PROTEM

A CUT ABOVE THE REST

TUBE & PIPE MACHINING

BEVELING & ORBITAL CUTTING

ORBITAL CUTTING - SEVERING

BEVELING - SQUARING - FACING

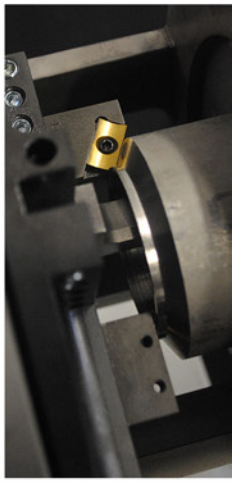
COUNTERBORING - BORING

PIPELINE MACHINERY











PRODUCT CATALOG

www.protem.fr

www.protem-gmbh.de

www.protemusa.com

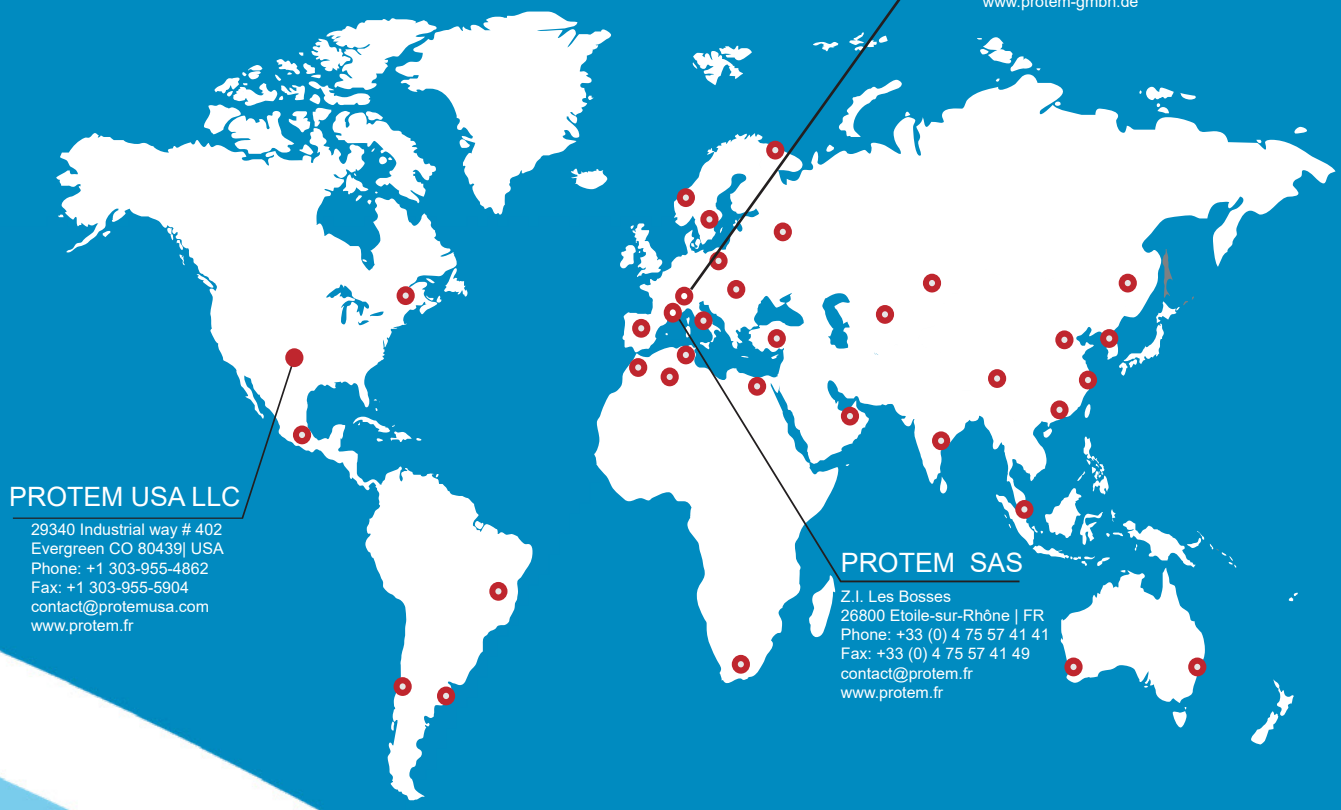
PROTEM OFFERS AN EXTENSIVE RANGE OF MACHINING EQUIPMENT

PROTEM also offers proven expertise that helps their customers all 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.



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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.

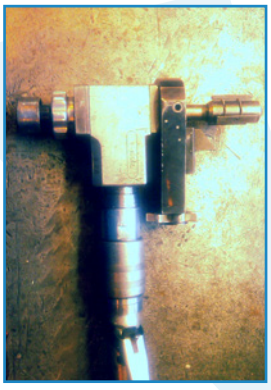
To meet the technological challenges of the coming years, we are laying foundations to take research and development to new heights.

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

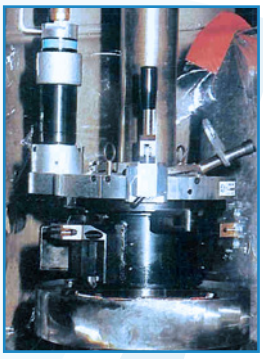


1980

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

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.



1995

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

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.

MORE THAN 50 YEARS OF WORLDWIDE EXPERIENCE

PROTEM
A CUT ABOVE THE REST

1987

PROTEM GmbH is set up in Germany.

1990

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

1994

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

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.

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.

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.

2007

PROTEM enters the German Nuclear Council.

2008

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

2014

Creation of PROTEM USA.

2015

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

2016

Launch of a new range of Orbital Cutting Saws

2009

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

2012

A branch office is opened in Russia.

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.

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

2019

Partnership with World Leading Manufacturers of Welding Equipment

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	US25CA	US25GL	US30CH	US40	US80	US150	US450	PFM414	PFM1222	PFM1030	PFM3038	PFM3848	US1020HSB	US1220HSB	US600R
Facing		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
Counterboring		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	-	-	-	-	-	-	-	-
Portable		x	x	x	x		x	x	x	x	-	-	-	-	-	-	-	-	-
Transportable		-	-	-	-	-	-	-	-	-	x	x	x	x	x	x	x	x	x
1" = 25,4 mm	Ø in mm	min = Ø ID / max = Ø OD																	
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 EQUIMENT

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	US6	GR	TTS	TTS-RD	TTLW	TTNG	TNO	MF	OCM	BB	O-HSB	CTA
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
Portable		x	x	x	x	x	x	x	x	x	x	x	x	-	-	-	-	-	-
Transportable		-	-	-	-	-	-	-	-	-	-	-	-	x	x	x	x	x	x
1" = 25,4 mm	Ø mm	min = Ø ID / max = Ø OD																	
0,078	2																		
0,118	3																		
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																		
3,500	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

OD MOUNTED MACHINING EQUIPMENT

ACCESSORIES & TOOL BITS :

Hydraulic Power Units

Page 184

Micro Lubrication System

Page 187

Accessories

Page 188

Tool Bits & Tool Inserts

Page 189

INDUSTRIES:

Nuclear

Page 198

Oil & Gas

Page 200

Tube Processing

Page 202

Shipbuilding

Page 204

High Purity

Page 206

Green energies

Page 208

Heat Exchanger Tubes

Page 210

Chemical

Page 212

Cryogenics

Page 214

Defense

Page 216

EDITORIALS:

The Different Types of Bevels

Page 218

Ten Tips to Achieve Perfect On-site Weld End Preparations

Page 223

Materials used to manufacture pipes and their machinability

Page 226

OTHER:

Nuclear Applications

Page 228

Serco - Flange and valve machining

Page 236

ID MOUNTED MACHINING EQUIPMENT

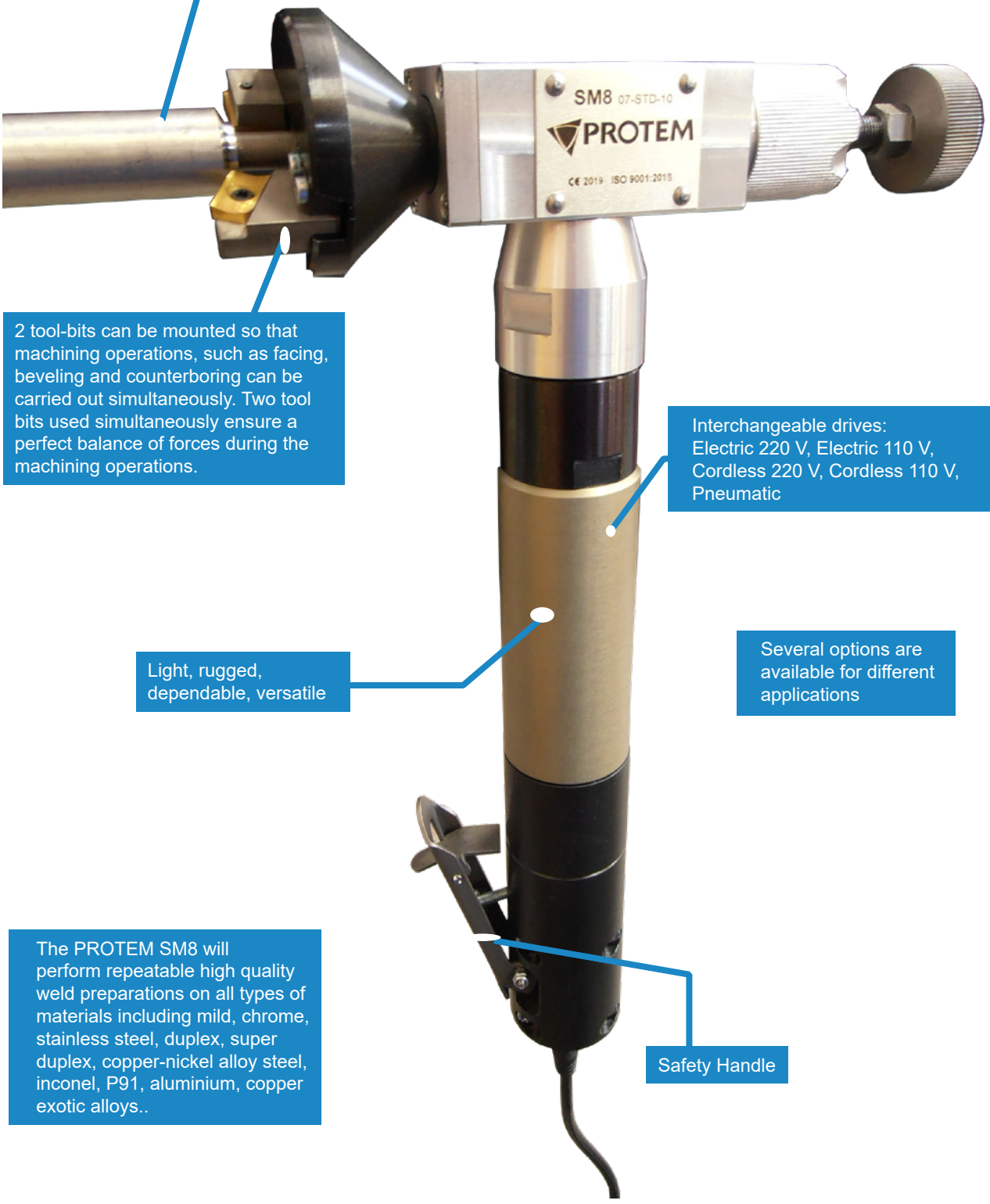
Ø 8 mm - 914 mm
Ø 0.315” – 36”

US Series	Machining Capacity	
SM8	8 - 32 mm	0.31” – 1.26”
S18	14 - 42 mm	0.55” – 1.65”
US25CH	12.5 - 120 mm	1/2” – 4.7”
US30CH	32 - 168.3 mm	1.26” - 6.63”
US40	43 - 219 mm	1.69” - 8.62”
US80	80 - 406 mm	3.15” - 16”
US150	150 - 610 mm	5.91” - 24”
US450	457 - 914 mm	18” - 36”

INDUSTRIES:

Shipbuilding	Boiler	Chemical
Nuclear	Oil & gaz	Renewable energies

SM8 Pipe Beveling Machine



Clamping collets are available in long and short lenghts. 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

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..

Safety Handle

SM8 Pipe Beveling Machine

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

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.

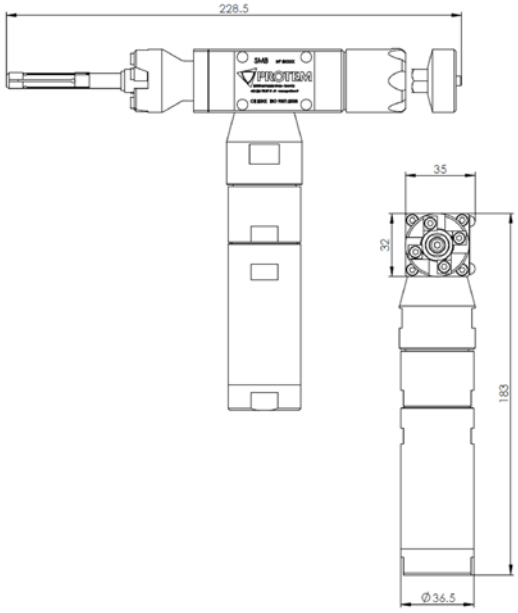
The cutting head will bevel, face, cut to lenght, remove weld joints individually or in a simultaneous operation.

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	Cut to length	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

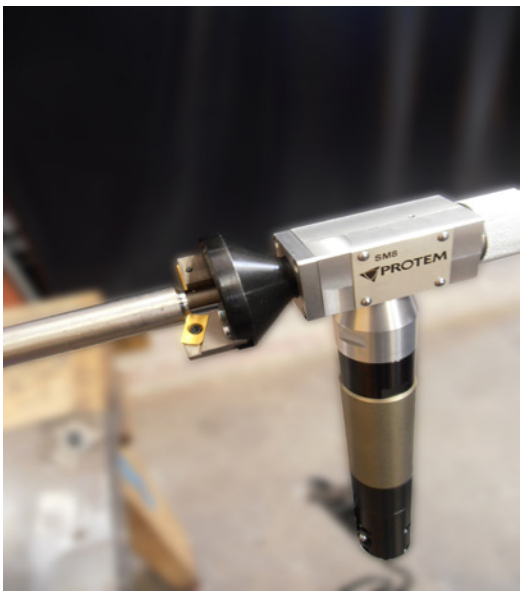
Technical Features:

Specific shapes & angles	I, V, Other on request
Clamping	Manual
Feed stroke	10 mm (0.394”)
Cutting head gear drive	120 rpm off-load speed, 60 rpm nominal speed
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
SM8-1000	Tube Beveling Machine SM8 with pneumatic drive 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)
SM8-1022	Tube Beveling Machine SM8 with cordless drive 220V 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
SM8-1513	Short collet for SM8, length 25mm steel (Please specify the required Ø)	
SM8-1553	Short collet for SM8, length 25mm stainless steel (Please specify the required Ø)	
SM8-1613	Collet for SM8, length 40mm steel (Please specify the required Ø)	
SM8-1653	Collet for SM8, length 40mm stainless steel (Please specify the required Ø)	
SM8-1715	Collet for SM8, length 50mm steel (Please specify the required Ø)	
SM8-1755	Collet for SM8, length 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“-1.141“ (12mm-29mm)	
SM8-1421	Short socket rod A for Ø 0.314“-0.472“ (8mm-12mm)	
SM8-1422	Short socket rod B for Ø 0.472“-1.141“ (12mm-29mm)	
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 0.314“-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“-1.188“ (17mm-30.2mm)	
SM8-1425	Short socket holder No. 0 for Ø 0.275“ (7mm)	

SM8 Tool-Bits:

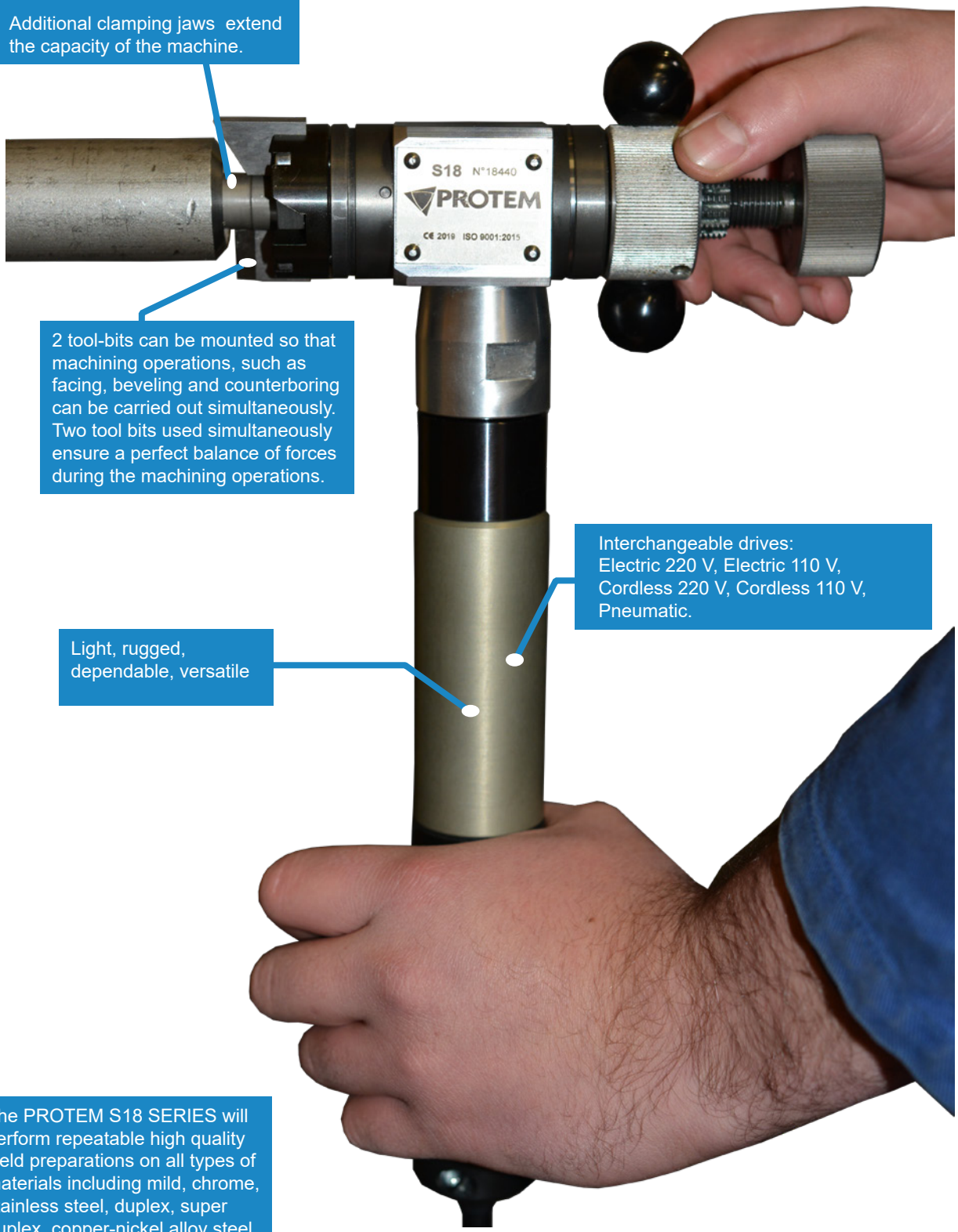
Order No.	Description	Picture
O-SM8-M0-4-H-74	Facing tool-bit 90° for SM8 for 0.354“-0.590“ (9mm-15mm)	
O-SM8-M1-4-H-70	Facing tool-bit 90° for SM8	
O-SM8-M2-4-H-71	Beveling tool-bit 30° for SM8	
O-SM8-M2INV-4-H-75	Beveling tool-bit inversed 30° for SM8	
O-SM8-M3-4-H-72	Beveling tool-bit 37°30 for SM8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

S18 Tube Beveling Machine

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.



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..

Different configurations are possible to suit different types of applications.

S18 Tube Beveling Machine

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

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

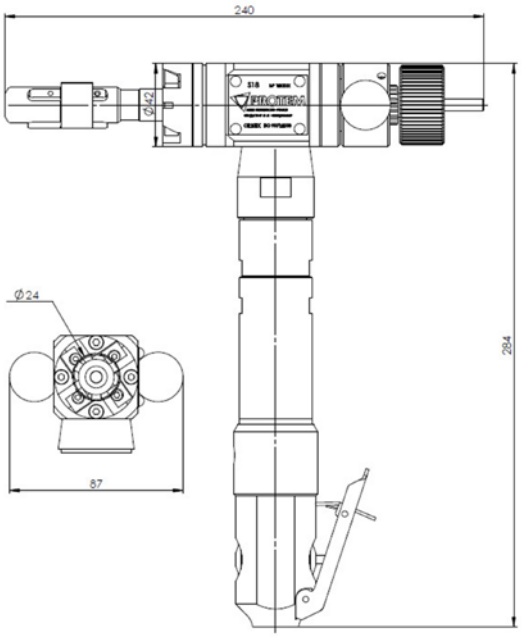
S18 with pneumatic drive

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, cut to lenght of heat exchanger tubes. The S18 features a self-accepting torque system and an integral drive motor.

Beveling	Squaring	Counter-boring	Cut to length	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

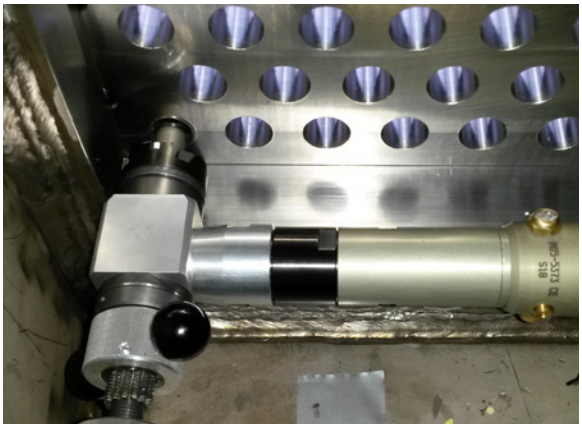
Technical Features:

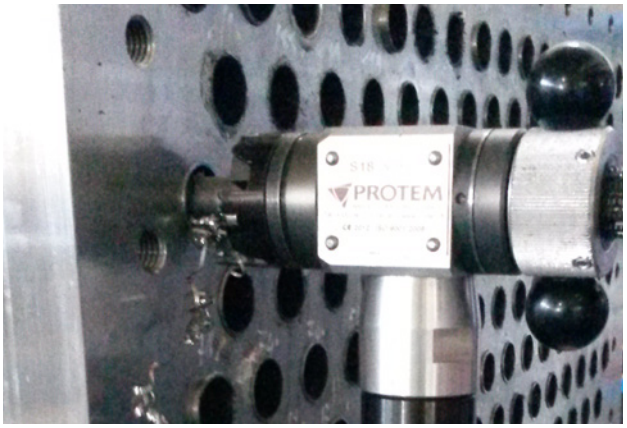
Specific shapes & angles	I, V, Other on Request
Clamping	Manual
Feed stroke	35 mm (1.378“)
Cutting head gear drive	300 rpm off-load speed, 150 rpm nominal speed
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

Order No.	Description
S18-1000	Tube Beveling Machine S18 with pneumatic drive for Ø 0.708“-1.653“ (18mm-42mm)
S18-1020	Tube Beveling Machine S18 with electric drive 220V 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)
S18-1040	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

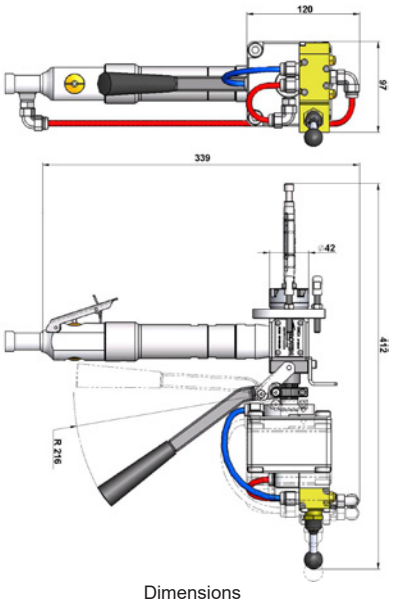
Standard Capacity: 18mm - 42mm (0.708“-1.653“)

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

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, cut to lenght of heat exchanger tubes.
The S18CA features a self-accepting torque system and an integral drive motor.

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

ID Mounted

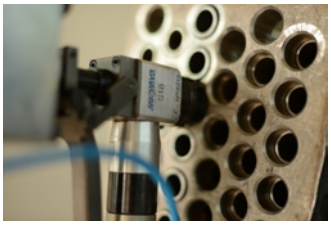


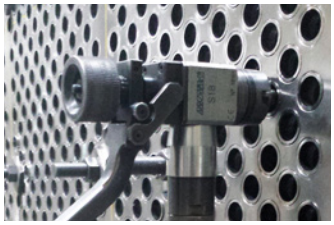
Dimensions

Technical Features:

Specific shapes & angles	I, V, Other on Request
Clamping	Automatic
Feed stroke	35 mm (1.377“)
Cutting head gear drive	300 rpm off-load speed, 150 rpm nominal speed
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.	

S18CA On-Site:

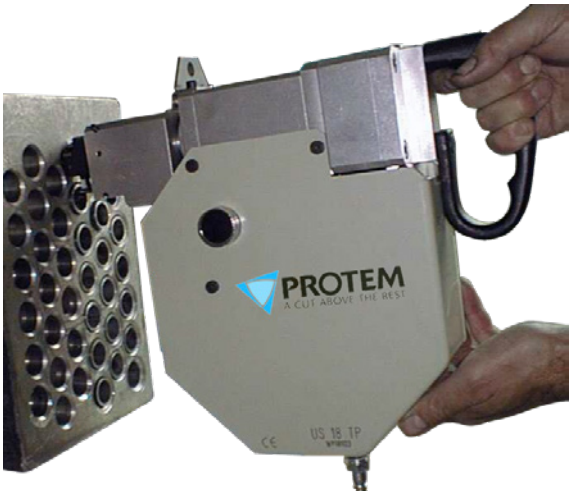




Order No.	Description
S18CA-1000	ID Mount Beveling Machine with pneumatic drive and clamping - Milling Cutter
S18CA-1002	Tube Beveling Machine S18CA with automatic clamping, pneumatic drive, for Ø 0.708“-1.653“ (18mm-42mm)
S18CA-1004	Tube Facing & Beveling machine S18CA with pneumatic drive and automatic clamping system for Ø 0.708“- 1.653“ (18mm-42mm), fitted with milling tool and clamping mandrel for Ø starting with 0.551“ (14 mm)
S18CA-1317	Milling Cutter 12 to 24mm Diameter
S18CA-1318	Milling Cutter 18 to 38mm Diameter
S18CA-1800	Limit Stop
210-0002	Balancer for S18CA

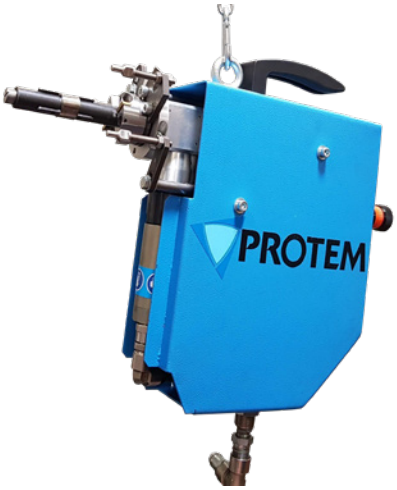
S18TP Heat Exchanger Tubes Machining Unit

Standard Capacity: 18,8mm - 46mm (0.740“-1.811“)



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, cut to lenght of heat exchanger tubes.
The S18TP features a self-accepting torque system and an integral drive motor.

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



Technical Features:

Specific shapes & angles	I, V, Other on Request
Clamping & Feed	Automatic
Feed stroke	16 mm (0.629“)
Cutting head gear drive	300 rpm off-load speed, 150 rpm nominal speed
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
S18TP-1000	Pipe Beveling Machine with pneumatic drive
S18TP-1002	Tube Beveling Machine S18TP with automatic clamping, pneumatic drive, for Ø 0.708“-1.417“ (18mm - 36mm)
S18TP-1112	Insert Holder / Milling Cutter
US18TP-47	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
S18-1500	Optional mandrel for Ø 14-22mm
S18-1600	Feed lever for S18
S18-1600-SSE1	Limit Stop
210-0002	Balancer

S18TP Shafts:

Order No.	Description
US18TP-26-1	Shaft, Ø 12mm
US18TP-26-2	Shaft, Ø 13mm
US18TP-26-3	Shaft, Ø 14mm
US18TP-26-4	Shaft, Ø 15mm
US18TP-26-5	Shaft, Ø 16mm
US18TP-26-6	Shaft, Ø 17mm
US18TP-29	Shaft, Ø 18-30mm

S18TP Clamping Blades:

Order No.	Description
US18TP-27-1	Clamping blades for Ø 12-14mm
US18TP-27-2	Clamping blades for Ø 13-15mm
US18TP-27-3	Clamping blades for Ø 14-16mm
US18TP-27-4	Clamping blades for Ø 15-17mm
US18TP-27-5	Clamping blades for Ø 16-18mm
US18TP-27-6	Clamping blades for Ø 17-19mm

S18TP Clamping Mandrels:

Order No.	Description
S18TP-1200	Clamping mandrel for Ø 18mm

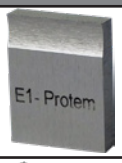
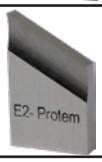
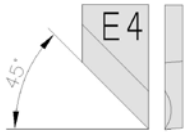
S18TP Milling Heads:

Order No.	Description
US18TP-65	Milling head for shaft Ø 12mm
US18TP-66	Milling head for shaft Ø 13mm
US18TP-67	Milling head for shaft Ø 14mm
US18TP-68	Milling head for shaft Ø 15mm
US18TP-69	Milling head for shaft Ø 16mm
US18TP-70	Milling head for shaft Ø 17mm

S18TP Further Options:

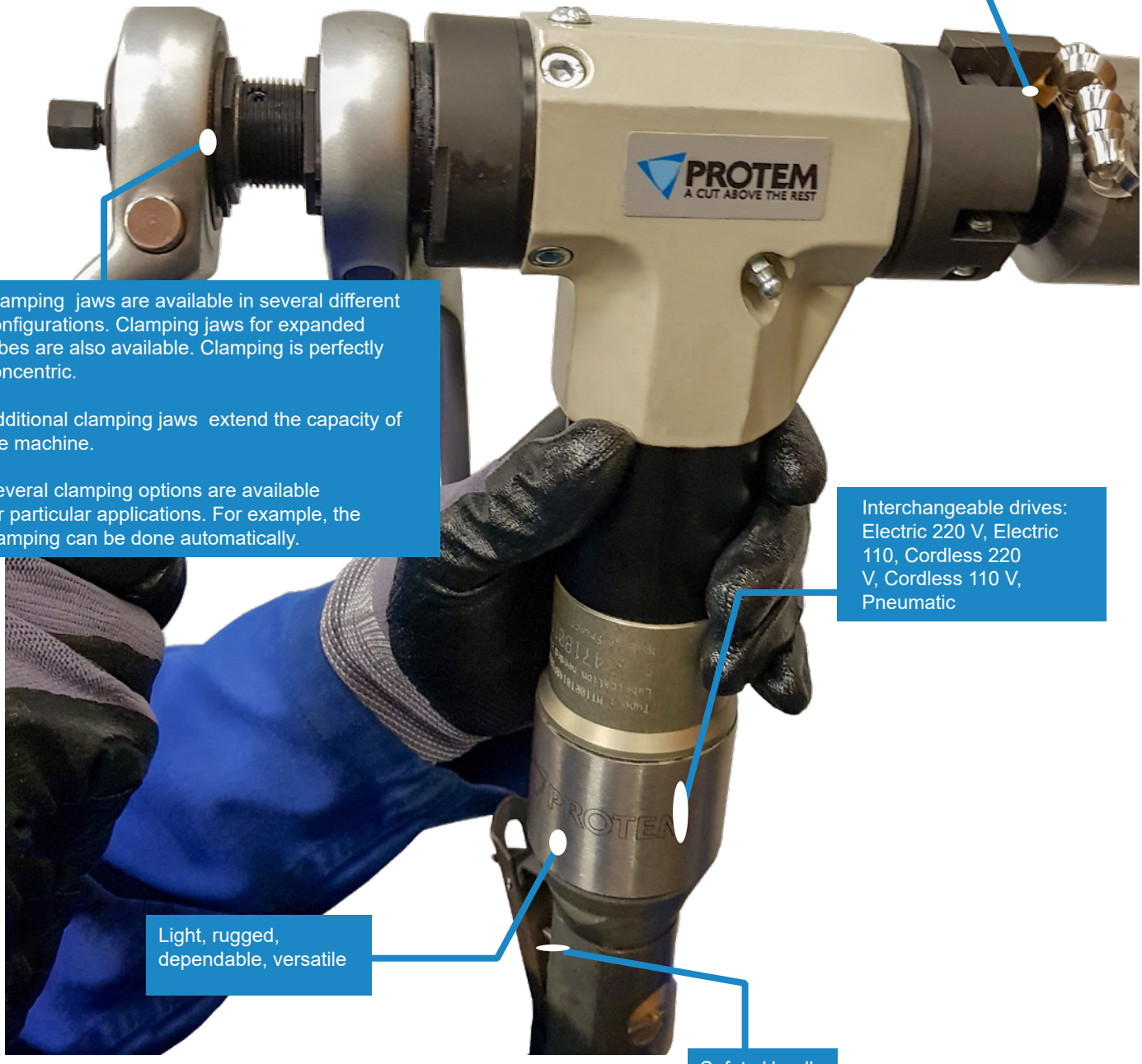
Order No.	Description
US18TP-47	Adjustable limit stop
210-0004	Balancer for S18TP

S18 Pipe Beveling Machine Tool-Bits

Order No.	Description	Picture
O-S18-E1-4-H-50	Tool-bits 90° for S18	
O-S18-E2-4-H-52	Tool-bits 30° for S18	
O-S18-E2INV-4-H-55	Tool-bits 30° for S18, for weld removal jobs	
O-S18-E3-4-H-51	Tool-bits 37°30 for S18	
O-S18-E4-4-H-53	Tool-bits 45° for S18	
O-S18-E4-4-H-F-53	Tool-bits 45° for S18	

US25CH Tube 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.



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

Light, rugged, dependable, versatile

Safety Handle

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..

Different configurations are possible to suit different types of applications.

ID Mounted

US25CH Boiler & Heat Exchanger Tubes Beveling Machine

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

Extended Capacity: 12,7mm - 120mm (0.5“ - 4.724“)

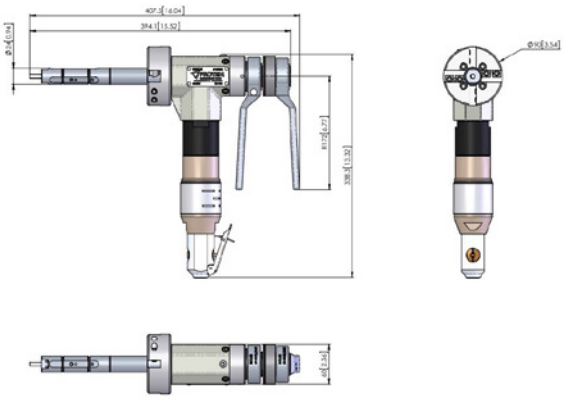
US25CH with pneumatic drive

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	Cut to length	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 4 tool-bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process

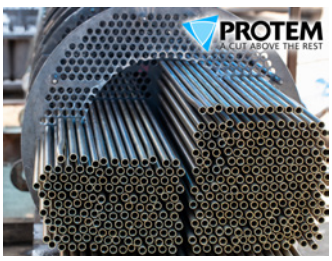
US25CH Boiler & Heat Exchanger Tubes Beveling Machine

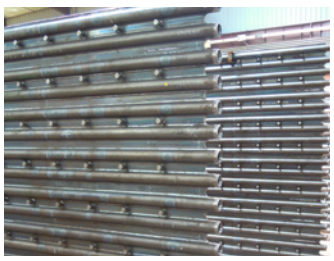
Technical Features:

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.	

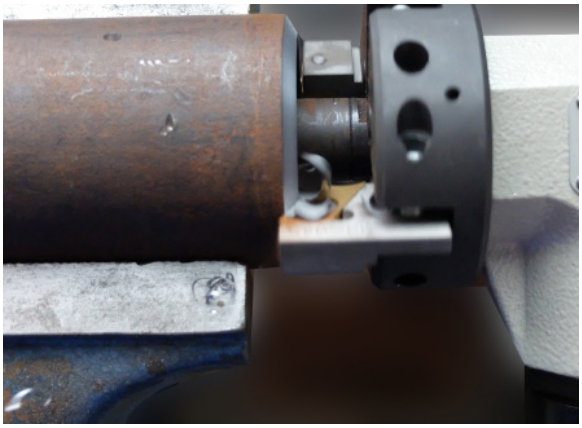
Order No.	Description
US25CH-1010	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.362“ (60mm) and pneumatic drive MO10.
US25CH-1012	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and pneumatic drive MO10.
US25CH-1014	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.952“ (75mm) and pneumatic drive MO10.
US25CH-1016	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 4.724“ (120mm) and pneumatic drive MO10.
US25CH-1020	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and electric drive 220V.
US25CH-1040	Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and electric drive 110V.

Applications:





Use On-Site or in Workshop:




US25CA Boiler Tube Beveling Machine

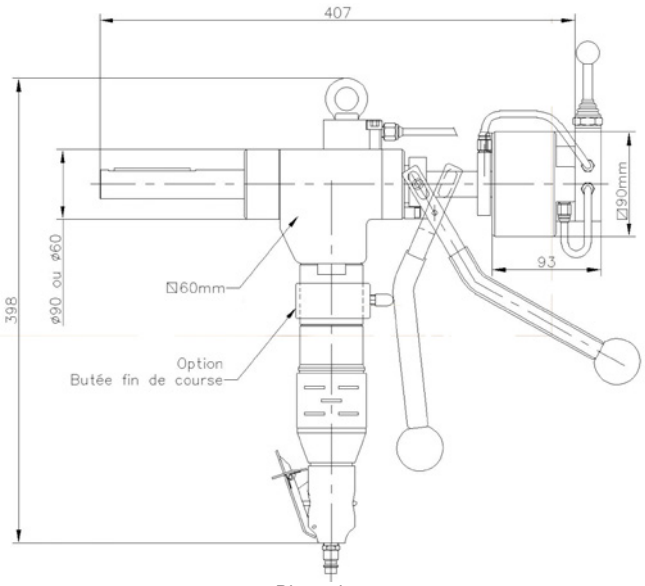
Standard Capacity: 25mm - 90mm (1“-3.543“)

Extended Capacity: 12,7mm - 120mm (0.5“ - 4.724“)

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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

ID Mounted

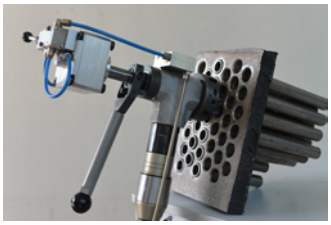


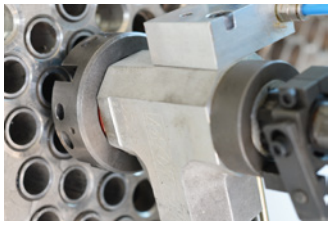
Dimensions

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Automatic
Feed stroke	35 mm (1.377“)
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)
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

US25CA On-Site:



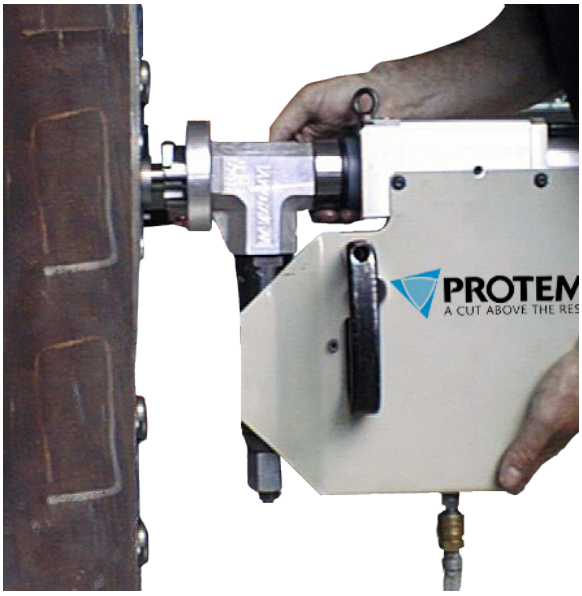


Order No.	Description
US25CA-1000	Pipe Beveling Machine US25 pneumatically driven with automatic clamping for Ø 1“-3.543“ OD (25mm-90mm)
US25CA-1002	Pipe Beveling Machine US25, pneumatically driven with automatic clamping for Ø 1“-2.362“ OD (25mm-60mm)

US25TP Boiler Tubes Beveling Machine Full Automatic Version

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

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 cut to length, weld joint removal, beveling operations).

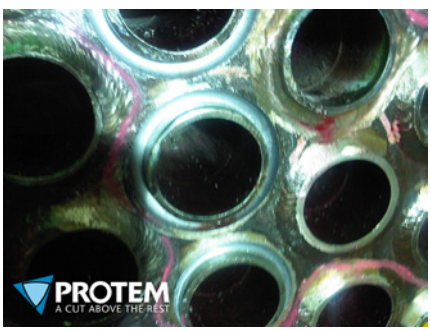
Beveling	Squaring	Counter-boring	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Automatic Clamping and Feed
Feed stroke	30 mm (1.181“)
Expansion	10 mm (0.394”)
Cutting head gear drive	150rpm off-load speed, 70rpm 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).
S18TP-1112	Milling tool with tool-inserts
O-SE-P1-3.-C-F-20A	Carbide tool-insert
210-0008	Balancer
US25TP-FC	Limit Stop

US25TA Pipe Beveling Machine for Fin Tubes

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

Extended Capacity: 12,7mm - 120mm (0.5“ - 4.724“)

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	Cut to length	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	35 mm (1.377“)
Expansion	10 mm (0.394”)
Cutting head gear drive	150rpm off-load speed, 70rpm 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.	

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 MO10, 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 MO10, 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 MO20, 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 MO20, equipped with one milling-head including 3 inserts.

US25CH Tube Beveling Machines Options

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

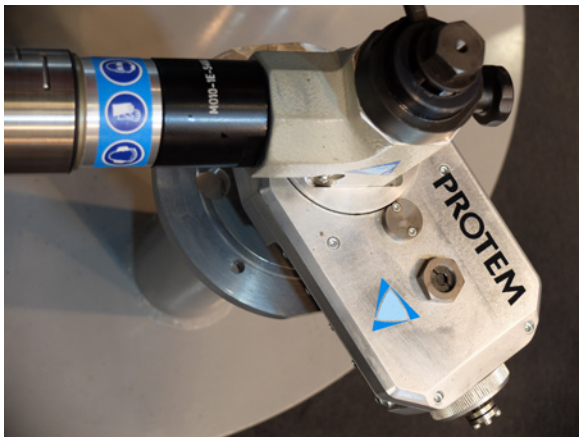
Extended Capacity: 12,7mm - 120mm (0.5“ - 4.724“)

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 (40-64 mm)
US25PR/C-1001	Elbow mandrel assembly for US25 (64-90 mm)
US25PR/C-1002	Elbow mandrel assembly for US25 (90-119 mm)

US25-ACC Flange Facing

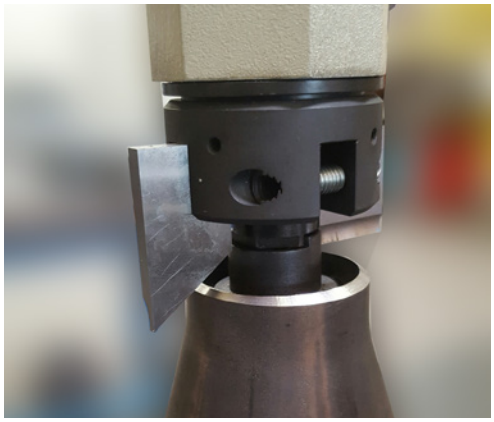


Flange facing attachment for flanges with Ø up to 11.023“: This flange attachment resurfaces any type of flange welded on pipes of any material directly on-site or in the workshop. This system is reliable, accurate, rugged, lightweight and very easy to use and operate. The clamping is made directly inside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

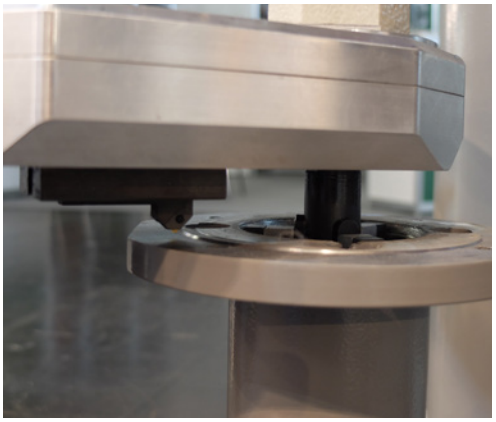
Order No.	Description
US25ACC-1002	Flange resurfacing module for US25 (25-280mm)

ID Mounted

US25-EMA On-Site:



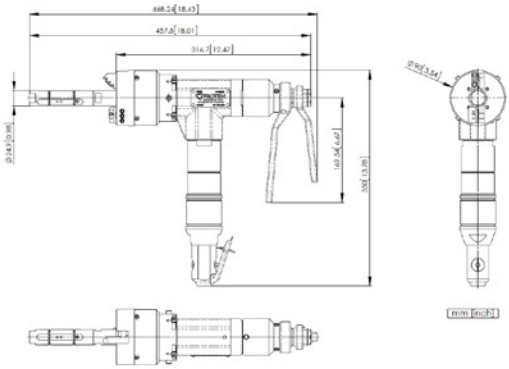
US25-ACC On-Site:



US25GL Saddle Beveling Machine

Standard Capacity: 25mm - 62mm (1“-2.441“)

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



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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✗	✗	✗	✗	✗	✗	✓	✗

ID Mounted

Technical Features:

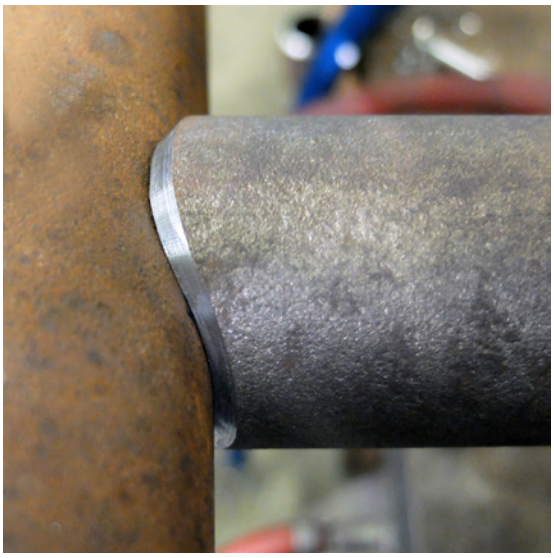
Specific shapes & angles	Saddles
Clamping	Manual with key
Feed stroke	35 mm (1.378“)
Expansion	10 mm (0.394”)
Cutting head gear drive	150 rpm off-load speed 70 rpm nominal speed. Approximate rotation speed according to air pressure and air flow
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
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
US25GL-1000	Saddle Beveling Machine PROTEM US25GL with pneumatic drive
US25GL-1020	Saddle Beveling Machine with electric drive PROTEM US25GL
US25GL-1311	Adapting set, one is necessary for each diameter

US25GL Saddle Beveling Machine

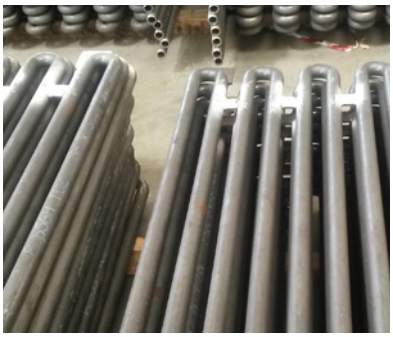
Example of use On-Site:

Saddle Type Tappings:



ID Mounted

Applications:



US25CH Tube Beveling Machines Options & Accessories

US25CH Crates:

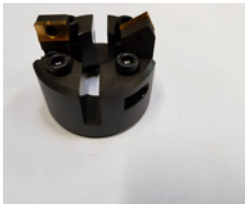
Order No.	Description
US25CH-K02	Transport Crate for US25CH electric MS10
US25CH-K04	Transport Crate for US25CH pneumatic
US25Ch-K06	Transport Crate for US25CH electric MS15

US25CH Mandrels:

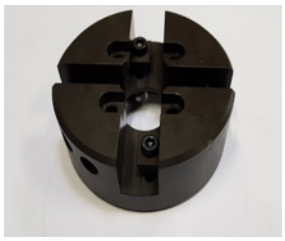
ID Mounted

Order No.	Description	Picture
US25-2900	Optional mandrel for Ø 0.492“-0.708“ (12,5-18mm)	
US25-3000	Optional mandrel for Ø 0.708“-1.023“ (18-26mm)	

US25CH Tool Holders:


Tool-holder Plate 60mm


Tool-holder Plate 75mm

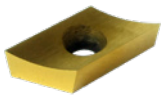
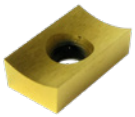

Tool-holder Plate 90mm


Tool-holder Plate 120mm

US25CH Further Options:

Order No.	Description	Picture
US25-2100	Quick lever clamping device	
US25-2200	Handwheel clamping device	
US25-5	Right angle feed with lever	
US25-6	Ratchet clamping device	
US25-3300	Feed and clamping through ratchet	

US25CH Tube Beveling Machines Tool-Bits

Order No.	Description	Picture
O-US-PP30-6-11045	Insert-holder 30° for US25	
O-US-PP375-9-14005	Insert-holder 37,5° for US25	
O-US-PP45-9-14006	Insert-holder 45° for US25	
O-US-PP90-6-11044	Insert-holder 90° for US25	
O-VIS-V5	Screw for tool insert P2	
O-US-P1-6-H-T	Tool-insert for US25-TIH-30 and US-TIH-30	
O-US-P2-6-H-T	Tool-insert for US25-TIH-90 and US-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US25-TIH-30 and US-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US25-TIH-90 and US-TIH-90	

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-A6-6	Tool-bit for counterboring 10°	
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-61	Tool-bit for 20° j-bevels	

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.

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

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..

Safety Handle

ID Mounted

US30CH Pipe Beveling Machine

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

Extended Capacity: 32mm - 168,3mm (1.259“ - 6.625“)

US30CH with pneumatic drive

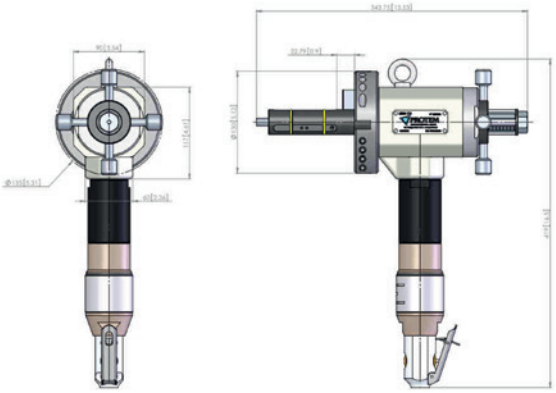
The US30CH portable pipe beveling machine is durable, reliable, versatile and light weighted. The standard tool-holder plate will accept multiple tool-bits, allowing up to four simultaneous machining operations. Such operations may include: 30°, 37°30, 45° bevels, J-bevels, compound bevels, facing, counterboring,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

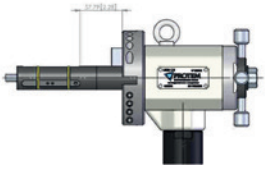
The tool-bits can be changed and adjusted very quickly. Carbide tool-inserts may also be used. The US30CH features a self-accepting torque system and an integral drive motor.

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	Cut to length	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 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

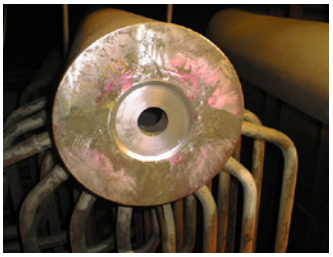
US30CH Pipe Beveling Machine

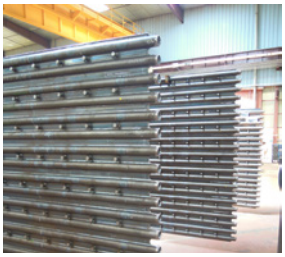
Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Manual with a key
Feed stroke	35 mm (1.378“)
Expansion	9 mm (0.354”)
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.	

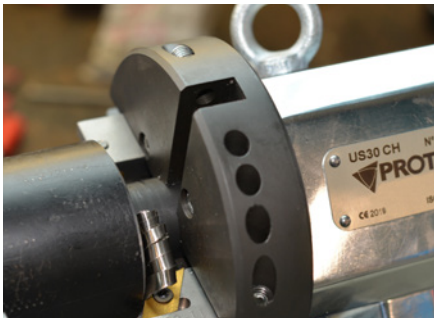
Order No.	Description
US30CH-1000	Pipe Beveling Machine US30CH for Ø 1.259“ - 4.488“ (32mm - 114mm) with pneumatic drive
US30CH-1010	Pipe Beveling Machine US30CH New Generation for boilers with option 11bis - longer mandrel for boiler works, for Ø 1.259“ - 4.488“ (32mm - 114mm) with pneumatic drive
US30CH-1012	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-1020	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 4.488“ (32mm - 114mm) with electric drive MS10.
US30CH-1022	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 4.488“ (32mm - 114mm) with electric drive MS10 and with option 11bis, longer mandrel for boiler works.
US30CH-1024	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-1026	Pipe Beveling Machine US30CH for Ø 1.259“ - 6.625“ (32mm - 168.3mm) with pneumatic right angle 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, MS15. 1500W.
US30CH-1040	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 4.488“ (32mm - 114mm) with electric drive 110V, MS15. 1500W.
US30CH-1042	Pipe Beveling Machine US30CH New Generation for boilers for Ø 1.259“ - 4.488“ (32mm - 114mm) with electric drive 110V, MS15. 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-1052	Pipe Beveling Machine US30CH for Ø 1.259“ - 4.488“ (32mm - 114mm) with hydraulic drive.

Applications:



Use On-Site or in Workshop:



US30CHCA Boiler & Heat Exchanger Tubes Beveling Machine

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

Extended Capacity: 32mm - 168,3mm (1.259“ - 6.625“)

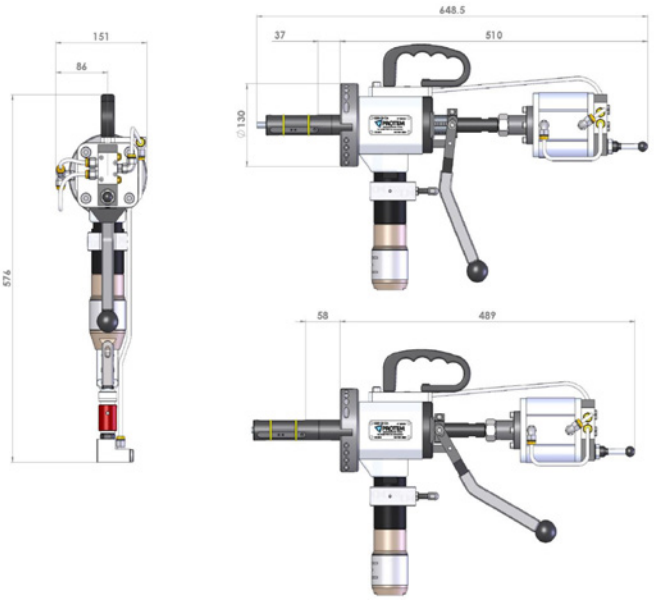
The US30CHCA portable pipe beveling machine is durable, reliable, versatile and light weighted. The standard tool-holder plate will accept multiple tool-bits, allowing up to four simultaneous machining operations. Such operations may include: 30°, 37°30, 45° bevels, J-bevels, compound bevels, facing, 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	Cut to length	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	Automatic
Feed stroke	35 mm (1.378“)
Expansion	9 mm (0.354”)
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.	

