



# Tube&Pipe Beveling Machines

Products Catalog 2022



**MADE IN  
POLAND**





# **Beveling machines**

## Catalog 2022

**IMPORTANT!**

Due to constant improvement of products presented in this catalog, the data and part numbers may change without further notice!

Most tools are available in custom-made versions. If your work requires a special solution - contact us, we will prepare a special tool.

The tube capacities given for expansion tools in this catalog, apply only for most popular cases with a standard percentage of the wall reduction. The reached capacity can be different for thicker tube sheet, harder and exotic metal tube and a higher percentage of wall reduction.

The recommended operating ranges of all cutting tools are suitable for standard pipe sizes and materials. The processing of pipes made of non-standard materials or of non-standard dimensions should be carried out after testing and with great care.

**KRAIS TUBE & PIPE TOOLS**

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By Royal Charter

# Certificate of Registration

## QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that:

KRAIS  
Przedsiębiorstwo Produkcyjno Remontowe  
Jerzy Krajs  
Czachowo 15  
Zawonia  
55-106  
Poland

Holds Certificate No:

**FM 720649**

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

Production of tools and equipment for pipe processing and installation.

For and on behalf of BSI:

Andrew Launn, EMEA Systems Certification Director

Original Registration Date: 2019-11-18

Latest Revision Date: 2019-11-18

Effective Date: 2019-11-18

Expiry Date: 2022-11-17

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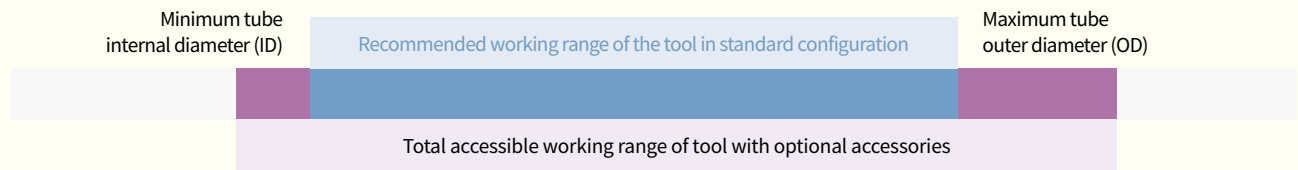


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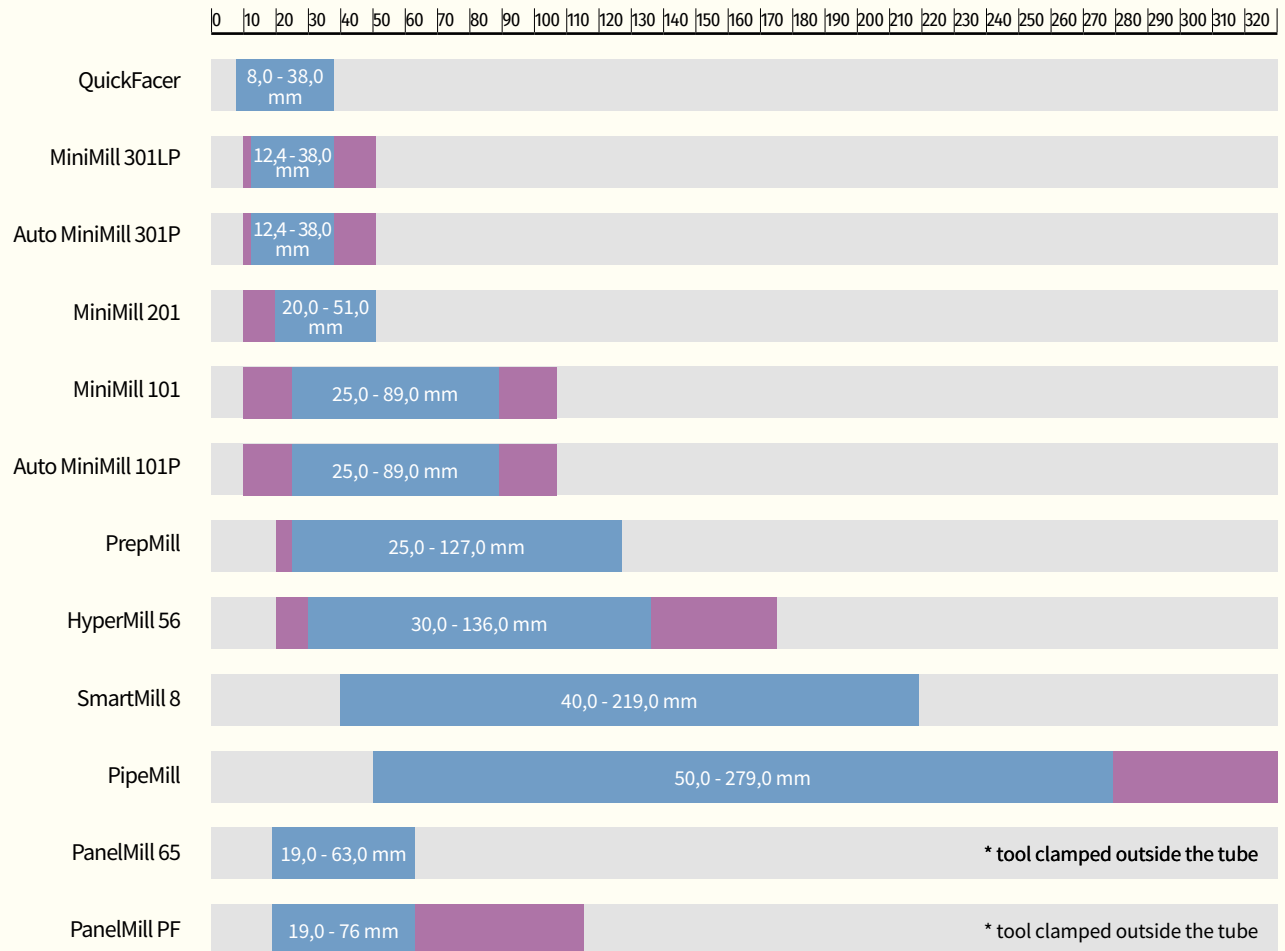


## Working ranges for ID/OD mount bevelers

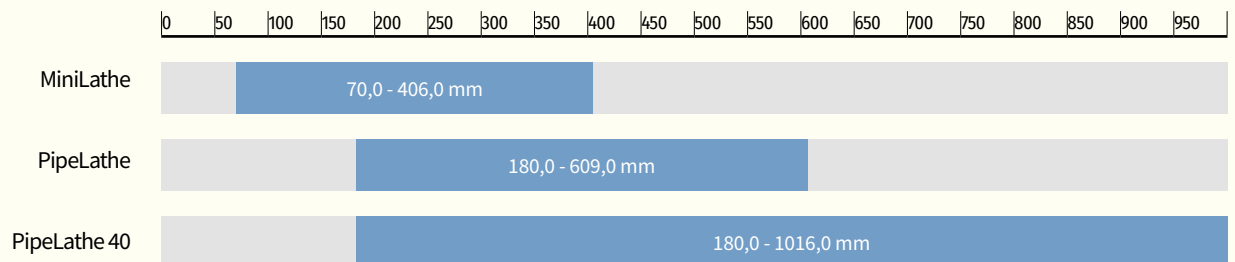
### HOW TO READ IT



### MILL SERIE WORKING RANGES (UNIVERSAL TOOLS)



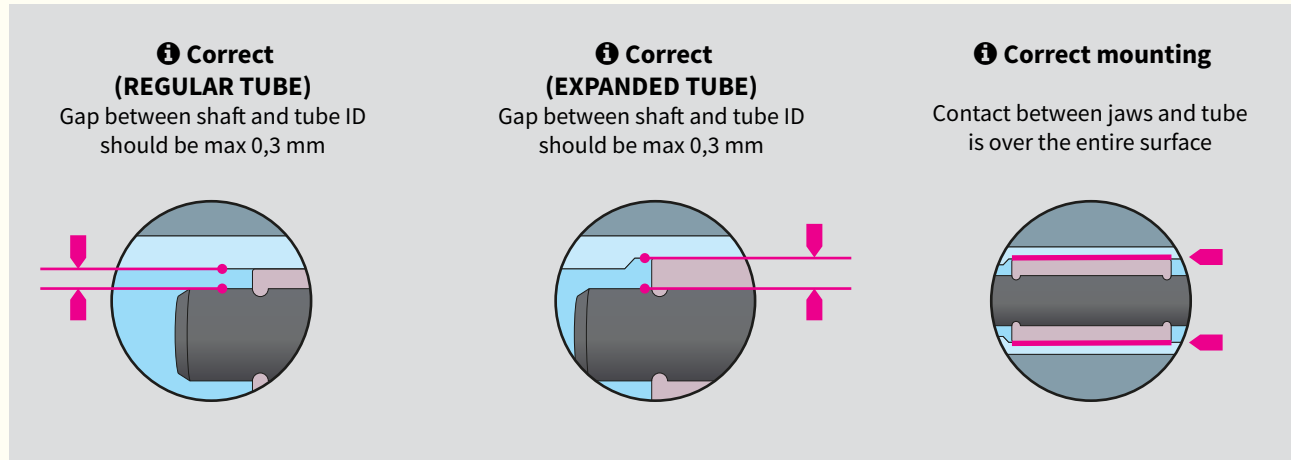
### LATHE SERIE WORKING RANGES (UNIVERSAL TOOLS)



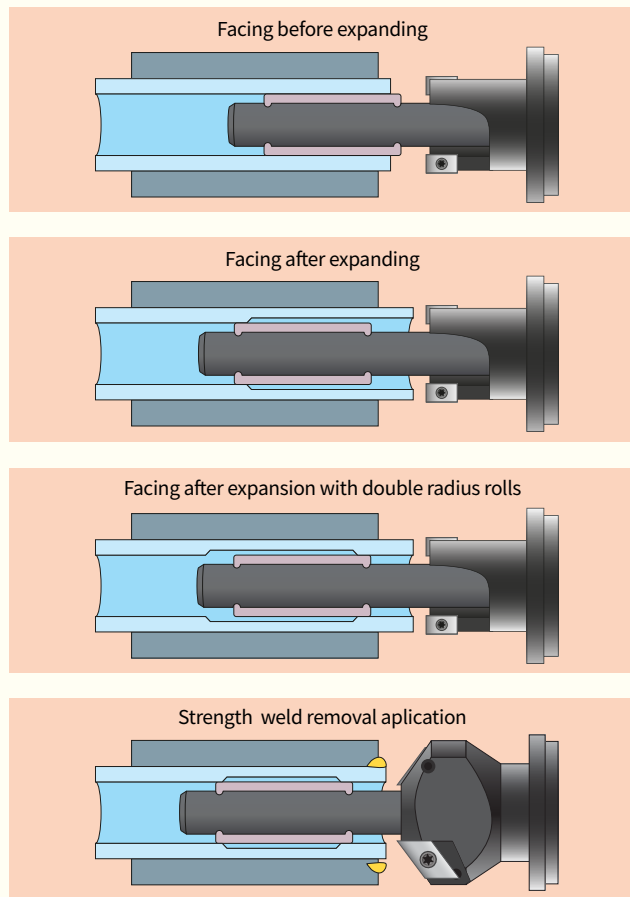
## How to proper lock ID beveling machines

**FOR: MINIMILL 101, MINIMILL 201, MINIMILL 301LP AND AUTO MINIMILL WITH MINISHAFT.**

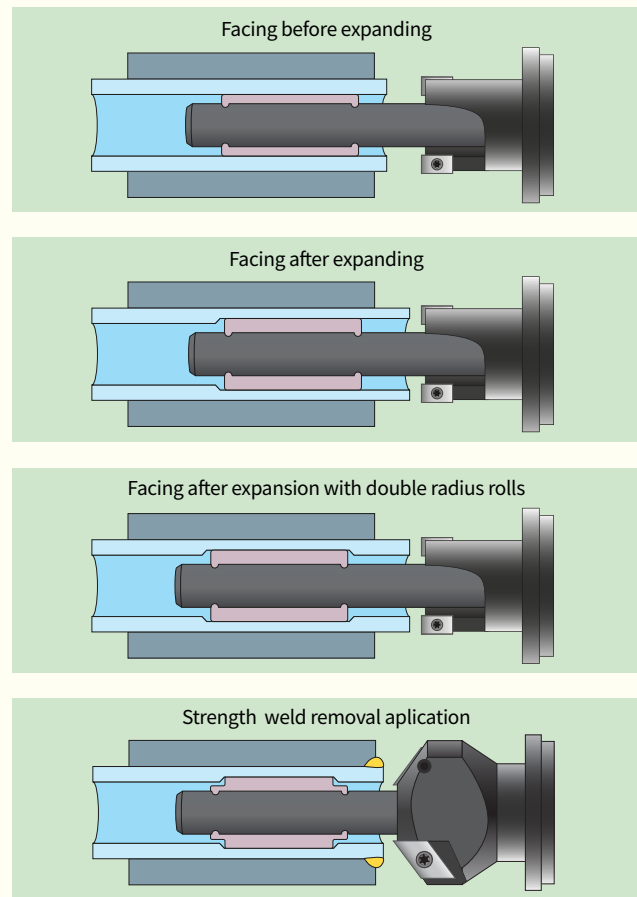
In order to obtain the best possible centring of the MiniMill into the faced, bevel or weld removal tube, we recommend to select the shaft with diameter closest possible to the inner diameter of tube.



### ✗ WRONG JAWS SETUP



### ✓ CORRECT JAWS SETUP





## MiniMill 101

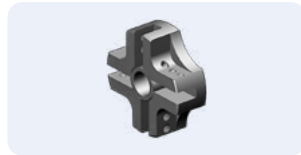
The MiniMill 101 is a rugged, fast, portable weld end preparation lathe designed for various tubes and pipes, including stainless steel and other high chromium materials. Our standard machine can be used for pipe sizes of 20 - 74 mm i.d. (0.787" - 2.913") and comes with a 88 mm cutting head.

### STANDARD SET UP



#### SHAFT25

Self-align, heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force.

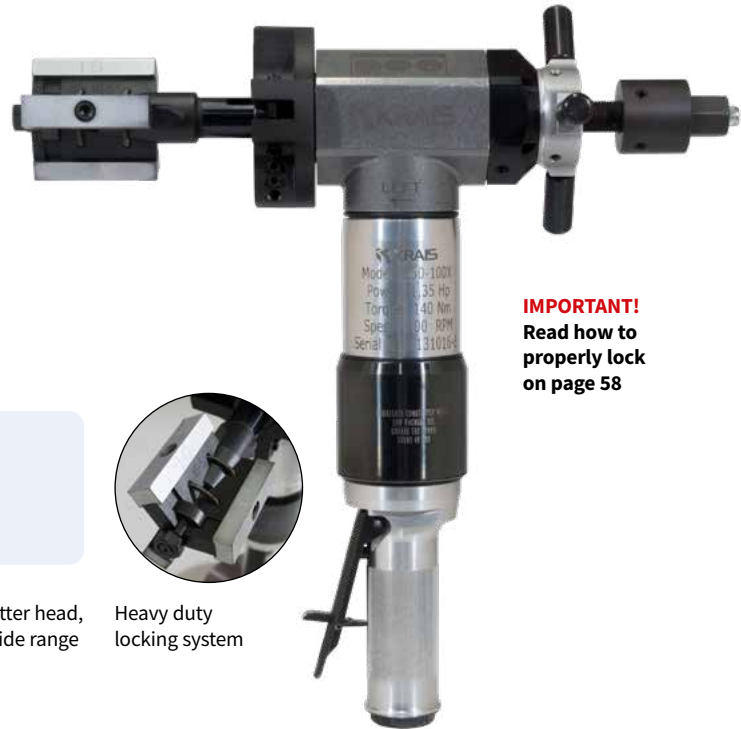


#### 88 MM (3,46")

The popular, medium cutter head, designed to fasten the wide range of cutting inserts.



Heavy duty locking system



**IMPORTANT!**  
Read how to properly lock on page 58

| STANDARD WORKING RANGE |        |                         |  | TOTAL WORKING RANGE |  |                |            |
|------------------------|--------|-------------------------|--|---------------------|--|----------------|------------|
| APPLICATION RANGE      |        | LOCKING RANGE           |  | APPLICATION RANGE   |  | LOCKING RANGE  |            |
| 25 – 89 mm             |        | 25 – 77 mm              |  | 10 – 107 mm         |  | 10 – 102 mm    |            |
| 0,984 – 3,504"         |        | 0,984 – 3,031"          |  | 0,394 – 4,213"      |  | 0,394 – 4,016" |            |
| FEED STROKE            |        | POWER                   |  | FREE SPEED          |  | TORQUE         |            |
| 20 mm                  | 0,787" | 1,3 hp                  |  | 100 rpm             |  | 140 Nm         | 105 Ft.lbs |
| 55 cfm                 |        | 1,3 m <sup>3</sup> /min |  | 13,1"               |  | 11,4 Lbs       | 5,2 kg     |
|                        |        | 2,32"                   |  | 335 mm              |  |                |            |
|                        |        | 59 mm                   |  |                     |  |                |            |

### MINIMILL 101E

MiniMill 101E is electric version of MiniMill 101. A standard machine cover the same pipe sizes and comes with the same cutting head. The electric motor made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time.

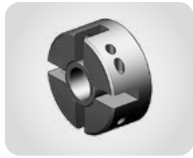
Free Speed ..... 115 RPM  
Power..... 750 W  
Torque ..... 366 NM (280 Ft.Lbs)  
Feed Stroke ..... 20 mm (0,787")



### AUTOMINIMILL 101

Auto MiniMill 101P is a fully automatic machine, controlled by a built-in, fully pneumatic control box, with adjustable feed rate and actuated by a hand button (foot switch optional). Ideal for repetitive work cycles on condensers and heat exchangers, as well as for bevelling and facing boiler tubes.



**OPTIONAL HEADS****60 MM (2,36")**

The smallest cutter head, designed to fasten the wide range of cutting inserts.

**106 MM (4,16")**

The popular, large cutter head, designed to fasten the wide range of cutting inserts.

**OBMH**

Head for bevelling tubes without membranes in the boiler water walls.

→ TABLE PAGE 32

**SWROTC**

Seal weld removal head over tube circumference prior to re-welding the damaged joint without removing the tube.

→ TABLE PAGE 33

**STWRMH**

Head dedicated for strength weld removal. Heads are easy to align and sized per tube diameter.

→ TABLE PAGE 31

**TFMH**

Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.

→ TABLE PAGE 31

**OPTIONAL SHAFTS****MICROSHAFT**

A system with interchangeable guide shafts. A complete set covers 10,0 to 15,0 mm ID tubes.

**MINISHAFT**

A system with interchangeable guide shafts. A complete set covers 12,4 to 48,0 mm ID tubes.

**OTHER OPTIONAL ACCESSORIES****RATCHET FEED**

Feed system allowing to work in narrow and tight locations, eg. in water walls.

**FAST CLAMPING SYSTEM**

System offers rapid tube to tube cycle time, increased productivity (up to 4x) with little operator fatigue. Ideal for large amount of end preps.

**SPEED REDUCER**

Easy to use gearbox for 3x speed reduction. Increases the torque, enabling the machine to generate a thick chip whilst reducing the cutting time.

**STANDARD MINIMILL 101 LOCKING RANGES****WITH SHAFT25**

| SHAFT   | JAWS | EXT.  | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|-------|------------|-----|--------------|-------|--------|------|
|         |      |       | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT25 | NS-1 | -     | 25         | 30  | 0,984        | 1,181 | SP-24  | 1    |
|         | NS-2 | -     | 30         | 35  | 1,181        | 1,378 | SP-24  | 1    |
|         | NS-3 | -     | 35         | 40  | 1,378        | 1,575 | SP-25  | 2    |
|         | NS-4 | -     | 40         | 45  | 1,575        | 1,772 | SP-25  | 2    |
|         | NS-5 | -     | 45         | 50  | 1,772        | 1,969 | SP-25  | 2    |
|         | NS-6 | -     | 50         | 55  | 1,969        | 2,165 | SP-25  | 2    |
|         | NS-7 | -     | 55         | 60  | 2,165        | 2,362 | SP-25  | 2    |
|         | NS-8 | -     | 60         | 65  | 2,362        | 2,559 | SP-25  | 2    |
|         | NS-5 | NS-10 | 62         | 67  | 2,441        | 2,638 | SP-25  | 2    |
|         | NS-6 | NS-10 | 67         | 72  | 2,638        | 2,835 | SP-25  | 2    |
|         | NS-7 | NS-10 | 72         | 77  | 2,835        | 3,031 | SP-25  | 2    |

**OPTIONAL MINIMILL 101 LOCKING RANGES****WITH SHAFT25**

| SHAFT   | JAWS | EXT.  | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|-------|------------|-----|--------------|-------|--------|------|
|         |      |       | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT25 | NS-8 | NS-10 | 77         | 82  | 3,031        | 3,228 | SP-25  | 2    |
|         | NS-5 | NS-20 | 82         | 87  | 3,228        | 3,425 | SP-25  | 2    |
|         | NS-6 | NS-20 | 87         | 92  | 3,425        | 3,622 | SP-25  | 2    |
|         | NS-7 | NS-20 | 92         | 97  | 3,622        | 3,819 | SP-25  | 2    |
|         | NS-8 | NS-20 | 97         | 102 | 3,819        | 4,016 | SP-25  | 2    |
|         | NS-5 | NS-30 | 102        | 107 | 4,016        | 4,213 | SP-25  | 2    |

**WITH SHAFT20**

| SHAFT   | JAWS | EXT. | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|------|------------|-----|--------------|-------|--------|------|
|         |      |      | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT20 | NS-0 | -    | 20         | 24  | 0,787        | 0,945 | SP-19  | 1    |
|         | NS-1 | -    | 24         | 28  | 0,945        | 1,102 | SP-19  | 1    |

**WITH MINISHAFT**

| SHAFT     | SIZE   |       | JAWS      | RANGE [MM] |       | RANGE [INCH] |       | SPRING  |
|-----------|--------|-------|-----------|------------|-------|--------------|-------|---------|
|           | [INCH] | [MM]  |           | MIN        | MAX   | MIN          | MAX   |         |
| 901MM#151 | 0,492  | 12,40 | 201MM#36  | 12,40      | 14,50 | 0,488        | 0,571 | DW-11   |
| 905MM#151 | 0,547  | 13,90 | 203 MM#36 | 13,90      | 16,00 | 0,547        | 0,630 | DW-12,5 |
| 909MM#151 | 0,661  | 16,90 | 205 MM#36 | 15,90      | 18,00 | 0,626        | 0,709 | DW-15,5 |
|           |        |       | 207 MM#36 | 16,90      | 19,00 | 0,665        | 0,748 |         |
|           |        |       | 209 MM#36 | 18,90      | 21,00 | 0,744        | 0,827 |         |
|           |        |       | 211 MM#36 | 19,90      | 22,00 | 0,783        | 0,866 |         |
|           |        |       | 213 MM#36 | 20,90      | 23,00 | 0,823        | 0,906 |         |
|           |        |       | 214 MM#36 | 21,90      | 24,00 | 0,862        | 0,944 |         |

**WITH MICROSHAFT**

| SHAFT     | SIZE   |       | JAWS     | RANGE [MM] |       | RANGE [INCH] |       | SPRING |
|-----------|--------|-------|----------|------------|-------|--------------|-------|--------|
|           | [INCH] | [MM]  |          | MIN        | MAX   | MIN          | MAX   |        |
| 800MM#151 | 0,354  | 9,00  | 301MM#36 | 10,00      | 11,00 | 0,394        | 0,433 | DW-7,5 |
| 801MM#151 | 0,394  | 10,00 | 303MM#36 | 11,00      | 12,00 | 0,433        | 0,472 | DW-8,5 |
| 805MM#151 | 0,453  | 11,50 | 305MM#36 | 12,00      | 13,00 | 0,472        | 0,512 | DW-10  |
|           |        |       | 307MM#36 | 13,00      | 14,00 | 0,512        | 0,551 |        |
|           |        |       | 309MM#36 | 14,00      | 15,00 | 0,551        | 0,591 |        |



## MiniMill 201

The MiniMill 201 is a rugged, fast, portable weld end preparation lathe for various tubes including stainless steel and other high chromium alloys. A standard machine comes complete with a 60 mm head, a locking system and includes all jaw sets to cover sizes of 20 to 44 mm (0.787" to 1.732")

### STANDARD SET UP



#### SHAFT20

Redesigned heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force. The jaws are self-align.



#### 60 MM (2,36")

The smallest cutter head, designed to fasten the wide range of cutting inserts.



**IMPORTANT!**  
Read how to  
properly lock  
on page 58

| STANDARD WORKING RANGE |            |                |       | TOTAL WORKING RANGE |        |                |           |
|------------------------|------------|----------------|-------|---------------------|--------|----------------|-----------|
| APPLICATION RANGE      |            | LOCKING RANGE  |       | APPLICATION RANGE   |        | LOCKING RANGE  |           |
| 20 – 51 mm             |            | 20 – 48 mm     |       | 10 – 51 mm          |        | 10 – 48 mm     |           |
| 0,787 – 2,008"         |            | 0,787 – 1,890" |       | 0,394 – 2,008"      |        | 0,394 – 1,890" |           |
| FEED STROKE            |            | POWER          |       | FREE SPEED          |        | TORQUE         |           |
| 20 mm                  | 0,787"     | 1,3 hp         |       | 200 rpm             |        | 72 Nm          | 53 Ft.lbs |
| 55 cfm                 | 1,3 m³/min | 2,32"          | 59 mm | 13,1"               | 335 mm | 11,4 Lbs       | 5,2 kg    |

### EXAMPLE TOOL APPLICATION



Standard locking system with handle feed makes quick work of trimming back tubes.



Completed strength weld removal.



Facing, bevelling tubes quickly and safely.

**OPTIONAL HEADS****88 MM (3,46")**

The popular, medium cutter head, designed to fasten the wide range of cutting inserts.

**OBMH**

Outside bevelling of both tubes and pipes. Sized per tube or pipe diameter and angle of required weld bevel.

→ TABLE PAGE 32

**SWROTC**

Seal weld removal head over tube circumference prior to re-welding the damaged joint without removing the tube.

TABLE PAGE 33

**STWRMH**

Custom designed head dedicated for strength weld removal. Heads are sized per tube diameter.

→ TABLE PAGE 31

**MICROSHAFT**

A system with interchangeable guide shafts. A complete set covers 9,0 to 15,0 mm inside diameter.

**MINISHAFT**

A system with interchangeable guide shafts. A complete set covers 12,4 to 48 mm inside diameter.

**OTHER OPTIONAL ACCESSORIES****RATCHET FEED**

Feed system allowing to work in narrow and tight locations, eg. in water walls.

**LEVER FEED**

Quick and easy feed system. Used in many basic applications.

**SPEED REDUCER**

Easy to use gearbox for 3x speed reduction. Increases the torque, enabling the machine to generate a thick chip whilst reducing the cutting time.

**FAST CLAMPING SYSTEM**

System offers rapid tube to tube cycle time, increased productivity (up to 4x) with little operator fatigue. Ideal for large amount of end preps.

**MINIMILL 201 LOCKING RANGES****WITH SHAFT20**

| SHAFT   | JAWS | EXT. | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|------|------------|-----|--------------|-------|--------|------|
|         |      |      | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT25 | NS-0 | -    | 20         | 24  | 0,787        | 0,945 | SP-19  | 1    |
|         | NS-1 | -    | 24         | 28  | 0,945        | 1,102 | SP-19  | 1    |
|         | NS-2 | -    | 28         | 33  | 1,102        | 1,299 | SP-19  | 1    |
|         | NS-3 | -    | 33         | 38  | 1,299        | 1,496 | SP-20  | 2    |
|         | NS-4 | -    | 38         | 43  | 1,496        | 1,693 | SP-20  | 2    |
|         | NS-5 | -    | 43         | 48  | 1,693        | 1,890 | SP-20  | 2    |

**WITH MINISHAFT**

| SHAFT     | SIZE   |       | JAWS      | RANGE [MM] |       | RANGE [INCH] |       | SPRING  |
|-----------|--------|-------|-----------|------------|-------|--------------|-------|---------|
|           | [INCH] | [MM]  |           | MIN        | MAX   | MIN          | MAX   |         |
| 901MM#151 | 0,492  | 12,40 | 201MM#36  | 12,40      | 14,50 | 0,488        | 0,571 | DW-11   |
| 905MM#151 | 0,547  | 13,90 | 203 MM#36 | 13,90      | 16,00 | 0,547        | 0,630 | DW-12,5 |
| 909MM#151 | 0,661  | 16,90 | 205 MM#36 | 15,90      | 18,00 | 0,626        | 0,709 | DW-15,5 |
|           |        |       | 207 MM#36 | 16,90      | 19,00 | 0,665        | 0,748 |         |
|           |        |       | 209 MM#36 | 18,90      | 21,00 | 0,744        | 0,827 |         |
|           |        |       | 211 MM#36 | 19,90      | 22,00 | 0,783        | 0,866 |         |
|           |        |       | 213 MM#36 | 20,90      | 23,00 | 0,823        | 0,906 |         |
|           |        |       | 214 MM#36 | 21,90      | 24,00 | 0,862        | 0,944 |         |

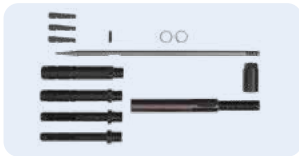
**WITH MICROSHAFT**

| SHAFT     | SIZE   |       | JAWS     | RANGE [MM] |       | RANGE [INCH] |       | SPRING |
|-----------|--------|-------|----------|------------|-------|--------------|-------|--------|
|           | [INCH] | [MM]  |          | MIN        | MAX   | MIN          | MAX   |        |
| 800MM#151 | 0,354  | 9,00  | 301MM#36 | 10,00      | 11,00 | 0,394        | 0,433 | DW-7,5 |
| 801MM#151 | 0,394  | 10,00 | 303MM#36 | 11,00      | 12,00 | 0,433        | 0,472 | DW-8,5 |
| 805MM#151 | 0,453  | 11,50 | 305MM#36 | 12,00      | 13,00 | 0,472        | 0,512 | DW-10  |
|           |        |       | 307MM#36 | 13,00      | 14,00 | 0,512        | 0,551 |        |
|           |        |       | 309MM#36 | 14,00      | 15,00 | 0,551        | 0,591 |        |

## MiniMill 301LP

The fastest and strongest facing machine on the market. Engineered for safety and ease of use, featuring a pneumatic locking system with a double piston cylinder. Compact milling head with double cutting edge inserts with 6% cobalt. For all types of material including: ferrous, non-ferrous, stainless and exotic alloys steel, duplex, inconel and titanium.

### STANDARD SET UP



#### MINISHAFT

A system with interchangeable guide shafts. A complete set covers 12,4 to 48,0 mm ID tubes.



#### 60 MM (2,36")

The smallest cutter head, designed to fasten the wide range of cutting inserts.



**IMPORTANT!**  
Read how to properly lock on page 58

| STANDARD WORKING RANGE  |        |                |  | TOTAL WORKING RANGE |  |                |           |
|-------------------------|--------|----------------|--|---------------------|--|----------------|-----------|
| APPLICATION RANGE       |        | LOCKING RANGE  |  | APPLICATION RANGE   |  | LOCKING RANGE  |           |
| 12,4 – 38,0 mm          |        | 12,4 – 24,0 mm |  | 10 – 51 mm          |  | 10 – 48 mm     |           |
| 0,488 – 1,496"          |        | 0,488 – 0,945" |  | 0,394 – 2,008"      |  | 0,394 – 1,890" |           |
| FEED STROKE             |        | POWER          |  | FREE SPEED          |  | TORQUE         |           |
| 20 mm                   | 0,787" | 1,3 hp         |  | 300 rpm             |  | 43 Nm          | 32 Ft.lbs |
| 55 cfm                  |        | 2,32"          |  | 13,1"               |  | 15,4 Lbs       |           |
| 1,3 m <sup>3</sup> /min |        | 59 mm          |  | 335 mm              |  | 7 kg           |           |



### AUTOMINIMILL 301

Auto MiniMill 301 is a fully automatic machine, controlled by a built-in, fully pneumatic control box, with adjustable feed rate and actuated by a hand button (foot switch optional). Ideal for repetitive work cycles on condensers and heat exchangers, as well as for bevelling and facing boiler tubes.

### EXAMPLE TOOL APPLICATION



A real application: shortening a bundle. MiniMill can deal with this task quickly and efficiently.



Double sided inserts and fixed diameter heads ensure unsurpassed efficiency and quality. Mechanical stops ensure identical tube projection.

**OPTIONAL HEADS****TFMH**

Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.

→ TABLE PAGE 31

**STWRMH**

Head for strength weld removal. Easy to align and sized per tube diameter. Must be used with 3X Speed Reducer.

→ TABLE PAGE 31

**OPTIONAL SHAFTS****MICROSHAFT**

A system with interchangeable guide shafts. A complete set covers 9,0 to 15,0 mm inside diameter.

**SHAFT20**

Self-align, heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force.

