# PROTEM

## A CUT ABOVE THE REST

**TUBE & PIPE MACHINING**

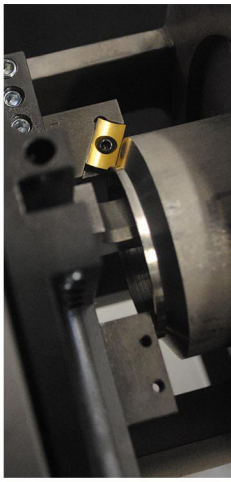
**ORBITAL CUTTING - SEVERING**

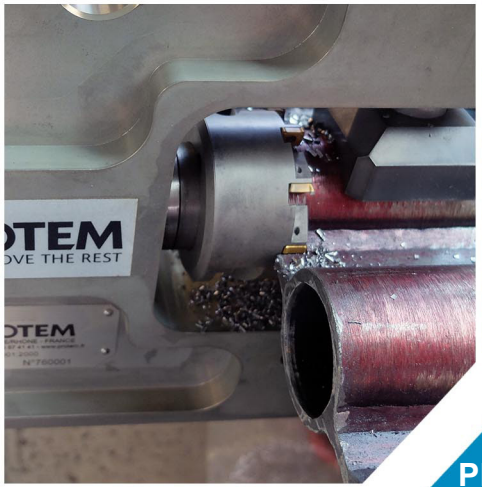
**BEVELING - SQUARING - FACING**

**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.

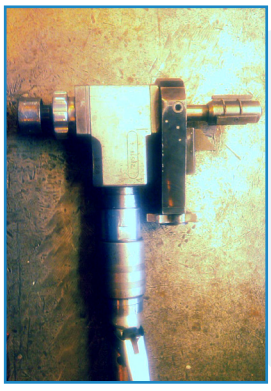
To meet the technological challenges of the coming years, we are laying foundations to take research and development to new heights.

# 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

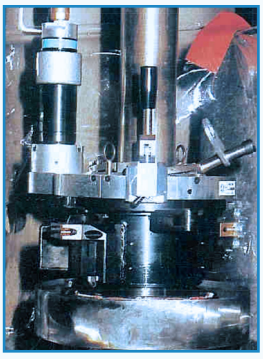


## 1980

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.

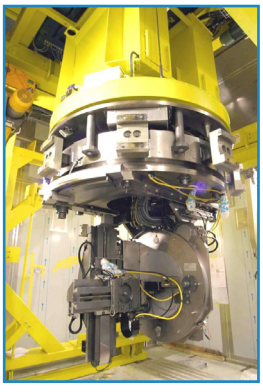


## 1987

PROTEM GmbH is set up in Germany.


## 2002

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



## 2003

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

## 2004

A branch office is opened in Spain.

# MORE THAN 50 YEARS OF WORLDWIDE EXPERIENCE

PROTEM
A CUT ABOVE THE REST

## 1990

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

## 1994

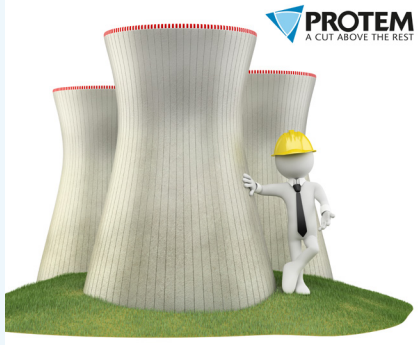
Creation of the business unit specifically for OIL & GAS and the design of equipment for the installation and maintenance of pipelines.

## 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


## 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.

DE LA RECHERCHE À L'INDUSTRIE
cea

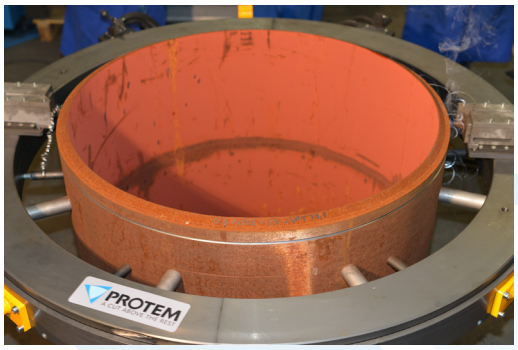
## 2007

PROTEM enters the German Nuclear Council.

# KEY DATES

## 2008

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




## 2009

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


## 2012

A branch office is opened in Russia.

## 2016

Launch of a new range of Orbital Cutting Saws

## 2017

Launch of a new range of Saddle Beveling Machines


## 2018

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

# MORE THAN 50 YEARS OF WORLDWIDE EXPERIENCE

## 2013

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

## 2014

Creation of PROTEM USA.

## 2015

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

## 2019

Partnership with World Leading Manufacturers of Welding Equipment


## 2020

Launch of the construction of new buildings -

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

## 2021

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

# 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 | US25TA | US25GL | US30CH | US40 | US80 | US150 | US450 | US600R | PFM414 | PFM1222 | PFM1030 | PFM3038 | PFM3848 | PFM-US1020HSB | PFM-US1220HSB | PFM-US1420HSB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Facing** | | x | x | x | x | x | - | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **Beveling** | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **Counterboring** | | x | x | x | x | x | - | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| **Cutting** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Surfacing** | | - | - | x | - | - | - | x | x | x | x | x | - | - | - | - | - | - | - | - | - |
| **Portable** | | x | x | x | x | x | x | x | x | x | x | - | - | - | - | - | - | - | - | - | - |
| **Transportable** | | - | - | - | - | - | - | - | - | - | - | x | x | x | x | x | x | x | x | x | x |
| 1" = 25.4 mm | Ø in mm | min = Ø ID / max = Ø OD | | | | | | | | | | | | | | | | | | | |
| 0.315 | 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 | US1 | US3 | US6 | US12 | GR | TTS-NG | TTS-RD | TTNG-LW | TTNG-HD | TNO | MF | OCM | BB | CTA | OHSB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Facing** | | x | x | x | x | x | x | - | - | - | - | x | x | - | x | x | x | x | x | x | x | x |
| **Beveling** | | x | x | x | x | x | x | - | - | - | - | x | x | - | x | x | x | x | x | x | x | x |
| **Counterboring** | | - | - | - | x | x | x | - | - | - | - | - | x | - | x | x | x | x | - | x | - | x |
| **Cutting** | | - | - | - | - | - | - | x | x | x | x | - | x | x | x | x | x | x | x | - | x | - |
| **Portable** | | x | x | x | x | x | x | x | x | - | - | x | x | x | x | x | - | - | - | - | - | - |
| **Transportable** | | - | - | - | - | - | - | - | - | x | x | - | - | - | x | x | x | x | x | x | x | x |
| 1" = 25.4 mm | Ø in mm | min = Ø ID / max = Ø OD | | | | | | | | | | | | | | | | | | | | |
| 0.078 | 2 | | | | | | | | | | | | | | | | | | | | | |
| 0.118 | 3 | | | | | | | | | | | | | | | | | | | | | |
| 0.196 | 5 | | | | | | | | | | | | | | | | | | | | | |
| 0.394 | 10 | | | | | | | | | | | | | | | | | | | | | |
| 0.406 | 10.3 | | | | | | | | | | | | | | | | | | | | | |
| 0.500 | 12.7 | | | | | | | | | | | | | | | | | | | | | |
| 0.709 | 18 | | | | | | | | | | | | | | | | | | | | | |
| 0.839 | 21.3 | | | | | | | | | | | | | | | | | | | | | |
| 1.000 | 25.4 | | | | | | | | | | | | | | | | | | | | | |
| 1.315 | 33.4 | | | | | | | | | | | | | | | | | | | | | |
| 1.496 | 38 | | | | | | | | | | | | | | | | | | | | | |
| 1.654 | 42 | | | | | | | | | | | | | | | | | | | | | |
| 1.693 | 43 | | | | | | | | | | | | | | | | | | | | | |
| 2.374 | 60.3 | | | | | | | | | | | | | | | | | | | | | |
| 3.070 | 78 | | | | | | | | | | | | | | | | | | | | | |
| 3.500 | 88.9 | | | | | | | | | | | | | | | | | | | | | |
| 4.500 | 114.3 | | | | | | | | | | | | | | | | | | | | | |
| 4.724 | 120 | | | | | | | | | | | | | | | | | | | | | |
| 6.626 | 168.3 | | | | | | | | | | | | | | | | | | | | | |
| 8.626 | 219.1 | | | | | | | | | | | | | | | | | | | | | |
| 10.752 | 273.1 | | | | | | | | | | | | | | | | | | | | | |
| 12.752 | 323.9 | | | | | | | | | | | | | | | | | | | | | |
| 14.000 | 355.6 | | | | | | | | | | | | | | | | | | | | | |
| 16.000 | 406.4 | | | | | | | | | | | | | | | | | | | | | |
| 20.000 | 508 | | | | | | | | | | | | | | | | | | | | | |
| 22.000 | 558.8 | | | | | | | | | | | | | | | | | | | | | |
| 24.016 | 610 | | | | | | | | | | | | | | | | | | | | | |
| 28.000 | 711.2 | | | | | | | | | | | | | | | | | | | | | |
| 30.000 | 762 | | | | | | | | | | | | | | | | | | | | | |
| 36.000 | 914.4 | | | | | | | | | | | | | | | | | | | | | |
| 48.000 | 1219.2 | | | | | | | | | | | | | | | | | | | | | |
| 50.000 | 1270 | | | | | | | | | | | | | | | | | | | | | |
| 56.000 | 1422.4 | | | | | | | | | | | | | | | | | | | | | |
| 1524 | 60.000 | | | | | | | | | | | | | | | | | | | | | |
| 1828.8 | 72.000 | | | | | | | | | | | | | | | | | | | | | |
| 2032 | 80.000 | | | | | | | | | | | | | | | | | | | | | |

Working Ø standard

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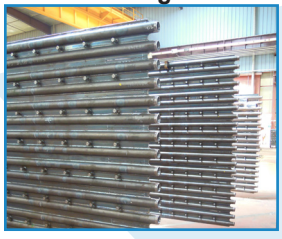
## INDUSTRIES:

### Boiler Tubes - Heat Exchanger Tubes



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# ID MOUNTED MACHINING EQUIPMENT

## Ø 8 mm - 1500 mm
## Ø 0.315” – 59”

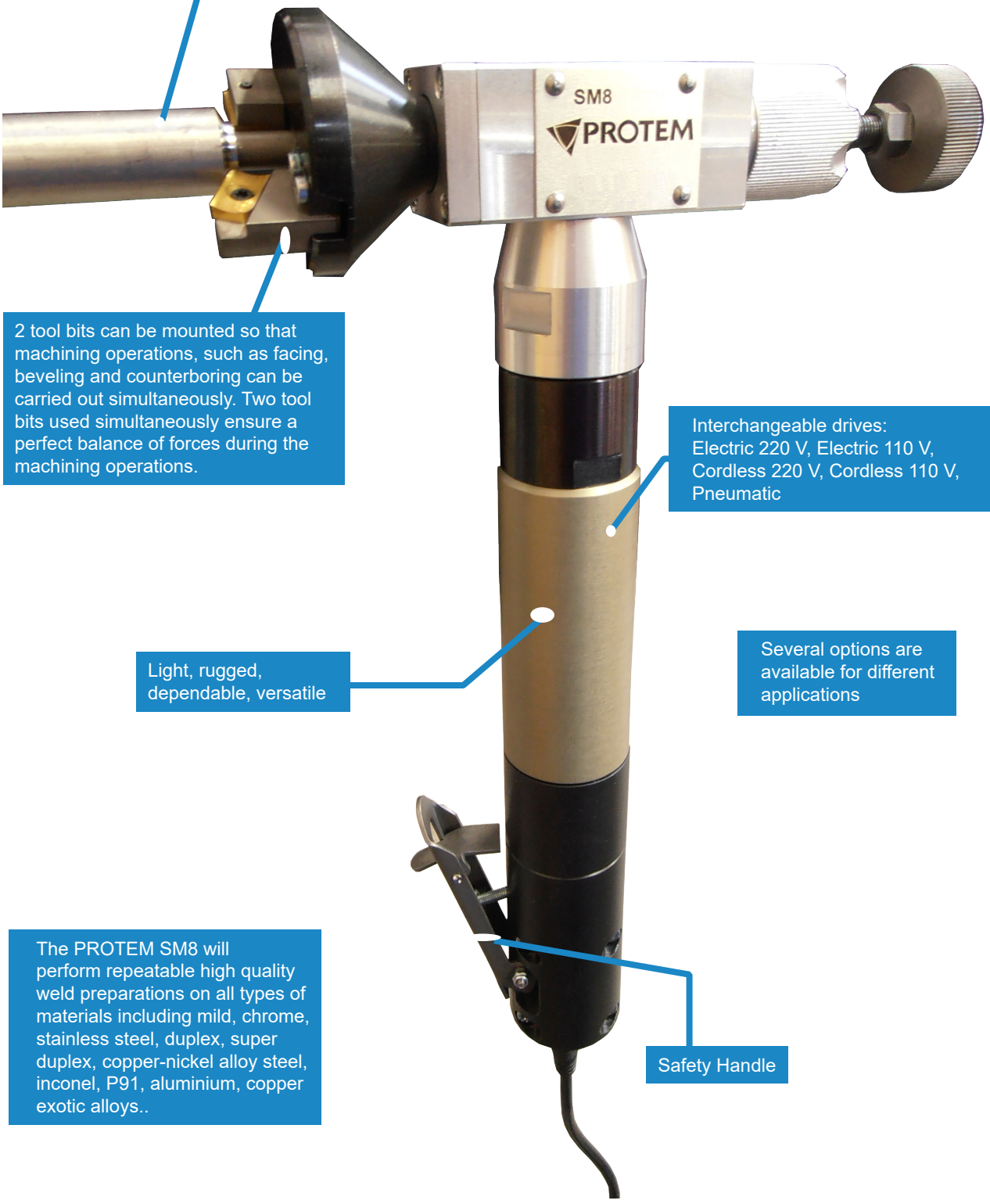



| US Series | Machining Capacity | |
|---|---|---|
| SM8 | 8 - 32 mm | 0.31” – 1.26” |
| S18 | 14 - 42 mm | 0.55” – 1.65” |
| US25CH | 12.5 - 120 mm | 1/2” – 4.7” |
| US30CH | 32 - 168.3 mm | 1.26” - 6.63” |
| US40 | 43 - 219 mm | 1.69” - 8.62” |
| US80 | 80 - 406 mm | 3.15” - 16” |
| US150 | 150 - 610 mm | 5.91” - 24” |
| US450 | 457 - 1422.4 mm | 18” - 56” |

### INDUSTRIES:

| Shipbuilding | Boiler | Chemical |
|---|---|---|
| Nuclear | Oil & gas | 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.

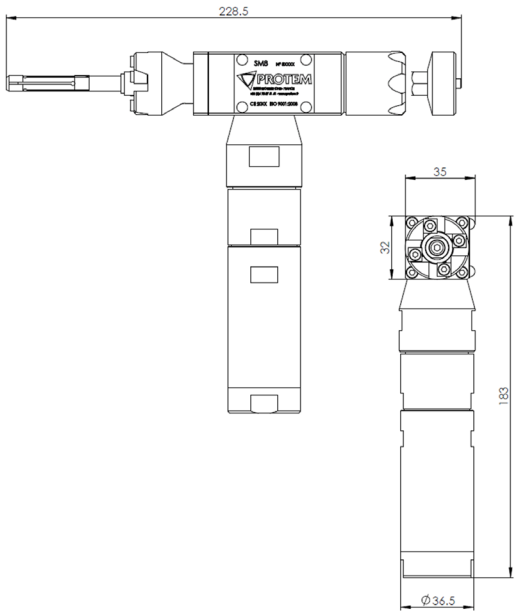
The cutting head will bevel, face, cut to lenght, remove weld joints individually or in a simultaneous operation.

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

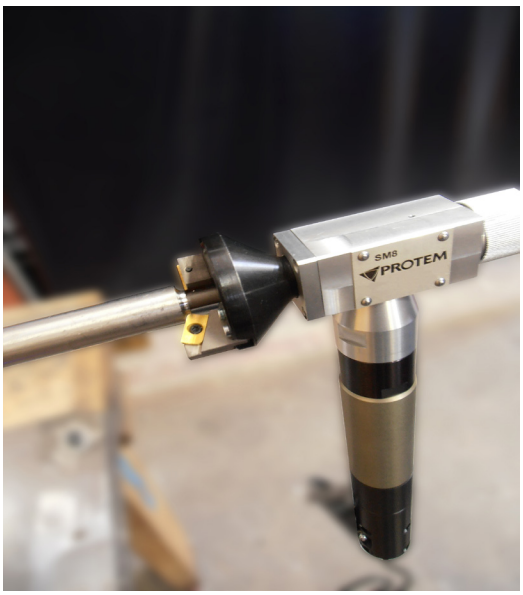
## Technical Features:

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

| Order No. | Description |
|---|---|
| SM8-1000 | Tube Beveling Machine SM8 with pneumatic drive for Ø 0.314“-1.259“ (8mm-32mm) |
| SM8-1020 | 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:

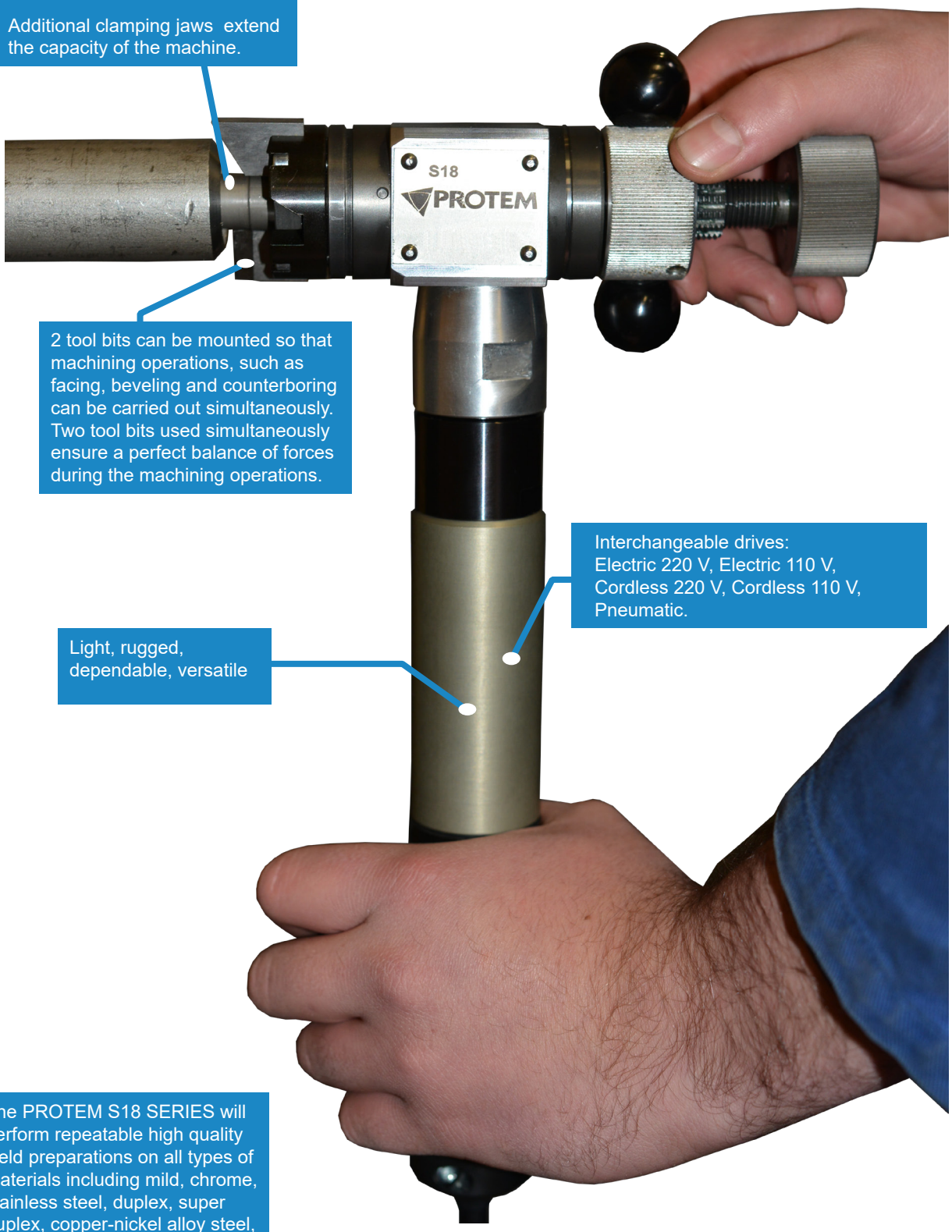
| Order No. | Description | Picture |
|---|---|---|
| O-SM8-M0-4-H-74 | Facing tool bit 90° for SM8 for 0.354“-0.590“ (9mm-15mm) |  |
| O-SM8-M1-4-H-70 | Facing tool bit 90° for SM8 |  |
| O-SM8-M2-4-H-71 | Beveling tool bit 30° for SM8 |  |
| O-SM8-M2INV-4-H-75 | Beveling tool bit inversed 30° for SM8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

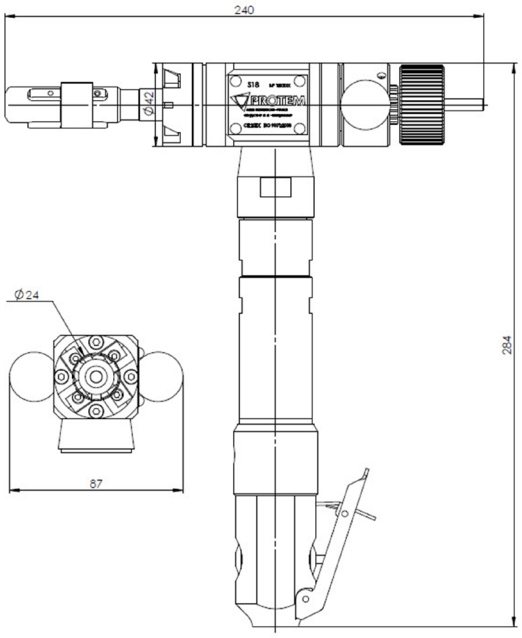
S18 with pneumatic drive

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:

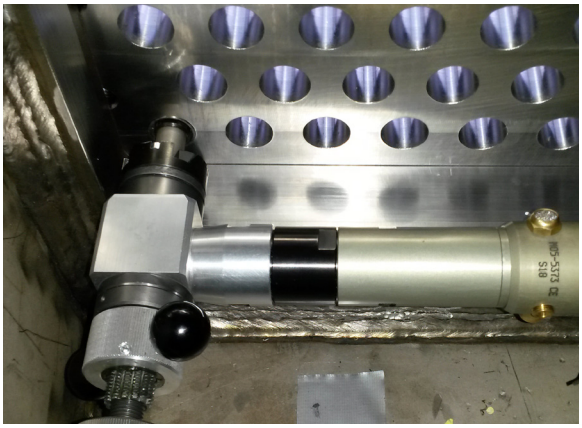
| | |
|---|---|
| ***Specific shapes & angles*** | I, V,<br>Other on Request |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 35 mm (1.378“) |
| ***Cutting head gear drive*** | 300 rpm off-load speed,<br>150 rpm nominal speed |
| ***Pneumatic drive*** | 370 W, 6 bar (87 psi),<br>350 l/min (12.36 cfm) |
| ***Electric drive*** | 110 V or 220 V |
| Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve. | |

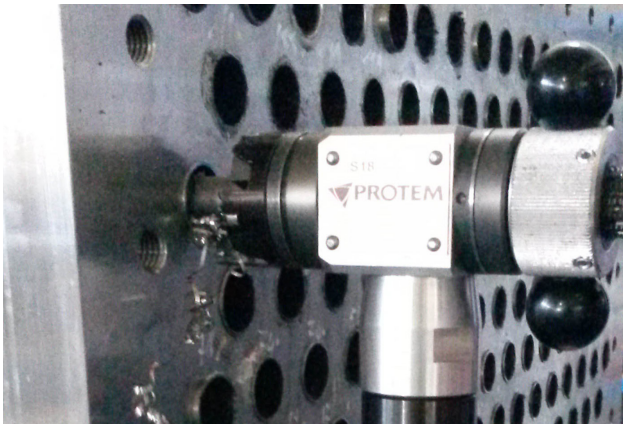
| Order No. | Description |
|---|---|
| S18-1000 | Tube Beveling Machine S18 with pneumatic drive for Ø 0.708“-1.653“ (18mm-42mm) |
| S18-1020 | Tube Beveling Machine S18 with electric drive 220V for Ø 0.708“-1.653“ (18mm-42mm) |
| S18-1022 | Tube Beveling Machine S18 with cordless drive 220V for Ø 0.708“-1.653“ (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:

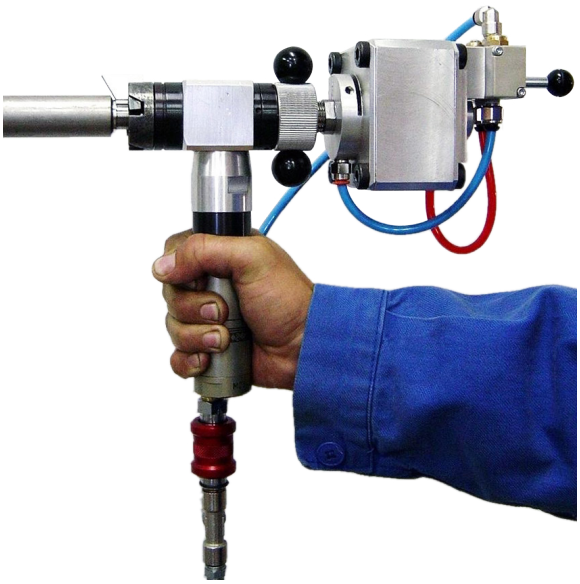




# S18CA Boiler and Heat Exchangers Tube Machining Unit

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

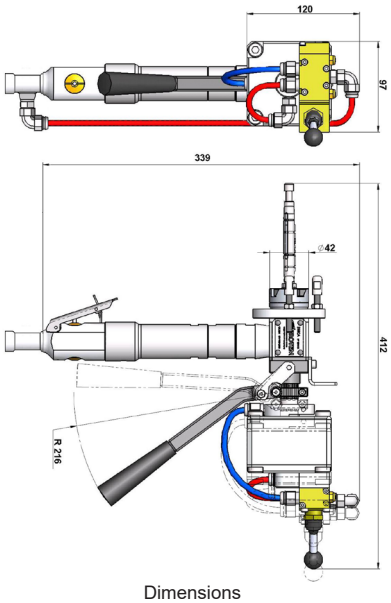
Extended Capacity: 14mm - 42mm (0.551“ - 1.653“)



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

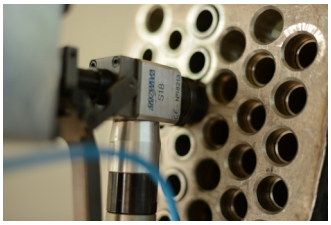


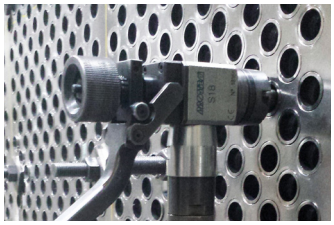

Dimensions

## Technical Features:

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

## S18CA On-Site:

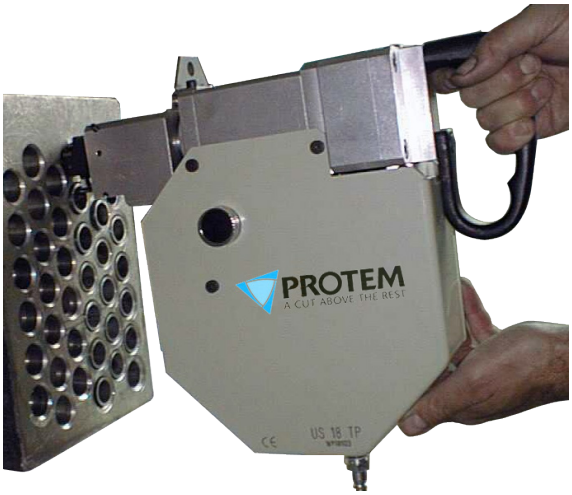




| Order No. | Description |
|---|---|
| S18CA-1000 | ID Mount Beveling Machine with pneumatic drive and clamping - Milling Cutter |
| S18CA-1002 | Tube Beveling Machine S18CA with automatic clamping, pneumatic drive, for Ø 0.708“-1.653“ (18mm-42mm) |
| S18CA-1004 | Tube Facing & Beveling machine S18CA with pneumatic drive and automatic clamping system for Ø 0.708“- 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 |

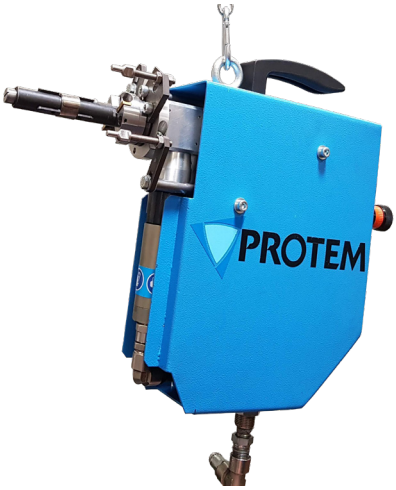
# S18TP Heat Exchanger Tubes Machining Unit

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

ID Mounted

| Order No. | Description |
|---|---|
| S18TP-1000 | 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 |
| S18CA-1800 | Adjustable limit stop |
| 210-0004 | Balancer for S18TP |

# S18 Pipe Beveling Machines Options & Accessories



## S18 Crates:

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

## S18 Options:

| Order No. | Description |
|---|---|
| S18-1500 | Optional mandrel for Ø 14-22mm |
| S18-1600 | Feed lever for S18 |
| S18-1602 | Limit Stop + feed Lever |
| 210-0002 | Balancer |

## S18TP Clamping Blades:

| Order No. | Description |
|---|---|
| S18-1219-1 | Clamping blades for Ø 17.5 - 23.69mm |
| S18-1219-2 | Clamping blades for Ø 22.24 - 28.56mm |
| S18-1214-1 | Clamping blades for Ø 27.45 - 33.85mm |
| S18-1214-2 | Clamping blades for Ø 32.40 - 38.80mm |
| S18-1214-3 | Clamping blades for Ø 37.35 - 43.75mm |

## S18TP Clamping Mandrels:

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

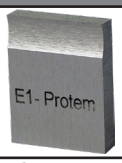
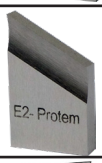
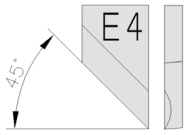
## S18TP Milling Heads:

| Order No. | Description |
|---|---|
| S18TP-1112 | Milling head for shaft Ø 46mm |
| S18TP-1122 | Milling head for shaft Ø 36mm |

## S18TP Further Options:

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

# S18 Pipe Beveling Machine Tool bits

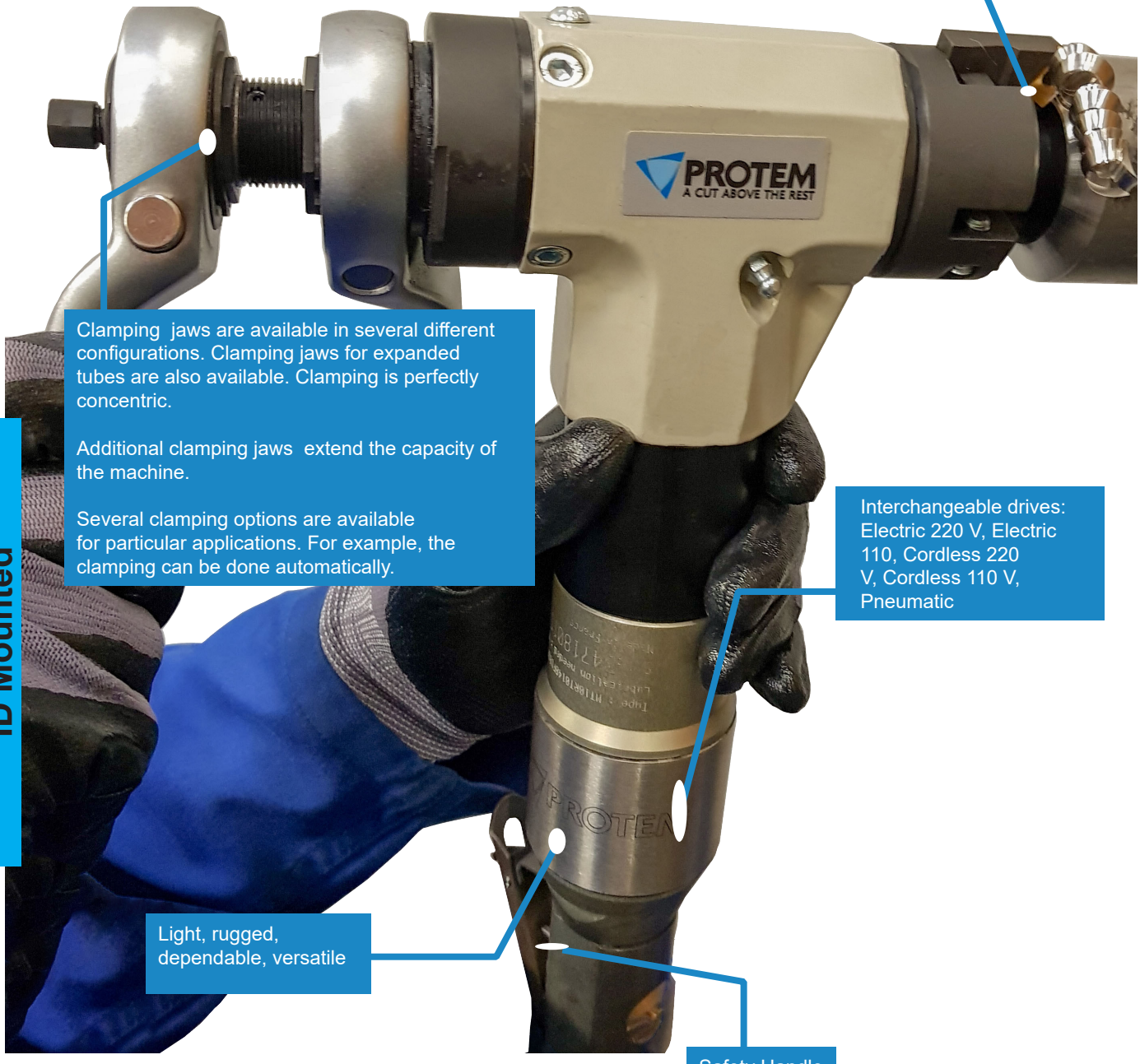
| Order No. | Description | Picture |
|---|---|---|
| O-S18-E1-4-H-50 | Tool bits 90° for S18 |   |
| O-S18-E2-4-H-52 | Tool bits 30° for S18 |   |
| O-S18-E2INV-4-H-55 | Tool bits 30° for S18, for weld removal jobs |   |
| O-S18-E3-4-H-51 | Tool bits 37°30 for S18 |   |
| O-S18-E4-4-H-53 | Tool bits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

ID Mounted

# US25CH Tube Beveling Machine

ID Mounted

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




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

Additional clamping jaws extend the capacity of the machine.

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

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

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.

# US25CH Boiler & Heat Exchanger Tubes Beveling Machine

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

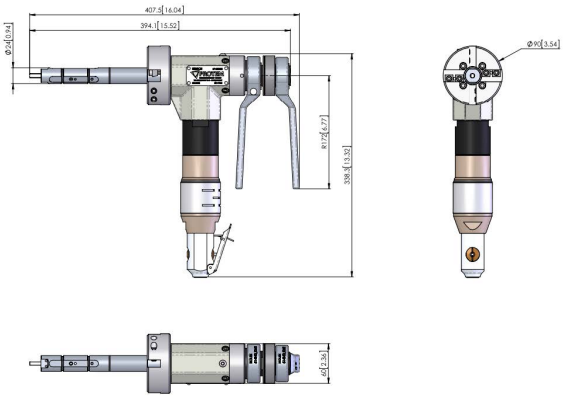
Extended Capacity: 12,7mm - 120mm (0.5“ - 4.724“)


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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |



Dimensions

## Advantages:

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

# US25CH Boiler & Heat Exchanger Tubes Beveling Machine

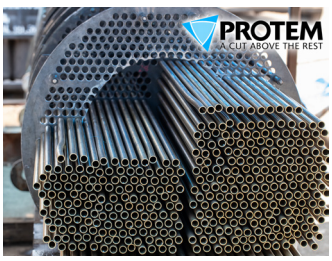
ID Mounted

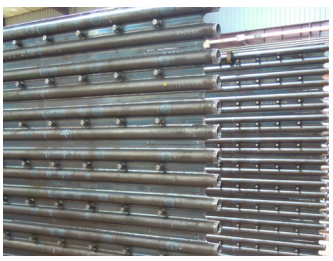
## Technical Features:

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

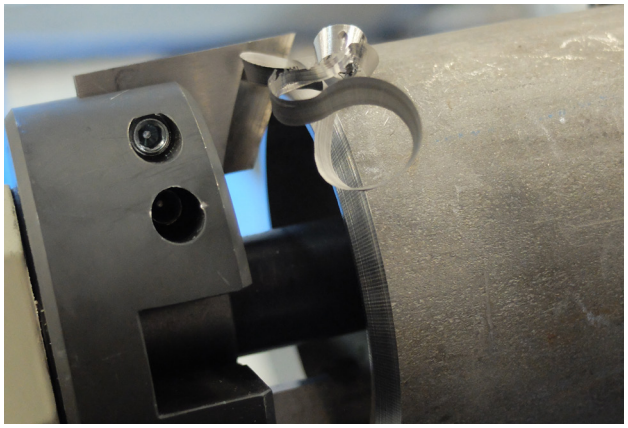
| Order No. | Description |
|---|---|
| US25CH-1010 | Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 2.362“ (60mm) and pneumatic drive MO10. |
| US25CH-1012 | Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and pneumatic drive MO10. |
| US25CH-1014 | Boiler 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-1032 | Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and electric drive 220V. |
| US25CH-1052 | Boiler Maintenance Unit US25CH, fitted with tool-holder plate Ø 3.543“ (90mm) and electric drive 110V. |

## Applications:





## Use On-Site or in Workshop:



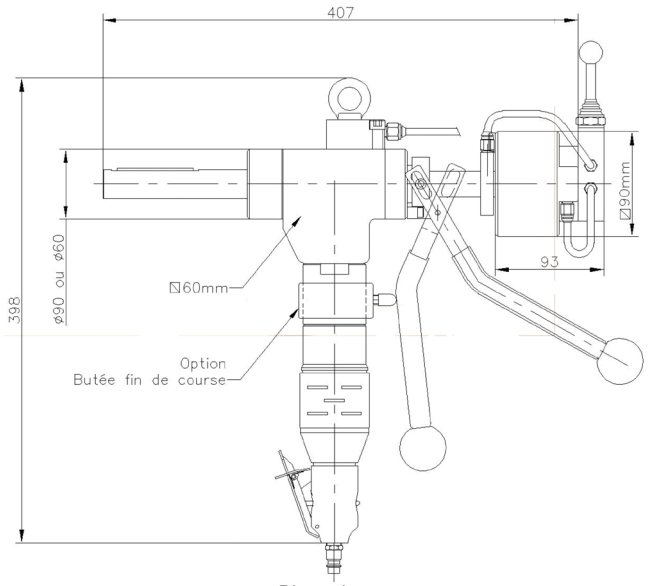
# US25CA Boiler Tube Beveling Machine

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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |



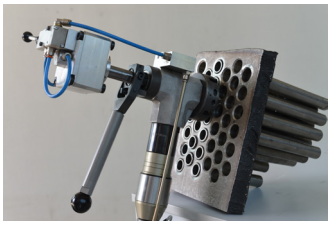
Dimensions

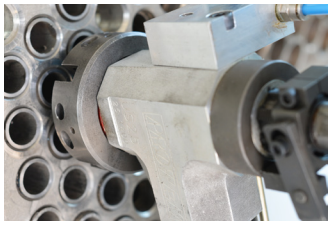
## Technical Features:

| | |
|---|---|
| ***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<br>70 rpm nominal speed.<br>Approximate rotation speed according to air pressure and air flow |
| ***Pneumatic drive*** | 730 W, 6 bar (87 psi),<br>1400 l/min (49 cfm) |
| Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve. | |

ID Mounted

## US25CA On-Site:



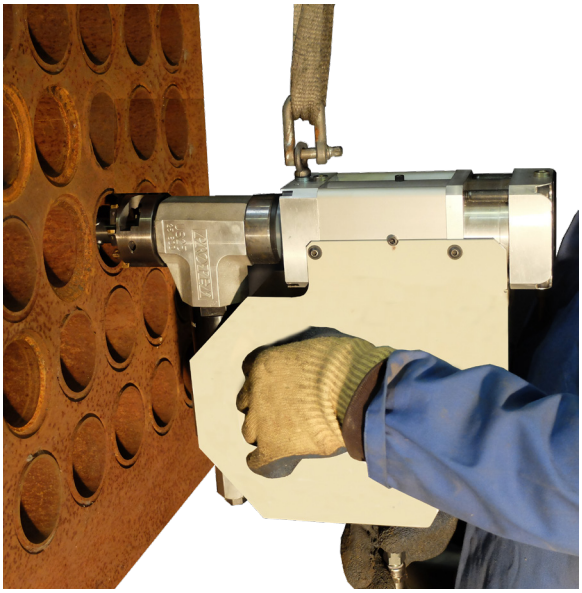


| Order No. | Description |
|---|---|
| US25CA-1000 | Pipe Beveling Machine US25 pneumatically driven with automatic clamping for Ø 1“-3.543“ OD (25mm-90mm) |
| US25CA-1002 | Pipe Beveling Machine US25, pneumatically driven with automatic clamping and mandrel for Ø 1“-3.543“ OD (25mm-90mm) |

# US25TP Boiler Tubes Beveling Machine Full Automatic Version

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

Extended Capacity: On Request

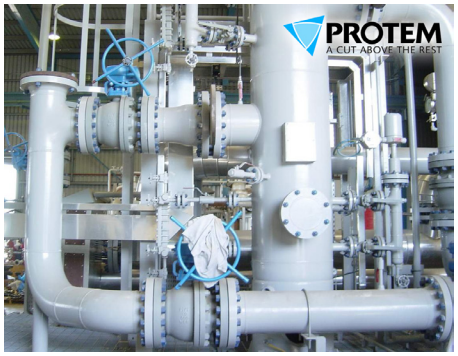


The US-TP series are fully automated beveling machines integrating the clamping mandrel with the tool holders of the US Series.

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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |

ID Mounted

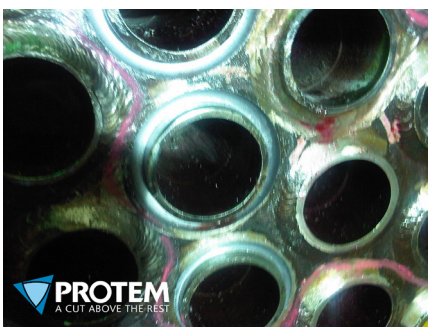




## Technical Features:

| | |
|---|---|
| ***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*** | 560 rpm off-load speed, 400 rpm nominal speed. Approximate rotation speed according to air pressure and air flow. |
| ***Pneumatic drive*** | 730 W, 6 bar (87 psi), 1400 l/min (49 cfm) |
| Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve. | |

## US25TP On-Site:




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

# US25TA Pipe Beveling Machine for Fin Tubes

Standard Capacity: 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.

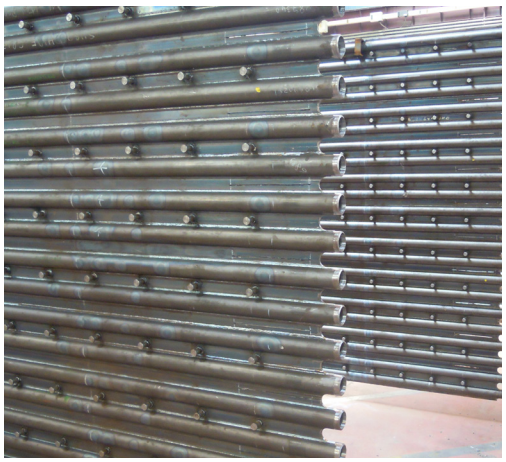
| Beveling | Squaring | Counter-boring | Cut to length | Weld Joint Removal | Coating Removal | Saddles | Surfacing |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |

## 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*** | 1460 W, 6 bar (87 psi), 1800 l/min (63 cfm) |
| Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve. | |

| Order No. | Description |
|---|---|
| US25TA-1000 | ID Mounted Machining Unit US25TA for the simultaneous beveling of fin tubes and the removal of membranes for diameters Ø 3.543“ (90mm) with pneumatic drive 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“)

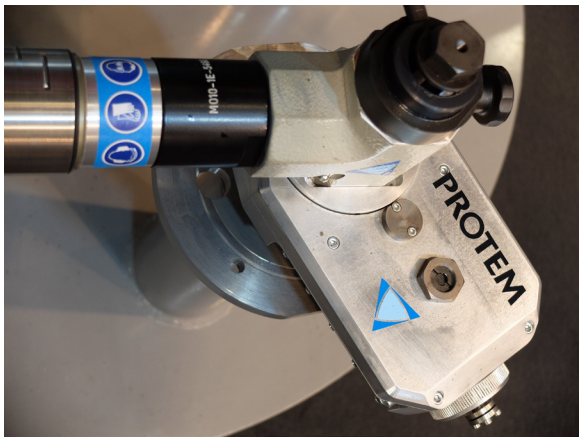
ID Mounted

## 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) |

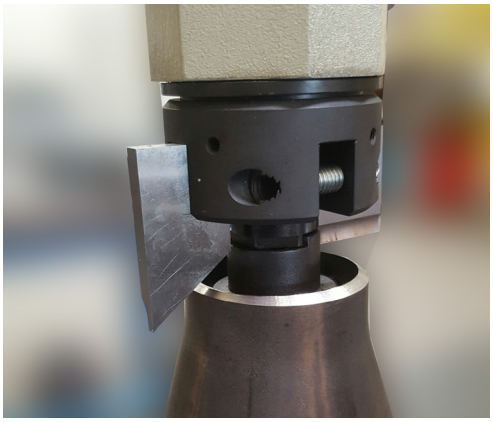
## US25-ACC Flange Facing



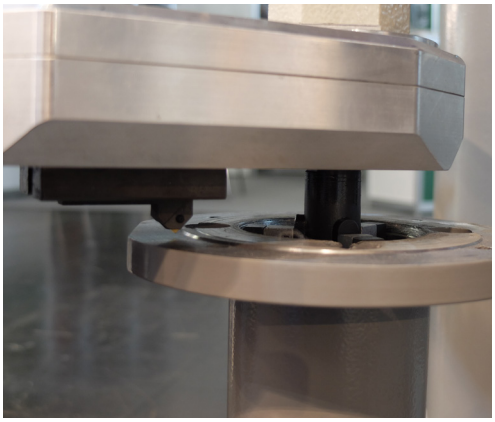

Flange facing attachment for flanges with Ø up to 11.023“: This flange attachment resurfaces any type of flange welded on pipes of any material directly on-site or in the workshop. This system is reliable, accurate, rugged, lightweight and very easy to use and operate. The clamping is made directly inside 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) |

## US25-EMA On-Site:



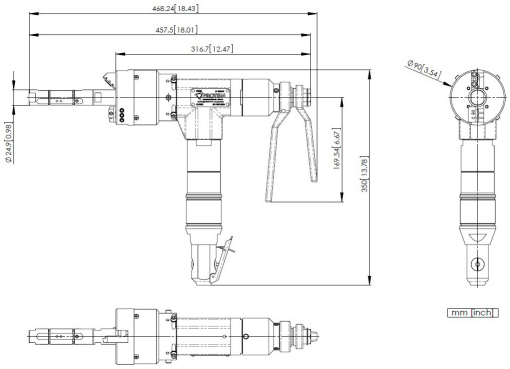
## US25-ACC On-Site:



# 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<br>70 rpm nominal speed.<br>Approximate rotation speed according to air pressure and air flow |
| ***Pneumatic drive*** | 730 W, 6 bar (87 psi),<br>1400 l/min (49 cfm) |
| ***Electric drive*** | 110 V (1500 W) or<br>220 V (1050 W) |
| Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve. | |

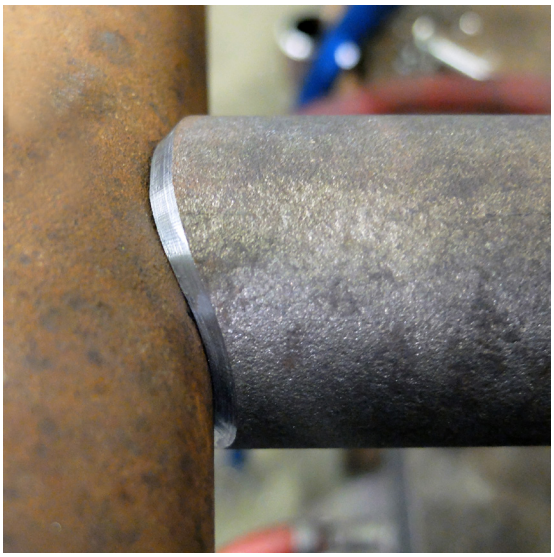
| Order No. | Description |
|---|---|
| US25GL-1000 | Saddle Beveling Machine PROTEM US25GL with pneumatic drive |
| US25GL-1020 | Saddle Beveling Machine with electric drive PROTEM US25GL |
| US25GL-1311 | Adapting set, one is necessary for each diameter |

# US25GL Saddle Beveling Machine

ID Mounted

## Example of use On-Site:

## Saddle Type Tappings:



## Applications:


# US25CH Tube Beveling Machines Options & Accessories

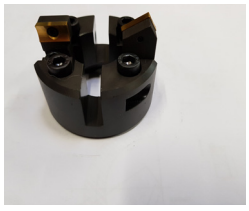
## US25CH Crates:


| 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 |

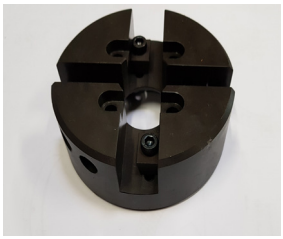
## US25CH Mandrels:

| Order No. | Description | Picture |
|---|---|---|
| US25CH-2902 | Optional mandrel for Ø 0.492“-0.708“ (12,5-18mm) |  |
| US25CH-3000 | Optional mandrel for Ø 0.708“-1.023“ (18-26mm) |  |

## US25CH Tool Holders:


Tool-holder Plate 60mm

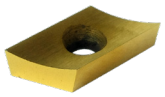
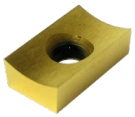

Tool-holder Plate 75mm


Tool-holder Plate 90mm


Tool-holder Plate 120mm

# US25CH Tube Beveling Machines Tool bits

ID Mounted

| Order No. | Description | Picture |
|---|---|---|
| O-US-PP30-6-11045 | Insert-holder 30° for US25 |  |
| O-US-PP375-6-14005 | Insert-holder 37,5° for US25 |  |
| O-US-PP45-6-14006 | 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-B6-6-H-55 | Tool bit 90°, with disalignment |  |
| O-US-B7-6-H-57 | Tool bit 30°, with disalignment |  |
| O-US-B8-6-H-58 | Tool bit 37°30, with disalignment |  |
| O-US-B9-6-H-60 | Tool bit for counterboring 15°, with disalignment |  |
| O-US-B11-6-H-24 | Tool bit for counterboring and squaring |  |
| O-US-C5-6-H-62 | Tool bit for 7° R6 j-bevels |  |
| O-US-C6-6-H-64 | Tool bit for 12,5° R6 j-bevels |  |
| O-US-C7-6-H-66 | Tool bit for 7° R6 j-bevels, with disalignment |  |
| O-US-C8-6-H-68 | Tool bit for 12,5° R6 j-bevels, with disalignment |  |
| O-US-C9-6-H-20 | Tool bit for 10° R1,5 j-bevels |  |
| O-US-C10-6-H-71 | Tool bit for 20° R4 j-bevels |  |

# 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

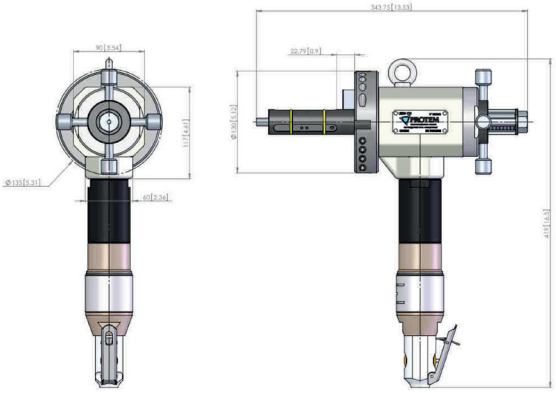
The US30CH portable pipe beveling machine is durable, reliable, versatile and light weighted. The standard tool-holder plate will accept multiple tool bits, allowing up to four simultaneous machining operations. Such operations may include: 30°, 37°30, 45° bevels, J-bevels, compound bevels, facing, counterboring,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

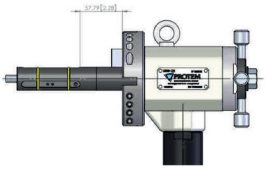
The tool bits can be changed and adjusted very quickly. Carbide tool-inserts may also be used. The US30CH features a self-accepting torque system and an integral drive motor.

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

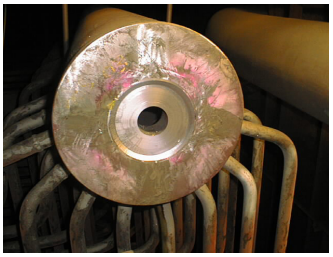
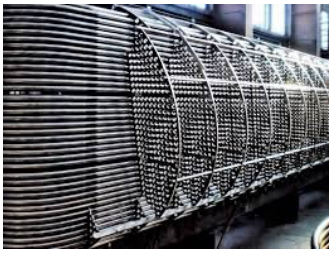
## Technical Features:

| | |
|---|---|
| ***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. | |

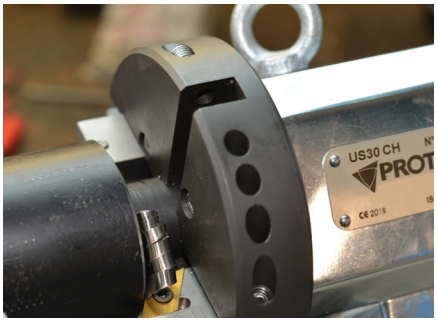
| Order No. | Description |
|---|---|
| US30CH-1000 | Pipe Beveling Machine US30CH for Ø 1.259“ - 4.488“ (32mm - 114mm) with pneumatic drive |
| US30CH-1010 | Pipe Beveling Machine US30CH New Generation for boilers with option 11bis - longer mandrel for boiler works, for Ø 1.259“ - 4.488“ (32mm - 114mm) 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-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. |



## 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“)

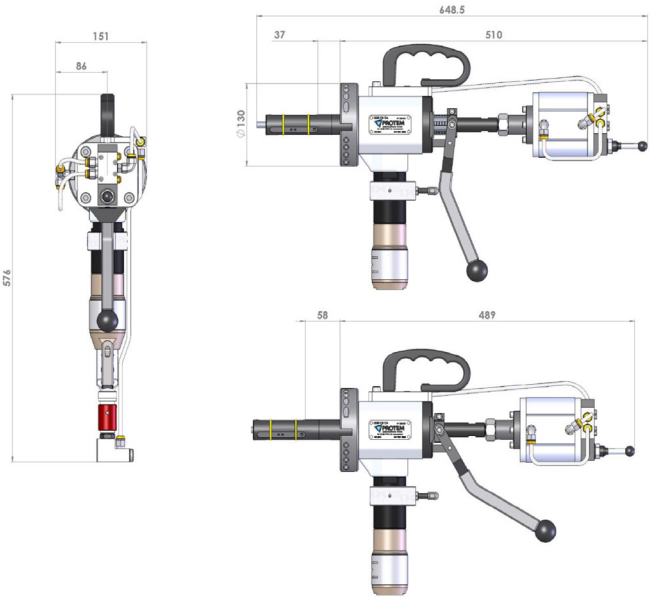
The US30CHCA portable pipe beveling machine is durable, reliable, versatile and light weighted. The standard tool-holder plate will accept multiple tool bits, allowing up to four simultaneous machining operations. Such operations may include: 30°, 37°30, 45° bevels, J-bevels, compound bevels, facing, 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 MS10 |
| US30CH-K04 | Transport crate for US30CH/E MS15 |
| US30CH-K05 | Transport crate for US30CH pneumatic + option 3302 |
| US30CHCA-K01 | Transport crate for US30CHCA pneumatic |

## US30CH Elbow Mandrels:

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

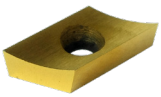
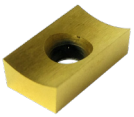


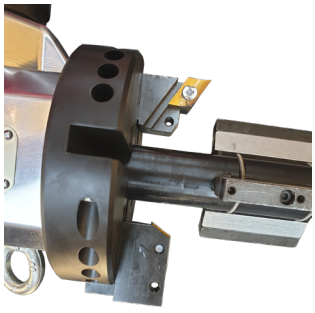
## US30CH Further Options:

| Order No. | Description |
|---|---|
| US30CH-1500 | US30CH beveling machine with electric drive for diameters up to 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-86 | 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° R4 j-bevels |  |

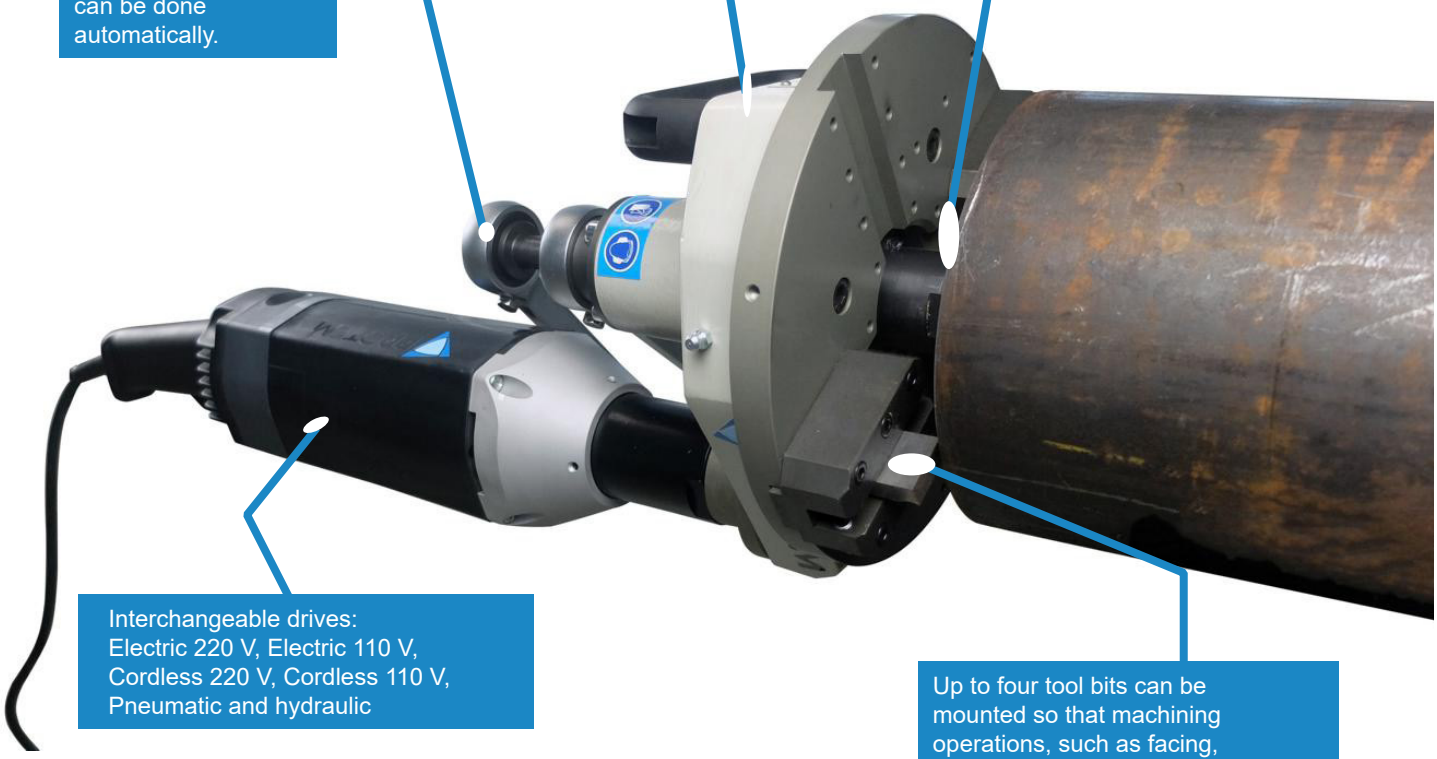
# US40 Pipe Beveling Machine

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“)

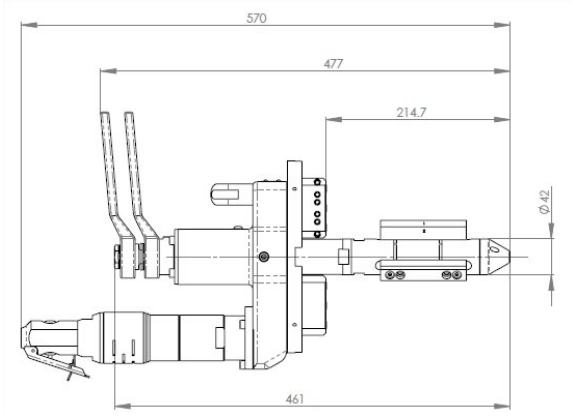
US40 with pneumatic drive

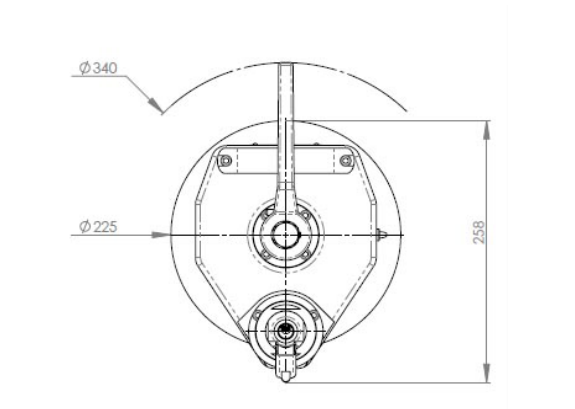
The portable id mount PROTEM US40 tube and pipe beveling machine is powerful, durable, reliable and versatile. The US40 covers Ø ranging from 43mm (1.692”) to 219mm (8.622”). The standard tool plate will accept multiple tool bits, allowing up to four simultaneous machining operations which may include 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

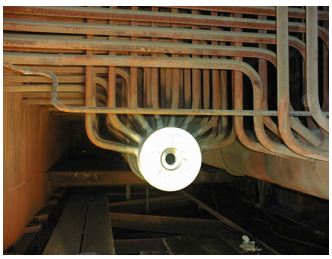
## Technical Features:

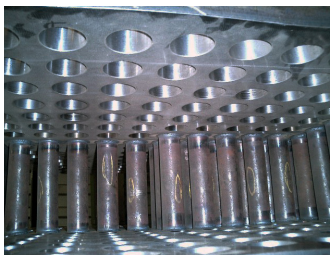
| | |
|---|---|
| ***Specific shapes & angles*** | Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, Other on request |
| ***Clamping*** | Manual with a key |
| ***Feed stroke*** | 50 mm (1.968“) |
| ***Expansion*** | 15 mm (0.590”) |
| ***Cutting head gear drive*** | 25 rpm off-load speed<br>16 rpm nominal speed.<br>Approximate rotation speed according to air pressure and air flow |
| ***Pneumatic drive*** | 730 W, 6 bar (87 psi),<br>1400 l/min (49 cfm) |
| ***Electric drive*** | 110 V (1500 W) or<br>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<br>Ø 1.692“ - 8.622“ (43mm - 219mm) |
| US40-1022 | Pipe Facing Machine PROTEM US40 with electric drive 220V MS15. for<br>Ø 1.692“ - 8.622“ (43mm - 219mm) |
| US40-1040 | Pipe Facing Machine PROTEM US40 with electric drive 110V, for<br>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<br>Ø 1.692“ - 8.622“ (43mm - 219mm) |



## Applications:



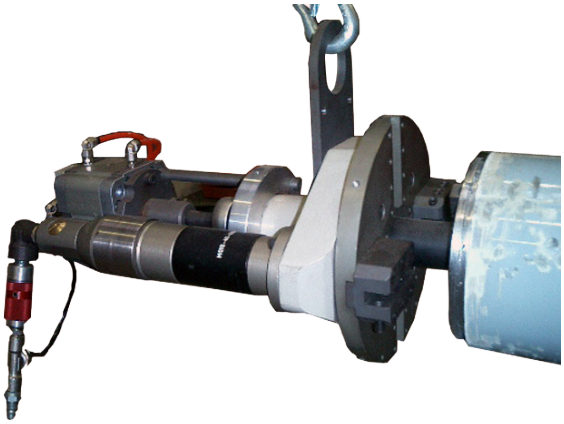



## Use On-Site or in Workshop:

# US40CA Beveling Machine with automatic clamping System

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

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

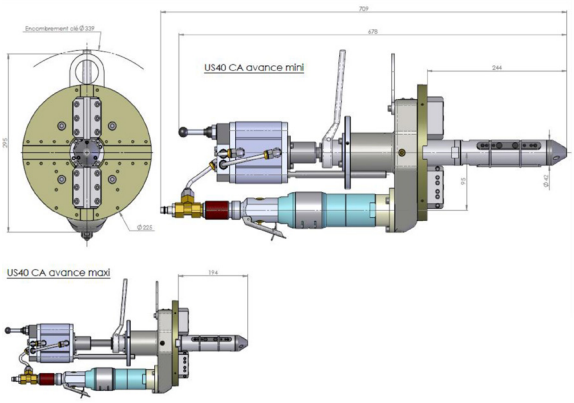


The portable id mount PROTEM US40CA tube and pipe beveling machine is powerful, durable, reliable and versatile.The US40CA covers Ø ranging from 43mm (1.692”) to 219mm (8.622”). The standard tool plate will accept multiple tool bits, allowing up to four simultaneous machining operations which may include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



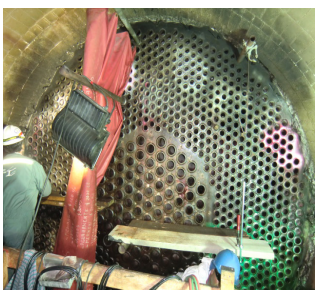

Dimensions

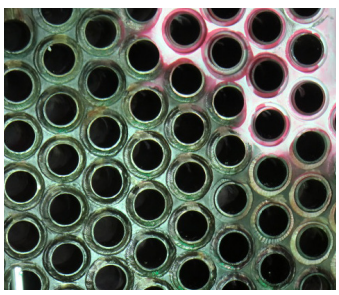
## Technical Features:

| | |
|---|---|
| ***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<br>16 rpm nominal speed.<br>Approximate rotation speed according to air pressure and air flow |
| ***Pneumatic drive*** | 730 W, 6 bar (87 psi),<br>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 pneumatic |
| US40-K03 | Transport crate for US40 hydraulic |
| US40-K05 | Transport crate for US40E (MS10-MS15) |
| US40-K06 | Transport crate for US40 pneumatic + bench |
| US40-K10 | Transport crate for US40 copying carriage |
| US40-K11 | Transport crate for US40-ASB |
| US40-K12 | Transport crate for US40E MS15 + RA |
| US40CA-K01 | Transport crate for US40CA pneumatic |
| US40PR/C-K01 | Transport crate for US40PR/C-1000 Elbow mandrel assembly |
| US40PR/C-K02 | Transport crate for US40PR/C-1001 Elbow mandrel assembly |

## US40 Elbow Mandrels:

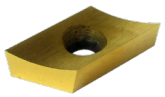
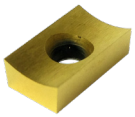
| Order No. | Description |
|---|---|
| US40PR/C-1000 | Elbow mandrel assembly EMA for US40 for Ø 3.346“ - 7.086“ (85mm - 180mm) |
| US40PR/C-1001 | Elbow mandrel assembly EMA for US40 for Ø 5.708“ - 8.622“ (145mm - 219mm) |


## 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-86 | 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° R4 j-bevels |  |

# US80 Pipe Beveling Machine

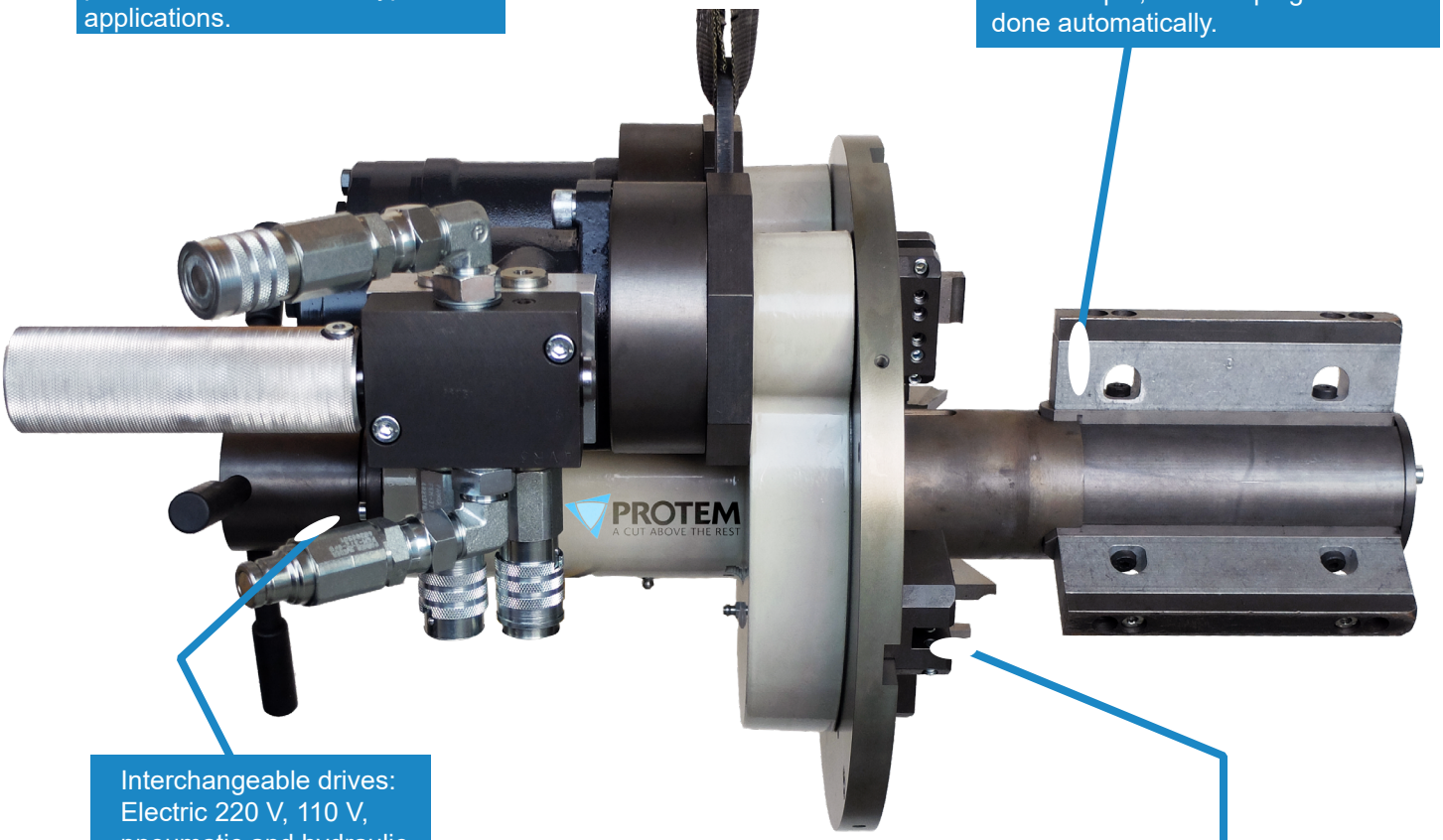
Rugged, dependable, versatile

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.

