KRAIS®
Tube & Pipe Tools

Beveling tubes

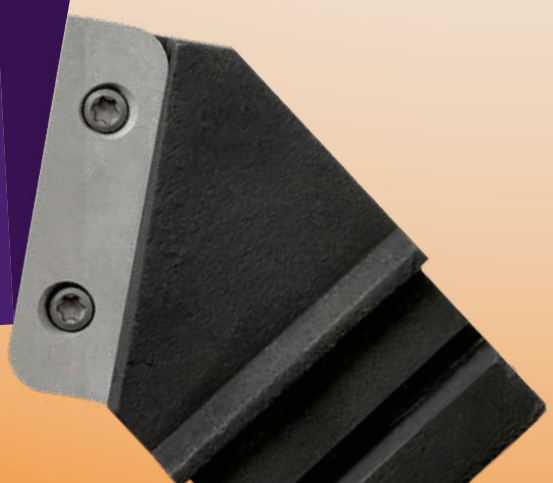
Pipe cutting

Flange facing

FinFan works

Leading manufacturer
of high quality tools and machines
for the tube and pipe industry

PRODUCTS CATALOG 2025




KRAIS®
Tube & Pipe Tools

KRAIS®
Tube & Pipe Tools

Tube & Pipe Tools

Catalog 2026

Original Manufacturer of the Products

bsi.

By Royal Charter

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that:

KRAIS
Przedsiebiorstwo Produkcyjno Remontowe
Jerzy Krais
Czachowo 15
Zawonia
55-106
Poland

Holds Certificate No: **FM 720649**

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

Production of tools and equipment for pipe processing and installation.
Activities are related to IAF Sector 17.

For and on behalf of BSI:

David Fardel, Country Manager, EMEA Assurance

Original Registration Date: 2019-11-18
Latest Revision Date: 2025-10-01

Effective Date: 2025-11-18
Expiry Date: 2028-11-17

Page: 1 of 1

...making excellence a habit.™

Table of contents

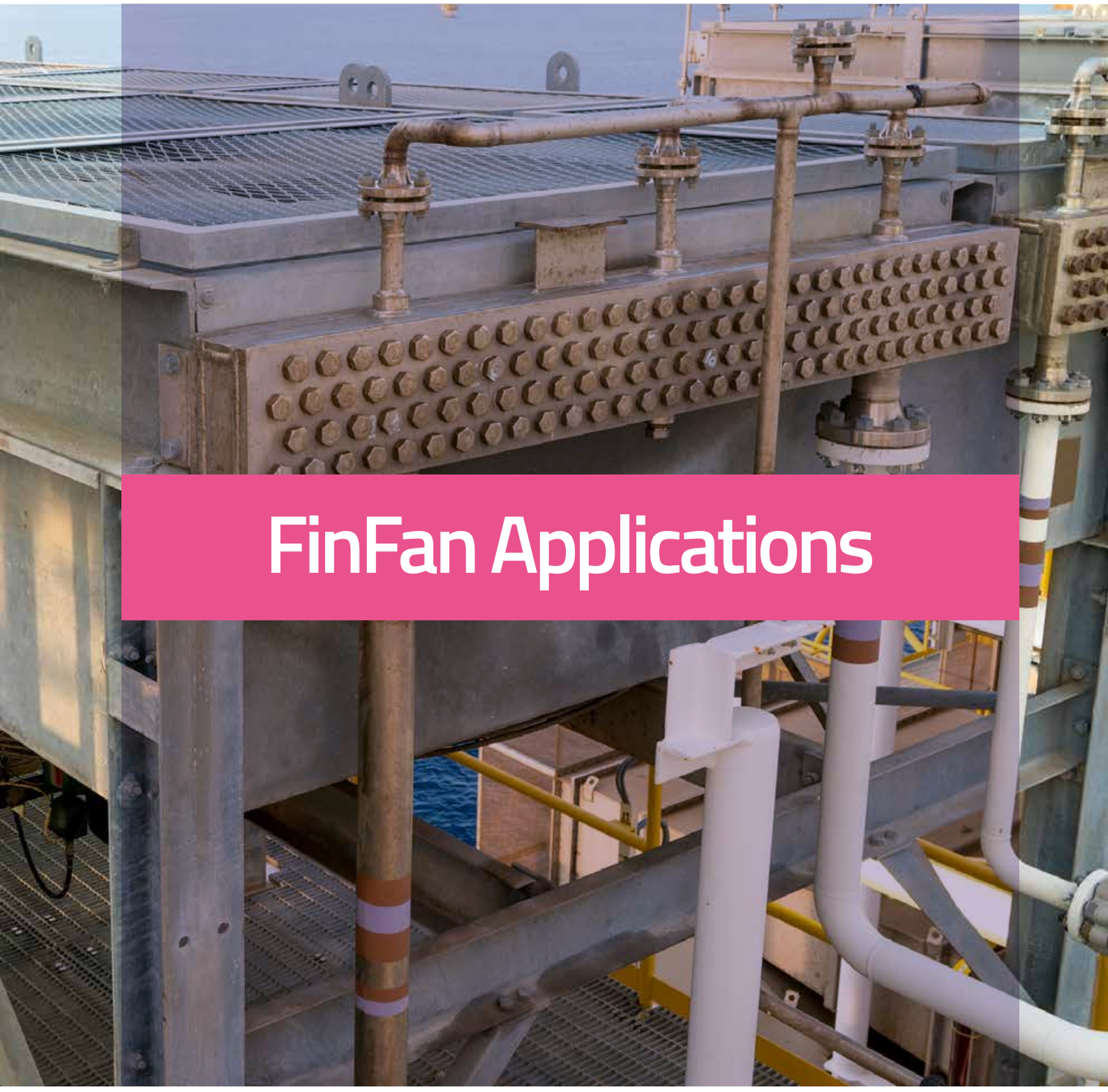
IMPORTANT!

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.

Table of contents



FinFan Applications

KRAIS
Tube & Pipe Tools

MiniDrill GFF

The MiniDrill GFF is a dedicated machining solution specifically developed for **FinFan air coolers**, enabling fast and precise repair of plug threads and sealing surfaces directly on-site.

Engineered for **FinFan maintenance**, the system supports drilling, re-machining, and seat restoration operations with a single machine, changing only the tool, eliminating the need for disassembly. Its rigid, torque-reactive design and dual clamping arms ensure stable mounting on adjacent tube holes, allowing accurate alignment across typical FinFan tube layouts.

With an **80 mm stroke**, controlled speed, and high torque output, the MiniDrill GFF delivers reliable performance even in demanding field conditions. The result is repeatable machining accuracy, reduced downtime, and restored sealing integrity of critical FinFan connections.

A compact, robust, and purpose-built tool for efficient FinFan thread repair and maintenance operations.

WORKING RANGE	LOCKING RANGE	WORKING STROKE	FREE SPEED	POWER	TORQUE
12,5– 51,0 mm	According to the drawing	80 mm	100 Rpm	1,3 Hp	140 Nm
0,492 – 2,000”		3,150"			105 Ft.Lbs

AIR USE		BODY WIDTH		BODY HEIGHT		BODY WEIGHT	
55 cfm	1,3 m3/min	2,32”	59 mm	13,1”	335 mm	17,5 Lbs	8 kg

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

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

FINFAN THREAD REPAIR PROCESS

PROPER MACHINE LOCKING FOR ALL STEPS
Choose the correct locking jaws to suit the exisiting plug holes

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

STEP 1 // Heads for weld removal over the welded plugs (in case are welded)

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

STEP 2 // Select the appropriate size drill head to match the desired new thread size

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

STEP 3 //Select the chamfering head to chamfer the hole before tapping (heads need a Weldon flange: MD-FLANGE-STWRMH)

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

STEP 4 // Select tapping head to suit the required thred size

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

STEP 5
Produce new gasket seat using MiniMill-300GFF. Choose heads and jaws on next page.

MiniMill 300GFF

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

STANDARD SET UP

GASKET FINFAN SET
Supplied with 20 mm shaft, one set of jaws to suit plug thread diameter, pilot and gasket seat milling head. Plug size details must be 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.

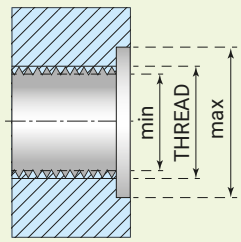
MiniMill 300GFF

GASKET SEAT FACING HEADS AND JAWS NUMBERS

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

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

Seal nest diameter diagram

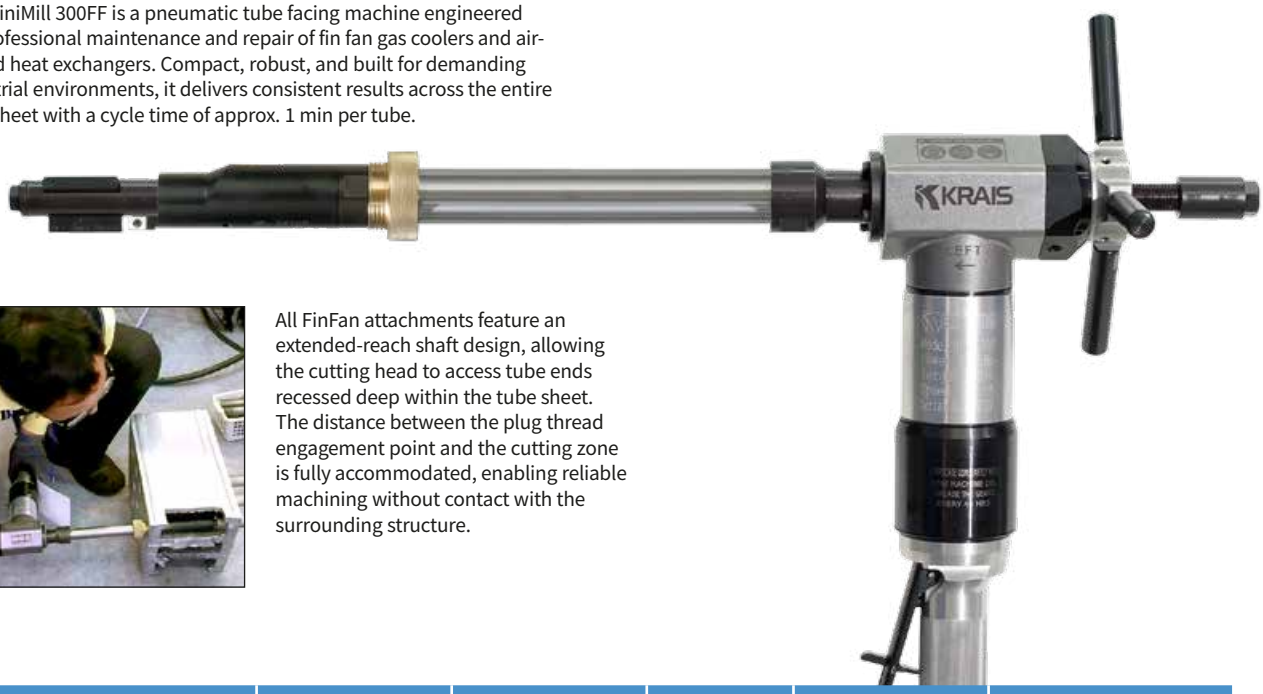


OTHER OPTIONAL ACCESSORIES

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

MiniMill 300FF

The MiniMill 300FF is a pneumatic tube facing machine engineered for professional maintenance and repair of fin fan gas coolers and air-cooled heat exchangers. Compact, robust, and built for demanding industrial environments, it delivers consistent results across the entire tube sheet with a cycle time of approx. 1 min per tube.



All FinFan attachments feature an extended-reach shaft design, allowing the cutting head to access tube ends recessed deep within the tube sheet. The distance between the plug thread engagement point and the cutting zone is fully accommodated, enabling reliable machining without contact with the surrounding structure.

APPLICATION RANGE (ID-OD)	LOCKING RANGE	FEED STROKE	POWER	FREE SPEED	TORQUE
12,5– 51,0 mm	According to the drawing	20 mm	1,3 Hp	300 Rpm	43 Nm / 32 Ft.Lbs
0,492 – 2,000”		0,787”		100 Rpm	120 Nm / 88,5 Ft.Lbs

AIR USE		BODY WIDTH		BODY HEIGHT		BODY WEIGHT	
55 cfm	1,3 m³/min	2,32”	59 mm	13,1”	335 mm	13,2Lbs	6 kg

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

The machine is designed for work on gas coolers: an elongated special head and a nut fixing the tool in the socket.

The bit edge covers the entire weld to be removed

Removal of the weld ends with a visible groove between the tube and the tube sheet.

MiniMill 300FF

FINFAN ATTACHMENT FOR FACING TUBES (DEFAULT)

Attachment for facing tube ends in fin fan gas coolers. Features an adjustable-length locking shaft and a support bushing that threads into the plug, ensuring precise, repeatable positioning from tube to tube. Cycle time: approx. 1 min per tube. Recommended machine speed: 300 RPM.

TOOL	TUBE CAPACITY (OD)			BIT	CENTER NUT	JAWS COVER	
	[INCH]	[MM]	BWG			MIN	MAX
597-FINFAN-CSS-12	0,750	19,05	12-18	CSZ	7/8	307MM#36	313MM#36
600-FINFAN-CSS-12	0,875	22,23	12-18	CSZ	1	316MM#36	319MM#36
601-FINFAN-CSS-12	1,000	25,40	12-23	CSS	1-1/8	207MM#36	213MM#36
603-FINFAN-CSS-12	1,125	28,58	12-23	CSS	1-1/4	211MM#36	217MM#36
605-FINFAN-CSS-12	1,250	31,75	11-23	CSS	1-3/8	103MM#36	107MM#36
607-FINFAN-CSS-12	1,500	38,10	11-23	CS	1-5/8	107MM#36	111MM#36
609-FINFAN-CSS-12	1,750	44,45	9-23	CS	1-7/8	111MM#36	115MM#36
611-FINFAN-CSS-12	2,000	50,80	9-23	CS	2-1/8	115MM#36	119MM#36

FINFAN SEAL WELD REMOVAL ATTACHMENT

Attachment for seal weld removal in air-cooled heat exchangers. The adjustable-length locking shaft and support bushing thread into the plug for secure, consistent engagement. Cycle time: approx. 1 min per tube. Recommended machine speed: 100 RPM.

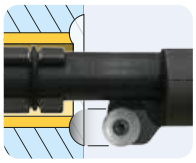
TOOL	TUBE CAPACITY (OD)			BIT	CENTER NUT	JAWS COVER	
	[INCH]	[MM]	BWG			MIN	MAX
597-FINFAN-SWR-12	0,750	19,05	12-18	CSZ	7/8	307MM#36	313MM#36
600-FINFAN-SWR-12	0,875	22,23	12-18	CSZ	1	316MM#36	319MM#36
601-FINFAN-SWR-12	1,000	25,40	12-23	CSS	1-1/8	207MM#36	213MM#36
603-FINFAN-SWR-12	1,125	28,58	12-23	CSS	1-1/4	211MM#36	217MM#36
605-FINFAN-SWR-12	1,250	31,75	11-23	CS	1-3/8	103MM#36	107MM#36
607-FINFAN-SWR-12	1,500	38,10	11-23	CS	1-5/8	107MM#36	111MM#36
609-FINFAN-SWR-12	1,750	44,45	9-23	CS	1-7/8	111MM#36	115MM#36
611-FINFAN-SWR-12	2,000	50,80	9-23	CS	2-1/8	115MM#36	119MM#36

FINFAN CHAMFERING ATACHMENT

Attachment for chamfering tube sheet holes in fin fan units prior to welding. Features an adjustable-length locking shaft and a support bushing that threads into the plug. Cycle time: approx. 1 min per tube. Recommended machine speed: 300 RPM.

TOOL	TUBE CAPACITY (OD)			BIT	CENTER NUT	JAWS COVER	
	[INCH]	[MM]	BWG			MIN	MAX
601-FINFAN-CMF-12	1,000	25,40	12-23	CI-6x6	1-1/8	207MM#36	213MM#36
605-FINFAN-CMF-12	1,250	31,75	11-23	CI-6x6	1-3/8	103MM#36	107MM#36
607-FINFAN-CMF-12	1,500	38,10	11-23	CI-6x6	1-5/8	107MM#36	111MM#36

FINFAN JPREP ATTACHMENT



Attachment for simultaneous facing of tube ends and tube sheet surfaces in fin fan units. The specially shaped head carries a large round cutting insert, enabling full coverage of the weld area in a single pass. Recommended machine speed: 100 RPM.

TOOL	TUBE CAPACITY (OD)			INSERT	CENTER NUT	JAWS COVER	
	[INCH]	[MM]	BWG			MIN	MAX
601-FF-JPREP-12"	1,000	25,40	12-23	O10-Co	1-1/8	207MM#36	213MM#36
603-FF-JPREP-12"	1,125	28,58	12-23	O10-Co	1-1/4	211MM#36	217MM#36
605-FF-JPREP-12"	1,250	31,75	11-23	O10-Co	1-3/8	215MM#36	219MM#36
607-FF-JPREP-12"	1,500	38,10	11-23	O10-Co	1-5/8	107MM#36	111MM#36
609-FF-JPREP-12"	1,750	44,45	9-23	O10-Co	1-7/8	111MM#36	115MM#36
611-FF-JPREP-12"	2,000	50,80	9-23	O10-Co	2-1/8	115MM#36	119MM#36

LENGTHS AVAILABLE ON REQUEST

MODEL	LENGTH	
	[MM]	[INCH]
xxx-FINFAN-6	152,4	6"
xxx-FINFAN-8	203,2	8"
xxx-FINFAN-10	254,0	10"
xxx-FINFAN-12	305,0	12"
xxx-FINFAN-14	355,6	14"
xxx-FINFAN-16	406,4	16"

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.

OPTIONAL

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

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 [INCH]	RANGE [MM]	HEAD
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-508
2-1/4	57,15	FMRH-571
2-1/2	63,50	FMRH-635

LOCKING RANGES WITH SHAFT25

RANGE [MM]		RANGE [INCH]		JAWS	SPRING	
MIN	MAX	MIN	MAX		NR	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

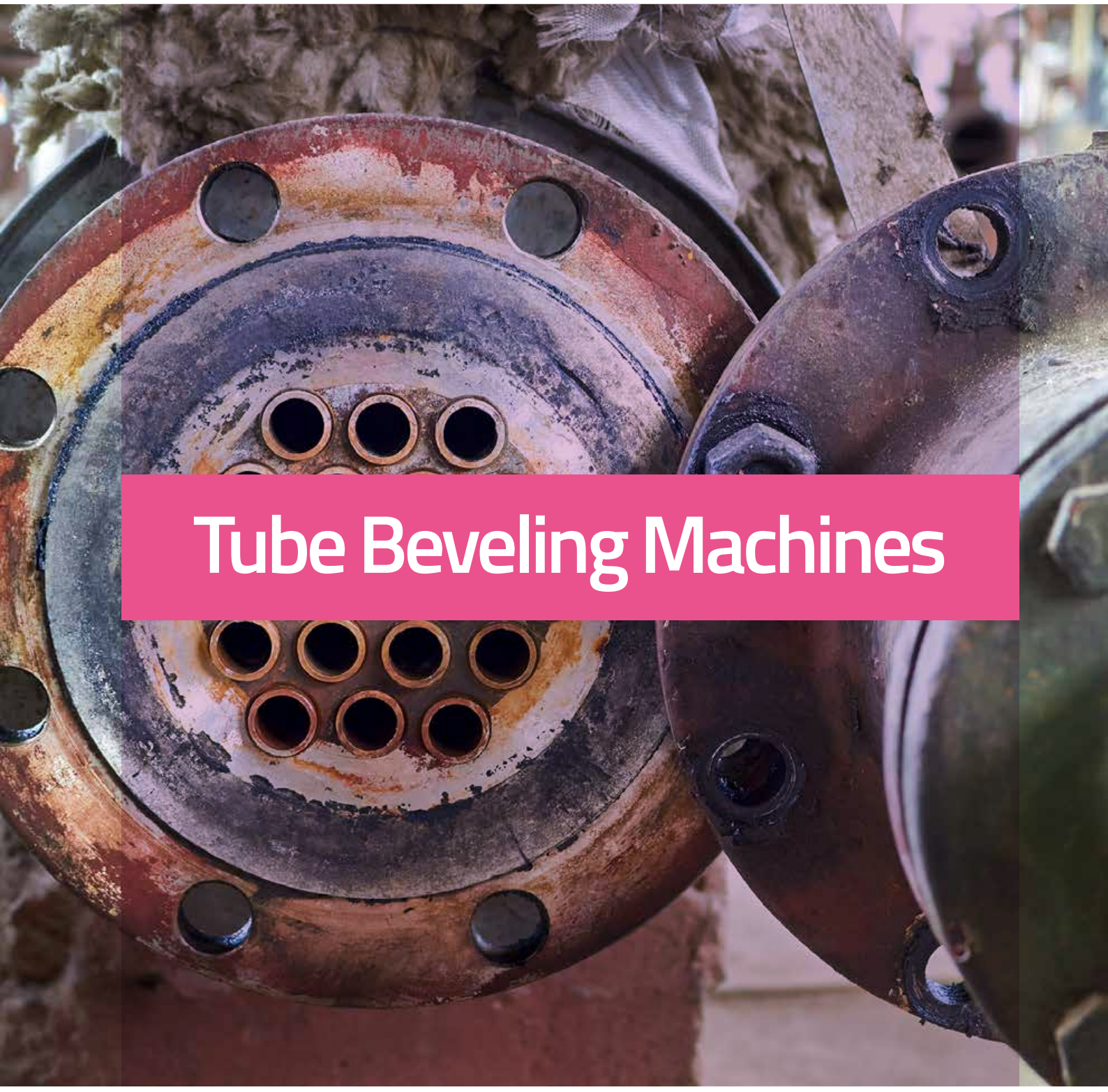
EXAMPLE TOOL APPLICATION

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

FINMILL E

Electric version of tool - covers the same pipe sizes and comes with the same cutting head. Electric motor made by Makita with 3 stage planetary gear box made by KRAIS has variable speed control and produce solid torque. Drive 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")
FinMill E works only with right hand fins.