US30CHCA On-Site:

Order No.	Description
US30CHCA-1000	US30-CH/CA 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 MS15 + option 3302
US30CH-K03	Transport crate for US30CH pneumatic + option 3300
US30CH-K04	Transport crate for US30CH/E MS15 + option 3300
US30CH-K05	Transport crate for US30CH pneumatic + option 3302
US30CHCA-K01	Transport crate for US30CH/E MS10

US30CH Elbow Mandrels:

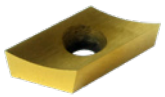
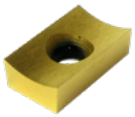
Order No.	Description
US30PR/C-1000	Option elbow mandrel assembly EMA for US30CH for Ø 2.165“-3.133“ (55mm-79.6mm)
US30PR/C-1001	Option elbow mandrel assembly EMA for US30CH for Ø 3.087“-4.785“ (78.43mm-121.54mm)

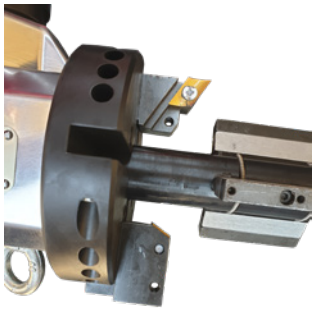
US30CH Further Options:

Order No.	Description
US30CH-1500	US30CH beveling machine with electric drive for diameters up to 168,3mm (6.625”) mm ID , delivered with 1 tool holder plate Ø 180 mm (7.087“)
US30CH-1800	Bench mounting device for US30CH

US30CH Pipe Beveling Machine Tool-Bits

ID Mounted

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-P1-6-H-T	Tool-insert for US25-TIH-30 and US30CH-TIH-30	
O-US-P2-6-H-T	Tool-insert for US25-TIH-90 and US30CH-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US25-TIH-30 and US30CH-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US25-TIH-90 and US30CH-TIH-90	



US30CH Tool-insert

Order No.	Description	Picture
O-US-A1-9-H-27	Tool-bit 90°	
O-US-A2-9-H-26	Tool-bit for 30° bevel	
O-US-A3-9-H-28	Tool-bit for 37°30 bevel	
O-US-A4-9-H-25	Tool-bit for counterboring 15°	
O-US-A5-9-H-85	Tool-bit for 45° bevel	
O-US-B6-9-H-54	Tool-bit 90°, with disalignment	
O-US-B7-9-H-56	Tool-bit 30°, with disalignment	
O-US-B8-9-H-59	Tool-bit 37°30, with disalignment	
O-US-B9-9-H-61	Tool-bit for counterboring 15°, with disalignment	
O-US-B11-9-H-15	Tool-bit for counterboring and squaring	
O-US-C5-9-H-63	Tool-bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Tool-bit for 12,5° R6 j-bevels	
O-US-C7-9-H-67	Tool-bit for 7° R6 j-bevels, with disalignment	
O-US-C8-9-H-69	Tool-bit for 12,5° R6 j-bevels, with disalignment	
O-US-C9-9-H-29	Tool-bit for 10° R1,5 j-bevels	
O-US-C10-9-H-70	Tool-bit for 20° j-bevels	

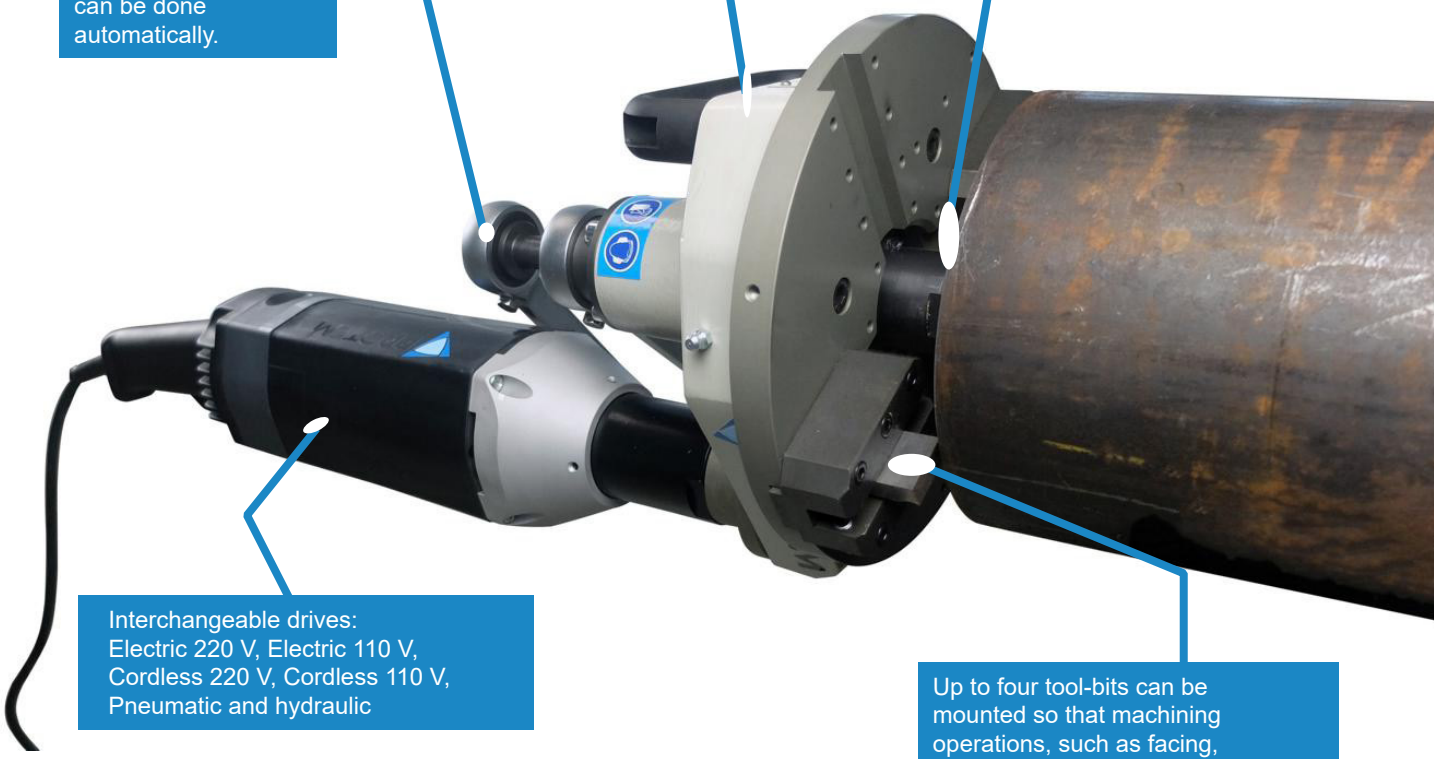
US40 Pipe Beveling Machine

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..

Different configurations are possible to suit different types of applications.

US40 Pipe Beveling Machine

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

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

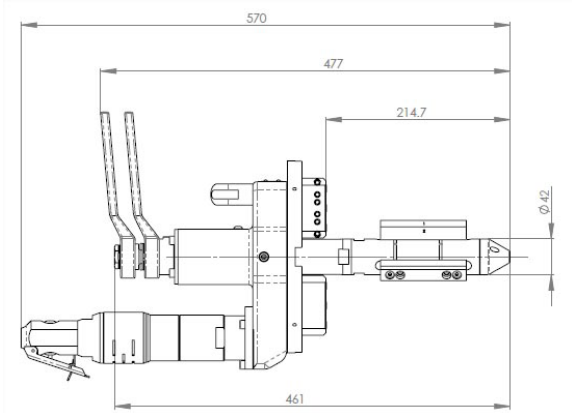
US40 with pneumatic drive

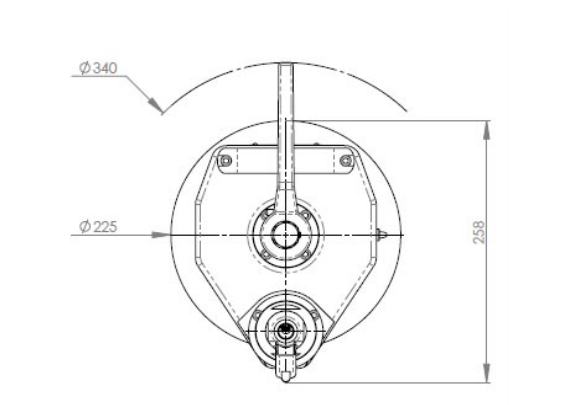
The portable id mount PROTEM US40 tube and pipe beveling machine is powerful, durable, reliable and versatile. The US40 covers Ø ranging from 43mm (1.692”) to 219mm (8.622”). The standard tool plate will accept multiple tool-bits, allowing up to four simultaneous machining operations which may include 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	Cut to length	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 4 tool-bits for simultaneous machining operations (land, bevel, counterboring, j prep)
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process

US40 with electric drive

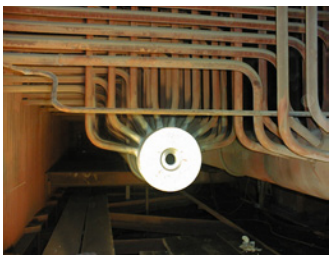
US40 Pipe Beveling Machine

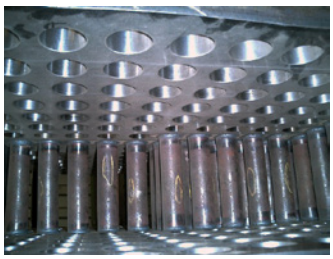
Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Manual with a key
Feed stroke	50 mm (1.968“)
Expansion	15 mm (0.590”)
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)
US40-1020	Pipe Facing Machine PROTEM US40 with electric drive 220V, 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)
US40-1040	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:



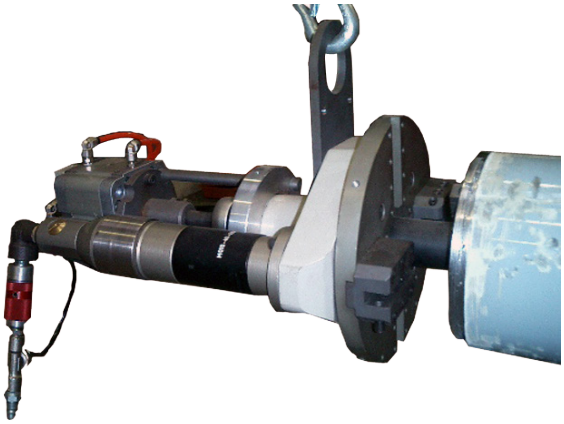



Use On-Site or in Workshop:

US40CA Beveling Machine with automatic clamping System

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

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

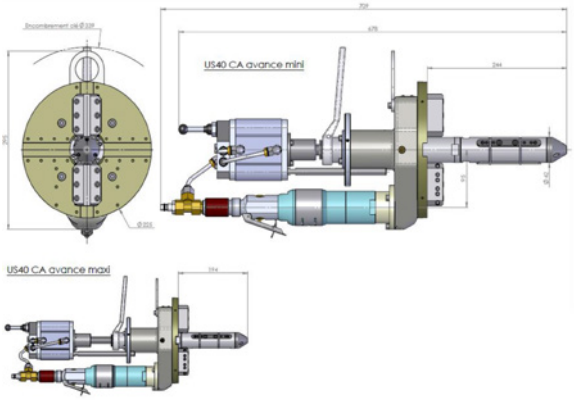


The portable id mount PROTEM US40CA tube and pipe beveling machine is powerful, durable, reliable and versatile.The US40CA covers Ø ranging from 43mm (1.692”) to 219mm (8.622”). The standard tool plate will accept multiple tool-bits, allowing up to four simultaneous machining operations which may include 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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✗	✗	✗

ID Mounted



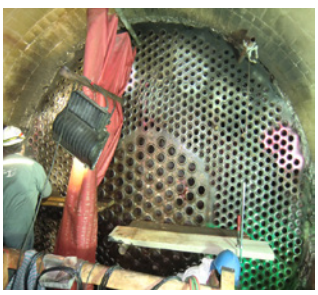
Dimensions

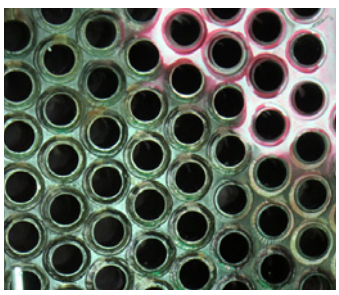
Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request
Clamping	Automatic
Feed stroke	50 mm (1.968“)
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.	

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
US40-K03	Transport crate for US40 hydraulic
US40-K05	Transport crate for US40E (MS10-MS15)
US40-K06	Transport crate for US40 pneumatic + bench
US40-K07	Transport box for US40-EMA-NG
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

US40 Elbow Mandrels:

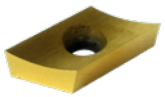
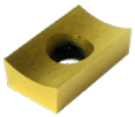
Order No.	Description
US40PR/C-1000	Spider type elbow mandrel kit: This new generation of elbow mandrel assembly allows the positioning of an ID Mount Beveli-ng Machine on all types of elbows.
US40PR/C-1001	Elbow mandrel assembly EMA for US40 for Ø 3.346“ - 7.086“ (85mm - 180mm)
US40PR/C-1002	Elbow mandrel assembly EMA for US40 for Ø 5.708“ - 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 for US40 Stroke 2.559“ (65mm)
US40-3100	Flange facing attachment, for flange diameters ranging from 70mm - 400mm (2.756” – 15.748“)
US40-3800	Tool-holder for diameter up to 273 mm (10.748“)

US40 Pipe Beveling Machine Tool-Bits

ID Mounted

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-P1-6-H-T	Tool-insert for US25-TIH-30, US30CH-TIH-30 and US40-TIH-30	
O-US-P2-6-H-T	Tool-insert for US25-TIH-90, US30CH-TIH-90 and US40-TIH-90	
O-US-P1-DU-PLEX-30	Tool-insert for US25-TIH-30, US30CH-TIH-30 and US40-TIH-30	
O-US-P2-DU-PLEX-0	Tool-insert for US25-TIH-90, US30CH-TIH-90 and US40-TIH-90	

Order No.	Description	Picture
O-US-A1-9-H-27	Tool-bit 90°	
O-US-A2-9-H-26	Tool-bit for 30° bevel	
O-US-A3-9-H-28	Tool-bit for 37°30 bevel	
O-US-A4-9-H-25	Tool-bit for counterboring 15°	
O-US-A5-9-H-85	Tool-bit for 45° bevel	
O-US-B6-9-H-54	Tool-bit 90°, with disalignment	
O-US-B7-9-H-56	Tool-bit 30°, with disalignment	
O-US-B8-9-H-59	Tool-bit 37°30, with disalignment	
O-US-B9-9-H-61	Tool-bit for counterboring 15°, with disalignment	
O-US-B11-9-H-15	Tool-bit for counterboring and squaring	
O-US-C5-9-H-63	Tool-bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Tool-bit for 12,5° R6 j-bevels	
O-US-C7-9-H-67	Tool-bit for 7° R6 j-bevels, with disalignment	
O-US-C8-9-H-69	Tool-bit for 12,5° R6 j-bevels, with disalignment	
O-US-C9-9-H-29	Tool-bit for 10° R1,5 j-bevels	
O-US-C10-9-H-70	Tool-bit for 20° j-bevels	

US80 Pipe Beveling Machine

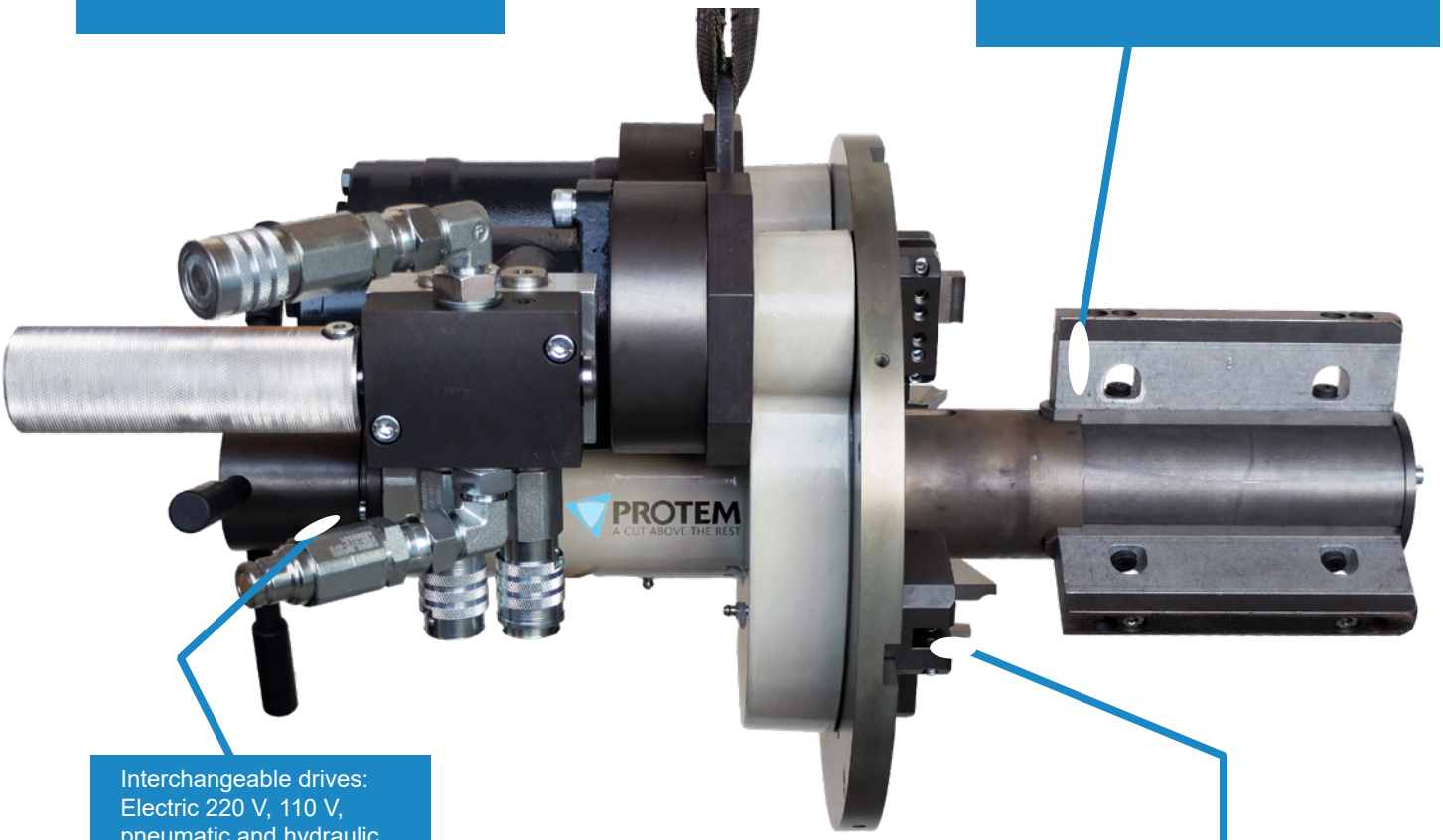
Rugged, dependable, versatile

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 220 V, 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.

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 Pipe Beveling Machine

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

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

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.

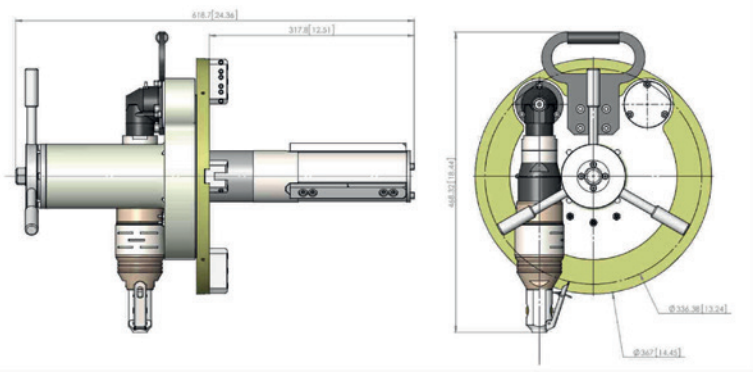
The US80 heavy duty beveler will perform repeatable high quality weld preparations on all types of materials including mild steel, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper and exotic alloys. It can be either pneumatically, electrically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

Beveling	Squaring	Counterboring	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓

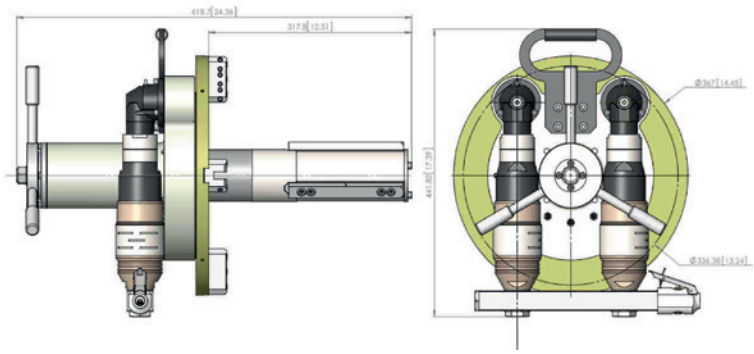
ID Mounted

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

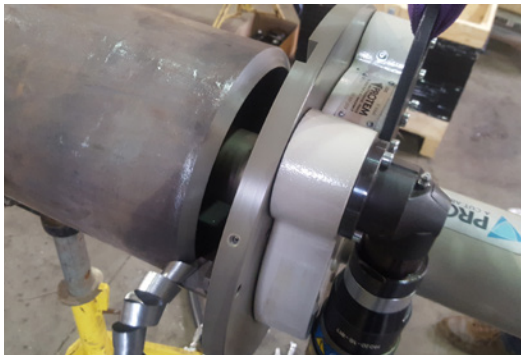
Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, other on request
Clamping	Manual with a key
Feed stroke	60 mm (2.362“)
Expansion	25 mm (0.984”)
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	220 V (2200 W) 110 V (1800 W
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 pneumatic drive, for Ø 3.149“ - 13.976“ (80mm - 355mm)
US80-1020	Heavy Duty Pipe Facing Machine with electric drive 220V, 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 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)
US80-1080	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)

Applications:

Use On-Site or in Workshop:



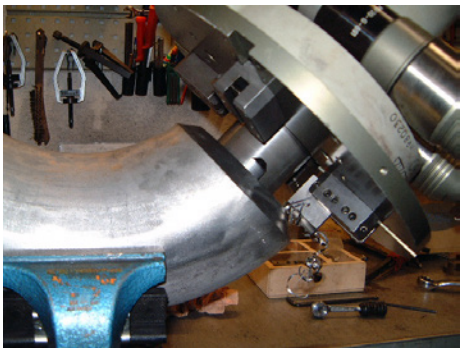
US80 Pipe Beveling Machines Options & Accessories

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

US80 Elbow Mandrels:

Order No.	Description
US80PR/C-1001	Elbow mandrel assembly EMA for US80 for Ø 3.149“ - 6.224“ (80mm - 158.1mm)
US80PR/C-1002	Elbow mandrel assembly EMA for US80 for Ø 5.905“ - 10.465“ (150mm - 265.8mm)

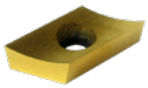
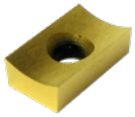


US80 Further Options:

Order No.	Description
US80-2400	Flange resurfacing module for flanges from 3.9“ to 24“ 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 4.724“ - 8.622“ (120mm - 219mm)
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
US80-3200	Tool-holder for diameter up to 406.4 mm (16“)

US80-2400 Flange Facing Attachment

US80 Pipe Beveling Machine — Tool-Bits

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30°	
O-US-PP375-9-14007	Insert-holder 37,5°	
O-US-PP45-9-14008	Insert-holder 45°	
O-US-PP90-9-11066	Insert-holder 90°	
O-VIS-V5	Screw for tool insert P2	
O-US-P1-6-H-T	Tool-insert for US80-TIH-30	
O-US-P2-6-H-T	Tool-insert for US80-TIH-90	
O-US-P1-DUPLEX-30	Tool-insert for US80-TIH-30	
O-US-P2-DUPLEX-0	Tool-insert for US80-TIH-90	

Order No.	Description	Picture
O-US-A1-9-H-27	Tool-bit 90°	
O-US-A2-9-H-26	Tool-bit for 30° bevel	
O-US-A3-9-H-28	Tool-bit for 37°30 bevel	
O-US-A4-9-H-25	Tool-bit for counterboring 15°	
O-US-A5-9-H-85	Tool-bit for 45° bevel	
O-US-B6-9-H-54	Tool-bit 90°, with disalignment	
O-US-B7-9-H-56	Tool-bit 30°, with disalignment	
O-US-B8-9-H-59	Tool-bit 37°30, with disalignment	
O-US-B9-9-H-61	Tool-bit for counterboring 15°, with disalignment	
O-US-B11-9-H-15	Tool-bit for counterboring and squaring	
O-US-C5-9-H-63	Tool-bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Tool-bit for 12,5° R6 j-bevels	
O-US-C7-9-H-67	Tool-bit for 7° R6 j-bevels, with disalignment	
O-US-C8-9-H-69	Tool-bit for 12,5° R6 j-bevels, with disalignment	
O-US-C9-9-H-29	Tool-bit for 10° R1,5 j-bevels	
O-US-C10-9-H-70	Tool-bit for 20° j-bevels	

ID Mounted

US150 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.

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 Pipe Beveling Machine

Standard Capacity: 150mm - 508mm (5.905“ - 20“)

Extended Capacity: 150mm - 610mm (5.905“ - 24.015“)

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 150mm (5.905”) ID to 508mm (20”) OD. This machine can also be delivered with its 610mm (24.015”) tool-holder plate. It can be either pneumatically, electrically or hydraulically driven.

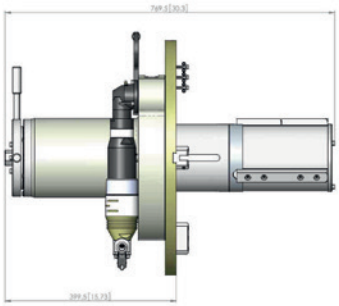
The standard tool-plate will accept multiple tool-bits, allowing up to four simultaneous machining operations. Operations may include 30°, 37°30, 45° bevels with or without land, J-bevels, compound bevels, facing, counterboring operations, etc.
The tool-bits can be changed and adjusted very quickly. 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.

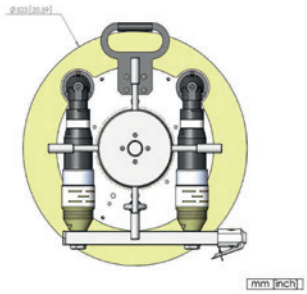
Beveling	Squaring	Counterboring	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓

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

US150 Brushless drive

US150 Pipe Beveling Machine

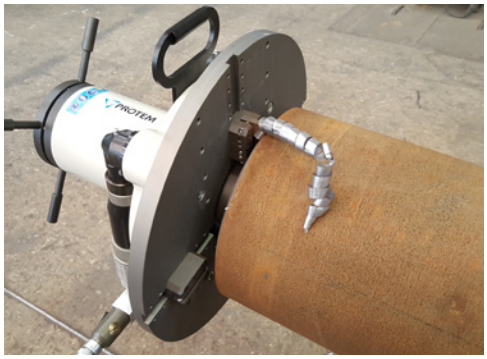
Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, other on request
Clamping	Manual with a key
Feed stroke	100 mm (3.937“)
Expansion	30 mm (1.181”)
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)
US150-1020	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)
US150-1022	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)
US150-1060	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)
US150-1064	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. For Ø 5.905" - 20" (150mm - 508mm)
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)

Use On-Site or in Workshop:



US150 Pipe Beveling Machines Options & Accessories

US150 Crates:

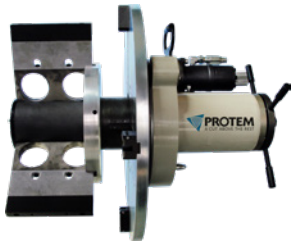
Order No.	Description
US150-K01	Transport crate for US150 pneumatic / hydraulic
US150-K02	Transport crate for US150 pneumatic / hydraulic with US150-Kit24"
US150-K03	Transport crate for US150 pneumatic / hydraulic + cover
US150-K04	Transport crate for US150 pneumatic / hydraulic with US150-Kit24" + cover
US150-K05	Transport crate for US150E
US150-K06	Transport crate for US150E with Kit24"
US150-K07	Transport crate in stainless steel for US150 pneumatic / hydraulic
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 10.275“ - 20“ (261mm - 508mm)

US150-Kit24":

Order No.	Description
US150-2700	Tool-holder for diameter up to 610mm (24.015“)



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: 150 - 508mm; 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:

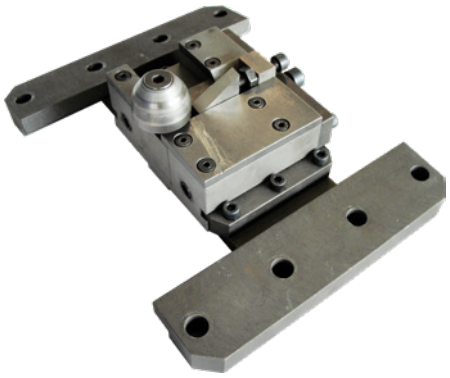
Order No.	Description
US150-3100	Copying carriage for US150 Stroke 2.952" (75mm) for pipe Ø up to 30" (762mm)
US150-3200	Copying carriage for US150 Stroke 2.952" (75mm) for pipe Ø up to 35.433" (900mm)

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 210 mm ID to 508 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 324,6 mm ID to 489,6 mm OD, limited tube wall thickness according to material and bevel type)

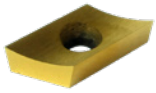
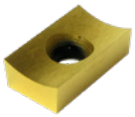


US150 Spider Assembly:

Order No.	Description
US150PR/C-1001	Spider assembly ranging from 20" to 30" (to be used with copying / flange facing carriages US150-3100 and US150-3000
US150PR/C-1002	Spider assembly ranging from 20" to 35.433" (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°	
O-US-PP375-9-14007	Insert-holder 37,5°	
O-US-PP45-9-14008	Insert-holder 45°	
O-US-PP90-9-11066	Insert-holder 90°	
O-VIS-V5	Screw for tool insert P2	
O-US-P1-6-H-T	Tool-insert for US150-TIH-30	
O-US-P2-6-H-T	Tool-insert for US150-TIH-90	
O-US-P1-DUPLEX-30	Tool-insert for US150-TIH-30	
O-US-P2-DUPLEX-0	Tool-insert for US150-TIH-90	

Order No.	Description	Picture
O-US-A1-9-H-27	Tool-bit 90°	
O-US-A2-9-H-26	Tool-bit for 30° bevel	
O-US-A3-9-H-28	Tool-bit for 37°30 bevel	
O-US-A4-9-H-25	Tool-bit for counterboring 15°	
O-US-A5-9-H-85	Tool-bit for 45° bevel	
O-US-B6-9-H-54	Tool-bit 90°, with disalignment	
O-US-B7-9-H-56	Tool-bit 30°, with disalignment	
O-US-B8-9-H-59	Tool-bit 37°30, with disalignment	
O-US-B9-9-H-61	Tool-bit for counterboring 15°, with disalignment	
O-US-B11-9-H-15	Tool-bit for counterboring and squaring	
O-US-C5-9-H-63	Tool-bit for 7° R6 j-bevels	
O-US-C6-9-H-65	Tool-bit for 12,5° R6 j-bevels	
O-US-C7-9-H-67	Tool-bit for 7° R6 j-bevels, with disalignment	
O-US-C8-9-H-69	Tool-bit for 12,5° R6 j-bevels, with disalignment	
O-US-C9-9-H-29	Tool-bit for 10° R1,5 j-bevels	
O-US-C10-9-H-70	Tool-bit for 20° j-bevels	

US450 Heavy Duty Pipe Beveling Machine

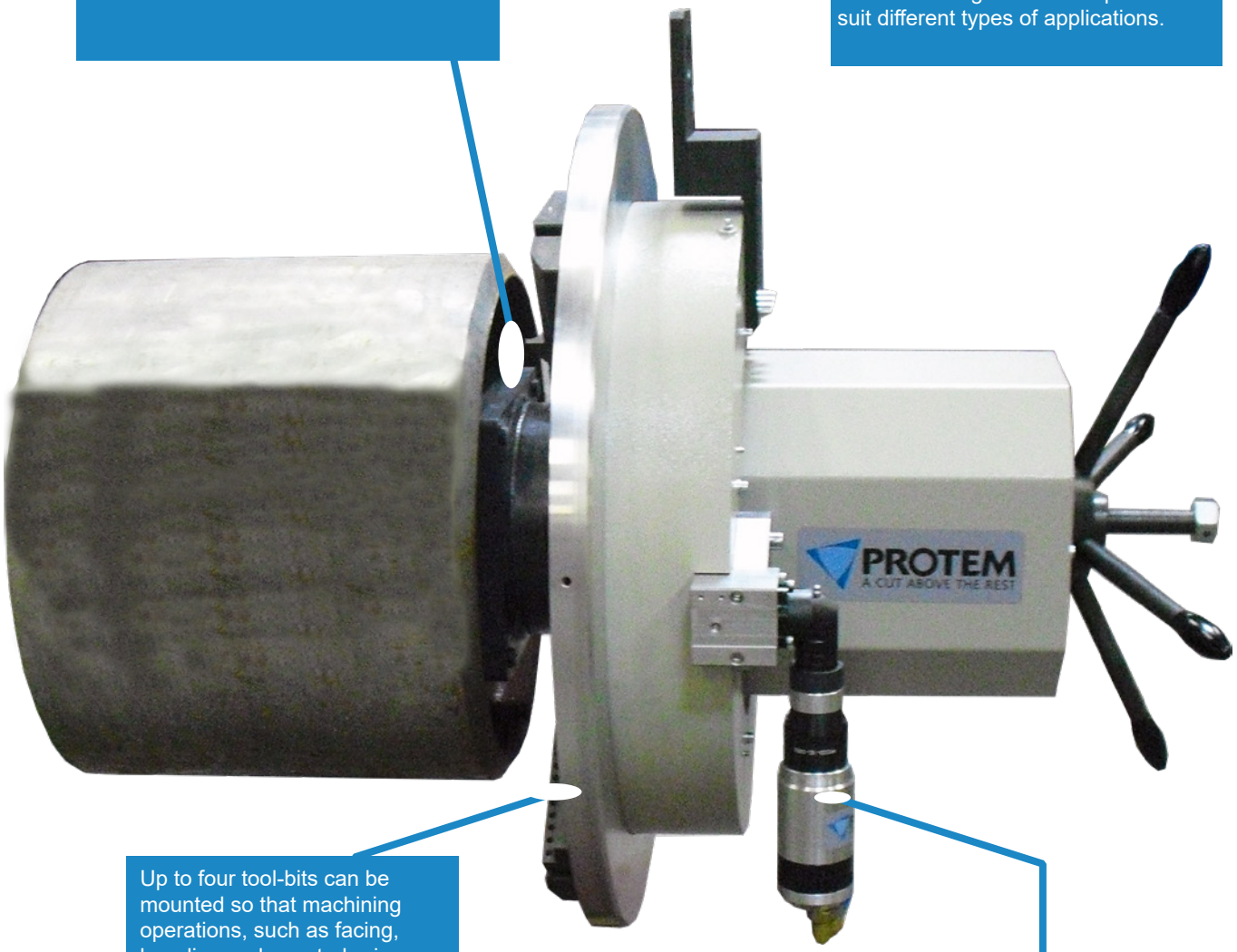
Clamping jaws are available in several different configurations.

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.



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: 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..

US450 Heavy Duty Pipe Beveling Machine

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

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

US450 with hydraulic drive

Ultimate end machining solution for tubes and pipes with Ø ranging from 457.2mm (18“) to 914.4mm (36“) 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.

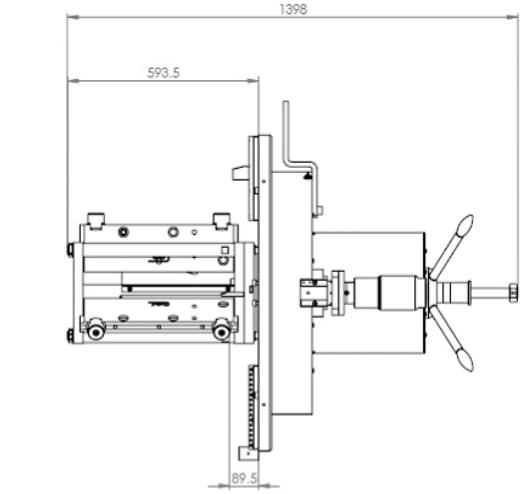
Strong ID clamping mandrel provides safe and secured mounting and fixing. Cold machining process and no Heat Affected Zone. For unmatched results! Available with dual pneumatic drive or dual hydraulic drive (to be used with a 22KW hydraulic power unit) The durability, reliability and capacity of the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

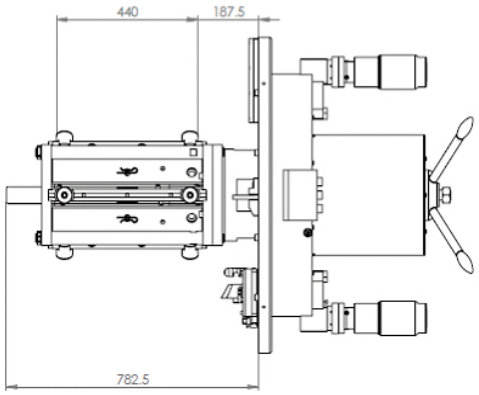
Beveling	Squaring	Counterboring	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✓	✓	✗	✓

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

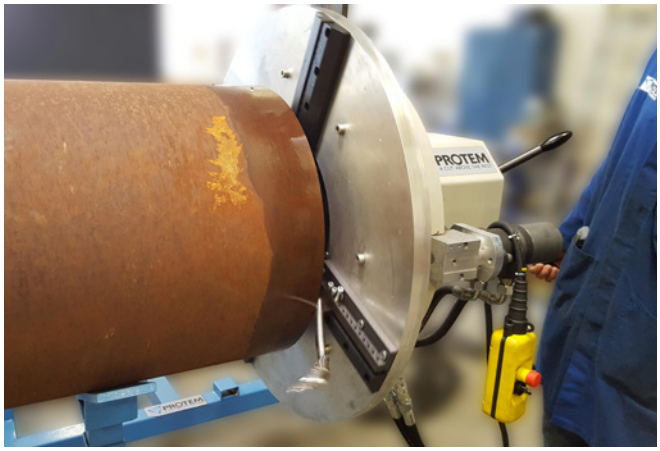
US450 Heavy Duty Pipe Beveling Machine

Technical Features:

Specific shapes & angles	Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, other on request
Clamping	Manual
Feed stroke	98 mm (3.858“)
Expansion	28 mm (1.102”)
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 dual pneumatic drive.
US450-1062	Heavy Duty Beveling Unit PROTEM US450 Kit56" for Ø 18"-56" (457.2mm-1422.4mm) with powerful hydraulic drive.
US450-1068	Heavy Duty Beveling Unit PROTEM US450 for Ø 18"- 36" (457.2mm-914.4mm) with powerful dual hydraulic drive.

Use On-Site or in Workshop:



ID Mounted

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)

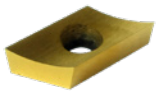
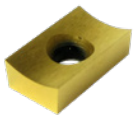
US450 Pads:

Order No.	Description
US450-1313	Pad height 25 mm set of 6 units
US450-1314	Pad height 50 mm set of 6 units
US450-1315	Pad height 75 mm set of 6 units
US450-1316	Pad height 100 mm set of 6 units

US450 Copying Carriage:

Order No.	Description
US450-3200	Copying carriage for US150 Stroke 2.952" (75mm) for pipe Ø up to 20 - 48" (508mm - 1219.2mm)

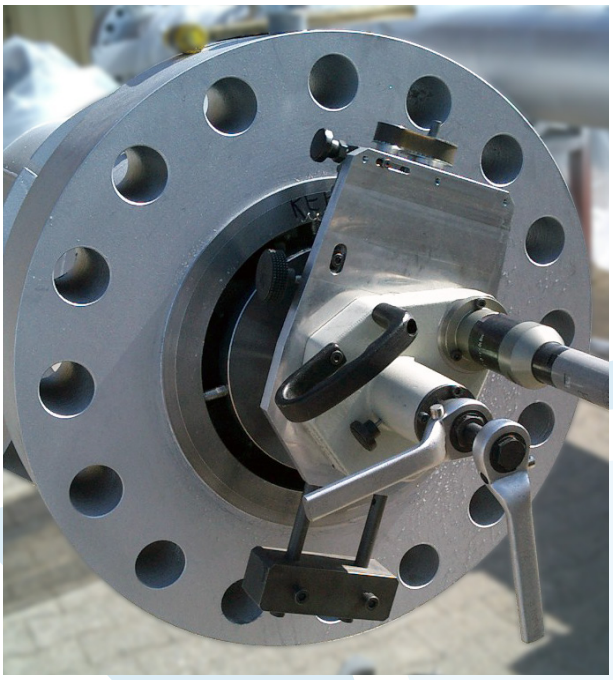
US450 Heavy Duty Pipe Beveling Machine Tool-Bits

Order No.	Description	Picture
O-US-PP30-9-14026	Insert-holder 30°	
O-US-PP375-9-14007	Insert-holder 37,5°	
O-US-PP45-9-14008	Insert-holder 45°	
O-US-PP90-9-11066	Insert-holder 90°	
O-VIS-V5	Screw for tool insert P2	
O-US-P1-6-H-T	Tool-insert for US450-TIH-30	
O-US-P2-6-H-T	Tool-insert for US450-TIH-90	
O-US-P1-DUPLEX-30	Tool-insert for US450-TIH-30	
O-US-P2-DUPLEX-0	Tool-insert for US450-TIH-90	

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

SINGLE POINT MACHINING

Flange Facing attachments | For US machines



DESCRIPTION:

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

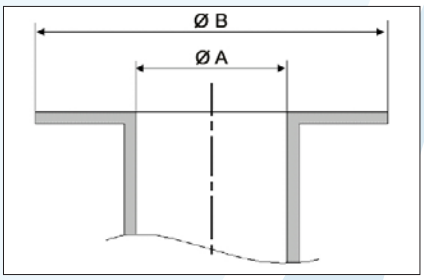
This flange attachment resurfaces all the different flanges welded on pipes, of all materials, directly on-site or in the workshop.

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

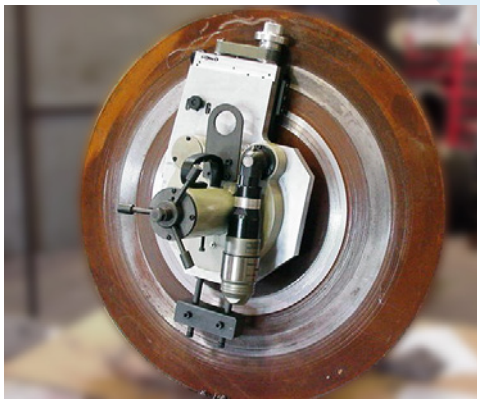
Clamping is made directly inside the flange ID via the clamping shaft of the US machines and their additional expansion blades, or with a spider elbow mandrel kit.

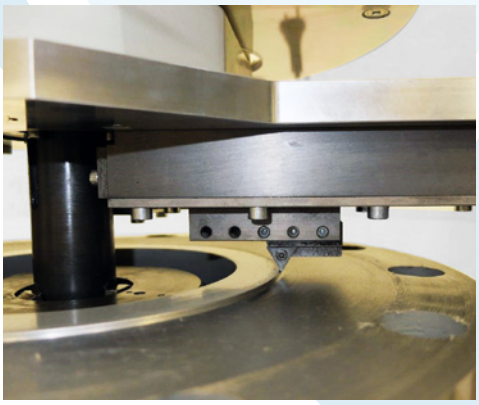
It is recommended to use the spider elbow mandrel kit to get an optimal adjustment of the machine with the flange (squareness and concentricity). For materials: mild steel, stainless steel, alloy steels, aluminium, duplex, super duplex, inconel, P91.

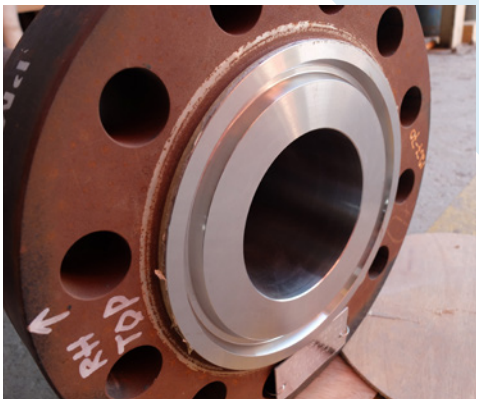
MACHINING CAPACITY:

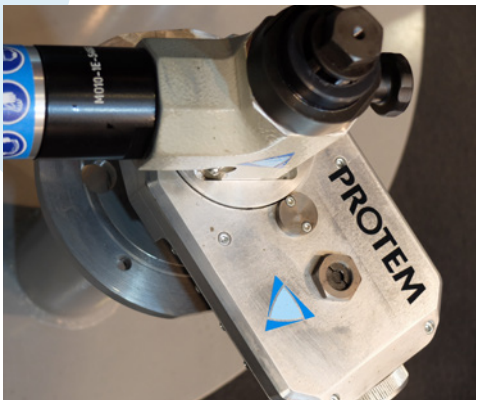


APPLICATIONS:









US25-ACC

ORDER NO.	DESCRIPTION
US25-1008	US25 with flange facing attachment for flange diameters up to 280mm (11“), weight ~ 8,5 kg/ 18,7 lbs
US25ACC-1002	US25-ACC-BR flange resurfacing module for US25 (25-280 mm) (.984" - 11.024")

TECHNICAL FEATURES:

Machine	US25-ACC
Clamping capacity	Ø25 – Ø107 mm
	0.984” – 4.213”
Machining capacity ØA	40 mm
	1.575”
Machining capacity ØB	276 mm
	10.866”

US30CH-ACC

ORDER NO.	DESCRIPTION
US30CH-1008	US30 with flange facing attachment for flange diameters up to 355mm (13.9“), weight ~ 9 kg/19.8 lbs
US30CH-1002	Flange resurfacing module (50-355 mm) (1.968" - 13.976")

TECHNICAL FEATURES:

Machine	US30CH-ACC
Clamping capacity	Ø32 – Ø114,3 mm
	1.260” – 4.500”
Machining capacity ØA	45 mm
	1.772"
Machining capacity ØB	323 mm
	12.717"

US40-ASB

ORDER NO.	DESCRIPTION
US40-3100	Flange facing attachment, for flange diameters ranging from 70 mm ID up to 400 mm OD (2,756” – 15,748“)

TECHNICAL FEATURES:

Machine	US40-ASB
Clamping capacity	Ø42 - Ø222 mm
	1.654” – 8.740”
Machining capacity ØA	59 mm
	2.323”
Machining capacity ØB	414 mm
	16.299”

US80-ASB

ORDER NO.	DESCRIPTION
US80-2400	Flange facing attachment, capable of resurfacing worn or damaged “weld neck” type flanges with diameter 100 mm ID up to 610 mm OD (3.9“ ID – 24“ OD)

TECHNICAL FEATURES:

Machine	US80-ASB
Clamping capacity	Ø80 - Ø355 mm
	3.150” – 13.976”
Machining capacity ØA	95 mm
	3.740”
Machining capacity ØB	627 mm
	24.685”

US150-ASB

ORDER NO.	DESCRIPTION
US150-3000	Flange facing attachment, for the remachining and resurfacing of worn or damaged flanges with diameters ranging from 165 mm ID up to 920 mm OD (6.5“ ID – 36.220“ AD)

TECHNICAL FEATURES:

Machine	US150-ASB
Clamping capacity	Ø150 - Ø1524.0 mm
	5.906” - 60”
Machining capacity ØA	167 mm
	6.575”
Machining capacity ØB	917 mm
	36.102”

US450-ASB

ORDER NO.	DESCRIPTION
US450-3000	Flange facing attachment, for the remachining and resurfacing of worn or damaged flanges with diameters ranging from 165 mm ID up to 900 mm OD (6.5“ ID – 35.4“ AD)

TECHNICAL FEATURES:

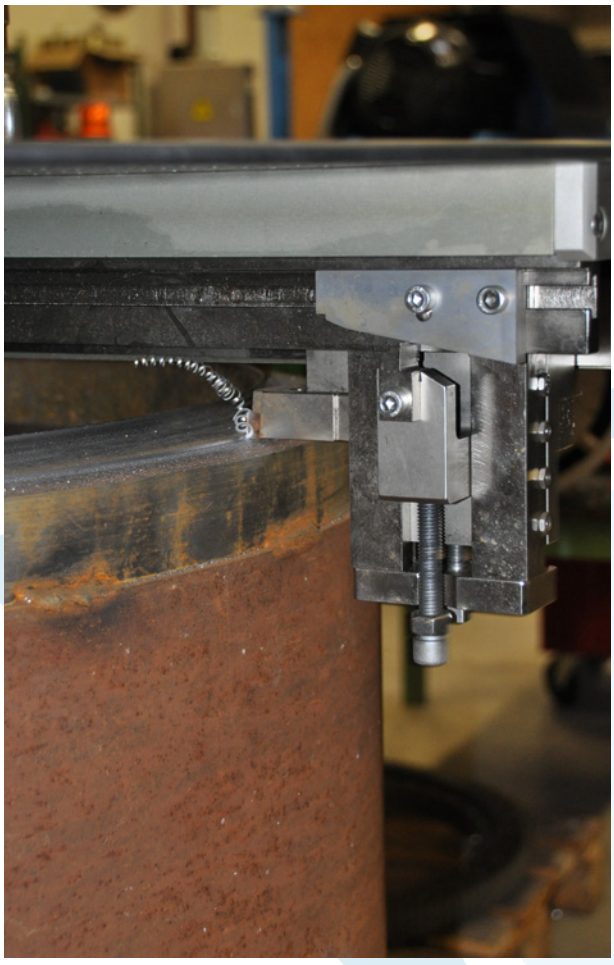
Machine	US450-ASB
Clamping capacity	Ø 420 – Ø1828.8 mm
	16.535” - 72”
Machining capacity ØA	450 mm
	17.717”
Machining capacity ØB	1828.8 mm
	72”

COPYING CARRIAGE OPTION

To Perform Compound Bevels on Heavy Pipes

Copying Carriage

For US & TT machines



DESCRIPTION:

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

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 TT-NG series.

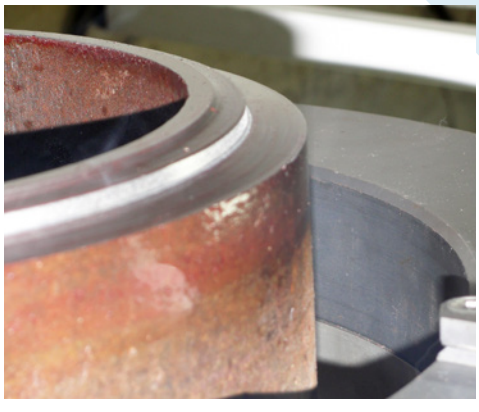
Using HSS or carbide inserts allows machining on metal pipes including mild steel, chrome, stainless steel, duplex, super duplex, coppernickel alloy steel, inconel, P91, aluminium, copper, exotic alloys and more.

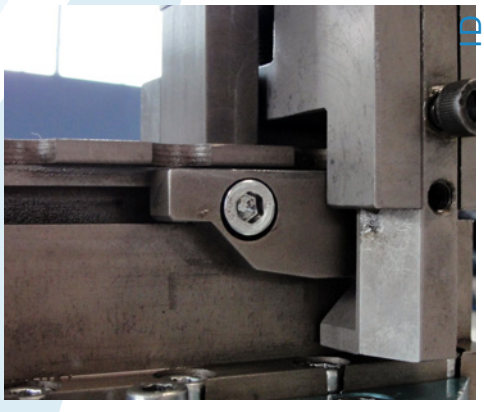
To implement the copying carriage system, simply remove the tool plate from the unit and fit the copying arm on the machine. This implementation is fast and easy to do. Once it has been completely equipped with its copying arm, the machine is ready to perform beveling operations

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:





US40

ORDER NO.	DESCRIPTION
US40-3000	Copying carriage stroke 65 mm (2.559")
US40-KS.S	Cam for compound bevel or J-bevel (Please send a drawing)
US40-KS.S1	Cam for simple bevel (Please send a drawing)

US80

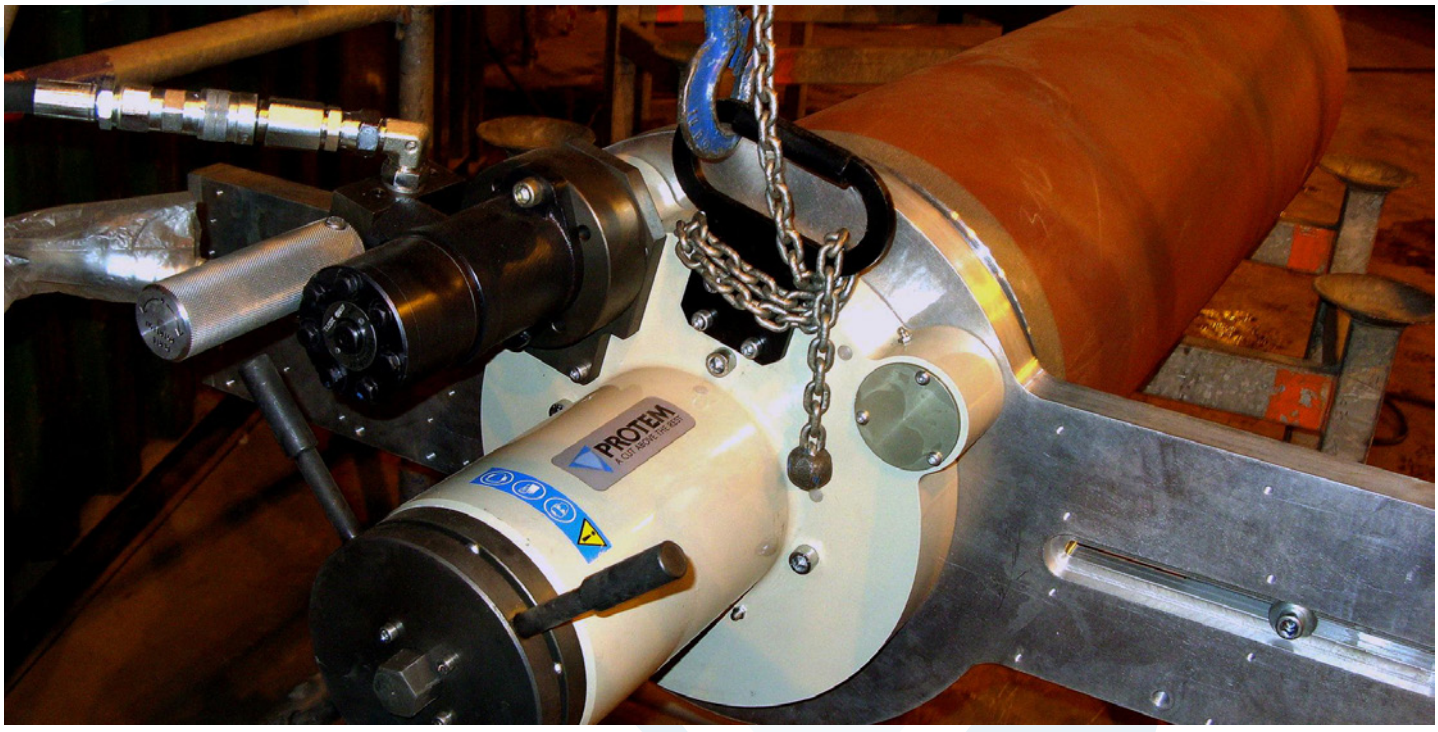
ORDER NO.	DESCRIPTION
US80-3000	Copying carriage stroke 75 mm (2.952")
US80-KS.S	Cam for compound bevel or J-bevel (Please send a drawing)
US80-KS.S1	Cam for simple bevel (Please send a drawing)

US150

ORDER NO.	DESCRIPTION
US150-3100	Copying carriage, stroke 75 mm (2.952") up to 30“ O.D.
US150-3200	Copying carriage, stroke 75 mm (2.952") up to 36“ O.D.
US150-KS.S	Cam for compound bevel or J-bevel (Please send a drawing)
US150-KS.S1	Cam for simple bevel (Please send a drawing)

US450

ORDER NO.	DESCRIPTION
US450-3200	Copying carriage, for diam. 20-48“
US450-KS.S	Cam for compound bevel or J-bevel (Please send a drawing)
US450-KS.S1	Cam for simple bevel (Please send a drawing)

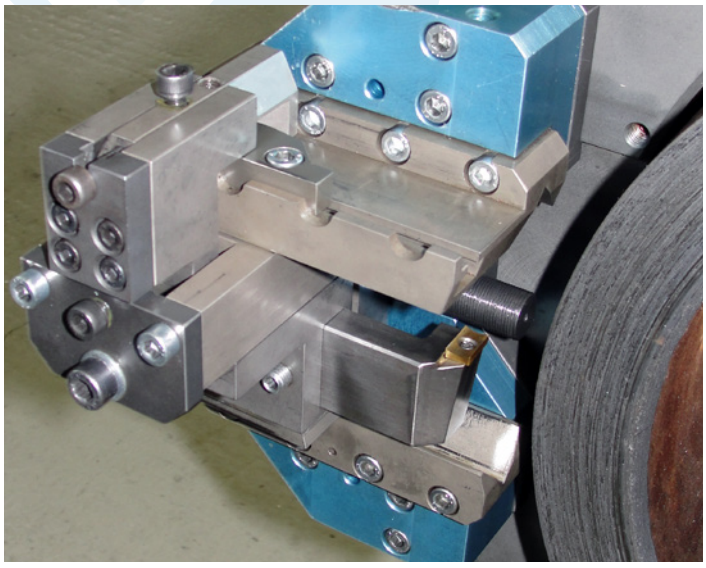


TT-NG

ORDER NO.	DESCRIPTION
TTNG-4200	Copying carriage stroke 50 mm (1.968")
TT-KS50.S	Cam for compound bevel or J-bevel (Please send a drawing)
TT-KS50.S1	Cam for simple bevel (Please send a drawing)

ORDER NO.	DESCRIPTION
TTNG-4300	Copying carriage stroke 100 mm (3.937")
TT-KS.S100	Cam for simple bevel (Please send a drawing)

ORDER NO.	DESCRIPTION
TT-KS150	Copying carriage stroke 150 mm (5.905")
TT-KS150.S	Cam for simple bevel (Please send a drawing)



ELBOW MANDREL ASSEMBLY

EMA

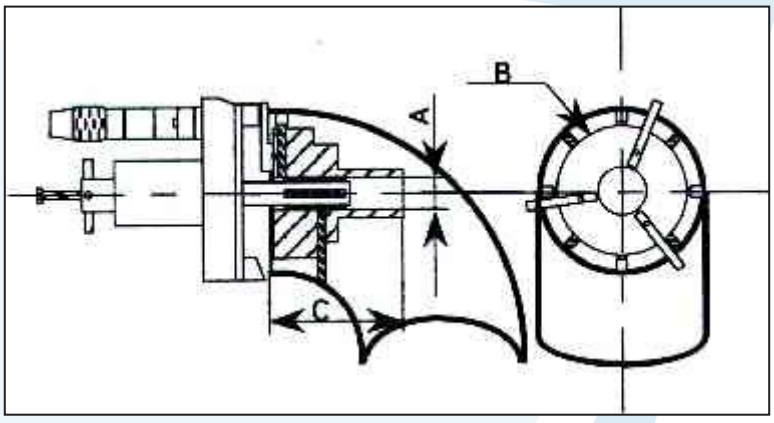
For US machines

DESCRIPTION:

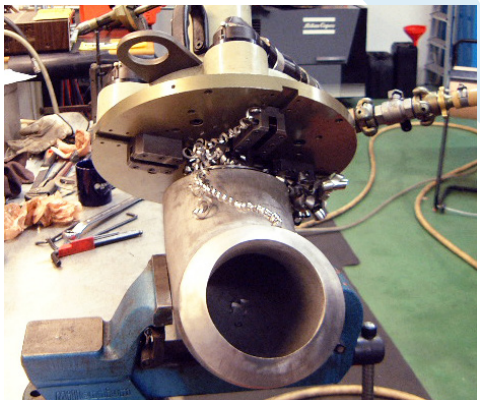
This new generation of elbow mandrel assembly allows the positioning of a US-type machine on all types of elbows.