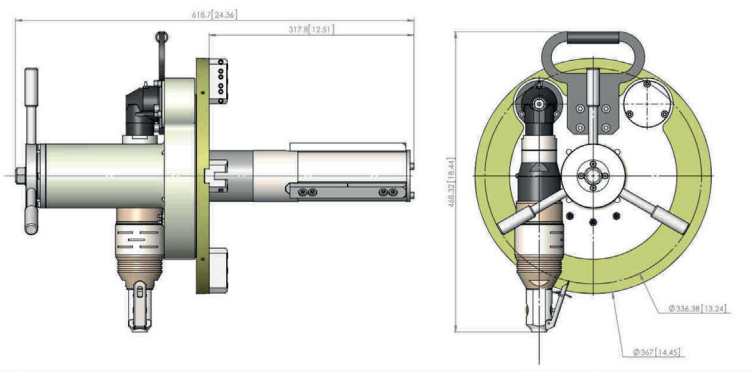
The US80 heavy duty beveler will perform repeatable high quality weld preparations on all types of materials including mild steel, chrome, stainless steel, duplex, super duplex, copper-nickel alloy steel, inconel, P91, aluminium, copper and exotic alloys. It can be either pneumatically, electrically 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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |

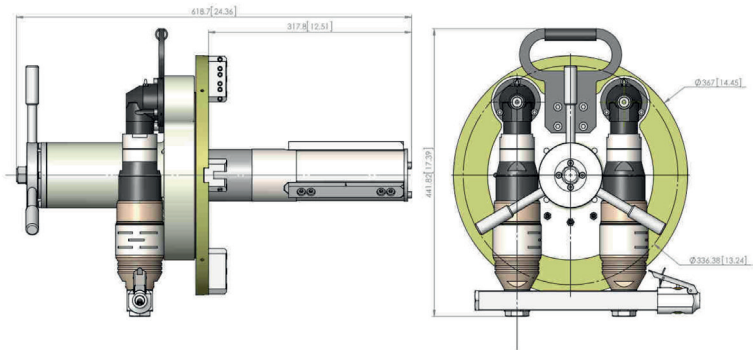
ID Mounted

## 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:

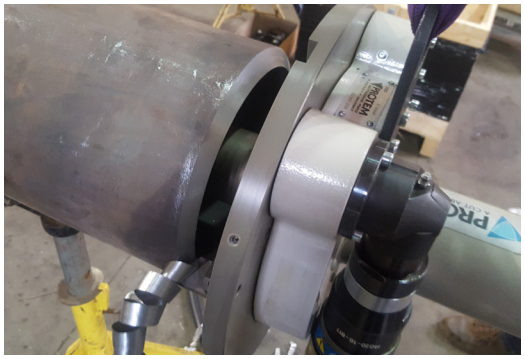
| | |
|---|---|
| ***Specific shapes & angles*** | Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, other on request |
| ***Clamping*** | Manual with a key |
| ***Feed stroke*** | 60 mm (2.362“) |
| ***Expansion*** | 25 mm (0.984”) |
| ***Cutting head gear drive*** | 16 rpm off-load speed<br>11 rpm nominal speed.<br>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)<br>110 V (1800 W) |
| ***Pneumatically driven machines have to be used with a lubricating filter.<br>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) |
| US80-1040 | Heavy Duty Pipe Facing Machine with electric drive 400V, for Ø 3.149“ - 13.976“ (80mm - 355mm) |
| US80-1060 | Heavy Duty Pipe Facing Machine with dual hydraulic drive and regulation valve, for Ø 3.149“ - 13.976“ (80mm - 355mm) |
| US80-1062 | Heavy Duty Pipe Facing Machine with 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:

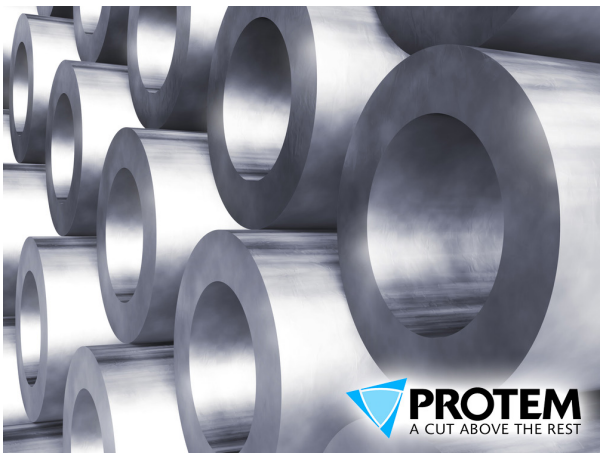

## Use On-Site or in Workshop:

# US80 Pipe Beveling Machines Options & Accessories

## US80 Crates:

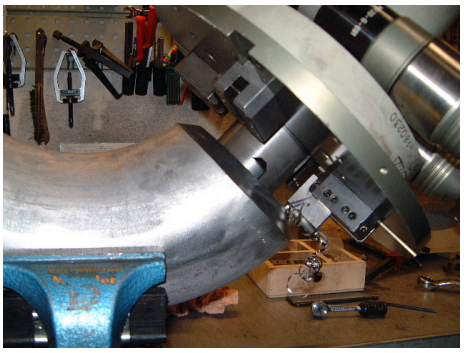
| Order No. | Description |
|---|---|
| US80-K01 | Transport crate for US80 pneumatic / hydraulic |
| US80-K02 | Transport crate for US80 pneumatic / hydraulic + cover |
| US80-K03 | Transport crate for US80E |
| US80-K04 | Transport crate for US80E-BRUSHLESS |
| US80-K05 | Transport crate for US80 in 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 |




ID Mounted

## US80 Elbow Mandrels:

| Order No. | Description |
|---|---|
| US80PR/C-1000 | Elbow mandrel assembly EMA for US80 for Ø 3.149“ - 6.224“ (80mm - 158.1mm) |
| US80PR/C-1001 | Elbow mandrel assembly EMA for US80 for Ø 5.905“ - 10.465“ (150mm - 265.8mm) |

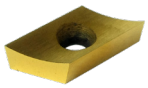
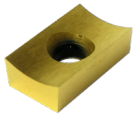


## US80 Further Options:

| 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 5.905“ - 10.315“ (150mm - 262mm) |
| 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-86 | 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° R4 j-bevels |  |

ID Mounted

# US150 Pipe Beveling Machine

ID Mounted

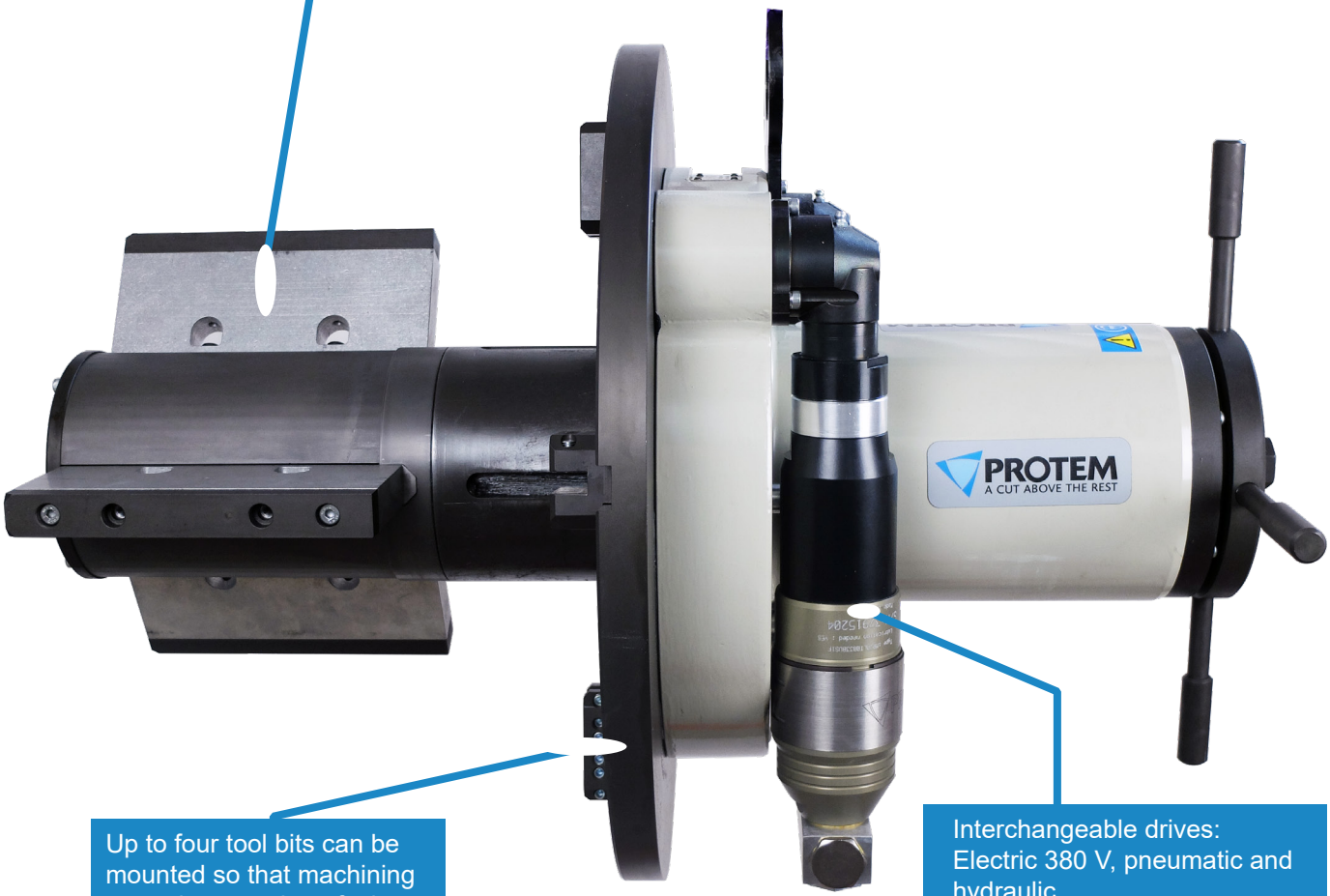
Clamping jaws are available in several different configurations.

Additional clamping jaws extend the capacity of the machine.

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

Rugged, dependable, versatile

Different configurations are possible to suit different types of applications.




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

Interchangeable drives: Electric 380 V, pneumatic and hydraulic

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

# US150 Pipe Beveling Machine

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

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


US150 with pneumatic drive

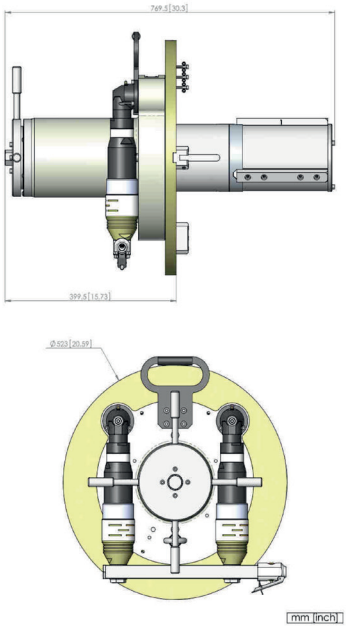
The US150 heavy duty beveler is a reliable and powerful machine that performs repeatable, high quality weld end preparation operations on all metal pipes including mild steel, chrome, stainless steel, duplex, super duplex, coppernickel alloy steel, inconel, P91, aluminium, copper and exotic alloys. The 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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |

## Advantages:

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




Dimensions


US150 Brushless drive

ID Mounted

# US150 Pipe Beveling Machine

ID Mounted

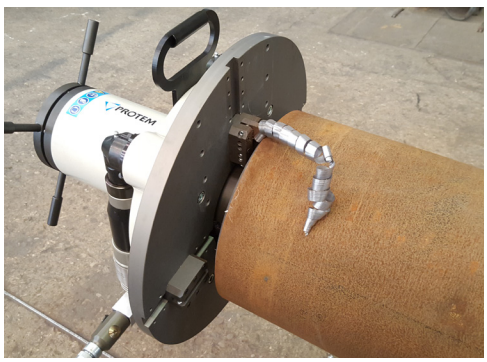
## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel, other on request |
| ***Clamping*** | Manual with a key |
| ***Feed stroke*** | 100 mm (3.937“) |
| ***Expansion*** | 30 mm (1.181”) |
| ***Cutting head gear drive*** | 7-10 rpm off-load speed<br>5-7 rpm nominal speed.<br>Approximate rotation speed according to air pressure and air flow |
| ***Single pneumatic drive*** | 1,47 kW, 6 bar (87 psi),<br>1800 l/min (63 cfm) |
| ***Double pneumatic drive*** | 2 x 1,47 kW, 6 bar (87 psi),<br>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.<br>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) |
| US150-1068 | Heavy Duty Pipe Facing Machine with dual hydraulic drive and regulation valve. Fitted with extension Kit24" for Ø 5.905" - 24.015" (150mm - 610mm) |
| US150-1080 | Heavy Duty Pipe Facing Machine with brushless electric drive & Three-Phase Motorization. Please indicate the required voltage and frequency for your application. For Ø 5.905" - 20" (150mm - 508mm) |
| US150DSB-1000 | Heavy Duty Pipe Facing Machine with dual pneumatic drive and dual bearing for higher accuracy. For options US150-3000, US150-3100, US150-3200, for Ø 5.905" - 20" (150mm - 508mm) |
| US150DSB-1002 | Heavy Duty Pipe Facing Machine with dual pneumatic drive and dual bearing for higher accuracy. Fitted with extension Kit 24" for Ø 5.905" - 24.015" (150mm - 610mm) |
| US150DSB-1060 | Heavy Duty Pipe Facing Machine with dual hydraulic drive and dual bearing for higher accuracy. For Ø 5.905" - 20" (150mm - 508mm) |
| US150DSB-1062 | Heavy Duty Pipe Facing Machine with dual hydraulic drive. For Ø 5.905" - 20" (150mm - 508mm) |
| US150DSB-1064 | Heavy Duty Pipe Facing Machine with single hydraulic drive and dual bearing and regulation valve for higher accuracy. For options US150-ASB, US150-KS75-30, US150-KS75-36, for Ø 5.905" - 20" (150mm - 508mm) |
| US150DSB-1066 | Heavy Duty Pipe Facing Machine with single hydraulic drive. For Ø 5.905" - 20" (150mm - 508mm) |
| US150DSB-1068 | Heavy Duty Pipe Facing Machine with dual hydraulic drive, dual bearing and regulation valve. Fitted with extension Kit24" for Ø 5.905" - 24.015" (150mm - 610mm) |


## Use On-Site or in Workshop:



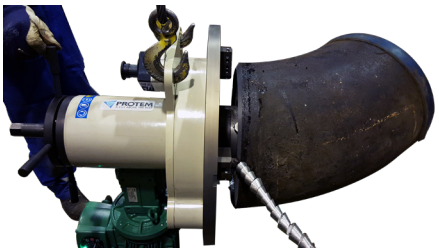
# US150 Pipe Beveling Machines Options & Accessories

## 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-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 |

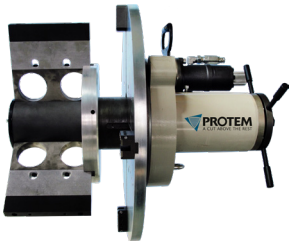
## US150 Elbow Mandrels:

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



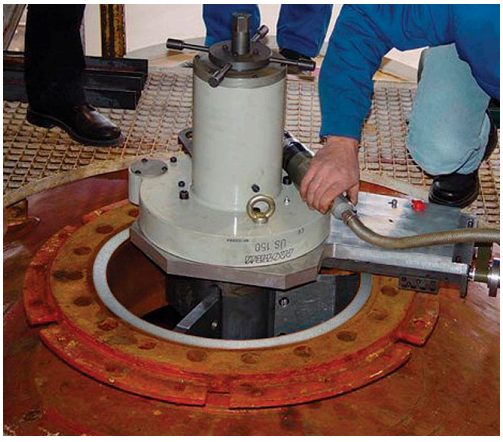
## US150-Kit24":

| Order No. | Description |
|---|---|
| US150-2702 | 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:

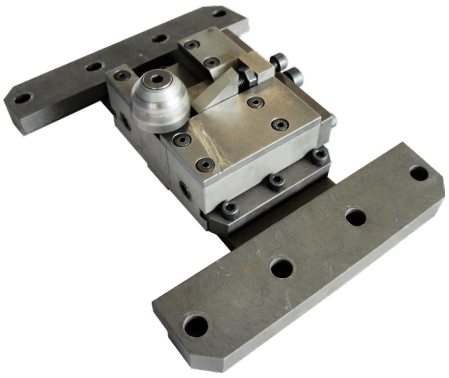
| Order No. | Description |
|---|---|
| US150-3100 | Copying carriage for US150 Stroke 2.952" (75mm) for pipe Ø up to 30" (762mm) |
| US150-3200 | Copying carriage for US150 Stroke 2.952" (75mm) for pipe Ø up to 35.433" (900mm) |

## US150 Mounting device:

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

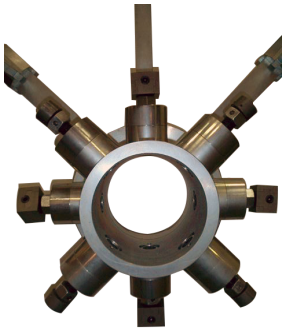
## US150 ID & OD Tracker:

| 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) |

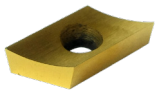
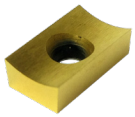


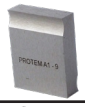
## US150 Spider Assembly:

| 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

| 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-86 | 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° R4 j-bevels |  |

ID Mounted

# US450 Heavy Duty Pipe Beveling Machine

ID Mounted

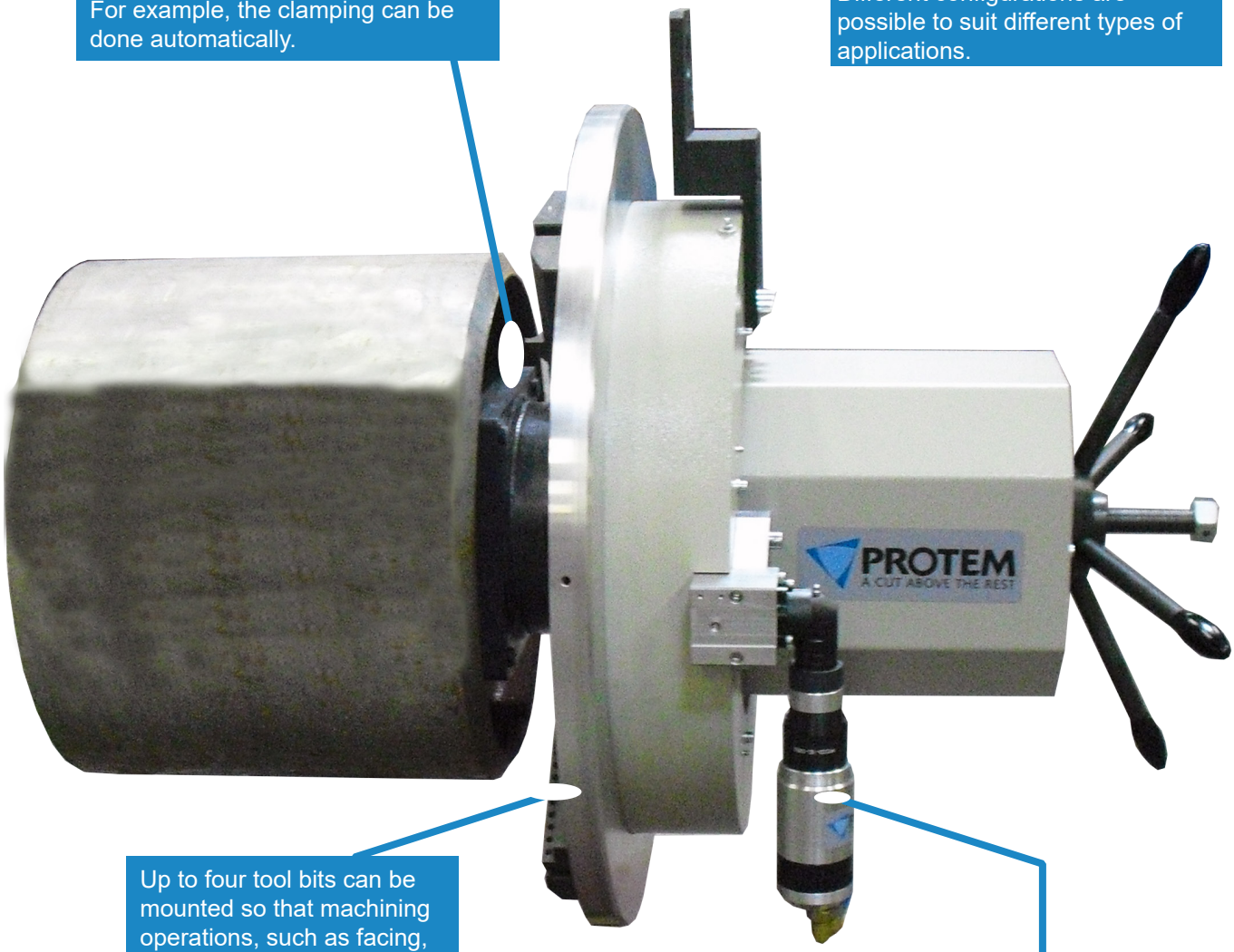
Clamping jaws are available in several different configurations.

Additional clamping jaws extend the capacity of the machine.

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

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.

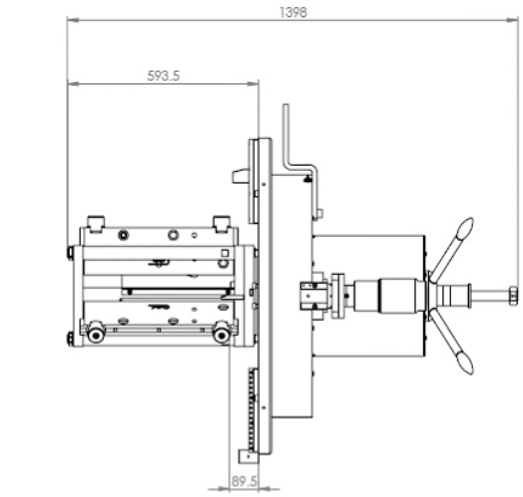
Strong ID clamping mandrel provides safe and secured mounting and fixing. Cold machining process and no Heat Affected Zone. For unmatched results! Available with dual pneumatic drive or dual hydraulic drive (to be used with a 22KW hydraulic power unit) The durability, reliability and capacity of the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

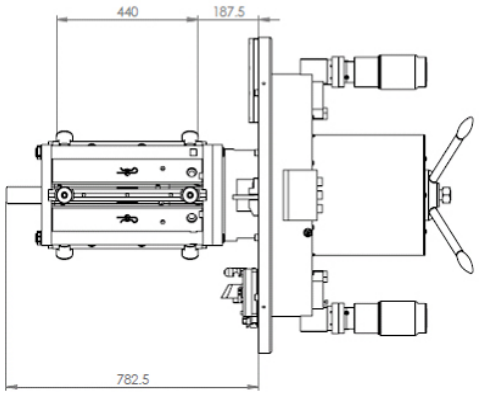
| Beveling | Squaring | Counterboring | Cut to length | Weld Joint Removal | Coating Removal | Saddles | Surfacing |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |

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

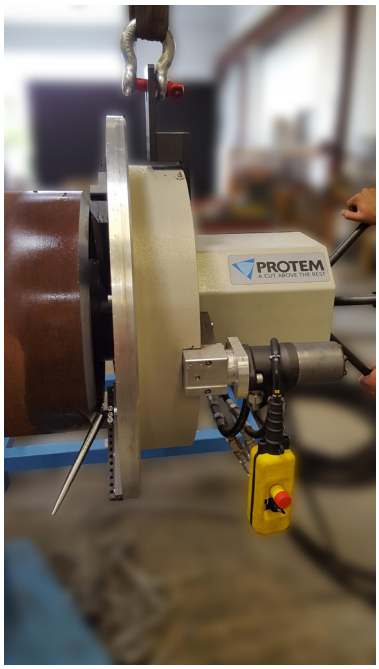


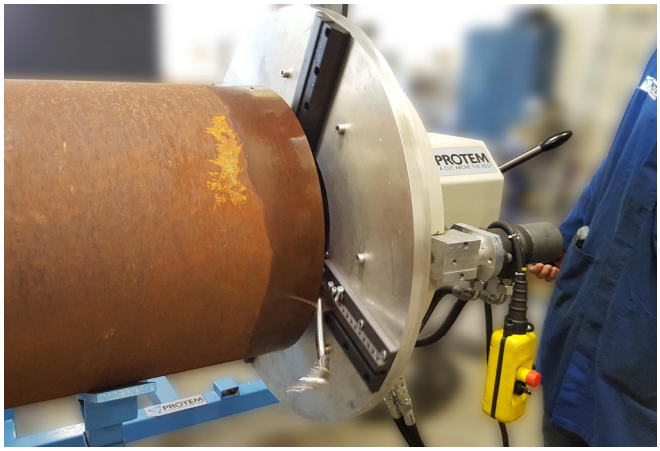
## Technical Features:

| | |
|---|---|
| ***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 |
|---|---|
| US450-1062 | Heavy Duty Beveling Unit PROTEM US450 for Ø 18"-36" (457.2mm-914.4mm) with powerful hydraulic drive. |
| US450-1064 | Heavy Duty Beveling Unit PROTEM US450 Kit56" for Ø 18"- 56" (457.2mm-1422.4mm) with powerful dual hydraulic drive. |


## Use On-Site or in Workshop:



## US450 Crates:

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

## US450 ID & OD Tracker:

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



## US450 Pads:

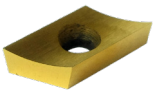
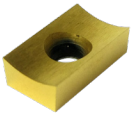
| Order No. | Description |
|---|---|
| US450-1313 | Pad height 25 mm set of 6 units |
| US450-1314 | Pad height 50 mm set of 6 units |
| US450-1315 | Pad height 75 mm set of 6 units |
| US450-1316 | Pad height 100 mm set of 6 units |


## US450 Copying Carriage:

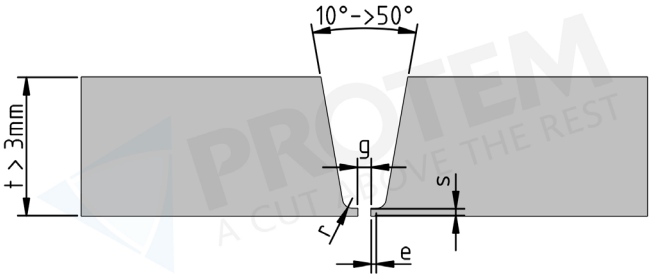
| Order No. | Description |
|---|---|
| US450-3202 | Copying carriage for US150 Stroke 2.952" (75mm) for pipe Ø up to 20 - 48" (508mm - 1219.2mm) |

# US450 Heavy Duty Pipe Beveling Machine — Tool bits

ID Mounted

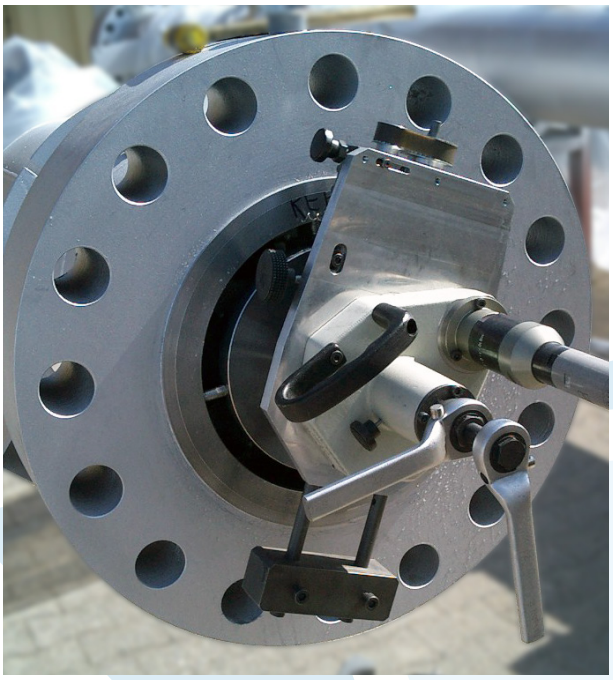
| Order No. | Description | Picture |
|---|---|---|
| O-US-PP30-9-14026 | Insert-holder 30° |  |
| O-US-PP375-9-14007 | Insert-holder 37,5° |  |
| O-US-PP45-9-14008 | Insert-holder 45° |  |
| O-US-PP90-9-11066 | Insert-holder 90° |  |
| O-VIS-V5 | Screw for tool insert P2 |  |
| O-US-P1-6-H-T | Tool-insert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

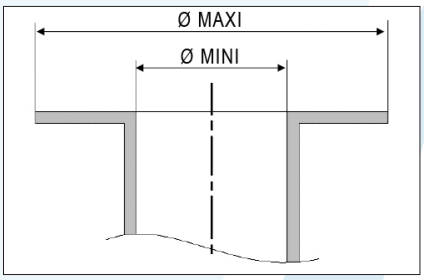
This flange attachment resurfaces all the different flanges welded on pipes, of all materials, directly on-site or in the workshop.

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

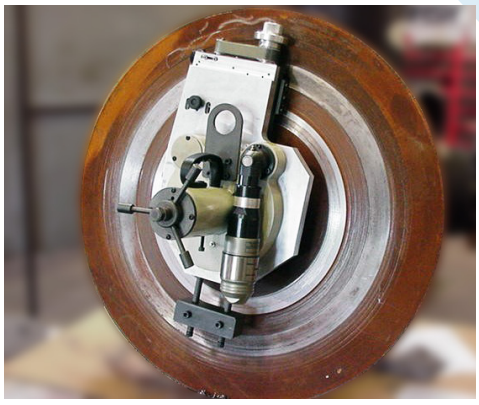
Clamping is made directly inside the flange ID via the clamping shaft of the US machines and their additional expansion blades, or with a spider elbow mandrel kit.

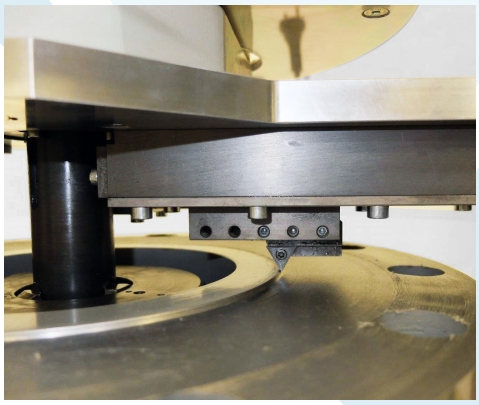
It is recommended to use the spider elbow mandrel kit to get an optimal adjustment of the machine with the flange (squareness and concentricity). For materials: mild steel, stainless steel, alloy steels, aluminium, duplex, super duplex, inconel, P91.

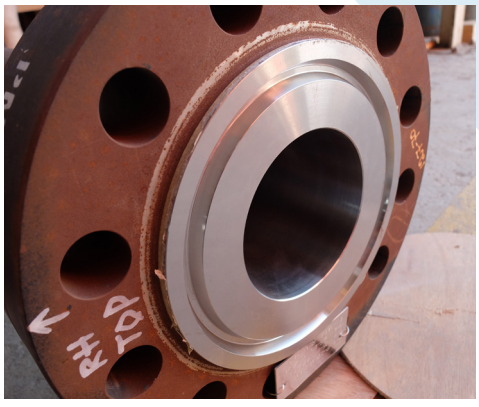
### MACHINING CAPACITY:

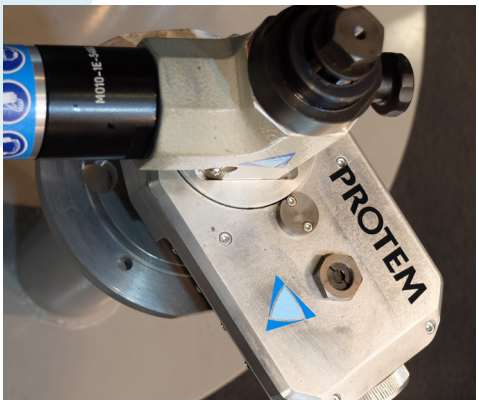



### APPLICATIONS:










OD Mounted

# SINGLE POINT MACHINING



## 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 150 mm ID up to 914 mm OD (5.903“ ID – 36“ AD) |

### TECHNICAL FEATURES:

| Machine | US150-ASB |
|---|---|
| Clamping capacity | Ø150 - Ø914 mm |
| | 5.906” - 36” |
| 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 450 mm ID up to 1422 mm OD (17.717“ ID – 56“ AD) |

### TECHNICAL FEATURES:

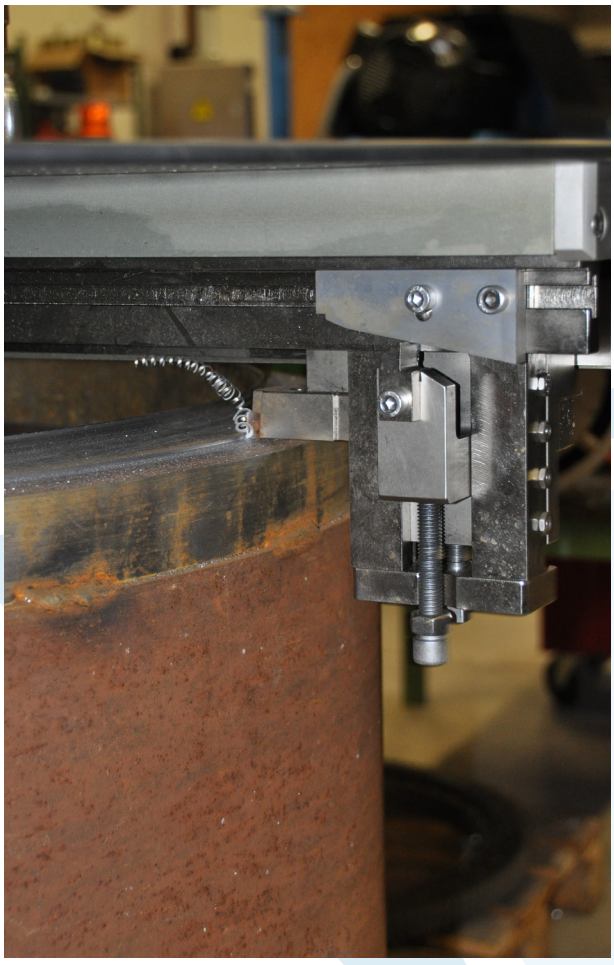
| Machine | US450-ASB |
|---|---|
| Clamping capacity | Ø 450 – Ø1422 mm |
| | 17.717” - 56” |
| Machining capacity ØA | 450 mm |
| | 17.717” |
| Machining capacity ØB | 1422 mm |
| | 56” |

# 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 TTNG-HD series.

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

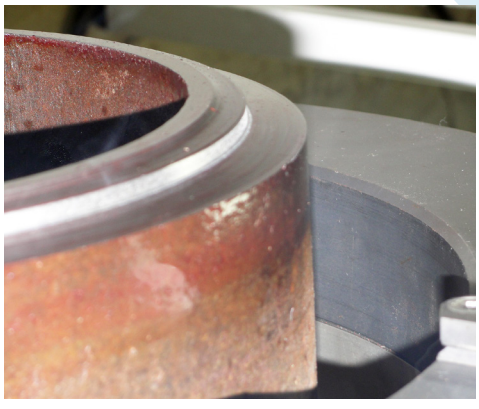
To implement the copying carriage system, simply remove the tool plate from the unit and fit the copying arm on the machine. This implementation is fast and easy to do. Once it has been completely equipped with its copying arm, the machine is ready to perform beveling operations

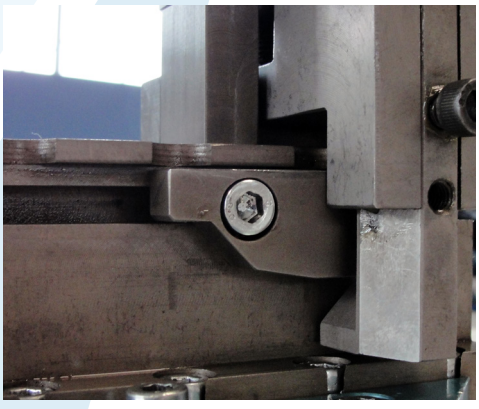
During the machining operation, the operator’s safety is ensured by the safety cover which is situated over the copying arm during rotation.Reliable and accurate, the copying carriage system performs machining operations by using a copying cam.  The copying cam is connected to the tool holder by a ‘‘follower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

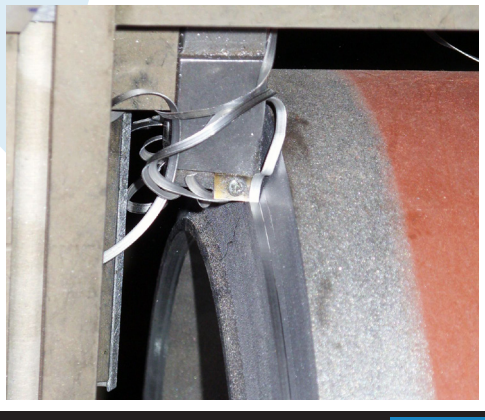
In order to guarantee that the land or root face has a constant width over the whole circumference of the pipe, a counterboring tool may be added on the copying carriage.

ID Mounted

### APPLICATIONS:





# COPYING CARRIAGE OPTION

To Perform Compound Bevels on Heavy Pipes

## US40

| ORDER NO. | DESCRIPTION |
|---|---|
| US40-3000 | Copying carriage stroke 65 mm (2.559") |

## US80

| ORDER NO. | DESCRIPTION |
|---|---|
| US80-3000 | Copying carriage stroke 75 mm (2.952") |

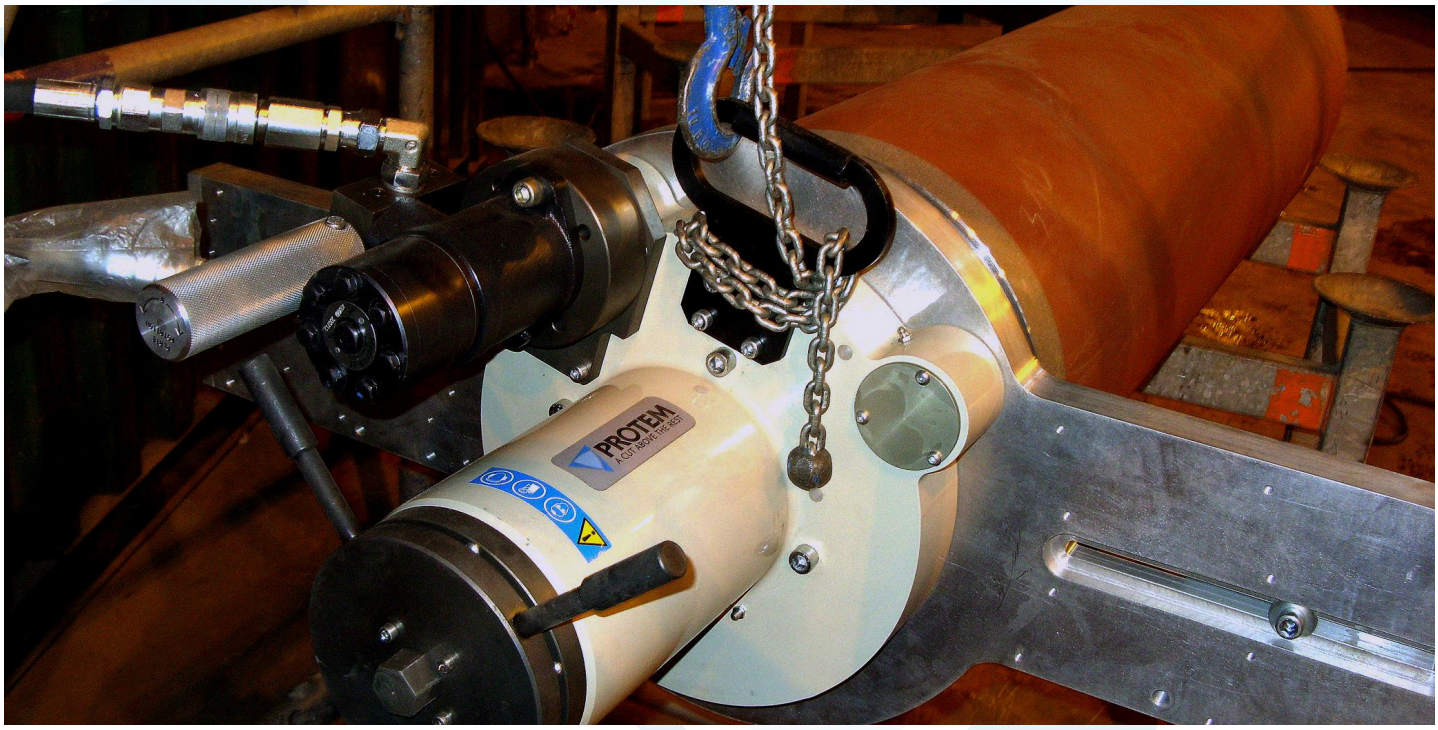
## US150

| 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. |

## US450

| ORDER NO. | DESCRIPTION |
|---|---|
| US450-3202 | Copying carriage, for diam. 20-48“ |



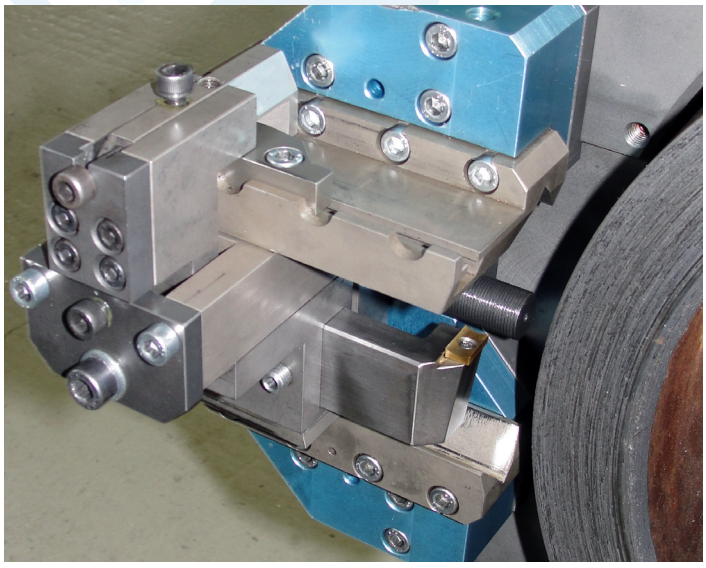



## TTNG-HD

| ORDER NO. | DESCRIPTION |
|---|---|
| TTNG-HD-4200 | Copying carriage stroke 50 mm (1.968") |
| TTNG-4280 | Cam for simple bevel (Please send a drawing) |

| ORDER NO. | DESCRIPTION |
|---|---|
| TTNG-HD-4300 | Copying carriage stroke 100 mm (3.937") |
| TTNG-4380 | Cam for simple bevel (Please send a drawing) |

| ORDER NO. | DESCRIPTION |
|---|---|
| TT-KS150 | Copying carriage stroke 150 mm (5.905") |



# ELBOW MANDREL ASSEMBLY

## EMA

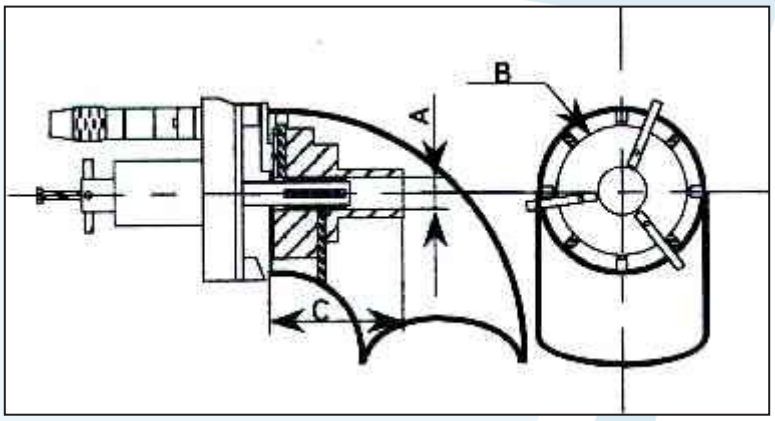
## For US machines

### DESCRIPTION:

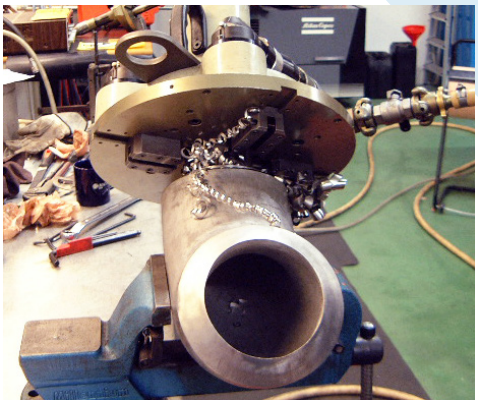
This new generation of elbow mandrel assembly allows the positioning of a US-type machine on all types of elbows.

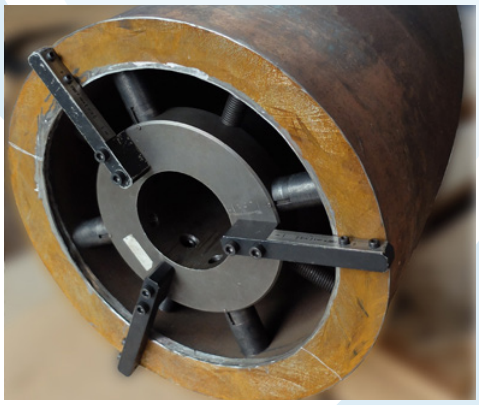
The mounting system provides precise concentric positioning of the machine in the elbow which creates an extremely precise alignment that leads to a high quality weld-end preparation on all types of elbows and materials including stainless steel and high nickel alloys.

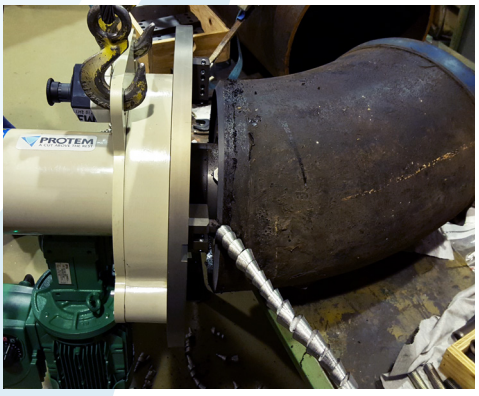
### DIMENSIONS:



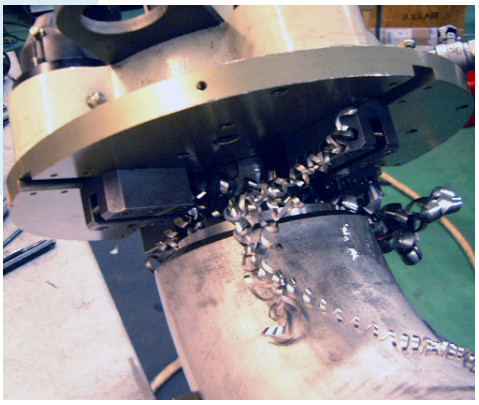

### APPLICATIONS:











OD Mounted

# ELBOW MANDREL ASSEMBLY

OD Mounted

## 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" |

## 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" |

## US40-EMA

| ORDER NO. | DESCRIPTION |
|---|---|
| US40PR/C-1000 | Elbow mandrel assembly EMA for US40 for Ø 3.346" - 7.086" (85mm - 180mm) |
| 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" |

## 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" |

## 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) |

### 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

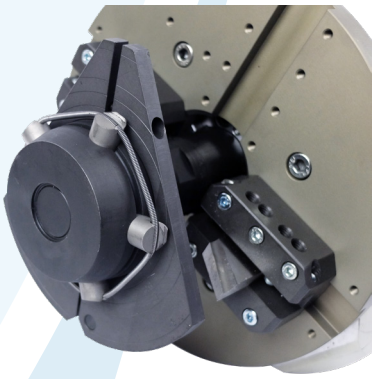
| ORDER NO. | DESCRIPTION |
|---|---|
| US80-3301 | Elbow mandrel assembly for US80 (80 - 158.11 mm) |
| US80-3302 | Elbow mandrel assembly for US80 (150 - 265.83 mm) |
| US80-3303 | Elbow mandrel assembly for US80 (252.02 - 277.82 mm) |

## 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.

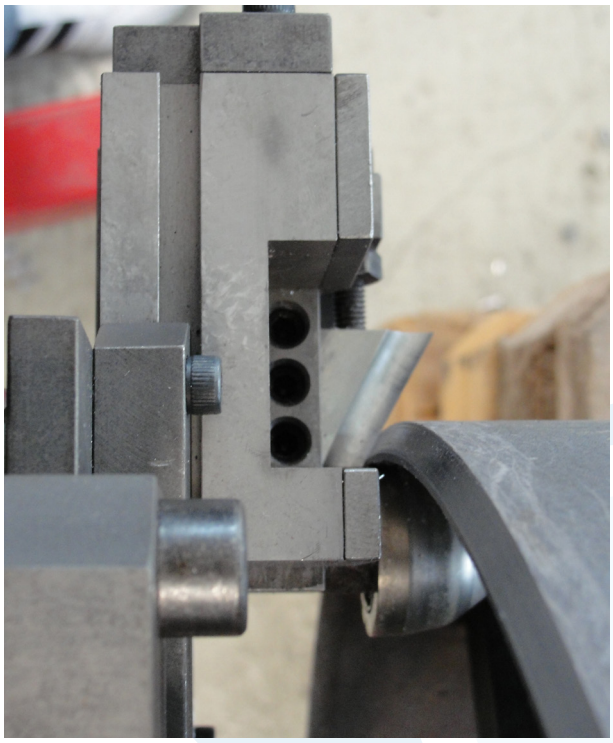

OD Mounted

# 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 TTNG-HD series and for the pipe facing, PFM machines.

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

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

OD Mounted

### US40

| ORDER NO. | DESCRIPTION |
|---|---|
| US40-2500 | ID-Tracker 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

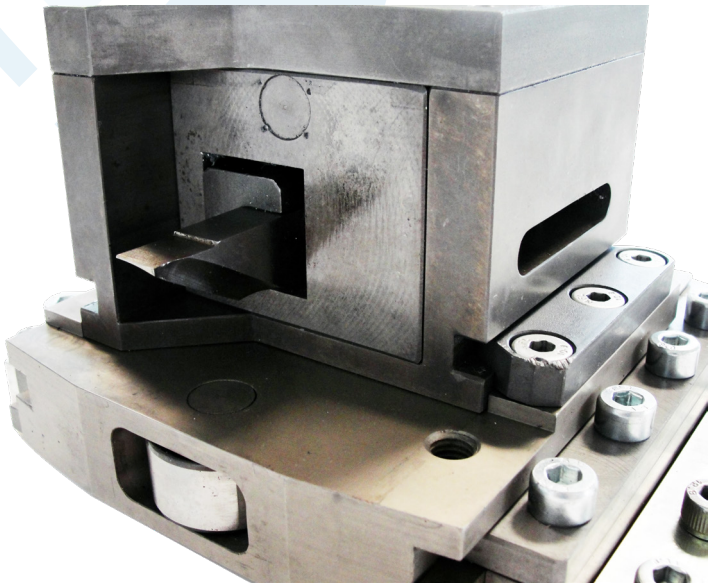
| ORDER NO. | DESCRIPTION |
|---|---|
| US450-3400 | ID-Tracker |
| US450-3500 | OD-Tracker |

### PFM

| ORDER NO. | DESCRIPTION |
|---|---|
| US-HSB-R-PO-5000 | Stronger ID tracking carriage. With excentric. |
| US-HSB-R-PO-1400 | Follower roller diameter 40 set on reference 5000 |
| US-HSB-R-PO-1300 | Follower roller diameter 36 set on reference 5000 |

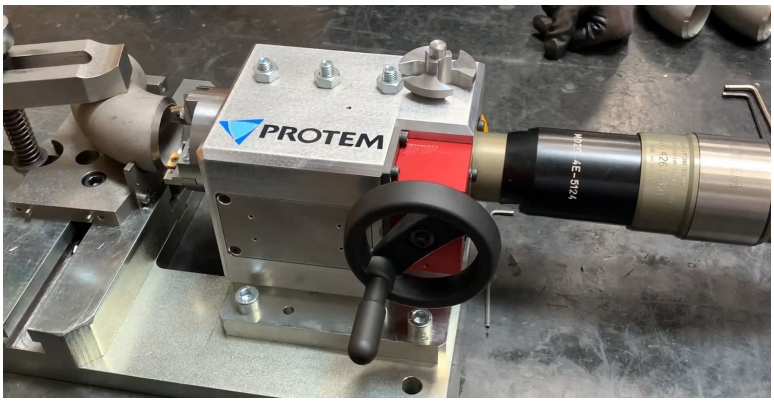
### TTNG-HD

| ORDER NO. | DESCRIPTION |
|---|---|
| TTNG-HD-ODT-1000 | OD Tracker for TT219 to TT610 |
| TTNG-HD-ODT-1002 | OD Tracker for TT762 |
| TTNG-HD-ODT-1004 | OD Tracker for TT900 to TT1016 |



# FBB1-3 Elbow Bench Beveling Machine

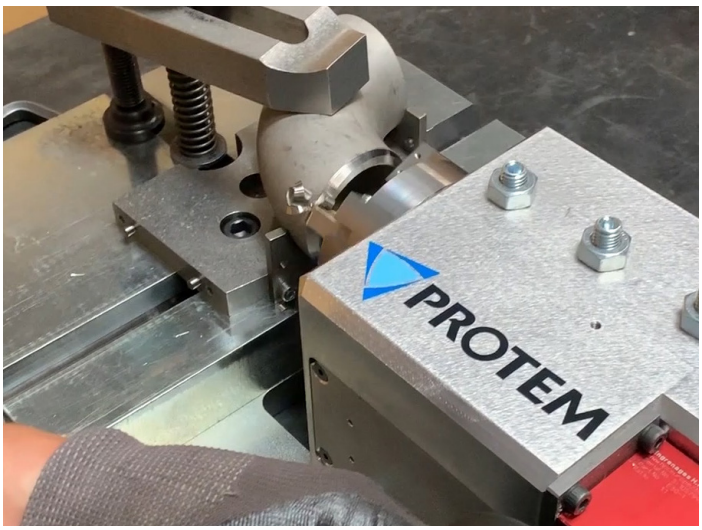
Standard Capacity: 33.4mm - 88.9 mm (1“ - 3“)

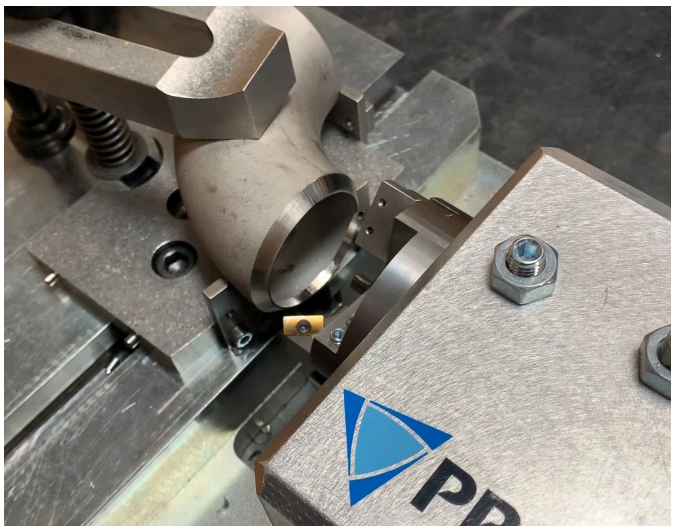



This mobile machine has been designed for the machining of elbows from 1 to 3 inches. It can perform beveling, facing and counterboring operations simultaneously. Based on the standard SE90NG design, the machining spindle is equipped with a standard plate with 4 tool holders in which the insert holders can be adjusted according to the requested angles.

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

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



OD Mounted

## Technical Features:

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

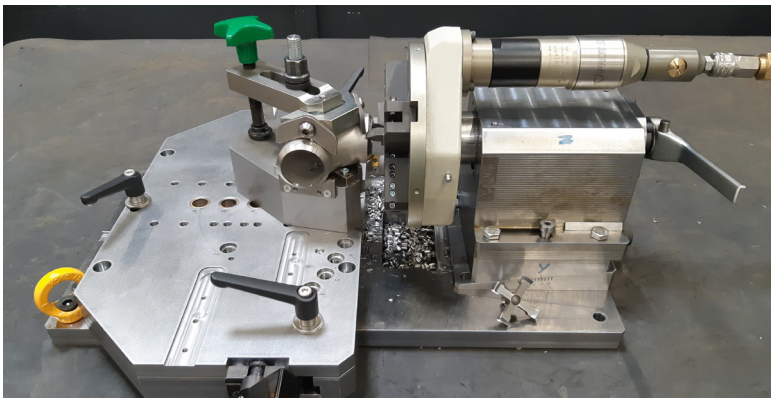
| Order No. | Description |
|---|---|
| FBB-1-3-1000 | Fittings beveling bench for Ø 33.4 mm - 88.9 mm (1" - 3") with pneumatic drive |
| FBB-1-3-1020 | Fittings beveling bench for Ø 33.4 mm - 88.9 mm (1" - 3") in electric 1500W - 220V |

## FBB1-3 Accessories:

| Order No. | Description |
|---|---|
| EHB-1-3-1410 | 1" Elbow support block for FBB-1-3 machine |
| EHB-1-3-1420 | 2" Elbow support block for FBB-1-3 machine |
| EHB-1-3-1425 | 2.5" Elbow support block for FBB-1-3 machine |
| EHB-1-3-1430 | 3" Elbow support block for FBB-1-3 machine |

# FBB2-6 Elbow Bench Beveling Machine

Standard Capacity: 60.3 mm - 168.3 mm (2“ - 6")

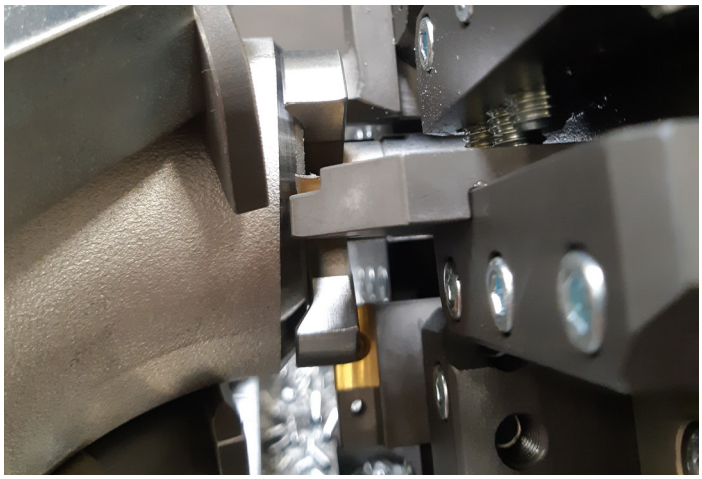


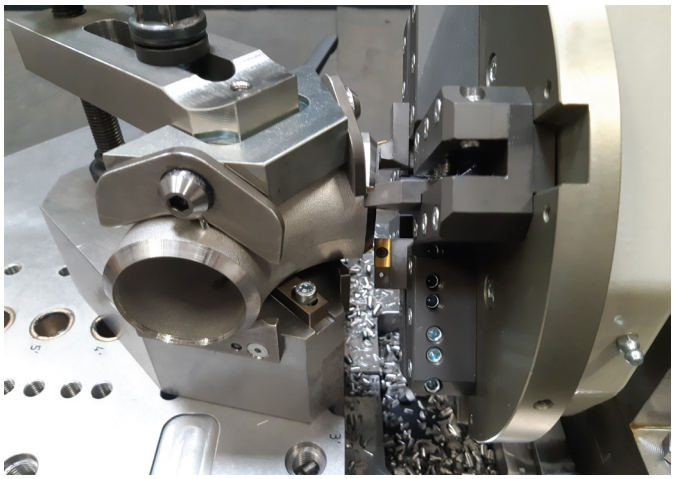
This mobile machine has been designed for the machining of elbows from 2 to 6 inches.
It can perform beveling, facing and counterboring operations simultaneously.

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

The other part of the machine is dedicated to the clamping of the elbows. The principle of a cross table is used for the axes adjustments (+/-5mm, 0.19’’). The clamping is made manually. For each elbow, a small table equipped with a clamping system comes into position automatically on the cross table. This small table orientates itself according to the face of the elbows. (90° rotation). Depending on the elbows diameters, a frame system with V pods clamps the elbows. Max weight without the elbow: 200 kg. Dimensions: length 760mm (29.92’’) x width 652mm (25.67’’) x height 350mm (13.78’’).

OD Mounted





## Technical Features:

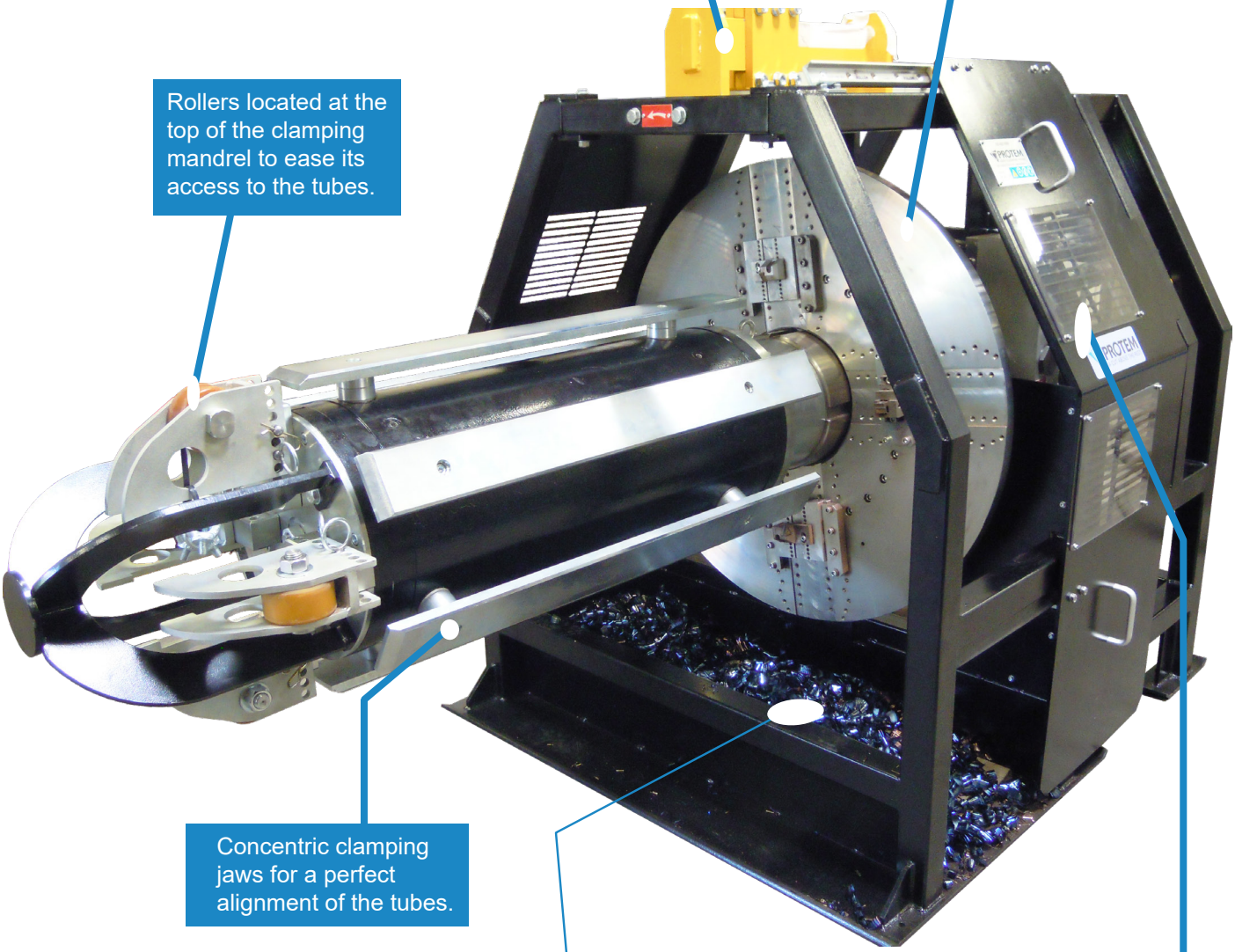
| | |
|---|---|
| ***Specific shapes & angles*** | Facing 90°, bevel 30°, 37°30, 45°, counterbore, J-bevel. Other on request |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 30mm (1.181’’) |
| ***Pneumatic drive*** | 730W, 6 bar (87 psi), 1400 l/min (49 cfm) |
| ***Electric drive*** | 110V (1500W)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

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

## FBB2-6 Accessories:

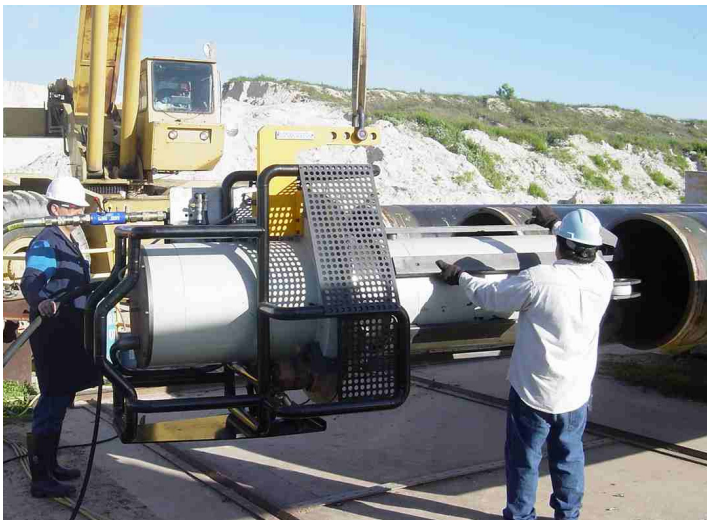
| Order No. | Description |
|---|---|
| EHB-2-6-1402 | 2" Elbow support block for FBB-2-6 machine |
| EHB-2-6-1403 | 3" Elbow support block for FBB-2-6 machine |
| EHB-2-6-1404 | 4" Elbow support block for FBB-2-6 machine |
| EHB-2-6-1405 | 5" Elbow support block for FBB-2-6 machine |
| EHB-2-6-1406 | 6" Elbow support block for FBB-2-6 machine |

# PFM Series High Speed Beveling Machines



# PFM Series Pipeline Machinery - Pipe Facing Machines

Standard Capacity: 101.6mm - 1828.8mm (4“ - 72“)



Pipeline Machinery: The PROTEM PFM HSB are reliable and very powerful portable Pipe Facing Machines for diameters ranging from 4” to 72” (101.6mm-1828.8mm). The PFM - HSB serve all industries where the weld quality is critical and projects must stay on schedule. The machines are easy to install and quickly adjustable to any size within the machine’s range. They will machine the pipe ends in one smooth pass in just a few seconds! For your Oil and Gas engineering and construction projects: Pipe Facing Fachines for the most demanding and challenging pipeline applications: Offshore - Onshore - Deep Water - Spool Bases. They allow to maximize your production and to minimize your downtime.