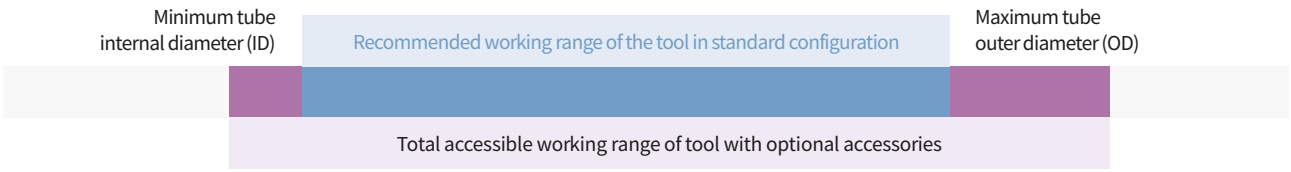


Tube Beveling Machines

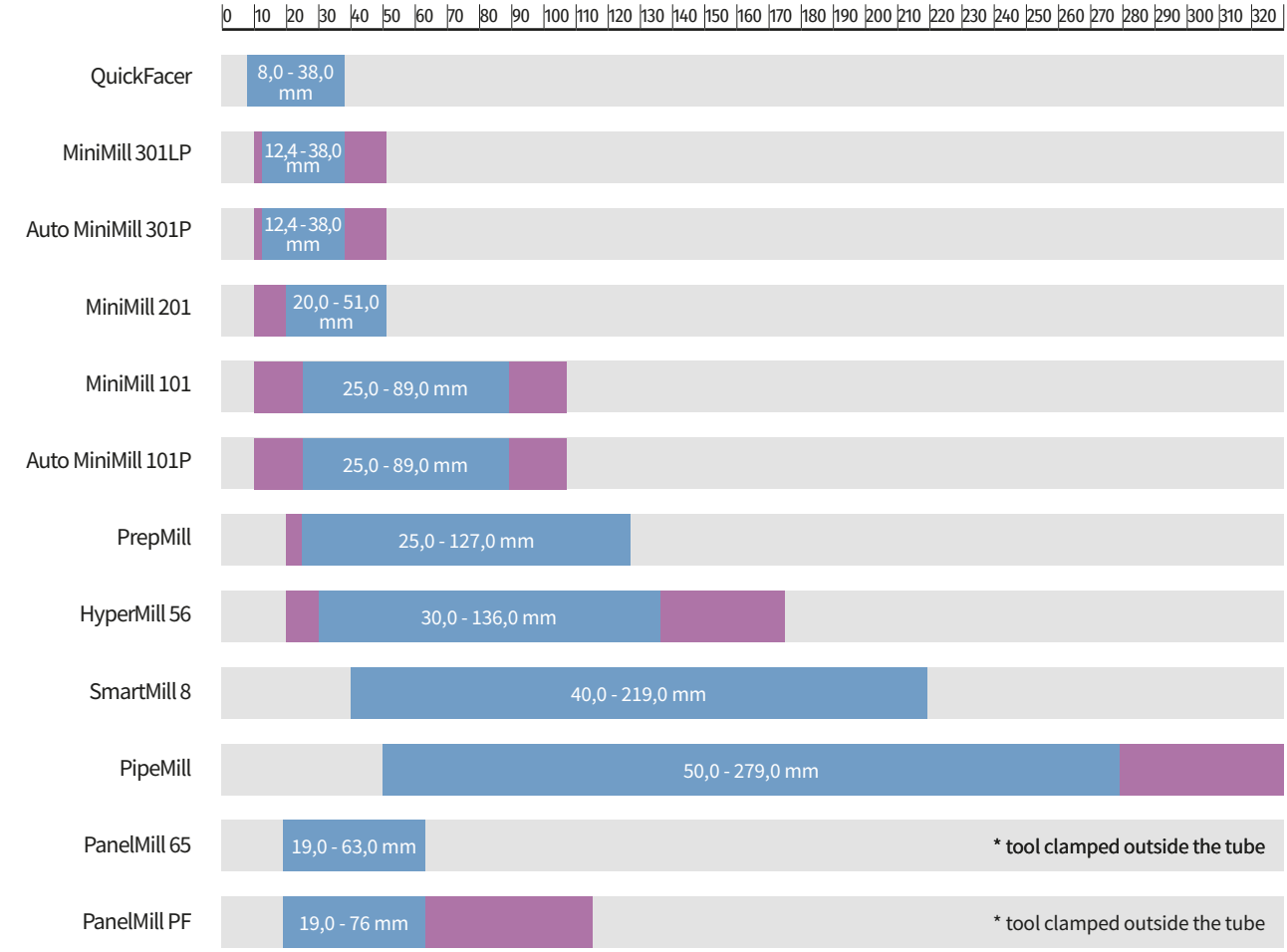
KRAIS
Tube & Pipe Tools

Ranges for ID/OD mount bevelers

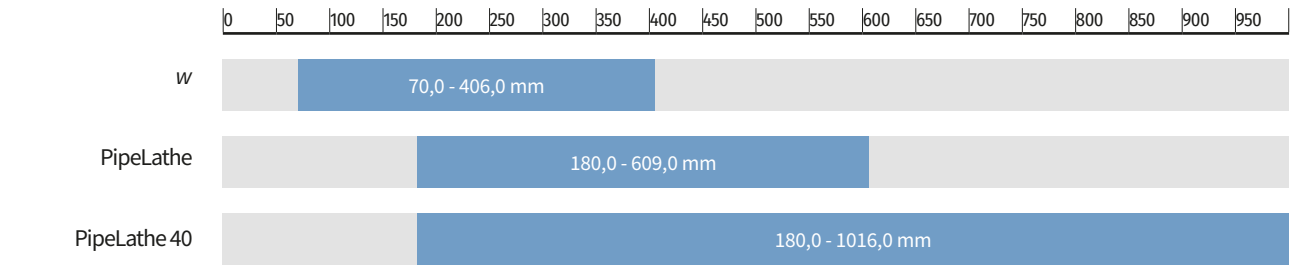
HOW TO READ IT



MILL SERIE WORKING RANGES (UNIVERSAL TOOLS)



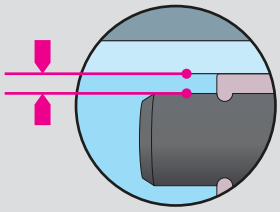
LATHE SERIE WORKING RANGES (UNIVERSAL TOOLS)



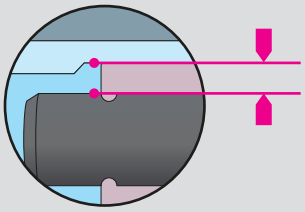
ID beveling machines proper lock

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

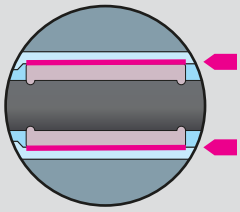


Correct
(EXPANDED TUBE)
Gap between shaft and tube ID should be max 0,3 mm



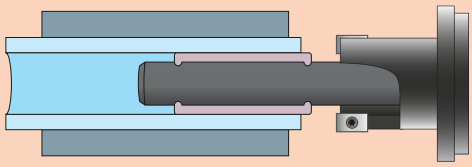
Correct mounting

Contact between jaws and tube is over the entire surface

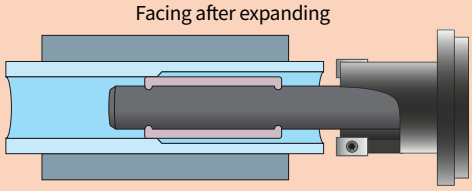


WRONG JAWS SETUP

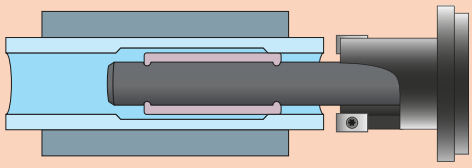
Facing before expanding



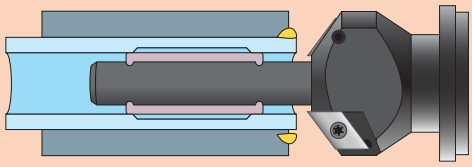
Facing after expanding



Facing after expansion with double radius rolls

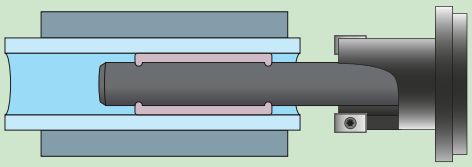


Strength weld removal aplication

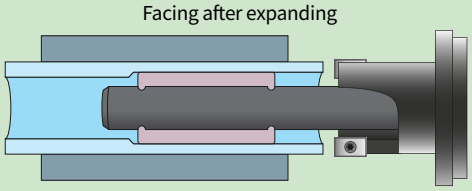


CORRECT JAWS SETUP

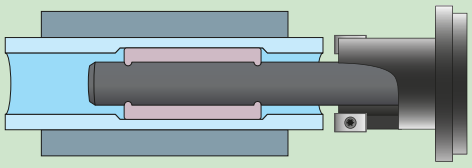
Facing before expanding



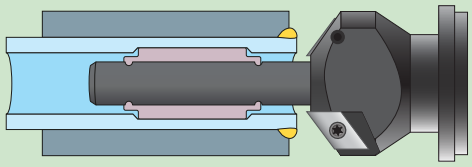
Facing after expanding



Facing after expansion with double radius rolls



Strength weld removal aplication



Locking jaws selection for Minimill & HyperMill

Selecting the appropriate clamping system is critical for ensuring machining precision and operator safety. KRAIS provides specialized shaft configurations designed to match specific tube diameters and torque requirements.

Each machine is delivered with a selected clamping set only, which is specified on the machines pages in the catalog. Below we present the full available range of jaws for each clamping system to facilitate jaw selection for specific customer needs.

MICROSHAFT AND MINISHAFT SYSTEMS

These systems utilize interchangeable guide shafts designed for high-precision applications in small-diameter tubing. They provide a stable pilot for the bevelling head, ensuring concentricity during the machining process.

MICROSHAFT SYSTEM
Engineered for extremely restricted access and small-bore applications. This system uses a set of interchangeable shafts to cover an internal diameter (ID) range from 9,0 mm to 15,0 mm. It is the primary choice for thin-walled heat exchanger tubes where precise alignment is mandatory.

MINISHAFT SYSTEM
A versatile centering system for standard small-to-medium tube sizes. It utilizes reinforced interchangeable shafts to cover an ID range of 12,4 mm to 48,0 mm. The system maintains a low profile while providing sufficient rigidity for consistent weld prep geometry.

JAWS FOR MICROSHAFT

MICROSHAFT can be used with:
MiniMill 101, MiniMill 201, MiniMill 301

	RANGE [MM]		RANGE [INCH]		JAWS	SHAFT	PIN	CAGE SIZE		SPRING
	MIN	MAX	MIN	MAX				[INCH]	[MM]	
STANDARD	9,00	10,00	0,354	0,394	301MM#36	800MM#151	MS-158-51	0,354	9,00	DW-7,5
	10,00	11,00	0,394	0,433	301MM#36	801MM#151	MS-158	0,394	10,00	DW-8,5
	11,00	12,00	0,433	0,472	303MM#36					
	12,00	13,00	0,472	0,512	305MM#36					
	13,00	14,00	0,512	0,551	307MM#36	805MM#151		0,453	11,50	DW-10
	14,00	15,00	0,551	0,591	309MM#36					

JAWS FOR MINISHAFT

MINISHAFT can be used with:
MiniMill 101, MiniMill 201, MiniMill 301

	RANGE [MM]		RANGE [INCH]		JAWS	SHAFT	CAGE SIZE		SPRING
	MIN	MAX	MIN	MAX			[INCH]	[MM]	
STANDARD	12,40	14,50	0,488	0,571	201MM#36	901MM#151	0,488	12,40	DW-11
	13,90	16,00	0,547	0,630	203MM#36	905MM#151	0,547	13,90	DW-12,5
	15,90	18,00	0,626	0,709	205MM#36	909MM#151	0,665	16,90	DW-15,5
	16,90	19,00	0,665	0,748	207MM#36				
	18,90	21,00	0,744	0,827	209MM#36				
	19,90	22,00	0,783	0,866	211MM#36				
	20,90	23,00	0,823	0,906	213MM#36				
	21,90	24,00	0,862	0,945	214MM#36				
	23,60	25,60	0,929	1,008	215MM#36	915 MM#151	0,787	20,00	O-15
	25,20	27,20	0,992	1,071	217MM#36				
	26,80	28,80	1,055	1,134	219MM#36				O-17
	28,40	30,40	1,118	1,197	221MM#36				
	30,00	32,00	1,181	1,260	223MM#36				
	31,60	33,60	1,244	1,323	225MM#36				O-20
	33,20	35,20	1,307	1,386	227MM#36				
	34,80	36,80	1,370	1,449	229MM#36				O-22
	36,40	38,40	1,433	1,512	231MM#36				
	38,00	40,00	1,496	1,575	233MM#36				
	39,60	41,60	1,559	1,638	235MM#36				
	41,20	43,20	1,622	1,701	237MM#36				
	42,80	44,80	1,685	1,764	239MM#36				O-25
	44,40	46,40	1,748	1,827	241MM#36				
	46,00	48,00	1,811	1,890	243MM#36				

HEAVY DUTY SELF-ALIGNING SHAFT SYSTEMS

The heavy duty series is engineered for high-torque pipe bevelling and applications requiring maximum material removal rates.

SELF-ALIGNING GEOMETRY
The integrated locking system automatically centers the tool within the pipe axis. This eliminates manual adjustment errors and ensures a perfectly square face or uniform bevel angle.

ENHANCED CLAMPING SURFACE
These shafts feature elongated and widened jaws that significantly increase the contact area against the pipe ID. This design maximizes friction and clamping force, preventing tool slippage or vibration during aggressive machining cycles.

STRUCTURAL RIGIDITY
Constructed from hardened engineering-grade alloys, the shaft xx series is designed to withstand the radial and axial forces encountered when working on heavy-wall pipes or hard alloys.

JAWS FOR SHAFT20

SHAFT20 can be used with:
MiniMill 101, MiniMill 201, MiniMill 301, PrepMill, HyperMill 56

RANGE [MM]		RANGE [INCH]		JAWS	EXT.	SPRING	
MIN	MAX	MIN	MAX			NO.	QTY.
20,0	24,0	0,787	0,945	NS-0	-	SP-19	1
24,0	28,0	0,945	1,102	NS-1	-	SP-19	1
28,0	33,0	1,102	1,299	NS-2	-	SP-19	1
33,0	38,0	1,299	1,496	NS-3	-	SP-20	2
38,0	43,0	1,496	1,693	NS-4	-	SP-20	2
43,0	48,0	1,693	1,890	NS-5	-	SP-20	2
48,0	53,0	1,890	2,087	NS-6	-	SP-20	2
53,0	58,0	2,087	2,283	NS-7	-	SP-20	2
58,0	63,0	2,283	2,480	NS-8	-	SP-20	2
60,0	65,0	2,362	2,559	NS-5	NS-10	SP-20	2
65,0	70,0	2,559	2,756	NS-6	NS-10	SP-20	2
70,0	75,0	2,756	2,953	NS-7	NS-10	SP-20	2
75,0	80,0	2,953	3,150	NS-8	NS-10	SP-20	2

STANDARD

JAWS FOR SHAFT25

SHAFT25 can be used with:
MiniMill 101, PrepMill, HyperMill 56

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

STANDARD

JAWS FOR SHAFT30

SHAFT30 can be used with:
HyperMill 56

RANGE [MM]		RANGE [INCH]		JAWS	EXT.	SPRING	
MIN	MAX	MIN	MAX			NO.	QTY.
30,0	34,0	1,181	1,339	NS-1		SP-29	1
34,0	39,0	1,339	1,535	NS-2		SP-29	1
39,0	44,0	1,535	1,732	NS-3		SP-30	2
44,0	49,0	1,732	1,929	NS-4		SP-30	2
49,0	54,0	1,929	2,126	NS-5		SP-30	2
54,0	59,0	2,126	2,323	NS-6		SP-30	2
59,0	64,0	2,323	2,520	NS-7		SP-30	2
64,0	69,0	2,520	2,717	NS-8		SP-30	2
66,0	71,0	2,598	2,795	NS-5	NS-10	SP-30	2
71,0	76,0	2,795	2,992	NS-6	NS-10	SP-30	2
76,0	81,0	2,992	3,189	NS-7	NS-10	SP-30	2
81,0	86,0	3,189	3,386	NS-8	NS-10	SP-30	2
86,0	91,0	3,386	3,583	NS-5	NS-20	SP-30	2
91,0	96,0	3,583	3,780	NS-6	NS-20	SP-30	2
96,0	101,0	3,780	3,976	NS-7	NS-20	SP-30	2
101,0	106,0	3,976	4,173	NS-8	NS-20	SP-30	2
106,0	111,0	4,173	4,370	NS-5	NS-30	SP-30	2
111,0	116,0	4,370	4,567	NS-6	NS-30	SP-30	2
116,0	121,0	4,567	4,764	NS-7	NS-30	SP-30	2
121,0	126,0	4,764	4,961	NS-8	NS-30	SP-30	2
126,0	131,0	4,961	5,157	NS-5	NS-40	SP-30	2
131,0	136,0	5,157	5,354	NS-6	NS-40	SP-30	2
136,0	141,0	5,354	5,551	NS-7	NS-40	SP-30	2
141,0	146,0	5,551	5,748	NS-8	NS-40	SP-30	2
146,0	151,0	5,748	5,945	NS-5	NS-50	SP-30	2
151,0	156,0	5,945	6,142	NS-6	NS-50	SP-30	2
156,0	161,0	6,142	6,339	NS-7	NS-50	SP-30	2
161,0	166,0	6,339	6,535	NS-8	NS-50	SP-30	2

STANDARD

QuickFacer

MICRO FACING MACHINE

QuickFacer is a compact, high-performance tube facing tool designed for precision weld end preparation and weld removal. This portable micro lathe is suitable for a wide range of tube materials, including stainless steel and high-chromium alloys.

The QuickFacer machine allows for machining tubes from 8,00 up to 38,00 mm OD (0.314"–1.496"), with a locking range of 7,5 to 36,00 mm (0.295"–1.417") and a feed stroke of 15 mm (0.590"). As a standard Quickfacer is equipped with a 50 mm cutting head.

IMPORTANT!
Read how to properly lock on page 85

STANDARD SET UP

MICROSHAFT QF
A system with interchangeable guide shafts. Set covers 10,0 to 13,0 mm ID tubes, with option to extend the range.

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

WORKING RANGE (ID-OD)	LOCKING RANGE (ID)	FEED STROKE	POWER	FREE SPEED	TORQUE
8,00 – 38,0 mm	7,50 – 36,00 mm	15,00 mm	0,7 kW	300 RPM	18 Nm
0,314 – 1,496"	0,307 – 1,417"	0,590"	0,98 Hp	(100 RPM with SpeedReducer)	13,3 Ft.lbs

AIR USE		DIMENSIONS		BODY WEIGHT	
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

OPTIONAL SHAFT

MINISHAFT QF
Tool set with interchangeable guide shafts. Covers 12,4 to 24,0 mm ID tubes, with option to extend the range.

OPTIONAL HEADS

OBMH
Head designed for outside bevelling tubes for wide range of tube sizes.
→ **TABLE PAGE 116**

STWRMH
Easy to align, sized per tube diameter, head dedicated for strength weld removal.
→ **TABLE PAGE 115**

TFMH
Tube facing milling head for tubes made of any type of material.
→ **TABLE PAGE 115**

TFMH127
Tube facing milling head for smallest tubes made of any type of material. Utilizes 6% cobalt special inserts.

