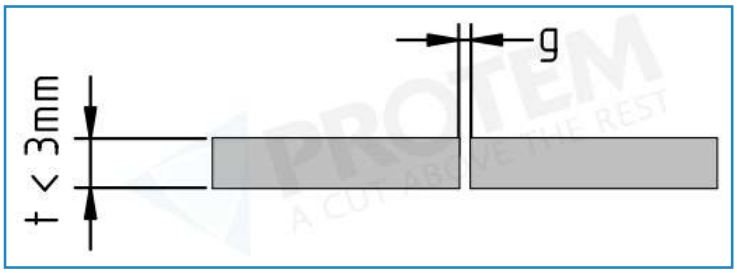
1.3 Inside Counterboring



Pipe production tolerances may lead to varying thicknesses over the pipe's circumference. This may lead in turn to variations in the thickness of the root face when the bevel is being made. This is why a counterboring operation is generally recommended in welding procedures.

The operation consists of lightly machining the inside surface of the pipe in order to guarantee that the land or root face has a constant width over the whole circumference of the pipe. Having a constant land width will make it easier to do the root pass. This parameter is essential when automated welding processes are used because a machine is not capable of assessing and compensating for any possible irregularity on the land, which obviously is not the case in manual welding.

2. The Different Types of Bevels



2.1 Range of Thicknesses T ≤ 3 mm

When butt-welding is required for pipes with walls less than 3mm (.118") thick, beveling the end of the pipe is generally unnecessary. Arc-welding technologies (111, 13x, 141) are capable of penetrating the whole depth of the pipe in a single pass.

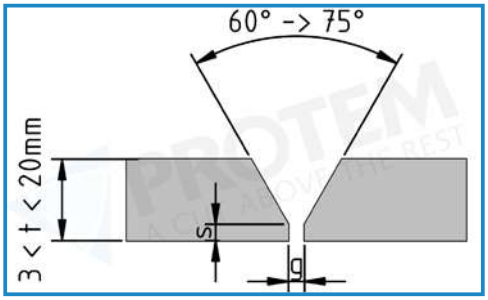
Assembling Pipes by Butt-Welding: The different types of Bevels and how to make them



When an automated welding technique is used (orbital welding or a process using high-density energy sources), the end of the pipe must be faced to make sure that the weld edges are perfectly perpendicular. Depending on the application or the process used, the opening between the parts will be between g=1/2t and g=0 (especially for processes using high-density energy sources).

2.2 Range of Thicknesses 3 ≤ T ≤ 20 mm

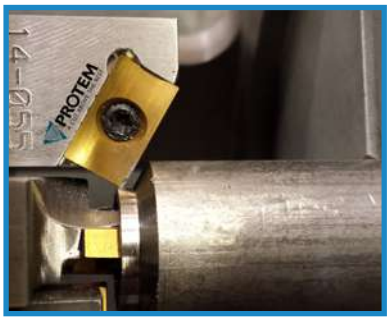
When a welder can only access one side of the joint to be welded, preparing the parts with open square edges does not generally enable the weld metal to penetrate completely when wall thicknesses are more than 3mm (0.118”). Therefore, a bevel must be made, so that the welder can make a root pass at the bottom of the joint, which will then be filled by one or more additional passes.



Usually the root pass is made using the 141 process for providing the best possible penetration (the root pass being used as a base for subsequent welding passes). For economic reasons, the following passes, called “fill” or “filling” passes, are made using a 13x or 111 process, which is more productive (the quantity of metal deposited, feed speed, etc.) than that of the 141 process.



The most common angles for V grooves are 60° and 75° ((2×30° and 2x 37.5°) depending on the standard to be applied. A land is generally required with a width (s) between 0.5 and 1.5 mm (.020 and .059”). The root opening between the parts to be welded (g) is between 0.5 and 1mm (.020 and .059”).



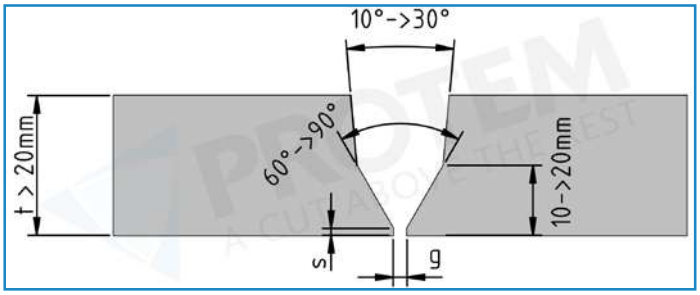
However, ‘J’ groove preparations are required more often for this range of thickness (see details below). This is especially true when orbital welding processes are used. It is also the normal type of preparation when welding alloys, such as, duplex or inconel.

2.3 Range of Thicknesses 20 mm ≤ T

When wall thicknesses increase on the parts to be welded, the quantity of weld metal that needs to be deposited in the weld bead also increases in similar proportions. For avoiding welding operations that are too long and too costly from a labor and consumables point of view, preparations for welding joints with thicknesses of over 20mm (.787”) are made using bevels that enable the total volume of the bevel to be reduced.

2.3.1 Double Angle V Grooves (or Compound V Grooves)

The first solution for reducing the size of the bevel is to make a change in the groove angle. An initial angle of 30° or 37.5° (up to 45°) is combined with a second angle, generally between 5° and 15°. The first 30° or 37.5° angle must be kept to avoid the groove becoming too narrow and preventing the welder from making the root pass.

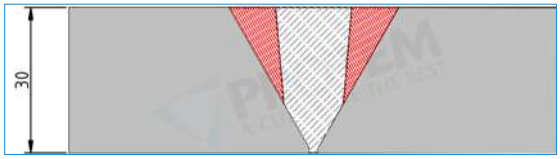




Just like single V grooves, these preparations require a land from 0.5 mm to 1.5mm (.020 to .059”) wide and an opening between the parts (g) between 0.5 and 1mm (.020 and .039”). The hot pass for the land is usually done using the 141 process, and filling operations using the 13x or 111 processes.

Assembling Pipes by Butt-Welding: The different types of Bevels and how to make them





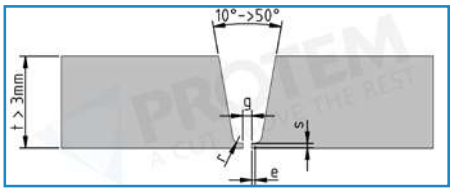
For example, in comparison with a 30° single angle bevel (grey zone plus red zone), a V bevel with a double angle of 30°/5° (grey zone) gives an economy of about 20% in terms of weld metal for a part 20mm (.787") thick.

The potential savings in terms of bevel volume increases in proportion to the wall thickness of the pipe to be welded. Consequently, savings will be over 35% on a 30 mm (1.181") thick pipe.

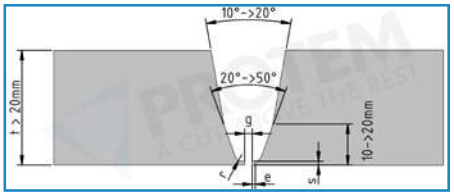
2.3.2 Single and Double Angle J Grooves

The second solution for drastically reducing the volume of the bevel and, consequently, the amount of weld metal in the 'J' groove preparation. Single angle 'J' grooves are comprised of an angle that is normally between 5° and 20°, a groove radius (r) and an increase in the land (e). The latter element makes the root pass easier to do by giving the welder better access to the land.

For cases with very thick walls, compound angle 'J' grooves can be made. Normally, the first angle is made at 20° and the second at 5°.



J or compound J grooves are usually welded with either a very small or a zero opening (g) between the parts.





From the point of view of geometry, bevels must be perfect to avoid cracking and other problems. As well as providing the accuracy to be guaranteed for this type of preparation, the machine used must also be capable of machining thick-walled pipes rapidly, in order to meet the production speeds required by manufacturers.

2.3.3 Narrow Gap Preparation

A variation on this type of bevel is narrow-gap preparation, which is used more and more in the oil industry due to the increase in pipe wall thicknesses and the high production rates to be maintained. The technique generally consists of making a single or compound angle 'J' bevel, with an opening as narrow as possible. This provides a very substantial reduction in the amount of weld metal used and an increase in productivity due to the decrease in welding times. For thicknesses of over 50mm (1.968"), the productivity factor can be over five times higher than on a weld made with a traditional bevel.

Even so, a large number of constraints are to be found in the use of this technique. Two of them have a direct impact on the weld preparation process:

Firstly, bevel geometry and the opening between the parts must be controlled with the utmost accuracy. This is because the opening between the parts does not give the welder access to the bevel root. As a result, the whole weld, including the root pass, must be done using an automatic process. Automatic processes cannot accept any faults in alignment or irregularities in land width, contrary to the welder who is capable of adjusting the position of his torch for compensating any geometric faults in the groove.

The grade of the materials to be welded represents the second factor that must be taken into account. Every type of material possesses different shrinkage characteristics. Therefore, bevel geometry (the opening angle) must be studied beforehand for each different grade. The higher the shrinkage level of a material after welding, the more the angle has to be open, so as to prevent any cracks from appearing during solidification. A variation of a few tenths of a degree in the angle is liable to have a direct impact on the occurrence or absence of cracking, especially when welding nickel-based alloys.

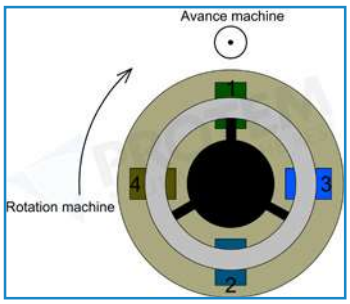
Assembling Pipes by Butt-Welding: The different types of Bevels and how to make them

These types of constraints require long and costly preliminary studies. Therefore, they need to be accompanied by a perfectly controlled bevel machining process. The description of the welding procedure (DMOS) resulting from preliminary studies requires lands to be accurate to one millimeter (.039”), for angles to be accurate to one degree and for the parts to be welded to be aligned perfectly so as to avoid any possible welding defects. Therefore, the equipment used for making the bevel must be capable of guaranteeing reliable repeat preparations under all conditions.