**OTHER OPTIONAL ACCESSORIES****SPEED REDUCER**

Easy to use gearbox for 3x speed reduction. Increases the torque, enabling the machine to generate a thick chip whilst reducing the cutting time.

**STAR WHEEL**

The most precise feed system. Used in many basic and demanding applications.

**EXAMPLE TOOL APPLICATION**

The fast locking and the handle feed make this system very efficient for heat exchanger manufacturers.

**MINIMILL 301LP LOCKING RANGES****WITH MINISHAFT**

| SHAFT     | SIZE   |       | JAWS      | RANGE [MM] |       | RANGE [INCH] |       | SPRING  |
|-----------|--------|-------|-----------|------------|-------|--------------|-------|---------|
|           | [INCH] | [MM]  |           | MIN        | MAX   | MIN          | MAX   |         |
| 901MM#151 | 12,40  | 0,492 | 201MM#36  | 12,40      | 14,50 | 0,488        | 0,571 | DW-11   |
| 905MM#151 | 13,90  | 0,547 | 203 MM#36 | 13,90      | 16,00 | 0,547        | 0,630 | DW-12,5 |
| 909MM#151 | 16,90  | 0,661 | 205 MM#36 | 15,90      | 18,00 | 0,626        | 0,709 | DW-15,5 |
|           |        |       | 207 MM#36 | 16,90      | 19,00 | 0,665        | 0,748 |         |
|           |        |       | 209 MM#36 | 18,90      | 21,00 | 0,744        | 0,827 |         |
|           |        |       | 211 MM#36 | 19,90      | 22,00 | 0,783        | 0,866 |         |
|           |        |       | 213 MM#36 | 20,90      | 23,00 | 0,823        | 0,906 |         |
|           |        |       | 214 MM#36 | 21,90      | 24,00 | 0,862        | 0,944 |         |

**WITH MICROSHAFT**

| SHAFT     | SIZE   |       | JAWS     | RANGE [MM] |       | RANGE [INCH] |       | SPRING |
|-----------|--------|-------|----------|------------|-------|--------------|-------|--------|
|           | [INCH] | [MM]  |          | MIN        | MAX   | MIN          | MAX   |        |
| 800MM#151 | 0,354  | 9,00  | 301MM#36 | 10,00      | 11,00 | 0,394        | 0,433 | DW-7,5 |
| 801MM#151 | 0,394  | 10,00 | 303MM#36 | 11,00      | 12,00 | 0,433        | 0,472 | DW-8,5 |
| 805MM#151 | 0,453  | 11,50 | 305MM#36 | 12,00      | 13,00 | 0,472        | 0,512 | DW-10  |
|           |        |       | 307MM#36 | 13,00      | 14,00 | 0,512        | 0,551 |        |
|           |        |       | 309MM#36 | 14,00      | 15,00 | 0,551        | 0,591 |        |

**WITH SHAFT20**

| SHAFT   | JAWS | EXT. | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|------|------------|-----|--------------|-------|--------|------|
|         |      |      | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT20 | NS-0 | -    | 20         | 24  | 0,787        | 0,945 | SP-19  | 1    |
|         | NS-1 | -    | 24         | 28  | 0,945        | 1,102 | SP-19  | 1    |
|         | NS-2 | -    | 28         | 33  | 1,102        | 1,299 | SP-19  | 1    |
|         | NS-3 | -    | 33         | 38  | 1,299        | 1,496 | SP-20  | 2    |
|         | NS-4 | -    | 38         | 43  | 1,496        | 1,693 | SP-20  | 2    |
|         | NS-5 | -    | 43         | 48  | 1,693        | 1,890 | SP-20  | 2    |

## PrepMill

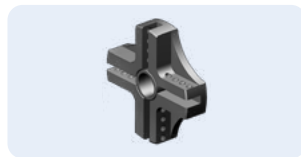
The PrepMill series pneumatic tube facing, bevelling and weld removal machine. The PrepMill is a rugged, fast, portable weld end preparation lathe for various tubes including stainless steel and other high chromium alloys. Machine is constructed on two opposite set up taper roller bearings that makes the machine extremely stable and very rigid and compact. A standard machine is equipped to cover 25 to 122 mm ID (1" to 4,8") with a 116 mm cutter head.

### STANDARD SET UP



#### SHAFT25

Self-align, heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force.

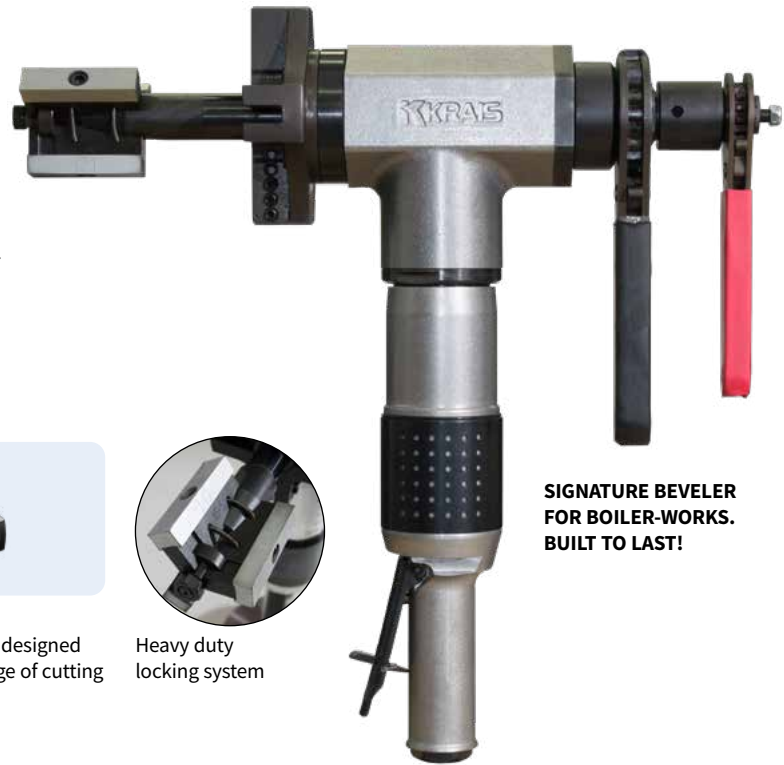


#### 116 MM (4,56")

The large cutter head, designed to fasten the wide range of cutting inserts.



Heavy duty locking system



**SIGNATURE BEVELER  
FOR BOILER-WORKS.  
BUILT TO LAST!**

| STANDARD WORKING RANGE  |    |               |  | TOTAL WORKING RANGE |  |               |            |
|-------------------------|----|---------------|--|---------------------|--|---------------|------------|
| APPLICATION RANGE       |    | LOCKING RANGE |  | APPLICATION RANGE   |  | LOCKING RANGE |            |
| 25 – 127 mm             |    | 25 – 122 mm   |  | 20 – 127 mm         |  | 20 – 122 mm   |            |
| 1 – 5"                  |    | 1,0 – 4,8"    |  | 0,787 – 5"          |  | 0,787 – 4,8"  |            |
| FEED STROKE             |    | POWER         |  | FREE SPEED          |  | TORQUE        |            |
| 25 mm                   | 1" | 1,3 hp        |  | 120 rpm             |  | 140 Nm        | 105 Ft.lbs |
| 55 cfm                  |    | 2,59"         |  | 14,5"               |  | 20,5 Lbs      | 9,5 kg     |
| 1,3 m <sup>3</sup> /min |    | 66 mm         |  | 370 mm              |  |               |            |

### PREPMILL-E

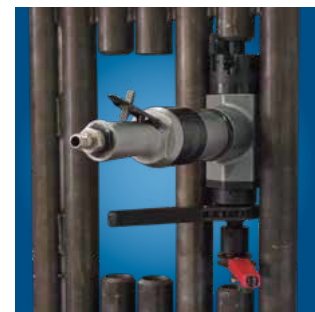
PrepMill-E is electric version of PrepMill.

A standard machine can cover the same pipe sizes and comes with the same cutting head. The electric motor made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time.

Free Speed ..... 115 RPM  
Power..... 750 W  
Torque ..... 368 Nm (280 Ft.Lbs)  
Feed Stroke ..... 25 mm (1")

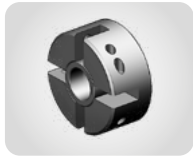


### EXAMPLE TOOL APPLICATION



PrepMill with its 66 mm (2-5/8) width body perfectly fit into limited access areas such as Water wall panels. Easy to clamp and feed with our heavy duty ratchet or star wheel feed.



**OPTIONAL HEADS****66 MM (2,59")**

The smallest cutter head, designed to fasten the wide range of cutting inserts.

**88 MM (3,46")**

The popular, medium cutter head, designed to fasten the wide range of cutting inserts.

**OBPM**

Head for outside bevelling of tubes and pipes. Available in wide range of diameters and beveling angles.

→ TABLE PAGE 34

**PRRMBH**

Head for membrane and overlay removal. Efficiently remove material between boiler tubes.

→ TABLE PAGE 34

**STWRPM**

Head dedicated for strength weld removal. Heads are easy to align and sized per tube diameter.

→ TABLE PAGE 35

**TFPM**

Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.

→ TABLE PAGE 35

**OPT. SHAFT****SHAFT20**

Self-align, heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force.

**HEAD FLANGE**

Adapter to use all MiniMill's special cutter heads (from size 1-1/2" and up).

**SPEED REDUCER**

Easy to use gearbox for 3x speed reduction. Increases the torque, enabling the machine to generate a thick chip whilst reducing the cutting time.

**FAST CLAMPING SYSTEM**

System offers rapid tube to tube cycle time, increased productivity (up to 4x) with little operator fatigue. Ideal for large amount of end preps.

**STAR WHEEL**

The most precise feed system. Used in many basic and demanding applications.

**PREMILL LOCKING RANGES****WITH SHAFT25**

| SHAFT   | JAWS | EXT.  | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|-------|------------|-----|--------------|-------|--------|------|
|         |      |       | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT25 | NS-1 | -     | 25         | 30  | 0,984        | 1,181 | SP-24  | 1    |
|         | NS-2 | -     | 30         | 35  | 1,181        | 1,378 | SP-24  | 1    |
|         | NS-3 | -     | 35         | 40  | 1,378        | 1,575 | SP-25  | 2    |
|         | NS-4 | -     | 40         | 45  | 1,575        | 1,772 | SP-25  | 2    |
|         | NS-5 | -     | 45         | 50  | 1,772        | 1,969 | SP-25  | 2    |
|         | NS-6 | -     | 50         | 55  | 1,969        | 2,165 | SP-25  | 2    |
|         | NS-7 | -     | 55         | 60  | 2,165        | 2,362 | SP-25  | 2    |
|         | NS-8 | -     | 60         | 65  | 2,362        | 2,559 | SP-25  | 2    |
|         | NS-5 | NS-10 | 62         | 67  | 2,441        | 2,638 | SP-25  | 2    |
|         | NS-6 | NS-10 | 67         | 72  | 2,638        | 2,835 | SP-25  | 2    |
|         | NS-7 | NS-10 | 72         | 77  | 2,835        | 3,031 | SP-25  | 2    |
|         | NS-8 | NS-10 | 77         | 82  | 3,031        | 3,228 | SP-25  | 2    |
|         | NS-5 | NS-20 | 82         | 87  | 3,228        | 3,425 | SP-25  | 2    |
|         | NS-6 | NS-20 | 87         | 92  | 3,425        | 3,622 | SP-25  | 2    |
|         | NS-7 | NS-20 | 92         | 97  | 3,622        | 3,819 | SP-25  | 2    |
|         | NS-8 | NS-20 | 97         | 102 | 3,819        | 4,016 | SP-25  | 2    |
|         | NS-5 | NS-30 | 102        | 107 | 4,016        | 4,213 | SP-25  | 2    |
|         | NS-6 | NS-30 | 107        | 112 | 4,213        | 4,409 | SP-25  | 2    |
|         | NS-7 | NS-30 | 112        | 117 | 4,409        | 4,606 | SP-25  | 2    |
|         | NS-8 | NS-30 | 117        | 122 | 4,606        | 4,803 | SP-25  | 2    |

**WITH SHAFT20**

| SHAFT   | JAWS | EXT. | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|------|------------|-----|--------------|-------|--------|------|
|         |      |      | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT20 | NS-0 | -    | 20         | 24  | 0,787        | 0,945 | SP-19  | 1    |
|         | NS-1 | -    | 24         | 28  | 0,945        | 1,102 | SP-19  | 1    |

**EXAMPLE TOOL APPLICATION**

## HyperMill 56

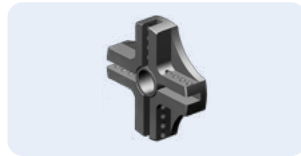
Powerful pneumatic tube facing, bevelling and weld removal machine. The HyperMill 56 is a rugged, fast, portable weld end preparation lathe for various tubes and pipes, including stainless steel and other high chromium materials. A standard machine is equipped with a solid locking system to cover most common tube sizes.

### STANDARD SET UP



#### SHAFT30

Self-align, heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force.



#### 135 MM (5,3")

The large cutter head, very sturdy and rigid, designed to fasten the wide range of cutting inserts.



Heavy duty locking system

| STANDARD WORKING RANGE |      |                         |  | TOTAL WORKING RANGE |  |                |            |
|------------------------|------|-------------------------|--|---------------------|--|----------------|------------|
| APPLICATION RANGE      |      | LOCKING RANGE           |  | APPLICATION RANGE   |  | LOCKING RANGE  |            |
| 30 – 136 mm            |      | 30 – 136 mm             |  | 20 – 175 mm         |  | 20 – 166 mm    |            |
| 1,181 – 5,354"         |      | 0,181 – 4,354"          |  | 0,787 – 6,890"      |  | 0,787 – 6,535" |            |
| FEED STROKE            |      | POWER                   |  | FREE SPEED          |  | TORQUE         |            |
| 40 mm                  | 1,6" | 1,3 hp                  |  | 55 rpm              |  | 280 Nm         | 210 Ft.lbs |
| 55 cfm                 |      | 1,3 m <sup>3</sup> /min |  | 3,22"               |  | 82 mm          |            |
|                        |      |                         |  | 15"                 |  | 385 mm         |            |
|                        |      |                         |  |                     |  | 19 Lbs         | 9 kg       |

### HYPERMILL 56E

HyperMill 56E is electric version of HyperMill 56. The machine can cover the same pipe sizes and comes with the same cutting head. The electric motor made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time.

Free Speed ..... 58 RPM  
 Power..... 750 W  
 Torque ..... 720 Nm (530 Ft.Lbs)  
 Feed Stroke ..... 40 mm (1,6")



### EXAMPLE TOOL APPLICATION





**OPTIONAL HEADS**

**116 MM (4,56")**  
The large cutter head, designed to fasten the wide range of cutting inserts.



**175 MM (6,89")**  
Cutter head special for the largest machines, designed to fasten the wide range of cutting inserts.



**HMRBMH**  
Head for membrane and overlay removal. Efficiently remove material between boiler tubes.

**OPTIONAL SHAFTS**

**SHAFT20**  
Self-align, heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force.



**SHAFT25**  
Self-align, heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force.

**AVAILABLE HOLDERS**

**Streight weld removal holder**



IB-45-37-HM  
IB-45-30-HM  
BIT:  
2CDI

**OTHER OPTIONAL ACCESSORIES**

**HEAD FLANGE**  
Adapter to use all MiniMill's special cutter heads (from size 1-1/2" and up).



**SPEED REDUCER**  
Easy to use gearbox for 3x speed reduction. Increases the torque, enabling the machine to generate a thick chip whilst reducing the cutting time.



**RATCHET FEED**  
Feed system allowing to work in narrow and tight locations, eg. in water walls.

**STANDARD HYPERMILL 56 LOCKING RANGES****WITH SHAFT30**

| SHAFT   | JAWS | EXT.  | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|-------|------------|-----|--------------|-------|--------|------|
|         |      |       | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT30 | NS-1 |       | 30         | 34  | 1,181        | 1,339 | SP-29  | 1    |
|         | NS-2 |       | 34         | 39  | 1,339        | 1,535 | SP-29  | 1    |
|         | NS-3 |       | 39         | 44  | 1,535        | 1,732 | SP-30  | 2    |
|         | NS-4 |       | 44         | 49  | 1,732        | 1,929 | SP-30  | 2    |
|         | NS-5 |       | 49         | 54  | 1,929        | 2,126 | SP-30  | 2    |
|         | NS-6 |       | 54         | 59  | 2,126        | 2,323 | SP-30  | 2    |
|         | NS-7 |       | 59         | 64  | 2,323        | 2,520 | SP-30  | 2    |
|         | NS-8 |       | 64         | 69  | 2,520        | 2,717 | SP-30  | 2    |
|         | NS-5 | NS-10 | 66         | 71  | 2,598        | 2,795 | SP-30  | 2    |
|         | NS-6 | NS-10 | 71         | 76  | 2,795        | 2,992 | SP-30  | 2    |
|         | NS-7 | NS-10 | 76         | 81  | 2,992        | 3,189 | SP-30  | 2    |
|         | NS-8 | NS-10 | 81         | 86  | 3,189        | 3,386 | SP-30  | 2    |
|         | NS-5 | NS-20 | 86         | 91  | 3,386        | 3,583 | SP-30  | 2    |
|         | NS-6 | NS-20 | 91         | 96  | 3,583        | 3,780 | SP-30  | 2    |
|         | NS-7 | NS-20 | 96         | 101 | 3,780        | 3,976 | SP-30  | 2    |
|         | NS-8 | NS-20 | 101        | 106 | 3,976        | 4,173 | SP-30  | 2    |
|         | NS-5 | NS-30 | 106        | 111 | 4,173        | 4,370 | SP-30  | 2    |
|         | NS-6 | NS-30 | 111        | 116 | 4,370        | 4,567 | SP-30  | 2    |
|         | NS-7 | NS-30 | 116        | 121 | 4,567        | 4,764 | SP-30  | 2    |
|         | NS-8 | NS-30 | 121        | 126 | 4,764        | 4,961 | SP-30  | 2    |

**OPTIONAL HYPERMILL 56 LOCKING RANGES****WITH SHAFT30**

| SHAFT   | JAWS | EXT.  | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|-------|------------|-----|--------------|-------|--------|------|
|         |      |       | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT30 | NS-5 | NS-40 | 126        | 131 | 4,961        | 5,157 | SP-30  | 2    |
|         | NS-6 | NS-40 | 131        | 136 | 5,157        | 5,354 | SP-30  | 2    |
|         | NS-7 | NS-40 | 136        | 141 | 5,354        | 5,551 | SP-30  | 2    |
|         | NS-8 | NS-40 | 141        | 146 | 5,551        | 5,748 | SP-30  | 2    |
|         | NS-5 | NS-50 | 146        | 151 | 5,748        | 5,945 | SP-30  | 2    |
|         | NS-6 | NS-50 | 151        | 156 | 5,945        | 6,142 | SP-30  | 2    |
|         | NS-7 | NS-50 | 156        | 161 | 6,142        | 6,339 | SP-30  | 2    |
|         | NS-8 | NS-50 | 161        | 166 | 6,339        | 6,535 | SP-30  | 2    |

**WITH SHAFT25**

| SHAFT   | JAWS | EXT.  | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|-------|------------|-----|--------------|-------|--------|------|
|         |      |       | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT25 | NS-1 | -     | 25         | 30  | 0,984        | 1,181 | SP-24  | 1    |
|         | NS-2 | -     | 30         | 35  | 1,181        | 1,378 | SP-24  | 1    |
|         | NS-3 | -     | 35         | 40  | 1,378        | 1,575 | SP-25  | 2    |
|         | NS-4 | -     | 40         | 45  | 1,575        | 1,772 | SP-25  | 2    |
|         | NS-5 | -     | 45         | 50  | 1,772        | 1,969 | SP-25  | 2    |
|         | NS-6 | -     | 50         | 55  | 1,969        | 2,165 | SP-25  | 2    |
|         | NS-7 | -     | 55         | 60  | 2,165        | 2,362 | SP-25  | 2    |
|         | NS-8 | -     | 60         | 65  | 2,362        | 2,559 | SP-25  | 2    |
|         | NS-5 | NS-10 | 62         | 67  | 2,441        | 2,638 | SP-25  | 2    |
|         | NS-6 | NS-10 | 67         | 72  | 2,638        | 2,835 | SP-25  | 2    |
|         | NS-7 | NS-10 | 72         | 77  | 2,835        | 3,031 | SP-25  | 2    |
|         | NS-8 | NS-10 | 77         | 82  | 3,031        | 3,228 | SP-25  | 2    |
|         | NS-5 | NS-20 | 82         | 87  | 3,228        | 3,425 | SP-25  | 2    |
|         | NS-6 | NS-20 | 87         | 92  | 3,425        | 3,622 | SP-25  | 2    |
|         | NS-7 | NS-20 | 92         | 97  | 3,622        | 3,819 | SP-25  | 2    |
|         | NS-8 | NS-20 | 97         | 102 | 3,819        | 4,016 | SP-25  | 2    |

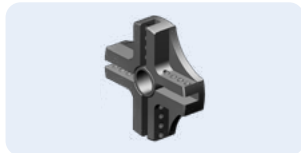
**WITH SHAFT20**

| SHAFT   | JAWS | EXT. | RANGE [MM] |     | RANGE [INCH] |       | SPRING |      |
|---------|------|------|------------|-----|--------------|-------|--------|------|
|         |      |      | MIN        | MAX | MIN          | MAX   | NO.    | QTY. |
| SHAFT20 | NS-0 | -    | 20         | 24  | 0,787        | 0,945 | SP-19  | 1    |
|         | NS-1 | -    | 24         | 28  | 0,945        | 1,102 | SP-19  | 1    |
|         | NS-2 | -    | 28         | 33  | 1,102        | 1,299 | SP-19  | 1    |
|         | NS-3 | -    | 33         | 38  | 1,299        | 1,496 | SP-20  | 2    |

## PipeMill

PipeMill is a pneumatic powered tube facing, bevelling and weld removal machine. The PipeMill is a rugged, fast and powerful weld end preparation lathe for various pipes including stainless steel and other exotic alloys. A standard machine is equipped with a locking system to cover sizes of 50,8 to 172 mm ID (2.000" to 6.800") with a 250 mm cutting head.

### STANDARD SET UP



#### 250 MM (9,8")

Cutter head special for the largest machines. Very rigid. Designed to fasten the wide range of cutting inserts.



| STANDARD WORKING RANGE |            |                 |        | OPTIONAL WORKING RANGE |        |                 |       |
|------------------------|------------|-----------------|--------|------------------------|--------|-----------------|-------|
| APPLICATION RANGE      |            | LOCKING RANGE   |        | APPLICATION RANGE      |        | LOCKING RANGE   |       |
| 50 – 279 mm            |            | 50 – 319 mm     |        | 50 – 319 mm            |        | 50 – 319 mm     |       |
| 1,968 – 10,984”        |            | 1,968 – 12,559” |        | 1,968 – 12,559”        |        | 1,968 – 12,559” |       |
| FEED STROKE            |            | POWER           |        | FREE SPEED             |        | TORQUE          |       |
| 50 mm                  | 1,968”     | 1,3 hp          |        | Depends on gear        |        |                 |       |
| AIR USE                |            | BODY WIDTH      |        | BODY HEIGHT            |        | BODY WEIGHT     |       |
| 70 cfm                 | 2,2 m³/min | 5,7”            | 145 mm | 21,5”                  | 550 mm | 52,9 Lbs        | 24 kg |

### LOCKING RANGES WITH STANDARD JAWS

#### JAWS: SM-42

| RANGE [MM] |       | RANGE [INCH] |        | EXTENSIONS  |         |          |
|------------|-------|--------------|--------|-------------|---------|----------|
| MIN        | MAX   | MIN          | MAX    | A           | B       | C        |
| 50,0       | 65,0  | 1,969        | 2,559  |             |         |          |
| 65,0       | 80,0  | 2,559        | 3,150  | ML-42-A-75  |         |          |
| 80,0       | 95,0  | 3,150        | 3,740  | ML-42-A-150 |         |          |
| 95,0       | 110,0 | 3,740        | 4,331  | ML-42-A-225 |         |          |
| 110,0      | 125,0 | 4,331        | 4,921  | ML-42-A-300 |         |          |
| 125,0      | 140,0 | 4,921        | 5,512  | ML-42-A-375 |         |          |
| 140,0      | 155,0 | 5,512        | 6,102  |             |         | SML-42-C |
| 155,0      | 170,0 | 6,102        | 6,693  | ML-42-A-75  |         | SML-42-C |
| 170,0      | 184,5 | 6,693        | 7,264  | ML-42-A-150 |         | SML-42-C |
| 184,5      | 199,0 | 7,264        | 7,835  | ML-42-A-225 |         | SML-42-C |
| 199,0      | 214,0 | 7,835        | 8,425  | ML-42-A-300 |         | SML-42-C |
| 214,0      | 229,0 | 8,425        | 9,016  | ML-42-A-375 |         | SML-42-C |
| 229,0      | 244,5 | 9,016        | 9,626  |             | ML-42-B | SML-42-C |
| 244,5      | 259,5 | 9,626        | 10,217 | ML-42-A-75  | ML-42-B | SML-42-C |
| 259,5      | 274,0 | 10,217       | 10,787 | ML-42-A-150 | ML-42-B | SML-42-C |
| 274,0      | 289,0 | 10,787       | 11,378 | ML-42-A-225 | ML-42-B | SML-42-C |
| 289,0      | 304,0 | 11,378       | 11,969 | ML-42-A-300 | ML-42-B | SML-42-C |
| 304,0      | 319,0 | 11,969       | 12,559 | ML-42-A-375 | ML-42-B | SML-42-C |

### AVAILABLE GEARBOX CONFIGURATIONS

This tool comes with one chosen gearbox as a standard. Torque/speed depends on gear configuration:

|                   |        |         |             |
|-------------------|--------|---------|-------------|
| GEARBOX <b>15</b> | 15 RPM | 2544 Nm | 1908 Ft.Lbs |
| GEARBOX <b>20</b> | 20 RPM | 1883 Nm | 1415 Ft.Lbs |
| GEARBOX <b>28</b> | 28 RPM | 1290 Nm | 969 Ft.Lbs  |
| GEARBOX <b>37</b> | 37 RPM | 971 Nm  | 730 Ft.Lbs  |

## AVAILABLE HOLDERS

| Facing                                                                            | Inside bevelling and boring                                                          | Outside bevelling                                                                 | J-Prep                                                                            | Compound bevelling                                                                  |                                                                                     |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |     |  |  |  |  |
| F-45-90<br>BIT:<br>2CDI                                                           | F-CB-25+2-90<br>(ADJUSTABLE LENGTH FACING<br>HOLDER FOR THE LAND)<br>BIT:<br>XXXXXXX | IB-45-37<br>IB-45-10<br>BIT:<br>2CDI                                              | OB-45-45<br>OB-45-37<br>OB-45-30<br>OB-45-10<br>BIT:<br>2CDI                      | JP-45-45<br>JP-45-37<br>JP-45-30<br>BIT:<br>2CDJ-5                                  | CB-1037<br>(OTHERS ON REQUEST)<br>BIT:<br>CB-45                                     |

## OPTIONAL HEAD



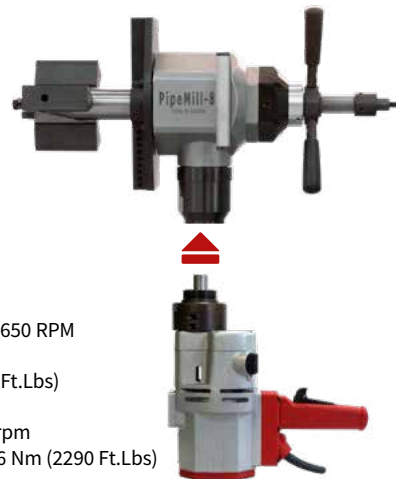
**290 MM (11,4'')**  
Biggest head for KRAIS Mini&HyperMill tools. Very rigid. Designed to fasten the wide range of cutting inserts.

## PIPEMILL-E - ELECTRIC VERSION

PipeMill-E is electric version of PipeMill. The machine can cover the same pipe sizes and comes with the same cutting head. The electric motor with 4 speed mechanical gear box has also variable speed control and produce enormous torque on the cutter blade. Is interchangeable with pneumatic drive and can be purchased separately at any time. Take 5 min to replace from pneumatic to electric.

## DUDE-2000-4-SPEED

Motor free speed ..... 120-210-380-650 RPM  
Motor power ..... 2000 W  
Motor torque (on the 1st gear) ..... 240 Nm (180 Ft.Lbs)  
Machine feed stroke ..... 40 mm (1,6'')  
Cutter head speed ..... 10-17-30-50 rpm  
Max torque on cutter blade (on the 1st gear) .... 3096 Nm (2290 Ft.Lbs)



## EXAMPLE TOOL APPLICATION



## SmartMill-8

Most powerful machine within this size range on the market today. Utilizes a powerful 2.2 kW (3 HP) pneumatic motor that is entirely engineered and manufactured by KRAIS. SmartMill-8 has a unique construction that has been specifically designed for the largest end prep systems.

- Self-centering 40 mm (1,57") one piece locking shaft.
- Only one mandrel and 6 Jaw sets needed to cover machines entire range.
- Wide clamps produce superior clamping force for chatter free end preps.
- Fully portable for on-site and Fab-shop work.

SmartMill-8 is available for sale or rent.



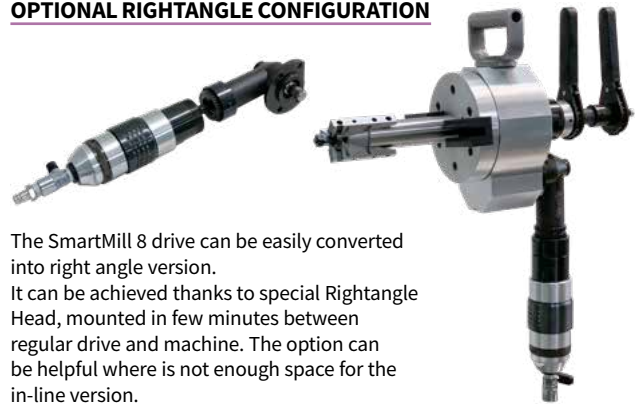
| STANDARD WORKING RANGE |            |                |         | FEED<br>STROKE    | FREE<br>SPEED      | POWER       | TORQUE     |
|------------------------|------------|----------------|---------|-------------------|--------------------|-------------|------------|
| APPLICATION RANGE      |            | LOCKING RANGE  |         |                   |                    |             |            |
| 40 - 219 mm            |            | 40 - 203,5 mm  |         | 50 mm             | 39 Rpm             | 3,0 hp      | 930 Nm     |
| 1,574 - 8,622"         |            | 1,574 - 8,012" |         | 2"                |                    |             | 697 Ft.Lbs |
| AIR USE                |            | AIR PRESSURE   |         | BODY DIMENSIONS   |                    | BODY WEIGHT |            |
| 75 cfm                 | 2,2 m³/min | 90 PSI         | 6,2 Bar | 22 x 9,25 x 7,48" | 560 x 235 x 190 mm | 46 Lbs      | 21 kg      |

### LOCKING RANGES WITH STANDARD JAWS

#### JAWS: SM-7

| RANGE [MM] |       | RANGE [INCH] |       | SEGMENTS |         |                                           |
|------------|-------|--------------|-------|----------|---------|-------------------------------------------|
| MIN        | MAX   | MIN          | MAX   | SM-42-0  | SM-42-1 | ML-42-A                                   |
| 40,0       | 55,0  | 1,575        | 2,165 | SM-42-0  |         |                                           |
| 55,0       | 69,5  | 2,165        | 2,736 |          | SM-42-1 |                                           |
| 69,5       | 84,0  | 2,736        | 3,307 |          | SM-42-1 | ML-42-A-75                                |
| 84,0       | 98,5  | 3,307        | 3,878 |          | SM-42-1 | ML-42-A-150                               |
| 98,5       | 113,5 | 3,878        | 4,469 |          | SM-42-1 | ML-42-A-225                               |
| 113,5      | 128,5 | 4,469        | 5,059 |          | SM-42-1 | ML-42-A-300                               |
| 128,5      | 143,5 | 5,059        | 5,650 |          | SM-42-1 | ML-42-A-300<br>ML-42-A-75                 |
| 143,5      | 158,5 | 5,650        | 6,240 |          | SM-42-1 | ML-42-A-300<br>ML-42-A-150                |
| 158,5      | 173,5 | 6,240        | 6,831 |          | SM-42-1 | ML-42-A-300<br>ML-42-A-225                |
| 173,5      | 188,5 | 6,831        | 7,421 |          | SM-42-1 | ML-42-A-300<br>ML-42-A-225<br>ML-42-A-75  |
| 188,5      | 203,5 | 7,421        | 8,012 |          | SM-42-1 | ML-42-A-300<br>ML-42-A-225<br>ML-42-A-150 |

### OPTIONAL RIGHTANGLE CONFIGURATION



The SmartMill 8 drive can be easily converted into right angle version. It can be achieved thanks to special Rightangle Head, mounted in few minutes between regular drive and machine. The option can be helpful where is not enough space for the in-line version.