BIT	MIN TUBE ID		MAX TUBE OD	
	[INCH]	[MM]	[INCH]	[MM]
CSS 107	0,303	7,70	0,433	11,00
CSS 117	0,327	8,30	0,551	14,00
CSS 127	0,366	9,30	0,591	15,00

QuickFacer

QUICKFACER CLAMPING JAWS SELECTION TABLE

TUBE ID				JAWS	EXPANSION PIN	SHAFT			SPRING
[MM]		[INCH]				SHAFT NR	SHAFT OD		
MIN	MAX	MIN	MAX				[MM]	[INCH]	
7,50	8,00	0,295	0,315	296MM#36	MS#158-40-QF	870QF#151	7,50	0,295	DW-6,5
8,00	8,50	0,315	0,335	297MM#36	MS#158-40-QF	878QF#151	8,00	0,315	DW-7,5
8,50	9,00	0,335	0,354	298MM#36	MS#158-40-QF	878QF#151	8,00	0,315	DW-7,5
9,00	9,50	0,354	0,374	298AMM#36	MS#158-40-QF	878QF#151	8,00	0,315	DW-7,5
9,00	10,00	0,354	0,394	299MM#36	MS#158-51-QF	878QF#151	8,00	0,315	DW-7,5
9,50	10,00	0,374	0,394	298BMM#36	MS#158-40-QF	878QF#151	8,00	0,315	DW-7,5
9,50	10,50	0,374	0,413	300MM#36	MS#158-51-QF	800QF#151	9,00	0,354	DW-7,5
10,00	11,00	0,394	0,433	301MM#36	MS#158-QF	801QF#151	10,00	0,394	DW-7,5
11,00	12,00	0,433	0,472	303MM#36	MS#158-QF	801QF#151	10,00	0,394	DW-8,5
12,00	13,00	0,472	0,512	305MM#36	MS#158-QF	805QF#151	11,50	0,453	DW-10
13,00	14,00	0,512	0,551	307MM#36	MS#158-QF	805QF#151	11,50	0,453	DW-10
14,00	15,00	0,551	0,591	309MM#36	MS#158-QF	805QF#151	11,50	0,453	DW-10
12,40	14,50	0,488	0,571	201MM#36	MM#158-QF	901QF#151	12,40	0,488	DW-11
13,90	16,00	0,547	0,630	203MM#36	MM#158-QF	905QF#151	13,90	0,547	DW-12,5
15,90	18,00	0,626	0,709	205MM#36	MM#158-QF	909QF#151	16,90	0,665	DW-15,5
16,90	19,00	0,665	0,748	207MM#36	MM#158-QF	909QF#151	16,90	0,665	DW-15,5
18,90	21,00	0,744	0,827	209MM#36	MM#158-QF	909QF#151	16,90	0,665	DW-15,5
19,90	22,00	0,783	0,866	211MM#36	MM#158-QF	909QF#151	16,90	0,665	DW-15,5
20,90	23,00	0,823	0,906	213MM#36	MM#158-QF	909QF#151	16,90	0,665	DW-15,5
21,90	24,00	0,862	0,944	214MM#36	MM#158-QF	909QF#151	16,90	0,665	DW-15,5
UP TO 38,00 MM (1,496 INCH)				ON REQUEST	MM#158-QF	915QF#151	20,00	0,787	DW-15,5

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.

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

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 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. The machine is offered in two options:

- **MiniMill 101SM**, for general use, can be used for pipe sizes of 20 - 74 mm i.d. (0.787" - 2.913") and comes with an 88 mm cutting head.
- **MiniMill 101SMSS** version is specialized for machining tubes in heat exchanger applications.

Heavy duty locking system

IMPORTANT!
Read how to properly lock on page 58

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.

MINIMILL 101SM				MINIMILL 101SMSS			
WORKING RANGE		TOTAL WORKING RANGE		WORKING RANGE		TOTAL WORKING RANGE SS	
APPLICATION	LOCKING	APPLICATION	LOCKING	APPLICATION	LOCKING	APPLICATION	LOCKING
25 – 89 mm	25 – 77 mm	10 – 107 mm	10 – 102 mm	12,4 – 38,0 mm	12,4 – 24,0 mm	10 – 51 mm	10 – 48 mm
0,984 – 3,504"	0,984 – 3,031"	0,394 – 4,213"	0,394 – 4,016"	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		100 rpm		140 Nm	105 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	11,4 Lbs	5,2 kg

STANDARD MINIMILL 101 LOCKING RANGES

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 JAWS

We deliver machines with selected shaft and set of jaws (below).
For more locking options please refer to page 86

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.

MiniMill 101

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 116

SWROTC
Seal weld removal head over tube circumference prior to re-welding the damaged joint without removing the tube.
→ TABLE PAGE 117

STWRMH
Head dedicated for strength weld removal. Heads are easy to align and sized per tube diameter.
→ TABLE PAGE 115

TFMH
Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.
→ TABLE PAGE 115

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.

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.

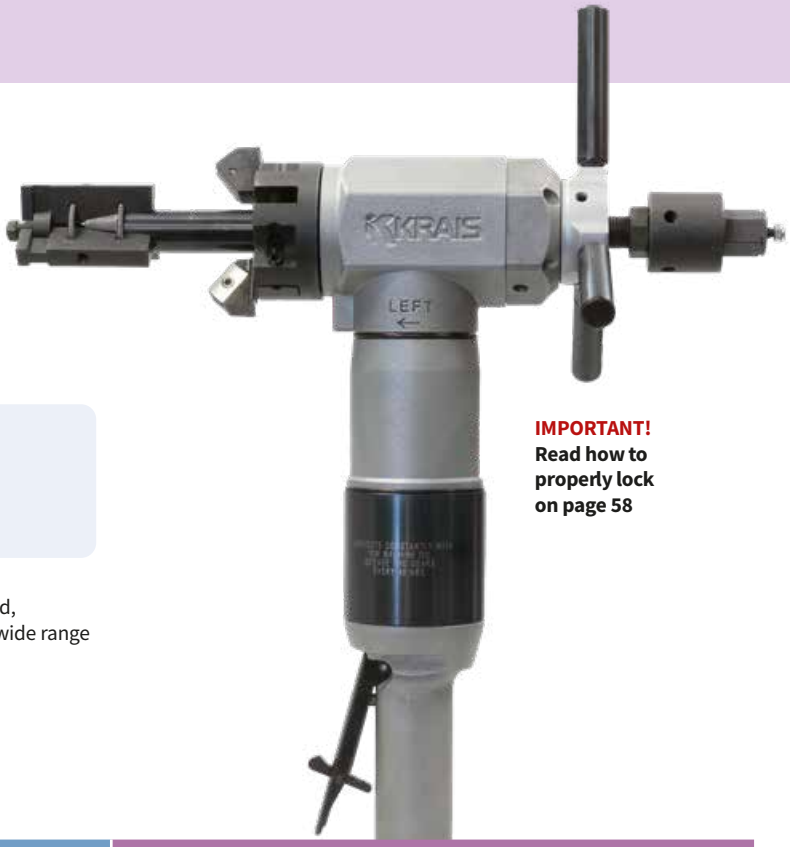
Model ED-230-MM
Free Speed..... 115 RPM
Power..... 750 W
Torque..... 366 NM (280 Ft.Lbs)
Feed Stroke ..... 20 mm (0,787")

AUTOMINIMILL 101P

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.

MiniMill 201

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



STANDARD SET UP

SHAFT20
Redesigned heavy duty locking system. Shafts and jaws are longer and wider to ensure maximum clamping force. The jaws are self-align.

60 MM (2,36”)
The smallest cutter head, designed to fasten the wide range of cutting inserts.

IMPORTANT!
Read how to properly lock on page 58

STANDARD WORKING RANGE		TOTAL WORKING RANGE	
APPLICATION RANGE	LOCKING RANGE	APPLICATION RANGE	LOCKING RANGE
20 – 51 mm	20 – 48 mm	10 – 51 mm	10 – 48 mm
0,787 – 2,008”	0,787 – 1,890”	0,394 – 2,008”	0,394 – 1,890”

FEED STROKE		POWER		FREE SPEED		TORQUE	
20 mm	0,787”	1,3 hp		200 rpm		72 Nm	53 Ft.lbs
55 cfm	1,3 m³/min	2,32”	59 mm	13,1”	335 mm	11,4 Lbs	5,2 kg

STANDARD MINIMILL 201 LOCKING RANGES

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

OPTIONAL JAWS

We deliver machines with selected shaft and set of jaws (below).
For more locking options please refer to page 86

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.

MiniMill 201

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 116

SWROTC
Seal weld removal head over tube circumference prior to re-welding the damaged joint without removing the tube.
TABLE PAGE 117

STWRMH
Custom designed head dedicated for strength weld removal. Heads are sized per tube diameter.
→ TABLE PAGE 115

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.

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.

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 58

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

STANDARD MINIMILL 301LP LOCKING RANGES

SHAFT	SIZE		JAWS	RANGE [MM]		RANGE [INCH]		SPRING
	[INCH]	[MM]		MIN	MAX	MIN	MAX	
901MM#151	12,40	0,488	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	0,945	

OPTIONAL JAWS

We deliver machines with selected shaft and set of jaws (below).
For more locking options please refer to page 86

OPTIONAL LOCKING SETS

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.

MiniMill 301LP

OPTIONAL HEADS

TFMH
Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.
→ TABLE PAGE 115

STWRMH
Head for strength weld removal. Easy to align and sized per tube diameter. Must be used with 3X Speed Reducer.
→ TABLE PAGE 115

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.

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

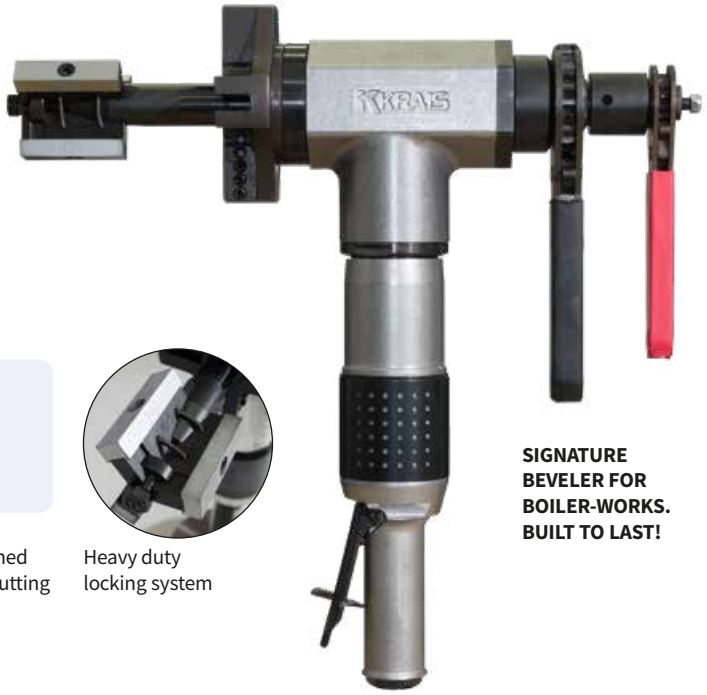
Double sided inserts and fixed diameter heads ensure unsurpassed efficiency and quality. Mechanical stops ensure identical tube projection.

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.

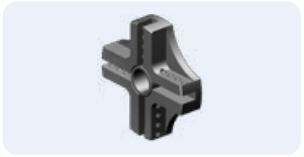
PrepMill

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



STANDARD SET UP

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



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

Heavy duty locking system

SIGNATURE BEVELER FOR BOILER-WORKS. BUILT TO LAST!

STANDARD WORKING RANGE		TOTAL WORKING RANGE	
APPLICATION RANGE	LOCKING RANGE	APPLICATION RANGE	LOCKING RANGE
25 – 127 mm	25 – 122 mm	20 – 127 mm	20 – 122 mm
1 – 5"	1,0 – 4,8"	0,787 – 5"	0,787 – 4,8"

FEED STROKE		POWER		FREE SPEED		TORQUE	
25 mm	1"	1,3 hp		120 rpm		140 Nm	105 Ft.lbs
55 cfm	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.

Model..... ED-230-PM
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.

PrepMill

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 118

PRRMBH
Head for membrane and overlay removal. Efficiently remove material between boiler tubes.
→ TABLE PAGE 118

STWRPM
Head dedicated for strength weld removal. Heads are easy to align and sized per tube diameter.
→ TABLE PAGE 119

TFPM
Tube facing milling head for tubes made of any type of material. Utilizes 6% cobalt inserts.
→ TABLE PAGE 119

STANDARD PREPMILL LOCKING RANGES

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

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.

OPT. SHAFT

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

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

OPTIONAL JAWS

We deliver machines with selected shaft and set of jaws (below).
For more locking options please refer to page 86

EXAMPLE TOOL APPLICATION

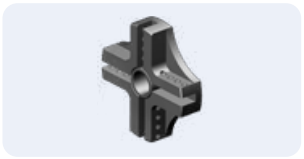
HyperMill 56

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.

Heavy duty locking system

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.

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

STANDARD HYPERMILL 56 LOCKING RANGES

SHAFT	JAWS	EXT.	RANGE [MM]		RANGE [INCH]		SPRING	
			MIN	MAX	MIN	MAX	NO.	QTY.
SHAFT30	NS-1		30,0	34,0	1,181	1,339	SP-29	1
	NS-2		34,0	39,0	1,339	1,535	SP-29	1
	NS-3		39,0	44,0	1,535	1,732	SP-30	2
	NS-4		44,0	49,0	1,732	1,929	SP-30	2
	NS-5		49,0	54,0	1,929	2,126	SP-30	2
	NS-6		54,0	59,0	2,126	2,323	SP-30	2
	NS-7		59,0	64,0	2,323	2,520	SP-30	2
	NS-8		64,0	69,0	2,520	2,717	SP-30	2
	NS-5	NS-10	66,0	71,0	2,598	2,795	SP-30	2
	NS-6	NS-10	71,0	76,0	2,795	2,992	SP-30	2
	NS-7	NS-10	76,0	81,0	2,992	3,189	SP-30	2
	NS-8	NS-10	81,0	86,0	3,189	3,386	SP-30	2
	NS-5	NS-20	86,0	91,0	3,386	3,583	SP-30	2
	NS-6	NS-20	91,0	96,0	3,583	3,780	SP-30	2
	NS-7	NS-20	96,0	101,0	3,780	3,976	SP-30	2
	NS-8	NS-20	101,0	106,0	3,976	4,173	SP-30	2
	NS-5	NS-30	106,0	111,0	4,173	4,370	SP-30	2
	NS-6	NS-30	111,0	116,0	4,370	4,567	SP-30	2
	NS-7	NS-30	116,0	121,0	4,567	4,764	SP-30	2
	NS-8	NS-30	121,0	126,0	4,764	4,961	SP-30	2

OPTIONAL JAWS

We deliver machines with selected shaft and set of jaws (below).
For more locking options please refer to page 86

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.

HyperMill 56

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.

HYPERMILL LP

The HyperMill LP features a built-in pneumatic locking system with a dual-piston cylinder, enabling fast and secure tube clamping. Designed for high-volume end preps, it increases productivity by up to four times while reducing operator fatigue, making it ideal for efficient, large-scale operations.

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.

AVAILABLE HOLDERS

Facing	Inside bevelling and boring	Outside bevelling
		
F-45-90-HM BIT: 2CDI	IB-45-37-HM IB-45-10-HM BIT: 2CDI	OB-45-45-HM OB-45-37-HM OB-45-30-HM OB-45-10-HM BIT: 2CDI

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.

Model ED-230-HM
Free Speed..... 58 RPM
Power..... 750 W
Torque..... 720 Nm (530 Ft.Lbs)
Feed Stroke ..... 40 mm (1,6")

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 half hour on one battery.
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.

PipeMill-8

PipeMill-8 is a high-performance pneumatic tube facing, beveling, and weld removal machine engineered for demanding industrial applications. Designed for speed, durability, and precision, PipeMill-8 delivers reliable weld end preparation on a wide range of pipe materials, including stainless steel and other exotic alloys.

Its robust construction and powerful pneumatic drive ensure consistent cutting performance, while the internal locking system provides fast and secure setup on pipes with inside diameters from 50.8 to 172 mm (2.000" to 6.800"). Equipped with a 250 mm cutting head, PipeMill-8 offers excellent machining accuracy, making it an ideal solution for workshop and on-site operations where efficiency and quality are critical.

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

EXAMPLE TOOL APPLICATION

PipeMill-8

AVAILABLE HOLDERS

Facing	Inside bevelling and boring	Outside bevelling	J-Prep	Compound bevelling
				
F-45-90 BIT: 2CDI	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

PIPEMILL-8-H – HYDRAULIC VERSION

PipeMill-8-H is the hydraulic version of the PipeMill machine, covering the same pipe size range and using the same cutting head as other PipeMill-8 versions. The hydraulic motor provides high, constant torque for efficient and precise cutting, with performance dependent on oil pressure and flow from an external power unit. PipeMill-8-H is interchangeable with electric and pneumatic drives, allowing conversion in approximately 5 minutes. Its robust yet lightweight design makes it suitable for both field and industrial applications.

Motor constant free speed ..... 375 RPM
Oil pressure required..... 160 bar
Oil flow max ..... 75 l/min
Motor power..... 16,2 Hp
Machine feed stroke ..... 40 mm (1,6")
Cutter head max free speed..... 75 RPM
Max constant torque on cutter blade..... 2200 Nm (1625 Ft.Lbs)
Total machine weight..... 41 kg

OPTIONAL HEAD

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

PIPEMILL-8-E – ELECTRIC VERSION

PipeMill-8-E is electric version of PipeMill-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 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)

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

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.

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.

OPTIONAL SHAFT

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 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

AVAILABLE HOLDERS

Facing	Inside bevelling and boring	Outside bevelling	J-Prep	Compound bevelling
				
F-45-90 BIT: 2CDI	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

LOCKING WITH STANDARD JAWS

RANGE [MM]		RANGE [INCH]		SEGMENTS	
MIN	MAX	MIN	MAX	FIRST	NEXT
40,0	55,0	1,575	2,165	SM-42-0	none
55,0	69,5	2,165	2,736	SM-42-1	none
69,5	84,0	2,736	3,307	SM-42-1	ML-42-A-75
84,0	98,5	3,307	3,878		ML-42-A-150
98,5	113,5	3,878	4,469		ML-42-A-225
113,5	128,5	4,469	5,059		ML-42-A-300
128,5	143,5	5,059	5,650		ML-42-A-300 ML-42-A-75
143,5	158,5	5,650	6,240		ML-42-A-300 ML-42-A-150
158,5	173,5	6,240	6,831		ML-42-A-300 ML-42-A-225
173,5	188,5	6,831	7,421		ML-42-A-300 ML-42-A-225 ML-42-A-75
188,5	203,5	7,421	8,012		ML-42-A-300 ML-42-A-225 ML-42-A-150

OPTIONAL SERVO DRIVE

EV-2000 SYNC
The machine can be driven by modern, high-tech KRAIS AC servo motor for controlled axis motion. They ensure highly accurate and smooth machine motion.
The motor has a rated output of 3 kW, rated speed of 2000 r/min, and rated torque of 14.3 Nm.

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)

SMARTMILL-8 PERFORMANCE

The SmartMill-8 is the most powerful machine in its class currently available on the market.

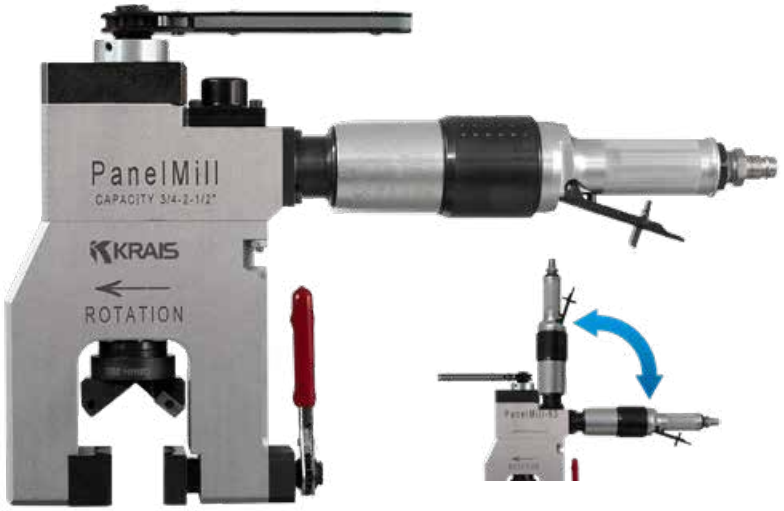
SMARTMILL-8H – HYDRAULIC VERSION

SmartMill-8H is the hydraulic version of the machine, sharing the same pipe range and cutting head as other 8-series models. Its hydraulic motor delivers high, constant torque for precision cutting, powered by an external unit. The drive is interchangeable with electric or pneumatic versions in just 5 minutes. Its robust yet lightweight design makes it ideal for both field and industrial use.

Motor constant free speed ..... 375 RPM
Oil pressure required..... 160 bar
Oil flow max ..... 75 l/min
Motor power..... 16,2 Hp
Machine feed stroke ..... 40 mm (1,6”)
Cutter head max free speed..... 75 RPM
Max constant torque on cutter blade..... 2200 Nm (1625 Ft.Lbs)
Total machine weight..... 41 kg

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.



	WORKING RANGE [MM]		WORKING RANGE [INCH]		CLEARANCE		CLADDING REMOVAL		MEMBRANE UP TO		FEED STROKE		FREE SPEED	TORQUE	
	MIN	MAX	MIN	MAX	[MM]	[INCH]	[MM]	[INCH]	[MM]	[INCH]	[MM]	[INCH]	[RPM]	[NM]	[FT.LBS]
65EXT	19,0	63,5	0,75"	2,50"	70,0	2,75"	44,4	1,75"	51,0	2.0"	25,5	1"	100*	140	105
65EXT-M*	19,0	63,5	0,75"	2,50"	84,0	3,3"	63,5	2,50"	63,5	2,5"	25,4	1"	100*	140	105
101	50,0	101,0	2"	4"	122,0	4,8"	88,9	3,50"	122,0	4,8"	25,4	1"	100**	140	105

**65EXT-M working range +63,5 mm membrane; **65EXT and EXT-M optional free speeds are 35, 200 and 300 RPM; ***101 optional free speed: 40 RPM*

	AIR USE		BODY WIDTH		BODY HEIGHT		WEIGHT	
	[CFM]	[M^3/MIN]	[MM]	[INCH]	[MM]	[INCH]	[KG]	[LBS]
65EXT	55	1,3	50	1,96"	300	11,81"	10	22
65EXT-M	55	1,3	50	1,96"	320	12,60"	11	24
101	55	1,3	50	1,96"	350	13,78"	18	40

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
334 PM#2	57,10	2,248

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
338 PM#2	60,30	2,374

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.

