European Quality

Tube&Pipe
Beveling Machines

PRODUCTS CATALOG

bsi. ISO 9001 Quality Management
FM720649

KRAIS
Tube & Pipe Tools

KRAIS

Tube&Pipe
Beveling Machines

KRAIS PRODUCTS CATALOG

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.

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TUBE&PIPE BEVELERS INSIDE MOUNT

TUBE BEVELERS OUTSIDE MOUNT

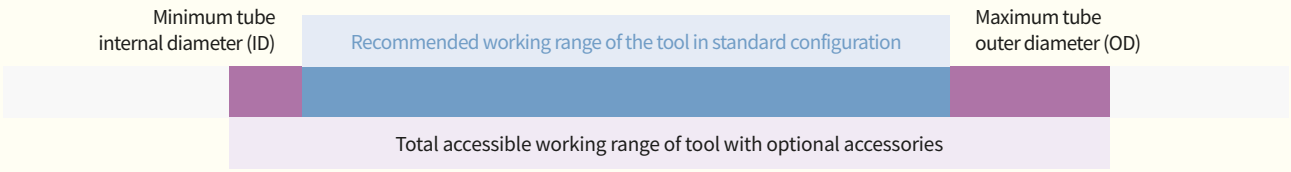
FIN-FAN APPLICATIONS

FLANGE MANAGEMENT

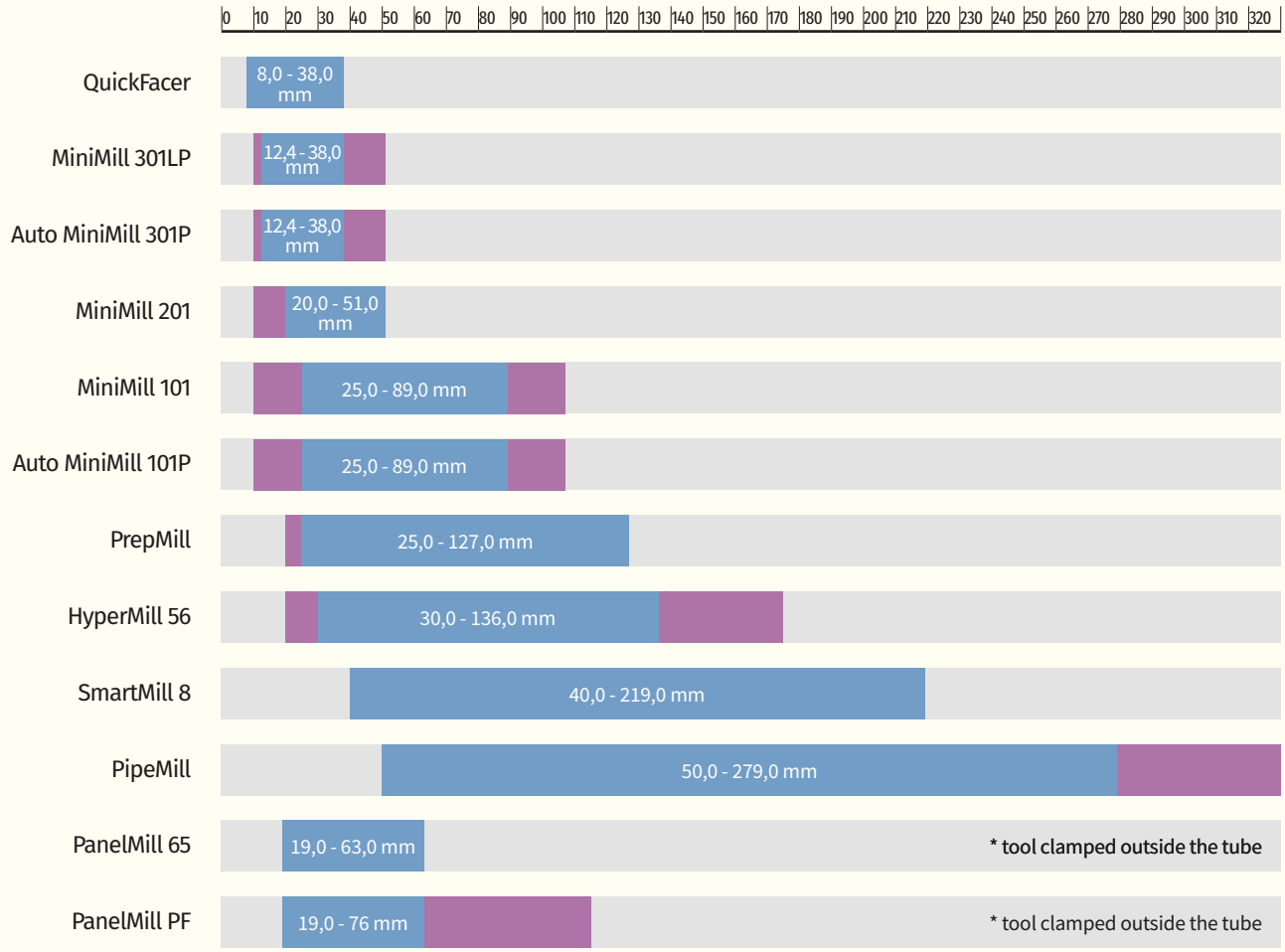
SPLITFRAME CLAMSHELLS

Working ranges for ID/OD mount bevelers

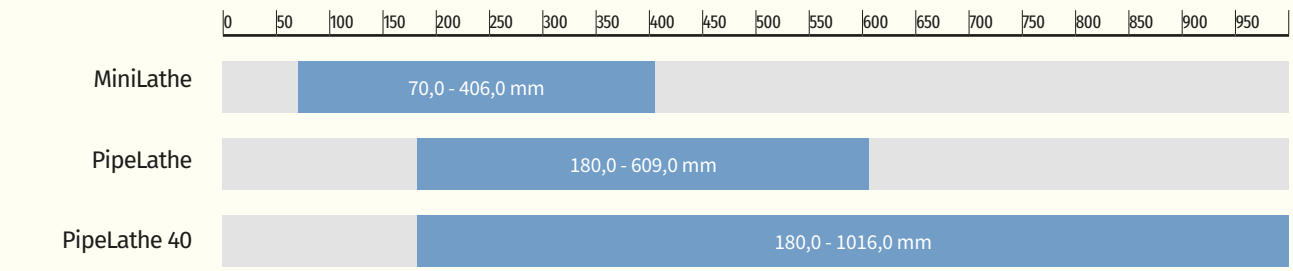
HOW TO READ IT



MILL SERIE WORKING RANGES (UNIVERSAL TOOLS)



LATHE SERIE WORKING RANGES (UNIVERSAL TOOLS)

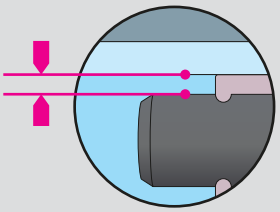


Tube&Pipe Bevelers
INSIDE MOUNT

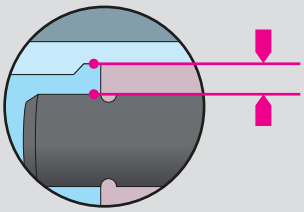
How to proper lock ID beveling machines

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.

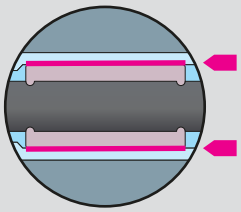
Correct (REGULAR TUBE)
Gap between shaft and tube ID should be max 0,3 mm



Correct (EXPANDED TUBE)
Gap between shaft and tube ID should be max 0,3 mm

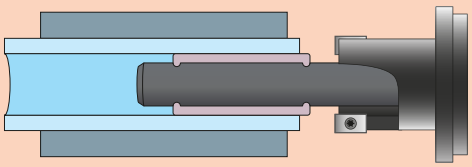


Correct mounting
Contact between jaws and tube is over the entire surface

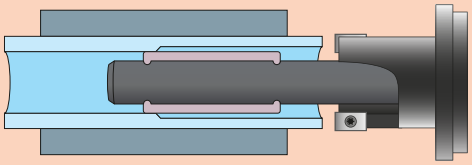


WRONG JAWS SETUP

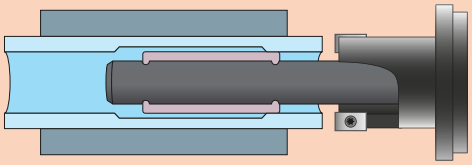
Facing before expanding



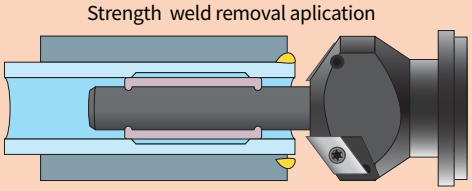
Facing after expanding



Facing after expansion with double radius rolls

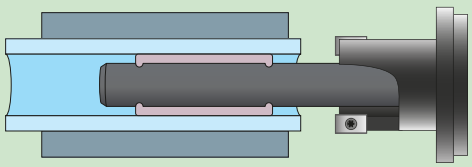


Strength weld removal aplication

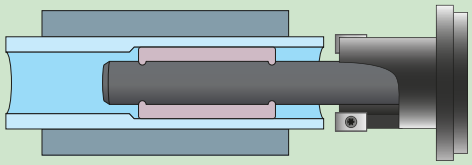


CORRECT JAWS SETUP

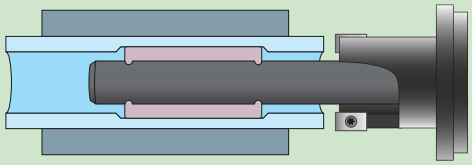
Facing before expanding



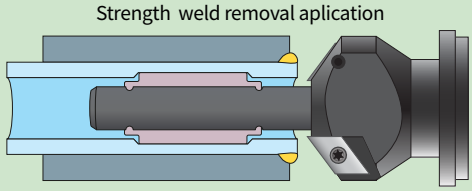
Facing after expanding



Facing after expansion with double radius rolls



Strength weld removal aplication



QuickFacer

KRAIS QuickFacer is a rugged, fast, portable tube facing weld end preparation and weld removal tool. It is a micro lathe – designed for various tubes materials, including stainless steel and other high chromium materials. QuickFacer standard machine can be used for machining tube sizes from 8 mm ID to 38 mm OD (0.314" – 1.2 ") and comes with a 50 mm cutting head.