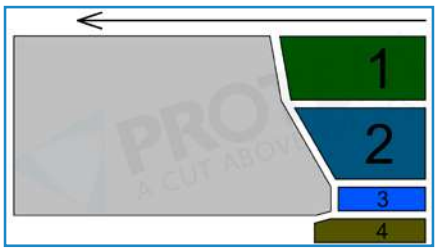
3. Machining a Bevel on a Pipe End

Numerous techniques exist for machining bevels on pipe ends. The most common are manual machining by grinding or heat-cutting and cold machining with a machine. Even so, this last process is the only one capable of providing a bevel with a perfect geometry and a repeat production capability while maintaining all the base material’s properties at the same time...
Making a bevel on a pipe-end by cold machining can be approached in two different ways.

3.1 Axial Movement Machines



Axial movement machines are equipped with a plate that moves in line with the axis of the pipe. Cutting tools are placed in position on the plate for making the required bevel shape. In the case of a compound bevel, tools will be used that have a shape identical to that of the required bevel or their shape is formed by combinations of simple shape tools. The most efficient machines on the market enable four tools to be used at the same time. This enables a bevel, a land and a counterbore to be made in one single operation.



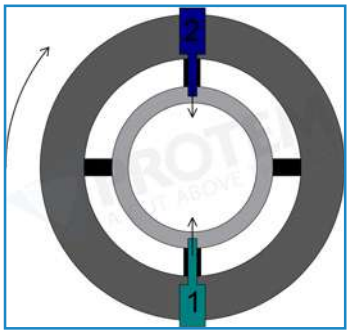
Here, tools No. 1 and 2 machine a compound bevel (the two tools can be combined to form one single tool). Tool No. 3 faces the land or root and tool No. 4 counterbores the inside diameter of the pipe.

The tools move parallel to the axis of the pipe. For this reason, axial movement machines are essentially designed for beveling operations and are incapable of cutting a pipe into two separate parts.

Example of application: Making a bevel on the end of a pipe that has been cut to the correct length beforehand.

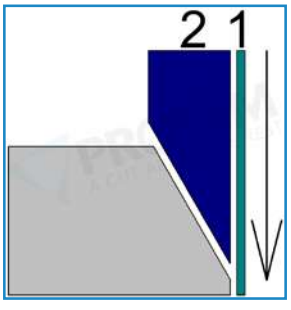


3.2 Radial Movement Machines



Radial movement machines, called orbital machines, are generally held in place on the outside of the pipe. The tool-holder plate rotates while the pipe to be machined remains fixed. The tools move perpendicularly to the axis of the pipe by means of a mechanical transmission system.

Unlike axial movement machines, radial movement machines carry out the beveling operation by separating the pipe into two parts. So, the latter type of machine can also be used for pipe cutting or length adjustment operations.



Using beveling tools (No. 2, simple or compound shapes) combined with cutting tools (No.1) enables the pipe to be cut in two and welding preparation (beveling) to be carried out in a single operation. The most efficient machines are capable of cutting and beveling several dozen millimeters in just a few minutes.

Example of application: Cutting lengths of pipe from an original base pipe. The parts cut off in this way are beveled at the same time as the cutting operation.



SOCKET WELD – What does it mean ?

Socket welding is used to connect pipes using a range of different fittings, allowing for changes in the direction and diameter of pipe networks as well as creating branches from existing pipelines. The pipes are inserted into the socket weld fitting, which includes a recess to accept the pipe, making placement easy.

What is the ASME standard for socket weld?

ASME B16. 11 is the standard for the forged steel fittings, including socket weld and threaded type. Material including carbon steel, alloy steel and stainless steel. Also described as Class 2000, 3000, 6000 threaded end fittings and Class 3000, 6000, and 9000 for socket weld end fittings.

The socket welding ends are prepared by boring in each end of the valve a socket with an inside diameter slightly larger than the pipe outside diameter. The pipe slips into the socket where it butts against a shoulder and then joins to the valve with a fillet weld.

Socket welding ends in a given size are dimensionally the same regardless of pipe schedule. They are usually furnished in sizes through 2-inch.

Socket Welding up to Ansi B16.11

Nominal Pipe Size NPS [inches]	Nominal Diameter DN [mm]	Socket Bore Diameter B [mm]		Min. Depth of the socket J [mm]
		min.	max.	
1/8	10	10.8	11.2	9.5
1/4	8	14.2	14.6	9.5
3/8	10	17.6	18.0	9.5
1/2	15	21.8	22.2	9.6
3/4	20	27.2	27.6	12.5
1	25	33.9	34.3	12.5
1 1/4	32	42.7	43.1	12.5
1 1/2	40	48.8	49.2	12.7
2	50	61.2	61.7	16.0
2 1/2	65	73.9	74.4	16.0
3	80	89.8	90.3	16.0
4	100	115.2	115.7	19.0

What is the Difference between Socket Welds and Butt Welds?

Socket weld and butt weld fittings are governed by different applicable standards (socket weld fittings are ASME B16.11 and butt weld fittings are ASME B16.9), as there are differences between the two types of weld.

Socket welds involve the insertion of the pipe into a recess at the joint and there is no need to bevel the pipe ends or prepare the materials other than to ensure they are clean.

Butt welds require the fittings to be the same thickness as the pipes so that they can be welded. Butt welded joints also need to be bevelled at the ends.

In addition to these practical differences, there are differences in performance, with butt weld fittings tending to be stronger. For this reason, socket weld fittings tend to be reserved for pipes with relatively small diameters. This difference in strength also means that butt welds are preferred for high temperature and pressure applications or where the weld joint strength does not have to be more than the base metal.

Is a Socket Weld a Fillet Weld?

A socket weld is generally considered to be different from a fillet weld, although there are some similarities between the shapes of the two welds.

How do you fit a Socket Weld?

To fit a socket weld, a pipe is inserted into the fitting's recess, allowing a gap of at least 1/16" to allow for thermal expansion of the pipe under welding pressure. Once the pipe is in position, it can be welded in place with a series of fillet-type welds. The thermal expansion gap will prevent the weld from cracking should the pipe expand against the fitting.

What is a Socket Weld Flange?

Socket weld flanges tend to be used on smaller diameter, high pressure pipes. The pipes are inserted into the socket end and fillet style welds are applied around the top to hold it in place.

Can you X-Ray Socket Welds?

X-rays can be used to examine socket welds, using radiographic inspection techniques similar to those used in the medical industry.

Can you Radiograph Socket Welds?

Socket welds can be radiographed, although it is not an ideal method for determining the quality of the weld, it will tell you if there is an appropriate root gap.

When to use Socket Weld Fittings?

Socket weld fittings are best used for small diameter pipes of NPS 2 or less. They can be used to join small bore pipe sections together using fillet weld type joins to seal the pipes to the fitting.

Why use Socket Weld Fittings?

Socket weld fittings join lines of small diameter pipe used to convey flammable, toxic or expensive materials that cannot be allowed to leak. Socket weld fittings can also be used for steam with a pressure of 300-600 psi. They can create a high strength union with a high flow characteristic and reduced chance of leakage.

So to summarise:

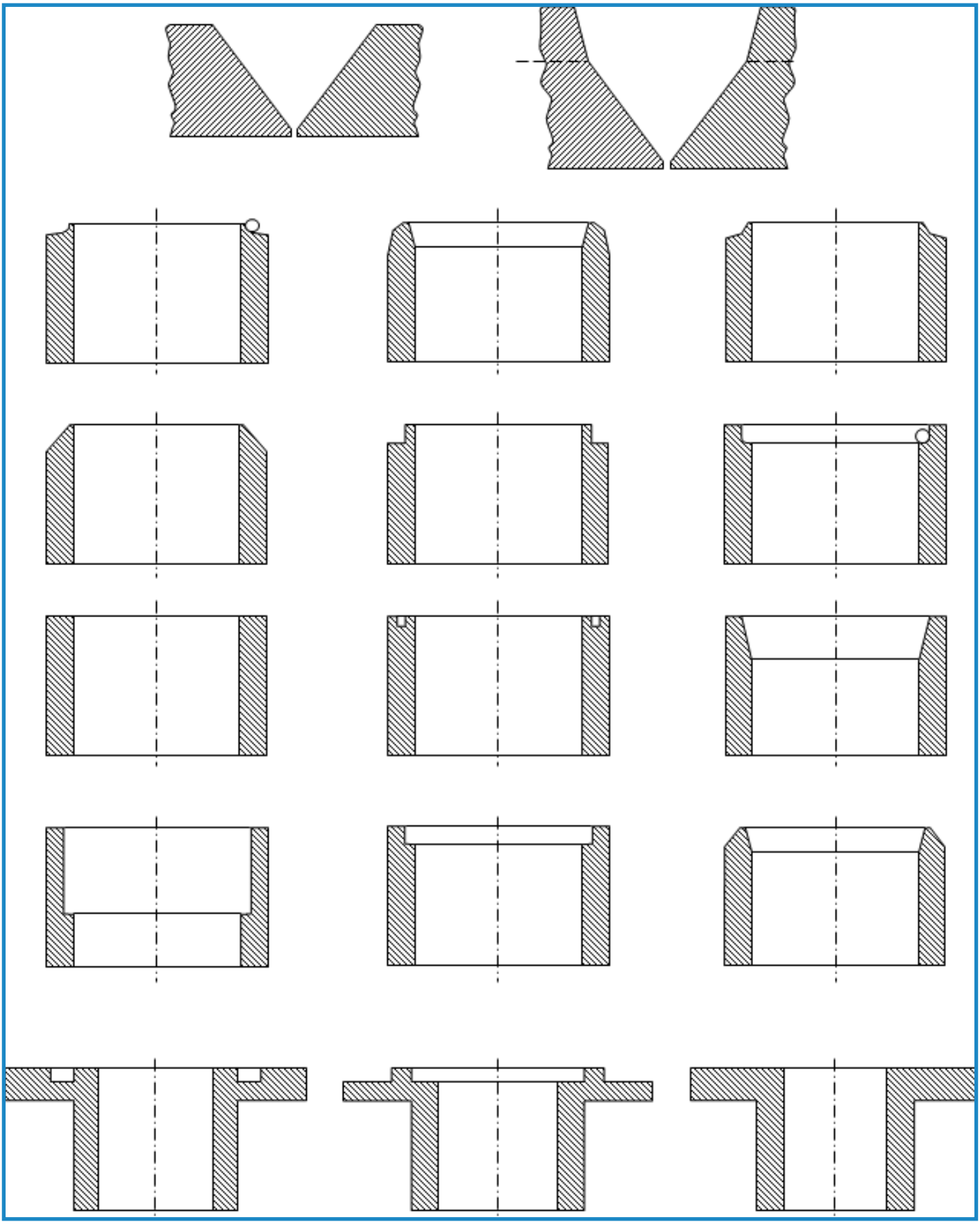
Socket welding is used to connect pipes using a range of different fittings, allowing for changes in the direction and diameter of pipe networks as well as creating branches from existing pipelines.