Model ED-230-PME
Free Speed.....115 RPM
Power.....750 W
Torque.....366 NM (280 Ft.Lbs)
Feed Stroke .....20 mm (0,787")

PanelMill 65

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

MACHINING IN EVERY POSITION

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-254	1,000	25,40	11-23	0,315	1,339	8,00	34,00	WRIL	2
OBPMH-285	1,125	28,58	11-23	0,307	1,331	7,80	33,80	WRIL	2
OBPMH-317	1,250	31,75	8-23	0,433	1,457	11,00	37,00	WRIL	2
OBPMH-381	1,500	38,10	6-23	0,681	1,705	17,30	43,30	WRIL	2
OBPMH-444	1,750	44,45	6-23	0,929	1,953	23,60	49,60	WRIL	2
OBPMH-508	2,000	50,80	6-23	1,181	2,205	30,00	56,00	WRIL	2
OBPMH-571	2,250	57,15	6-23	1,433	2,457	36,40	62,40	WRIL	2
OBPMH-603	2,375	60,33	6-23	1,535	2,559	39,00	65,00	WRIL	2
OBPMH-635	2,500	63,50	6-23	1,654	2,677	42,00	68,00	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.

	WORKING RANGE [MM]		WORKING RANGE [INCH]		CLEARANCE		CLADDING REMOVAL		MEMBRANE UP TO		FEED STROKE		FREE SPEED	TORQUE	
	MIN	MAX	MIN	MAX	[MM]	[INCH]	[MM]	[INCH]	[MM]	[INCH]	[MM]	[INCH]	[RPM]	[NM]	[FT.LBS]
PanelDrill 2,5" clamps	19,0	63,5	0,75"	2,50"	70,0	2,75"	44,4	1,75"	51,0	2.0"	50	2"	100*	140	105
PanelDrill 3,0" clamps	19,0	76,0	0,75"	3,00"	84,0	3,3"	63,5	2,50"	63,5	2,5"	50	2"	100*	140	105
PanelDrill 4,0" clamps	50,0	101,0	2,00"	4,00"	122,0	4,8"	88,9	3,50"	122,0	4,8"	50	2"	100**	140	105

**PanelDrill with 2,5" and 3" clamps optional free speeds are 35, 200 and 300 RPM; **PanelDrill with 4" clamps optional free speed: 35 RPMwith Speedreducer*

	AIR USE		BODY WIDTH		BODY HEIGHT		WEIGHT	
	[CFM]	[M^3/MIN]	[MM]	[INCH]	[MM]	[INCH]	[KG]	[LBS]
PanelDrill 2,5" clamps	55	1,3	50	1,96"	300	11,81"	10	22
PanelDrill 3,0" clamps	55	1,3	50	1,96"	320	12,60"	11	24
PanelDrill 4,0" clamps	55	1,3	50	1,96"	350	13,78"	18	40

PanelDrill

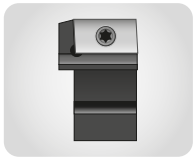
UNIVERSAL CUTTER HEADS AND HOLDERS

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

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.

Model ED-230-PDE
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

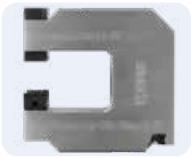
PanelMill PF

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

TWO VARIANTS

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.

PanelMill PF

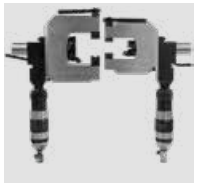
UNIVERSAL CUTTER HEADS

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

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

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

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.

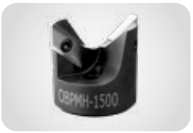
BENCH MOUNT PLATE (BMP)
Thanks to bench mount plate, it is possible to attach PanelMill to the table/worktop. A table base allows you to convert PanellMill-PF to a table machine for bevelling pipes, stubs or elbows. This is only available for 4,5" clamp only.

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

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

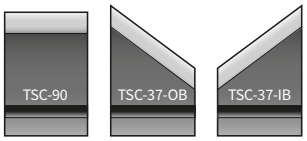
Head with carbide bits.

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

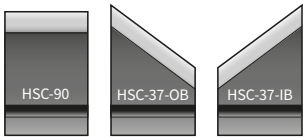
Cutters and inserts

REGULAR CUTTERS

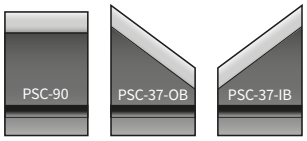
FOR USE WITHOUT HOLDERS
BIT: HSS and HSS Cobalt



Cutters for MiniMill series



Cutters for HyperMill series



Cutters for PipeMill series

INSERTS

Inserts options:
HSS-Co 5% cobalt
HSS-Co-AN 5% cobalt + ANOVA coating
HSS-M2
HSS-M2-TiN HSS+TiN coating

CI	A	B
mm	5	5

MAT: Carbide
Screw: MHS-2

CI7	A	B
mm	7	7

MAT: Carbide
Screw: MHS-2,7

CS	A	B
mm	9,5	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4

CSZ	A	B
mm	5,8	9,5

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

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

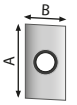
MAT: HSS 6% Carbide
Screw: MHS-2,5

CSS	A	B
mm	6,3	9,5

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

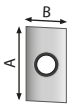
PO8	R
mm	8

MAT: Carbide
Screw: MHS-2,7



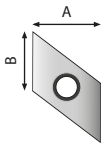
CDI	A	B
mm	18	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4



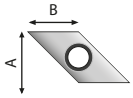
CDI-CB	A	B
mm	18	9,5

MAT: HSS 6% Carbide
Screw: MHS-4



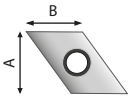
WRIL	A	B
mm	13,5	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4



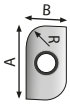
WRK	A	B
mm	10	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4



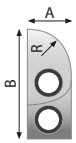
WRI	A	B
mm	13,5	9,5

MAT: HSS 6% Cobalt
Screw: MHS-4



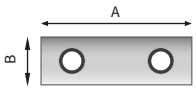
	A	B	R
CDJ-2.5*	18	9,5	2,5
CDJ-5	18	9,5	4,7
CDJ-8*	18	9,5	8,0

MAT: HSS 6% Cobalt
Screw: MHS-4
* order only



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

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

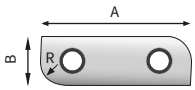


2CDI	A	B
mm	45	12,7

MAT: HSS 6% Cobalt
Screw: MHS-5

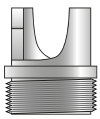
CDK	A	B
mm	25	9,5

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



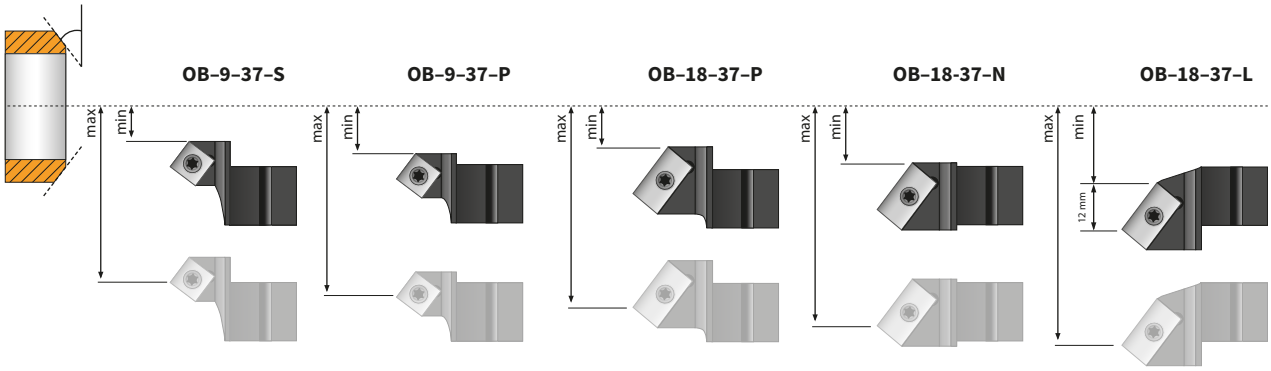
MAT: HSS 6% Cobalt

	MIN	MAX
CSS-100	8,00	12,00
CSS-117	8,60	13,50
CSS-127	9,60	14,50
CSS-145	10,6	16,5

Holders for regular cutter heads

OUTSIDE BEVELING HOLDERS

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



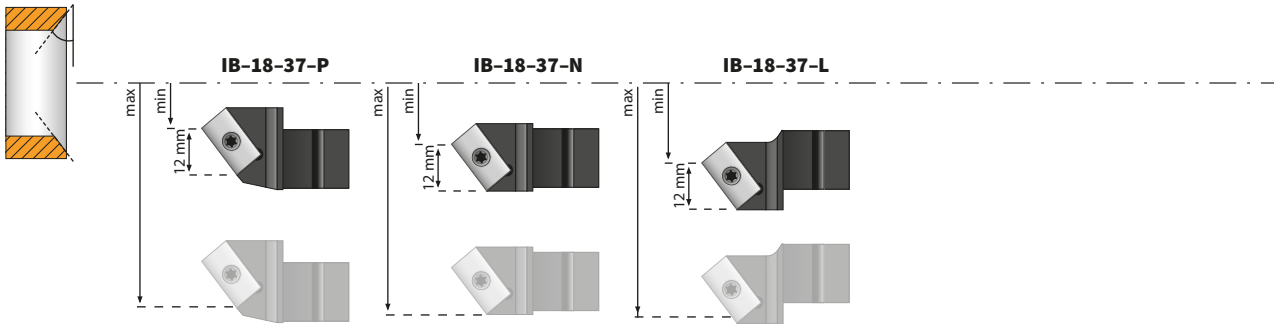
HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
OB-9-37-S	CS	60	16,00	26,00	0,630	1,024	20; 30; **37,5;** 45
		88	16,00	51,00	0,630	2,008	20; 30; **37,5;** 45
OB-9-37-P	CS	60	24,00	34,00	0,945	1,339	20; 30; **37,5;** 45
		88	24,00	58,00	0,945	2,283	20; 30; **37,5;** 45
		106	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

Holders for regular cutter heads

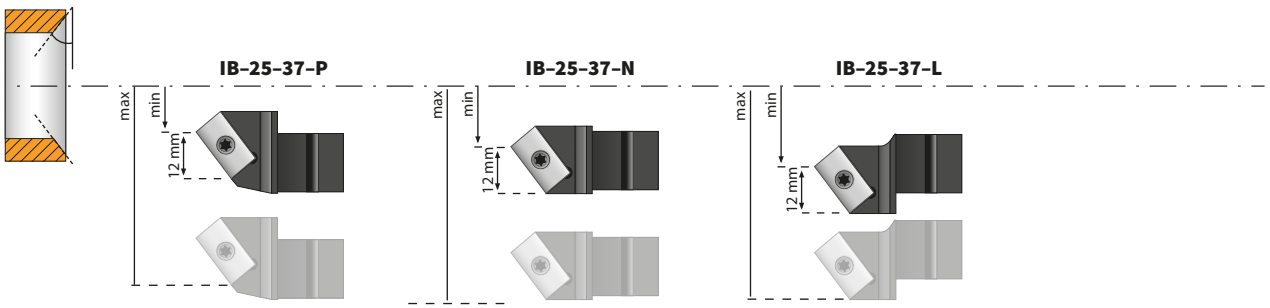
INSIDE BEVELING HOLDERS

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



HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
IB-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
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

HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
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



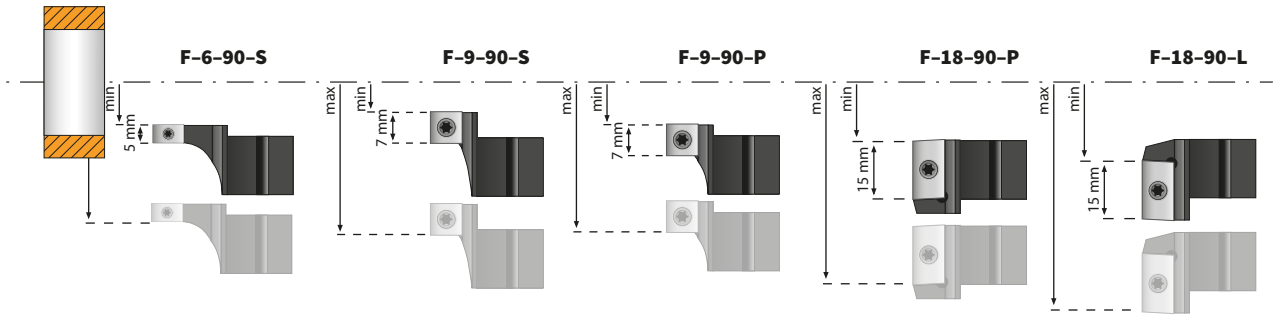
HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
IB-25-37-P	CDK	60	35,50	63,00	1,398	2,480	20; 30; **37,5;** 45
		88	35,50	87,50	1,398	3,444	20; 30; **37,5;** 45
		106	39,50	101,50	1,555	3,996	20; 30; **37,5;** 45
		114	42,00	107,00	1,654	4,212	20; 30; **37,5;** 45
		135	42,00	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

Holders for regular cutter heads

FACING HOLDERS

Standard: 90,0°

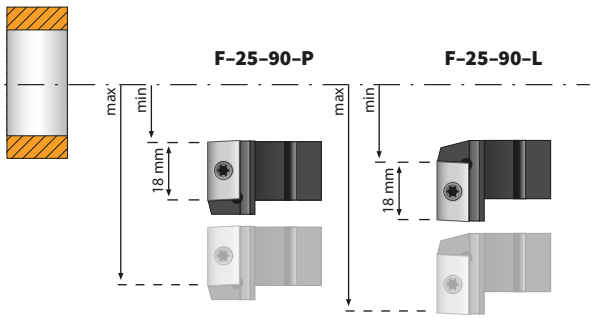


HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
F-6-90-S	CSS	60	14,50	24,50	0,571	0,965	90
F-9-90-S	CS	60	16,00	30,00	0,630	1,181	90
F-9-90-P	CS	60	24,00	38,00	0,945	1,496	90
		88	24,00	62,00	0,945	2,441	90
		106	28,00	75,00	1,102	2,953	90
		114	31,00	80,00	1,220	3,150	90
F-18-90-P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

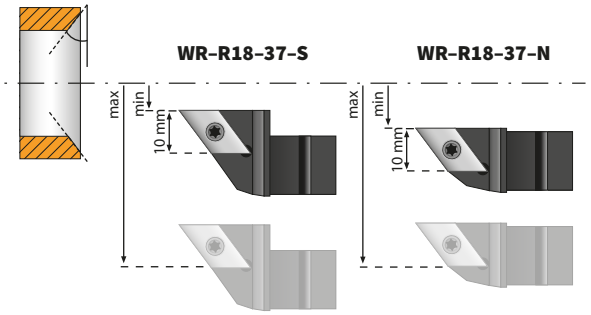


HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
F-25-90-P	CDK	60	24,00	61,00	0,945	2,401	90
		88	24,00	86,00	0,945	3,385	90
		106	28,00	102,00	1,102	4,015	90
	CDK	114	31,00	105,00	1,220	4,133	90
		135	31,00	126,00	1,220	4,960	90
		175	31,00	166,00	1,220	6,535	90
F-25-90-L	CDK	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

Holders for regular cutter heads

WELD REMOVAL HOLDERS

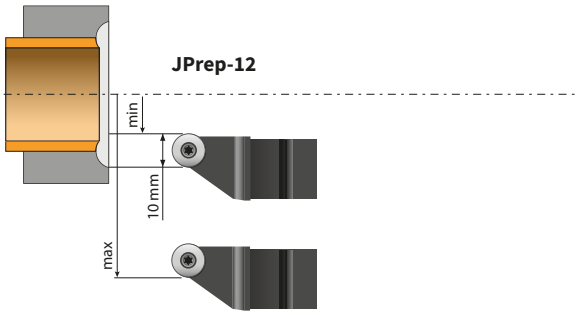
STANDARD: 37,5°; OTHER ANGLES ONLY ON REQUEST



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

JPREP STRENGTH REMOVAL

SIMULTANEOUS PROCESSING OF THE TUBE AND THE TUBE SHEET.



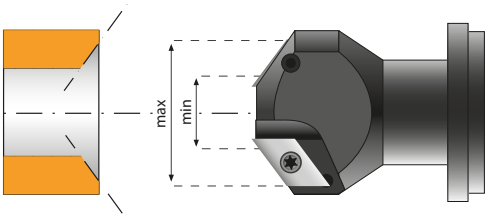
HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]	
			MIN	MAX	MIN	MAX
JPrep-12	PO12	60	24,00	38,00	0,945	1,496
		88	24,00	62,00	0,945	2,441
		106	28,00	75,00	1,102	2,953
		114	31,00	80,00	1,220	3,150

MiniMIll Special Heads

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.

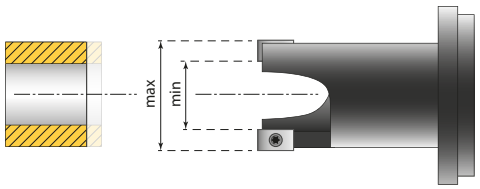


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
STWRMH-145	**0,570**	**14,5**	**16-23**	**0,433**	**1,417**	**11,00**	**36,00**	**WRI**	**2**	**801MM#151 10 mm**
STWRMH-158	**0,625**	**15,9**	**16-23**	**0,492**	**1,476**	**12,50**	**37,50**	**WRI**	**2**	**805MM#151 11 mm**
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.



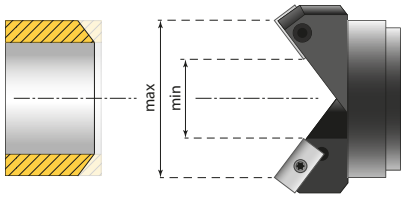
HEAD NR	RURA			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
TFMH-145	0,570	14,48	16-23	0,441	0,870	11,2	22,1	CSZ	2	801 MM#151 Micro 10,0MM
TFMH-158	0,625	15,88	16-23	0,500	0,933	12,70	23,70	CSZ	2	805 MM#151 Micro 11,5 MM
TFMH-190	0,750	19,05	12-23	0,531	1,004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

MiniMill Special Heads

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.

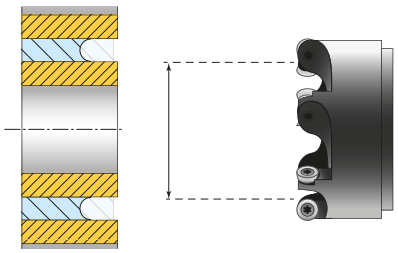


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
OBMH-190	0,750	19,05	14-23	0,5826	0,866	14,80	22,00	CS	2	901 MM#151 12,4 mm
OBMH-222	0,875	22,23	12-23	0,654	1,004	16,60	25,50	CS	2	905 MM#151 13,9 mm
OBMH-254	1,000	25,40	11-23	0,764	1,122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



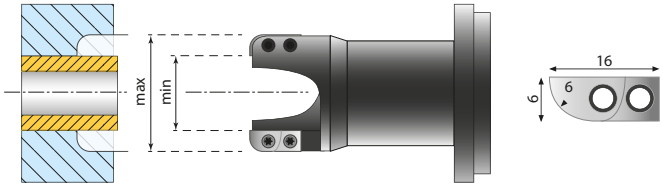
HEAD NR	TUBE CAPACITY		RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS
	[INCH]	[MM]	MIN	MAX	MIN	MAX		
MMRBMH-254	1,000	25,40	1,000	1,630	25,40	41,40	PO8	4
MMRBMH-288	1,125	28,58	1,134	1,764	28,80	44,80	PO8	5
MMRBMH-317	1,250	31,75	1,248	1,878	31,70	47,70	PO8	5
MMRBMH-381	1,500	38,10	1,500	2,130	38,10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

MiniMill Special Heads

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.

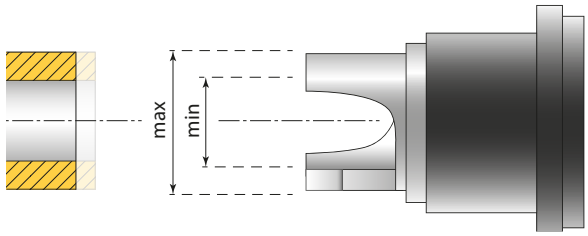


HEAD NR	TUBE CAPACITY		RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	MIN	MAX	MIN	MAX			
SWROTC-190	0,750	19,05	0,750	1,222	19,05	31,05	CSWR	2	901 MM#151 12,4 mm
SWROTC-222	0,875	22,23	0,874	1,346	22,20	34,20	CSWR	2	905 MM#151 13,9 mm
SWROTC-254	1,000	25,40	1,000	1,472	25,40	37,40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

TFMH-127

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.