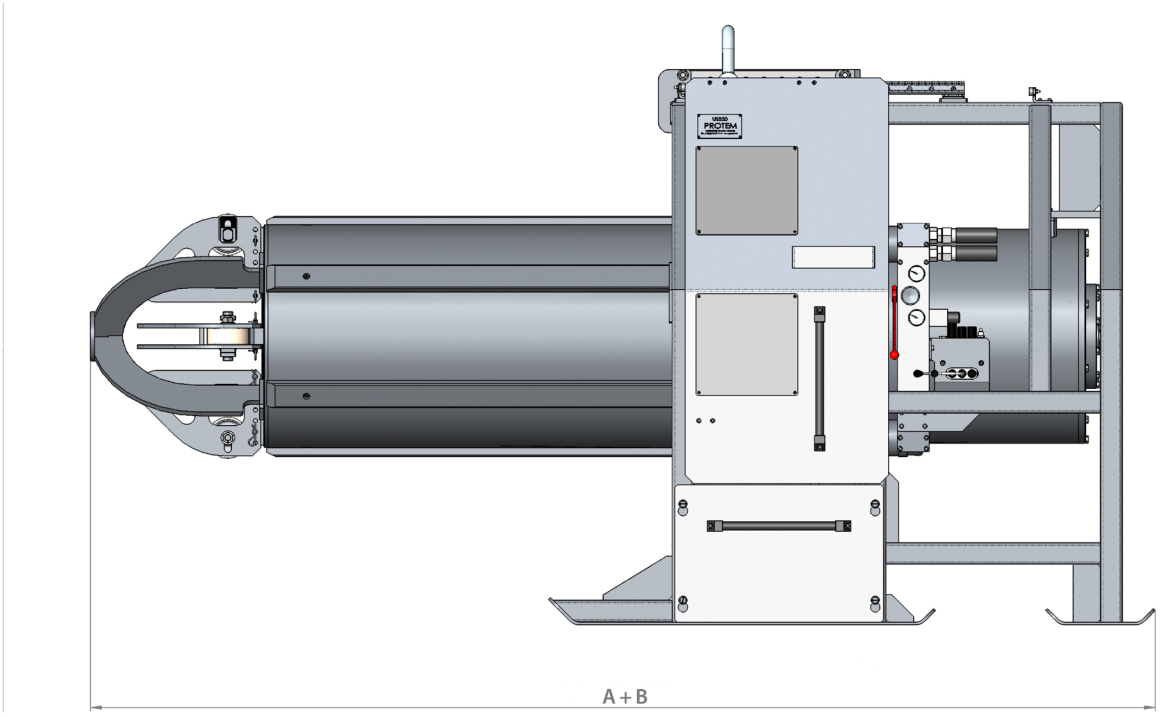
| Beveling | Cut to length | Weld joint removal | Coating Removal | Squaring | Surfacing | Cutting |
|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ |

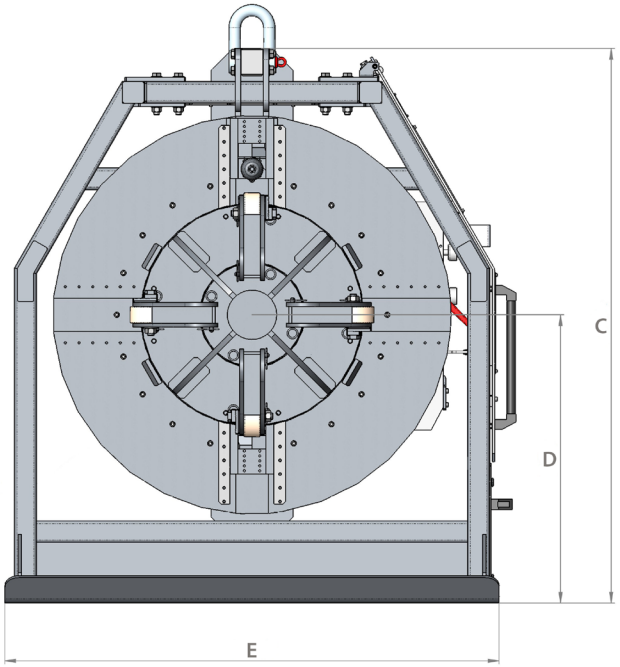
## Advantages:

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

ID Mounted

# PFM Series Pipeline Machinery - Pipe Facing Machines Dimensions




| Model PFM | A | B | C | D | E | Weight |
|---|---|---|---|---|---|---|
| US80HSB | 1150 mm 45.275" | 32 mm 1.25" | 871 mm 34.291" | 424 mm 16.693“ | 800 mm 31.496“ | 350 kg 771 lbs |
| US150HSB | 1310 mm 51.575“ | 32 mm 1.25" | 871 mm 34.291" | 424 mm 16.693“ | 800 mm 31.496“ | 350 kg 771 lbs |
| US220HSB | 2030 mm 79.921“ | 80 mm 3.15“ | 1410 mm 55.512“ | 640 mm 25.197“ | 1250 mm 49.212“ | 1150 kg 2535 lbs |
| US420HSB | 2672 mm 105.196“ | 80 mm 3.15“ | 1796 mm 70.708“ | 830 mm 32.677“ | 1360 mm 53.543“ | 2000 kg 4409 lbs |
| US620HSB | 3074 mm 121.023“ | 150 mm 5.905“ | 1544 mm 60.787“ | 755 mm 29.724“ | 1320 mm 51.968“ | 2700 kg 5952 lbs |
| US820HSB | 3877 mm 152.637“ | 150 mm 5.905“ | 2020 mm 79.52" | 1050 mm 41.33“ | 1800 mm 70.86“ | 4900 kg 10802 lbs |

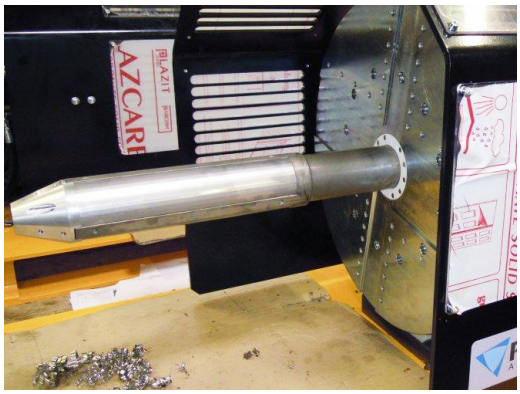
# PFM-414 HSB-80/150 Pipeline Machinery - Pipe Facing Machine

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


ID Mounted

## Technical Features:

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





| Order No. | Description |
|---|---|
| US150HSB-AR-1000 | Pipeline Machinery, Pipe Facing Machine for Ø 4" - 14" (101.6mm - 355.60mm) with hydraulic drive. |

# PFM-1222 HSB-220 Pipeline Machinery - Pipe Facing Machine

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


## Technical Features:

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

| Order No. | Description |
|---|---|
| US220HSB-1000 | Pipeline Machinery - Pipe Facing Machines PFM for Ø 12.75" - 22" (323.9mm - 558.8mm) hydraulic drive. |

# PFM-1030 HSB-420 Pipeline Machinery - Pipe Facing Machine

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

ID Mounted

## Technical Features:

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

| Order No. | Description |
|---|---|
| US420HSB-1000 | Pipeline Machinery - Pipe Facing Machines PFM for Ø 10.75" - 30" (273.1mm - 762mm) with hydraulic drive. |

# PFM-3038 HSB-620 Pipeline Machinery - Pipe Facing Machine

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

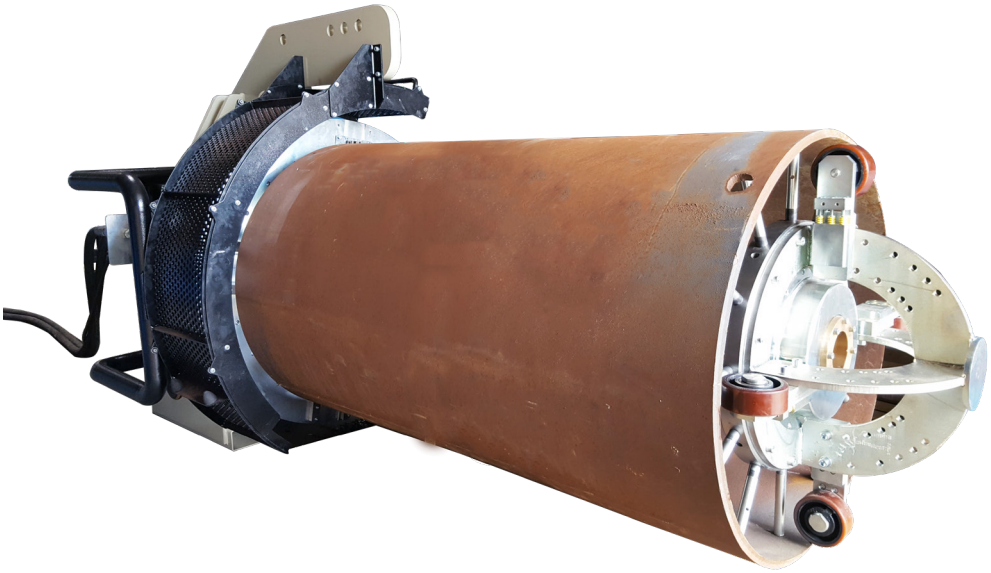

## Technical Features:

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

| Order No. | Description |
|---|---|
| US620HSB-1000 | Pipeline Machinery - Pipe Facing Machines PFM for Ø 30" - 38" (762mm - 965.2mm) with hydraulic drive. |

# PFM-3848 HSB-820 Pipeline Machinery - Pipe Facing Machine

Standard Capacity: 965mm - 1219.2mm (38“ - 48“)



ID Mounted

## Technical Features:

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

| Order No. | Description |
|---|---|
| US820HSB-1000 | Pipeline Machinery - Pipe Facing Machines PFM for Ø 38" - 48" (965mm - 1219.2mm) with hydraulic drive. |

# Pipeline Machinery - Pipe Facing Machines

## PFM-4656 HSB-1020

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

| Order No. | Description |
|---|---|
| US1020HSB-1000 | Pipeline Machinery - Pipe Facing Machines PFM for Ø 46" - 56" (1168.4mm - 1422.4mm) with hydraulic drive. |

## PFM-5464 HSB-1220

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

| Order No. | Description |
|---|---|
| US1220HSB-1000 | Pipeline Machinery - Pipe Facing Machines PFM for Ø 54" - 64" (1371.6mm - 1625.6mm) with hydraulic drive. |

## PFM-6272 HSB-1420

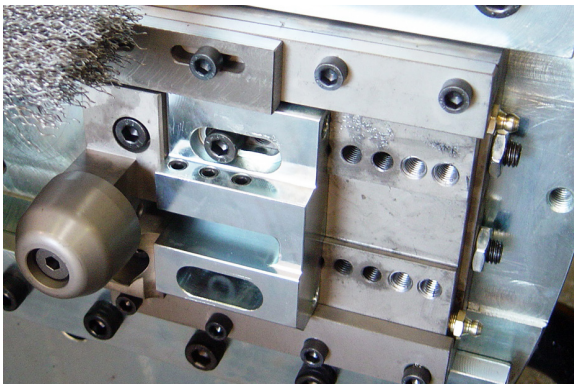
Standard Capacity: 1574.8mm - 1828.8mm (62“ - 72“)

| Order No. | Description |
|---|---|
| US1420HSB-1000 | Pipeline Machinery - Pipe Facing Machines PFM for Ø 62" - 72" (1574.8mm - 1828.8mm) with hydraulic drive. |

# PFM Series Pipeline Machinery - Pipe Facing Machines Options

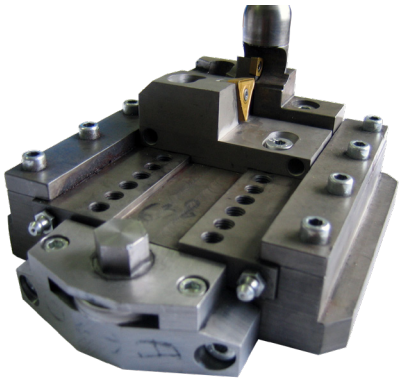
ID Mounted

## ID-Tracker



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

## Tool-Holder



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

## Brush kit

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

# PFM Series Pipeline Machinery - Pipe Facing Machines Tool-Bits

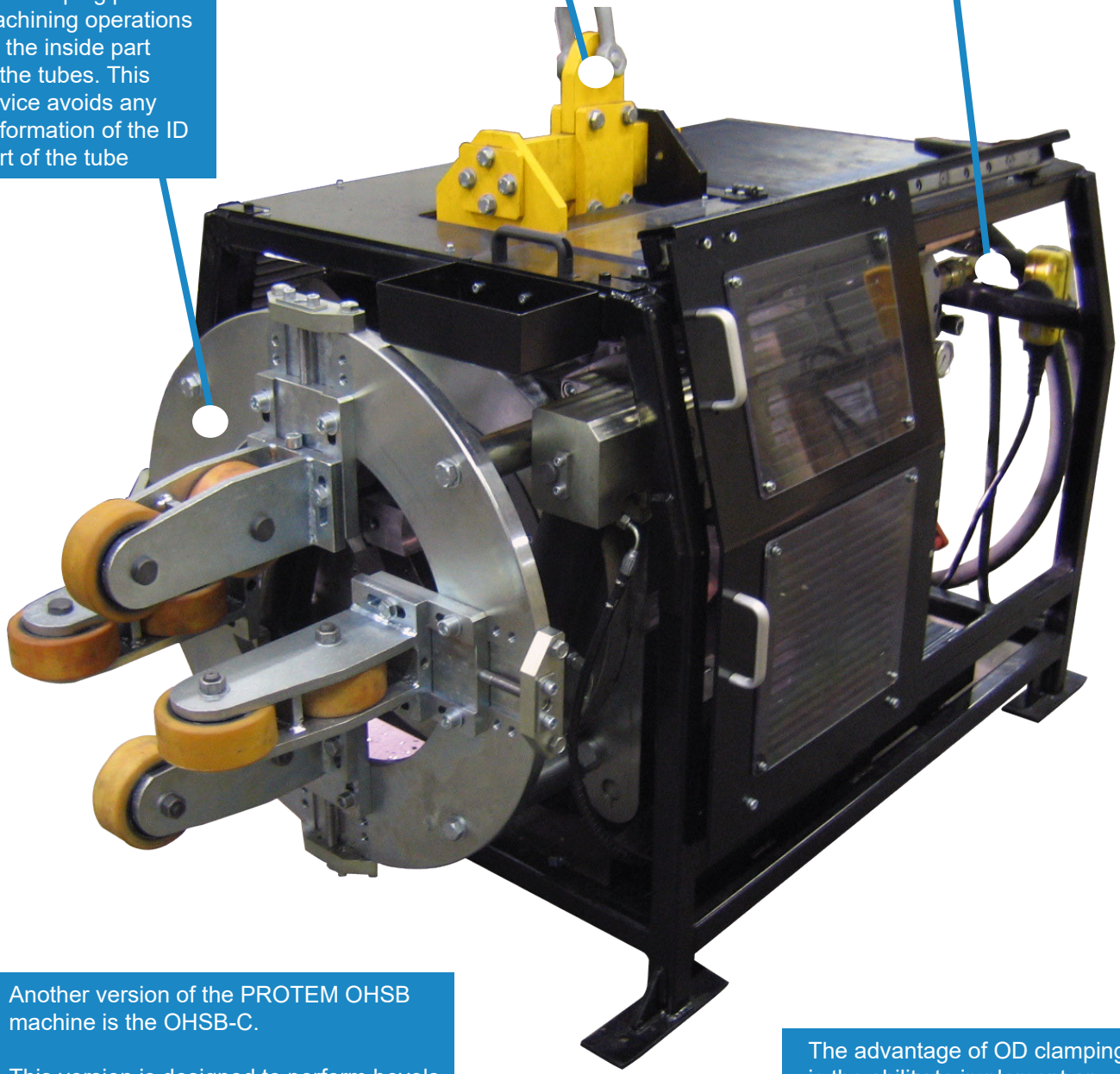
| Order No. | Description |
|---|---|
| US-HSB-R-PO/40C | US-HSB-R-PO/40C Carbide insert triangular 27x27(xx following radius, material, reverse or no) |
| US-HSB-R-PO/45C01 | US-HSB-R-PO/45C01 Carbide insert rhomb shape 9,52x9,52 (xx following radius, material, reverse or no) |

# OHSB Series Heavy Duty Pipe Beveling & Facing Machine

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

Powerful hydraulic motors suitable for the machining of large wall thicknesses

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



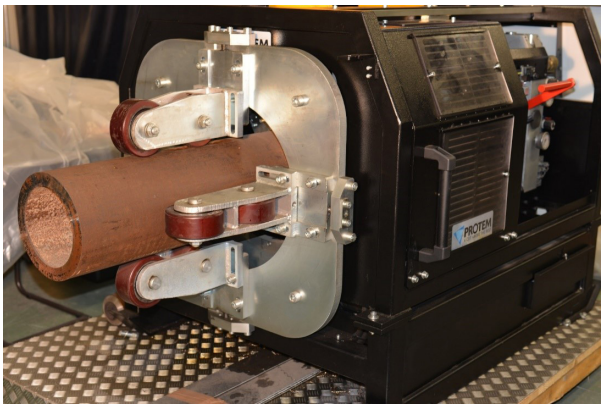
Another version of the PROTEM OHSB machine is the OHSB-C.

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

The advantage of OD clamping is the ability to implement an inline boring bar and to machine tubes to a depth ranging from 0 to 200 mm (7.874")

# OHSB Heavy Duty Pipe Beveling & Facing Machine

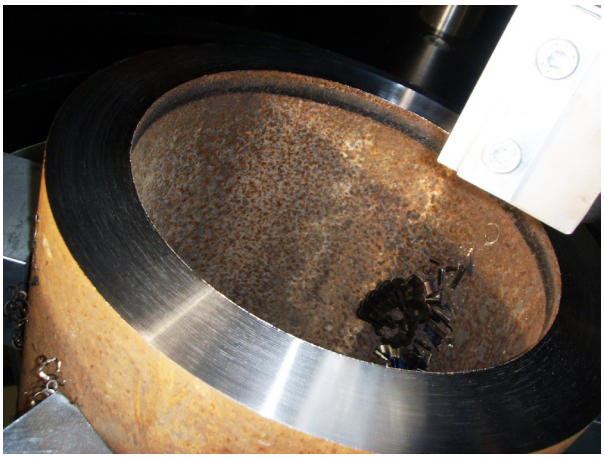
Standard Capacity: 152.4 mm - 355.6 mm (6“ - 14“)



The OHSB is a mobile Pipe Beveling and Facing machine. It features an OD Clamping system for machining pipes with diameters ranging from 152.4 mm - 355.6 mm (6" to 14’’) OD with wall thicknesses up to 60 mm (2 362’’’). The advantage of OD Clamping is the ability to implement an inline boring bar and to machine tubes to a depth ranging from 0 - 200 mm (0’’ - 7.874"). OD Clamping performs machining operations on the inside part of the tubes. This device avoids any deformation of the ID part of the tube. Easy to move from one working place to another, the OHSB machines can also be used as stationary machines. Handling and setup are simple and easy. The machine is fitted with powerful hydraulic motors suitable for the machining of large wall thicknesses. The machine is perfect for use for following operations: Facing, Beveling: I, V, J, X shapes or compound bevels, Counterboring. Repeatable high quality surface finish, High performance, Perfectly suitable for manual or automated welding works.

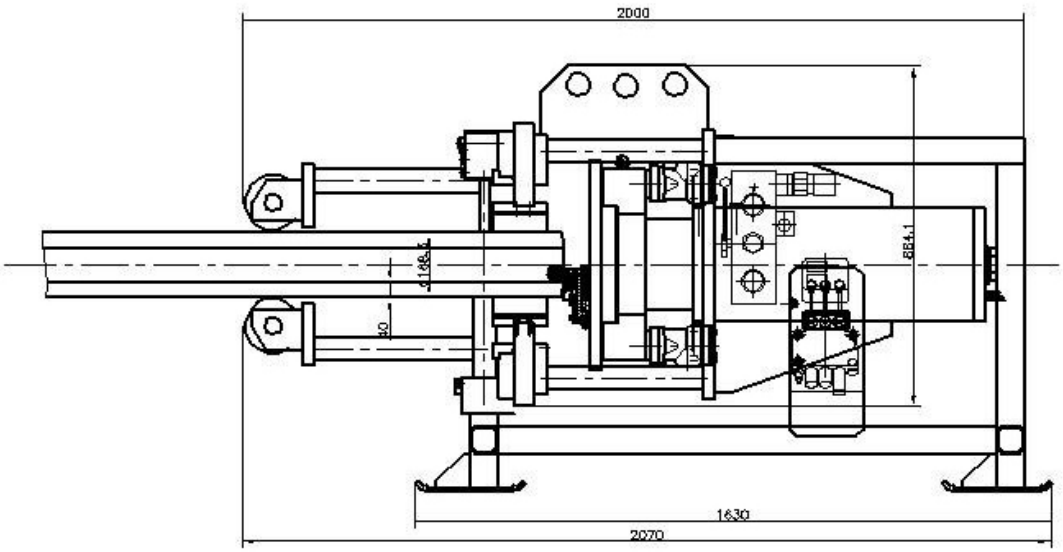
| Beveling | Cutting | Counterboring | Severing | Coating Removal | Facing | Weld joint removal | Surfacing |
|---|---|---|---|---|---|---|---|
| ✓ | ✗ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ |

OD Mounted



## Advantages:

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



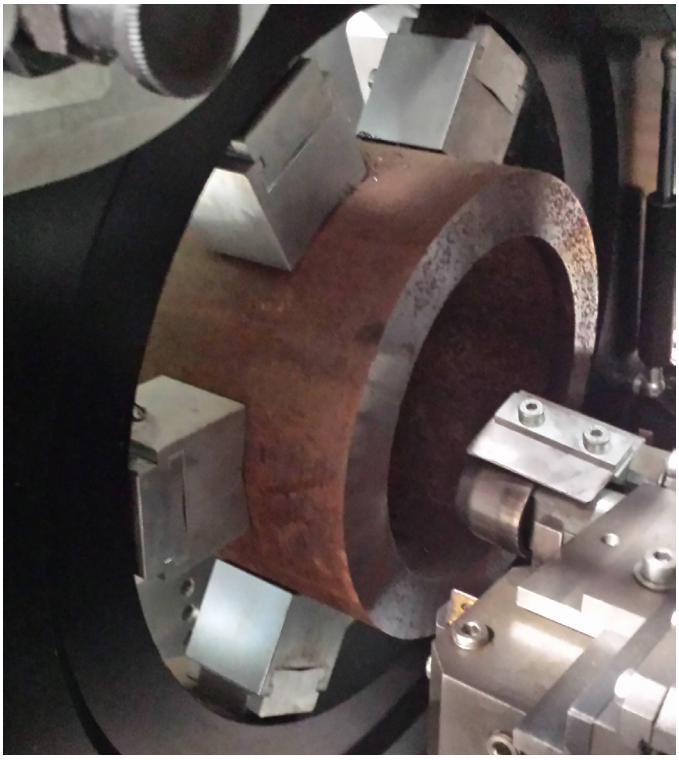
# OHSB Heavy Duty Pipe Beveling & Facing Machine

## Technical Features:

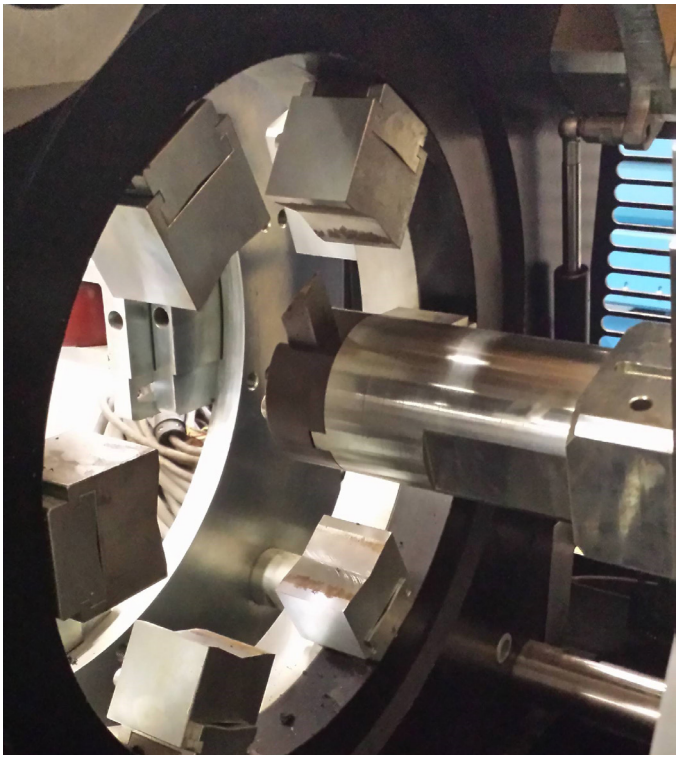
| | | |
|---|---|---|
| ***Mechanical tool plate feed movement*** | 200 mm (7.874") | |
| ***Gripping jaw movement*** | 50 mm (1.968") | |
| ***Clamping jack movement*** | 125 mm (4.921") | |
| | Minimum | Maximum |
| ***Tool plate rotation speed*** | 10 RPM | 230 RPM |
| ***Speed advance of tool plate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

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

## Use On-Site or in Workshop:



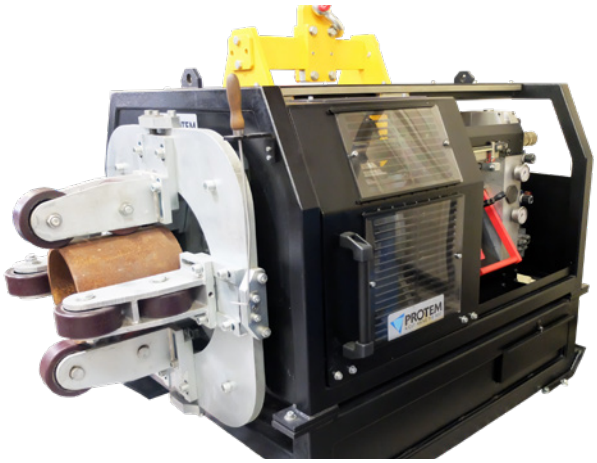
OHSB equiped with Cam profile copying device



OHSB equiped with Boring Bar

# OHSB-C Heavy Duty Pipe Beveling & Facing Machine

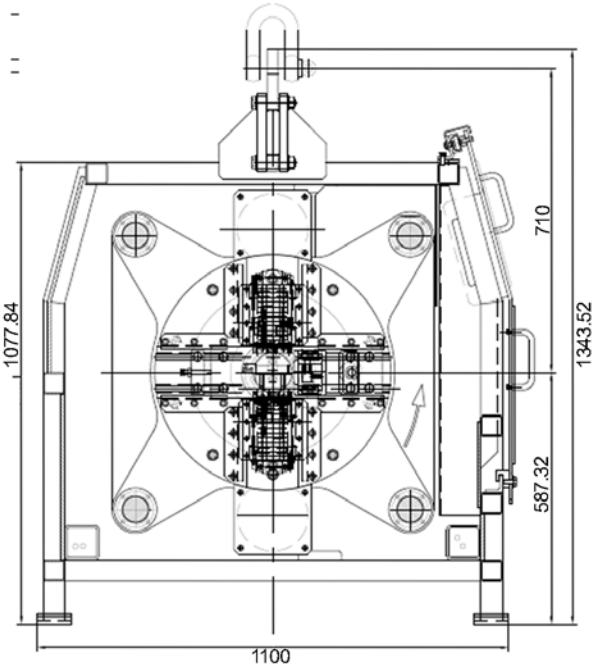
Standard Capacity: 152.4 mm - 355.6 mm (6“ - 14“)

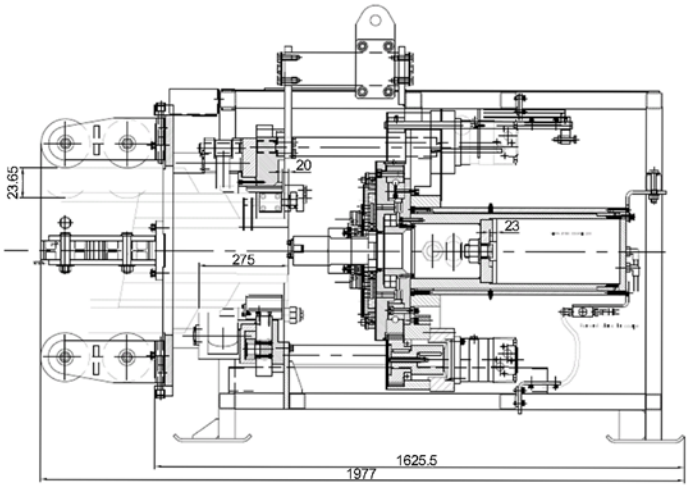


Another version of the PROTEM OHSB is the PROTEM- OHSB-C. This version is designed to perform bevels or compound bevels by copying. A carriage with hydraulic radial movement, mounted on the tool holder plate performs beveling operations while using a copying cam. The tool holder is equipped with carbide tips.
Maximum wall thickness of the tube: 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")

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

OD Mounted



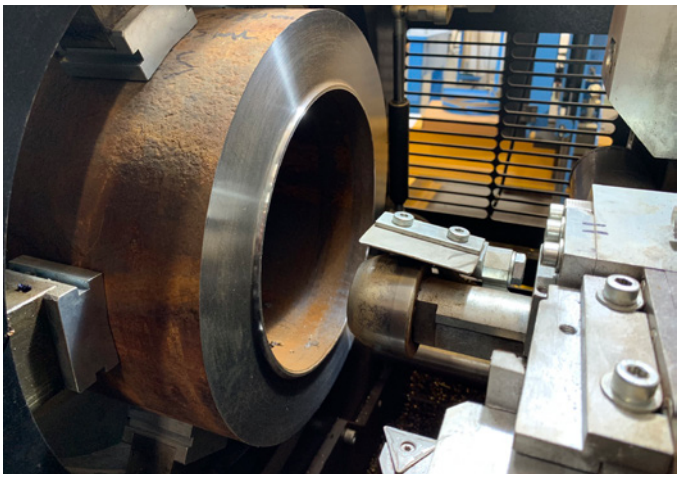

## Technical Features:

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

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

# OHSB-C Heavy Duty Pipe Beveling & Facing Machine

## Use On-Site or in Workshop:



## OHSB Series Heavy Duty Pipe Beveling & Facing Machine Options

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



## OHSB Series Heavy Duty Pipe Beveling & Facing Machine Tool bits

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

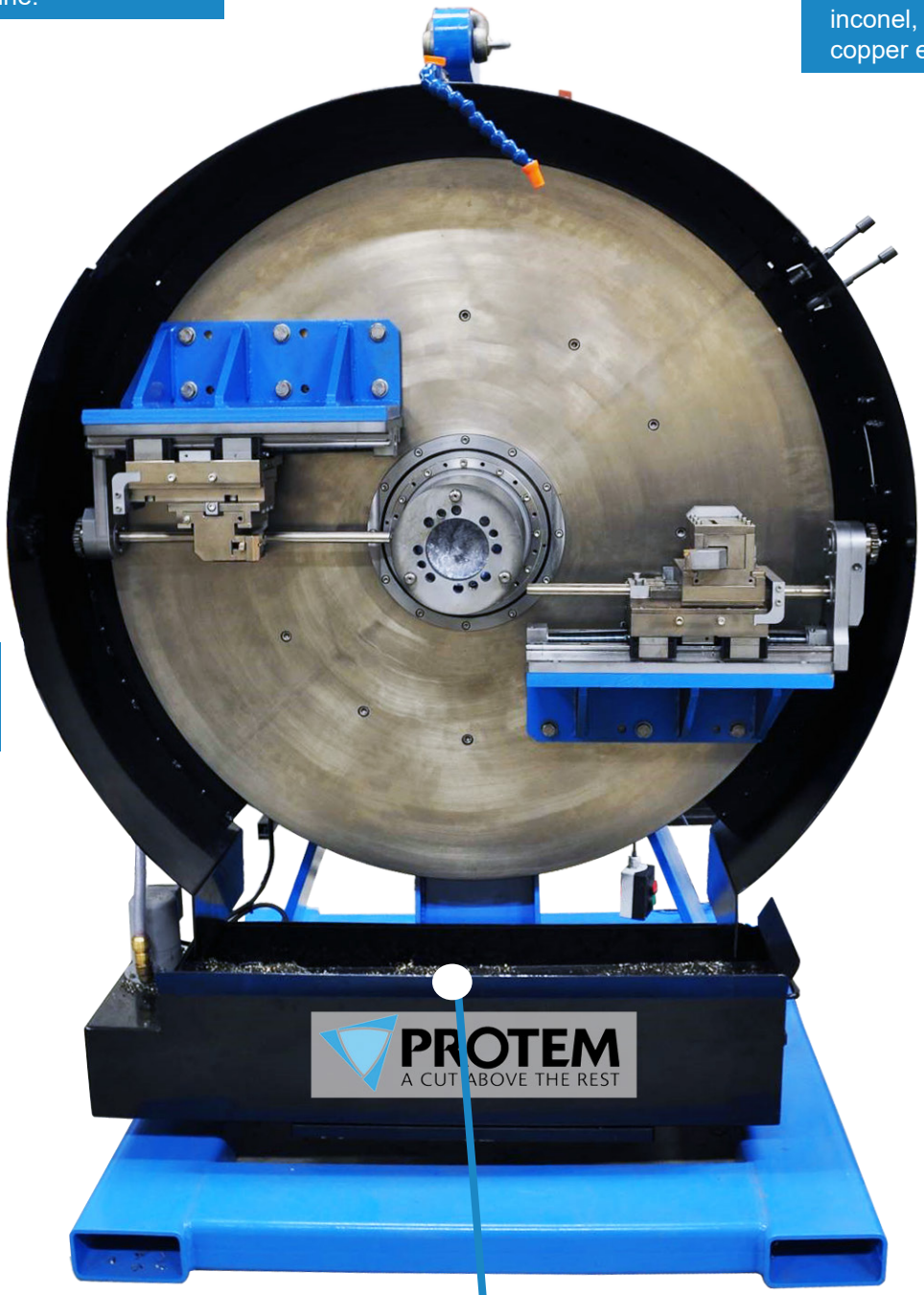
# US600R Series Heavy Duty Pipe Beveling Machine

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

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

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

OD Mounted




No Heat Affected Zone

Mobile, rugged, dependable, versatile

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

# US600R Series Heavy Duty Pipe Beveling Machine

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

The Protem US600-R is a mobile 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.

| Beveling | Squaring | Counter-boring | Cut to length | Coating Removal | Cutting | Weld joint removal | Surfa-cing |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ | ✗ |

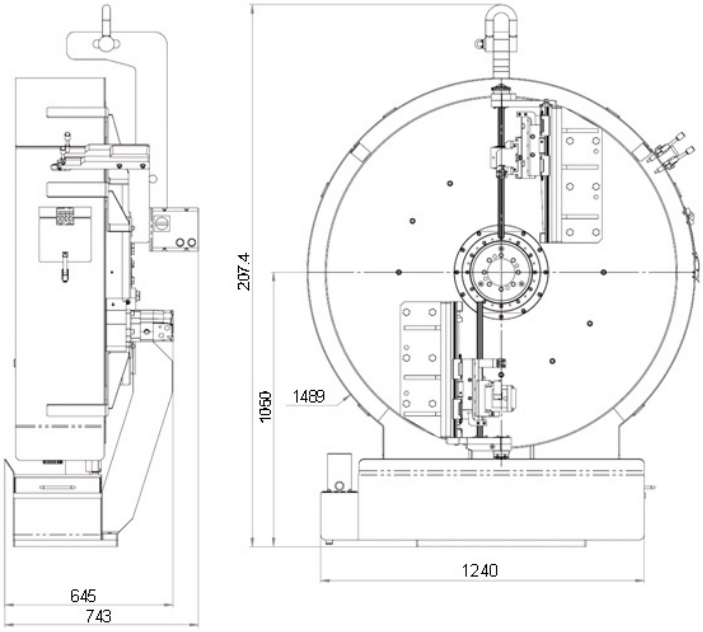
OD Mounted

## Advantages:

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

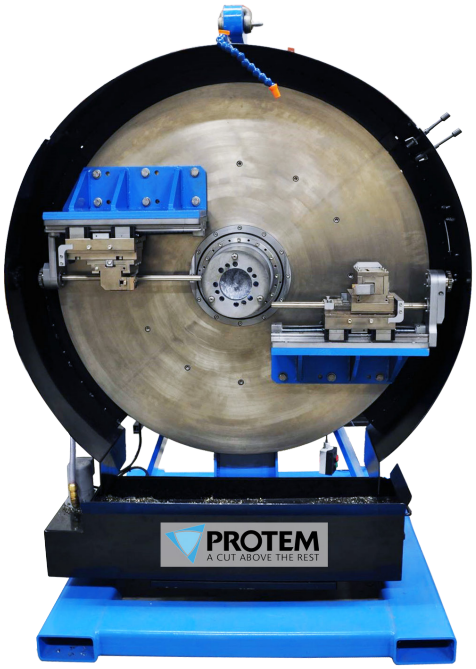
## Technical Features:

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



# US600R Series Heavy Duty Pipe Beveling Machine (Version 1)

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




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

OD Mounted

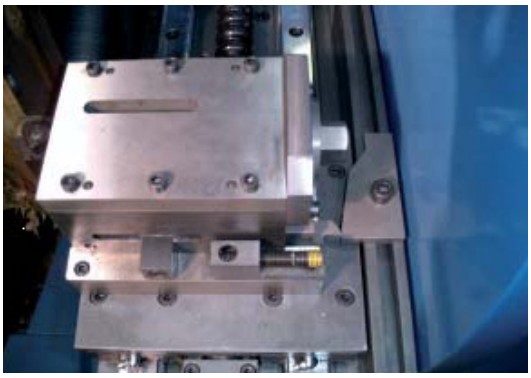
# US600R Series Heavy Duty Pipe Beveling Machine (Version 2)

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

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

# US600R Series Heavy Duty Pipe Beveling Machine — Options

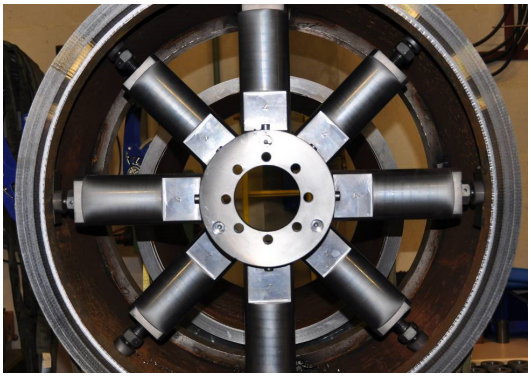
## Copying carriage



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

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

## Spider clamping kit



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

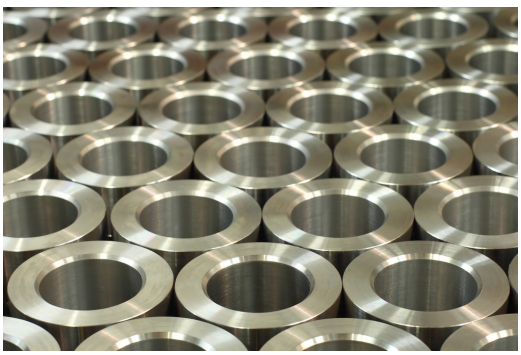
| Order No. | Description |
|---|---|
| US600-R-SS | Small spider clamping kit for diameters from Ø 600 mm - 1000 mm (23.622" - 39.370") included in the price of the US 600 R |
| US600-R-BS | Big spider clamping kit for diameters from Ø 1000 mm - 1500 mm (39.370" - 59.055 ") included in the price of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

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



# US600R Series Heavy Duty Pipe Beveling Machine — Tool-bits

**On Request**



# 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 |
|---|---|---|---|---|
| ✗ | ✓ | ✗ | ✗ | ✗ |

OD MOUNTED MACHINE

### 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 |
| **Electric drive** | 700 W |

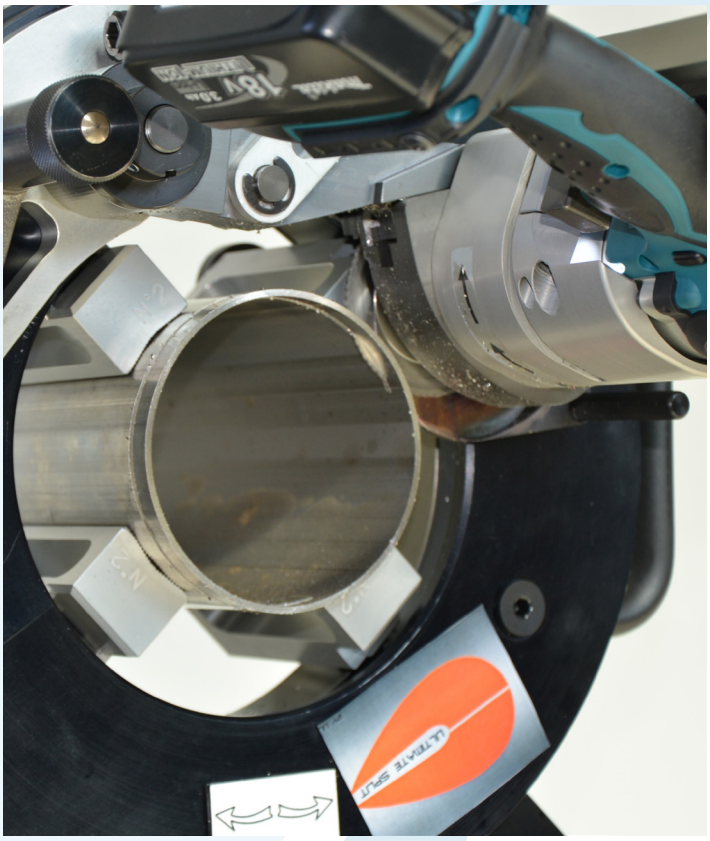
| ORDER NR. | DESCRIPTION |
|---|---|
| US1-1020 | Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with electric drive 220V. |
| US1-1022 | Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with cordless electric drive 220V |
| US1-1040 | Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with electric drive 110V. |
| US1-1042 | Orbital Cutting Saw US1 for Ø 0.5"-6.625" (12.7mm-168.3mm) with cordless electric drive 110V. |

# US1 ORBITAL TUBE CUTTING SAW

The ULTIMATE SPLIT orbital tube cutter features many advantages:

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

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



OD MOUNTED MACHINE

# US3 ORBITAL TUBE CUTTING SAW

## US3

**Ø 5 - 88.9 mm (0.196” - 3.5”)**

## DESCRIPTION:

The Ultimate Split 3 Orbital Cutting machine is used for cutting tubes made of virtually all materials having Ø 0.196" - 3.5" (5mm - 88.9mm) and wallthicknesses ranging from 0.04“ (1mm) 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 Ø is very simple and fast. Various motorization options are available: Electric or pneumatic.

| Beveling | Cutting | Facing | Counterboring | Surfacing |
|---|---|---|---|---|
| ✗ | ✓ | ✗ | ✗ | ✗ |

OD MOUNTED MACHINE

## TECHNICAL FEATURES:

| Machine | US3 |
|---|---|
| **Machining Capacity** | 5 mm - 88.9 mm OD |
| | 0.196" - 3.5" OD |
| **Clamping capacity** | 5 mm - 88.9 mm OD |
| | 0.196" - 3.5" 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** | 780 W |

| ORDER NR. | DESCRIPTION |
|---|---|
| US3-1000 | Orbital Cutting Saw with Pneumatic Drive and with Clamping Jaws for Ø 0.196"-3.5" (5mm-88.9mm) |
| US3-1020 | Orbital Cutting Saw with Electric Drive 220V for Ø 0.196"-3.5" (5mm-88.9mm) |
| US3-1040 | Orbital Cutting machine with Electric Drive 110 V for Ø 0.196"-3.5" (5mm-88.9mm) |

# 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),<br>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. |

# US6 ORBITAL TUBE CUTTING SAW

The orbital cutting process used for the US3 and 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)

OD MOUNTED MACHINE

# SE Series Tube Squaring Machines

Precise feed set-up with indexed barrel

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

Interchangeable machining heads: easy set-up for different diameters


Interchangeable carbide inserts with different coatings

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

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

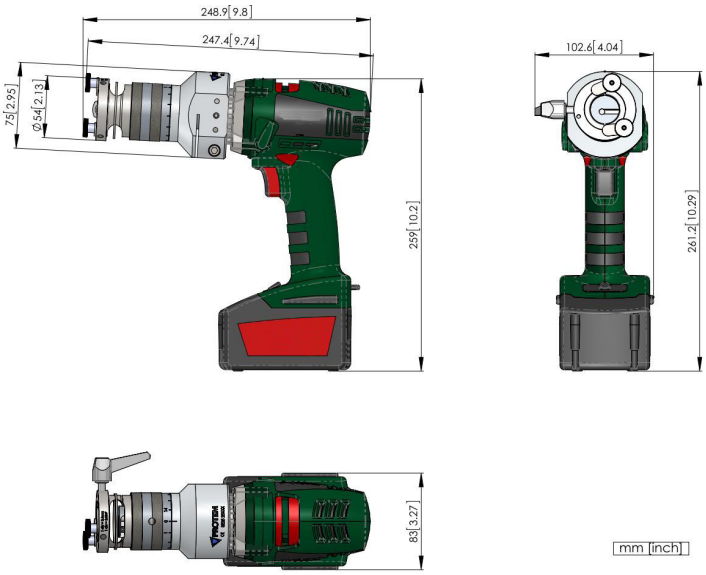
# SE25 Tube Squaring Machine

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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |

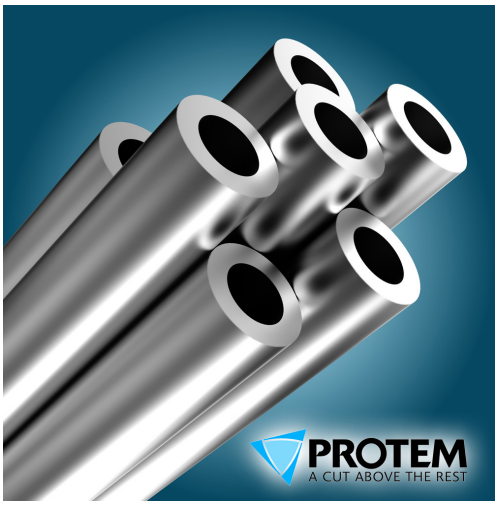
OD Mounted




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 500 rpm<br>2. Level 1700 rpm |
| ***Electrical or Cordless drive*** | 110 V (1100 W) or<br>220 V (1300 W) |

| Order No. | Description |
|---|---|
| SE25-1020 | Tube Squaring Machine PROTEM SE25 for Ø 0.118“-1“ (3mm-25.4mm) with cordless drive 220V. |
| SE25-1030 | 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:

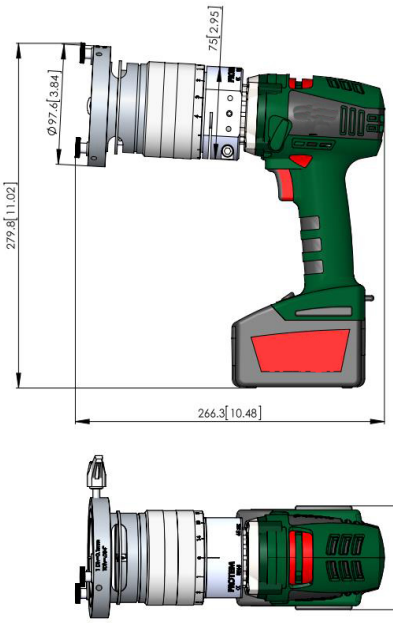


# SE65 High Purity Tube Squaring Machine

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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |




Dimensions

## Technical Features:

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



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

# SE25RA Tube Squaring Machine with Angle Drive

Standard Capacity: 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*** | 700 rpm |
| ***Electrical or Cordless drive*** | 110 V (1100 W) or<br>220 V (1300 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*** | 700 rpm |
| ***Electrical or Cordless drive*** | 110 V (1100 W) or<br>220 V (1300 W) |

OD Mounted

| 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 |

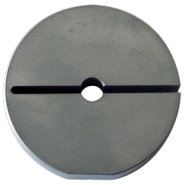
## SE25 Insert Holders:

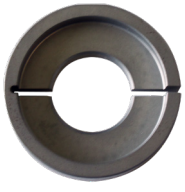
OD Mounted

| Order No. | Description | Picture |
|---|---|---|
| SE25-3210 | Insert Holder 30° for SE25 & SE2T |  |
| SE25-3110 | Insert Holder 37°30 for SE25 & SE2T | |
| SE25-3300 | Insert Holder 45° for SE25E & SE2T | |

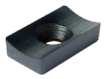
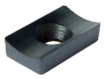
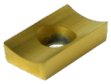
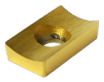
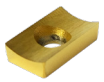
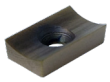
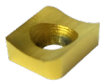
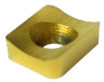
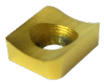
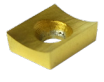
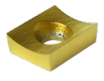
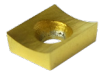
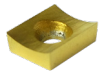
## SE Collets:

| 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 | Insert right for J-prep with radius 1.5, material HSSE with TiN coating |  |
| 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 | Insert, left, material HSSE with TiN coating |  |
| 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

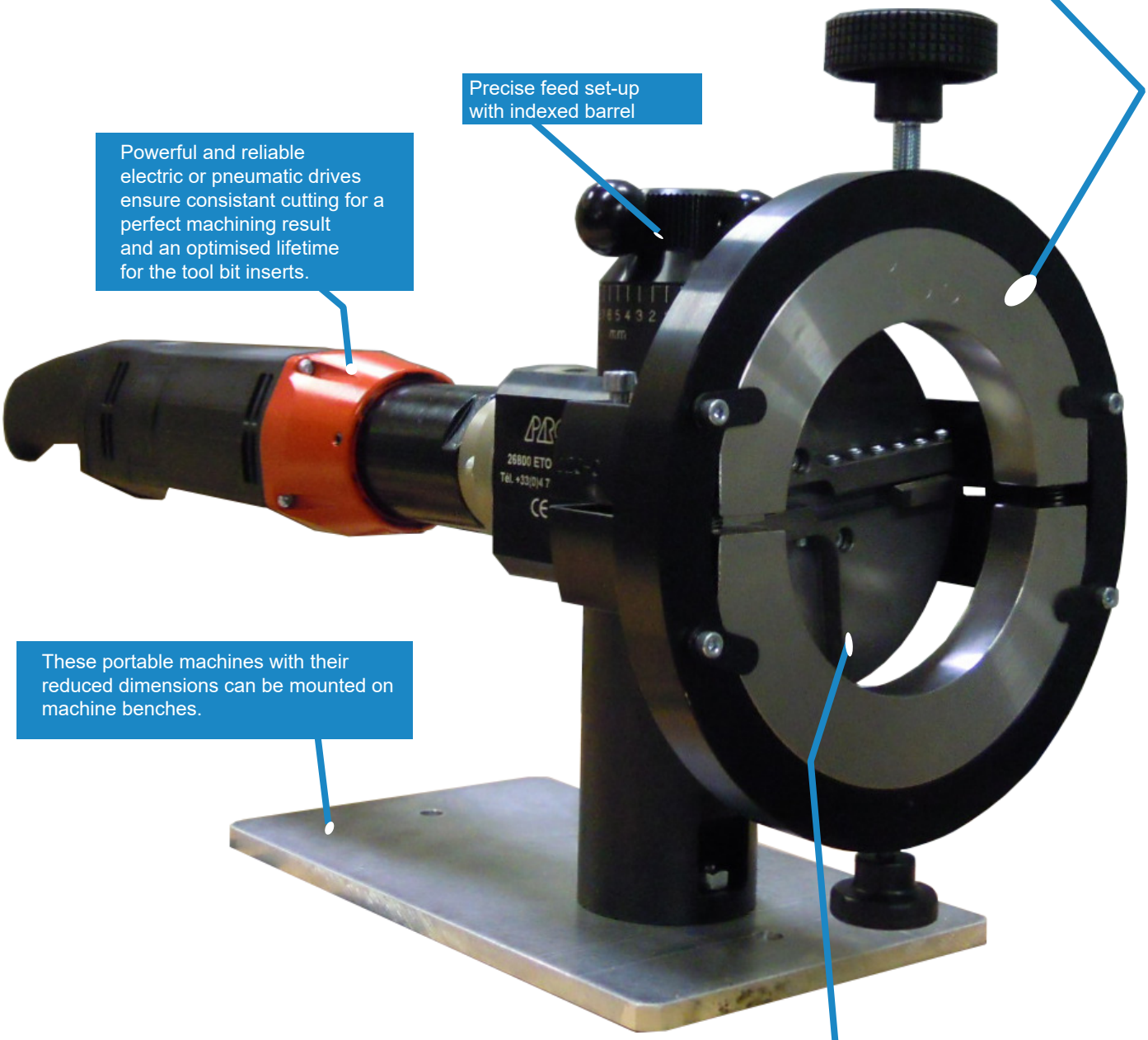


## Cold Machining

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.

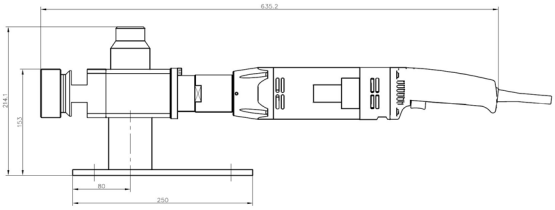
Tool-holder plates enable the facing and beveling of tubes, fittings, micro fittings and tee fittings. Machining can be performed on all types of materials (mild steels, stainless steels, alloys). Chips are contained and easily collected in order to avoid altering the integrity of the tube.

# 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

# SL30 Tube and Pipe Beveling Machine



## Technical Features:

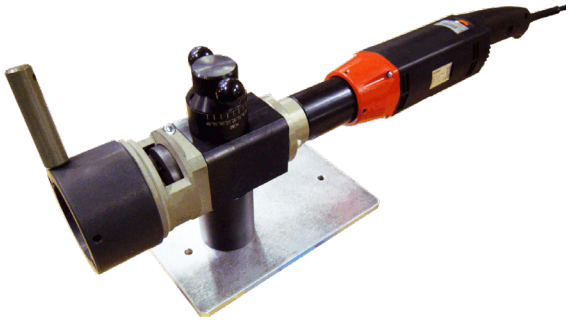
| | |
|---|---|
| ***Specific shapes & angles*** | I, V,<br>Other on Requests |
| ***Clamping*** | Clamping heads and collets long or short |
| ***Feed stroke*** | 10 mm (0.394“) |
| ***Gear drive*** | 95 tr/min to 280 tr/min |
| ***Pneumatic drive*** | 730 W, 6 bar (87 psi),<br>1400 l/min (49 cfm) |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

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

## Applications:

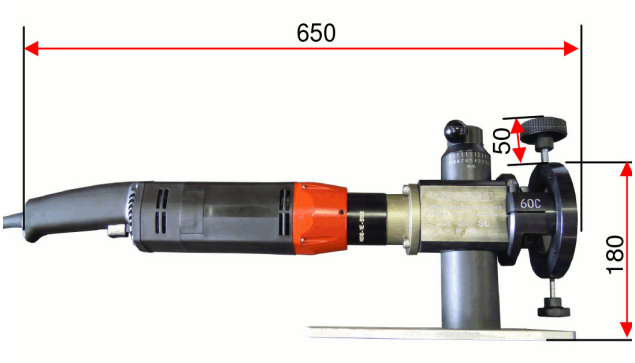
# SL60 Tube and Pipe Facing Machine

Standard Capacity: 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,<br>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),<br>1400 l/min (49 cfm) |
| ***Electrical drive*** | 110 V (1500 W) or<br>220 V (1050 W) |
| ***Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.*** | |

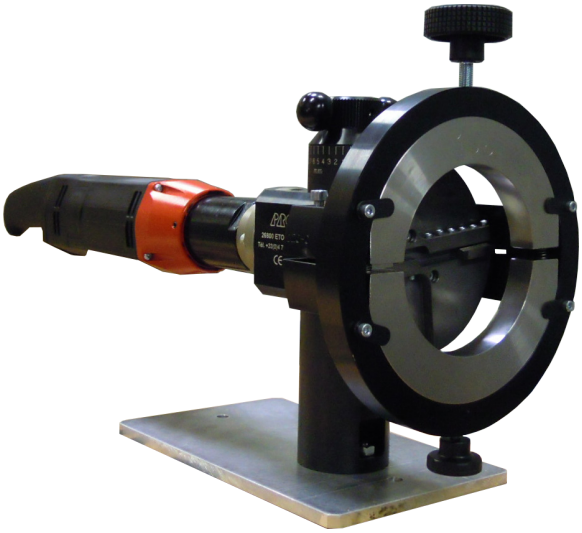
OD Mounted

| 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) version with short clamping head for microfittings, with electric drive 110V MS10. |

# SL120 Tube Squaring Machine

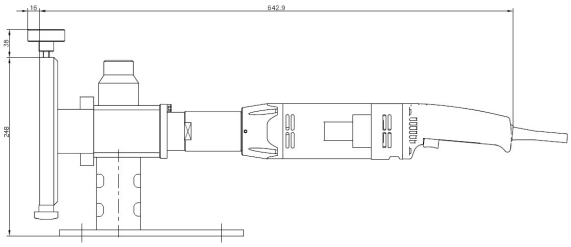
Standard Capacity: 50mm - 120mm (1.968“-4.724“)



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,<br>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),<br>1400 l/min (49 cfm) |
| ***Electrical drive*** | 110 V (1500 W) or<br>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) version with short clamping head for microfittings, with electric drive 110V MS10. |

# SL Tube Squaring Machines Options & Accessories

## SL Crates:

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

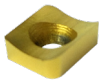
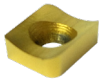
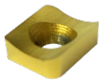
## SL Insert Holders:

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

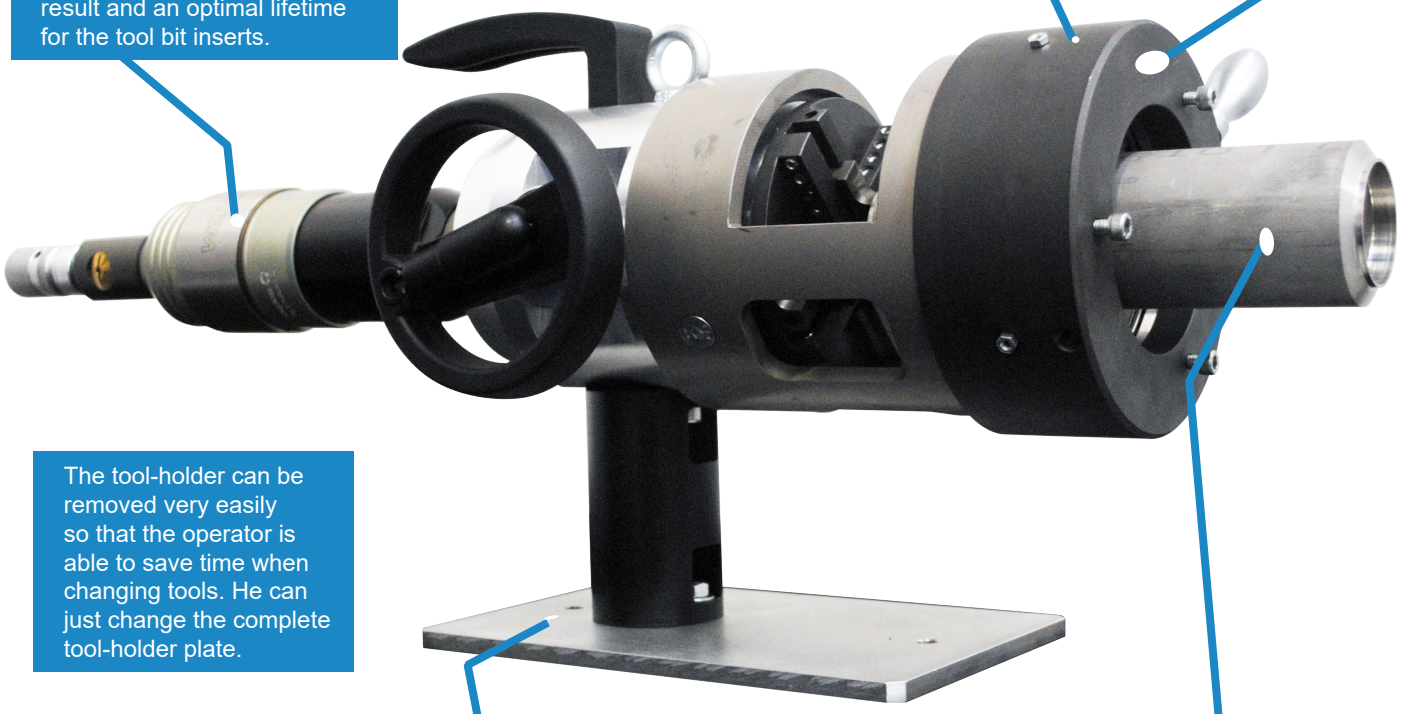
## SL Collets:

| 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 | Insert right for J-prep with radius 1.5, material HSSE with TiN coating |  |
| 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 | Insert, left, material HSSE with TiN coating |  |
| 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.

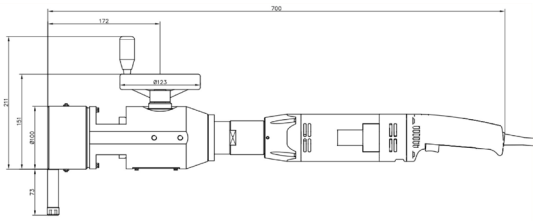
# SE60NG Tube and Pipe Beveling Machine

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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ |

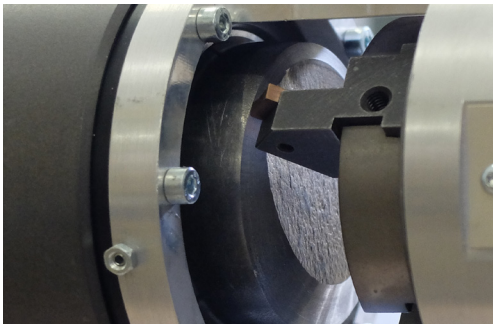
OD Mounted

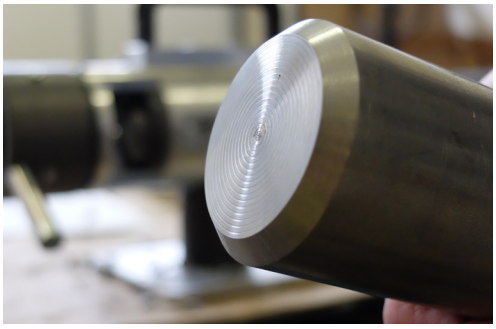


Dimensions

## 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,<br>Other on Requests |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 25 mm (0.98“) |
| ***Gear drive*** | 60 rpm to 90 rpm |
| ***Pneumatic drive*** | 730 W, 6 bar (87 psi),<br>1400 l/min (49 cfm) |
| ***Electrical drive*** | 110 V (1500 W) or<br>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. |
| SE60-1006 | Tube & Pipe Beveling and Facing Machine PROTEM SE60NG for Ø 0.393“-2.374“ (10mm-60.3mm) with automatic feed. |



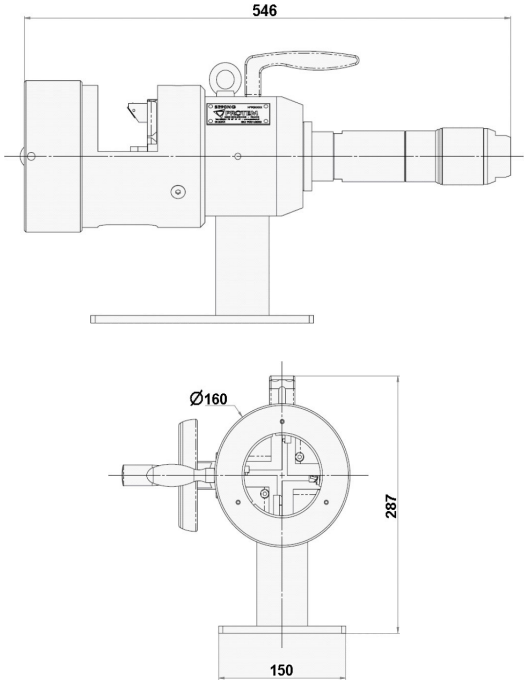
## Applications:


# 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 |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ |




Dimensions

OD Mounted

## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, J-bevel,<br>Other on Requests |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 30 mm (1.18“) |
| ***Gear drive*** | 75 rpm to 90 rpm |
| ***Pneumatic drive*** | 1500 W, 6 bar (87 psi),<br>2800 l/min (100 cfm) |
| ***Electrical drive*** | 110 V (1500 W) or<br>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. |

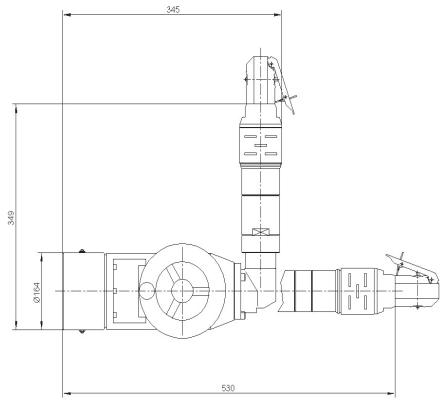
| Order No. | Description |
|---|---|
| SE90NG-1022 | Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with electric right angle drive 220V. |
| SE90-1040 | Tube & Pipe Beveling and Facing Machine PROTEM SE90NG for Ø 0.393“-3.543“ (10mm-90mm) with electric drive 110V. |
| SE90-1006 | 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,<br>Other on Requests |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 30 mm (1.18“) |
| ***Gear drive*** | 60 rpm to 75 rpm |
| ***Pneumatic drive*** | 1500 W, 6 bar (87 psi),<br>2800 l/min (100 cfm) |
| ***Electrical drive*** | 110 V (1500 W) or<br>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. |
| SE120-1006 | Tube & Pipe Beveling and Facing Machine PROTEM SE120NG for Ø 1.968“-4.724“ (50mm-120mm) with automatic feed. |

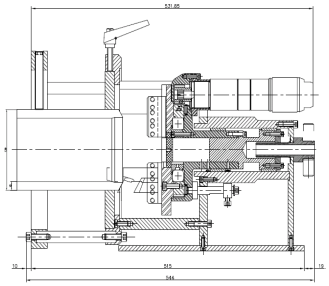
# SE219NG Tube Squaring Machine

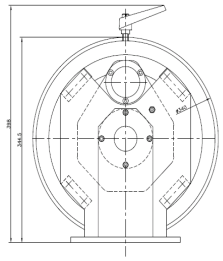
Standard Capacity: 60,3mm - 219mm (2.374“-8.622“)

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,<br>Other on Requests |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 23 mm (0.9“) |
| ***Gear drive*** | 33 rpm |
| ***Pneumatic drive*** | 730 W, 6 bar (87 psi),<br>1400 l/min (49 cfm) |
| ***Electrical drive*** | 110 V (1500 W) or<br>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-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. |
| SE219NG-1040 | Tube & Pipe Beveling and Facing Machine PROTEM SE219NG for Ø 2.374“-8.622“ (60.3mm-219mm) with electric drive 110V. |

# SE-NG 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° |

OD Mounted

## SE90NG Tool-holders:

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

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

# SE-NG Tube Squaring Machines Options & Accessories



## SE120NG Tool-holders:

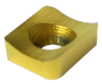
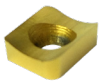
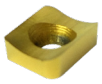
| Order No. | Description |
|---|---|
| SE120-68 | Tool-holder plate |
| SE60PP-30-41 | Tool-holder 30° |
| SE60PP-37-10 | Tool-holder 37°30 |
| SE60PP-45-11 | Tool-holder 45° |
| SE60PP-90-09 | Tool-holder 90° |

## SE-NG Collets:

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

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

# SE-NG Tube Squaring Machines Tool-Inserts

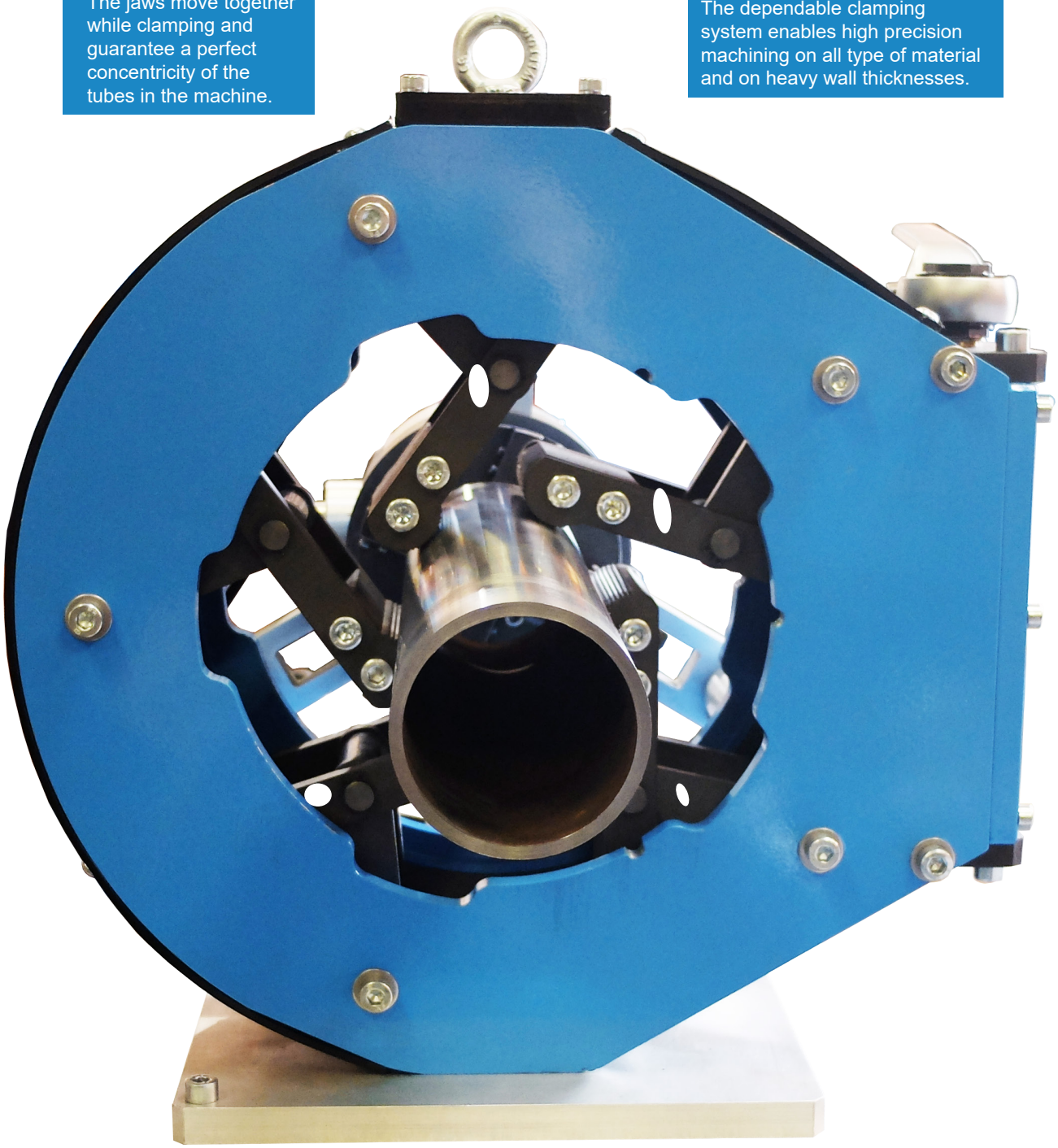
| Order No. | Description | Picture |
|---|---|---|
| O-SE-P2-3.-H-T-25 | Insert, right, material HSSE with TiN coating |  |
| O-SE-P2-3.-H-F-25 | Insert, right, material HSSE with TiALN coating |  |
| O-SE-P3-3.-H-T-25A | Insert right for J-prep with radius 1.5, material HSSE with TiN coating |  |
|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

# 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.

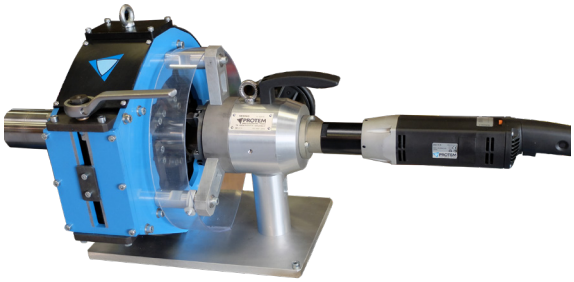


These machines minimize the risk of contamination since they produce collectible ribbon-like chips and no particles.