IMPORTANT!
Read how to properly lock on page 6

STANDARD WORKING RANGE		
APPLICATION (ID-OD)	LOCKING RANGE	FEED STROKE
8 – 38 mm	7,8 – 36 mm	15 mm
0,314 – 1,496"	0,307 – 1,417"	0,590"

POWER	FREE SPEED	TORQUE	
0,98 hp	300 rpm	18 Nm	13,3 Ft.lbs

17 cfm	0,48 m³/min	1,73 x 10,82 x 12,20"	44 x 275 x 310 mm	7,7 Lbs	3,5 kg

STANDARD SET UP

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

50 MM (2")
The smallest cutter head, designed to fasten the wide range of cutting inserts.

OPT. SHAFT

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

OPTIONAL HEADS

OBMH
Head for outside bevelling tubes from 1/2" to 1-1/2" OD
→ **TABLE PAGE 33**

STWRMH
Head dedicated for strength weld removal. Heads are easy to align and sized per tube diameter, max size 1"
→ **TABLE PAGE 32**

TFMH
Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.
→ **TABLE PAGE 32**

LOCKING RANGES FOR SHAFTS

SHAFT	SIZE		JAWS	EXPANSION SHAFT	RANGE [MM]		RANGE [INCH]		SPRING
	[INCH]	[MM]			MIN	MAX	MIN	MAX	
878MM#151	0,307	7,80	378MM#36	MS-158-45	8,00	9,00	0,314	0,354	DW-7,5
885MM#151	0,334	8,50	385MM#36	MS-158-45	9,00	10,00	0,354	0,394	DW-7,7
800MM#151	0,354	9,00	301MM#36	MS-158-51	10,00	11,00	0,394	0,433	DW-7,5
801MM#151	0,394	10,00	303MM#36	MS-158	11,00	12,00	0,433	0,472	DW-8,5
805MM#151	0,453	11,50	305MM#36	MS-158	12,00	13,00	0,472	0,512	DW-10
			307MM#36	MS-158	13,00	14,00	0,512	0,551	
			309MM#36	MS-158	14,00	15,00	0,551	0,591	
901MM#152	0,492	12,40	201MM#36	MM#158-QF	12,40	14,50	0,488	0,571	DW-11
905MM#152	0,547	13,90	203 MM#36	MM#158-QF	13,90	16,00	0,547	0,630	DW-12,5
909MM#152	0,661	16,90	205 MM#36	MM#158-QF	15,90	18,00	0,626	0,709	DW-15,5
			207 MM#36	MM#158-QF	16,90	19,00	0,665	0,748	
			209 MM#36	MM#158-QF	18,90	21,00	0,744	0,827	
			211 MM#36	MM#158-QF	19,90	22,00	0,783	0,866	
			213 MM#36	MM#158-QF	20,90	23,00	0,823	0,906	
			214 MM#36	MM#158-QF	21,90	24,00	0,862	0,944	
915MM#152	0,787	20,00	MADE ON ORDER						

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.

IMPORTANT!
Read how to properly lock on page 6

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

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^3/min	2,32"	59 mm	13,1"	335 mm	11,4 Lbs	5,2 kg

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 (4,56")
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 33

SWROTC
Seal weld removal head over tube circumference prior to re-welding the damaged joint without removing the tube.
→ TABLE PAGE 34

STWRMH
Head dedicated for strength weld removal. Heads are easy to align and sized per tube diameter.
→ TABLE PAGE 32

TFMH
Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.
→ TABLE PAGE 32

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”)

IMPORTANT!
Read how to properly lock on page 6

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.

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 33

SWROTC
Seal weld removal head over tube circumference prior to re-welding the damaged joint without removing the tube.
TABLE PAGE 34

STWRMH
Custom designed head dedicated for strength weld removal. Heads are sized per tube diameter.
→ TABLE PAGE 32

OPTIONAL SHAFTS

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

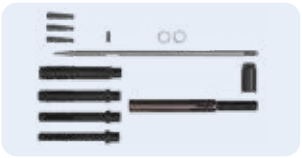
SHAFT	SIZE		JAWS	RANGE [MM]		RANGE [INCH]		SPRING
	[INCH]	[MM]		MIN	MAX	MIN	MAX	
800MM#151	0,354	9,00	301MM#36	10,00	11,00	0,394	0,433	DW-7,5
801MM#151	0,394	10,00	303MM#36	11,00	12,00	0,433	0,472	DW-8,5
805MM#151	0,453	11,50	305MM#36	12,00	13,00	0,472	0,512	DW-10
			307MM#36	13,00	14,00	0,512	0,551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

IMPORTANT!
Read how to properly lock on page 6

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.

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	1,3 m^3/min	2,32"	59 mm	13,1"	335 mm	15,4 Lbs	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 32

MMFH
Tube facing milling head for tubes made of hardest type of materials. Utilizes carbide inserts with 4 blades.
→ TABLE PAGE 34

STWRMH
Head for strength weld removal. Easy to align and sized per tube diameter. Must be used with 3X Speed Reducer.
→ TABLE PAGE 32

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

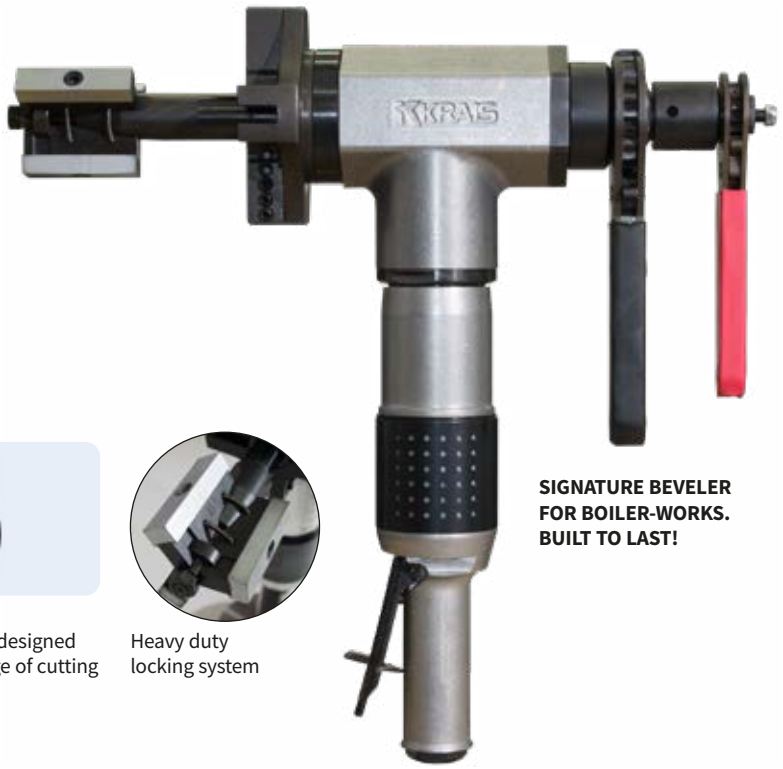
SHAFT	SIZE		JAWS	RANGE [MM]		RANGE [INCH]		SPRING
	[INCH]	[MM]		MIN	MAX	MIN	MAX	
800MM#151	0,354	9,00	301MM#36	10,00	11,00	0,394	0,433	DW-7,5
801MM#151	0,394	10,00	303MM#36	11,00	12,00	0,433	0,472	DW-8,5
805MM#151	0,453	11,50	305MM#36	12,00	13,00	0,472	0,512	DW-10
			307MM#36	13,00	14,00	0,512	0,551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

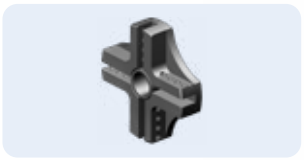
The PrepMill series pneumatic tube facing, bevelling and weld removal machine. The PrepMill is a rugged, fast, portable weld end preparation lathe for various tubes including stainless steel and other high chromium alloys. Machine is constructed on two opposite set up taper roller bearings that makes 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.



SIGNATURE BEVELER FOR BOILER-WORKS. BUILT TO LAST!

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

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	1,3 m^3/min	2,59"	66 mm	14,5"	370 mm	20,5 Lbs	9,5 kg

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 35

PRRMBH
Head for membrane and overlay removal. Efficiently remove material between boiler tubes.
→ TABLE PAGE 35

STWRPM
Head dedicated for strength weld removal. Heads are easy to align and sized per tube diameter.
→ TABLE PAGE 36

TFPM
Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.
→ TABLE PAGE 36

OPT. SHAFT

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

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.

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.

PREPMILL 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

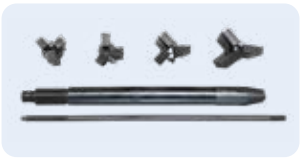
SHAFT	JAWS	EXT.	RANGE [MM]		RANGE [INCH]		SPRING	
			MIN	MAX	MIN	MAX	NO.	QTY.
SHAFT20	NS-0	-	20	24	0,787	0,945	SP-19	1
	NS-1	-	24	28	0,945	1,102	SP-19	1

EXAMPLE TOOL APPLICATION

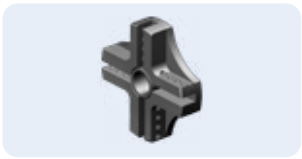
HyperMill 56

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^3/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

Strenght 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 m^3/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 **15**	15 RPM	2544 Nm	1908 Ft.Lbs
GEARBOX **20**	20 RPM	1883 Nm	1415 Ft.Lbs
GEARBOX **28**	28 RPM	1290 Nm	969 Ft.Lbs
GEARBOX **37**	37 RPM	971 Nm	730 Ft.Lbs

AVAILABLE HOLDERS

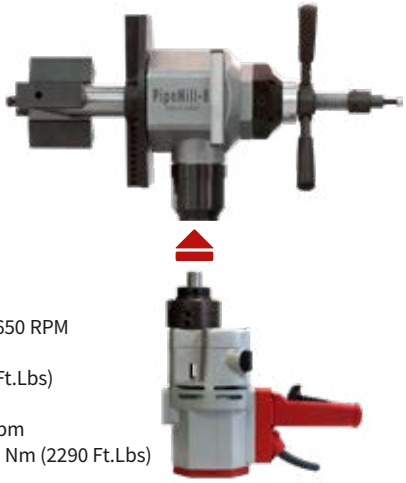
Facing		Inside bevelling and boring	Outside bevelling	J-Prep	Compound bevelling
					