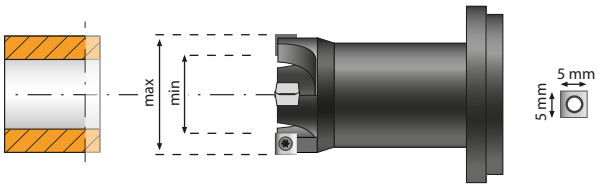


INSERT NR	RANGE [MM]		RANGE [INCH]		SHAFT	SHAFT OD	
	MIN	MAX	MIN	MAX		[MM]	[INCH]
CSS-100	8,00	12,00	0,315	0,472	798MM#151	7,70	0,303
CSS-117	8,60	13,50	0,339	0,531	799MM#151	8,00	0,315
CSS-127	9,60	14,50	0,378	0,571	800MM#151	9,00	0,354
CSS-145	10,6	16,5	0,417	0,650	801MM#151	10,00	0,394

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

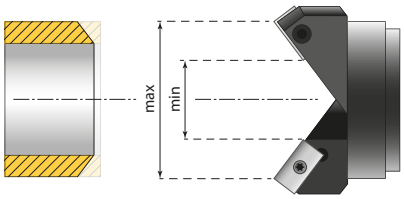
PrepMill and HyperMill Special Heads

FOR HYPERMILL ADDITIONAL FLANGE OBPM-F IS REQUIRED!

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.

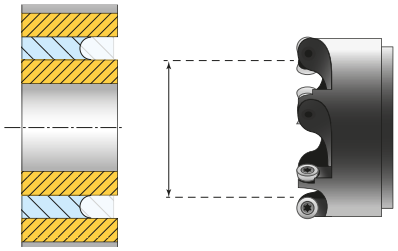


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
OBPM-190	0,750	19,05	14-23	0,5826	0,866	14,80	22,00	CS	2	915 MM#151 20 mm
OBPM-222	0,875	22,23	12-23	0,654	1,004	16,60	25,50	CS	2	STD Shaft: 20 or 25 mm
OBPM-254	1,000	25,40	11-23	0,764	1,122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



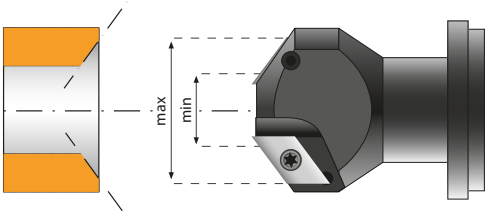
HEAD NR	TUBE CAPACITY		RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS
	[INCH]	[MM]	MIN	MAX	MIN	MAX		
PRRBMH-254	1,000	25,40	1,000	1,630	25,40	41,40	PO8	4
PRRBMH-288	1,125	28,58	1,134	1,764	28,80	44,80	PO8	5
PRRBMH-317	1,250	31,75	1,248	1,878	31,70	47,70	PO8	5
PRRBMH-381	1,500	38,10	1,500	2,130	38,10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

PrepMill and HyperMill Special Heads

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.

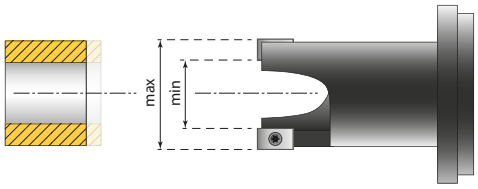


HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
STWRPM-190	0,750	19,05	12-23	0,530	1,46	13,50	37,00	WRI	2	STD Shaft: 20 mm
STWRPM-222	0,875	22,23	12-23	0,650	1,496	16,50	38,00	WRI	2	STD Shaft: 20 or 25 mm
STWRPM-254	1,000	25,40	10-23	0,732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



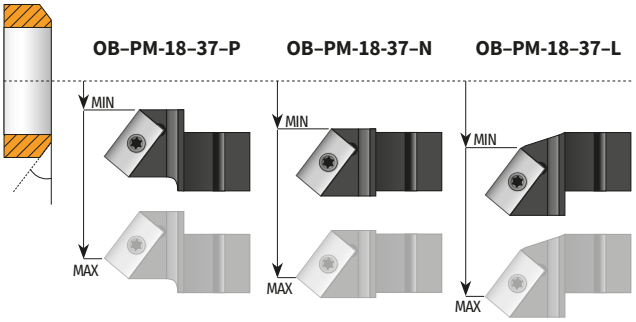
HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
TFPM-285	1,125	28,58	11-23	0,854	1,307	21,70	33,20	CSS	2	STD Shaft 20 mm
TFPM-317	1,250	31,75	9-23	0,949	1,366	24,10	34,70	CSS	2	STD Shaft 20 mm
TFPM-381	1,500	38,10	9-23	1,197	1,614	30,40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

Holders for PanelMill heads

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

OUTSIDE BEVELING HOLDERS

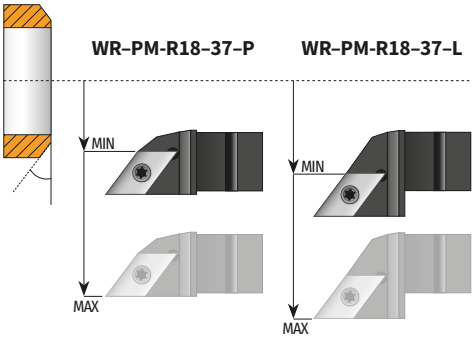
Cutting edge length: 12 mm, standard angle: 37,5° (others on request)



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**

OUTSIDE BEVELING HOLDERS

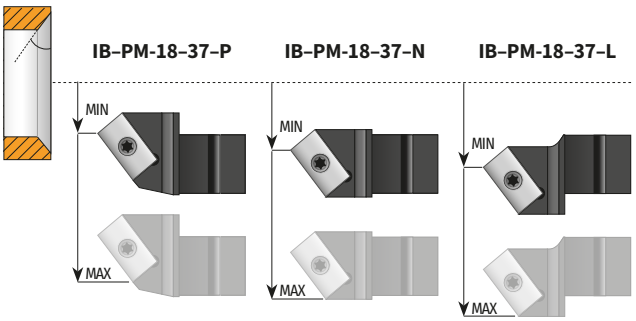
Cutting edge length: 10 mm, standard angle: 37,5° (others on request)



HOLDER NO.	BIT	HEAD	RANGE [MM]		RANGE [INCH]		DEGREE*
			MIN	MAX	MIN	MAX	
WR-PM-R18-37-P	WRIL	64	28,00	62,00	1,102	2,441	30; **37,5**
WR-PM-R18-37-L	WRIL	64	36,00	70,00	1,417	2,756	30; **37,5**
WR-PM-R18-37-L	WRIL	99	36,00	116,00	1,417	4,567	30; **37,5**

INSIDE BEVELING HOLDERS

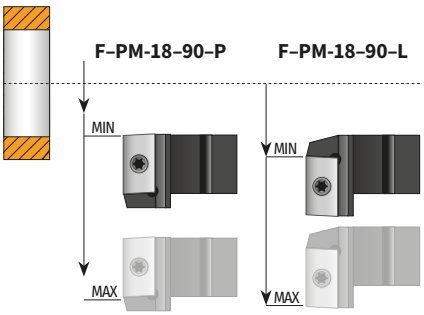
Cutting edge length: 12 mm, standard angle: 37,5° (others on request)



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**

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

Pipe Beveling Machines

KRAIS
Tube & Pipe Tools

MiniLathe

The most powerful machine within its size range on the market today. It utilizes a powerful 3.5 HP pneumatic motor, entirely engineered and manufactured by KRAIS for the largest end prep systems.

- Innovative 6-point locking system ensures maximum stability during all machining operations.
- Self-centering 2.75" one-piece locking shaft with built-in jaws eliminates the issue of broken or loose retaining springs and O-rings.
- Only one mandrel and 10 jaw sets are needed to cover the machine's entire range.
- Wide clamps produce superior clamping force for chatter-free end preps.
- Fully portable for both 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	3,5 Hp	5 Rpm	12500 Nm
2,800 - 16,000"	2,755 - 15,700"	2"			9219 Ft.Lbs

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

OPTIONAL SERVO DRIVE

EV-2000 SYNC
The machine can be driven by modern, high-tech KRAIS AC servo motor for controlled axis motion. They ensure highly accurate and smooth machine motion.
The motor has a rated output of 3 kW, rated speed of 2000 r/min, and rated torque of 14.3 Nm.

OPTIONAL HYDRAULIC DRIVE

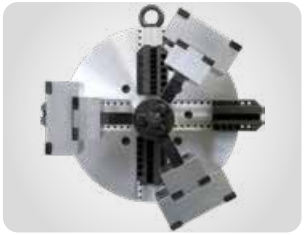
PDH MOTOR
Optional super strong hydraulic motor. Constructed on the basis of a small hydraulic motor and multistage planetary gear box. HyperLathe version generates 11 rpm and up to 8200 Nm (6050 Ft.Lbs) torque on cutter blade at constant cutting speed.

MiniLathe

AVAILABLE HOLDERS

Facing	Inside bevelling and boring	Outside bevelling	J-Prep	Compound bevelling
				
F-45-90 BIT: 2CDI	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.

EXAMPLE TOOL APPLICATION

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 24

PipeLathe 24 is strong and versatile facing lathe in the KRAIS line, engineered for precision machining of pipes up to 24" (600 mm) OD, including the most demanding materials such as P91, Super Duplex, SMO-254, Inconel, and high-alloy stainless steels.

The new generation introduces a fundamental upgrade: full multi-drive compatibility, with the ability to work using hydraulic, electric PMSM, or pneumatic drives, either in single-motor or dual synchronized motor configuration.

This gives operators the freedom to optimise torque, speed, and cutting dynamics depending on the application - from heavy wall machining to clean, highly repeatable bevels in stainless steels.

THREE FULLY SUPPORTED DRIVE OPTIONS

- Hydraulic drive - extreme torque for heavy-wall machining and hard alloys.
- Electric PMSM drive - high efficiency, constant torque across the full speed range, ideal for stainless steels.
- Pneumatic drive - lightweight, dynamic, EX-safe, and easy to service.

SINGLE- OR DUAL-MOTOR OPERATION FOR ALL DRIVES

Two synchronized drives significantly increase torque capacity and ensure stable cutting conditions on wall thicknesses up to 3 inches.

STANDARD WORKING RANGE		FEED STROKE	POWER (ONE PNEUMATIC)	FREE SPEED (ONE PNEUMATIC)	TORQUE (ONE PNEUMATIC)
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

KEY FEATURES OF PIPELATHE 24

- High rigidity and mechanical stability
- 150 mm (5.9") one-piece locking shaft with integrated jaws — no springs, no O-rings.
- 6-point locking system providing maximum stiffness and vibration-free cutting.
- One mandrel and six jaw sets cover the entire working range.

Wide machining capability

- 10–37° compound bevel
- J-Prep (all standard angles)
- V-bevel, U-bevel, facing, boring
- Internal and external beveling
- Up to 3" wall thickness

DRIVE CONFIGURATIONS

HYDRAULIC DRIVE (SINGLE OR DUAL)
Provides the highest torque output and unmatched stability. Ideal for:

- Heavy wall up to 3"
- Cutting operations with strong heat build-up

EV2000-SYNC ELECTRIC DRIVE (SINGLE OR DUAL)
Constant torque even at low RPM

- Smooth, quiet operation
- Excellent surface finish and high process repeatability
- Perfect for stainless steels and high-alloy applications

PNEUMATIC DRIVE (SINGLE OR DUAL)
Best choice in EX-restricted zones

- Lightweight, dynamic acceleration
- Easy to maintain and economical to operate

PipeLathe 24

AVAILABLE HOLDERS

Facing	Inside bevelling and boring	Outside bevelling	J-Prep	Compound bevelling
				
F-45-90 BIT: 2CDI	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

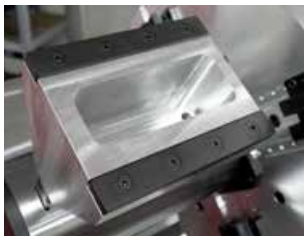
HYDRAULIC POWER-PACK

For advanced, heavy-duty applications, we offer high-performance hydraulic power units (HPUs) designed for seamless integration with the hydraulic-driven version of the PipeLathe 24.

ADVANTAGES OF PIPELATHE 24

HEAVY DUTY DESIGN
The PipeLathe24 is engineered specifically to excel in the harshest industrial environments. At the heart of this series is a robust, extended steel spindle which serves as the foundation for maximum structural rigidity.

Unlike conventional designs where the locking shaft is only partially seated within a softer aluminum body—a flaw that creates stress points and leads to adverse vibration due to excessive tension—our locking shaft is fully mounted and supported within the hardened steel spindle.



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.

LOCKING RANGES WITH STANDARD JAWS

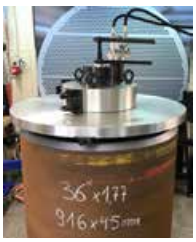
JAWS: PL-42

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 40

- Powerful hydraulic drive generating 14500 Nm (10800 ft.lbs) of torque on the cutter blade.
- Variable speed control 0-5 RPM. There is no need for an extra gear box that reduces the RPM and multiplies the torque. It comes as standard!
- 150 mm (5,9”) locking shaft with built-in jaws eliminates the issue of broken or loosening retaining springs and o-rings.
- An innovative 6-point locking system with wide clamps assures maximum stability during machining.
- Only one mandrel and a set of six jaws cover the 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				
305 - 1016 mm	300 - 972 mm	60 mm	3,5 hp	5 Rpm	12500 Nm
12,0" - 40,0”	11,8" - 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
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		
621	647	24,4	25,5	PL-42-A-500 PL-42-A-250		PL-42-C		

RANGE [MM]		RANGE [INCH]		SEGMENT				
MIN	MAX	MIN	MAX	A	B	C	D	E
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

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 .

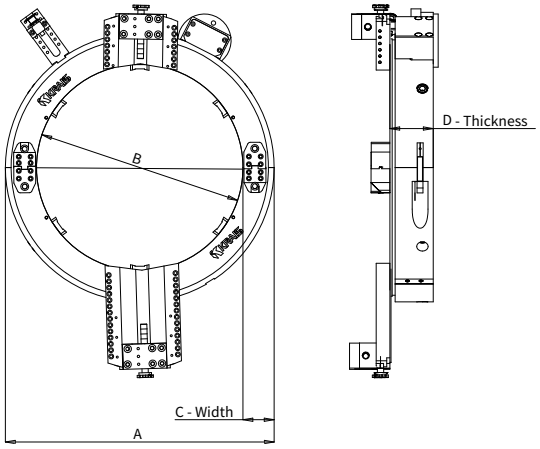
AIR TREATMENT MODULE

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

SlimFit Split Frame Clamshells

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

EV-2000 SYNC
The machine can be driven by modern, high-tech KRAIS AC servo motor for controlled axis motion. They ensure highly accurate and smooth machine motion.
The motor has a rated output of 3 kW, rated speed of 2000 r/min, and rated torque of 14.3 Nm.

HYDRAULIC POWER PACK

For advanced, heavy-duty applications, we offer high-performance hydraulic power units—perfectly suited for operation with the Spin Air tube extraction and collapsing system.

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

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

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.

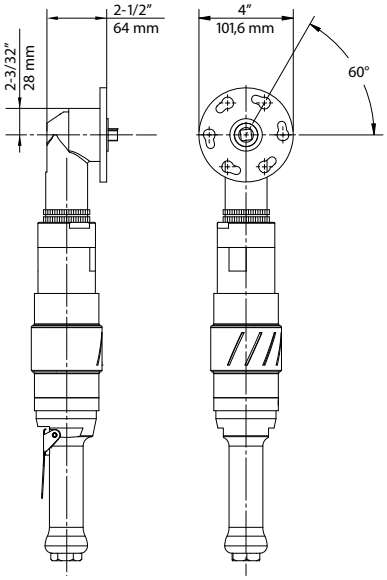
Cleco® is a registered trademark of Apex Brands, Inc.
DL Ricci® and Hydratight® are a registered trademark of Enerpac
E.H. Wachs® is a registered trademark of ITW, Inc.
H&S® is a registered trademark of Climax

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.



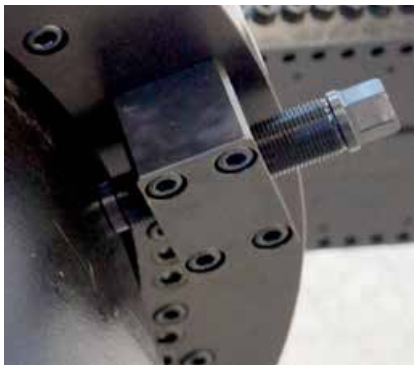
FLEXIBLE CONFIG

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.

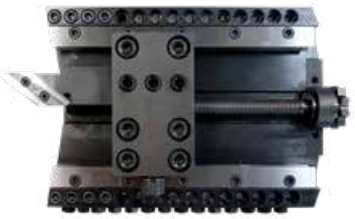
SFSF-1624 with ORR mounted on the 24” pipe schedule 120.



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

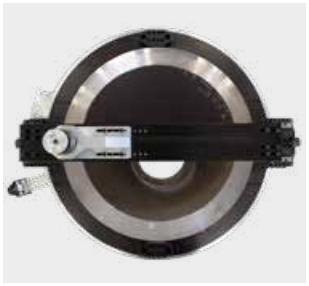
SFSF clamshells add-ons

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



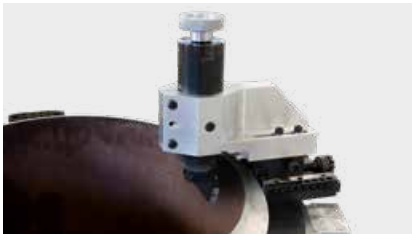
Bridge Cross Slides are available for all KRAIS Split Frame SlimFit series machines. Whether flange facing our single point heavy wall machining, the BCS quickly and easily bolts onto the split frame ring.

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

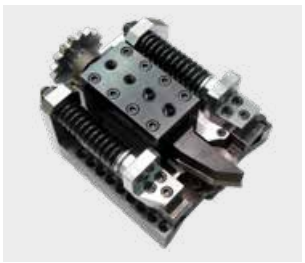


Designed for the precision counterboring of tube and pipe inside diameters. The Universal counterbore is manufactured with both 6" (SFSF-CBA-150) and 10" (SFSF-CBA-254) long sleeves, and attaches directly to all KRAIS clamshells. The Universal Counterbore Attachment utilizes a simple and effective hand 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

Engineered for precision ID counterboring, the Swivel Head Attachment also supports flange facing, OD beveling, and grooving. Available with 6" (SFSF-SCBA-150) or 10" (SFSF-SCBA-254) sleeves, it integrates directly with all KRAIS Split Frame SlimFit clamshells. Featuring a manual hand wheel for precise feed control, both versions mount to standard tool slides or Bridge Cross Slides.

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.

DEADMAN SWITCH

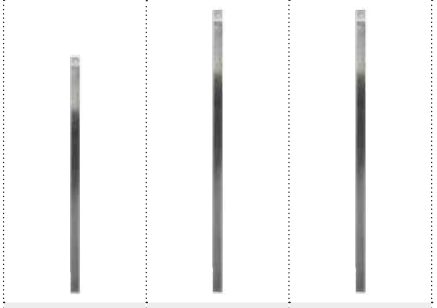
Ergonomic Deadman Switch for Clamshell machines; ensures instantaneous fail-safe motor cutout for enhanced operator safety during pipe machining.

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)



HSS-4964-160	HSS-5CO-25X6X200	HSS-8CO-25X6X200

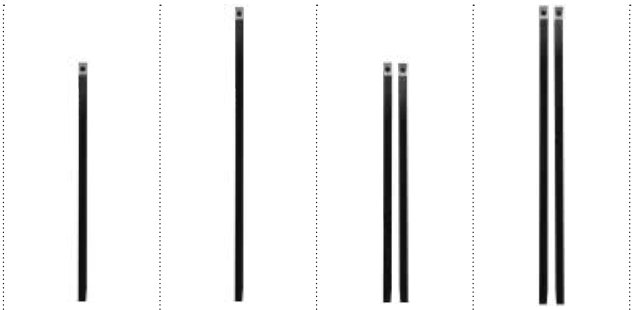
CUTTING BITS FOR USING WITH HOLDERS

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.