The pipes are inserted into the socket weld fitting, which includes a recess to accept the pipe, making placement easy. Once inserted into the recess, allowing a gap at the bottom of the socket to prevent a potential stress failure, the pipe can be fixed in place with fillet welds around its outer diameter.

Mainly used for smaller sized pipes, socket weld fittings provide leak-proof joins that can withstand high pressures and deliver high-flow characteristics. The fittings are available in a range of styles and materials to suit a range of applications.



Examples of possible Machining Operations



Ten Tips to achieve perfect On-Site Weld End Preparations

Would you like the same weld preparation as shown in the photo above? Here are 10 tips you can use to have the same result.



1. Use the right Machine

Forget torches, saws and grinders, the only way to achieve a truly perfect weld end preparation is through cold machining. Today it is possible to find a machine for any diameter, any wall thickness, any material and at any price. The quality depends on a lot of parameters but without the right machine it is just impossible to even think about achieving the quality shown in the photo above.

2. Use the right Tool

After selection of the suitable machine, another concern is the tool. The tool should be very sharp with good geometry, and the coating must match the material you want to machine. For example a tube made of Super Duplex requires at least a TiCN coated tool to be machined properly. The tools can be a significant cost, but it is better to have an appropriate tool, despite its cost, which will do the work rather than three or more broken tools with bad results.

3. Take appropriate care during Set-up

Set-up is the step you cannot miss. A bad setup means that you need to start over. Time spent for proper setup is not lost time. Set-up accuracy will depend on the skill of the operator, but also on the machine. On-site machines have to be easy to set-up because operators don’t have time to constantly be adjusting the machine.

Ten Tips to achieve perfect On-Site Weld End Preparations

4. Control the Machining Speed

The machining speed is the most important parameter necessary to achieving a good quality weld end preparation. The speed adjustment will depend on many factors; the material, the pass depth, the geometry of the bevel, etc. To adjust the speed perfectly, some experience is needed but some tips can help you, which are detailed in the following sections.

5. Use the right Lubrication

Lubrication can help you achieve the perfect weld end preparation. Lubrication maintains the tool sharpness, guarantees a better surface finish and cools the machining area. It is not always necessary or even allowed to use lubrication, but for hard materials it is often necessary to use it. The best lubricants are oil-based lubricants, but they are often forbidden and have to be replaced by water-based lubricants.

6. Do several Machining Passes

This section is only for the perfectionist. If you want a surface finish like a mirror you might need to make several machining passes. The first passes are called roughing passes. These are passes where you remove the material without being concerned about the surface finish. The second time you will do a finish pass with other tools, removing just a small amount of material. With this technique it is possible to achieve a nearly perfect surface finish.

7. Listen

Perhaps this is the strangest advice I can give you, but a lot of information can be deduced from machining noise. If you hear vibrations, the speed has to be reduced. If you hear a noise like metal against metal, it means that the pass depth is too small or that a chip is blocked between the tool and the tube. With experience you will be able to recognize different noises and adjust the parameters based upon what you are hearing.

8. Look at the Chips

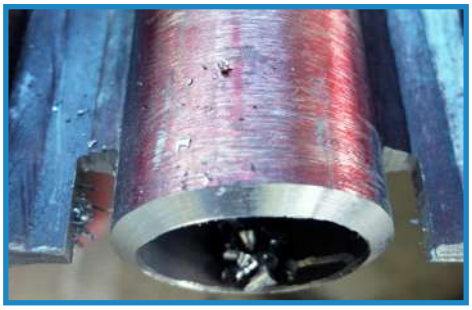
The color and form of the chips are excellent indicators. If the chips are small, the depth pass is too small. If the chips are large and look like they were torn off the tube, the depth pass is too big or the tool is dull. If the chips are blue, they are heat-affected. It could mean that the machining speed is too high, however it is something normal when machining with a High Speed Beveller.

9. Involve the Right People

On-site projects are always facing unexpected problems. Time and cost pressures will crush inexperienced people. Experience is the only way to avoid or to deal with such situations. That's why hiring the right people to do your on-site machining is extremely important.

10. Take Advice from the Right People

Choosing the right machine or choosing the right tool requires experience. For some resellers the goal is to sell, without taking care of the client's real need(s). The role of an advisor is to find long-term solutions and have a real partnership with the client that is understanding of their unique requirements.


Materials used to manufacture Pipes and their Machinability

In an industrial setting, a material is never selected by chance. During the design phase, the characteristics of the materials must be carefully studied and determined in order to avoid subsequent complications when in use, and to avoid incurring unnecessary costs.

This is especially the case when choosing a material to be used in a pipe. This is because some pipes are subjected to considerable mechanical, thermal or chemical stresses, depending on the type of fluid they carry, with pressure and temperature playing a determining role. The material used to manufacture the pipe has an influence on all the manufacturing operations, including machining. The machinability of the pipe depends directly on the material used to manufacture the pipe, and for each given material, specific precautions must be taken in order to ensure good-quality machining.

Machining is a common operation when preparing a piece for welding where, for example, the pipe end has to be machined at specific angles so that the weld can penetrate the entire thickness of the pipe material.

Standard Steel

Standard steel pipes are the most commonly used types of pipes owing to their low cost and mechanical qualities which make them suitable for a wide range of applications. Steel pipes are resistant, long-lasting and deformable. This means that they can be used for applications with significant temperature or pressure variations. Standard steel pipes are also very commonly used in situations where impacts or vibrations can affect the pipeline (underneath roads, for example). In addition, steel pipes are fairly easy to manufacture, bend and cut.



Steel pipes are however very prone to corrosion if no preventive treatment is applied. Galvanization is a common corrosion-control treatment; this consists in applying a zinc coat to the steel pipe. This coat then oxidizes in the place of the steel which it protects, with the all-important difference however that the zinc oxidizes very slowly.

Low-alloy steel (i.e., with a low carbon level between 0.008% and 2.14%) can be easily machined. When the carbon rate increases, the material properties (such as hardness or mechanical resistance) tend to improve significantly. However, machining steels with a high carbon level is more difficult.

P91 Steel



P91 steel is an alloy steel with a high chromium (9%) and molybdenum (1%) content. Adding chromium increases the mechanical resistance at high temperatures as well as corrosion resistance, and adding molybdenum improves creep resistance. Small amounts of nickel and manganese are added to enhance the overall hardness of the material. P91 steel is very sensitive to changes in its microstructure that can occur during excessive heating. These microstructure variations tend to weaken the material. This is why cold machining is often preferred for cutting this material.

P91 was initially developed for the manufacturing of pipelines in conventional or nuclear thermal power plants, where the steam leaves the superheater of a boiler in a modern conventional/thermal plant at a temperature between 570°C to 600°C for a pressure between 170 bars to 230 bars. This means that the final stages of the superheater and the pipelines delivering the turbine steam must be able to withstand these extreme conditions. In such a case, the high mechanical resistance of P91, constant over time, makes it the right choice.

By using P91 in such circumstances, the engineers were able to reduce the thickness of the pipelines while simultaneously increasing the operating temperature; all of which enhances the overall thermodynamic efficacy of such plants.
The high mechanical resistance of P91 steel means however that machining is difficult. Thus, the tools should be changed regularly to ensure sharpness and the cutting speeds should be kept low. The pass depth can also be adjusted to increase the machining speed.

Materials used to manufacture Pipes and their Machinability

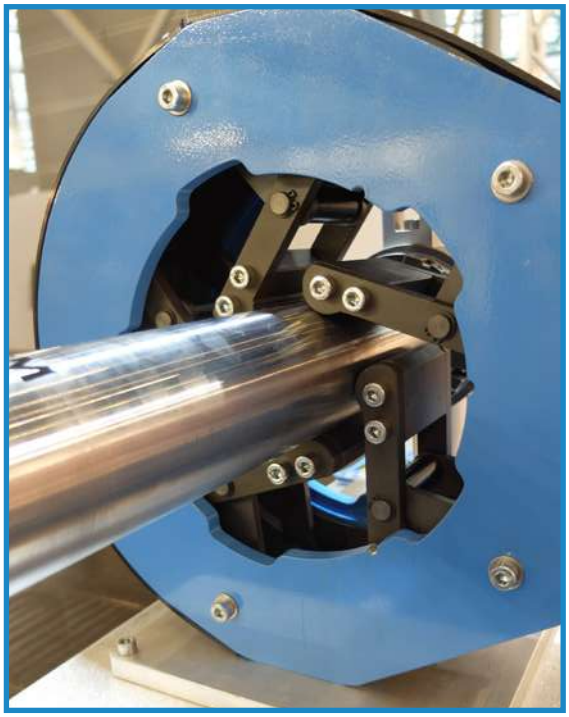
Duplex Steel

A Duplex stainless steel consists of stainless chromium steel with nickel added. The matrix contains both ferrite and austenite, hence the name Duplex. This alloy was designed to provide corrosion resistance and tensile strength. Duplex steel pipes are very commonly used in gas and petroleum offshore platforms where the pipelines are subjected to intense pressures and saline elements. Duplex steel tubes can also be found in industries with chlorinated products and acids, such as in the chemical or pharmaceutical industries. In recent years, more strongly alloyed Duplex steels have emerged under the name of Super-Duplex or Hyper-Duplex.



Duplex steel pipes are relatively difficult to machine due to their tensile strength and high yield strength. This can lead to very high cutting temperatures and to a plastic deformation of the pipe. In any case, the tooling and clamping must be sufficiently rigid and stable in order to machine a Duplex steel pipe.