### SMARTMILL-8 PERFORMANCE



The performance of the machine may vary depending on the skill of the operator, the materials, the conditions of the tools and the air supply system in case of pneumatic unit.

**AVAILABLE HOLDERS**

| Facing                                                                            | Inside bevelling and boring                                                          | Outside bevelling                                                                 | J-Prep                                                                            | Compound bevelling                                                                  |                                                                                     |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |     |  |  |  |  |
| F-45-90<br>BIT:<br>2CDI                                                           | F-CB-25+2-90<br>(ADJUSTABLE LENGTH FACING<br>HOLDER FOR THE LAND)<br>BIT:<br>XXXXXXX | IB-45-37<br>IB-45-10<br>BIT:<br>2CDI                                              | OB-45-45<br>OB-45-37<br>OB-45-30<br>OB-45-10<br>BIT:<br>2CDI                      | JP-45-45<br>JP-45-37<br>JP-45-30<br>BIT:<br>2CDJ-5                                  | CB-1037<br>(OTHERS ON REQUEST)<br>BIT:<br>CB-45                                     |

**ADVANTAGES OF SMARTMILL-8****UNIQUE SHAFT DESIGN**

40 mm (1.57") shaft, assures rigidity when machining heavy wall pipe. Only 6 set of jaws needed to cover the full locking range.

**POWERFUL MOTOR UNIT**

SmartMill-8 is powered by powerful and efficient drives dedicated for our Lathe series beveling machines. 39 rpm and 930 Nm (697 Ft.Lbs) torque on the cutter blade is a standard feature.

**LIGHTWEIGHT AND PORTABLE**

The innovative design made it possible to produce lightweight and portable machine. Small weight of SmartMill-8 allows for fatigue-free operation in all conditions.

**HEAVY DUTY HANDLE**

Machine is equipped with a solid and convenient aluminium handle.

**OPTIONALS****RIGHT ANGLE HEAD**

This right angle head allows for fastening drive in alternate positions. The useful option in tight spaces.

**30 MM SHAFT**

Optional shaft to enable the machine to be used for smaller tubes. The shaft is supplied with complete jaws set to cover up to 2" ID.

**OPTIONAL ELECTRIC MOTOR UNIT**

SmartMill-8E is electric version of SmartMill-8. The machine can cover the same pipe sizes and comes with the same cutting head. The electric motor with 4 speed mechanical gear box has also variable speed control and produce enormous torque on the cutter blade. Is interchangeable with pneumatic drive and can be purchased separately at any time. Take 5 min to replace from pneumatic to electric.

**DUDE-2000-4-SPEED**

Motor free speed: 120-210-380-650 RPM

Motor power: 2000 Watt

Motor torque (on the 1st gear): 240 Nm (180 Ft.Lbs)

Machine feed stroke: 50 mm (2")

Cutter head speed: 8-14-25-43 rpm

Max torque on cutter blade (on the 1st gear): 3600 Nm (2664 Ft.Lbs)





## MiniLathe

- Most powerful machine within this size range on the market today. Utilises a powerful 2.2kW (3 HP) pneumatic motor that is entirely engineered and manufactured by KRAIS for the largest end prep systems.
- MiniLathe comes with one of 3 gearboxes as a standard. It gives a wide choice for operator. No need for extra gearbox that reduces the RPM and multiplies the torque - it comes as standard!
- Innovative 6 point locking system assures maximum stability during all machining operations.
- Self-centering 2,75" one piece locking shaft with build in jaws, eliminates the issue of broken or loosening retaining springs and o-rings.
- Only one mandrel and 10 Jaw sets needed to cover machines entire range.
- Wide clamps produce superior clamping force for chatter free end preps.
- Fully portable for on-site and Fab-shop work.
- Available for sale or rent.



| STANDARD WORKING RANGE |            |                    |         | FEED STROKE   | POWER              | FREE SPEED         | TORQUE |
|------------------------|------------|--------------------|---------|---------------|--------------------|--------------------|--------|
| APPLICATION RANGE      |            | LOCKING RANGE (ID) |         |               |                    |                    |        |
| 72 - 406 mm            |            | 70 - 400 mm        |         | 50 mm         | 3,0 Hp             | DEPENDS ON GEARBOX |        |
| 2,800 - 16,000"        |            | 2,755 - 15,700"    |         | 2"            |                    |                    |        |
|                        |            |                    |         |               |                    |                    |        |
|                        |            |                    |         |               |                    |                    |        |
| 70 cfm                 | 2,2 m³/min | 90 PSI             | 6,2 Bar | 25 x 13 x 12" | 640 x 330 x 300 mm | 75 Lbs             | 35 kg  |

### LOCKING RANGES WITH STANDARD JAWS

#### JAWS: ML-42

| RANGE [MM] |     | RANGE [INCH] |        | SEGMENT                    |         |         |
|------------|-----|--------------|--------|----------------------------|---------|---------|
| MIN        | MAX | MIN          | MAX    | A                          | B       | C       |
| 70         | 85  | 2,756        | 3,346  |                            |         |         |
| 85         | 100 | 3,346        | 3,937  | ML-42-A-75                 |         |         |
| 100        | 115 | 3,937        | 4,528  | ML-42-A-150                |         |         |
| 115        | 130 | 4,528        | 5,118  | ML-42-A-225                |         |         |
| 130        | 145 | 5,118        | 5,709  | ML-42-A-300                |         |         |
| 145        | 160 | 5,709        | 6,299  | ML-42-A-375                |         |         |
| 160        | 175 | 6,299        | 6,890  |                            |         | ML-42-C |
| 175        | 190 | 6,890        | 7,480  | ML-42-A-75                 |         | ML-42-C |
| 190        | 205 | 7,480        | 8,071  | ML-42-A-150                |         | ML-42-C |
| 205        | 220 | 8,071        | 8,661  | ML-42-A-225                |         | ML-42-C |
| 220        | 235 | 8,661        | 9,252  | ML-42-A-300                |         | ML-42-C |
| 235        | 250 | 9,252        | 9,843  | ML-42-A-375                |         | ML-42-C |
| 250        | 265 | 9,843        | 10,433 |                            | ML-42-B | ML-42-C |
| 265        | 280 | 10,433       | 11,024 | ML-42-A-75                 | ML-42-B | ML-42-C |
| 280        | 295 | 11,024       | 11,614 | ML-42-A-150                | ML-42-B | ML-42-C |
| 295        | 310 | 11,614       | 12,205 | ML-42-A-225                | ML-42-B | ML-42-C |
| 310        | 325 | 12,205       | 12,795 | ML-42-A-300                | ML-42-B | ML-42-C |
| 325        | 340 | 12,795       | 13,386 | ML-42-A-375                | ML-42-B | ML-42-C |
| 340        | 355 | 13,386       | 13,976 | ML-42-A-300<br>ML-42-A-150 | ML-42-B | ML-42-C |
| 355        | 370 | 13,976       | 14,567 | ML-42-A-300<br>ML-42-A-225 | ML-42-B | ML-42-C |
| 370        | 385 | 14,567       | 15,157 | ML-42-A-375<br>ML-42-A-225 | ML-42-B | ML-42-C |
| 385        | 400 | 15,157       | 15,748 | ML-42-A-375<br>ML-42-A-300 | ML-42-B | ML-42-C |

### AVAILABLE GEARBOX

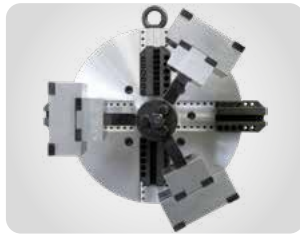
This tool comes with one of 3 gearboxes as a standard. Torque/speed depends on gear configuration.

|                   |        |         |             |
|-------------------|--------|---------|-------------|
| GEARBOX <b>11</b> | 11 RPM | 3850 Nm | 2840 Ft.Lbs |
| GEARBOX <b>15</b> | 15 RPM | 2615 Nm | 1960 Ft.Lbs |
| GEARBOX <b>21</b> | 21 RPM | 1770 Nm | 1327 Ft.Lbs |



**AVAILABLE HOLDERS**

| Facing                                                                            | Inside bevelling and boring                                                          | Outside bevelling                                                                 | J-Prep                                                                              | Compound bevelling                                                                  |                                                 |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------|
|  |     |  |  |  |                                                 |
| F-45-90<br>BIT:<br>2CDI                                                           | F-CB-25+2-90<br>(ADJUSTABLE LENGTH FACING<br>HOLDER FOR THE LAND)<br>BIT:<br>XXXXXXX | IB-45-37<br>IB-45-10<br>BIT:<br>2CDI                                              | OB-45-45<br>OB-45-37<br>OB-45-30<br>OB-45-10<br>BIT:<br>2CDI                        | JP-45-45<br>JP-45-37<br>JP-45-30<br>BIT:<br>2CDJ-5                                  | CB-1037<br>(OTHERS ON REQUEST)<br>BIT:<br>CB-45 |

**ADVANTAGES OF MINILATHE****6 POINT LOCKING JAWS**

150 mm (5,9") shaft, assures rigidity when machining heavy wall pipe. The jaws are fully contained within the shaft with no need for retaining springs or O-rings that easily brake or get lost.

**POWERFUL MOTOR UNIT**

Powerful and efficient drives dedicated for our Lathe series beveling machines. 11 rpm and 3850 Nm (2840 Ft.Lbs) torque on the cutter blade is a standard feature.

**HEAVY DUTY PENDANT**

Machine is equipped with a heavy duty pendant. This can be attached to both sides of the motor for operator convenience.

**SLIDE BEARING**

As an option we can supply a bronze slide bearing that delivers more stability and rigidity while machining a very hard materials and heavy wall pipes.

**OPTIONAL MOTOR UNITS****DUDE-2000-4-SPEED**

For thin wall application (up to 1" / 25,4 mm) is an electric motor DUDE-2000-4-SPEED, which offers 4 speed: 120-210-380-650 RPM

**PDE MOTOR**

The PipeLathe can also be supplied as an electric version, with a 3200 Watt heavy duty motor.

**PDH MOTOR**

Optional super strong hydraulic motor. Constructed on the basis of a small hydraulic motor and multistage planetary gear box. HyperLathe version generates 11 rpm and up to 8200 Nm (6050 Ft.Lbs) torque on cutter blade at constant cutting speed.

**PDU MOTOR**

Powerful and efficient drive dedicated for our Lathe series beveling machines. 0-5 rpm and 12500 Nm (9219 ft.lbs) torque on the cutter blade is a standard feature.

**EXAMPLE TOOL APPLICATION**

In order to facilitate the assembly of the machine in the pipe, the machine optionally can be equipped with a double-sided yoke with removable extensions so that two people can freely install into the processed pipe.

## PipeLathe

- Powerful 3.5 HP pneumatic drive generating 12500 Nm (9259 ft.lbs) torque on the cutter blade. Variable speed control 0-5 rpm.
- No need for extra gear box that reduces the rpm and multiplies the torque. It comes as standard!
- 150 mm (5,9") One piece locking shaft with build in jaws, eliminates the issue of broken or loosening retaining springs and o-rings.
- One mandrel covers complete working range.
- Innovative 6 point locking system assures maximum stability during all machining operations.
- Only one mandrel and 6 Jaw sets needed to cover machines entire range.
- Self-centering shaft with build in jaws.
- Wide Clamps produce superior clamping force for chatter free end preps.
- Fully portable for on-site and Fab-shop work.
- Available for sale or rent.



| STANDARD WORKING RANGE |               | FEED STROKE  | POWER   | FREE SPEED      | TORQUE             |             |        |
|------------------------|---------------|--------------|---------|-----------------|--------------------|-------------|--------|
| APPLICATION RANGE      | LOCKING RANGE |              |         |                 |                    |             |        |
| 180 - 609 mm           | 175 - 600 mm  | 60 mm        | 3,5 hp  | 5 Rpm           | 12500 Nm           |             |        |
| 7,0 - 24,0"            | 6,889 - 23,6" | 2,4"         |         |                 | 9219 Ft.lbs        |             |        |
| AIR USE                |               | AIR PRESSURE |         | BODY DIMENSIONS |                    | BODY WEIGHT |        |
| 85 cfm                 | 2,8 m³/min    | 90 PSI       | 6,2 Bar | 38 x 22 x 22"   | 950 x 550 x 500 mm | 495 Lbs     | 225 kg |

### LOCKING RANGES WITH STANDARD JAWS

#### JAWS: PL-42

| RANGE [MM] |       | RANGE [INCH] |        | SEGMENT                    |         |         |
|------------|-------|--------------|--------|----------------------------|---------|---------|
| MIN        | MAX   | MIN          | MAX    | A                          | B       | C       |
| 175,0      | 200,0 | 6,890        | 7,874  |                            |         |         |
| 200,0      | 225,0 | 7,874        | 8,858  | PL-42-A-125                |         |         |
| 225,0      | 250,0 | 8,858        | 9,843  | PL-42-A-250                |         |         |
| 250,0      | 275,0 | 9,843        | 10,827 | PL-42-A-375                |         |         |
| 275,0      | 300,0 | 10,827       | 11,811 | PL-42-A-500                |         |         |
| 300,0      | 325,0 | 11,811       | 12,795 | PL-42-A-500<br>PL-42-A-125 |         |         |
| 325,0      | 350,0 | 12,795       | 13,780 | PL-42-A-500<br>PL-42-A-250 |         |         |
| 350,0      | 375,0 | 13,780       | 14,764 |                            | PL-42-B |         |
| 375,0      | 400,0 | 14,764       | 15,748 | PL-42-A-125                | PL-42-B |         |
| 400,0      | 425,0 | 15,748       | 16,732 | PL-42-A-250                | PL-42-B |         |
| 425,0      | 450,0 | 16,732       | 17,717 | PL-42-A-375                | PL-42-B |         |
| 450,0      | 475,0 | 17,717       | 18,701 | PL-42-A-500                | PL-42-B |         |
| 475,0      | 500,0 | 18,701       | 19,685 |                            |         | PL-42-C |
| 500,0      | 525,0 | 19,685       | 20,669 | PL-42-A-125                |         | PL-42-C |
| 525,0      | 550,0 | 20,669       | 21,654 | PL-42-A-250                |         | PL-42-C |
| 550,0      | 575,0 | 21,654       | 22,638 | PL-42-A-375                |         | PL-42-C |
| 575,0      | 600,0 | 22,638       | 23,622 | PL-42-A-500                |         | PL-42-C |

### EXAMPLE TOOL APPLICATION



PipeLathe is the strongest machine from all KRAIS Lathe tools. It allows for machining tubes up to 24" (600 mm) OD.

**AVAILABLE HOLDERS**

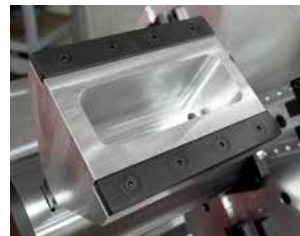
| Facing                                                                               | Inside bevelling and boring                                                       | Outside bevelling                                                                 | J-Prep                                                                              | Compound bevelling                                                                  |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|     |  |  |  |  |
| F-45-90<br>BIT:<br>2CDI                                                              | IB-45-37<br>IB-45-10<br>BIT:<br>2CDI                                              | OB-45-45<br>OB-45-37<br>OB-45-30<br>OB-45-10<br>BIT:<br>2CDI                      | JP-45-45<br>JP-45-37<br>JP-45-30<br>BIT:<br>2CDJ-5                                  | CB-1037<br>(OTHERS ON REQUEST)<br>BIT:<br>CB-45                                     |
| F-CB-25+2-90<br>(ADJUSTABLE LENGTH FACING<br>HOLDER FOR THE LAND)<br>BIT:<br>XXXXXXX |                                                                                   |                                                                                   |                                                                                     |                                                                                     |

**ADVANTAGES OF HYPERLATHE****HEAVY DUTY DESIGN**

All the Lathe series machine design is based on long steel spindle which assure maximum rigidity because the locking shaft is fully mounted into that spindle instead partially into the main aluminium body what is causing adverse vibration due to a lot of tension on it.

**POWERFUL MOTOR UNIT**

Powerful and efficient drive dedicated for our Lathe series beveling machines. 0-5 rpm and 12500 Nm (9219 ft.lbs) torque on the cutter blade is a standard feature.

**6 POINT LOCKING JAWS**

150 mm (5,9") shaft, assures rigidity when machining heavy wall pipe. The jaws are fully contained within the shaft with no need for retaining springs or O-rings that easily brake or get lost.

**HEAVY DUTY PENDANT**

Machine is equipped with a heavy duty pendant. This can be attached to both sides of the motor for operator convenience.

**OPTIONAL MOTOR UNITS****MOTOR PDE**

The PipeLathe can also be supplied as an electric version, with a 3200 Watt heavy duty motor.

**MOTOR PDH**

Optional super strong hydraulic motor. Constructed on the basis of a small hydraulic motor and multistage planetary gear box. PipeLathe version generates 6 rpm and up to 14200 Nm (10475 Ft.Lbs) torque on cutter blade at constant cutting speed.

## PipeLathe 40

- Powerful hydraulic drive generating 14500 Nm (10800 Ft.lbs) torque on the cutter blade. Variable speed control 0-5 RPM.
- No need for extra gear box that reduces the RPM and multiplies the torque. It comes as standard!
- 150 mm (5,9") locking shaft with build in jaws, eliminates the issue of broken or loosening retaining springs and o-rings.
- Innovative 6 point locking system with wide clamps assures maximum stability during machining.
- Only one mandrel and 6 Jaws set covers entire working range.
- Fully portable for on-site and Fab-shop work.
- Available for sale or rent.



### MACHINE PERFORMANCE

PipeLathe 40 is the biggest internal mounted machine from all KRAIS Lathe tools. It allows for machining tubes up to 40" (600 mm) OD. Picture shows PipeLathe 40 machining 36" tube.



| STANDARD WORKING RANGE |            |               |         | FEED STROKE     | POWER              | FREE SPEED  | TORQUE      |
|------------------------|------------|---------------|---------|-----------------|--------------------|-------------|-------------|
| APPLICATION RANGE      |            | LOCKING RANGE |         |                 |                    |             |             |
| 180 - 1016 mm          |            | 175 - 972 mm  |         | 60 mm           | 3,5 hp             | 5 Rpm       | 12500 Nm    |
| 7,0 - 40,0"            |            | 6,9 - 38,3"   |         | 2,4"            |                    |             | 9219 Ft.lbs |
| AIR USE                |            | AIR PRESSURE  |         | BODY DIMENSIONS |                    | BODY WEIGHT |             |
| 85 cfm                 | 2,8 m³/min | 90 PSI        | 6,2 Bar | 38 x 22 x 22"   | 950 x 550 x 500 mm | 495 Lbs     | 225 kg      |

### LOCKING RANGES WITH STANDARD JAWS

#### JAWS: PL-42

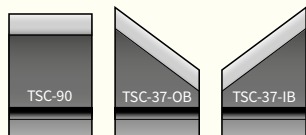
| RANGE [MM] |     | RANGE [INCH] |      | SEGMENT                    |         |         |   |   |
|------------|-----|--------------|------|----------------------------|---------|---------|---|---|
| MIN        | MAX | MIN          | MAX  | A                          | B       | C       | D | E |
| 175        | 200 | 6,9          | 7,9  |                            |         |         |   |   |
| 200        | 225 | 7,9          | 8,9  | PL-42-A-125                |         |         |   |   |
| 225        | 250 | 8,9          | 9,8  | PL-42-A-250                |         |         |   |   |
| 250        | 275 | 9,8          | 10,8 | PL-42-A-375                |         |         |   |   |
| 275        | 300 | 10,8         | 11,8 | PL-42-A-500                |         |         |   |   |
| 300        | 325 | 11,8         | 12,8 | PL-42-A-500<br>PL-42-A-125 |         |         |   |   |
| 325        | 350 | 12,8         | 13,8 | PL-42-A-500<br>PL-42-A-250 |         |         |   |   |
| 350        | 375 | 13,8         | 14,8 |                            | PL-42-B |         |   |   |
| 375        | 400 | 14,8         | 15,7 | PL-42-A-125                | PL-42-B |         |   |   |
| 400        | 425 | 15,7         | 16,7 | PL-42-A-250                | PL-42-B |         |   |   |
| 425        | 450 | 16,7         | 17,7 | PL-42-A-375                | PL-42-B |         |   |   |
| 450        | 475 | 17,7         | 18,7 | PL-42-A-500                | PL-42-B |         |   |   |
| 475        | 500 | 18,7         | 19,7 |                            |         | PL-42-C |   |   |
| 500        | 525 | 19,7         | 20,7 | PL-42-A-125                |         | PL-42-C |   |   |
| 525        | 550 | 20,7         | 21,7 | PL-42-A-250                |         | PL-42-C |   |   |
| 550        | 575 | 21,7         | 22,6 | PL-42-A-375                |         | PL-42-C |   |   |
| 575        | 600 | 22,6         | 23,6 | PL-42-A-500                |         | PL-42-C |   |   |
| 593        | 622 | 23,3         | 24,5 | PL-42-A-500<br>PL-42-A-125 |         | PL-42-C |   |   |

| RANGE [MM] |     | RANGE [INCH] |      | SEGMENT                    |   |         |         |         |
|------------|-----|--------------|------|----------------------------|---|---------|---------|---------|
| MIN        | MAX | MIN          | MAX  | A                          | B | C       | D       | E       |
| 621        | 647 | 24,4         | 25,5 | PL-42-A-500<br>PL-42-A-250 |   | PL-42-C |         |         |
| 646        | 671 | 25,4         | 26,4 | PL-42-A-500<br>PL-42-A-375 |   | PL-42-C |         |         |
| 667        | 693 | 26,3         | 27,3 |                            |   | PL-42-C | PL-42-D |         |
| 692        | 716 | 27,2         | 28,2 | PL-42-A-125                |   | PL-42-C | PL-42-D |         |
| 715        | 739 | 28,1         | 29,1 | PL-42-A-250                |   | PL-42-C | PL-42-D |         |
| 738        | 762 | 29,1         | 30,0 | PL-42-A-375                |   | PL-42-C | PL-42-D |         |
| 761        | 786 | 30,0         | 30,9 | PL-42-A-500                |   | PL-42-C | PL-42-D |         |
| 787        | 811 | 31,0         | 31,9 |                            |   | PL-42-C |         | PL-42-E |
| 810        | 834 | 31,9         | 32,8 | PL-42-A-125                |   | PL-42-C |         | PL-42-E |
| 833        | 856 | 32,8         | 33,7 | PL-42-A-250                |   | PL-42-C |         | PL-42-E |
| 856        | 879 | 33,7         | 34,6 | PL-42-A-375                |   | PL-42-C |         | PL-42-E |
| 878        | 903 | 34,6         | 35,6 | PL-42-A-500                |   | PL-42-C |         | PL-42-E |
| 902        | 925 | 35,5         | 36,4 | PL-42-A-500<br>PL-42-A-125 |   | PL-42-C |         | PL-42-E |
| 924        | 949 | 36,4         | 37,4 | PL-42-A-500<br>PL-42-A-250 |   | PL-42-C |         | PL-42-E |
| 948        | 972 | 37,3         | 38,3 | PL-42-A-500<br>PL-42-A-375 |   |         |         | PL-42-E |

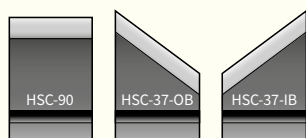
## Cutters and inserts for tube bevelers

### REGULAR CUTTERS

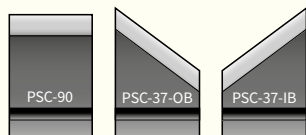
FOR USE WITHOUT HOLDERS  
BIT: HSS and HSS Cobalt



Cutters for MiniMill series



Cutters for HyperMill series



Cutters for PipeMill series

### INSERTS

Inserts options:

HSS-Co 5% cobalt

HSS-Co-AN 5% cobalt + ANOVA coating

HSS-M2

HSS-M2-TiN HSS+TiN coating



| CI | A | B |
|----|---|---|
| mm | 5 | 5 |

MAT: Carbide  
Screw: MHS-2



| CI7 | A | B |
|-----|---|---|
| mm  | 7 | 7 |

MAT: Carbide  
Screw: MHS-2,7



| CS | A   | B   |
|----|-----|-----|
| mm | 9,5 | 9,5 |

MAT: HSS 6% Cobalt  
Screw: MHS-4



| CSZ | A   | B   |
|-----|-----|-----|
| mm  | 5,8 | 9,5 |

MAT: HSS 6% Cobalt  
Screw: MHS-2,5



| CSS-CB | A   | B   |
|--------|-----|-----|
| mm     | 6,3 | 9,5 |

MAT: HSS 6% Carbide  
Screw: MHS-2,5



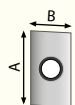
| CSS | A   | B   |
|-----|-----|-----|
| mm  | 6,3 | 9,5 |

MAT: HSS 6% Cobalt  
Screw: MHS-2,5



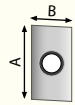
| PO8 | R |
|-----|---|
| mm  | 8 |

MAT: Carbide  
Screw: MHS-2,7



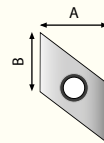
| CDI | A  | B   |
|-----|----|-----|
| mm  | 18 | 9,5 |

MAT: HSS 6% Cobalt  
Screw: MHS-4



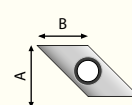
| CDI-CB | A  | B   |
|--------|----|-----|
| mm     | 18 | 9,5 |

MAT: HSS 6% Carbide  
Screw: MHS-4



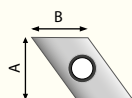
| WRIL | A    | B   |
|------|------|-----|
| mm   | 13,5 | 9,5 |

MAT: HSS 6% Cobalt  
Screw: MHS-4



| WRK | A  | B   |
|-----|----|-----|
| mm  | 10 | 9,5 |

MAT: HSS 6% Cobalt  
Screw: MHS-4



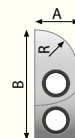
| WRI | A    | B   |
|-----|------|-----|
| mm  | 13,5 | 9,5 |

MAT: HSS 6% Cobalt  
Screw: MHS-4



|          | A  | B   | R   |
|----------|----|-----|-----|
| CDJ-2.5* | 18 | 9,5 | 2,5 |
| CDJ-5    | 18 | 9,5 | 4,7 |
| CDJ-8*   | 18 | 9,5 | 8,0 |

MAT: HSS 6% Cobalt  
Screw: MHS-4  
\* na zamówienie



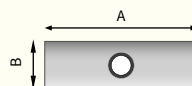
| CSWR | A   | B    | R |
|------|-----|------|---|
| mm   | 6,5 | 16,5 | 6 |

MAT: HSS 6% Cobalt  
Screw: MHS-2,5



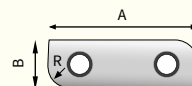
| 2CDI | A  | B    |
|------|----|------|
| mm   | 45 | 12,7 |

MAT: HSS 6% Cobalt  
Screw: MHS-5



| CDK | A  | B   |
|-----|----|-----|
| mm  | 25 | 9,5 |

MAT: HSS 6% Cobalt  
Screw: MHS-5



| 2CDJ-5 | A  | B    | R   |
|--------|----|------|-----|
| mm     | 45 | 12,7 | 4,7 |

MAT: HSS 6% Cobalt  
Screw: MHS-5



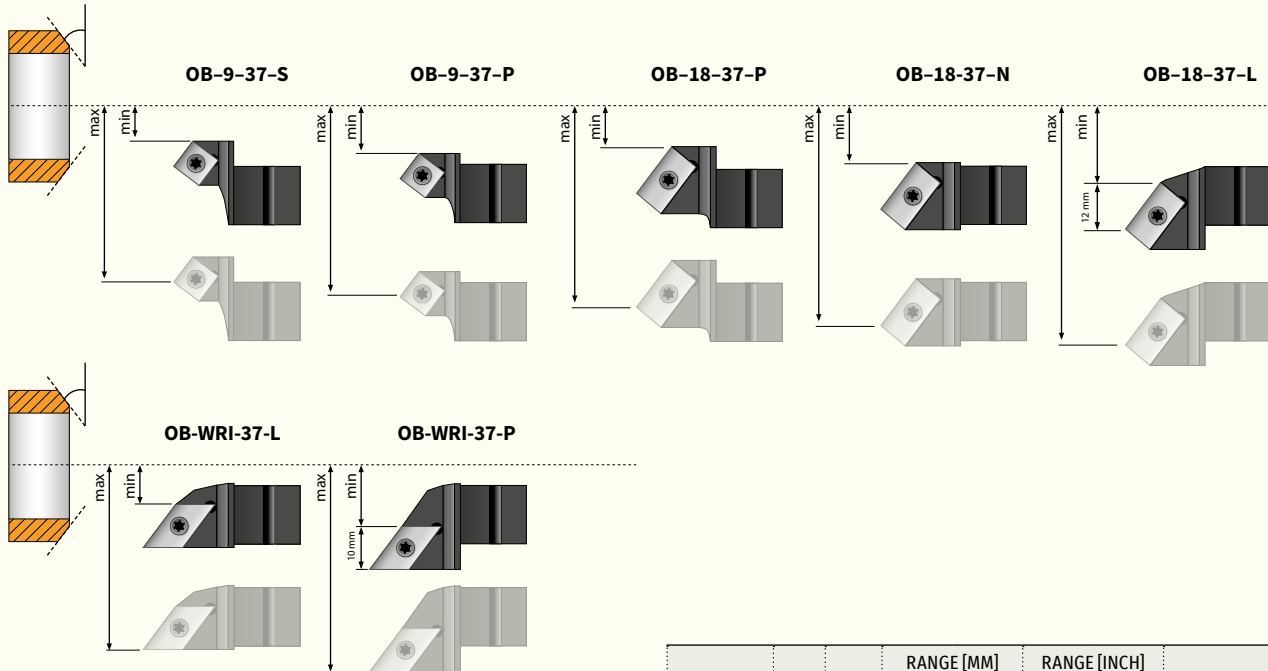
| CSS-127 | Min | Max  |
|---------|-----|------|
| mm      | 9,5 | 15,0 |

MAT: HSS 6% Cobalt

## Holders for regular MiniMill/HyperMill cutter heads

### OUTSIDE BEVELING HOLDERS

Standard: 37,5°; other angles only on request



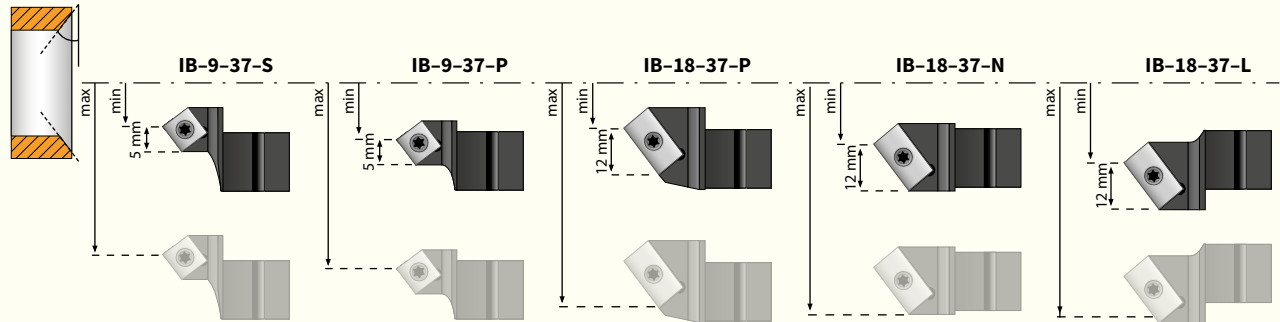
| HOLDER NO. | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*                  |
|------------|-----|------|------------|--------|--------------|-------|--------------------------|
|            |     |      | MIN        | MAX    | MIN          | MAX   |                          |
| OB-9-37-S  | CS  | 60   | 16,00      | 26,00  | 0,630        | 1,024 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 16,00      | 51,00  | 0,630        | 2,008 | 20; 30; <b>37,5</b> ; 45 |
| OB-9-37-P  | CS  | 60   | 24,00      | 34,00  | 0,945        | 1,339 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 24,00      | 58,00  | 0,945        | 2,283 | 20; 30; <b>37,5</b> ; 45 |
| OB-18-37-P | CDI | 106  | 28,00      | 72,00  | 1,102        | 2,835 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 60   | 24,00      | 47,00  | 0,945        | 1,850 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 24,00      | 71,00  | 0,945        | 2,795 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 28,00      | 85,00  | 1,102        | 3,346 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 114  | 31,00      | 88,00  | 1,220        | 3,465 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 135  | 31,00      | 109,00 | 1,220        | 4,291 | 20; 30; <b>37,5</b> ; 45 |
| OB-18-37-L | CDI | 175  | 31,00      | 149,00 | 1,220        | 5,866 | 20; 30; <b>37,5</b> ; 45 |

| HOLDER NO.  | BIT  | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*                  |
|-------------|------|------|------------|--------|--------------|-------|--------------------------|
|             |      |      | MIN        | MAX    | MIN          | MAX   |                          |
| OB-18-37-N  | CDI  | 60   | 34,00      | 56,00  | 1,339        | 2,205 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 88   | 34,00      | 80,00  | 1,339        | 3,150 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 106  | 38,00      | 94,00  | 1,496        | 3,701 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 114  | 43,00      | 101,00 | 1,693        | 3,976 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 135  | 43,00      | 122,00 | 1,693        | 4,803 | 20; 30; <b>37,5</b> ; 45 |
| OB-18-37-L  | CDI  | 175  | 43,00      | 162,00 | 1,693        | 6,378 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 60   | 40,00      | 63,00  | 1,575        | 2,480 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 88   | 40,00      | 87,00  | 1,575        | 3,425 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 106  | 44,00      | 101,00 | 1,732        | 3,976 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 114  | 47,00      | 104,00 | 1,850        | 4,094 | 20; 30; <b>37,5</b> ; 45 |
| OB-18-37-L  | CDI  | 135  | 47,00      | 125,00 | 1,850        | 4,921 | 20; 30; <b>37,5</b> ; 45 |
|             |      | 175  | 47,00      | 165,00 | 1,850        | 6,496 | 20; 30; <b>37,5</b> ; 45 |
| OB-WRI-37-L | WRIL | 64   | 22,00      | 66,00  | 0,866        | 2,598 | 30; <b>37,5</b>          |
| OB-WRI-37-P | WRIL | 64   | 36,00      | 80,00  | 1,417        | 3,150 | 30; <b>37,5</b>          |
|             | WRIL | 99   | 36,00      | 116,00 | 1,417        | 4,567 | 30; <b>37,5</b>          |