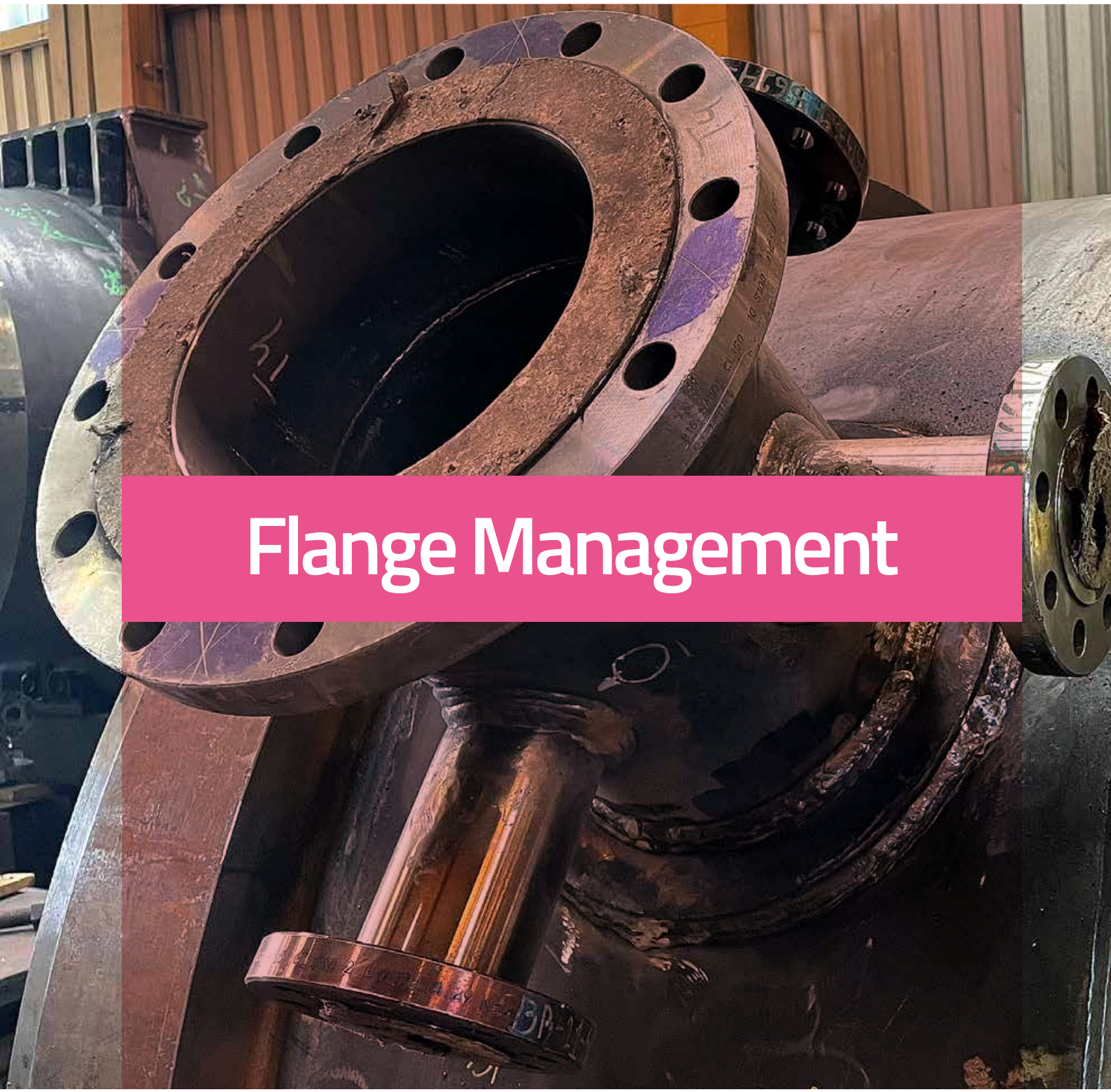
SFSC-525-180 BIT: CSS-1	SFSC-525-225 BIT: CSS-1	SFSC-525-180-TWEEN1 SFSC-525-180-TWEEN2 BITS: CSS-2 & CSS-2	SFSC-525-225-TWEEN1 SFSC-525-225-TWEEN2 BITS: CSS-2 & CSS-2

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



Flange Management

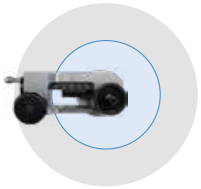
KRAIS
Tube & Pipe Tools

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.

With its robust cage-type frame, the MFM ensures exceptional stiffness and precision, unmatched by other hand-operated flange milling machines in the market.

TOOL SWING DIAMETERS



FACING RANGE

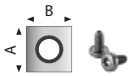
BODY SWING DIAMETER

FACING RANGE	LOCKING RANGE	MAX V TOOL TRAVEL	MAX H TOOL TRAVEL	BODY SWING DIAMETER
30 – 350 mm	25,4 - 254,0 MM	10 MM	55 MM	457,2 MM
1,750 – 14,000”	1 - 10”	0,395”	2,165”	18”

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

MFM TOOL BITS AND HOLDER

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



CI7	A	B
mm	7	7

MFM ADVANTAGES

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

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

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

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

TOOLING CHART

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

EXAMPLE TOOL APPLICATION

MFM-OMM Module

Outside mounting module for MFM

Expand the capabilities of your KRAIS Manual FlangeMill with the MFM-OMM conversion module. This compact and purpose-built solution enables secure outside mounting, allowing you to face flanges even in situations where internal mounting is not possible—such as with very small diameter flanges or restricted access areas.

With the MFM-OMM, there's no need to invest in additional mini facers or dedicated outside-mount tools. The module lets you easily switch between internal and external mounting configurations without compromising on performance or precision.

FEATURES

- **Rigidity** - significantly greater compared to mini flange facers, which are used on small-diameter miniature shafts that tend to bend under the pressure during the rotational force of a long arm.
- **Cost-effective** – eliminates the need for additional, expensive tools
- **Versatile** – quick and easy switching between mounting setups
- **Compact design** – ideal for small flanges and hard-to-reach locations

The MFM-OMM is designed exclusively for the Manual FlangeMill 14.

WORKING PARAMETERS FOR MANUAL FLANGEMILL WITH THE MODULE			
FACING RANGE	OD LOCKING RANGE	FEED STROKE	ADJUSTABLE JAWS
0 to 127 mm	95,3 to 155,4 mm	31,70 MM	4
0" to 5"	3,752" to 6,118"	1,248"	

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

TOOL SWING DIAMETERS

Tool without crank, with bit in position 0 mm

Tool with crank, bit in position 127 mm

OUTSIDE-MOUNTED - READY TO FACE

The MFM-OMM module securely installed on a pipe flange with the Manual FlangeMill. Designed for field use, this setup allows precise facing of small flanges directly from the outside—ideal for tight or inaccessible locations.

QUICK CONVERSION

Switching your Manual FlangeMill to outside mounting is fast and simple – just tighten four clamps and you're ready to face flanges from the outside. No need for disassembly or additional tools.

Manual FlangeMill Long

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

TOOL SWING DIAMETERS

FACING RANGE

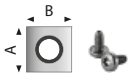
BODY SWING DIAMETER

FACING RANGE	LOCKING RANGE	MAX V TOOL TRAVEL	MAX H TOOL TRAVEL	BODY SWING DIAMETER
51 – 650 mm	51 - 550 MM	10 MM	55 MM	757 MM
2,01 – 25,60"	2,01 - 21,65"	0,395"	2,165"	30"

DRIVE	BODY WIDTH		BODY HEIGHT		BODY WEIGHT	
Manual	6,5"	165 mm	18,7"	475 mm	19,4 Lbs	8,8 kg

MFM TOOL BITS AND HOLDER

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



CI7	A	B
mm	7	7

MFM ADVANTAGES

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

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

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

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

TOOLING CHART

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

MFF-125, Mini Flange Facer

Highly efficient and lightweight flange facing machine – among the most compact options available today.

- Minimal clearance required
- Suitable for flat and raised face flanges
- Reinforced stainless steel body for enhanced machine stability
- Robust aluminum facing head, bolstered by multiple bearings
- Durable mandrel shaft with a secure jaw set for firm mounting
- Precision-engineered, hardened, and ground tool slides
- Available with a 1.3 Hp pneumatic drive or 750 W electric motor, equipped with a multi-stage planetary gearbox

PREMIUM COMPONENTS

- The pneumatic motor is fully equipped with a filter, lubricator, and flow control system.
- Streamlined, low-profile drive system designed to deliver exceptional power-to-weight efficiency.
- Built with a sturdy main body, heavy-duty bearings, sealed lubrication, and a solid mounting system for reliable performance.

FACING RANGE	LOCKING RANGE	VERTICAL FEED STROKE	MACHINING FEED RATE	POWER
20 – 125 mm	20 – 88 mm	13 mm	0,125 to 0,5 mm	1,3 Hp
0.787 – 4.921"	0.787 – 3.465"	0,5''	0,005 to 0,019"	

AIR USE		WEIGHT		HEIGHT		LENGTH		SWING DIAMETER	
55 cfm	1,3 m^3/min	23,81 Lbs	10,80 kg	14,5"	372,0 mm	11,8"	300 mm	8,86"	225 mm

AUTOMATIC FEED

The tool is equipped with automatic feed system. The feed rate is set in a simple and quick manner.

FEED TRIPPERS

The machine is equipped with four trippers, allowing to make four feed rates to produce cores and fine surfaces.
Using two or more trippers simulates the gramophone groove.

1 strike 0,125 mm per rev / 203 rev per 1"
2 strikes 0,250 mm oer rev / 101 rev per 1"
3 strikes 0,375 mm per rev / 67 rev per 1"
4 strikes 0,500 mm per rev / 51 rev per 1"

MFF-125, Mini Flange Facer

EASY SETUP

The device has clear markings that help to precisely set the required machining and grooving depth.

RIGID LOCKING SYSTEM

Precise flange machining is also achieved thanks to the three jaws with six locking points, which hold it very securely inside the tube.

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

TOOL HOLDERS RANGES

MFF-125 is a low clearance flange facing machine. To achieve this multiple tool holders are required to cove full range.

HOLDER	INSERT	SCREW	TORX
MFF-V11-L	CI-3-1	MHS-4	TX-15
MFF-V11-P			

MFF-125-E

Electric version of regular tool.
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.

	FACING RANGE [MM]		FACING RANGE [INCH]		CLAMPING RANGE [MM]		CLAMPING RANGE [INCH]		MAX. SWING DIAMETER		TOOL POST TRAVEL		FREE SPEED	POWER	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	[MM]	[INCH]	[MM]	[INCH]	[RPM]	[KW]	[HP]
NBFF-115	0	125	0"	4,921	89	170	3,504	6,693	125	4,921	62,5	2,461	100	0,97	1,3
NBFF-160	0	185	0"	7,283	89	280	3,504	11,024	185	7,283	92,5	3,642	115	1,6	2,2
NBFF-300	0	310	0"	12,205	108	356	4,252	14,016	310	12,205	155	6,102	85	1,6	2,2
NBFF-600															

	AIR USE		DIMENSIONS		WEIGHT	
	[CFM]	[M³/MIN]	[MM]	[INCH]	[KG]	[LBS]
NBFF-115	55	1,3	65 (100) x 460 x 260	2,55" (3,93") x 18,11" x 10,23"	25	55,11
NBFF-160	75	2,2	70 (100) x 510 x 340	2,75" (3,93") x 20,07" x 13,38"	27	59,5
NBFF-300	75	2,2	70 (100) x 510 x 470	2,75" (3,93") x 20,07" x 18,50"	32	70,5
NBFF-600						

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

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.

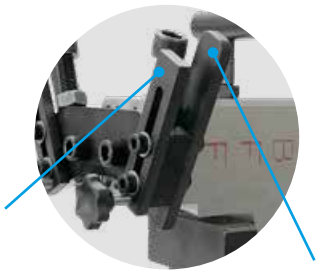
TOOLING CHART

HOLDER	INSERT	SCREW	TORX
NBFF-CI7	CI7	MHS-2,7	TX-8

NBFF – Narrow Body Flange Facer

STANDARD LOCKING SYSTEM

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



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

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

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.

REAL LIFE EXAMPLE

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

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.

OMFM-305

The OMFM-305 is a high-performance, externally mounted machine tool designed for demanding flange machining applications. With its lightweight yet super-rigid construction, the OMFM-305 combines portability with the heavy-duty strength required for precision machining of various flange faces, seal grooves, weld preparations, and counterbores. Its robust design, featuring heavy-duty steel and aluminum components, ensures exceptional durability and reliability in the toughest environments.

KEY FEATURES:

- Externally mounted, lightweight yet heavy-duty machine.
- Heavy-duty steel/aluminum construction for durability and precision.
- High rigidity due to cast steel body and steel body plate.
- Continuous groove facing feed with 2-speed gearbox for precision finishes.
- Swivel tool post for grooves, RTJ flanges, and bevels.
- Complete toolkit with CE certification.

STANDARD WORKING RANGE		FACING FEEDS		FREE SPEED	POWER
FACING RANGE	LOCKING RANGE	COARSE FEED	FINE FEED		
0 - 305 mm	50,8 - 305,4 mm	0,5 mm (0,020") / Revolution	0,125 mm (0,005") / Revolution	30 Rpm	2,2 Hp
0" to 12"	2" - 12"	50 Grooves per inch	203 Grooves per inch		1,6 kW

AIR USE		MACHINE WEIGHT		DRIVE WEIGHT	
75 cfm	2,2 m^3/min	43 kg	95 Lbs	5 kg	11,0 Lbs

SHIPPING BOX		SHIPPING WEIGHT	
75 x 55 x 35 cm	30" x 22" x 14"	86 kg	189 Lbs

COMPLETE TOOLING PACKAGE

The OMFM-305 comes with a comprehensive toolkit, including all necessary tools, inserts, an air filter lubricator, a hose connection, mounting feet, and extensions. The machine is supplied with a storage and shipping box for easy transport and protection. Additionally, the package includes a CE certificate, packing list, and user manual, ensuring compliance with industry standards and providing operators with all the information needed for safe and effective use.

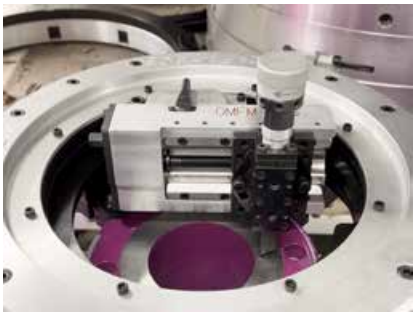
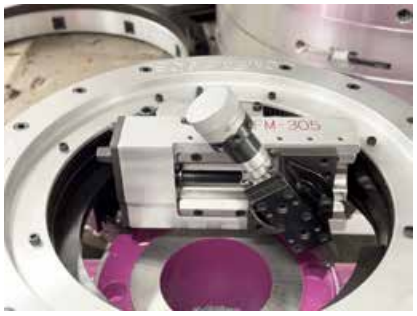
TOOLING CHART

HOLDER	INSERT	SCREW	TORX
IMFM24-V11-L	CIV-11-3-1	MHS-4	TX-15
IMFM24-V11-N	CIV-11-3-1	MHS-4	TX-15
IMFM24-V11-P	CIV-11-3-1	MHS-4	TX-15

OMFM-305

SWIVEL TOOL

Swivel tool post for grooves, RTJ flanges, and bevels


ELECTRIC DRIVE

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

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

CONVENIENT JAWS

Special jaw set for easy and quick levelling and centring machine. A special mechanism allows convenient adjustment of the mounting plane relative to the pipe.

TIGHT SPACES

The OMFM-305 is also highly effective in hard-to-reach areas. It allows for the drive motor to be mounted on either side of the machine, making it ideal for machining flanges in confined spaces. Additionally, the optional angle module enables horizontal motor installation for even greater flexibility.


EFFICIENT ON-SITE OPERATION

The OMFM-305 is the ideal solution for professionals requiring a rugged and reliable machine for high-precision flange machining tasks. Its lightweight design, combined with heavy-duty construction and easy setup, makes it a versatile tool for a wide range of industrial applications.

IMFM-24/30

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

- Heavy-duty steel/aluminium all design.
- Heavy-duty cast steel body and steel body plate.
- Solid construction and high rigidity of the machine concerning the dimension and weight.
- Continuous groove facing feed, 2-speed gearbox.
- Swivel tool post for grooves, RTJ flanges, and bevels.
- Quick-set independent bases for improved on-site operation.
- Fast mounted arm with spindle for the very convenient measure of levelling and centring.
- Super quick machine fixing to the locking base.
- Special jaw set for easy and quick levelling and centring machine; jaws are interchangeable with all IMFM series Flange Facers.
- CE certificate.

STANDARD WORKING RANGE		FACING FEEDS			FREE SPEED	POWER
FACING RANGE	LOCKING RANGE	1,75 MM SCREW	1,25 MM SCREW	1,00 MM SCREW		
145 – 762 mm	140 - 670 mm	0,2 / 0,8 mm	0,14 / 0,57 mm	0,15 / 0,45 mm	20 - 42 Rpm	2,2 Hp
5" - 30"	5-1/2" - 26"	0,008 / 0,031"	0,006 / 0,022"	0,004 / 0,018"		1,6 kW

AIR USE		MACHINE WEIGHT		DRIVE WEIGHT		MAX BIG BASE WEIGHT		MAX SMALL BASE WEIGHT		COUNTER WEIGHT	
75 cfm	2,2 m³/min	26 kg	57,4 Lbs	5 kg	11,0 Lbs	18 kg	39,7 Lbs	4 kg	8,82 Lbs	6 kg	13,23 Lbs

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

TOOLING CHART

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

COMPLETE PACKAGE

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

UNIQUE RIGIDITY

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

WIDE RANGE

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

IMFM-24/30

SWIVEL TOOL

Swivel tool post for grooves, RTJ flanges, and bevels



CONVENIENT JAWS

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

PRECISE MOUNTING

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

FAST FIXING

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


RIGHT ANGLE HEAD

This optional addon allows for fastening drive in alternate positions. The useful option in tight spaces.

ELECTRIC DRIVE

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

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

IMFM-24 Internal Mounted FlangeMill

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

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

As standard IMFM is supplied with the complete toolkit, including cutting tool and inserts 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		
100 – 610 mm	100 - 508 mm	0,2 / 0,8 mm	0,14 / 0,57 mm	0,15 / 0,45 mm	20 - 42 Rpm	2,2 Hp
3,93 - 24,00"	3,93 - 20,00"	0,008 / 0,031"	0,006 / 0,022"	0,004 / 0,018"		1,6 kW

AIR USE		BODY WIDTH	BODY HEIGHT	BODY WEIGHT	
75 cfm	2,2 m^3/min	Depends on motor configuration, see drawing below		99 Lbs	45 kg

LEVELLING & CENTERING

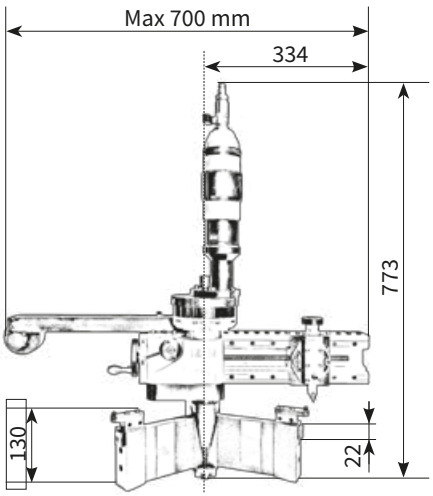
Special jaw set for easy and quick levelling and centering machines on the flange

TOOLING CHART

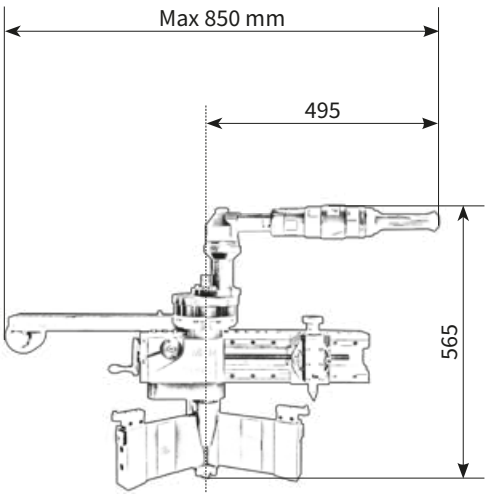
HOLDER	INSERT	SCREW	TORX
IMFM24-V11	CIV-11-3-1	MHS-4	TX-15

DIMENSIONS

INLINE VERSION



RIGHTANGLE VERSION



IMFM-40 Internal Mounted FlangeMill

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

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

As standard IMFM is supplied with the complete toolkit, including cutting tool and inserts 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					
322 – 1016 mm	322 - 915 mm	1220 mm	102 mm	See table	0 - 24 Rpm	2,2 Hp
12,67 - 40,00”	12,67 - 36,00”	48"	4”			1,6 kW

AIR USE		SHIPPING WIDTH		SHIPPING HEIGHT		SHIPPING LENGTH		BODY WEIGHT		SHIPPING WEIGHT	
75 cfm	2,2 m³/min	600 mm	24"	725 mm	28,5"	845 mm	34"	145 kg	319 Lbs	210 kg	462 Lbs

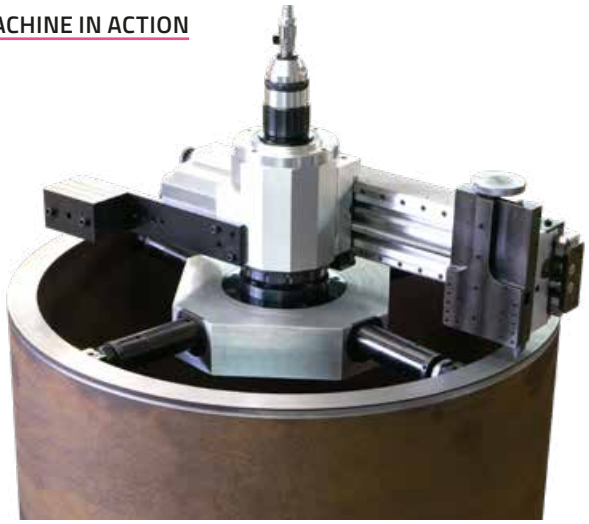
FACING FEED RATES (3 OFF IN/OUT)

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

BORING FEED RATES (3 OFF UP/DOWN)

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

MACHINE IN ACTION

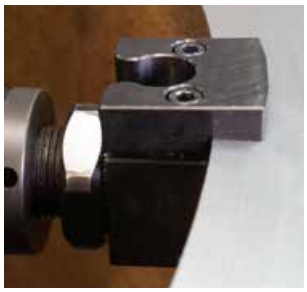


TOOLING CHART

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

IMFM-40 and IMFM-60 features

LEVELLING AND CENTERING

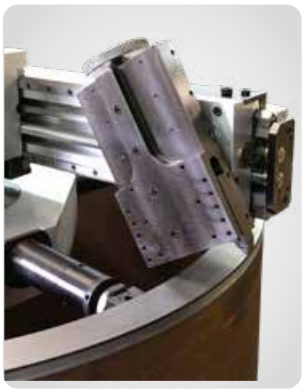


Both machines are equipped with special jaw set for easy, quick levelling and centering. A special mechanism allows convenient adjustment of the mounting plane relative to the pipe. Built-in self-centering locking system significantly facilitates the coarse setting of the machine.