F-45-90 BIT: 2CDI	F-CB-25+2-90 (ADJUSTABLE LENGTH FACING HOLDER FOR THE LAND) BIT: XXXXXXX	IB-45-37 IB-45-10 BIT: 2CDI	OB-45-45 OB-45-37 OB-45-30 OB-45-10 BIT: 2CDI	JP-45-45 JP-45-37 JP-45-30 BIT: 2CDJ-5	CB-1037 (OTHERS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

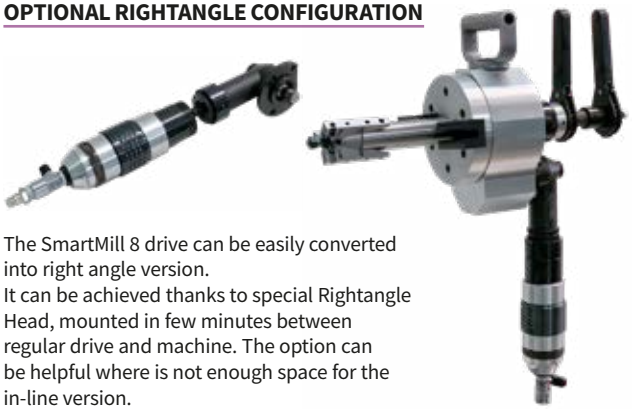
AIR USE		AIR PRESSURE		BODY DIMENSIONS		BODY WEIGHT	
75 cfm	2,2 m^3/min	90 PSI	6,2 Bar	22 x 9,25 x 7,48"	560 x 235 x 190 mm	46 Lbs	21 kg

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 ML-42-A-75
143,5	158,5	5,650	6,240		SM-42-1	ML-42-A-300 ML-42-A-150
158,5	173,5	6,240	6,831		SM-42-1	ML-42-A-300 ML-42-A-225
173,5	188,5	6,831	7,421		SM-42-1	ML-42-A-300 ML-42-A-225 ML-42-A-75
188,5	203,5	7,421	8,012		SM-42-1	ML-42-A-300 ML-42-A-225 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 BIT: 2CDI	F-CB-25+2-90 (ADJUSTABLE LENGTH FACING HOLDER FOR THE LAND) BIT: XXXXXXX	IB-45-37 IB-45-10 BIT: 2CDI	OB-45-45 OB-45-37 OB-45-30 OB-45-10 BIT: 2CDI	JP-45-45 JP-45-37 JP-45-30 BIT: 2CDJ-5	CB-1037 (OTHERS ON REQUEST) BIT: 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 m^3/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 ML-42-A-150	ML-42-B	ML-42-C
355	370	13,976	14,567	ML-42-A-300 ML-42-A-225	ML-42-B	ML-42-C
370	385	14,567	15,157	ML-42-A-375 ML-42-A-225	ML-42-B	ML-42-C
385	400	15,157	15,748	ML-42-A-375 ML-42-A-300	ML-42-B	ML-42-C

AVAILABLE GEARBOX

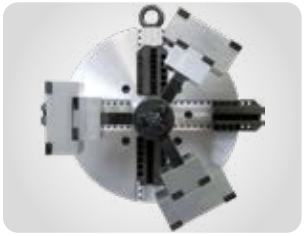
This tool comes with one of 3 gearboxes as a standard. Torque/speed depends on gear configuration.

GEARBOX **11**	11 RPM	3850 Nm	2840 Ft.Lbs
GEARBOX **15**	15 RPM	2615 Nm	1960 Ft.Lbs
GEARBOX **21**	21 RPM	1770 Nm	1327 Ft.Lbs

AVAILABLE HOLDERS

Facing		Inside bevelling and boring	Outside bevelling	J-Prep	Compound bevelling
					
F-45-90 BIT: 2CDI	F-CB-25+2-90 (ADJUSTABLE LENGTH FACING HOLDER FOR THE LAND) BIT: XXXXXXX	IB-45-37 IB-45-10 BIT: 2CDI	OB-45-45 OB-45-37 OB-45-30 OB-45-10 BIT: 2CDI	JP-45-45 JP-45-37 JP-45-30 BIT: 2CDJ-5	CB-1037 (OTHERS ON REQUEST) BIT: 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 m^3/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 PL-42-A-125		
325,0	350,0	12,795	13,780	PL-42-A-500 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.

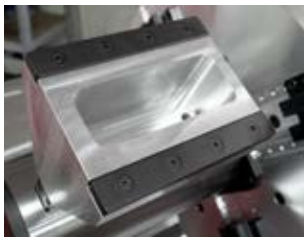
AVAILABLE HOLDERS

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

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 casing 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.

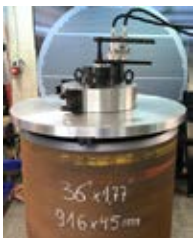
OPTIONAL MOTOR UNITS

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 maching 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 m^3/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 PL-42-A-125				
325	350	12,8	13,8	PL-42-A-500 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 PL-42-A-125		PL-42-C		

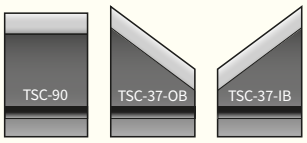
RANGE [MM]		RANGE [INCH]		SEGMENT				
MIN	MAX	MIN	MAX	A	B	C	D	E
621	647	24,4	25,5	PL-42-A-500 PL-42-A-250		PL-42-C		
646	671	25,4	26,4	PL-42-A-500 PL-42-A-375		PL-42-C		
667	693	26,3	27,3			PL-42-C	PL-42-D	
692	716	27,2	28,2	PL-42-A-125		PL-42-C	PL-42-D	
715	739	28,1	29,1	PL-42-A-250		PL-42-C	PL-42-D	
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 PL-42-A-125		PL-42-C		PL-42-E
924	949	36,4	37,4	PL-42-A-500 PL-42-A-250		PL-42-C		PL-42-E
948	972	37,3	38,3	PL-42-A-500 PL-42-A-375				PL-42-E

Bits, heads and cutters
INSIDE MOUNT

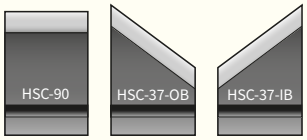
Cutters and inserts for tube bevelers

REGULAR CUTTERS

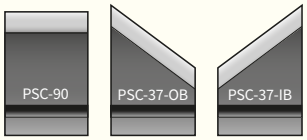
FOR USE WITHOUT HOLDERS
BIT: HSS and HSS Cobalt



Cutters for MiniMill series



Cutters for HyperMill series



Cutters for PipeMill series

INSERTS

Inserts for use only with holders or special heads, all inserts made by KRAIS have ALNOVA coating by OERLIKON .

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

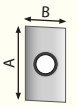
MAT: HSS 6% Carbide
Screw: MHS-2,5

CSS	A	B
mm	6,3	9,5

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

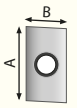
PO8	R
mm	8

MAT: Carbide
Screw: MHS-2,7



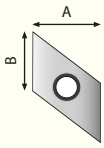
CDI	A	B
mm	18	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4



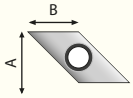
CDI-CB	A	B
mm	18	9,5

MAT: HSS 6% Carbide
Screw: MHS-4



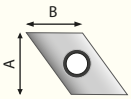
WRIL	A	B
mm	13,5	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4



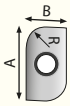
WRK	A	B
mm	10	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4



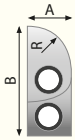
WRI	A	B
mm	13,5	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4



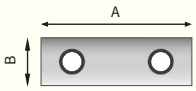
	A	B	R
CDJ-2.5*	18	9,5	2,5
CDJ-5	18	9,5	4,7
CDJ-8*	18	9,5	8,0