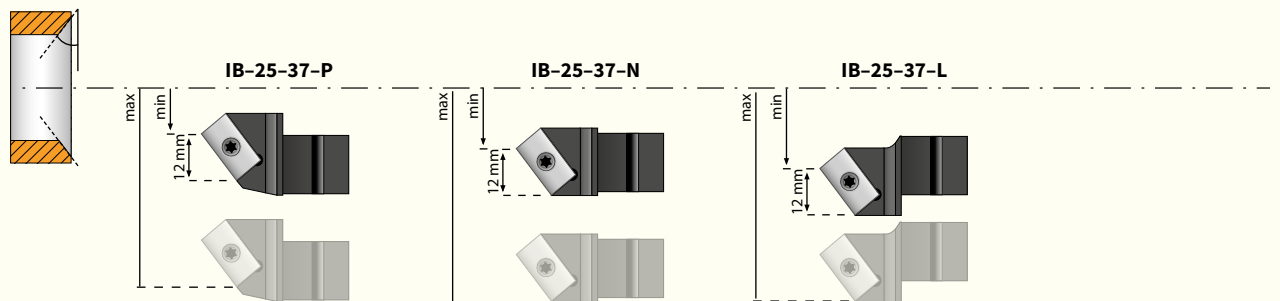
## INSIDE BEVELING HOLDERS

Standard: 37,5°; other angles only on request



| HOLDER NO. | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*                  |
|------------|-----|------|------------|--------|--------------|-------|--------------------------|
|            |     |      | MIN        | MAX    | MIN          | MAX   |                          |
| IB-9-37-S  | CS  | 60   | 29,00      | 39,00  | 1,142        | 1,535 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 29,00      | 63,00  | 1,142        | 2,480 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 33,00      | 77,00  | 1,299        | 3,031 | 20; 30; <b>37,5</b> ; 45 |
| IB-9-37-P  | CS  | 60   | 35,50      | 45,50  | 1,398        | 1,791 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 35,50      | 70,00  | 1,398        | 2,756 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 39,50      | 84,00  | 1,555        | 3,307 | 20; 30; <b>37,5</b> ; 45 |
| IB-18-37-P | CDI | 60   | 35,50      | 58,00  | 1,398        | 2,283 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 35,50      | 82,50  | 1,398        | 3,248 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 39,50      | 96,50  | 1,555        | 3,799 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 114  | 42,00      | 102,00 | 1,654        | 4,016 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 135  | 42,00      | 123,00 | 1,654        | 4,843 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 175  | 42,00      | 163,00 | 1,654        | 6,417 | 20; 30; <b>37,5</b> ; 45 |

| HOLDER NO. | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*                  |
|------------|-----|------|------------|--------|--------------|-------|--------------------------|
|            |     |      | MIN        | MAX    | MIN          | MAX   |                          |
| IB-18-37-N | CDI | 60   | 44,50      | 67,50  | 1,752        | 2,657 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 44,50      | 92,00  | 1,752        | 3,622 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 48,50      | 106,00 | 1,909        | 4,173 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 114  | 51,00      | 111,00 | 2,008        | 4,370 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 135  | 51,00      | 132,00 | 2,008        | 5,197 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 175  | 51,00      | 172,00 | 2,008        | 6,772 | 20; 30; <b>37,5</b> ; 45 |
| IB-18-37-L | CDI | 60   | 53,00      | 76,00  | 2,087        | 2,992 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 53,00      | 100,00 | 2,087        | 3,937 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 57,00      | 114,00 | 2,244        | 4,488 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 114  | 60,00      | 120,00 | 2,362        | 4,724 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 135  | 60,00      | 141,00 | 2,362        | 5,551 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 175  | 60,00      | 181,00 | 2,362        | 7,126 | 20; 30; <b>37,5</b> ; 45 |

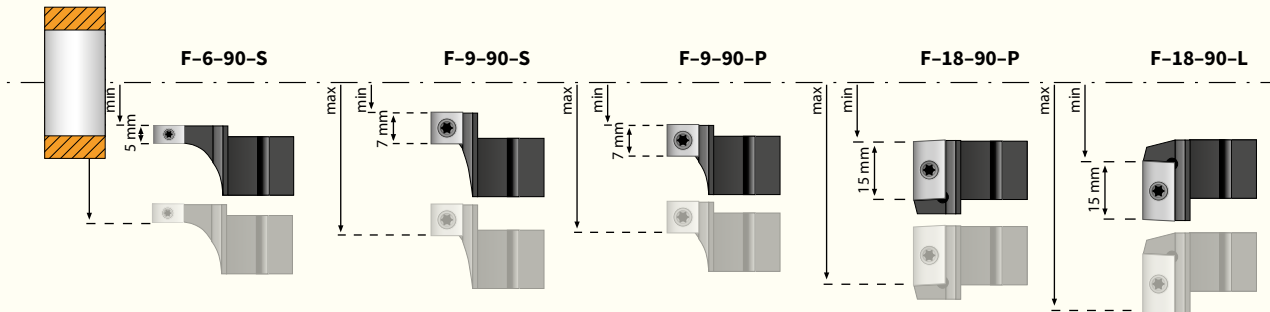


| HOLDER NO. | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*                  |
|------------|-----|------|------------|--------|--------------|-------|--------------------------|
|            |     |      | MIN        | MAX    | MIN          | MAX   |                          |
| IB-25-37-P | CDK | 60   | 35,50      | 63,00  | 1,398        | 2,480 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 35,50      | 87,50  | 1,398        | 3,444 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 39,50      | 101,50 | 1,555        | 3,996 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 114  | 42,00      | 107,00 | 1,654        | 4,212 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 135  | 42,00      | 128,00 | 1,654        | 5,039 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 175  | 42,00      | 168,00 | 1,654        | 6,614 | 20; 30; <b>37,5</b> ; 45 |
| IB-25-37-N | CDK | 60   | 44,50      | 72,50  | 1,752        | 2,854 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 44,50      | 97,00  | 1,752        | 3,818 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 48,50      | 111,00 | 1,909        | 4,370 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 114  | 51,00      | 116,00 | 2,008        | 4,566 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 135  | 51,00      | 137,00 | 2,008        | 5,393 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 175  | 51,00      | 177,00 | 2,008        | 6,969 | 20; 30; <b>37,5</b> ; 45 |

| HOLDER NO. | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*                  |
|------------|-----|------|------------|--------|--------------|-------|--------------------------|
|            |     |      | MIN        | MAX    | MIN          | MAX   |                          |
| IB-25-37-L | CDK | 60   | 53,00      | 81,00  | 2,087        | 3,188 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 88   | 53,00      | 105,00 | 2,087        | 4,133 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 106  | 57,00      | 119,00 | 2,244        | 4,685 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 114  | 60,00      | 125,00 | 2,362        | 4,921 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 135  | 60,00      | 146,00 | 2,362        | 5,748 | 20; 30; <b>37,5</b> ; 45 |
|            |     | 175  | 60,00      | 186,00 | 2,362        | 7,322 | 20; 30; <b>37,5</b> ; 45 |

**FACING HOLDERS**

Standard: 90,0°

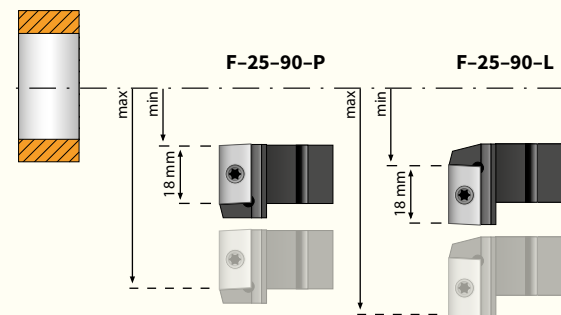


| HOLDER NO. | BIT | HEAD | RANGE [MM] |       | RANGE [INCH] |       | DEGREE* |
|------------|-----|------|------------|-------|--------------|-------|---------|
|            |     |      | MIN        | MAX   | MIN          | MAX   |         |
| F-6-90-S   | CSS | 60   | 14,50      | 24,50 | 0,571        | 0,965 | 90      |
| F-9-90-S   | CS  | 60   | 16,00      | 30,00 | 0,630        | 1,181 | 90      |
| F-9-90-P   | CS  | 60   | 24,00      | 38,00 | 0,945        | 1,496 | 90      |
|            |     | 88   | 24,00      | 62,00 | 0,945        | 2,441 | 90      |
|            |     | 106  | 28,00      | 75,00 | 1,102        | 2,953 | 90      |
|            |     | 114  | 31,00      | 80,00 | 1,220        | 3,150 | 90      |
| F-18-90-P  | CDI | 60   | 24,00      | 54,00 | 0,945        | 2,126 | 90      |
|            |     | 88   | 24,00      | 79,00 | 0,945        | 3,110 | 90      |
|            |     | 106  | 28,00      | 95,00 | 1,102        | 3,740 | 90      |

| HOLDER NO. | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE* |
|------------|-----|------|------------|--------|--------------|-------|---------|
|            |     |      | MIN        | MAX    | MIN          | MAX   |         |
| F-18-90-P  | CDI | 114  | 31,00      | 98,00  | 1,220        | 3,858 | 90      |
|            |     | 135  | 31,00      | 119,00 | 1,220        | 4,685 | 90      |
|            |     | 175  | 31,00      | 159,00 | 1,220        | 6,260 | 90      |
| F-18-90-L  | CDI | 60   | 33,00      | 62,00  | 1,299        | 2,441 | 90      |
|            |     | 88   | 33,00      | 87,00  | 1,299        | 3,425 | 90      |
|            |     | 106  | 37,00      | 101,00 | 1,457        | 3,976 | 90      |
|            |     | 114  | 38,00      | 104,00 | 1,496        | 4,094 | 90      |
|            |     | 135  | 38,00      | 125,00 | 1,496        | 4,921 | 90      |
|            |     | 175  | 38,00      | 165,00 | 1,496        | 6,496 | 90      |

**FACING HOLDERS**

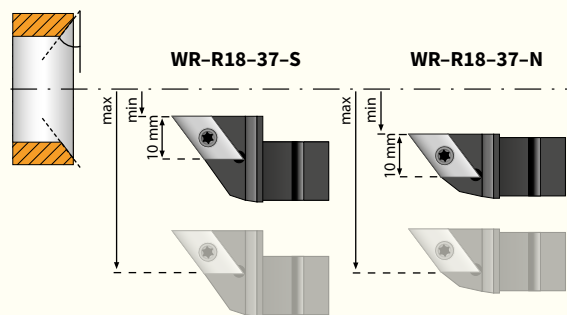
Standard: 90,0°



| HOLDER NO. | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE* |
|------------|-----|------|------------|--------|--------------|-------|---------|
|            |     |      | MIN        | MAX    | MIN          | MAX   |         |
| F-25-90-P  | CDK | 60   | 24,00      | 61,00  | 0,945        | 2,401 | 90      |
|            |     | 88   | 24,00      | 86,00  | 0,945        | 3,385 | 90      |
|            |     | 106  | 28,00      | 102,00 | 1,102        | 4,015 | 90      |
|            | CDK | 114  | 31,00      | 105,00 | 1,220        | 4,133 | 90      |
|            |     | 135  | 31,00      | 126,00 | 1,220        | 4,960 | 90      |
|            |     | 175  | 31,00      | 166,00 | 1,220        | 6,535 | 90      |
| F-25-90-L  | CDK | 60   | 33,00      | 69,00  | 1,299        | 2,716 | 90      |
|            |     | 88   | 33,00      | 94,00  | 1,299        | 3,700 | 90      |
|            |     | 106  | 37,00      | 108,00 | 1,457        | 4,251 | 90      |
|            |     | 114  | 38,00      | 111,00 | 1,496        | 4,370 | 90      |
|            |     | 135  | 38,00      | 132,00 | 1,496        | 5,196 | 90      |
|            |     | 175  | 38,00      | 172,00 | 1,496        | 6,771 | 90      |

**WELD REMOVAL HOLDERS**

STANDARD: 37,5°; OTHER ANGLES ONLY ON REQUEST



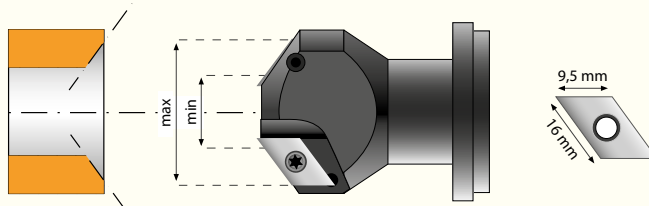
| HOLDER NO.  | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*                  |
|-------------|-----|------|------------|--------|--------------|-------|--------------------------|
|             |     |      | MIN        | MAX    | MIN          | MAX   |                          |
| WR-R18-37-S | WRI | 60   | 15,50      | 36,00  | 0,610        | 1,417 | 20; 30; <b>37,5</b> ; 45 |
|             |     | 88   | 15,50      | 61,00  | 0,610        | 2,402 | 20; 30; <b>37,5</b> ; 45 |
|             |     | 106  | 19,50      | 75,00  | 0,768        | 2,953 | 20; 30; <b>37,5</b> ; 45 |
| WR-R18-37-N | WRI | 60   | 30,00      | 50,00  | 1,181        | 1,969 | 20; 30; <b>37,5</b> ; 45 |
|             |     | 88   | 30,00      | 75,00  | 1,181        | 2,953 | 20; 30; <b>37,5</b> ; 45 |
|             |     | 106  | 34,00      | 89,00  | 1,339        | 3,504 | 20; 30; <b>37,5</b> ; 45 |
|             |     | 114  | 37,00      | 94,00  | 1,457        | 3,701 | 20; 30; <b>37,5</b> ; 45 |
|             |     | 135  | 37,00      | 115,00 | 1,457        | 4,528 | 20; 30; <b>37,5</b> ; 45 |
|             |     | 175  | 37,00      | 155,00 | 1,457        | 6,102 | 20; 30; <b>37,5</b> ; 45 |

## Special Heads for MiniMill

### STWRMH

STRENGTH WELD REMOVAL  
BIT: HSS 6% Cobalt  
DEGREE: 37.5°

Custom designed head dedicated for strength weld removal. The heads are sized per tube diameter and are precisely engineered so that the inserts cannot damage the shaft or locking jaws. Simple, trouble-free set up makes these heads very advantageous.

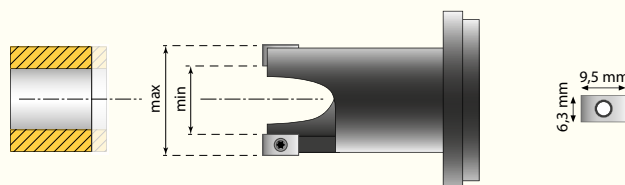


| HEAD NR    | TUBE CAPACITY |        |       | RANGE [INCH] |       | RANGE [MM] |        | INSERT | NO. OF INSERTS | SHAFT                  |
|------------|---------------|--------|-------|--------------|-------|------------|--------|--------|----------------|------------------------|
|            | [INCH]        | [MM]   | BWG   | MIN          | MAX   | MIN        | MAX    |        |                |                        |
| STWRMH-190 | 0,750         | 19,05  | 12-23 | 0,530        | 1,46  | 13,50      | 37,00  | WRI    | 2              | 901 MM#151 12,4 mm     |
| STWRMH-222 | 0,875         | 22,23  | 12-23 | 0,650        | 1,496 | 16,50      | 38,00  | WRI    | 2              | 905 MM#151 13,9 mm     |
| STWRMH-254 | 1,000         | 25,40  | 10-23 | 0,732        | 1,654 | 18,60      | 42,00  | WRI    | 2              | 909 MM#151 16,9 mm     |
| STWRMH-285 | 1,125         | 28,58  | 10-23 | 0,858        | 1,772 | 21,80      | 45,00  | WRI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-317 | 1,250         | 31,75  | 9-23  | 0,945        | 1,850 | 24,00      | 47,00  | WRI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-381 | 1,500         | 38,10  | 8-23  | 1,142        | 2,047 | 29,00      | 52,00  | WRI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-444 | 1,750         | 44,45  | 8-23  | 1,417        | 2,244 | 36,00      | 57,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-508 | 2,000         | 50,80  | 6-23  | 1,575        | 2,480 | 40,00      | 63,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-571 | 2,250         | 57,15  | 6-23  | 1,811        | 2,717 | 46,00      | 69,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-603 | 2,375         | 60,33  | 6-23  | 1,949        | 2,854 | 49,50      | 72,50  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-635 | 2,500         | 63,50  | 6-23  | 2,067        | 2,972 | 52,50      | 75,50  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-762 | 3,000         | 76,20  | 6-23  | 2,579        | 3,484 | 65,50      | 88,50  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-889 | 3,500         | 88,90  | 6-23  | 3,071        | 3,976 | 78,00      | 101,00 | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRMH-900 | 4,000         | 101,60 | 6-23  | 3,563        | 4,469 | 90,50      | 113,50 | CDI    | 2              | STD Shaft: 20 or 25 mm |

### TFMH

TUBE FACING MILLING HEAD  
BIT: HSS 6% Cobalt  
DEGREE: 90.0°

A tube facing milling head created for facing tubes made of any type of material. Utilizes 6% cobalt inserts.

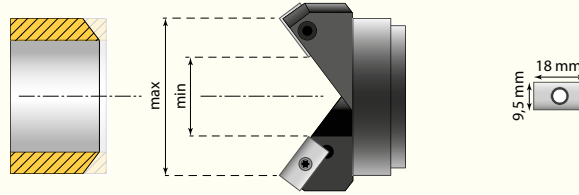


| HEAD NR  | RURA   |       |       | RANGE [INCH] |       | RANGE [MM] |       | INSERT | NO. OF INSERTS | SHAFT                    |
|----------|--------|-------|-------|--------------|-------|------------|-------|--------|----------------|--------------------------|
|          | [INCH] | [MM]  | BWG   | MIN          | MAX   | MIN        | MAX   |        |                |                          |
| TFMH-145 | 0,570  | 14,48 | 16-23 | 0,441        | 0,870 | 11,2       | 22,1  | CSZ    | 2              | 801 MM#151 Micro 10,0MM  |
| TFMH-158 | 0,625  | 15,88 | 16-23 | 0,500        | 0,933 | 12,70      | 23,70 | CSZ    | 2              | 805 MM#151 Micro 11,5 MM |
| TFMH-190 | 0,750  | 19,05 | 12-23 | 0,531        | 1,004 | 13,50      | 25,50 | CSS    | 2              | 901 MM#151 12,4 mm       |
| TFMH-222 | 0,875  | 22,23 | 12-23 | 0,654        | 1,063 | 16,60      | 27,00 | CSS    | 2              | 905 MM#151 13,9 mm       |
| TFMH-254 | 1,000  | 25,40 | 11-23 | 0,764        | 1,201 | 19,40      | 30,50 | CSS    | 2              | 909 MM#151 16,9 mm       |
| TFMH-285 | 1,125  | 28,58 | 11-23 | 0,854        | 1,307 | 21,70      | 33,20 | CSS    | 2              | 915 MM#151 20,0 mm       |
| TFMH-317 | 1,250  | 31,75 | 9-23  | 0,949        | 1,366 | 24,10      | 34,70 | CSS    | 2              | 915 MM#151 20,0 mm       |
| TFMH-381 | 1,500  | 38,10 | 9-23  | 1,197        | 1,614 | 30,40      | 41,00 | CSS    | 2              | 915 MM#151 20,0 mm       |
| TFMH-444 | 1,750  | 44,45 | 9-23  | 1,449        | 1,862 | 36,80      | 47,30 | CS     | 2              | MM#37                    |
| TFMH-508 | 2,000  | 50,80 | 9-23  | 1,701        | 2,114 | 43,20      | 53,70 | CS     | 2              | MM#37                    |

**OBMH**

OUTSIDE BEVEL MILLING HEAD  
BIT: HSS 6% Cobalt  
DEGREE: 37,5°

Dedicated for the outside beveling of both tubes and pipes. Sized per tube or pipe diameter and angle of required weld bevel. The heads are precisely engineered so that the inserts cannot damage the shaft or locking jaws.

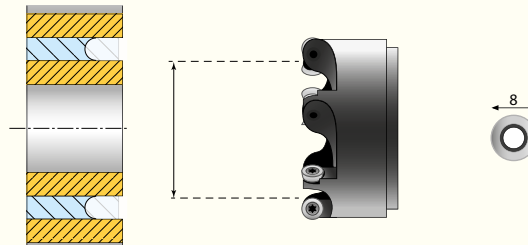


| HEAD NR  | TUBE CAPACITY |        |       | RANGE [INCH] |       | RANGE [MM] |        | INSERT | NO. OF INSERTS | SHAFT                  |
|----------|---------------|--------|-------|--------------|-------|------------|--------|--------|----------------|------------------------|
|          | [INCH]        | [MM]   | BWG   | MIN          | MAX   | MIN        | MAX    |        |                |                        |
| OBMH-190 | 0,750         | 19,05  | 14-23 | 0,5826       | 0,866 | 14,80      | 22,00  | CS     | 2              | 901 MM#151 12,4 mm     |
| OBMH-222 | 0,875         | 22,23  | 12-23 | 0,654        | 1,004 | 16,60      | 25,50  | CS     | 2              | 905 MM#151 13,9 mm     |
| OBMH-254 | 1,000         | 25,40  | 11-23 | 0,764        | 1,122 | 19,40      | 28,50  | CS     | 2              | 909 MM#151 16,9 mm     |
| OBMH-285 | 1,125         | 28,58  | 11-23 | 0,890        | 1,240 | 22,60      | 31,50  | CS     | 2              | 915 MM#151 20 mm       |
| OBMH-317 | 1,250         | 31,75  | 8-23  | 0,917        | 1,732 | 23,30      | 44,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-381 | 1,500         | 38,10  | 6-23  | 0,984        | 1,850 | 25,00      | 47,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-444 | 1,750         | 44,45  | 6-23  | 1,024        | 1,890 | 26,00      | 48,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-508 | 2,000         | 50,80  | 6-23  | 1,181        | 2,047 | 30,00      | 52,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-571 | 2,250         | 57,15  | 6-23  | 1,417        | 2,283 | 36,00      | 58,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-603 | 2,375         | 60,33  | 6-23  | 1,535        | 2,402 | 39,00      | 61,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-635 | 2,500         | 63,50  | 6-23  | 1,654        | 2,559 | 42,00      | 65,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-762 | 3,000         | 76,20  | 6-23  | 2,165        | 3,031 | 55,00      | 77,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-889 | 3,500         | 88,90  | 6-23  | 2,677        | 3,543 | 68,00      | 90,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBMH-900 | 4,000         | 101,60 | 6-23  | 3,150        | 4,016 | 80,00      | 102,00 | CDI    | 2              | STD Shaft: 20 or 25 mm |

**MMRBH**

MEMBRANE REMOVAL HEAD  
BIT: CARBIDE

Specially designed head for membrane removal and overlay head (cladding removal)

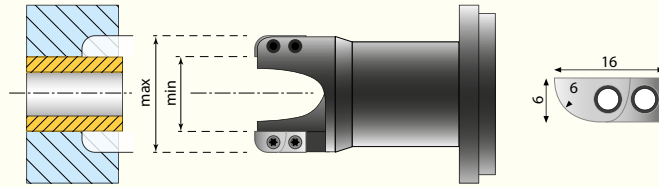


| HEAD NR   | TUBE CAPACITY |        | RANGE [INCH] |       | RANGE [MM] |        | INSERT | NO. OF INSERTS |
|-----------|---------------|--------|--------------|-------|------------|--------|--------|----------------|
|           | [INCH]        | [MM]   | MIN          | MAX   | MIN        | MAX    |        |                |
| MMRBH-254 | 1,000         | 25,40  | 1,000        | 1,630 | 25,40      | 41,40  | PO8    | 4              |
| MMRBH-288 | 1,125         | 28,58  | 1,134        | 1,764 | 28,80      | 44,80  | PO8    | 5              |
| MMRBH-317 | 1,250         | 31,75  | 1,248        | 1,878 | 31,70      | 47,70  | PO8    | 5              |
| MMRBH-381 | 1,500         | 38,10  | 1,500        | 2,130 | 38,10      | 54,10  | PO8    | 6              |
| MMRBH-444 | 1,750         | 44,45  | 1,748        | 2,378 | 44,40      | 60,40  | PO8    | 6              |
| MMRBH-508 | 2,000         | 50,80  | 2,000        | 2,630 | 50,80      | 66,80  | PO8    | 7              |
| MMRBH-571 | 2,250         | 57,15  | 2,252        | 2,882 | 57,20      | 73,20  | PO8    | 7              |
| MMRBH-603 | 2,375         | 60,33  | 2,374        | 3,004 | 60,30      | 76,30  | PO8    | 7              |
| MMRBH-635 | 2,500         | 63,50  | 2,500        | 3,130 | 63,50      | 79,50  | PO8    | 7              |
| MMRBH-762 | 3,000         | 76,20  | 3,000        | 3,630 | 76,20      | 92,20  | PO8    | 8              |
| MMRBH-889 | 3,500         | 88,90  | 3,500        | 4,130 | 88,90      | 104,90 | PO8    | 8              |
| MMRBH-101 | 4,000         | 101,60 | 4,000        | 4,630 | 101,60     | 117,60 | PO8    | 9              |

**SWROTC**

TUBE FACING MILLING HEAD  
BIT: HSS 6% Cobalt

A seal weld removal head over  
tube circumference prior to  
re-welding the damaged joint  
without removing the tube.



| HEAD NR    | TUBE CAPACITY |       | RANGE [INCH] |       | RANGE [MM] |       | INSERT | NO. OF<br>INSERTS | SHAFT              |
|------------|---------------|-------|--------------|-------|------------|-------|--------|-------------------|--------------------|
|            | [INCH]        | [MM]  | MIN          | MAX   | MIN        | MAX   |        |                   |                    |
| SWROTC-190 | 0,750         | 19,05 | 0,750        | 1,222 | 19,05      | 31,05 | CSWR   | 2                 | 901 MM#151 12,4 mm |
| SWROTC-222 | 0,875         | 22,23 | 0,874        | 1,346 | 22,20      | 34,20 | CSWR   | 2                 | 905 MM#151 13,9 mm |
| SWROTC-254 | 1,000         | 25,40 | 1,000        | 1,472 | 25,40      | 37,40 | CSWR   | 2                 | 909 MM#151 16,9 mm |
| SWROTC-285 | 1,125         | 28,58 | 1,124        | 1,596 | 28,55      | 40,55 | CSWR   | 2                 | 915 MM#151 20,0 mm |
| SWROTC-318 | 1,250         | 31,7  | 1,250        | 1,722 | 31,75      | 43,75 | CSWR   | 2                 | 915 MM#151 20,0 mm |
| SWROTC-381 | 1,500         | 38,1  | 1,500        | 1,969 | 38,10      | 50,01 | CSWR   | 2                 | 915 MM#151 20,0 mm |

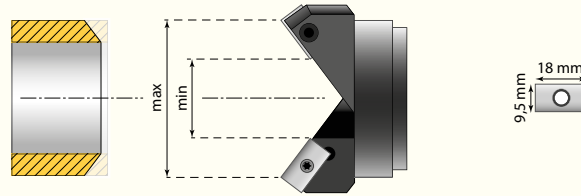
## Special Heads for PrepMill and HyperMill

FOR HYPERMILL ADDITIONAL FLANGE OBPM-F IS REQUIRED!

### OBPM

OUTSIDE BEVEL MILLING HEAD  
BIT: HSS 6% Cobalt  
DEGREE: 37,5°

Custom, precisely designed head. Dedicated for the outside bevelling of both tubes and pipes. Sized per tube or pipe diameter and angle of required weld bevel. The heads are precisely engineered so that the inserts cannot damage the shaft or locking jaws.

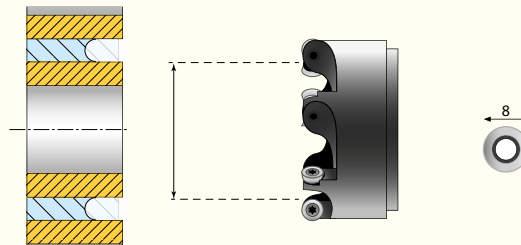


| HEAD NR  | TUBE CAPACITY |        |       | RANGE [INCH] |       | RANGE [MM] |        | INSERT | NO. OF INSERTS | SHAFT                  |
|----------|---------------|--------|-------|--------------|-------|------------|--------|--------|----------------|------------------------|
|          | [INCH]        | [MM]   | BWG   | MIN          | MAX   | MIN        | MAX    |        |                |                        |
| OBPM-190 | 0,750         | 19,05  | 14-23 | 0,5826       | 0,866 | 14,80      | 22,00  | CS     | 2              | 915 MM#151 20 mm       |
| OBPM-222 | 0,875         | 22,23  | 12-23 | 0,654        | 1,004 | 16,60      | 25,50  | CS     | 2              | STD Shaft: 20 or 25 mm |
| OBPM-254 | 1,000         | 25,40  | 11-23 | 0,764        | 1,122 | 19,40      | 28,50  | CS     | 2              | STD Shaft: 20 or 25 mm |
| OBPM-285 | 1,125         | 28,58  | 11-23 | 0,890        | 1,240 | 22,60      | 31,50  | CS     | 2              | STD Shaft: 20 or 25 mm |
| OBPM-317 | 1,250         | 31,75  | 8-23  | 0,917        | 1,732 | 23,30      | 44,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-381 | 1,500         | 38,10  | 6-23  | 0,984        | 1,850 | 25,00      | 47,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-444 | 1,750         | 44,45  | 6-23  | 1,024        | 1,890 | 26,00      | 48,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-508 | 2,000         | 50,80  | 6-23  | 1,181        | 2,047 | 30,00      | 52,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-571 | 2,250         | 57,15  | 6-23  | 1,417        | 2,283 | 36,00      | 58,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-603 | 2,375         | 60,33  | 6-23  | 1,535        | 2,402 | 39,00      | 61,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-635 | 2,500         | 63,50  | 6-23  | 1,654        | 2,559 | 42,00      | 65,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-762 | 3,000         | 76,20  | 6-23  | 2,165        | 3,031 | 55,00      | 77,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-889 | 3,500         | 88,90  | 6-23  | 2,677        | 3,543 | 68,00      | 90,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| OBPM-900 | 4,000         | 101,60 | 6-23  | 3,150        | 4,016 | 80,00      | 102,00 | CDI    | 2              | STD Shaft: 20 or 25 mm |

### PRRMBH

MEMBRANE REMOVAL HEAD  
BIT: CARBIDE

Specially designed head for membrane removal and overlay head (cladding removal)



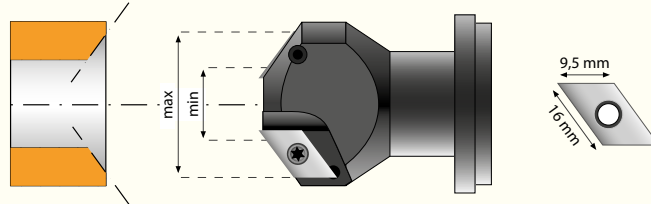
| HEAD NR    | TUBE CAPACITY |        | RANGE [INCH] |       | RANGE [MM] |        | INSERT | NO. OF INSERTS |
|------------|---------------|--------|--------------|-------|------------|--------|--------|----------------|
|            | [INCH]        | [MM]   | MIN          | MAX   | MIN        | MAX    |        |                |
| PRRBMH-254 | 1,000         | 25,40  | 1,000        | 1,630 | 25,40      | 41,40  | PO8    | 4              |
| PRRBMH-288 | 1,125         | 28,58  | 1,134        | 1,764 | 28,80      | 44,80  | PO8    | 5              |
| PRRBMH-317 | 1,250         | 31,75  | 1,248        | 1,878 | 31,70      | 47,70  | PO8    | 5              |
| PRRBMH-381 | 1,500         | 38,10  | 1,500        | 2,130 | 38,10      | 54,10  | PO8    | 6              |
| PRRBMH-444 | 1,750         | 44,45  | 1,748        | 2,378 | 44,40      | 60,40  | PO8    | 6              |
| PRRBMH-508 | 2,000         | 50,80  | 2,000        | 2,630 | 50,80      | 66,80  | PO8    | 7              |
| PRRBMH-571 | 2,250         | 57,15  | 2,252        | 2,882 | 57,20      | 73,20  | PO8    | 7              |
| PRRBMH-603 | 2,375         | 60,33  | 2,374        | 3,004 | 60,30      | 76,30  | PO8    | 7              |
| PRRBMH-635 | 2,500         | 63,50  | 2,500        | 3,130 | 63,50      | 79,50  | PO8    | 7              |
| PRRBMH-762 | 3,000         | 76,20  | 3,000        | 3,630 | 76,20      | 92,20  | PO8    | 8              |
| PRRBMH-889 | 3,500         | 88,90  | 3,500        | 4,130 | 88,90      | 104,90 | PO8    | 8              |
| PRRBMH-101 | 4,000         | 101,60 | 4,000        | 4,630 | 101,60     | 117,60 | PO8    | 9              |



**STWRPM**

STRENGTH WELD REMOVAL  
BIT: HSS 6% Cobalt  
DEGREE: 37.5°

Custom designed head dedicated for strength weld removal. The heads are sized per tube diameter and are precisely engineered so that the inserts cannot damage the shaft or locking jaws. Simple, trouble-free set up makes these heads very advantageous.