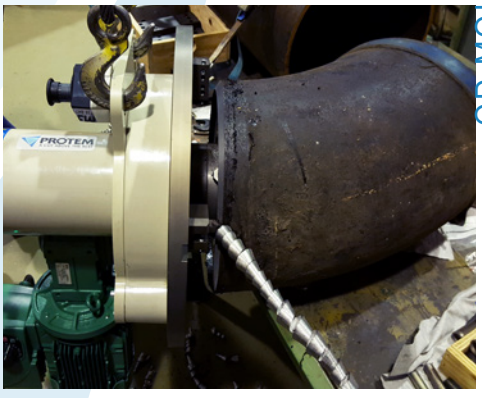
The mounting system provides precise concentric positioning of the machine in the elbow which creates an extremely precise alignment that leads to a high quality weld-end preparation on all types of elbows and materials including stainless steel and high nickel alloys.

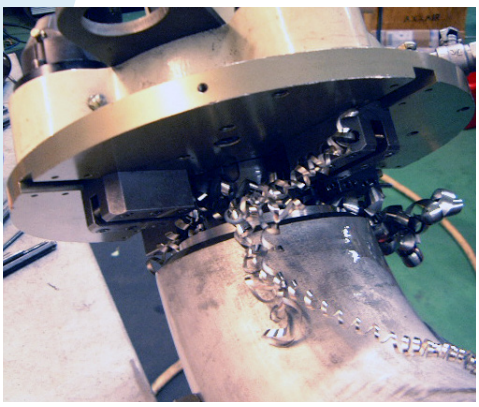
DIMENSIONS:



APPLICATIONS:







US25-EMA

ORDER NO.	DESCRIPTION
US25PR/C-1000	US25-EMA-40-64 elbow mandrel assembly for US25 (40-64 mm) (1.575" - 2.520")
US25PR/C-1001	US25-EMA-64-90 elbow mandrel assembly for US25 (64-90 mm) (2.520" - 3.543")
US25PR/C-1002	US25-EMA-90-119 elbow mandrel assembly for US25 (90-119 mm) (3.543" - 4.685")

DIMENSIONS:

ØA	ØB	C
-	38 mm - 1.496”	40 mm - 1.575”
-	61 mm - 2.402”	40 mm - 1.575”
-	87.5 mm - 3.445”	40 mm - 1.575”

TECHNICAL FEATURES:

ID Clamping Ø .	OD CLAMPING Ø .
38 mm - 1.496”	68.5 mm - 2.697”
62 mm - 2.44”	92 mm - 3.622”
88 mm - 3.465”	118 mm - 4.646”

US40-EMA

ORDER NO.	DESCRIPTION
US40PR/C-1000	Spider type elbow mandrel kit
US40PR/C-1001	Elbow mandrel assembly for diameters from 145 mm ID up to 219 mm OD (5,709” – 8,622“)

DIMENSIONS:

ØA	ØB	C
-	80 mm - 3.150”	40 mm - 1.575”
60 mm - 2.362”	139 mm - 5.472”	100 mm - 3.94”

TECHNICAL FEATURES:

ID Clamping Ø .	OD CLAMPING Ø .
80.5 mm - 3.169”	183 mm - 7.205”
145 mm - 5.709”	219 mm - 8.622”

US150-EMA

ORDER NO.	DESCRIPTION
US150PR/C-1000	US150-EMA standard elbow mandrel assembly for US150 (261-508 mm) for easy installation into the elbow , tube or flange (allows to center the machine according to the bevel to perform)

US30CH-EMA

ORDER NO.	DESCRIPTION
US30CHPR/C-1000	Elbow mandrel assembly for US30CH (55-79,6 mm)
US30CHPR/C-1001	Elbow mandrel assembly for US30CH (78,43-121,54 mm) (3.088" - 4.785")
US30CHPR/C-...	For Ø > 121,54 mm (4.785"): on request

DIMENSIONS:

ØA	ØB	C
35 mm - 1.378"	60 mm - 2.362”	100 mm - 3.94”

TECHNICAL FEATURES:

ID Clamping Ø .	OD CLAMPING Ø .
65 mm - 2.559”	160 mm - 6.299”

US80-EMA

ORDER NO.	DESCRIPTION
US80PR/C-1000	Spider type elbow mandrel kit for easy installation into the flange or tube. Capacity: 100 to 180 mm ID (3.9“– 7” ID)
US80PR/C-1001	Clamping spider for elbows. Allows an easy set up in tube, pipe or flange. Capacity: 170 to 356 mm ID (3.9“– 7” ID)

DIMENSIONS:

ØA	ØB	C
-	80 mm - 3.150”	50 mm - 1.968”
85.4 mm - 3.36”	166 mm - 6.535”	140 mm - 5.512”

TECHNICAL FEATURES:

ID Clamping Ø .	OD CLAMPING Ø .
90 mm - 3.543”	180 mm - 7.087”
170.9 mm - 6.728”	356 mm - 14.016”

DIMENSIONS:

ØA	ØB	C
155 mm - 6.10”	255 mm - 10.039”	140 mm - 5.51”
180 mm - 7.087”	320 mm - 12.598”	208 mm - 8.189”

TECHNICAL FEATURES:

ID Clamping Ø .	OD CLAMPING Ø .
90 mm - 3.543”	180 mm - 7.086”
170.9 mm - 6.728”	356 mm - 14.016”

CONCENTRIC CLAMPING DEVICE FOR ELBOWS

ECM

For Protem US-Series Machines

DESCRIPTION:

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.

US25-ECM

ORDER NO.	DESCRIPTION
US25-3801	Elbow mandrel assembly for US25 (25 - 33.45 mm)
US25-3802	Elbow mandrel assembly for US25 (32 - 45.91 mm)
US25-3803	Elbow mandrel assembly for US25 (42 - 79.37 mm)

US30CH-ECM

ORDER NO.	DESCRIPTION
US30CH-1901	Elbow mandrel assembly for US30CH (32 - 45.91 mm)
US30CH-1902	Elbow mandrel assembly for US30CH (42 - 67.4 mm)
US30CH-1903	Elbow mandrel assembly for US30CH (76.71 - 121.31 mm)

US40-ECM

ORDER NO.	DESCRIPTION
US40-2701	Elbow mandrel assembly for US40 (42 - 79.37 mm)
US40-2702	Elbow mandrel assembly for US40 (76.71 - 151.29 mm)

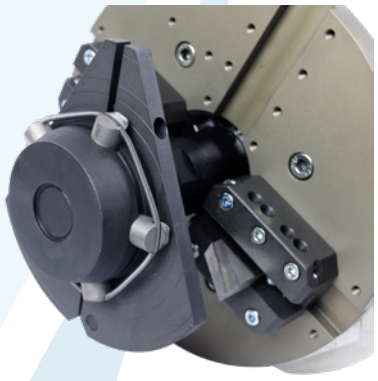
US80-ECM

ORDER NO.	DESCRIPTION
US80-3301	Elbow mandrel assembly for US80 (80 - 158.11 mm)
US80-3302	Elbow mandrel assembly for US80 (150 - 265.83 mm)
US80-3303	Elbow mandrel assembly for US80 (252.02 - 277.82 mm)

US150-ECM

ORDER NO.	DESCRIPTION
US150-3801	Elbow mandrel assembly for US150 (150 - 256.83 mm)
US150-3802	Elbow mandrel assembly for US150 (252.02 - 277.82 mm)
US150-3803	US150-ECM-380 elbow mandrel assembly for US150

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.

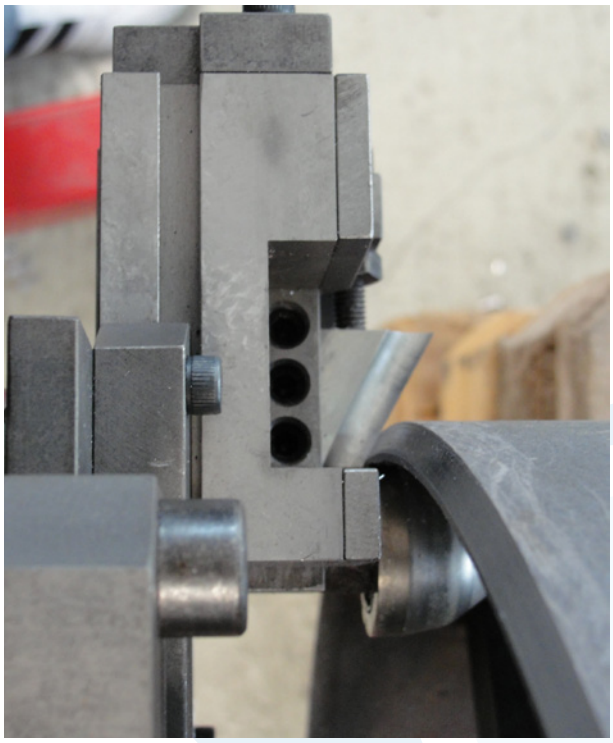
OD MOUNTED MACHINING

TRACKER OPTION

To Obtain a Precise Machining Geometry

IDT & ODT

For US, TT, and PFM Machines



DESCRIPTION:

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 TT-NG 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 MACHINING

US40

ORDER NO.	DESCRIPTION
US40-2500	ID-Tracker from 120 mm (4.724“) I.D to 219 mm (8.622“) O.D

US80

ORDER NO.	DESCRIPTION
US80-2800	ID-Tracker from 150 mm (4.724“) I.D to 355 mm (14“) O.D

US150

ORDER NO.	DESCRIPTION
US150-3400	ID-Tracker from 220 mm (8.661“) I.D to 508 mm (20“) O.D
US150-3500	OD-Tracker to keep a constant land when tube is oval. Can be used from 324,6 mm I.D to 489,6 mm O.D.

US450

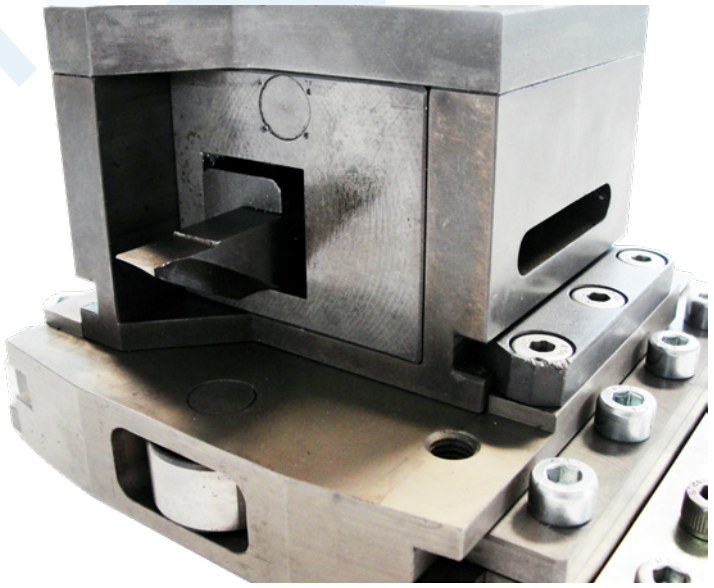
ORDER NO.	DESCRIPTION
US450-3400	ID-Tracker
US450-3500	OD-Tracker

PFM

ORDER NO.	DESCRIPTION
US-HSB-R-PO-5001	Stronger ID tracking carriage. With excentric.
US-HSB-R-PO-1401	Follower roller diameter 40 set on reference 5001
US-HSB-R-PO-1301	Follower roller diameter 36 set on reference 5001

TT-NG

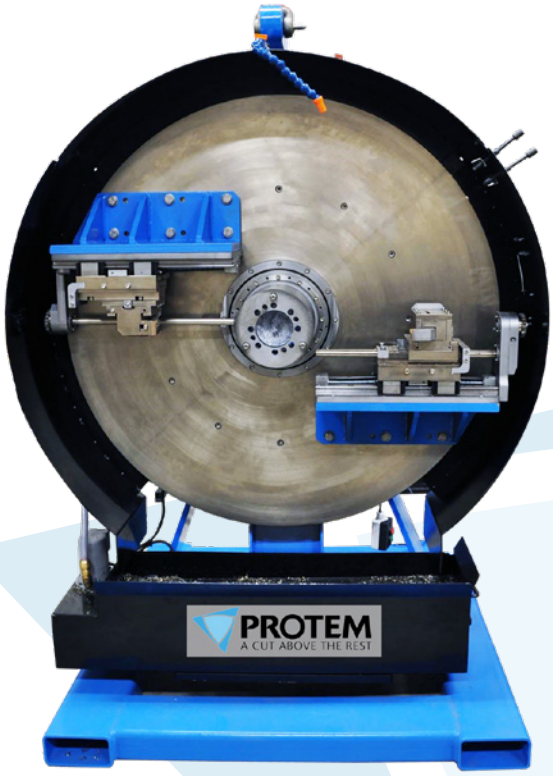
ORDER NO.	DESCRIPTION
TTNG-ODT-1000	OD Tracker for TT210 to TT610
TTNG-ODT-1002	OD Tracker for TT762
TTNG-ODT-1004	OD Tracker for TT900 to TT1016



US600R

US600R version 1

Ø 600 - 1000 mm (23.622” - 39.370”)



DESCRIPTION:

The Protem US600-R is a transportable machine that performs custom bevels from 600 mm (23.622“) up to 1000 mm (39.370“) (version 1) or 1000 mm (39.370“) up to 1500 mm (59,055“) (version 2).

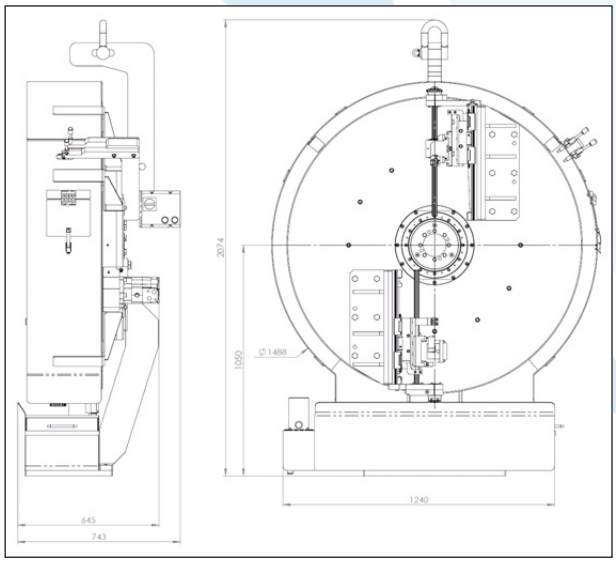
It is designed to perform bevels on rough tubes and pipes by using standard carbide inserts and can easily perform beveling jobs on wall thicknesses up to 4“ wall pipe. The machine is hydraulically driven and connected to a 30 kW power pack.

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

ORDER NO.	DESCRIPTION
US600-R version 1	Inside clamping beveling and surfacing unit for tubes of 18“ to 56“ with copying carriage and spider clamping kit

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✗	✓	✓	✗

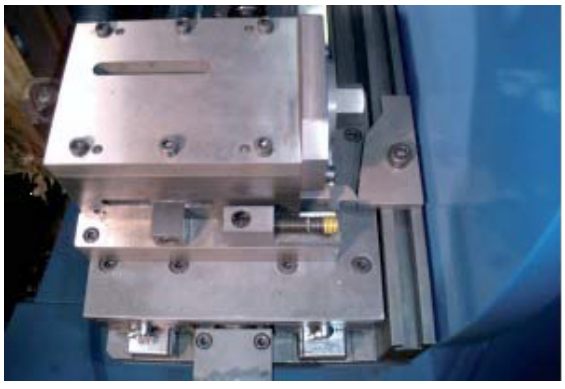
DIMENSIONS:



TECHNICAL FEATURES:

Machine	US600R Version 1
Machining Capacity	600 - 1000 mm
	23.622“ - 39.370“
Clamping capacity	545 - 1000 mm
	21.456“ - 39.370“
Tool feed	Adjustable
Tool rotation	Up to 50 rpm
Motor	Dual hydraulic drive

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

US600R version 2

Ø 1000 - 1500 mm (39.370” - 59.055 ”)

DESCRIPTION:

The US 600-R is simply the most suitable beveler for heavy wall tubes and pipes, large diameters and Increased productivity and efficiency.

This machine features many advantages:

- **Transportable**
- **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 condition thanks to a strong and powerful design**
- **Versatile**
- **Modular design**
- **Safe use on site and in your workshop.**

ORDER NO.	DESCRIPTION
US600-R version 2	Inside clamping beveling and surfacing unit for tubes of 18“ to 56“ with copying carriage and spider clamping kit

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✗	✓	✓	✗

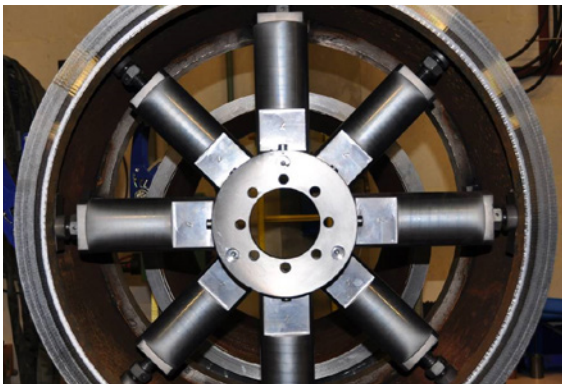
OPTIONS:

ORDER NO.	DESCRIPTION
US600-R-POSUI	ID tracking carriage to adapt to the pipe's ovality
US600-R-PODEL	Counterboring carriage
US600-R-OA	Optional adjustment arm
US600R-LUB	Lubrication kit
US600-R-K01	Wooden crate
US600-R-K02	US600-R-K02 Wooden crate for several uses
US600-R-K03	Wooden Crate with shrink wrapping (Recommended for shipment by boat)

TECHNICAL FEATURES:

Machine	US600R Version 2
Machining Capacity	1000 mm - 1500 mm
	39.370“ - 59.055“
Clamping capacity	1000 mm - 1500 mm
	(39.370“ - 59.055“)
Tool feed	Adjustable
Tool rotation	Up to 50 rpm
Motor	Dual hydraulic drive

Spider clamping kit



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

ORDER NO.	DESCRIPTION
US600-R-SS	US600-R-SS Small spider clamping kit for diameters from 16" to 32" included in the price of the US 600 R
US600-R-BS	US600-R-BS Big spider clamping kit for diameters from 30“ to 56“

PIPE FACING MACHINES

Ø 101.6 mm - 1828.8 mm
Ø 4” – 72”

OD MOUNTED MACHINING

PFM	Machining Capacity	
PFM 414	101.6 - 355.6 mm	4” – 14”
PFM 1222	323.9 - 558.8 mm	12” – 22”
PFM 1030	273.1 - 762 mm	10” – 30”
PFM 3038	762 - 1066 mm	30” - 38”
PFM 3848	965 - 1219.2 mm	38” - 48”

BIGGER MODELS ON REQUEST

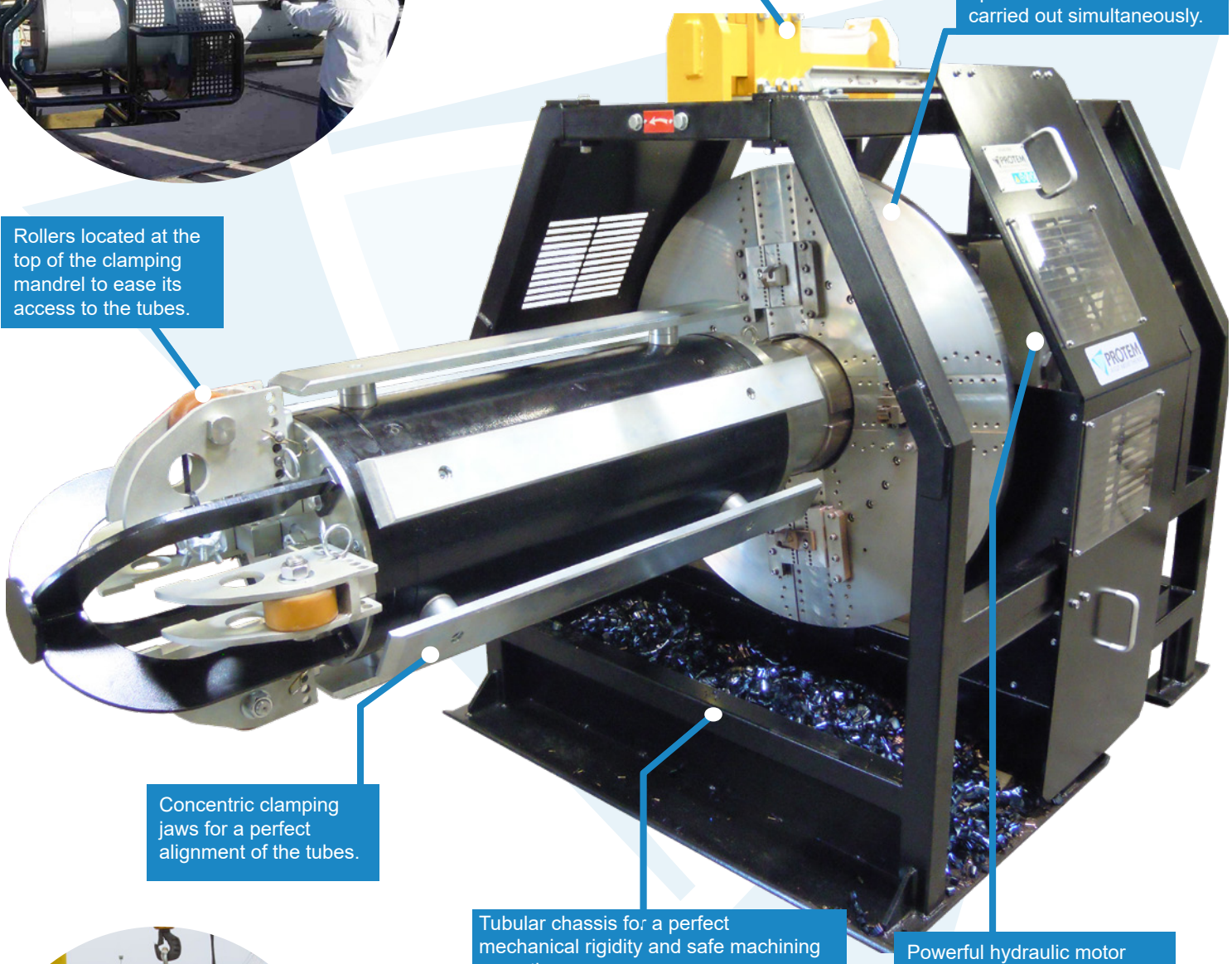
INDUSTRIES:

Spoolbases	Pipelines Construction
	
Pipelines Maintenance	Oil & Gas
	

Transportable on-site and/or in workshop.

Tool-holder plate for up to four tool bits for facing, beveling and counterboring operations which can be carried out simultaneously.

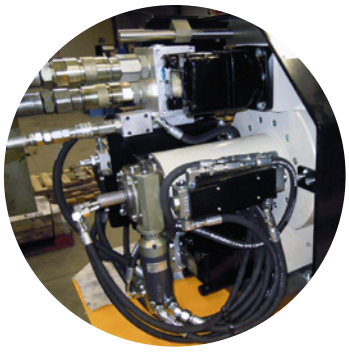
Rollers located at the top of the clamping mandrel to ease its access to the tubes.



Concentric clamping jaws for a perfect alignment of the tubes.

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

Powerful hydraulic motor suitable for the machining of large wall thicknesses.



PFM

Ø 101.6 - 1828.8 mm (4” - 72”)

DESCRIPTION:

The PROTEM PFM HSB are reliable and very powerful portable PIPE FACING MACHINES for diameters ranging from 4” to 72”.

The pipeline machinery equipement you will need for all your pipeline projects. Drastically increase your productivity!

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:

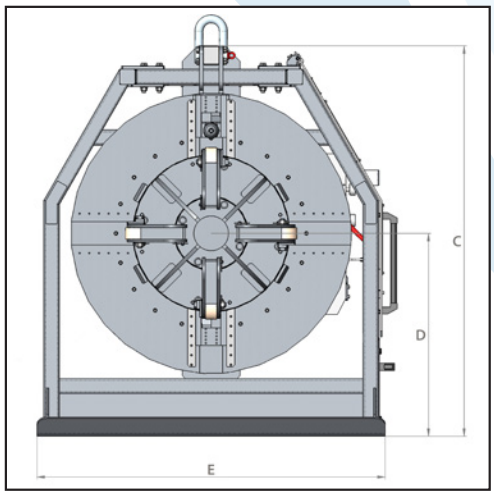
Pipe Facing machines for the most demanding and challenging pipeline applications

Offshore - Onshore - deep water - spool bases

Maximize your production to minimize your downtime

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✗	✓	✓	✗

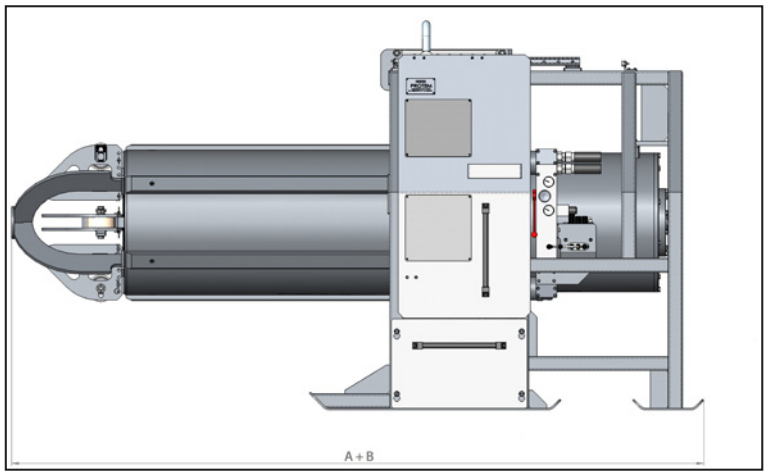
DIMENSIONS:



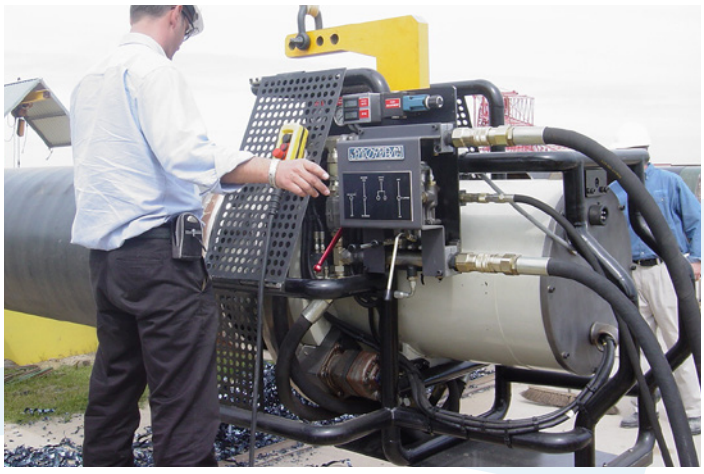
TECHNICAL FEATURES:

Machine	PFM
Machining Capacity	101.6 mm (4“) OD
	1219.2 mm (72“) OD
Specific shapes & angles	Facing, 30°, 37°30, 45° bevel, counterbore, J-bevel and others on request
Clamping	Automatic with hydraulic drive
Feed	Automatic with hydraulic drive
Drive Power	Hydraulic

DIMENSIONS VIEW 2 :



PFM ON-SITE:



APPLICATIONS:

OD MOUNTED MACHINING

PFM-414 | HSB-80/150

Ø 168 - 355.6 mm (4” - 14”)

ORDER NO.	DESCRIPTION
US150HSB-AR-1000	High speed beveling maching type US-HSB-R-1000 for tubes 4-14“

TECHNICAL FEATURES:

Machine	PFM-414	
Tool plate feed stroke:	50 mm	
	1.968“	
Mandrel expansion stroke:	21 mm	
	0.826“	
	Minimum	Maximum
Advance speed of plate tool holders:	20 rpm	150 rpm
Tool plate feed stroke:	0.05 mm/ rev.	0.3 mm/ rev.
Mandrel supply pressure:	75 bar	150 bar
	1 087 psi	2 175 psi
Tool plate rotation supply pressure:	65 bar	130 bar
	942 psi	1 885 psi
Tool plate feed supply pressure:	45 bar	120 bar
	652 psi	1740 psi
Wall thickness on X42 material bevel 30°:	10 mm	30 mm
	0.375”	1.180”

DIMENSIONS:

HSB-80

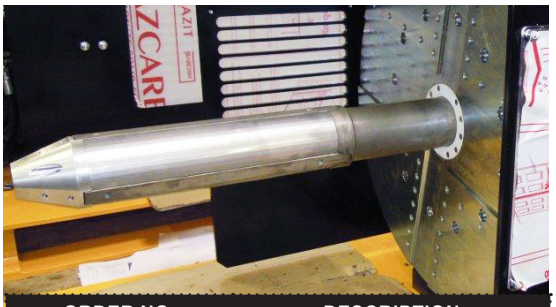
A	1150 mm 45.275“
B	50 mm 1.968“
C	871 mm 34.291“
D	424 mm 16.693“
E	800 mm 31.496“

HSB-150

A	1310 mm 51.575“
B	50 mm 1.968“
C	871 mm 34.291“
D	424 mm 16.693“
E	800 mm 31.496“

PFM-414 | HSB-80/150

Expansion mandrel



ORDER NO.	DESCRIPTION
US-HSB-R-2804	OD clamping system for machining pipes from 6 to 14'' (168-273.1 mm)

ORDER NO.	DESCRIPTION
US-HSB-R-2504	OD clamping system for machining pipes from 10 to 14'' (273.1-355 mm)

The US80/150HSB-R-HYD can be equipped with two different clamping mandrels. Within a short time through the replacement of either the US150 mandrel or the US80 mandrel, the range of diameters can be reduced or increased according to the version of the expansion mandrel.

Options:	Expansion mandrel US80	Expansion mandrel US150
ID range	80 mm - 273 mm (3.149" - 10.748")	150 mm - 361 mm (5.905" - 14.213")
OD range	6'' pipe /Ø OD 168 mm	10'' pipe /Ø OD 273 mm
	10'' pipe/ Ø OD 273 mm	14'' pipe/ Ø OD 356 mm
Wall thickness on X42 material bevel 30°	0.394''/10 mm	0.394''/10 mm
	1.000''/25 mm	1.181''/30 mm

PFM-1222 | HSB-220

Ø 323.9 - 558.8 mm (12'' - 22'')

ORDER NO.	DESCRIPTION
US220HSB-1000	High speed beveling maching type US220-HSB for tubes 12-22"

TECHNICAL FEATURES:

Machine	PFM-1222	
Tool plate feed stroke:	80 mm	
	3.149"	
Mandrel expansion stroke:	44.1 mm	
	1.736"	
	Minimum	Maximum
Tool plate rotation speed:	22 rpm	100 rpm
Advance speed of plate tool holders:	0.05 mm/ rev.	0.3 mm/ rev.
Mandrel supply pressure:	75 bar	150 bar
	1 087 psi	2 175 psi
Tool plate rotation supply pressure:	65 bar	130 bar
	942 psi	1 885 psi
Tool plate feed supply pressure:	45 bar	120 bar
	652 psi	1 740 psi
Wall thickness on X42 material bevel 30°:	10 mm	30 mm
	0.375''	1.180''

≈ 1150 kg
≈ 2535 lbs

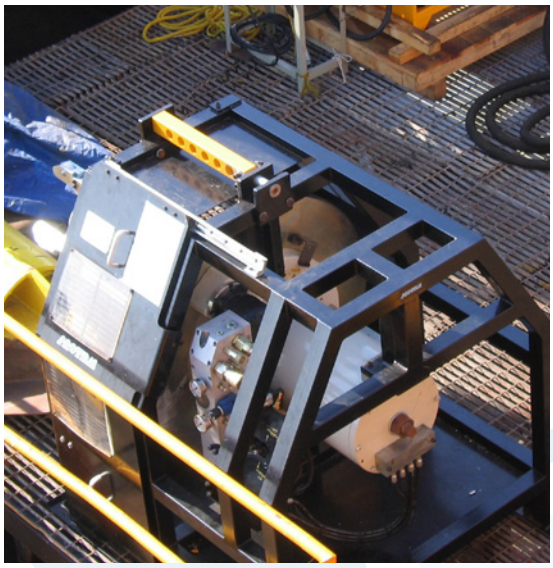
DIMENSIONS:

HSB-220

A	2030 mm 79.921"
B	180 mm 7.087"
C	1410 mm 55.512"
D	640 mm 25.197"
E	1250 mm 49.212"

PFM-1030 | HSB-420

Ø 273.1 - 762 mm (10” - 30”)



≈ 3000 kg
≈ 6613 lbs

TECHNICAL FEATURES:

Machine	PFM-1030	
Tool plate feed stroke:	80 mm 3.149“	
Mandrel expansion stroke:	48.8 mm 1.921“	
	Minimum	Maximum
Tool plate rotation speed:	12 rpm	55 rpm
Advance speed of plate tool holders:	0.05 mm/ rev.	0.3 mm/ rev.
Mandrel supply pressure:	60 bar 870 psi	120 bar 1 740 psi
Tool-plate rotation supply pressure:	60 bar 870 psi	120 bar 1 740 psi
Tool-plate feed supply pressure:	55 bar 797 psi	110 bar 1 595 psi
Wall thickness on X42 material bevel 30°:	10 mm 0.375’’	32 mm 1.250’’

DIMENSIONS:

HSB-420

A	2672 mm 105.196“
B	83 mm 3.267“
C	1796 mm 70.708“
D	830 mm 32.677“
E	1360 mm 53.543“

ORDER NO.	DESCRIPTION
US420HSB-1000	High speed beveling maching type US420-HSB for tubes 10-30“

PFM-3038 | HSB-620

Ø 762 - 1066 mm (30” - 38”)

≈ 3500 kg
≈ 7716 lbs

TECHNICAL FEATURES:

Machine	PFM-3038	
Tool plate feed stroke:	150 mm	
	5.905“	
Mandrel expansion stroke:	48.8 mm	
	1.921“	
	Minimum	Maximum
Tool plate rotation speed:	12 rpm	50 rpm
Advance speed of plate tool holders:	0.05 mm/ rev.	0.3 mm/ rev.
Mandrel supply pressure:	75 bar	150 bar
	1 087 psi	2 175 psi
Tool plate rotation supply pressure:	65 bar	130 bar
	942 psi	1 885 psi
Tool plate feed supply pressure:	55 bar	110 bar
	797 psi	1 595 psi
Wall thickness on X42 material bevel 30°:	10 mm	35 mm
	0.375’’	1.375’’

DIMENSIONS:

HSB-620

A	3074 mm 121.023“
B	150 mm 5.905“
C	1544 mm 60.787“
D	755 mm 29.724“
E	1320 mm 51.968“

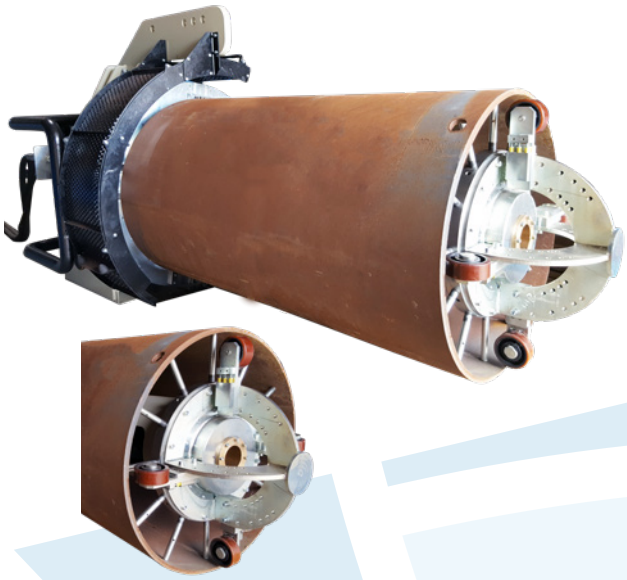
ORDER NO.	DESCRIPTION
US620HSB-1000	High speed beveling maching type US620-HSB for tubes 30-38“

PFM

PFM-3848 | HSB-820

Ø 965 - 1219.2 mm (38” - 48”)

≈ 4000 kg
≈ 8818.3 lbs



ORDER NO.	DESCRIPTION
PFM-3448-1000	High speed beveling maching type US820-HSB for tubes 38-48“

TECHNICAL FEATURES:

Machine	PFM-3848	
Tool-plate feed stroke:	150 mm	
	5.905“	
Mandrel expansion stroke:	48.8 mm	
	1.921“	
	Minimum	Maximum
Tool-plate rotation speed:	10 rpm	42 rpm
Tool-plate feed stroke:	0.05 mm/ rev.	0.3 mm/ rev.
Mandrel supply pressure:	75 bar	150 bar
	1 087 psi	2 175 psi
Tool-plate rotation supply pressure:	65 bar	130 bar
	942 psi	1 885 psi
Tool-plate feed supply pressure:	55 bar	110 bar
	797 psi	1 595 psi
Wallthickness on X42 material bevel 30°:	10 mm	30 mm
	0.375”	1.180”

DIMENSIONS:

HSB-820

A	3877 mm 152.637“
B	150 mm 5.905“
C	871 mm 34.291“
D	424 mm 16.692“
E	800 mm 31.496“

BIGGER MODELS ON REQUEST

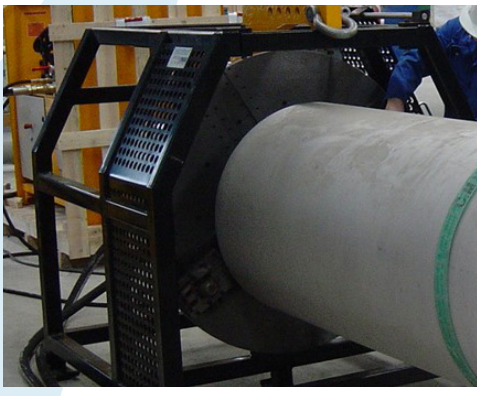
HSB-1020

ORDER NO.	DESCRIPTION
PFM-4656-1000	High speed beveling maching type US1020-HSB for tubes 48-56“

HSB-1220

ORDER NO.	DESCRIPTION
PFM-5464-1000	High speed beveling maching type US1220-HSB for tubes 54-64“

HSB-1420

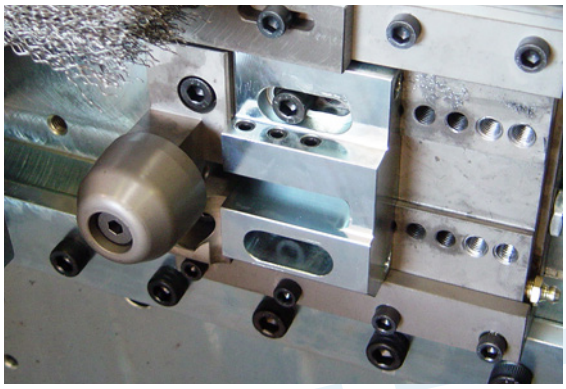


ORDER NO.	DESCRIPTION
PFM-6272-1000	High speed beveling maching type US1420-HSB for tubes 62-72“

OD MOUNTED MACHINING

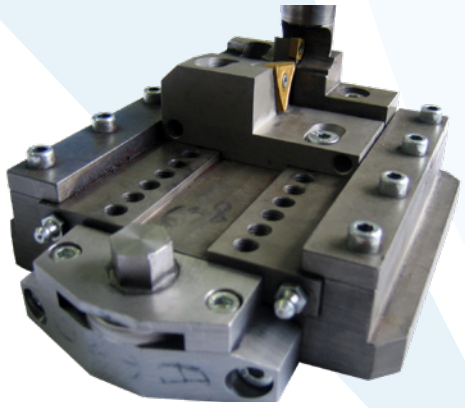
OPTIONS:

ID-Tracker



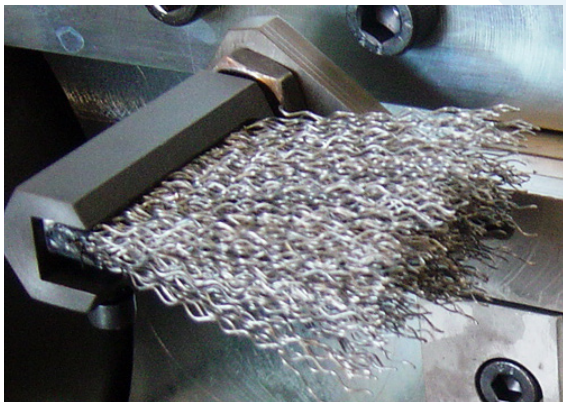
ORDER NO.	DESCRIPTION
US-HSB-R-PO-5001	Enhanced version of the roller tracking carriage without eccentric roller
US-HSB-R-PO-1401	Tracking roller, diameter 40 set on reference 5001
US-HSB-R-PO-1301	Tracking roller diameter 36 set on reference 5001
US-HSB-R-PO-1201	Follower roller diameter 28 set on reference 5001.

Tool Holder



ORDER NO.	DESCRIPTION
US-HSB-R-PO/3014	Outside beveling carbide insert holder 10°
US-HSB-R-PO/3025	Outside beveling carbide insert holder 20°
US-HSB-R-PO/3018	Outside beveling carbide insert holder 37°5
US-HSB-R-PO/3033	Outside beveling carbide insert holder 75°
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-2301	Brush Kit (only suitable for the tracking carriage)

ELBOW BEVELING MACHINE

Ø 406.4 - 1066.8 mm (16” - 42”)

DESCRIPTION:

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.

Beveling	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 50.8 mm (2") on carbon steel type XC45.

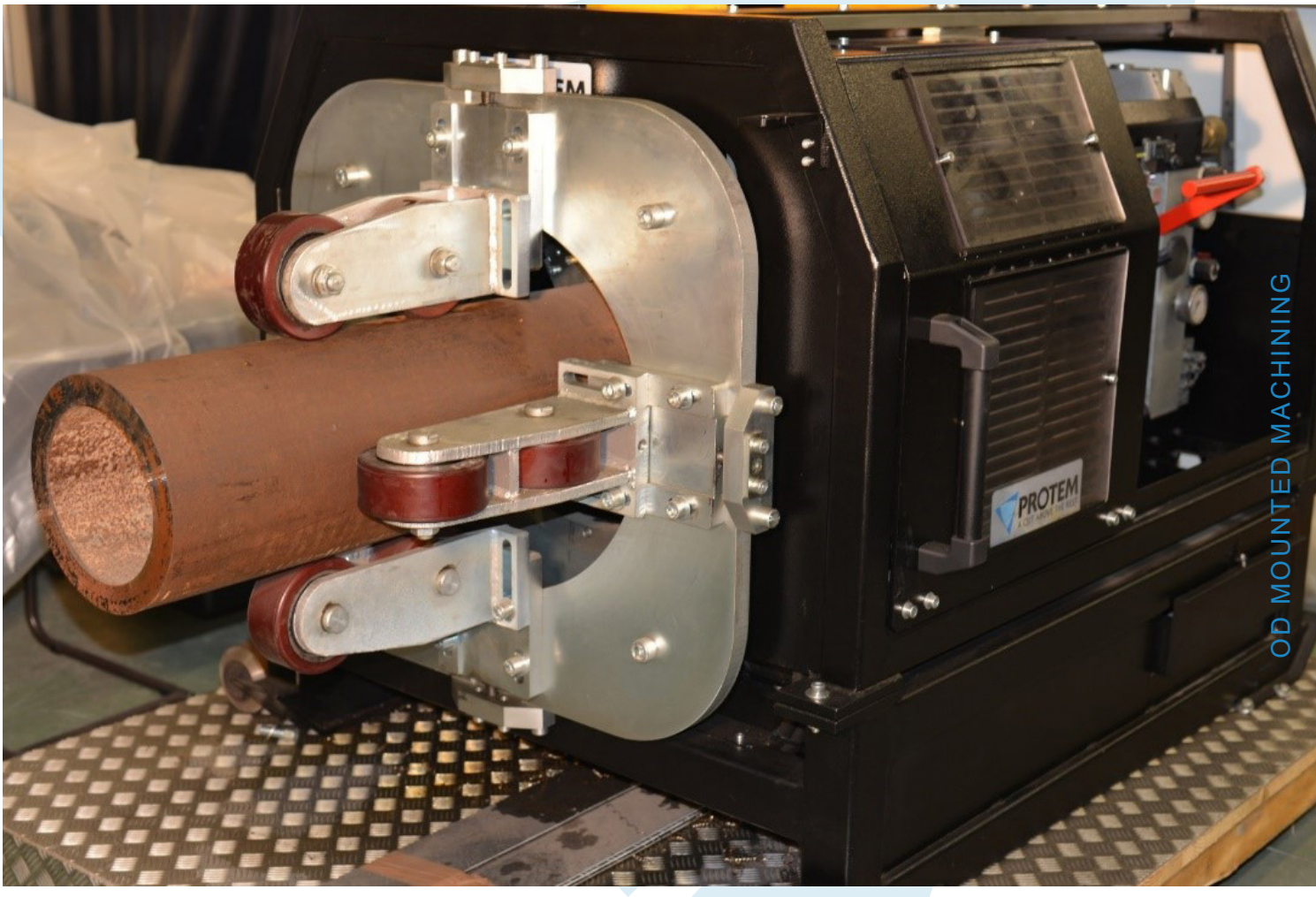
Four tool holder carriages with profile tracking are mounted onto the rotating plate. Thanks to a roller located on the inside diameter, this device allows the tools to follow the ovality of the elbow.

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).

OD MOUNTED TUBE AND PIPE BEVELING AND FACING MACHINE

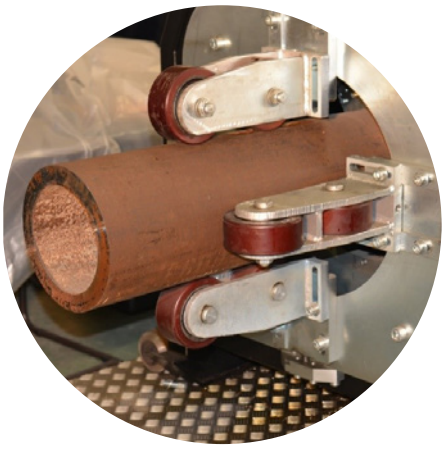
Ø152.4 mm - 355.6 mm
Ø 6” – 14“



OHSB Series	Machining Capacity	
OHSB	152.4 - 355.6 mm	6” – 14”
OHSB-C	152.4 - 355.6 mm	6” – 14”

INDUSTRIES:

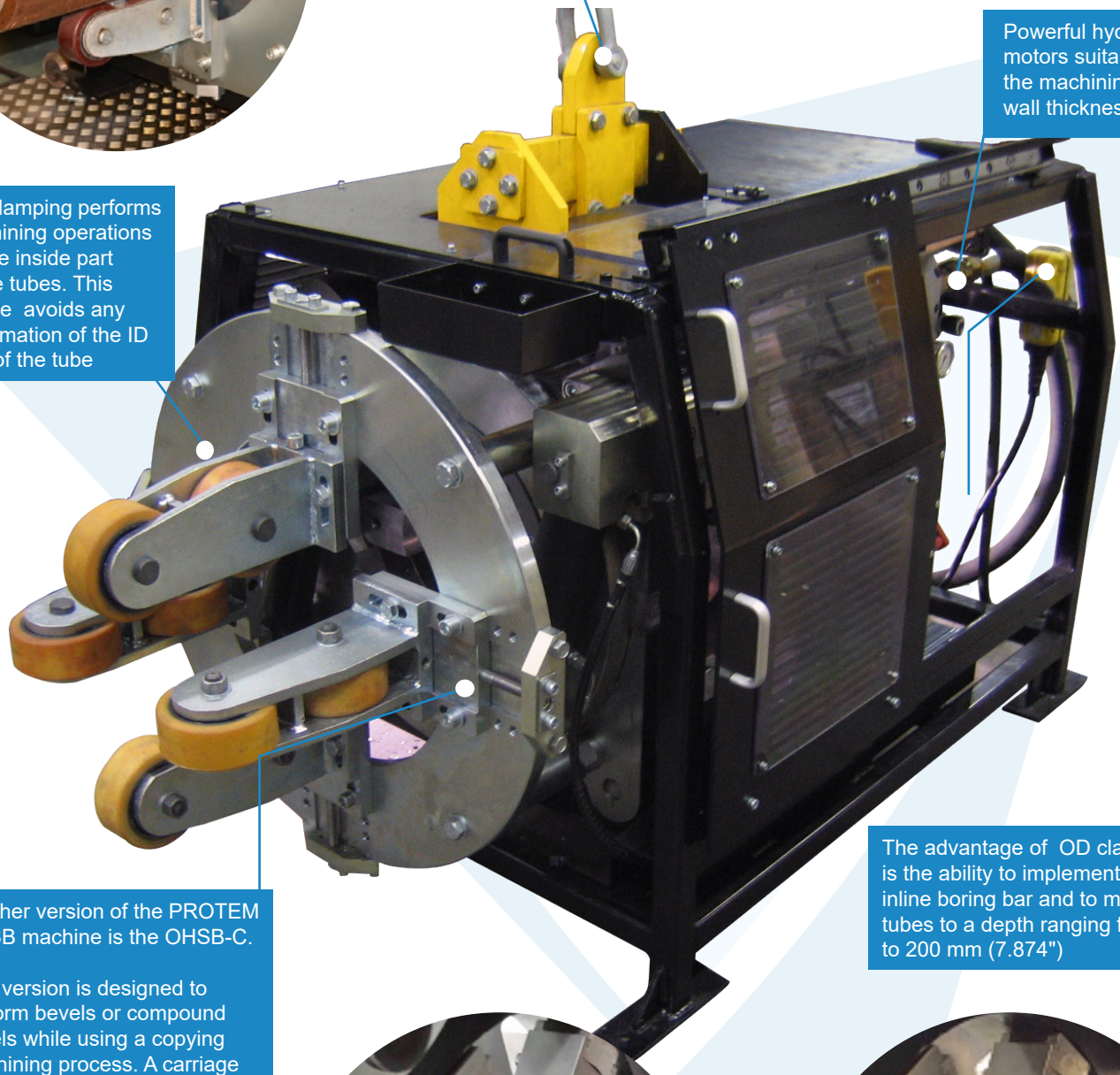
Shipbuilding	Tube Manufacturers
Spoolbases	Pipelines Construction



Easy to move from one working place to another, the OHSB machines can also be used as a stationary machine. Handling and set-up 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.

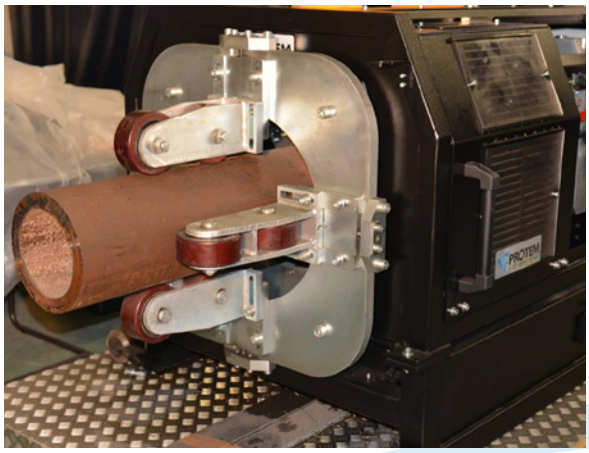
This version is designed to perform bevels or compound bevels while using a copying machining process. A carriage with radial hydraulic movement, mounted on the tool holder, performs beveling operations while using a copying cam.

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 200 mm (7.874")

OHSB

OHSB Standard

Ø 152.4 - 355.6 mm (6” - 14”)



DESCRIPTION:

The OHSB is a portable OD Mounted tube and pipe beveling and facing machine.

The OHSB features an OD clamping system for machining pipes with diameters ranging from 6 to 14’’ OD with wall thicknesses up to 60 mm.

The machine is perfect for use in the following operations:

- Facing
- Beveling : I, V, J, X shape or compounded bevels
- Counterboring
- Repeatable high quality surface

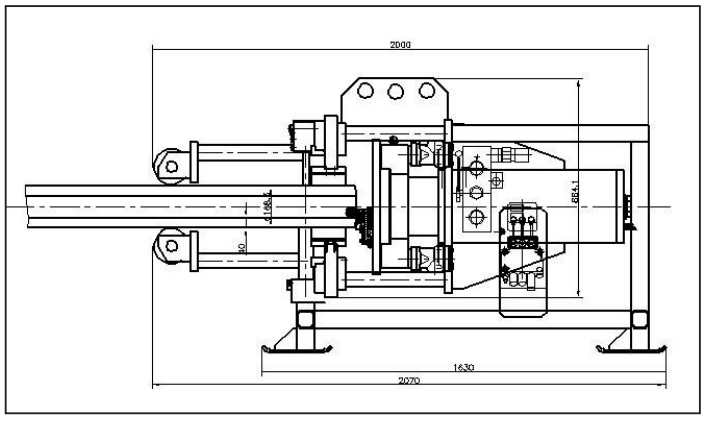
High performance. Perfectly suitable for manual or automated welding processes.

ORDER NO.	DESCRIPTION
O-HSB-6-14	OHSB Outside clamping beveling and surfacing unit for tubes ranging from 6“ to 14“

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✗	✓	✓	✗

OHSB MACHINING:

DIMENSIONS:



TECHNICAL FEATURES:

Machine	OHSB	
Mechanical tool plate feed movement	200 mm	
	7.874“	
Gripping jaw movement	50 mm / Ø	
	1.968“ / Ø	
Clamping jack movement	125 mm	
	4.921”	
	Minimum	Maximum
Tool plate rotation speed	10 tr/mn	230 tr/mn
Advance speed of tool plate holders	0.05 mm (.002")/tr	0.3 mm (.012")/tr
Clamping jack supply pressure	-	110 bar
		1 595 psi
Plate rotation drive supply pressure	-	80 bar
		1 160 psi
Plate rotation drive supply pressure	-	80 bar
		1 160 psi
Inside boring capacity	127 mm	218.44 mm
	5”	8.6“
Length of bore	0	152.4 mm
		6’’

OHSB-C-COPIAGE

Ø 152.4 - 355.6 mm (6” - 14”)

DESCRIPTION:

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

This version is designed to carry out 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: maximum 60 mm (2.362") on a height of chamfer lower than 30 mm (1.181") and a maximum angle of 37°.