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.

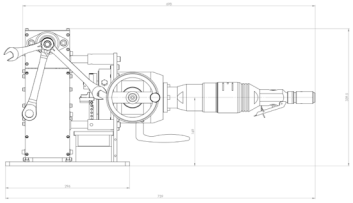
# BMFM114 Tube and Pipe Beveling Machine

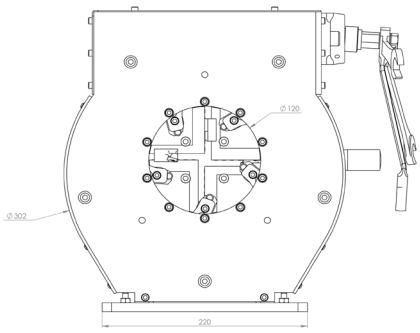
Standard Capacity: 20mm - 114.3mm (0.78“ - 4.5“)



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

| Beveling | Squaring | Counter-boring | 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

# BMFM114 Tube and Pipe Beveling Machine

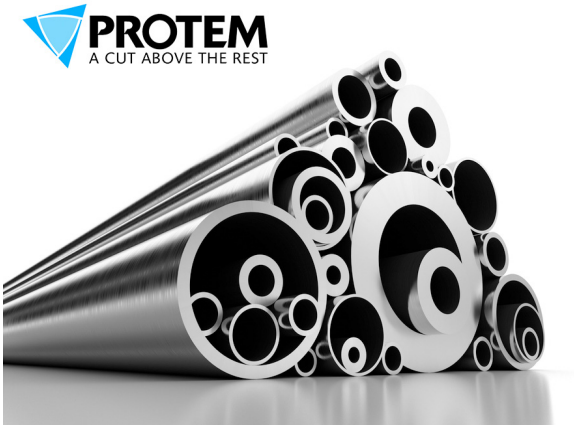


## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X and J-bevel, Other on Requests |
| ***Clamping*** | Manual with a key |
| ***Feed stroke*** | 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.*** | |

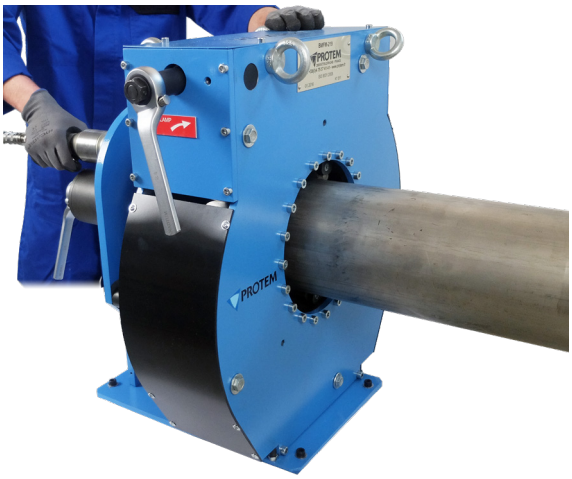
| Order No. | Description |
|---|---|
| BMFM114-1000 | Tube & Pipe Beveling and Facing Machine PROTEM BMFM114 for Ø 0.78“ - 4.5“ (20mm - 114.3mm) with pneumatic drive |
| BMFM114-1002 | Tube & Pipe Beveling and Facing Machine PROTEM BMFM114 for Ø 0.78“ - 4.5“ (20mm - 114.3mm) with pneumatic drive and automatic clamping. |
| BMFM114-1004 | Tube & Pipe Beveling and Facing Machine PROTEM BMFM114 for Ø 0.78“ - 4.5“ (20mm - 114.3mm) with integrated pneumatic automatic clamping and feed device |
| BMFM114-1020 | Tube & Pipe Beveling and Facing Machine PROTEM BMFM114 for Ø 0.78“ - 4.5“ (20mm - 114.3mm) with electric drive 220V. |
| BMFM114-1040 | Tube & Pipe Beveling and Facing Machine PROTEM BMFM114 for Ø 0.78“ - 4.5“ (20mm - 114.3mm) with electric drive 110V. |
| BMFM114-K01 | Transport crate for BMFM114 |

## Applications:



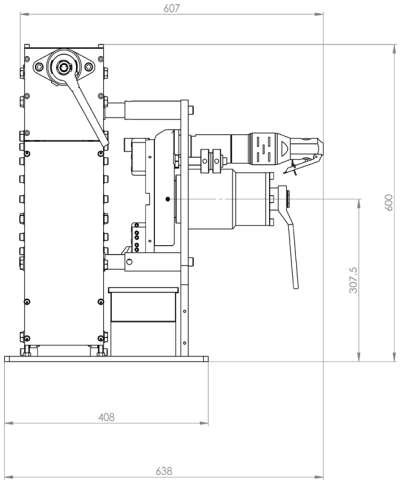

# BMFM219 Tube and Pipe Facing Machine

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-K01 | Transport crate for BMFM219 |

## BMFM219 On-Site:

# BMFM Tube Squaring Machine Tool bits



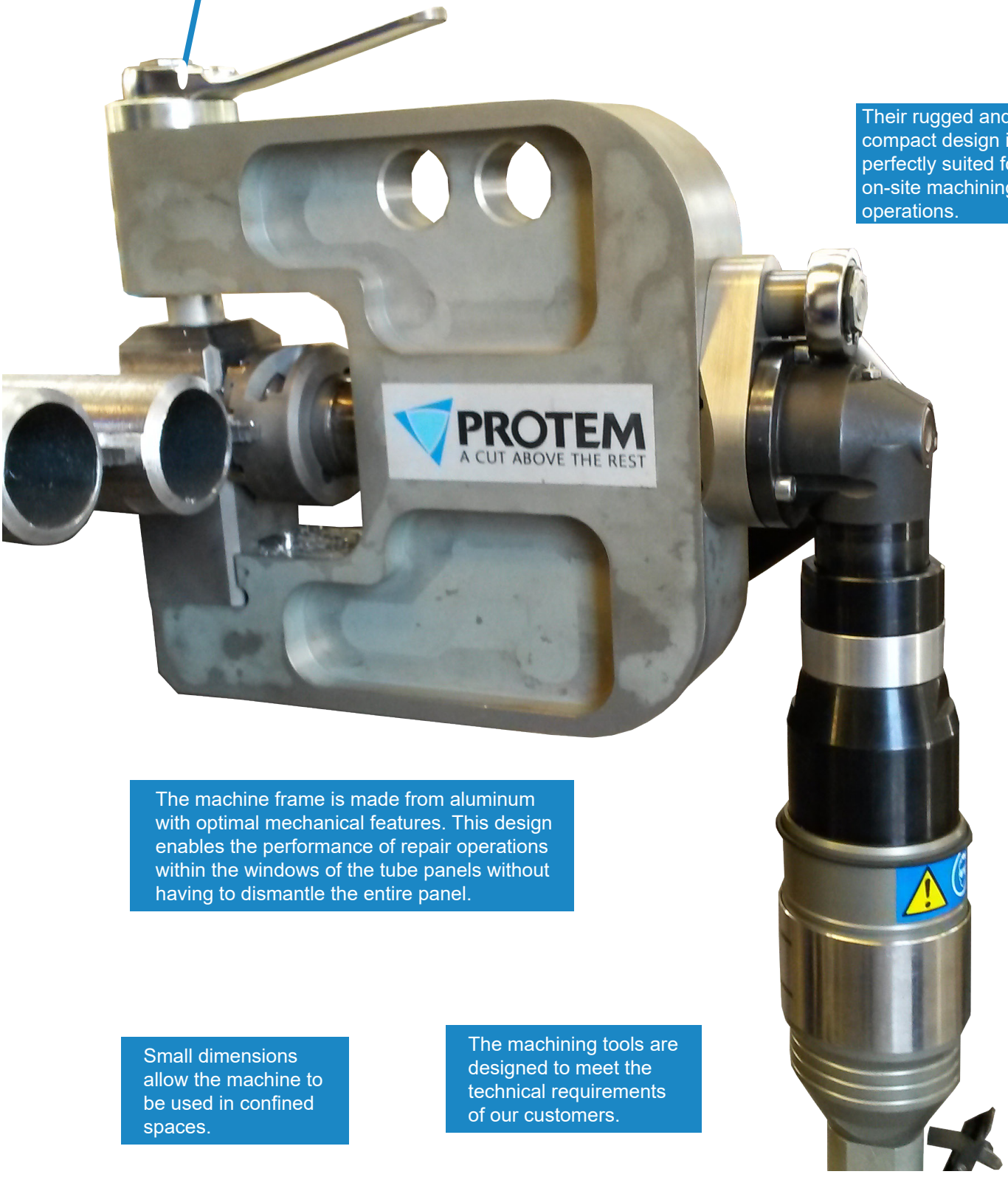
| Order No. | Description | Picture |
|---|---|---|
| O-US-A1-6-H-18 | Tool bit 90° |  |
| O-US-A2-6-H-17 | Tool bit for 30° bevel |  |
| O-US-A3-6-H-19 | Tool bit for 37°30 bevel |  |
| O-US-A4-6-H-16 | Tool bit for counterboring 15° |  |
| O-US-A5-6-H-85 | Tool bit for 45° bevel |  |
| O-US-B6-6-H-55 | Tool bit 90°, with disalignment |  |
| O-US-B7-6-H-57 | Tool bit 30°, with disalignment |  |
| O-US-B8-6-H-58 | Tool bit 37°30, with disalignment |  |
| O-US-B9-6-H-60 | Tool bit for counterboring 15°, with disalignment |  |
| O-US-B11-6-H-24 | Tool bit for counterboring and squaring |  |
| O-US-C5-6-H-62 | Tool bit for 7° R6 j-bevels |  |
| O-US-C6-6-H-64 | Tool bit for 12,5° R6 j-bevels |  |
| O-US-C7-6-H-66 | Tool bit for 7° R6 j-bevels, with disalignment |  |
| O-US-C8-6-H-68 | Tool bit for 12,5° R6 j-bevels, with disalignment |  |
| O-US-C9-6-H-20 | Tool bit for 10° R1,5 j-bevels |  |
| O-US-C10-6-H-61 | Tool bit for 20° j-bevels |  |

# GR Series Portable Beveling and Waterwall Machine for Boiler Tubes

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

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

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




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

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

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

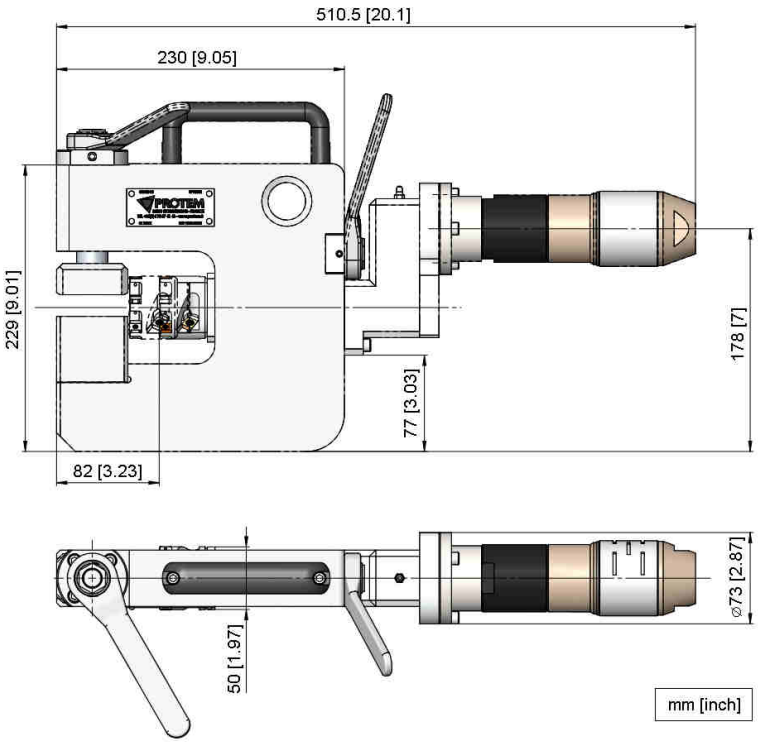
# GR40NG Portable Beveling and Waterwall Machine for Boiler Tubes

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

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

| Beveling | Surfacing | Cut to length | Weld joint removal | Coating Removal | Squaring | Cutting |
|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |

OD Mounted




## Advantages:

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

# GR40NG Portable Beveling and Waterwall Machine for Boiler Tubes

## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, other on request |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 24 mm (0.945") |
| ***Cutting head gear drive*** | 170 rpm.<br>Approximate rotation speed according to air pressure and air flow |
| ***GR40NG pneumatic drive*** | 1.47 kW, 6 bar (87 psi),<br>1400 l/min (49 cfm) |
| ***Electric drive*** | 110V and 220V |
| ***Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.*** | |

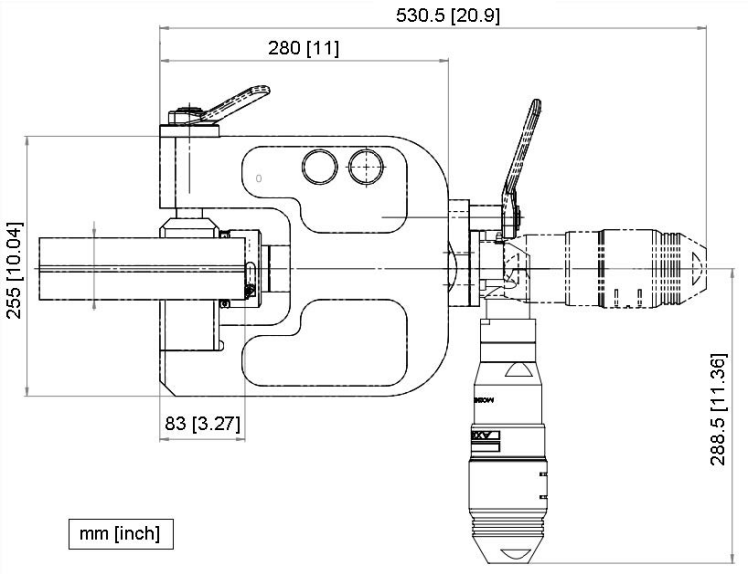
| Order No. | Description |
|---|---|
| GR40NG-1000 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR40 for Ø 0.838" - 2.374" (21.3mm - 60.3mm) with pneumatic drive |
| GR40NG-1020 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR40 for Ø 0.838" - 2.374" (21.3mm - 60.3mm) with electric drive 220V |
| GR40NG-1040 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR40 for Ø 0.838" - 2.374" (21.3mm - 60.3mm) with electric drive 110V |

# GR76NG Portable Beveling and Waterwall Machine for Boiler Tubes

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


| Beveling | Surfacing | Cut to length | Weld joint removal | Coating Removal | Squaring | Cutting |
|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |

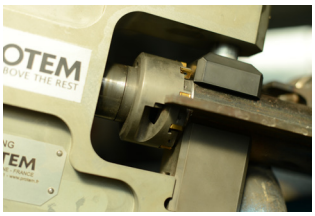
OD Mounted

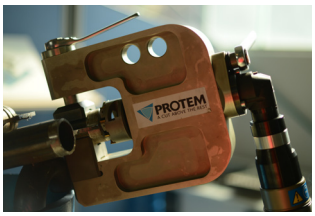



## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, other on request |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 27 mm (1.06") |
| ***Cutting head gear drive*** | 148 rpm.<br>Approximate rotation speed according to air pressure and air flow |
| ***GR76NG pneumatic drive*** | 1.47 kW, 6 bar (87 psi),<br>1800 l/min (63 cfm) |
| ***Electric drive*** | 110V and 220V |
| ***Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.*** | |

## GR76NG On-Site or in Workshop:

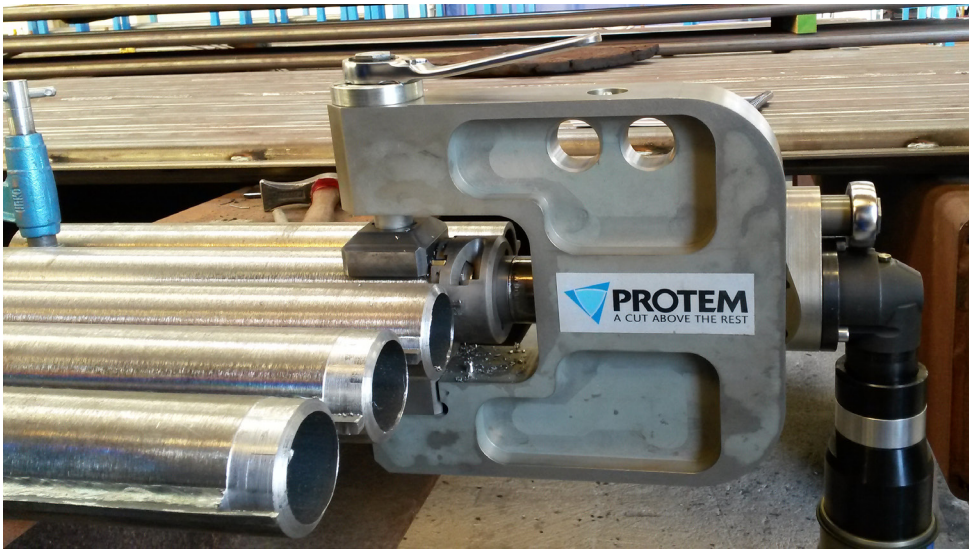





| Order No. | Description |
|---|---|
| GR76NG-1000 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR76 for Ø 1.496" - 2.992" (38mm - 76mm) with pneumatic drive |
| GR76NG-1020 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR76 for Ø 1.496" - 2.992" (38mm - 76mm) with electric drive 220V |
| GR76NG-1040 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR76 for Ø 1.496" - 2.992" (38mm - 76mm) with electric drive 220V |

# GR90NG Portable Beveling and Waterwall Machine for Boiler Tubes

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

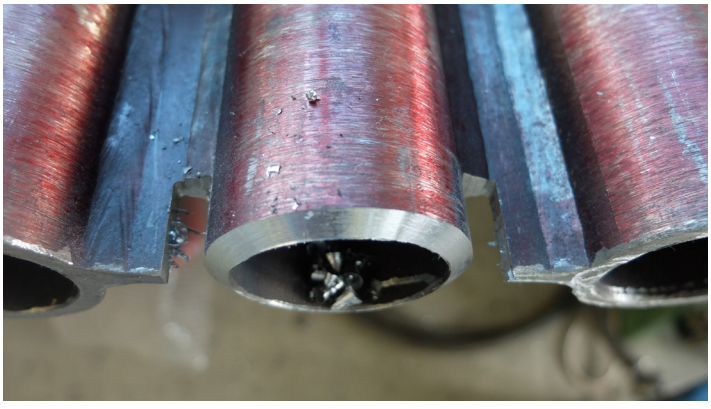



| Beveling | Surfacing | Cut to length | Weld joint removal | Coating Removal | Squaring | Cutting |
|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |

## Technical Features:

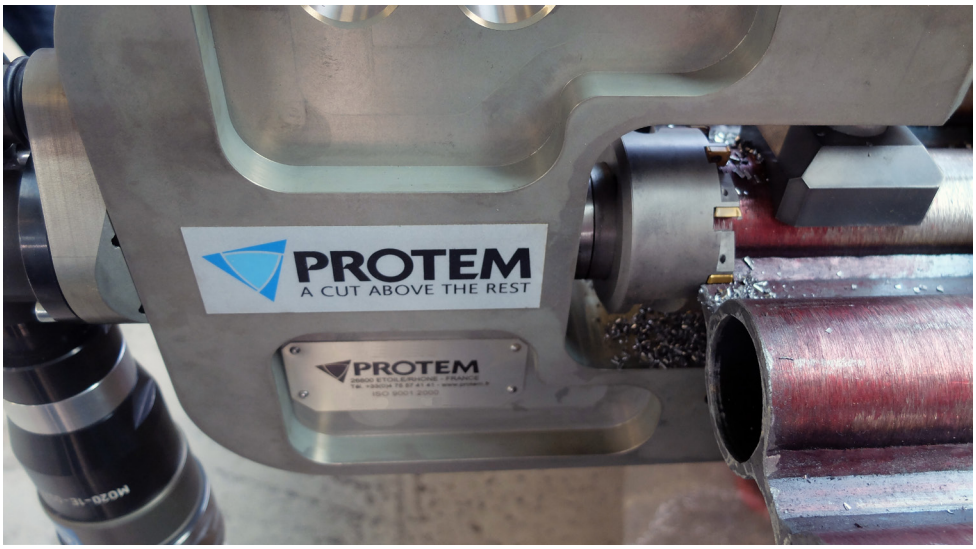
| | |
|---|---|
| ***Specific shapes & angles*** | I, V, other on request |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 27 mm (1.06") |
| ***Cutting head gear drive*** | 90 rpm.<br>Approximate rotation speed according to air pressure and air flow |
| ***GR90NG pneumatic drive*** | 1.47 kW, 6 bar (87 psi),<br>1800 l/min (63 cfm) |
| ***Electric drive*** | 110V and 220V |
| ***Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.*** | |

| Order No. | Description |
|---|---|
| GR90NG-1000 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR90 for Ø 1.661" - 3.508" (42.2mm - 89mm) with pneumatic drive |
| GR90NG-1020 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR90 for Ø 1.661" - 3.508" (42.2mm - 89mm) with electric drive 220V |
| GR90NG-1040 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR90 for Ø 1.661" - 3.508" (42.2mm - 89mm) with electric drive 110V |



# GR120NG Portable Beveling and Waterwall Machine for Boiler Tubes

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




| Beveling | Surfacing | Cut to length | Weld joint removal | Coating Removal | Squaring | Cutting |
|---|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |

OD Mounted

## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, other on request |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 27 mm (1.06") |
| ***Cutting head gear drive*** | 50 rpm.<br>Approximate rotation speed according to air pressure and air flow |
| ***GR120NG pneumatic drive*** | 1.47 kW, 6 bar (87 psi),<br>1800 l/min (63 cfm) |
| ***Electric drive*** | 110V and 220V |
| ***Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.*** | |

| Order No. | Description |
|---|---|
| GR120NG-1000 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR120 for Ø 1.901" - 4.5" (48.3mm - 114.3mm) with pneumatic drive |
| GR120NG-1020 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR120 for Ø 1.901" - 4.5" (48.3mm - 114.3mm) with electric drive 220V |
| GR120NG-1040 | Portable Beveling and Waterwall Cutting Machine for boiler tubes PROTEM GR120 for Ø 1.901" - 4.5" (48.3mm - 114.3mm) with electric drive 110V |

# GR Series Portable Waterwall Machine for Boiler Tubes — Options

| Order No. | Description |
|---|---|
| GR40NG-1500 | Milling tool for GR40 - one for each diameter |
| GR40PP-45-11 | Tool holder 45° |
| GR40PP-90-09 | Tool holder 90° |
| GR40PPD-1316 | Tool holder for inside machining operations |
| GR40NG-68 | Tool holder plate |
| GR40NG-K01 | Transport crate |

| Order No. | Description |
|---|---|
| GR76NG-1500 | Milling tool for GR76 - one for each diameter |
| GR76PP-45-11 | Tool holder 45° |
| GR76PP-90-09 | Tool holder 90° |
| GR76PPD-1316 | Tool holder for inside machining operations |
| GR76NG-68 | Tool holder plate |
| GR76NG-K01 | Transport crate |

| Order No. | Description |
|---|---|
| GR90NG-1500 | Milling tool for GR90 - one for each diameter |
| GR90PP-45-11 | Tool holder 45° |
| GR90PP-90-09 | Tool holder 90° |
| GR90PPD-1316 | Tool holder for inside machining operations |
| GR90NG-68 | Tool holder plate |
| GR90NG-K01 | Transport crate |

| Order No. | Description |
|---|---|
| GR120NG-1500 | Milling tool for GR120 - one for each diameter |
| GR120PP-45-11 | Tool holder 45° |
| GR120PP-90-09 | Tool holder 90° |
| GR120PPD-1316 | Tool holder for inside machining operations |
| GR120NG-68 | Tool holder plate |
| GR120NG-K01 | Transport crate |



# GR Series Portable Waterwall Machine for Boiler Tubes — Tool bits

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

# TTS-NG Series Orbital Tube Severing & Beveling Machines

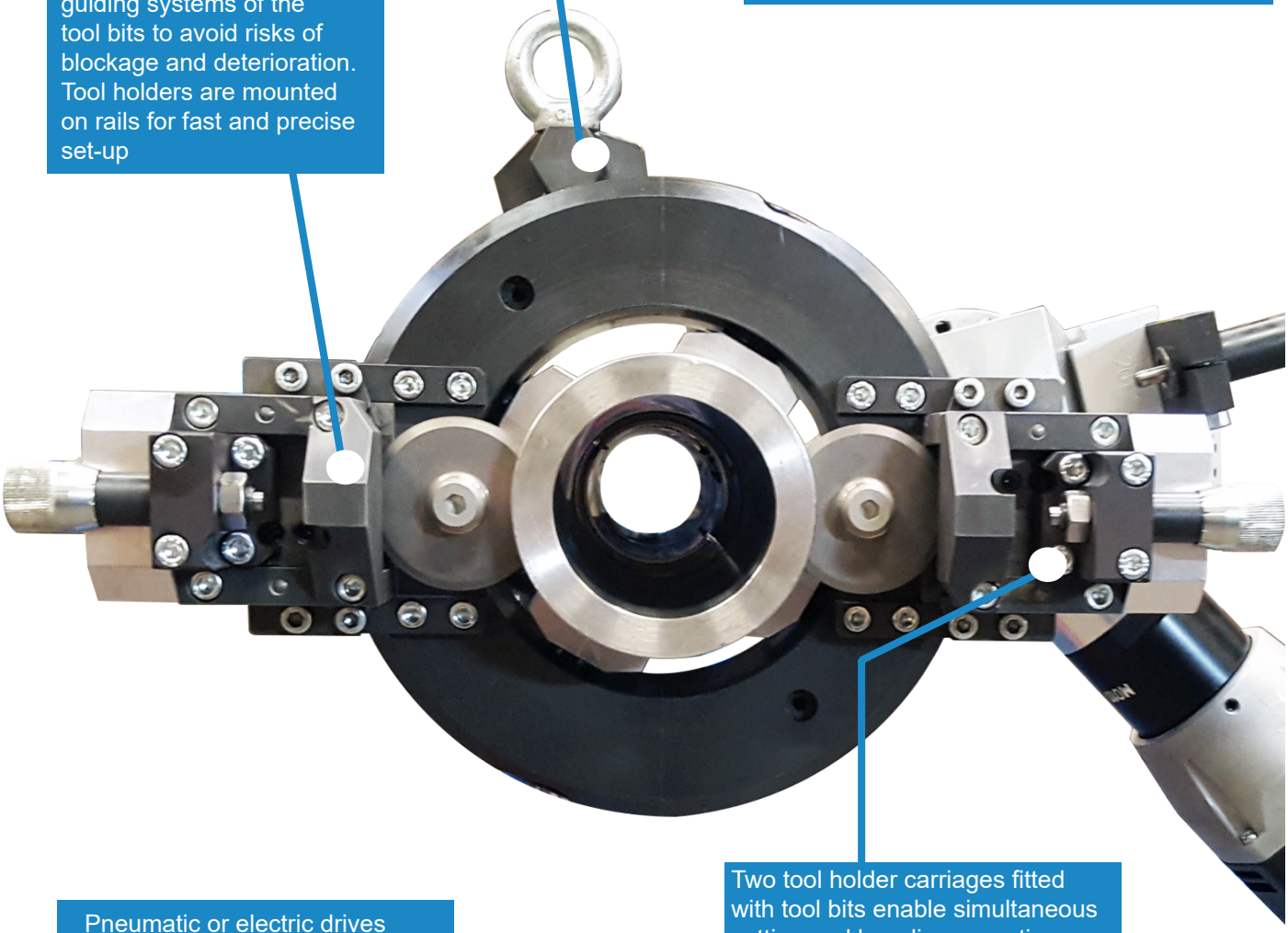
OD Mounted

Splitframe design for a use on existing tubular beams

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

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

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



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.

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

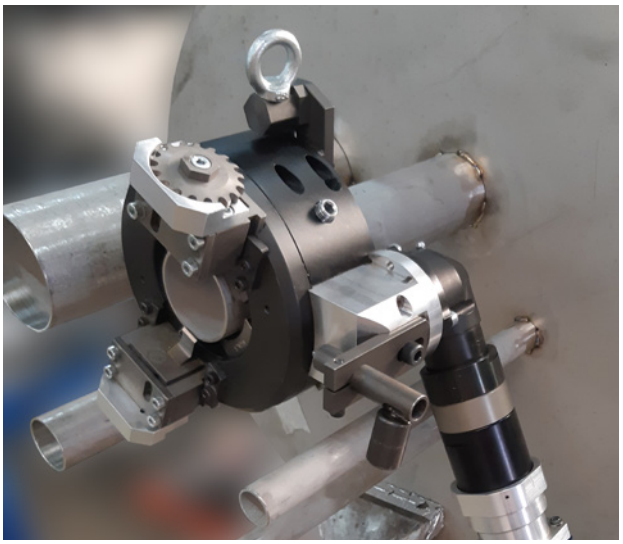
Cold Cutting Process.
No Heat Affected Zone

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

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

# TTS-NG Series Orbital Tube Severing & Beveling Machines

Standard Capacity: 10.3 mm - 219.1 mm (0.405" - 8.625“)



The TTSNG Series perform accurate cutting and/or beveling of tubes of all schedules from 0.406" (10.3mm) up to 8.625" (219.1mm) in one simultaneous operation. Their reduced weight and overall dimensions enable these machines to work in areas where there is a shortage of space.
The special design of the machines features:
• Split frame configuration, opening in two half-shells
• Manual clamping using four independent adjustable jaws.

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

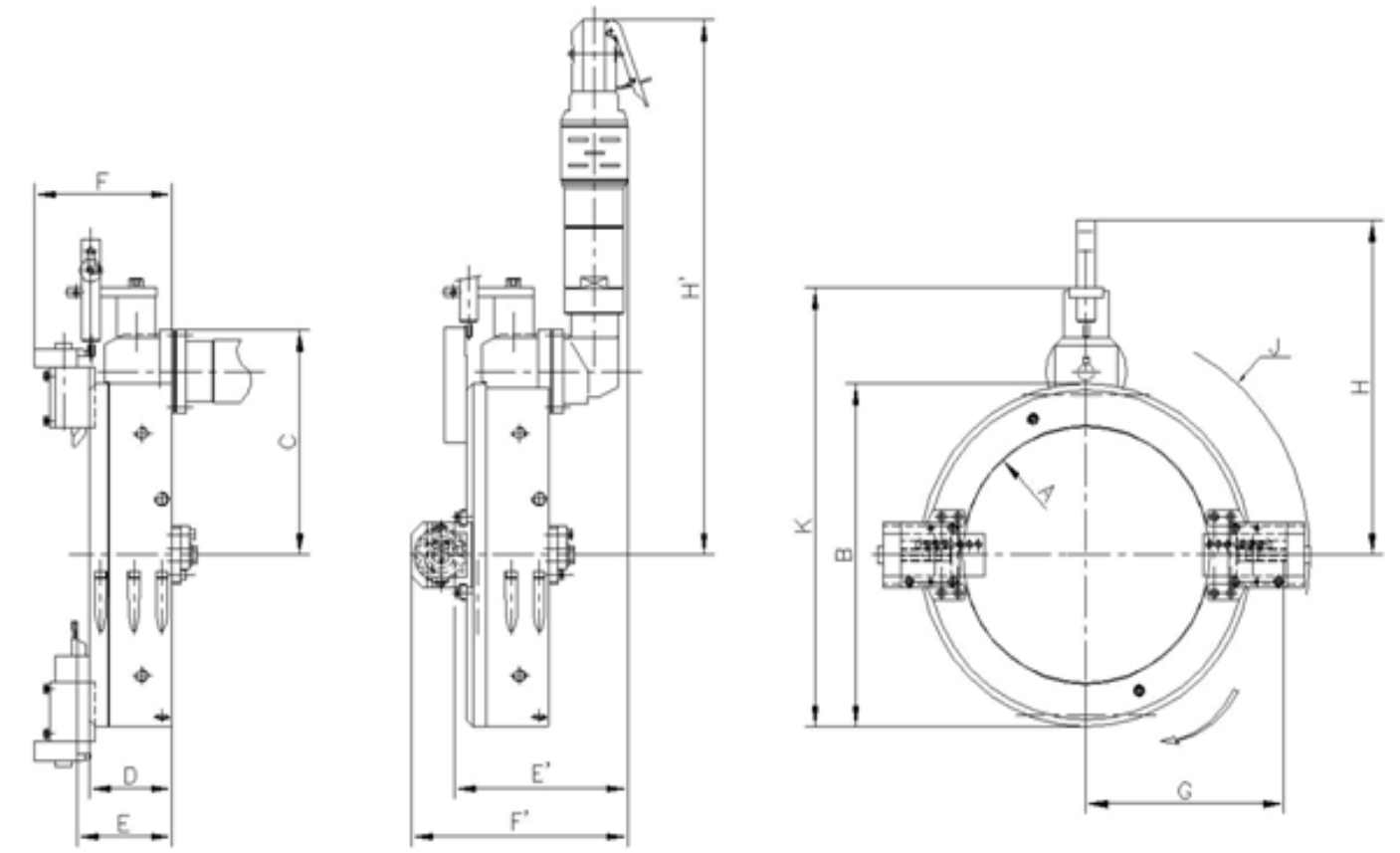
## Advantages:

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

| TTS-NG Series | Machining Capacities | |
|---|---|---|
| TTS-NG 27 | 0.405" - 1.051" | 10.3 mm - 26.7 mm |
| TTS-NG 33 | 0.405“ - 1.314“ | 10.3 mm - 33.4 mm |
| TTS-NG 42 | 0.405“ - 1.661“ | 10.3 mm - 42.2 mm |
| TTS-NG 48 | 0.405“ - 1.902“ | 10.3 mm - 48.3 mm |
| TTS-NG 60 | 0.838“ - 2.374“ | 21.3 mm - 60.3 mm |
| TTS-NG 73 | 0.838“ - 2.874“ | 21.3 mm - 73 mm |
| TTS-NG 88 | 1.314“ - 3.5“ | 33.4 mm - 88.9 mm |
| TTS-NG 101 | 1.902“ - 4“ | 48.3 mm - 101.6 mm |
| TTS-NG 114 | 2.374“ - 4.5“ | 60.3 mm - 114.3 mm |
| TTS-NG 127 | 2.374“ - 5“ | 60.3 mm - 127 mm |
| TTS-NG 141 | 2.874“ - 5.562“ | 73 mm - 141.3 mm |
| TTS-NG 168 | 3.5“ - 6.625“ | 88.9 mm - 168.3 mm |
| TTS-NG 193 | 4.5“ - 7.598“ | 114.3 mm - 193 mm |
| TTS-NG 219 | 5.562“ - 8.625“ | 141.3 mm - 219.1 mm |

# TTS-NG Series Orbital Tube Cutting Machines — Dimensions






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

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

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

# TTS-NG Series Orbital Tube Severing & Beveling Machines

## Technical Features:

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

## TTS-NG27 Orbital Tube Severing & Beveling Machine

OD Mounted

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

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

## TTS-NG33 Orbital Tube Severing & Beveling Machine

Standard Capacity: 10.3 mm - 33.4 mm (0.405“ - 1.314“)

| Order No. | Description |
|---|---|
| TTSNG33-1000 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG33 Splitframe Design - for Ø 0.405" - 1.314" (10.3mm - 33.4mm) with pneumatic drive |
| TTSNG33-1020 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG33 Splitframe Design - for Ø 0.405" - 1.314" (10.3mm - 33.4mm) with right angle electric drive 220V |
| TTSNG33-1040 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG33 Splitframe Design - for Ø 0.405" - 1.314" (10.3mm - 33.4mm) with right angle electric drive 110V |

OD Mounted

# TTS-NG42 Orbital Tube Severing & Beveling Machine

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

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

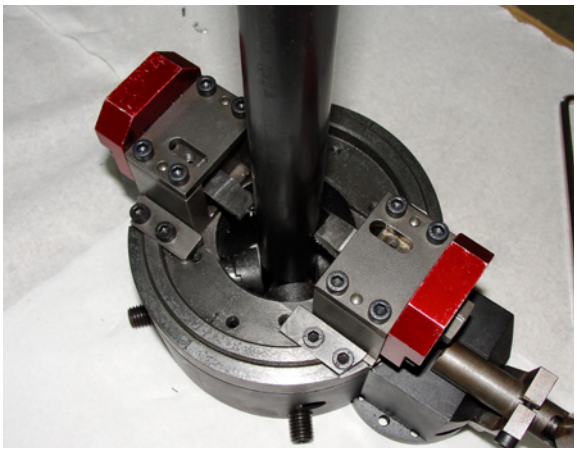
# TTS-NG48 Orbital Tube Severing & Beveling Machine

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

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

# TTS-NG60 Orbital Tube Severing & Beveling Machine

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



| Order No. | Description |
|---|---|
| TTSNG60-1000 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG60 Splitframe Design - for Ø 0.838" - 2.374" (21.3 mm - 60.3mm) with pneumatic drive |
| TTSNG60-1020 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG60 Splitframe Design - for Ø 0.838" - 2.374" (21.3 mm - 60.3mm) with right angle electric drive 220V |
| TTSNG60-1040 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG60 Splitframe Design - for Ø 0.838" - 2.374" (21.3 mm - 60.3mm) with right angle electric drive 110V |

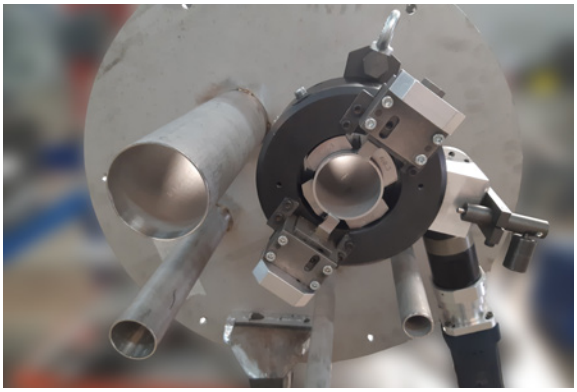
# TTS-NG73 Orbital Tube Severing & Beveling Machine

Standard Capacity: 21.3 mm - 73 mm (0.838“ - 2.874“)

| Order No. | Description |
|---|---|
| TTSNG73-1000 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG73 Splitframe Design - for Ø 0.838" - 2.874" (21.3 mm - 73mm) with pneumatic drive |
| TTSNG73-1020 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG73 Splitframe Design - for Ø 0.838" - 2.874" (21.3 mm - 73mm) with right angle electric drive 220V |
| TTSNG73-1040 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG73 Splitframe Design - for Ø 0.838" - 2.874" (21.3 mm - 73mm) with right angle electric drive 110V |

# TTS-NG88 Orbital Tube Severing & Beveling Machine

Standard Capacity: 33.4 mm - 88.9 mm (1.314“ - 3.5“)



| Order No. | Description |
|---|---|
| TTSNG88-1000 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4mm - 88.9mm) with pneumatic drive |
| TTSNG88-1020 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4mm - 88.9mm) with right angle electric drive 220V |
| TTSNG88-1040 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4 mm - 88.9mm) with right angle electric drive 110V |

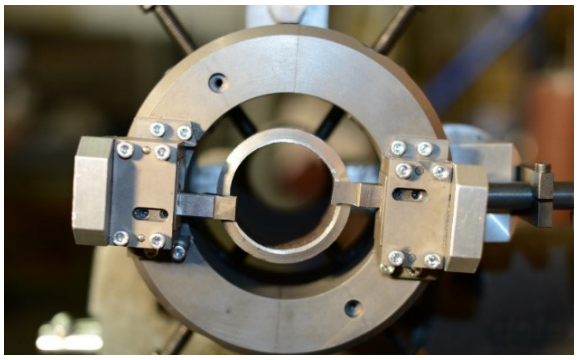
# TTS-NG101 Orbital Tube Severing & Beveling Machine

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

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

# TTS-NG114 Orbital Tube Severing & Beveling Machine

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



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

# TTS-NG127 Orbital Tube Severing & Beveling Machine

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

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

OD Mounted

# TTS-NG141 Orbital Tube Severing & Beveling Machine

Standard Capacity: 73 mm - 141.3 mm (2.874“ - 5.562“)

| Order No. | Description |
|---|---|
| TTSNG141-1000 | Orbital Tube Severing & Beveling Machine PROTEM TTSNG141 Splitframe Design - for Ø 2.874" - 5.562" (73mm - 141.3mm) with pneumatic drive |
| TTSNG141-1020 | Orbital Tube Severing & Beveling Machine PROTEM TTSNG141 Splitframe Design - for Ø 2.874" - 5.562" (73mm - 141.3mm) with right angle electric drive 220V |
| TTSNG141-1040 | Orbital Tube Severing & Beveling Machine PROTEM TTSNG141 Splitframe Design - for Ø 2.874" - 5.562" (73mm - 141.3mm) with right angle electric drive 110V |

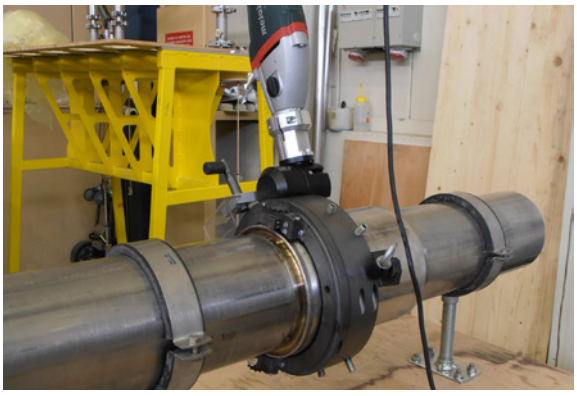
# TTS-NG168 Orbital Tube Severing & Beveling Machine

Standard Capacity: 88.9 mm - 168.3 mm (3.5“ - 6.625“)

| Order No. | Description |
|---|---|
| TTSNG168-1000 | Orbital Tube Severing & Beveling Machine PROTEM TTSNG168 Splitframe Design - for Ø 3.5" - 6.625" (88.9mm - 168.3mm) with pneumatic drive |
| TTSNG168-1020 | Orbital Tube Severing & Beveling Machine PROTEM TTSNG168 Splitframe Design - for Ø 3.5" - 6.625" (88.9mm - 168.3mm) with right angle electric drive 220V |
| TTSNG168-1040 | Orbital Tube Severing & Beveling Machine PROTEM TTSNG168 Splitframe Design - for Ø 3.5" - 6.625" (88.9mm - 168.3mm) with right angle electric drive 110V |

# TTS-NG193 Orbital Tube Severing & Beveling Machine

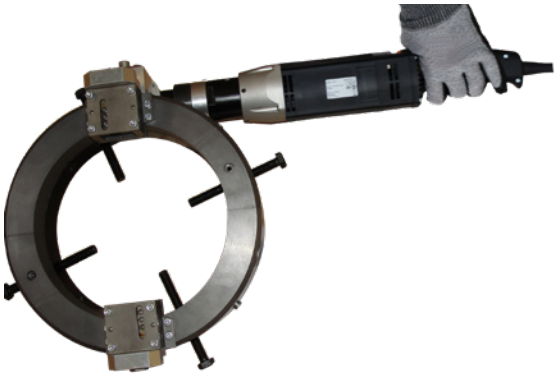
Standard Capacity: 114.3 mm - 193 mm (4.5“ - 7.598“)



| Order No. | Description |
|---|---|
| TTSNG193-1000 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4mm - 88.9mm) with pneumatic drive |
| TTSNG193-1020 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4mm - 88.9mm) with right angle electric drive 220V |
| TTSNG193-1040 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4 mm - 88.9mm) with right angle electric drive 110V |

# TTS-NG219 Orbital Tube Severing & Beveling Machine

Standard Capacity: 141.3 mm - 219.1 mm (5.562“ - 8.625“)



| Order No. | Description |
|---|---|
| TTSNG219-1000 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4mm - 88.9mm) with pneumatic drive |
| TTSNG219-1020 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4mm - 88.9mm) with right angle electric drive 220V |
| TTSNG219-1040 | Orbital Tube Severing & Beveling Machine PROTEM TTS-NG88 Splitframe Design - for Ø 1.314" - 3.5" (33.4 mm - 88.9mm) with right angle electric drive 110V |

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

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

| Order No. | Description |
|---|---|
| O-TTS-D2D-12-H-12 | Standard pointed cutting tool-bit |
| O-TTS-D1D-12-H-11 | Standard flat cutting tool-bit right |
| O-TTS-D4-12-H-18 | Beveling tool-bit 30° |
| O-TTS-D4-12-H-13 | Beveling tool-bit 37°30  (up to 12.7 mm (.5") wall) |
| O-TTS-D1G-12-H-10 | Standard flat cutting tool-bit left |

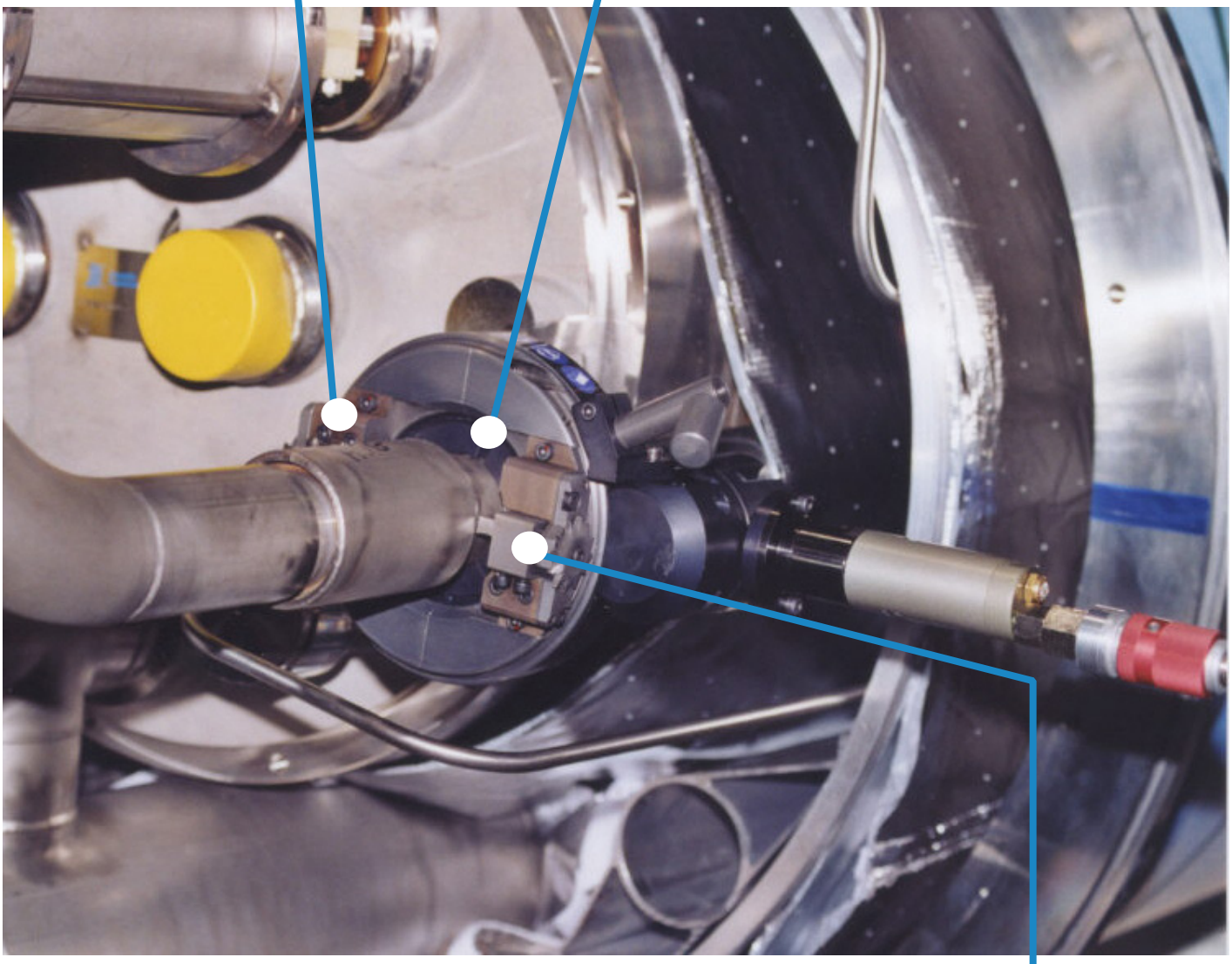

# TTS-RD Series Orbital Tube Severing & Beveling Machines

OD Mounted

Splitframe design for a use on existing tubular beams

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

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



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

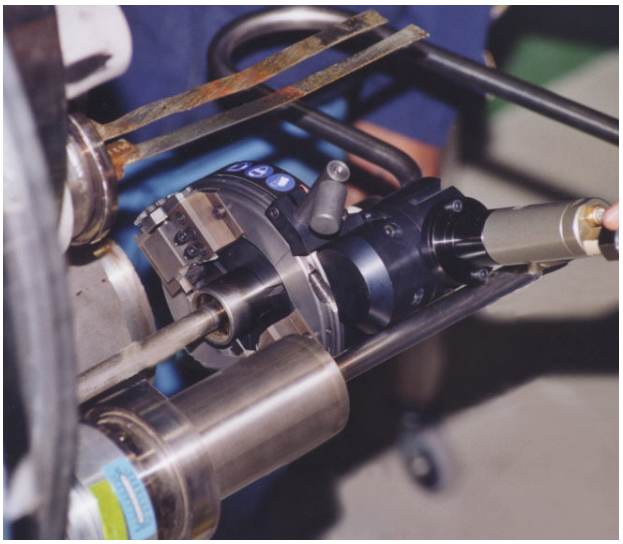
Two tool holder carriages fitted with tool bits enable simultaneous cutting and beveling operations. Two feed speeds can be selected by the operator. The machine can be operated in all positions.

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

Cold Cutting Process. No Heat Affected Zone

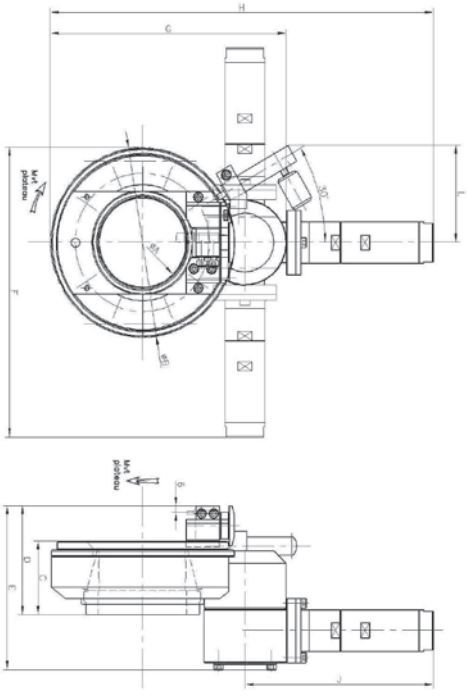
# TTS-RD Series Orbital Tube Severing & Beveling Machines

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



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

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



Dimensions on request

| TTS-RD Series | Machining Capacities | |
|---|---|---|
| TTS-RD 60 | 0.838“ - 2.374“ | 21.3 mm - 60.3 mm |
| TTS-RD 73 | 0.838“ - 2.874“ | 21.3 mm - 73 mm |
| TTS-RD 88 | 1.314“ - 3.5“ | 33.4 mm - 88.9 mm |
| TTS-RD 101 | 1.902“ - 4“ | 48.3 mm - 101.6 mm |
| TTS-RD 114 | 2.374“ - 4.5“ | 60.3 mm - 114.3 mm |
| TTS-RD 127 | 2.374“ - 5“ | 60.3 mm - 127 mm |
| TTS-RD 141 | 2.874“ - 5.562“ | 73 mm - 141.3 mm |

## Advantages:

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

## Technical Features:

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

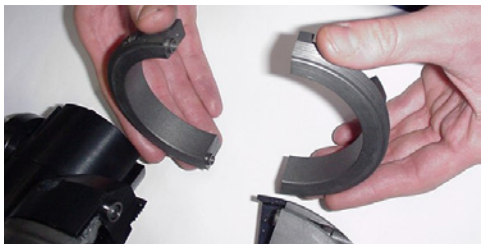
OD Mounted

# TTS-RD Series Orbital Tube Severing & Beveling Machines

## Assembly Operation:

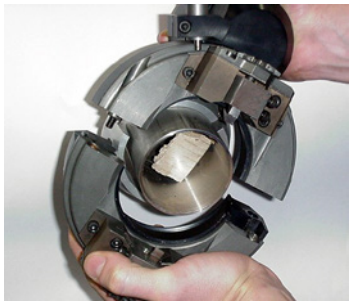
### Operation 1:
### Implementation of nut + collet

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



OD Mounted

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



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

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

### Operation 3:
### Clamping of the machine nut on the tube

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

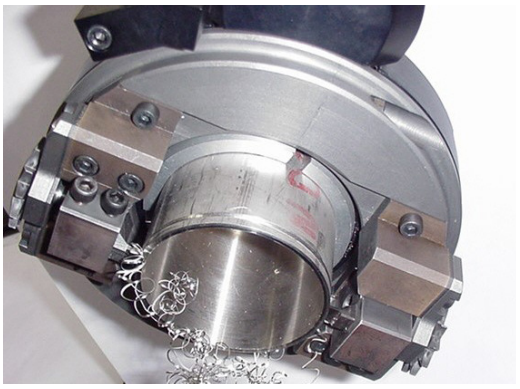
Each round, due to the clutch pin, moves the tool carriage forward. (0.04 mm (.002") /rev)
Two drive designs are avaible; straight or angle drive version (only for the pneumatic drive)

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

# TTS-RD Series Orbital Tube Severing & Beveling Machines

## Operation 4: Incrementation of the tool bit

## Operation 5: Cutting





## TTS-RD60 Orbital Tube Severing & Beveling Machine

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

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

## TTS-RD73 Orbital Tube Severing & Beveling Machine

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

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

## TTS-RD88 Orbital Tube Severing & Beveling Machine

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

| Order No. | Description |
|---|---|
| TTSRD88-1000 | Orbital tube cutting machine with concentric clamping and pneumatic drive 730 W for Ø 21.3 mm - 88.9 mm (0.839“ - 3.5“) |

# TTS-RD101 Orbital Tube Severing & Beveling Machine

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

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

# TTS-RD114 Orbital Tube Severing & Beveling Machine

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

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

# TTS-RD127 Orbital Tube Severing & Beveling Machine

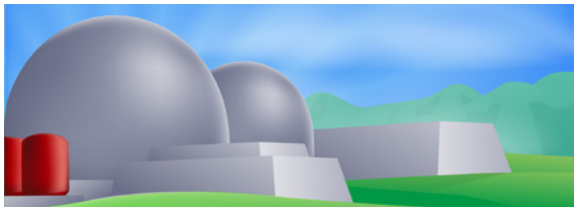
OD Mounted

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

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

# TTS-RD141 Orbital Tube Severing & Beveling Machine

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



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

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

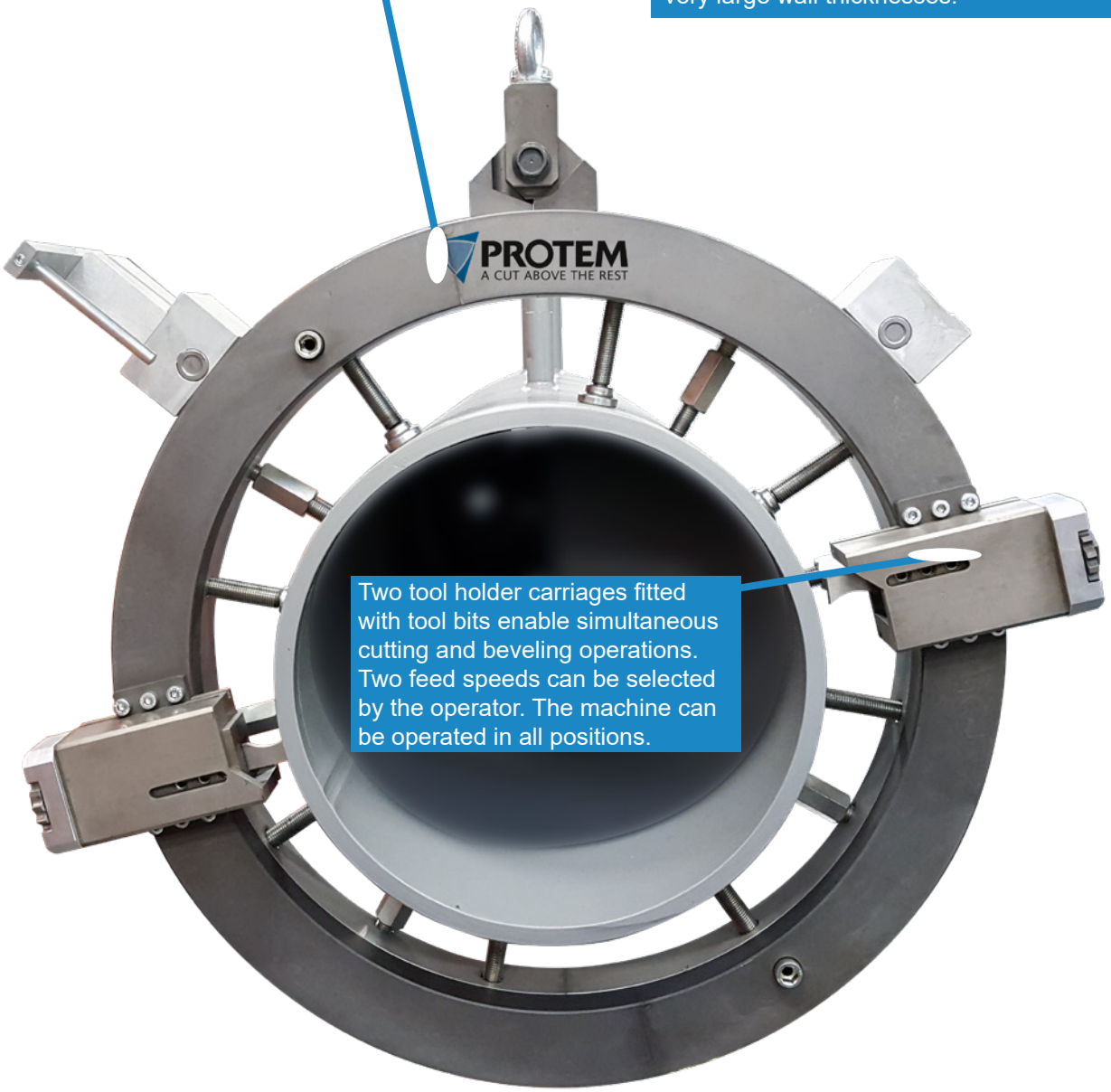
| Order No. | Description |
|---|---|
| O-TTS-D2D-12-H-12 | Standard pointed cutting tool bit |
| O-TTS-D1D-12-H-11 | Standard flat cutting tool bit right |
| O-TTS-D4-12-H-18 | Beveling tool bit 30° |
| O-TTS-D4-12-H-13 | Beveling tool bit 37°30 (up to 12.7 mm (.5") wall) |
| O-TTS-D1G-12-H-10 | Standard flat cutting tool bit left |

# TTNG-LW Series Splitframe Orbital Pipe Cutting & Beveling Machines

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.

Splitframe design for a use on existing tubular beams




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

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

Cold Cutting Process.
No Heat Affected Zone

# TTNG-LW Series Splitframe Orbital Pipe Cutting & Beveling Machines

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

The machines in the TTNG-LW series cut and bevel tubes simultaneously using two tool-holder plates that are incremented by the finger of a mechanical clutch. The main advantages of the TTNG-LW are:**Light weight**Rugged construction**Fast and easy mounting on tubes and pipes**Suited for in-line piping systems**Safe operation**Modular design**Ideal for tight spaces**Dependable orbital cutting and beveling**Cold Cutting Process, no heat affected zone. These machines are the low profile version of the TTNG-HD series. They are transportable and can be opened in two halfshells. According to the diameters and wall thicknesses to consider, they can be equipped with pneumatic, electric or hydraulic drive. The turning ring is rolling on adjustable bearings. The TTNG-LW can perform a cut up to a 1” (25.4mm) wall on any material and cut and bevel up to .787" (20mm). A variety of weld joint designs can be performed including cut, bevel, double bevel, J-bevel, counterbore, compound bevel and socket weld removal. Adapted for virtually all environments : Irradiated areas (remote control device on request), Subsea, Very high or very low temperatures...