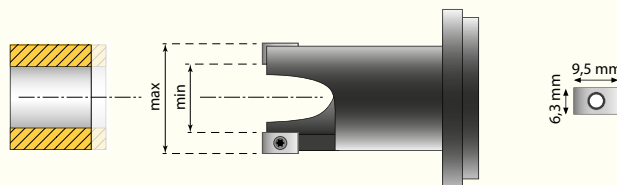


| HEAD NR    | TUBE CAPACITY |        |       | RANGE [INCH] |       | RANGE [MM] |        | INSERT | NO. OF INSERTS | SHAFT                  |
|------------|---------------|--------|-------|--------------|-------|------------|--------|--------|----------------|------------------------|
|            | [INCH]        | [MM]   | BWG   | MIN          | MAX   | MIN        | MAX    |        |                |                        |
| STWRPM-190 | 0,750         | 19,05  | 12-23 | 0,530        | 1,46  | 13,50      | 37,00  | WRI    | 2              | STD Shaft: 20 mm       |
| STWRPM-222 | 0,875         | 22,23  | 12-23 | 0,650        | 1,496 | 16,50      | 38,00  | WRI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-254 | 1,000         | 25,40  | 10-23 | 0,732        | 1,654 | 18,60      | 42,00  | WRI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-285 | 1,125         | 28,58  | 10-23 | 0,858        | 1,772 | 21,80      | 45,00  | WRI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-317 | 1,250         | 31,75  | 9-23  | 0,945        | 1,850 | 24,00      | 47,00  | WRI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-381 | 1,500         | 38,10  | 8-23  | 1,142        | 2,047 | 29,00      | 52,00  | WRI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-444 | 1,750         | 44,45  | 8-23  | 1,417        | 2,244 | 36,00      | 57,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-508 | 2,000         | 50,80  | 6-23  | 1,575        | 2,480 | 40,00      | 63,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-571 | 2,250         | 57,15  | 6-23  | 1,811        | 2,717 | 46,00      | 69,00  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-603 | 2,375         | 60,33  | 6-23  | 1,949        | 2,854 | 49,50      | 72,50  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-635 | 2,500         | 63,50  | 6-23  | 2,067        | 2,972 | 52,50      | 75,50  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-762 | 3,000         | 76,20  | 6-23  | 2,579        | 3,484 | 65,50      | 88,50  | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-889 | 3,500         | 88,90  | 6-23  | 3,071        | 3,976 | 78,00      | 101,00 | CDI    | 2              | STD Shaft: 20 or 25 mm |
| STWRPM-900 | 4,000         | 101,60 | 6-23  | 3,563        | 4,469 | 90,50      | 113,50 | CDI    | 2              | STD Shaft: 20 or 25 mm |

**TFPM**

TUBE FACING MILLING HEAD  
BIT: HSS 6% Cobalt  
DEGREE: 90.0°

A tube facing milling head created for facing tubes made of any type of material. Utilizes 6% cobalt inserts.



| HEAD NR  | TUBE CAPACITY |       |       | RANGE [INCH] |       | RANGE [MM] |       | INSERT | NO. OF INSERTS | SHAFT                  |
|----------|---------------|-------|-------|--------------|-------|------------|-------|--------|----------------|------------------------|
|          | [INCH]        | [MM]  | BWG   | MIN          | MAX   | MIN        | MAX   |        |                |                        |
| TFMP-285 | 1,125         | 28,58 | 11-23 | 0,854        | 1,307 | 21,70      | 33,20 | CSS    | 2              | STD Shaft 20 mm        |
| TFMP-317 | 1,250         | 31,75 | 9-23  | 0,949        | 1,366 | 24,10      | 34,70 | CSS    | 2              | STD Shaft 20 mm        |
| TFMP-381 | 1,500         | 38,10 | 9-23  | 1,197        | 1,614 | 30,40      | 41,00 | CSS    | 2              | STD Shaft: 20 or 25 mm |
| TFMP-444 | 1,750         | 44,45 | 9-23  | 1,449        | 1,862 | 36,80      | 47,30 | CS     | 2              | STD Shaft: 20 or 25 mm |
| TFMP-508 | 2,000         | 50,80 | 9-23  | 1,701        | 2,114 | 43,20      | 53,70 | CS     | 2              | STD Shaft: 20 or 25 mm |

## PanelMill 65

The PanelMill attaches to the tube outside diameter by means of custom or specific clamp type jaws that provide strong clamping action that minimizes chatter and vibration. Rugged construction allows the tool's cutting blade to end prep quickly. Several cutter heads are available for tubes with up to 2-1/2" O.D. Both the clamp and cutter heads are extremely durable and easy to change. The ratchet feed arm enables the operator to comfortably feed the tool during bevelling or facing. The PanelMill is suitable for small bore heavy wall tubes with a high percentage of chrome, stainless steel, and other exotic alloys. Standard and custom made blades are offered in a wide variety of angles and sizes.



| MODEL           | WORKING RANGE | CLEARANCE  | CLADDING REMOVAL | MEMBRANE UP TO | FEED STROKE | FREE SPEED                     | TORQUE          |
|-----------------|---------------|------------|------------------|----------------|-------------|--------------------------------|-----------------|
| PANELMILL 65EXT | 19 - 63,5 mm  | 70 mm      | 44,4 mm          | 51,0 mm        | 25,4 mm     | 100 Rpm<br>(Opc. 35, 200, 300) | 140 Nm          |
|                 | 0,75 - 2,50"  | 2,75"      | 1,75"            | 2,0"           | 1,0"        |                                | 105 Ft.Lbs      |
|                 | AIR USE       |            | BODY WIDTH       |                | BODY HEIGHT |                                | WEIGHT          |
|                 | 55 cfm        | 1,3 m³/min | 1,96"            | 50 mm          | 13,1"       | 300 mm                         | 22 Lbs    10 kg |

| MODEL                | WORKING RANGE                    | CLEARANCE  | CLADDING REMOVAL | MEMBRANE UP TO | FEED STROKE | FREE SPEED                     | TORQUE          |
|----------------------|----------------------------------|------------|------------------|----------------|-------------|--------------------------------|-----------------|
| PANELMILL<br>65EXT-M | 50 - 63,5 mm<br>+ 63,5 MEMBRANE  | 84 mm      | 63,5             | 63,5 mm        | 25,4 mm     | 100 Rpm<br>(Opc. 35, 200, 300) | 140 Nm          |
|                      | 0,75 - 2,50"<br>+ 2,50" MEMBRANE | 3,3"       | 2,5"             | 2,5"           | 1,0"        |                                | 105 Ft.Lbs      |
|                      | AIR USE                          |            | BODY WIDTH       |                | BODY HEIGHT |                                | WEIGHT          |
|                      | 55 cfm                           | 1,3 m³/min | 1,96"            | 50 mm          | 12,60"      | 320 mm                         | 24 Lbs<br>11 kg |

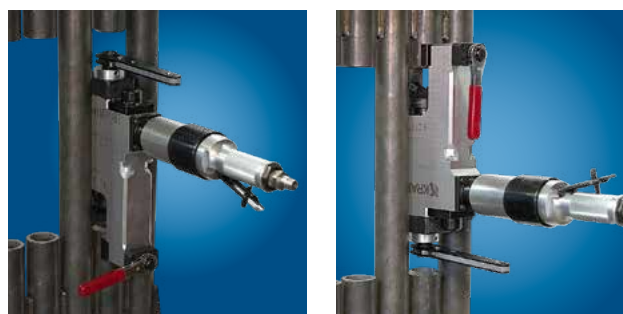
| MODEL         | WORKING RANGE | CLEARANCE  | CLADDING REMOVAL | MEMBRANE UP TO | FEED STROKE | FREE SPEED           | TORQUE          |
|---------------|---------------|------------|------------------|----------------|-------------|----------------------|-----------------|
| PANELMILL 101 | 50 - 101 mm   | 122 mm     | 88,9 mm          | 122 mm         | 25,4 mm     | 100 Rpm<br>(Opc. 40) | 140 Nm          |
|               | 2 - 4"        | 4,8        | 3,5"             | 4,8"           | 1,0"        |                      | 105 Ft.Lbs      |
|               | AIR USE       |            | BODY WIDTH       |                | BODY HEIGHT |                      | WEIGHT          |
|               | 55 cfm        | 1,3 m³/min | 1,96"            | 50 mm          | 13,77"      | 350 mm               | 40 Lbs<br>18 kg |

### CLAMPING JAWS FOR PANELMILL

| JAWS NO. | TUBE OD |        |
|----------|---------|--------|
|          | [MM]    | [INCH] |
| 300 PM#2 | 19,05   | 0,750  |
| 301 PM#2 | 20,00   | 0,787  |
| 304 PM#2 | 22,20   | 0,874  |
| 308 PM#2 | 25,40   | 1,000  |
| 309 PM#2 | 25,00   | 0,984  |
| 312 PM#2 | 28,80   | 1,134  |
| 313 PM#2 | 30,00   | 1,181  |
| 314 PM#2 | 31,70   | 1,248  |
| 318 PM#2 | 34,90   | 1,374  |

| JAWS NO. | TUBE OD |        |
|----------|---------|--------|
|          | [MM]    | [INCH] |
| 322 PM#2 | 38,10   | 1,500  |
| 326 PM#2 | 44,40   | 1,748  |
| 330 PM#2 | 50,80   | 2,000  |
| 331 PM#2 | 51,00   | 2,008  |
| 334 PM#2 | 57,10   | 2,248  |
| 338 PM#2 | 60,30   | 2,374  |
| 342 PM#2 | 63,50   | 2,500  |
| 346 PM#2 | 76,20   | 3,000  |

### MACHINING IN EVERY POSITION

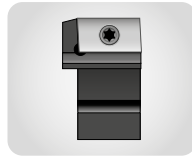


**UNIVERSAL CUTTER HEADS**

**50 MM (1,97'')**  
Head supplied with PanelMill 63. Designed to fasten wide range of cutting inserts.



**63 MM (2,48'')**  
Head supplied with PanelMill 100. Designed to fasten wide range of cutting inserts.



**BIT & HOLDERS**  
Universal cutter heads can hold a wide range of holders, with a bunch types of bits.

→ TABLE PAGE 44

**PANELMILL-E**

PanelMill E is electric version of PanelMill. A standard machine cover the same pipe sizes and comes with the same cutting head. The electric motor made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time.

Free Speed .....115 RPM  
Power .....750 W  
Torque .....366 NM (280 Ft.Lbs)  
Feed Stroke .....20 mm (0,787'')

**OUTSIDE BEVELLING HEAD**

BIT: HSS 6% COBALT  
DEGREE: 37,5°

Outside beveling head for machining tubes without membranes in a boiler water wall.

| HEAD NR   | TUBE CAPACITY |       |       | RANGE [INCH] |       | RANGE [MM] |       | INSERT | NO. OF INSERTS |
|-----------|---------------|-------|-------|--------------|-------|------------|-------|--------|----------------|
|           | [INCH]        | [MM]  | BWG   | MIN          | MAX   | MIN        | MAX   |        |                |
| OBPMH-190 | 0,750         | 19,05 | 14-23 | 0,5826       | 0,866 | 14,80      | 22,00 | WRIL   | 2              |
| OBPMH-222 | 0,875         | 22,23 | 12-23 | 0,654        | 1,004 | 16,60      | 25,50 | WRIL   | 2              |
| OBPMH-254 | 1,000         | 25,40 | 11-23 | 0,764        | 1,122 | 19,40      | 28,50 | WRIL   | 2              |
| OBPMH-285 | 1,125         | 28,58 | 11-23 | 0,890        | 1,240 | 22,60      | 31,50 | WRIL   | 2              |
| OBPMH-317 | 1,250         | 31,75 | 8-23  | 0,917        | 1,732 | 23,30      | 44,00 | WRIL   | 2              |
| OBPMH-381 | 1,500         | 38,10 | 6-23  | 0,984        | 1,850 | 25,00      | 47,00 | WRIL   | 2              |
| OBPMH-444 | 1,750         | 44,45 | 6-23  | 1,024        | 1,890 | 26,00      | 48,00 | WRIL   | 2              |
| OBPMH-508 | 2,000         | 50,80 | 6-23  | 1,181        | 2,047 | 30,00      | 52,00 | WRIL   | 2              |
| OBPMH-571 | 2,250         | 57,15 | 6-23  | 1,417        | 2,283 | 36,00      | 58,00 | WRIL   | 2              |
| OBPMH-603 | 2,375         | 60,33 | 6-23  | 1,535        | 2,402 | 39,00      | 61,00 | WRIL   | 2              |
| OBPMH-635 | 2,500         | 63,50 | 6-23  | 1,654        | 2,559 | 42,00      | 65,00 | WRIL   | 2              |
| OBPMH-889 | 3,500         | 88,90 | 6-23  | 2,677        | 3,543 | 68,00      | 90,00 | WRIL   | 2              |

**MEMBRANE REMOVAL HEAD**

BIT: CARBIDE

Specially designed head for membrane removal and overlay head (cladding removal)

| HEAD NR    | TUBE CAPACITY |        | RANGE [INCH] |       | RANGE [MM] |        | INSERT | NO. OF INSERTS |
|------------|---------------|--------|--------------|-------|------------|--------|--------|----------------|
|            | [INCH]        | [MM]   | MIN          | MAX   | MIN        | MAX    |        |                |
| PMRBMH-254 | 1,000         | 25,40  | 1,000        | 1,630 | 25,40      | 41,40  | PO8    | 4              |
| PMRBMH-288 | 1,125         | 28,58  | 1,134        | 1,764 | 28,80      | 44,80  | PO8    | 5              |
| PMRBMH-317 | 1,250         | 31,75  | 1,248        | 1,878 | 31,70      | 47,70  | PO8    | 5              |
| PMRBMH-381 | 1,500         | 38,10  | 1,500        | 2,130 | 38,10      | 54,10  | PO8    | 6              |
| PMRBMH-444 | 1,750         | 44,45  | 1,748        | 2,378 | 44,40      | 60,40  | PO8    | 6              |
| PMRBMH-508 | 2,000         | 50,80  | 2,000        | 2,630 | 50,80      | 66,80  | PO8    | 7              |
| PMRBMH-571 | 2,250         | 57,15  | 2,252        | 2,882 | 57,20      | 73,20  | PO8    | 7              |
| PMRBMH-603 | 2,375         | 60,33  | 2,374        | 3,004 | 60,30      | 76,30  | PO8    | 7              |
| PMRBMH-635 | 2,500         | 63,50  | 2,500        | 3,130 | 63,50      | 79,50  | PO8    | 7              |
| PMRBMH-762 | 3,000         | 76,20  | 3,000        | 3,630 | 76,20      | 92,20  | PO8    | 8              |
| PMRBMH-889 | 3,500         | 88,90  | 3,500        | 4,130 | 88,90      | 104,90 | PO8    | 8              |
| PMRBMH-101 | 4,000         | 101,60 | 4,000        | 4,630 | 101,60     | 117,60 | PO8    | 9              |

## PanelDrill

The KRAIS PanelDrill is a modular machine for the boiler waterwalls manufactures.

This is the first outside mounting tool with unique up to 80 mm feed stroke and 50 mm thick drive spindle.

Thanks to long feed stroke, rigid construction, powerful drives options and strong clamping PanelDrill is much more comfortable than other solutions. Minimized chatter and vibration results in smooth machining and operator convenience. The PanelDrill is suitable for small bore, heavy wall tubes with a high percentage of chrome, stainless steel and other exotic alloys.

The machine is offered with a choice of one from 3 available clamping jaws: 2,5", 3" or 4" OD, other sizes are just on request.



The crank arm enables the operator to smooth and fast feeding the tool during beveling or facing.

### AVAILABLE CLAMPS



#### 2,5" CLAMPS

Basic clamps allows for machining tubes with MiniDrill up to 2,5" with 2" feed range.



#### 3" CLAMP

The mid 3" clamps increases MiniDrill capacity up to 76 mm (3") with 2" feed range.



#### 4" CLAMP

The biggest, 4" clamps increases MiniDrill capacity up to 101 mm (4") with 2" feed range.

| CLAMPS | WORKING RANGE | CLEARANCE  | CLADDING REMOVAL | MEMBRANE UP TO | FEED STROKE | FREE SPEED                     | TORQUE     |       |
|--------|---------------|------------|------------------|----------------|-------------|--------------------------------|------------|-------|
| 2,5"   | 19 - 63,5 mm  | 70 mm      | 44,4 mm          | 51,0 mm        | 50 mm       | 100 Rpm<br>(Opt. 35, 200, 300) | 140 Nm     |       |
|        | 0,75 - 2,50"  | 2,75"      | 1,75"            | 2,0"           | 2,0"        |                                | 105 Ft.Lbs |       |
|        | AIR USE       |            | BODY WIDTH       |                | BODY HEIGHT |                                | WEIGHT     |       |
|        | 55 cfm        | 1,3 m³/min | 1,96"            | 50 mm          | 13,1"       | 300 mm                         | 22 Lbs     | 10 kg |

| CLAMPS | WORKING RANGE | CLEARANCE  | CLADDING REMOVAL | MEMBRANE UP TO | FEED STROKE | FREE SPEED                     | TORQUE          |
|--------|---------------|------------|------------------|----------------|-------------|--------------------------------|-----------------|
| 3"     | 19 - 76 mm    | 84 mm      | 63,5             | 63,5 mm        | 50 mm       | 100 Rpm<br>(Opt. 35, 200, 300) | 140 Nm          |
|        | 0,75 - 3,00"  | 3,3"       | 2,5"             | 2,5"           | 2,0"        |                                | 105 Ft.Lbs      |
|        | AIR USE       |            | BODY WIDTH       |                | BODY HEIGHT |                                | WEIGHT          |
|        | 55 cfm        | 1,3 m³/min | 1,96"            | 50 mm          | 12,60"      | 320 mm                         | 24 Lbs<br>11 kg |

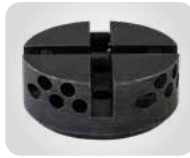
| CLAMPS | WORKING RANGE | CLEARANCE  | CLADDING REMOVAL | MEMBRANE UP TO | FEED STROKE | FREE SPEED                                      | TORQUE     |       |
|--------|---------------|------------|------------------|----------------|-------------|-------------------------------------------------|------------|-------|
| 4"     | 50 - 101 mm   | 122 mm     | 88,9 mm          | 122 mm         | 50 mm       | 100 Rpm<br>(Optional 35 Rpm with Speed Reducer) | 140 Nm     |       |
|        | 2 - 4"        | 4,8        | 3,5"             | 4,8"           | 2,0"        |                                                 | 105 Ft.Lbs |       |
|        | AIR USE       |            | BODY WIDTH       |                | BODY HEIGHT |                                                 | WEIGHT     |       |
|        | 55 cfm        | 1,3 m³/min | 1,96"            | 50 mm          | 13,77"      | 350 mm                                          | 40 Lbs     | 18 kg |

**UNIVERSAL CUTTER HEADS AND HOLDERS****50 MM**

Standard cutter head, delivered with 2,5" clamps, covers full range from 19 to 63,5 mm tubes.

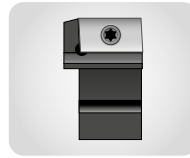
**63 MM (2,48")**

Head supplied with 3" clamps. Designed to fasten wide range of cutting inserts.

**101 MM (3,97")**

Head supplied with biggest 4" clamps. Designed to fasten wide range of cutting inserts.

All cutter heads are based on Weldon type gripper.

**BIT & HOLDERS**

Wide range of holders, with a standard and custom made blades are offered in a wide variety of angles and sizes.

→ TABLE PAGE 44

**OPTIONAL LONG FEED SYSTEM**

Special version of clamps and spindle with longer feed stroke. Depending on the application, there is a possibility to build machine with stroke even up to 80 mm. Please consult with factory if you have an application that needs even longer feed.

**OTHER OPTIONAL****SPEED REDUCER**

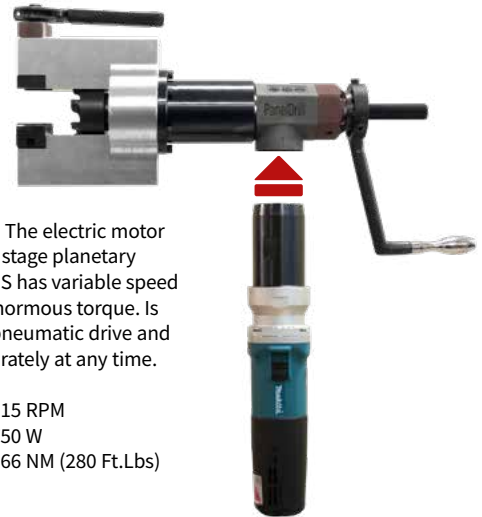
Easy to use gearbox for 3x speed reduction. Increases the torque, enabling the machine to generate a thick chip whilst reducing the cutting time.

**PANELDRILL PERFORMANCE**

PanelDrill during 2" carbon steel membrane removal.

**PANELDRILL-E**

PanelDrill E is electric version of PanelDrill. A standard machine cover the same pipe sizes and comes with the same cutting head. The electric motor made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time.



Free Speed .....115 RPM  
Power .....750 W  
Torque .....366 NM (280 Ft.Lbs)

**CLAMPING JAWS FOR PANELDRILL**

| JAWS     | TUBE OD |        |
|----------|---------|--------|
|          | [MM]    | [INCH] |
| 300 PM#2 | 19,05   | 0,750  |
| 301 PM#2 | 20,00   | 0,787  |
| 304 PM#2 | 22,20   | 0,874  |
| 308 PM#2 | 25,40   | 1,000  |
| 309 PM#2 | 25,00   | 0,984  |
| 312 PM#2 | 28,80   | 1,134  |
| 313 PM#2 | 30,00   | 1,181  |
| 314 PM#2 | 31,70   | 1,248  |
| 318 PM#2 | 34,90   | 1,374  |
| 322 PM#2 | 38,10   | 1,500  |
| 326 PM#2 | 44,40   | 1,748  |
| 330 PM#2 | 50,80   | 2,000  |
| 331 PM#2 | 51,00   | 2,008  |
| 334 PM#2 | 57,10   | 2,248  |
| 338 PM#2 | 60,30   | 2,374  |
| 342 PM#2 | 63,50   | 2,500  |
| 346 PM#2 | 76,20   | 3,000  |
| 350 PM#2 | 88,90   | 3,500  |
| 400 PM#2 | 101,60  | 4,000  |

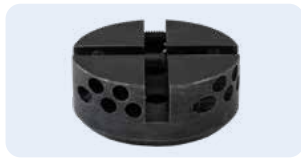
## PanelMill PF

KRAIS PanelMill PF is the first machine where the bevelling cycle time is not dependent on an operator efficiency but on the machine mechanism. Both, the feed mechanism and the spindle rotation mechanism are driven from one source. A fixed rate of spindle advancement is achieved for each rotation of the spindle so every stroke cycle is predictable.

The standard machine has 35 mm feed stroke (longer ones are available as option).

PanelMill PF – positive feed bevelling machine, is highly recommended for tube end facing, bevelling, and membrane milling in water wall panels. As well as for the tube end preparation in the boiler and heat exchanger industry and FAB shops.

### STANDARD SET UP



#### CUTTER HEAD 66 MM

Cutter head thanks to special way of fixing with spindle can cover full range from 0 to 76 mm



#### 3" CLAMPS

Standard machine clamps allows for machining tubes up to 3" with 35 mm positive feed range.



#### 35 MM SPINDLE

Heavy duty 35 mm (1-3/8") diameter spindle. The best stability and rigidity available on the market within this machine sizes!

The first one in the world! OD clamp pipe bevelling machine with Positive Feed.

| STANDARD WORKING RANGE |             |               | OPTIONAL WORKING RANGE |             |               |
|------------------------|-------------|---------------|------------------------|-------------|---------------|
| APPLICATION            | FEED STROKE | FEED PER REV. | APPLICATION            | FEED STROKE | FEED PER REV. |
| 19,05 - 76,20 mm       | 35 mm       | 0,1 mm        | 51 - 114 mm            | 35 mm       | 0,1 mm        |
| 0,75 - 3,00"           | 1,377"      | 0,003"        | 2,00 - 4,50"           | 1,377"      | 0,003"        |
| POWER                  | FREE SPEED  | TORQUE        | POWER                  | FREE SPEED  | TORQUE        |
| 2,2 hp                 | 125 Rpm     | 300 Nm        | 2,2 Hp                 | 100 Rpm     | 360 Nm        |

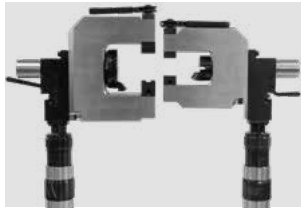
### STANDARD JAWS

| JAWS NO. | TUBE OD |        |
|----------|---------|--------|
|          | [MM]    | [INCH] |
| 308 PM#2 | 25,40   | 1,000  |
| 314 PM#2 | 31,70   | 1,248  |
| 322 PM#2 | 38,10   | 1,500  |
| 330 PM#2 | 50,80   | 2,000  |
| 342 PM#2 | 63,50   | 2,500  |
| 346 PM#2 | 76,20   | 3,000  |

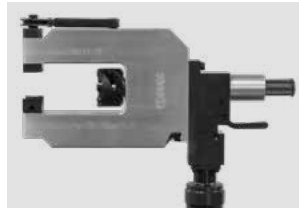
### OPTIONAL JAWS

| JAWS NO. | TUBE OD |        |
|----------|---------|--------|
|          | [MM]    | [INCH] |
| 300 PM#2 | 19,05   | 0,750  |
| 301 PM#2 | 20,00   | 0,787  |
| 304 PM#2 | 22,20   | 0,874  |
| 309 PM#2 | 25,00   | 0,984  |
| 312 PM#2 | 28,80   | 1,134  |
| 313 PM#2 | 30,00   | 1,181  |
| 318 PM#2 | 34,90   | 1,374  |
| 326 PM#2 | 44,40   | 1,748  |
| 331 PM#2 | 51,00   | 2,008  |
| 334 PM#2 | 57,10   | 2,248  |
| 338 PM#2 | 60,30   | 2,374  |



**OPTIONAL PARTS****4,5" CLAMP**

The bigger 4,5" clamp to increase PanelMill PF capacity up to 114 mm (4,5"). With this clamp the machine covers tube range from 51 to 114 mm (2-4,5").

**LONG FEED STROKE**

Special version of clamps and sindle with longer feed stroke. Depending on the application, there is a possibility to build machine with stroke even up to 4". Please consult with factory if you have an application that needs even longer feed.

**BENCH MOUNT PLATE (BMP)**

Thanks to bench mount plate, it is possible to attach PanelMill to the table/worktop. A table base allows you to convert PanelMill-PF to a table machine for bevelling pipes, stubs or elbows. This is only available for 4,5" clamp only.

**PANELMILL PF-E**

PanelMill PF can be driven by electric motor. Thus equipped machine covers the same working range but gets much more mobility. We offer two drives with different free speed. Both of them are run by Makita motor and use planetary gear Box's made by KRAIS. It has variable speed control and produce enormous torque. Electric drives are interchangeable with pneumatic one and can be purchased separately at any time.



| PanelMill Size | 3"      | 4,5"    |
|----------------|---------|---------|
| Type:          | ED600   | ED240   |
| Free speed:    | 220 Rpm | 110 Rpm |
| Power:         | 750W    | 1500 W  |
| Torque:        | 360 Nm  | 420 Nm  |
| Gearbox:       | 2-stage | 3-stage |

**TWO VARIANTS****RIGHT-ANGLE AND IN-LINE**

PanelMill-PF is available in two versions: right angle and in-line. You can choose the version, which suits better for your needs. Both models have exactly the same parameters.

## OPTIONAL HEADS FOR PANELMILL PF

### UNIVERSAL CUTTER HEADS



#### PMH-PF-66 66 MM (2,598")

Head supplied with PanelMill 3". Designed to fasten wide range of cutting inserts.



#### PMH-PF-99 99 MM (3,897")

Head supplied with PanelMill 4,5". Designed to fasten wide range of cutting inserts.



#### BIT & HOLDERS

Universal cutter heads can hold a wide range of holders, with a bunch types of bits.

### CLADDING REMOVAL HEAD



Head with carbide bits.



| HEAD NR    | TUBE CAPACITY |       | INSERT | NO. OF INSERTS |
|------------|---------------|-------|--------|----------------|
|            | [INCH]        | [MM]  |        |                |
| CRH-PF-508 | 2,000         | 50,80 | CI 9x9 | 3              |
| CRH-PF-571 | 2,250         | 57,15 | CI 9x9 | 3              |
| CRH-PF-603 | 2,375         | 60,33 | CI 9x9 | 3              |
| CRH-PF-635 | 2,500         | 63,50 | CI 9x9 | 3              |
| CRH-PF-762 | 3,000         | 76,20 | CI 9x9 | 3              |

### OUTSIDE BEVELLING HEAD



Angle: 37,5°; for tubes without membranes, with HSS 6% cobalt bits.



| HEAD NR      | TUBE CAPACITY |       |       | RANGE [INCH] |       | RANGE [MM] |       | INSERT | NO. OF INS. |
|--------------|---------------|-------|-------|--------------|-------|------------|-------|--------|-------------|
|              | [INCH]        | [MM]  | BWG   | MIN          | MAX   | MIN        | MAX   |        |             |
| OBPMH-PF-285 | 1,125         | 28,58 | 11-23 | 0,890        | 1,240 | 22,60      | 31,50 | WRIL   | 2           |
| OBPMH-PF-317 | 1,250         | 31,75 | 8-23  | 0,917        | 1,732 | 23,30      | 44,00 | WRIL   | 2           |
| OBPMH-PF-381 | 1,500         | 38,10 | 6-23  | 0,984        | 1,850 | 25,00      | 47,00 | WRIL   | 2           |
| OBPMH-PF-444 | 1,750         | 44,45 | 6-23  | 1,024        | 1,890 | 26,00      | 48,00 | WRIL   | 2           |
| OBPMH-PF-508 | 2,000         | 50,80 | 6-23  | 1,181        | 2,047 | 30,00      | 52,00 | WRIL   | 2           |
| OBPMH-PF-571 | 2,250         | 57,15 | 6-23  | 1,417        | 2,283 | 36,00      | 58,00 | WRIL   | 2           |
| OBPMH-PF-603 | 2,375         | 60,33 | 6-23  | 1,535        | 2,402 | 39,00      | 61,00 | WRIL   | 2           |
| OBPMH-PF-635 | 2,500         | 63,50 | 6-23  | 1,654        | 2,559 | 42,00      | 65,00 | WRIL   | 2           |
| OBPMH-PF-889 | 3,500         | 88,90 | 6-23  | 2,677        | 3,543 | 68,00      | 90,00 | WRIL   | 2           |

### MEMBRANE REMOVAL AND OVERLAY HEAD



Head with carbide bits.