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



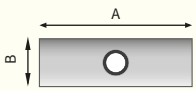
CSWR	A	B	R
mm	6,5	16,5	6

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



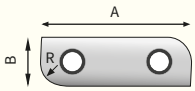
2CDI	A	B
mm	45	12,7

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

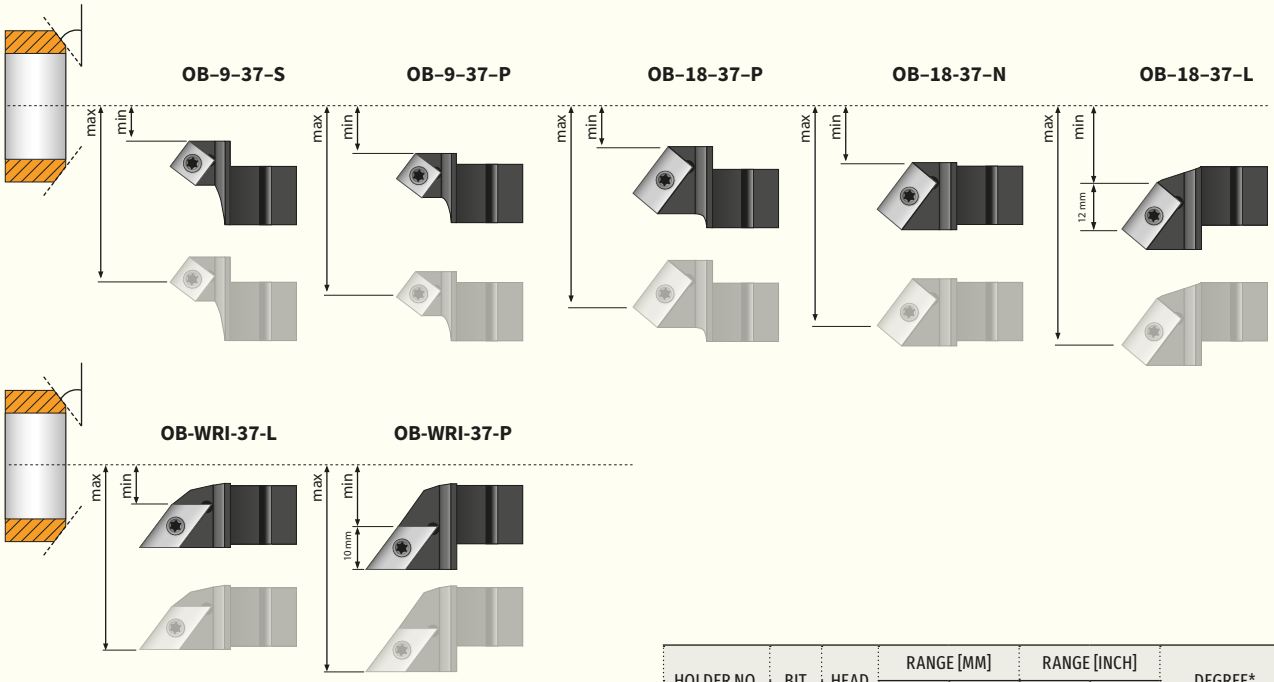
CSS-127	Min	Max
mm	9,5	15,0

MAT: **HSS 6% Cobalt**

Holders for regular MiniMill/HyperMill cutter heads

OUTSIDE BEVELING HOLDERS

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

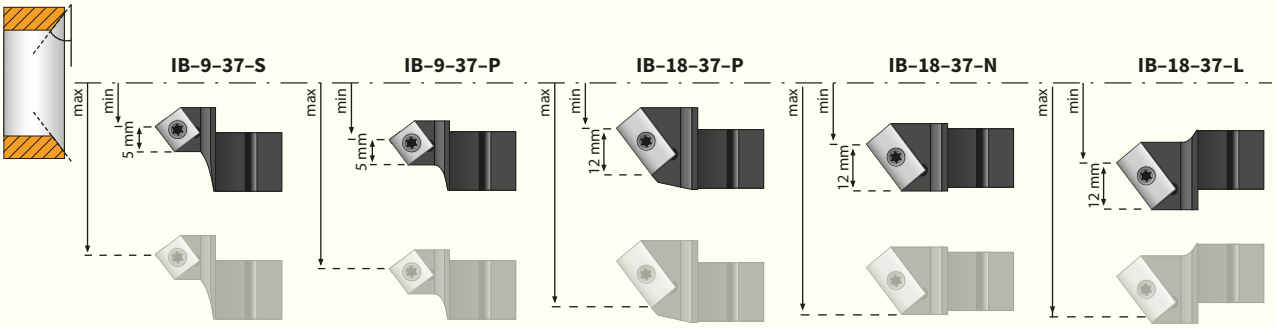


HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
OB-9-37-S	CS	60	16,00	26,00	0,630	1,024	20; 30; **37,5;** 45
		88	16,00	51,00	0,630	2,008	20; 30; **37,5;** 45
OB-9-37-P	CS	60	24,00	34,00	0,945	1,339	20; 30; **37,5;** 45
		88	24,00	58,00	0,945	2,283	20; 30; **37,5;** 45
		106	28,00	72,00	1,102	2,835	20; 30; **37,5;** 45
OB-18-37-P	CDI	60	24,00	47,00	0,945	1,850	20; 30; **37,5;** 45
		88	24,00	71,00	0,945	2,795	20; 30; **37,5;** 45
		106	28,00	85,00	1,102	3,346	20; 30; **37,5;** 45
		114	31,00	88,00	1,220	3,465	20; 30; **37,5;** 45
		135	31,00	109,00	1,220	4,291	20; 30; **37,5;** 45
		175	31,00	149,00	1,220	5,866	20; 30; **37,5;** 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; **37,5;** 45
		88	34,00	80,00	1,339	3,150	20; 30; **37,5;** 45
		106	38,00	94,00	1,496	3,701	20; 30; **37,5;** 45
		114	43,00	101,00	1,693	3,976	20; 30; **37,5;** 45
		135	43,00	122,00	1,693	4,803	20; 30; **37,5;** 45
		175	43,00	162,00	1,693	6,378	20; 30; **37,5;** 45
OB-18-37-L	CDI	60	40,00	63,00	1,575	2,480	20; 30; **37,5;** 45
		88	40,00	87,00	1,575	3,425	20; 30; **37,5;** 45
		106	44,00	101,00	1,732	3,976	20; 30; **37,5;** 45
		114	47,00	104,00	1,850	4,094	20; 30; **37,5;** 45
		135	47,00	125,00	1,850	4,921	20; 30; **37,5;** 45
		175	47,00	165,00	1,850	6,496	20; 30; **37,5;** 45
OB-WRI-37-L	WRIL	64	22,00	66,00	0,866	2,598	30; **37,5**
OB-WRI-37-P	WRIL	64	36,00	80,00	1,417	3,150	30; **37,5**
	WRIL	99	36,00	116,00	1,417	4,567	30; **37,5**

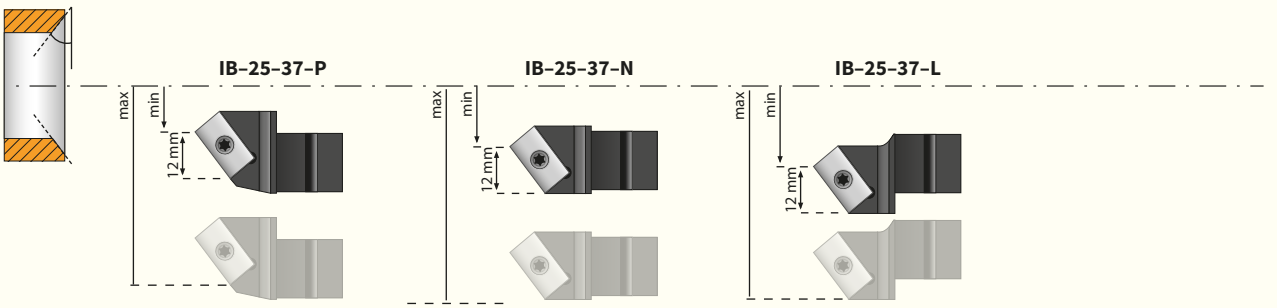
INSIDE BEVELING HOLDERS

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; **37,5;** 45
		88	29,00	63,00	1,142	2,480	20; 30; **37,5;** 45
		106	33,00	77,00	1,299	3,031	20; 30; **37,5;** 45
IB-9-37-P	CS	60	35,50	45,50	1,398	1,791	20; 30; **37,5;** 45
		88	35,50	70,00	1,398	2,756	20; 30; **37,5;** 45
		106	39,50	84,00	1,555	3,307	20; 30; **37,5;** 45
IB-18-37-P	CDI	60	35,50	58,00	1,398	2,283	20; 30; **37,5;** 45
		88	35,50	82,50	1,398	3,248	20; 30; **37,5;** 45
		106	39,50	96,50	1,555	3,799	20; 30; **37,5;** 45
		114	42,00	102,00	1,654	4,016	20; 30; **37,5;** 45
		135	42,00	123,00	1,654	4,843	20; 30; **37,5;** 45
		175	42,00	163,00	1,654	6,417	20; 30; **37,5;** 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; **37,5;** 45
		88	44,50	92,00	1,752	3,622	20; 30; **37,5;** 45
		106	48,50	106,00	1,909	4,173	20; 30; **37,5;** 45
		114	51,00	111,00	2,008	4,370	20; 30; **37,5;** 45
		135	51,00	132,00	2,008	5,197	20; 30; **37,5;** 45
		175	51,00	172,00	2,008	6,772	20; 30; **37,5;** 45
IB-18-37-L	CDI	60	53,00	76,00	2,087	2,992	20; 30; **37,5;** 45
		88	53,00	100,00	2,087	3,937	20; 30; **37,5;** 45
		106	57,00	114,00	2,244	4,488	20; 30; **37,5;** 45
		114	60,00	120,00	2,362	4,724	20; 30; **37,5;** 45
		135	60,00	141,00	2,362	5,551	20; 30; **37,5;** 45
		175	60,00	181,00	2,362	7,126	20; 30; **37,5;** 45

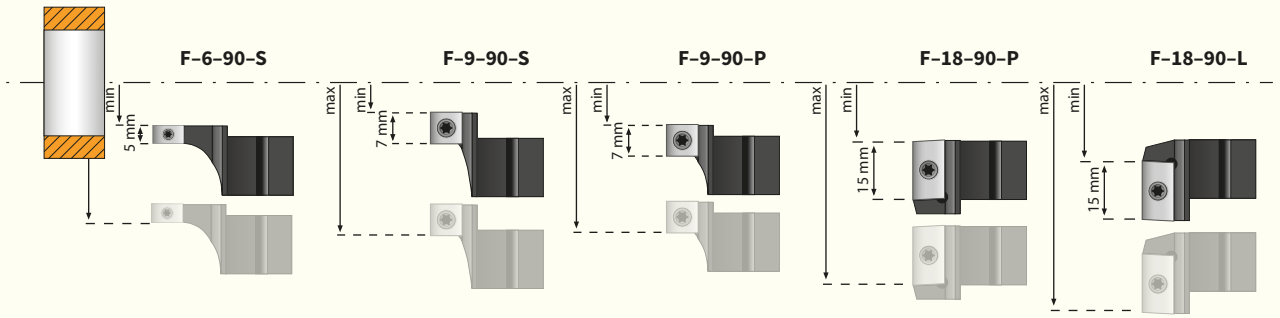


HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
IB-25-37-P	CDK	60	35,50	63,00	1,398	2,480	20; 30; **37,5;** 45
		88	35,50	87,50	1,398	3,444	20; 30; **37,5;** 45
		106	39,50	101,50	1,555	3,996	20; 30; **37,5;** 45
		114	42,00	107,00	1,654	4,212	20; 30; **37,5;** 45
		135	42,00	128,00	1,654	5,039	20; 30; **37,5;** 45
		175	42,00	168,00	1,654	6,614	20; 30; **37,5;** 45
IB-25-37-N	CDK	60	44,50	72,50	1,752	2,854	20; 30; **37,5;** 45
		88	44,50	97,00	1,752	3,818	20; 30; **37,5;** 45
		106	48,50	111,00	1,909	4,370	20; 30; **37,5;** 45
		114	51,00	116,00	2,008	4,566	20; 30; **37,5;** 45
		135	51,00	137,00	2,008	5,393	20; 30; **37,5;** 45
		175	51,00	177,00	2,008	6,969	20; 30; **37,5;** 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; **37,5;** 45
		88	53,00	105,00	2,087	4,133	20; 30; **37,5;** 45
		106	57,00	119,00	2,244	4,685	20; 30; **37,5;** 45
		114	60,00	125,00	2,362	4,921	20; 30; **37,5;** 45
		135	60,00	146,00	2,362	5,748	20; 30; **37,5;** 45
		175	60,00	186,00	2,362	7,322	20; 30; **37,5;** 45