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

OD Mounted

## Advantages:

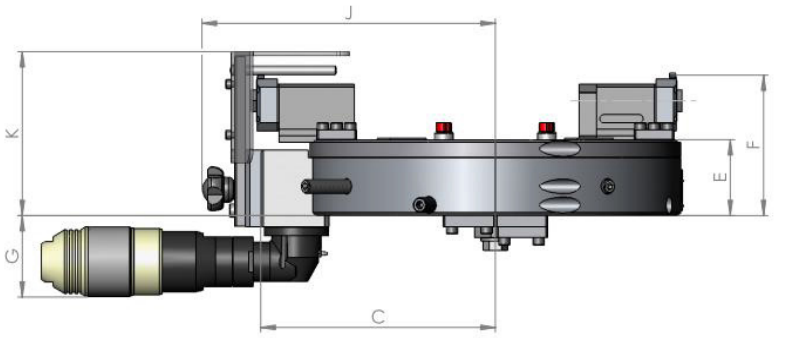
- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Splitframe Configuration

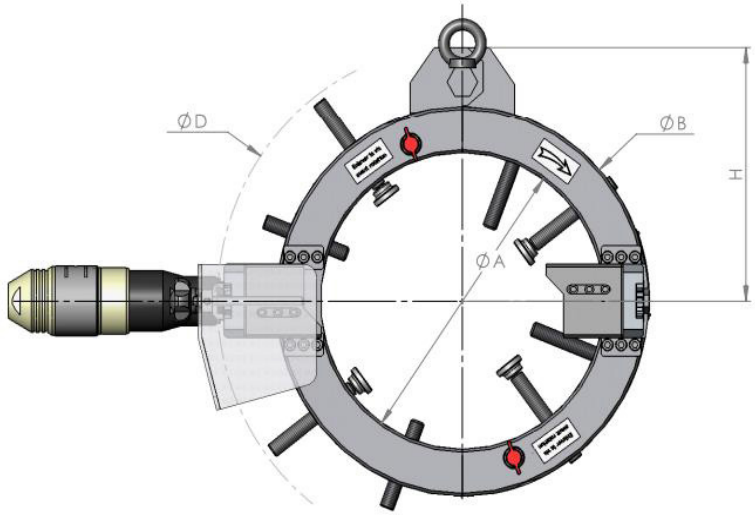
## Technical Features:

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

| TTNG-LW Series | Machining Capacities | |
|---|---|---|
| TTNG-LW 168 | 2.374“ - 6.625“ | 60.3 mm - 168.3 mm |
| TTNG-LW 219 | 4.5“ - 8.625“ | 114.3 mm - 219.1 mm |
| TTNG-LW 273 | 6.625“ - 10.751“ | 168.3 mm - 273.1 mm |
| TTNG-LW 323 | 8.625“ - 12.751“ | 219.1 mm - 323.9 mm |
| TTNG-LW 406 | 10.751“ - 16“ | 273.1 mm - 406.4 mm |
| TTNG-LW 508 | 12.751“ - 20“ | 323.9 mm - 508 mm |
| TTNG-LW 610 | 16“ - 24“ | 406.4 mm - 610 mm |

# TTNG-LW Series Splitframe Orbital Pipe Cutting & Beveling Machines




| Model TTNG-LW | ØA | ØB | C | ØD | E | F | G | H | J | K | Weight* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TTNG-LW 168** | 175 mm 6.889" | 311 mm 12.244" | 185.8 mm 7.314" | 471,32 mm 18,56" | 85.25 mm 3.356“ | 192.75 mm 7.588“ | 215.7 mm 8.492“ | 227.5 mm 8.956“ | 394 mm 15.511“ | 171 mm 6.73" | 22 kg 50 lbs |
| **TTNG-LW 219** | 229 mm 8.779“ | 365 mm 14.37“ | 211.9 mm 8.342“ | 522.04 mm 20.55" | 85.25 mm 3.356“ | 192.75 mm 7.588“ | 215.7 mm 8.492“ | 254.5 mm 10.019“ | 421 mm 16.574“ | 171 mm 6.73" | 25 kg 56 lbs |
| **TTNG-LW 273** | 283 mm 11.142“ | 419 mm 16.496“ | 238.8 mm 9.401“ | 578.23 mm 22.76" | 85.25 mm 3.356“ | 192.75 mm 7.588“ | 215.7 mm 8.492“ | 280 mm 11.023“ | 472.5 mm 18.602“ | 171 mm 6.73" | 28 kg 62 lbs |
| **TTNG-LW 323** | 331 mm 13.031“ | 467 mm 18.385“ | 262.8 mm 10.346“ | 626.71 mm 24.67" | 85.25 mm 3.356“ | 192.75 mm 7.588“ | 215.7 mm 8.492“ | 305.5 mm 12.027“ | 472 mm 18.582“ | 171 mm 6.73" | 31.4 kg 70 lbs |
| **TTNG-LW 406** | 415 mm 16.338“ | 551 mm 21.692“ | 304.7 mm 11.996“ | 711.54 mm 28.01" | 85.25 mm 3.356“ | 192.75 mm 7.588“ | 215.7 mm 8.492“ | 346.9 mm 13.657“ | 540 mm 21.259“ | 171 mm 6.73" | 36.6 kg 81 lbs |
| **TTNG-LW 508** | 517 mm 20.354“ | 653 mm 25.708“ | 355.6 mm 14“ | 812.21 mm 31.98" | 85.25 mm 3.356“ | 192.75 mm 7.588“ | 215.7 mm 8.492“ | 398.5 mm 15.688“ | 565 mm 22.244“ | 171 mm 6.73" | 42 kg 93 lbs |
| **TTNG-LW 610** | 619 mm 24.37“ | 755 mm 29.724“ | 406.5 mm 16.003“ | 915.17 mm 36.03" | 85.25 mm 3.356“ | 192.75 mm 7.588“ | 215.7 mm 8.492“ | 476.25 mm 18.75“ | 642 mm 25.275“ | 171 mm 6.73" | 50.5 kg 112 lbs |

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

# TTNG-LW168 Splitframe Orbital Pipe Cutting & Beveling Machine

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

| Order No. | Description |
|---|---|
| TTNG-LW168-1010 | Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with pneumatic drive |
| TTNG-LW168-1031 | Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with electric drive MS15, 220V |
| TTNG-LW168-1051 | Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with electric drive MS15, 110V. |
| TTNG-LW168-1070 | Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with single hydraulic drive and regulation valve. |
| TTNG-LW168-1072 | Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with single hydraulic drive. |
| TTNG-LW168-1090 | Orbital Pipe Cutting Machine PROTEM TTNG-LW168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with Brushless electric drive. |

OD Mounted

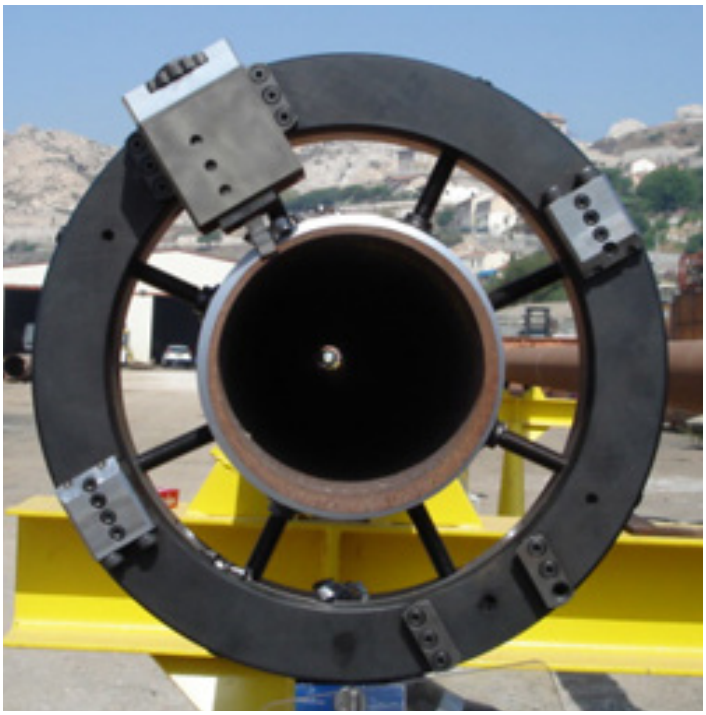
# TTNG-LW219 Splitframe Orbital Pipe Cutting & Beveling Machine

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

| Order No. | Description |
|---|---|
| TTNG-LW219-1010 | Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with pneumatic drive |
| TTNG-LW219-1031 | Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with electric drive MS15, 220V |
| TTNG-LW219-1051 | Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with electric drive MS15, 110V. |
| TTNG-LW219-1070 | Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with single hydraulic drive and regulation valve. |
| TTNG-LW219-1072 | Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with single hydraulic drive. |
| TTNG-LW219-1090 | Orbital Pipe Cutting Machine PROTEM TTNG-LW219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with Brushless electric drive. |

# TTNG-LW273 Splitframe Orbital Pipe Cutting & Beveling Machine

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



| Order No. | Description |
|---|---|
| TTNG-LW273-1010 | Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with pneumatic drive |
| TTNG-LW273-1031 | Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with electric drive MS15, 220V |
| TTNG-LW273-1051 | Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with electric drive MS15, 110V. |
| TTNG-LW273-1070 | Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with single hydraulic drive and regulation valve. |
| TTNG-LW273-1072 | Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with single hydraulic drive. |
| TTNG-LW273-1090 | Orbital Pipe Cutting Machine PROTEM TTNG-LW273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with Brushless electric drive. |

# TTNG-LW323 Splitframe Orbital Pipe Cutting & Beveling Machine

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

| Order No. | Description |
|---|---|
| TTNG-LW323-1010 | Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.625" - 12.751" (219.1mm - 323.9mm) with pneumatic drive |
| TTNG-LW323-1031 | Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.625" - 12.751" (219.1mm - 323.9mm) with electric drive MS15, 220V |
| TTNG-LW323-1051 | Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.625" - 12.751" (219.1mm - 323.9mm) with electric drive MS15, 110V. |
| TTNG-LW323-1070 | Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.625" - 12.751" (219.1mm - 323.9mm) with single hydraulic drive and regulation valve. |
| TTNG-LW323-1072 | Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.625" - 12.751" (219.1mm - 323.9mm) with single hydraulic drive. |
| TTNG-LW323-1090 | Orbital Pipe Cutting Machine PROTEM TTNG-LW323 for Ø 8.625" - 12.751" (219.1mm - 323.9mm) with Brushless electric drive. |

# TTNG-LW406 Splitframe Orbital Pipe Cutting & Beveling Machine

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

| Order No. | Description |
|---|---|
| TTNG-LW406-1010 | Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double pneumatic drive |
| TTNG-LW406-1031 | Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with electric drive MS15, 220V |
| TTNG-LW406-1051 | Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with electric drive MS15, 110V. |
| TTNG-LW406-1070 | Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double hydraulic drive and regulation valve. |
| TTNG-LW406-1072 | Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double hydraulic drive. |
| TTNG-LW406-1090 | Orbital Pipe Cutting Machine PROTEM TTNG-LW406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with Brushless electric drive. |

OD Mounted

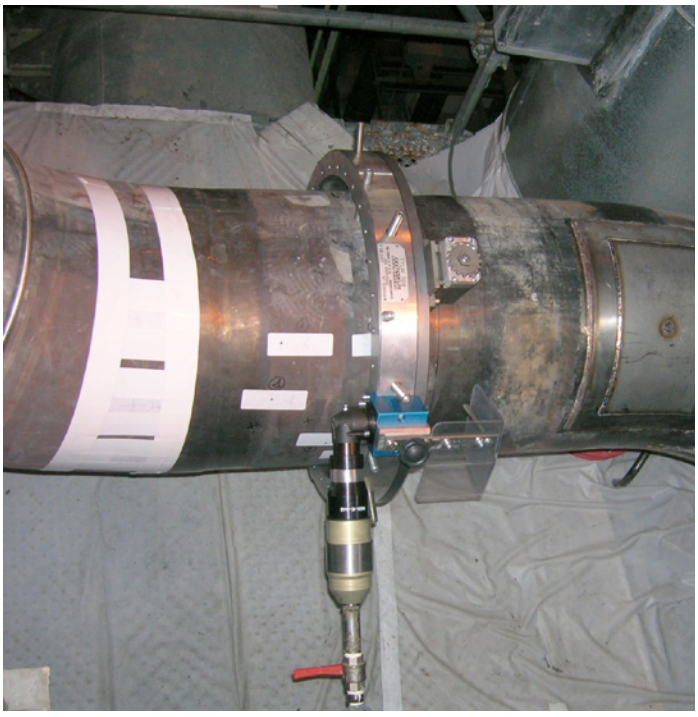
# TTNG-LW508 Splitframe Orbital Pipe Cutting & Beveling Machine

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

| Order No. | Description |
|---|---|
| TTNG-LW508-1010 | Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with double pneumatic drive |
| TTNG-LW508-1031 | Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with electric drive MS15, 220V |
| TTNG-LW508-1051 | Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with electric drive MS15, 110V. |
| TTNG-LW508-1070 | Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with double hydraulic drive and regulation valve. |
| TTNG-LW508-1072 | Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with double hydraulic drive. |
| TTNG-LW508-1090 | Orbital Pipe Cutting Machine PROTEM TTNG-LW508 for Ø 12.751" - 20" (323.9mm - 508mm) with Brushless electric drive. |

# TTNG-LW610 Splitframe Orbital Pipe Cutting & Beveling Machine

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



| Order No. | Description |
|---|---|
| TTNG-LW610-1010 | Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with double pneumatic drive |
| TTNG-LW610-1031 | Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with electric drive MS15, 220V |
| TTNG-LW610-1051 | Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with electric drive MS15, 110V. |
| TTNG-LW610-1070 | Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with double hydraulic drive and regulation valve. |
| TTNG-LW610-1072 | Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with double hydraulic drive. |
| TTNG-LW610-1090 | Orbital Pipe Cutting Machine PROTEM TTNG-LW610 for Ø 16" - 24" (406.4mm - 610mm) with Brushless electric drive. |



# TTNG-LW Orbital Cutting & Beveling Machines — Tool-Bits



| 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° |

# TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines

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# TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines

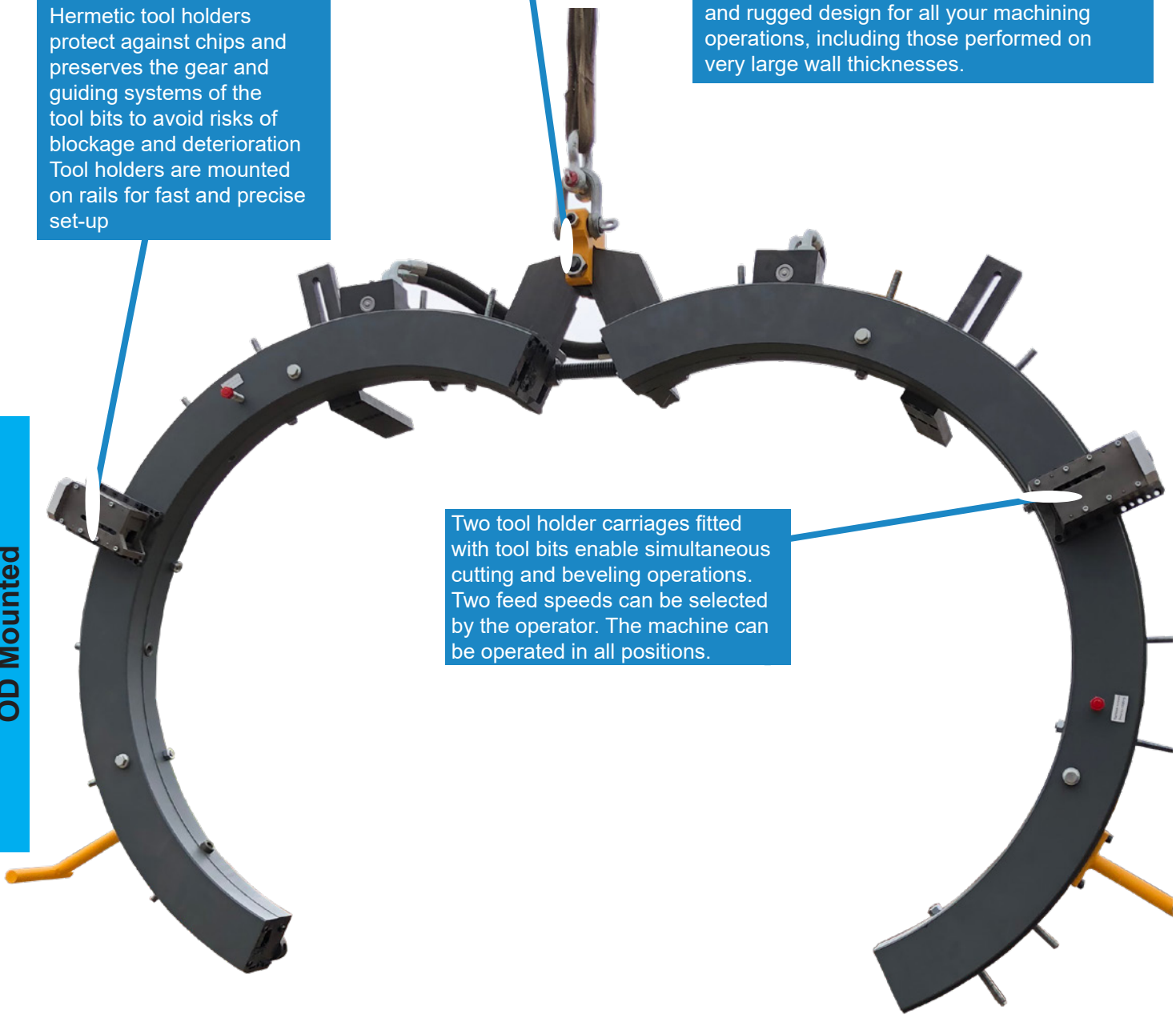
OD Mounted

Splitframe design for a use on existing tubular beams

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

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

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



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

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-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines

Standard Capacity: 60.3mm - 4267.2mm (2.374“ - 168“)

TTNG-HD are engineered to serve all industries where the weld quality is critical and projects must stay on schedule. TTNG-HD series machines are available in many configurations with standard or customised accessories and options. All the devices provided with the TTNG-HD series machines are built based on 50 years 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

| TTNG-HD Series | Machining Capacities | |
|---|---|---|
| TTNG-HD 168 | 2.374“ - 6.625“ | 60.3 mm - 168.3 mm |
| TTNG-HD 219 | 4.5“ - 8.625“ | 114.3 mm - 219.1 mm |
| TTNG-HD 273 | 6.625“ - 10.751“ | 168.3 mm - 273.1 mm |
| TTNG-HD 323 | 8.625“ - 12.751“ | 219.1 mm - 323.9 mm |
| TTNG-HD 406 | 10.751“ - 16“ | 273.1 mm - 406.4 mm |
| TTNG-HD 508 | 12.751“ - 20“ | 323.9 mm - 508 mm |
| TTNG-HD 610 | 16“ - 24“ | 406.4 mm - 610 mm |
| TTNG-HD 762 | 22“ - 30“ | 558.8 mm - 762 mm |
| TTNG-HD 900 | 26“ - 36“ | 660.4 mm - 914.4 mm |
| TTNG-HD 1016 | 32“ - 40“ | 812.8 mm - 1016 mm |
| TTNG-HD 1200 | 36“ - 48“ | 914.4 mm - 1219.2 mm |
| TTNG-HD 1400 | 44“ - 56“ | 1117.6 mm - 1422.4 mm |

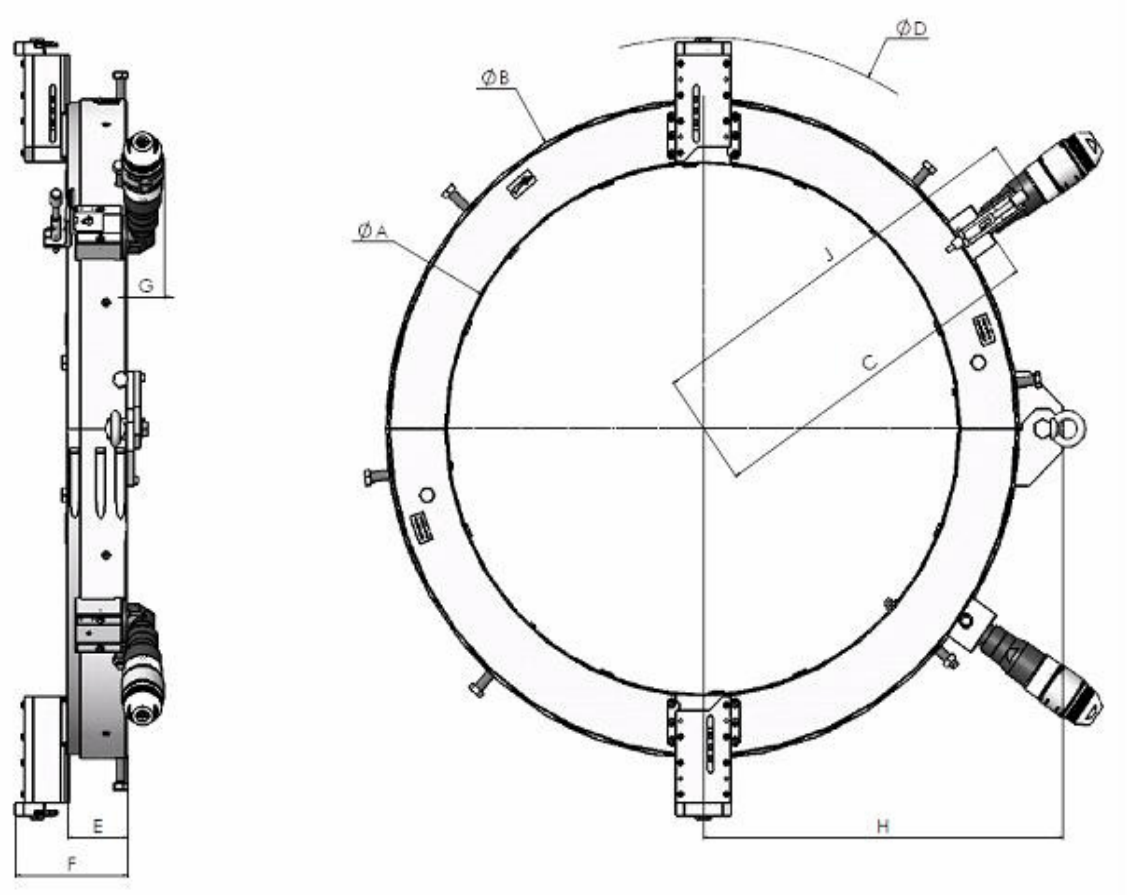


Tool carriages with covered spindles enable to ensure a  protection against chips. The main advantage of the TTNG-HD machines are: cut and bevel individually or simultaneously, Perfect Weld End Preparation suited for manual welding operations and for advanced orbital welding systems, V track and rollers: The V shape design compensates for axial and radial forces to ensure maximum precision and less wear. Aluminium body: Light weight and durable for limitless machining jobs!  Split frame design with hinge: Easier to set up on continuous or long length pipes. Fully enclosed tool-holder design: Protects the feed system from chips and prevents damage during machining.

Sliding tool-holders: Easier and faster to set up. Machine design permits cutting and beveling operation simultaneously, maximizes productivity! Large diameter machines delivered with two standard configuration motors allowing more power for highly demanding jobs, Cold cutting process, no heat affected zone, Dependability, Versatility, Durability, Rapidity, High Accuracy, Rigidity, Compact design, dimensions adapted for works in areas of tight clearances. For any material: mild, stainless steel, alloys, hastelloy, Inconel, duplex, super duplex, P91

# TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines

OD Mounted




| Model TTNG-HD | ØA | ØB | C | ØD | E | F | G | H | J | Weight* |
|---|---|---|---|---|---|---|---|---|---|---|
| **TTNG-HD 168** | 175mm 6.889" | 325mm 12.795" | 217mm 8.543" | 471.32 mm 18.56“ | 108.6 mm 4.252“ | 202.6 mm 7.952“ | 66 mm 2.598“ | 216 mm 8.504“ | 407 mm 16.024“ | 44 kg 97 lbs |
| **TTNG-HD 219** | 223 mm 8.779“ | 373 mm 14.685“ | 241 mm 9.488“ | 522.04 mm 20.55“ | 108.6 mm 4.252“ | 202.6 mm 7.952“ | 66 mm 2.598“ | 240 mm 9.449“ | 431 mm 16.968“ | 51 kg 113 lbs |
| **TTNG-HD 273** | 283 mm 11.142“ | 433 mm 17.047“ | 271 mm 10.669“ | 575.97 mm 22.68“ | 108.6 mm 4.252“ | 202.6 mm 7.952“ | 66 mm 2.598“ | 270 mm 10.629“ | 462 mm 18.189“ | 56 kg 124 lbs |
| **TTNG-HD 323** | 331 mm 13.031“ | 481 mm 18.937“ | 295 mm 11.614“ | 626.71 mm 24.67“ | 108.6 mm 4.252“ | 202.6 mm 7.952“ | 66 mm 2.598“ | 294 mm 11.574“ | 486 mm 19.134“ | 60 kg 133 lbs |
| **TTNG-HD 406** | 415 mm 16.338“ | 565 mm 22.244“ | 337 mm 13.267“ | 709.14 mm 27.92“ | 108.6 mm 4.252“ | 202.6 mm 7.953“ | 66 mm 2.598“ | 336 mm 13.228“ | 521 mm 20.512“ | 74 kg 163 lbs |
| **TTNG-HD 508** | 517 mm 20.354“ | 667 mm 26.259“ | 388 mm 15.275“ | 810.67 mm 31.92“ | 108.6 mm 4.252“ | 202.6 mm 7.953“ | 66 mm 2.598“ | 387 mm 15.236“ | 572 mm 22.519“ | 86 kg 190 lbs |
| **TTNG-HD 610** | 619 mm 24.370“ | 788 mm 31.023“ | 449 mm 17.677“ | 1043.57 mm 41.09“ | 108.6 mm 4.252“ | 202.6 mm 7.953“ | 66 mm 2.598“ | 473.5 mm 18.622“ | 624 mm 24.566“ | 96 kg 212 lbs |
| **TTNG-HD 762** | 775 mm 30.512“ | 944 mm 37.165“ | 526 mm 20.708“ | 1200 mm 47.244“ | 108.6 mm 4.252“ | 202.6 mm 7.953“ | 66 mm 2.598“ | 551.5 mm 21.692“ | 776 mm 30.551“ | 123 kg 272 lbs |
| **TTNG-HD 900** | 962 mm 36.457“ | 1146 mm 45.118“ | 662 mm 24.488“ | 1354 mm 53.307“ | 108.6 mm 4.252“ | 202.6 mm 7.953“ | 66 mm 2.598“ | 652.5 mm 25.669“ | 854 mm 33.622“ | 196 kg 433 lbs |
| **TTNG-HD 1016** | 1040 mm 40.945“ | 1260 mm 49.606“ | 684 mm 26.929“ | 1458 mm 57.401“ | 108.6 mm 4.252“ | 202.6 mm 7.953“ | 66 mm 2.598“ | 709.5 mm 27.913“ | 906 mm 35.669“ | 355 kg 783 lbs |
| **TTNG-HD 1200** | 1262 mm 49.685“ | 1540 mm 60.629“ | 826 mm 32.519“ | 1676 mm 65.984“ | 120.6 mm 4.724“ | 228 mm 8.976“ | 128 mm 5.039“ | 875 mm 34.448“ | 1015 mm 39.960“ | 650 kg 1433 lbs |
| **TTNG-HD 1400** | 1460 mm 57.480“ | 1730 mm 68.110“ | 910 mm 35.827“ | 1874 mm 73.779“ | 118.1 mm 4.645“ | 213 mm 8.385“ | 170 mm 6.693“ | 945 mm 37.204“ | 1114 mm 43.858“ | 730 kg 1610 lbs |

**Larger capacities up to 168" on request**

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

# TTNG-HD Series Splitframe Orbital Pipe Cutting & Beveling Machines

## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X, J-bevel, other on request |
| ***Clamping*** | Manual |
| ***Feed stroke*** | 98 mm (3.858“) |
| ***Cutting head gear drive***<br><br>***TTNG-HD168-TTNG-HD323 1 pneumatic drive*** | 174 rpm.<br>Approximate rotation speed according to air pressure and air flow<br><br>1.47 kW, 6 bar (87 psi), 1800 l/min (63 cfm) |
| ***TTNG-HD406-TTNG-HD900 2 pneumatic drives*** | 1.47 kW, 6 bar (87 psi), 3600 l/min (128 cfm) |
| ***TTNG-HD1016 hydraulic drive*** | 0 - 5.7 rpm (speed to be adjusted according to the diameter, the thickness and the material of the pipe to be machined) |
| ***TTNG-HD1200 hydraulic drive*** | 0.4 - 6 rpm (speed to be adjusted according to the diameter, the thickness and the material of the pipe to be machined) |
| ***TTNG-HD1400 hydraulic drive*** | 0.5 - 5.2 rpm (speed to be adjusted according to the diameter, the thickness and the material of the pipe to be machined) |
| ***Electric drive*** | 110V, 240V and 380V |
| ***Pneumatically driven machines have to be used with a lubricating filter. Recommended option: regulation valve.*** | |



OD Mounted

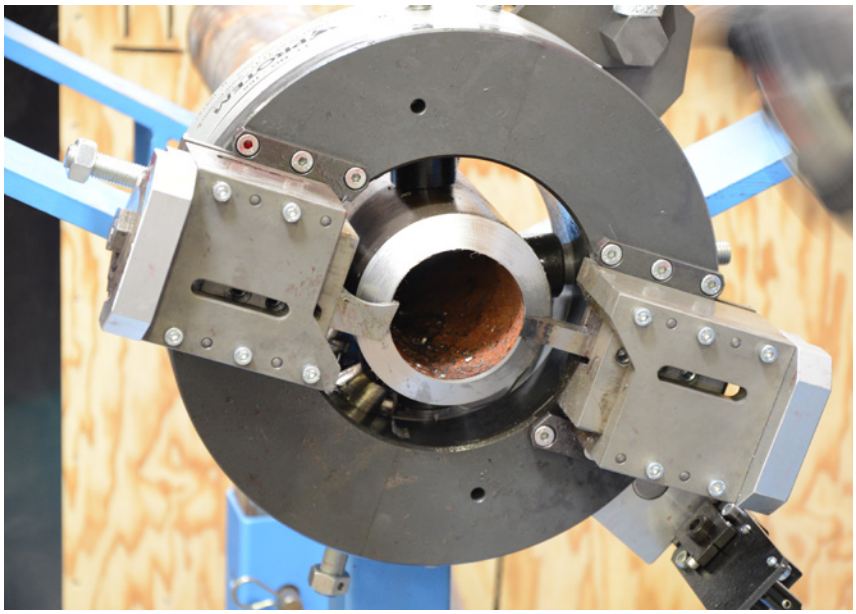
Several options available: Enveloping jaws can be optionally proposed, they are designed to clamp the machine onto even the thinnest tubes without any distortion. Remote control available on request for works in hazardous areas (under water, explosive areas, areas submitted to ionizing radiations etc)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

The OD tracker ensures consistent machining, regardless of the tube’s ovality. Its roller follows the tube’s OD profile and adjusts the position of the tool-holder. Radial Copying carriage.Copying carriage allows the user to machine any geometry of bevel thanks to a cam-following system. This technology of single point machining is particularly suited for heavy wall machining. Axial copying carriage. Performs special shape machining on the inner or outer diameter 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.

# TTNG-HD168 Splitframe Orbital Pipe Cutting & Beveling Machine

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

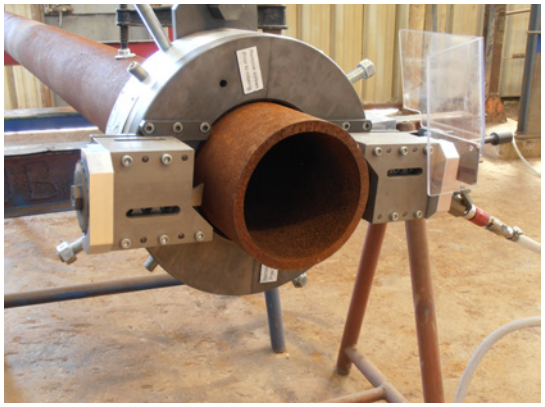


OD Mounted

| Order No. | Description |
|---|---|
| TTNG-HD168-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with single pneumatic drive |
| TTNG-HD168-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with single pneumatic drive and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD168-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with angle electric drive 230V - ME25 |
| TTNG-HD168-1022 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with angle electric drive MS15 - 230V |

| Order No. | Description |
|---|---|
| TTNG-HD168-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with 1 hydraulic Motor and reversing valve |
| TTNG-HD168-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with 1 hydraulic Motor |
| TTNG-HD168-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with hydraulic drive (1 Motor) and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD168-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD168 for Ø 2.374" - 6.625" (60.3mm - 168.3mm) with Brushless electric drive. 3 Phase |

## TTNG-HD168 On-Site or in Workshop:



# TTNG-HD219 Splitframe Orbital Pipe Cutting & Beveling Machine

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

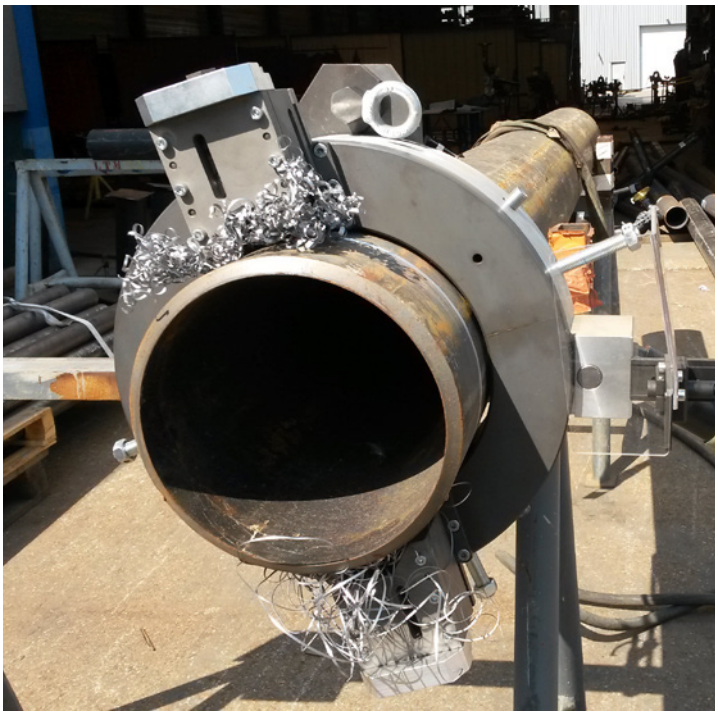


| Order No. | Description |
|---|---|
| TTNG-HD219-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with single pneumatic drive |
| TTNG-HD219-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with single pneumatic drive and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD219-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with angle electric drive 230V - ME25 |
| TTNG-HD219-1022 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with angle electric drive MS15 - 230V |
| TTNG-HD219-1040 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with 110V electric drive |

| Order No. | Description |
|---|---|
| TTNG-HD219-1050 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with angled drive 110 V MS15 |
| TTNG-HD219-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with 1 hydraulic Motor and reversing valve |
| TTNG-HD219-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with 1 hydraulic Motor |
| TTNG-HD219-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with hydraulic drive (1 Motor) and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD219-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD219 for Ø 4.5" - 8.625" (114.3mm - 219.1mm) with 1 Brushless electric drive. 3 Phase |

# TTNG-HD273 Splitframe Orbital Pipe Cutting & Beveling Machine

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



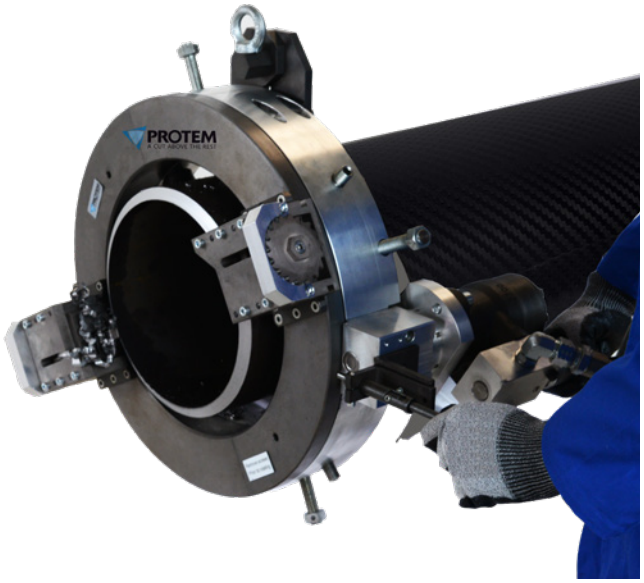
OD Mounted

| Order No. | Description |
|---|---|
| TTNG-HD273-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with single pneumatic drive |
| TTNG-HD273-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with single pneumatic drive and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD273-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with angle electric drive 230V - ME25 |
| TTNG-HD273-1022 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with angle electric drive MS15 - 230V |
| TTNG-HD273-1040 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with 110V electric drive |

| Order No. | Description |
|---|---|
| TTNG-HD273-1050 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with angled drive 110 V MS15 |
| TTNG-HD273-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with 1 hydraulic Motor and reversing valve |
| TTNG-HD273-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with 1 hydraulic Motor |
| TTNG-HD273-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with hydraulic drive (1 Motor) and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD273-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD273 for Ø 6.625" - 10.751" (168.3mm - 273.1mm) with 1 Brushless electric drive. 3 Phase |

# TTNG-HD323 Splitframe Orbital Pipe Cutting & Beveling Machine

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

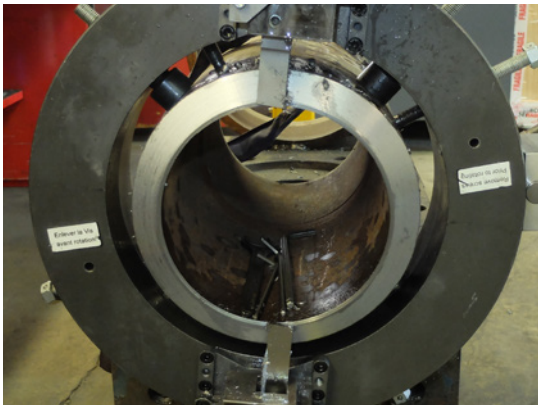


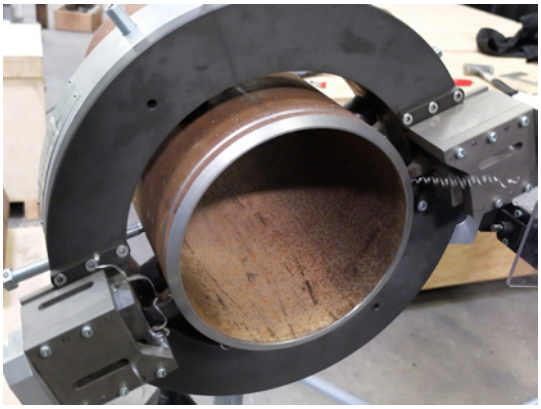

| Order No. | Description |
|---|---|
| TTNG-HD323-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with single pneumatic drive |
| TTNG-HD323-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with single pneumatic drive and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD323-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with angle electric drive 230V - ME25 |
| TTNG-HD323-1022 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with angle electric drive MS15 - 230V |
| TTNG-HD323-1040 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with 110V electric drive |

| Order No. | Description |
|---|---|
| TTNG-HD323-1050 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with angled drive 110 V MS15 |
| TTNG-HD323-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with 1 hydraulic Motor and reversing valve |
| TTNG-HD323-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with 1 hydraulic Motor |
| TTNG-HD323-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with hydraulic drive (1 Motor) and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD323-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD323 for Ø 8.625" - 12.751"(219.1mm - 323.9mm) with 1 Brushless electric drive. 3 Phase |



## TTNG-HD323 On-Site or in Workshop:





# TTNG-HD406 Splitframe Orbital Pipe Cutting & Beveling Machine

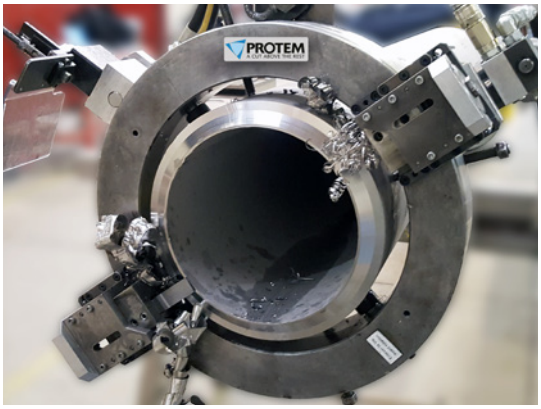
Standard Capacity: 273.1mm - 406.4mm (10.751“ - 16“)

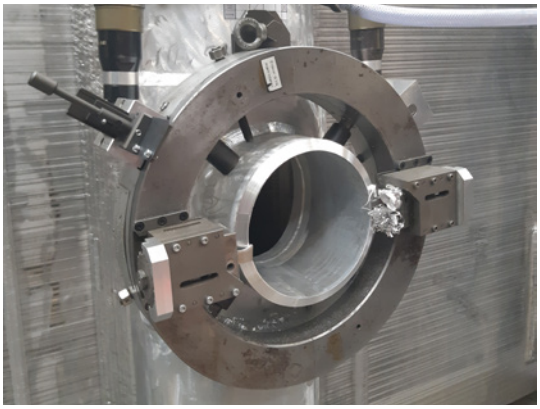
OD Mounted

| Order No. | Description |
|---|---|
| TTNG-HD406-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 pneumatic drives |
| TTNG-HD406-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with double pneumatic drive (2 pneumatic drives) and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD406-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with angle electric drive 230V - ME25 |

| Order No. | Description |
|---|---|
| TTNG-HD406-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives and reversing valve |
| TTNG-HD406-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives |
| TTNG-HD406-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 2 hydraulic drives and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD406-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD406 for Ø 10.751" - 16" (273.1mm - 406.4mm) with 1 Brushless electric drive. 3 Phase |

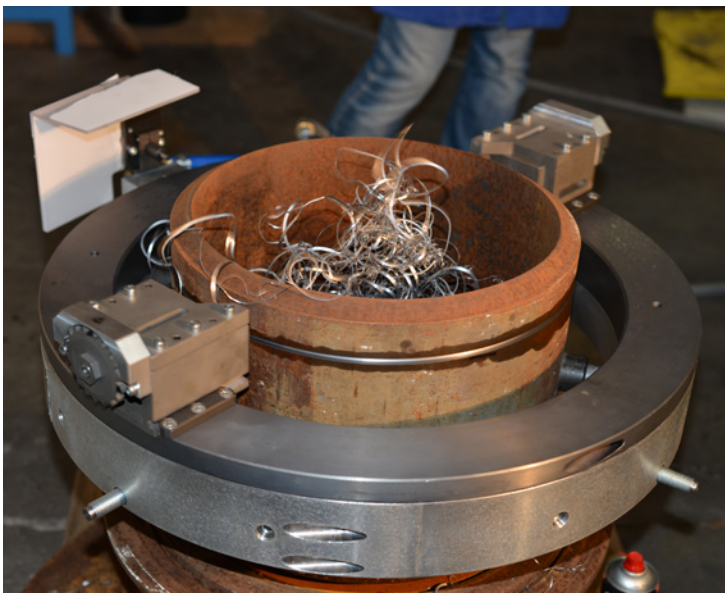
## TTNG-HD406 On-Site or in Workshop:



# TTNG-HD508 Splitframe Orbital Pipe Cutting & Beveling Machine

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

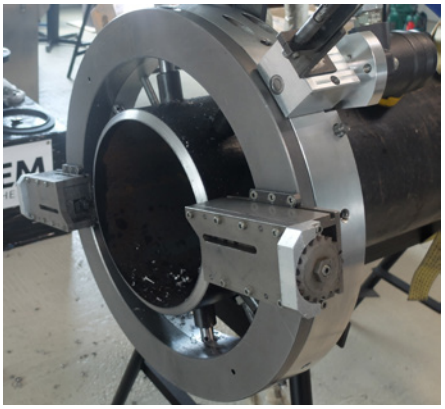


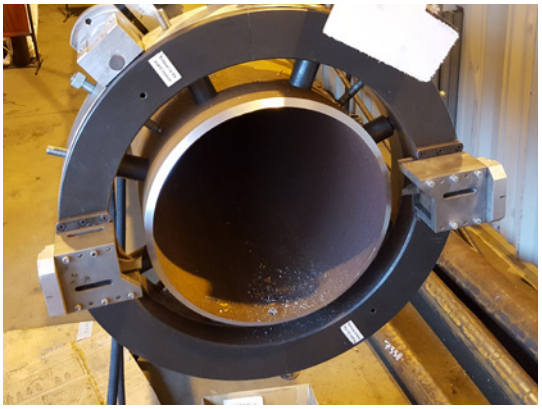
| Order No. | Description |
|---|---|
| TTNG-HD508-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 pneumatic drives |
| TTNG-HD508-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 pneumatic drives and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD508-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with angle electric drive 230V - ME25 |

| Order No. | Description |
|---|---|
| TTNG-HD508-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 hydraulic drives and reversing valve |
| TTNG-HD508-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 hydraulic drives |
| TTNG-HD508-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 2 hydraulic drives and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD508-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD508 for Ø 12.751" - 20" (323.9mm - 508mm) with 1 Brushless electric drive. 3 Phase |



## TTNG-HD508 On-Site or in Workshop:





# TTNG-HD610 Splitframe Orbital Pipe Cutting & Beveling Machine

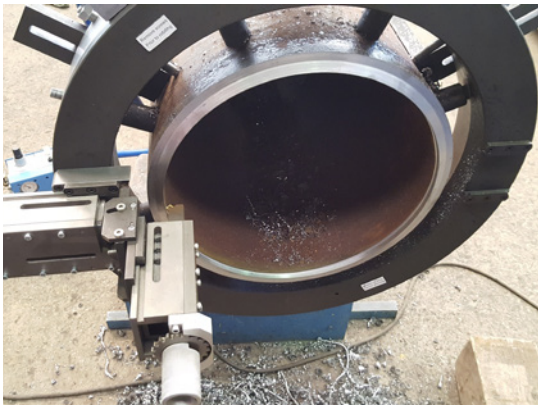
Standard Capacity: 406.4mm - 610mm (16“ - 24“)


OD Mounted

| Order No. | Description |
|---|---|
| TTNG-HD610-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 2 pneumatic drives |
| TTNG-HD610-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 2 pneumatic drives and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD610-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with angle electric drive 230V - ME25 |

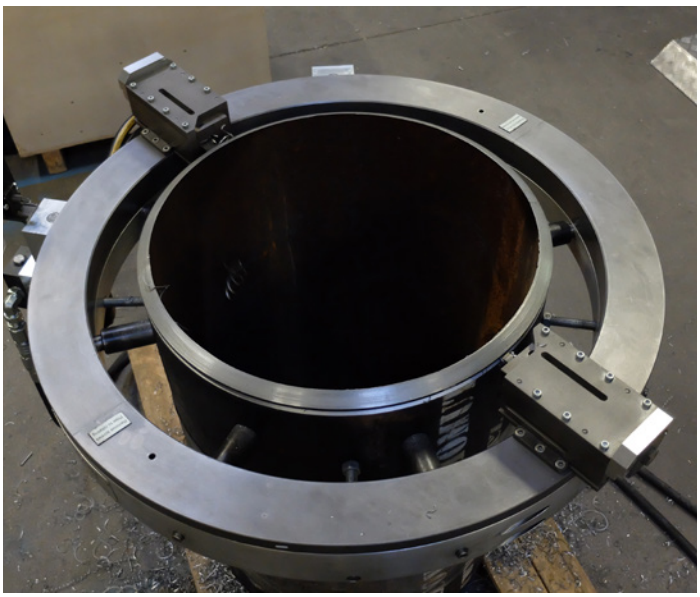
| Order No. | Description |
|---|---|
| TTNG-HD610-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 2 hydraulic drives and reversing valve |
| TTNG-HD610-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 2 hydraulic drives |
| TTNG-HD610-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 2 hydraulic drives and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD610-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD610 for Ø 16" - 24" (406.4mm - 610mm) with 1 Brushless electric drive. 3 Phase |

## TTNG-HD610 On-Site or in Workshop:



# TTNG-HD762 Splitframe Orbital Pipe Cutting & Beveling Machine

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



| Order No. | Description |
|---|---|
| TTNG-HD762-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 2 pneumatic drives |
| TTNG-HD762-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 2 pneumatic drives and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD762-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with angle electric drive 230V - ME25 |

| Order No. | Description |
|---|---|
| TTNG-HD762-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 2 hydraulic drives and reversing valve |
| TTNG-HD762-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 2 hydraulic drives |
| TTNG-HD762-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 2 hydraulic drives and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD762-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD762 for Ø 22" - 30" (558.8mm - 762mm) with 1 Brushless electric drive. 3 Phase |



## TTNG-HD762 On-Site or in Workshop:

# TTNG-HD900 Splitframe Orbital Pipe Cutting & Beveling Machine

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

OD Mounted

| Order No. | Description |
|---|---|
| TTNG-HD900-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 pneumatic drives |
| TTNG-HD900-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 pneumatic drives and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD900-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 hydraulic drives and reversing valve |

| Order No. | Description |
|---|---|
| TTNG-HD900-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 hydraulic drives |
| TTNG-HD900-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 2 hydraulic drives and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD900-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD900 for Ø 26" - 36" (660.4mm - 914.4mm) with 1 Brushless electric drive. 3 Phase |

## TTNG-HD900 On-Site or in Workshop:

# TTNG-HD1016 Splitframe Orbital Pipe Cutting & Beveling Machine

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



| Order No. | Description |
|---|---|
| TTNG-HD1016-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 pneumatic drives |
| TTNG-HD1016-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 pneumatic drives and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD1016-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 hydraulic drives and reversing valve |

| Order No. | Description |
|---|---|
| TTNG-HD1016-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 hydraulic drives |
| TTNG-HD1016-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 2 hydraulic drives and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD1016-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1016 for Ø 32" - 40" (812.8mm - 1016mm) with 1 Brushless electric drive. 3 Phase |

# TTNG-HD1200 Splitframe Orbital Pipe Cutting & Beveling Machine

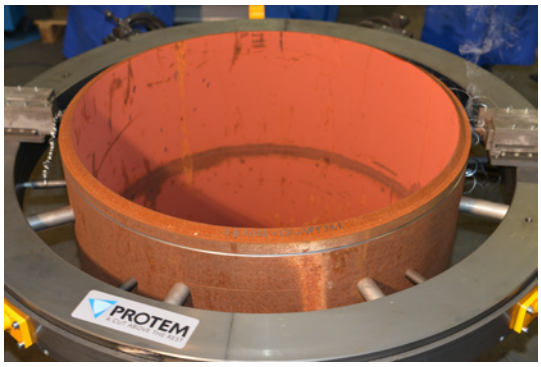
Standard Capacity: 914.4mm - 1219.2mm (36“ - 48“)

OD Mounted

| Order No. | Description |
|---|---|
| TTNG-HD1200-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 pneumatic drives |
| TTNG-HD1200-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 pneumatic drives and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD1200-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 hydraulic drives and reversing valve |

| Order No. | Description |
|---|---|
| TTNG-HD1200-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 hydraulic drives |
| TTNG-HD1200-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 2 hydraulic drives and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD1200-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1200 for Ø 36" - 48" (914.4mm - 1219.2mm) with 1 Brushless electric drive. 3 Phase |

## TTNG-HD1200 On-Site or in Workshop:



# TTNG-HD1400 Splitframe Orbital Pipe Cutting & Beveling Machine

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

| Order No. | Description |
|---|---|
| TTNG-HD1400-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 pneumatic drives |
| TTNG-HD1400-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 pneumatic drives and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD1400-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 hydraulic drives and reversing valve |

| Order No. | Description |
|---|---|
| TTNG-HD1400-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 hydraulic drives |
| TTNG-HD1400-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 2 hydraulic drives and reversing valve and options TTNG-HD-3100 (Extension Kit), TTNG-HD-3700 (hinge) and TTNG-HD-3600 (squares) |
| TTNG-HD1400-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-HD1400 for Ø 44" - 56" (1117.6mm - 1422.4mm) with 1 Brushless electric drive. 3 Phase |



## TTNG-HD1400 On-Site or in Workshop:

# TTNG-AF Splitframe Orbital Pipe Cutting & Beveling Machine

## Cutting of Pipe Sections

TTNG-AF have especially been engineered for applications in the field of Oil & Gas Industry. They allow to cut a section of pipe where the weld joint shows defects. The machine allows to cut or to cut and bevel a section of pipe. This section can then be reused. TTNG-AF series machines are designed to meet the requirements of the Oil & Gas Industry in term of repeatable machining quality, reliability and rigidity. All the devices provided with the TTNG-AF series machines are built based on 50 years knowledge and expertise of PROTEM to provide enhanced performance and job specific solutions. They are built to cut and bevel tubes up to 100mm (3.937") thick (larger upon request) on the field or in workshops.

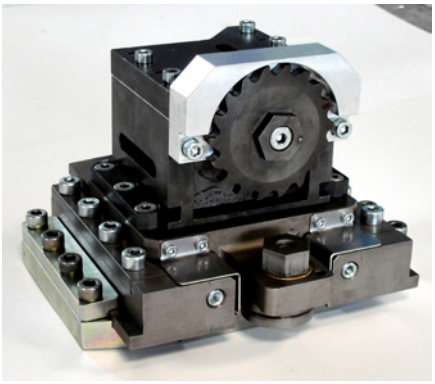
| Order No. | Description |
|---|---|
| TTNG-AF-1000 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-AF for Ø 2.374" - 168" (60.3mm - 4267.2mm) with 2 pneumatic drives |
| TTNG-AF-1002 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-AF for Ø 2.374" - 168" (60.3mm - 4267.2mm) with 2 pneumatic drives and options TTNG-AF-3100 (Extension Kit), TTNG-AF-3700 (hinge) and TTNG-AF-3600 (squares) |
| TTNG-AF-1020 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-AF for Ø 2.374" - 168" (60.3mm - 4267.2mm) with angle electric drive 230V - ME25 |

| Order No. | Description |
|---|---|
| TTNG-AF-1060 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-AF for Ø 2.374" - 168" (60.3mm - 4267.2mm) with 2 hydraulic drives and reversing valve |
| TTNG-AF-1062 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-AF for Ø 2.374" - 168" (60.3mm - 4267.2mm) with 2 hydraulic drives |
| TTNG-AF-1064 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-AF for Ø 2.374" - 168" (60.3mm - 4267.2mm) with 2 hydraulic drives and reversing valve and options TTNG-AF-3100 (Extension Kit), TTNG-AF-3700 (hinge) and TTNG-AF-3600 (squares) |
| TTNG-AF-1080 | Splitframe - Orbital Pipe Cutting Machine PROTEM TTNG-AF for Ø 2.374" - 168" (60.3mm - 4267.2mm) with 1 Brushless electric drive. 3 Phase |



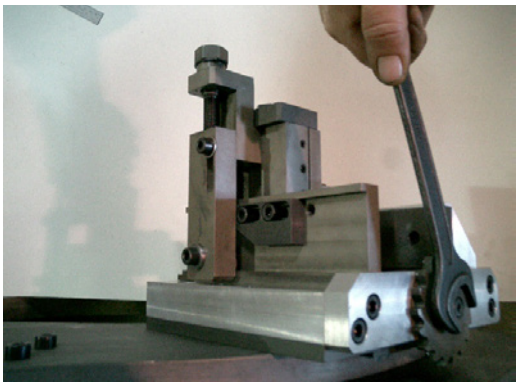

## TTNG-HD OD Tracker:

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



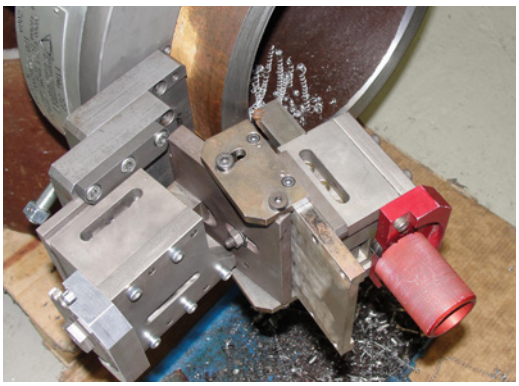
## TTNG-HD Copying Carriage:

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



## TTNG-HD Counterboring Carriage:

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

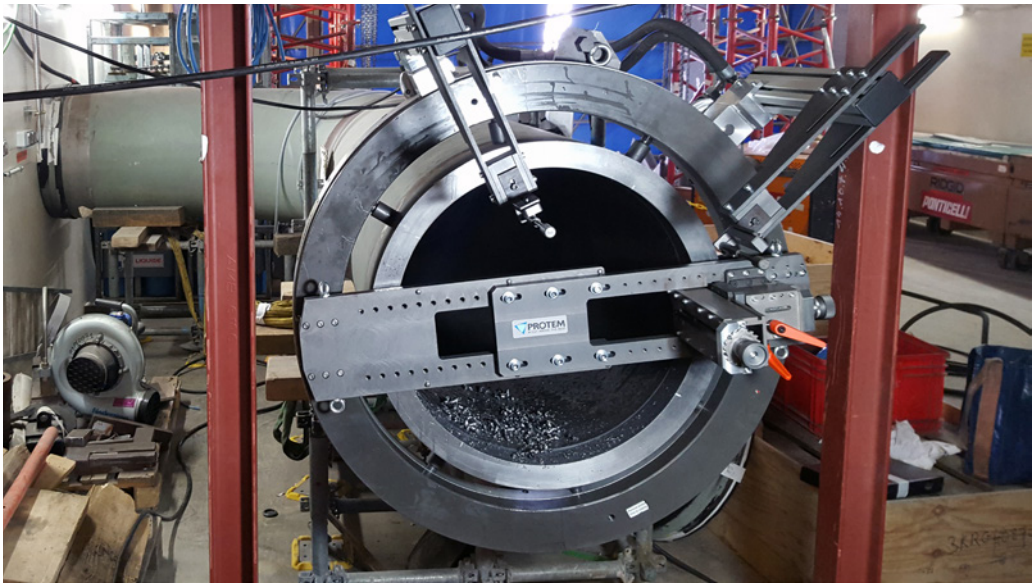


OD Mounted

## TTNG-HD Further Options:

| Order No. | Description |
|---|---|
| TTNG-HD-3600 | Adjustment bracket for TTNG-HD168, TTNG-HD219, TT-NG-HD273, TTNG-HD323, TTNG-HD406 price per set of 2 units |
| TTNG-HD-3602 | Adjustment bracket for TTNG-HD508, TTNG-HD610, TT-NG-HD762, TTNG-HD900, TTNG-HD1016 price per set of 2 units |
| TTNG-HD-3604 | Adjustment bracket for TTNG-HD1200, TTNG-HD1400, price per set of 2 units |
| TTNG-HD-3700 | Opening assisted device for TTNG-HD168, TTNG-HD219, TT-NG-HD273, TTNG-HD323, TTNG-HD406, TTNG-HD508 |
| TTNG-HD-3702 | Opening assisted device for TTNG-HD610, TTNG-HD762,TT-NG-HD1016 |
| TTNG-HD-3704 | Opening assisted device for TTNG-HD900 |
| TTNG-HD-3708 | Opening assisted device for TTNG-HD1200 |
| TTNG-HD-4100 | Carriage with clutch feed for machining of grooves (eg for vitolic joints) |

# TTNG-HD Pipe Cutting & Beveling Machines — Deep Counterboring

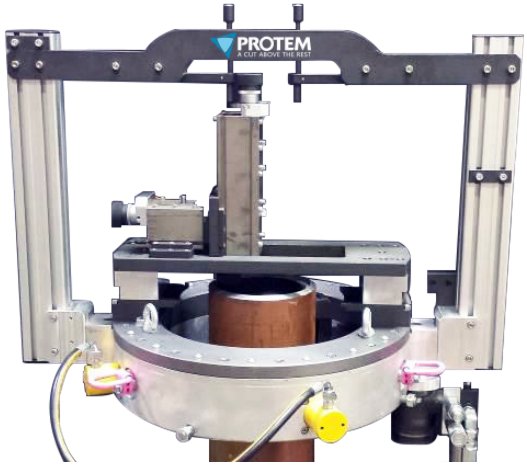


When heavy counterboring lengths are imposed, they are often associated to tight tolerances that are similar to boring operations. Protem has developed some solutions for the TT-NG-HD orbital cutting machines, so as to meet the requests of the most demanding users.

Two examples of applications are shown below: The first is more « classic » with a simpler design, the second one performs more difficult shapes and its design is more compact.

## TTNG-HD: System with extended counterboring/boring carriage

OD Mounted




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-HD: System with an automatic boring bar through copying

This system is a variation of the copying carriage for heavy wall. It is designed to perform boring operations. The tool holder carriage follows a cam that was machined according to the profile of the required boring. A cam is necessary for each boring configuration. The machining is performed by straight turning with an insert.

The entire system offers a holder beam, a copying device and incrementation with right angle for the use of a finger side clutch. This system, with reduced dimensions, machines difficult boring profiles without manual intervention (angle adjustment or others).

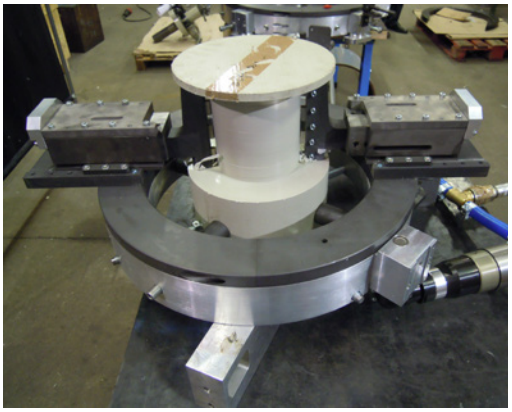
## For TTNG-HD and US machines

PROTEM US with coating removal option

The PROTEM TTNG-HD Cold Cutting and Beveling Machines and the US ID Clamping Beveling Machines can be equipped with optional accessories capable of machining the plastic coating of pipe, up to 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.





PROTEM TTNG-HD Orbital cutting machine with coating removal option

# TTNG-HD Pipe Cutting & Beveling Machines — Brushless Motor

## For TTNG-HD and US machines


Protem US beveling machine with Brushless Motor

Protem has implemented the brushless motor technology on their US (portable beveling machines) and TT machines (orbital pipe cutting & beveling machines). The brushless motors offer numerous advantages. Compared to classical DC motors, the brushless motors are light and compact. It is a significant benefit for machines mainly used on-site and very often in harsh environments. The lifetime of these motors is approximately four times longer than DC motors.

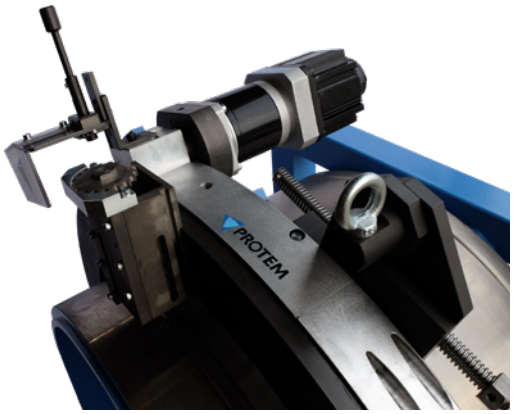
Any issues related to friction with the brushes have been rectified. The mechanical wear is almost non-existent. Consequently, the reliability of the equipment is greatly improved. The electrical efficiency is higher than what a DC motor is able to provide. Moreover, the thermal heating of a brushless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

The speed adjustment is far smoother and the torque stays constant during the use of the motor (no modification is needed for the input voltage) Lastly, the brushless motor is not vibrating, and the low noise level of the running motor guarantees a positive ergonomic experience for the operators using the equipment.

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 |
|---|---|
| TTNG-HD168-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD219-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD273-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD323-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD406-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD508-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD610-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD762-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD900-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD1016-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD1200-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |
| TTNG-HD1400-1080 | Cutting and Beveling Machine with Electric motorisation Brushless, 220V |

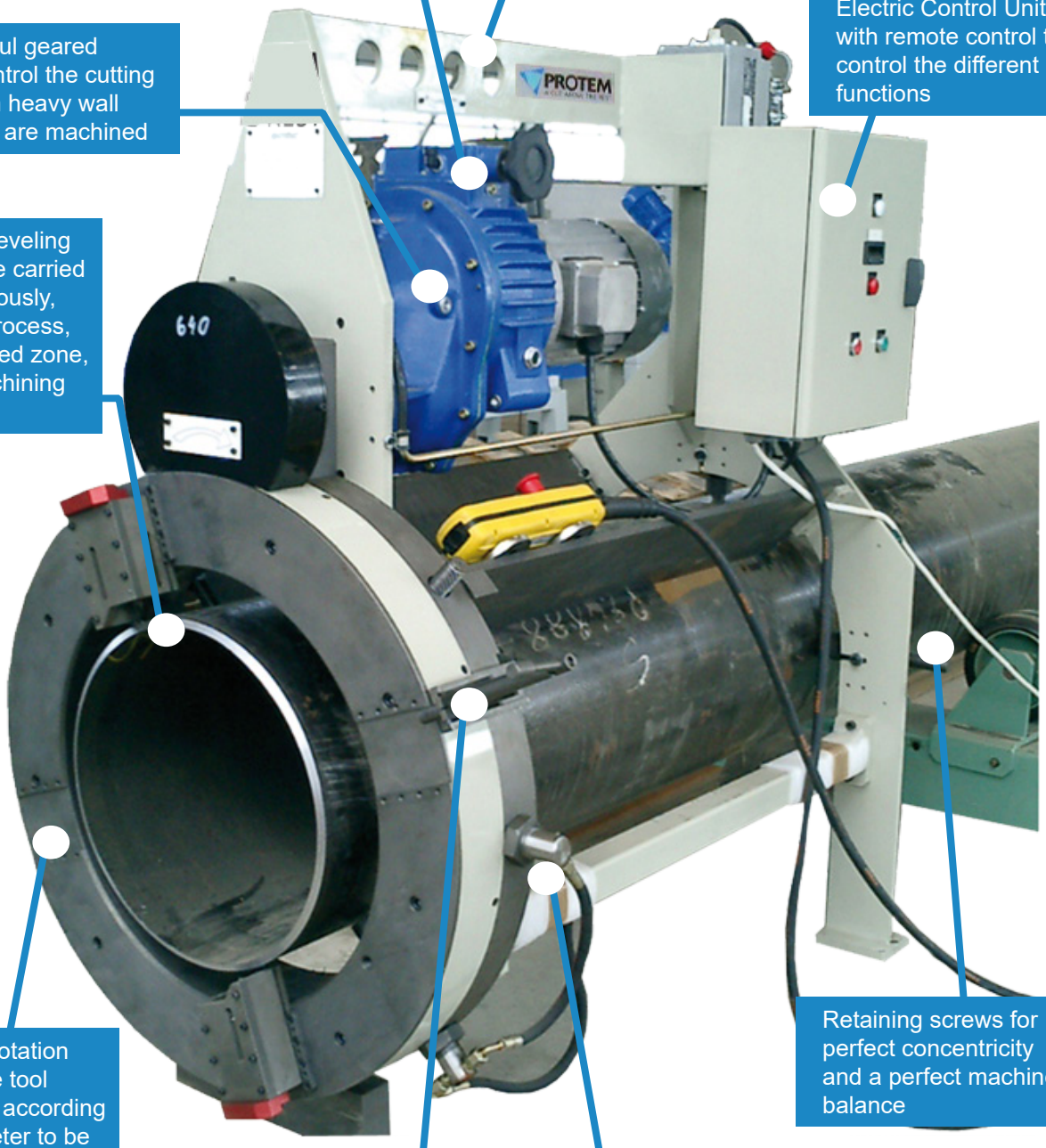

Protem TTNG-HD orbital cutting machine with Brushless Motor

| 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° |

# TNO Series OD Mount Pipe Cutting & Beveling Machines

OD Mounted




An integrated hydraulic power unit with high pressure operates the clamping jacks

Rugged design and easy transport of the machine for integration of the machine into a production line

Electric Control Unit with remote control to control the different functions

Very powerful geared motor to control the cutting forces when heavy wall thicknesses are machined

Cutting and beveling operations are carried out simultaneously, cold cutting process, no heat affected zone, very high machining precision

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

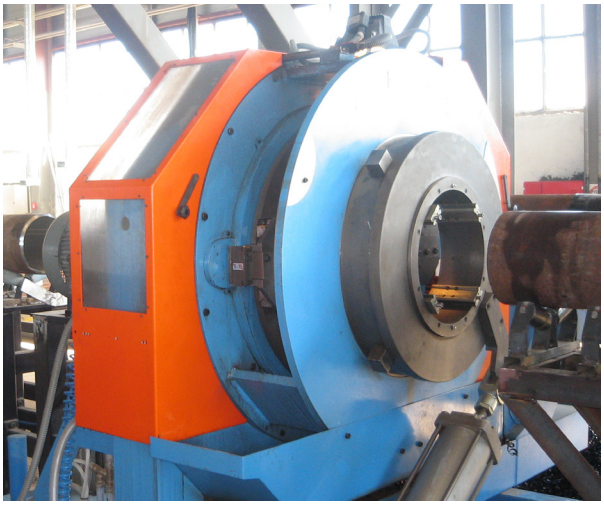
Automatic and adjustable feed between two speeds due to the mechanical incrementation

Concentric hydraulic external clamping that is automated

Retaining screws for perfect concentricity and a perfect machine balance

# TNO Series OD Mount Pipe Cutting & Beveling Machines

Standard Capacity: 114.3 mm - 1828.8 mm (4.5“ - 72“)



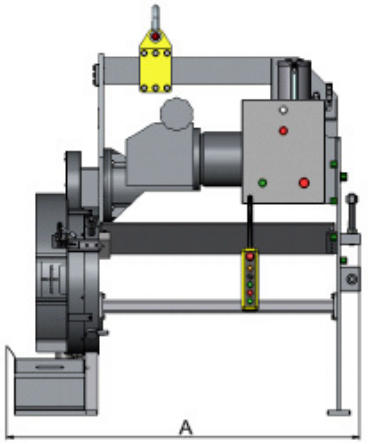
The TNO are high speed cutting and beveling machines, specially designed to fit your piping or tubing prefab applications on-site or in workshops. These machines cut and bevel heavy wall pipes faster than any other machine!
The TNO machines save space in your workshops and can be integrated into your production lines for unmatched results.
They save man hours by avoiding grinding operations, flame cutting, difficult handling and the setting of pipes on a lathe.
They are transportable, rigid, fast and accurate.
The TNO machines are electrically driven and equipped with a hydraulic power unit for the automatic clamping system.
Clamping screws located on the front and on the rear of the machine adjust the concentricity and allow a perfect alignment and a perfect squaring.
The TNO are OD clamping orbital cutting and beveling machines. The cutting tools rotate around the tube.
The automatic incremental feed system controls the two tool carriages with two feed speeds.
The rotation speed of the tool holder plate is adjustable according to the tube Ø.