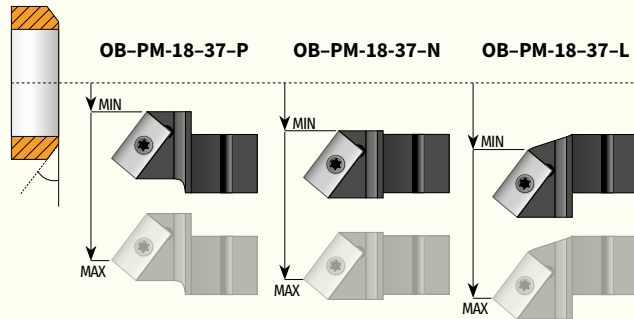
| HEAD NR       | TUBE CAPACITY |       | INSERT | NO. OF INSERTS |
|---------------|---------------|-------|--------|----------------|
|               | [INCH]        | [MM]  |        |                |
| PRRBMH-PF-508 | 2,000         | 50,80 | PO8    | 7              |
| PRRBMH-PF-571 | 2,250         | 57,15 | PO8    | 7              |
| PRRBMH-PF-603 | 2,375         | 60,33 | PO8    | 7              |
| PRRBMH-PF-635 | 2,500         | 63,50 | PO8    | 7              |
| PRRBMH-PF-762 | 3,000         | 76,20 | PO8    | 9              |

## Holders for PanelMill and PanelMill PF

It is highly recommended to use on this machine inserts made by KRAIS with ALNOVA coating by OERLIKON .

### OUTSIDE BEVELING HOLDERS

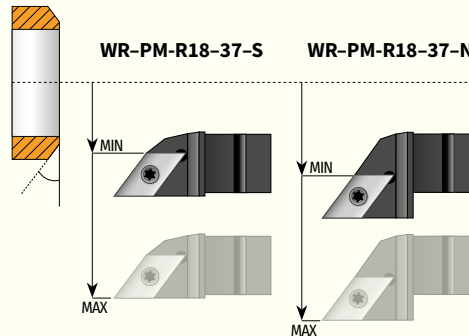
Cutting edge length: 12 mm, standard angle: 37,5° (others on request)



| HOLDER NO.    | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*         |
|---------------|-----|------|------------|--------|--------------|-------|-----------------|
|               |     |      | MIN        | MAX    | MIN          | MAX   |                 |
| OB-PM-18-37-P | CDI | 64   | 0,00       | 47,00  | 0,000        | 1,850 | 30; <b>37,5</b> |
|               | CDI | 99   | 0,00       | 85,00  | 0,000        | 3,346 | 30; <b>37,5</b> |
| OB-PM-18-37-N | CDI | 64   | 11,00      | 56,50  | 0,433        | 2,224 | 30; <b>37,5</b> |
|               | CDI | 99   | 11,00      | 95,00  | 0,433        | 3,740 | 30; <b>37,5</b> |
| OB-PM-18-37-L | CDI | 64   | 20,00      | 65,50  | 0,787        | 2,579 | 30; <b>37,5</b> |
|               | CDI | 99   | 20,00      | 104,00 | 0,787        | 4,094 | 30; <b>37,5</b> |

### OUTSIDE BEVELING HOLDERS

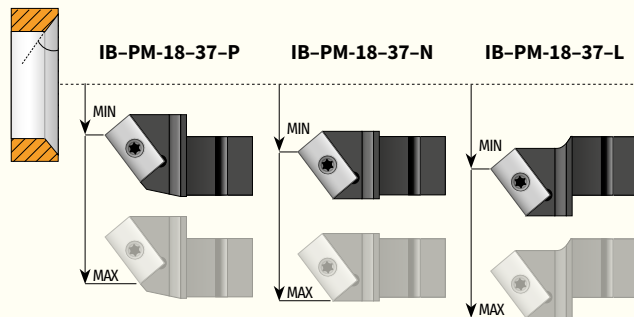
Cutting edge length: 10 mm, standard angle: 37,5° (others on request)



| HOLDER NO.     | BIT  | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*         |
|----------------|------|------|------------|--------|--------------|-------|-----------------|
|                |      |      | MIN        | MAX    | MIN          | MAX   |                 |
| WR-PM-R18-37-S | WRIL | 64   | 22,00      | 66,00  | 0,866        | 2,598 | 30; <b>37,5</b> |
| WR-PM-R18-37-N | WRIL | 64   | 36,00      | 80,00  | 1,417        | 3,150 | 30; <b>37,5</b> |
| WR-PM-R18-37-N | WRIL | 99   | 36,00      | 116,00 | 1,417        | 4,567 | 30; <b>37,5</b> |

### INSIDE BEVELING HOLDERS

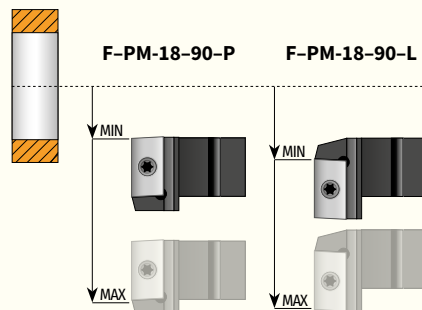
Cutting edge length: 12 mm, standard angle: 37,5° (others on request)



| HOLDER NO.    | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE*         |
|---------------|-----|------|------------|--------|--------------|-------|-----------------|
|               |     |      | MIN        | MAX    | MIN          | MAX   |                 |
| IB-PM-18-37-P | CDI | 64   | 10,00      | 56,00  | 0,394        | 2,205 | 30; <b>37,5</b> |
|               | CDI | 99   | 10,00      | 95,00  | 0,394        | 3,740 | 30; <b>37,5</b> |
| IB-PM-18-37-N | CDI | 64   | 20,00      | 65,00  | 0,787        | 2,559 | 30; <b>37,5</b> |
|               | CDI | 99   | 20,00      | 104,00 | 0,787        | 4,094 | 30; <b>37,5</b> |
| IB-PM-18-37-L | CDI | 64   | 35,00      | 79,00  | 1,378        | 3,110 | 30; <b>37,5</b> |
|               | CDI | 99   | 35,00      | 115,00 | 1,378        | 4,528 | 30; <b>37,5</b> |

### FACING HOLDERS

Cutting edge length: 15 mm, standard angle: 90,0°



| HOLDER NO.   | BIT | HEAD | RANGE [MM] |        | RANGE [INCH] |       | DEGREE* |
|--------------|-----|------|------------|--------|--------------|-------|---------|
|              |     |      | MIN        | MAX    | MIN          | MAX   |         |
| F-PM-18-90-P | CDI | 64   | 0,00       | 53,00  | 0,000        | 2,087 | 90      |
|              | CDI | 99   | 0,00       | 88,00  | 0,000        | 3,465 | 90      |
| F-PM-18-90-L | CDI | 64   | 20,00      | 80,00  | 0,787        | 3,150 | 90      |
|              | CDI | 99   | 20,00      | 116,00 | 0,787        | 4,567 | 90      |

## MiniDrill GFF



**TAILOR MADE ONLY!**

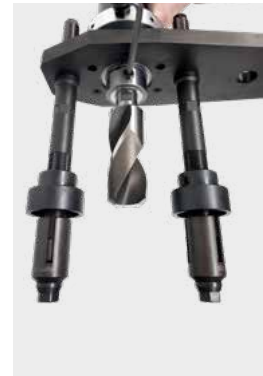
MiniDrill GFF is a unique machining platform designed to safely perform the repair or increase the FinFan Cooler plug thread and other operations on heat exchangers, boilers and similar thermal exchange equipment. This system can drill, ream, bore and even re-machine serrations in steam drums. With a 80 mm (3.150") travel, tool is suited for the majority of plant equipment. The system is fully torque reacted with 2 clamping arms that are independent of one another and can accommodate most pitch configurations. Once locked into the tubes, the MiniDrill is extremely stable.

| WORKING RANGE  |            | LOCKING RANGE            |       | FREE SPEED  |        | POWER       |  | TORQUE     |  |
|----------------|------------|--------------------------|-------|-------------|--------|-------------|--|------------|--|
| 12,5– 51,0 mm  |            | According to the drawing |       | 100 Rpm     |        | 1,3 Hp      |  | 140 Nm     |  |
| 0,492 – 2,000" |            |                          |       |             |        |             |  | 105 Ft.Lbs |  |
| AIR USE        |            | BODY WIDTH               |       | BODY HEIGHT |        | BODY WEIGHT |  |            |  |
| 55 cfm         | 1,3 m3/min | 2,32"                    | 59 mm | 13,1"       | 335 mm | 17,5 Lbs    |  | 8 kg       |  |



### RIGID LOCKING

On standard FinFan gas coolers machine locks onto two shafts on the adjacent holes. The locking plate is manufactured according to the tube hole pitch to ensure precise tool alignment.



### UNIVERSAL REACTION PLATE

MiniDrill FinFan is delivered with locking plate and 2 reaction shafts. Construction of the plate allows for locking machine with both shafts on one side to allow to machine the last holes in the row. Plate can be etc.

**FINFAN THREAD REPAIR PROCESS****PROPER MACHINE LOCKING FOR ALL STEPS**

Choose the correct locking jaws to suit the existing plug holes



| PLUG SIZE |          |        | JAW SET (2 REQUIRED) |
|-----------|----------|--------|----------------------|
| 1-1/8"    | 28,58 mm | 12 TPI | 701MM #36-1-1/8-GFF  |
| 1-1/4"    | 31,75 mm | 12 TPI | 703MM #36-1-1/4-GFF  |
| 1-3/8"    | 34,93 mm | 12 TPI | 705MM #36-1-3/8-GFF  |
| 1-1/2"    | 38,10 mm | 12 TPI | 707MM #36-1-1/2-GFF  |
| 1-5/8"    | 41,28 mm | 12 TPI | 709MM #36-1-5/8-GFF  |
| 1-3/4"    | 44,45 mm | 12 TPI | 711MM #36-1-3/4-GFF  |
| 1-7/8"    | 47,63 mm | 12 TPI | 713MM #36-1-7/8-GFF  |

**STEP 1**

Heads for weld removal over the welded plugs (in case are welded)



| PLUGS SIZE |          |        | HEAD         | INSERT | SCREW |
|------------|----------|--------|--------------|--------|-------|
| 1-1/8"     | 28,58 mm | 12 TPI | TFWR-GFF-350 | CS-5D  | MHS-4 |
| 1-1/4"     | 31,75 mm | 12 TPI | TFWR-GFF-380 | CS-5D  | MHS-4 |
| 1-3/8"     | 34,93 mm | 12 TPI | TFWR-GFF-410 | CS-5D  | MHS-4 |
| 1-1/2"     | 38,10 mm | 12 TPI | TFWR-GFF-440 | CS-5D  | MHS-4 |
| 1-5/8"     | 41,28 mm | 12 TPI | TFWR-GFF-470 | CS-5D  | MHS-4 |
| 1-3/4"     | 44,45 mm | 12 TPI | TFWR-GFF-500 | CS-5D  | MHS-4 |
| 1-7/8"     | 47,63 mm | 12 TPI | TFWR-GFF-540 | CS-5D  | MHS-4 |

**STEP 2**

Select the appropriate size drill head to match the desired new thread size



| DRILL HEAD SIZE |                   | DRILL HEAD          | INSERT | SCREW |
|-----------------|-------------------|---------------------|--------|-------|
| 1-1/8 to 1-1/4" | 28,58 to 31,75 mm | MD-29,6-DRILL-L-130 | CS-0.4 | MHS-4 |
| 1-1/4 to 1-3/8" | 31,74 to 34,93 mm | MD-32,9-DRILL-L-130 | CS-0.4 | MHS-4 |
| 1-3/8 to 1-1/2" | 34,93 to 38,10 mm | MD-36,1-DRILL-L-130 | CS-0.4 | MHS-4 |
| 1-1/2 to 1-5/8" | 38,10 to 41,28 mm | MD-39,3-DRILL-L-130 | CS-0.4 | MHS-4 |
| 1-5/8 to 1-3/4" | 41,28 to 44,45 mm | MD-42,5-DRILL-L-130 | CS-0.4 | MHS-4 |
| 1-3/4 to 1-7/8" | 44,45 to 47,63 mm | MD-45,5-DRILL-L-130 | CS-0.4 | MHS-4 |

**STEP 3**

Select the chamfering head to chamfer the hole before tapping (heads need a Weldon flange: MD-FLANGE-STWRMH)



| RANGE           |                   | HEAD       | INSERT | SCREW |
|-----------------|-------------------|------------|--------|-------|
| 0,787 to 1,653" | 20,00 to 42,00 mm | STWRMH-317 | WRI    | MHS-4 |
| 1,417 to 2,244" | 36,00 to 57,00 mm | STWRMH-444 | CDI    | MHS-4 |

**STEP 4**

Select tapping head to suit the required thred size



| PLUGS THREAD SIZE |          |        | TAP HEAD        | RATCHED FEED ARM |
|-------------------|----------|--------|-----------------|------------------|
| 1-1/8"            | 28,58 mm | 12 TPI | MDFFPT-1-1/8_12 | MD-RS-H28        |
| 1-1/4"            | 31,75 mm | 12 TPI | MDFFPT-1-1/4_12 | MD-RS-H28        |
| 1-3/8"            | 34,93 mm | 12 TPI | MDFFPT-1-3/8_12 | MD-RS-H28        |
| 1-1/2"            | 38,10 mm | 12 TPI | MDFFPT-1-1/2_12 | MD-RS-H28        |
| 1-5/8"            | 41,28 mm | 12 TPI | MDFFPT-1-5/8_12 | MD-RS-H28        |
| 1-3/4"            | 44,45 mm | 12 TPI | MDFFPT-1-3/4_12 | MD-RS-H28        |
| 1-7/8"            | 47,63 mm | 12 TPI | MDFFPT-1-7/8_12 | MD-RS-H28        |

**STEP 5**

Produce new gasket seat using MiniMill-300GFF. Choose heads and jaws on next page.

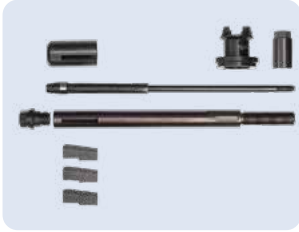




## MiniMill 300GFF

Ideal for gasket seat machining of any size of fin fan cooler. A standard machine is equipped with a cutter head and a special locking system to fit your application. The machine locks directly into the plug thread.

### STANDARD SET UP



#### GASKET FINFAN SET

Supplied with 20 mm shaft, one set of jaws to suit plug thread diameter, pilot and gasket seat milling head. Plug size details must be provided by customer with order.



Custom machined jaws. Showing locked and up-locked position.



| STANDARD WORKING RANGE    |            |                               |       | FEED<br>STROKE | FREE<br>SPEED | POWER       | TORQUE    |
|---------------------------|------------|-------------------------------|-------|----------------|---------------|-------------|-----------|
| APPLICATION RANGE (ID-OD) |            | LOCKING RANGE (ID)            |       |                |               |             |           |
| 12 TPI                    |            | Suit to thread<br>of the plug |       | 20 mm          | 300 Rpm       | 1,3 Hp      | 43 Nm     |
| 1,125 - 2,125"            |            |                               |       | 0,787"         |               |             | 32 Ft.Lbs |
| AIR USE                   |            | BODY WIDTH                    |       | BODY HEIGHT    |               | BODY WEIGHT |           |
| 55 cfm                    | 1,3 m³/min | 2,32"                         | 59 mm | 13,1"          | 335 mm        | 13,2Lbs     | 6 kg      |

### EXAMPLE TOOL APPLICATION



FinFan cooler before a maintenance



Plug hole before re machining the gasket seat



Safely re-machine gasket surfaces in seconds.



All types of water box materials can be machined with the carbide inserts of the MiniMill 300 GFF.

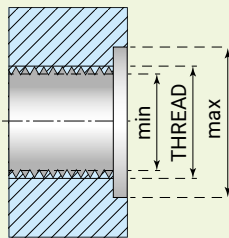


**GASKET SEAT FACING HEADS AND JAWS NUMBERS**

| HEAD TYPE   | PLUG SIZE |       |     | SEAL NEST DIAMETER |            |          |          | INSERT | NO. OF INSERTS | JAWS SET NUMBER     | PLUG SIZE |        | TPI | PILOT     |
|-------------|-----------|-------|-----|--------------------|------------|----------|----------|--------|----------------|---------------------|-----------|--------|-----|-----------|
|             | [INCH]    | [MM]  | TPI | MIN [INCH]         | MAX [INCH] | MIN [MM] | MAX [MM] |        |                |                     | [INCH]    | [MM]   |     |           |
| FFGSMH-1125 | 1,125     | 28,58 | 12  | 0,940              | 1,496      | 24,00    | 38,00    | CI 5x5 | 4              | 701MM #36-1-1/8-GFF | 1,125     | 28,575 | 12  | PGFF-1125 |
| FFGSMH-1250 | 1,250     | 31,75 | 12  | 1,063              | 1,614      | 27,00    | 41,00    | CI 5x5 | 4              | 703MM #36-1-1/4-GFF | 1,250     | 31,750 | 12  | PGFF-1250 |
| FFGSMH-1350 | 1,375     | 34,93 | 12  | 1,220              | 1,772      | 31,00    | 45,00    | CI 5x5 | 4              | 705MM #36-1-3/8-GFF | 1,375     | 34,925 | 12  | PGFF-1350 |
| FFGSMH-1500 | 1,500     | 38,10 | 12  | 1,339              | 1,890      | 34,00    | 48,00    | CI 5x5 | 4              | 707MM #36-1-1/2-GFF | 1,500     | 38,100 | 12  | PGFF-1500 |
| FFGSMH-1625 | 1,625     | 41,27 | 12  | 1,457              | 2,008      | 37,00    | 51,00    | CI 5x5 | 4              | 709MM #36-1-5/8-GFF | 1,625     | 41,275 | 12  | PGFF-1625 |
| FFGSMH-1750 | 1,750     | 44,45 | 12  | 1,590              | 2,140      | 40,40    | 54,40    | CI 5x5 | 4              | 711MM #36-1-3/4-GFF | 1,750     | 44,450 | 12  | PGFF-1750 |
| FFGSMH-1875 | 1,875     | 47,62 | 12  | 1,720              | 2,270      | 43,60    | 57,60    | CI 5x5 | 4              | 713MM #36-1-7/8-GFF | 1,875     | 47,625 | 12  | PGFF-1875 |

Other sizes on request. If plug holes are damaged beyond repair, our MiniDrill 55 can be used to upsize them to the next size. Example - 1-1/8" to 1-3/8".

Seal nest diameter diagram

**OTHER OPTIONAL ACCESSORIES****FAST CLAMPING SYSTEM**

System offers rapid tube to tube cycle time, increased productivity (up to 4x) with little operator fatigue. Ideal for large amount of end preps.

## MiniMill 300FF

A standard machine for Fin Fan cooler tube trimming is equipped with custom head and locking system to suit your application (customer to provide drawing of unit). The MiniMill 300FF cutter heads have 3 carbide inserts with 4 Cutting edges each.

### STANDARD SET UP



### FINFAN ATTACHMENT

Special attachment for facing tubes in fin fan gas coolers. A locking shaft with adjustable length and a support bushing are screwed into the plug thread, making this tool the best one available on the market today. The cycle is approx. 1 min from tube to tube. For this application we recommend our 300 Rpm machine



| STANDARD WORKING RANGE    |            |                          |       | FEED STROKE | FREE SPEED | POWER       | TORQUE    |
|---------------------------|------------|--------------------------|-------|-------------|------------|-------------|-----------|
| APPLICATION RANGE (ID-OD) |            | LOCKING RANGE (ID)       |       |             |            |             |           |
| 12,5– 51,0 mm             |            | According to the drawing |       | 20 mm       | 300 Rpm    | 1,3 Hp      | 43 Nm     |
| 0,492 – 2,000"            |            |                          |       | 0,787"      |            |             | 32 Ft.Lbs |
| AIR USE                   |            | BODY WIDTH               |       | BODY HEIGHT |            | BODY WEIGHT |           |
| 55 cfm                    | 1,3 m³/min | 2,32"                    | 59 mm | 13,1"       | 335 mm     | 13,2Lbs     | 6 kg      |

### FINFAN ATTACHMENT PART NUMBERS

| FINFAN               | TUBE CAPACITY (OD) |       |       | INSERT | NO. INSERTS | SCREW | JAWS COVER |          |
|----------------------|--------------------|-------|-------|--------|-------------|-------|------------|----------|
|                      | [INCH]             | [MM]  | BWG   |        |             |       | MIN        | MAX      |
| 601-FinFan-1-12"     | 1,000              | 25,40 | 12-23 | CI     | 3           | 1-1/8 | 207MM#36   | 213MM#36 |
| 603-FinFan-1-1/8-12" | 1,125              | 28,58 | 12-23 | CI     | 3           | 1-1/4 | 211MM#36   | 217MM#36 |
| 605-FinFan-1-1/4-12" | 1,250              | 31,75 | 11-23 | CI     | 3           | 1-3/8 | 103MM#36   | 107MM#36 |
| 607-FinFan-1-1/2-12" | 1,500              | 38,10 | 11-23 | CI     | 3           | 1-5/8 | 107MM#36   | 111MM#36 |
| 609-FinFan-1-3/4-12" | 1,750              | 44,45 | 9-23  | CI     | 3           | 1-7/8 | 111MM#36   | 115MM#36 |
| 611-FinFan-2-12"     | 2,000              | 50,80 | 9-23  | CI     | 3           | 2-1/8 | 115MM#36   | 119MM#36 |

### AVAILABLE LENGTHS

| MODEL            | DŁUGOŚĆ |        |
|------------------|---------|--------|
|                  | [MM]    | [INCH] |
| 601-FinFan-xx-6  | 152,4   | 6"     |
| 601-FinFan-xx-8  | 203,2   | 8"     |
| 601-FinFan-xx-10 | 254,0   | 10"    |
| 601-FinFan-xx-12 | 305,0   | 12"    |
| 601-FinFan-xx-14 | 355,6   | 14"    |
| 601-FinFan-xx-16 | 406,4   | 16"    |

**OPTIONAL ATTACHMENT****FINFAN SEAL WELD REMOVAL ATTACHMENT**

Simply the best solution for seal weld removal from air coolers. Adjustable length locking shaft and support bushing that fits into the plug thread, making this tool the best one available on the market today. A cycle time of approximately 1 min from tube to tube can be expected.

**FINFAN CHAMFERING ATTACHMENT**

FINFAN-CMF-000-00 Chamfering Attachment for tube sheet holes in the FinFan tube sheet before welding. Available for 45-degree chamfer and R4 radius J-Prep.

**OTHER OPTIONAL ACCESSORIES****SPEED REDUCER**

Easy to use gearbox for 3x speed reduction. Increases the torque, enabling the machine to generate a thick chip whilst reducing the cutting time.

**RATCHET FEED**

Feed system allowing to work in narrow and tight locations, eg. in water walls.

**LEVER FEED**

Quick and easy feed system. Used in many basic applications.

**EXAMPLE TOOL APPLICATION**

Trimming tubes safely and efficiently. Machine locks securely both to the tube and the plug thread of the water box.

**EXAMPLE TOOL APPLICATION**

Water box demonstration of the simplicity of machine operation.



An operator trimming back tubes prior to seal welding.



## FinMill

KRAIS FinMill is a air powered tool designed for removing fin from the outside diameter of a tube. The tool is based on the same quality drive and housing as our other PrepMill series tools. Thanks to heavy duty locking system The FinMill fin tube removal tool clamps reliably in the tube and offers chatter-free work at any position.



Reversible motor allow to work and remove left and right hand fins.

### STANDARD SET UP



#### DOUBLE SIDE HEAD

Special shaped head, allows to remove left- and right-handed fins.



#### SHAFT25

Self-align, heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force.

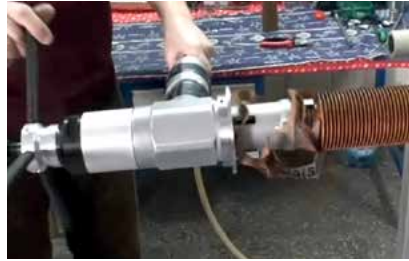
| STANDARD WORKING RANGE    |            |                    |       | FEED<br>STROKE | FREE<br>SPEED | POWER       | TORQUE     |
|---------------------------|------------|--------------------|-------|----------------|---------------|-------------|------------|
| APPLICATION RANGE (ID-OD) |            | LOCKING RANGE (ID) |       |                |               |             |            |
| 31,75 - 63,50 mm          |            | 25 - 122 mm        |       | 100 mm         | 100 Rpm       | 2,2 Hp      | 370 Nm     |
| 1-1/4" - 2-1/2"           |            | 0,984 - 4,803"     |       | 4"             |               |             | 277 Ft.Lbs |
| AIR USE                   |            | BODY WIDTH         |       | BODY HEIGHT    |               | BODY WEIGHT |            |
| 75 cfm                    | 2,2 m³/min | 2,59"              | 66 mm | 14,5"          | 370 mm        | 19 Lbs      | 9 kg       |

### HEAD NUMBERS

| RANGE  |       | HEAD     |
|--------|-------|----------|
| [INCH] | [MM]  |          |
| 1-1/4  | 31,75 | FMRH-317 |
| 1-1/2  | 38,10 | FMRH-381 |
| 1-3/4  | 44,45 | FMRH-444 |
| 2      | 50,80 | FMRH-501 |
| 2-1/4  | 57,15 | FMRH-571 |
| 2-1/2  | 63,50 | FMRH-635 |

### LOCKING RANGES WITH SHAFT25

| RANGE [MM] |     | RANGE [INCH] |       | JAWS | EXT. | SPRING |      |
|------------|-----|--------------|-------|------|------|--------|------|
| MIN        | MAX | MIN          | MAX   |      |      | NUMBER | QTY. |
| 25         | 30  | 0,984        | 1,181 | NS-1 | -    | SP-24  | 1    |
| 30         | 35  | 1,181        | 1,378 | NS-2 | -    | SP-24  | 1    |
| 35         | 40  | 1,378        | 1,575 | NS-3 | -    | SP-25  | 2    |
| 40         | 45  | 1,575        | 1,772 | NS-4 | -    | SP-25  | 2    |
| 45         | 50  | 1,772        | 1,969 | NS-5 | -    | SP-25  | 2    |
| 50         | 55  | 1,969        | 2,165 | NS-6 | -    | SP-25  | 2    |
| 55         | 60  | 2,165        | 2,362 | NS-7 | -    | SP-25  | 2    |
| 60         | 65  | 2,362        | 2,559 | NS-8 | -    | SP-25  | 2    |

**EXAMPLE TOOL APPLICATION**

Removes 4.0" (101 mm) depth of fin from the tube OD in less than 2 minutes

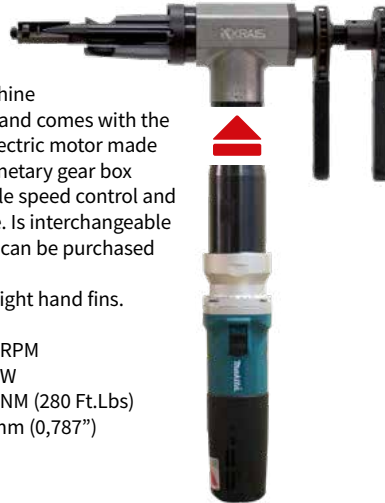
**OPTIONAL****STAR WHEEL**

The most precise feed system. Used in many basic and demanding applications.

**FINMILL E**

FinMill E is electric version of FinMill. A standard machine cover the same pipe sizes and comes with the same cutting head. The electric motor made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time. FinMill E works only with right hand fins.

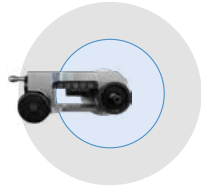
Free Speed ..... 115 RPM  
 Power..... 750 W  
 Torque ..... 366 NM (280 Ft.Lbs)  
 Feed Stroke ..... 20 mm (0,787")



## MFM – Manual FlangeMill

Basic, simple and cost-effective solution for ID mount flange facing. It is a quick and easy way to reface a damaged flat, grooves in pipe flanges on site. Manual FlangeMill size and body is designed and built to allow quick and convenient processing of small flanges in awkward or dangerous locations.

### TOOL SWING DIAMETERS



FACING RANGE

BODY SWING DIAMETER



| FACING RANGE    | LOCKING RANGE   | MAX V TOOL TRAVEL | MAX H TOOL TRAVEL | BODY SWING DIAMETER |             |        |
|-----------------|-----------------|-------------------|-------------------|---------------------|-------------|--------|
| 30 – 350 mm     | 25,4 - 254,0 MM | 10 MM             | 55 MM             | 457,2 MM            |             |        |
| 1,750 – 14,000" | 1 - 10"         | 0,395"            | 2,165"            | 18"                 |             |        |
| DRIVE           | BODY WIDTH      |                   | BODY LENGHT       |                     | BODY WEIGHT |        |
| Manual          | 6,5"            | 165 mm            | 12,8"             | 325 mm              | 19,4 Lbs    | 8,8 kg |

### MFM TOOL BITS AND HOLDER



Manual Flange Mill uses one just type of holders: MFMH-7-L and MFMH-7-R with carbide insert CI7 (screw MHS-2,7)

|        | A | B |
|--------|---|---|
| CI7 mm | 7 | 7 |

### MFM ADVANTAGES



#### PRECISE DEPTH ADJUSTMENT

The tool depth can be adjusted (10 mm stroke) thru spindle to define cut depth and the correct finish.



#### EASE OF USE

The tool arm is rotated by hand using a worm-gear mechanism to provide a perfect spiral finish.



#### SMOOTH OPERATION

Quick adjustment handle to move the cutter to groove position



#### MACHINING IN EVERY POSITION

Manual FlangeMill can be freely rotated to work in every position. Remachining damaged flat, grooves and raised faced flanges on site is possible in every position.

### TOOLING CHART

| HOLDER   | INSERT | SCREW   | TORX |
|----------|--------|---------|------|
| MFMH-7-L | CI7    | MHS-2,7 | TX-8 |
| MFMH-7-R | CI7    | MHS-2,7 | TX-8 |

### EXAMPLE TOOL APPLICATION

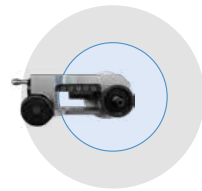




## MFML – Manual FlangeMill Long

Long version of simple and cost-effective solution for ID mount flange facing. It is a quick and easy way to reface a damaged flat, grooves in pipe flanges on site. The L(ong) version FlangeMill size and body is designed and built to allow quick and convenient processing of mid sized flanges in awkward or dangerous locations.

### TOOL SWING DIAMETERS



FACING RANGE

BODY SWING DIAMETER



| FACING RANGE  | LOCKING RANGE | MAX V TOOL TRAVEL | MAX H TOOL TRAVEL | BODY SWING DIAMETER |             |        |
|---------------|---------------|-------------------|-------------------|---------------------|-------------|--------|
| 51 – 650 mm   | 51 - 550 MM   | 10 MM             | 55 MM             | 757 MM              |             |        |
| 2,01 – 25,60" | 2,01 - 21,65" | 0,395"            | 2,165"            | 30"                 |             |        |
| DRIVE         | BODY WIDTH    |                   | BODY HEIGHT       |                     | BODY WEIGHT |        |
| Manual        | 6,5"          | 165 mm            | 18,7"             | 475 mm              | 19,4 Lbs    | 8,8 kg |

### MFM TOOL BITS AND HOLDER



Manual Flange Mill uses one just type of holders: MFMH-7-L and MFMH-7-R with carbide insert CI7 (screw MHS-2,7)

|     |   |   |
|-----|---|---|
|     | A | B |
| CI7 | 7 | 7 |
| mm  | 7 | 7 |

### MFM ADVANTAGES



#### PRECISE DEPTH ADJUSTMENT

The tool depth can be adjusted (10 mm stroke) thru spindle to define cut depth and the correct finish.



#### EASE OF USE

The tool arm is rotated by hand using a worm-gear mechanism to provide a perfect spiral finish.



#### SMOOTH OPERATION

Quick adjustment handle to move the cutter to groove position



#### MACHINING IN EVERY POSITION

Manual FlangeMill can be freely rotated to work in every position. Remachining damaged flat, grooves and raised faced flanges on site is possible in every position.

### TOOLING CHART

| HOLDER   | INSERT | SCREW   | TORX |
|----------|--------|---------|------|
| MFMH-7-L | CI7    | MHS-2,7 | TX-8 |
| MFMH-7-R | CI7    | MHS-2,7 | TX-8 |

## MMFM – Mini Flange Mill

Compact and light weight flange milling machine – one of the most compact designs on the market today.