The carriage is provided with a copying roller acting on the internal diameter of the tube.

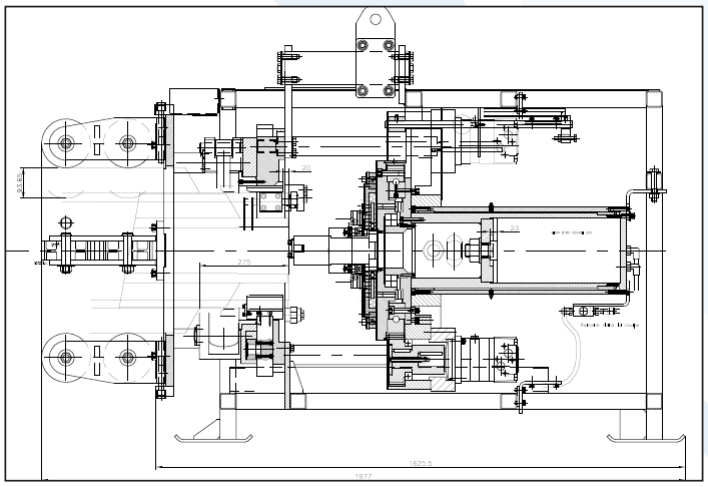
Minimum inside copying Ø: 100 mm (3.937")
Maximum inside copying Ø: 255 mm (10.039")

ORDER NO.	DESCRIPTION
O-HSB-C-6-14	O-HSB-C-6-14 Outside clamping beveling and surfacing unit for tubes of 6“ to 14“with copying carriage

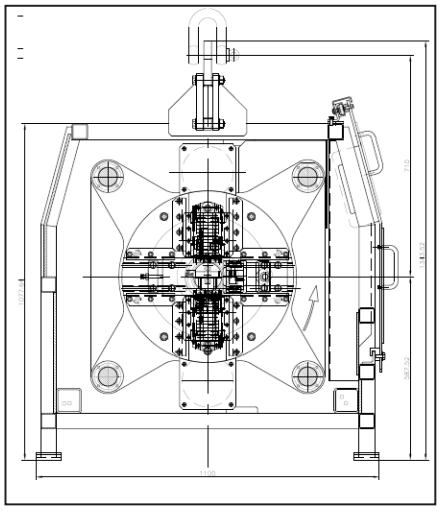
Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✗	✓	✓	✗

OD MOUNTED MACHINING

DIMENSIONS:



DIMENSIONS VIEW 2:



TECHNICAL FEATURES:

Machine	OHSB-C-COPIAGE
Machining Capacity	Maximum thickness 60 mm (2.362"); maximum angle 37°
Clamping capacity	152.4 mm (6“)
	355.6 mm (14“)
Maximum tool holder plate speed	170 rpm
Feed	Hydraulic actuating cylinder
Stroke	Axial 150 mm
	Radial 80 mm
Drive Power	Hydraulic

OPTIONS:

ORDER NO.	DESCRIPTION
OHSB-C-6-14-ME	O-HSB-C-6-14-ME Enveloping jaws (set of 4 jaws)
OHSB-C-6-14-BA	O-HSB-C-6-14-BA Boring bar + accessories L = 200 mm (7.874")
O-HSB-C-PO/3005	Counter boring carbide insert holder 15°
O-HSB-C-PO/3026	Copying carbide insert holder 30°
OHSB-K01	O-HSB-K01 Wooden crate
OHSB-K02	O-HSB-K02 Wooden crate for several uses
OHSB-K03	O-HSB-K03 Wooden Crate with shrink wrapping (Recommended for shipment by boat)

US1 ORBITAL TUBE CUTTING SAW

US1

Ø 12.7 - 168 mm (0.5” - 6.6”)

≈ 22 kg
≈ 48 lbs

DESCRIPTION:

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 U.S 1 is fully portable. It features a cordless drive, a split frame housing and, therefore, it can be directly mounted onto a tube.

Beveling	Cutting	Facing	Counterboring	Surfacing
✗	✓	✗	✗	✗

TECHNICAL FEATURES:

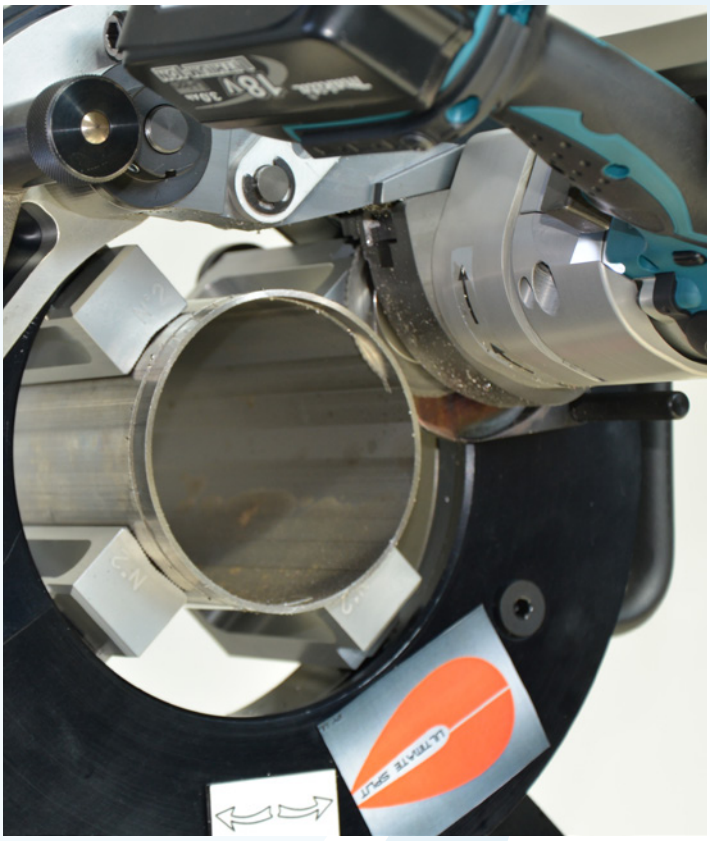
Machine	US1
Machining Capacity	12.7 mm - 168 mm OD
	0.5" - 6.6" OD
Clamping capacity	12.7 mm - 168 mm OD
	0.5" - 6.6" OD
Clamping	Manual with key
Feed stroke	30 mm
RPM Engine	0 to 1700 rp/min
Pneumatic drive	736 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	700 W

ORDER NR.	DESCRIPTION
US1-1000	Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with pneumatic drive.
US1-1020	Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with electric drive 220V.
US1-1022	Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with cordless electric drive 220V
US1-1040	Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with electric drive 110V.
US1-1044	Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with cordless electric drive 110V.

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)



US6 ORBITAL TUBE CUTTING SAW

US6

Ø 12.7 - 168 mm (0.5” - 6.6”)

≈ 75 kg
≈ 165 lbs

DESCRIPTION:

The Ultimate Split 6 orbital cutting machine is used for cutting tubes made of virtually all materials having diameters ranging from 1/2“ (12.7 mm) to 6.6“ (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.

Various motorization options are available: Electric or pneumatic.

Beveling	Cutting	Facing	Counterboring	Surfacing
✗	✓	✗	✗	✗

TECHNICAL FEATURES:

Machine	US6
Machining Capacity	12.7 mm - 168 mm OD
	0.5" - 6.6" OD
Clamping capacity	12.7 mm - 168 mm OD
	0.5" - 6.6" OD
Clamping	Manual with key
Feed stroke	30 mm
RPM Engine	115 to 322 rp/min, Speed converter
Pneumatic drive	736 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electric drive	1300 W

OD MOUNTED MACHINE

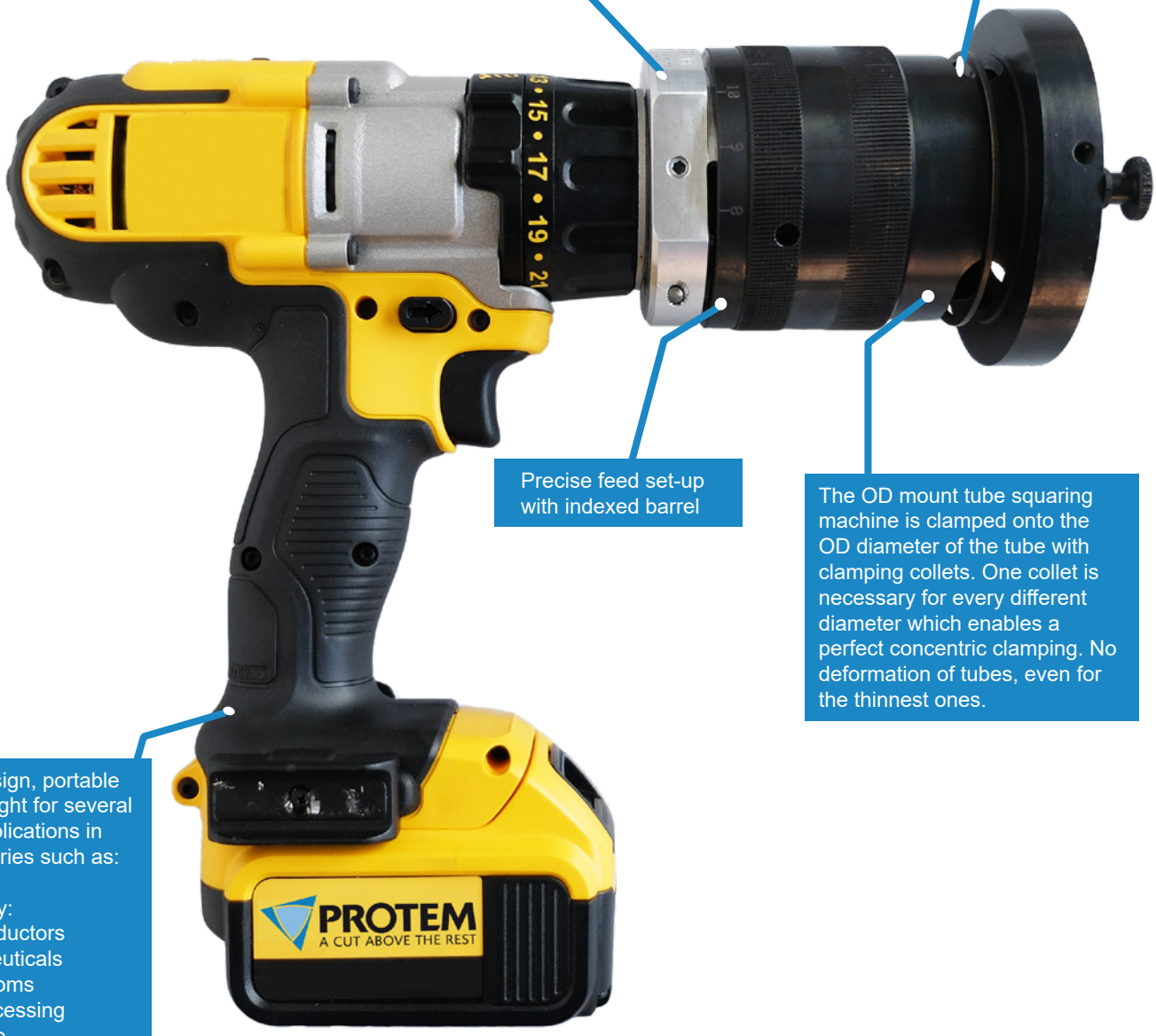
ORDER NR.	DESCRIPTION
US6-1000	Orbital Cutting Saw US6 for Ø 0.5" - 6.625" (12.7mm - 168.3mm) with pneumatic drive.
US6-1020	Orbital Cutting Saw US6 for Ø 0.5" - 6.625" (12.7mm - 168.3mm) with electric drive 230V.
US6-1022	Orbital Cutting Saw US6 for Ø 0.5" - 6.625" (12.7mm - 168.3mm) with cordless electric drive 230V
US6-1040	Orbital Cutting Saw US6 for Ø 0.5" - 6.625" (12.7mm - 168.3mm) with electric drive 110V.
US6-1042	Orbital Cutting Saw US6 for Ø 0.5" - 6.625" (12.7mm - 168.3mm) with cordless electric drive 110V.

The orbital cutting process used for the US6 provides a lot of advantages:

• Perpendicular cut
• Automatic centering onto the pipe
• Perfect concentric clamping
• Burr-free cut
• No Vibration
• No heat-affected zone
• Excellent preparation for mechanised welding processes
• Rigidity, ergonomic design, flexibility, reliability
• Suitable for all types of steel: mild steel, stainless steel, duplex, super duplex, inconel, hastelloy, aluminium, copper, titanium

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)

SE Series Tube Squaring Machines



Interchangeable machining heads: easy set-up for different diameters

Interchangeable carbide inserts with different coatings

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.

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

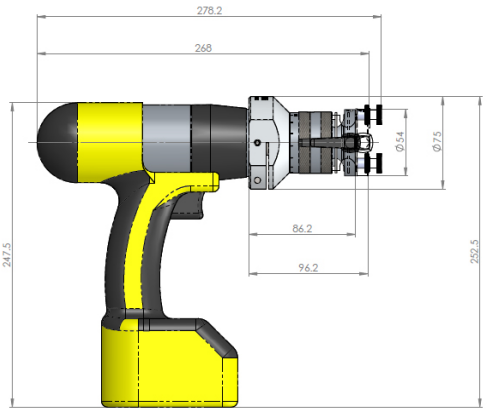
SE25 Tube Squaring Machine

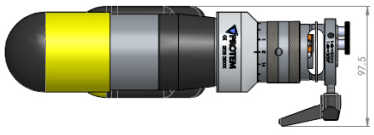
Standard Capacity: 3mm - 25,4mm (0.118“-1“)

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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗

OD Mounted

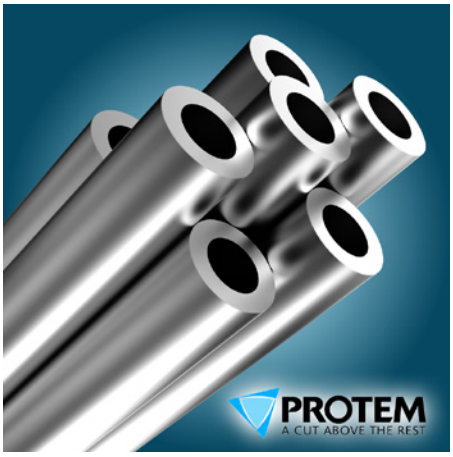




Dimensions

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



SE25 Tube Squaring Machine

Technical Features:

Specific shapes & angles	I and V
Clamping	Manual
Feed stroke	10 mm (0.394“)
Gear drive	1. Level 0 - 425 rpm 2. Level 0 - 1200 rpm 3. Level 0 - 1800 rpm
Electrical or Cordless drive	110 V (1500 W) or 220 V (1050 W)

Order No.	Description
SE25-1020	Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive 220V.
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

Applications:

OD Mounted

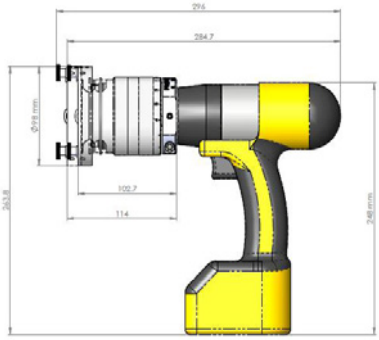
SE65 High Purity Tube Squaring Machine

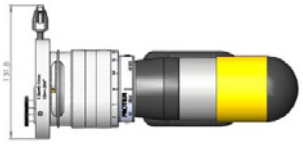
Standard Capacity: 12,7mm - 63,5mm (0.5“-2.5“)

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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗

OD Mounted





Dimensions

Technical Features:

Specific shapes & angles	I
Clamping	Manual
Feed stroke	10 mm (0.394“)
Gear drive	1. Level 0 - 425 rpm 2. Level 0 - 1200 rpm 3. Level 0 - 1800 rpm
Electrical or Cordless drive	110 V (1500 W) or 220 V (1050 W)

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.
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: 3mm - 63,5mm (0.118“-2.5“)

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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗

Technical Features:

Specific shapes & angles	I and V
Clamping	Manual
Feed stroke	10 mm (0.394“)
Gear drive	1. Level 0 - 425 rpm 2. Level 0 - 1200 rpm 3. Level 0 - 1800 rpm
Electrical or Cordless drive	110 V (1500 W) or 220 V (1050 W)

SE2T On-Site:

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: 3mm - 25,4mm (0.118“-1“)

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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✓	✗	✗	✗	✗

OD Mounted

Technical Features:

Specific shapes & angles	I
Clamping	Manual
Feed stroke	10 mm (0.394“)
Gear drive	1. Level 0 - 425 rpm 2. Level 0 - 1200 rpm 3. Level 0 - 1800 rpm
Electrical or Cordless drive	110 V (1500 W) or 220 V (1050 W)

Order No.	Description
SE25RA-1020	Tube Squaring Machine PROTEM SE-25RA for Ø 0.118“-1“ (3mm-25.4mm) with right angle cordless drive.
SE25DASH-1020	Tube Squaring Machine PROTEM SE25 DASH for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive. Adapted for aerospace applications.
SE25RA-DASH-1020	Tube Squaring Machine PROTEM SE25RA-DASH for Ø 0.118“-1“ (3mm-25.4mm) with right angle cordless drive. Adapted for aerospace applications.

SE65RA Tube End Squaring Machine with Angle Drive

Standard Capacity: 12,7mm - 63,5mm (0.5“-2.5“)

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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✗	✗	✗	✗	✗	✗

Technical Features:

Specific shapes & angles	I and V
Clamping	Manual
Feed stroke	10 mm (0.394“)
Gear drive	1. Level 0 - 425 rpm 2. Level 0 - 1200 rpm 3. Level 0 - 1800 rpm
Electrical or Cordless drive	110 V (1500 W) or 220 V (1050 W)

Order No.	Description
SE65RA-1020	Tube Squaring Machine PROTEM SE-65RA for Ø 0.5“-2.5“ (12.7mm-63.5mm) with right angle cordless drive.
SE65DASH-1020	Tube Squaring Machine PROTEM SE65 DASH for Ø 0.5“-2.5“ (12.7mm-63.5mm) with cordless drive. Adapted for aerospace applications.
SE65RA-DASH-1020	Tube Squaring Machine PROTEM SE65RA-DASH for Ø 0.5“-2.5“ (12.7mm-63.5mm) with right angle cordless drive. Adapted for aerospace applications.

SE Tube Squaring Machines Options & Accessories

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

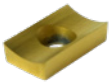
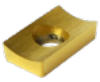
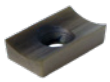
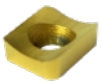
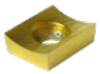
SE25 Insert Holders:

Order No.	Description	Picture
SE25-31	Insert Holder 30° for SE25 & SE2T	
SE25-3110	Insert Holder 37°30 for SE25 & SE2T	
SE25-33	Insert Holder 90° for SE25E & SE2T	

SE Collets:

Order No.	Description
SE25-2000-(Please specify the required Ø)	Clamping collet for SE25 and SE2T for (Please specify the required Ø)
SE25-2300-(Please specify the required Ø)	Clamping collet short version for SE25 and SE2T for Micro Fittings (Please specify the required Ø)
SE65-2000-(Please specify the required Ø)	Clamping collet for SE65 and SE2T for (Please specify the required Ø)

SE Tube Squaring Machines Tool-Bits

Order No.	Description	Picture
O-SE-P0-3.-H-T-24	Tool-bit for SE25	
O-SE-P1-3.-H-F-20	Tool-bit for SE25 material HSSE, coating: TiALN	
O-SE-P1-3.-C-T-20A	Tool-bit for SE25 material carbide, coating: TiN	
O-SE-P1-3.-H-T-20	Tool-bit for SE25 material HSSE, coating: TiN	
O-SE-P1-3.-C-F-20A	Tool-bit for SE25 material carbide, coating: TiALN	
O-SE-P1-3.-H-HC-20	Tool-bit for SE25 material HSSE, coating: TiSiN	
O-SE-P2-3.-H-T-25	Insert, right, material HSSE with TiN coating	
O-SE-P2-3.-H-F-25	Insert, right, material HSSE with TiALN coating	
O-SE-P3-3.-H-T-25A		
O-SE-P3-3.-H-F-25A	Insert right for J-prep with radius 1.5, material HSSE with TiALN coating	
O-SE-P3-3.-H-T-25C	Insert, right for J-prep with radius 2	
O-SE-P4-3.-H-T-26		
O-SE-P4-3.-H-F-26	Insert, left, material HSSE with TiALN coating	
O-SE-P5-3.-H-T-26A	Insert, left for J-prep with radius 1.5, material HSSE with TiN coating	
O-SE-P5-3.-H-F-26A	Insert, left, for J-prep with radius 1.5, material HSSE with TiALN coating	

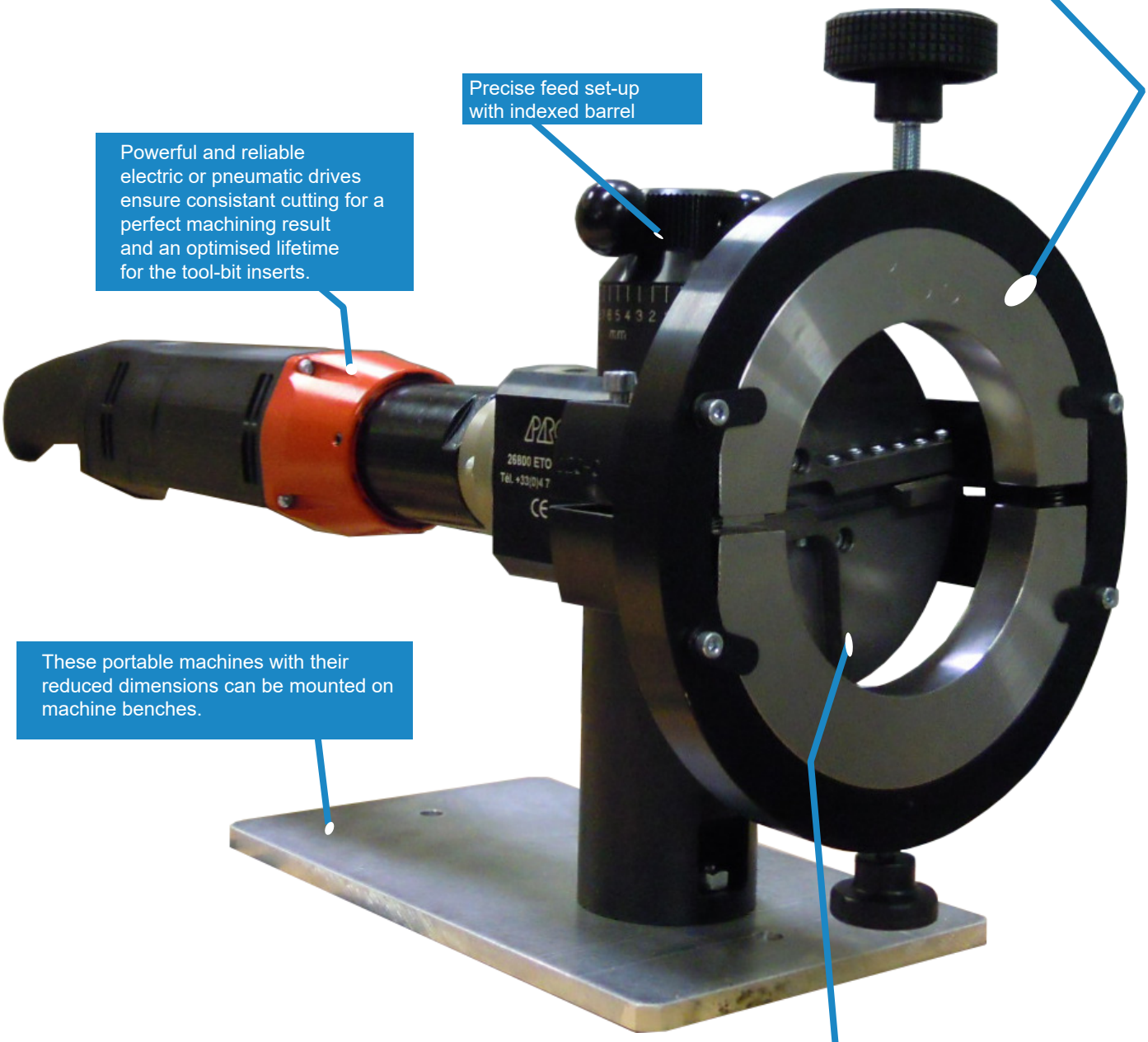
SL Series Tube Squaring Machines

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.

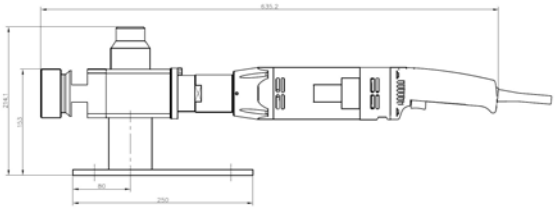
Tool-holder plates enable the facing and beveling of tubes, fittings, micro fittings and tee fittings. Machining can be performed on all types of materials (mild steels, stainless steels, alloys). Chips are contained and easily collected in order to avoid altering the integrity of the tube.

SL30 Tube and Pipe Beveling Machine

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

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	Cut to length	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

OD Mounted

SL30 Tube and Pipe Beveling Machine

Technical Features:

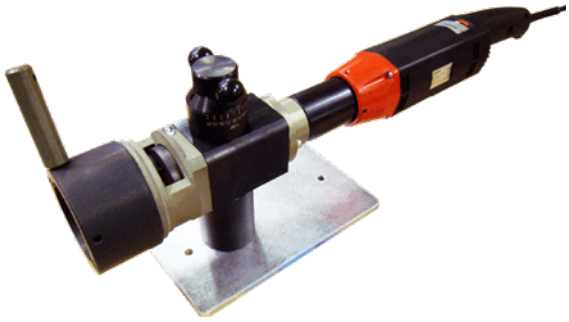
Specific shapes & angles	I, V, Other on Requests
Clamping	Clamping heads and collets long or short
Feed stroke	10 mm (0.394“)
Gear drive	95 tr/min to 280 tr/min
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have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

Applications:

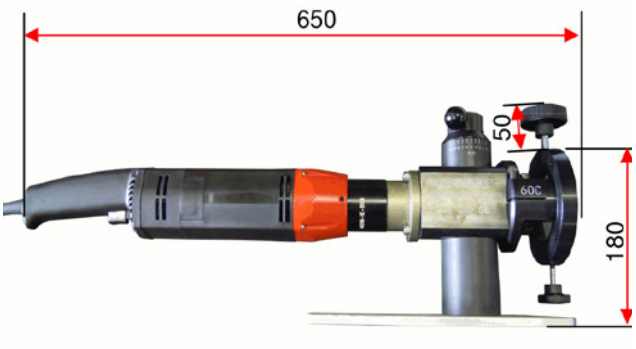
SL60 Tube and Pipe Facing Machine

Standard Capacity: 10mm - 60,3mm (0.393“-2.374“)



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	Cut to length	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	10 mm (0.394“)
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.	

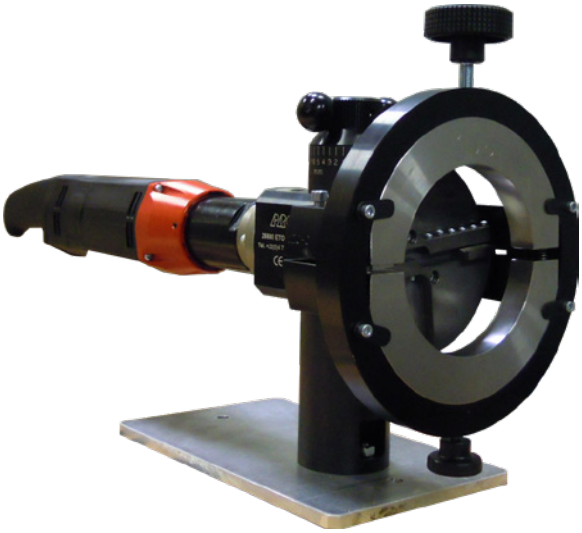
OD Mounted

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) with electric drive 220.

SL120 Tube Squaring Machine

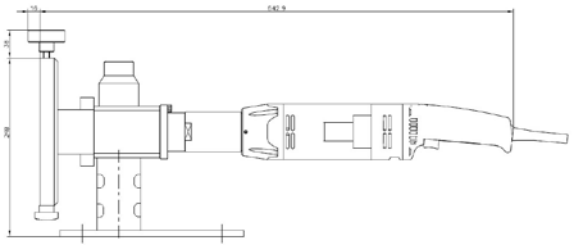
Standard Capacity: 50mm - 120mm (1.968“-4.724“)



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	Cut to length	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	10 mm (0.394“)
Gear drive	20 tr/min to 60 tr/min
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
SL120-1000	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with 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
SL120-1004	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
SL120-1022	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.
SL120-1040	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with electric drive 110V MS10.
SL120-1042	Tube & Pipe Beveling and Facing Machine PROTEM SL120 for 1.968“-4.724“ (50-120mm) with electric drive 220.

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

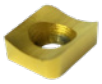
SL Insert Holders:

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	Insert-holder for SL30
SL-2310	Insert-holder for SL60
SL-3310	Insert-holder for SL120

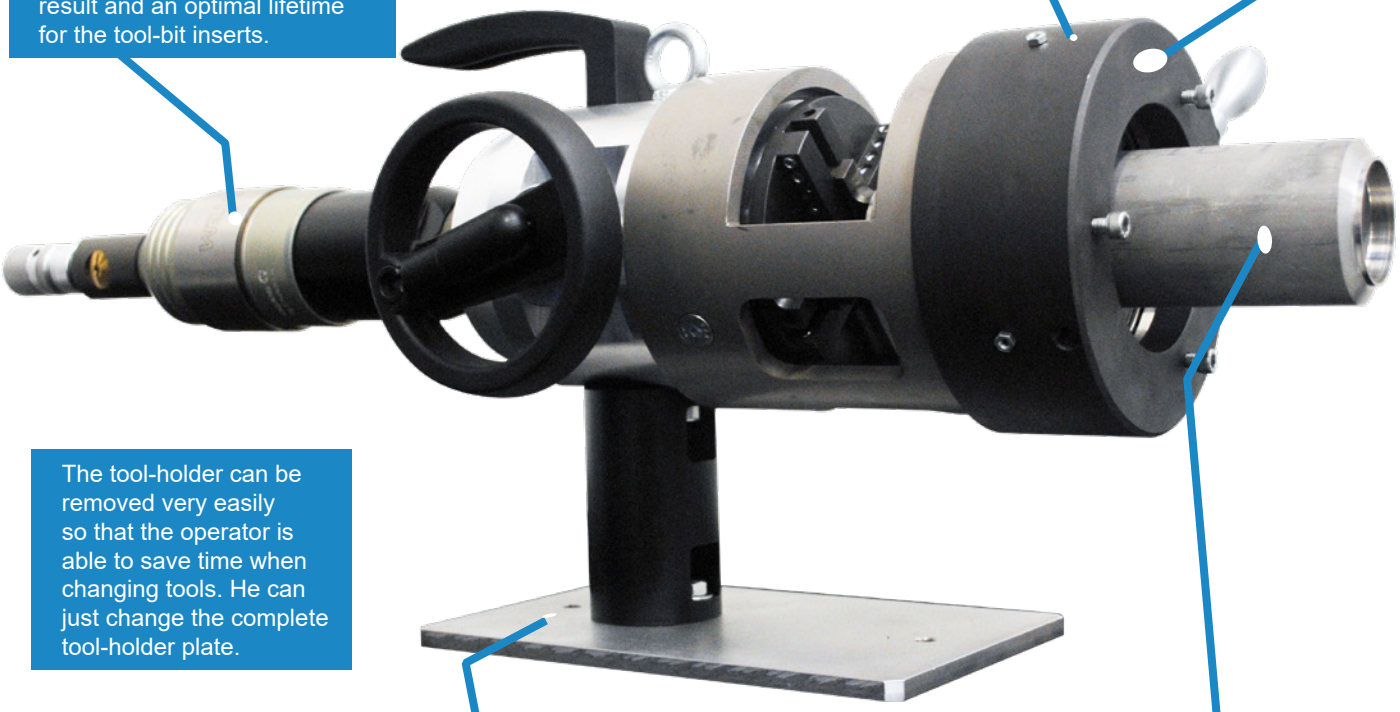
SL Collets:

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)

Order No.	Description	Picture
O-SE-P2-3.-H-T-25	Insert, right, material HSSE with TiN coating	
O-SE-P2-3.-H-F-25	Insert, right, material HSSE with TiALN coating	
O-SE-P3-3.-H-T-25A		
O-SE-P3-3.-H-F-25A	Insert right for J-prep with radius 1.5, material HSSE with TiALN coating	
O-SE-P3-3.-H-T-25C	Insert, right for J-prep with radius 2	
O-SE-P4-3.-H-T-26		
O-SE-P4-3.-H-F-26	Insert, left, material HSSE with TiALN coating	
O-SE-P5-3.-H-T-26A	Insert, left for J-prep with radius 1.5, material HSSE with TiN coating	
O-SE-P5-3.-H-F-26A	Insert, left, for J-prep with radius 1.5, material HSSE with TiALN coating	

SE-NG Series Tube Squaring Machines



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 10mm (0.393“) to 219mm (8.622“)

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

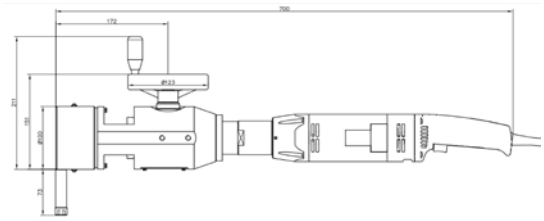
SE60NG Tube and Pipe Beveling Machine

Standard Capacity: 10mm - 60,3mm (0.393“-2.374“)

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 (230 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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗

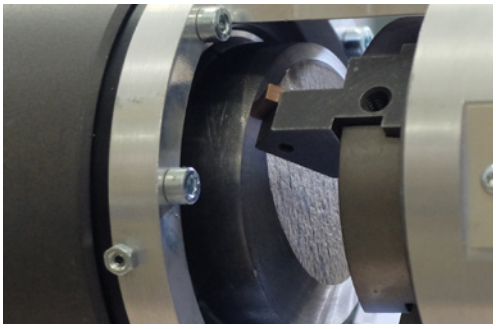
OD Mounted

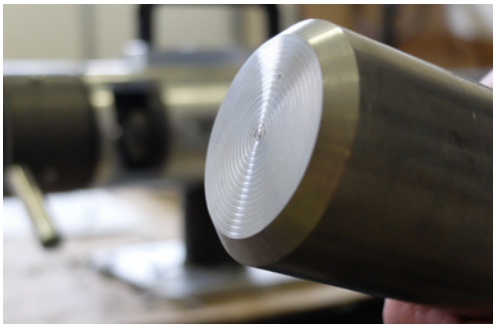


Dimensions

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





SE60NG Tube and Pipe Beveling Machine

Technical Features:

Specific shapes & angles	I, V, J-bevel, Other on Requests
Clamping	Manual
Feed stroke	10 mm (0.394“)
Gear drive	240 rpm to 330 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-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.
SE60-1040	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with electric drive 110V.
SE60-SAA	Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with automatic feed.

Applications:

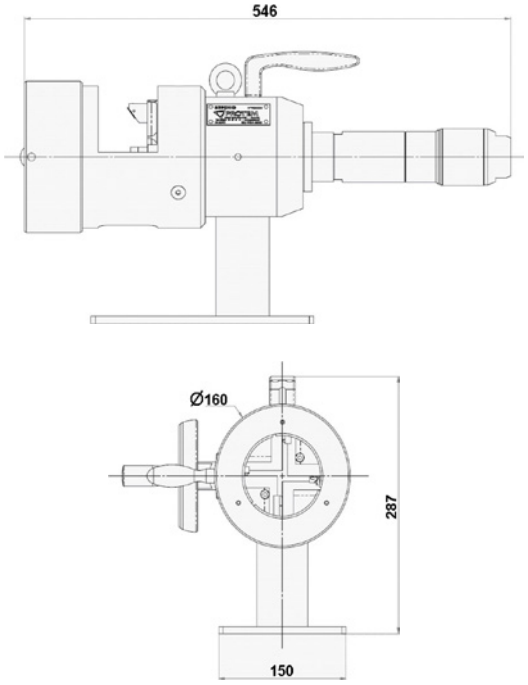
SE90NG Tube and Pipe Facing Machine

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

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 (230 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	Cut to length	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	10 mm (0.394“)
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
SE90NG-1000	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with pneumatic drive
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 integrated pneumatic automatic clamping and feed device
SE90NG-1020	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with electric drive 220V.

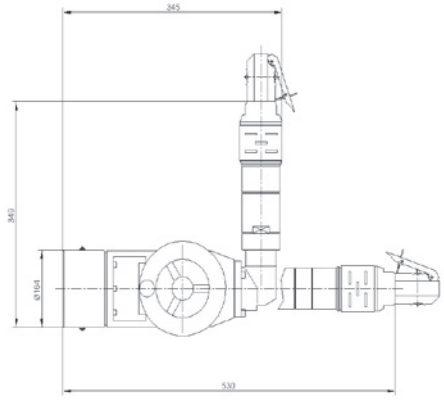
Order No.	Description
SE90NG-1022	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with electric right angle drive 220V.
SE90-1040	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with electric drive 110V.
SE90-SAA	Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with automatic feed.

SE120NG Tube Squaring Machine

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

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 (230 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	Cut to length	Weld Joint Removal	Coating Removal	Saddles	Surfacing
✓	✓	✓	✓	✗	✗	✗	✗



Dimensions

Technical Features:

Specific shapes & angles	I, V, J-bevel, Other on Requests
Clamping	Manual
Feed stroke	10 mm (0.394“)
Gear drive	60 rpm to 75 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
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
SE120NG-1020	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with electric drive 220V.

Order No.	Description
SE120NG-1022	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with electric right angle drive 220V.
SE120-1040	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with electric drive 110V.
SE120-SAA	Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with automatic feed.

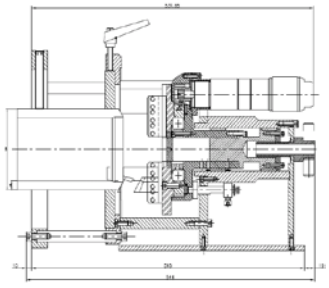
SE219NG Tube Squaring Machine

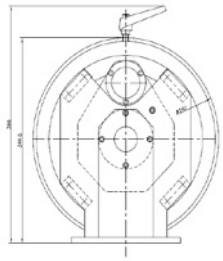
Standard Capacity: 60,3mm - 219mm (2.374“-8.622“)

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	Cut to length	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	10 mm (0.394“)
Gear drive	16,5 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
SE219NG-1000	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with pneumatic drive
SE219NG-1002	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with pneumatic drive and automatic clamping.
SE219NG-1004	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with integrated pneumatic automatic clamping and feed device
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 right angle drive 220V MS15.
SE219-1040	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with electric drive 110V.
SE219-SAA	Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with automatic feed.

SE-NG Tube Squaring 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

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°

SE120NG Tool-holders:

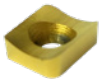
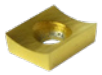
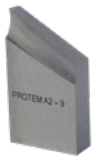
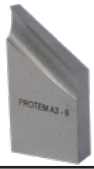
Order No.	Description
SE120-68	Tool-holder plate
SE60PP-30-41	Tool-holder 30°
SE60PP-37-10	Tool-holder 37°30
SE60PP-45-11	Tool-holder 45°
SE60PP-90-09	Tool-holder 90°

SE-NG Collets:

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

Order No.	Description
SE90NG-1204-(Please specify the required Ø)	Clamping collet, stainless steel. One collet necessar per Ø. Please specify the required Ø
SE120-69-(Please specify the required Ø)	Clamping collet. One collet necessar per Ø. Please specify the required Ø
SE219-1200-(Please specify the required Ø)	Clamping collet, aluminium. One collet necessar per Ø. Please specify the required Ø
SE219-1204-(Please specify the required Ø)	Clamping collet, stainless steel. One collet necessar per Ø. Please specify the required Ø

SE-NG Tube Squaring Machines Tool-Inserts

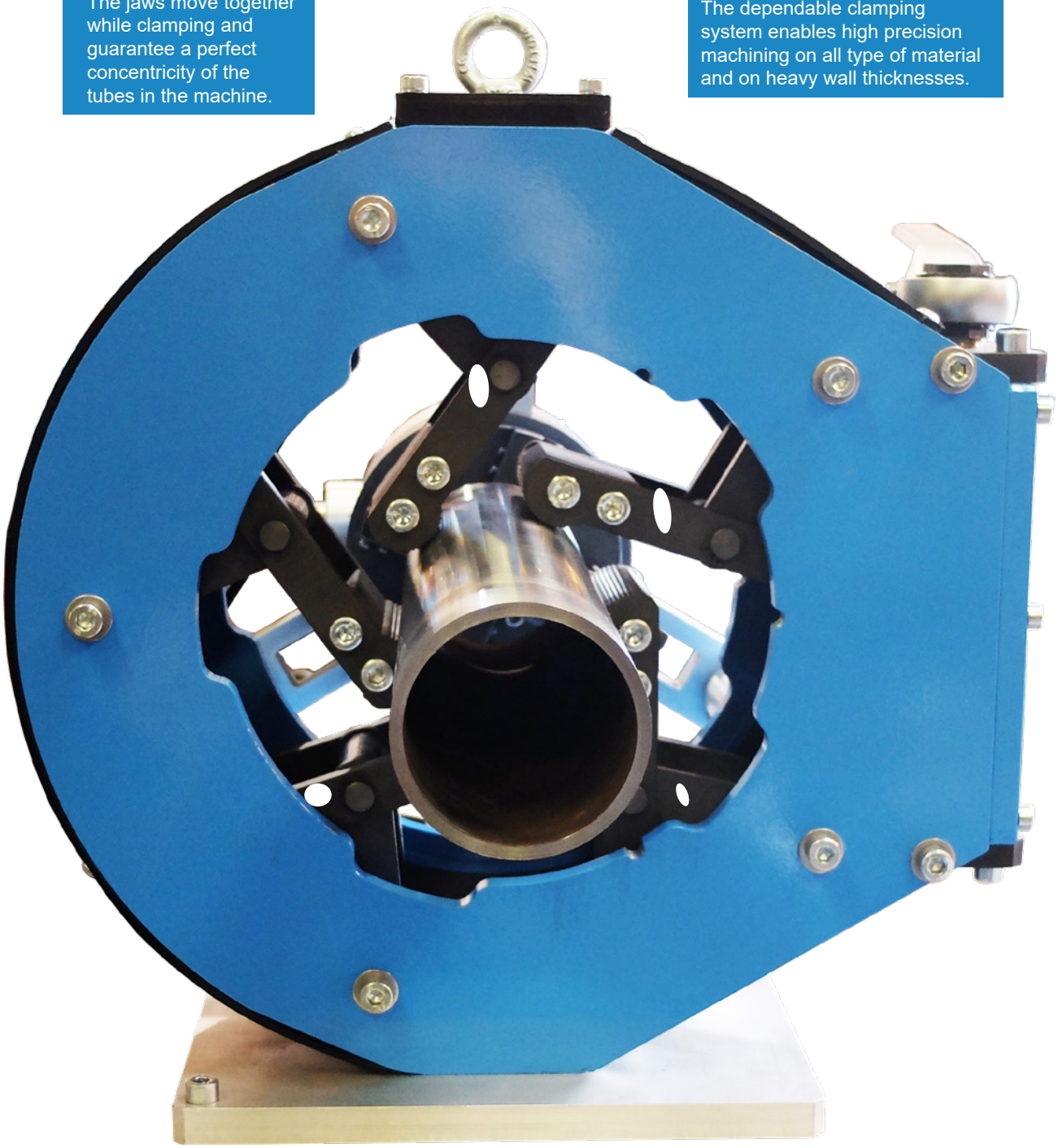
Order No.	Description	Picture
O-SE-P2-3.-H-T-25	Insert, right, material HSSE with TiN coating	
O-SE-P2-3.-H-F-25	Insert, right, material HSSE with TiALN coating	
O-SE-P3-3.-H-T-25A		
O-SE-P3-3.-H-F-25A	Insert right for J-prep with radius 1.5, material HSSE with TiALN coating	
O-SE-P3-3.-H-T-25C	Insert, right for J-prep with radius 2	
O-SE-P4-3.-H-T-26		
O-SE-P4-3.-H-F-26	Insert, left, material HSSE with TiALN coating	
O-SE-P5-3.-H-T-26A	Insert, left for J-prep with radius 1.5, material HSSE with TiN coating	
O-SE-P5-3.-H-F-26A	Insert, left, for J-prep with radius 1.5, material HSSE with TiALN coating	
O-US-A1-9-H-27	Tool-bit 90°	
O-US-A2-9-H-26	Tool-bit for 30° bevel	
O-US-A3-9-H-28	Tool-bit for 37°30 bevel	

OD Mounted

BMFM Series Tube & Pipe Beveling and Facing Machines

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.



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

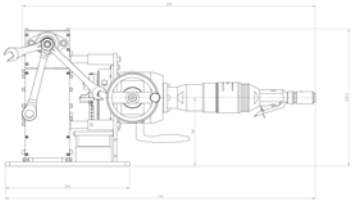
The outside clamping system prevents all inside contamination of the inside of the tube. Such contamination would be considered hazardous or critical for high purity applications.

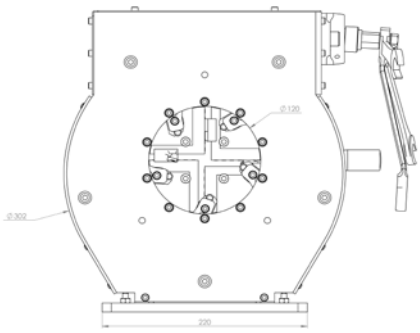
BMFM 90 Tube and Pipe Beveling Machine

Standard Capacity: 3,175mm - 90mm (0.125“-3.543“)

The new od mounted and concentric clamping machine Protem BMFM90 is designed to perform weld preparations on tubes with diameters up to 3.543 inches (90mm). 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 BMFM90.

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



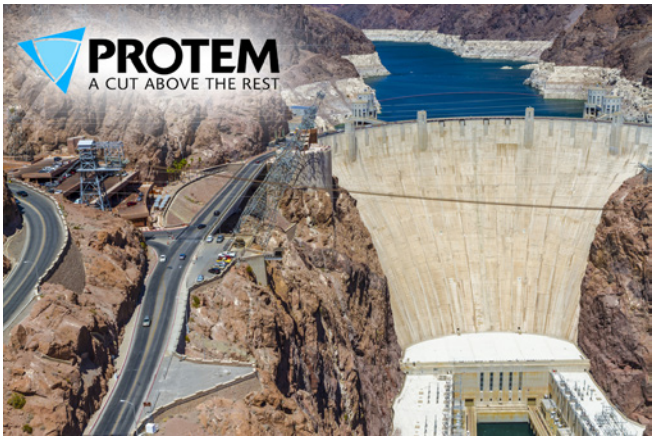


Dimensions

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



BMFM90 Tube and Pipe Beveling Machine

Technical Features:

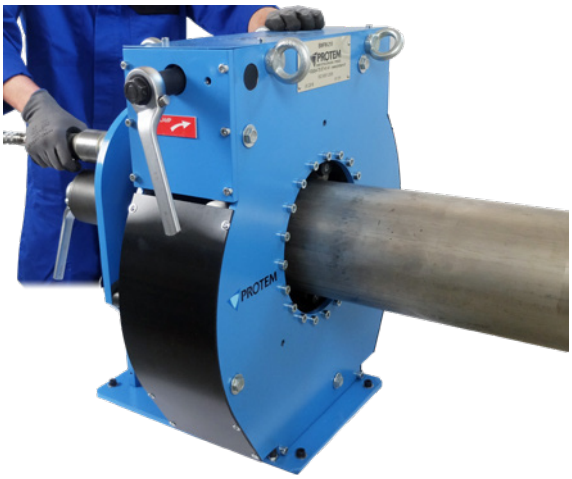
Specific shapes & angles	I, V, X and J-bevel, Other on Requests
Clamping	Manual with a key
Feed stroke	30 mm (1.181“)
Gear drive	75 rpm to 90 rpm
Pneumatic drive	730 W, 6 bar (87 psi), 1400 l/min (49 cfm)
Electrical drive	110 V (1500 W) or 220 V (1050 W)
Pneumatically driven machines have to be used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

Order No.	Description
BMFM90-1000	Tube & Pipe Beveling and Facing Machine PROTEM BMFM90 for Ø 0.125“-3.543“ (3,175mm-90mm) with pneumatic drive
BMFM90-1002	Tube & Pipe Beveling and Facing Machine PROTEM BMFM90 for Ø 0.125“-3.543“ (3,175mm-90mm) with pneumatic drive and automatic clamping.
BMFM90-1004	Tube & Pipe Beveling and Facing Machine PROTEM BMFM90 for Ø 0.125“-3.543“ (3,175mm-90mm) with integrated pneumatic automatic clamping and feed device
BMFM90-1020	Tube & Pipe Beveling and Facing Machine PROTEM BMFM90 for Ø 0.125“-3.543“ (3,175mm-90mm) with electric drive 220V.
BMFM90-1040	Tube & Pipe Beveling and Facing Machine PROTEM BMFM90 for Ø 0.125“-3.543“ (3,175mm-90mm) with electric drive 110V.
BMFM90-SAA	Tube & Pipe Beveling and Facing Machine PROTEM BMFM90 for Ø 0.125“-3.543“ (3,175mm-90mm) with automatic feed.
BMFM90-K01	Transport crate for BMFM90

Applications:

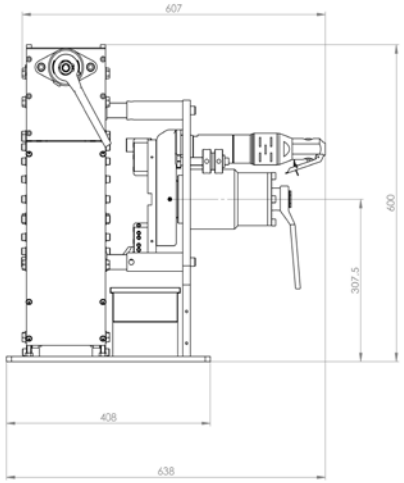
BMFM219 Tube and Pipe Facing Machine

Standard Capacity: 25,4mm - 219mm (1“-8.622“)



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	Cut to length	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	23 mm (0.905“)
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-219mm) with pneumatic drive
BMFM219-1002	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“-8.622“ (25.4mm-219mm) with pneumatic drive and automatic clamping.
BMFM219-1004	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“-8.622“ (25.4mm-219mm) 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-219mm) with electric drive 220V.
BMFM219-1040	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“-8.622“ (25.4mm-219mm) with electric drive 110V.
BMFM219-SAA	Tube & Pipe Beveling and Facing Machine PROTEM BMFM219 for Ø 1“-8.622“ (25.4mm-219mm) with automatic feed.
BMFM219-K01	Transport crate for BMFM219

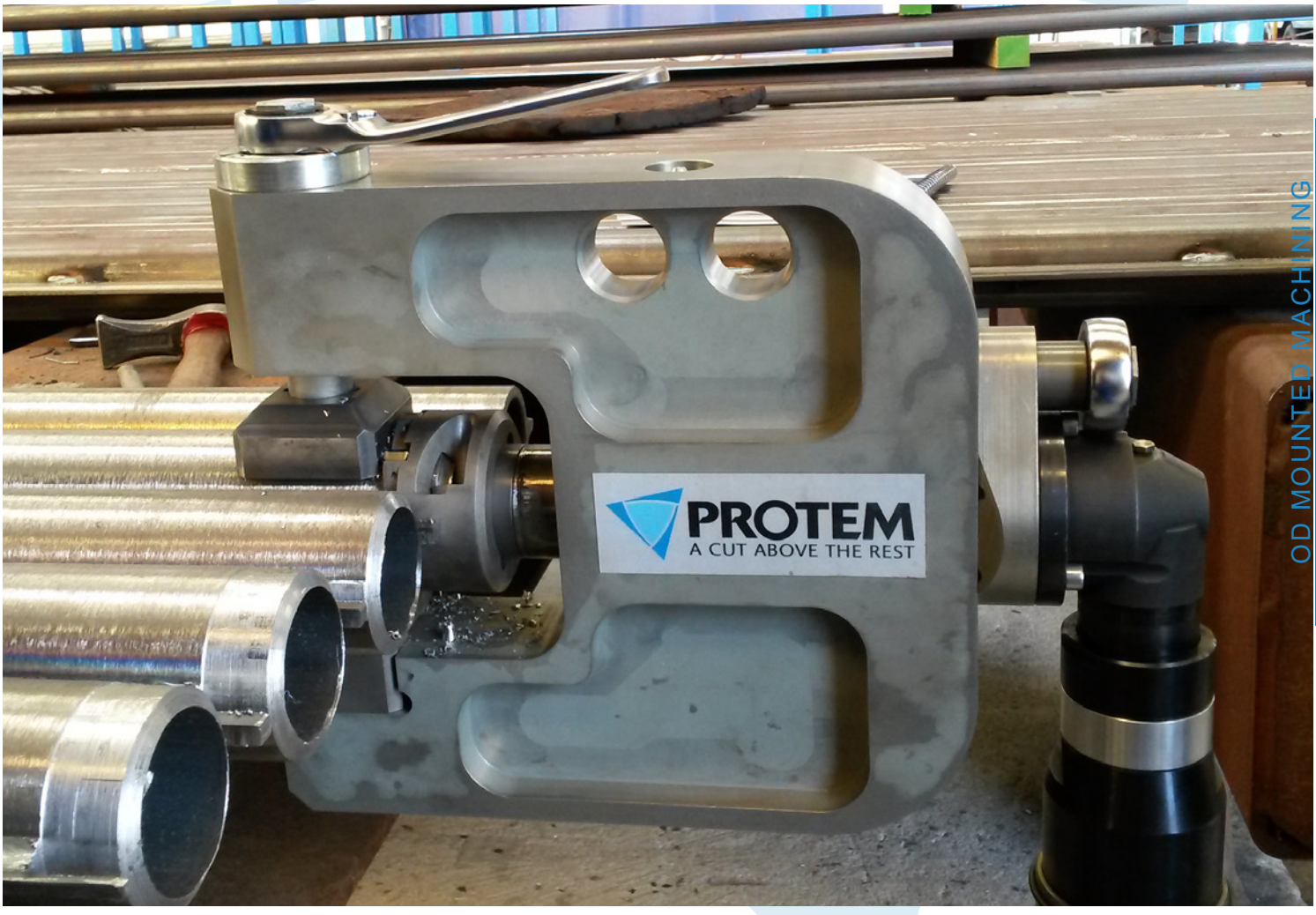
BMFM219 On-Site:

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-A6-6	Tool-bit for counterboring 10°	
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-61	Tool-bit for 20° j-bevels	

EQUIPMENT FOR WATERWALL CUTOUT WINDOWS ON BOILER TUBES

Ø 21.3 mm - 114.3 mm
Ø 0.839” – 4.5”



OD MOUNTED MACHINING

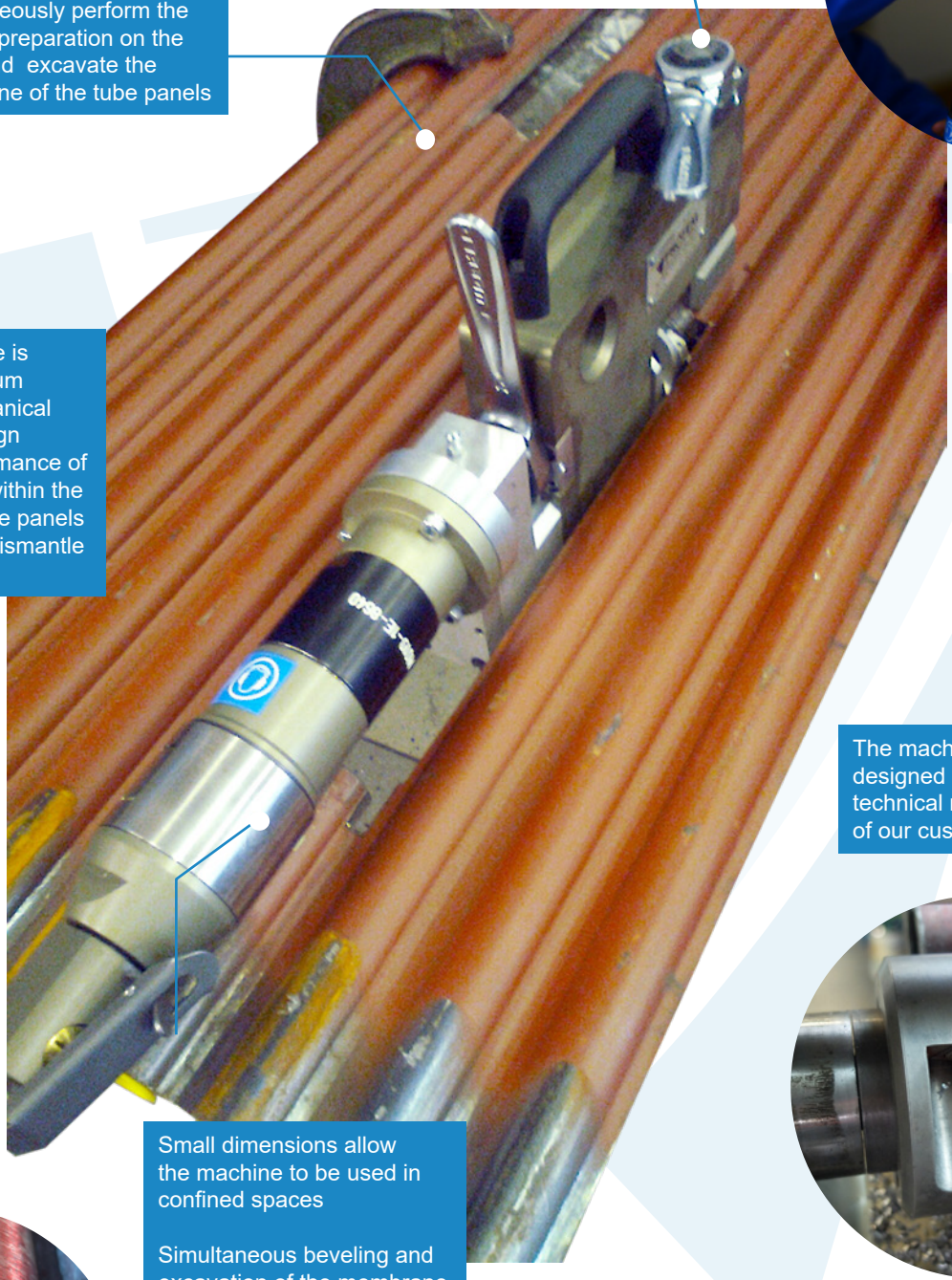
GR Series	Machining Capacity	
GR40NG	21.3 - 60.3 mm	0.839” – 2.374”
GR76NG	38 - 76 mm	1.496” – 2.992”
GR90NG	42.2 - 89 mm	1.661” – 3.5”
GR120NG	48.3 - 114.3 mm	1.902” - 4.5”

INDUSTRIES:

Nuclear	Boiler Manufacturers

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

The GR machines simultaneously perform the welding preparation on the tubes and excavate the membrane of the tube panels



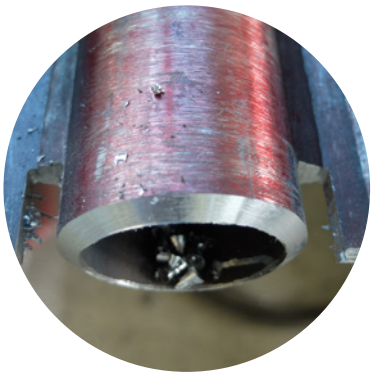
Their rugged and compact design is perfectly suited for on-site machining operations.