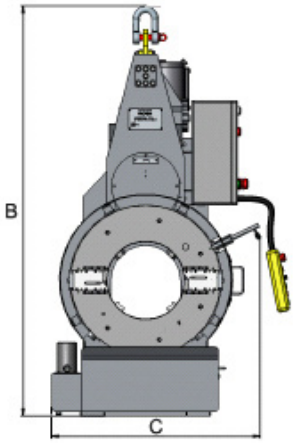
SPECIFIC WELD PREPARATIONS ON REQUEST

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

## Advantages:

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

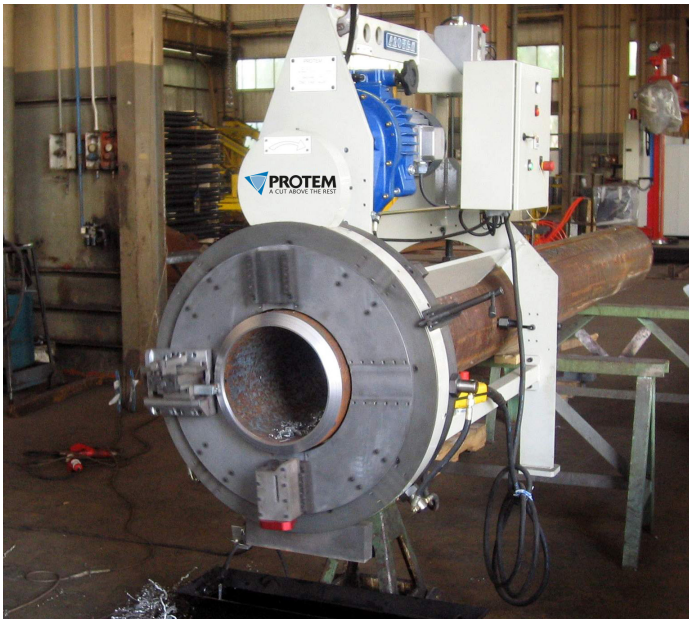


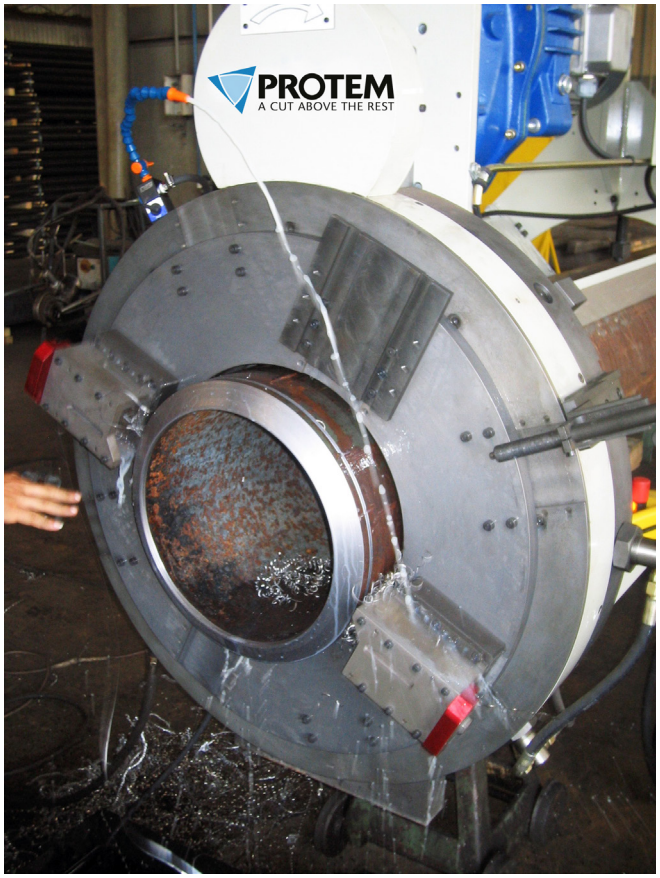

| Model TNO | A | B | C |
|---|---|---|---|
| TNO 4-12 | 1700 mm 66.929" | 1964 mm 77.322" | 1000 mm 39.370" |
| TNO 12-24 | 1700 mm 66.929" | 2118 mm 83.385“ | 1210 mm 47.637“ |
| TNO 24-36 | 1700 mm 66.929" | 2515 mm 99.015“ | 1510 mm 59.448“ |

# TNO4-12 OD Mount Pipe Cutting & Beveling Machine

Standard Capacity: 114.3 mm - 323.9 mm (4.5“ - 12.75“)




OD Mounted



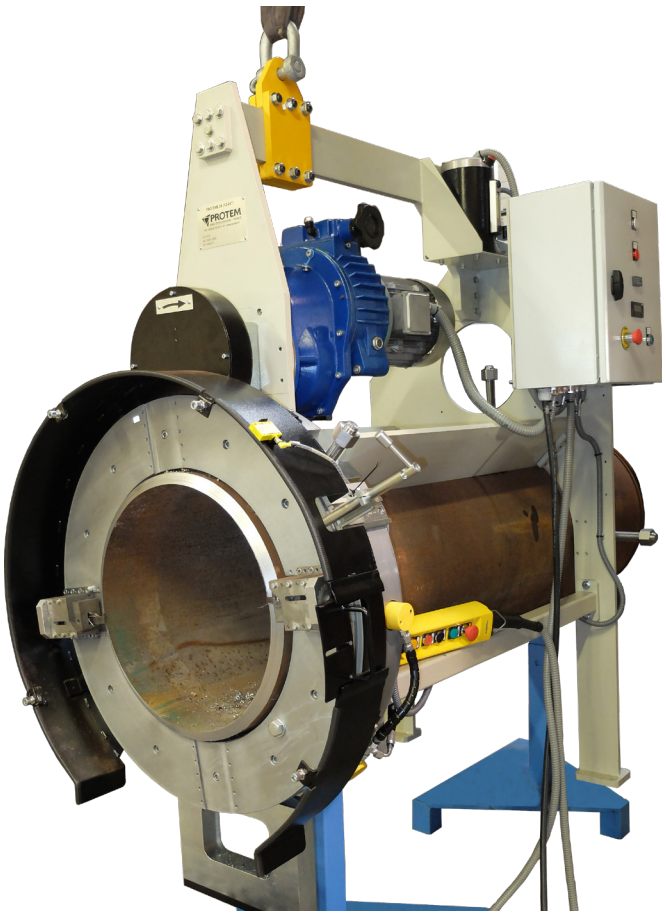

## Technical Features:

| | | |
|---|---|---|
| ***Cutting carriage stroke*** | 100 mm (3.93”) | |
| ***Effective stroke of cutting and bevelling tool bits*** | 60 mm (2.36”) | |
| ***Clamping jack movement*** | 100 mm (3.93”) | |
| | Minimum | Maximum |
| ***Cutting head gear drive*** | 5.5 RPM | 30 RPM |
| ***Tool-holder plate feed speed*** | 0.0032"/rev.<br>0.08 mm/rev. | 0.0063"/rev.<br>0.16 mm/rev. |
| ***Clamping jack normal pressure*** | 1450 psi<br>100 bars | 2900 psi<br>200 bars |
| ***Pipe OD range*** | 114.3 mm<br>4.5" | 323.9 mm<br>12.75" |
| ***Electricity supply*** | 50-60 Hz / 400 V 3-phase + earth | |
| ***Installed capacity*** | 11 Kw | |
| ***Power consumption under full load*** | 19 A | |

| Order No. | Description |
|---|---|
| TNO_FAB-4/12-1020 | Heavy Duty Pipe Cutting & Beveling Machine TNO 4-12 for Ø 114.3 mm - 323.9 mm (4.5" - 12.751") with electric drive 220V |

# TNO12-24 OD Mount Pipe Cutting & Beveling Machine

Standard Capacity: 323.9 mm - 610 mm (12.75“ - 24“)



## Technical Features:

| | | |
|---|---|---|
| ***Cutting carriage stroke*** | 100 mm (3.93”) | |
| ***Effective stroke of cutting and bevelling tool bits*** | 60 mm (2.36”) | |
| ***Clamping jack movement*** | 100 mm (3.93”) | |
| | Minimum | Maximum |
| ***Cutting head gear drive*** | 4.2 RPM | 21.5 RPM |
| ***Tool-holder plate feed speed*** | 0.0032"/rev.<br>0.08 mm/rev. | 0.0063"/rev.<br>0.16 mm/rev. |
| ***Clamping jack normal pressure*** | 1450 psi<br>100 bars | 2900 psi<br>200 bars |
| ***Pipe OD range*** | 323.9 mm<br>12.75" | 610 mm<br>24" |
| ***Electricity supply*** | 50-60 Hz / 400 V 3-phase + earth | |
| ***Installed capacity*** | 11 Kw | |
| ***Power consumption under full load*** | 19 A | |

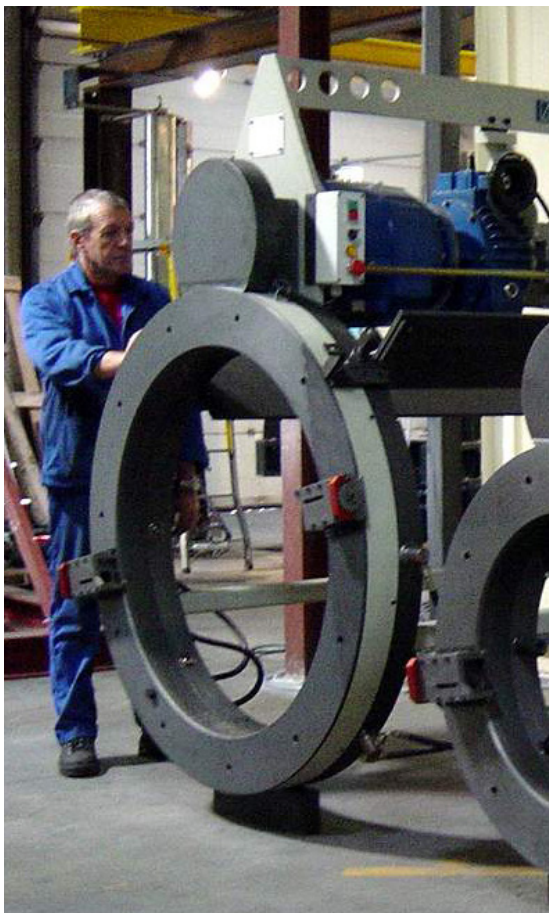
| Order No. | Description |
|---|---|
| TNO_FAB-24-1020 | Heavy Duty Pipe Cutting & Beveling Machine TNO12-24 for<br>Ø 323.9 mm - 610 mm (12.751" - 24.015") with electric drive 220V |

## Use On-Site or in Workshop:


# TNO24-36 OD Mount Pipe Cutting & Beveling Machine

Standard Capacity: 610 mm - 914.4 mm (24.015“ - 36“)





## Technical Features:

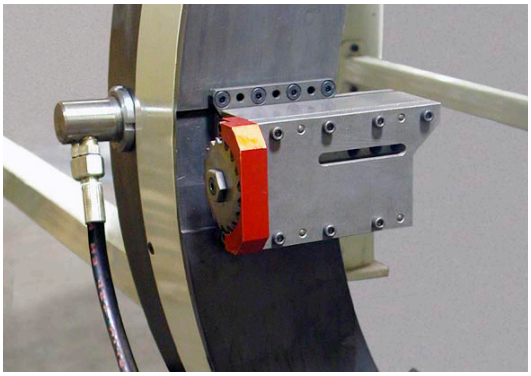
| | | |
|---|---|---|
| ***Cutting carriage stroke*** | 100 mm (3.93”) | |
| ***Effective stroke of cutting and bevelling tool bits*** | 60 mm (2.36”) | |
| ***Clamping jack movement*** | 100 mm (3.93”) | |
| | Minimum | Maximum |
| ***Cutting head gear drive*** | 2.2 RPM | 11.9 RPM |
| ***Tool-holder plate feed speed*** | 0.0032"/rev.<br>0.08 mm/rev. | 0.0063"/rev.<br>0.16 mm/rev. |
| ***Clamping jack normal pressure*** | 1450 psi<br>100 bars | 2900 psi<br>200 bars |
| ***Pipe OD range*** | 610 mm<br>24" | 914.4 mm<br>36" |
| ***Electricity supply*** | 50-60 Hz / 400 V 3-phase + earth | |
| ***Installed capacity*** | 11 Kw | |
| ***Power consumption under full load*** | 19 A | |

| Order No. | Description |
|---|---|
| TNO_FAB-36-1020 | Heavy Duty Pipe Cutting & Beveling Machine TNO24-36 for<br>Ø 610 mm - 914.4 mm (24.015" - 36.023") with electric drive 220V |

## LARGER MODELS ON REQUEST

# TNO Series OD Mount Pipe Cutting & Beveling Machines Options

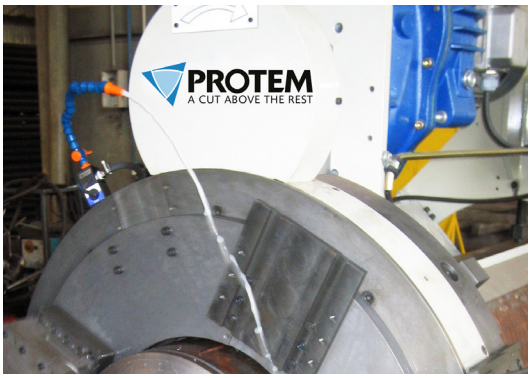
## Tool block carriage



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 | Carriage, Stroke 50 mm (1.969") |
| TTNG-2400 | Carriage, Stroke 100 mm (3.93") |
| TNO_FAB-1002 | Carriage for ovalization tracking with kit intermediate plates and clutch holder |

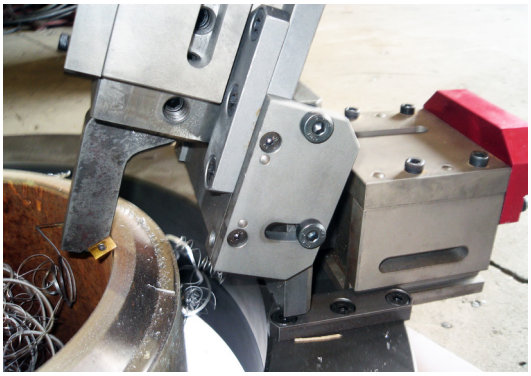
## Lubrication device




In order to increase the lifetime of the inserts and to reduce the noise level during the machining operations a lubrication device must be used. This lubrication device is made up of a cutting fluid tank, covered by a chip container and a pump for circulating the cutting fluid . A flexible piping kit for aiming the fluid at the cutting point is also supplied together with a tank support plate. This option is activated through a push button.

| Order No. | Description |
|---|---|
| TNO_FAB-24-LUB | Lubrication Kit |
| TNO_FAB-36-LUB | Lubrication Kit |

## Counterboring carriage



The counterboring carriage performs an ID bevel in order to obtain a regular land.

| Order No. | Description |
|---|---|
| TTNG-2700 | Counterboring carriage, stroke 50 mm (1.969") with tool bit holder |
| TTNG-2800 | Counterboring carriage, stroke 50 mm (1.969") with insert holder |
| TTNG-2900 | Counterboring carriage, stroke 100 mm (3.93") with tool bit holder |
| TTNG-3000 | Counterboring carriage, stroke 100 mm (3.93") with insert holder |

## Chipguard

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

| Order No. | Description |
|---|---|
| TNO_FAB-2400 | Safety housing |

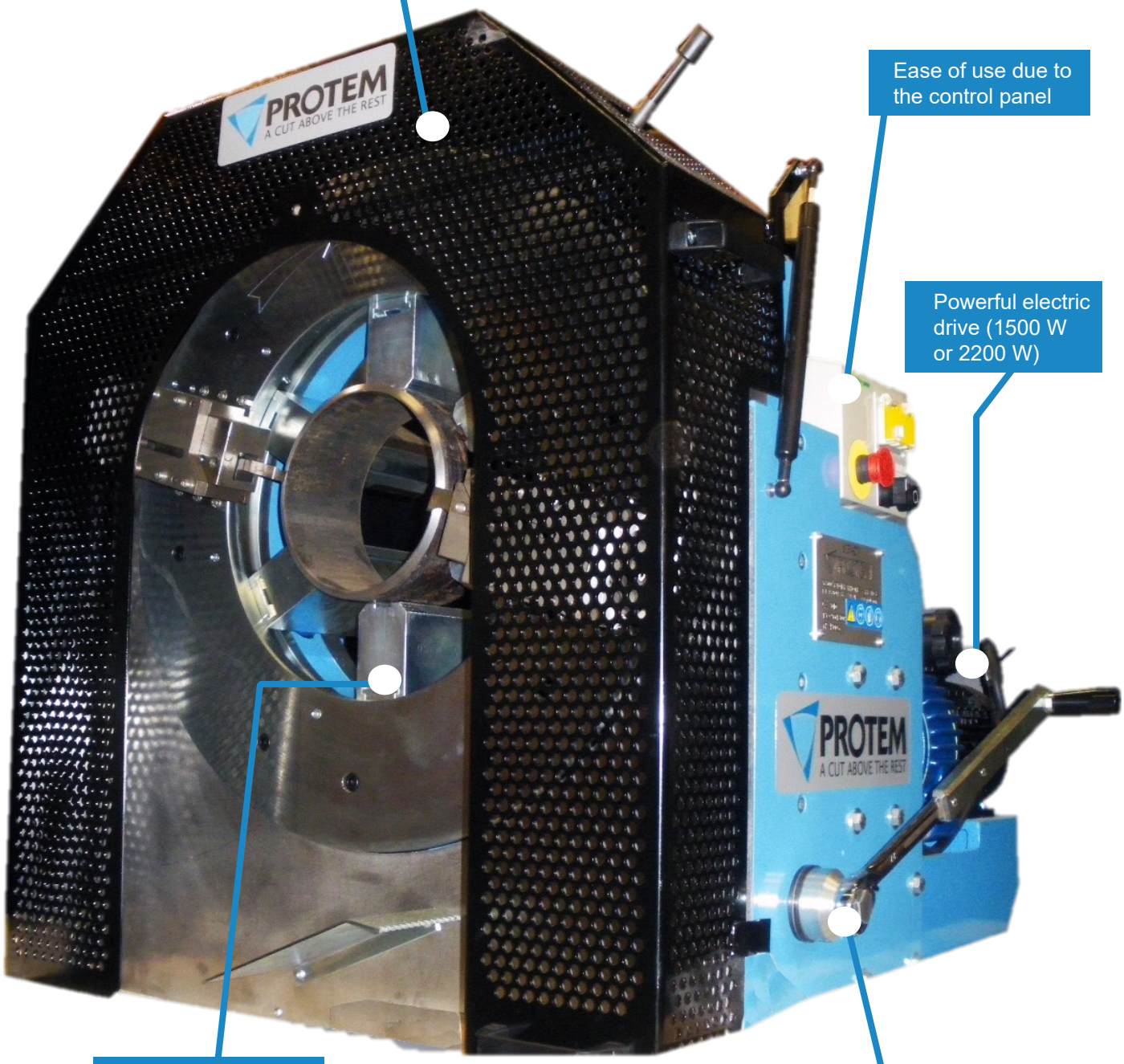
# TNO Series OD Mount Pipe Cutting & Beveling Machines Tool bits



| Order No. | Description |
|---|---|
| O-TTN-TT1-5-H-PL | Severing tool bit, max. wall thickness 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° |

# MF Series Transportable Cutting & Beveling Machines




Machine guard ensures safe use

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

Ease of use due to the control panel

Powerful electric drive (1500 W or 2200 W)

Fast and perfect concentric clamping with a ratchet

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

Automatic feed with clutch

OD Mounted

# MF Series Transportable Cutting & Beveling Machines

Standard Capacity: 25.4 mm - 420 mm (1" - 16.535“)

Extended Capacity: 12.7 mm - 420 mm (0.5" - 16.535“)

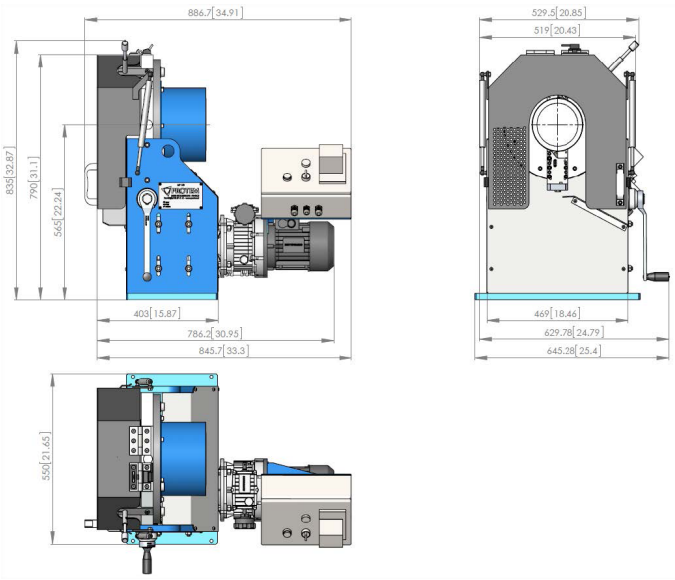

The PROTEM MF Series machines are orbital cutting & beveling machines designed to cut and bevel tubes & pipes from 0.5"-16.535" (12.7 mm – 420 mm), in one operation!
The concentric clamping system allows for quick and easy tube tightening and automatic adjustment.
The machines are equipped with very strong motors that have adjustable speed. The machining plate is equipped with two tool carriages that provide automatic feed by means of a mechanical clutch.
A protective cage ensures safety and security for the operator.

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

OD Mounted


## Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- The tool bits can be changed and adjusted very quickly
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System
- No distorsion of the tubes & pipes during the machining process, even the thinest ones



# MF170 Transportable Cutting & Beveling Machine

Standard Capacity: 25.4 mm - 168 mm (1" - 6.6")

Extended Capacity: 12.7 mm - 168 mm (0.5" - 6.6")

## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X, J-bevel, other on request |
| ***Clamping*** | External clamping with 4 jaws |
| ***Feed*** | Automatic with clutch |
| ***Motor speed*** | Minimum speed: 18 rpm<br>Maximum speed: 90 rpm |
| ***Electric drive*** | 400 V (1500 W) |

| Order No. | Description |
|---|---|
| MF-170-1020 | Stationary & Mobile Cutting and Beveling machine (CE Standard) for Ø 25.4 mm - 168 mm (1" - 6.6") |
| MF-170-1040 | Stationary & Mobile Cutting and Beveling machine (UL Standard) for Ø 25.4 mm - 168 mm (1" - 6.6") |

## Use On-Site or in Workshop:

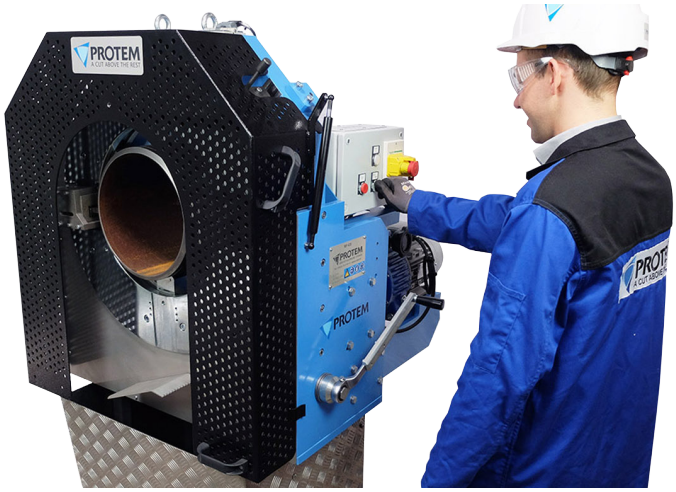


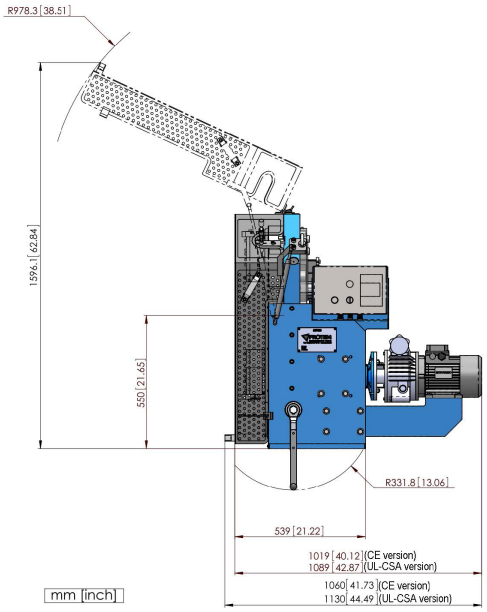
OD Mounted

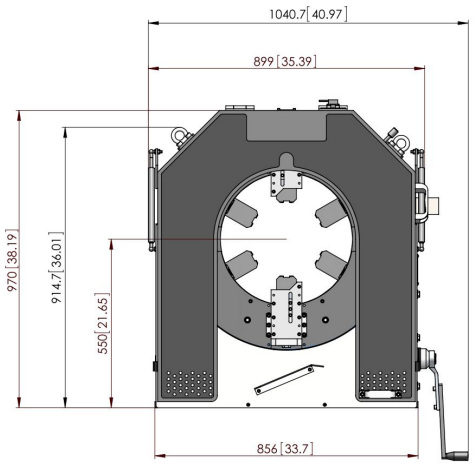
# MF420 Transportable Cutting & Beveling Machine

Standard Capacity: 168 mm - 420 mm (6.6" - 16.535")

OD Mounted





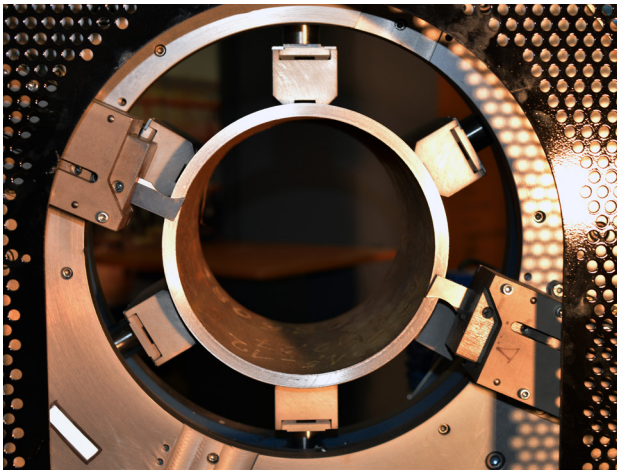

mm [inch]

## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X, J-bevel, other on request |
| ***Clamping*** | External clamping with 6 jaws |
| ***Feed*** | Automatic with clutch |
| ***Motor speed*** | Minimum speed: 12 rpm<br>Maximum speed: 56 rpm |
| ***Electric drive*** | 400 V (2200 W) |

| Order No. | Description |
|---|---|
| MF-420-1020 | Stationary & Mobile Cutting and Beveling machine (CE Standard) for Ø 168 mm - 420 mm (6.6" - 16.535") |
| MF-420-1040 | Stationary & Mobile Cutting and Beveling machine (UL Standard) for Ø 168 mm - 420 mm (6.6" - 16.535") |

## Use On-Site or in Workshop:



# MF Series Transportable Cutting & Beveling Machines Options & Tool bits

## MF170 Options:

| Order No. | Description |
|---|---|
| MF170-K01 | Wooden crate for MF170 |
| MF-170-1705 | 37°50 double beveling tool assembly |
| MF-170-1710 | Right Hand Insert-Holder 30° |
| MF-170-1711 | Right Hand Insert-Holder 37.5° |
| MF-170-1712 | Left Hand Insert-Holder 37.5° |
| MF-170-1713 | Left Hand Insert-Holder 30° |
| MF-170-1714 | Shim under Cutting-tool bit 0.211" (5.35mm) |
| MF-170-1715 | Shim under Cutting-tool bit 0.191" (4.85mm) |
| MF-170-2200 | Kit for Ø 1"-2.484" (25.4mm-63.1mm) |
| MF-170-2400 | Lifting Table, électric |
| MF-170-13C00 | Visual speed indicator |
| MF170-1400 | Carriage, Stroke 2.362" (60 mm) |

## MF420 Options:

| Order No. | Description |
|---|---|
| MF420-K01 | Wooden crate for MF420 |
| MF-420-1133-1 | Extended Jaw H= 2.441" (62mm) |
| MF-420-1133-2 | Extended Jaw H= 4.213" (107mm) |
| MF-420-2000 | Lubrication Kit for MF-Type |
| MF-420-3000 | Lifting Table, électric |
| O-MF-SO-20014 | Insert holder left 30° for MF420 (max thickness 12.7) No land |
| O-MF-SO-20015 | Insert holder right 30° for MF420 (max thickness 12.7) No land |
| MF-420-13C00 | Visual speed indicator |
| TTNG-2200 | Carriage, Stroke 1.969" (50mm) |
| TTNG-2400 | Carriage, Stroke 16.181" (100mm) |

## MF Series Tool bits:

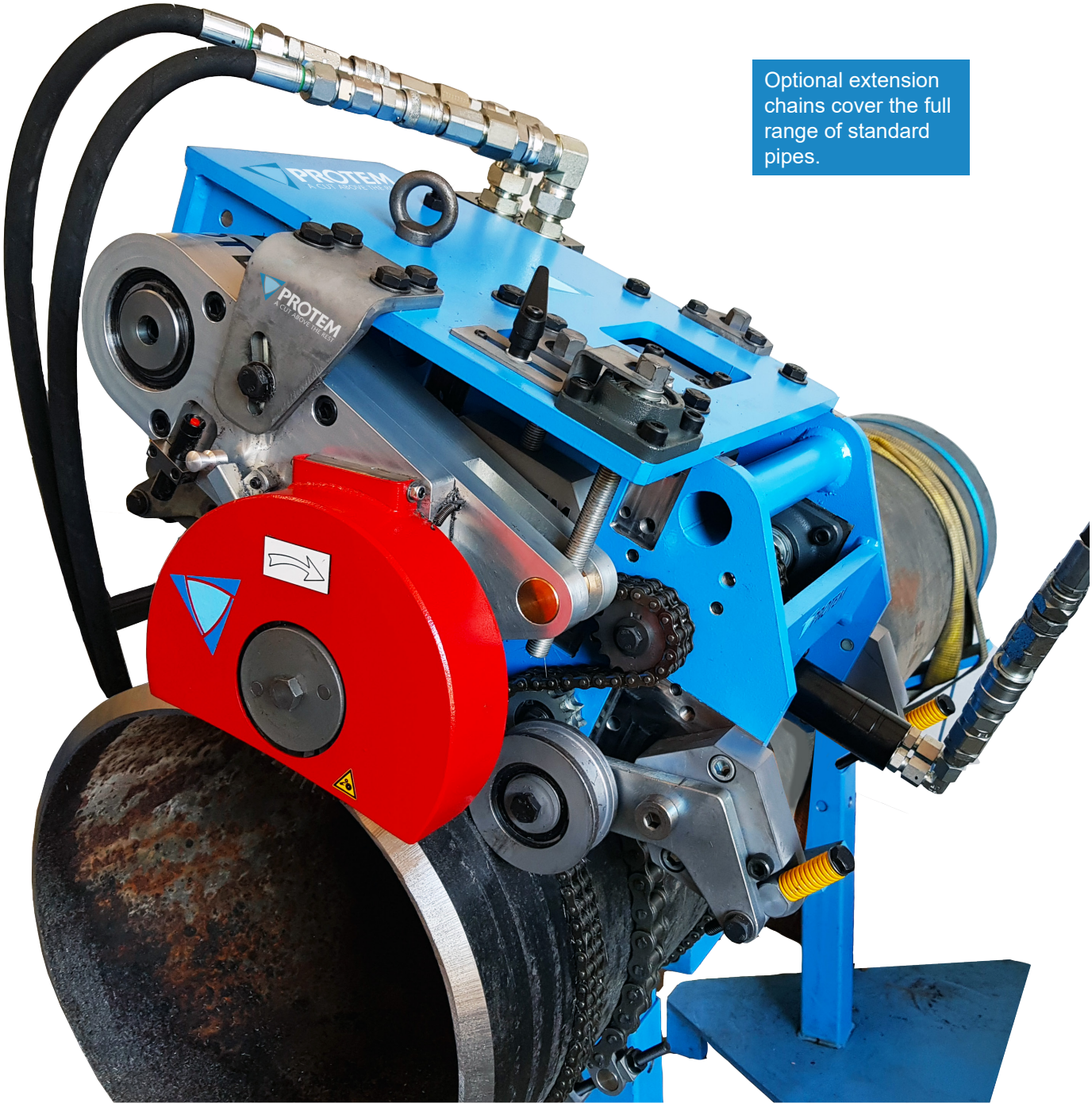
| Order No. | Description |
|---|---|
| O-MF-P1-3-H | Cutting tool (2 cutting edges) with shim |
| O-MF-P2-4-H | Tool inserts for 30° and 37,5° |
| O-TTN-TT1-5-H-PL | Severing tool bit, max. wall thickness 35mm |
| O-TTN-TT1-5-H-PT | Pointed tool bit, max. wall thickness 35mm |
| O-TTN-TT2-12-H-2 | Beveling 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° |

# OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine

The OCM mobile pipe lathe machine is designed to cut and bevel pipes with min. Ø 6.6" (Ø168.3 mm) OD and for wall thicknesses up to 2" (50.8 mm).

Its adjustable module can perform the required angle & bevel shape




Optional extension chains cover the full range of standard pipes.

OD Mounted

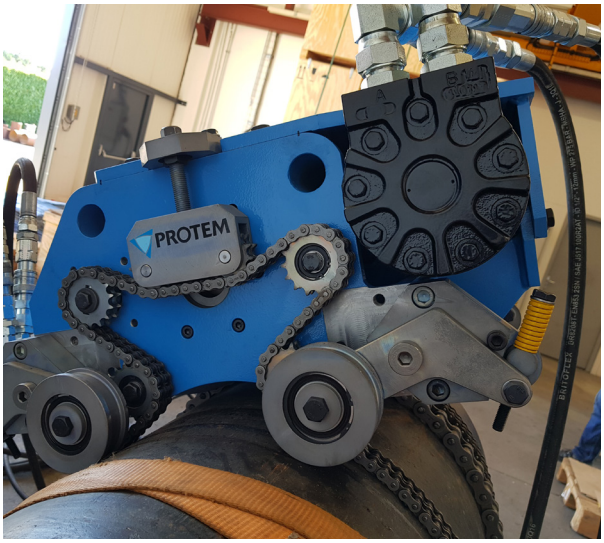
Robust and reliable, it can be used on-site, in the workshop or in extreme environments.

Designed for all types of materials; mild steel, chromium, stainless steel, duplex, super duplex, copper-nickel alloys, inconel, P91, aluminum, exotic alloys, etc...

# OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine

Standard Capacity: 168.3 - 1320.8 mm (6.6" - 52")

Extended Capacity: 168.3 - 3048 mm (6.6" - 120")




The OCM mobile cold milling and severing machine is designed to cut and bevel pipes with min. Ø 6.6" (Ø168.3 mm) OD and for wall thicknesses up to 2" (50.8 mm). Its independent Milling module is entirely adjustable and performs bevels from 0° to 90° without changing accessories. It is designed to be easy to use; Robust and reliable, it can be used on-site, in the workshop or in extreme environments. The OD mount chain milling and severing machine enables to fit any OD while using additional chains.

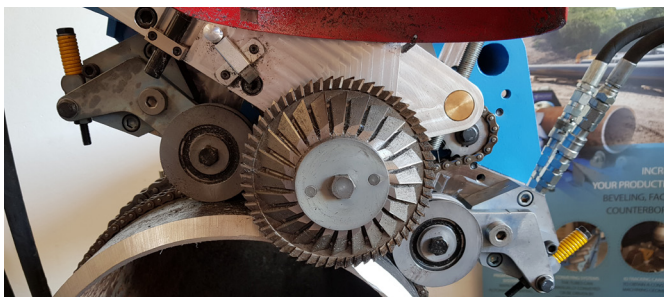
- Mobile (OD clamping).
- Severing and milling modules available.
- Perfect weld preparation.
- Ability to perform I and V bevels from 0 to 90°.
- For construction, maintenance and repair of Pipes & Pipelines
- On-site or in the workshop.
- No Heat-Affected Zone!
- Designed for all types of materials; mild steel, chromium, stainless steel, duplex, super duplex, copper-nickel alloys, inconel, P91, aluminum, exotic alloys, etc...

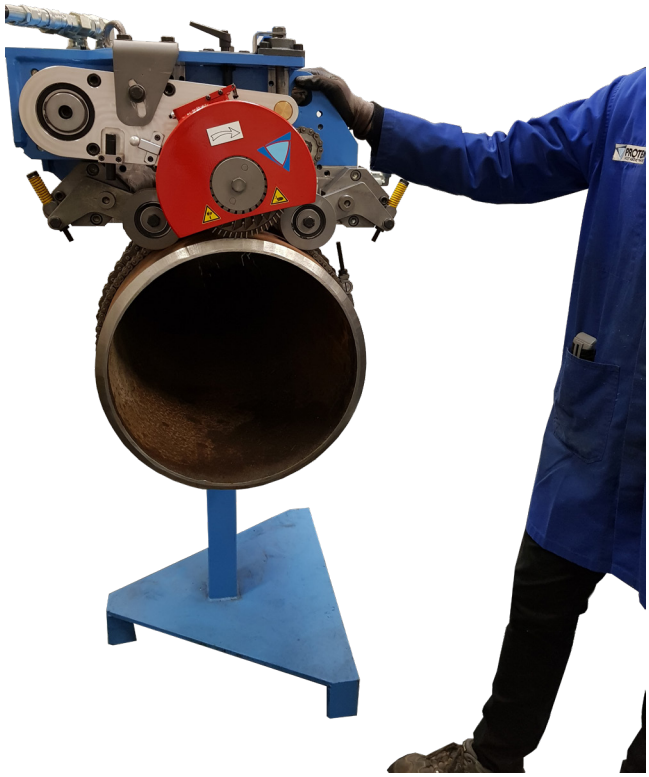
| Milling | Cutting | Counterboring | Severing | Coating Removal | Facing | Weld joint removal | Surfacing |
|---|---|---|---|---|---|---|---|
| ✓ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ |

OD Mounted

## Advantages:

- Mobile
- Powerful
- Fast & accurate
- Easy and Safe use
- No Heat Affected Zone
- Rugged
- Easy & fast mounting
- Powerful pneumatic or hydraulic drives
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System
- Suited for hostile environment and very tight working spaces
- All pipes and pipelines Ø including Tanks
- Machine surface ready for welding
- Cold Cutting

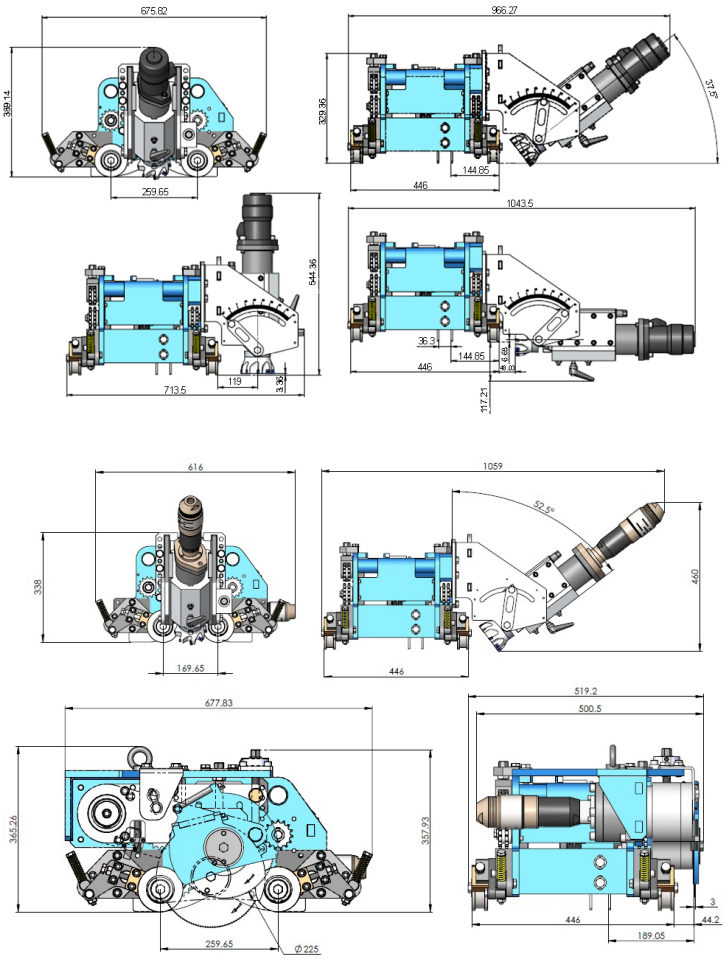




# OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine

OD Mounted

## Dimensions




## Technical Features:

| | |
|---|---|
| ***Machining Capacity*** | The OCM mobile pipe lathe machine is designed to cut and bevel pipes with min. Ø 6.6" (Ø168.3 mm) OD and for wall thicknesses up to 2" (50.8 mm). Optional extension chains cover the full range of standard pipes & pipelines.<br><br>Milling can be performed on wall thicknesses up to 2" ( 50.8 mm) in several passes.<br>Its adjustable module can perform the required angle & bevel shape. |
| ***Carriage feed*** | 200 rpm (8") |
| ***Clamping capacity*** | From 6.6" (168.3 mm) OD<br>According to the length of the chain. |
| ***Shapes and bevel angles*** | I, V bevels from 0° to 90° |
| ***Clamping*** | Manual |
| ***Feed stroke*** | Manual |
| ***Feed and rotation*** | Automatic |

| Machine | OCM |
|---|---|
| Hydraulic Motor | Feed motor nominal speed: 95 rpm (before gear reduction)<br>Cutting motor nominal speed: from 10 to 50 rpm<br>Milling motor nominal speed: from 160 to 255 rpm (adjustable rotation speed according to oil pressure and flow)<br>Feed motor power: 1.1 kW<br>Cutter saw motor power: 35.4 kW<br>Milling motor power: 10 kW |

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

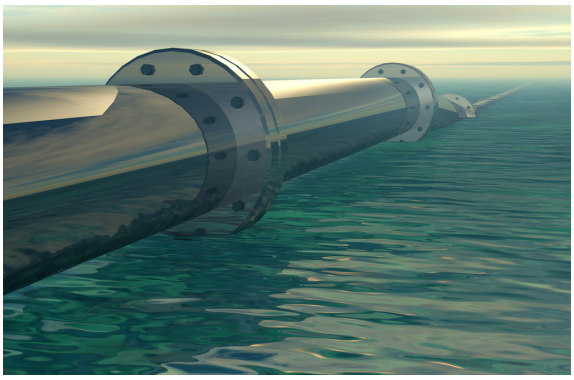
** Other Motors are available on Request*

# OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine

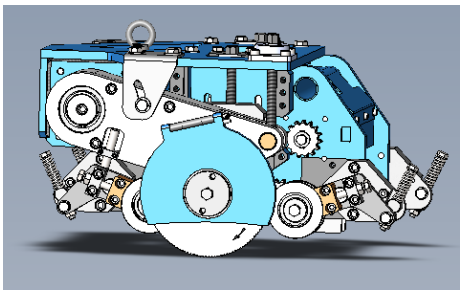
| Order No. | Description |
|---|---|
| OCM-1000 | OCM with pneumatic motor and Severing module + Milling module (2 kW) |
| OCM-1005 | OCM with pneumatic motor and Severing module 2 kW |
| OCM-1062 | OCM with 2 kW hydraulic motor and 35.4 kW Severing module and 12 kW Milling module - Weight 486 LB ~ 220 kg |
| OCM-1100 | OCM - Milling machine for pipes & pipelines. Carriage only - Weight 212 LB ~ 96 kg, hydraulic |
| OCM-1102 | OCM - Milling machine for pipes & pipelines. Carriage only, pneumatic |
| OCM-2200 | OCM with 2 kW hydraulic motor and Milling module for beveling - Weight 309 LB ~ 140 kg |
| OCM-2202 | OCM with 1 kW pneumatic motor and Milling module for beveling |

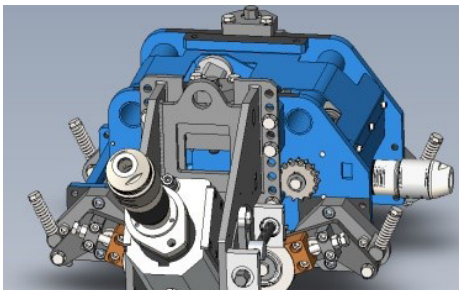

# OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine Options

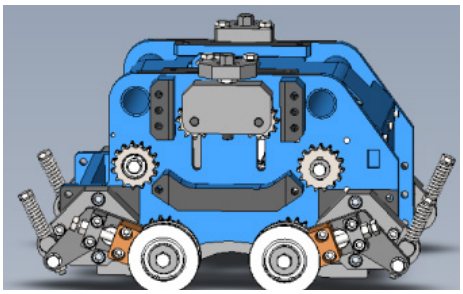
| Order No. | Description |
|---|---|
| OCM-18C06 | Quick Links for Chain type 16B1 |
| OCM-18C07 | Chain Windages for Chain type 16B-1 |
| OCM-22C20 | Tool holder - Milling cutter Ø 80 mm (3.149") |
| OCM-24C02 | Quick Links for Chain type 08B2 |
| OCM-24C03 | Chain Windages for Chain type 08B2 |
| OCM-1814 | 48" TO 80" Guiding Chain 16B1 type 1200 mm - 2032 mm (48" - 80") |
| OCM-2300 | Chain Assembler Kit type 08B2 |
| OCM-2302 | Chain Assembler Kit type 16B1 |
| OCM-2411 | 48" TO 80" Feed Chain 08B2 type 1200 mm - 2032 mm (48" - 80") |
| OCM-2501 | Pneumatic connection |

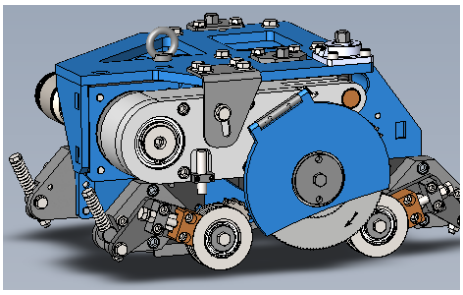





OCMHY-CC


OCMHY-CF


OCMHY-CH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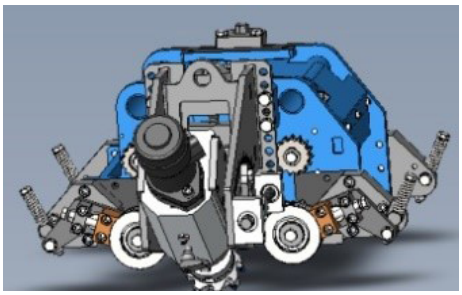
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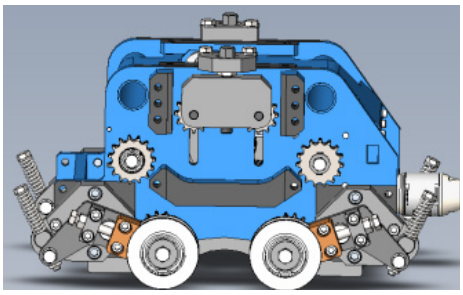

OCMHY-CH

# OCM Orbital Inline Pipe and Pipeline Severing and Milling Machine Tool Bits

| Order No. | Description |
|---|---|
| OCM-2138 | Milling Cutter 3T Ø 160x3x42 - 52 teeth |
| OCM-2139 | Milling Cutter 3T Ø 225x3x32 - 60 teeth |
| OCM-2148 | Milling Cutter 3T Ø 210x3x42 - 60 teeth |
| OCM-2152 | Milling Cutter 3T Ø 177,8x4,8x31,8 for 30° Bevel |
| OCM-2153 | Left Milling Cutter for 30° Bevel |
| OCM-2154 | Right Milling Cutter for 30° Bevel |
| OCM-22C21 | Box of 10 Inserts |



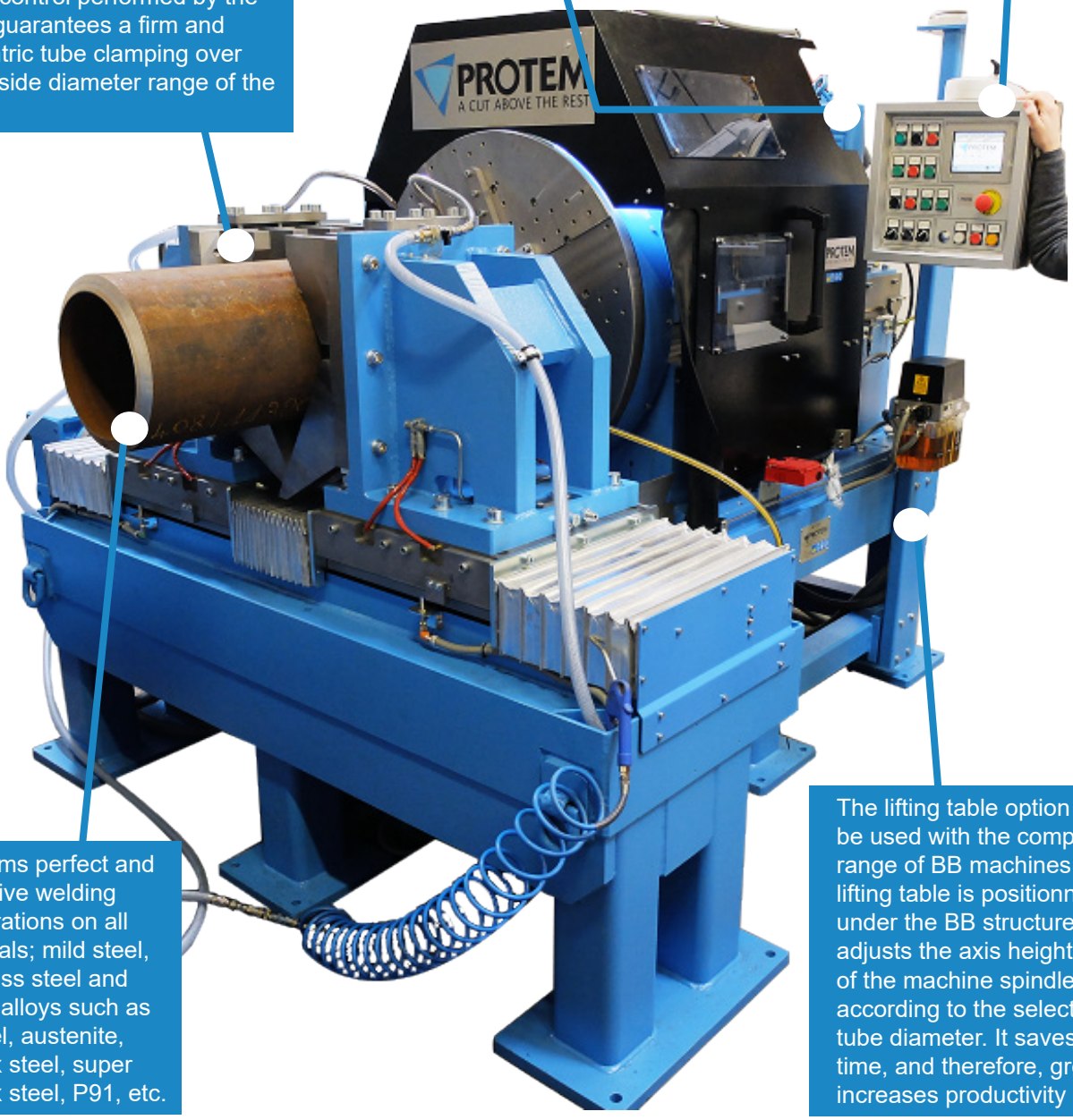


# BB Series High Speed Pipe Beveling Bench

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.

The "Brushless" motors used by PROTEM guarantee very high accuracy and control the cutting speeds and feed as required.

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.




Performs perfect and repetitive welding preparations on all materials; mild steel, stainless steel and exotic alloys such as inconel, austenite, duplex steel, super duplex steel, P91, etc.

The lifting table option can be used with the complete range of BB machines. The lifting table is positionned under the BB structure. It adjusts the axis height of the machine spindle according to the selected tube diameter. It saves time, and therefore, greatly increases productivity

The PROTEM conveyors are designed to be adapted to all the BB machines. The tubes can be conveyed manually or with motorized rollers. The rollers are zinc treated in order to avoid any pollution of the tubes during transport. If requested, they can be rubber coated.

# BB Series High Speed Pipe Beveling Bench

Standard Capacity: 25.4 mm - 1422.4 mm (1“ - 56“)

The electric BB machines can be used either on-site or in the workshop. These heavy duty bevelers will bevel, face and counterbore, individually or simultaneously, heavy walled pipes.

The BB machines are high speed bench bevelers. If required, they can be attached to the floor, are easily installed and clamp onto the OD diameter of the tubes and pipes.

They can be easily operated by a sole operator. Used with the optional profile tracking device, they will machine oval pipes, leaving a root face of a consistent width, which is required when using orbital welding processes.

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

OD Mounted

## Advantages:

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

# BB1-6 High Speed Pipe Beveling Bench

Standard Capacity: 25.4 mm - 168 mm (1“ - 6.6“)


## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X, J-bevel, other on request |
| ***Clamping process*** | Manual, Semi-automatic, Automatic |
| ***Feed*** | Manual & Automatic |
| ***Feed stroke*** | 100 mm (3.937“) |
| ***Machining Time*** | A few seconds |
| ***Motor Power*** | 30 kW |
| ***Machining*** | Carbide insert |

| Order No. | Description |
|---|---|
| BB-1-6-1004 | Beveling Bench PROTEM BB 1-6 for Ø 25.4 mm - 168 mm (1" - 6.6") |

# BB3-16 High Speed Pipe Beveling Bench

Standard Capacity: 76.2 mm - 406.4 mm (3“ - 16“)

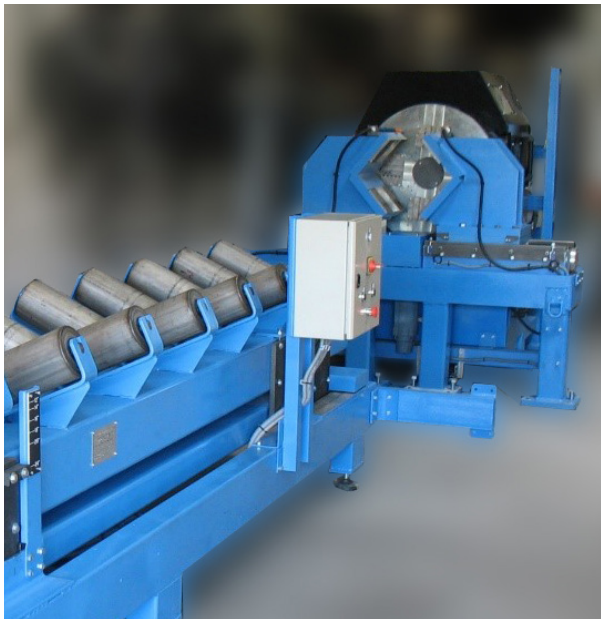
## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X, J-bevel, other on request |
| ***Clamping process*** | Manual, Semi-automatic, Automatic |
| ***Feed*** | Manual & Automatic |
| ***Feed stroke*** | 100 mm (3.937“) |
| ***Machining Time*** | A few seconds |
| ***Motor Power*** | 30 kW |
| ***Machining*** | Carbide insert |

| Order No. | Description |
|---|---|
| BB-3-16-V1-1000 | Beveling Bench PROTEM BB3-16-V1 for Ø 76.2 mm - 406.4 mm (3" - 16") (maximum wallthickness 19 mm, électrical rotation and Manual Clamping and Feed) |
| BB-3-16-V3-1004 | Beveling Bench PROTEM BB3-16-V3 for Ø 76.2 mm - 406.4 mm (3" - 16") (maximum wallthickness 25.4 mm, électrical rotation and automatic Clamping and Feed) |
| BB-3-16-V4-1006 | Beveling Bench PROTEM BB3-16-V4 for Ø 76.2 mm - 406.4 mm (3" - 16") (maximum wallthickness 36 mm, électrical rotation and automatic Clamping and Feed) |

# BB12-24 High Speed Pipe Beveling Bench

Standard Capacity: 323 mm - 610 mm (12.7“ - 24“)



## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X, J-bevel, other on request |
| ***Clamping process*** | Manual, Semi-automatic, Automatic |
| ***Feed*** | Manual & Automatic |
| ***Feed stroke*** | 100 mm (3.937“) |
| ***Machining Time*** | A few seconds |
| ***Motor Power*** | 37 kW |
| ***Machining*** | Carbide insert |

| Order No. | Description |
|---|---|
| BB-12-24-V1-1020 | Beveling Bench PROTEM BB12-24-V1 for Ø 323 mm - 610 mm (12.7" - 24") (maximum wallthickness 25 mm, electrical rotation and Manual Clamping and Feed) |
| BB-12-24-V4-1020 | Beveling Bench PROTEM BB12-24-V4 for Ø 323 mm - 610 mm (12.7" - 24") (maximum wallthickness 35 mm, electrical rotation and automatic clamping and feed) |

OD Mounted

# BB24-36 High Speed Pipe Beveling Bench

Standard Capacity: 610 mm - 914 mm (24“ - 36“)


## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X, J-bevel, other on request |
| ***Clamping process*** | Manual, Semi-automatic, Automatic |
| ***Feed*** | Manual & Automatic |
| ***Feed stroke*** | 150 mm (5.905“) |
| ***Machining Time*** | A few seconds |
| ***Motor Power*** | 50 kW |
| ***Machining*** | Carbide insert |

| Order No. | Description |
|---|---|
| BB-24-36-V4-1020 | Bench Beveling Machine with outside clamping device Ø 610 mm - 914 mm (24“ - 36“) |

# BB36-48 High Speed Pipe Beveling Bench

Standard Capacity: 914 mm - 1219 mm (36“ - 48“)


## Technical Features:

| | |
|---|---|
| ***Specific shapes & angles*** | I, V, X, J-bevel, other on request |
| ***Clamping process*** | Manual, Semi-automatic, Automatic |
| ***Feed*** | Manual & Automatic |
| ***Feed stroke*** | 200 mm (7.874“) |
| ***Machining Time*** | A few seconds |
| ***Motor Power*** | 50 kW |
| ***Machining*** | Carbide insert |

| Order No. | Description |
|---|---|
| BB-36-48-V4-1020 | Bench Beveling Machine with outside clamping device Ø 914 mm - 1219 mm (36“ - 48“) |

## Larger Models and Options for larger wall thickness on Request


OD Mounted

# BB Series High Speed Pipe Beveling Bench — Options



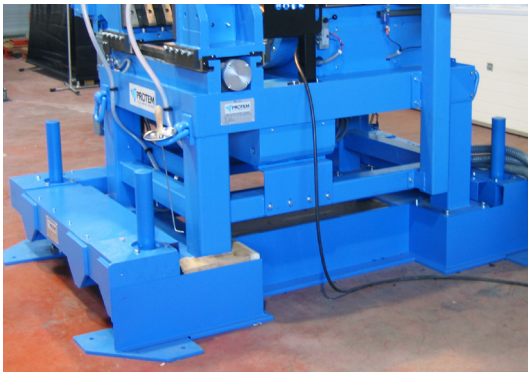
## Multifunctional Control Panel

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 essential functions: Clamp /Unlock - Slow / Fast Machining - Start / Stop Machine - Manual / Automatic - Stop feed - Lubrication - Chip conveyor - Emergency stop button

## Tube Storage Table

All the feeding tube conveyors or storage tube conveyors can be easily connected to any BB machine entering the BB range.
The length of the feeding or storage tube conveyor is adapted to the length of the tube conveyor.

## Lifting Table



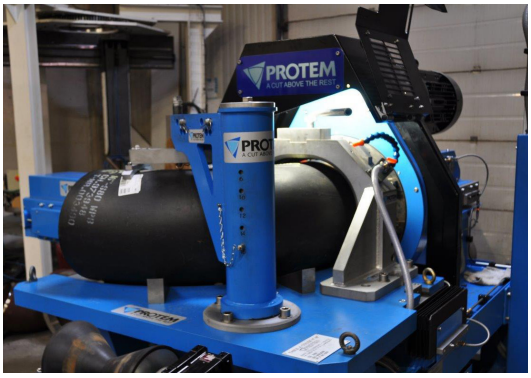
The optional lifting table can be used with all versions of the BB. The lifting table is positioned under the BB structure. Its purpose is to align the axis tool holder plate with the tube to be machined which must be set on a fixed tube conveyor. This option saves time and increases productivity. It also makes the BB very easy to use due to the alignment between the axis of the tube set on a tube conveyor and the axis of the tool holder plate of the BB.

## Chips Conveyor

The optional chips conveyor can be used on all versions of the BB. This option increases productivity as all the chips produced during a machining cycle are removed automatically. This option makes the machining process much easier for the operator, as it is not necessary to stop the production operations to remove the chips.

| Order No. | Description |
|---|---|
| BB-3-16-1010 | Chips Conveyor with integrated Lubrication |

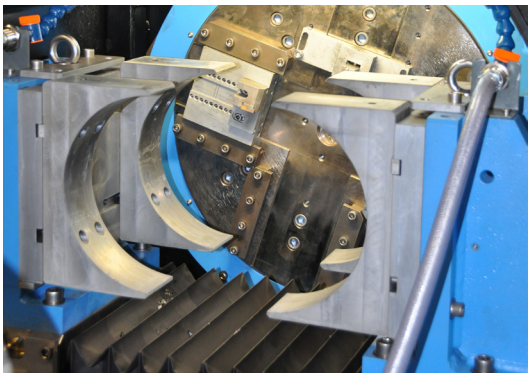
## Machining Table for Elbows




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

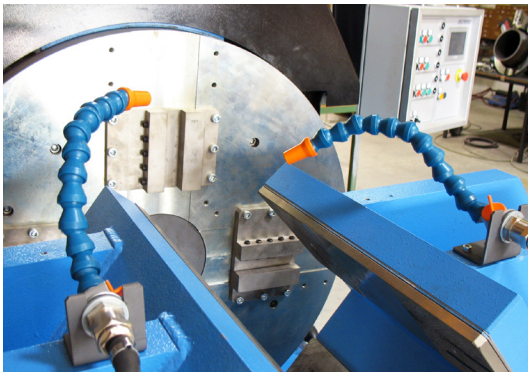
| Order No. | Description |
|---|---|
| BB-3/16-TC | Elbow Table to machine Elbow and piping accessories (fittings, T, etc,) |

## Enveloping Clamping Jaws



To avoid deformation of tubes with thin wall thicknesses during the clamping operation, the aluminum enveloping clamping jaws are recommended. One set of enveloping clamping jaws is necessary for each different OD.

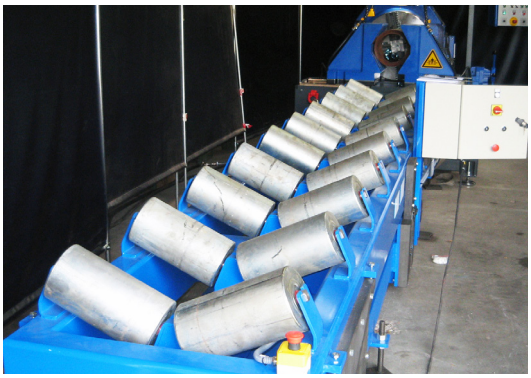
## Lubrication Device



Increases the lifetime of the inserts and reduces the noise level.
A lubrication system is integrated into the chips conveyor (for chips removal). A pump sprays oil mixed with water during the cut. A tank replaces the standard chips box and a filter insures a closed circuit with the pump. This option is activated through a push button.

OD Mounted

## Tube conveyors



The tube conveyor can be supplied in various configurations to meet the customer's application requirements. The tube conveyor can be supplied with different lengths, 6 meters (20 feet), 8 meters (26 feet), 10 meters (33 feet) or 12 meters (39 feet). The height adjustment ensures a very precise positioning of the tube into the mandrel. The tubes can be manually conveyed or be driven by motorized rollers. The rollers are zinc treated, and therefore, able to accept stainless steel tubes while avoiding any risk of pollution to the transported tubes.

| Order No. | Description |
|---|---|
| CONVF | fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Roller (V form) (please specify for which machine) |
| CONVFRM | fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Motorized Roller (bobbin shape) (please specify for which machine) |
| CONVFRV | fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with bobbin shape Roller (please specify for which machine) |
| CONVMBRV | 6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system and bobbin shape Rollers (please specify for which machine) |
| CONVMBRM | 6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system & Motorized Roller ( Bobbin shape) (please specify for which machine) |

## ID-Tracker

The ID tracking carriage maintains a constant machining geometry.

| Order No. | Description |
|---|---|
| US-HSB-R-PO-5001 | stronger ID Tracking Carriage, with Excentric, |
| US-HSB-R-PO-5201 | ID Tracking Carriage long version (Smallest OD) |
| US-HSB-R-PO-1401 | Follower Roller Ø 40 set on reference 5001 |
| US-HSB-R-PO-2301 | Brush Kit (only used with ID Tracking Carriage) |

## Prism Clamping System


The prism clamps the pipe. Accuracy and repetitive perfect weld end preparations are achieved within a few seconds. The clamping can be done manually or automatically

## Shims

| Order No. | Description |
|---|---|
| US-HSB-R-PO/3300 | Shim for Counterboring Carbide Insert-Holder wall 0,1mm |
| US-HSB-R-PO/3301 | Shim for Counterboring Carbide Insert-Holder wall 0,2mm |
| US-HSB-R-PO/3302 | Shim for Counterboring Carbide Insert-Holder wall 0,5mm |
| US-HSB-R-PO/3303 | Shim for Counterboring Carbide Insert-Holder wall 1mm |
| US-HSB-R-PO/3304 | Shim for Counterboring Carbide Insert-Holder wall 2mm |
| US-HSB-R-PO/3305 | Shim for Counterboring Carbide Insert-Holder wall 3mm |
| US-HSB-R-PO/3310 | Shim for Counterboring Carbide Insert-Holder wall 0,1mm |
| US-HSB-R-PO/3311 | Shim for Counterboring Carbide Insert-Holder wall 0,2mm |
| US-HSB-R-PO/3312 | Shim for Counterboring Carbide Insert-Holder wall 0,5mm |
| US-HSB-R-PO/3313 | Shim for Counterboring Carbide Insert-Holder wall 1mm |
| US-HSB-R-PO/3314 | Shim for Counterboring Carbide Insert-Holder wall 2mm |
| US-HSB-R-PO/3315 | Shim for Counterboring Carbide Insert-Holder wall 3mm |
| US-HSB-R-PO/3320 | Shim for Beveling Carbide Insert-Holder wall 0,1mm |
| US-HSB-R-PO/3321 | Shim for Beveling Carbide Insert-Holder wall 0,2mm |
| US-HSB-R-PO/3322 | Shim for Beveling Carbide Insert-Holder wall 0,5mm |
| US-HSB-R-PO/3350 | Shim between Beveling Holder/Roller wall 0,1mm |
| US-HSB-R-PO/3351 | Shim between Beveling Holder/Roller wall 0,2mm |
| US-HSB-R-PO/3352 | Shim between Beveling Holder/Roller wall 0,5mm |
| US-HSB-R-PO/3353 | Shim between Beveling Holder/Roller wall 1mm |
| US-HSB-R-PO/3354 | Shim between Beveling Holder/Roller wall 2mm |
| US-HSB-R-PO/3355 | Shim between Beveling Holder/Roller wall 4mm |
| US-HSB-R-PO/3356 | Shim between Beveling Holder/Roller wall 5mm |

| Order No. | Description |
|---|---|
| US-HSB-R-PO/1015 | Bed plate for Counterboring block (3601) |
| US-HSB-R-PO/3001 | Outside Beveling Carbide Insert-Holder 30° bottom (wall<19mm) |
| US-HSB-R-PO/3002 | Outside Beveling Carbide Insert-Holder 30° top (please consider reference 3001 for wall >19mm) |
| US-HSB-R-PO/3014 | Outside Beveling Carbide Insert-Holder 10° |
| US-HSB-R-PO/3017 | Outside Beveling Carbide Insert-Holder 37°5(wall<19mm) |
| US-HSB-R-PO/3018 | Outside Beveling Carbide Insert-Holder 37°5+ ref 3504 (wall>19mm) |
| US-HSB-R-PO/3025 | Outside Beveling Carbide Insert-Holder 20° (wall<19mm) |
| US-HSB-R-PO/3032 | Outside Beveling Carbide Insert-Holder 20°+ ref 3001 (wall>19mm) |
| US-HSB-R-PO/3101 | Counterboring Carbide Insert-Holder 4° |
| US-HSB-R-PO/3210 | Facing tool holder block |
| US-HSB-R-PO/3211 | Facing Carbide Insert-Holder |
| US-HSB-R-PO/3213 | tool holder Adapter plate for Facing tool holder block |
| US-HSB-R-PO/3216 | tool holder Adapter plate for Facing tool holder block for Small Ø |
| US-HSB-R-PO/3220 | disaligned tool holder support |
| US-HSB-R-PO/3504 | Inside Beveling Carbide Insert-Holder 30° bottom (wall<19mm) |
| US-HSB-R-PO/3505 | Inside Beveling Carbide Insert-Holder 30° top (associated to reference 3504 when wall >19mm) |
| US-HSB-R-PO/3600 | Counterboring tool holder block set on bed plate 1010 |
| US-HSB-R-PO/3601 | Insert-Holder for Counterboring mounted on bed plate (ref, 1015) |
| O-cléCL5 | Tork Key to Screw all Carbide Insert Screw |

# ELBOW BEVELING MACHINE

## 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 |
|---|---|---|---|---|
| ✓ | ✗ | ✓ | ✓ | ✗ |

OD Mounted

### 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).

# ELBOW BEVELING MACHINE

OD Mounted

# CTA Series High Speed Cutting and Beveling Machines

The electric motors, up to 50 kW for large diameters, supply the necessary power to cut and bevel tubes with heavy wall thicknesses.
The "Brushless" motors used by PROTEM guarantee a very high machining accuracy and control the feed and rotation speeds.