FACING HOLDERS

Standard: 90,0°

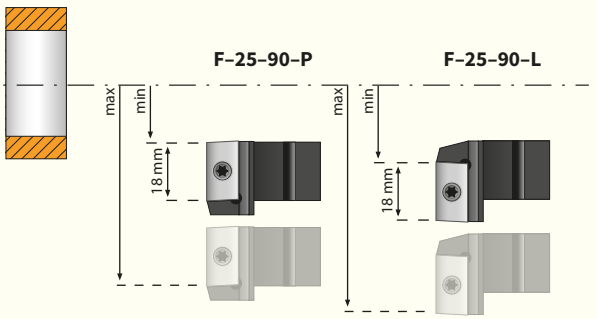


HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
F-6-90-S	CSS	60	14,50	24,50	0,571	0,965	90
F-9-90-S	CS	60	16,00	30,00	0,630	1,181	90
F-9-90-P	CS	60	24,00	38,00	0,945	1,496	90
		88	24,00	62,00	0,945	2,441	90
		106	28,00	75,00	1,102	2,953	90
		114	31,00	80,00	1,220	3,150	90
F-18-90-P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

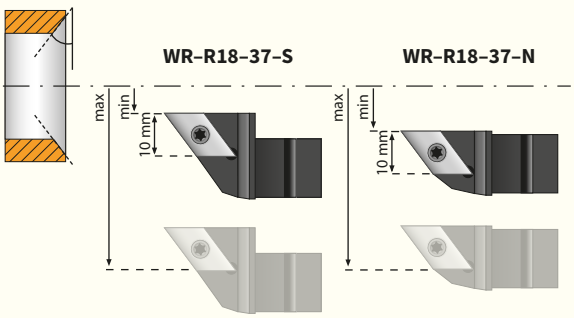
Standard: 90,0°



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



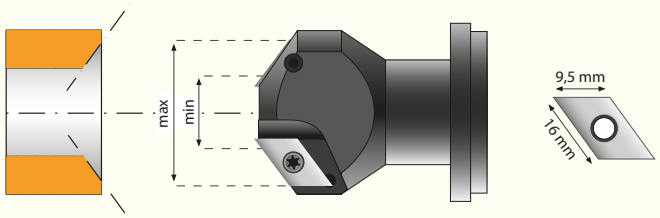
HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
WR-R18-37-S	WRI	60	15,50	36,00	0,610	1,417	20; 30; **37,5;** 45
		88	15,50	61,00	0,610	2,402	20; 30; **37,5;** 45
		106	19,50	75,00	0,768	2,953	20; 30; **37,5;** 45
WR-R18-37-N	WRI	60	30,00	50,00	1,181	1,969	20; 30; **37,5;** 45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

Special Heads for MiniMill and HyperMill

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.

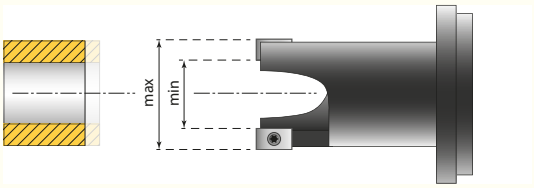


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
STWRMH-190	0,750	19,05	12-23	0,530	1,46	13,50	37,00	WRI	2	901 MM#151 12,4 mm
STWRMH-222	0,875	22,23	12-23	0,650	1,496	16,50	38,00	WRI	2	905 MM#151 13,9 mm
STWRMH-254	1,000	25,40	10-23	0,732	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 MILING 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.

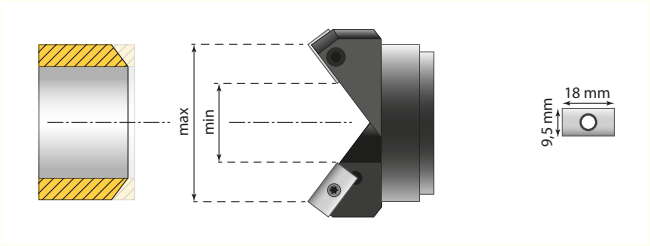


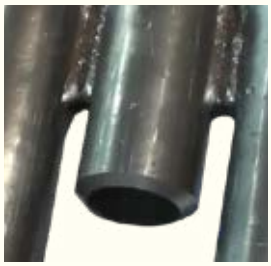
HEAD NR	RURA			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
TFMH-145	0,570	14,48	16-23	0,441	0,870	11,2	22,1	CSZ	2	801 MM#151 Micro 10,0MM
TFMH-158	0,625	15,88	16-23	0,500	0,933	12,70	23,70	CSZ	2	805 MM#151 Micro 11,5 MM
TFMH-190	0,750	19,05	12-23	0,531	1,004	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 MILING HEAD
BIT: HSS 6% Cobalt
DEGREE: 37,5°

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.



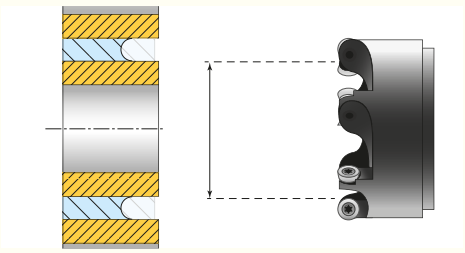


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
OBMH-190	0,750	19,05	14-23	0,5826	0,866	14,80	22,00	CS	2	901 MM#151 12,4 mm
OBMH-222	0,875	22,23	12-23	0,654	1,004	16,60	25,50	CS	2	905 MM#151 13,9 mm
OBMH-254	1,000	25,40	11-23	0,764	1,122	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

MMRBMH

MEMBRANE REMOVAL HEAD
BIT: CARBIDE

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

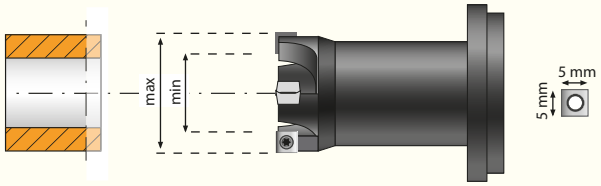


HEAD NR	TUBE CAPACITY		RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS
	[INCH]	[MM]	MIN	MAX	MIN	MAX		
MMRBMH-254	1,000	25,40	1,000	1,630	25,40	41,40	PO8	4
MMRBMH-288	1,125	28,58	1,134	1,764	28,80	44,80	PO8	5
MMRBMH-317	1,250	31,75	1,248	1,878	31,70	47,70	PO8	5
MMRBMH-381	1,500	38,10	1,500	2,130	38,10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

SWRMH

SEAL WELD REMOVAL HEAD
BIT: CARBIDE
DEGREE: 90.0°

Size specific heads designed for seal weld removal on tubes. Suitable for weld removal on carbon, duplex, inconel and other exotic alloys. Utilizes 4 sided carbide inserts.

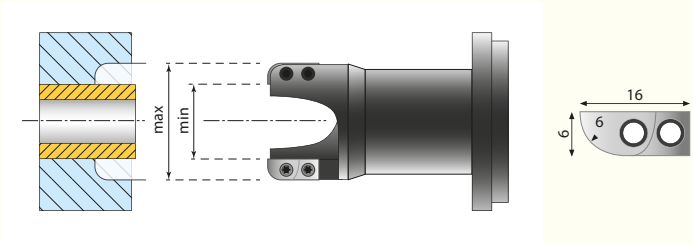


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SCREW
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
SWRMH-160	0,625	15,88	17-22	0,500	1,100	12,70	28,00	CI 5x5	4	MHS-2
SWRMH-190	0,750	19,05	11-22	0,510	1,140	13,00	29,00	CI 5x5	4	MHS-2
SWRMH-222	0,875	22,23	10-22	0,710	1,300	18,00	33,00	CI 5x5	4	MHS-2
SWRMH-254	1,000	25,40	8-20	0,810	1,380	20,50	35,00	CI 5x5	4	MHS-2

SWROTC

TUBE FACING MILING HEAD
BIT: HSS 6% Cobalt

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

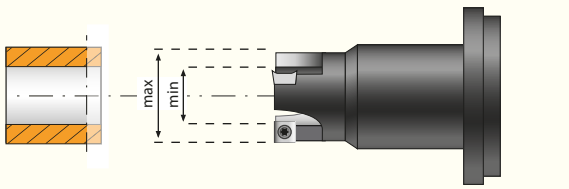


HEAD NR	TUBE CAPACITY		RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	MIN	MAX	MIN	MAX			
SWROTC-190	0,750	19,05	0,750	1,222	19,05	31,05	CSWR	2	901 MM#151 12,4 mm
SWROTC-222	0,875	22,23	0,874	1,346	22,20	34,20	CSWR	2	905 MM#151 13,9 mm
SWROTC-254	1,000	25,40	1,000	1,472	25,40	37,40	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

MMFH

TUBE FACING MILING HEAD
BIT: CARBIDE
DEGREE: 90.0°

A tube facing milling head suitable for machining tubes manufactured from very hard materials such as duplex, inconel and other exotic alloys. Utilizes 4 sided carbide inserts.



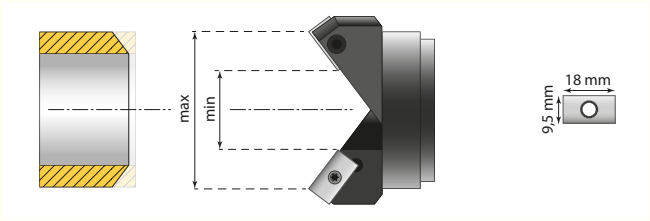
HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
MMFH-145	0,550	14,00	17-23	0,440	0,807	11,20	20,5	CI 5x5	2	801 MM#151 Micro 10,0 MM
MMFH-158	0,625	15,88	16-23	0,500	0,866	12,70	22,00	CI 5x5	2	805 MM#151 Micro 11,5 MM
MMFH-190	0,750	19,05	13-23	0,559	0,906	14,20	23,00	CI 5x5	3	901 MM#151 12,4 mm
MMFH-222	0,875	22,23	12-23	0,654	0,965	16,60	24,50	CI 5x5	3	905 MM#151 13,9 mm
MMFH-254	1,000	25,40	11-23	0,764	1,087	19,40	27,50	CI 5x5	3	909 MM#151 16,9 mm
MMFH-285	1,125	28,58	11-23	0,886	1,213	22,50	30,80	CI 5x5	3	915 MM#151 20,0 mm

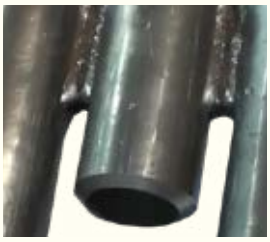
Special Heads for PrepMill

OBPM

OUTSIDE BEVEL MILING 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.