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 .

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

Small dimensions allow the machine to be used in confined spaces

Simultaneous beveling and excavation of the membrane walls within the tube exchanger panels.



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

GR SERIES

GR40

Ø 21.3 - 60.3 mm (0.839” - 2.374”)

≈ 11.5 kg
≈ 25.35 lbs

DESCRIPTION:

Machine	GR40NG
Pipe size range	21,3 mm (0.839“) ID
	60.3 mm (2.374“) OD
Max. wall thickness	≈ 12 mm (0.472“)
Drive Power	Pneumatic (1,47 kW)
Air consumption	1800 l/min (63 cfm)
Air pressure:	6 bars (87 psi)

ORDER NO.	DESCRIPTION
GR40NG-1000	GR40 OD clamping machining equipment for tube panels

OPTIONS:

ORDER NO.	DESCRIPTION
GR40NG-1500	GR40-PPF milling tool for GR76 - one for each diameter
GR40PP-45-11	GR40-PP45 45° tool holder
GR40PP-90-09	GR40-PP90 90° tool holder
GR40PPD-1316	GR40-PPD tool holder for inside machining operations
GR40-68	GR40-PO tool holder plate
GR40-K01	GR40-K01 transport crate

GR76

Ø 38 - 76 mm (1.496” - 2.992”)

≈ 24 kg
≈ 52.91 lbs

DESCRIPTION:

Machine	GR76NG
Pipe size range	38 mm (1.496“) ID
	76 mm (2.992“) OD
Max. wall thickness	≈ 13 mm (0.511“)
Drive Power	Pneumatic (1,47 kW)
Air consumption	1800 l/min (63 cfm)
Air pressure:	6 bars (87 psi)

ORDER NO.	DESCRIPTION
GR76	GR76 OD clamping machining equipment for tube panels

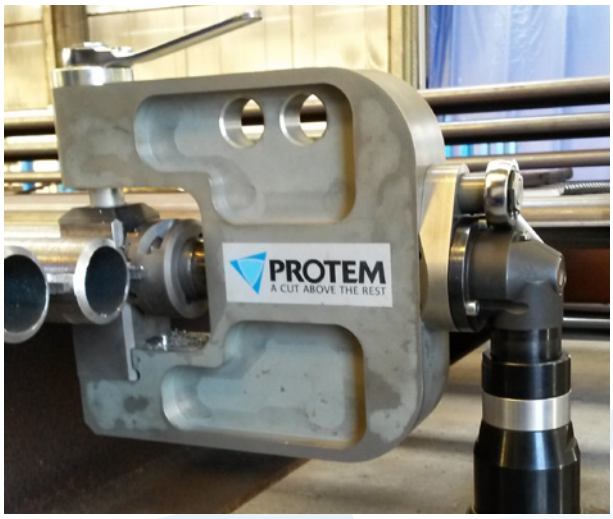
OPTIONS:

ORDER NO.	DESCRIPTION
GR76NG-1500	GR76-PPF milling tool for GR76 - one for each diameter
GR76PP-45-11	GR76-PP45 45° tool holder
GR76PP-90-09	GR76-PP90 90° tool holder
GR76PPD-1316	GR76-PPD tool holder for inside machining operations
GR76-68	GR76-PO tool holder plate
GR76-K01	GR76-K01 transport crate

GR90

Ø 42.2 - 89 mm (1.661” - 3.5”)

≈ 28 kg ≈ 60 lbs



DESCRIPTION:

Machine	GR90NG
Pipe size range	42.2 mm (1.661“) ID
	89 mm (3.5“) OD
Max. wall thickness	≈ 15 mm (0.591“)
Drive Power	Pneumatic (1,47 kW)
Air consumption	1800 l/min (63 cfm)
Air pressure:	6 bars (87 psi)

ORDER NO.	DESCRIPTION
GR90NG-1000	GR90 OD clamping machining equipment for tube panels

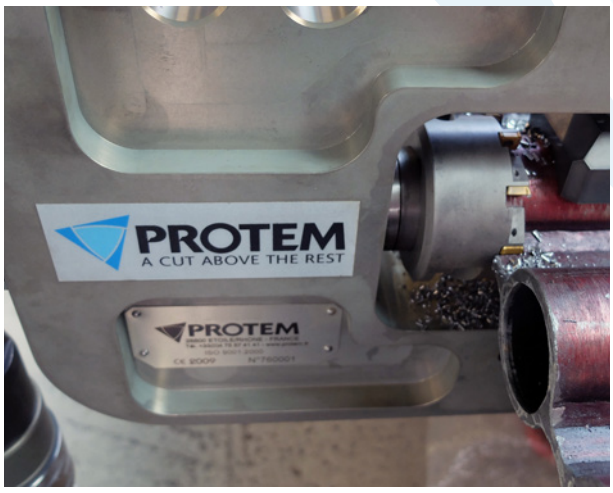
OPTIONS:

ORDER NO.	DESCRIPTION
GR90NG-1500	GR90-PPF milling tool for GR76 - one for each diameter
GR90PP-45-11	GR90-PP45 45° tool holder
GR90PP-90-09	GR90-PP90 90° tool holder
GR90PPD-1316	GR90-PPD tool holder for inside machining operations
GR90-68	GR40-PO tool holder plate
GR90-K01	GR90-K01 transport crate

GR120

Ø 48.3 - 114.3 mm (1.902” - 4.5”)

≈ 26 kg ≈ 57,32 lbs



DESCRIPTION:

Machine	GR120NG
Pipe size range	48.3 mm (1.902“) ID
	114.3 mm (4.5“) OD
Max. wall thickness	≈ 20 mm (0.787“)
Drive Power	Pneumatic (1,47 kW)
Air consumption	1800 l/min (63 cfm)
Air pressure:	6 bars (87 psi)

ORDER NO.	DESCRIPTION
GR120NG-1000	GR120 OD clamping machining equipment for tube panels

OPTIONS:

ORDER NO.	DESCRIPTION
GR120NG-1500	GR120-PPF milling tool for GR76 - one for each diameter
GR120PP-45-11	GR120-PP45 45° tool holder
GR120PP-90-09	GR120-PP90 90° tool holder
GR120PPD-1316	GR120-PPD tool holder for inside machining operations
GR120-68	GR120-PO tool holder plate
GR120-K01	GR120-K01 transport crate

TTNG Series Splitframe Orbtial Pipe Cutting & Beveling Machines

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TTNG Series Splitframe Orbtial Pipe Cutting & Beveling Machines

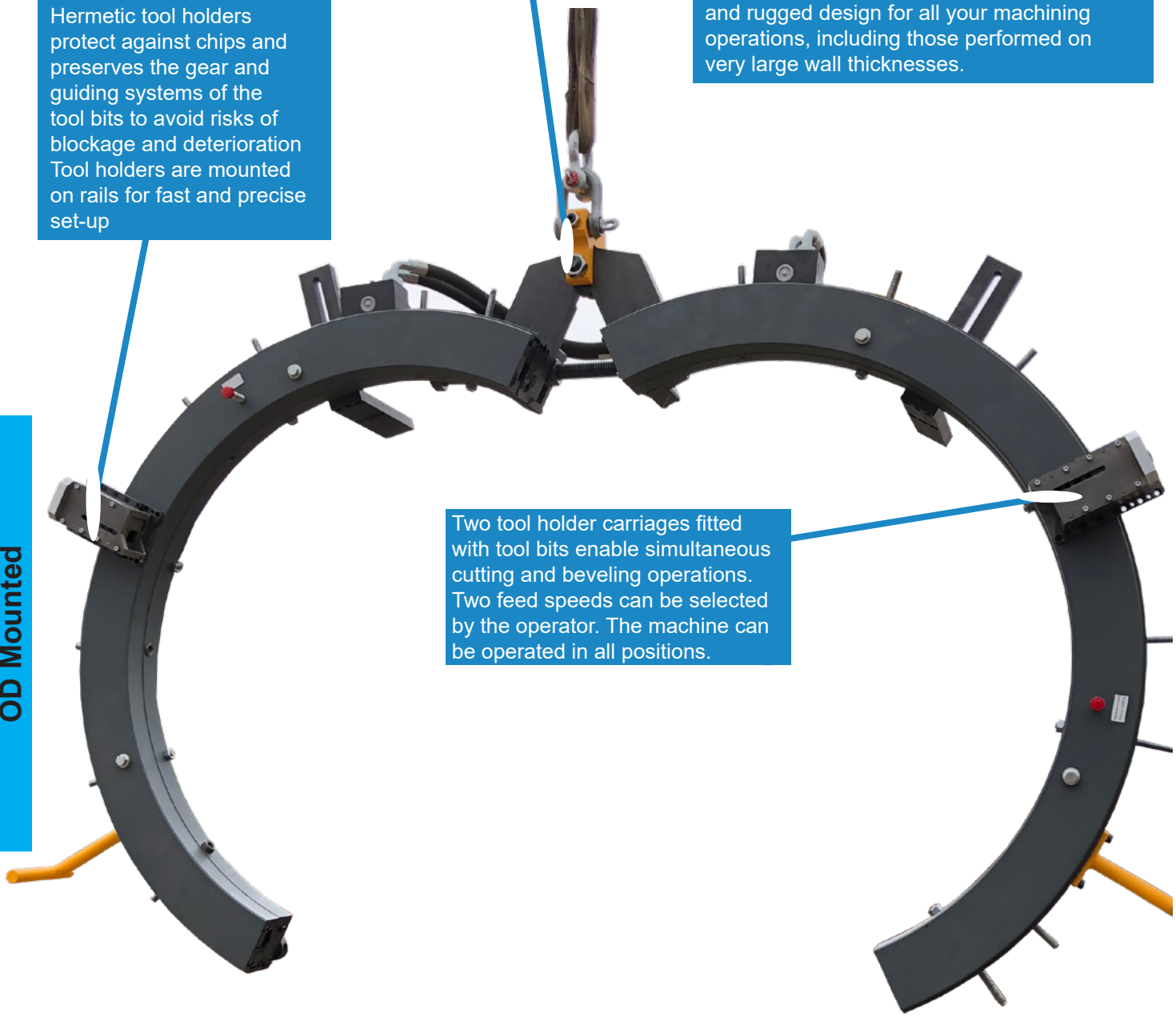
OD Mounted

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.

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.

Hydraulic, pneumatic or electric drives are available for all machines in the TT series.

Cold Cutting Process.
No Heat Affected Zone

TTNG Series Splitframe Orbtial Pipe Cutting & Beveling Machines

Standard Capacity: 60.3mm - 1422.4mm (2.374“ - 56“)

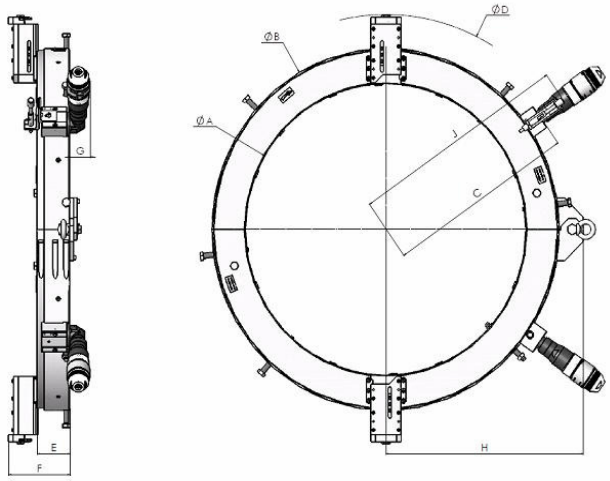
TTNG are engineered to serve all industries where the weld quality is critical and projects must stay on schedule. TTNG series machines are available in many configurations with standard or customised accessories and options. All the devices provided with the TTNG series machines are built based on 50 years knowledge and expertise of PROTEM to provide enhanced performance and job specific solutions. They are built to cut and bevel tubes up to 100mm (3.937”) 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



Dimensions

OD Mounted

Tool carriages with covered spindles enable to ensure a protection against chips. The main advantage of the TTNG 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 Series Splitframe Orbtial Pipe Cutting & Beveling Machines

Technical Features:

Specific shapes & angles	I, V, X, J-bevel, other on request
Clamping	Manual
Feed stroke	98 mm (3.858“)
Cutting head gear drive	174 rpm. Approximate rotation speed according to air pressure and air flow
TTNG168-TTNG323 pneumatic drive	1.47 kW, 6 bar (87 psi), 1800 l/min (63 cfm)
TTNG406-TTNG900 pneumatic drive	1.47 kW, 6 bar (87 psi), 3600 l/min (128 cfm)
TTNG1016 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)
TTNG1200 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)
TTNG1400 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, 240V and 380V
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

OD Mounted

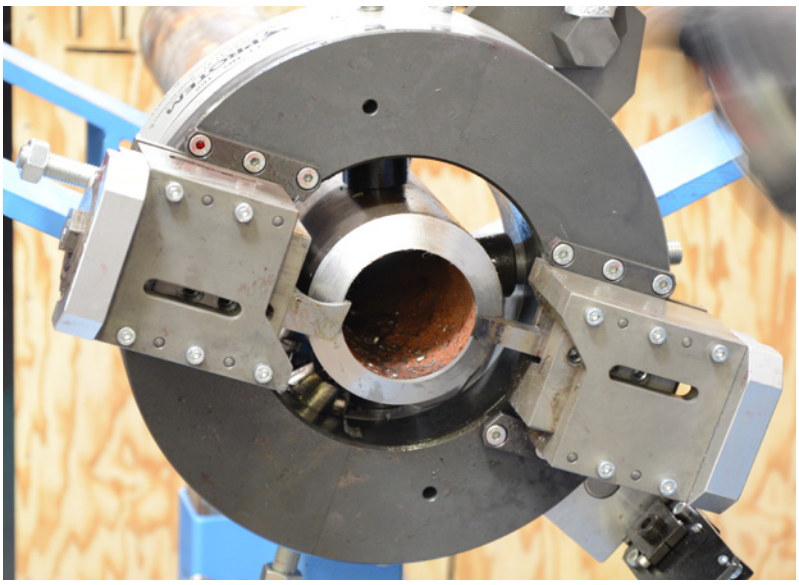
Several options available: Enveloping jaws can be optionally proposed, they are designed to clamp the machine onto even the thinnest tubes without any distortion. Remote control available on request for works in hazardous areas (under water, explosive areas, areas submitted to ionizing radiations etc) Counterboring carriages, cam-copying operations and wheel cutting are possible within the wide range of diameters covered by each model in the TTNG 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 Axial
copying carriage. Performs special shape machining on the inner or outer diameter Counterboring tool-holder.

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.

TTNG168 Splitframe Orbital Pipe Cutting & Beveling Machine

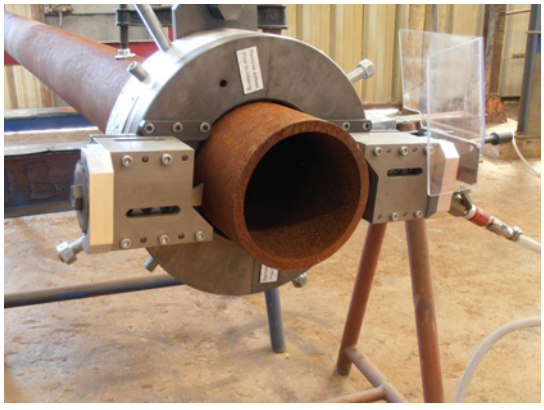
Standard Capacity: 60.3mm - 168.3mm (2.374“ - 6.625“)



Order No.	Description
TTNG168-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with single pneumatic drive
TTNG168-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with single pneumatic drive and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG168-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with angle electric drive 230V - ME25
TTNG168-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with angle electric drive MS15 - 230V
TTNG168-1040	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with 110V electric drive

Order No.	Description
TTNG168-1042	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with angled drive 110 V MS15
TTNG168-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with 1 hydraulic Motor and reversing valve
TTNG168-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with 1 hydraulic Motor
TTNG168-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with hydraulic drive (1 Motor) and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG168-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with Brushless electric drive. 3 Phase

TTNG168 On-Site or in Workshop:



TTNG219 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 114.3mm - 219.1mm (4.5“ - 8.625“)

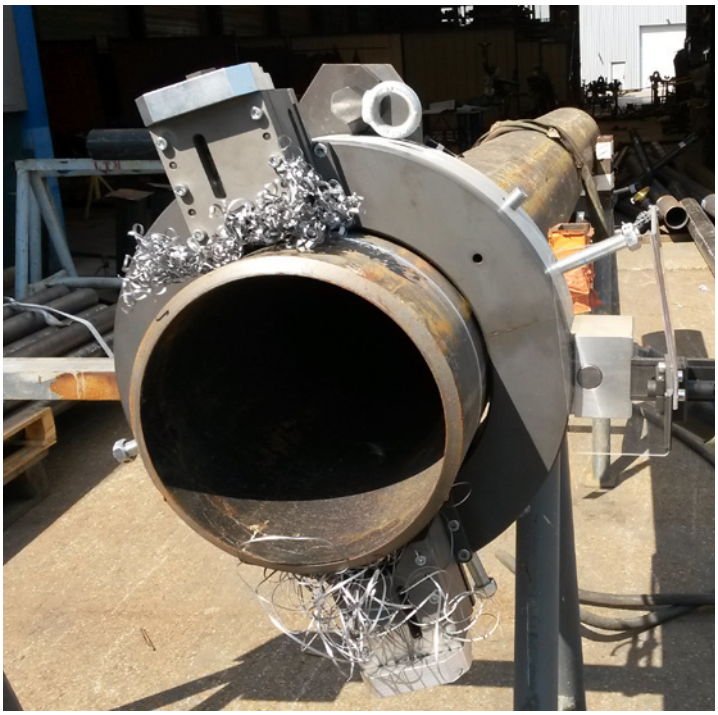
OD Mounted

Order No.	Description
TTNG219-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with single pneumatic drive
TTNG219-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with single pneumatic drive and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG219-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with angle electric drive 230V - ME25
TTNG219-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with angle electric drive MS15 - 230V
TTNG219-1040	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with 110V electric drive

Order No.	Description
TTNG219-1042	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with angled drive 110 V MS15
TTNG219-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with 1 hydraulic Motor and reversing valve
TTNG219-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with 1 hydraulic Motor
TTNG219-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with hydraulic drive (1 Motor) and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG219-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with 1 Brushless electric drive. 3 Phase

TTNG273 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 168.3mm - 273.1mm (6.625“ - 10.751“)

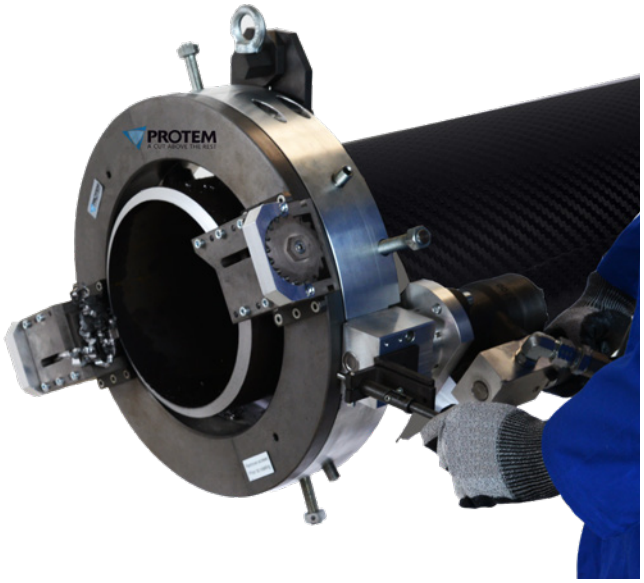


Order No.	Description
TTNG273-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with single pneumatic drive
TTNG273-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with single pneumatic drive and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG273-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with angle electric drive 230V - ME25
TTNG273-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with angle electric drive MS15 - 230V
TTNG273-1040	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with 110V electric drive

Order No.	Description
TTNG273-1042	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with angled drive 110 V MS15
TTNG273-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with 1 hydraulic Motor and reversing valve
TTNG273-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with 1 hydraulic Motor
TTNG273-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with hydraulic drive (1 Motor) and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG273-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with 1 Brushless electric drive. 3 Phase

TTNG323 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 219.1mm - 323.9mm (8.625“ - 12.751“)

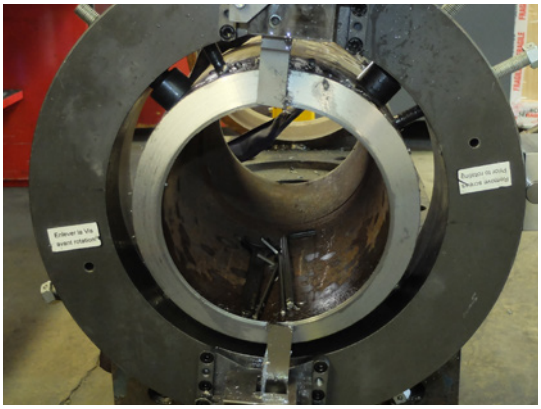


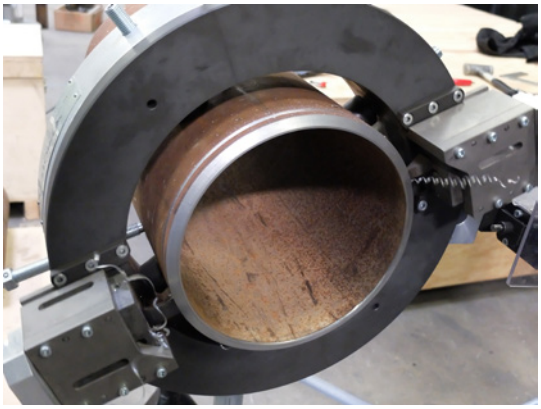
OD Mounted

Order No.	Description
TTNG323-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with single pneumatic drive
TTNG323-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with single pneumatic drive and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG323-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with angle electric drive 230V - ME25
TTNG323-1022	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with angle electric drive MS15 - 230V
TTNG323-1040	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with 110V electric drive

Order No.	Description
TTNG323-1042	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with angled drive 110 V MS15
TTNG323-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with 1 hydraulic Motor and reversing valve
TTNG323-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with 1 hydraulic Motor
TTNG323-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with hydraulic drive (1 Motor) and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG323-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with 1 Brushless electric drive. 3 Phase

TTNG323 On-Site or in Workshop:





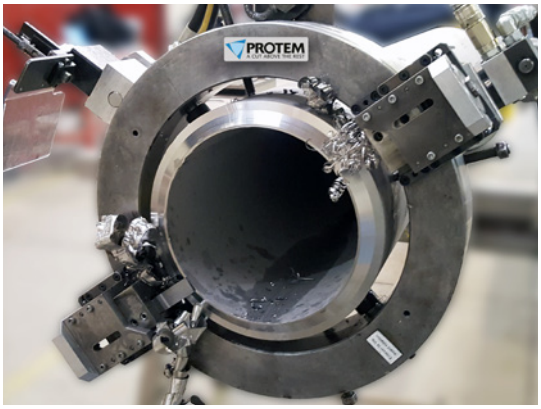
TTNG406 Splitframe Orbital Pipe Cutting & Beveling Machine

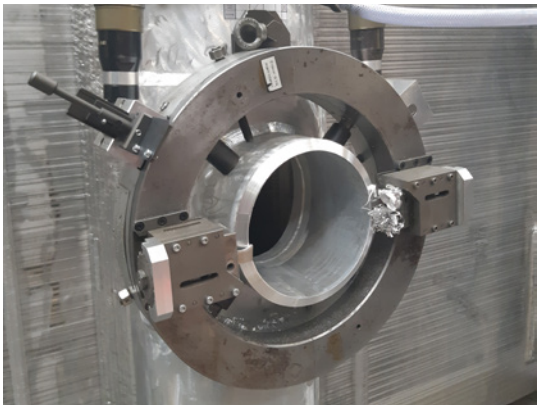
Standard Capacity: 273.1mm - 406.4mm (10.751“ - 16“)

Order No.	Description
TTNG406-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 pneumatic drives
TTNG406-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double pneumatic drive (2 pneumatic drives) and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG406-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with angle electric drive 230V - ME25

Order No.	Description
TTNG406-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives and reversing valve
TTNG406-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives
TTNG406-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG406-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 1 Brushless electric drive. 3 Phase

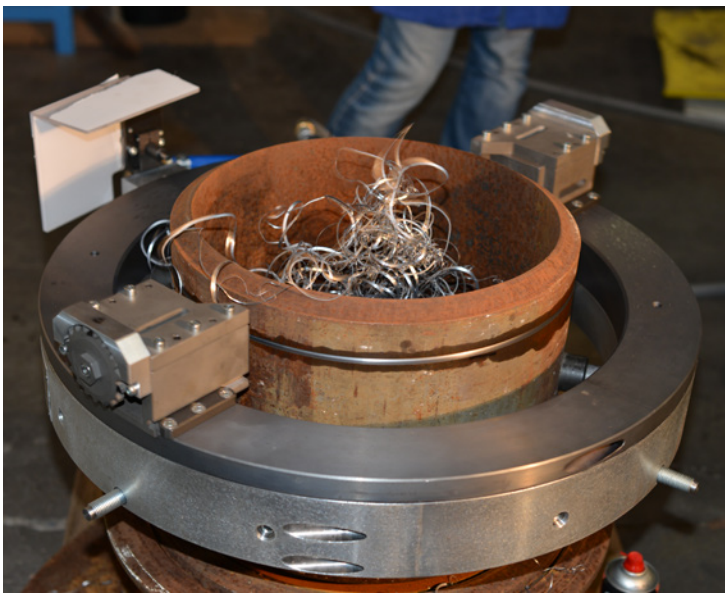
TTNG406 On-Site or in Workshop:





TTNG508 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 323.9mm - 508mm (12.751“ - 20“)

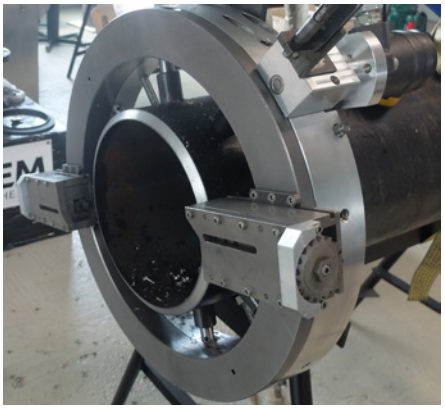


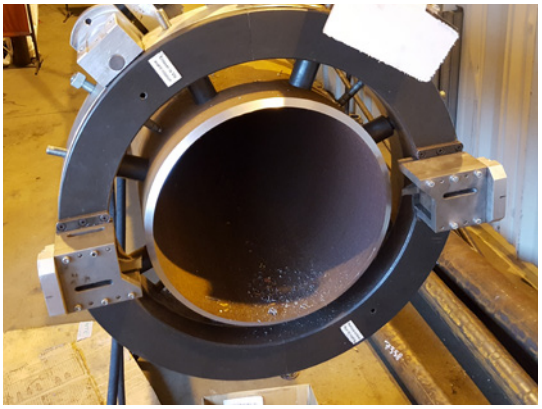
OD Mounted

Order No.	Description
TTNG508-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 pneumatic drives
TTNG508-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 pneumatic drives and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG508-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG508 for Ø 12.751" - 20" (323.9mm - 508mm) with angle electric drive 230V - ME25

Order No.	Description
TTNG508-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 hydraulic drives and reversing valve
TTNG508-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 hydraulic drives
TTNG508-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 hydraulic drives and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG508-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG508 for Ø 12.751" - 20" (323.9mm - 508mm) with 1 Brushless electric drive. 3 Phase

TTNG508 On-Site or in Workshop:





TTNG610 Splitframe Orbital Pipe Cutting & Beveling Machine

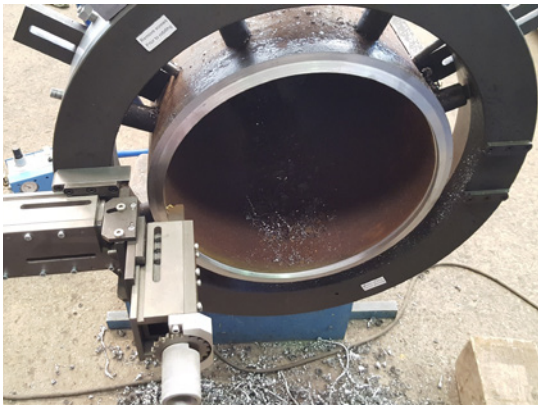
Standard Capacity: 406.4mm - 610mm (16“ - 24“)

Order No.	Description
TTNG610-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG610 for Ø 16" - 24" (406.4mm - 610mm) with 2 pneumatic drives
TTNG610-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG610 for Ø 16" - 24" (406.4mm - 610mm) with 2 pneumatic drives and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG610-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG610 for Ø 16" - 24" (406.4mm - 610mm) with angle electric drive 230V - ME25

Order No.	Description
TTNG610-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG610 for Ø 16" - 24" (406.4mm - 610mm) with 2 hydraulic drives and reversing valve
TTNG610-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG610 for Ø 16" - 24" (406.4mm - 610mm) with 2 hydraulic drives
TTNG610-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG610 for Ø 16" - 24" (406.4mm - 610mm) with 2 hydraulic drives and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG610-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG610 for Ø 16" - 24" (406.4mm - 610mm) with 1 Brushless electric drive. 3 Phase

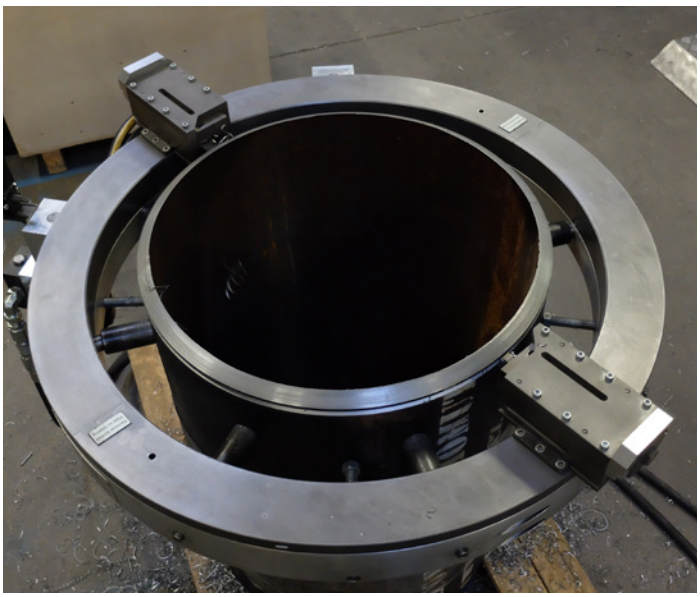
OD Mounted

TTNG610 On-Site or in Workshop:



TTNG762 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 558.8mm - 762mm (22“ - 30“)



OD Mounted

Order No.	Description
TTNG762-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG762 for Ø 22" - 30" (558.8mm - 762mm) with 2 pneumatic drives
TTNG762-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG762 for Ø 22" - 30" (558.8mm - 762mm) with 2 pneumatic drives and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG762-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG762 for Ø 22" - 30" (558.8mm - 762mm) with angle electric drive 230V - ME25

Order No.	Description
TTNG762-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG762 for Ø 22" - 30" (558.8mm - 762mm) with 2 hydraulic drives and reversing valve
TTNG762-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG762 for Ø 22" - 30" (558.8mm - 762mm) with 2 hydraulic drives
TTNG762-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG762 for Ø 22" - 30" (558.8mm - 762mm) with 2 hydraulic drives and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG762-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG762 for Ø 22" - 30" (558.8mm - 762mm) with 1 Brushless electric drive. 3 Phase

TTNG762 On-Site or in Workshop:

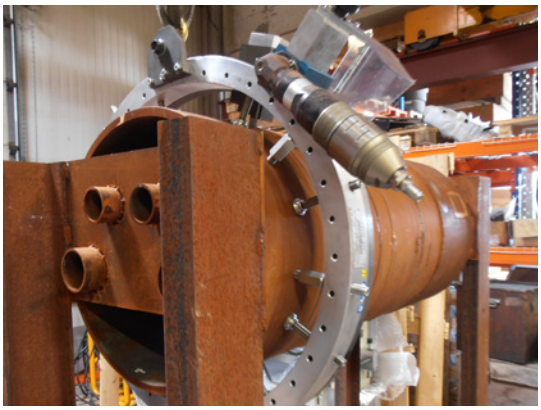
TTNG900 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 660.4mm - 914.4mm (26“ - 36“)

Order No.	Description
TTNG900-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 pneumatic drives
TTNG900-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 pneumatic drives and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG900-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG900 for Ø 26" - 36" (660.4mm - 914.4mm) with angle electric drive 230V - ME25

Order No.	Description
TTNG900-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 hydraulic drives and reversing valve
TTNG900-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 hydraulic drives
TTNG900-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 hydraulic drives and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG900-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG900 for Ø 26" - 36" (660.4mm - 914.4mm) with 1 Brushless electric drive. 3 Phase

TTNG900 On-Site or in Workshop:



TTNG1016 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 812.8mm - 1016mm (32“ - 40“)

OD Mounted

Order No.	Description
TTNG1016-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 pneumatic drives
TTNG1016-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 pneumatic drives and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG1016-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1016 for Ø 32" - 40" (812.8mm - 1016mm) with angle electric drive 230V - ME25

Order No.	Description
TTNG1016-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 hydraulic drives and reversing valve
TTNG1016-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 hydraulic drives
TTNG1016-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 hydraulic drives and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG1016-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 Brushless electric drive. 3 Phase

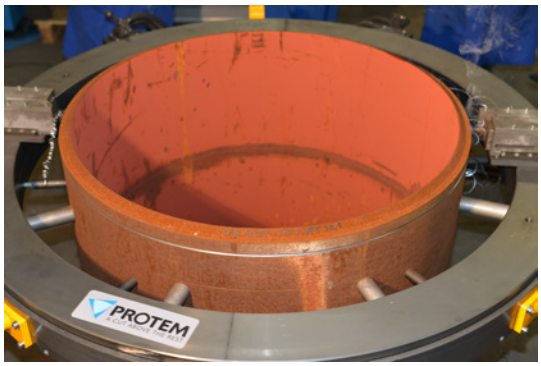
TTNG1200 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 914.4mm - 1219.2mm (36“ - 48“)

Order No.	Description
TTNG1200-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 pneumatic drives
TTNG1200-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 pneumatic drives and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG1200-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with angle electric drive 230V - ME25

Order No.	Description
TTNG1200-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 hydraulic drives and reversing valve
TTNG1200-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 hydraulic drives
TTNG1200-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 hydraulic drives and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG1200-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 Brushless electric drive. 3 Phase

TTNG1200 On-Site or in Workshop:



TTNG1400 Splitframe Orbital Pipe Cutting & Beveling Machine

Standard Capacity: 1117.6mm - 1422.4mm (44“ - 56“)

OD Mounted

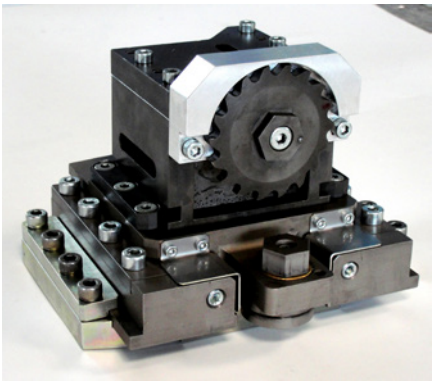
Order No.	Description
TTNG1400-1000	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 pneumatic drives
TTNG1400-1002	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 pneumatic drives and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG1400-1020	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with angle electric drive 230V - ME25

Order No.	Description
TTNG1400-1060	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 hydraulic drives and reversing valve
TTNG1400-1062	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 hydraulic drives
TTNG1400-1064	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 hydraulic drives and reversing valve and options TTNG-3100 (Extension Kit), TTNG-3700 (hinge) and TTNG-3600 (squares)
TTNG1400-1080	Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 Brushless electric drive. 3 Phase

TTNG1400 On-Site or in Workshop:

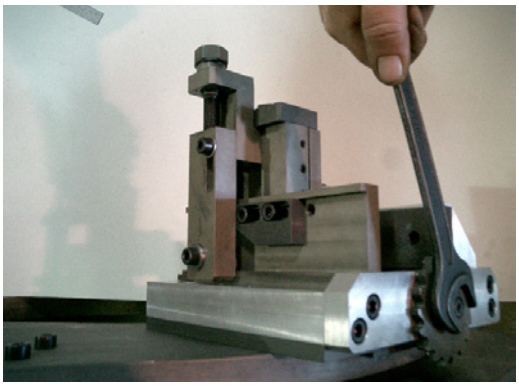
TTNG OD Tracker:

Order No.	Description
TTNG-ODT-1000	OD Tracker for TTNG219 - TTNG610
TTNG-ODT-1002	OD Tracker for TTNG762
TTNG-ODT-1004	OD Tracker for TTNG900 - TTNG1016



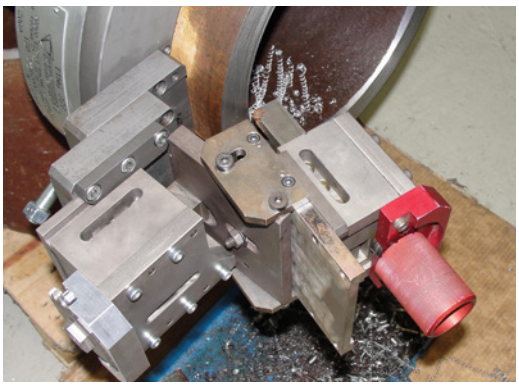
TTNG Copying Carriage:

Order No.	Description
TTNG-4200	Copying Carriage, stroke 50mm
TTNG-4300	Copying Carriage, stroke 100mm



TTNG Counterboring Carriage:

Order No.	Description
TTNG-2700	Counterboring Carriage, stroke 50mm with tool bit holder
TTNG-2800	Counterboring Carriage, stroke 50mm with insert holder
TTNG-2900	Counterboring Carriage, stroke 100mm with tool bit holder
TTNG-3000	Counterboring Carriage, stroke 100mm with insert holder

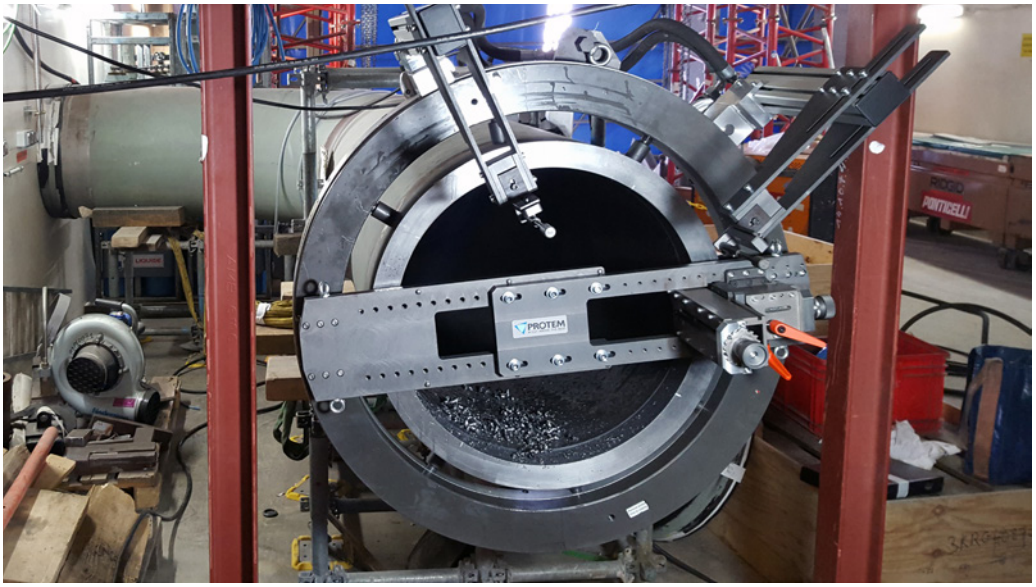


OD Mounted

TTNG Further Options:

Order No.	Description
TTNG-3600	Adjustment bracket for TTNG168, TTNG219, TTNG273, TTNG323, TTNG406 price per set of 2 units
TTNG-3602	Adjustment bracket for TTNG508, TTNG610, TTNG762, TTNG900, TTNG1016 price per set of 2 units
TTNG-3604	Adjustment bracket for TTNG1200, TTNG1400, price per set of 2 units
TTNG-3700	Opening assisted device for TTNG168, TTNG219, TTNG273, TTNG323, TTNG406, TTNG508
TTNG-3702	Opening assisted device for TTNG610, TTNG762,TTNG1016
TTNG-3704	Opening assisted device for TTNG900
TTNG-3708	Opening assisted device for TTNG1200
TTNG-4100	Carriage with clutch feed for machining of grooves (eg for vitolic joints)

TTNG Pipe Cutting & Beveling Machines — Deep Counterboring

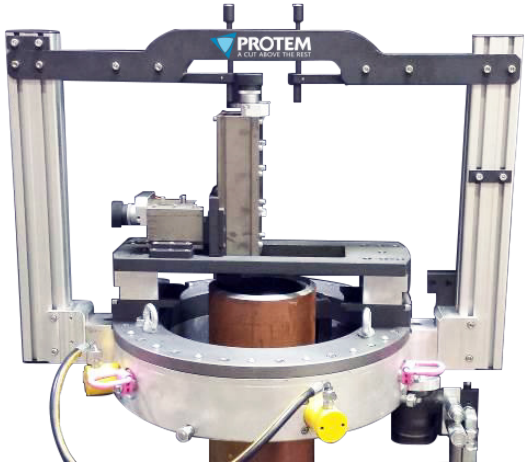


When heavy counterboring lengths are imposed, they are often associated to tight tolerances that are similar to boring operations.
Protem has developed some solutions for the TTNG orbital cutting
machines, so as to meet the requests of the most demanding users.

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.

OD Mounted

TTNG: System with extended counterboring/boring carriage



This system reproduces the function of the standard counterboring carriage but with an extended tool holder carriage (stroke 180-200mm (7"-8"), 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: 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).

TTNG Pipe Cutting & Beveling Machines — Coating Removal

For TTNG and US machines

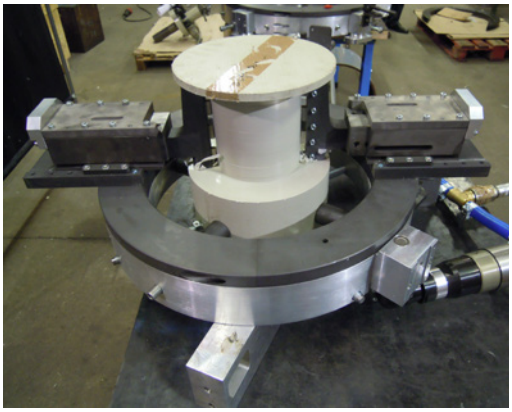
PROTEM US with coating removal option

The PROTEM TTNG 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 130 mm (5”) 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.

Order No.	Description
US80-3600	Beveling machine with coating option
US150-3600	Beveling machine with coating option

Order No.	Description
TT168-3600	Cutting and Beveling Machine with coating option
TT219-3600	Cutting and Beveling Machine with coating option
TT273-3600	Cutting and Beveling Machine with coating option
TT323-3600	Cutting and Beveling Machine with coating option
TT406-3600	Cutting and Beveling Machine with coating option
TT508-3600	Cutting and Beveling Machine with coating option
TT610-3600	Cutting and Beveling Machine with coating option
TT762-3600	Cutting and Beveling Machine with coating option
TT900-3600	Cutting and Beveling Machine with coating option
TT1016-3600	Cutting and Beveling Machine with coating option
TT1200-3600	Cutting and Beveling Machine with coating option
TT1400-3600	Cutting and Beveling Machine with coating option



PROTEM TTNG Orbital cutting machine with coating removal option

TTNG Pipe Cutting & Beveling Machines — Brushless Motor

For TTNG 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.

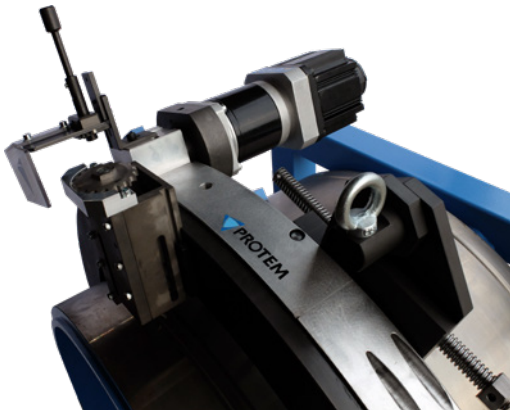
Any issues related to friction with the brushes have been rectified. The mechanical wear is almost non-existent. Consequently, the reliability of the equipment is greatly improved. The electrical efficiency is higher than what a DC motor is able to provide. Moreover, the thermal heating of a brushless 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.

OD Mounted

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
TT168-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT219-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT273-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT323-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT406-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT508-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT610-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT762-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT900-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT1016-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT1200-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V
TT1400-1080	Cutting and Beveling Machine with Electric motorisation Brushless, 220V



Protem TTNG orbital cutting machine with Brushless Motor

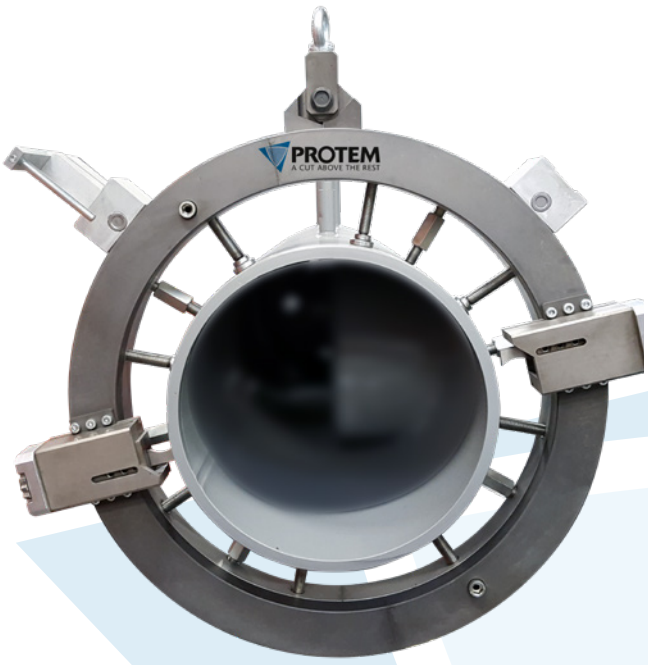
Order No.	Description
O-TTN-TT1-5-H-PL	Severing tool-bit, max. wall thickness 35mm
O-TTN-TT1-5-H-PT	Pointed tool-bit, max. wall thickness 35mm
O-TTN-TT2-12-H-2	Beveling tool-bit 30°, wall thickness 27mm
O-TTN-TT3-12-H-3	Beveling tool-bit 37°30, wall thickness 20mm
O-TTN-TT4-12-H-4	Beveling tool-bit 45°
O-TTN-TT5-12-H-5	Beveling tool-bit 30°, reversed
O-TTN-TT6-12-H-6	Beveling tool-bit 37°30, reversed
O-TTN-TT7-25-H-7	Beveling tool-bit 30°, wall thickness 35mm
O-TTN-TT8-25-H-8	Beveling tool-bit 37°30, wall thickness 35mm
O-TTN-TT9-25-H-9	Beveling tool-bit for double bevel
O-TTN-TT10-12-H-10	Beveling tool-bit 37°30, double bevel, wall thickness 18mm
O-TTN-TT11-5-H-PL	Severing tool-bit, max. wall thickness 90mm
O-TTN-TT11-5-H-PT	Pointed tool-bit, max. wall thickness 90mm
O-TTN-TT12-25-H-12	Beveling tool-bit for double bevel, wall thickness 46mm

Order No.	Description
O-TTN-TT13-25-H-13	Beveling tool-bit for double bevel, wall thickness 39mm
O-TTN-TT14-25-H-14	Beveling tool-bit 37°30, wall thickness 50mm
O-TTN-TT15-8-H-PL	Severing tool-bit, max. wall thickness 90mm , width 30mm
O-TTN-TT15-8-H-PT	Pointed tool-bit, max. wall thickness 90mm , width 30mm
O-TTN-TT16-8-H-PL	Severing tool-bit, max. wall thickness 90mm, width 8mm
O-TTN-TT16-8-H-PT	Pointed tool-bit, max. wall thickness 90mm, width 8mm
O-TTN-TT17-25-H-17	Beveling tool-bit for compound bevel 37°30 / 10°
O-TTN-TT18-25-H-18	Beveling tool-bit for compound bevel, wall thickness 45mm 37°30 / 10°
O-TTN-TT19-25-H-19	Beveling tool-bit for compound bevel, wall thickness 50mm 37°30 / 10°
O-TTN-TT20-25-H-20	Beveling tool-bit for compound bevel, wall thickness 35mm 30° / 10°
O-TTN-TT21-25-H-21	Beveling tool-bit for compound bevel, wall thickness 45mm 30° / 10°
O-TTN-TT22-25-H-22	Beveling tool-bit for compound bevel, wall thickness 50mm 30° / 10°
O-TTN-TT23-25-H-23	Beveling tool-bit for double bevel, wall thickness 50mm 30°
O-TTN-TT24-12-H-24	Beveling tool-bit for double bevel, wall thickness 22mm 30°

TT-LW SERIES

TT-LW

Ø 60.3 - 610 mm (2.374” - 24”)



TTLW Orbital Tube Cutting & Beveling equipement with pneumatic drive

DESCRIPTION:

The machines in the TTLW series cut and bevel tubes simultaneously using two tool holder plates that are incremented by the finger of a mechanical clutch.

- 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

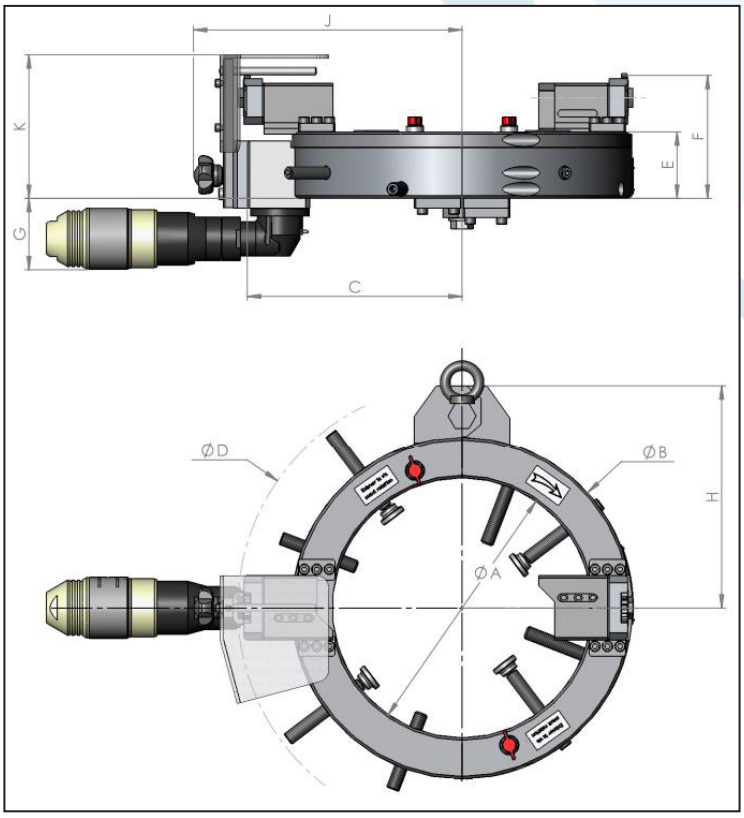
These machines are the low profile version of the TTNG series. They are transportable and can be opened in two halfshells; According to the diameters and wall thicknesses to consider, they can be equipped with pneumatic, electric or hydraulic drive.