The machine is designed with a double external clamping of the tubes upstream and downstream of the internal part of the machine. The jack thrust and clamping system design provide a firm and concentric clamping on the outside diameter of the tube.

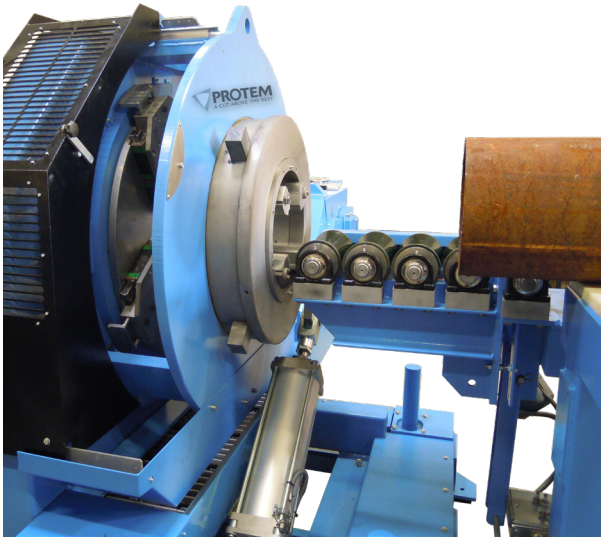
The chips conveyor is automatically operated by the CTA control system. As soon as the tool holder plate starts rotating, the chips conveyor start to operate.
The chips conveyor keeps the internal part of the machine clean. The immediate removal of the chips toward the outside protects the machine from any chip that could damage the quality of the machining operation or shorten the lifetime of the cutting tool bits.


The lifting table option can be used with the complete range of CTA machines.
The lifting table is positioned under the CTA structure. It adjusts the machine to the tube diameter. This option is necessary if the front and back conveyors (to be supplied by the enduser or delivered as an option upon request) are not equipped with a height adjustment system.

All the front / back conveyors can be used with the complete range of CTA machines. The height adjustment conveyor is designed to align the different diameters of tubes with the cutting machine axis. It can be supplied with different lengths; 6 meters (20'), 8 meters (26'), 10 meteres (33') or 12 meters (39'). The tubes can be conveyed manually or with motorized rollers.

# CTA Series High Speed Cutting and Beveling Machines

Standard Capacity: 25.4 mm - 1422.4 mm (1“ - 56“) depending on the model




The Protem CTA machines are the equipment you will need for your production and prefabrication requirements. The PROTEM CTA – High speed cutting and beveling machines save space in your workshops and can be integrated on your production lines for unmatched results.
Tubes and pipes with OD Ø ranging from 25.4 - 1422.4 mm (1” - 56”) will be cut and beveled within just a few seconds. Larger models are available upon request. The machining unit is made of a welded structure with:
• One tool holder plate
• Two OD clamping systems for the pipe

**Cutting principle**
The tube to cut and bevel is stationary. It is immobilized in the machines OD clamping devices. The tool bits mounted on the rotating plate are put into rotation around the tube to perform the cut. The feed and back up of the tool bits are performed entirely mechanically during the rotation of the tool holder plate. While cutting, the machine performs beveling on both ends.
The tool holder carriages mounted on the rotating plate are equipped with housings which can accept several types of tool blocks.

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

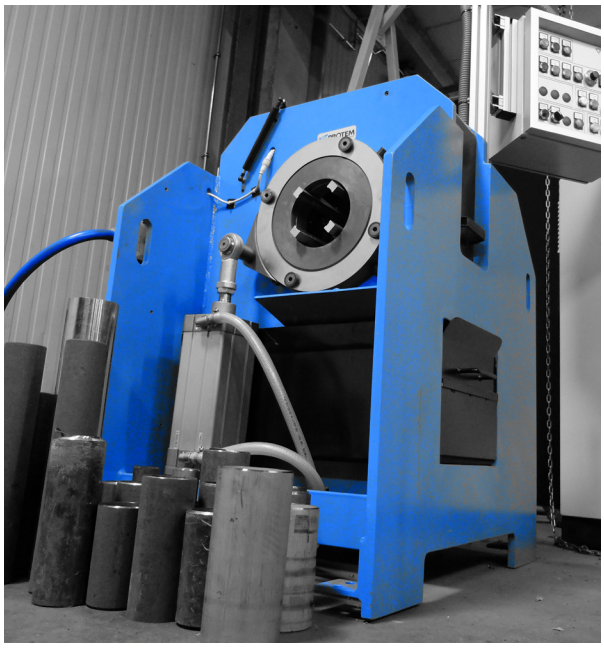
OD Mounted

## Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- High-speed machining operation
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System
- Adapted for extreme conditions

# CTA1-4 High Speed Cutting and Beveling Machine

Standard Capacity: 25.4 mm - 114 mm (1“ - 4.5“)



## Technical Features:

| | |
|---|---|
| ***Cam movement*** | 27mm (1.06”) |
| ***Maximum machining thickness*** | 10 mm (0.394”) |
| ***Clamping jaw Ø*** | Min = Ø1" (33.4mm) (1.315”)<br>Max = Ø4" (114.3mm) (4.5”) |
| ***Number of jaws*** | 4 per Set |
| ***Tool-plate rotation speed*** | Min = 60 rpm<br>Max = 370 rpm |
| ***Rotation motor drive power*** | ASYNCHRONOUS, 15 KW |
| ***Machining tool feed speed*** | 0.17 mm (.007”) per rev. |
| ***Pneumatic cylinders*** | Ø125mm (4.92”) -<br>movement 200mm (7.87”) |
| ***Cylinder pressure*** | Min: 5 bars (72.52 psi)<br>Max: 7 bars (101.53 psi) |
| ***Electricity supply*** | Three-phase / no neutral 380/415Volts 50Hz |

| Order No. | Description |
|---|---|
| CTA-1-4-1020 | High Speed Cutting & Beveling Machine for<br>Ø 25.4 mm - 114 mm (1" - 4.5") |

OD Mounted

# CTA2-6 High Speed Cutting and Beveling Machine

Standard Capacity: 60.3 mm - 168.3 mm (2.37“ - 6.6“)

## Technical Features:

| | |
|---|---|
| ***Cam movement*** | 15 mm (0.59") |
| ***Maximum machining thickness*** | 12 mm (0.47") |
| ***Clamping jaw Ø*** | Standard jaw diameter<br>Min = Ø < 11.02” (280 mm) Max = Ø > 18.5” (470 mm)<br>Additional jaw diameters<br>Min = Ø < 5.9” (150 mm) Max = Ø > 13.38” (340 mm) |
| ***Number of jaws*** | 4 per Set |
| ***Rotation motor drive power*** | ASYNCHRONOUS |
| ***Pneumatic cylinders*** | Ø 160 mm (6.3”) -<br>movement 450 mm (17.72”) |
| ***Cylinder pressure*** | Min: 5 bars (72.52 psi)<br>Max: 7 bars (101.53 psi) |
| ***Electricity supply*** | Three-phase / no neutral 380/415 Volts 50Hz |

| Order No. | Description |
|---|---|
| CTA-2-6-1020 | High Speed Cutting & Beveling Machine for<br>Ø 60.3 mm - 168.3 mm (2.37" - 6.6") |

OD Mounted

# CTA2-12 High Speed Cutting and Beveling Machine

Standard Capacity: 60.3 mm - 323.9 mm (2.37“ - 12.75“)


## Technical Features:

| | |
|---|---|
| ***Cam movement*** | 19 mm (.748”) - 29 mm (1.14”) |
| ***Maximum machining thickness*** | 15 mm (0.591”) |
| ***Clamping jaw Ø*** | Standard jaw diameter<br>Min = Ø6"< 173mm Max = Ø12">330mm<br>Additional jaw diameters<br>Min = Ø2"< 50mm Max = Ø8">212mm |
| ***Number of jaws*** | 4 per Set |
| ***Tool-plate rotation speed*** | Min = 50 rpm<br>Max = 200 rpm |
| ***Rotation motor drive power*** | ASYNCHRONOUS, 30 KW |
| ***Machining tool feed speed*** | 0.17 mm (.007”) per rev. |
| ***Pneumatic cylinders*** | Ø160 mm (6.3”) -<br>movement 450 mm (17.7”) |
| ***Cylinder pressure*** | Min: 5 bars (72.52 psi)<br>Max: 7 bars (101.53 psi) |
| ***Electricity supply*** | Three-phase / no neutral 380/415Volts 50Hz |

| Order No. | Description |
|---|---|
| CTA-2-12-1020 | High Speed Cutting & Beveling Machine for<br>Ø 60.3 mm - 323.9 mm (2.37" - 12.75") |

# CTA6-16 High Speed Cutting and Beveling Machine

Standard Capacity: 168.3 mm - 406.4 mm (6.6“ - 16“)

## Technical Features:

| | |
|---|---|
| ***Cam movement*** | 52 mm (2.04”) |
| ***Maximum machining thickness*** | 25.4 mm (1”) |
| ***Clamping jaw Ø*** | Standard jaw diameter<br>Min = Ø < 11.02” (280 mm) Max = Ø > 18.5” (470 mm)<br>Additional jaw diameters<br>Min = Ø < 5.9” (150 mm) Max = Ø > 13.38” (340 mm) |
| ***Number of jaws*** | 6 per Set |
| ***Tool-plate rotation speed*** | Min = 35 rpm<br>Max = 150 rpm |
| ***Rotation motor drive power*** | ASYNCHRONOUS, 55 KW |
| ***Machining tool feed speed*** | Min = 0.1 mm (0.004”) per rev.<br>Max = 0.4 mm (0.015”) per rev. |
| ***Pneumatic cylinders*** | Ø 160 mm (6.3”) -<br>movement 450 mm (17.72”) |
| ***Cylinder pressure*** | Min: 5 bars (72.52 psi)<br>Max: 7 bars (101.53 psi) |
| ***Electricity supply*** | Three-phase / no neutral 380 Volts 50Hz |

| Order No. | Description |
|---|---|
| CTA-6-16-1020 | High Speed Cutting & Beveling Machine for<br>Ø 168.3 mm - 406.4 mm (6.6" - 16") |

# CTA12-24 High Speed Cutting and Beveling Machine

Standard Capacity: 323.9 mm - 610 mm (12.75“ - 24“)

## Technical Features:

| | |
|---|---|
| ***Cam movement*** | 19.5 mm (0.767”) - 29.5 mm (1.16”) |
| ***Maximum machining thickness*** | 15 mm (0.591”) |
| ***Clamping jaw Ø*** | Standard jaw diameter<br>Min = Ø20"< 508mm Max = Ø24">610mm<br>Additional jaw diameters<br>Min = Ø12"< 323mm Max = Ø20">508mm |
| ***Number of jaws*** | 8 per Set |
| ***Tool-plate rotation speed*** | Min = 17 rpm<br>Max = 80 rpm |
| ***Rotation motor drive power*** | ASYNCHRONOUS, 30 KW |
| ***Machining tool feed speed*** | 0.17 mm (0.007”) per rev. |
| ***Pneumatic cylinders*** | Ø 160 mm (6.3”) -<br>movement 450 mm (17.7”) |
| ***Cylinder pressure*** | Min: 5 bars (72.52 psi)<br>Max: 7 bars (101.53 psi) |
| ***Electricity supply*** | Three-phase / no neutral 380/415Volts 50Hz |

| Order No. | Description |
|---|---|
| CTA-12-24-1020 | High Speed Cutting & Beveling Machine for<br>Ø 323.9 mm - 610 mm (12.75" - 24") |

OD Mounted

# CTA16-30 High Speed Cutting and Beveling Machine

Standard Capacity: 406.4 mm - 762 mm (16“ - 30“)


## Technical Features:

| | |
|---|---|
| ***Cam movement*** | 52 mm (2.04”) |
| ***Maximum machining thickness*** | 25.4 mm (1”) |
| ***Clamping jaw Ø*** | Standard jaw diameter<br>Min = Ø < 26” (660 mm) Max = Ø > 32.28” (820 mm)<br>Additional jaw diameters<br>Min = Ø < 14.5” (370 mm) Max = Ø > 27.1” (690 mm) |
| ***Number of jaws*** | 8 per Set |
| ***Tool-plate rotation speed*** | Min = 25 rpm<br>Max = 75 rpm |
| ***Rotation motor drive power*** | ASYNCHRONOUS, 55 KW |
| ***Machining tool feed speed*** | Min = 0.5 mm (0.002”) per rev.<br>Max = 1 mm (0.039”) per rev. |
| ***Pneumatic cylinders*** | Ø 160 mm (6.3”) -<br>movement 450 mm (17.72”) |
| ***Cylinder pressure*** | Min: 5 bars (72.52 psi)<br>Max: 7 bars (101.53 psi) |
| ***Electricity supply*** | Three-phase / no neutral 400 Volts 50Hz |

| Order No. | Description |
|---|---|
| CTA-16-30-1020 | High Speed Cutting & Beveling Machine for<br>Ø 406.4 mm - 762 mm (16" - 30") |

# CTA24-36 High Speed Cutting and Beveling Machine

Standard Capacity: 610 mm - 914.4 mm (24“ - 36“)


OD Mounted

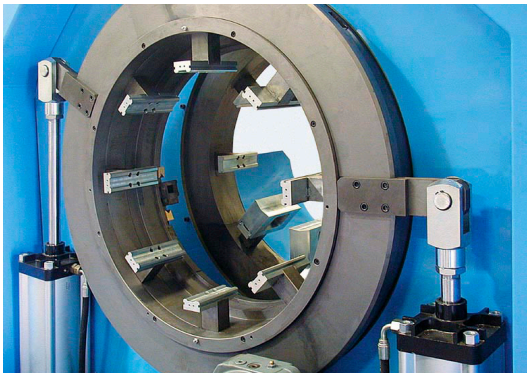
| Order No. | Description |
|---|---|
| CTA-24-36-1020 | High Speed Cutting & Beveling Machine for<br>Ø 610 mm - 914.4 mm (24" - 36") |

## LARGER MODELS ON REQUEST

## Multifunctional Control Panel


The machine is delivered with an electric panel in conformity with the EC Standards. On the face of the panel, several switches and a screen to operate the machine are available. The end user can use the manual mode. The control panel allows the user to control all essential functions: Clamp /Unlock, Slow / Fast Machining, Start / Stop Machine Manual / Automatic, Emergency Stop.

## Automatic clamping system



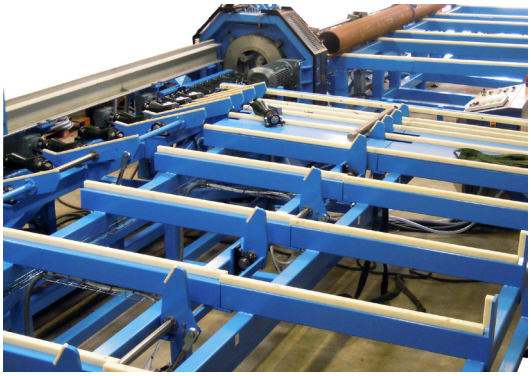
The automatic and pneumatic clamping systems set the concentricity of the tube. The machining is performed between both clamping systems.

## Tube conveyors

All tube conveyors can be used with the CTA machine range. The tube conveyor can be supplied in various configurations to meet the application requirements. The tube conveyor can be supplied with different lengths 6 meters (20 feet), 8 meters (26 feet), 10 meters (33 feet) or 12 meters (39 feet). The height adjustment ensures a very precise positioning of the tube in the mandrel. The tubes can be manually conveyed or be driven by motorized rollers. The rollers are zinc treated and therefore able to accept stainless steel tubes while avoiding any risk of pollution to the transported tubes.

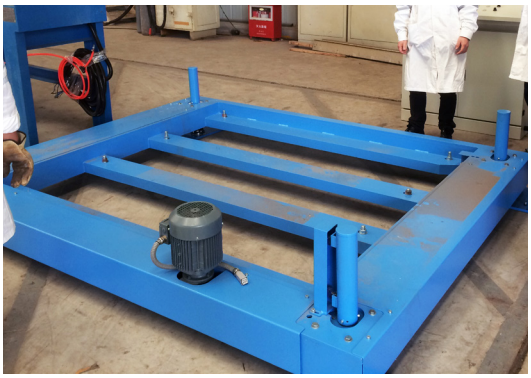
| Order No. | Description |
|---|---|
| CONVF | Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Roller (V form) (please specify for which machine) |
| CONVFRM | Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Motorized Roller (bobbin shape) (please specify for which machine) |
| CONVFRV | Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with bobbin shape Roller (please specify for which machine) |
| CONVMB | 6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system (V form) (please specify for which machine) |
| CONVMBRV | 6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system and bobbin shape Rollers (please specify for which machine) |
| CONVMBRM | 6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system & Motorized Roller (Bobbin shape) (please specify for which machine) |
| CONVMBRMV | 6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system & Motorized bobbin shape & V form Rollers (please specify for which machine) |

## Tube Storage Table



All the feeding tube conveyors or storage tube conveyors can be easily connected to any machine in the CTA series. The length of the feeding or storage tube conveyor is adapted to the length of the tube conveyor.

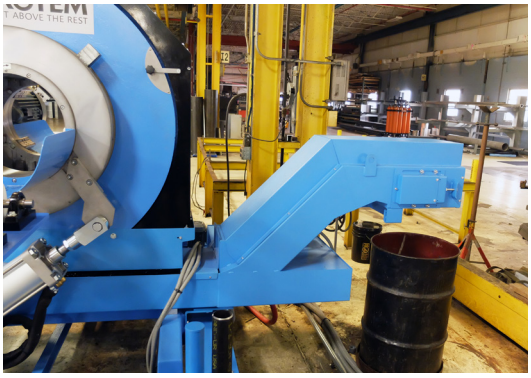
## Lifting table



The optional lifting table can be used with any version of the CTA machine. The lifting table is positioned under the CTA structure. Its purpose is to align the axis tool holder plate with the tube to be machined which must be set on a fixed tube conveyor. This option saves time and helps to increase productivity. It also makes the CTA very easy to use due to the alignment between the axis of the tube set on a tube conveyor and the axis of the tool holder plate of the CTA.

| Order No. | Description |
|---|---|
| CTA-MB-1000 | Lifting Table (please specify for which machine) |

## Chips conveyor



The optional chips conveyor can be used on all versions of the CTA. This option increases productivity as all the chips produced during a machining cycle are removed automatically. This option makes the machining process much easier for the operator, as it is not necessary to stop the production operations to remove the chips, which it is the case with the chips tank delivered with the standard version.

| Order No. | Description |
|---|---|
| CTA-CONVCOLUB | Lubrication and Chips Conveyor (please specify for which machine) |

OD Mounted

| Order No. | Description |
|---|---|
| CTA-PO/PO106 | Beveling tool bit 30° |
| CTA-PO/PO107 | Beveling tool bit 37,5° |
| CTA-PO/PO108 | Beveling tool bit 37,5° sym. |
| CTA-PO/PO109 | Beveling tool bit 10° for bevel 30° |
| CTA-PO/PO110 | Cutting and Beveling tool bit 10° for double bevel 37°30 |
| CTA-PO/PO111 | Cutting tool bit 30° |
| CTA-PO/PO113 | Cutting and Beveling tool bit 10° double for bevel 30° |
| CTA-PO/PO131 | 37°30 insert holder |
| CTA-PO/PO133 | 30° insert holder |
| CTA-PO/PO142 | Cutting tool holder for 30° beveling |
| CTA-PO/OT106 | Tool bit holder 30° |
| CTA-PO/OT107 | Tool bit holder 37° 30 |
| CTA-PO/OT108 | Tool bit holder 37° 30 sym. |
| CTA-PO/OT109 | Tool bit holder 10° |
| CTA-PO/OT110 | Cutting blade holder + Beveling 10° for double bevel 37°30 |
| CTA-PO/OT111 | Cutting blade holder |
| CTA-PO/OT112-01 | Shim for cutting blade holder 0.1 mm (0.004") |
| CTA-PO/OT112-02 | Shim for cutting blade holder 0.2 mm (0.008") |
| CTA-PO/OT112-2 | Shim for cutting blade holder 2 mm (0.079") |
| CTA-PO/OT113 | Cutting blade holder + Beveling 10° for double bevel 30° |
| CTA-PO/OTC34 | Cutting blade (PO142) |
| CTA-PO/OTC35 | Insert for PO131-PO133 |
| CTA-PO/OTC36 | Screw axis for PO131-PO133 |

# HYDRAULIC POWER UNITS

## 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

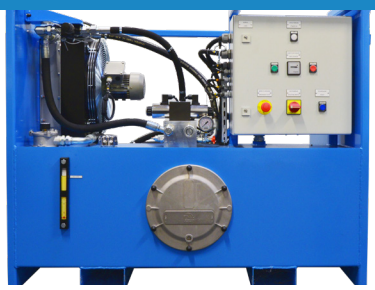
| ORDER NO. | DESCRIPTION |
|---|---|
| GH-HPP11KW | Hydraulic power pack 11 kW, two senses of rotation, flow regulation manual, without hoses |

| 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 | 1500 mm | 1250 mm |
| 37.401“ | 59“ | 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

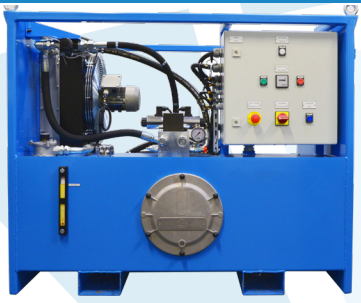
| ORDER NO. | DESCRIPTION |
|---|---|
| GH-HPP22KW | Hydraulic power pack 22 kW, two senses of rotation, flow regulation manuell, without hoses |

| 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

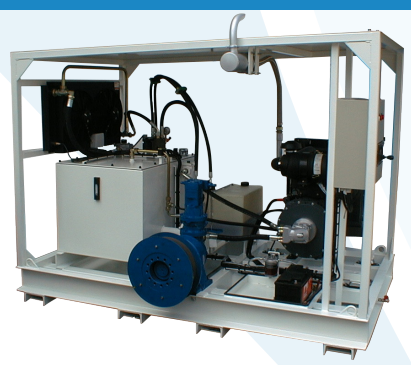
| ORDER NO. | DESCRIPTION |
|---|---|
| GH-HPP-TD15 | Hydraulic power pack with Diesel motor, 15 kW |

| 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-D85



| ORDER NO. | DESCRIPTION |
|---|---|
| GH-HPP-TD85 | Hydraulic power pack with Diesel motor, 85 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

# MICRO LUBRICATION SYSTEM

## 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-HD, TTNG-LW, MF, etc.) or with any other type of these machines.

The system of micro-lubrication is completely independent of the machine with which it can be associated.

| ORDER NO. | DESCRIPTION |
|---|---|
| MICRO_LUB-1002 | Lubrification device |
| MICRO_LUB-K01 | MICRO_LUB-K01 transport box |

It can be positioned under the tube to be cut and/or beveled on ground level.

The base is held by two cross-pieces which allows it to be moved by forklift or through any other adapted means of handling.

It can be positioned directly on the tube while fixed with removable tension belts (ref. 2) which are provided for adjustment in height and the desired leveling (with pawl).

It also has four handles (ref. 3) which allow it to be used in areas where a forklift could not be maneuvered.

The tension belts are provided with hooks and locks fixed on the lifting eye (ref. 4).

Delivery without plugs.

# UG1 Tungsten Electrode Sharpener & Grinder

## UG1

≈ 1.9 kg
≈ 4.19 lbs

### DESCRIPTION:

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

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

OD MOUNTED MACHINE

### TECHNICAL FEATURES:

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

### SCOPE OF DELIVERY:

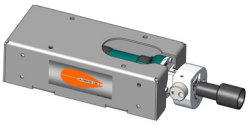
| Order Nr. | Description |
|---|---|
| UG-1-1020 | Electrode grinder with 220V electric drive |
| UG-1-1040 | Electrode grinder with 110V electric drive |
| UG-1-K01 | Transport Case |

### OPTIONS:

Device to plug a vacuum cleaner

Diamond Wheel


Collet



Machine Bench

Clamping Collet

| Order Nr. | Description |
|---|---|
| UG-1-1115 | Diamond wheel |
| UG-1-1123 | Device to plug a vacuum cleaner |
| UG-1-1212 | Machine Bench |
| UG-1-1300 | Pencil |
| UG-1-1310 | Sub-assembly electrode holder |
| UG-1-13C01 | Clamping Collet - 1 mm diameter |
| UG-1-13C02 | Clamping Collet - 1.6 mm diameter |
| UG-1-13C03 | Clamping Collet - 2 mm diameter |
| UG-1-13C04 | Clamping Collet - 2.4 mm diameter |
| UG-1-13C05 | Clamping Collet -3.2 mm diameter |
| UG-1-13C06 | Clamping Collet - 4 mm diameter |
| UG-1-1510 | Collet-30° |
| UG-1-1511 | Collet-15° |
| UG-1-1512 | Collet-22.5° |
| UG-1-1513 | Collet-18° |

# ACCESSORIES

## Lubricating filter FRL200

| ORDER NO. | DESCRIPTION |
|---|---|
| FRL200-1000 | Maintenance unit for pneumatically operated machines with pressure adjustment. |


## Lubricating filter FRL300

| ORDER NO. | DESCRIPTION |
|---|---|
| FRL300-1000 | Maintenance unit for pneumatically operated machines with dual motor pack. |


## Kits 01

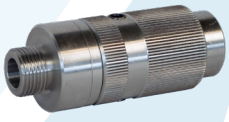
| ORDER NO. | DESCRIPTION |
|---|---|
| FK-1000 | Flexible tubing set |

## Kits 02

| ORDER NO. | DESCRIPTION |
|---|---|
| FK-1002 | Flexible tubing set |

## Regulation Valve

| ORDER NO. | DESCRIPTION |
|---|---|
| RP-1000 | Regulation Valve |



## Chip hook

| ORDER NO. | DESCRIPTION |
|---|---|
| 103-0001 | Chip hook |

## Oil for filters

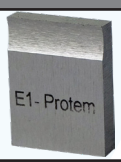
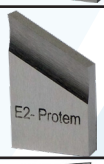
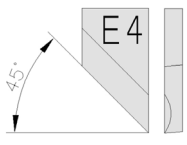
| ORDER NO. | DESCRIPTION |
|---|---|
| FL-1000 | Oil for filters, 0,5 L |
| FL-1001 | Oil for filters, 1 L |
| FL-1003 | Oil for filters, 5 L |

# TOOLS BITS & INSERTS

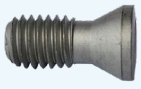
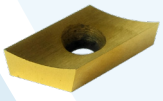
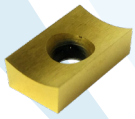
## SM8

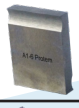
| Order No. | Description | Picture |
|---|---|---|
| O-SM8-M0-4-H-74 | Facing tool bit 90° for SM8 for 0.354“-0.590“ (9mm-15mm) |  |
| O-SM8-M1-4-H-70 | Facing tool bit 90° for SM8 |  |
| O-SM8-M2-4-H-71 | Beveling tool bit 30° for SM8 |  |
| O-SM8-M2INV-4-H-75 | Beveling tool bit inversed 30° for SM8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

| 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 |  |

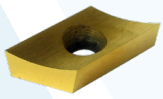
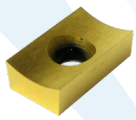
## US25

| Order No. | Description | Picture |
|---|---|---|
| O-US-PP30-6-11045 | Insert-holder 30° for US25 |  |
| O-US-PP375-6-14005 | Insert-holder 37,5° for US25 |  |
| O-US-PP45-6-14006 | 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-B6-6-H-55 | Tool bit 90°, with disalignment |  |
| O-US-B7-6-H-57 | Tool bit 30°, with disalignment |  |
| O-US-B8-6-H-58 | Tool bit 37°30, with disalignment |  |
| O-US-B9-6-H-60 | Tool bit for counterboring 15°, with disalignment |  |
| O-US-B11-6-H-24 | Tool bit for counterboring and squaring |  |
| O-US-C5-6-H-62 | Tool bit for 7° R6 j-bevels |  |
| O-US-C6-6-H-64 | Tool bit for 12,5° R6 j-bevels |  |
| O-US-C7-6-H-66 | Tool bit for 7° R6 j-bevels, with disalignment |  |
| O-US-C8-6-H-68 | Tool bit for 12,5° R6 j-bevels, with disalignment |  |
| O-US-C9-6-H-20 | Tool bit for 10° R1,5 j-bevels |  |
| O-US-C10-6-H-71 | Tool bit for 20° R4 j-bevels |  |

# TOOLS BITS & INSERTS

## US Series (US30CH to US150)

| Order No. | Description | Picture |
|---|---|---|
| O-US-PP30-6-11045 | Insert-holder 30° for US25 |  |
| O-US-PP375-6-14005 | Insert-holder 37,5° for US25 |  |
| O-US-PP45-6-14006 | 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-A1-9-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-86 | 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° R4 j-bevels |  |

## US450

| 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 |

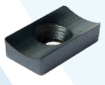
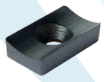
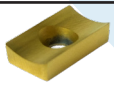
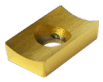
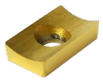
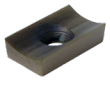
## PFM

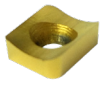
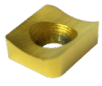
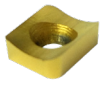
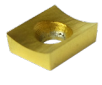
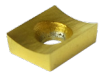
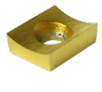
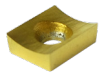
| Order No. | Description |
|---|---|
| US-HSB-R-PO/40C | US-HSB-R-PO/40C Carbide insert triangular 27x27(xx following radius, material, reverse or no) |
| US-HSB-R-PO/45C01 | US-HSB-R-PO/45C01 Carbide insert rhomb shape 9,52x9,52 (xx following radius, material, reverse or no) |

## OHSB

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

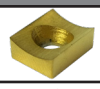
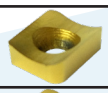
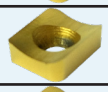
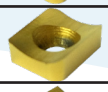
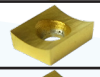
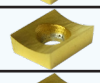
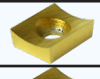
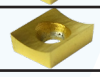
## SE25 & SE65 & SE2T

| 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 |  |

| Order No. | Description | Picture |
|---|---|---|
| O-SE-P3-3.-H-T-25A | Insert right for J-prep with radius 1.5, material HSSE with TiN coating |  |
| 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 | Insert, left, material HSSE with TiN coating |  |
| 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 |  |

# TOOLS BITS & INSERTS

## SL & SE-NG Series

| 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 | Insert right for J-prep with radius 1.5, material HSSE with TiN coating |  |
| 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 | Insert, left, material HSSE with TiN coating |  |
| 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 |  |

## GR Series

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

## TTS-NG & TTS-RD Series

| Order No. | Description |
|---|---|
| O-TTS-D2D-12-H-12 | Standard pointed cutting tool-bit |
| O-TTS-D1D-12-H-11 | Standard flat cutting tool-bit right |
| O-TTS-D4-12-H-18 | Beveling tool-bit 30° |
| O-TTS-D4-12-H-13 | Beveling tool-bit 37°30 (up to 12.7 mm (.5") wall) |
| O-TTS-D1G-12-H-10 | Standard flat cutting tool-bit left |

## TTNG-HD, TTNG-LW & TNO Series

| 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° |

# TOOLS BITS & INSERTS

## MF Series

| Order No. | Description |
|---|---|
| O-MF-P1-3-H | Cutting tool (2 cutting edges) with shim |
| O-MF-P2-4-H | Tool inserts for 30° and 37,5° |
| O-TTN-TT1-5-H-PL | Severing tool bit, max. wall thickness 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 |

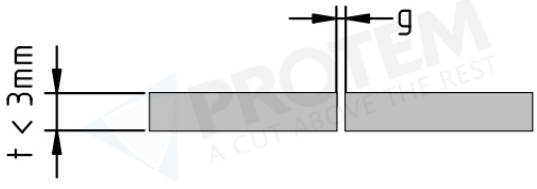
| Order No. | Description |
|---|---|
| O-TTN-TT13-25-H-13 | Beveling tool bit for double bevel, wall thickness 39mm |
| O-TTN-TT14-25-H-14 | Beveling tool bit 37°30, wall thickness 50mm |
| O-TTN-TT15-8-H-PL | Severing tool bit, max. wall thickness 90mm , width 30mm |
| O-TTN-TT15-8-H-PT | Pointed tool 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° |

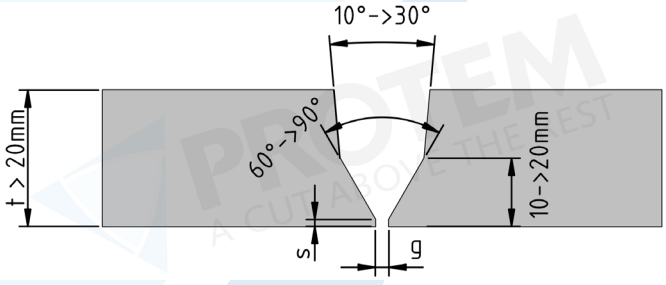
## CTA Series

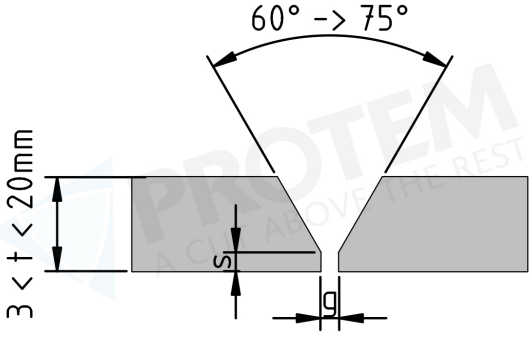
| Order No. | Description |
|---|---|
| CTA-PO/PO106 | Beveling tool bit 30° |
| CTA-PO/PO107 | Beveling tool bit 37,5° |
| CTA-PO/PO108 | Beveling tool bit 37,5° sym. |
| CTA-PO/PO109 | Beveling tool bit 10° for bevel 30° |
| CTA-PO/PO110 | Cutting and Beveling tool bit 10° for double bevel 37°30 |
| CTA-PO/PO111 | Cutting tool bit 30° |
| CTA-PO/PO113 | Cutting and Beveling tool bit 10° double for bevel 30° |
| CTA-PO/PO131 | 37°30 insert holder |
| CTA-PO/PO133 | 30° insert holder |
| CTA-PO/PO142 | Cutting tool holder for 30° beveling |
| CTA-PO/OT106 | Tool bit holder 30° |
| CTA-PO/OT107 | Tool bit holder 37° 30 |
| CTA-PO/OT108 | Tool bit holder 37° 30 sym. |
| CTA-PO/OT109 | Tool bit holder 10° |
| CTA-PO/OT110 | Cutting blade holder + Beveling 10° for double bevel 37°30 |
| CTA-PO/OT111 | Cutting blade holder |
| CTA-PO/OT112-01 | Shim for cutting blade holder 0.1 mm (0.004") |
| CTA-PO/OT112-02 | Shim for cutting blade holder 0.2 mm (0.008") |
| CTA-PO/OT112-2 | Shim for cutting blade holder 2 mm (0.079") |
| CTA-PO/OT113 | Cutting blade holder + Beveling 10° for double bevel 30° |
| CTA-PO/OTC34 | Cutting blade (PO142) |
| CTA-PO/OTC35 | Insert for PO131-PO133 |
| CTA-PO/OTC36 | Screw axis for PO131-PO133 |

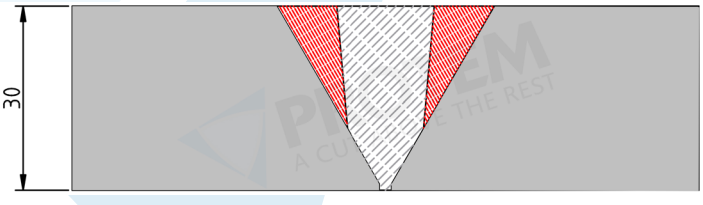
## BB Series

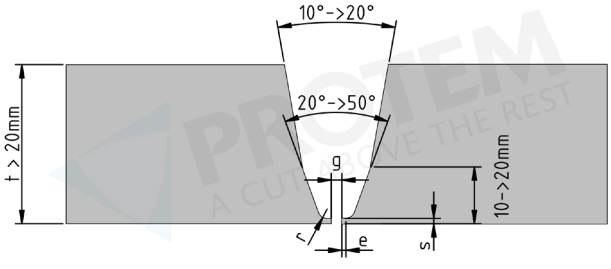
| Order No. | Description |
|---|---|
| US-HSB-R-PO/1015 | Bed plate for Counterboring block (3601) |
| US-HSB-R-PO/3001 | Outside Beveling Carbide Insert-Holder 30° bottom (wall<19mm) |
| US-HSB-R-PO/3002 | Outside Beveling Carbide Insert-Holder 30° top (please consider reference 3001 for wall >19mm) |
| US-HSB-R-PO/3014 | Outside Beveling Carbide Insert-Holder 10° |
| US-HSB-R-PO/3017 | Outside Beveling Carbide Insert-Holder 37°5(wall<19mm) |
| US-HSB-R-PO/3018 | Outside Beveling Carbide Insert-Holder 37°5+ ref 3504 (wall>19mm) |
| US-HSB-R-PO/3025 | Outside Beveling Carbide Insert-Holder 20° (wall<19mm) |
| US-HSB-R-PO/3032 | Outside Beveling Carbide Insert-Holder 20°+ ref 3001 (wall>19mm) |
| US-HSB-R-PO/3101 | Counterboring Carbide Insert-Holder 4° |
| US-HSB-R-PO/3210 | Facing tool holder block |
| US-HSB-R-PO/3211 | Facing Carbide Insert-Holder |
| US-HSB-R-PO/3213 | tool holder Adapter plate for Facing tool holder block |
| US-HSB-R-PO/3216 | tool holder Adapter plate for Facing tool holder block for Small Ø |
| US-HSB-R-PO/3220 | disaligned tool holder support |
| US-HSB-R-PO/3504 | Inside Beveling Carbide Insert-Holder 30° bottom (wall<19mm) |
| US-HSB-R-PO/3505 | Inside Beveling Carbide Insert-Holder 30° top (associated to reference 3504 when wall >19mm) |
| US-HSB-R-PO/3600 | Counterboring tool holder block set on bed plate 1010 |
| US-HSB-R-PO/3601 | Insert-Holder for Counterboring mounted on bed plate (ref, 1015) |
| O-cléCL5 | Tork Key to Screw all Carbide Insert Screw |

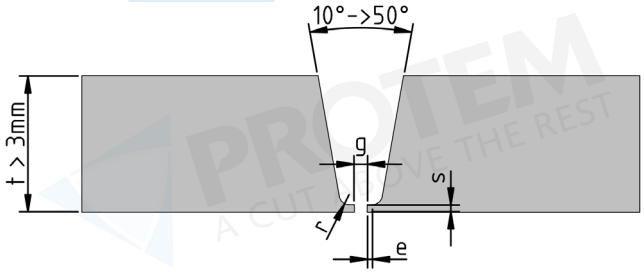


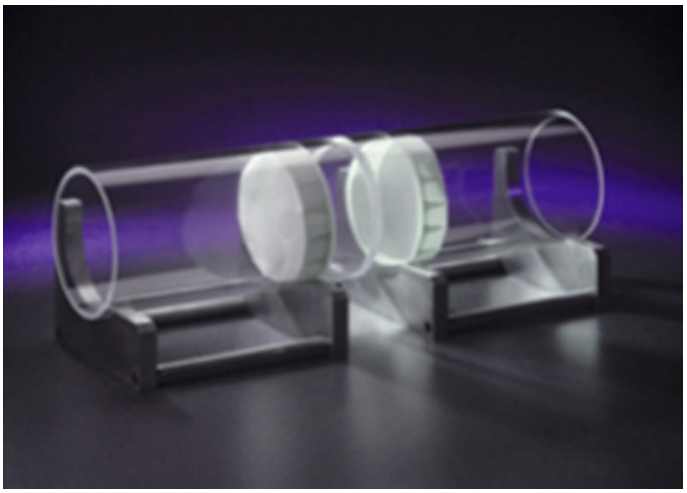



PROTEM
A CUT ABOVE THE REST

# Dissolvo®

## WATER SOLUBLE PAPER AND TAPE


*THE PROVEN ECOLOGICALLY FRIENDLY PURGING SOLUTION*



## About

Dissolvo Water Soluble Paper is the proven, efficient and ecologically friendly purging solution.
Used to retain inert gas during TIG welding of stainless steel and aluminum pipes, Dissolvo can be constructed into purge dams fitting all diameters and placed within close proximity to the weld zone.

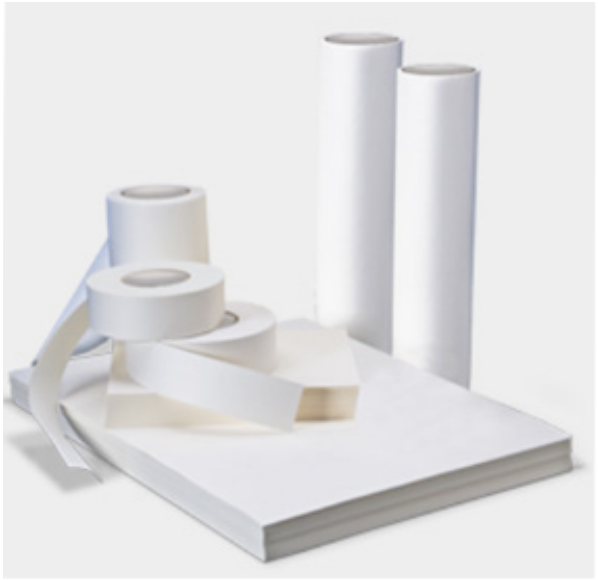
Dissolvo provides an excellent barrier to create the ideal purge environment by trapping inert gas within the weld zone, while preventing oxygen from entering and causing contamination. Thus, Dissolvo is cost effective, reducing the amount of expensive inert gas needed to create a superior purge.

Comprised of 100% biodegradable sodium carboxyl methyl, cellulose and wooden pulp, Dissolvo quickly disperses when introduced to water and most aqueous solutions, leaving no residue behind in the pipeline.

Dissolvo is available in a wide range of grades and sizes and is non-toxic, making it ideal for the nuclear, petrochemical, and food and beverage industries.

# Features and Benefits

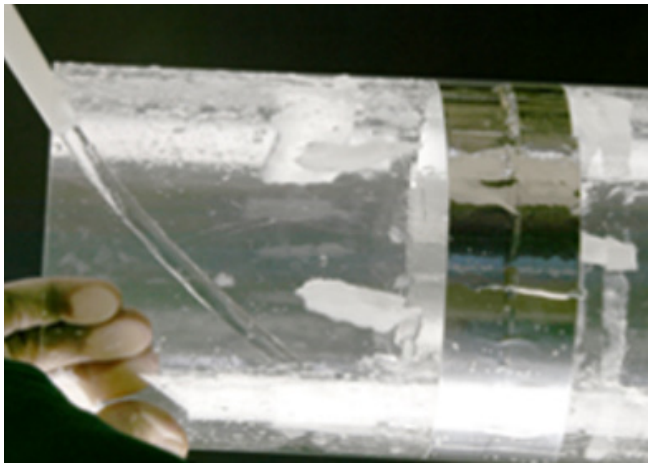
## Purge Gas Barrier for any Pipe Diameter



- Fast and easy construction into purge dam that fits any pipe schedule and size
- Retains inert gas, while preventing oxygen contamination
- Can be placed near weld zone, reducing amount of expensive inert gas used to create purge environment
- Create an air tight seal by securing dam to pipe wall with Dissolvo Water SolubleTape

## Green, Non-toxic and Eco-friendly

- 100% biodegradable
- Made of sodium carboxy methyl cellulose & wooden pulp
- Ideal for nuclear, petrochemical, food and beverage industries



## Effortless Removal Process

- Disperses when introduced to water and most aqueous solutions
- Eliminates post weld process
- Nothing remains in the pipeline
- Eliminates extra labor associated with device removal, saving time and money.

## Versatile

- Available in wide range of sizes, grades and forms

# How Dissolvo Works

## Trace and Impress

Trace pipe's inner diameter by pressing paper along pipe edge, creating an impression. Then fold to form a 90° angle.

## Cut

Cut in a circle around the impression, approximately one-third times greater than pipe diameter.

## Slit

Slit approximately 1″ to 2″ segments perpendicular to impression on paper making first slit at 12 o'clock position followed by 3 o'clock, 6 o'clock and so on.

# How Dissolvo Works

## Position Inside Pipe and Tape in Place

Cut Dissolvo Water Soluble Tape into pieces. Position slit Dissolvo Water Soluble Paper dam inside pipe. Secure dam with tape pieces along the entire circumference.

***ACTIVATE WATER SOLUBLE TAPE***

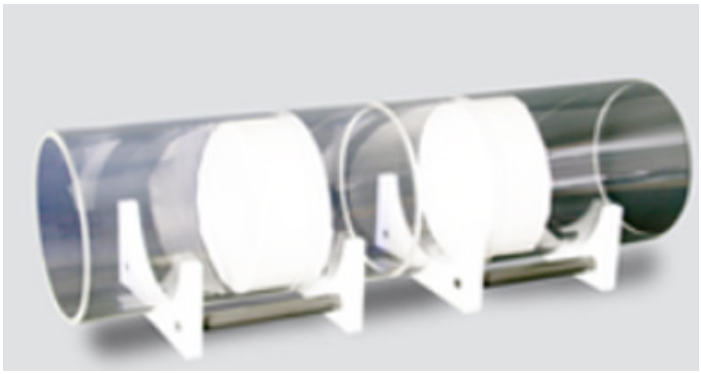
## Moisten Sponge

Moisten an ordinary sponge with water and squeeze out excess water until the sponge is damp.

## Lightly Dab

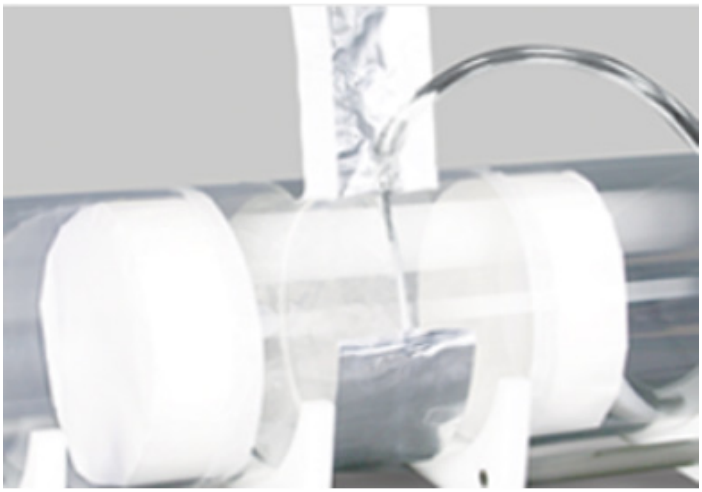
Lightly dab sponge along the water soluble tape portion of the dam. The dampened sponge will reactivate the adhesive to ensure low air permeability.

# How Dissolvo Works



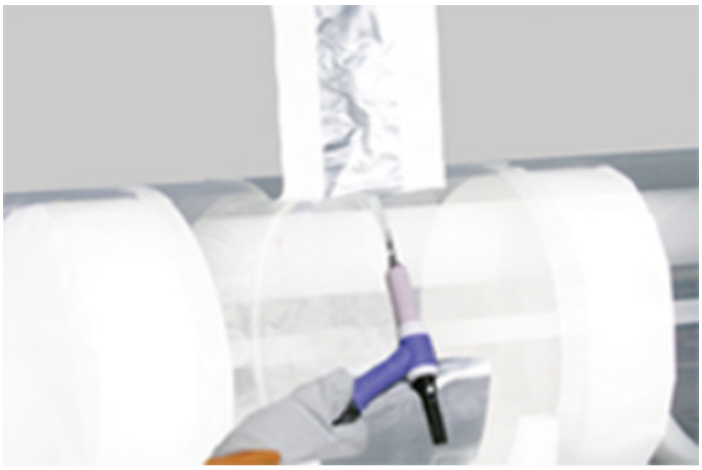
## Repeat

Repeat process on the opposite side of the pipe to define purge chamber



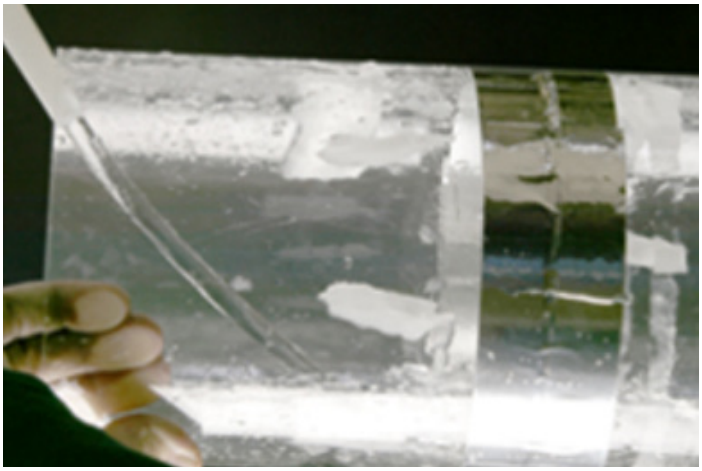
## Introduce Gas

Insert purge gas needle into root gap and introduce noble gas, while ensuring connection to gas line.



## Weld

Carry out the welding process.



## Dissolve

Introduce Water to Dissolvo Water Soluble Paper and Tape and watch them disperse, clearing the pipeline.

# Types & Sizes

## Dissolvo Purge Paper and Purge Tape

| Item Nr. | Description | Dimensions | | Type | Case Pack |
|---|---|---|---|---|---|
| | | Inch | Metric | | |
| D01S | WLD35 | 8 1/2“ x 11“ | 22 cm x 28 cm | Sheet | 1000 sheets/ ream |
| D02S | WLD35 | 8 1/2“ x 14“ | 22 cm x 36 cm | Sheet | 1000 sheets/ ream |
| D03S | WLD35 | 17“ x 22“ | 43 cm x 56 cm | Sheet | 500 sheets/ ream |
| DW209165 | WLD35 | 9“ x 165“ | 23 cm x 50 m | Roll | 4 rolls/case |
| DW215165 | WLD35 | 15 1/2“ x 165“ | 39 cm x 50 m | Roll | 4 rolls/case |
| DWAC320 | WLD40C | 20 1/2“ x 165“ | 52 cm x 50 m | Roll | 4 rolls/case |
| DW615022 | WLD60 | 15 1/2“ x 22“ | 39 cm x 56 m | Sheet | 250 Sheets/ ream |
| DW615165 | WLD60 | 15 1/2“ x165“ | 39 cm x 50 m | Roll | 4 rolls/case |
| DW631165 | WLD60 | 31“ x 165“ | 79 cm x 50 m | Roll | 4 rolls/case |
| DW14K | Tape WAT | 1“ x 300“ | 2.5 cm x 92 m | Roll | 24 rolls/case |
| DW10K | Tape WAT | 2“ x 300“ | 5 cm x 92 m | Roll | 12 rolls/case |

# FAQ (Frequently asked Questions)

## Dissolvability

Dissolvo Water Soluble Paper and Tape dissolves in most aqueous solutions or steam.

## Dissolve in Oil

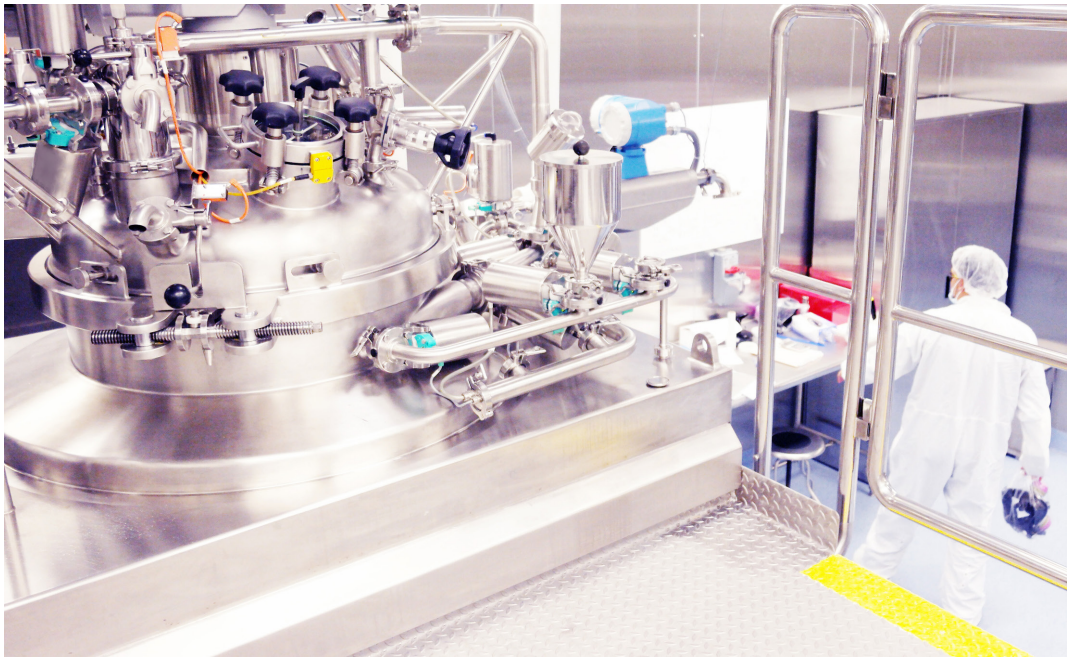
Dissolvo Water Soluble Paper and Tape will not dissolve in oil or fuel, however both can be flushed water, steam or an aqueous solution.

## Dissolvability In Solvents

Dissolvo Water Soluble Paper and Tape cannot dissolve in solvents such as MEK or acetone. The products must be flushed water, steam or an aqueous solution.

## Dissolve in Hot and Cold Water Temperatures

Dissolvo Water Soluble Paper and Tape will dissolve in either hot or cold water. However, the rate of dissolvability increases as the temperature of the water increases.



# FAQ (Frequently asked Questions)

## Flash Point

Dissolvo Water Soluble Paper and Tape have a flash point equivalent to ordinary paper, which is 450°F (232°C).

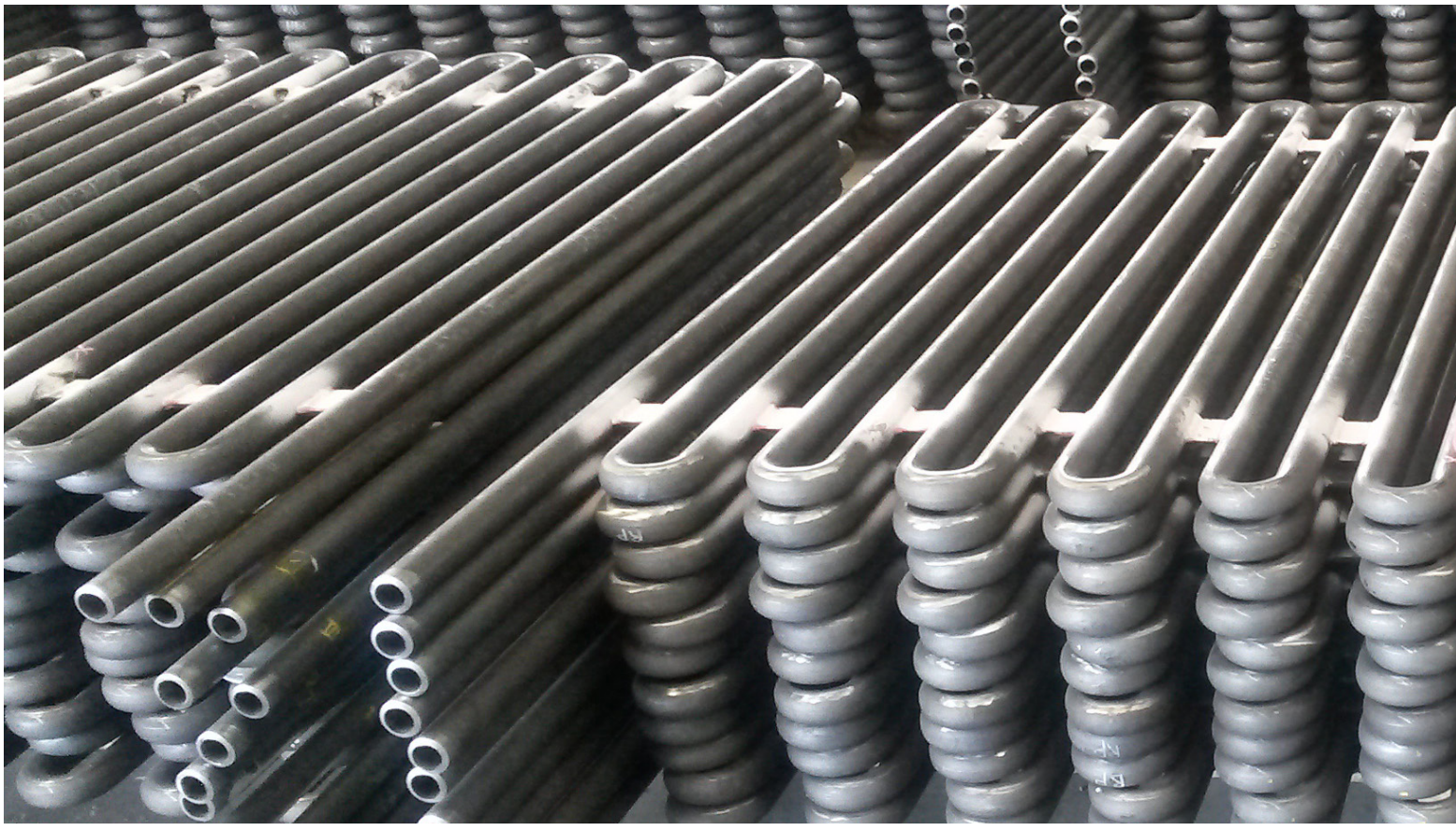
## Safe Components

Dissolvo Water Soluble Paper and Tape are 100% biodegradable and eco-friendly. Both are non-toxic products that do not cause reactions or adverse effects when used.

## Dry Tape

Dissolvo Water Soluble Tape is designed to allow the user to place the dam in the proper position before maximizing the adhesion of the seal. The strength of the “tack” or “stickiness” of the adhesive allows the user to have control and re-°© position the dam if not properly placed on the first attempt. Once the dam is in place, the user can increase adhesion by reactivating the adhesive on the tape portion of the dam with a damp sponge. A tight seal will be formed as it dries.

# BOILER TUBES - HEAT EXCHANGER TUBES

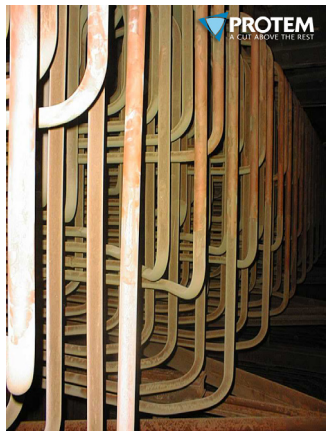


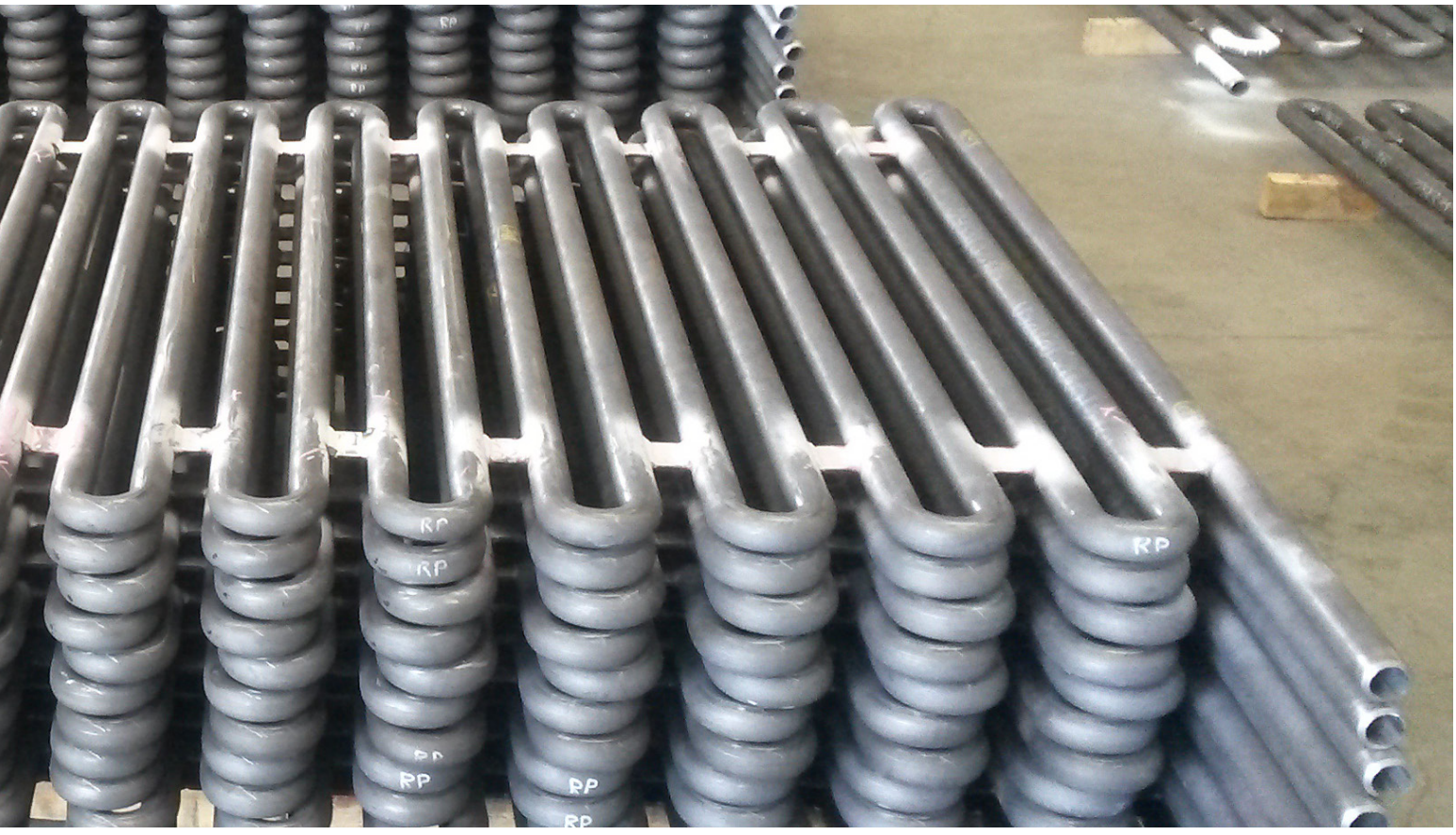
## Description:

PROTEM was founded in the 1970s with the aim to design and manufacture mobile machining equipment which meet the technical and quality requirements of the operators of the Boiler industry. Since the 1970s, PROTEM has been the primary innovator of portable beveling, cutting, severing, facing, squaring, counterboring equipment. Thanks to its capability, capacity, experience and expertise, PROTEM has gained international recognition for its commitment to providing reliable solutions for the welding preparation. The machines were designed together with field operators. They allow to bevel, face, counterbore, cut to length, remove welded joints from heat exchanger panels, to cut and bevel simultaneously or individually heavy walled tubes and pipes, remove the membrane of fin tubes and simultaneously bevel the fin tubes. These machines can be operated in all positions : vertically, horizontally, over head. In extreme temperatures and environment conditions (high humidity, saline areas...), in very tight spaces. They can be remote controlled for works performed under ionized areas. Different versions are available according to the ranges of diameters to cover, to the preferred motorisation type -pneumatic, electric, hydraulic, cordless...-, to the preferred degree of automation - manual feed and/or clamping, semi automatic or full automatic version. The PROTEM mobile machining units are either id mounted or od mounted and self centered in the tubes or pipes. They are fitted with HSS tool bits or with tool inserts enabling to perform I, V, J, compound bevels. Suitable for all materials : mild steel, stainless steel, exotic alloys (inconel, austenitic steels, duplex, super duplex, copper etc.)

## Applications:

- Machining of boiler tubes, heat exchanger tubes, waterwall cutout windows, condensers etc.
- Cutting tubes to length
- Removal of wall membranes and simultaneous beveling of fin tubes
- Removal of weld joints on heat exchanger plates
- Facing of tubes
- ID cut of heat exchanger tubes





# HEAT EXCHANGER TUBES INDUSTRY

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

SM8

S18


S18TP

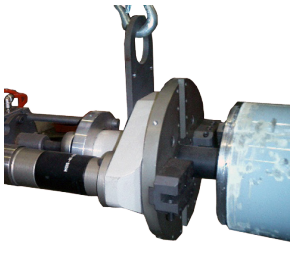
US25TP

US25CA


US25TA


US30CH

US30CHCA



US40CA


GR76NG

# NUCLEAR INDUSTRY

## Description:

Our equipment is known for its capability, quality, precision, sturdiness and ease of use. The design is able to perform varied operations including; cutting, beveling, de-tubing and inside tube cutting of tubular plates.

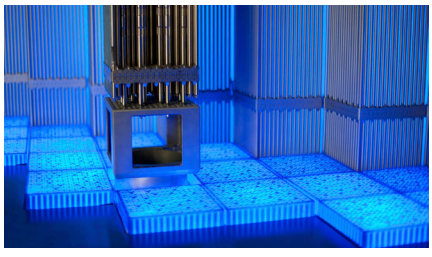
PROTEM equipment is used during all the stages of a nuclear power station's life; construction, maintenance, dismantling and nuclear waste processing.

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

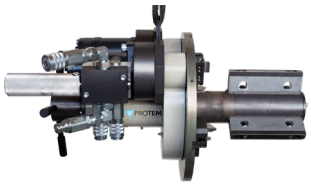


# NUCLEAR INDUSTRY

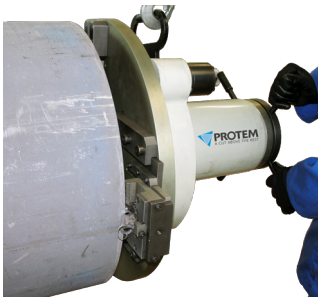
For more than 50 years PROTEM equipment has been used successfully by nuclear operators.

TTNG-HD

US 40

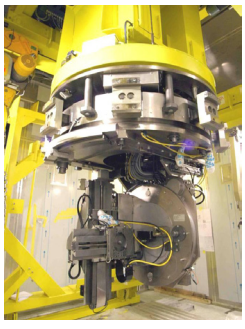


US 80



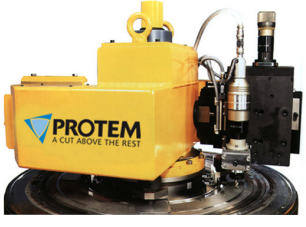
US 150

US 450



F9 - Sodium Reactor Decommissioning

US 3000 R - Cladding equipment on VVER 1100




US 480 R – Machining and Cladding Equipment on Steam Generator

# OIL AND GAS INDUSTRY

## Description:

PROTEM offers industrial operators involved in the field of Oil and Gas integrated solutions for prefabrication work, manufacturing and maintenance.

This equipment is designed to provide the essential qualities expected by our customers

Sturdiness, reliability, ease of use, ergonomic design, wide range of capabilities, machinings that can be done within a very short time and perfect welding preparation.

Adapted to all environments, including the most restrictive ones, the equipment designed by PROTEM can be used in fabrication workshops, on the job site, onboard ships, onshore or offshore platforms, spoolbases, etc.

The proposed range of equipment includes:

- High speed beveling machines type PFM HSB and US600R
- High speed cutting and beveling machines, CTA Series
- Beveling benches, BB Series
- Portable cutting and beveling machines, TT and TNO Series
- Portable beveling machines, US Series
- Coating machining equipment for pipelines, US and TT Series

## Applications:

> Prefabrication

> Manufacture of pipelines

> Pipelines Maintenance

> Under water machining

# OIL AND GAS INDUSTRY

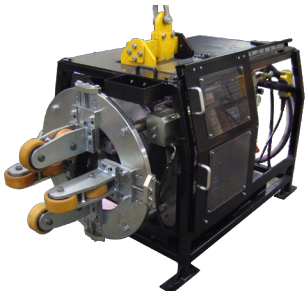
SUBSEA - EXTREME TEMPERATURES - BARGES - ONSHORE - OFFSHORE - SPOOLBASE

PFM

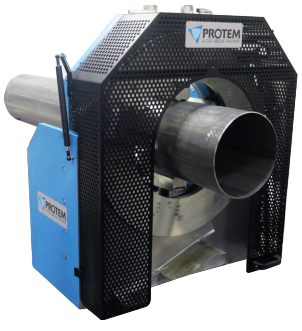
TTNG-HD

BB

Elbow Beveling Machine

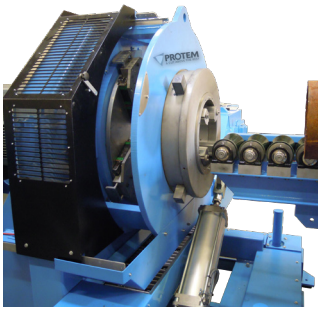


OHSB



MF

TNO



CTA

# TUBE PROCESSING

## Description:

Energy industries, in particular, have an increasing need for tubes to transport raw materials and sources of energy.