ELECTRIC DRIVE

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

SWIVEL TOOL AS A STANDARD




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

TWO LOCKING PLATES

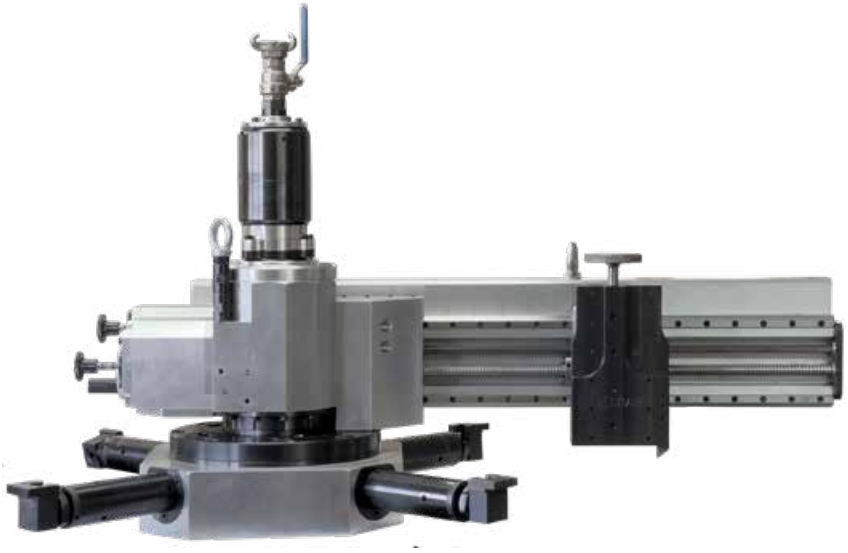

The offer includes two sizes of locking system. Thanks to the matching dimensions of the rigid body, stable mounting and smooth machining of face surfaces and flanges in all pipe sizes is possible.

IMFM-60 Internal Mounted FlangeMill

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

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

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



STANDARD WORKING RANGE		MAX SWING DIAMETER	TOOL POST TRAVEL	FEED RATES	FREE SPEED	POWER
FACING RANGE	CLAMPING RANGE					
507 – 1525 mm	507 - 1400 mm	1745 mm	102 mm	See table	0 - 22 Rpm	4,0 Hp
20" - 60"	20" - 55"	68"	4"			3,0 kW

AIR USE		SHIPPING WIDTH		SHIPPING HEIGHT		SHIPPING LENGTH		BODY WEIGHT		SHIPPING WEIGHT	
98 cfm	2,69 m^3/min	820 mm	32"	830 mm	33"	1230 mm	48"	412 kg	906 Lbs	499 kg	1010 Lbs

FACING FEED RATES (3 OFF IN/OUT)

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

BORING FEED RATES (3 OFF UP/DOWN)

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

TOOLING CHART

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

MACHINE FACING 60" FLANGE RING

SFFM Flange Facer

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

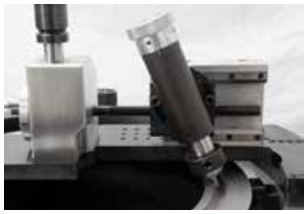
SFFM Flange Facing Machines are suitable for various flange types:

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

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

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

FEATURES OF MACHINE



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

GRAMOPHONE GROOVE
The design of the feed attachment assures the automatic and variable feed rate on radial 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

TOOLING CHART

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

SFFM Module

SFFM Module can be mounted on all our SFSF clamshells and convert the regular Clamshell into OD mount flange facing machine
SFSF clamshell combined with the module 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.

TOOLING CHART

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

MicroDrill-SOFD

Studding outlet flange drilling tool

MicroDrill-SOFD machine is specifically designed for this problem. It can fit even on 1" studding outlet flanges and, with its low-speed, high-torque operation, can drill holes up to 20 mm, making it perfect for precise drilling in tight spaces.

The locking shafts are 150 mm long as standard and 300 mm as optional.
Other lengths are available on request.

Studding Outlet Flanges, also known as "pad flanges" (ANSI B16.5 ASTM A182), are often installed inside or outside vessels and tanks. A common issue arises when a stud breaks or shears, requiring the flange to be drilled out and re-threaded.

KEY FEATURES

UP TO 20 MM (2.4") DRILLING
Covers most heat exchanger tube sheets; suitable for various equipment types.

COMPACT BODY
Machine is lightweight and can be used in very tight spaces.

TORQUE-REACTIVE PLATFORM
Firm clamping absorbs machining forces, improving safety and control.

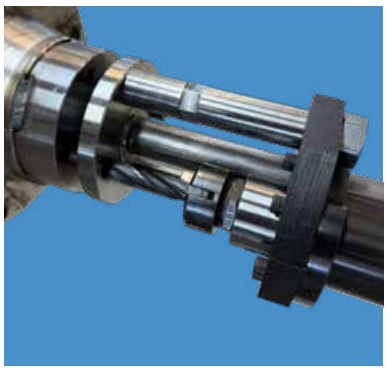
OPERATOR SAFETY
Designed for quick, safe plug removal with minimal risk.

WORKING RANGE	LOCKING RANGE	POWER	TORQUE
12,5– 38,0 mm	According to the drawing	0,98 Hp	18 Nm / 300 RPM (55 Nm / 100 RPM*)
0,492 – 1,496"			13,28 Ft-lbs / 300 RPM (40,57 Ft-lbs / 100 RPM*)

AIR USE		BODY WIDTH		BODY HEIGHT		BODY LENGTH	
17 cfm	0,48 m^3/min	1,73"	44 mm	10,82"	275 mm	12,2"	310 mm

**with 3x Speed Reducer*

STABILITY AND DURABILITY



MiniDrill-SOFD features a robust steel frame for stability and durability. Precision locking plates ensure perfect centering on any flange size for stud drilling and thread prep. It also handles oversized holes with ease.

STANDARD TOOL

The machine is equipped with a standard ER25 collet chuck with the Weldon-type holder for quick and efficient tool changes. If needed, other configurations can be provided upon request to suit specific applications.

Useful charts

KRAIS
Tube & Pipe Tools

THICKNESS OF WALL IN BIRMINGHAM WIRE GAGE AND IN DECIMAL INCHES

TUBE		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
O.D.	I.D.	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203	.220	.238	.259	.284	.300	.340
1/2	Min.	.422	.408	.392	.373	.357	.342	.318	.291	.260	.236											
	Nom.	.430	.416	.402	.384	.370	.356	.334	.310	.282	.260											
5/8	Min.	.547	.533	.517	.498	.482	.467	.443	.417	.385	.361	.330	.299	.262	.229							
	Nom.	.555	.541	.527	.509	.495	.481	.459	.435	.407	.385	.357	.329	.295	.265							
3/4	Min.	.672	.658	.642	.623	.607	.592	.568	.542	.510	.486	.455	.424	.387	.354	.303	.266	.226	.180			
	Nom.	.680	.666	.652	.634	.620	.606	.584	.560	.532	.510	.482	.454	.420	.390	.344	.310	.274	.232			
7/8	Min.	.797	.783	.767	.747	.732	.717	.693	.666	.636	.611	.580	.549	.512	.479	.428	.391	.351	.305			
	Nom.	.805	.791	.777	.759	.745	.731	.709	.685	.657	.635	.607	.579	.545	.515	.469	.435	.399	.357			
1	Min.	.922	.908	.892	.873	.857	.842	.818	.791	.761	.736	.706	.675	.637	.604	.553	.516	.476	.430	.375	.340	.252
	Nom.	.930	.916	.902	.884	.870	.856	.834	.810	.782	.760	.732	.704	.670	.640	.594	.560	.524	.482	.432	.400	.320
1-1/8	Min.	1.047	1.033	1.017	.997	.982	.967	.943	.916	.886	.861	.831	.800	.762	.729	.678	.641	.601	.555	.500	.465	.377
	Nom.	1.055	1.041	1.027	1.009	.995	.981	.959	.935	.907	.885	.857	.829	.795	.765	.719	.685	.649	.607	.557	.525	.445
1-1/4	Min.	1.172	1.158	1.142	1.122	1.107	1.092	1.068	1.041	1.011	.986	.956	.925	.887	.854	.803	.766	.726	.680	.625	.590	.502
	Nom.	1.180	1.166	1.152	1.134	1.120	1.106	1.084	1.060	1.032	.010	,982	.954	.920	.890	.844	.810	.774	.732	.682	.650	.570
1-3/8	Min.	1.297	1.283	1.267	1.247	1.232	1.217	1.192	1.166	1.136	.111	1.081	.049	1.012	.979	.928	.891	.851	.805	.750	.715	.627
	Nom.	1.305	1.291	1.277	1.259	1.245	1.231	1.209	1.185	1.157	1.135	1.107	.079	1.045	1.015	.969	.935	.899	.857	.807	.775	.695
1-1/2	Min.	1.422	1.408	1.392	1.372	1.357	1.342	1.318	1.291	1.260	1.236	1.205	1.174	1.137	1.104	1.053	1.016	.976	.930	.875	.840	.752
	Nom.	1.430	1.426	1.402	1.384	1.370	1.356	1.334	1.310	1.282	1.260	1.232	1.204	1.170	1.140	1.094	1.060	1.024	.982	.932	.900	.820
1-3/4	Min.	1.672	1.658	1.642	1.622	1.607	1.592	1.568	1.541	1.510	1.486	1.455	1.424	1.387	1.354	1.303	1.266	1.226	1.180	1.125	1.090	1.002
	Nom.	1.680	1.666	1.652	1.634	1.620	1.606	1.584	1.560	1.532	1.510	1.482	1.454	1.420	1.390	1.344	1.310	1.274	1.232	1.182	1.150	1.070
2	Min.	1.922	1.908	1.892	1.872	1.857	1.842	1.817	1.791	1.760	1.736	1.705	1.674	1.637	1.604	1.553	1.516	1.476	1.430	1.375	1.340	1.252
	Nom.	1.930	1.916	1.902	1.884	1.870	1.856	1.834	1.810	1.782	1.760	1.732	1.704	1.670	1.640	1.594	1.560	1.524	1.482	1.432	1.400	1.320
2-1/4	Min.	2.172	2.158	2.142	2.122	2.107	2.092	2.067	2.041	2.010	1.986	1.955	1.924	1.887	1.854	1.803	1.766	1.726	1.680	1.625	1.590	1.502
	Nom.	2.180	2.166	2.152	2.134	2.120	2.106	2.084	2.060	2.032	2.010	1.982	1.954	1.920	1.890	1.844	1.810	1.774	1.732	1 .682	1.650	1.570
2-1/2	Min.	2.422	2.408	2.392	2.372	2.357	2.342	2.317	2.291	2.260	2.236	2.205	2.174	2.137	2.104	2.053	2.016	1.976	1.930	1.875	1.840	1.752
	Nom.	2.430	2.416	2.402	2.384	2.370	2.356	2.334	2.310	2.282	2.260	2.232	2.204	2.170	2.140	2.094	2.060	2.024	1.982	1.932	1.900	1.820
2-3/4	Min.	2.672	2.658	2.642	2.622	2.607	2.592	2.567	2.541	2.510	2.486	2.455	2.424	2.387	2.354	2.303	2.266	2.226	2.180	2.125	2.090	2.002
	Nom.	2.680	2.666	2.652	2.634	2.620	2.606	2.584	2.560	2.532	2.510	2.482	2.454	2.420	2.390	2.344	2.310	2.274	2.232	2.182	2.150	2.070
3	Min.	2.922	2.908	2.892	2.872	2.857	2.842	2.817	2.791	2.760	2.736	2.705	2.674	2.636	2.604	2.553	2.516	2.476	2.430	2.375	2.340	2.252
	Nom.	2.930	2.916	2.902	2.884	2.870	2.856	2.834	2.810	2.782	2.760	2.732	2.704	2.670	2.640	2.594	2.560	2.524	2.482	2.432	2.400	2.320
3-1/4	Min.	3.172	3.158	3.142	3.122	3.107	3.092	3.067	3.041	3.010	2.986	2.955	2.924	2.887	2.854	2.803	2.766	2.726	2.680	2.625	2.590	2.502
	Nom.	3.180	3.166	3.152	3.134	3.120	3.106	3.084	3.060	3.032	3.010	2.982	2.954	2.920	2.890	2.844	2.810	2.774	2.732	2.682	2.650	2.570
3-1/2	Min.	3.422	3.408	3.392	3.372	3.357	3.342	3.317	3.291	3.260	3.236	3.205	3.174	3.137	3.104	3.053	3.016	2.976	2.930	2.875	2.840	2.752
	Nom.	3.430	3.416	3.402	3.384	3.370	3.356	3.334	3.310	3.282	3.260	3.232	3.204	3.170	3.140	3.094	3.060	3.024	2.982	2.932	2.900	2.820
3-3/4	Min.	3.672	3.658	3.642	3.622	3.607	3.592	3.567	3.541	3.510	3.486	3.455	3.424	3.387	3.354	3.303	3.266	3.226	3.180	3.125	3.090	3.002
	Nom.	3.680	3.666	3.652	3.634	3.620	3.606	3.584	3.560	3.532	3.510	3.482	3.454	3.420	3.390	3.344	3.310	3.274	3.232	3.182	3.150	3.070
4	Min.	3.922	3.908	3.892	3.872	3.857	3.842	3.817	3.791	3.760	3.736	3.705	3.674	3.637	3.604	3.553	3.516	3.476	3.430	3.375	3.340	3.252
	Nom.	3.930	3.916	3.902	3.884	3.870	3.856	3.834	3.810	3.782	3.760	3.732	3.704	3.670	3.640	3.594	3.560	3.524	3.482	3.432	3.400	3.320
4-1/2	Min.	4.422	4.408	4.392	4.372	4.357	4.342	4.317	4.291	4.260	4.236	4.205	4.174	4.137	4.104	4.053	4.016	3.976	3.930	3.875	3.840	3.752
	Nom.	4.430	4.416	4.402	4.384	4.370	4.356	4.334	4.310	4.282	4.260	4.232	4.204	4.170	4.140	4.094	4.060	4.024	3.982	3.932	3.900	3.820
5	Min.	4.922	4.908	4.892	4.872	4.857	4.842	4.817	4.791	4.760	4.736	4.705	4.674	4.637	4.604	4.553	4.516	4.476	4.430	4.375	4.340	4.252
	Nom.	4.930	4.916	4.902	4.884	4.870	4.856	4.834	4.810	4.782	4.780	4.732	4.704	4.670	4.640	4.594	4.560	4.524	4.482	4.432	4.400	4.320

ADDITIONAL BIRMINGHAM WIRE GAGES

NUMBER	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	00	000	0000	00000
DECIMAL	.004	.005	.007	.008	.009	.010	.012	.013	.014	.016	.018	.020	.022	.025	.028	.032	.380	.425	.454	.500

THICKNESS OF WALL IN BIRMINGHAM WIRE GAGE IN MILLIMETERS

TUBE		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
O.D.	I.D.	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2	5.6	6.0	6.6	7.2	7.6	8.6
12.7	Min.	10.7	10.4	10.0	9.5	9.1	8.7	8.1	7.4	6.6	6.0											
	Nom.	10.9	10.6	10.2	9.8	9.4	9.0	8.5	7.9	7.2	6.6											
15.9	Min.	13.9	13.5	13.1	12.6	12.2	11.9	11.3	10.6	9.8	9.2	8.4	7.6	6.7	5.8							
	Nom.	14.1	13.7	13.4	12.9	12.6	12.2	11.7	11.0	10.3	9.8	9.1	8.4	7.5	6.7							
19.1	Min.	17.1	16.7	16.3	15.8	15.4	15.0	14.4	13.8	13.0	12.3	11.6	10.8	9.8	9.0	7.7	6.8	5.7	4.6			
	Nom.	17.3	16.9	16.6	16.1	15.7	15.4	14.8	14.2	13.5	13.0	12.2	11.5	10.7	9.9	8.7	7.9	7.0	5.9			
22.2	Min.	20.2	19.9	19.5	19.0	18.6	18.2	17.6	16.9	16.2	15.5	14.7	13.9	13.0	12.2	10.9	9.9	8.9	7.7			
	Nom.	20.4	20.1	19.7	19.3	18.9	18.6	18.0	17.4	16.7	16.1	15.4	14.7	13.8	13.1	11.9	11.0	10.1	9.1			
25.4	Min.	23.4	23.1	22.7	22.2	21.8	21.4	20.8	20.1	19.3	18.7	17.9	17.1	16.2	15.3	14.0	13.1	12.1	10.9	9.5	8.6	6.4
	Nom.	23.6	23.3	22.9	22.5	22.1	21.7	21.2	20.6	19.9	19.3	18.6	17.9	17.0	16.3	15.1	14.2	13.3	12.2	11.0	10.2	8.1
28.6	Min.	26.6	26.2	25.8	25.3	24.9	24.6	24.0	23.3	22.5	21.9	21.1	20.3	19.4	18.5	17.2	16.3	15.3	14.1	12.7	11.8	9.6
	Nom.	26.8	26.4	26.1	25.6	25.3	24.9	24.4	23.7	23.0	22.5	21.8	21.1	20.2	19.4	18.3	17.4	16.5	15.4	14.1	13.3	11.3
31.8	Min.	29.8	29.4	29.0	28.5	28.1	27.7	27.1	26.4	25.7	25.0	24.3	23.5	22.5	21.7	20.4	19.5	18.4	17.3	15.9	15 .0	12.8
	Nom.	30.0	29.6	29.3	28.8	28.4	28.1	27.5	26.9	26.2	25.7	24.9	24.2	23.4	22.6	21.4	20.6	19.7	18.6	17.3	16.5	14.5
34.9	Min.	32.9	32.6	32.2	31.7	31.3	30.9	30.3	29.6	28.9	28.2	27.5	26.6	25.7	24.9	23.6	22.6	21.6	20.4	19.1	18.2	15.9
	Nom.	33.1	32.8	32.4	32.0	31.6	31.3	30.7	30.1	29.4	28.8	28.1	27.4	26.5	25.8	24.6	23.7	22.8	21.8	20.5	19.7	17.7
38.1	Min.	36.1	35.8	35.4	34.8	34.5	34.1	33.5	32.8	32.0	31.4	30.6	29.8	28.9	28.0	26.7	25.8	24.8	23.6	22.2	21.3	19.1
	Nom.	36.3	36.2	35.6	35.2	34.8	34.4	33.9	33.3	32.6	32.0	31.3	30.6	29.7	29.0	27.8	26.9	26.0	24.9	23.7	22.9	20.8
44.5	Min.	42.5	42.1	41.7	41.2	40.8	40.4	39.8	39.1	38.4	37.7	37.0	36.2	35.2	34.4	33.1	32.2	31.1	30.0	28.6	27.7	25.5
	Nom.	42.7	42.3	42.0	41.5	41.1	40.8	40.2	39.6	38.9	38.4	37.6	36.9	36.1	35.3	34.1	33.3	32.4	31.3	30.0	29.2	27.2
50.8	Min.	48.8	48.5	48.1	47.5	47.2	46.8	46.2	45.5	44.7	44.1	43.3	42.5	41.6	40.7	39.4	38.5	37.5	36.3	34.9	34.0	31.8
	Nom.	49.0	48.7	48.3	47.9	47.5	47.1	46.6	46.0	45.3	44.7	44.0	43.3	42.4	41.7	40.5	39.6	38.7	37.6	36.4	35.6	33.5
57.2	Min.	55.2	54.8	54.4	53.9	53.5	53.1	52.5	51.8	51.1	50.4	49.7	48.9	47.9	47.1	45.8	44.9	43.8	42.7	41.3	40.4	38.2
	Mom.	55.4	55.0	54.7	54.2	53.8	53.5	52.9	52.3	51.6	51.1	50.3	49.6	48.8	48.0	46.8	46.0	45.1	44.0	42.7	41.9	39.9
63.5	Min.	61.5	61.2	60.8	60.2	59.9	59.5	58.9	58.2	57.4	56.8	56.0	55.2	54.3	53.4	52.1	51.2	50.2	49.0	47.6	46.7	44.5
	Nom.	61.7	61.4	61.0	60.6	60.2	59.8	59.3	58.7	58.0	57.4	56.7	56.0	55.1	54.4	53.2	52.3	51.4	50.3	49.1	48.3	46.2
69.9	Min.	67.9	67.5	67.1	66.6	66.2	65.8	65.2	64.5	63.8	63.1	62.4	61.6	60.6	59.8	58.5	57.6	56.5	55.4	54.0	53.1	50.9
	Nom.	68.1	67.7	67.4	66.9	66.5	66.2	65.6	65.0	64.3	63.8	63.0	62.3	61.5	60.7	59.5	58.7	57.8	56.7	55.4	54.6	52.6
76.2	Min.	74.2	73.9	73.5	72.9	72.6	72.2	71.6	70.9	70.1	69.5	68.7	67.9	67.0	66.1	64.8	63.9	62.9	61.7	60.3	59.4	57.2
	Nom.	74.4	74.1	73.7	73.3	72.9	72.5	72.0	71.4	70.7	70.1	69.4	68.7	67.8	67.1	65.9	65.0	64.1	63.0	61.8	61.0	58.9
82.6	Min.	80.6	80.2	79.8	79.3	78.9	78.5	77.9	77.2	76.5	75.8	75.1	74.3	73.3	72.5	71.2	70.3	69.2	68.1	66.7	65.8	63.6
	Nom.	80.8	80.4	80.1	79.6	79.2	78.9	78.3	77.7	77.0	76.5	75.7	75.0	74.2	73.4	72.2	71.4	70.5	69.4	68.1	67.3	65.3
88.9	Min.	86.9	86.6	86.2	85.6	85.3	84.9	84.3	83.6	82.8	82.2	81.4	80.6	79.7	78.8	77.5	76.6	75.6	74.4	73.0	72.1	69.9
	Nom.	87.1	86.8	86.4	86.0	85.6	85.2	84.7	84.1	83.4	82.8	82.1	81.4	80.5	79.8	78.6	77.7	76.8	75.7	74.5	73.7	71.6
95.3	Min.	93.3	92.9	92.5	92.0	91.6	91.2	90.6	89.9	89.2	88.5	87.8	87.0	86.0	85.2	83.9	83.0	81.9	80.8	79.4	78.5	76.3
	Nom.	93.5	93.1	92.8	92.3	91.9	91.6	.91.0	90.4	89.7	89.2	88.4	87.7	86.9	86.1	84.9	84.1	83.2	82.1	80.8	80.0	78.0
101.6	Min.	99.6	99.3	98.9	98.3	98.0	97.6	97.0	96.3	95.5	94.9	94.1	93.3	92.4	91.5	90.2	89.3	88.3	87.1	85.7	84.8	82.6
	Nom.	99.8	99.5	99.1	98.7	98.3	97.9	97.4	96.8	96.1	95.5	94.8	94.1	93.2	92.5	91.3	90.4	89.5	88.4	87.2	86.4	84.3
114.3	Min.	112.3	112.0	111.6	111.0	110.7	110.3	109.7	109.0	108.2	107.6	106.8	106.0	105.1	104.2	102.9	102.0	101.0	99.8	98.4	97.5	95.3
	Nom.	112.5	112.2	111.8	111.4	111,0	110.6	110.1	109.5	108.8	108.2	107.5	106.8	105.9	105.2	104.0	103.1	102.2	101.1	99.9	99.1	97.0
127.3	Min.	125.0	124..7	124.3	123.7	123.4	123.0	122.4	121.7	120.9	120.3	119.5	118.7	117.8	116.9	115.6	114.7	113.7	112.5	111.1	110.2	108.0
	Nom.	125.2	124.9	124.5	124.1	123.7	123.3	122.8	122.2	121.5	120.9	120.2	119.5	118.6	117.9	116.7	115.8	114.9	113.8	112.6	111.8	109.7