- 】 Low clearance.
- 】 Flat and raised face flanges
- 】 Single line, true gramophone groove with 50 grooves per 1" to comply with ASME B46.1 code
- 】 Pneumatic drive 1,3 Hp or 750 W electric with multiple planetary gear box
- 】 Stainless steel body to stiffen the machine base
- 】 Rigid construction aluminium facing head , supported by multiple bearings
- 】 Solid locking mandrel shaft and rigid mounting jaw set
- 】 Hardened and ground tool slides for precision

### QUALITY COMPONENTS

- 】 Pneumatic motor comes complete with filter, lubricator and flow control.
- 】 Compact, low-profile drive system engineered for superior power to weight ratio.
- 】 Features rugged main body, heavy-duty bearings, sealed lubrication, and rigid mounting system.



| FACING RANGE |            | RANGE PIPE FACING<br>(SINGLE POINT) |          | LOCKING RANGE |        | VERTICAL<br>FEED STROKE |        | MACHINING<br>FEED RATE |        | POWER  |  |
|--------------|------------|-------------------------------------|----------|---------------|--------|-------------------------|--------|------------------------|--------|--------|--|
| 37 – 254 mm  |            | 51 – 254 mm                         |          | 26 – 150 mm   |        | 13 mm                   |        | 0,5 mm                 |        | 1,3 Hp |  |
| 1,45 – 10"   |            | 2 – 10" OD                          |          | 1,0 – 5,9"    |        | 0,5"                    |        | 0,019"                 |        |        |  |
| AIR USE      |            | WEIGHT                              |          | HEIGHT        |        | LENGTH                  |        | SWING DIAMETER         |        |        |  |
| 55 cfm       | 1,3 m³/min | 23 Lbs                              | 10,43 kg | 19,291"       | 490 mm | 16,338                  | 415 mm | 12,204                 | 310 mm |        |  |

### STANDARD FEED SCREW



Machine comes standard with 50 grooves per inch feed screw and nut. Optional feed screw/ nut are available with 68 and 101 grooves per inch.

### CONVENIENT SCALE



Convenient and easy to read gauge in metric and imperial scale allowing adjustment of the working range before mounting on the flange.

**BASIC FEATURES**

Single line gramophone groove  
(50 grooves per 1 inch)



Graduation of the tool setting to  
the desired depth of cut.



Handy depth feed  
locking system to  
prevent accidental  
movement of the  
handle during flange  
processing.



Hand guard to protect against accidental  
impact of the rotating head.

**TOOL HOLDERS RANGES**

MMFM is a low clearance flange facing machine. To achieve this multiple tool holders are required to cover full range, below table specifies machining range of each holder.

**TOOLING CHART**

| HOLDER     | INSERT | SCREW   | TORX |
|------------|--------|---------|------|
| MMFM-12520 | CI7    | MHS-2,7 | TX-8 |
| MMFM-85210 | CI7    | MHS-2,7 | TX-8 |
| MMFM-37160 | CI7    | MHS-2,7 | TX-8 |

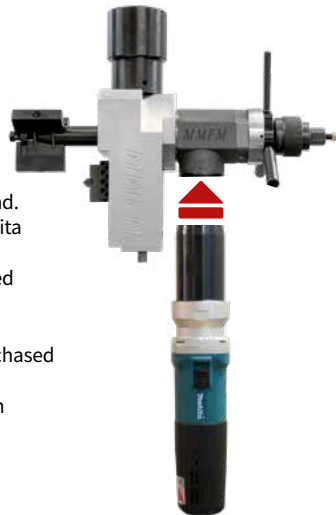
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320

|                                                                                     |             |                              |
|-------------------------------------------------------------------------------------|-------------|------------------------------|
|  | MMFM-125250 | 125 - 250 mm (4.92" - 9.84") |
|  | MMFM-85210  | 85 - 250 mm (3.35" - 8.27")  |
|  | MMFM-37160  | 37 - 160 mm (1.45" - 6.3")   |

**MMFM-E**

MMFM-E is electric version of MMFM. A standard machine covers the same flange sizes and comes with the same cutting head. The electric motor, made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time. Also available with battery driven motor!

Free Speed ..... 115 RPM  
Power ..... 750 W  
Torque ..... 360 Nm (266 Ft.Lbs)

**BATTERY OPTION**

The machine is also available with a portable electric drive 18 Volt 5.2 Ah 93.6 Wh Li-Ion battery. The machine can operate up to 15-20 minutes on one battery. Machining itself of one flange takes about 3-4 minutes of motor operation, so the operating time on one battery may suffice on 3-4 flanges. It is possible to have many charged batteries. Comfortable and easy to use in any place where compressed air and electricity is not available or even impossible to use as for example oil refinery.



## NBFF – Narrow Body Flange Facer

\*Patent pending

NBFF – the flange facing machine with a slim line gantry profile for mounting in tight spaces. An operator can mount NBFF tool on-site within demanding conditions such as flanges close to walls or pipe racks.

The unique design of NBFF allows the operator to mount the machine and perform a repair in locations that popular, standard equipment could not fit. The machine conforms to all the necessary standards and is extremely easy to use. Light and robust to quickly mount and repair damaged faces on flanges. NBFF can maximize production and uptime in all flange management jobs.

### SUPER NARROW BODY

Thanks to unique, a true narrow design NBFF tool is fully usable within demanding conditions such as flanges close to walls or pipe racks.



| MODEL    | FACING RANGE | CLAMPING RANGE | MAX SWING DIAMETER | TOOL POST TRAVEL | FEED RATES      | FREE SPEED | POWER   |        |             |           |
|----------|--------------|----------------|--------------------|------------------|-----------------|------------|---------|--------|-------------|-----------|
| NBFF-115 | 0 – 125 mm   | 89 - 170 mm    | 125 mm             | 62,5 mm          | See table below | 100 Rpm    | 1,3 Hp  |        |             |           |
|          | 0 - 4,92"    | 3,5 – 6,6"     | 4,92"              | 2,45"            |                 |            | 0,97 kW |        |             |           |
|          | AIR USE      |                | WIDTH              |                  | HEIGHT          |            | LENGTH  |        | BODY WEIGHT |           |
|          | 55 cfm       | 1,3 m³/min     | 65/100 mm          | 2,55"/3,93"      | 460 mm          | 18,11"     | 260 mm  | 10,23" | 25 kg       | 55,11 Lbs |

| MODEL    | FACING RANGE | CLAMPING RANGE | MAX SWING DIAMETER | TOOL POST TRAVEL | FEED RATES      | FREE SPEED | POWER  |        |             |           |
|----------|--------------|----------------|--------------------|------------------|-----------------|------------|--------|--------|-------------|-----------|
| NBFF-160 | 0 - 185 mm   | 89 - 280 mm    | 185 mm             | 92,5 mm          | See table below | 115 Rpm    | 2,2 Hp |        |             |           |
|          | 0 - 7,27"    | 3,5 - 11"      | 7,27"              | 3,6"             |                 |            | 1,6 kW |        |             |           |
|          | AIR USE      |                | WIDTH              |                  | HEIGHT          |            | LENGTH |        | BODY WEIGHT |           |
|          | 75 cfm       | 2,2 m³/min     | 70/100 mm          | 2,75"/3,93"      | 510 mm          | 20,07"     | 340 mm | 13,38" | 27 kg       | 59,52 Lbs |

| MODEL    | FACING RANGE | CLAMPING RANGE | MAX SWING DIAMETER | TOOL POST TRAVEL | FEED RATES      | FREE SPEED | POWER  |       |             |           |
|----------|--------------|----------------|--------------------|------------------|-----------------|------------|--------|-------|-------------|-----------|
| NBFF-300 | 0 - 310 mm   | 108 - 356 mm   | 310 mm             | 155 mm           | See table below | 85 Rpm     | 2,2 Hp |       |             |           |
|          | 0 - 12,2"    | 4,25 - 14"     | 12,2"              | 6,1"             |                 |            | 1,6 kW |       |             |           |
|          | AIR USE      |                | WIDTH              |                  | HEIGHT          |            | LENGTH |       | BODY WEIGHT |           |
|          | 75 cfm       | 2,2 m³/min     | 70/100 mm          | 2,75"/3,93"      | 510 mm          | 20,07"     | 470 mm | 18,50 | 32 kg       | 70,54 Lbs |

### CHOICE OF THREE

All versions of NBFF deliver the same advantage over standard flange facers: despite working size all are narrow and fit perfectly in tight spaces.



### FEED RATES

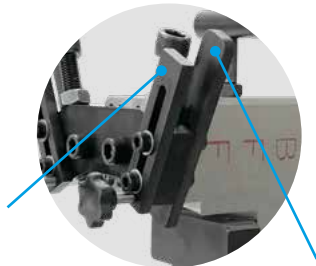
| Feed rates pitch mm |      |    |      |
|---------------------|------|----|------|
| 0,5                 | 0,75 | 1* | 1,25 |
| Grooves per inch    |      |    |      |
| 104                 | 69   | 52 | 41   |

\* standard feed screw supplied with machine



**STANDARD LOCKING SYSTEM**

The standard locking system consists of two jaws. One of them is a stabilizing jaw with two adjustable screws to fit the outer diameter of the flange. The second jaw has three clamping screws. Both jaws are equipped with pair top pads for levelling on the sealing surface of the flange. Pads at the bottom, are for tension the machine to the flange surface. Pads help to fix the machine in any position and protect it from falling out of the flange in case of a collision.



Pads at the bottom, are for tension the machine to the flange surface and protect it from falling out of the flange in case of a collision.

Top pads are for levelling on the sealing surface of the flange.

**REAL LIFE EXAMPLE**

Example of really tight flange – NBFF is the only tool suitable here.

**FLANGE2FLANGE LOCKING OPTION**

Additional, special flange type locking system is made to suit the application more. NBFF machine is still mounted on the flange outside diameter, but the locking system is equipped with additional studs to be mounted in the flange holes to provide easy operation and perfect centring.

**TOOLING CHART**

| HOLDER   | INSERT | SCREW   | TORX |
|----------|--------|---------|------|
| NBFF-C17 | C17    | MHS-2,7 | TX-8 |

**NBFF IN ACTION****NBFF-E**

NBFF-E is electric version of NBFF. A standard machine covers the same flange sizes and comes with the same cutting head. The electric motor, made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time.

Free Speed ... 115 RPM  
Power..... 750 W  
Torque ..... 360 Nm (266 Ft.Lbs)

**BATTERY OPTION**

The machine is also available with a portable electric drive 18 Volt 5.2 Ah 93.6 Wh Li-Ion battery. The machine can operate up to 15-20 minutes on one battery. Machining itself of one flange takes about 3-4 minutes of motor operation, so the operating time on one battery may suffice on 3-4 flanges. It is possible to have many charged batteries. Comfortable and easy to use in any place where compressed air and electricity is not available or even impossible to use as for example oil refinery.



## IMFM-24/30 – Internal Mounted Flange Facing Machine

Internally mounted, lightweight, super rigid yet super heavy-duty machine tool. Ideal for machining all types of flange faces, seal grooves, weld preparations and counterbores.

\* Heavy-duty steel/aluminium all design.

\* Heavy-duty cast steel body and steel body plate.

\* Solid construction and high rigidity of the machine concerning the dimension and weight.

\* Continuous groove facing feed, 2-speed gearbox.

\* Swivel tool post for grooves, RTJ flanges, and bevels.

\* Quick-set independent bases for improved on-site operation.

\* Fast mounted arm with spindle for the very convenient measure of levelling and centring.

\* Super quick machine fixing to the locking base.

\* Special jaw set for easy and quick levelling and centring machine; jaws are interchangeable with all IMFM series Flange Facers.

\* CE certificate.



| STANDARD WORKING RANGE |            |                |          | FACING FEEDS   |                |                     |          |                       | FREE SPEED  | POWER          |           |
|------------------------|------------|----------------|----------|----------------|----------------|---------------------|----------|-----------------------|-------------|----------------|-----------|
| FACING RANGE           |            | LOCKING RANGE  |          | 1,75 MM SCREW  | 1,25 MM SCREW  | 1,00 MM SCREW       |          |                       |             |                |           |
| 145 – 762 mm           |            | 140 - 670 mm   |          | 0,2 / 0,8 mm   | 0,14 / 0,57 mm | 0,15 / 0,45 mm      |          |                       | 20 - 42 Rpm | 2,2 Hp         |           |
| 5" - 30"               |            | 5-1/2" - 26"   |          | 0,008 / 0,031" | 0,006 / 0,022" | 0,004 / 0,018"      |          |                       |             | 1,6 kW         |           |
| AIR USE                |            | MACHINE WEIGHT |          | DRIVE WEIGHT   |                | MAX BIG BASE WEIGHT |          | MAX SMALL BASE WEIGHT |             | COUNTER WEIGHT |           |
| 75 cfm                 | 2,2 m³/min | 26 kg          | 57,4 Lbs | 5 kg           | 11,0 Lbs       | 18 kg               | 39,7 Lbs | 4 kg                  | 8,82 Lbs    | 6 kg           | 13,23 Lbs |

|  | SHIPPING BOX    |                 | SHIPPING WEIGHT |         |
|-------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|---------|
|                                                                                     | 75 x 55 x 35 cm | 30" x 22" x 14" | 80 kg           | 177 Lbs |

### TOOLING CHART

| HOLDER     | INSERT     | SCREW | TORX  |
|------------|------------|-------|-------|
| IMFM24-V11 | CIV-11-3-1 | MHS-4 | TX-15 |

### COMPLETE PACKAGE

As standard IMFM is supplied with the complete toolkit, including cutting tool and inserts, an air filter with lubricator and hose connection, required jaws to cover the full range, user manual and storage shipping box. For IMFM, besides standard pneumatic 2,2 Hp drive, we offer a wide choice of pneumatic and electric drives.

### UNIQUE RIGIDITY

High rigidity of the machine in relation to the dimension and weight by applying Heavy-duty cast steel body and steel body plate.



### WIDE RANGE

Machine is equipped with 2 locking bases  
Big 250-700 mm  
Small 140 – 290 mm





**SWIVEL TOOL**

Swivel tool post for grooves, RTJ flanges, and bevels

**CONVENIENT JAWS**

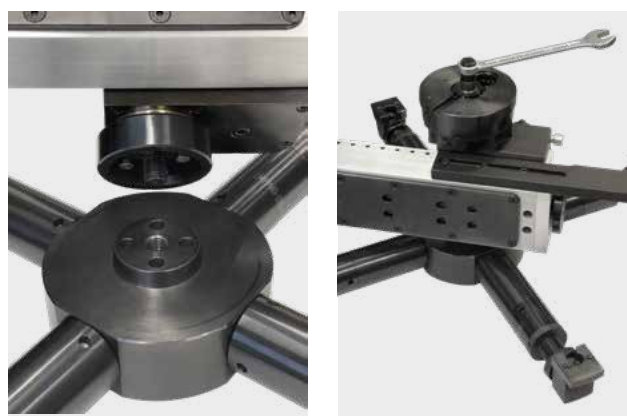
Special jaw set for easy and quick levelling and centring machine. A special mechanism allows convenient adjustment of the mounting plane relative to the pipe. Jaws are interchangeable with all IMFM series Flange Facers.

**PRECISE MOUNTING**

Fast mounted arm with spindle for the very convenient measure of levelling and cantering

**FAST FIXING**

Super fast machine fixing with locking base by means of a taper in the locking base and taper seat in the spindle fastened with a central locking screw

**RIGHT ANGLE HEAD**

This optional add-on allows for fastening drive in alternate positions. The useful option in tight spaces.

**ELECTRIC DRIVE**

As an option, we can deliver the electric motor, made by Makita. With 3 stage planetary gear box made by KRAIS, the drive has variable speed control and produce enormous torque. Is interchangeable with pneumatic drive and can be purchased separately at any time. Also available with battery driven motor!



Free Speed ..... 115 RPM  
Power ..... 750 W  
Torque ..... 360 Nm (266 Ft.Lbs)

## IMFM-24 Internal Mounted FlangeMill

Internally mounted, lightweight and durable machine tool. Ideal for machining all types of flange faces, seal grooves, weld preparations and counterbores.

### Features:

- 】 Heavy-duty steel/aluminium design
- 】 High rigidity of the machine in relation to the dimension and weight
- 】 Solid but lightweight construction
- 】 Continuous groove facing feeds
- 】 Swivel tool post for grooves, RTJ flanges and bevels
- 】 Easy levelling and centering system with built-in fast centre feature
- 】 Quick clamping with solid, 50 mm self-centering steel shaft
- 】 CE certificate

As standard IMFM is supplied with the complete toolkit, including cutting tool and inserts, air filter with lubricator and hose connection, required jaws to cover the full range, paper manual and storage/shipping box.

Beside standard pneumatic 2,2 Hp drive, for IMFM we offer a wide choice of pneumatic and electric drives.



| STANDARD WORKING RANGE |               | FACING FEEDS                                      |                |                | FREE SPEED  | POWER       |       |
|------------------------|---------------|---------------------------------------------------|----------------|----------------|-------------|-------------|-------|
| FACING RANGE           | LOCKING RANGE | 1,75 MM SCREW                                     | 1,25 MM SCREW  | 1,00 MM SCREW  |             |             |       |
| 63 – 610 mm            | 57 - 508 mm   | 0,2 / 0,8 mm                                      | 0,14 / 0,57 mm | 0,15 / 0,45 mm | 20 - 42 Rpm | 2,2 Hp      |       |
| 2,50 - 24,00"          | 2,25 - 20,00" | 0,008 / 0,031"                                    | 0,006 / 0,022" | 0,004 / 0,018" |             | 1,6 kW      |       |
| AIR USE                |               | BODY WIDTH                                        |                | BODY HEIGHT    |             | BODY WEIGHT |       |
| 75 cfm                 | 2,2 m³/min    | Depends on motor configuration, see drawing below |                |                |             | 99 Lbs      | 45 kg |

### LEVELLING AND CENTERING



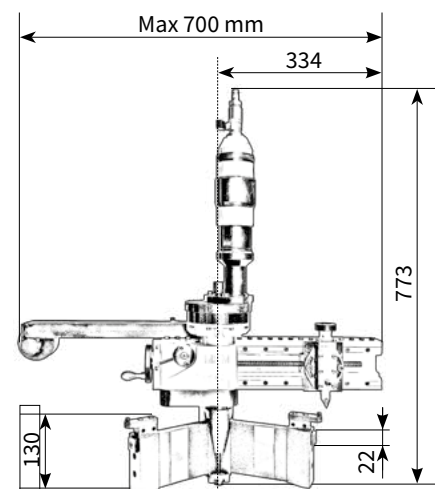
Special jaw set for easy and quick levelling and centering machines on the flange

### TOOLING CHART

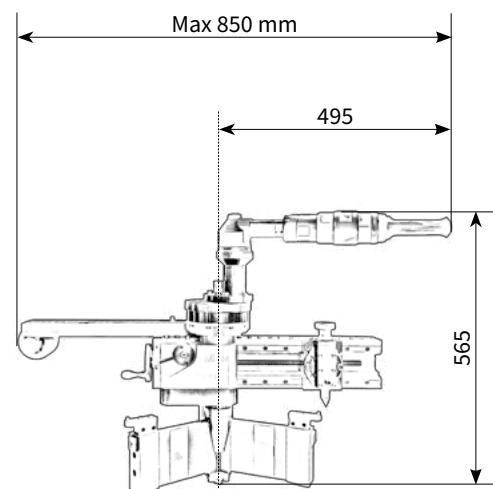
| HOLDER     | INSERT     | SCREW | TORX  |
|------------|------------|-------|-------|
| IMFM24-V11 | CIV-11-3-1 | MHS-4 | TX-15 |

### DIMENSIONS

#### INLINE VERSION



#### RIGHTANGLE VERSION



## IMFM-40 Internal Mounted FlangeMill

Internally mounted, lightweight and durable machine tool. Ideal for machining all types of flange faces, seal grooves, weld preparations and counterbores.

- 】 Heavy-duty steel/aluminium design with solid but lightweight construction
- 】 High rigidity of the machine in relation to the dimension and weight
- 】 Continuous groove facing feeds
- 】 Swivel tool post for grooves, RTJ flanges and bevels
- 】 Easy levelling and centering system with built-in self-centre feature
- 】 Quick clamping with solid, 50 mm self-centering steel shaft
- 】 CE certificate

As standard IMFM is supplied with the complete toolkit, including cutting tool and inserts, air filter with lubricator and hose connection, required jaws to cover the full range, paper manual and storage/shipping box. Beside standard pneumatic 2,2 Hp drive, for IMFM we offer a wide choice of pneumatic and electric drives.



| STANDARD WORKING RANGE |            |                |     | MAX SWING<br>DIAMETER | TOOL POST<br>TRAVEL | FEED RATES      | FREE<br>SPEED | POWER       |         |                 |         |
|------------------------|------------|----------------|-----|-----------------------|---------------------|-----------------|---------------|-------------|---------|-----------------|---------|
| FACING RANGE           |            | CLAMPING RANGE |     |                       |                     |                 |               |             |         |                 |         |
| 152 – 1016 mm          |            | 120 - 820 mm   |     | 1220 mm               | 102 mm              | See table       | 0 - 24 Rpm    | 2,2 Hp      |         |                 |         |
| 6 - 39,70"             |            | 4,72 - 32,20"  |     | 32"                   | 4"                  |                 |               | 1,6 kW      |         |                 |         |
| AIR USE                |            | SHIPPING WIDTH |     | SHIPPING HEIGHT       |                     | SHIPPING LENGTH |               | BODY WEIGHT |         | SHIPPING WEIGHT |         |
| 75 cfm                 | 2,2 m³/min | 600 mm         | 24" | 725 mm                | 28,5"               | 845 mm          | 34"           | 145 kg      | 319 Lbs | 210 kg          | 462 Lbs |

### FACING FEED RATES (3 OFF IN/OUT)

| Direction | Gear | mm/rev | inch/rev | grooves per cm | grooves per inch |
|-----------|------|--------|----------|----------------|------------------|
| Out       | 1    | 0,139  | 0,005    | 72             | 183              |
|           | 2    | 0,217  | 0,009    | 46             | 117              |
|           | 3    | 0,528  | 0,021    | 19             | 48               |
| In        | 1    | 0,165  | 0,006    | 61             | 154              |
|           | 2    | 0,258  | 0,010    | 39             | 98               |
|           | 3    | 0,628  | 0,025    | 16             | 40               |

### BORING FEED RATES (3 OFF UP/DOWN)

| mm/rev             | inches/rev            |
|--------------------|-----------------------|
| 0.05 – 0.10 – 0.20 | 0.002 – 0.004 – 0.008 |

### TOOLING CHART

| HOLDER      | INSERT     | SCREW | TORX  |
|-------------|------------|-------|-------|
| IMFM40F-V11 | CIV-11-3-1 | MHS-4 | TX-15 |
| IMFM40P-V11 | CIV-11-3-1 | MHS-4 | TX-15 |
| IMFM40L-V11 | CIV-11-3-1 | MHS-4 | TX-15 |

### MACHINE IN ACTION



## IMFM-40 and IMFM-60 features

### LEVELLING AND CENTERING



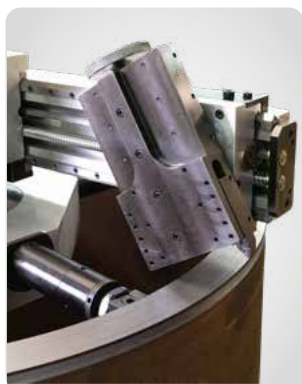
Both machines are equipped with special jaw set for easy, quick levelling and centering. A special mechanism allows convenient adjustment of the mounting plane relative to the pipe. Built-in self-centering locking system significantly facilitates the coarse setting of the machine.

### ELECTRIC DRIVE



As an alternative, we offer an electric drive for IMFM40&60. The motor provides similar parameters to the pneumatic one.

### SWIVEL TOOL AS A STANDARD



Standard configuration of IMFM is equipped with swivel tool post for grooves, RTJ flanges and bevels

### TWO LOCKING PLATES



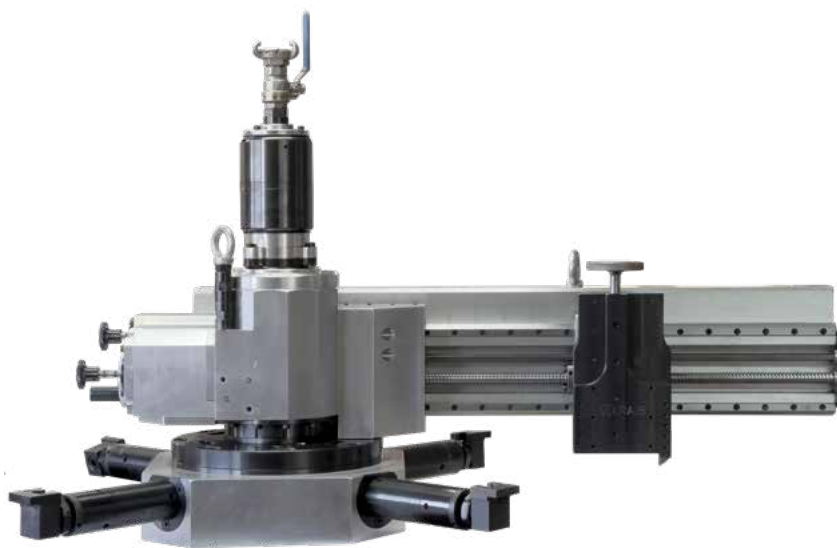
The offer includes two sizes of locking system. Thanks to the matching dimensions of the rigid body, stable mounting and smooth machining of face surfaces and flanges in all pipe sizes is possible.

## IMFM-60 Internal Mounted FlangeMill

Internally mounted, lightweight and durable machine tool. Ideal for machining all types of flange faces, seal grooves, weld preparations and counterbores.

- 】 Heavy-duty steel/aluminium design with solid but lightweight construction
- 】 High rigidity of the machine in relation to the dimension and weight
- 】 Continuous groove facing feeds
- 】 Swivel tool post for grooves, RTJ flanges and bevels
- 】 Easy levelling and centering system with built-in self-centre feature
- 】 Quick clamping with solid, 50 mm self-centering steel shaft
- 】 CE certificate

As standard IMFM is supplied with the complete toolkit, including cutting tool and inserts, air filter with lubricator and hose connection, required jaws to cover the full range, paper manual and storage/shipping box. Beside pneumatic 4,0 Hp drive, for IMFM we offer a wide choice of pneumatic and electric drives.



| STANDARD WORKING RANGE |             |                |     | MAX SWING<br>DIAMETER | TOOL POST<br>TRAVEL | FEED RATES      | FREE<br>SPEED | POWER       |         |                 |          |
|------------------------|-------------|----------------|-----|-----------------------|---------------------|-----------------|---------------|-------------|---------|-----------------|----------|
| FACING RANGE           |             | CLAMPING RANGE |     |                       |                     |                 |               |             |         |                 |          |
| 305 – 1525 mm          |             | 290 - 1400 mm  |     | 765 mm                | 102 mm              | See table       | 0 - 22 Rpm    | 4,0 Hp      |         |                 |          |
| 12" - 60"              |             | 11,4" - 55"    |     | 30,1"                 | 4"                  |                 |               | 3,0 kW      |         |                 |          |
| AIR USE                |             | SHIPPING WIDTH |     | SHIPPING HEIGHT       |                     | SHIPPING LENGTH |               | BODY WEIGHT |         | SHIPPING WEIGHT |          |
| 98 cfm                 | 2,69 m³/min | 820 mm         | 32" | 830 mm                | 33"                 | 1230 mm         | 48"           | 412 kg      | 906 Lbs | 499 kg          | 1010 Lbs |

### FACING FEED RATES (3 OFF IN/OUT)

| Direction | Gear | mm/rev | inch/rev | grooves per cm | grooves per inch |
|-----------|------|--------|----------|----------------|------------------|
| Out       | 1    | 0,130  | 0,005    | 76             | 195              |
|           | 2    | 0,203  | 0,008    | 49             | 125              |
|           | 3    | 0,494  | 0,019    | 20             | 51               |
| In        | 1    | 0,155  | 0,006    | 65             | 164              |
|           | 2    | 0,241  | 0,009    | 41             | 105              |
|           | 3    | 0,588  | 0,023    | 17             | 43               |

### BORING FEED RATES (3 OFF UP/DOWN)

| mm/rev             | inches/rev            |
|--------------------|-----------------------|
| 0.05 – 0.10 – 0.20 | 0.002 – 0.004 – 0.008 |

### TOOLING CHART

| HOLDER      | INSERT     | SCREW | TORX  |
|-------------|------------|-------|-------|
| IMFM60F-V11 | CIV-11-3-1 | MHS-4 | TX-15 |
| IMFM60P-V11 | CIV-11-3-1 | MHS-4 | TX-15 |
| IMFM60L-V11 | CIV-11-3-1 | MHS-4 | TX-15 |

### MACHINE FACING 60" FLANGE RING





## SFFM Flange Facer

SFFM series Flange Facing Machines are mounted on the outer diameter of the flange. The precise, synchronized radial and axial feed mechanism allows for a high quality machining, resulting in one continuous groove producing a true gramophone finish.

SFFM Flange Facing Machines are suitable for various flange types:

- 】 Flat Face
- 】 Raised Face
- 】 Ring Type Joints (RTJ)
- 】 Tongue & Groove
- 】 Lens Ring
- 】 Grayloc® (hub profile)
- 】 Compact Flanges

SFFM Flange Facers are suitable for the oil and gas industry, power plants, chemical plants, oil rigs and many others. They are prepared to implement applications complying with ASME standards.



| MODEL     | WORKING RANGE |        |         | DIMENSIONS |          |          |             |        | WEIGHT | JAWS |
|-----------|---------------|--------|---------|------------|----------|----------|-------------|--------|--------|------|
|           | UNIT          | MIN OD | MAX OD  | UNIT       | FRAME OD | FRAME ID | FRAME WIDTH | HEIGHT |        |      |
| SFFM-0410 | NPS           | 2,00   | 10,00   | [inch]     | 16,22    | 11,24    | 2,50        | 17,3"  | 57     | 4    |
|           | Metric        | 50,00  | 250,00  | [mm]       | 412,00   | 285,40   | 63,50       | 440    |        |      |
| SFFM-1016 | NPS           | 2,00   | 15,00   | [inch]     | 21,46    | 16,48    | 2,50        | 17,3"  | 68     | 6    |
|           | Metric        | 50,00  | 370,00  | [mm]       | 545,00   | 418,70   | 63,50       | 440    |        |      |
| SFFM-1624 | NPS           | 4,00   | 23,00   | [inch]     | 29,49    | 24,41    | 2,50        | 17,3"  | 103    | 10   |
|           | Metric        | 100,00 | 580,00  | [mm]       | 749,00   | 619,90   | 63,50       | 440    |        |      |
| SFFM-2836 | NPS           | 8,00   | 35,00   | [inch]     | 42,15    | 37,00    | 2,76        | 17,3"  | 180    | 10   |
|           | Metric        | 200,00 | 890,00  | [mm]       | 1070,60  | 939,80   | 65,40       | 440    |        |      |
| SFFM-4048 | NPS           | 10,00  | 47,00   | [inch]     | 54,40    | 49,53    | 2,76        | 17,3"  | 260    | 12   |
|           | Metric        | 250,00 | 1200,00 | [mm]       | 1381,80  | 1251,00  | 65,40       | 440    |        |      |

### FEATURES OF MACHINE



#### CUTTING GROOVES

The machine offers a simple way of execution of the RTJ grooves by using the single point swivel head or formed tools



#### GRAMOPHONE GROOVE

The design of the feed attachment assures the automatic and variable feed rate on radial axis producing proper gramophone groove.



#### STRONG DRIVES

Machine can be driven with a wide range of motors, pneumatic, hydraulic and electrical, including servo drives - all made by KRAIS.



#### AVAILABLE AS MODULE

For owners of our regular SFSF machines we offer special module, allowing to convert the standard SFSF into regular flange facing module

### TOOLING CHART

| HOLDER   | INSERT     | SCREW | TORX  |
|----------|------------|-------|-------|
| SFFM-V11 | CIV-11-3-1 | MHS-4 | TX-15 |



## SFFM Module

SFFM Module can be mounted on all our SFSF clamshells and convert the regular Clamshell into OD mount flange facing machine. SFSF clamshell combined with the module widens the scope of its application and still providing the same functionality as the machine SFFM.