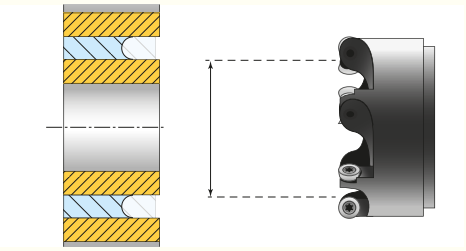


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
OBPM-190	0,750	19,05	14-23	0,5826	0,866	14,80	22,00	CS	2	915 MM#151 20 mm
OBPM-222	0,875	22,23	12-23	0,654	1,004	16,60	25,50	CS	2	STD Shaft: 20 or 25 mm
OBPM-254	1,000	25,40	11-23	0,764	1,122	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)

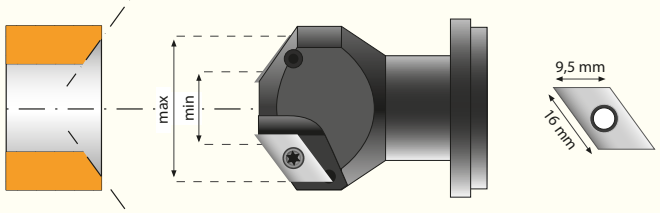


HEAD NR	TUBE CAPACITY		RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS
	[INCH]	[MM]	MIN	MAX	MIN	MAX		
PRRBMH-254	1,000	25,40	1,000	1,630	25,40	41,40	PO8	4
PRRBMH-288	1,125	28,58	1,134	1,764	28,80	44,80	PO8	5
PRRBMH-317	1,250	31,75	1,248	1,878	31,70	47,70	PO8	5
PRRBMH-381	1,500	38,10	1,500	2,130	38,10	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.

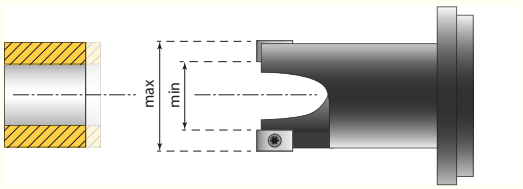


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
STWRPM-190	0,750	19,05	12-23	0,530	1,46	13,50	37,00	WRI	2	STD Shaft: 20 mm
STWRPM-222	0,875	22,23	12-23	0,650	1,496	16,50	38,00	WRI	2	STD Shaft: 20 or 25 mm
STWRPM-254	1,000	25,40	10-23	0,732	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 MILING 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.

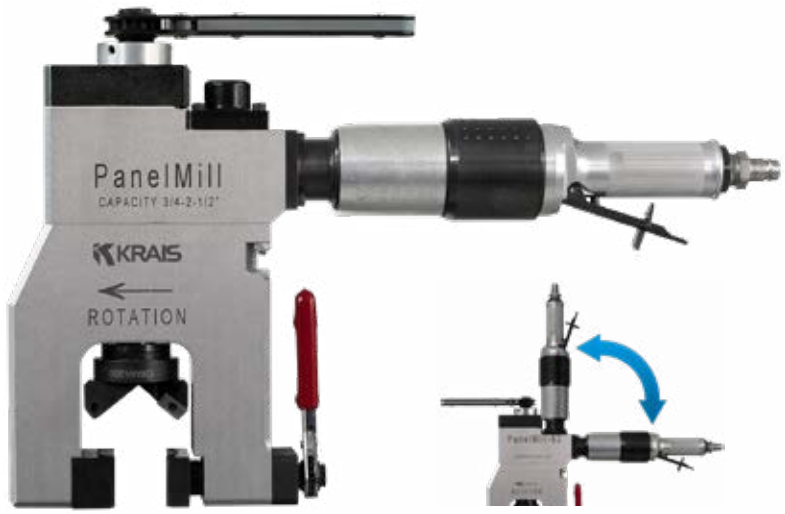


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
TFMP-285	1,125	28,58	11-23	0,854	1,307	21,70	33,20	CSS	2	STD Shaft 20 mm
TFMP-317	1,250	31,75	9-23	0,949	1,366	24,10	34,70	CSS	2	STD Shaft 20 mm
TFMP-381	1,500	38,10	9-23	1,197	1,614	30,40	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

Tube bevelers
OUTSIDE MOUNT

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 (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 65EXT-M	50 - 63,5 mm + 63,5 MEMBRANE	84 mm	63,5	63,5 mm	25,4 mm	100 Rpm (Opc. 35, 200, 300)	140 Nm
	0,75 - 2,50" + 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	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 (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	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 bevelling 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 (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 (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	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 (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

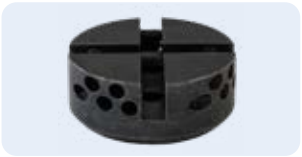
JAWS	TUBE OD	
	[MM]	[INCH]
300 PM#2	19,05	0,750
301 PM#2	20,00	0,787
304 PM#2	22,20	0,874
308 PM#2	25,40	1,000
309 PM#2	25,00	0,984
312 PM#2	28,80	1,134
313 PM#2	30,00	1,181
314 PM#2	31,70	1,248
318 PM#2	34,90	1,374
322 PM#2	38,10	1,500
326 PM#2	44,40	1,748
330 PM#2	50,80	2,000
331 PM#2	51,00	2,008
334 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

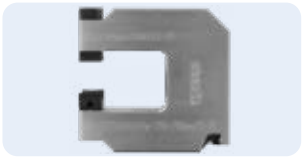
KRAIS PanelMill PF is the first machine where the bevelling cycle time is not dependent on an operator efficiency but on the machine mechanism. Both, the feed mechanism and the spindle rotation mechanism are driven from one source. A fixed rate of spindle advancement is achieved for each rotation of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

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

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!

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

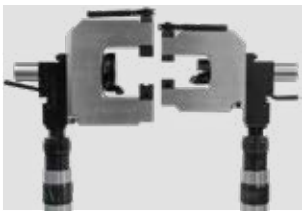
JAWS NO.	TUBE OD	
	[MM]	[INCH]
300 PM#2	19,05	0,750
301 PM#2	20,00	0,787
304 PM#2	22,20	0,874
309 PM#2	25,00	0,984
312 PM#2	28,80	1,134
313 PM#2	30,00	1,181
318 PM#2	34,90	1,374
326 PM#2	44,40	1,748
331 PM#2	51,00	2,008
334 PM#2	57,10	2,248
338 PM#2	60,30	2,374

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

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 PanellMill-PF to a table machine for bevelling pipes, stubs or elbows. This is only available for 4,5" clamp only.

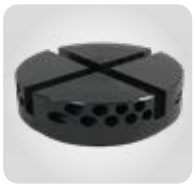
TWO VARIANTS

RIGHT-ANGLE AND IN-LINE
PanellMill-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

UNIVERSAL CUTTER HEADS

PMH-PF-66
66 MM (2,598")
Head supplied with PanelMill 3". Designed to fasten wide range of cutting inserts.

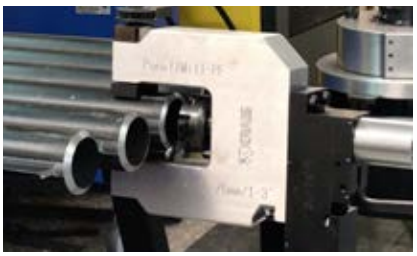


PMH-PF-99
99 MM (3,897")
Head supplied with PanelMill 4,5". Designed to fasten wide range of cutting inserts.

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

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

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

MEMBRANE REMOVAL AND OVERLAY HEAD

Head with carbide bits.

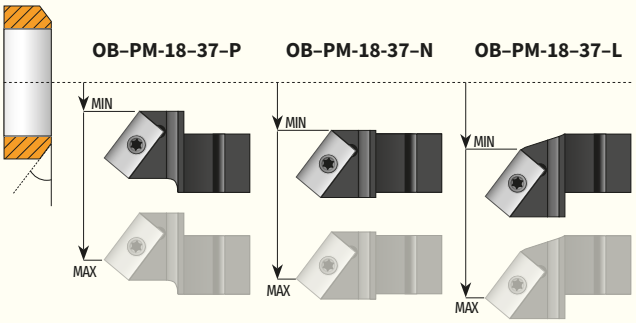
HEAD NR	TUBE CAPACITY		INSERT	NO. OF INSERTS
	[INCH]	[MM]		
PRRBMH-PF-508	2,000	50,80	PO8	7
PRRBMH-PF-571	2,250	57,15	PO8	7
PRRBMH-PF-603	2,375	60,33	PO8	7
PRRBMH-PF-635	2,500	63,50	PO8	7
PRRBMH-PF-762	3,000	76,20	PO8	9

Holders for regular PanelMill/PF CUTTER heads

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

OUTSIDE BEVELING HOLDERS

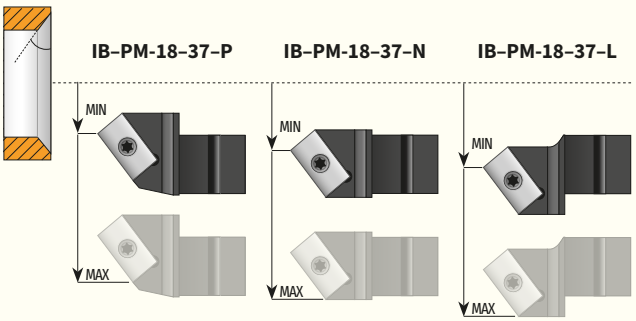
Cutting edge length: 12 mm, standard angle: 37,5° (others on request)