Tube and elbow manufacturers supply these industries with a large range of tubes in all diameters, materials and wall thicknesses.

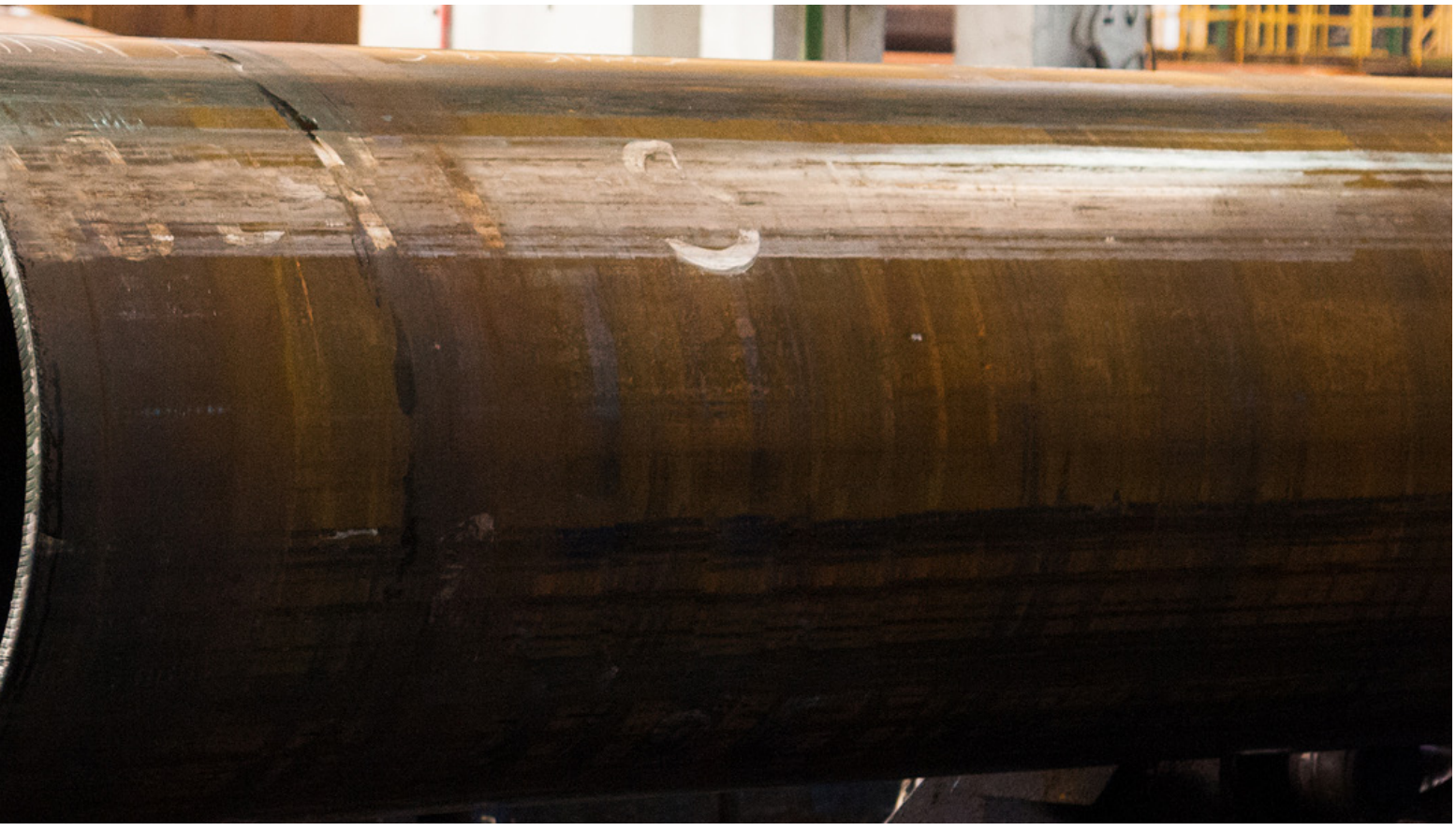
Each tube or elbow to weld requires an end machining operation. This operation ranges from the simple facing of the end to the most complex bevel forms.

PROTEM equipment is integrated before and after the manufacturing process, creating very substantial gains in productivity.

PROTEM is a world leader in the manufacture of portable machining equipment for tubes, elbows and pipelines. Our machines are used daily by the Majors of the industry worldwide.

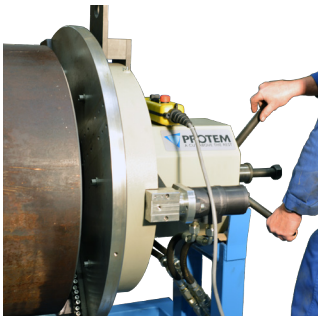
## Applications:

> Construction, Maintenance, Repair, Dismantling of Piping systems



# TUBE PROCESSING INDUSTRY

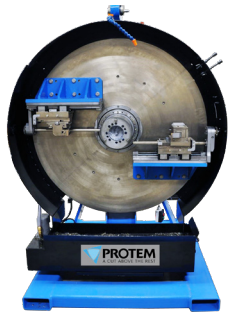
Equipment designed by PROTEM is integrated into the manufacturing processes of Tube and Pipeline Manufacturers for substantial gains in productivity.



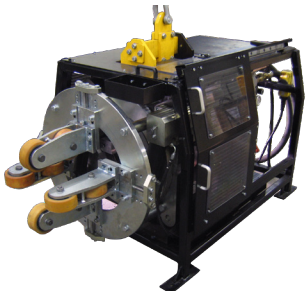
US450

TTNG-HD

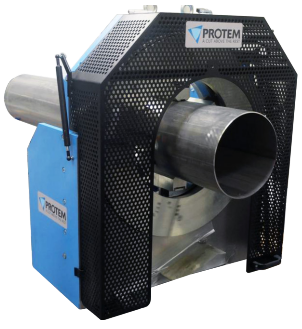
BB



US600-R

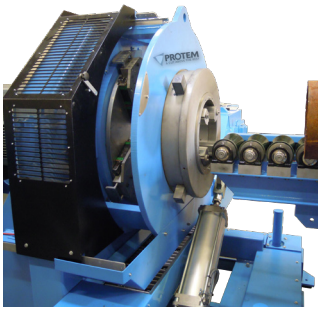


OHSB



MF

TNO



CTA

# SHIPBUILDING INDUSTRY

## Description:

PROTEM equipment is used 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

# SHIPBUILDING INDUSTRY

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

SM8

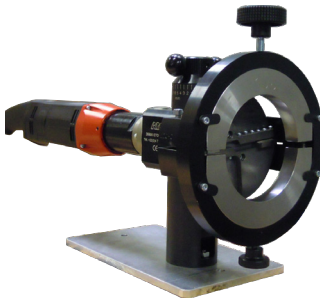
S18

SL30

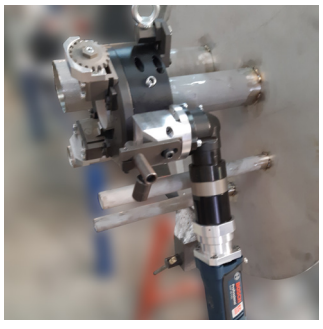
SE25

US25CH

US30CH



SL120



TTS-NG

# HIGH PURITY INDUSTRY

## Description:

Most of these industries operate in clean rooms during their manufacturing processes. In clean rooms, parameters such as temperature, humidity and relative pressure are maintained at a precise level. In addition, particular attention is paid to the concentration of particulates.

PROTEM equipment performs manufacturing or maintenance operations (tube cutting, facing, beveling, counterboring) while keeping the creation of particles resulting from machining operations to a minimum. The chips produced during machining are easy to collect and no particlulates are released into the environment.

PROTEM equipment that is dedicated to high purity industries features a clamping on the outside of the tube to avoid contamination inside the tubes to be machined. Furthermore, the OD collets are manufactured in the same material as the tube, (stainless steel, aluminum, etc).

PROTEM equipment is able to be used on electropolished tubing, provides perfectly concentric clamping without deformation due to clamping sleeves, and achieves perfectly perpendicular cuts.

## Applications:

- Tube Facing
- Tube Cutting
- Facing for Fittings
- Facing for T Fittings
- Facing for Elbows

# HIGH PURITY INDUSTRY

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

SE25

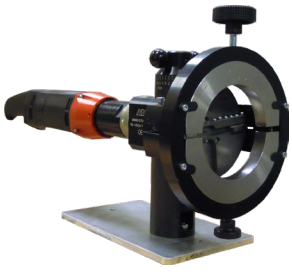
SE25RA

SL30

SE-NG Series

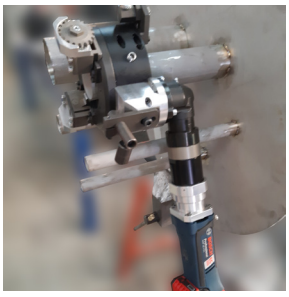
SE65

SE65RA



SL120

SE219



TTS-NG

# GREEN ENERGIES

## Description:

The energy transition from fossil fuels to renewable energies, is creating ever greater investments in these new energy industries for construction and maintenance.

PROTEM is a key partner in this transition offering a large choice of machines and tools designed for wind power, hydraulic, solar, biofuels, biogas and for congeneration.

PROTEM machines and tools are used for on-site machining needs necessary during construction, maintenance or repair of these new installations.

## Applications:

- Re-machining of flanges and valves in Hydro-electric power stations
- Maintenance and construction of Biogas - Biofuel power stations and refineries
- Heat exchangers for Cogeneration and Solar energy

# GREEN ENERGIES INDUSTRY

Machining times are reduced, while maintaining high precision and accuracy

SM8

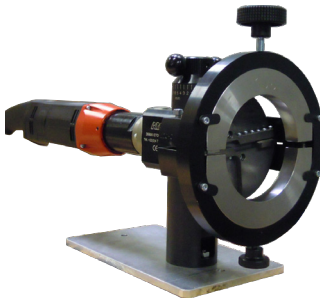
S18

SL30

SE25

US25CH

US30CH



SL120

TTS-NG

# CHEMICAL INDUSTRY

## Description:

Pipelines are omnipresent in the chemical, petrochemical, phytosanitary chemical, pharmaceutical, polymer or paints manufacturing and oleochemical industries.

These pipelines have to be very resistant to corrosion. The use of stainless steels and other alloys is unavoidable.

For nearly 50 years, PROTEM has offered integrated solutions for construction and maintenance of these pipelines with machines and tools adapted to the features of the tubes. They perform any machining operations that are needed; beveling, cutting, facing, etc.
Their versatility and sturdiness are a perfect match for any project; factory construction, routine maintenance or decommissioning.

In addition to solutions proposed by PROTEM equipment, SERCO also manufactures equipment for the maintenance of flanges and valves that can be found on the SERCO web site (www.Serco-tools.com).

## Applications:

- Manufacturing of pipelines
- Cutting, removal or repair of parts damaged by corrosion
- Re-machining of valve seats and seal surfaces

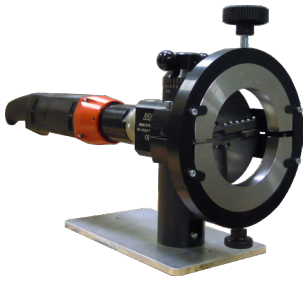
# CHEMICAL INDUSTRY

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

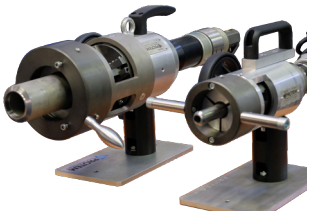
US25CH

US30CH

SE Series



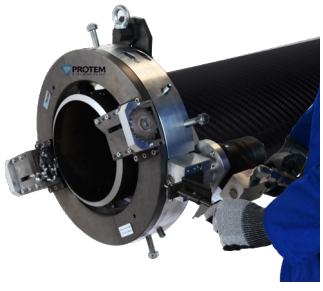
SL Series



SE-NG Series

TTS-RD

TTS-NG



TTNG-HD

# CRYOGENICS INDUSTRY

## Description:

The branches of physics and engineering that study very low temperatures, lower than 150° C how to produce them, and how materials behave at those temperatures.

**Used for research purposes :**

- Measures at very low temperatures
- materials, solid physics
- instrumentation development
- accelerators and particle physics
- magnets, cavities, detectors
- magnetic confinement
- astrophysics
- earth and space military sensors

**Use in the industry**

- Electronics (detectors, components)
- Electrotechnical industry (storage, transport, alternators, limiters)
- Transport
- Liquefaction and cooling
- Storage of fluid
- Insulation
- Space industry
- Propellers (fuel and engine)
- Medical
- Cryosurgical, cryopreservation

## Applications :

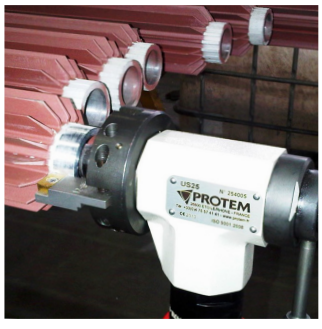
> Tubes maintenance

> Cutting, removal or repair of parts damaged by corrosion

> Weld beam removal

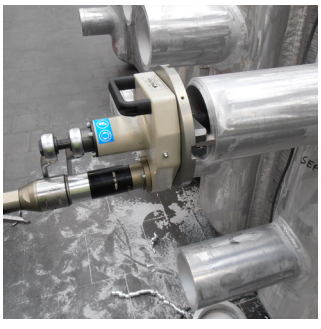
> Re-machining of valve seats and seal surfaces

# CRYOGENICS INDUSTRY

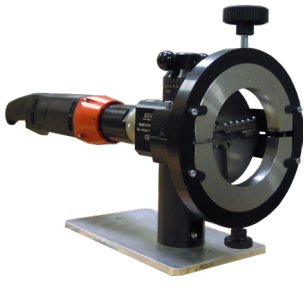


US25CH

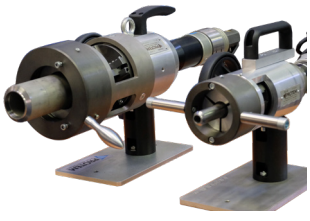
US30CH



US40



SL



SE-NG

TTS-RD

TTS-NG

TTNG-HD

# DEFENSE INDUSTRY

## Description:

The defense industry is a leading economic and technological sector.

The defense industry brings a very wide variety of players of different sizes together, from the contracting authority down to small and medium-sized companies that possess specific knowledge and expertise.

PROTEM equipment is used by leading companies in the defense industry throughout the world, especially those working in nuclear power, ship-building and aeronautics

## Applications :

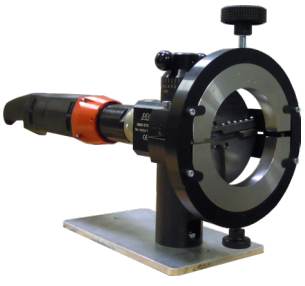
- Tubes maintenance
- Cutting, removal or repair of parts damaged by corrosion
- Weld beam removal
- Re-machining of valve seats and seal surfaces

# DEFENSE INDUSTRY

US25CH

US30CH

US40



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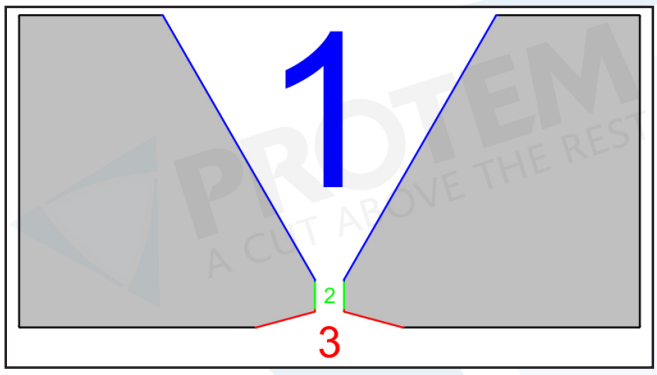
# ASSEMBLING PIPES BY BUTT-WELDING: THE DIFFERENT TYPES OF BEVELS AND HOW TO MAKE THEM

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.

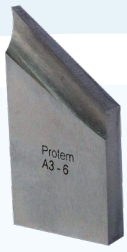
Butt-welding on pipes is special in as much as the welder does not generally have access to the inner face of the joint. Therefore, all the welding operations must be done from the outside. For this reason, the edges must be prepared accordingly.

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

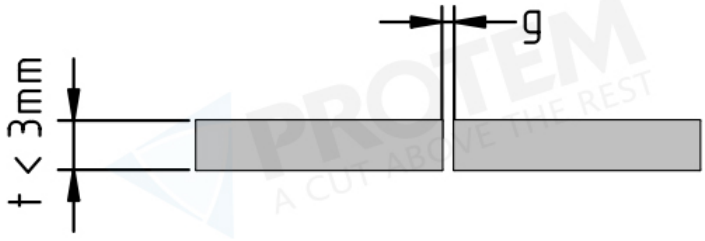

Facing is the term used for the operation to create a land, which consists of making a flat surface on the end of the pipe. Correct facing makes it easier to put the pipes in line with each other before welding and also contributes to having a constant root opening between parts. These are both essential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



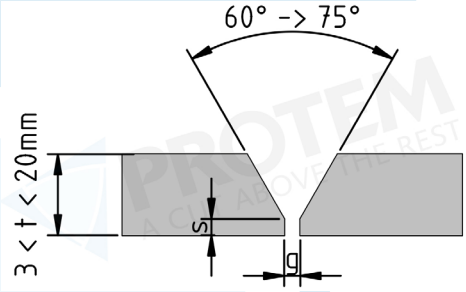

### 1. RANGE OF THICKNESSES T ≤ 3MM (.118")

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).

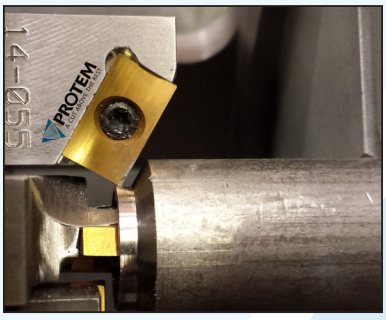
## 2. RANGE OF THICKNESSES 3 ≤ T ≤ 20MM (.787")

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").



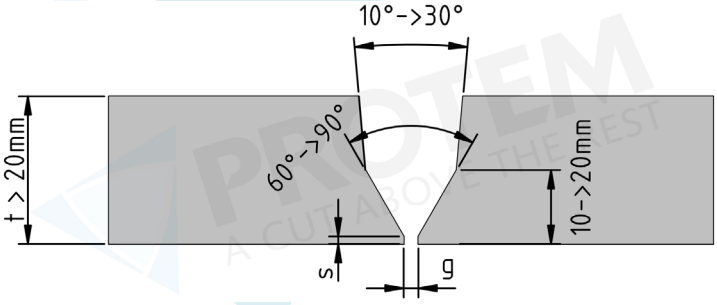

However, 'J' groove preparations are required more often for this range of thickness (see details below). This is especially true when orbital welding processes are used. It is also the normal type of preparation when welding alloys, such as, duplex or inconel.

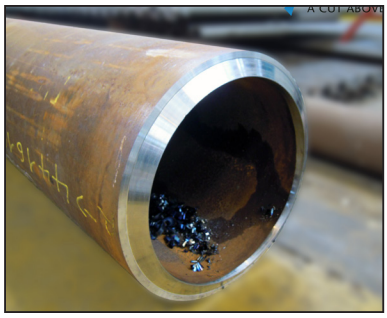
## 3. RANGE OF THICKNESSES 20MM (.787") ≤ T

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):**

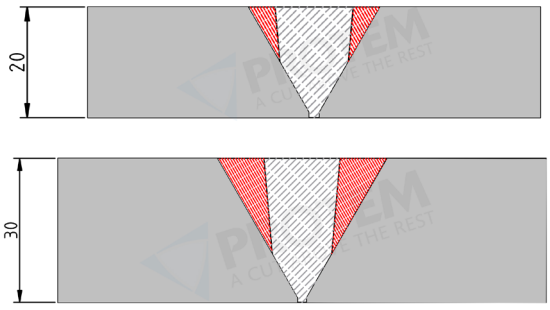
The first solution for reducing the size of the bevel is to make a change in the groove angle. An initial angle of 30° or 37.5° (up to 45°) is combined with a second angle, generally between 5° and 15°. The first 30° or 37.5° angle must be kept to avoid the groove becoming too narrow and preventing the 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



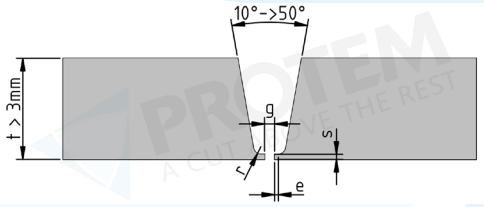

For example, in comparison with a 30° single angle bevel (grey zone plus red zone), a V bevel with a double angle of 30°/5° (grey zone) gives an economy of about 20% in terms of weld metal for a part 20mm (.787") thick.

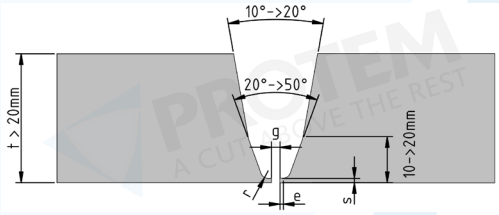
The potential savings in terms of bevel volume increases in proportion to the wall thickness of the pipe to be welded. Consequently, savings will be over 35% on a 30 mm (1.181") thick pipe.

### 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.

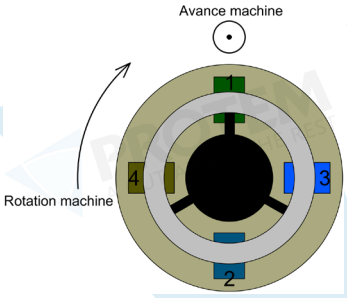
These types of constraints require long and costly preliminary studies. Therefore, they need to be accompanied by a perfectly controlled bevel machining process. The description of the welding procedure (DMOS) resulting from preliminary studies requires lands to be accurate to one millimeter (.039”),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

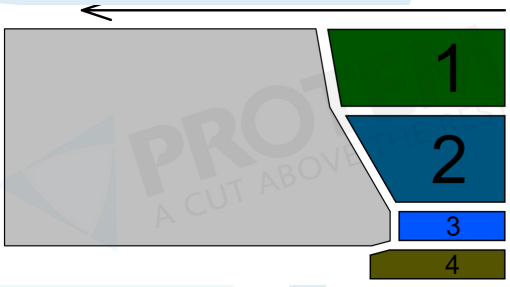
Numerous techniques exist for machining bevels on pipe ends. The most common are manual machining by grinding or heat-cutting and cold machining with a machine.  Even so, this last process is the only one capable of providing a bevel with a perfect geometry and a repeat production capability while maintaining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



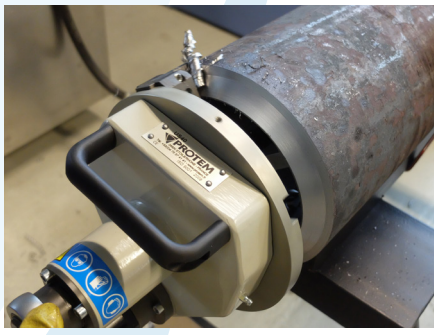

Axial movement machines are equipped with a plate that moves in line with the axis of the pipe. Cutting tools are placed in position on the plate for making the required bevel shape. In the case of a compound bevel, tools will be used that have a shape identical to that of the required bevel or their 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.



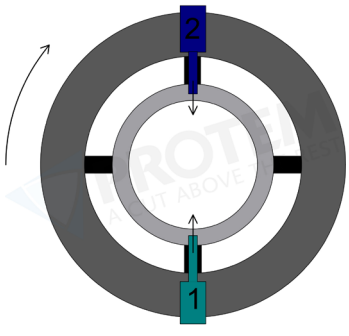

Here, tools No. 1 and 2 machine a compound bevel (the two tools can be combined to form one single tool). Tool No. 3 faces the land or root and tool No. 4 counterbores the inside diameter of the pipe.

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.

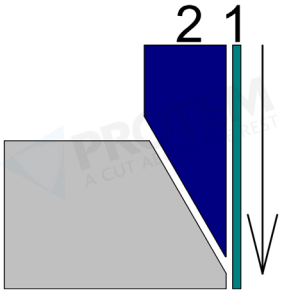


### 2. RADIAL MOVEMENT MACHINES



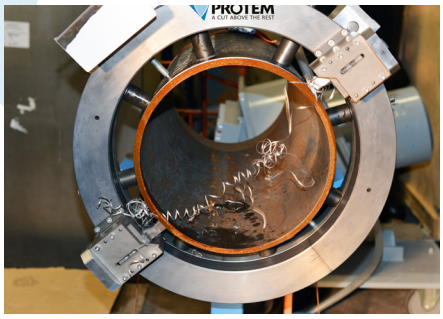

Radial movement machines, called orbital machines, are generally held in place on the outside of the pipe. The tool-holder plate rotates while the pipe to be machined remains fixed. The tools move perpendicularly to the axis of the pipe by means of a mechanical transmission system.

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.

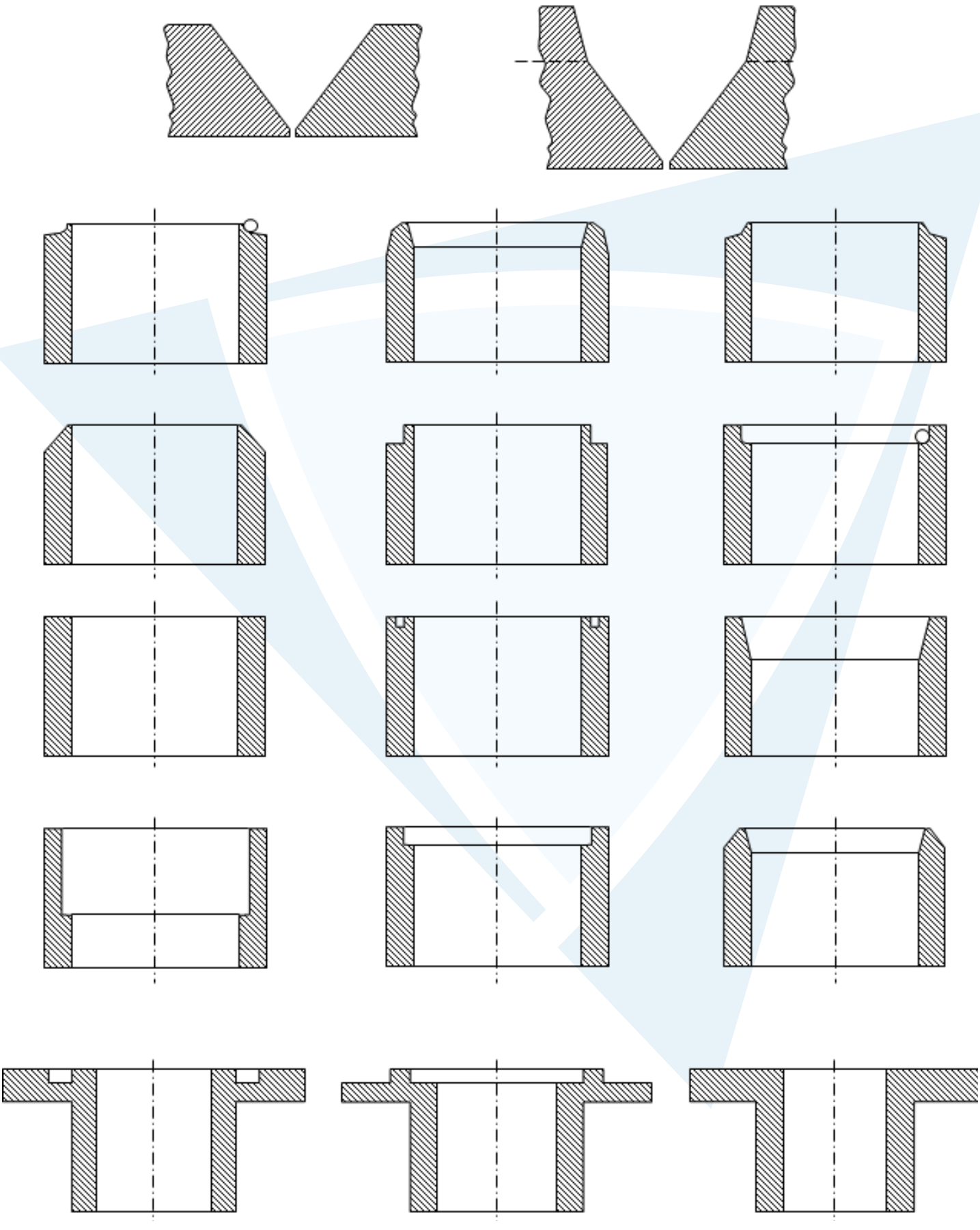



Using beveling tools (No. 2, simple or compound shapes) combined with cutting tools (No. 1) enables the pipe to be cut in two and welding preparation (beveling) to be carried out in a single operation. The most efficient machines are capable of cutting and beveling several dozen millimeters in just a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

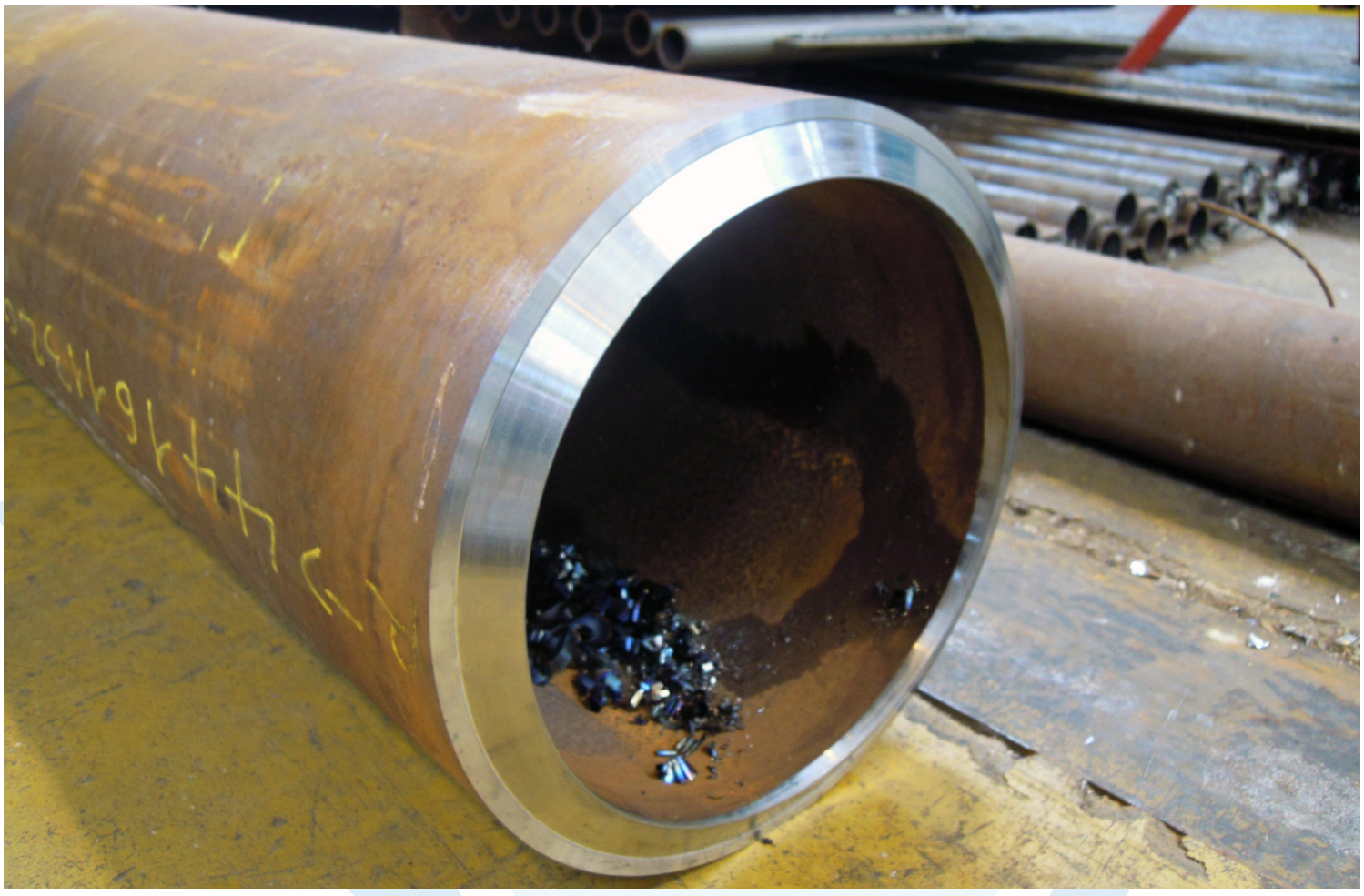


## EXAMPLES OF POSSIBLE MACHINING OPERATIONS



# 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

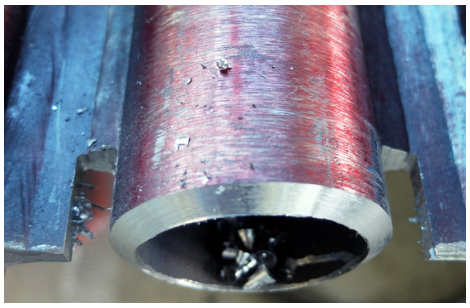
The color and form of the chips are excellent indicators. If the chips are small, the depth pass is too small. If the chips are large and look like they were torn off the tube, the depth pass is too big or the tool is dull. If the chips are blue, they are heat-affected. It could mean that the machining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

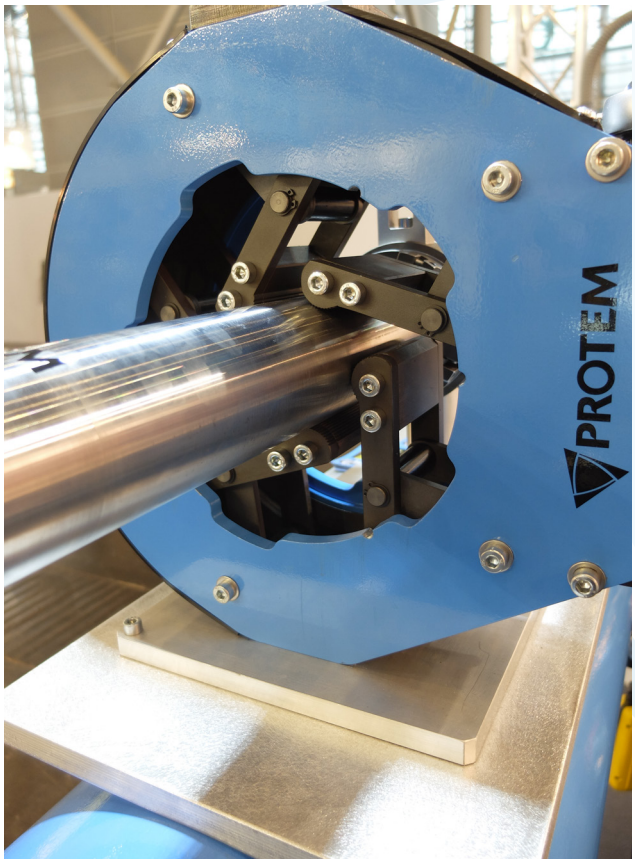
# MATERIALS USED TO MANUFACTURE PIPES AND THEIR MACHINABILITY

## 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.).

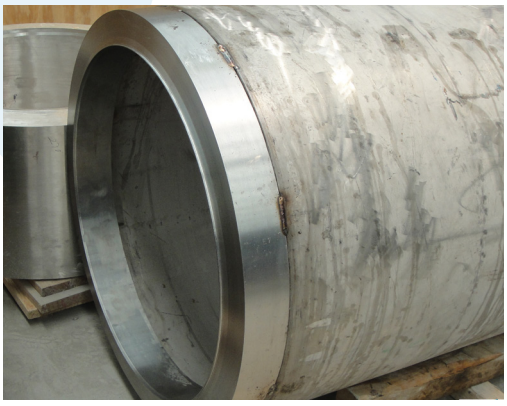
Their popularity stems from their corrosion resistance and chemical stability which make stainless steel piping suitable for fluids that must not be contaminated (pharmaceutical industry, food industry, etc.) and for corrosive fluids (the chemical industry, in particular).

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.

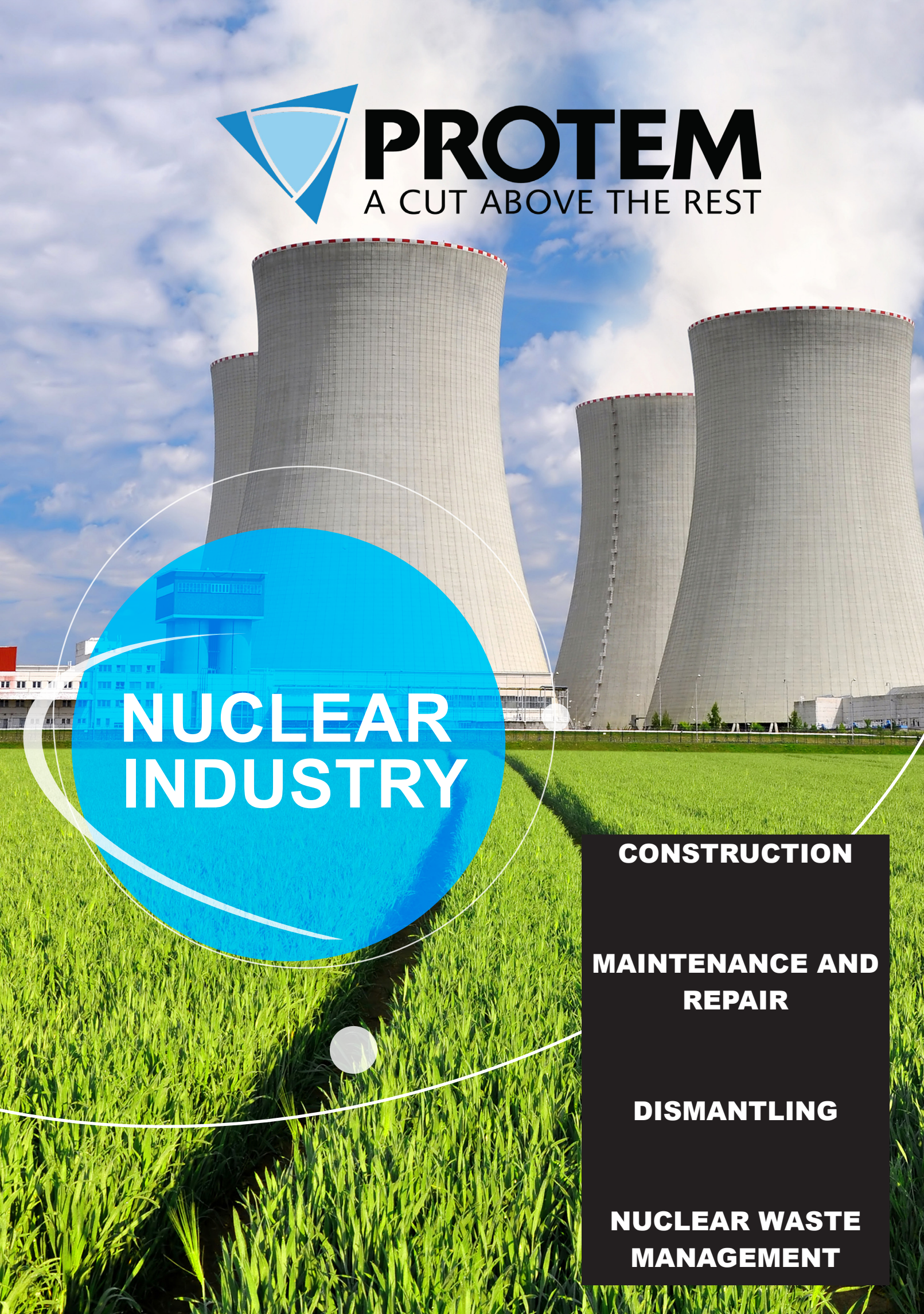
Machining is even more difficult in the case of treated titanium (e.g., treatment by precipitation, presence of chromium).

## 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

EDF
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SPX
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enrichment technology
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SCK·CEN
Siempelkamp
EHEPTO ENERGOATOM
Sellafield Ltd
ensa
ROSENERGOATOM The Russian concern manufacturing electric and thermal energy at nuclear plants
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Kraftanlagen Heidelberg
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RWE
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DE LA RECHERCHE À L'INDUSTRIE cea

PROTEM
A CUT ABOVE THE REST

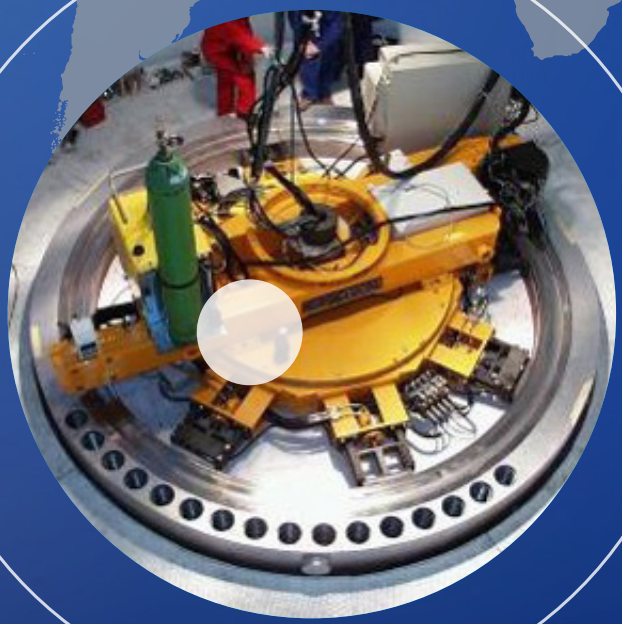
# PROTEM AND THE NUCLEAR INDUSTRY

## 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.

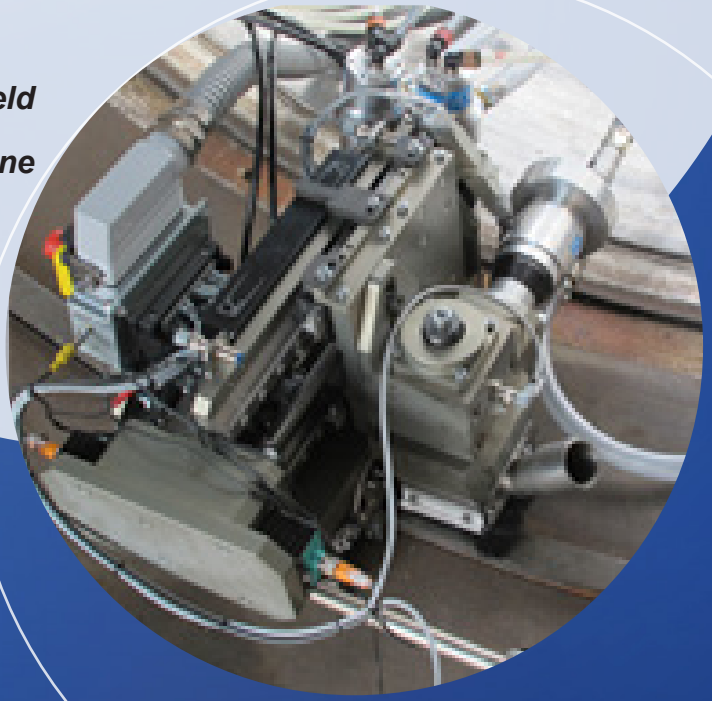
# CONSTRUCTION

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.***

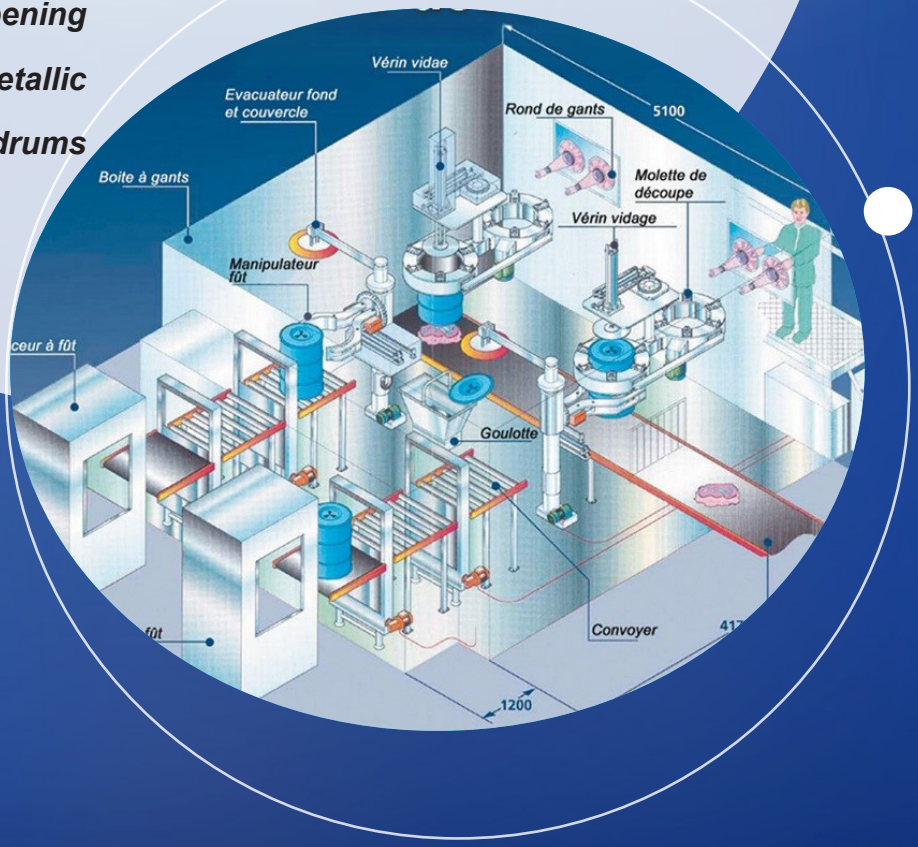
# NUCLEAR WASTE MANAGEMENT

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

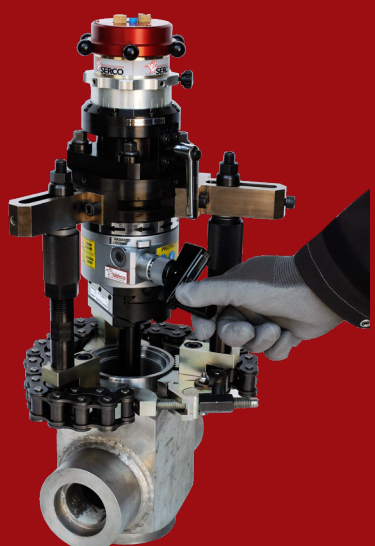
# ON-SITE MACHINING

Maintenance

Repair

Flanges - Valves






## Portable Machine Tools

Facing

Single point

Threading

Counterboring

Tapping

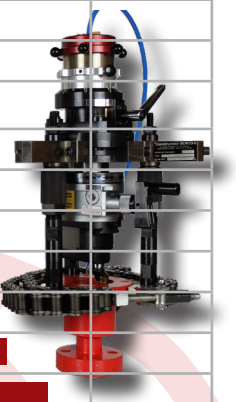
Resurfacing

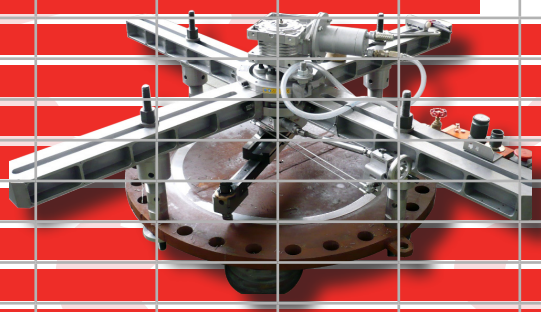
Grinding

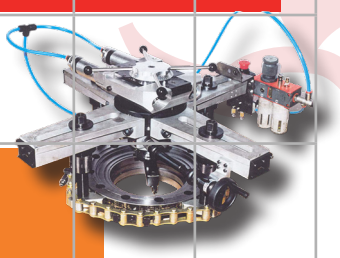
Conical machining

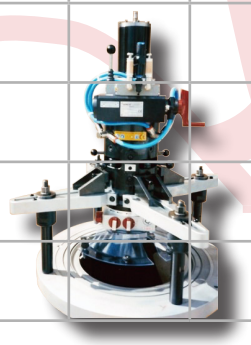
# RANGE OF SERCO MACHINES

| | | 1" 25,4 mm | 8" 203 mm | 16" 406 mm | 24" 609 mm | 32" 812 mm | 40" 1016 mm | 56" 1422 mm | 72" 1828 mm | 90" 2286 mm | 120" 3048 mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TU Series | TU 200 | | | | | | | | | | |
| | TU 400 | | | | | | | | | | |
| | TU 600 | | | | | | | | | | |
| | TU 1100 | | | | | | | | | | |
| | TU1200 | | | | | | | | | | |
| | TU1400 | | | | | | | | | | |
| | TU1800 | | | | | | | | | | |
| | TU2000 | | | | | | | | | | |
| | TU2400 | | | | | | | | | | |
| | TU2600 | | | | | | | | | | |
| | TU2800 | | | | | | | | | | |
| | TU3000 | | | | | | | | | | |
| | TU3200 | | | | | | | | | | |
| XP Series | XP400NG | | | | | | | | | | |
| | XP600NG | | | | | | | | | | |
| | XP1200 | | | | | | | | | | |
| | XP1800NG | | | | | | | | | | |
| | XP2000NG | | | | | | | | | | |
| | XP2200NG | | | | | | | | | | |
| | XP2400NG | | | | | | | | | | |
| | XP2600NG | | | | | | | | | | |
| | XP2800NG | | | | | | | | | | |
| | XP3000NG | | | | | | | | | | |
| | XP3200NG | | | | | | | | | | |
| MS Series | MS600 | | | | | | | | | | |
| | MS2300 | | | | | | | | | | |
| TA 240 | TA240/100 | | | | | | | | | | |
| | TA240/120 | | | | | | | | | | |
| | TA240/170 | | | | | | | | | | |
| | TA240/220 | | | | | | | | | | |





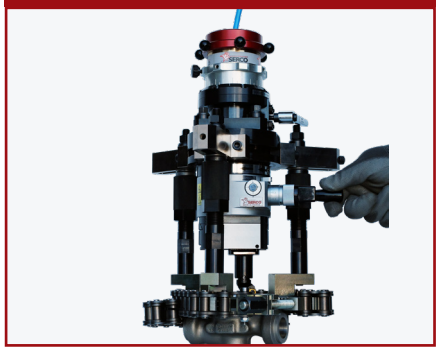




# RANGE OF SERCO MACHINES

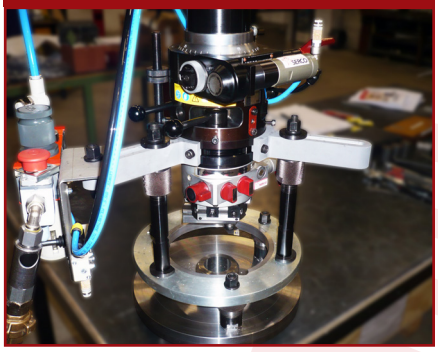
## PORTABLE SURFACING AND BORING MACHINES

### TU200



| ORDER NO. | DESCRIPTION |
|---|---|
| TU200-1000 | Portable facing and boring machine – facing Ø: 0-200 mm (7.87") |

### TU400

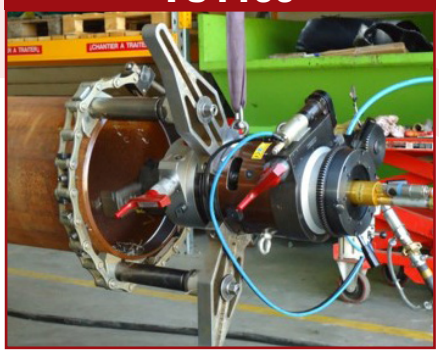


| ORDER NO. | DESCRIPTION |
|---|---|
| TU400-1000 | Portable facing and boring machine – facing Ø: 0-400 mm (15.7") |

### TU600

| ORDER NO. | DESCRIPTION |
|---|---|
| TU600-1000 | Portable facing and boring machine – facing Ø: 0-600 mm (23.6") |

### TU1100

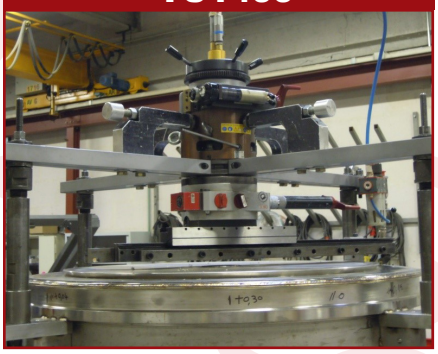


| ORDER NO. | DESCRIPTION |
|---|---|
| TU1100-1000 | Portable facing and boring machine – facing Ø: 0-1100 mm (43.3") |

### TU1200

| ORDER NO. | DESCRIPTION |
|---|---|
| TU1200-1000 | Portable facing and boring machine – facing Ø: 0-1200 mm (47.2") |

### TU1400



| ORDER NO. | DESCRIPTION |
|---|---|
| TU1400-1000 | Portable facing and boring machine – facing Ø: 0-1400 mm (55.1") |

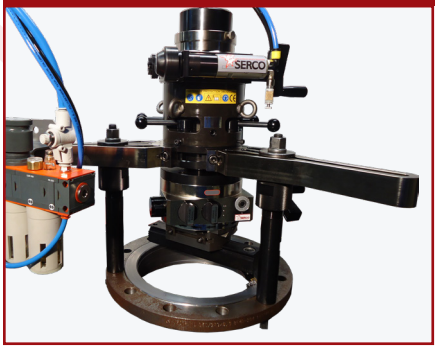
### TU400TE

| ORDER NO. | DESCRIPTION |
|---|---|
| TU400TE-1080 | Portable facing and boring machine with brushless electric motor and control system – facing Ø: 0-400 mm (15.7") |

### TU600TE

| ORDER NO. | DESCRIPTION |
|---|---|
| TU600TE-1080 | Portable facing and boring machine with brushless electric motor and control system – facing Ø: 0-600 mm (0" - 23.6") |

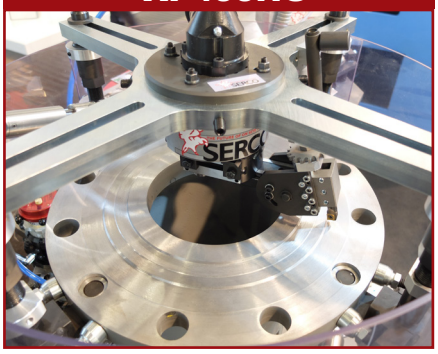
### TA240



| ORDER NO. | DESCRIPTION |
|---|---|
| TA240-170-1000 | TA 240 borer equipped with the TA 170 head - facing Ø: 320-900 mm (12.6"-35.4") |

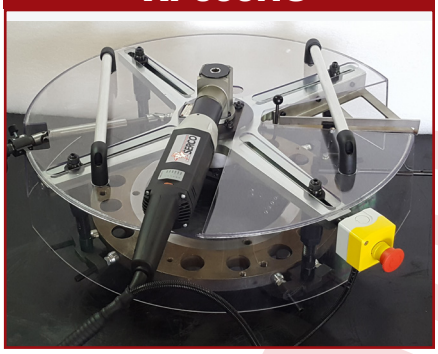
# PORTABLE SURFACING EQUIPMENT FOR FLANGES AND VALVES

## XP400NG



| ORDER NO. | DESCRIPTION |
|---|---|
| XP400NG-1000 | Portable flange facing machine – facing Ø: 10-400 mm (0.393'' - 15.7") |

## XP600NG

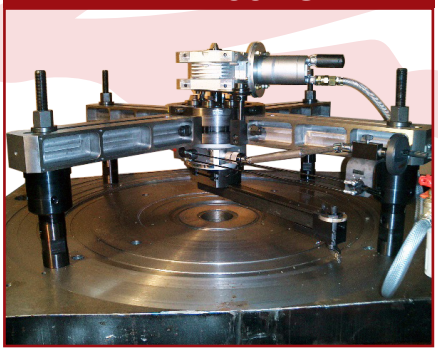


| ORDER NO. | DESCRIPTION |
|---|---|
| XP600NG-1000 | Portable flange facing machine – facing Ø: 10-600 mm (0.393'' - 23.6") |

## XP1200NG

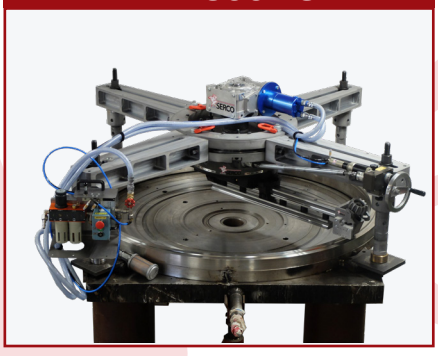
| ORDER NO. | DESCRIPTION |
|---|---|
| XP900NG-1000 | Portable flange facing machine – facing Ø: 10 - 900 mm (0.393" - 35.433"). |

## XP1200NG



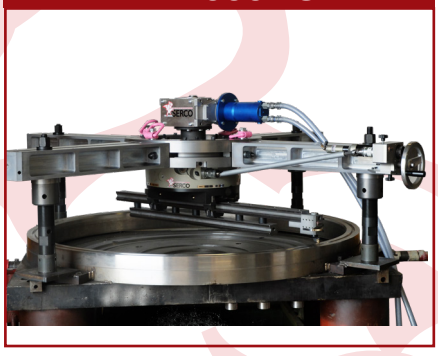
| ORDER NO. | DESCRIPTION |
|---|---|
| XP1200-1000 | Portable flange facing machine – facing Ø: 0 - 1200 mm (0" - 47.244"). |

## XP1800NG



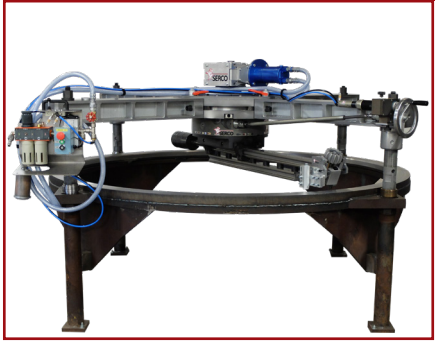
| ORDER NO. | DESCRIPTION |
|---|---|
| XP1800NG-1000 | Portable flange facing machine – facing Ø: 0-1800 mm (0" - 70.8") |

## XP2000NG



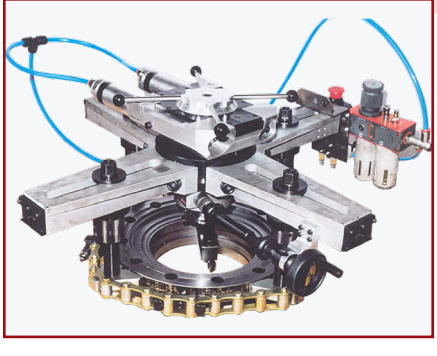
| ORDER NO. | DESCRIPTION |
|---|---|
| XP2000NG-1000 | Portable flange facing machine – facing Ø: 0-2000 mm (0" - 78.74") |

## XP2200NG



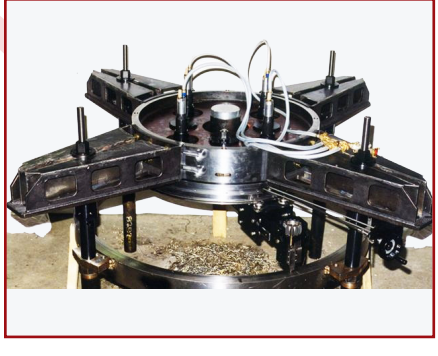
| ORDER NO. | DESCRIPTION |
|---|---|
| XP2200NG-1000 | Portable flange facing machine – facing Ø: 0-2200 mm (.787" - 86.6") |

## MS600



| ORDER NO. | DESCRIPTION |
|---|---|
| MS600-1000 | Portable flange facing machine with air-motor – facing Ø: 10-600 mm (0.39" - 23.6") |

## MS2300



| ORDER NO. | DESCRIPTION |
|---|---|
| MS2300-1000 | Portable flange facing machine – facing Ø: 1000 -2300 mm |

# RANGE OF SERCO MACHINES

## Portable Boring Bar

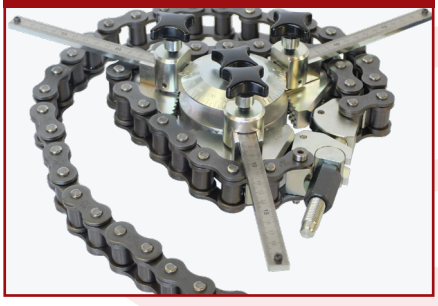
| ORDER NO. | DESCRIPTION |
|---|---|
| SBM 1 | SBM1 Portable Boring Bar |

## Milling Unit

| ORDER NO. | DESCRIPTION |
|---|---|
| BDF 1100 | Milling Unit |

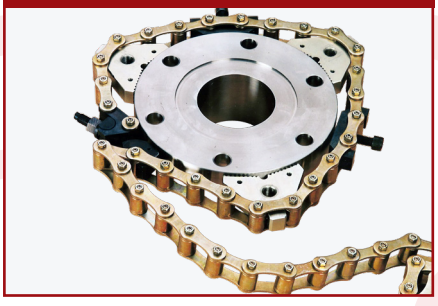
## OPTIONS AND ACCESSORIES

### FC300



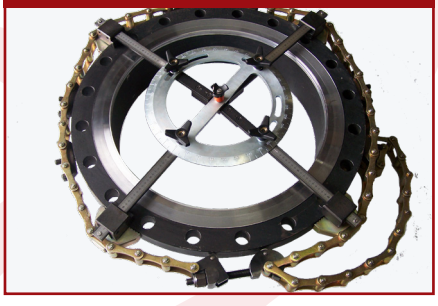
| ORDER NO. | DESCRIPTION |
|---|---|
| FC 300 | Chain clamping |

### FC745



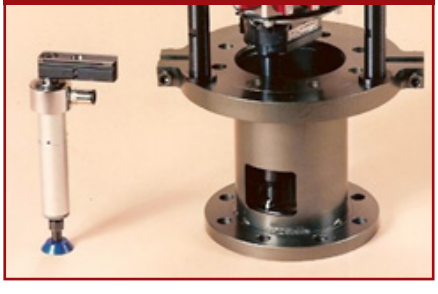
| ORDER NO. | DESCRIPTION |
|---|---|
| FC 745 | Chain clamping |

### FC1150



| ORDER NO. | DESCRIPTION |
|---|---|
| FC 1150 | Chain clamping |

### UR40

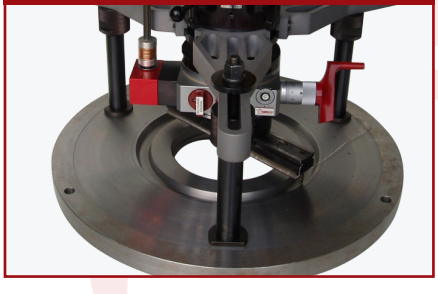


| ORDER NO. | DESCRIPTION |
|---|---|
| UR 40 | Grinding device |

### AC38

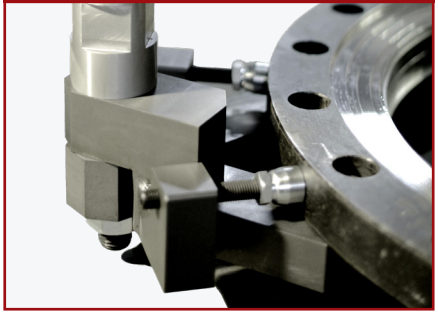

| ORDER NO. | DESCRIPTION |
|---|---|
| AC 38 | Conical machining system |

### RTJ



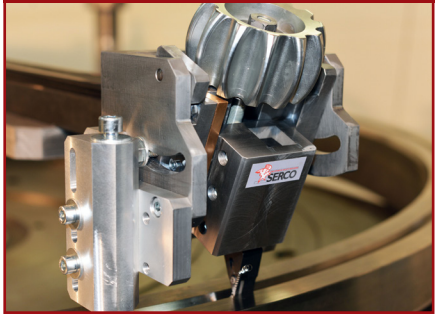
| ORDER NO. | DESCRIPTION |
|---|---|
| RTJ system | System for making RTJ groove bearing surfaces |

### FSTG

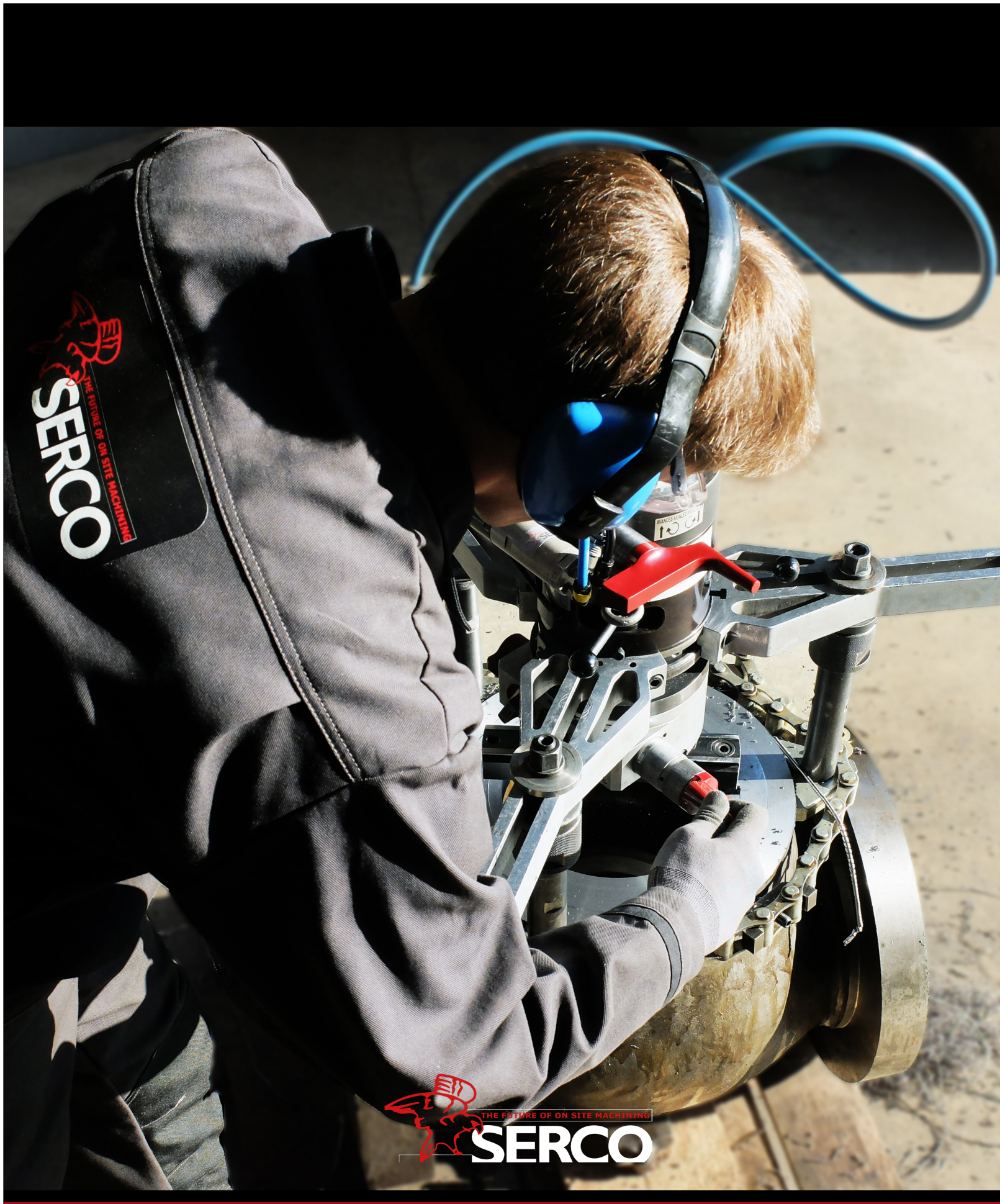


| ORDER NO. | DESCRIPTION |
|---|---|
| FSTG | System for clamping the unit onto the dowel pin bores |

### 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 .....**

OD Mounted

*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


## CONTACT US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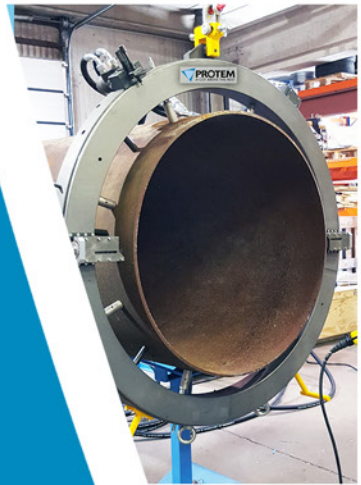


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