The turning ring is rolling on adjustable bearings. The TTLW can perform a cut up to a 25.4 mm (1") wall on any material and cut and bevel up to 20 mm (.787"). 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	Facing	Counterboring	Surfacing
✓	✓	✓	✓	✗

DIMENSIONS:



TECHNICAL FEATURES:

Machine	TTLW
Machining Capacity	60.3 mm (2.374“) ID 610 mm (24“) OD
Specific shapes & angles	I, V, J, X or any other specific weld preps special shapes are available on request
Clamping	manual, without a key
Feed	Automatic with clutch
Drive Power	Pneumatic or hydraulic Electric drive is available upon request
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

ORBITAL TUBE CUTTING & BEVELING SPLIT-FRAME CLAMSHELLS

TTLW168

Ø 60.3 - 168.3 mm (2” - 6”)

≈ 15.5 kg
≈ 34.2 lbs

TTLW168 Orbital Tube Cutting & Beveling Equipement with pneumatic drive

ORDER NO.	DESCRIPTION
TTLW168-1000	TTLW168 Cutting and beveling machine with pneumatic drive
TTLW168-1020	TTLW168 Tube cutting and beveling machine with electric drive, 230 V 1500W RA

DIMENSIONS:

ØA	ØB	C	ØD	E	F	G	H	J
175 mm	325 mm	217 mm	460 mm	108.6 mm	202.6 mm	66 mm	216 mm	407 mm
6.889“	12.795“	8.543“	18.110“	4.252“	7.953“	2.598“	8.504“	16.024“

TTLW219

Ø 114.3 - 219.3 mm (4” - 8”)

≈ 18 kg
≈ 40 lbs

TTLW219 Tube Cutting & Beveling Equipement with pneumatic drive

ORDER NO.	DESCRIPTION
TTLW219-1000	TTLW219 Cutting and beveling machine with pneumatic drive
TTLW219-1020	TTLW219 Tube cutting and beveling machine with electric drive, 230 V 1500W

DIMENSIONS:

ØA	ØB	C	ØD	E	F	G	H	J
223 mm	373 mm	241 mm	508 mm	108.6 mm	202.6 mm	66 mm	240 mm	431 mm
8.779“	14.685“	9.488“	20“	4.252“	7.953“	2.598“	9.449“	16.968“

TTLW273

Ø 168.3 - 273.1 mm (6” - 10”)

≈ 20.4 kg
≈ 45 lbs

TTLW273 Tube Cutting & Beveling Equipement with pneumatic drive

ORDER NO.	DESCRIPTION
TTLW273-1000	TTLW273 Cutting and beveling machine with pneumatic drive
TTLW273-1020	TTLW273 Tube cutting and beveling machine with electric drive, 230 V 1500W

DIMENSIONS:

ØA	ØB	C	ØD	E	F	G	H	J
283 mm	433 mm	271 mm	570 mm	108.6 mm	202.6 mm	66 mm	270 mm	462 mm
11.142“	17.047“	10.669“	22.441“	4.252“	7.953“	2.598“	10.629“	18.189“

TTLW323

Ø 219.1 - 323.9 mm (8” - 12”)

≈ 22.7 kg
≈ 50 lbs

TTLW323 Tube Cutting & Beveling Equipement with pneumatic drive

ORDER NO.	DESCRIPTION
TTLW323-1000	TTLW323 Cutting and beveling machine with pneumatic drive
TTLW323-1020	TTLW323 Tube cutting and beveling machine with electric drive, 230 V 1500W

DIMENSIONS:

ØA	ØB	C	ØD	E	F	G	H	J
331 mm	481 mm	295 mm	619 mm	108.6 mm	202.6 mm	66 mm	294 mm	486 mm
13.031“	18.937“	11.614“	24.370“	4.252“	7.953“	2.598“	11.574“	19.134“

TT-LW SERIES

TTLW406

Ø 273.1 - 406.4 mm (10” - 16”)

≈ 26.5 kg
≈ 58 lbs

TTLW406 Tube Cutting & Beveling Equipement
with pneumatic drive

ORDER NO.	DESCRIPTION
TTLW406-1000	TTLW406 Cutting and beveling machine with pneumatic drive
TTLW406-1020	TTLW406 Tube cutting and beveling machine with electric drive, 230 V 1500W

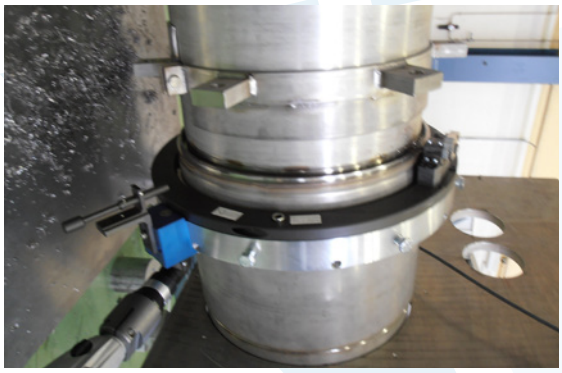
DIMENSIONS:

ØA	ØB	C	ØD	E	F	G	H	J
175 mm	325 mm	217 mm	460 mm	108.6 mm	202.6 mm	66 mm	216 mm	407 mm
6.889“	12.795“	8.543“	18.110“	4.252“	7.953“	2.598“	8.504“	16.024“

TTLW508

Ø 323.9 - 508 mm (12” - 20”)

≈ 36 kg
≈ 79.4 lbs



TTLW508 Tube Cutting & Beveling Equipement
with pneumatic drive

ORDER NO.	DESCRIPTION
TTLW508-1000	TTLW508 Cutting and beveling machine with pneumatic drive
TTLW508-1020	TTLW508 Tube cutting and beveling machine with electric drive, 230 V 1500W

DIMENSIONS:

ØA	ØB	C	ØD	E	F	G	H	J
223 mm	373 mm	241 mm	508 mm	108.6 mm	202.6 mm	66 mm	240 mm	431 mm
8.779“	14.685“	9.488“	20“	4.252“	7.953“	2.598“	9.449“	16.968“

TTLW610

Ø 355.6 - 610 mm (14” - 24”)

≈ 45.5 kg
≈ 100 lbs

TTLW610 Tube Cutting & Beveling Equipement
with pneumatic drive

ORDER NO.	DESCRIPTION
TTLW610-1000	TTLW610 Cutting and beveling machine with pneumatic drive
TTLW610-1020	TTLW610 Tube cutting and beveling machine with electric drive, 230 V 1500W

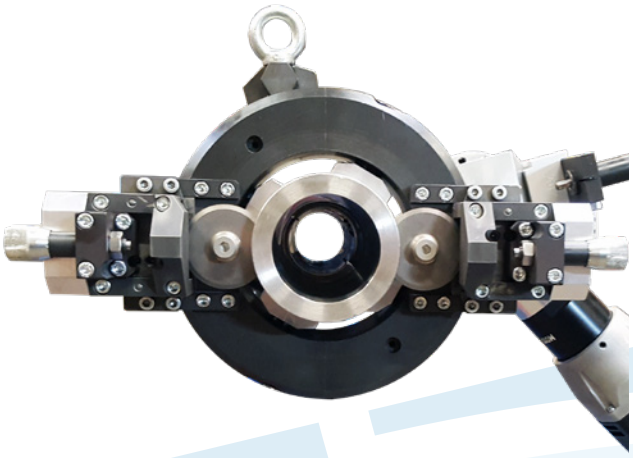
DIMENSIONS:

ØA	ØB	C	ØD	E	F	G	H	J
283 mm	433 mm	271 mm	570 mm	108.6 mm	202.6 mm	66 mm	270 mm	462 mm
11.142“	17.047“	10.669“	22.441“	4.252“	7.953“	2.598“	10.629“	18.189“

TTS-NG SERIES

TTS-NG

Ø 10.3 - 219 mm (0.406” - 8.622”)



DESCRIPTION:

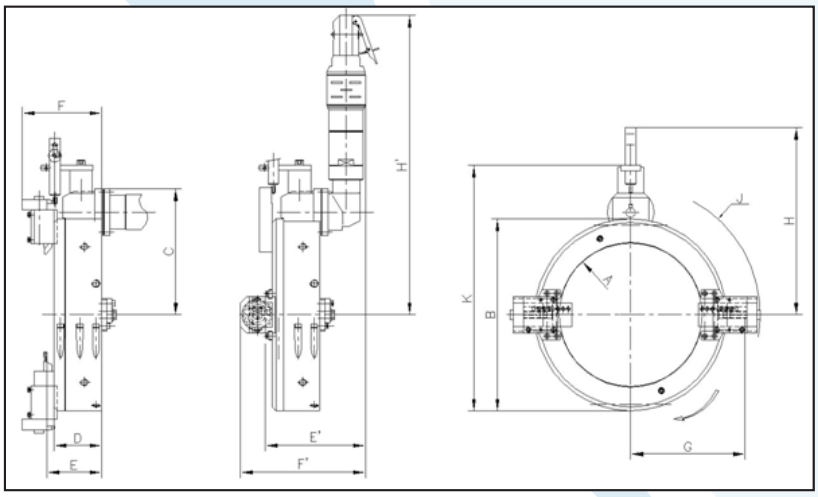
The TTS-NG-Series performs accurate cutting and/or beveling of tubes and pipes of all schedules from 10.3 mm up to 273 mm (.406" up to 10.748") OD in one simultaneous operation. Their reduced weight and overall dimensions enable these machines to work in areas where there is a shortage of space.

The special design of the machines features:

- Spilt frame configuration, opening in two half-shells
- Manual clamping using four independent adjustable jaws

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✓	✓	✓	✗

DIMENSIONS:



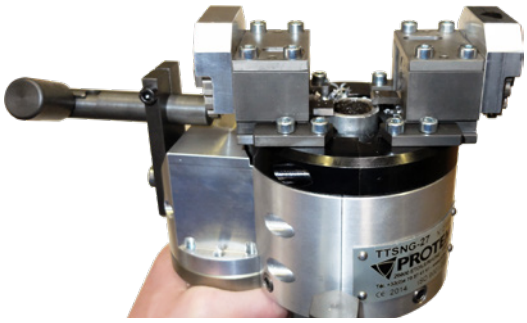
TECHNICAL FEATURES:

Machine	TTS-NG
Machining Capacity	10.3 mm (0 .406“) OD
	219 mm (8.622“) OD
Clamping	manual with key
Feed	Automatic with clutch
Drive Power	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.	

TTS-NG27

Ø 10.3 - 26.7 mm (0.406” - 1.02”)

≈ 3.5 kg
≈ 7.7 lbs



ORDER NO.	DESCRIPTION
TTSNG27-1000	TTS27 with pneumatic drive 730 W
TTSNG27-1020	TTS27 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
30 mm	106 mm	100 mm	86 mm	81,5 mm	175 mm	154 mm	97.5 mm	135.5 mm	175.5 mm	156 mm	194 mm	368.5 mm
1.181“	4.173“	3.937“	3.385“	3.188“	6.889“	6.062“	3.818“	5.314“	6.889“	6.141“	7.637“	14.488“

TTS-NG SERIES

TTS-NG33

Ø 10.3 - 33.4 mm (0.406” - 1.29”)

≈ 3.5 kg
≈ 7.7 lbs

ORDER NO.	DESCRIPTION
TTSNG33-1000	TTS33 with pneumatic drive 730 W
TTSNG33-1020	TTS33 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
36 mm	112 mm	103 mm	86 mm	84.5 mm	181 mm	160 mm	97.5 mm	135.5 mm	178.5 mm	156 mm	194 mm	371.5 mm
1.417“	4.409“	4.055“	3.385“	3.307“	7.125“	6.299“	3.818“	5.314“	7.007“	6.141“	7.637“	14.606“

TTS-NG42

Ø 10.3 - 42.2 mm (0.406” - 1.66”)

≈ 4 kg
≈ 8.8 lbs

ORDER NO.	DESCRIPTION
TTSNG42-1000	TTS42 with pneumatic drive 730 W
TTSNG42-1020	TTS42 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
45 mm	121 mm	107.5 mm	74 mm	89 mm	187 mm	169 mm	85.5 mm	123.5 mm	183.5 mm	156 mm	194 mm	376 mm
1.771“	4.763“	4.212“	2.913“	3.503“	7.362“	6.653“	3.346“	4.842“	7.204“	6.141“	7.637“	14.803“

TTS-NG48

Ø 10.3 - 48.3 mm (0.406” - 1.902”)

≈ 4.5 kg
≈ 9.9 lbs

ORDER NO.	DESCRIPTION
TTSNG48-1000	TTS48 with pneumatic drive 730 W
TTSNG48-1020	TTS48 with pneumatic angled drive 730 W

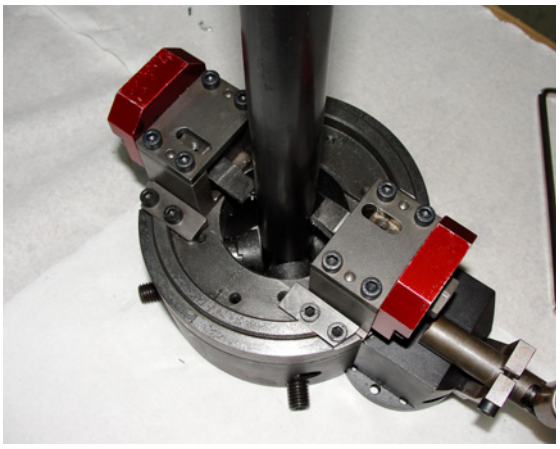
DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
51 mm	127 mm	110,5 mm	74 mm	92 mm	194 mm	175 mm	85.5 mm	123.5 mm	186.5 mm	156 mm	194 mm	379 mm
2.007“	5“	4.330“	2.913“	3.622“	7.637“	6.889“	3.346“	4.842“	7.322“	6.141“	7.637“	14.921“

TTS-NG60

Ø 21.3 - 60.3 mm (0.839” - 2.374”)

≈ 5 kg
≈ 11 lbs



ORDER NO.	DESCRIPTION
TTSNG60-1000	TTS60 with pneumatic drive 730 W
TTSNG60-1020	TTS60 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
63 mm	139 mm	116,5 mm	74 mm	98 mm	206 mm	187 mm	85.5 mm	123.5 mm	192.5 mm	156 mm	194 mm	385 mm
2.480“	5.472“	4.566“	2.913“	3.858“	8.110“	7.362“	3.346“	4.842“	7.559“	6.141“	7.637“	15.157“

TTS-NG73

Ø 21.3 - 73 mm (0.839" - 2"874)

≈ 5.5 kg
≈ 12.1 lbs

ORDER NO.	DESCRIPTION
TTSNG73-1000	TTS73 with pneumatic drive 730 W
TTSNG73-1020	TTS73 with pneumatic angled drive 730 W

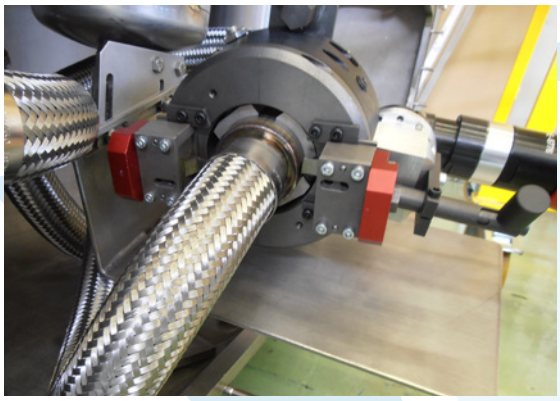
DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
75 mm	151 mm	122.5 mm	74 mm	104 mm	223.5 mm	199 mm	86.5 mm	123.5 mm	198.5 mm	156 mm	194 mm	391 mm
2.952"	5.944"	4.803"	2.913"	4.094"	8.779"	7.834"	3.385"	4.842"	7.795"	6.141"	7.637"	15.393"

TTS-NG88

Ø 33.4 - 88.9 mm (1.29" - 3.46")

≈ 6 kg
≈ 13.2 lbs



ORDER NO.	DESCRIPTION
TTSNG88-1000	TTS88 with pneumatic drive 730 W
TTSNG88-1020	TTS88 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
90 mm	166 mm	130 mm	74 mm	111.5 mm	232.5 mm	214 mm	85.5 mm	123.5 mm	205.5 mm	156 mm	194 mm	412 mm
3.543"	6.535"	5.118"	2.913"	4.370"	9.133"	8.425"	3.346"	4.842"	8.070"	6.141"	7.637"	16.220"

TTS-NG101

Ø 48.3 - 101.6 mm (1.89" - 3.976")

≈ 6.5 kg
≈14.3 lbs

ORDER NO.	DESCRIPTION
TTSNG101-1000	TTS101 with pneumatic drive 730 W
TTSNG101-1020	TTS101 with pneumatic angled drive 730 W

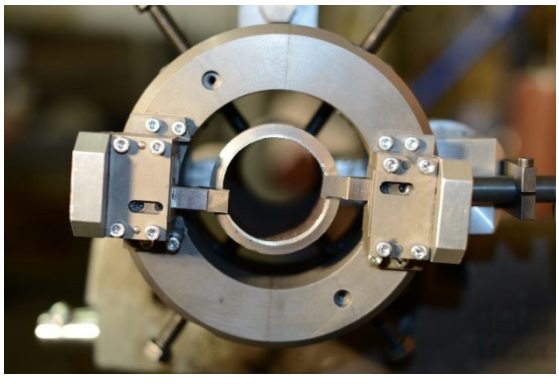
DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
105 mm	181 mm	137.5 mm	74 mm	119 mm	250.5 mm	229 mm	85.5 mm	123.5 mm	213 mm	156 mm	194 mm	406 mm
4.133"	7.125"	5.393"	2.913"	4.685"	9.842"	9.015"	3.346"	4.842"	8.385"	6.141"	7.637"	15.984"

TTS-NG114

Ø 60.3 - 114.3 mm (2.36"- 4.488")

≈ 7 kg
≈ 15.4 lbs



ORDER NO.	DESCRIPTION
TTSNG114-1000	TTS114 with pneumatic drive 730 W
TTSNG114-1020	TTS114 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
117 mm	193 mm	143.5 mm	74 mm	125 mm	259.5 mm	241 mm	85.5 mm	123.5 mm	219 mm	156 mm	194 mm	412 mm
4.606"	7.598"	5.629"	2.913"	4.921"	10.196"	9.488"	3.346"	4.842"	8.622"	6.141"	7.637"	16.220"

TTS-NG SERIES

TTS-NG127

Ø 60.3 - 127.0 mm (2.36” - 5")

≈ 7.5 kg
≈ 16.5 lbs

ORDER NO.	DESCRIPTION
TTSNG127-1000	TTS127 with pneumatic drive 730 W
TTSNG127-1020	TTS127 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
129 mm	205 mm	149.5 mm	74 mm	131 mm	271.5 mm	253 mm	85.5 mm	123.5 mm	225 mm	156 mm	194 mm	418 mm
5.078“	8.070“	5.866“	2.913“	5.157“	10.669“	9.960“	3.346“	4.842“	8.858“	6.141“	7.637“	16.456“

TTS-NG141

Ø 73.0 - 141.3 mm (2.87" - 5.55”)

≈ 8.5 kg
≈ 18.7 lbs

ORDER NO.	DESCRIPTION
TTSNG141-1000	TTS141 with pneumatic drive 730 W
TTSNG141-1020	TTS141 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
144 mm	220 mm	157 mm	74 mm	138.5 mm	286.5 mm	268 mm	85.5 mm	123.5 mm	232.5 mm	156 mm	194 mm	425.5 mm
5.669“	8.661“	6.181“	2.913“	5.433“	11.259“	10.551“	3.346“	4.842“	9.133“	6.141“	7.637“	16.732“

TTS-NG168

Ø 88.9 - 168.3 mm (3.5”- 7”)

≈ 10 kg
≈ 22 lbs

ORDER NO.	DESCRIPTION
TTSNG168-1000	TTS168 with pneumatic drive 730 W
TTSNG168-1020	TTS168 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
171 mm	247 mm	170.5 mm	74 mm	152 mm	351.5 mm	330 mm	85.5 mm	123.5 mm	265.5 mm	156 mm	194 mm	439 mm
6.732“	9.724“	6.692“	1.181“	5.984“	13.818“	12.992“	3.346“	4.842“	10.433“	6.141“	7.637“	17.283“

TTS-NG193

Ø 114.3 - 193 mm (4.5”- 7.6”)

≈ 11 kg
≈ 24.3 lbs

ORDER NO.	DESCRIPTION
TTSNG193-1000	TTS193 with pneumatic drive 730 W
TTSNG193-1020	TTS193 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
195 mm	271 mm	182.5 mm	74 mm	164 mm	375.5 mm	354 mm	85.5 mm	123.5 mm	277.5 mm	156 mm	194 mm	451 mm
7.677“	10.669“	7.165“	2.913“	6.456“	14.763“	13.937“	3.346“	4.842“	10.905“	6.141“	7.637“	17.755“

TTS-NG219

Ø 141.3 - 219.1 mm (5.6” - 8.6”)

≈ 12 kg
≈ 26.5 lbs

ORDER NO.	DESCRIPTION
TTSNG219-1000	TTS219 with pneumatic drive 730 W
TTSNG219-1020	TTS219 with pneumatic angled drive 730 W

DIMENSIONS:

ØA	B	C	D	G	ØJ	K	E	F	H	E'	F'	H'
222 mm	298 mm	196 mm	74 mm	177.5 mm	402.5 mm	381 mm	85.5 mm	123.5 mm	291 mm	156 mm	194 mm	464.5 mm
8.740“	11.732“	7.716“	1.181“	6.968“	15.826“	15“	3.346“	4.842“	11.456“	6.141“	7.637“	18.267“

TTS-RD SERIES

TTS-RD

Ø 21 - 141.3 mm (0.827” - 5.563”)

DESCRIPTION:

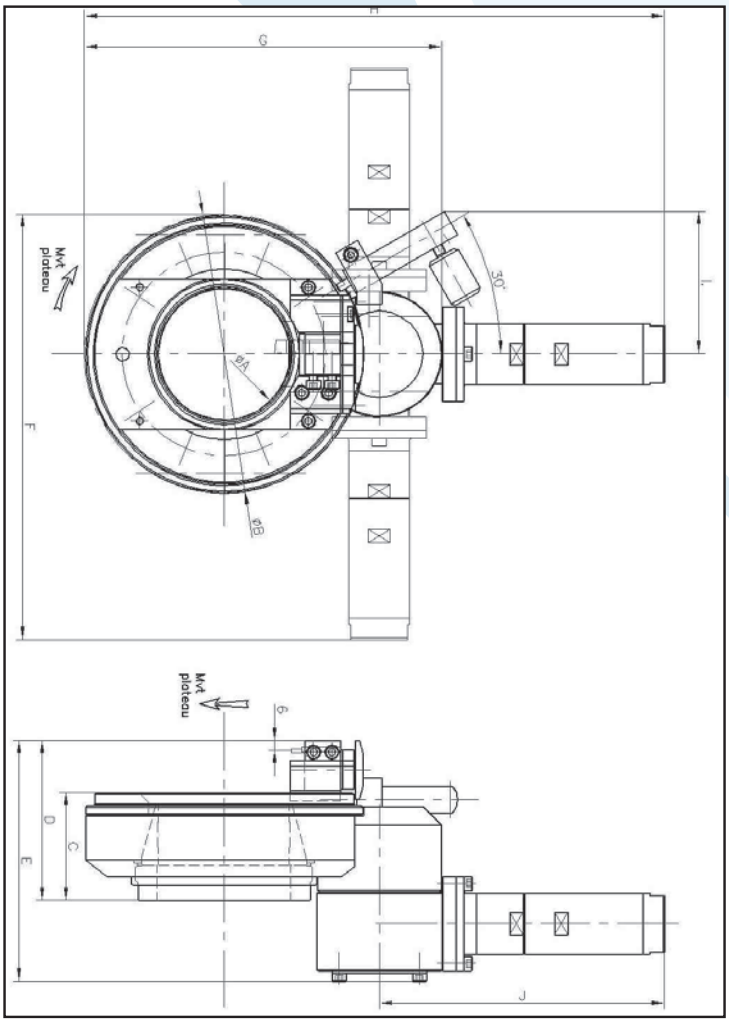
The TTS-RD cutting machines are designed to cut and bevel all types of tubes, individually or simultaneously.

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 in case of poor machine set-up. 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, for example.

Beveling	Cutting	Facing	Counterboring	Surfacing
✗	✓	✓	✗	✗

DIMENSIONS:



TECHNICAL FEATURES:

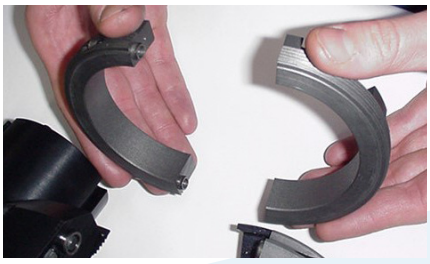
Machine	TTS-RD
Machining Capacity	21 mm (0.827“) OD
	141.3 mm (5.563“) OD
Clamping	manual with a key
Feed	Automatic with clutch
Rotation	Up to 30 rpm off-load-speed
Drive Power	Pneumatic.
Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.	

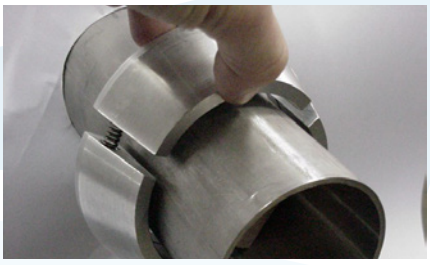
TTS-RD SERIES

ASSEMBLY OPERATION:

Operation 1 :
Implementation of nut + collet

The two parts of the nut must positioned on the tube. Next the collet is positioned relative to the outside diameter of the tube. Then the machine is positioned on the tubes (see the photo enclosed).





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

The TTSRD machines are portable and made for orbital tube cutting. These machines can be opened in two half-shells.

This allows for cuts to be made cleanly and precisely.

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 manually adjustable carriage.

Each round, due to the clutch pin, moves the tool carriage forward. (0.04 mm (.002") /rev)

Two drive designs are avaible; 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.

Operation 4:
Incrementation of the tools

Operation 5:
Cutting

TTS-RD60

Ø 21.3 - 60.3 mm (0.839” - 2.374“)

≈ 8 kg
≈ 17.6 lbs

ORDER NO.	DESCRIPTION
TTSRD60-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W.

DIMENSIONS:

A	B	C	D	E
Dimensions on request				

TTS-RD 73

Ø 21.3 - 73 mm (0.839” - 2.874")

≈ 8,5 kg
≈ 18.7 lbs

ORDER NO.	DESCRIPTION
TTSRD73-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W.

DIMENSIONS:

A	B	C	D	E
Dimensions on request				

TTS-RD 88

Ø 33.4 - 88.9 mm (1.29” - 3.46“)

≈ 9 kg
≈ 19.8 lbs

ORDER NO.	DESCRIPTION
TTSRD88-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W.

DIMENSIONS:

A	B	C	D	E
Dimensions on request				

TTS-RD 101

Ø 48.3 - 101.6 mm (1.889” - 4“)

≈ 10 kg
≈ 22 lbs

ORDER NO.	DESCRIPTION
TTSRD101-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W.

DIMENSIONS:

A	B	C	D	E
Dimensions on request				

TTS-RD 114

Ø 60.3 - 114.3 mm (2.36” - 4.5“)

≈ 12 kg
≈ 26.4 lbs

ORDER NO.	DESCRIPTION
TTSRD114-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W.

DIMENSIONS:

A	B	C	D	E
Dimensions on request				

TTS-RD 127

Ø 60.3 - 127 mm (2.36” - 5“)

≈ 13 kg
≈ 28.6 lbs

ORDER NO.	DESCRIPTION
TTSRD127-1000	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W.

DIMENSIONS:

A	B	C	D	E
Dimensions on request				

TTS-RD 141

Ø 73 - 141.3 mm (2.874” - 5.55“)

≈ 15 kg
≈ 33 lbs

ORDER NO.	DESCRIPTION
TTSRD141-100	Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W.

DIMENSIONS:

A	B	C	D	E
Dimensions on request				

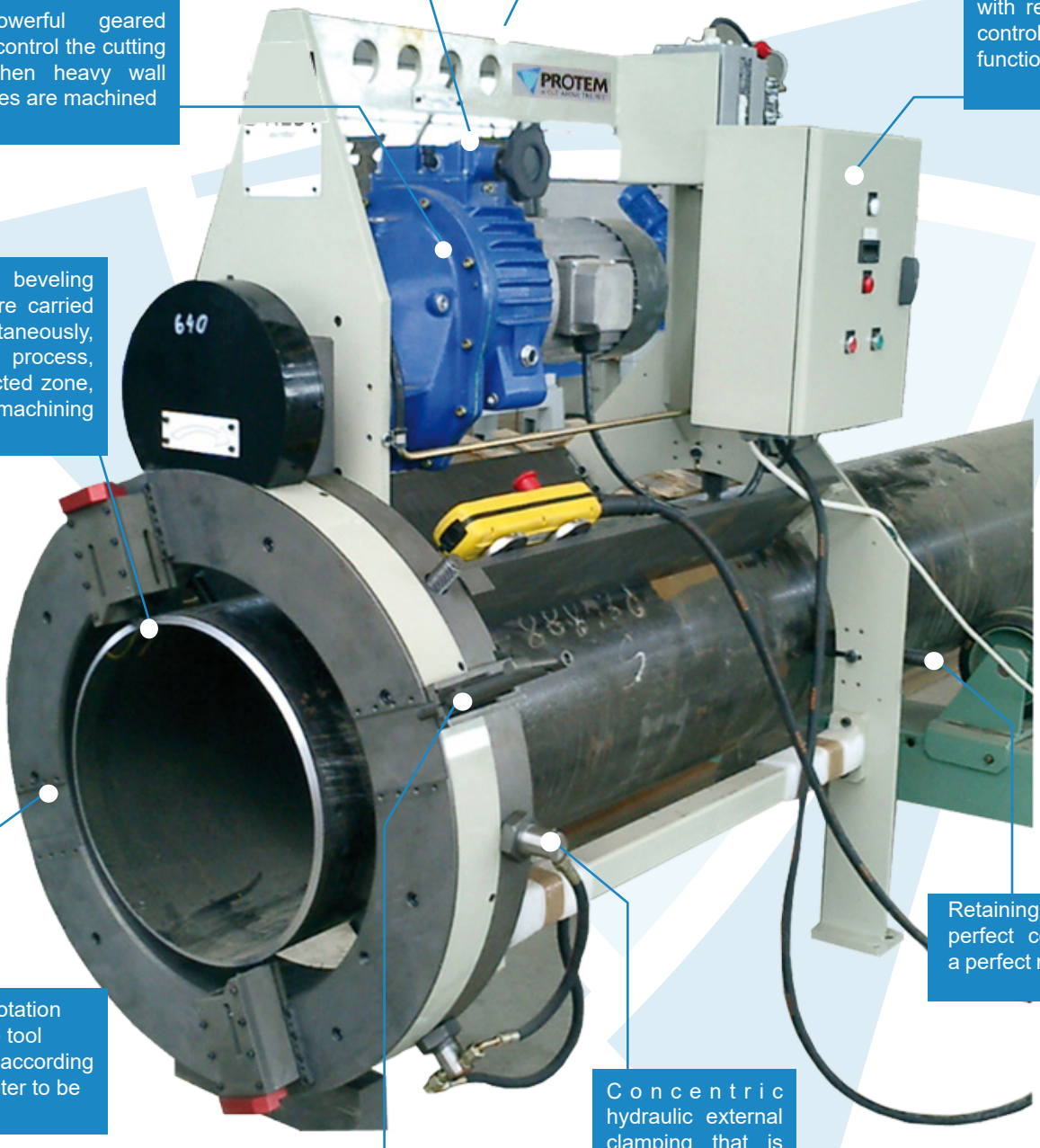
HEAVY DUTY SEVERING & BEVELING

Ø 114.3 mm - 1828.8 mm
Ø 4.5” – 72”

TNO Series	Machining Capacity	
TNO 4-12	114.3 - 323.9 mm	4” - 12”
TNO 12-24	323.9 - 610 mm	12” - 24”
TNO 24-36	610 - 914.4 mm	24” – 36”

INDUSTRIES:

Oil & Gas	*Tube Manufacturers*
	



An integrated hydraulic power unit with high pressure that 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

Retaining screws for perfect concentricity and a perfect machine balance

Adjustable rotation speed of the tool holder plate according to the diameter to be machined

Concentric hydraulic external clamping that is automated

Automatic and adjustable feed between two speeds due to the mechanical incrementation

TNO SERIES

TNO

Ø 114.3 - 1828.8 mm (4.5” - 72”)

DESCRIPTION:

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 is an OD clamping orbital cutting and beveling machine. The cutting tools rotate around the tube.

The automatic incremental feed system controls the two tool carriages with two feed speeds.

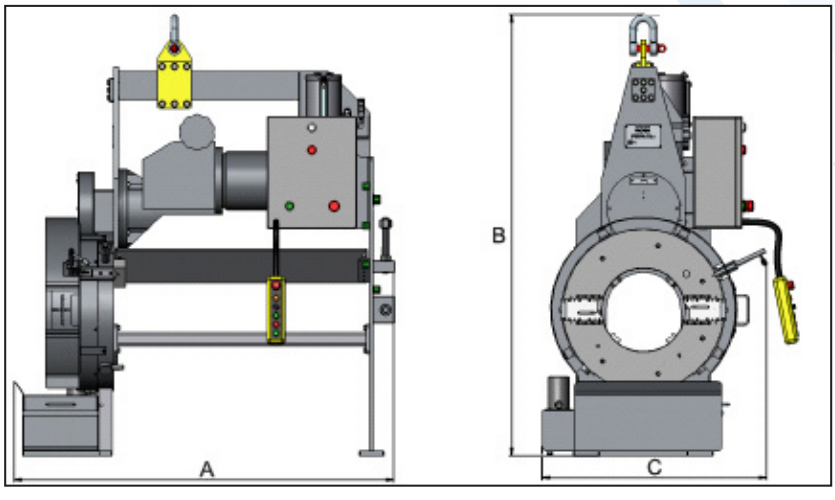
The rotation speed of the tool holder plate is adjustable according to the tube diameter.

SPECIFIC WELD PREPARATIONS ON REQUEST

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✓	✓	✓	✗

OD MOUNTED MACHINING

DIMENSIONS:



TECHNICAL FEATURES:

Machine	TNO Series
Clamping range	114.3 - 1828.8 mm 4” - 12”
Clamping	Automatic
Machining Time	Few minutes
Power	400 V – 50 Hz
Stroke of the tool holder	100 mm 3.937“
Usable feed of cutting or beveling tool bits	60 mm 2.362“
Feed of the clamping cylinders	100 mm 3.937“

TNO 4-12

Ø 114.3 - 323.9 mm (4” - 12”)

≈ 1100 kg
≈ 2425 lbs

DESCRIPTION:

ORDER NO.	DESCRIPTION
TNO FAB-12	Cutting and beveling machine type TNO 4-12“

Machine	TNO 4-12	
Clamping range	114.3 - 323.9 mm	
	4” - 12”	
	Minimum	Maximum
Tool-plate rotation speed:	5,5 rpm	30 rpm
Advance speed of tool holder plates:	0.08 mm/ round	0.16 mm/ round
Operating pressure of the clamping cylinders	100 bar	200 bar
	1450 psi	2900 psi
Tube outside diameter	114.3 mm	323.9 mm
	4.5“	12.751“

DIMENSIONS:

TNO 4-12

A	1700 mm
	66.929“
B	1964 mm
	77.322“
C	1000 mm
	39.370“

TNO 12-24

Ø 323.9 - 610 mm (12” - 24”)

≈ 1200 kg
≈ 2645.5 lbs

DESCRIPTION:

ORDER NO.	DESCRIPTION
TNO FAB-24	Cutting and beveling machine type TNO 12-24“

Machine	TNO 12-24	
Clamping range	323.9 - 610 mm	
	12” - 24”	
	Minimum	Maximum
Tool-plate rotation speed:	4.2 tr/mn	21.5 tr/mn
Advance speed of tool holder plates:	0.08 mm/ round.	0.16 mm/ round
Operating pressure of the clamping cylinders	100 bar	200 bar
	1450 psi	2900 psi
Tube outside diameter	323.9 mm	610 mm
	12.751“	24.015“

DIMENSIONS:

TNO 12-24

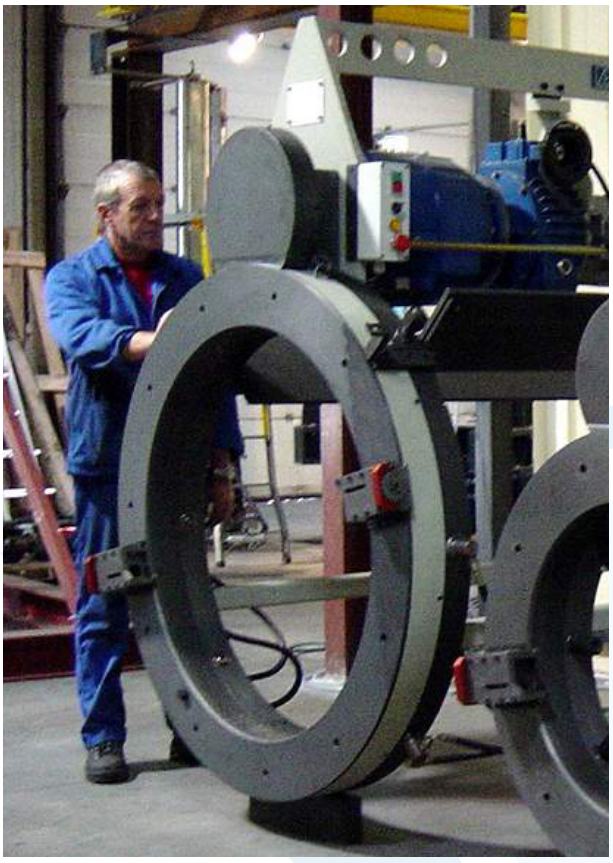
A	1700 mm
	66.929“
B	2118 mm
	88.385“
C	1210 mm
	47.637“

TNO SERIES

TNO 24-36

Ø 610 - 914.4 mm (24” - 36”)

≈ 1600 kg
≈ 3527 lbs



DESCRIPTION:

ORDER NO.	DESCRIPTION
TNO FAB-36	Cutting and beveling machine type TNO 24-36“

Machine	TNO 24-36	
Clamping range	610 - 914.4 mm	
	24” – 36”	
	Minimum	Maximum
Tool-plate rotation speed:	2.2 rpm	11.9 rpm
Advance speed of tool holder plates:	0.08 mm/ round.	0.16 mm/ round
Operating pressure of the clamping cylinders	100 bar	200 bar
	1450 psi	2900 psi
Tube outside diameter	610 mm	915 mm
	24.015“	36.023“

DIMENSIONS:

TNO 24-36

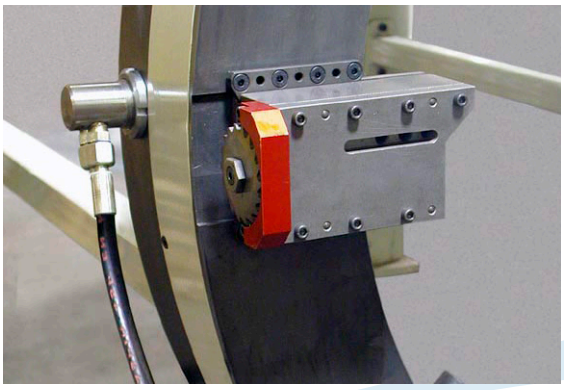
A	1700 mm
	66.929“
B	2515 mm
	99.015“
C	1510 mm
	59.448“

BIGGER MODELS ON REQUEST

OD MOUNTED MACHINING

OPTIONS:

Tool block carriage



100 mm (3.937") 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.

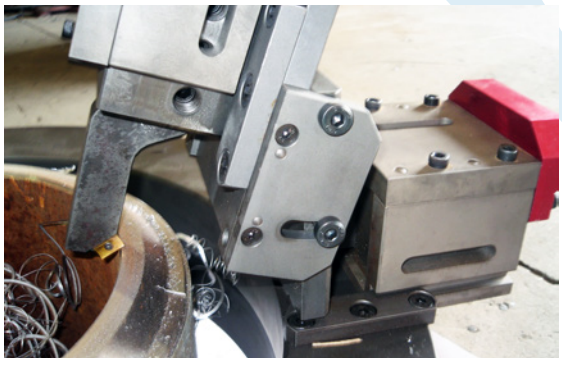
ORDER NO.	DESCRIPTION
TTNG-2200	TTNG-PO-C-50 Tool holder carriage, 50 mm stroke
TTNG-2400	TTNG-PO-C-100 Tool holder carriage, 100 mm stroke
TNO_FAB-1002	TTNG FAB-4/12-POSUI Carriage for ovalization tracking with kit intermediate plates and clutch holder

Lubrification 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-36-LUB	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 50 mm with tool bit holder
TTNG-2800	Counterboring carriage, stroke 50 mm with insert holder
TTNG-2900	Counterboring carriage, stroke 100 mm with tool bit holder
TTNG-3000	Counterboring carriage, stroke 100 mm with insert holder

Chipguard

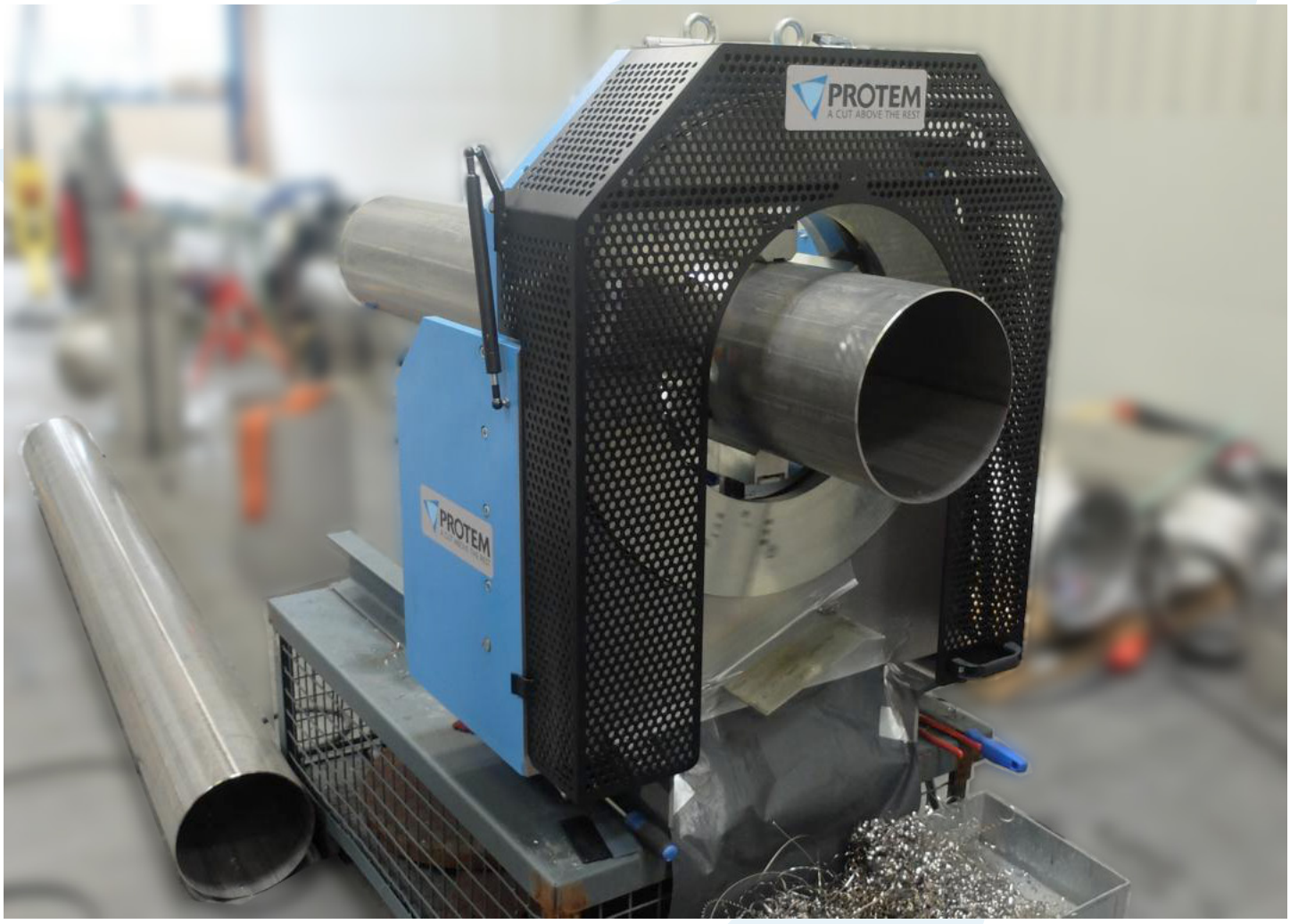
The whole range of TNO units is fitted with a protective housing which covers the tool-plate. The housing represents a safety system for the operators. It has a slot to be able to adjust the posit ion of the clutch pin that moves the tool carriage forward.

ORDER NO.	DESCRIPTION
TNO-3200	Safety housing

TRANSPORTABLE TUBE CUTTING & BEVELING MACHINES

Ø 25.4mm - 406 mm

Ø 1” – 16”



MF Series	Machining Capacity	
MF170	25.4 - 168 mm	1” – 6.6”
MF420	168 - 406 mm	6.6” – 16”

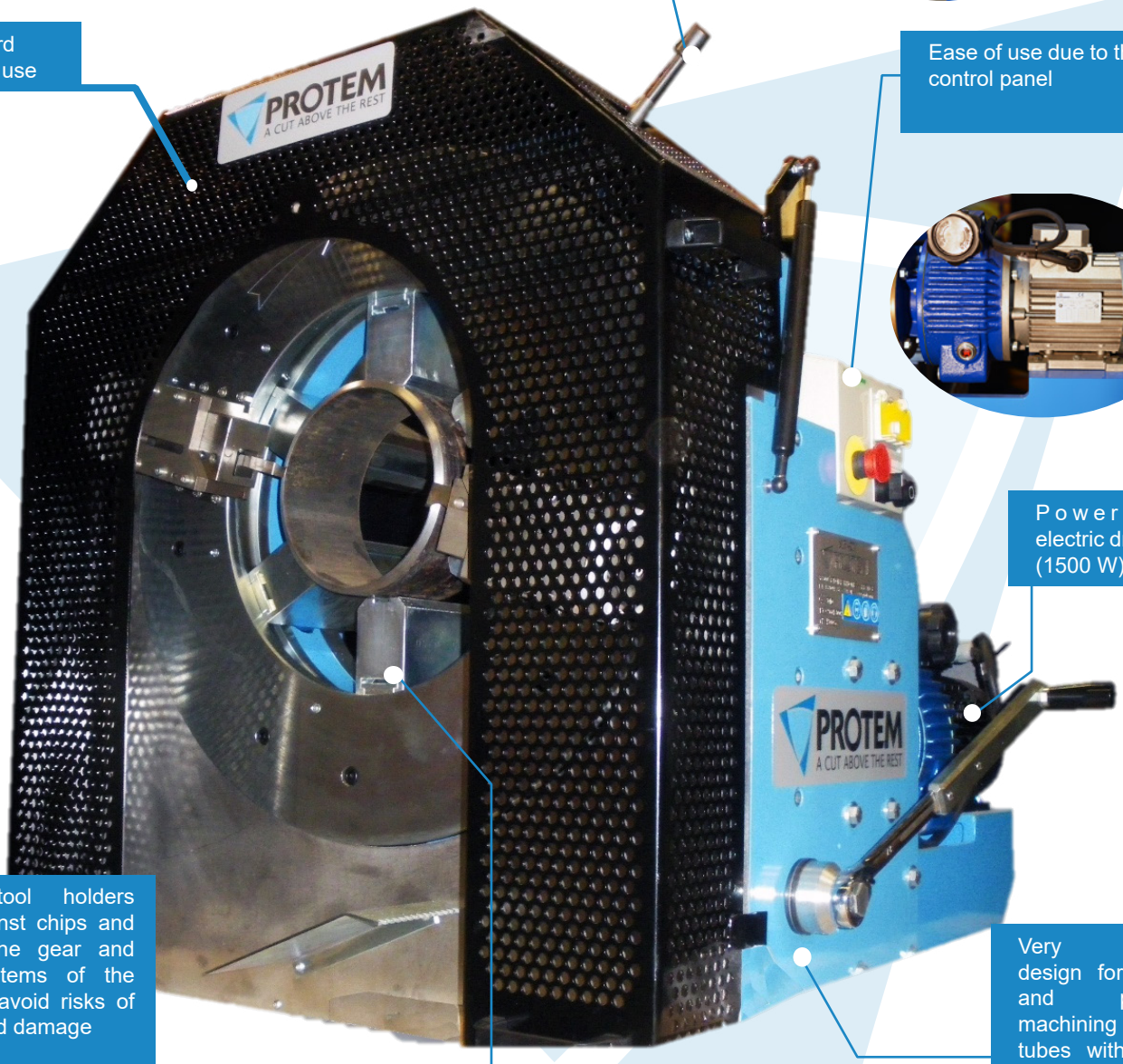
INDUSTRIES:

Tube Manufacturers	Nuclear	Oil & Gas
		

Automatic feed with clutch

Machine guard ensures safe use

Ease of use due to the control panel



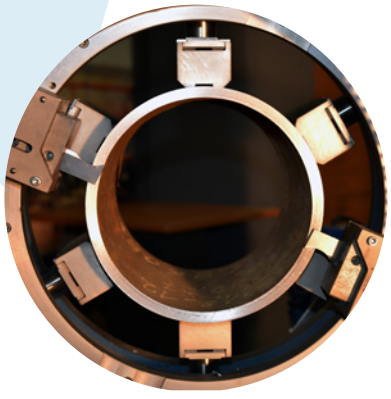
Powerful electric drive (1500 W)

Hermetic tool holders protect against chips and preserves the gear and guiding systems of the tool bits to avoid risks of blockage and damage

Tool holder mounted on rails for fast and precise set-up

Fast and perfect concentric clamping with a ratchet

Very rugged design for fast and precise machining of tubes with large wall thicknesses



MF170

MF170

Ø 25.4 - 168 mm (1” - 6.6”)

≈ 180 kg
≈ 396.8 lbs

DESCRIPTION:

MF-Series machines are designed to cut and bevel tubes from 25.4 mm to 406 mm (1" to 16") OD in one operation.

Perfect for use in all highly demanding industries such as, Energy Generation, Oil & Gas, Shipbuilding, Tube Processing, Aerospace, etc.

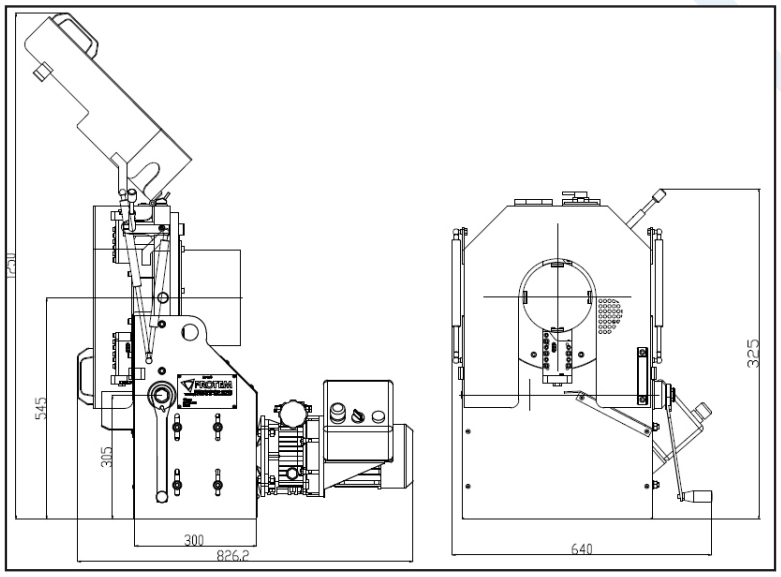
ORDER NO.	DESCRIPTION
MF-170-1000	MF170 with electrical drive 1500 W, weight ~ 180 kg/ 396,8 lbs

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✓	✓	✗	✗

OD MOUNTED MACHINING

MF170 ON-SITE :

DIMENSIONS:



TECHNICAL FEATURES:

Machine	MF170
Clamping range	25.4 to 168 mm (1” - 6.6”)
Clamping	Concentric clamping with ratchet
Clamping Process	Manual Automatic
Feed stroke	60 mm
Gear drive	10 - 80 rpm
Machining Time	Few minutes
Motor Power	Electric 1500W - 380 V Three phase motor
Machining	Carbide insert
Weight	180 kg (397 lbs)

OPTIONS:

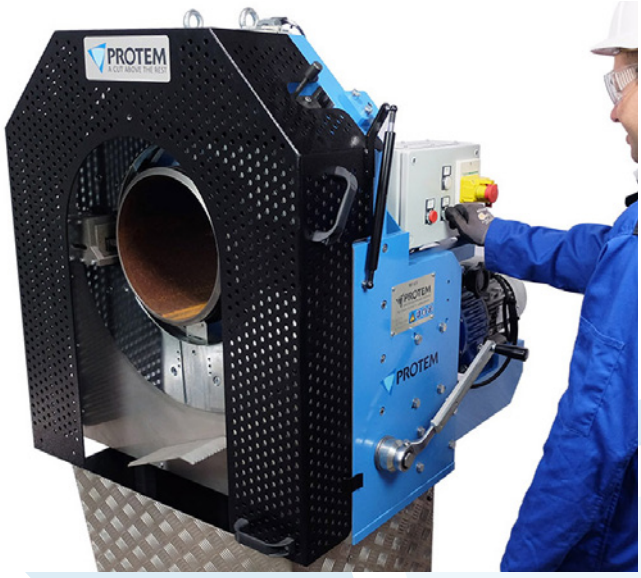
ORDER NO.	DESCRIPTION
MF170-K01	Wooden crate
MF170-2200	Kit for diameters from 25,4 mm (1")
MF170-2100	Pneumatic clamping
MF170-2400	Lifting table, manual
MF-170-2000	Electric Lubrication System
MF170-ODK	Visual speed control

MF420

MF420

Ø 168 - 406 mm (6.6” - 16”)

≈ 500 kg
≈ 1102.3 lbs



DESCRIPTION:

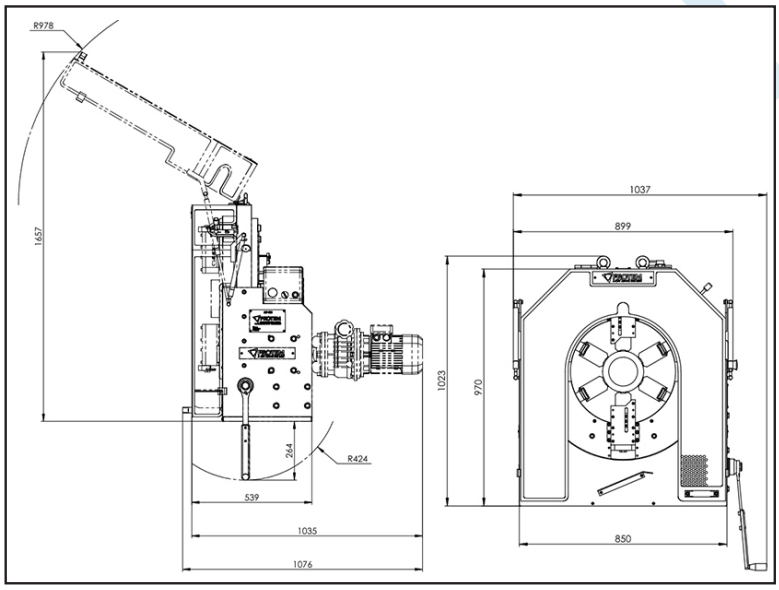
The PROTEM MF machines can achieve perfect weld preparations on all materials: mild steel, stainless steel, exotic alloys such as incoloy, hastelloy, duplex, super duplex, copper, etc.

ORDER NO.	DESCRIPTION
MF420-1000	MF420 with electrical drive 1500 W, weight ~ 500 kg/ 1102,3 lbs

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✓	✓	✗	✗

MF420 ON-SITE

DIMENSIONS:



TECHNICAL FEATURES:

Machine	MF420
Clamping range	168 to 406 mm (6.6” - 16”)
Clamping	Concentric clamping with ratchet
Clamping Process	Manual Automatic
Feed stroke	80 mm
Gear drive	10 - 80 rpm
Machining Time	Few minutes
Motor Power	Electric 1500W - 380 V Three phase motor
Machining	Carbide insert HSS-toolbits
Weight	500 kg (1102 lbs)

OPTIONS:

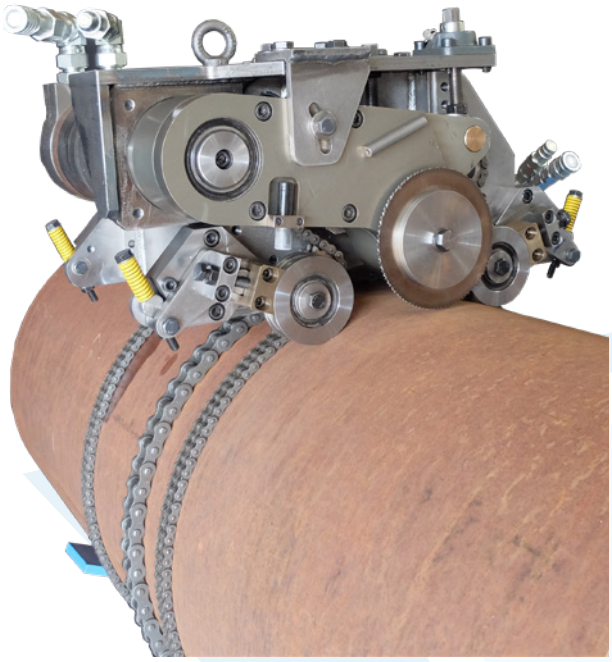
ORDER NO.	DESCRIPTION
MF420-K01	Crate MF420
MF-420-1133-2	6 additional jaws for diameters from 140 mm to 255 mm
MF420-1133-1	6 additional jaws for diameters from 230 mm to 335 mm
MF420-MHT	Lifting table, manual
MF-420-3000	Lifting table, electric
MF420-EKSS	Electric Lubrication System
MF420-ODK	Visual speed control

OCM - ORBITAL CUTTING AND BEVELING MACHINE FOR TUBES AND PIPES

OCM

Ø 168.3 - 1320.8 mm (6” - 52”)

≈ 96 kg
≈ 212 lbs



DESCRIPTION:

The OCM portable tube cutting machine is designed for cutting and beveling tubes to length from 6’’ in diameter (Ø168.3 mm) OD minimum and for wall thicknesses up to 2’’ (50.8 mm).