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; **37,5**
	CDI	99	0,00	85,00	0,000	3,346	30; **37,5**
OB-PM-18-37-N	CDI	64	11,00	56,50	0,433	2,224	30; **37,5**
	CDI	99	11,00	95,00	0,433	3,740	30; **37,5**
OB-PM-18-37-L	CDI	64	20,00	65,50	0,787	2,579	30; **37,5**
	CDI	99	20,00	104,00	0,787	4,094	30; **37,5**

INSIDE BEVELING HOLDERS

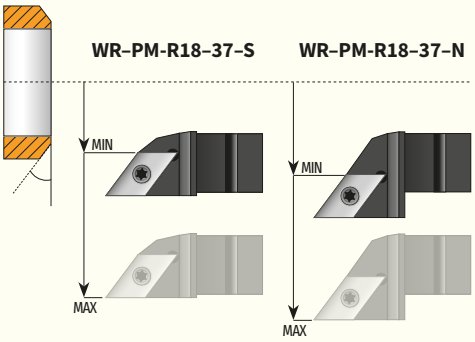
Cutting edge length: 12 mm, standard angle: 37,5° (others on request)



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; **37,5**
	CDI	99	10,00	95,00	0,394	3,740	30; **37,5**
IB-PM-18-37-N	CDI	64	20,00	65,00	0,787	2,559	30; **37,5**
	CDI	99	20,00	104,00	0,787	4,094	30; **37,5**
IB-PM-18-37-L	CDI	64	35,00	79,00	1,378	3,110	30; **37,5**
	CDI	99	35,00	115,00	1,378	4,528	30; **37,5**

OUTSIDE BEVELING HOLDERS

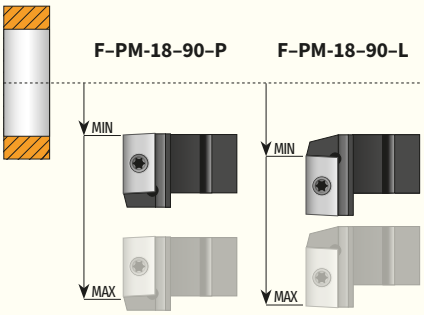
Cutting edge length: 10 mm, standard angle: 37,5° (others on request)



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; **37,5**
WR-PM-R18-37-N	WRIL	64	36,00	80,00	1,417	3,150	30; **37,5**
WR-PM-R18-37-N	WRIL	99	36,00	116,00	1,417	4,567	30; **37,5**

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

FIN-FAN
APPLICATIONS

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 m^3/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 ATACHMENT

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.

EXAMPLE TOOL APPLICATION

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

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

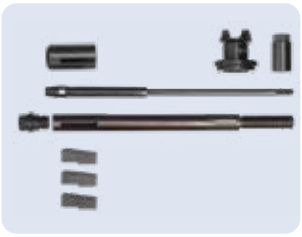
Water box demonstration of the simplicity of machine operation.

An operator trimming back tubes prior to seal welding.

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 provide by customer with order.

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

STANDARD WORKING RANGE		FEED STROKE	FREE SPEED	POWER	TORQUE
APPLICATION RANGE (ID-OD)	LOCKING RANGE (ID)				
12 TPI	Suit to thread 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 m^3/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.

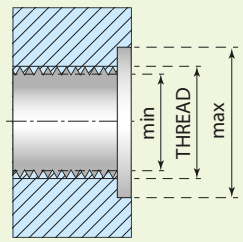
All types of water box materials can be machined with the carbide inserts of the MiniMill 300 GFF.

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.

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 STROKE	FREE 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 m^3/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”)

MiniDrill GFF

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 rotated 180 degrees to accommodate partition plates, channel heads etc.

MACHINING TOOLS

Head for weld removal around the welded plug

Drill head to machine the hole to the next size plug thread.

Head for chamfering before threading.

Taps with manual ratchet handle.

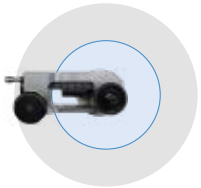
EXAMPLE TOOL APPLICATION

Flange MANAGEMENT

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

MODEL	FACING RANGE	LOCKING RANGE	MAX V TOOL TRAVEL	MAX H TOOL TRAVEL	BODY SWING DIAMETER
MFM Short	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"

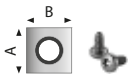
DRIVE	WIDTH		LENGHT		WEIGHT	
Manual	6,5"	165 mm	12,8"	325 mm	19,4 Lbs	8,8 kg

MODEL	FACING RANGE	LOCKING RANGE	MAX V TOOL TRAVEL	MAX H TOOL TRAVEL	BODY SWING DIAMETER
MFM Long	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	12 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)



CI7	A	B
mm	7	7

EXAMPLE TOOL APPLICATION

MFM ADVANTAGES

PRECISE DEPTH ADJUSTMENT
The tool depth can be can be adjusted (10 mm stroke) through 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.

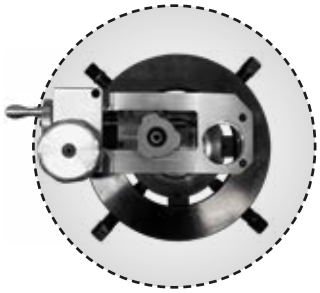
SMOOTH OPERATION
Quick adjustment handle to move the cutter to groove position

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.

OMFM – Outside Mounted Manual Flange Mill

OMFM is the first in the world, uncomplicated and cost-effective outside mounted manual flange facing tool for machining flanges with diameter from 0 to 150 mm. Gives a quick and easy way to re-machine a damaged sealing surface in the pipe flanges on site. Outside Mounted Manual Flange Mill size and body are designed and built to allow quick and convenient processing of very small flanges in awkward or dangerous locations, where the inside mounted flange facers are impossible to use due to its shaft size.

TOOL SWING DIAMETER



360 - 400 MM / 14,17 - 15,75"

FACING RANGE	CLAMPING RANGE	DRIVE	TOOL WIDTH	TOOL HEIGHT	TOOL WEIGHT
0 – 150 mm	75 - 160 MM	Manual	252 mm	200 mm	16,6 kg
0 – 6”	3,0 - 6,3"		9,9"	7,9"	36,6 Lbs

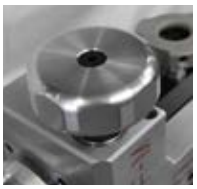
OMFM LOCKING SYSTEM

OMFM locking system has a 4 independent bolts for manual centring and 4 "self " centring plates made to suit to each flange diameter - it helps to quickly centre the machine on the flange. OMFM allows for very precise set-up for refacing.

OMFM HOLDER

OMFM uses just one type of holders with carbide insert V.

OMFM ADVANTAGES



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

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

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 (SINGLE POINT)	LOCKING RANGE	VERTICAL FEED STROKE	MACHINING 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 m^3/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.

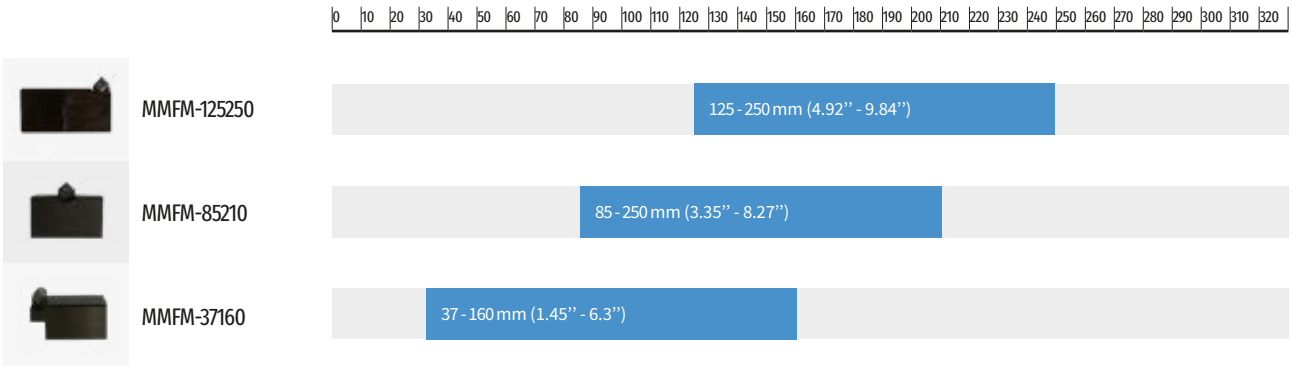
Handy depth feed locking system to prevent accidental movement of the handle during flange processing.

SAFETY FIRST

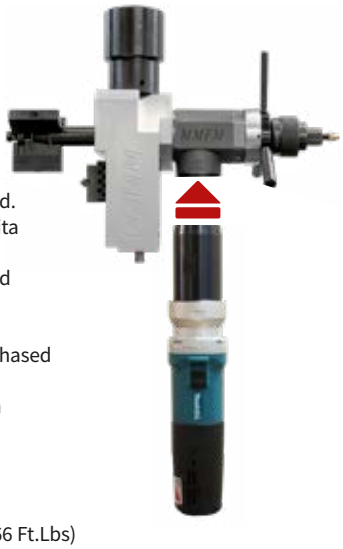
Hand guard to protect against accidental impact of the rotating head.

TOOL HOLDERS RANGES

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



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-Lon 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 m^3/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 m^3/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 m^3/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.

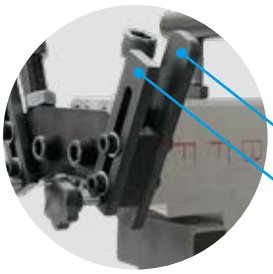
FEED RATES

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

* standard feed screw suplied 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.



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

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.

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.

AVAILABLE PNEUMATIC MOTORS

All three options: NBFF 115, 160 and 300 comes with well suited drive. But for best specialists and demanding tasks we offer a bunch of alternative drives.