Stainless Steels



Just like standard steels, stainless steels are comprised of iron and carbon, to which chromium has been added. Upon exceeding a certain proportion of chromium (10.5%), a chromium oxide layer is formed on the steel surface. This so-called “passive layer” is chemically inert, corrosion resistant and stable.
Other elements can be added to improve the mechanical strength (nickel) or the high-temperature performance (molybdenum, titanium, vanadium, tungsten).
Although more expensive than standard steel pipes, stainless steel pipes are widely used in many industries (chemicals, petroleum, pharmaceutical, food, aeronautics, shipbuilding, etc.).
Their popularity stems from their corrosion resistance and chemical stability which make stainless steel piping suitable for fluids that must not be contaminated (pharmaceutical industry, food industry, etc.) and for corrosive fluids (the chemical industry, in particular).
The machinability of stainless steel is highly dependent on the proportion of alloying elements. Specifically, a high proportion of chromium, nickel or titanium makes machining more difficult, whereas adding carbon or sulfur facilitates machining.
The cutting edge must be sharp to facilitate detachment of the material and reduce the cutting forces.
The cutting tool must be sufficiently well assembled and the machine itself must be sufficiently rigid to support the forces caused by the cutting; as a rule of thumb, the forces deployed when cutting stainless steel can be more than 50% higher than with standard carbon steel.

Superalloys

Most of the superalloys used to manufacture pipes belong to the range of nickelbased superalloys. This range includes Inconel and Austenite, named after the alloy manufacturer. Therefore, the alloy base is nickel which can be alloyed with chromium, iron, titanium or aluminum. These alloys have the same advantages as stainless steel, but to a greater extent. Specifically, their heat resistance is higher (about 900°C) as is their corrosion resistance (corrosion in chlorine ion, pure water and caustic medium).

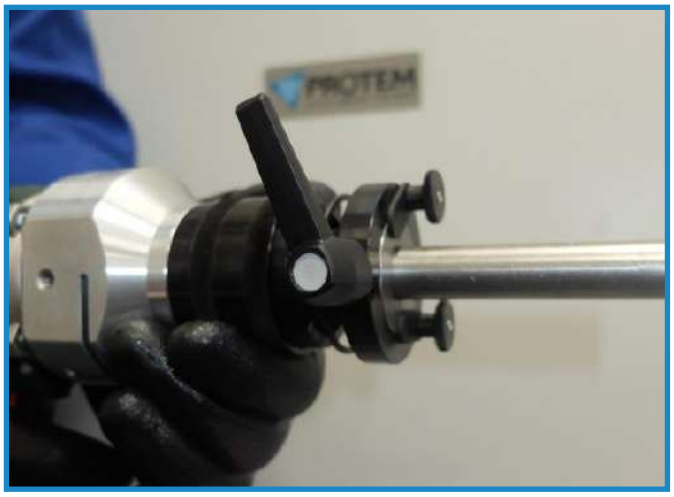


They are also much more expensive than standard alloys, but this is justified for applications where operator safety is an essential criterion. Pipes made from nickel-based superalloys are used in aeronautics (in combustion chambers, for example), the chemical industry (owing to their corrosion resistance), nuclear engineering, and, to a lesser extent, in the food industry.

Materials used to manufacture Pipes and their Machinability

Superalloys are considered very difficult to machine. This can be attributed to several factors. Firstly, one must bear in mind that 70% of the heat is returned directly to the cutting tool (as opposed to 15% for standard steel, for example). Therefore, it is essential to keep the cuttingedge cooled during the machining. The second complication is the hardness of the material; in fact, the lifetime of a cutting tool used to machine a superalloy can be reduced to just a few minutes if the tool does not have the necessary power, or if the cutting speeds and tools are not suitable.

Titanium



Titanium is an extremely interesting metal for the industry. Titanium can be used to manufacture pipes which are light and yet highly resistant to corrosion and able to withstand very high temperatures (600°C). Its mechanical properties (resistance, fatigue and deductibility) are also appreciated. Titanium is however expensive and this limits its use to specific applications. In general, one finds titanium in the aeronautics sector where its low density combined with its attractive mechanical properties make it an essential material.

Since the thermal conductivity of titanium is very low (about 10 times lower than steel), the heat dissipation during machining is relatively poor. Therefore, the cutting edge needs to be properly cooled to avoid machining defects.

Sharp tools should be used to facilitate the detachment of the material, and thus reduce the cutting force.

Machining is even more difficult in the case of treated titanium (e.g., treatment by precipitation, presence of chromium).

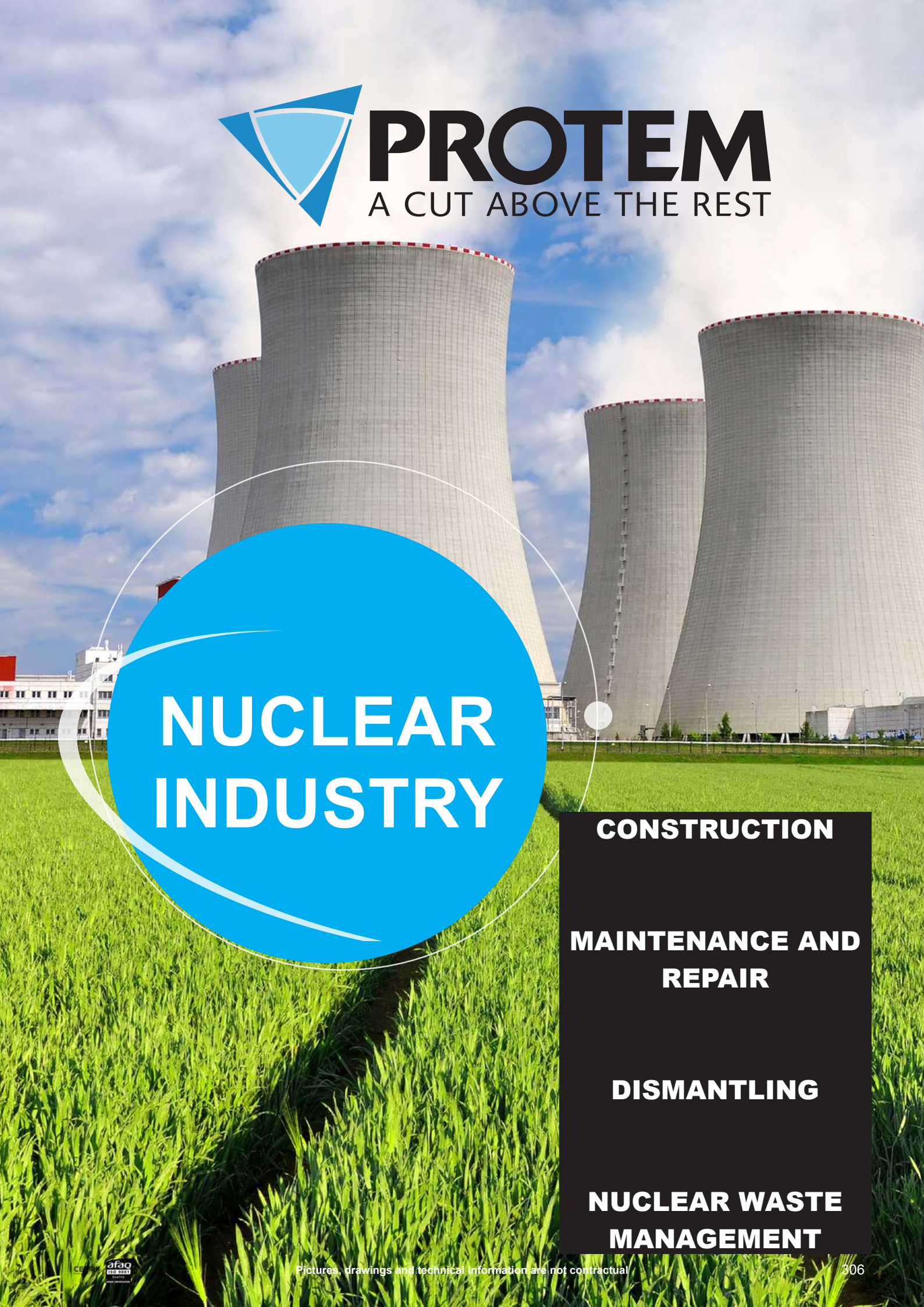
Aluminum



Aluminum is very widely used in the industry. Aluminum pipes are inexpensive, easy to form and assemble. They are also light and corrosion-resistant, making them a natural choice in the aeronautics, transport and construction sectors. Aluminum pipes are also used to build compressed-air pipelines.

Aluminum pipes have a very low level of hardness, and are therefore relatively easy to machine. However, the malleability of aluminum can cause problems (shavings can lead to machine jamming, for example). In this case, the best response is to increase the cutting speed, the depth of the pass and the feeding speed. There is also a risk of aluminum pipes being deformed during machining if the machine tool, and in particular the clamping jaws, are not correctly chosen.

The high thermal conductivity of aluminum allows for good heat dissipation. Thus, the cutting speed can be increased without reducing the lifetime of the tools.


PROTEM
A CUT ABOVE THE REST
NUCLEAR INDUSTRY
CONSTRUCTION
MAINTENANCE AND REPAIR
DISMANTLING
NUCLEAR WASTE MANAGEMENT

PROTEM IS YOUR KEY PARTNER FOR YOUR PROJECTS WORLDWIDE



PROTEM AND THE NUCLEAR INDUSTRY

FOR MORE THAN 50 YEARS, PROTEM HAS OFFERED ITS EXPERTISE AND EXPERIENCE TO SERVE THE NUCLEAR INDUSTRY.

PROTEM designs and manufactures weld end preparation equipment such as portable beveling machines, orbital cutting machines, tube facing machines, high speed beveling and cutting benches and inside cutting machines.

PROTEM also designs and manufactures special machines for the construction, maintenance and dismantling of nuclear installations.

PROTEM has customers all over the world and PROTEM is their key partner for the successful completion of their industrial projects.