Purchasing the SFFM Module allows to save a lot of money by avoiding the purchase of two separate machine tools. Time needed for the machine changeover is only 20 minutes.



| SFSF MODEL | WORKING RANGE WITH MODULE |        |         | DIMENSIONS |          |          |             |             | WEIGHT* | JAWS |
|------------|---------------------------|--------|---------|------------|----------|----------|-------------|-------------|---------|------|
|            | UNIT                      | MIN OD | MAX OD  | UNIT.      | FRAME OD | FRAME ID | FRAME WIDTH | BOTH HEIGHT |         |      |
| SFSF-0410  | NPS                       | 0,80   | 8,80    | [inch]     | 16,22    | 11,24    | 2,50        | 16,25       | 57,00   | 4    |
|            | Metric                    | 20,00  | 224,00  | [mm]       | 412,00   | 285,40   | 63,50       | 412,5       |         |      |
| SFSF-0612  | NPS                       | 1,60   | 10,50   | [inch]     | 18,15    | 13,24    | 2,50        | 16,25       | 59,00   | 4    |
|            | Metric                    | 40,00  | 270,00  | [mm]       | 461,00   | 336,20   | 63,50       | 412,5       |         |      |
| SFSF-0814  | NPS                       | 1,60   | 12,00   | [inch]     | 19,49    | 14,48    | 2,50        | 16,25       | 61,00   | 6    |
|            | Metric                    | 40,00  | 305,00  | [mm]       | 495,00   | 367,90   | 63,50       | 412,5       |         |      |
| SFSF-1016  | NPS                       | 1,60   | 14,00   | [inch]     | 21,46    | 16,48    | 2,50        | 16,29       | 68,00   | 6    |
|            | Metric                    | 40,00  | 356,00  | [mm]       | 545,00   | 418,70   | 63,50       | 413,5       |         |      |
| SFSF-1218  | NPS                       | 2,00   | 16,80   | [inch]     | 23,50    | 18,48    | 2,50        | 16,29       | 83,00   | 6    |
|            | Metric                    | 50,00  | 427,00  | [mm]       | 597,00   | 469,50   | 63,50       | 413,5       |         |      |
| SFSF-1420  | NPS                       | 2,00   | 20,00   | [inch]     | 25,47    | 20,85    | 2,50        | 16,29       | 90,00   | 6    |
|            | Metric                    | 50,00  | 508,00  | [mm]       | 647,00   | 520,30   | 63,50       | 413,5       |         |      |
| SFSF-1624  | NPS                       | 2,00   | 22,70   | [inch]     | 29,49    | 24,41    | 2,50        | 16,29       | 103,00  | 10   |
|            | Metric                    | 50,00  | 578,00  | [mm]       | 749,00   | 619,90   | 63,50       | 413,5       |         |      |
| SFSF-2028  | NPS                       | 4,00   | 26,80   | [inch]     | 33,90    | 28,75    | 2,76        | 17,48       | 145,00  | 10   |
|            | Metric                    | 100,00 | 681,00  | [mm]       | 861,10   | 730,30   | 65,40       | 443,7       |         |      |
| SFSF-2432  | NPS                       | 8,00   | 30,70   | [inch]     | 38,15    | 33,00    | 2,76        | 17,48       | 158,00  | 10   |
|            | Metric                    | 200,00 | 782,00  | [mm]       | 969,00   | 838,20   | 65,40       | 443,7       |         |      |
| SFSF-2836  | NPS                       | 8,00   | 34,80   | [inch]     | 42,15    | 37,00    | 2,76        | 17,48       | 180,00  | 10   |
|            | Metric                    | 200,00 | 884,00  | [mm]       | 1070,60  | 939,80   | 65,40       | 443,7       |         |      |
| SFSF-3442  | NPS                       | 10,00  | 40,70   | [inch]     | 48,15    | 43,00    | 2,76        | 17,48       | 202,00  | 10   |
|            | Metric                    | 250,00 | 1036,00 | [mm]       | 1223,00  | 1092,20  | 65,40       | 443,7       |         |      |
| SFSF-4048  | NPS                       | 10,00  | 46,80   | [inch]     | 54,40    | 49,53    | 2,76        | 17,48       | 260,00  | 12   |
|            | Metric                    | 250,00 | 1189,00 | [mm]       | 1381,80  | 1251,00  | 65,40       | 443,7       |         |      |

\*depends on machine configuration

### SURFACE FINISH



The Modul is equipped as standard with feed gearbox in order to generate both, fine or coarse surface finish by simple switch on the gear box.

### TOOLING CHART

| HOLDER   | INSERT     | SCREW | TORX  |
|----------|------------|-------|-------|
| SFFM-V11 | CIV-11-3-1 | MHS-4 | TX-15 |

## SlimFit Split Frame Clamshells



KRAIS SFSF portable SLIM FIT Clamshell series are designed for strength and easy handling. Each of the machine from the SFSF series have a height of 3,248" (82,5 mm) up 24" and 4,47" (113,7 mm) up to 48" and a width of 2.5" (63,5 mm) resulting narrow body low profile design that makes the SFSF series the ideal choice in tight spaces .

- 】 15 Standard models cover a range from 1." (33,4 mm) to 48" (1219 mm) OD
- 】 Pneumatic, hydraulic and electric drive options are available .
- 】 Motor mount on keyways to prevent the motor to twist and potential damage on gear ring .
- 】 Several different drive options are available to best position the motor for a specific machining application
- 】 All pneumatic and electric motors are design and Manufactured by KRAIS after 20 years experience of manufacturing pneumatic drives for boiler and heat exchangers tube rolling motors.
- 】 SFSF series clamshells can be equipped a wide range of accessories to increase performance and expand capabilities.
- 】 Adjustable locator pads minimize the number of locators.



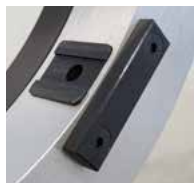
### FEATURES



Choice of 3 positions with different travel length tool holder with heat treated slights.



Lever type tripper module for operator safety.



Steel plates on the back part for machine squaring on the pipe .

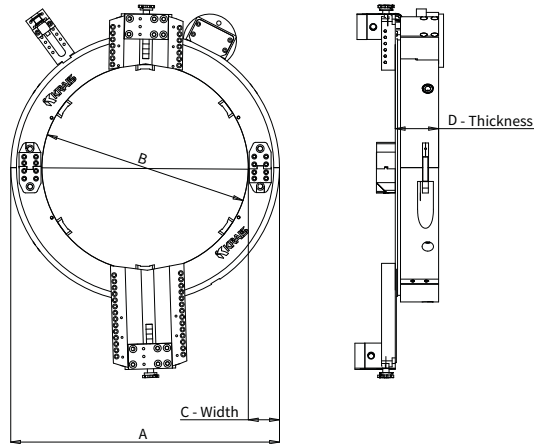
### AIR TREATMENT MODULE



Optional module (ATM) provides air treatment capability for KRAIS pneumatic powered split frames.

General technical machine information to enable to make the right choice to suit your application.

For our SFSF clamshells we offer a wide range of pneumatic , electric made 100% in house and hydraulic choose by our engineers or upon customer preference . Such a big range and variety of parameters allow us to select motor to achieve to best and most post suitable cutting speed to machined pipe material and diameter.



| MODEL     | PIPE CAPACITY |         |         | DIMENSIONS |         |         |       |        |                |                |                | LOCATOR PADS | GEAR RING RATIO |
|-----------|---------------|---------|---------|------------|---------|---------|-------|--------|----------------|----------------|----------------|--------------|-----------------|
|           | UNIT          | MIN OD  | MAX OD  | UNIT       | A       | B       | C     | D      | 1" SLIDE SWING | 3" SLIDE SWING | 6" SLIDE SWING |              |                 |
| SFSF-0204 | NPS           | 2,000   | 4,000   | [inch]     | 9,685   | 4,736   | 2,500 | 3,248  | 12,165         | 16,165         | -              | 4            | 4,6:1           |
|           | Metric        | 60,32   | 127,00  | [mm]       | 246,00  | 120,30  | 63,50 | 82,50  | 309,00         | 410,60         | -              |              |                 |
| SFSF-0256 | NPS           | 2,500   | 6,000   | [inch]     | 11,831  | 6,858   | 2,500 | 3,248  | 14,339         | 18,339         | -              | 4            | 5,7:1           |
|           | Metric        | 73,02   | 168,27  | [mm]       | 300,50  | 174,20  | 63,50 | 82,50  | 364,20         | 465,80         | -              |              |                 |
| SFSF-0358 | NPS           | 3,500   | 8,000   | [inch]     | 13,819  | 8,846   | 2,500 | 3,248  | 16,339         | 20,339         | 26,339         | 4            | 6,7:1           |
|           | Metric        | 101,60  | 219,07  | [mm]       | 351,00  | 224,70  | 63,50 | 82,50  | 415,00         | 516,60         | 669,00         |              |                 |
| SFSF-0410 | NPS           | 4,500   | 10,000  | [inch]     | 16,220  | 11,236  | 2,500 | 3,248  | 18,756         | 22,756         | 28,756         | 4            | 7,8:1           |
|           | Metric        | 127,00  | 273,05  | [mm]       | 412,00  | 285,40  | 63,50 | 82,50  | 476,40         | 578,00         | 730,40         |              |                 |
| SFSF-0612 | NPS           | 6,000   | 12,000  | [inch]     | 18,150  | 13,236  | 2,500 | 3,248  | 20,843         | 24,843         | 30,843         | 4            | 8,9:1           |
|           | Metric        | 168,27  | 323,85  | [mm]       | 461,00  | 336,20  | 63,50 | 82,50  | 529,40         | 631,00         | 783,40         |              |                 |
| SFSF-0814 | NPS           | 8,000   | 14,000  | [inch]     | 19,488  | 14,484  | 2,500 | 3,248  | 22,063         | 26,063         | 32,063         | 6            | 9,5:1           |
|           | Metric        | 219,07  | 355,60  | [mm]       | 495,00  | 367,90  | 63,50 | 82,50  | 560,40         | 662,00         | 814,40         |              |                 |
| SFSF-1016 | NPS           | 10,000  | 16,000  | [inch]     | 21,457  | 16,484  | 2,500 | 3,287  | 24,102         | 28,102         | 34,102         | 6            | 10,6:1          |
|           | Metric        | 273,05  | 406,40  | [mm]       | 545,00  | 418,70  | 63,50 | 83,50  | 612,20         | 713,80         | 866,20         |              |                 |
| SFSF-1218 | NPS           | 12,000  | 18,000  | [inch]     | 23,504  | 18,484  | 2,500 | 3,287  | 26,224         | 30,224         | 36,224         | 6            | 11,6:1          |
|           | Metric        | 323,85  | 457,20  | [mm]       | 597,00  | 469,50  | 63,50 | 83,50  | 666,10         | 767,70         | 920,10         |              |                 |
| SFSF-1420 | NPS           | 14,000  | 20,000  | [inch]     | 25,472  | 20,848  | 2,500 | 3,287  | 28,150         | 32,150         | 38,150         | 6            | 12,6:1          |
|           | Metric        | 355,60  | 508,00  | [mm]       | 647,00  | 520,30  | 63,50 | 83,50  | 715,00         | 816,60         | 969,00         |              |                 |
| SFSF-1624 | NPS           | 16,000  | 24,000  | [inch]     | 29,488  | 24,406  | 2,500 | 3,287  | 32,268         | 36,268         | 42,268         | 10           | 14,6:1          |
|           | Metric        | 406,40  | 609,60  | [mm]       | 749,00  | 619,90  | 63,50 | 83,50  | 819,60         | 921,20         | 1073,60        |              |                 |
| SFSF-2028 | NPS           | 20,000  | 28,000  | [inch]     | 33,900  | 28,750  | 2,757 | 4,476  | 36,516         | 40,516         | 46,516         | 10           | 16,9:1          |
|           | Metric        | 508,00  | 711,20  | [mm]       | 861,10  | 730,30  | 65,40 | 113,70 | 927,50         | 1029,10        | 1181,50        |              |                 |
| SFSF-2432 | NPS           | 24,000  | 32,000  | [inch]     | 38,150  | 33,000  | 2,757 | 4,476  | 40,787         | 44,787         | 50,787         | 10           | 19:1            |
|           | Metric        | 609,60  | 812,80  | [mm]       | 969,00  | 838,20  | 65,40 | 113,70 | 1036,00        | 1137,60        | 1290,00        |              |                 |
| SFSF-2836 | NPS           | 28,000  | 36,000  | [inch]     | 42,150  | 37,000  | 2,757 | 4,476  | 44,913         | 48,913         | 54,913         | 10           | 21:1            |
|           | Metric        | 711,20  | 914,40  | [mm]       | 1070,60 | 939,80  | 65,40 | 113,70 | 1140,80        | 1242,40        | 1394,80        |              |                 |
| SFSF-3442 | NPS           | 34,000  | 42,000  | [inch]     | 48,150  | 43,000  | 2,757 | 4,476  | 50,906         | 54,906         | 60,906         | 10           | 24,2:1          |
|           | Metric        | 863,60  | 1066,80 | [mm]       | 1223,00 | 1092,20 | 65,40 | 113,70 | 1293,00        | 1394,60        | 1547,00        |              |                 |
| SFSF-4048 | NPS           | 40,000  | 48,000  | [inch]     | 54,402  | 49,525  | 2,757 | 4,476  | 57,276         | 61,276         | 67,276         | 12           | 27,3:1          |
|           | Metric        | 1016,00 | 1219,20 | [mm]       | 1381,80 | 1251,00 | 65,40 | 113,70 | 1454,80        | 1556,40        | 1708,80        |              |                 |

## SFSF clamshells motors

### PNEUMATIC MOTORS

B50-100X



B50-xxx-RA



HM-xxx



K7x-LT-xxx



PDx48U



| MOTOR      | RIGHT-ANGLE | SPEED | POWER | TORQUE | AIR CONSUMPTION |     | AIR PRESSURE |     |
|------------|-------------|-------|-------|--------|-----------------|-----|--------------|-----|
|            |             | RPM   | HP    | NM     | LT/MIN          | CFM | BAR          | PSI |
| B50-100X   | -           | 200   | 1,3   | 70     | 1300            | 55  | 6,2          | 90  |
| B50-115-RA | YES         | 115   | 1,3   | 186    | 1300            | 55  | 6,2          | 90  |
| B50-210-RA | YES         | 210   | 1,3   | 102    | 1300            | 55  | 6,2          | 90  |
| B50-290-RA | YES         | 290   | 1,3   | 74     | 1300            | 55  | 6,2          | 90  |
| HM-198     | -           | 198   | 2,2   | 186    | 2200            | 75  | 6,2          | 90  |
| HM-252     | -           | 252   | 2,2   | 150    | 2200            | 75  | 6,2          | 90  |
| HM-379     | -           | 379   | 2,2   | 105    | 2200            | 75  | 6,2          | 90  |
| HM-498     | -           | 498   | 2,2   | 83     | 2200            | 75  | 6,2          | 90  |
| K72-LT-90  | YES         | 90    | 2,2   | 405    | 2200            | 75  | 6,2          | 90  |
| K73-LT-190 | YES         | 190   | 2,2   | 200    | 2200            | 75  | 6,2          | 90  |
| PD248U     | -           | 185   | 3,5   | 416    | 2800            | 95  | 6,2          | 90  |
| PD348U     | -           | 60    | 3,5   | 1250   | 2800            | 95  | 6,2          | 90  |

### HYDRAULIC MOTOR



| MOTOR   | SPEED | POWER | TORQUE | OIL PRESSURE |      | MIN. OIL FLOW RATE |     |
|---------|-------|-------|--------|--------------|------|--------------------|-----|
|         | RPM   | HP    | NM     | BAR          | PSI  | LT/MIN             | GPM |
| HTB-165 | 343   | 16,7  | 273    | 190          | 2750 | 57                 | 15  |

### ELECTRIC MOTORS



PDEC-3200



DUDE 2000



K90Exxx

| MOTOR             | REVERSIBLE | RIGHTANGLE | MOTOR SPEED        | POWER | TORQUE | VOLTAGE |
|-------------------|------------|------------|--------------------|-------|--------|---------|
|                   |            |            | RPM                | WATT  | OUT    | VOLT    |
| PDEC-3200/100     | -          | -          | 100                | 3200  | 800 Nm | 110/230 |
| PDEC-3200/145     | -          | -          | 145                | 3200  | 540 Nm | 110/230 |
| PDEC-3200/185     | -          | -          | 185                | 3200  | 420 Nm | 110/230 |
| DUDE-2000-4-speed | YES        | -          | 120, 210, 380, 650 | 2000  | 240 Nm | 110/230 |
| K90E90            | -          | YES        | 90                 | 1150  | 510 Nm | 110/230 |
| K90E190           | -          | YES        | 190                | 1150  | 260 Nm | 110/230 |
| K90E280           | -          | YES        | 280                | 1150  | 190 Nm | 110/230 |

### HIGH-END ELECTRIC SERVO DRIVE WITH CONTROL BOX (3 PHASE)



|                | POWER [WATT] | VOLTAGE [V] |
|----------------|--------------|-------------|
| Drive option 1 | 2300         | 390 – 440   |
| Drive option 2 | 4300         | 390 – 440   |

### RECOMMENDATIONS

Only proposal and subject to change upon customer requirement and application

### PNEUMATIC MOTORS

| UNIT  | MOTOR*    | POWER | WEIGHT |
|-------|-----------|-------|--------|
|       |           | HP    | KG     |
| SF-4  | B50-100X  | 1,3   | 11     |
| SF-6  | HM-252    | 2,2   | 17     |
| SF-8  | HM-252    | 2,2   | 20     |
| SF-10 | HM-252    | 2,2   | 27     |
| SF-12 | HM-252    | 2,2   | 23     |
| SF-14 | HM-198    | 2,2   | 28     |
| SF-16 | HM-198    | 2,2   | 32     |
| SF-18 | K72-LT-90 | 2,2   | 36     |
| SF-20 | K72-LT-90 | 2,2   | 39     |
| SF-24 | PD248U    | 3,5   | 52     |
| SF-28 | PD248U    | 3,5   | 95     |
| SF-32 | PD248U    | 3,5   | 107    |
| SF-36 | PD248U    | 3,5   | 118    |
| SF-42 | PD248U    | 3,5   | 137    |
| SF-48 | PD248U    | 3,5   | 153    |

### HYDRAULIC MOTORS

| UNIT  | MOTOR*  | POWER | WEIGHT |
|-------|---------|-------|--------|
|       |         | HP    | KG     |
| SF-16 | HTB-165 | 16,7  | 32     |
| SF-18 | HTB-165 | 16,7  | 36     |
| SF-20 | HTB-165 | 16,7  | 39     |
| SF-24 | HTB-165 | 16,7  | 52     |
| SF-28 | HTB-165 | 16,7  | 95     |
| SF-32 | HTB-165 | 16,7  | 107    |
| SF-36 | HTB-165 | 16,7  | 118    |
| SF-42 | HTB-165 | 16,7  | 137    |
| SF-48 | HTB-165 | 16,7  | 153    |

### RECOMMENDATION - ELECTRIC MOTORS

**First choice electric drive:** PDEC-3200 - high-torque motor with built-in controller for precise speed control. Similar to servo motors, this drive does not slow down and does not tighten under load, but generates up to 5 times more torque than a servo motor which translates into high machining stability. Offers additionally a bunch of indicators: for overload, overheating and brush worn.

| UNIT  | MOTOR* | POWER | WEIGHT |
|-------|--------|-------|--------|
|       |        | WATT  | KG     |
| SF-4  | PDEC   | 3200  | 11     |
| SF-6  | PDEC   | 3200  | 17     |
| SF-8  | PDEC   | 3200  | 20     |
| SF-10 | PDEC   | 3200  | 27     |
| SF-12 | PDEC   | 3200  | 23     |
| SF-14 | PDEC   | 3200  | 28     |
| SF-16 | PDEC   | 3200  | 32     |

## Other Clamshell K70 Drives

The KRAIS 70 series pneumatic drive motors are the perfect option for all your clamshell needs. They have undergone more than 20 years of rigorous field testing that guarantee's quality and maximum tool life.

The KRAIS 70 series motors and associated spare parts have been designed to be compatible with Cleco 75 series Nutrunners. This allows convenient parts interchangeability of existing motors as used by E.H.Wachs, D.L.Ricci / Hydratight, H&S and other popular clamshell manufacturers.

Both right angle and Inline versions are available.

*Cleco® is a registered trademark of Apex Brands, Inc.*

*DL Ricci® and Hydratight® are a registered trademark of Enerpac*

*E.H. Wachs® is a registered trademark of ITW, Inc.*

*H&S® is a registered trademark of Climax*



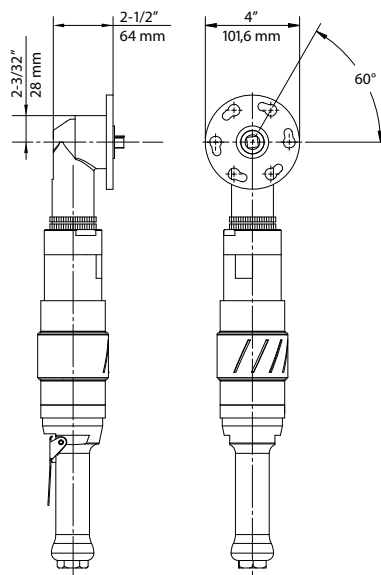
| MODEL<br>NUMBER     | REVERSIBLE | SQUARE<br>DRIVE | TORQUE  |     | FREE SPEED | LENGTH |     | WEIGHT |     | HEAD HEIGHT |    | ANGLE<br>HEAD SIZE |
|---------------------|------------|-----------------|---------|-----|------------|--------|-----|--------|-----|-------------|----|--------------------|
|                     |            |                 | FT.LBS. | NM  | RPM        | IN     | MM  | LBS    | KG  | IN          | MM |                    |
| RIGHT ANGLE VERSION |            |                 |         |     |            |        |     |        |     |             |    |                    |
| K75-RL-3V-375       | Yes        | 1/2"            | 82      | 111 | 375        | 19,35  | 491 | 12,7   | 5,8 | 2,5         | 64 | V                  |
| K75-RL-3V-280       | Yes        | 1/2"            | 104     | 141 | 280        | 19,35  | 491 | 12,7   | 5,8 | 2,5         | 64 | V                  |
| K75-RL-3V-190       | Yes        | 1/2"            | 140     | 190 | 190        | 19,35  | 491 | 12,7   | 5,8 | 2,5         | 64 | V                  |
| K75-RL-3V-152       | Yes        | 1/2"            | 180     | 244 | 152        | 19,35  | 491 | 12,7   | 5,8 | 2,5         | 64 | V                  |
| K75-RL-3V-100       | Yes        | 1/2"            | 283     | 384 | 101        | 20,10  | 511 | 16,5   | 6,4 | 2,5         | 64 | V                  |
| K75-RL-3V-50        | Yes        | 1/2"            | 544     | 738 | 50         | 20,10  | 511 | 16,5   | 6,4 | 2,5         | 64 | V                  |
| K75-NL-3V-190       | No         | 1/2"            | 165     | 225 | 190        | 19,35  | 491 | 12,7   | 5,8 | 2,5         | 64 | V                  |
| IN LINE VERSION     |            |                 |         |     |            |        |     |        |     |             |    |                    |
| L75-RL-488          | Yes        | 1/2"            | 63      | 86  | 488        | 11,00  | 279 | 8,8    | 4,0 | 2,5         | 64 | -                  |
| L75-RL-364          | Yes        | 1/2"            | 80      | 108 | 364        | 11,00  | 279 | 8,8    | 4,0 | 2,5         | 64 | -                  |
| L75-RL-247          | Yes        | 1/2"            | 108     | 146 | 247        | 11,00  | 279 | 8,8    | 4,0 | 2,5         | 64 | -                  |
| L75-RL-198          | Yes        | 1/2"            | 138     | 188 | 198        | 11,00  | 279 | 8,8    | 4,0 | 2,5         | 64 | -                  |
| L75-RL-131          | Yes        | 1/2"            | 218     | 295 | 131        | 13,40  | 340 | 10,0   | 4,6 | 2,5         | 64 | -                  |
| L75-RL-65           | Yes        | 1/2"            | 418     | 567 | 65         | 13,40  | 340 | 10,0   | 4,6 | 2,5         | 64 | -                  |
| L75-NL-247          | No         | 1/2"            | 127     | 225 | 247        | 11,00  | 279 | 8,8    | 4,0 | 2,5         | 64 | -                  |

**Air use:** air inlet NPT: 1/2"; minimal hose ID: 1/2", 70 scfm

### MOUNTING FLANGE



Our mounting flange is manufactured to align with popular E.H.Wachs or D.L.Ricci/Hydratight machines. Custom mounting flanges can be manufactured upon request.



### FLEXIBLE CONFIG

KRAIS 70 Series Drives are available in both right angle and inline configurations. Electric and Hydraulic options are also available. Please consult factory.



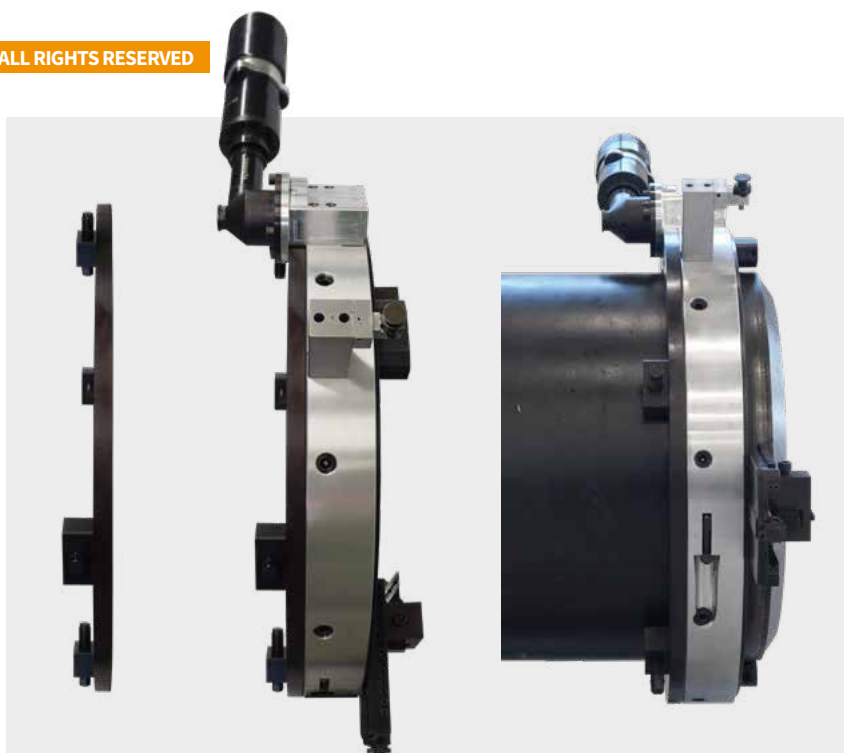


## Reaction ring for SFSF clamshells

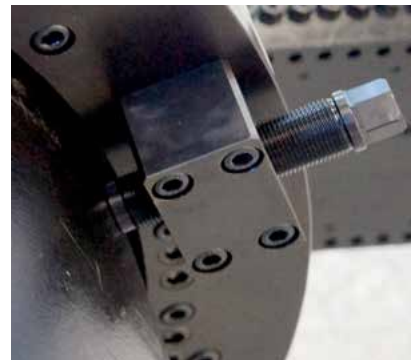
KRAIS SFSF REACTION RING IS PATENT PENDING! ALL RIGHTS RESERVED



For super heavy applications with super heavy wall and/or hard alloy pipes, consider our ORR to enhance axial and linear stability. We manufacture the ORR steel ring, which mounts on the rear of the aluminium ring. The ORR is also equipped with 4 steel location stabilizers to enhance the range and rigidity of the machine for those heavy duty applications. The ORR dramatically increases the axial stability and rigidity when cutting and/or bevelling. This solution can help to save time and expense for clamshells completely made out of steel – ask your representative for more details.



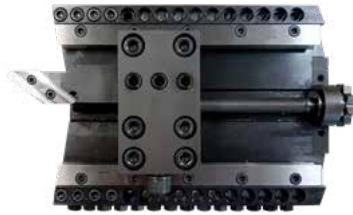
SFSF-1624 with ORR mounted on the 24" pipe schedule 120.



ORR mounted on the rear on the existing threaded holes in the aluminium ring.

## SFSF clamshells add-ons

### TOOL SLIDES



KRAIS Tool Slides are rugged and built for strength and durability tool slides. Standard sizes are 1", 3" and 6". Other on request. Out-of-round and axial-feed tool slides are also available. Built with the same quality: for strength and durability as other KRAIS tool slides. KRAIS Slide construction dramatically eases tool slide mounting and locating.

### BCS - BRIDGE CROSS SLIDES



Bridge Cross Slides are available for all KRAIS Split Frame SlimFit series machines. Whether flange facing or single point heavy wall machining, the BCS quickly and easily bolts onto the split frame ring.

| BCS<br>NUMBER | RANGE [MM] |        | RANGE [INCH] |        |
|---------------|------------|--------|--------------|--------|
|               | MIN        | MAX    | MIN          | MAX    |
| BCS-0814      | 203,2      | 355,6  | 8,000        | 14,000 |
| BCS-1416      | 355,6      | 406,4  | 14,000       | 16,000 |
| BCS-1618      | 406,4      | 457,2  | 16,000       | 18,000 |
| BCS-1820      | 457,2      | 508,0  | 18,000       | 20,000 |
| BCS-2024      | 508,0      | 609,6  | 20,000       | 24,000 |
| BCS-2832      | 609,6      | 812,8  | 24,000       | 32,000 |
| BCS-3236      | 812,8      | 914,4  | 32,000       | 36,000 |
| BCS-3642      | 914,4      | 1066,8 | 36,000       | 42,000 |
| BCS-4248      | 1066,8     | 1117,6 | 42,000       | 44,000 |

### SUPPORT HINGE



Accessory for convenient folding and unfolding of the device. It also allows the use of cranes and lifts that make work easier.

### SFSF-CBA UNIVERSAL COUNTERBORE ATTACHMENT



Designed for the precision counterboring of tube and pipe inside diameters. The Universal counterbore is manufactured with both 6" (SFSF-CBA-150) and 10" (SFSF-CBA-254) long sleeves, and attaches directly to all KRAIS Split Frame SlimFit clamshells.

The Universal Counterbore Attachment utilizes a simple and effective hand wheel to precisely control the counterboring process. Both versions (6" and 10") can be mounted directly to the tool slide or Bridge Cross Slide.

### SFSF-SCBA SWIVEL HEAD COUNTERBORING ATTACHMENT



Designed for the precision counterboring of tube and pipe inside diameters. The swivel head attachment can also be used for flange facing, OD beveling and flange facing grooving.

The Swivel counterbore is manufactured with both 6" (SFSF-SCBA-150) and 10" (SFSF-SCBA-254) long sleeves, and attaches directly to all KRAIS Split Frame SlimFit clamshells.

The Universal Counterbore Attachment utilizes a simple and effective hand wheel to precisely control the counterboring process. Both versions (6" and 10") can be mounted directly to the tool slide or Bridge Cross Slide.

### OUT OF ROUND TOOL SLIDES



Out of round tool slides - can be solution for all misshapen tubes and pipes. Out of round slides feature durable springs and tracking module that follows the contours of a deformed or less than perfectly round pipe. Built with the same quality: for strength and durability as other KRAIS tool slides.

## SFSF clamshells bits and holders

### HSS CUTTERS

All cutters are made out of regular High Speed Steel. All of them are also available with increased content of Cobalt. Sever holders are available in two standard lengths: 200 and 160 mm. For other shapes please send your request.

| Sever (90° cutting)                                                               |                                                                                   | Bevelling (37,5°)                                                                 |                                                                                   | Compound (10° & 37,5°)                                                            |                                                                                   |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |
| HSS-625-HSS                                                                       | HSS-625-HSS-CO                                                                    | HSS-2525-OBR-37                                                                   | HSS-2525-OBL-37                                                                   | HSS-2525-CBR-1037                                                                 | HSS-2525-CBL-1037                                                                 | HSS-2525-2B                                                                         |

### CUTTING BITS FOR USING WITH HOLDERS

Inserts are made out of High Speed Steel with 6% Cobalt and are available with ALNOVE hard coating also. For other tool bits please send your request.

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |   |                                                                                     |                                                                                     |                                                                                     |
| CSS-1                                                                               | CSS-2                                                                               | 2CDJ-5-SF                                                                           |                                                                                     |                                                                                     |                                                                                     |
|  |  |  |  |  |  |
| WRI-45                                                                              | WRIL-45                                                                             | CB-45                                                                               | CBL-45                                                                              | CB-46                                                                               | CBL-46                                                                              |

### SEVER HOLDERS (90° CUTTING)

Sever holders are made in two lengths: 225 and 180 mm. Twin sets have a special rotated bits for better chip removal. Another lengths are available on special request.

|                                                                                     |                                                                                      |                                                                                       |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |
| SFSC-525-180<br>BIT:<br>CSS-1                                                       | SFSC-525-225<br>BIT:<br>CSS-1                                                        | SFSC-525-180-TWEEN1<br>SFSC-525-180-TWEEN2<br>BITS:<br>CSS-2 & CSS-2                  | SFSC-525-225-TWEEN1<br>SFSC-525-225-TWEEN2<br>BITS:<br>CSS-2 & CSS-2                 |

### BEVELING HOLDERS

High quality, wide range of holders to work with KRAIS inserts. For other tool bits please send your request.

| Bevelling (30°)                                                                     |                                                                                     | Bevelling (37,5°)                                                                   |                                                                                     | Compound (10° & 37,5°)                                                              |                                                                                     |                                                                                       |                                                                                       | J-Prep                                                                                |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |  |  |
| SFRB-30<br>BIT:<br>WRI-45                                                           | SFLB-30<br>BIT:<br>WRIL-45                                                          | SFRB-37<br>BIT:<br>WRI-45                                                           | SFLB-37<br>BIT:<br>WRIL-45                                                          | SFRB-1037<br>BIT:<br>CB-45                                                          | SFLB-1037<br>BIT:<br>CBL-45                                                         | SFRLB-2X1037<br>BITS:<br>CB-46 & CBL-46                                               | SFRLB-2X37<br>BITS:<br>WRI-46 & WRIL-46                                               | SFJP-37-R5<br>BIT:<br>2CDJ-5-SF                                                       |

Handwriting practice lines consisting of 40 horizontal dotted lines.









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- installation tools,
- cutters,
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- and accessories,

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