Its independent beveling module is entirely adjustable and performs bevels from 0° to 90° without changing accessories.

It was designed to be easy to use;

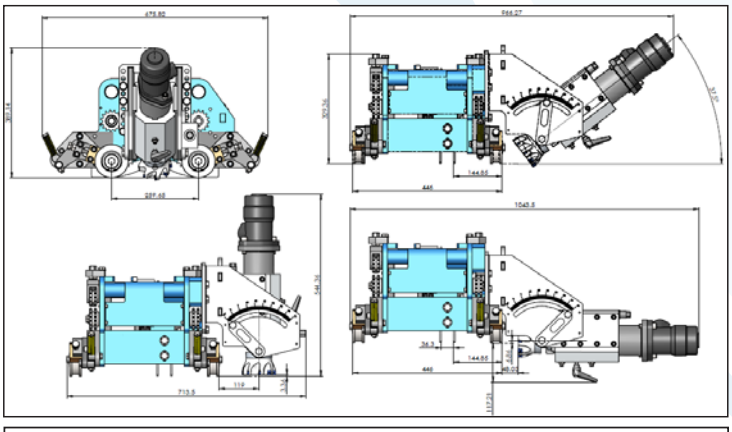
Robust and reliable, it can be used on-site, in the workshop or in challenging environments.

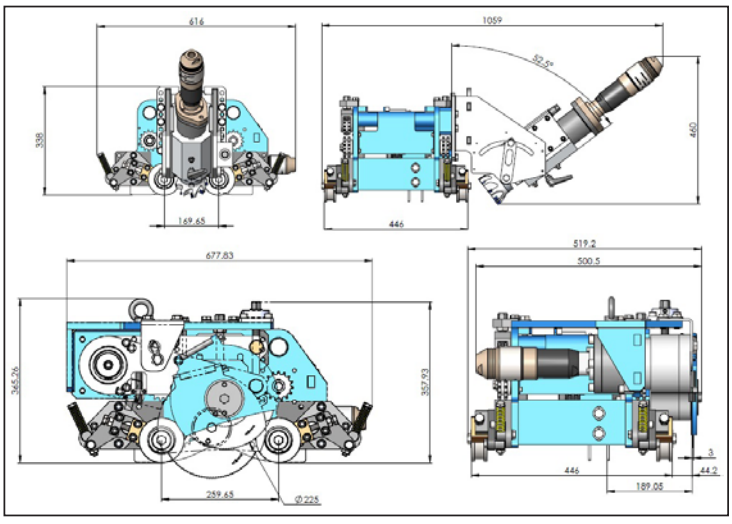
It has extension chains to clamp onto large diameter tubes.

- The OCM tube cutting machine is the essential complement for all your welding operations.
- Portable machining tool (OD clamping).
- Cutting and beveling modules available.
- Perfect weld preparation.
- Ability to perform I and V bevels from 0 to 90°.
- For construction, maintenance, and repair of tubular components.
- On -site or in the workshop.
- No heat-affected zone!
- Designed for all types of materials; carbon steel, chromium, stainless steel, duplex, super duplex, copper-nickel alloys, inconel, P91, aluminum, exotic alloys.

Beveling	Cutting	Facing	Counterboring	Surfacing
✓	✓	✓	✗	✗

DIMENSIONS:





TECHNICAL SPECIFICATIONS:

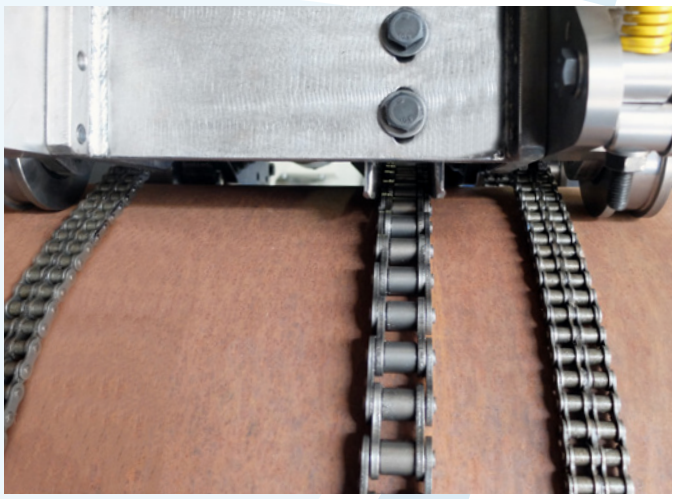
Machine	OCM
Machining capacity	From 6’’ OD (168.3 mm) For wall thicknesses up to 2’’ (50.8 mm). The basic chains machine up to 52’’ diameter (1320.8 mm). Optional extension chains cover the full range of standard tubes on the market. Beveling can be performed on wall thicknesses up to 2’’ (50.8 mm) in several passes. Its adjustable module can bevel the required inclination, whatever it may be.
Carriage feed	8” (200 mm)/min.
Clamping capacity	From 6’’ (168.3 mm) OD According to length of the chain.
Shapes and bevel angles	Facing, bevels from 0° to 90°
Clamping	Manual according to the procedure of the operating manual
Penetration	Manual according to the procedure of the operating 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 Beveling motor nominal speed: From 160 to 255 rpm (adjustable rotation speed according to oil pressure and flow) Feed motor power: 1.1kW Cutter saw motor power: 35.4 kW Beveling motor power: 10 kW

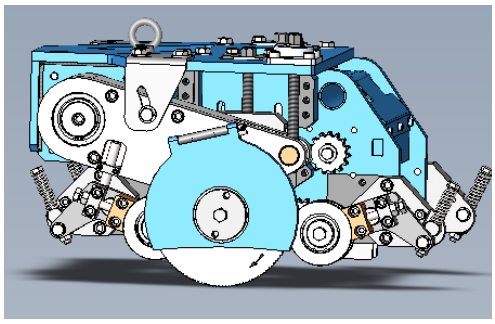
Machine	OCM
Pneumatic motor	Feed motor nominal speed: 95 rpm (before gear reduction) Cutting motor nominal speed: From 10 to 50 rpm (after gear reduction) Beveling motor nominal speed: From 160 to 255 rpm (after gear reduction) (adjustable rotation speed according to pressure and flow – mini recommended air supply: 6bars- Adjustable speed) Feed motor power: 1 kW Cutter saw motor power: 2 kW Beveling motor power: 2 kW

Other motors are available on request

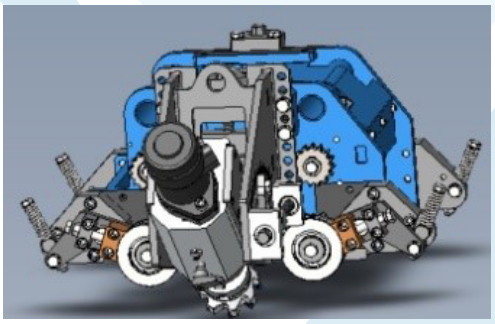
ORDER NO.	DESCRIPTION
OCM-1004	OCM with 2kW hydraulic motor and 35.4kW cutting module - Weight 386 LB ~ 175 kg.
OCM-2200	OCM with 2kW hydraulic motor and 12 kW beveling module - Weight 309 LB ~ 140 kg
OCM-1062	OCM with 2kW hydraulic motor, 35.4kW cutting module and 12 kW beveling module - Weight 486 LB ~ 220 kg
OCM-1100	OCM - Orbital cutting and beveling machine for tubes and pipe carriage only - Weight 212 LB ~ 96 kg
OCM-1005	OCM with pneumatic motor and cutting module 2kW
OCM-2202	OCM with pneumatic motor and beveling module 2Kw
OCM-1000	OCM with pneumatic motor cutting module and beveling module(2kW)
OCM-1102	OCM - Orbital cutting and beveling machine for tubes and pipe carriage only



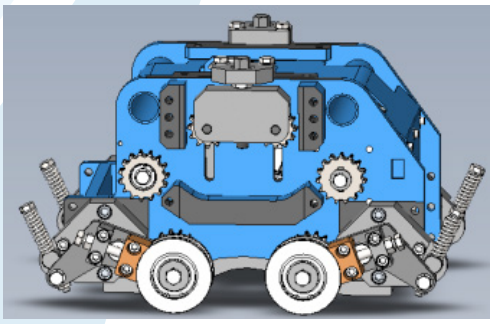
OPTIONS:



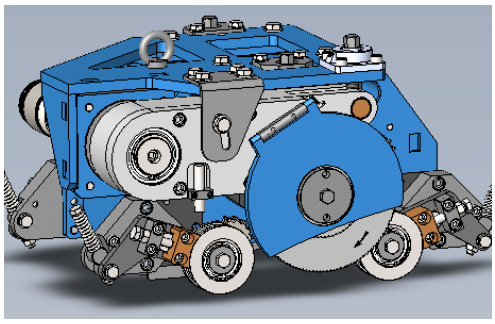
OCMHY-CC



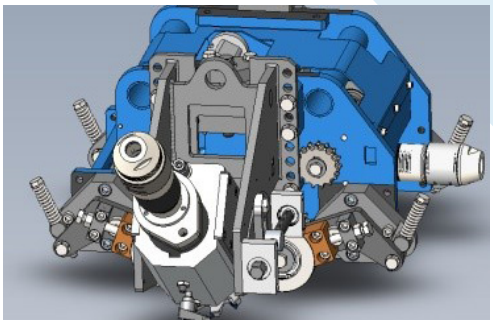
OCMHY-CF



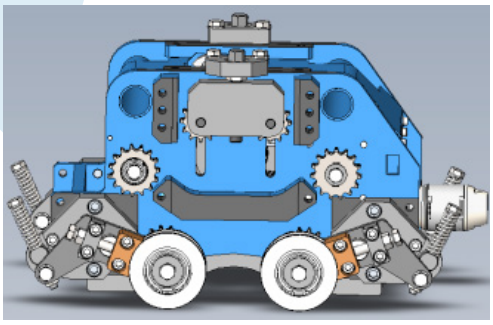
OCMHY-CH



OCMP-CC



OCMP-CF



OCMP-CH

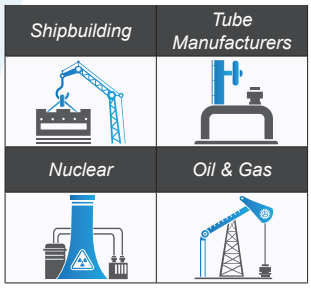
HIGH SPEED CUTTING AND BEVELING MACHINE

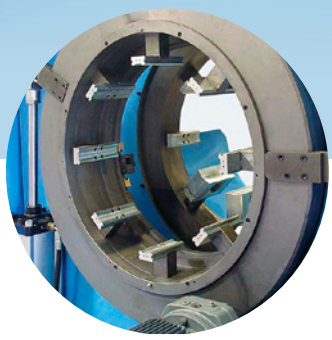
Ø 25.4 mm - 1422.4 mm
Ø 1” – 56”

CTA Series	Machining Capacity	
CTA 1-4	25.4 - 114 mm	1” – 4”
CTA 2-6	60.3 - 168 mm	2” – 6”
CTA 2-12	60.3 - 323.9 mm	2” – 12”
CTA 6-16	168.3 - 406.4 mm	6” - 16”
CTA 12-24	323.9 - 610 mm	12” - 24”
CTA 16-30	406.4 - 762 mm	16” - 30”
CTA 24-36	610 - 914.4 mm	24” - 36“

BIGGER MODELS ON REQUEST

INDUSTRIES:





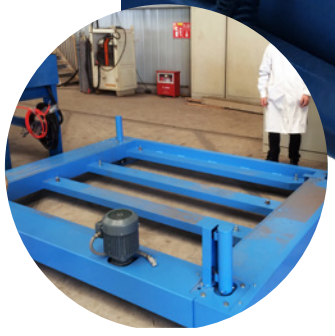
The machine is designed with a double external clamping of the tubes upstream and downstream of the internal part of the machine.

The jack thrust and clamping system design provide a firm and concentric clamping on the outside diameter of the tube.

The 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 chips conveyor is automatically operated by the CTA control system. As soon as the tool holder plate starts rotating, the chips conveyor initiates.

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 user or delivered as an option upon request) are not equipped with a height adjustment system.

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 diameter tubes with the cutting machine axis. It can be supplied with different lengths; 6 meters (20 '), 8 meters (26') or 12 meters (39'). The tubes can be conveyed manually or with motorized rollers.

CTA SERIES

CTA

Ø 25.4 - 1422.4 mm (1” - 56”)

DESCRIPTION:

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 diameters ranging from 2” to 36” (60.3 to 914.4 mm)will be cut and beveled within just a few seconds. Larger diameters 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

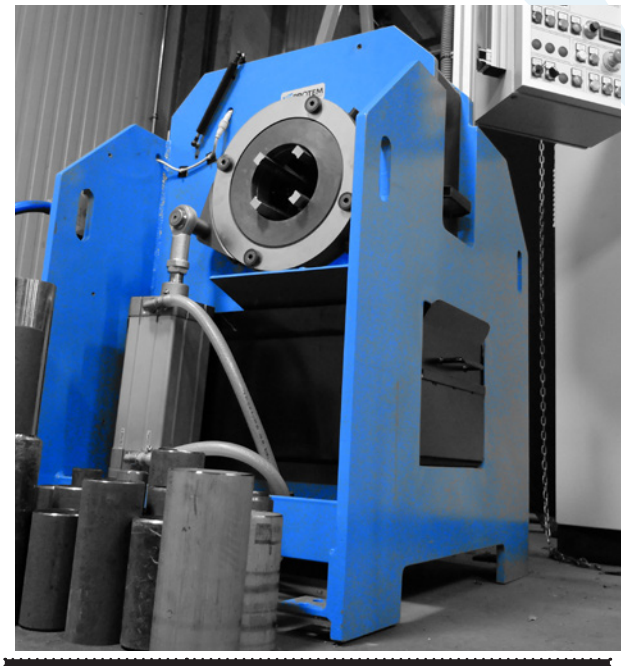
The tube to cut and bevel is stationary. It is immobilized in the machines OD clamping devices. The tool bits mounted on the rotating plate are put into rotation around the tube to perform the cut. The feed and back up of the tool bits are completed entirely mechanically during the rotation of the tool 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	Facing	Counterboring	Surfacing
✓	✓	✓	✗	✗

CTA 1-4

Ø 25.4 - 114 mm (1” - 4”)



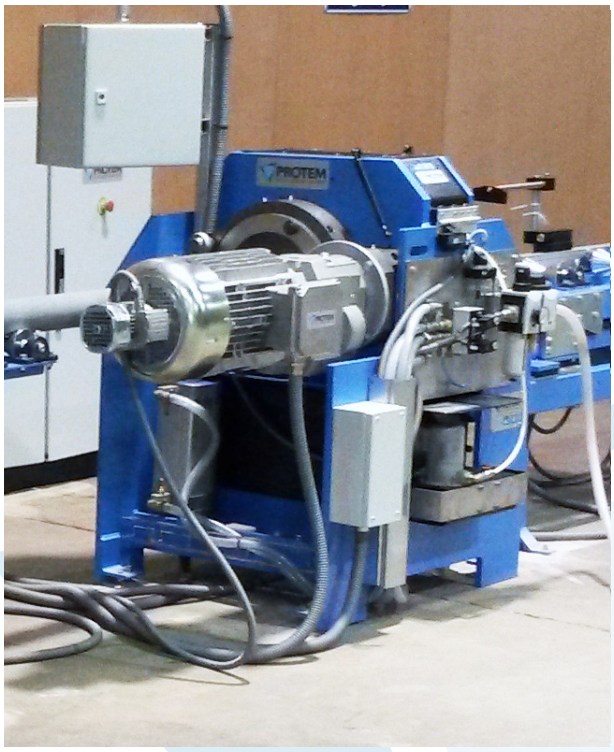
ORDER NO.	DESCRIPTION
CTA-1-4-1000	Automatic cutting and beveling machine for tubes from 1“ to 4“

TECHNICAL FEATURES:

Machine	CTA 1-4
Pipe size range	25.4 - 114 mm
	1” – 4”
Machining Capacity	15 mm (0.590“)
Clamping	Automatic
Machining Time	1 to 3 minutes
Motor Power	30 kW
Machining	Carbide insert

CTA 2-6

Ø 60.3 - 168.3 mm (2” - 6”)



TECHNICAL FEATURES:

Machine	CTA 2-6
Pipe size range	60.3 - 168.3 mm
	2” – 6”
Machining Capacity	22 mm (0.866“)
Clamping	Automatic
Machining Time	1 to 3 minutes
Motor Power	40 kW
Machining	Carbide insert

ORDER NO.	DESCRIPTION
CTA-2-6-1000	Automatic cutting and beveling machine for tubes from 2“ to 6“

CTA 2-12

Ø 60.3 - 323.9 mm (2” - 12”)

TECHNICAL FEATURES:

Machine	CTA 2-12
Pipe size range	60.3 - 323.9 mm
	2” – 12”
Machining Capacity	15 mm (0.590“)
Clamping	Automatic
Machining Time	1 to 3 minutes
Motor Power	30 kW
Machining	Carbide insert

ORDER NO.	DESCRIPTION
CTA-2-12-1000	Automatic cutting and beveling machine for tubes from 2“ to 12“

CTA SERIES

CTA 6-16

Ø 168.3 - 406.4 mm (6” - 16”)

ORDER NO.	DESCRIPTION
CTA-6-16-1000	Automatic cutting and beveling machine for tubes from 6“ to 16“

TECHNICAL FEATURES:

Machine	CTA 6-16
Pipe size range	168.3 - 406.4 mm
	6” - 16”
Machining Capacity	25.4 mm (0.984“)
Clamping	Automatic
Machining Time	1 to 3 minutes
Motor Power	55 kW
Machining	Carbide insert

CTA 12-24

Ø 323.9 - 610 mm (12” - 24”)

ORDER NO.	DESCRIPTION
CTA-12-24-1002	Automatic cutting and beveling machine for tubes from 12“ to 24“

TECHNICAL FEATURES:

Machine	CTA 12-24
Pipe size range	323.9 - 610 mm
	12” - 24”
Machining Capacity	15 mm (0.590“)
Clamping	Automatic
Machining Time	1 to 3 minutes
Motor Power	30 kW
Machining	Carbide insert

CTA 16-30

Ø 406.4 - 762 mm (16” - 30”)

TECHNICAL FEATURES:

Machine	CTA 16-30
Pipe size range	406.4 - 762 mm
	16” - 30”
Machining Capacity	25.4 mm (0.984“)
Clamping	Automatic
Machining Time	1 to 3 minutes
Motor Power	55 kW
Machining	Carbide insert

ORDER NO.	DESCRIPTION
CTA-16-30-1000	Automatic cutting and beveling machine for tubes from 16“ to 30“

CTA 24-36

Ø 610 - 914.4 mm (24” - 36”)

TECHNICAL FEATURES:

Machine	CTA 24-36
Pipe size range	610 - 914.4 mm
	24” - 36“
Machining Capacity	25.4 mm (0.984“)
Clamping	Automatic
Machining Time	1 to 3 minutes
Motor Power	55 kW
Machining	Carbide insert

ORDER NO.	DESCRIPTION
CTA-24-36-1000	Automatic cutting and beveling machine for tubes from 24“ to 36“

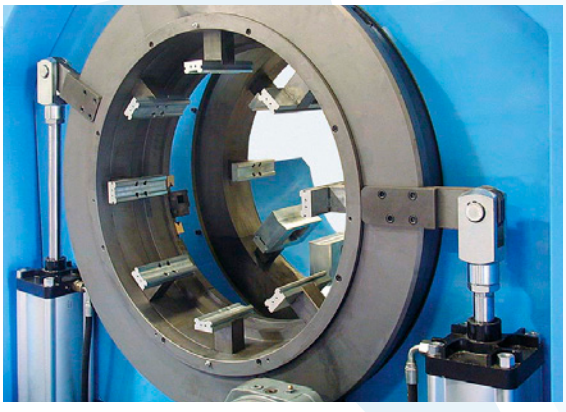
CTA SERIES

OPTIONS:

Multifunctional Control Panel

The machine is delivered with an electric panel in accordance 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 important functions: Clamp /Unlock, Slow / Fast Machining, Start / Stop Machine Manual / Automatic.

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 delivered 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 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.

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.

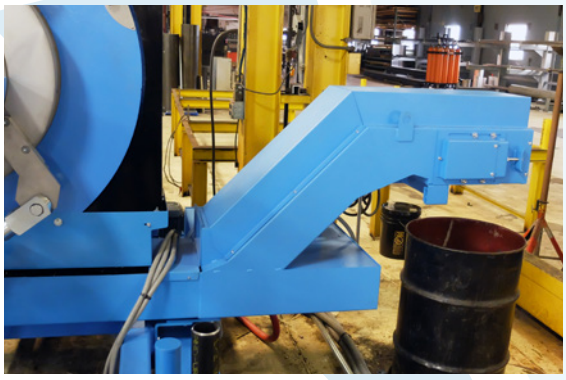
Lifting table

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.

Chips conveyor



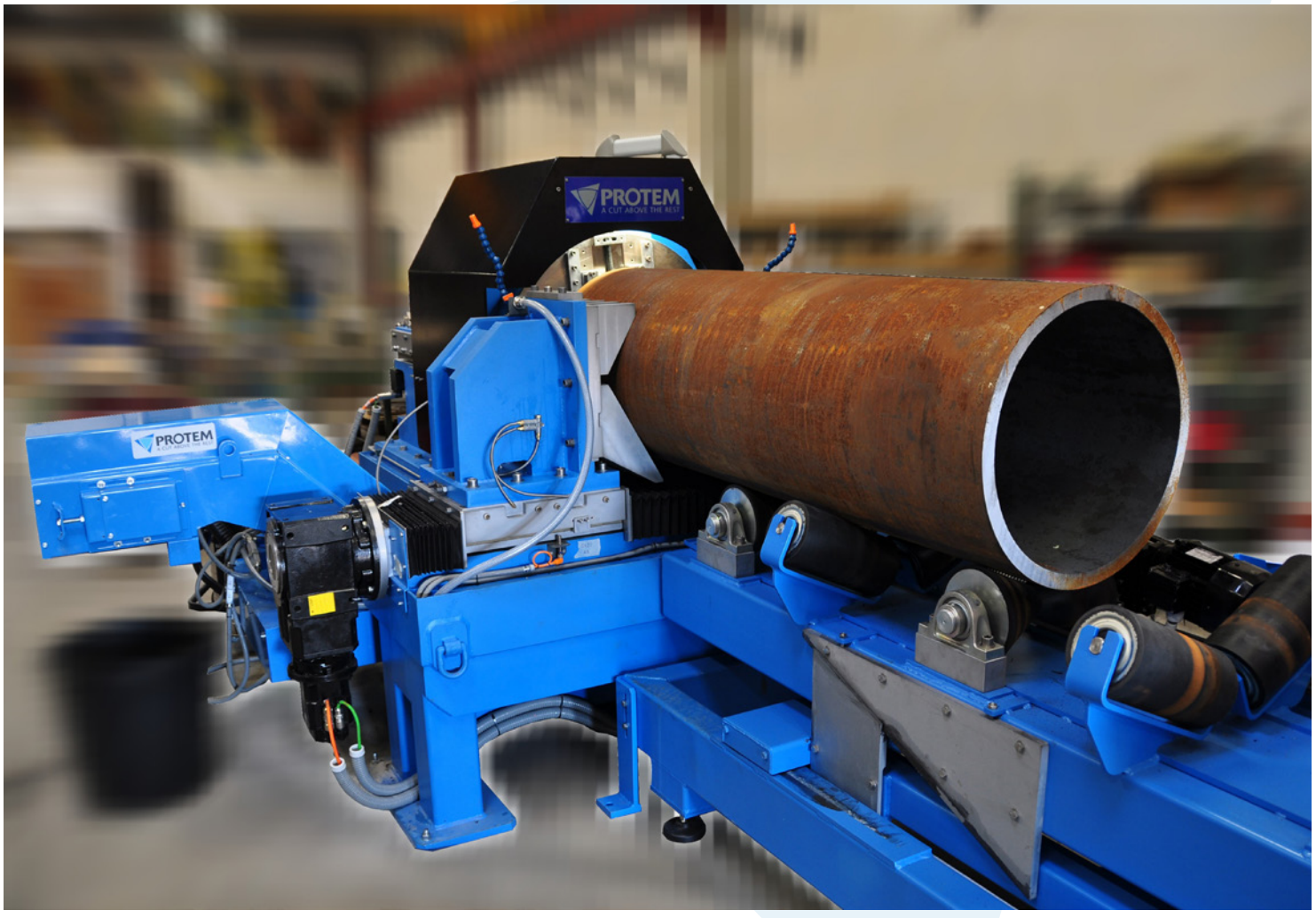
The optional chips conveyor can be used on all versions of the CTA.
This option increases productivity as all the chips produced during a machining cycle are removed automatically.

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 on the standard version.

BB SERIES

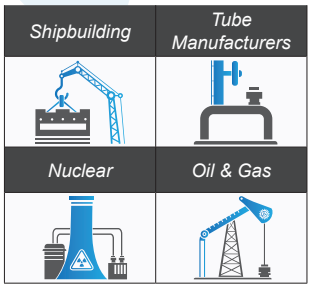
HIGH SPEED PIPE BEVELING MACHINE

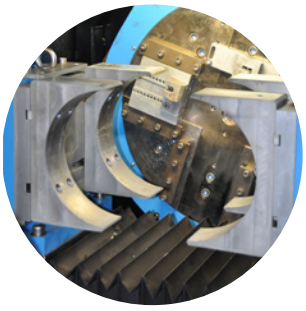
Ø 25.4 mm - 1422.4 mm
Ø 1” – 56”



BB Series	Machining Capacity	
BB 1-6	25.4 - 168 mm	1” – 6”
BB 3-16	76.2 - 406.4 mm	3” – 16”
BB 12-24	323 - 610 mm	12” – 24”
BB 24-36	610 - 914 mm	24” - 36”
BB 36-48	914 - 1219 mm	36” - 48”

INDUSTRIES:





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; soft 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.

The PROTEM conveyors are designed to adapt 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 to the tubes during transport. If preferred, they can be rubber coated.

BB SERIES

BB

Ø 25.4 - 1422.4 mm (1” - 56”)

DESCRIPTION:

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 desired, 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	Facing	Counterboring	Surfacing
✓	✗	✓	✓	✗

OD MOUNTED MACHINING

BB 1-6

Ø 25.4 - 168 mm (1” - 6”)

TECHNICAL FEATURES:

Machine	BB 1-6
Pipe size range	25.4 - 168 mm
	1” - 6”
Machining Capacity	25.4 mm (1“)
Clamping process	Manual
	Semi automatic
	Automatic
Feed stroke	100 mm (3.937“)
Feed	Manual
	Automatic
Machining Time	A few seconds
Motor Power	30 kW
Machining	Carbide insert

ORDER NO.	DESCRIPTION
BB-1/6-1000	Bench Beveling Machine with outside clamping device for pipes ranging from 1" to 6"

BB 3-16

Ø 76.2 - 406.4 mm (3” - 16”)

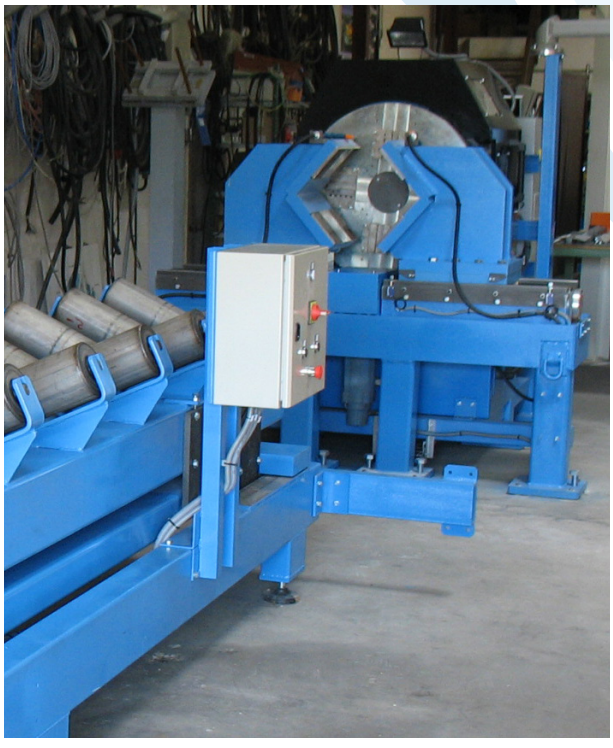
ORDER NO.	DESCRIPTION
BB-3/6-1000	Bench Beveling Machine with outside clamping device for pipes ranging from 3" to 16"

TECHNICAL FEATURES:

Machine	BB 3-16
Pipe size range	76.2 - 406.4 mm
	3” - 16”
Machining Capacity	25.4 mm (1“)
Clamping process	Manual
	Semi automatic
	Automatic
Feed stroke	100 mm (3.937“)
Feed	Manual
	Automatic
Machining Time	A few seconds
Motor Power	30 kW
Machining	Carbide insert

BB 12-24

Ø 323 - 610 mm (12” - 24”)



ORDER NO.	DESCRIPTION
BB-12-24-V3-1004	Bench Beveling Machine with outside clamping device for pipes ranging from 12" to 24"

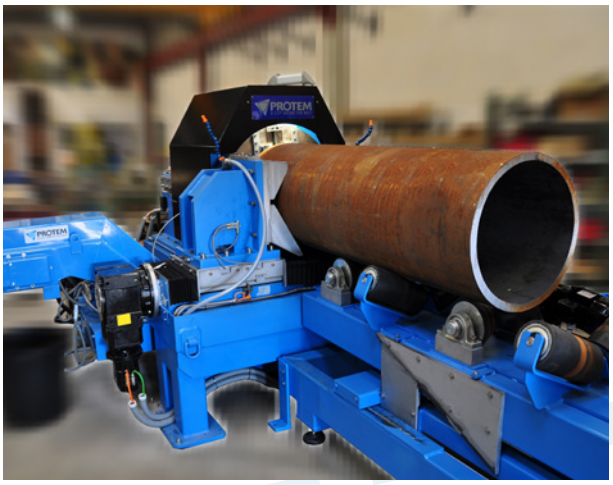
TECHNICAL FEATURES:

Machine	BB 12-24
Pipe size range	323 - 610 mm
	12” - 24”
Machining Capacity	25.4 mm (1“)
Clamping process	Manual
	Semi automatic
	Automatic
Feed stroke	100 mm (3.937“)
Feed	Manual
	Automatic
Machining Time	A few seconds
Motor Power	37 kW
Machining	Carbide insert

BB SERIES

BB 24-36

Ø 610 - 914 mm (24” - 36”)



ORDER NO.	DESCRIPTION
BB-24/36-1000	Bench Beveling Machine with outside clamping device for pipes ranging from 24" to 36"

TECHNICAL FEATURES:

Machine	BB 24-36
Pipe size range	610 - 914 mm
	24” - 36”
Machining Capacity	35 mm (1.37“)
Clamping process	Manual
	Semi automatic
	Automatic
Feed stroke	150 mm (5.905“)
Feed	Manual
	Automatic
Machining Time	Few seconds
Motor Power	50 kW
Machining	Carbide insert

BB 36-48

Ø 914 - 1219 mm (36” - 48”)

ORDER NO.	DESCRIPTION
BB-36/48-1000	Bench Beveling Machine with outside clamping device for pipes ranging from 36" to 48"

TECHNICAL FEATURES:

Machine	BB 36-48
Pipe size range	914 - 1219 mm
	36” - 48”
Machining Capacity	35 mm (1.37“)
Clamping process	Manual
	Semi automatic
	Automatic
Feed stroke	200 mm (7.874“)
Feed	Manual
	Automatic
Machining Time	Few seconds
Motor Power	50 kW
Machining	Carbide insert

BIGGER MODELS ON REQUEST

OPTIONS:

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 important 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 within the 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 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 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 BB.

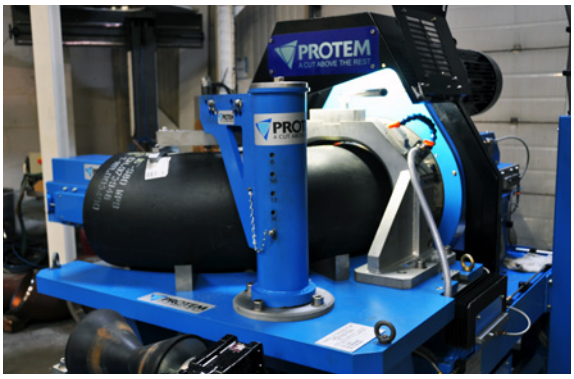
Chips Conveyor

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.

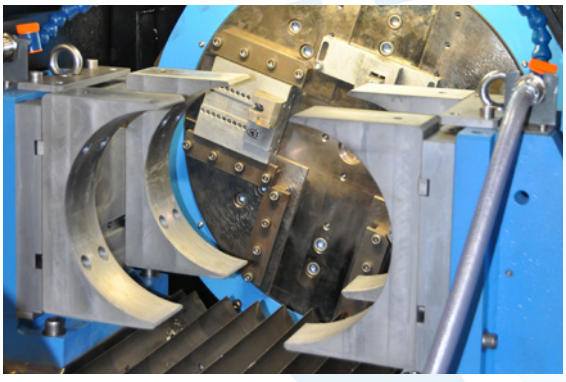
BB SERIES

Machining Table for Elbows



Designed for machining elbows, this option allows you to quickly and easily machine elbows of all sizes.

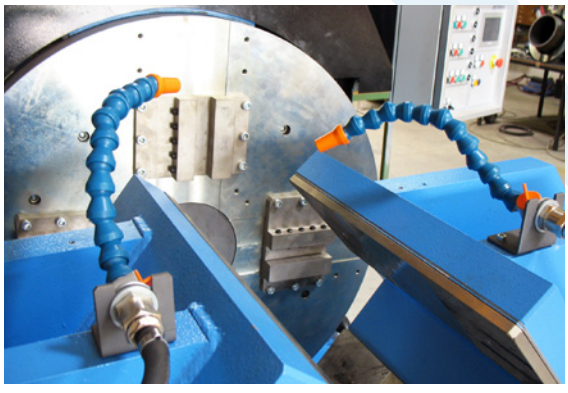
Enveloping Clamping Jaws



To avoid deformation of tubes with thinner 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.

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.

Tube conveyors

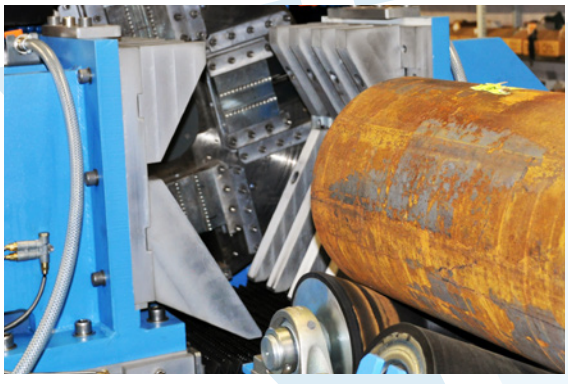
The tube conveyor can be delivered in various configurations to meet the customer's application requirements. The tube conveyor can be supplied with different lengths, 6 meters (20 feet), 8 meters (26 feet), 10 meters (33 feet) or 12 meters (39 feet).

The height adjustment ensures a very precise positioning of the tube 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.

ID-Tracker

The ID tracking carriage maintains a constant machining geometry.

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.

HYDRAULIC POWER UNITS

DESCRIPTION:

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.

HY-HPP30

ORDER NO.	DESCRIPTION
GH-HPP3KW	Hydraulic power pack 3 kW -manual regulation

Machine	HY-HPP030
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

Lenght	Width	Height
600 mm	560 mm	1150 mm
23.622“	22.047“	45.275“

≈ 130 kg
≈ 286 lbs

HY-HPP100

ORDER NO.	DESCRIPTION
GH-HPP11KW	Hydraulic power pack 11 kW, two senses of rotation, flow regulation manual, without hoses

Machine	HY-HPP100
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

Lenght	Width	Height
950 mm	710 mm	1250 mm
37.401“	27.952“	49.212“

≈ 500 kg
≈ 1102 lbs

HY-HPP150

ORDER NO.	DESCRIPTION
GH-HPP15KW	Hydraulic power pack 15 kW (1 pump) and 15 m hydraulic hoses

Machine	HY-HPP150
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

Lenght	Width	Height
980 mm	1470 mm	1200 mm
38.582“	57.874“	47.244“

≈ 500 kg
≈ 1102 lbs

HY-HPP200

ORDER NO.	DESCRIPTION
GH-HPP22KW	Hydraulic power pack 22 kW, two senses of rotation, flow regulation manuell, without hoses

Machine	HY-HPP200
Oil capacity	180 l (21.133 gal)
Range adjustable flow	80 l/min (17.171 gal/min)
Maximum Pressure	140 bar (1 305 psi)
Low and High Pressure	Yes
Power	Electrical Motor 22 kW

Lenght	Width	Height
850 mm	1500 mm	1350 mm
33.464“	59“	53.149“

≈ 660 kg
≈ 1455 lbs

HY-HPP300

ORDER NO.	DESCRIPTION
GH-HPP30KW	Hydraulic power pack 30 kW (1 pump) and 15 m hydraulic hoses

Machine	HY-HPP300
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	Moteur électrique 30 kW

Lenght	Width	Height
980 mm	1470 mm	1200 mm
38.582“	58“	47.244“

≈ 650 kg
≈ 1433 lbs

HY-HPP500

ORDER NO.	DESCRIPTION
GH-HPP55KW	Hydraulic power pack 55 kW

Machine	HY-HPP500
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

Lenght	Width	Height
1970 mm	1100 mm	1810 mm
77.559“	43.3“	70.866“

≈ 1800 kg
≈ 3968 lbs

HY-HPP700

ORDER NO.	DESCRIPTION
GH-HPP75KW	Hydraulic power pack 75 kW

Machine	HY-HPP700
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

Lenght	Width	Height
1970 mm	1100 mm	1810 mm
77.559“	43.3“	70.866“

≈ 1900 kg
≈ 4188 lbs

HYDRAULIC POWER UNITS

HY-HPP-D15

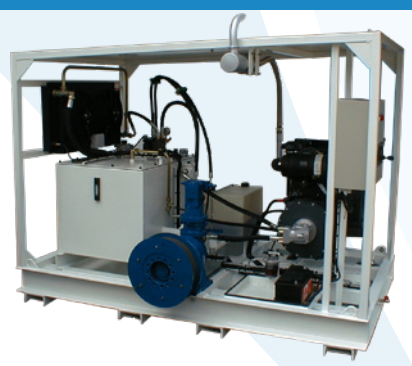
ORDER NO.	DESCRIPTION
GH-HPP-TD15	Hydraulic power pack with Diesel motor, 15 kW

Machine	HY-HPP-D15
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

Lenght	Width	Height
1500 mm	1000 mm	1000 mm
59.055“	39.37“	39.37“

≈ 400 kg
≈ 881 lbs

HY-HPP-D30



ORDER NO.	DESCRIPTION
GH-HPP-TD30	Hydraulic power pack with Diesel motor, 30 kW

Machine	HY-HPP-D85
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

Lenght	Width	Height
2800 mm	1900 mm	1900 mm
110.236“	74.803“	74.803“

≈ 2000 kg
≈ 4409 lbs

Lubrification device

DESCRIPTION:

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, TTLW, 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
MCLUB-K01	MCLUB-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

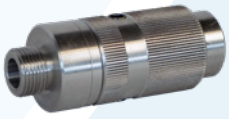
ORDER NO.	DESCRIPTION
FK-1000	Flexible tubing set

Kits 02

ORDER NO.	DESCRIPTION
FK-1002	Flexible tubing set

Regulation Valve

ORDER NO.	DESCRIPTION
RP-1000	Regulation Valve



Chip hook

ORDER NO.	DESCRIPTION
ACC-CROCHET-COPEAU	Chip hook

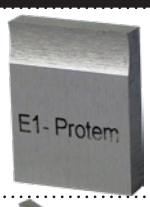
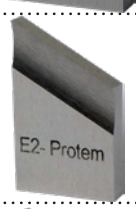
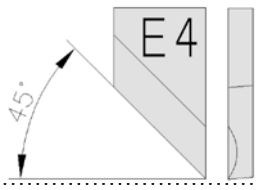
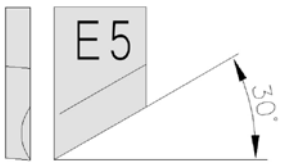
Oil for filters

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

SM8

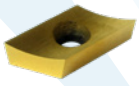
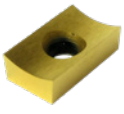
ORDER NO.	DESCRIPTION	VISUAL
O-SM8-M1-4-H-70	Facing, 4 mm (.157") wall thickness	
O-SM8-M2-4-H-71	30° beveling, 4 mm (.157") wall thickness	
O-SM8-M3-4-H-72	37°30 beveling, 4 mm (.157") wall thickness	
O-SM8-M4-4-H-73	45° beveling, 4 mm (.157") wall thickness	

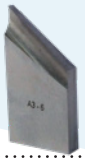
S18

ORDER NO.	DESCRIPTION	VISUAL
O-S18-E1-4-H-50	Facing tool bit	
O-S18-E2-4-H-52	30° beveling tool bit	
O-S18-E3-4-H-51	37°30 beveling tool bit	
O-S18-E4-4-H-53	45° beveling tool bit	
O-S18-E2INV-4-H-52	30° inverse beveling tool bit	

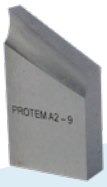
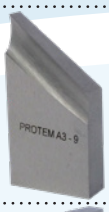
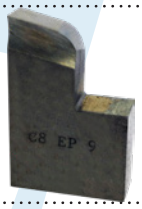
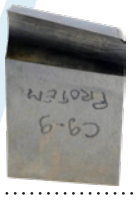
TOOLS BITS & INSERTS

US25

ORDER NO.	DESCRIPTION	VISUAL
US25-TIH-30	US25-TIH-30 Insert holder 30° for US25	
US25-TIH-37.5	US25-TIH-30 Insert holder 37,5° for US25	
US25-TIH-45	US25-TIH-30 Insert holder 45° for US25	
US25-TIH-90	US25-TIH-90 Insert holder 90° for US25	
US25-TIH-S	US25-TIH-S screw for tool insert	
O-US-P1-6-H-T	Tool Holder for US25	
O-US-P2-6-H-T	Tool Holder for US25	
O-US-P1-DUPLEX-30	Tool Holder for US25	
O-US-P2-DUPLEX-0	Tool Holder for US25	

ORDER NO.	DESCRIPTION	VISUAL
O-US-A1-6-H-18	Facing 90°	
O-US-A2-6-H-17	30° beveling	
O-US-A3-6-H-19	37°30 beveling	
O-US-A4-6-H-16	15° counterboring	
O-US-B6-6-H-55	Notched tool bit for facing	
O-US-B7-6-H-57	Notched tool bit for 30° beveling	
O-US-B8-6-H-58	Notched tool bit for 37°30 beveling	
O-US-B9-6-H-60	15° counterboring	
O-US-B11-6-H-24	Facing and counterboring	
O-US-C5-6-H-62	J-bevel 7° with radius 6	
O-US-C6-6-H-64	J-bevel 12,5° with radius 6	
O-US-C8-6-H-68	J-bevel 12,5° with radius 6	
O-US-C9-6-H-20	J-bevel 10°, with radius 1,5	

US Series (US30CH to US150)

ORDER NO.		VISUAL
O-US-A1-9-H-27	Facing 90°	
O-US-A2-9-H-26	30° beveling	
O-US-A3-9-H-28	37°30 beveling	
O-US-A4-9-H-25	15° counterboring	
O-US-B6-9-H-54	Notched tool bit for facing	
O-US-B7-9-H-56	Notched tool bit for 30° beveling	
O-US-B8-9-H-59	Notched tool bit for 37°30 beveling	
O-US-B9-9-H-61	15° counterboring	
O-US-B11-9-H-15	Facing and counterboring	
O-US-C5-9-H-63	J-bevel 7° with radius 6	
O-US-C6-9-H-65	J-bevel 12,5° with radius 6	
O-US-C8-9-H-69	Notched tool bit for J-bevel 12,5° with radius 6	
O-US-C9-9-H-29	J-bevel 10°, with radius 1,5	
COATING TIN/TICN	Coating (Titanium, TiCN) on request	

US450

ORDER NO.	DESCRIPTION:
O-US-A7	O-US-A7 tool bit 90°
O-US-A8	O-US-A8 tool bit for 30° bevel
O-US-A9	O-US-A9 tool bits for 37°30 bevels
O-US-A10	O-US-A10-85 tool bit for 45° bevels

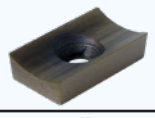
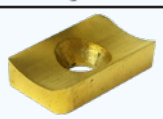
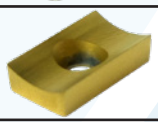
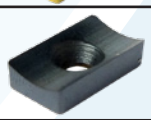
PFM

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)

OHSB

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

SE25 & SE65 & SE2T

ORDER NO.	DESCRIPTION	VISUAL
O-SE-P1-3.-H-HC-20	Tool inserts for SE25 and SE65, material: HSSE – coating: TiSiN	
O-SE-P1-3.3-C-F-20A	Tool inserts for SE25 and SE65, material carbide, coating: TiALN	
O-SE-P1-3.3-C-T-20A	Tool inserts for SE25 and SE65, material carbide, coating: TiN	
O-SE-P1-3.3-H-F-20	Tool inserts for SE25 and SE65, material HSSE, coating: TiALN	
O-SE-P1-3.3-H-T-20	Tool inserts for SE25 and SE65 , material HSSE, coating: TiN	

SL & SE Series

ORDER NO.	VISUAL
O-SE-P2-3.3-H-T-25	Tool inserts right for SL, SE
O-SE-P3-3.3-H-T-25A	Tool inserts right with radius 1.5 for SL, SE
O-SE-P4-3.3-H-T-26	Tool inserts left for SL, SE

TOOLS BITS & INSERTS

GR Series

ORDER NO.	DESCRIPTION
O-GR-P1-4-H-F	O-GR-P1-4-H-F beveling tool insert for GR machines
O-GR-P2.3-H-T	O-GR-P2.3-H-T pointed tool insert for GR machines
O-GR-P3.3-H-T	O-GR-P3.3-H-T flat tool insert for GR machines

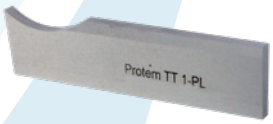
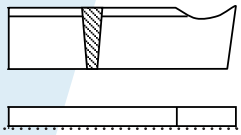
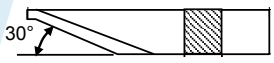
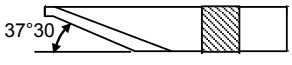
TTS & TTS-RD Series

ORDER NO.	DESCRIPTION
O-TTS-D2D-12-H-12	Standard pointed cutting tool bits
O-TTS-D1D-12-H-11	Standard flat cutting tool bits right
O-TTS-D4-12-H-18	30° beveling tool bits
O-TTS-D4-12-H-13	37°30 beveling tool bits (up to 12,7 mm (.5") wall)
O-TTS-D1D-12-H-10	Standard flat cutting tool bits left

SL & SE Series

ORDER NO.	DESCRIPTION
O-TTL-PL-5-H-2210	Standard severing tool bits (up to 25,4 mm (1") wall)
O-TTL-PT-5-H-2211	Standard pointed tool bits (up to 25,4 mm (1") wall)

TT-NG & TNO Series

ORDER NO.		VISUAL
O-TTN-TT1-5-H-PL	Standard severing tool bits (up to 35 mm (1.378") wall)	
O-TTN-TT1-5-H-PT	Standard pointed tool bits (up to 35 mm (1.378") wall)	
O-TTN-TT11-5-H-PL	Standard severing tool bits (up to 90 mm (3.543") wall)	
O-TTN-TT11-5-H-PT	Standard pointed tool bits (up to 90 mm (3.543") wall)	
O-TTN-TT2-12-H-2	30° beveling tool bits (up to 27mm (1.063") wall)	
O-TTN-TT3-12-H-3	37°30 beveling tool bits (up to 20mm (.787") wall)	

Additional beveling-tool bits: see cutting tool bits for TTNG-machines

ORDER NO.	DESCRIPTION
O-TTN-TT4-12-H-4	45° beveling tool bit
O-TTN-TT5-12-H-5	Beveling tool bit 30°, reversed
O-TTN-TT6-12-H-6	Beveling tool bit 37°30, reversed
O-TTN-TT7-25-H-7	Beveling tool bit 30°, wall thickness 35 mm (1.378")
O-TTN-TT8-25-H-8	Beveling tool bit 37°30, wall thickness 35 mm (1.378")
O-TTN-TT9-25-H-9	Beveling tool bit 30° for double bevel
O-TTN-TT9I-25-H-9	30° reversed beveling tool bit for double bevel
O-TTN-TT10-12-H-10	Beveling tool bit 37°30, double bevel, wall thickness 18 mm (.709")
O-TTN-TT10I-12-H-10	Beveling tool bit 37°30, double bevel, wall thickness 18 mm (.709"), reversed
O-TTN-TT11-5-H-PL	Severing tool bit, max. wall thickness 90 mm (3.543")
O-TTN-TT11-5-H-PT	Pointed tool bit, max. wall thickness 90 mm (3.543")
O-TTN-TT12-25-H-12	30° beveling tool bit for double bevel, wall thickness 46 mm (1.811")
O-TTN-TT12I-25-H-12	30° beveling tool bit for double bevel, wall thickness 46 mm (1.811"), reversed
O-TTN-TT13-25-H-13	30° beveling tool bit for double bevel, wall thickness 39 mm (1.535")
O-TTN-TT13I-25-H-13	30° beveling tool bit for double bevel, wall thickness 39 mm (1.535"), reversed
O-TTN-TT14-25-H-14	Beveling tool bit 37°30, wall thickness 50 mm (1.968")
O-TTN-TT14I-25-H-14	Beveling tool bit 37°30, wall thickness 50 mm (1.968"), reversed
O-TTN-TT15-8-H-PL	Severing tool bit, max. wall thickness 90 mm (3.543"), height 30 mm (1.181")
O-TTN-TT15-8-H-PT	Pointed tool bit, max. wall thickness 90 mm (3.543"), height 30 mm (1.181")
O-TTN-TT16-8-H-PL	Severing tool bit, max. wall thickness 90 mm (3.543"), width 8 mm (.315")
O-TTN-TT16-8-H-PT	Pointed tool bit, max. wall thickness 90 mm (3.543"), width 8 mm (.315")

ORDER NO.	DESCRIPTION
O-TTN-TT17-25-H-17	37°30 / 10° beveling tool bit for compound bevel
O-TTN-TT17I-25-H-17	37°30 / 10° beveling tool bit for compound bevel, reversed
O-TTN-TT18-25-H-18	37°30 / 10° beveling tool bit for compound bevel, wall thickness 45 mm (1.772")
O-TTN-TT18I-25-H-18	37°30 / 10° beveling tool bit for compound bevel, reversed
O-TTN-TT19-25-H-19	37°30 / 10° beveling tool bit for compound bevel, wall thickness 50 mm (1.968")
O-TTN-TT19I-25-H-19	37°30 / 10° beveling tool bit for compound bevel, reversed
O-TTN-TT20-25-H-20	30° / 10° beveling tool bit for compound bevel, wall thickness 35 mm (1.378")
O-TTN-TT20I-25-H-20	30° / 10° beveling tool bit for compound bevel, reversed
O-TTN-TT21-25-H-21	30° / 10° beveling tool bit for compound bevel, wall thickness 45 mm (1.772")
O-TTN-TT21I-25-H-21	30° / 10° beveling tool bit for compound bevel, reversed
O-TTN-TT22-25-H-22	30° / 10° beveling tool bit for compound bevel, wall thickness 50 mm (1.968")
O-TTN-TT22I-25-H-22	30° / 10° beveling tool bit for compound bevel, reversed
O-TTN-TT23-25-H-23	30° beveling tool bit for double bevel, wall thickness 50 mm (1.968")
O-TTN-TT23I-25-H-23	30° beveling tool bit for double bevel, wall thickness 50 mm (1.968"), reversed
O-TTN-TT24-12-H-24	30° beveling tool bit for double bevel, wall thickness 22 mm (.866")
O-TTN-TT24I-12-H-24	30° beveling tool bit for double bevel, wall thickness 22 mm, reversed (.866")
TT-KS	Tool inserts for the copying carriage
TT.INNEN	Tool bits for the counter boring carriage
TT-TULPE	Tool bits for J-bevels

TOOLS BITS & INSERTS

MF Series

ORDER NO.	DESCRIPTION
O-MF-P1-3-H	Cutting blade (2 cutting edges) with shim
O-MF-P2-4-H	Tool inserts for 30° and 37,5°

ORDER NO.	DESCRIPTION
O-TTN-TT1-5-H-PL	Standard severing tool bits (up to 35 mm (1.378") wall)
O-TTN-TT1-5-H-PT	Standard pointed tool bits (up to 35 mm (1.378") wall)
O-TTN-TT2-12-H-2	30° beveling tool bits (up to 27 mm (1.063") wall)
O-TTN-TT3-12-H-3	37°30 beveling tool bits (up to 20 mm (.787") wall)
Additional beveling-tool bits: see cutting tool bits for TTNG-machines	

CTA Series

ORDER NO.	DESCRIPTION
CTA-PO/PO106	CTA-PO/PO106 Bevel 30°
CTA-PO/PO107	CTA-PO/PO107 Bevel 37,5°
CTA-PO/PO108	CTA-PO/PO108 Bevel 37,5° sym.
CTA-PO/PO109	CTA-PO/PO109 Bevel 10° for bevel 30°
CTA-PO/PO110	CTA-PO/PO110 Cut and Bevel 10° for bevel 37°30
CTA-PO/PO111	CTA-PO/PO111 cut 30°
CTA-PO/PO113	CTA-PO/PO113 Cut and Bevel 10° for bevel 30°
CTA-PO/OT106	CTA-PO/OT106 Tool bit holder 30°
CTA-PO/OT107	CTA-PO/OT107 Tool bit holder 37° 30
CTA-PO/OT108	CTA-PO/OT108 Tool bit holder 37° 30
CTA-PO/OT109	CTA-PO/OT109 Tool bit holder 10°
CTA-PO/OT110	CTA-PO/OT110 Cutting blade holder + bevel 10° for bevel 37°30
CTA-PO/OT111	CTA-PO/OT111 Cutting blade holder
CTA-PO/OT112-01	CTA-PO/OT112-01 Shim for cutting blade holder 0.1 mm (.004")
CTA-PO/OT112-02	CTA-PO/OT112-02 Shim for cutting blade holder 0.2 mm (.008")
CTA-PO/OT112-2	CTA-PO/OT112-2 Shim for cutting blade holder 2 mm (.079")
CTA-PO/OT113	CTA-PO/OT113 Cutting blade holder + bevel 10° for bevel 30°

BB Series

ORDER NO.	DESCRIPTION
BB-PO/3025	BB-3/16-PO/3025 Outside beveling carbide insert holder 20° (wall<19 mm (.748"))
BB-PO/3032	BB-3/16-PO/3032 Outside beveling carbide insert holder 20°+ ref 3001 (wall>19 mm (.748"))
BB-PO/3017	BB-3/16-PO/3017 Outside beveling carbide insert holder 37°5(wall<19 mm (.748"))
BB-PO/3018	BB-3/16-PO/3018 Outside beveling carbide insert holder 37°5+ ref 3504 (wall>19 mm (.748"))
BB-PO/3014	BB-3/16-PO/3014 Outside beveling carbide insert holder 10°
BB-PO/3033	BB-3/16-PO/3033 Outside beveling carbide insert holder 75°
BB-PO/3216	BB-3/16-PO/3216 Tool holder adapter plate for facing tool holder block for small diameter
BB-PO/3220	BB-3/16-PO/3220 Deported tool holder
BB-PO/3221	BB-3/16-PO/3221 Horizontal tool holder
BB-PO/3221	BB-3/16-PO/3221 Horizontal tool holder

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, de-tubing 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

EQUIPMENT FOR THE NUCLEAR INDUSTRY

For more than 50 years PROTEM equipment has been used successfully by nuclear operators.