WHATEVER THE REACTOR TYPE, PROTEM WILL DESIGN THE APPROPRIATE EQUIPMENT

- Soviet graphite-moderated boiling water reactor (RBMK)
- Graphite-moderated and carbon dioxide cooled natural uranium reactor (natural uranium or graphite gas (NUGG) reactor types)
- Pressurized water reactor (PWR) or its Russian alternative (WWER)
- Boiling water reactor (BWR)
- Pressurized heavy water reactor (PHWR)
- Advanced gas reactor (AGR)
- Sodium coolant and fast neutron reactor
- Heavy water moderated natural uranium reactor (Canadian reactor types CANDU)



THE NUCLEAR INDUSTRY HAS ALWAYS BEEN KEY IN THE STRATEGIC DEVELOPMENT AXIS FOR PROTEM

Supplying solutions to the nuclear industry requires a comprehensive knowledge and understanding of the factors associated with the projects of construction, maintenance, repair, dismantling and waste disposal processes.

PROTEM has proven its technical expertise with the sucessful completion of several projects all around the world.

PROTEM's engineers and technicians provide service all over the world and they study the technical specifications with our customers in order to give them solutions adapted to their specific requirements.

PROTEM has always focused on reducing costs for our customers, improving their productivity, improving safety for their operators and on designing and manufacturing projects where nuclear security and safety are essential.

CONSTRUCTION

PROTEM has always designed equipment dedicated to the construction of nuclear components.

Our expertise allows you to:

- Control manufacturing processes
- See gains in productivity
- Improve working conditions

Steam generator steel weld backing / shaving machine



MAINTENANCE AND REPAIR WITHIN A NUCLEAR ENVIRONMENT

PROTEM offers an extensive range of equipment dedicated to nuclear component maintenance and repair operations. Our engineers and technicians will provide you with on-site service.

Our expertise allows you to:

- Cut operation and maintenance costs for your installations
- Perform your operations within your required time schedule
- Extend the lifetime of components
- Reduce the operator's exposure time to ionizing radiation
- Improve the overall performance of your on-site operations
- Adapt your equipment for nuclear environments and design it to meet your safety and security requirements

Machine for linear machining of joint surfaces



DISMANTLING AND DECOMMISSIONING OF NUCLEAR FACILITIES

The initial lifespan of a nuclear facility is usually 30 to 40 years. The life expectancy of a nuclear power plant is re-evaluated every ten years for an additional decade of operation.

Some nuclear power plants have already been subject to decommissioning and their dismantling has been completed or is in process.

PROTEM took part in the dismantling of several reactors all around the world by developing suitable mechanized equipment.

Robotized equipment for the dismantling of a sodium cooled reactor, internal components and vessel



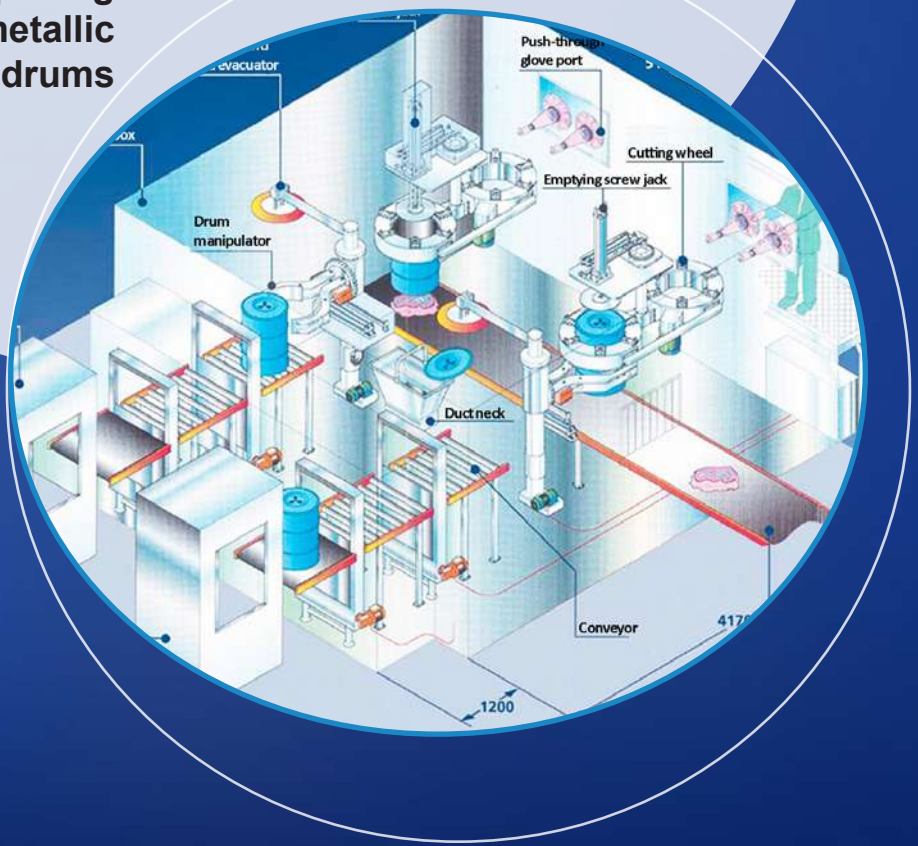
NUCLEAR WASTE MANAGEMENT

PROTEM is also aware of the factors associated with waste management. The processes used during some dismantling operations are adapted to reduce/compress the produced waste to a maximum.

PROTEM has designed several hundred special machines dedicated to this sector of the nuclear industry :

- Special machining and/or welding machines
- Machines to open or close waste drums
- Low activity waste management cells (mid and low level (LLW) and short life waste).

Complete cell for the opening and emptying of metallic radioactive waste drums



THE FUTURE OF ON SITE MACHINING

SERCO

ON-SITE MACHINING

Maintenance

Repair

Flanges - Valves







Portable Machine Tools

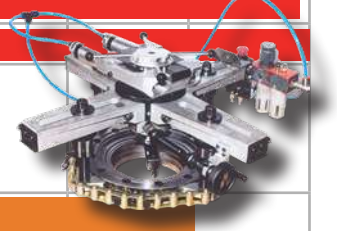
Facing
Single point
Threading
Counterboring
Tapping
Resurfacing
Grinding
Conical machining

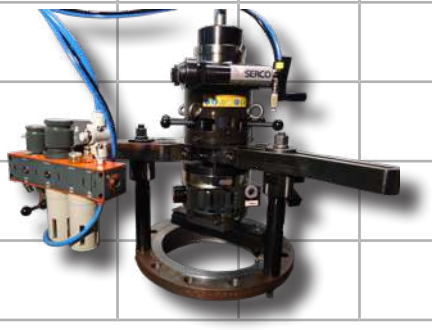
Range of Serco Machines

		1” 25,4 mm	8” 203 mm	16” 406 mm	24” 609 mm	32” 812 mm	40” 1016 mm	56” 1422 mm	72” 1828 mm	90” 2286 mm	120” 3048 mm
TU Series	TU 200										
	TU 400										
	TU 600										
	TU 1100										
	TU1200										
	TU1400										
	TU1800										
	TU2000										
	TU2400										
	TU2600										
	TU2800										
	TU3000										
	TU3200										
XP Series	XP400NG										
	XP600NG										
	XP900NG										
	XP1200										
	XP1800NG										
	XP2000NG										
	XP2200NG										
	XP2400NG										
	XP2600NG										
	XP2800NG										
	XP3000NG										
	XP3200NG										
MS Series	MS600										
	MS2300										
TA 240	TA240/100										
	TA240/120										
	TA240/170										
	TA240/220										









Range of Serco Maschines
Portable Surfacing and Boring Machines

TU200



Order No.	Description
TU200-1000	Portable facing and boring machine – facing Ø: 7.87" (0mm-200mm)

TU400



Order No.	Description
TU400-1000	Portable facing and boring machine – facing Ø: 15.7" (0mm-400mm)

TU600



Order No.	Description
TU600-1000	Portable facing and boring machine – facing Ø: 23.6" (0mm-600mm)

TU1100



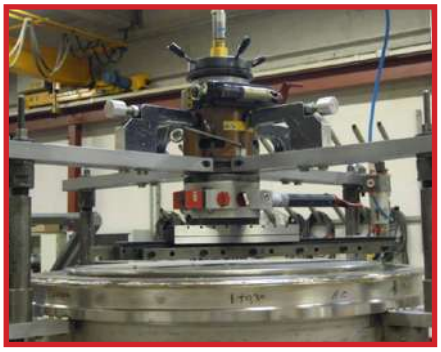
Order No.	Description
TU1100-1000	Portable facing and boring machine – facing Ø: 43.3" (0mm-1100mm)

TU1200



Order No.	Description
TU1200-1000	Portable facing and boring machine – facing Ø: 47.2" (0mm-1200mm)

TU1400



Order No.	Description
TU1400-1000	Portable facing and boring machine – facing Ø: 55.1" (0mm-1400mm)

TU400-CNC



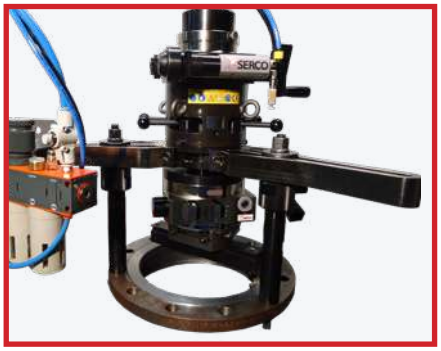
Order No.	Description
TU400CNC-1080	Portable facing and boring machine with brushless electric motor and control system – facing Ø: 0"-15.7" (0mm-400mm)

TU600-CNC



Order No.	Description
TU600CNC-1080	Portable facing and boring machine with brushless electric motor and control system – facing Ø: 0"-23.6" (0mm-600mm)

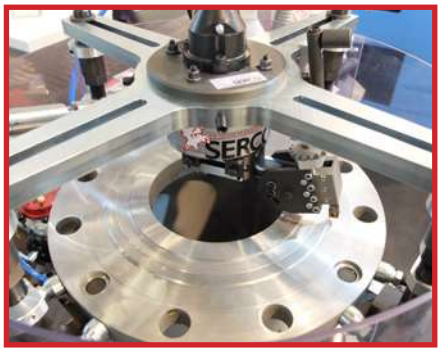
TA240



Order No.	Description
TA240-170-1000	TA 240 borer equipped with the TA 170 head - facing Ø: 12.6"-35.4" (320mm-900mm)