ADDITIONAL BIRMINGHAM WIRE GAGES

NUMBER	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	00	000	0000	00000
MM	.1	.1	.2	.2	.2	.3	.3	.3	.4	.4	.5	.5	.6	.6	.7	.8	9.7	10.8	11.5	12.7

Pipe Chart [inch]

SIZE	OUTER DIAMETER		SCHEDULE 5	SCHEDULE 10	SCHEDULE 20	SCHEDULE 30	SCHEDULE 40	STANDARD	SCHEDULE 60	SCHEDULE 80	X-HEAVY	SCHEDULE 100	SCHEDULE 120	SCHEDULE 140	SCHEDULE 160	XX-HEAVY
1/8	0,405	Wall thickness	0,035	0,049			0,068	0,068		0,095	0,095					
		Inside diameter	0,335				0,269	0,269		0,215	0,215					
1/4	0,540	Wall thickness	0,049	0,065			0,088	0,088		0,119	0,119					
		Inside diameter	0,442	0,410			0,364	0,364		0,302	0,302					
3/8	0,675	Wall thickness	0,049	0,065			0,091	0,091		0,126	0,126					
		Inside diameter	0,577	0,545			0,493	0,493		0,423	0,423					
1/2	0,840	Wall thickness	0,065	0,083			0,109	0,109		0,147	0,147				0,187	0,294
		Inside diameter	0,710	0,674			0,622	0,622		0,546	0,546				0,466	0,442
3/4	1,050	Wall thickness	0,065	0,083			0,113	0,113		0,154	0,154				0,218	0,308
		Inside diameter	0,920	0,884			0,824	0,824		0,742	0,742				0,614	0,434
1	1,315	Wall thickness	0,065	0,190			0,133	0,133		0,179	0,179				0,250	0,358
		Inside diameter	1,185	0,935			1,049	1,049		0,957	0,957				0,815	0,599
1 1/4	1,660	Wall thickness	0,065	0,109			0,140	0,140		0,191	0,191				0,250	0,382
		Inside diameter	1,530	1,442			1,380	1,380		1,278	1,278				1,160	0,896
1 1/2	1,900	Wall thickness	0,065	0,109			0,145	0,145		0,200	0,200				0,281	0,400
		Inside diameter	1,770	1,682			1,610	1,610		1,500	1,500				1,338	1,100
2	2,375	Wall thickness	0,065	0,109			0,154	0,154		0,218	0,218				0,343	0,436
		Inside diameter	2,245	2,157			2,067	2,067		1,939	1,939				1,689	1,503
2 1/2	2,875	Wall thickness	0,083	0,120			0,203	0,203		0,276	0,276				0,375	0,552
		Inside diameter	2,709	2,635			2,469	2,469		2,323	2,323				2,125	1,771
3	3,500	Wall thickness	0,083	0,120			0,216	0,216		0,300	0,300				0,437	0,600
		Inside diameter	3,334	3,260			3,068	3,068		2,900	2,900				2,626	2,300
3 1/2	4,000	Wall thickness	0,083	0,120			0,226	0,226		0,318	0,318					0,636
		Inside diameter	3,834	3,760			3,548	3,548		3,364	3,364					2,728
4	4,500	Wall thickness	0,083	0,120			0,237	0,237	0,281	0,337	0,337		0,437		0,531	0,674
		Inside diameter	4,334	4,260			4,026	4,026	3,938	3,826	3,826		3,626		3,438	3,152
4 1/2	5,000	Wall thickness						0,247			0,355					0,710
		Inside diameter						4,506			4,290					3,580
5	5,563	Wall thickness	0,109	0,134			0,258	0,258		0,375	0,375		0,500		0,625	0,750
		Inside diameter	5,345	5,295			5,047	5,047		4,813	4,813				4,313	4,063
6	6,625	Wall thickness	0,109	0,134			0,280	0,280		0,432	0,432		0,562		0,718	0,864
		Inside diameter	6,407	6,357			6,065	6,065		5,761	5,761				5,189	4,897
7	7,625	Wall thickness						0,301			0,500					0,875
		Inside diameter						7,023			6,625					5,875
8	8,625	Wall thickness	0,109	0,148	0,250	0,277	0,322	0,322	0,406	0,500	0,500	0,593	0,718	0,812	0,906	0,875
		Inside diameter	8,407	8,329	8,125	8,071	7,981	7,981	7,813	7,625	7,625	7,439	7,189	7,001	6,813	6,875
9	9,625	Wall thickness						0,342			0,500					
		Inside diameter						8,941			8,625					
10	10,750	Wall thickness	0,134	0,165	0,250	0,307	0,365	0,365	0,500	0,593	0,500	0,718	0,843	1,000	1,125	
		Inside diameter	10,482	10,420	10,250	10,136	10,020	10,020	9,750	9,564	9,750	9,314	9,064	8,750	8,500	
11	11,750	Wall thickness						0,375			0,500					
		Inside diameter						11,000			10,750					
12	12,750	Wall thickness	0,156	0,180	0,250	0,330	0,406	0,375	0,562	0,687	0,500	0,843	1,000	1,125	1,312	
		Inside diameter	12,438	12,390	12,250	12,090	11,938	12,000	11,626	11,376	11,750	11,064	10,750	10,500	10,126	
14	14,000	Wall thickness	0,156	0,250	0,312	0,375	0,437	0,375	0,593	0,750	0,500	0,937	10,930	1,250	1,406	
		Inside diameter	13,688	13,500	13,376	13,250	13,126	13,250	12,814	12,500	13,000	12,126	-7,860	11,500	11,188	
16	16,000	Wall thickness	0,165	0,250	0,312	0,375	0,500	0,375	0,656	0,843	0,500	1,031	1,218	1,437	1,593	
		Inside diameter	15,670	15,500	15,376	15,250	15,000	15,250	14,688	14,314	15,000	13,938	13,564	13,126	12,814	
18	18,000	Wall thickness	0,165	0,250	0,312	0,437	0,562	0,375	0,750	0,937	0,500	1,156	1,375	1,562	1,781	
		Inside diameter	17,670	17,500	17,376	17,126	16,876	17,250	16,500	16,126	17,000	15,688	15,250	14,876	14,438	
20	20,000	Wall thickness	0,188	0,250	0,375	0,500	0,593	0,375	0,812	1,031	0,500	1,280	1,500	1,750	1,968	
		Inside diameter	19,624	19,500	19,250	19,000	18,814	19,250	18,376	17,938	19,000	17,440	17,000	16,500	16,064	
24	24,000	Wall thickness	0,218	0,250	0,375	0,562	0,687	0,375	0,968	1,218	0,500	1,531	1,812	2,062	2,343	
		Inside diameter	23,564	23,500	23,250	22,876	22,626	23,250	22,064	21,564	23,000	20,938	20,376	19,876	19,314	
26	26,000	Wall thickness		0,312	0,500			0,375			0,500					
		Inside diameter		25,376	25,000			25,250			25,000					
28	28,000	Wall thickness		0,312	0,500	0,625		0,375			0,500					
		Inside diameter		27,376	27,000	26,750		27,250			27,000					
30	30,000	Wall thickness	0,250	0,312	0,500	0,625		0,375			0,500					
		Inside diameter	29,500	29,376	29,000	28,750		29,250			29,000					
32	32,000	Wall thickness		0,312	0,500	0,625	0,688	0,375			0,500					
		Inside diameter		31,376	31,000	30,750	30,624	31,250			31,000					
34	34,000	Wall thickness		0,344	0,500	0,625	0,688	0,375			0,500					
		Inside diameter		33,312	33,000	32,750	32,624	33,250								
36	36,000	Wall thickness		0,312	0,500	0,625	0,750	0,375			0,500					
		Inside diameter		35,376	35,000	34,750	34,500	35,250			35,000					
42	42,000	Wall thickness						0,375			0,500					
		Inside diameter						41,250			41,000					
48	48,000	Wall thickness						0,375			0,500					
		Inside diameter						47,250			47,000					

Pipe Chart [mm]

SIZE	OUTER DIAMETER		SCHEDULE 5	SCHEDULE 10	SCHEDULE 20	SCHEDULE 30	SCHEDULE 40	STANDARD	SCHEDULE 60	SCHEDULE 80	X-HEAVY	SCHEDULE 100	SCHEDULE 120	SCHEDULE 140	SCHEDULE 160	XX-HEAVY
1/8	10,28	Wall thickness	0,89	1,24			1,73	1,73		2,41	2,41					
		Inside diameter	8,51				6,83	6,83		5,46	5,46					
1/4	13,71	Wall thickness	1,24	1,65			2,24	2,24		3,02	3,02					
		Inside diameter	11,23	10,41			9,25	9,25		7,67	7,67					
3/8	17,14	Wall thickness	1,24	1,65			2,31	2,31		3,20	3,20					
		Inside diameter	14,66	13,84			12,52	12,52		10,74	10,74					
1/2	21,33	Wall thickness	1,65	2,11			2,77	2,77		3,73	3,73				4,75	7,47
		Inside diameter	18,03	17,12			15,80	15,80		13,87	13,87				11,84	11,23
3/4	26,67	Wall thickness	1,65	2,11			2,87	2,87		3,91	3,91				5,54	7,82
		Inside diameter	23,37	22,45			20,93	20,93		18,85	18,85				15,60	11,02
1	33,40	Wall thickness	1,65	4,83			3,38	3,38		4,55	4,55				6,35	9,09
		Inside diameter	30,10	23,75			26,64	26,64		24,31	24,31				20,70	15,21
1 1/4	42,16	Wall thickness	1,65	2,77			3,56	3,56		4,85	4,85				6,35	9,70
		Inside diameter	38,86	36,63			35,05	35,05		32,46	32,46				29,46	22,76
1 1/2	48,26	Wall thickness	1,65	2,77			3,68	3,68		5,08	5,08				7,14	10,16
		Inside diameter	44,96	42,72			40,89	40,89		38,10	38,10				33,99	27,94
2	60,32	Wall thickness	1,65	2,77			3,91	3,91		5,54	5,54				8,71	11,07
		Inside diameter	57,02	54,79			52,50	52,50		49,25	49,25				42,90	38,18
2 1/2	73,02	Wall thickness	2,11	3,05			5,16	5,16		7,01	7,01				9,53	14,02
		Inside diameter	68,81	66,93			62,71	62,71		59,00	59,00				53,98	44,98
3	88,90	Wall thickness	2,11	3,05			5,49	5,49		7,62	7,62				11,10	15,24
		Inside diameter	84,68	82,80			77,93	77,93		73,66	73,66				66,70	58,42
3 1/2	101,60	Wall thickness	2,11	3,05			5,74	5,74		8,08	8,08					16,15
		Inside diameter	97,38	95,50			90,12	90,12		85,45	85,45					69,29
4	114,30	Wall thickness	2,11	3,05			6,02	6,02	7,14	8,56	8,56		11,10		13,49	17,12
		Inside diameter	110,08	108,20			102,26	102,26	100,03	97,18	97,18		92,10		87,33	80,06
4 1/2	127,00	Wall thickness						6,27			9,02					18,03
		Inside diameter						114,45			108,97					90,93
5	141,30	Wall thickness	2,77	3,40			6,55	6,55		9,53	9,53		12,70		15,88	19,05
		Inside diameter	135,76	134,49			128,19	128,19		122,25	122,25				109,55	103,20
6	168,27	Wall thickness	2,77	3,40			7,11	7,11		10,97	10,97		14,27		18,24	21,95
		Inside diameter	162,74	161,47			154,05	154,05		146,33	146,33				131,80	124,38
7	193,67	Wall thickness						7,65			12,70					22,23
		Inside diameter						178,38			168,28					149,23
8	219,07	Wall thickness	2,77	3,76	6,35	7,04	8,18	8,18	10,31	12,70	12,70	15,06	18,24	20,62	23,01	22,23
		Inside diameter	213,54	211,56	206,38	205,00	202,72	202,72	198,45	193,68	193,68	188,95	182,60	177,83	173,05	174,63
9	244,47	Wall thickness						8,69			12,70					
		Inside diameter						227,10			219,08					
10	273,05	Wall thickness	3,40	4,19	6,35	7,80	9,27	9,27	12,70	15,06	12,70	18,24	21,41	25,40	28,58	
		Inside diameter	266,24	264,67	260,35	257,45	254,51	254,51	247,65	242,93	247,65	236,58	230,23	222,25	215,90	
11	298,45	Wall thickness						9,53			12,70					
		Inside diameter						279,40			273,05					
12	323,85	Wall thickness	3,96	4,57	6,35	8,38	10,31	9,53	14,27	17,45	12,70	21,41	25,40	28,58	33,32	
		Inside diameter	315,93	314,71	311,15	307,09	303,23	304,80	295,30	288,95	298,45	281,03	273,05	266,70	257,20	
14	355,60	Wall thickness	3,96	6,35	7,92	9,53	11,10	9,53	15,06	19,05	12,70	23,80	277,62	31,75	35,71	
		Inside diameter	347,68	342,90	339,75	336,55	333,40	336,55	325,48	317,50	330,20	308,00	-199,64	292,10	284,18	
16	406,40	Wall thickness	4,19	6,35	7,92	9,53	12,70	9,53	16,66	21,41	12,70	26,19	30,94	36,50	40,46	
		Inside diameter	398,02	393,70	390,55	387,35	381,00	387,35	373,08	363,58	381,00	354,03	344,53	333,40	325,48	
18	457,20	Wall thickness	4,19	6,35	7,92	11,10	14,27	9,53	19,05	23,80	12,70	29,36	34,93	39,67	45,24	
		Inside diameter	448,82	444,50	441,35	435,00	428,65	438,15	419,10	409,60	431,80	398,48	387,35	377,85	366,73	
20	508,00	Wall thickness	4,78	6,35	9,53	12,70	15,06	9,53	20,62	26,19	12,70	32,51	38,10	44,45	49,99	
		Inside diameter	498,45	495,30	488,95	482,60	477,88	488,95	466,75	455,63	482,60	442,98	431,80	419,10	408,03	
24	609,60	Wall thickness	5,54	6,35	9,53	14,27	17,45	9,53	24,59	30,94	12,70	38,89	46,02	52,37	59,51	
		Inside diameter	598,53	596,90	590,55	581,05	574,70	590,55	560,43	547,73	584,20	531,83	517,55	504,85	490,58	
26	660,40	Wall thickness		7,92	12,70			9,53			12,70					
		Inside diameter		644,55	635,00			641,35			635,00					
28	711,20	Wall thickness		7,92	12,70	15,88		9,53			12,70					
		Inside diameter		695,35	685,80	679,45		692,15			685,80					
30	762,00	Wall thickness	6,35	7,92	12,70	15,88		9,53			12,70					
		Inside diameter	749,30	746,15	736,60	730,25		742,95			736,60					
32	812,80	Wall thickness		7,92	12,70	15,88	17,48	9,53			12,70					
		Inside diameter		796,95	787,40	781,05	777,85	793,75			787,40					
34	863,60	Wall thickness		8,74	12,70	15,88	17,48	9,53			12,70					
		Inside diameter		846,12	838,20	831,85	828,65	844,55								
36	914,40	Wall thickness		7,92	12,70	15,88	19,05	9,53			12,70					
		Inside diameter		898,55	889,00	882,65	876,30	895,35			889,00					
42	1 066,80	Wall thickness						9,53			12,70					
		Inside diameter						1 047,75			1 041,40					
48	1 219,20	Wall thickness						9,53			12,70					
		Inside diameter						1 200,15			1 193,80					

WEIGHTS

GIVEN	MULTIPLY BY	TO OBTAIN
Grams	0.001	Kilograms
Grams	0.0353	Ounces
Grams	0.0022	Pounds
Kilograms	1 000.0	Grams
Kilograms	35.2740	Ounces
Kilograms	2.2046	Pounds
Ounces	28.3495	Grams
Ounces	0.0283	Kilograms
Ounces	0.0625	Pounds
Pounds	453.5924	Grams
Pounds	0.4536	Kilograms
Pounds	16.0	Ounces

FLOW RATE

GIVEN	MULTIPLY BY	TO OBTAIN
Cubic feet per minute (CFM)	0.0283	Cubic meters per minute
Cubic feet per minute (CFM)	7.4805	Gallons per minute (GPM)
Cubic feet per minute (CFM)	28.3163	Liters per minute
Cubic meters per minute	35.3133	Cubic feet per minute (CFM)
Cubic meters per minute	264.170	Gallons per minute (GPM)
Cubic meters per minute	1 000.0	Liters per minute
Gallons per minute (GPM)	0.1337	Cubic feet per minute (CFM)
Gallons per-minute (GPM)	0.0038	Cubic meters per minute
Gallons per minute (GPM)	3.7878	Liters per minute
Liters per minute	0.0353	Cubic feet per minute (CFM)
Liters per minute	0.001	Cubic meters per minute
Liters per minute	0.2641	Gallons per minute (GPM)

MEASURES

GIVEN	MULTIPLY BY	TO OBTAIN
Centimeters	0.0328	Feet
Centimeters	0.3937	Inches
Centimeters	10.0	Millimeters
Centimeters	0.01	Meters
Feet	30.4801	Centimeters
Feet	12.0	Inches
Feet	304.801	Millimeters
Feet	0.3048	Meters
Inches	2.5400	Centimeters
Inches	0.0833	Feet
Inches	25.400	Millimeters
Inches	0.0254	Meters
Millimeters	0.1	Centimeters
Millimeters	0.00328	Feet
Millimeters	0.03937	Inches
Millimeters	0.001	Meters
Meters	100.0	Centimeters
Meters	3.2808	Feet
Meters	39.370	Inches
Meters	1 000.0	Millimeters

PRESSURE

GIVEN	MULTIPLY BY	TO OBTAIN
Bar	1.0197	Kilograms per square centimeter
Bar	14.5038	Pounds per square inch
Kilograms per square centimeter	.9807	Bar
Kilograms per square centimeter	14.22	Pounds per square inch
Pounds per square inch	.0689	Bar
Pounds per square inch	.0703	Kilograms per square centimeter

Editing, photos and DTP: ***tomaszwiniarski.com***


KRAIS®
Tube & Pipe Tools

KRAIS Tube&Pipe Tools

Poland, 55-106 Zawonia, Czachowo 15
tel. +48 71 312 05 96, fax +48 71 387 03 32
email: export@krais.com
www.krais.com

MADE IN POLAND

facebook.com/KraisTubeExpanders/
linkedin.com/company/krais/

KRAIS tools in action! YouTube
youtube.com/kraistubeexpanders