TT-NG

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

EQUIPMENT FOR THE OIL AND GAS INDUSTRY

SUBSEA - EXTREME TEMPERATURES - BARGES - ONSHORE - OFFSHORE - SPOOLBASE

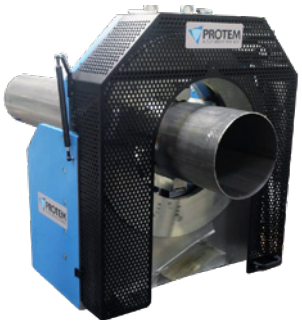
PFM

TT-NG

BB

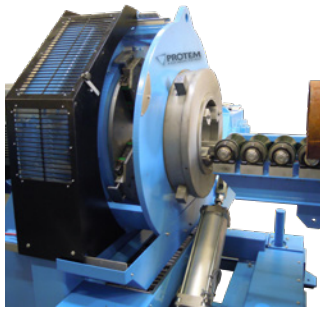
Elbow Beveling Machine

OHSB



MF

TNO



CTA

TUBE MANUFACTURERS

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 largest manufacturers and installation companies all over the world.

Applications:

> Manufacture of pipelines

> Pipelines Construction

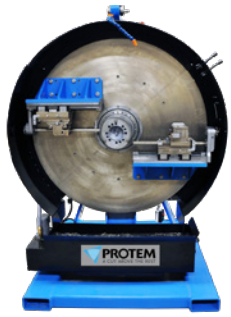
EQUIPEMENT FOR TUBE AND PIPELINE MANUFACTURERS

Equipment designed by PROTEM is integrated into the manufacturing processes of Tube and Pipeline Manufacturers for substantial gains in productivity.

US450

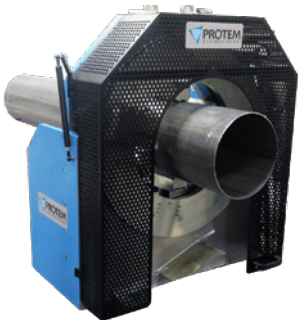
TT-NG

BB



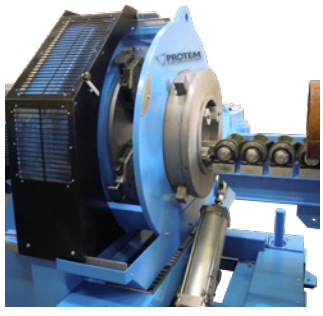
US600-R

OHSB



MF

TNO



CTA

SHIPBUILDING INDUSTRY

Description:

PROTEM equipment is used within 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

EQUIPMENT FOR THE SHIPBUILDING INDUSTRY

Equipment designed and manufactured by PROTEM can be used in confined spaces, extreme temperatures and saline environments.

SM8

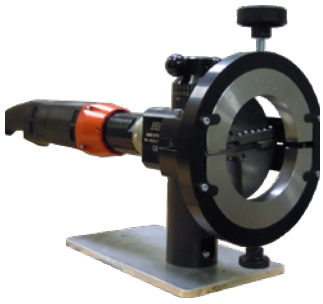
S18

SL30

SE25

US25CH

US30CH



SL120

TTS-RD

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

MACHINING EQUIPMENT FOR HIGH PURITY INDUSTRIES

Including, but not limited to, the Pharmaceutical, Cosmetics, Semi-conductor, Biotechnology, and Food Processing industries.

SE25

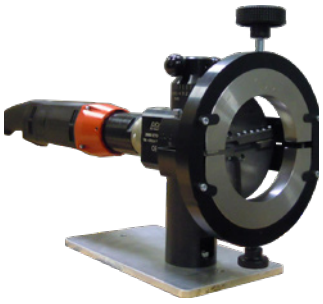
SE25RA

SL30

SE-NG Series

SE65

SE65RA



SL120

SE219

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

EQUIPMENTS FOR THE RENEWABLE ENERGIES INDUSTRY

Machining times are reduced, while maintaining high precision and accuracy

SM8

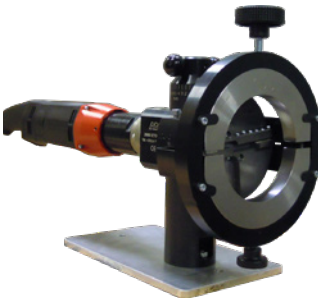
S18

SL30

SE25

US25CH

US30CH



SL120

TTS-NG

HEAT EXCHANGER TUBES

Description:

PROTEM was initially created to meet the needs of Boiler Manufacturers. For the past 50 years, PROTEM has been an innovator and today offers a large range of portable machines and tools specially designed for Boiler Manufacturers.

For example, PROTEM designs and manufactures specific machines and tools for heat exchangers or industrial boiler maintenance.

The GR Series machines and tools are specially designed for the simultaneous machining and beveling of membrane wall panels. The machine body is designed to fit in the gap of a membrane wall panel in order to avoid having to remove the entire panel.

The US25 TP performs any type of beveling, tube facing and removal of tubes on tubular plates.

Light, automatic, portable and easy to use, our high precision machines increase productivity in a wide variety of operations for Boilers and Heat Exchangers.

Applications:

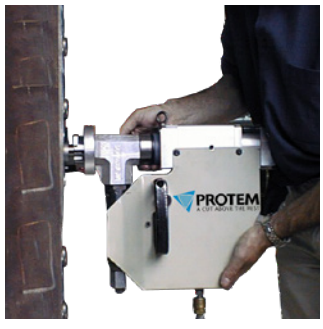
- Machining of boiler tubes, heat exchanger tubes, condensers etc.
- Cutting tubes to length
- Removal of wall membranes and tube heat exchanger plates
- Facing of tubes
- Machining/removal of the weld joint on tube sheets

EQUIPMENT USED BY BOILER MANUFACTURERS

PROTEM has always been known for being innovative and is offering a large range of portable machines specially designed for Boiler Manufacturers.

SM8

S18TP



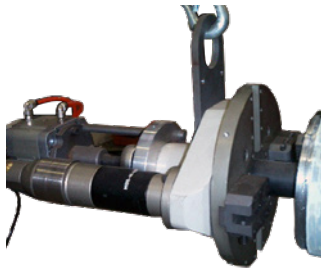
US25TP

US25CA

US30CH

US30CHCA

US25TA



US40CA

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

EQUIPMENT FOR CHEMICAL INDUSTRY

For nearly 50 years, PROTEM has been offering integrated solutions for the construction and maintenance of pipelines.

US25CH

US30CH

SE Series

SL Series

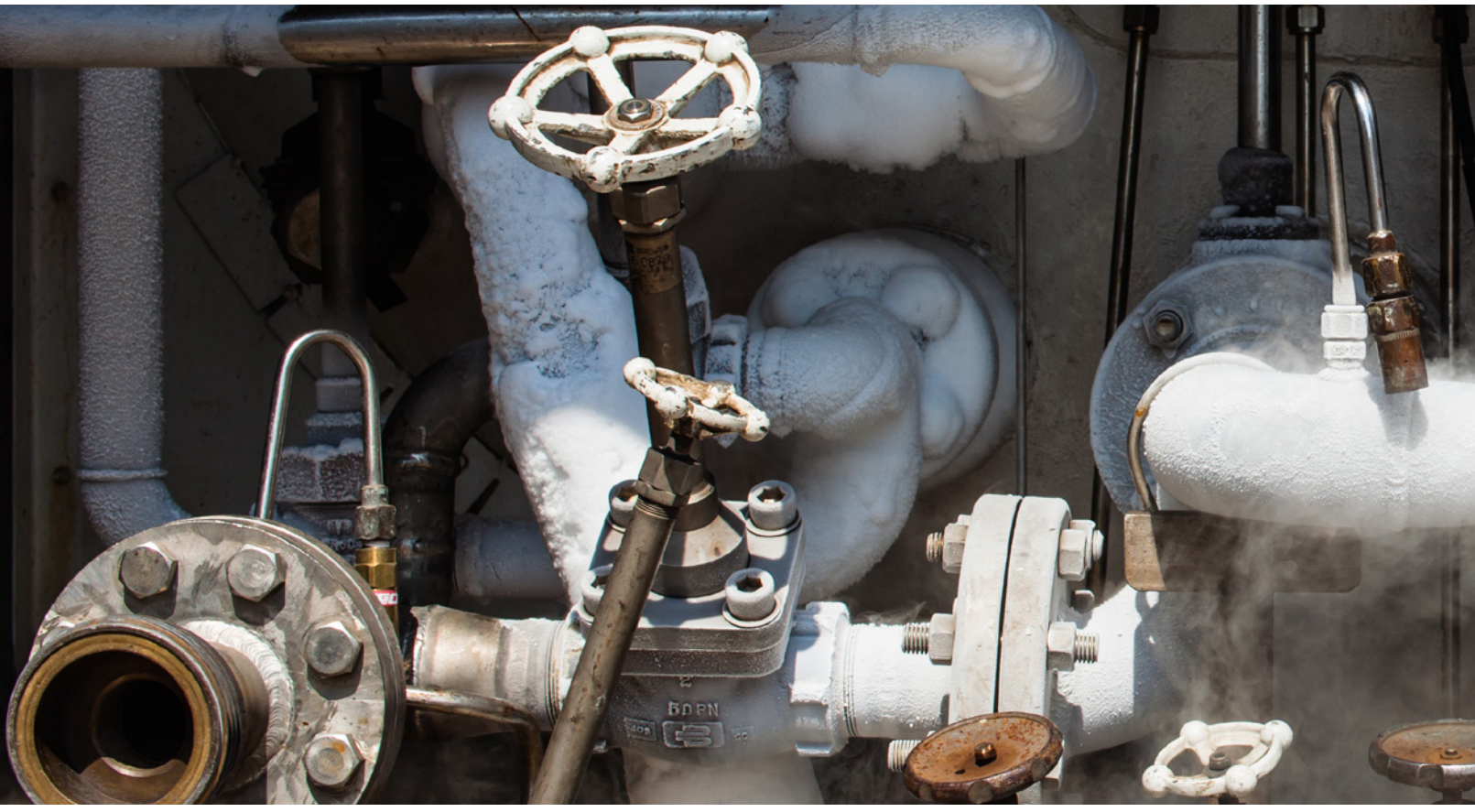
SE-NG Series

TTS-RD

TTS-NG

TT-NG

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

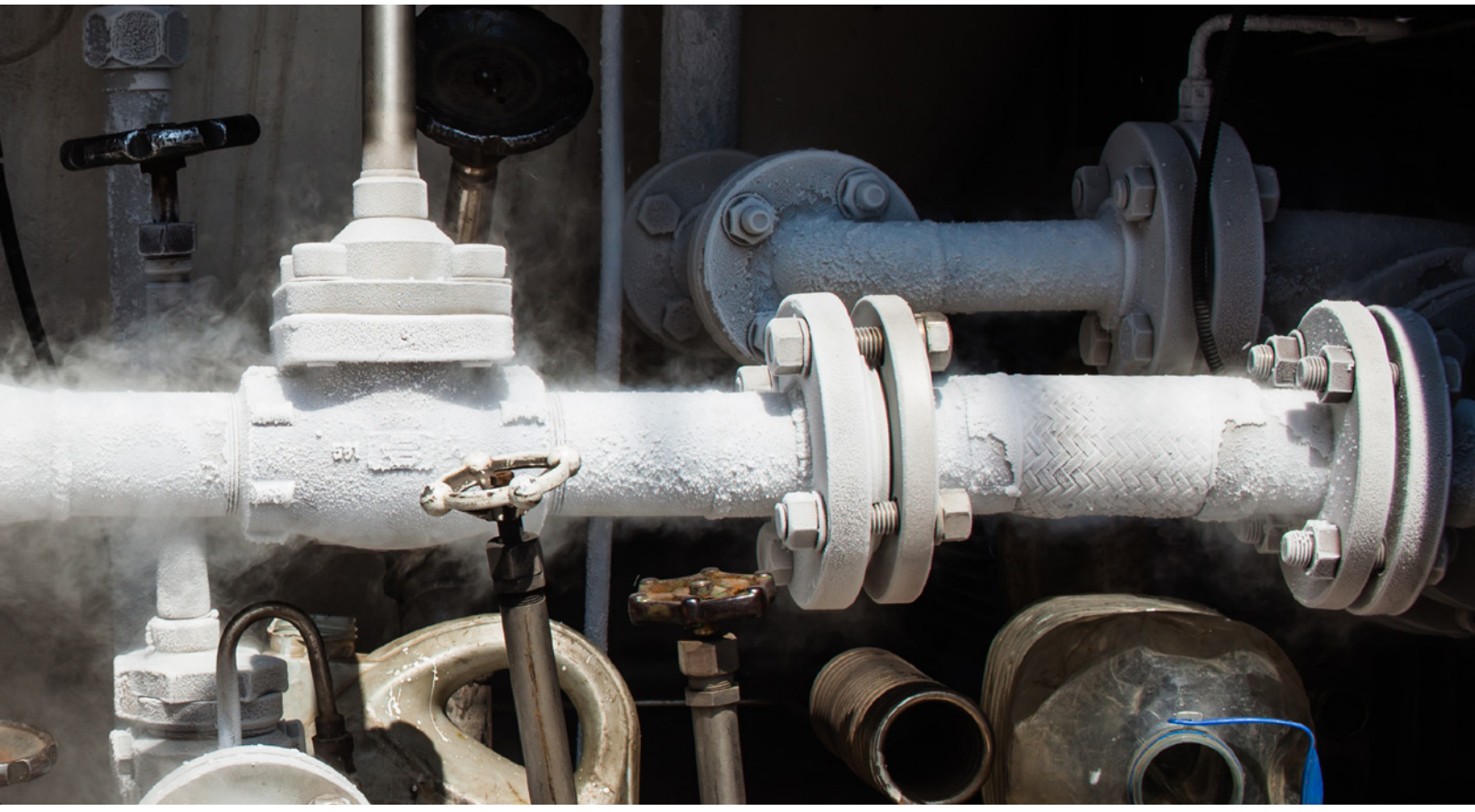
Applications :

> Tubes maintenance

> Cutting, removal or repair of parts damaged by corrosion

> Weld beam removal

> Re-machining of valve seats and seal surfaces



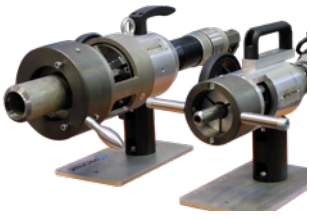
EQUIPMENT FOR CRYOGENICS

US25CH

US30CH

US40

SL



SE-NG

TTS-RD

TTS-NG

TT-NG

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

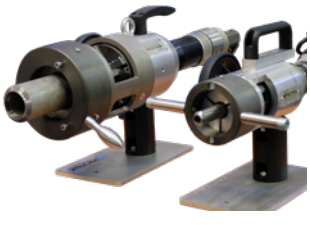
EQUIPMENT FOR DEFENSE

US25CH

US30CH

US40

SL



SE-NG

TTS-RD

TTS-NG

TT-NG

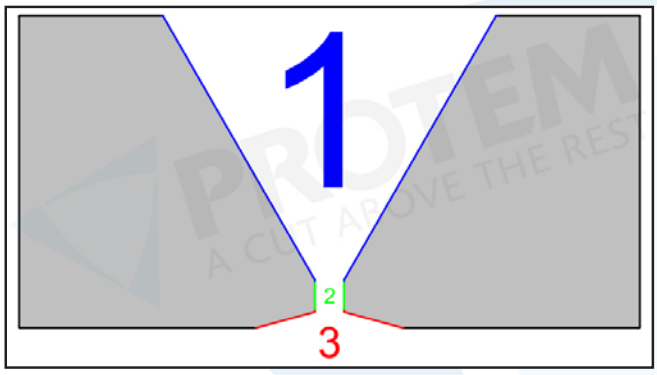
ASSEMBLING PIPES BY BUTT-WELDING: THE DIFFERENT TYPES OF BEVELS AND HOW TO MAKE THEM

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. 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.

2. FACING

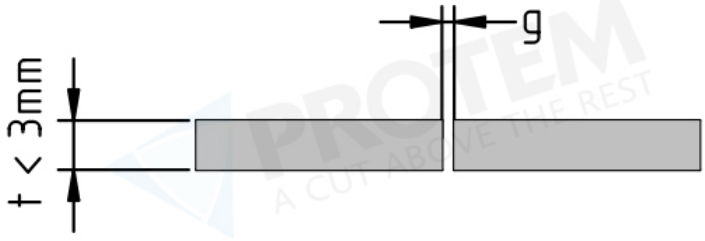
Facing is the term used for the operation to create a land, which consists of making a flat surface on the end of the pipe. Correct facing makes it easier to put the pipes in line with each other before welding and also contributes to having a constant root opening between parts. These are both essential parameters for maintaining a correct welding puddle and for ensuring that the root pass has penetrated the joint completely.

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



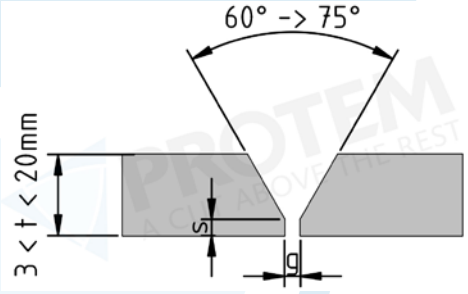
1. RANGE OF THICKNESSES T ≤ 3MM (.118")

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.

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).

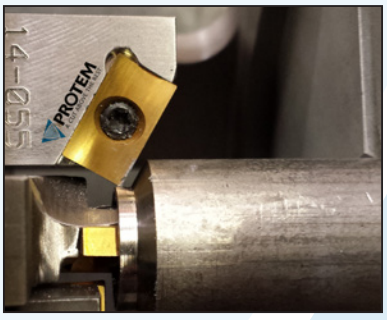
2. RANGE OF THICKNESSES 3 ≤ T ≤ 20MM (.787")

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 (.787"). 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").



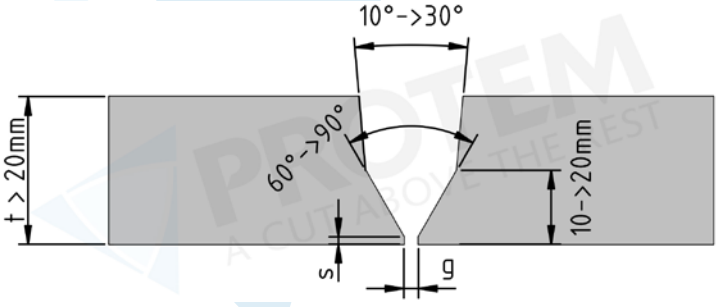
However, 'J' groove preparations are required more often for this range of thickness (see details below). This is especially true when orbital welding processes are used. It is also the normal type of preparation when welding alloys, such as, duplex or inconel.

3. RANGE OF THICKNESSES 20MM (.787") ≤ 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.

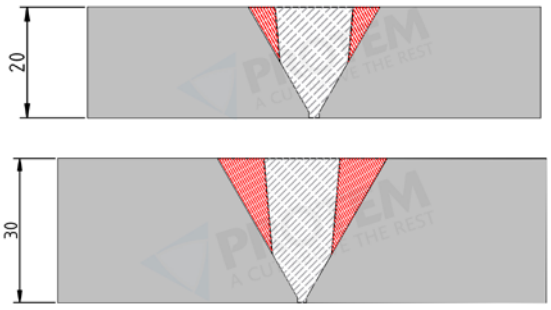
1. Double Angle V Grooves (or Compound V Grooves):

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



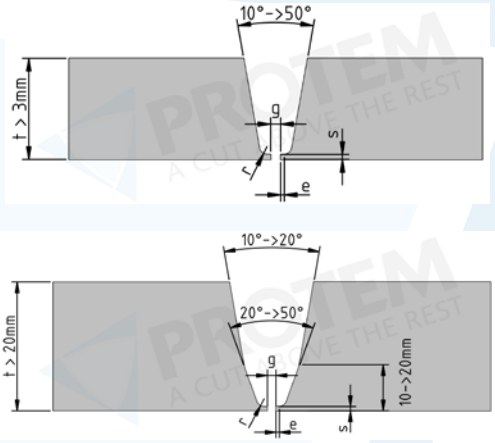
For example, in comparison with a 30° single angle bevel (grey zone plus red zone), a V bevel with a double angle of 30°/5° (grey zone) gives an economy of about 20% in terms of weld metal for a part 20mm (.787") thick.

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. 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.

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.

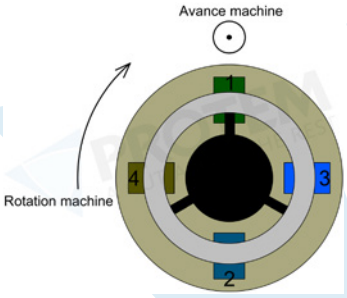
These types of constraints require long and costly preliminary studies. Therefore, they need to be accompanied by a perfectly controlled bevel machining process. The description of the welding procedure (DMOS) resulting from preliminary studies requires lands to be accurate to one millimeter (.039”), 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

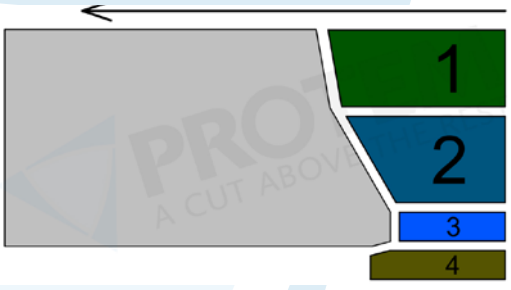
Numerous techniques exist for machining bevels on pipe ends. The most common are manual machining by grinding or heat-cutting and cold machining with a machine. Even so, this last process is the only one capable of providing a bevel with a perfect geometry and a repeat production capability while maintaining 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.

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.

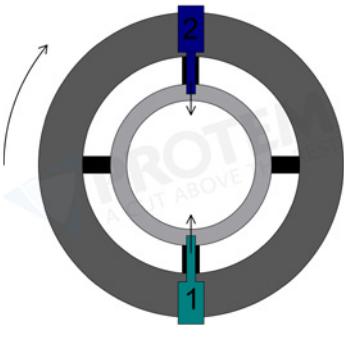


Here, tools No. 1 and 2 machine a compound bevel (the two tools can be combined to form one single tool). Tool No. 3 faces the land or root and tool No. 4 counterbores the inside diameter of the pipe.

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.

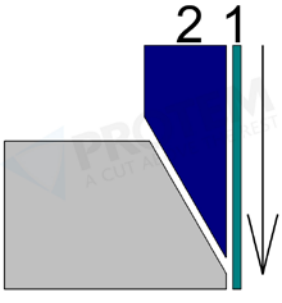
Example of application: Making a bevel on the end of a pipe that has been cut to the correct length beforehand.

2. RADIAL MOVEMENT MACHINES

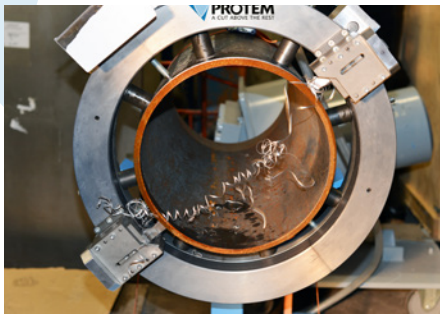


Radial movement machines, called orbital machines, are generally held in place on the outside of the pipe. The tool-holder plate rotates while the pipe to be machined remains fixed. The tools move perpendicularly to the axis of the pipe by means of a mechanical transmission system.

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.

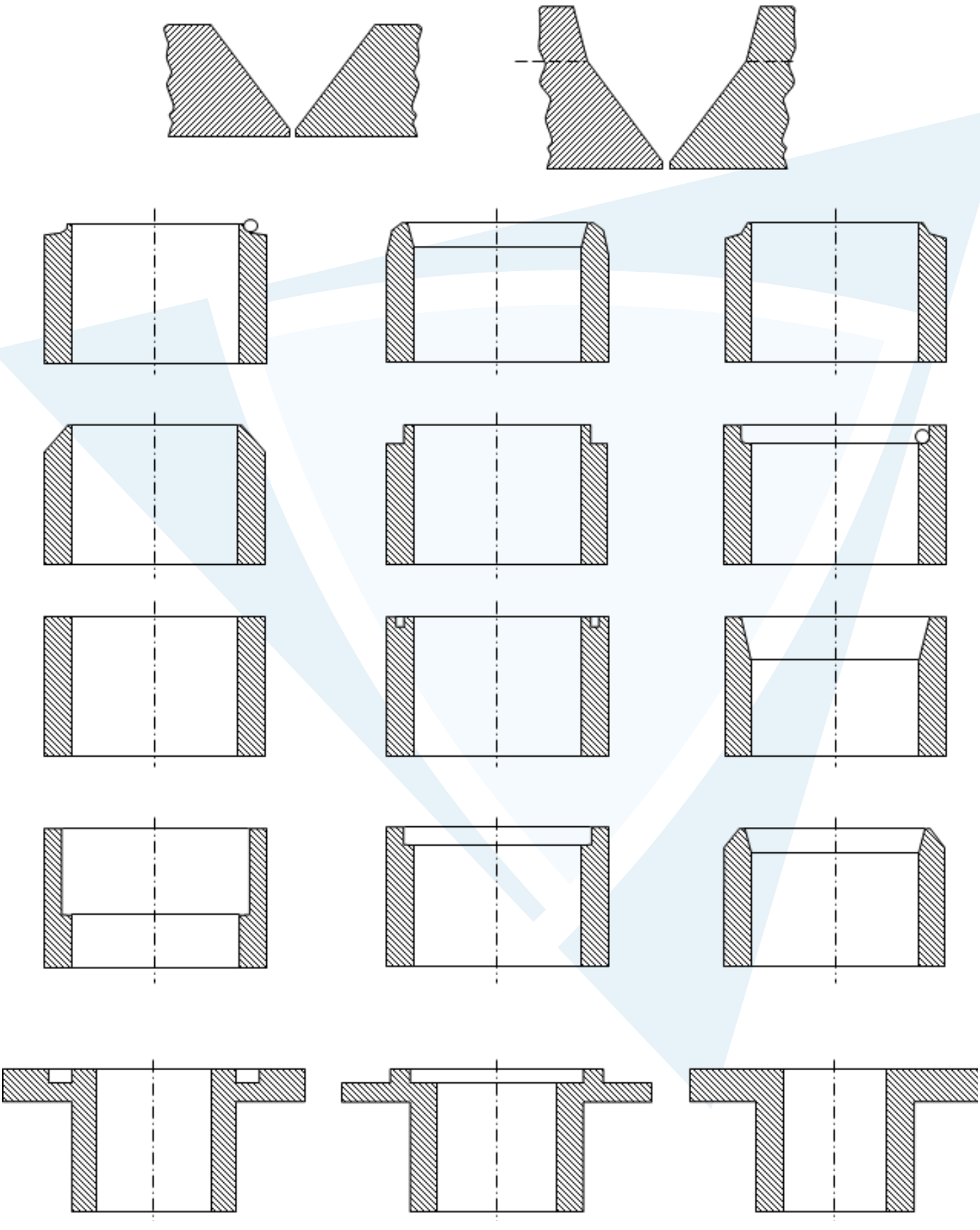


Using beveling tools (No. 2, simple or compound shapes) combined with cutting tools (No. 1) enables the pipe to be cut in two and welding preparation (beveling) to be carried out in a single operation. The most efficient machines are capable of cutting and beveling several dozen millimeters in just a few minutes.



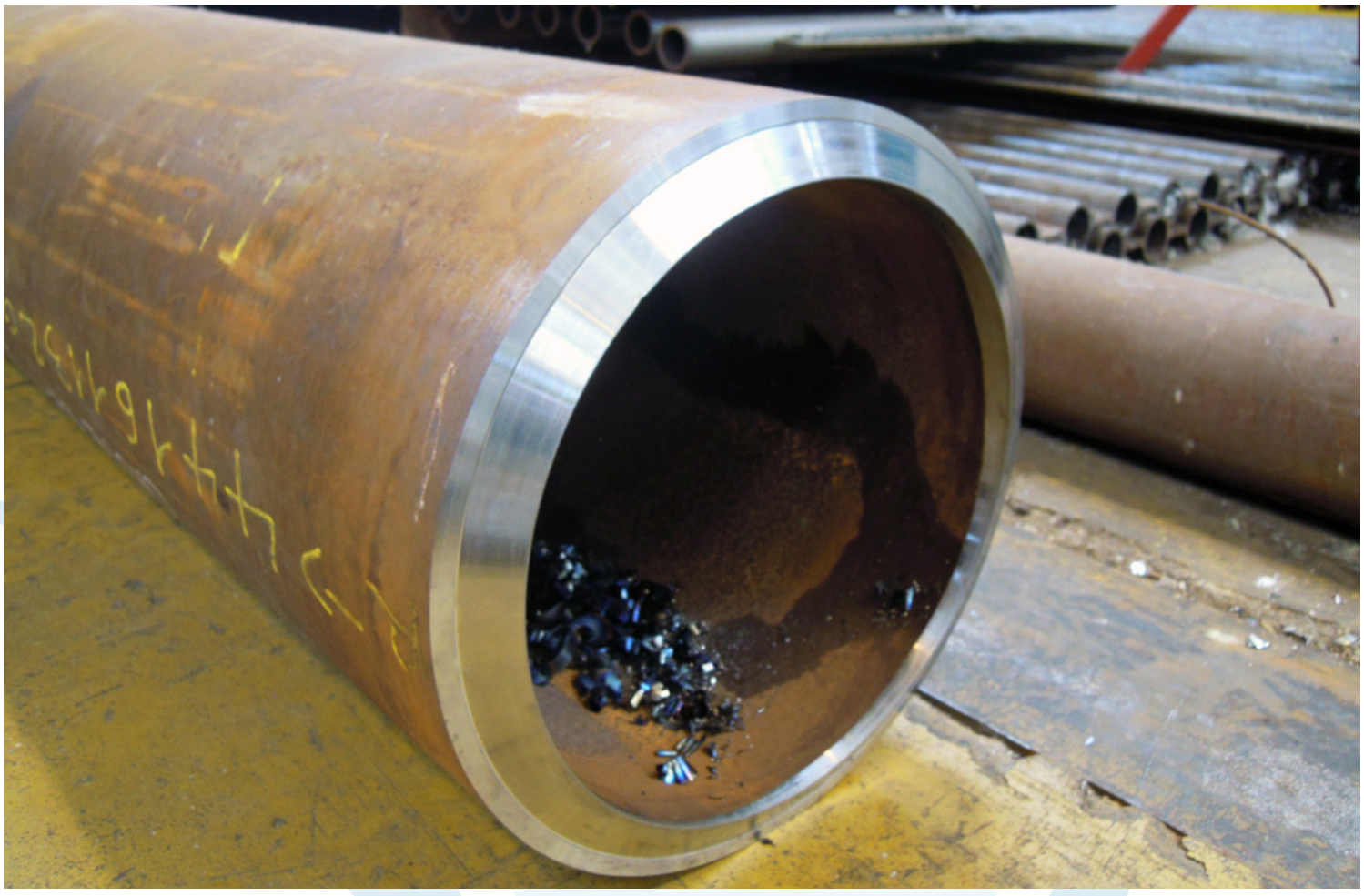
Example of application: Cutting lengths of pipe from an original base pipe. The parts cut off in this way are beveled at the same time as the cutting operation.

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.

4. Control the Machining Speed

TEN TIPS TO ACHIEVE PERFECT ON-SITE WELD END PREPARATIONS

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

Maybe 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

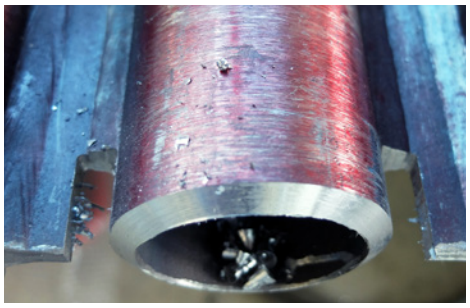
The color and form of the chips are excellent indicators. If the chips are small, the depth pass is too small. If the chips are large and look like they were torn off the tube, the depth pass is too big or the tool is dull. If the chips are blue, they are heat-affected. It could mean that the machining 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 pressure 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.

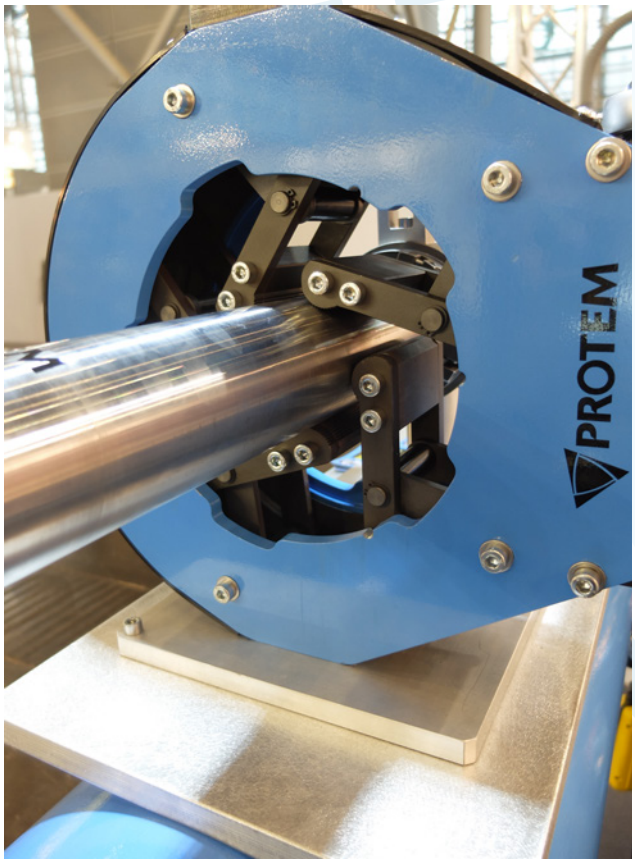
MATERIALS USED TO MANUFACTURE PIPES AND THEIR MACHINABILITY

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.).

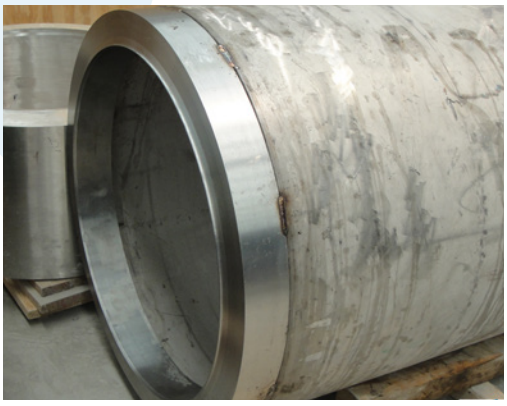
Their popularity stems from their corrosion resistance and chemical stability which make stainless steel piping suitable for fluids that must not be contaminated (pharmaceutical industry, food industry, etc.) and for corrosive fluids (the chemical industry, in particular).

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 nickel-based 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 steels, 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 criteria.

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.

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 cutting-edge 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.

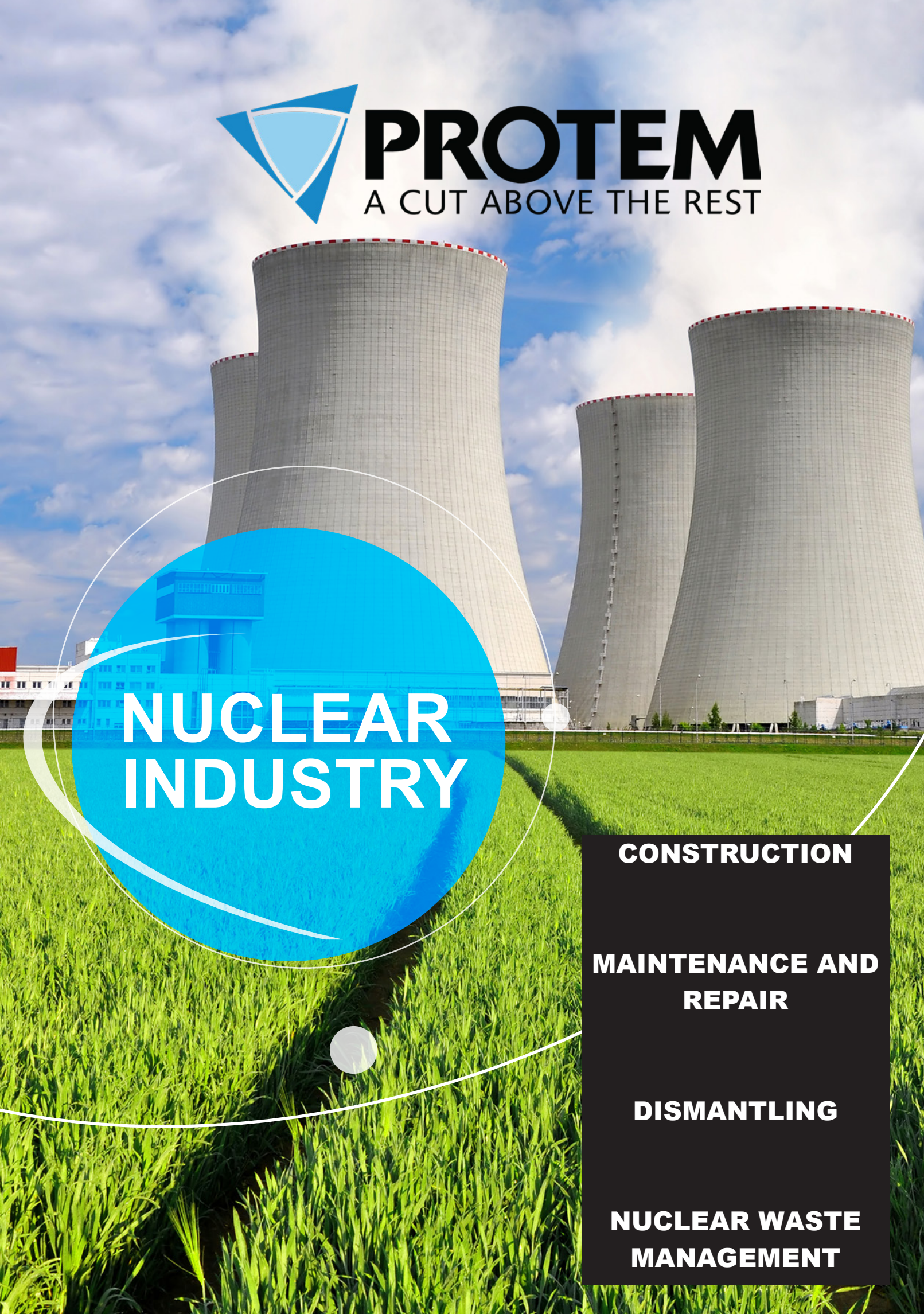
Machining is even more difficult in the case of treated titanium (e.g., treatment by precipitation, presence of chromium).

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

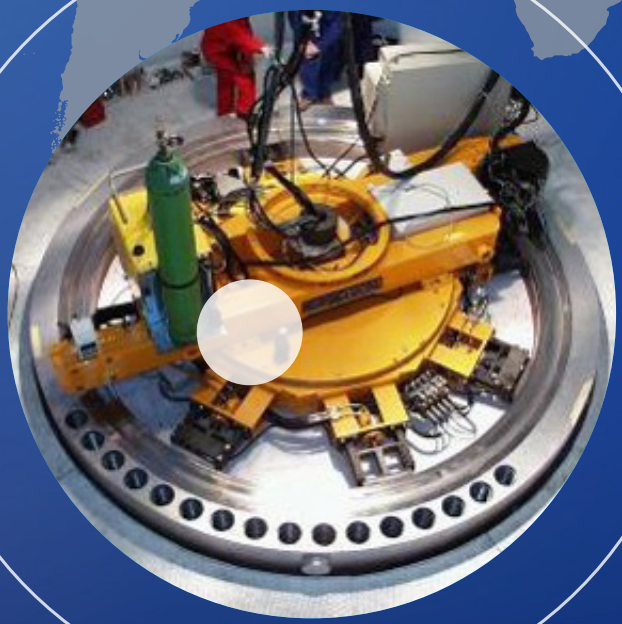
PROTEM AND THE NUCLEAR INDUSTRY

FOR MORE THAN 50 YEARS, PROTEM HAS OFFERED ITS EXPERTISE AND EXPERIENCE TO SERVICE 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, safety for their operators and on designing and manufacturing projects where nuclear security and safety are essential.

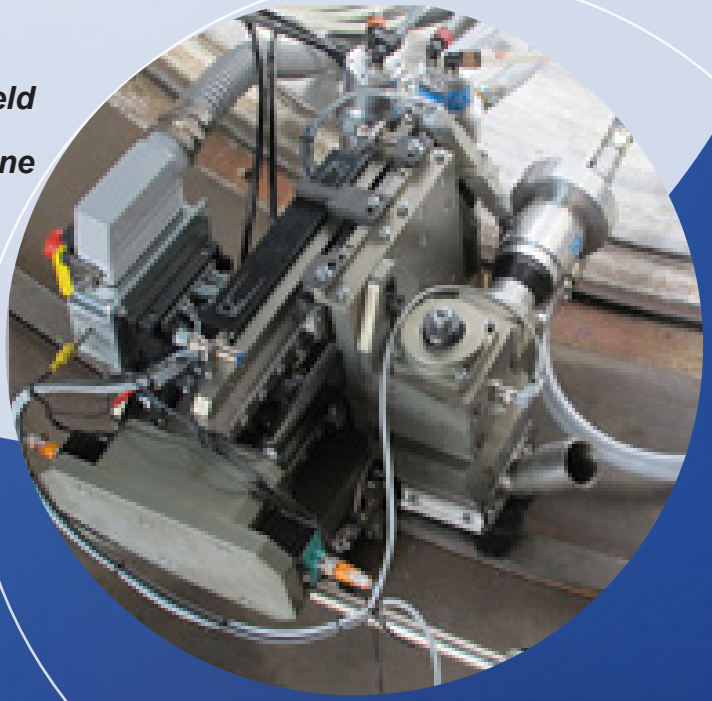
CONSTRUCTION

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 a decommisionning and their dismantling has been completely achieved or is being performed.

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.

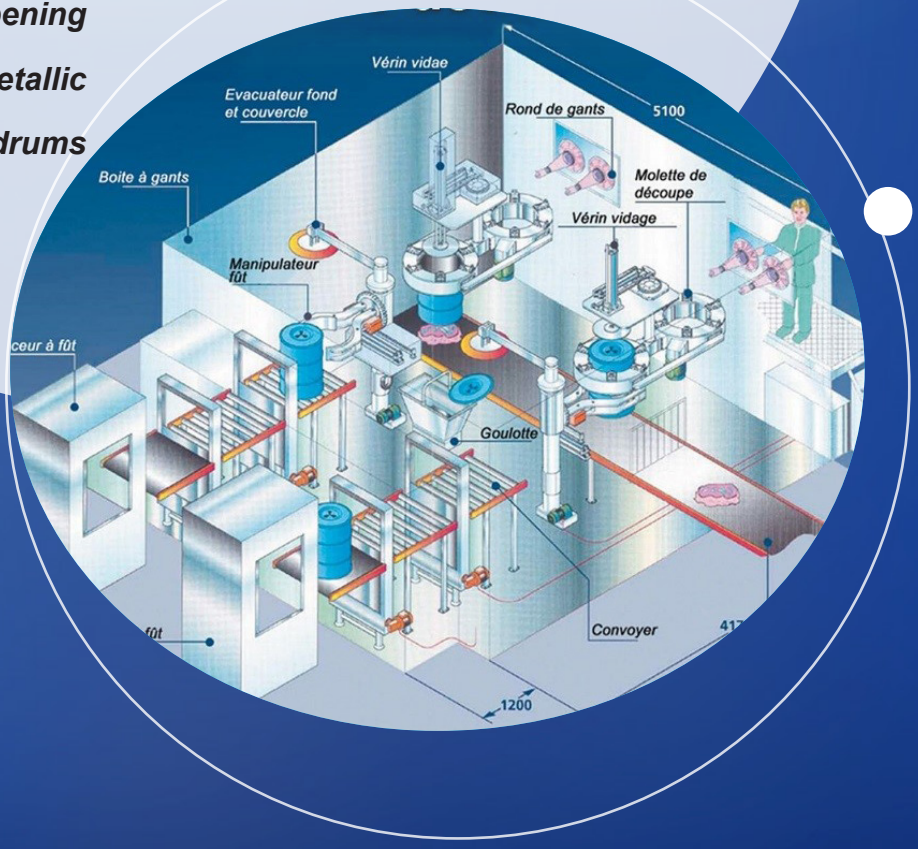
NUCLEAR WASTE MANAGEMENT

PROTEM is also aware of the factors associated with waste management. The processes adopted 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

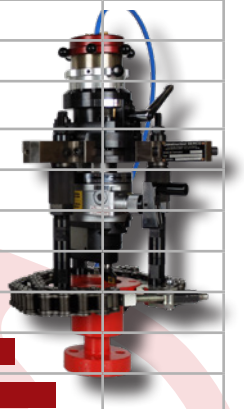
Flanges - Valves

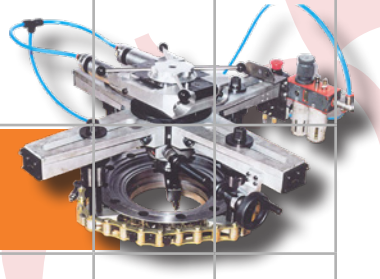
Portable Machine Tools

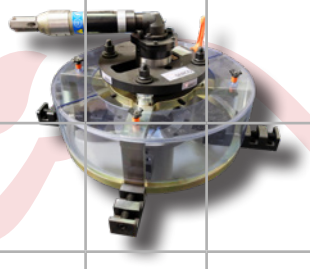
Facing
Single point
Threading
Counterboring
Tapping
Resurfacing
Grinding
Conical machining

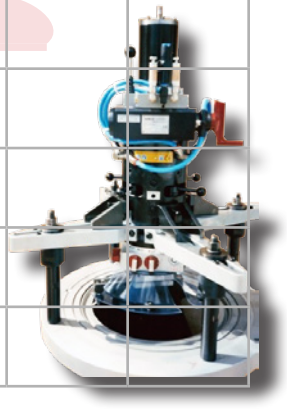
RANGE OF SERCO MACHINES

		1"	8"	16"	24"	32"	40"	56"	72"	90"	120"
		25,4 mm	203 mm	406 mm	609 mm	812 mm	1016 mm	1422 mm	1828 mm	2286 mm	3048 mm
TU Series	TU 200										
	TU 400										
	TU 600										
	TU 1100										
	TU1200										
	TU1400										
	TU1800										
	TU2000										
	TU2400										
	TU2600										
	TU2800										
	TU3000										
	TU3200										
XP Series	XP 600										
	XP 1200										
	XP 1800										
	XP 2000										
	XP 2200										
	XP 2400										
	XP 2600										
	XP 2800										
	XP 3000										
	XP 3200										
MS Series	MS600										
	MS2300										
S Series	S400										
	S600										
TA 240	TA240/100										
	TA240/120										
	TA240/170										
	TA240/220										







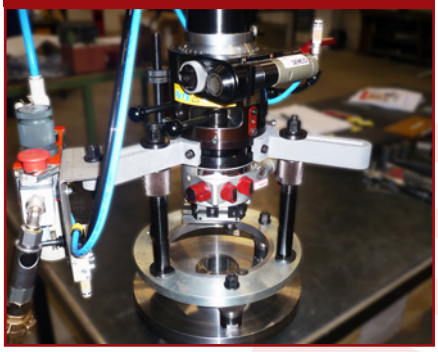


PORTABLE SURFACING AND BORING MACHINES

TU200

ORDER NO.	DESCRIPTION
TU200	Portable facing and boring machine – facing Ø: 0-200 mm (7.87")

TU400

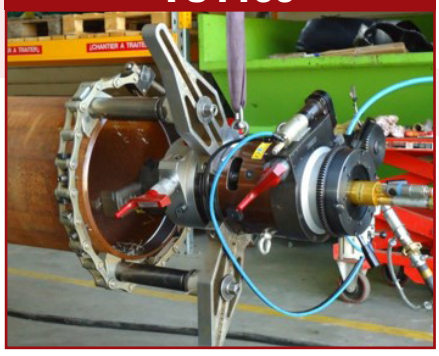


ORDER NO.	DESCRIPTION
TU400	Portable facing and boring machine – facing Ø: 0-400 mm (15.7")

TU600

ORDER NO.	DESCRIPTION
TU600	Portable facing and boring machine – facing Ø: 0-600 mm (23.6")

TU1100



ORDER NO.	DESCRIPTION
TU1100	Portable facing and boring machine – facing Ø: 0-1100 mm (43.3")

TU1200

ORDER NO.	DESCRIPTION
TU1200	Portable facing and boring machine – facing Ø: 0-1200 mm (47.2")

TU1400

ORDER NO.	DESCRIPTION
TU1400	Portable facing and boring machine – facing Ø: 0-1400 mm (55.1")

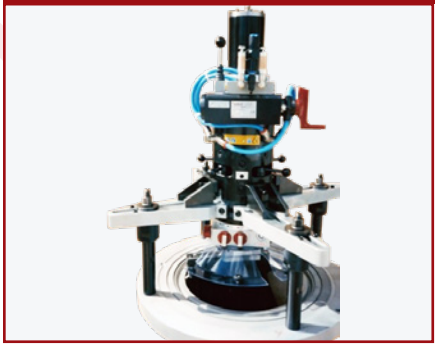
TU400TE

ORDER NO.	DESCRIPTION
TU400TE	Portable facing and boring machine with brushless electric motor and control system – facing Ø: 0-400 mm (15.7")

TU600TE

ORDER NO.	DESCRIPTION
TU600TE	Portable facing and boring machine with brushless electric motor and control system – facing Ø: 0-600 mm (39.370" - 90.551")

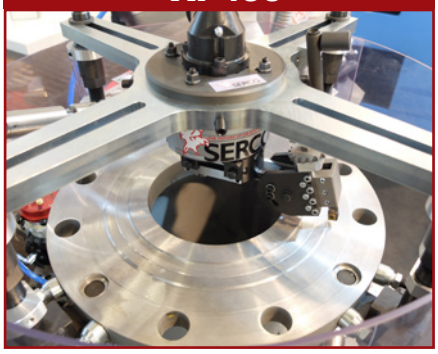
TA240



ORDER NO.	DESCRIPTION
TA240	TA 240 borer equipped with the TA 100 head - facing Ø: 320-900 mm (12.6"-35.4")

PORTABLE SURFACING EQUIPMENT FOR FLANGES AND VALVES

XP400



ORDER NO.	DESCRIPTION
XP400	Portable flange facing machine – facing Ø: 0-400 mm (0'' - 15.7")

XP600

ORDER NO.	DESCRIPTION
XP600	Portable flange facing machine – facing Ø: 10-600 mm (0.39'' - 23.6")

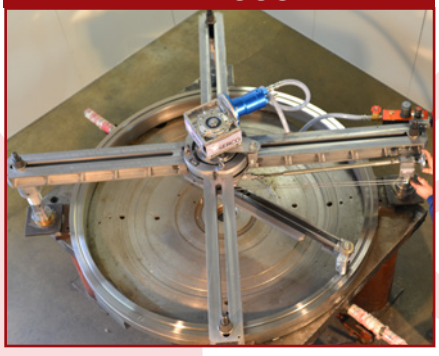
XP1200

ORDER NO.	DESCRIPTION
XP1200	Portable flange facing machine – facing Ø: 20 - 1200 mm (.787" - 47.244").

XP1800

ORDER NO.	DESCRIPTION
XP1800	Portable flange facing machine – facing Ø: 20-1800 mm (.787" - 70.866")

XP2000

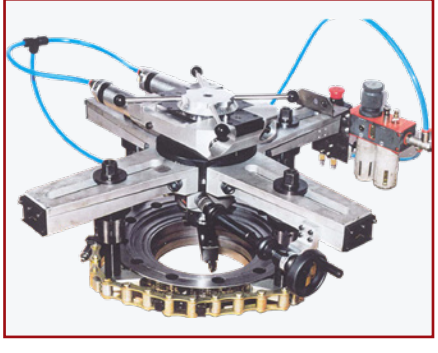


ORDER NO.	DESCRIPTION
XP2000	Portable flange facing machine – facing Ø: 20-2080 mm (.787" - 81.890")

XP2200

ORDER NO.	DESCRIPTION
TU1400	Portable flange facing machine – facing Ø: 20-2280 mm (.787" - 89.764")

MS600



ORDER NO.	DESCRIPTION
MS600	Portable flange facing machine with air-motor – facing Ø: 10-600 mm (0.39" - 23.6")

MS2300

ORDER NO.	DESCRIPTION
TU600TE	Portable flange facing machine – facing Ø: 1000 -2300 mm

S400 - S600

ORDER NO.	DESCRIPTION
S400 - S600	Portable facing and boring machine with air-motor – facing Ø: 90-580 mm (3.54" - 22.83")

Portable Boring Bar

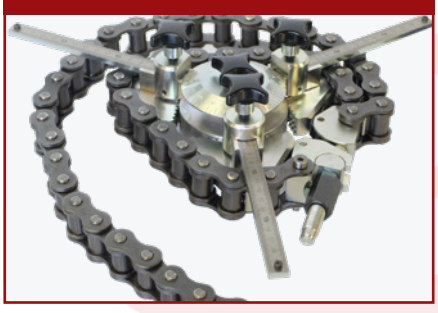
ORDER NO.	DESCRIPTION
SBM 1	SBM1 Portable Boring Bar

Milling Unit

ORDER NO.	DESCRIPTION
BDF 1100	Milling Unit

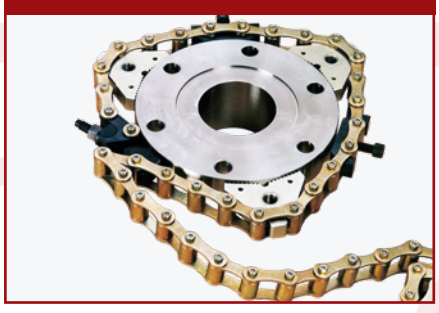
OPTIONS AND ACCESSORIES

FC300



ORDER NO.	DESCRIPTION
FC 300	Chain clamping

FC745

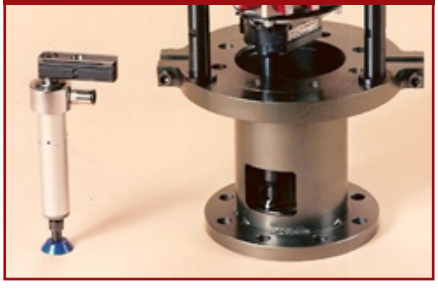


ORDER NO.	DESCRIPTION
FC 745	Chain clamping

FC1150

ORDER NO.	DESCRIPTION
FC 1150	Chain clamping

UR40

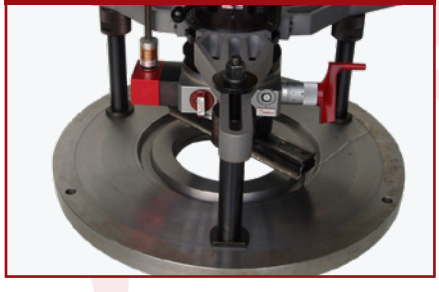


ORDER NO.	DESCRIPTION
UR 40	Grinding device

AC38

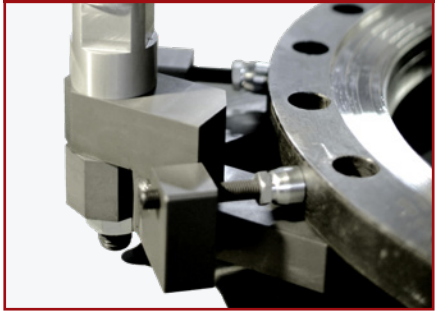
ORDER NO.	DESCRIPTION
AC 38 / TU400	Conical machining system

RTJ



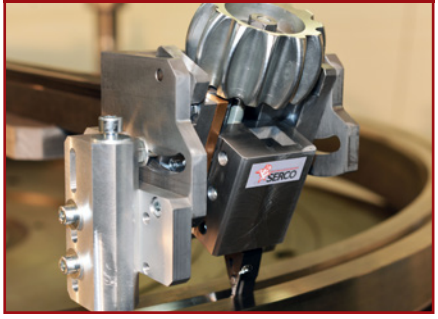
ORDER NO.	DESCRIPTION
RTJ system	System for making RTJ groove bearing surfaces

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 / 1800 / 2000 / 2200

SERCO engineers and operators contribute to providing 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: .....

Fax: .....

e-mail : .....

Web site: .....

Your requirements:

1) What type of component needs to be machined?

.....

2) What material is the component made of? (please indicate the reference)

.....

.....

3) What are the diameters of the tubes/pipelines?

ø from ..... to .....

3) What is the wall thickness of the tubes/pipelines?

Wall thickness 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 .....

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?

.....

PROTEM

A CUT ABOVE THE REST

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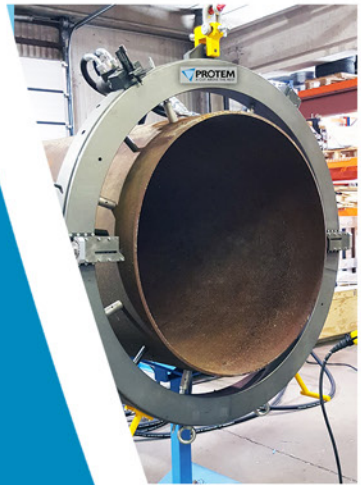

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