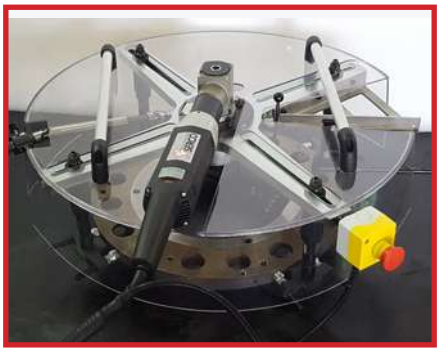
Range of Serco Maschines
Portable Surfacing Equipment for Flanges and Valves

XP400NG



Order No.	Description
XP400NG-1000	Portable flange facing machine – facing Ø: 0.393" - 15.7" (10mm-400mm)

XP600NG



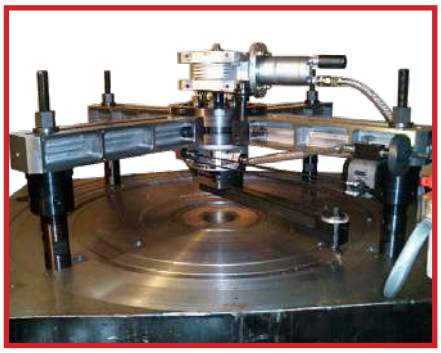
Order No.	Description
XP600NG-1000	Portable flange facing machine – facing Ø: 0.393" - 23.6" (10mm-600mm)

XP900NG



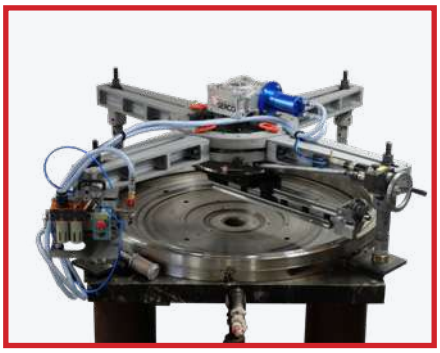
Order No.	Description
XP900NG-1000	Portable flange facing machine – facing Ø: 0.393" - 35.433" (10mm-900mm)

XP1200



Order No.	Description
XP1200-1000	Portable flange facing machine – facing Ø: 0.393" - 47.244" (10mm-1200mm)

XP1800NG



Order No.	Description
XP1800NG-1000	Portable flange facing machine – facing Ø: 0.393" - 70.8" (10mm-1800mm)

XP2000NG



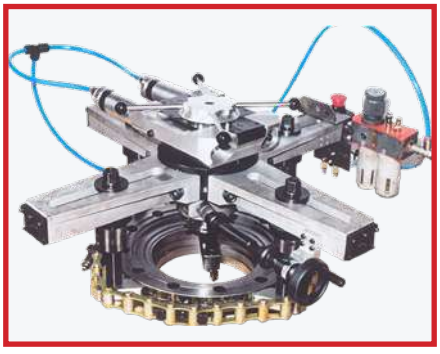
Order No.	Description
XP2000NG-1000	Portable flange facing machine – facing Ø: 0.393" - 78.74" (10mm-2000mm)

XP2200NG



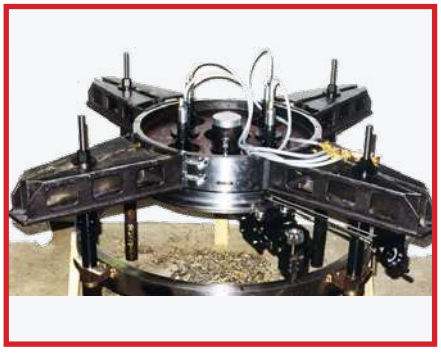
Order No.	Description
XP2200NG-1000	Portable flange facing machine – facing Ø: 0.393"- 86.6" (10mm-2200mm)

MS600



Order No.	Description
MS600-1000	Portable flange facing machine with air-motor – facing Ø: 0.393" - 23.6" (10mm-600mm)

MS2300



Order No.	Description
MS2300-1000	Portable flange facing machine – facing Ø: 39.3" - 90.5" (1000mm-2300mm)

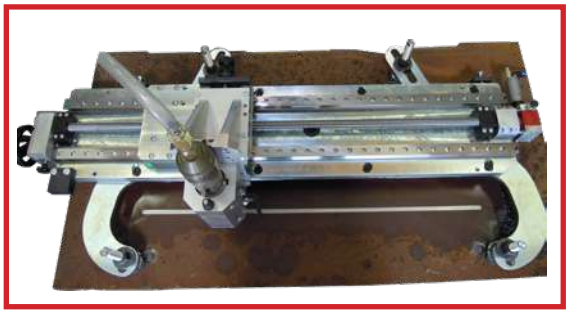
Range of Serco Maschines
Portable Surfacing Equipment for Flanges and Valves

Portable Boring Bar



Order No.	Description
SBM1-1000	SBM1 Portable Boring Bar Ø 1.49" - 5.9" (38mm - 150mm)

Milling Unit



Order No.	Description
BDF1100-1000	Milling Unit Ø 0" - 40.354" (0 mm - 1025 mm)

Range of Serco Maschines
Options and Accessories

FC300



Order No.	Description
FC300-1000	Chain clamping

FC745



Order No.	Description
FC745-1000	Chain clamping

FC1150



Order No.	Description
FC1150-1000	Chain clamping

UR40



Order No.	Description
UR40-1000	Grinding device

AC38



Order No.	Description
AC 38	Conical machining system

RTJ System



Order No.	Description
RTJ system	System for making RTJ groove bearing surfaces

FSTG



Order No.	Description
FSTG	System for clamping the unit onto the dowel pin bores

Tiltable head



Order No.	Description
XP-IH	Tiltable head for XP1200 / 1800NG / 2000NG / 2200NG





SERCO engineers and operators provide both preventive and corrective maintenance
on flanges, safety, relief and other valves, sealing surfaces,
engine blocks (diesel, gas, etc...) at their customer's job sites.

www.serco-tools.com

Describe your Application

We thank you for the interest you have shown in PROTEM. In order to best respond to your request, please define your needs and answer the questions shown below:

Your name and address:

Company: .....
Field of business: .....
Number of employees: .....
Address: .....
.....
.....
Country: .....
Name of contact: .....
Department: .....
Position: .....
Phone: .....
E-mail: .....
Website: .....

Your Requirements:

1) What type of component needs to be machined?

.....

2) What material is the component made of? (please indicate the reference)

.....

3.1) What are the diameters of the tubes/pipelines?

ø from ..... **to** .....

3.2) What is the wall thickness of the tubes/pipelines?

Wallthickness from ..... **to** .....

(Could you send us a table for identifying the number of flanges/valves and their relative dimensions?)

4) What type of machining needs to be done?

☐ **Cutting** ☐ **Beveling** ☐ **Facing** ☐ **Counterboring** ☐ **Surfacing**

5) Depth of machining?

from ..... **to** .....

Describe your Application

Please draw the machining profile with its dimensions (specify the unit)

6) How are the jobs done currently?

.....

7) Will the machine be operated

☐ **On-Site** ☐ **Workshop**

8) What drive does the equipment require (preferably)?

☐ **Pneumatic** ☐ **Electric** ☐ **Hydraulic**

9) How will the parts be clamped?

☐ **ID clamping** ☐ **OD clamping**

10) Automation level required?

☐ **Manual** ☐ **Semi-auto** ☐ **Auto**

11) What are the expected machining tolerances?

.....

12) How many pieces of equipment are required?

.....

13) When will your project start?

.....

14) Your remarks

.....

Tubes & Pipes Machining Data Table

NPS Inch OD Inch OD mm DN	Schedule	Imperial		Metric	
		Wall	ID	Wall	ID
1/8" 0,405“ 10,3mm DN 6	10S 40ST, 40S 80XS, 80S	0,049 0,068 0,095	0,307 0,269 0,215	1,24 1,73 2,41	7,82 6,84 5,48
1/4" 0,540“ 13,7mm DN 8	10S 40ST, 40S 80XS, 80S	0,065 0,088 0,119	0,410 0,364 0,302	1,65 2,24 3,02	10,4 9,22 7,66
3/8" 0,675“ 17,1mm DN 10	10S 40ST, 40S 80XS, 80S	0,065 0,091 0,126	0,545 0,493 0,423	1,65 2,31 3,20	13,80 12,48 10,70
1/2" 0,840“ 21,3mm DN 15	5S 10S 40ST, 40S 80XS, 80S 160 XX	0,065 0,083 0,109 0,147 0,188 0,294	0,710 0,674 0,622 0,546 0,464 0,252	1,65 2,11 2,77 3,73 4,78 7,47	18,00 17,08 15,76 13,84 11,74 6,36
3/4" 1,050“ 26,7mm DN 20	5S 10S 40ST, 40S 80XS, 80S 160 XX	0,065 0,083 0,113 0,154 0,219 0,308	0,920 0,884 0,824 0,742 0,612 0,434	1,65 2,11 2,87 3,91 5,55 7,82	23,40 22,48 20,96 18,88 15,60 11,06
1" 1,315“ 33,4mm DN 25	5S 10S 40ST, 40S 80XS, 80S 160 XX	0,065 0,109 0,133 0,179 0,250 0,358	1,185 1,097 1,049 0,957 0,815 0,599	1,65 2,77 3,38 4,55 6,35 9,09	30,10 27,86 26,64 24,30 20,70 15,22
1 1/4" 1,660“ 42,2mm DN 32	5S 10S 40ST, 40S 80XS, 80S 160 XX	0,065 0,109 0,140 0,191 0,250 0,382	1,530 1,442 1,380 1,278 1,160 0,896	1,65 2,77 3,55 4,85 6,35 9,70	38,90 36,66 35,10 32,50 29,50 22,80
1 1/2" 1,900“ 48,3mm DN 40	5S 10S 40ST, 40S 80XS, 80S 160 XX	0,065 0,109 0,145 0,200 0,281 0,400	1,770 1,682 1,610 1,500 1,338 1,100	1,65 2,77 3,68 5,08 7,14 10,16	45,00 42,76 40,94 38,14 34,02 27,98
2" 2,375“ 60,3mm DN 50	5S 10S 40ST, 40S 80XS, 80S 160 XX	0,065 0,109 0,154 0,218 0,344 0,436	2,245 2,157 2,067 1,939 1,687 1,503	1,65 2,77 3,91 5,54 8,74 11,07	57,00 54,76 52,48 49,22 42,82 38,16