B50-100X

HM-xxx

K7x-LT-xxx

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
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

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-Lon 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 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

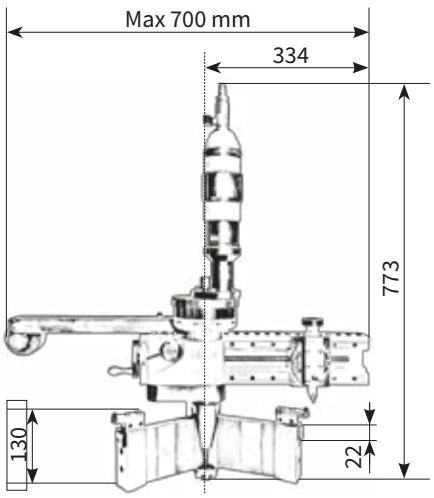
75 cfm	2,2 m³/min	Depends on motor configuration, see drawing below	99 Lbs	45 kg

LEVELLING AND CENTERING

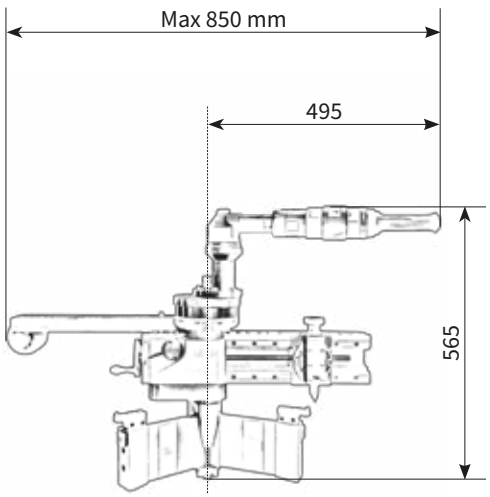
Special jaw set for easy and quick levelling and centering machines on the flange

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 DIAMETER	TOOL POST TRAVEL	FEED RATES	FREE 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

75 cfm	2,2 m^3/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

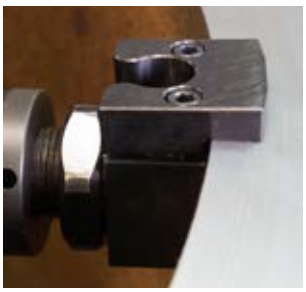
BORING FEED RATES (3 OFF UP/DOWN)

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

MACHINE IN ACTION

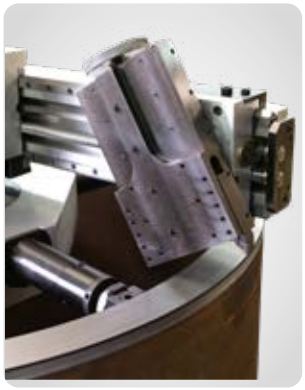
IMFM on xxx tube xxx shedule, facing operation, producing xx grooves per/cm

LEVELLING AND CENTERING



IMFM40 Special jaw set for easy and quick levelling and centering machine. 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.

SWIVEL TOOL AS A STANDARD




Standard configuration of IMFM is equpped 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.

SFFM Flange Facer

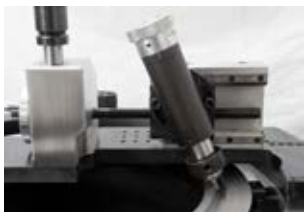
SFFM series Flange Facing Machines are mounted on the outer diameter of the flange. The precise, synchronized radial and axial feed mechanism allows for a high quality machining, resulting in one continuous groove producing a true gramophone finish.

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 axe 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

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 widen 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			DIMMENSIONS					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.

Splitframe CLAMSHELLS

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.

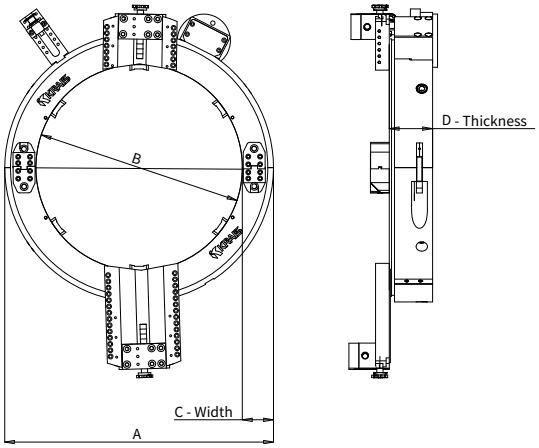
Steel plates on the back part for machine squaring on the pipe .

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

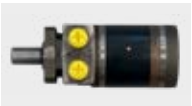
HM-xxx

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.

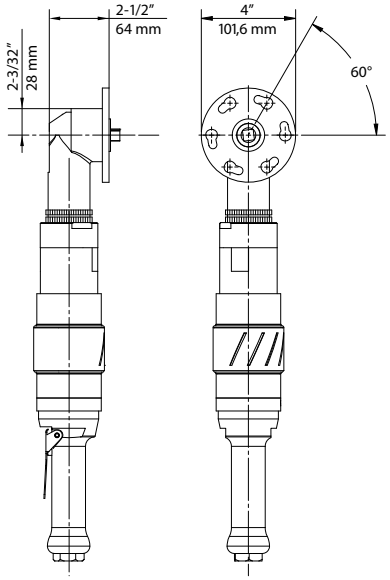
Cleco® is a registered trademark of Apex Brands, Inc.
DL Ricci® and Hydratight® are a registered trademark of Enerpac
E.H. Wachs® is a registered trademark of ITW, Inc.
H&S® is a registered trademark of Climax

MODEL NUMBER	REVERSIBLE	SQUARE DRIVE	TORQUE		FREE SPEED	LENGTH		WEIGHT		HEAD HEIGHT		ANGLE 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	-

Where: R - reversible | N - non reversible | L - lever valve | V - angle head | xxx - free speed
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 upoun request.

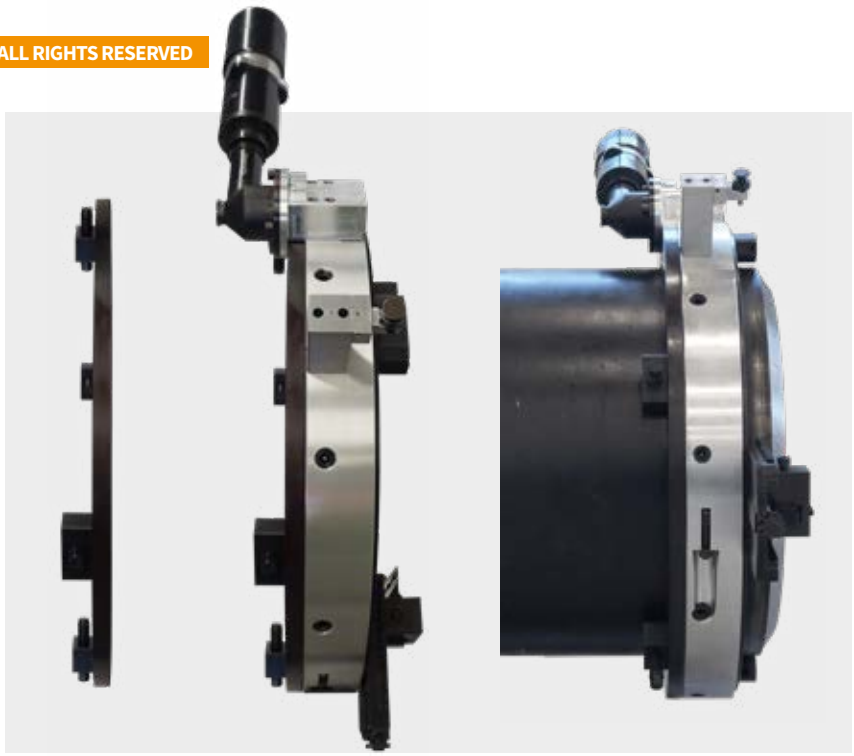


FLEXIBLE CONFIG

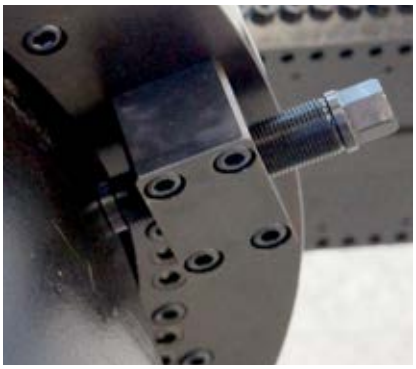
KRAIS 70 Series Drives are available in both right angle and inline configurations. Electric and Hydraulic options are also available. Please consult factory.

Reaction ring for SFSF clamshells

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 OOR 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.



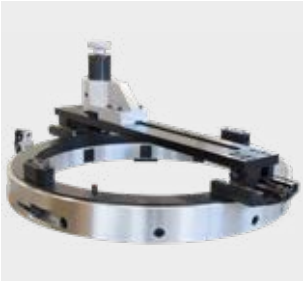
ORR mounted on the rear on the existing threaded holes in the aluminium ring.

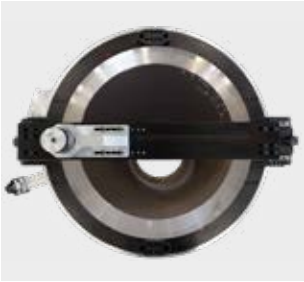
SFSF clamshells add-ons

TOOL SLIDES

KRAIS Tool Slides are rugged and build 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 our single point heavy wall machining, the BCS quickly and easily bolts onto the split frame ring.

BCS 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°)		
		MADE TO ORDER 	MADE TO ORDER 	MADE TO ORDER 	MADE TO ORDER 	MADE TO ORDER 
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 BIT: CSS-1	SFSC-525-225 BIT: CSS-1	SFSC-525-180-TWEEN1 SFSC-525-180-TWEEN2 BITS: CSS-2 & CSS-2	SFSC-525-225-TWEEN1 SFSC-525-225-TWEEN2 BITS: 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 BIT: WRI-45	SFLB-30 BIT: WRIL-45	SFRB-37 BIT: WRI-45	SFLB-37 BIT: WRIL-45	SFRB-1037 BIT: CB-45	SFLB-1037 BIT: CBL-45	SFRLB-2X1037 BITS: CB-46 & CBL-46	SFRLB-2X37 BITS: WRI-46 & WRIL-46	SFJP-37-R5 BIT: 2CDJ-5-SF

KRAIS

For more tools:

- expanding tubes
- installation tools
- bevelers for tube & pipe
- clamshell
- cutters
- pulling equipment
- tube removal tools
- flange management
- accessories

visit: www.krais.com

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