Tubes & Pipes Machining Data Table

NPS Inch OD Inch OD mm DN	Schedule	Imperial		Metric	
		Wall	ID	Wall	ID
2 1/2" 2.875“ 73.0mm DN 65	5S 10S 40ST, 40S 80XS, 80S 160 XX	0.083 0.120 0.203 0.276 0.375 0.552	2.709 2.635 2.469 2.323 2.125 1.771	2.11 3.05 5.16 7.01 9.53 14.02	68.78 66.90 62.68 58.98 53.94 44.96
3" 3.500“ 88.9mm DN 80	5S 10S 40ST, 40S 80XS, 80S 160 XX	0.083 0.120 0.216 0.300 0.438 0.600	3.334 3.260 3.068 2.900 2.624 2.300	2.11 3.05 5.49 7.62 11.13 15.24	84.68 82.80 77.92 73.66 66.64 58.42
3 1/2" 4.000“ 101.6mm DN 90	5S 10S 40ST, 40S 80XS, 80S	0.083 0.120 0.226 0.318	3.834 3.760 3.548 3.384	2.11 3.05 5.74 8.08	97.40 95.50 90.12 85.44
4" 4.500“ 114.3mm DN 100	5S 10S 40ST, 40S 80XS, 80S 120 160 XX	0.083 0.120 0.237 0.337 0.438 0.531 0.674	4.334 4.260 4.026 3.826 3.624 3.438 3.152	2.11 3.05 6.02 8.56 11.13 13.49 17.12	110.08 108.20 102.26 97.18 92.04 87.32 80.06
5" 5.563“ 141.3mm DN 125	5S 10S 40ST, 40S 80XS, 80S 120 160 XX	0.109 0.134 0.258 0.375 0.500 0.625 0.750	5.345 5.295 5.047 4.813 4.563 4.313 4.063	2.77 3.40 6.55 9.53 12.70 15.88 19.05	135.76 134.50 128.20 122.24 115.90 109.54 103.20
6" 6.625“ 168.3mm DN 150	5S 10S 40ST, 40S 80XS, 80S 120 160 XX	0.109 0.134 0.280 0.432 0.562 0.719 0.864	6.407 6.357 6.065 5.761 5.501 5.187 4.897	2.77 3.40 7.11 10.97 14.27 18.26 21.95	162.76 161.50 154.08 146.36 139.76 131.78 124.40
8" 8.625“ 219.1mm DN 200	5S 10S 20 30 40ST, 40S 60 80XS, 80S 100 120 140 XX 160	0.109 0.148 0.250 0.277 0.322 0.406 0.500 0.594 0.719 0.812 0.875 0.906	8.407 8.329 8.125 8.071 7.981 7.813 7.625 7.437 7.187 7.001 6.875 6.813	2.77 3.76 6.35 7.04 8.18 10.31 12.70 15.09 18.25 20.62 22.23 23.01	213.56 211.58 206.40 205.02 202.74 198.48 193.70 188.92 182.60 177.86 174.64 173.08

Tubes & Pipes Machining Data Table

NPS Inch OD Inch OD mm DN	Schedule	Imperial		Metric	
		Wall	ID	Wall	ID
10" 10.750“ 273.0mm DN 250	5S 10S 20 30 40ST, 40S 60XS, 80S 80 100 120 140, XX 160	0.134 0.165 0.250 0.307 0.365 0.500 0.594 0.719 0.844 1.000 1.125	10.482 10.420 10.250 10.136 10.020 9.750 9.562 9.312 9.062 8.750 8.500	3.40 4.19 6.35 7.80 9.27 12.70 15.08 18.25 21.44 25.40 28.58	266.20 264.62 260.30 257.40 254.46 247.60 242.84 236.50 230.12 222.20 215.84
12" 12.750“ 323.8mm DN 300	5S 10S 20 30 ST, 40S 40 XS, 80S 60 80 100 120, XX 140 160	0.156 0.180 0.250 0.330 0.375 0.406 0.500 0.562 0.688 0.844 1.000 1.125 1.312	12.438 12.390 12.250 12.090 12.000 11.938 11.750 11.626 11.374 11.062 10.750 10.500 10.126	3.95 4.57 6.35 8.38 9.53 10.31 12.70 14.27 17.48 21.44 25.40 28.58 33.32	315.90 314.70 311.10 307.04 304.74 303.18 298.40 295.26 288.84 280.92 273.00 266.64 257.16
14" 14.000“ 355.6mm DN 350	5S 10S 10 20 30, ST 40 XS 60 80 100 120 140 160	0.156 0.188 0.250 0.312 0.375 0.438 0.500 0.594 0.750 0.938 1.094 1.250 1.406	13.688 13.624 13.500 13.376 13.250 13.124 13.000 12.812 12.500 12.124 11.812 11.500 11.188	3.96 4.78 6.35 7.92 9.53 11.13 12.70 15.09 19.05 23.83 27.79 31.75 35.71	347.68 346.04 342.90 339.76 336.54 333.34 330.20 325.42 317.50 307.94 300.02 292.10 284.18
16" 16.000“ 406.4mm DN 400	5S 10S 10 20 30, ST 40, XS 60 80 100 120 140 160	0.165 0.188 0.250 0.312 0.375 0.500 0.656 0.844 1.031 1.219 1.438 1.594	15.670 15.624 15.500 15.376 15.250 15.000 14.688 14.312 13.938 13.562 13.124 12.812	4.19 4.78 6.35 7.92 9.53 12.70 16.68 21.44 26.19 30.96 35.53 40.49	398.02 396.80 393.70 390.56 387.34 381.00 373.04 363.52 354.02 344.48 335.34 325.42

Tubes & Pipes Machining Data Table

NPS Inch OD Inch OD mm DN	Schedule	Imperial		Metric	
		Wall	ID	Wall	ID
18" 18.000“ 457mm DN 450	5S 10S 10 20 ST 30 XS 40 60 80 100 120 140 160	0.165 0.188 0.250 0.312 0.375 0.438 0.500 0.562 0.750 0.938 1.156 1.375 1.562 1.761	17.670 17.624 17.500 17.376 17.250 17.124 17.000 16.876 16.500 16.124 15.688 15.250 14.876 14.478	4.18 4.78 6.35 7.92 9.53 11.13 12.70 14.22 19.05 22.83 29.36 34.93 39.67 45.24	448.64 447.44 444.30 441.16 437.94 434.74 431.60 428.56 418.90 411.34 398.28 387.30 377.66 366.52
20" 20.000“ 508mm DN 500	5S 10S 10 20, ST 30, XS 40 60 80 100 120 140 160	0.188 0.218 0.250 0.375 0.500 0.594 0.812 1.031 1.281 1.500 1.750 1.969	19.624 19.564 19.500 19.250 19.000 18.812 18.376 17.938 17.438 17.000 16.500 16.062	4.78 5.54 6.35 9.53 12.70 15.09 20.62 26.19 32.54 38.10 44.45 50.01	498.44 496.92 495.30 488.94 482.60 477.82 466.76 455.62 442.92 431.80 419.10 407.98
24" 24.000“ 610mm DN 600	5S 10, 10S 20, ST XS 30 40 60 80 100 120 140 160	0.218 0.250 0.375 0.500 0.562 0.688 0.969 1.219 1.531 1.812 2.062 2.344	23.564 23.500 23.250 23.000 22.876 22.624 22.062 21.562 20.938 20.376 19.876 19.312	5.54 6.35 9.53 12.70 14.27 17.48 24.61 30.95 38.89 46.02 52.27 59.54	598.92 597.30 590.94 584.60 581.46 575.04 560.78 548.10 532.20 518.00 505.46 490.92
30" 30.000“ 762mm DN 750	5S 10S, 10 ST 20, XS 30	0.250 0.312 0.375 0.500 0.625	29.500 29.376 29.250 29.000 28.750	6.35 7.92 9.53 12.70 15.88	749.30 746.16 742.94 736.60 730.24
38" 38.000“ 965mm DN 950	40S, ST XS	0.375 0.500	37.250 37.000	9.53 12.70	945.94 939.60
48" 48.000“ 1219.2mm DN 1200	40S, ST XS	0.375 0.500	47.250 47.000	9.53 12.70	1200.14 1193.80

Our Certificates

CEFRI

CERTIFICAT N° 667 E

Rév. 0

Le CEFRI certifie que le système de management de :

PROTEM

Z.I Les Bosses
26800 ETOILE SUR RHONE - FRANCE
SIRET n° 333 046 712 00027

satisfait aux exigences de la spécification CEFRI/SPE-E-0400 à l'indice en vigueur, de la procédure générale de certification des entreprises et entreprises de travail temporaire CEFRI/PRO-C-0311 à l'indice en vigueur, en référence à l'article R. 4451-38 du Code du travail, à l'arrêté du 27 novembre 2013 et au décret 2018-437 du 04 juin 2018 pour l(es) activité(s) suivant(es) :

- **Travaux de maintenance ou d'intervention**
- **Prestations intellectuelles d'expertise**
- **Prestations d'inspection**
- **Prestations de formation**

pour les types de zones suivantes :

- **Zones contrôlées jaunes, orange ou rouges**
- **Zones contrôlées vertes**
- **Zones surveillées**

au sein des installations suivantes :

- **Dans le périmètre d'une installation nucléaire de base (INB) ou installation individuelle comprise dans le périmètre d'une installation nucléaire de base secrète (INBS)**
- **Installations industrielles et de recherche ; Installations soumises au Code de l'Environnement (ICPE) ou Code de la Santé Publique (hors INB soumises à dossier ASN)**

Le présent certificat est valable à compter du **01/09/2021** et jusqu'au **31/08/2024,** sauf suspension ou annulation notifiée entre temps à la société ci-dessus.

Décision du 25/08/2021

La Présidente du Comité de Certification des Entreprises

Marie-Laure FITAMANT

Le Directeur du CEFRI

Pascal VAUCHERET

cofrac
CERTIFICATION DE SYSTEMES DE MANAGEMENT

© Ce document est la propriété du CEFRI, il ne peut être reproduit partiellement ou intégralement sans l'autorisation du CEFRI
© *This document is the property of CEFRI, it may not be reproduced in part or in whole without CEFRI's consent*
CEFRI - 39, rue Louis Blanc - CS 30080 - 92038 LA DÉFENSE CEDEX - Tél. : +33 (0)1 47 17 61 97 - www.cefri.fr

CEFRI/FPI-C-0611 Indice 2

afaq
AFNOR CERTIFICATION

Certificat
Certificate

N° 1993/1379.12

Page 1 / 1

AFNOR Certification certifie que le système de management mis en place par :
AFNOR Certification certifies that the management system implemented by:

PROTEM

pour les activités suivantes :
for the following activities:

**CONCEPTION, CONSTRUCTION, COMMERCIALISATION,
SERVICE APRES-VENTE ET LOCATION DE MACHINES D'USINAGE,
DE SOUDAGE ET DE PREPARATION A LA SOUDURE.
DEMANTELEMENT ET ASSAINISSEMENT NUCLEAIRE, INTERVENTIONS SUR SITE.**

***DESIGN, CONSTRUCTION, MARKETING, SALE AND RENTAL
OF EQUIPMENT FOR MACHINING, WELDING AND PREPARATION TO WELDING WORKS;
RELATED AFTER-SALES SUPPORT.
DISMANTLING AND NUCLEAR CLEAN-UP, ON-SITE INTERVENTION.***

a été évalué et jugé conforme aux exigences requises par :
has been assessed and found to meet the requirements of:

ISO 9001 : 2015

et est déployé sur les sites suivants :
and is developed on the following locations:

ZI Les Bosses FR-26800 ETOILE SUR RHONE

Ce certificat est valable à compter du (année/mois/jour)
This certificate is valid from (year/month/day) **2020-07-22** Jusqu'au *Until* **2023-03-28**

Julien NIZRI
Directeur Général d'AFNOR Certification
Managing Director of AFNOR Certification

*Flashez ce QR
Code pour vérifier la
validité du certificat*

11 rue Francis de Pressensé - 93571 La Plaine Saint-Denis Cedex - France - T. +33 (0)1 41 62 80 00 - F. +33 (0)1 49 17 90 00
SAS au capital de 18 187 000 € - 479 076 002 RCS Bobigny - www.afnor.org

afnor CERTIFICATION

Certificat de Membre de l'Institut de Soudure

2022

PROTEM

26800 ETOILE SUR RHONE

est Membre de l'Association Institut de Soudure

et dispose par conséquent d'un support technique et documentaire
pour accompagner ses activités et ses projets, dans les domaines du soudage
et des techniques connexes ainsi que de l'assemblage et des contrôles associés.

Fait à Villepinte, le 31 janvier 2022

Antoine Legros,
Président du Groupe Institut de Soudure

IS INSTITUT de SOUDURE ASSOCIATION



OUR COMMITMENT!
YOUR SATISFACTION!

World Class Engineered Pipe End Preparation
Construction - Maintenance & Repair - Tubes - Pipes - Flanges - Valves
Reliable - Cost Effective - Modular Design - Light Weighted - Portable
Pipe Facing, Beveling, Counterboring, Orbital Cutting, Severing, Single Point Machining. Pipeline Machinery, Equipment For Prefabrication Applications, On-Site Machining





Contents of the present catalogue

We pay the utmost attention to ensuring the accuracy of the contents of this catalogue. Nevertheless, and despite a regular update, occasional mistakes are inevitable. In this catalogue, the contents are for information purposes only and are not intended to be binding on the manufacturer. Moreover, the contents are subject to modifications without prior notice. The Manufacturer, also called the Seller is not bound by any obligation related to the representation of products in the catalogue, but presents the information as an aid to sell and deliver the products.

Intellectual property and counterfeitings:

The Manufacturer, also called the Seller is the owner of all intellectual property rights and/or of the use rights related to all the catalogue's contents, notably the texts, pictures, drawings, logo. All copy, representation, modification, publication, adaptation of all or part of the catalogue's contents, whatever the means or process used, is forbidden, except with the prior written agreement of the Manufacturer, also called the Seller.
Any unauthorised use of this catalogue or of any contents from it will be considered as counterfeiting and will be prosecuted according to the provisions of related articles of the Intellectual Property Code.

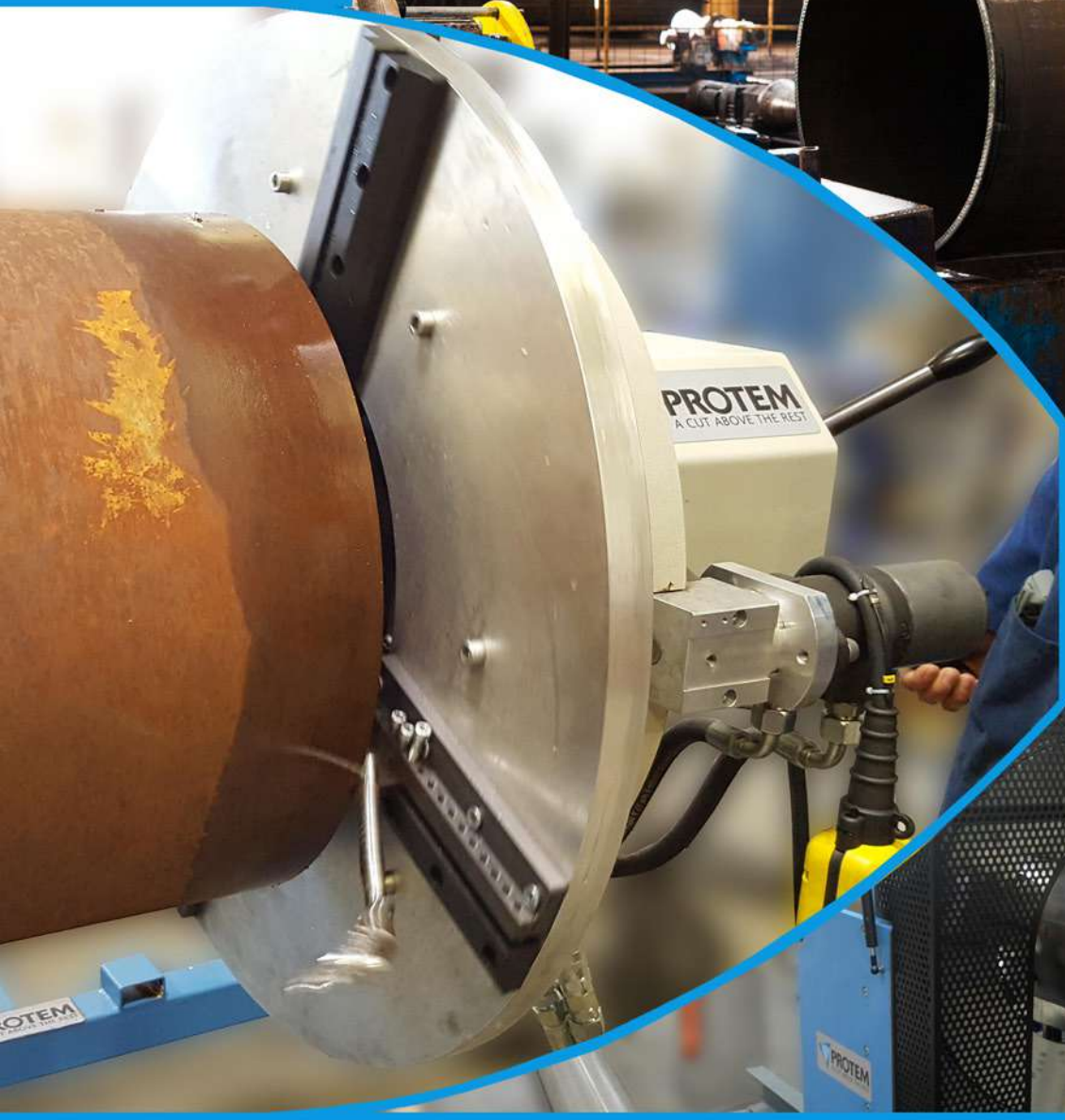


PROTEM

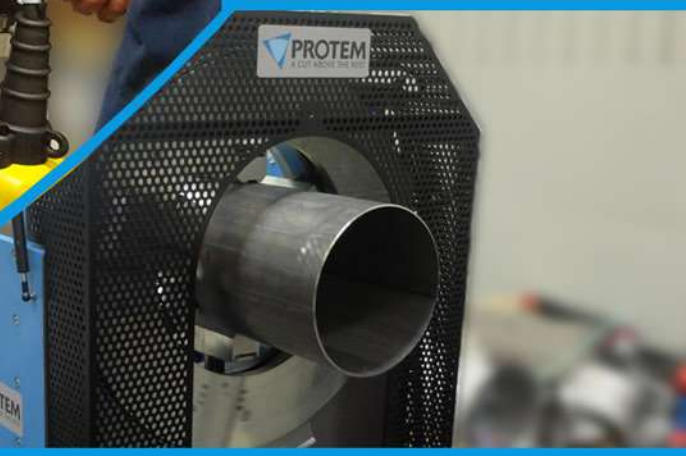
A CUT ABOVE THE REST

CONTACT US!





PROTEM ASSISTS YOUR INDUSTRIAL PROJECTS WORLDWIDE



PROTEM SAS

ZI Les Bosses
45, Chemin du Pont du Maroc
26800 Étoile-sur-Rhône | FR
Phone: +33 (0) 4 75 57 41 41
contact@protem.fr
www.protem.fr

4 A Rue des Artisans
68280 Sundhoffen | FR
Phone: +33 (0) 3 69 85 05 78
E-Mail: contact@protem.fr
Website: www.protem.fr

PROTEM GmbH

Am Hambiegel 27
76706 Dettenheim | DE
Phone: +49 (0) 7247 9393 0
E-Mail: info@protem-gmbh.de
Website: www.protem-gmbh.de

PROTEM USA

29340 Industrial Way, # 402
Evergreen, CO 80439| USA
Phone: +1 303 955 4862
E-Mail: contact@protemusa.com
Website: www.protemusa.com