

CHAPTER ONE

# Minimill Series



# MiniMill 100

The MiniMill 100 is a rugged, fast, portable weld end preparation lathe designed for various tubes and pipes, including stainless steel and other high chromium materials. Our standard machine can be used for pipe sizes of 20 - 74 mm i.d. (0.787" - 2.913") and comes with a 88 mm cutting head.



❖ Fitted with our optional multi feed system, the Mini Mill is easily changed from it's star wheel configuration to a ratchet drive for fast and accurate preps on water wall panels.



	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>MiniMill 100</b>	20 – 107 mm	20 – 74 mm	100 Rpm	1,3 Hp	140 Nm	20 mm
	0,787 – 4,213 "	0,787 – 2,913 "			105 Ft.Lbs	0,787"

Recommended for **Tube facing ▪ Tube bevelling ▪ Weld removal**

Air use:	55 cfm	1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	11,4 Lbs	5,2 kg
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## CUTTER HEADS



OPTIONAL  
60 mm | 2,36"



**STANDARD**  
88 mm | 3,46"



OPTIONAL  
106 mm | 4,17"

## LEVER FEED LM



A heavy duty feed handle ideal for heavy wall tube and pipe bevelling. Also well suited for strength and seal weld removal applications.

## MULTI FEED MM



Practical and easy to use multi feed system with Star Wheel and build in ratchet mechanism and handle.

**MINI SHAFT**

A system with 3 interchangeable guide shafts 12.4, 13.9 and 16.9 mm. A complete jaw set to cover 12.5 to 23 mm (0.492" to 0.905") inside diameter.

[JAWS FOR MINI SHAFT, PAGE 55](#)

**SHAFT 20**

Shaft with jaw sets to cover 20 to 74 mm (0.787" to 2.914") inside diameter.

[JAWS FOR SHAFT 20, PAGE 54](#)

**SHAFT 22**

Shaft with increased cross sectional diameter within the jaw retaining section. Enhances machining rigidity.

[JAWS FOR SHAFT 22, PAGE 54](#)

**TFMH**

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

[TABLE FOR TFMH, PAGE 51](#)

**OBMH**

Custom, precisely designed head. Dedicated for 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.

[TABLE FOR OBMH, PAGE 51](#)

**STWRMH**

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

[TABLE FOR STWRMH, PAGE 50](#)

**SWROTC**

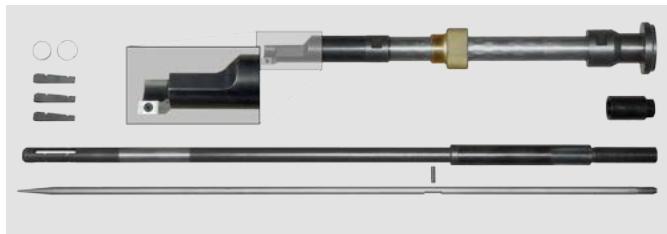
A seal weld removal head over tube circumference prior to re-welding the damaged joint without removing the tube.

[TABLE FOR SWROTC, PAGE 52](#)

**MRBMH**

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

[TABLE FOR MMRBMH/PMMRBMH, PAGE 53](#)

**FINFAN SEAL WELD REMOVAL ATTACHMENT**

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

**SPEED REDUCER**

An optional speed reducer can be used for seal and strength weld removal applications including duplex, super duplex and other hard to machine alloys.

[SPEED REDUCER, PAGE 4](#)

**PNEUMATIC LOCK**

This optional pneumatic lock decreases the cycle time between end preps by up to four times and is ideal for fabrication shops.

[CLAMPING SYSTEM, PAGE 4](#)

# MiniMill 100ESM

The MiniMill is a rugged, fast, portable weld end preparation lathe for various tubes and pipes, including stainless steel and other high chromium alloys. A standard machine can cover the pipe sizes of 20 to 74 mm ID (0.787" to 2.910") and comes with a with 88 mm cutting head. The electric motor is interchangeable with our pneumatic one and can be purchased separately



110V or 220V motor for fast and accurate weld preps.



ELECTRIC  
DRIVEN

	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>MiniMill 100ESM</b>	20 – 107 mm	20 – 74 mm	115 Rpm	1,1 W	366 Nm	20 mm
	0,787 – 4,213"	0,787 – 2,913"			280 Ft.Lbs	0,787"

Recommended for

Tube facing ■ Tube bevelling ■ Weld removal

Power:	230 V	Body width:	2,32"	59 mm	Body height:	18,5"	470 mm	Body weight:	15,0 Lbs	6,8 kg
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## CUTTER HEADS



OPTIONAL  
60 mm | 2,36"



**STANDARD**  
88 mm | 3,46"



OPTIONAL  
106 mm | 4,17"

## LEVER FEED LM



A heavy duty feed handle ideal for heavy wall tube and pipe bevelling. Also well suited for strength and seal weld removal applications.

## MULTI FEED MM



Practical and easy to use multi feed system with Star Wheel and build in ratchet mechanism and handle.

**SHAFT 20**

Shaft with jaw sets to cover 20 to 74 mm (0.787" to 2.914") inside diameter.

**JAWS FOR SHAFT 20, PAGE 54**

**SHAFT 22**

Shaft with increased cross sectional diameter within the jaw retaining section. Enhances machining rigidity.

**JAWS FOR SHAFT 22, PAGE 54**

**OBMH**

Custom, precisely designed head. Dedicated for 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.

**TABLE FOR OBMH, PAGE 51**

**STWRMH**

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

**TABLE FOR STWRMH, PAGE 50**

**TFMH**

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

**TABLE FOR TFMH, PAGE 51**

**TFMHL LONG REACH FACING HEAD**

Long reach facing head, designed to trim back tubes that are positioned very close to the shell or channels of heat exchangers.

**TABLE FOR TFMHL, PAGE 52**

**EXAMPLE TOOL APPLICATION**

# MiniMill 200

The MiniMill-200 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")



Facing, bevelling tubes quickly and safely.



	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>MiniMill 200</b>	12,5 – 74,0 mm	20,0 – 44,0 mm	200 Rpm	1,3 Hp	72 Nm	20 mm
	0,492 – 2,913 "	0,787 – 1,732"			53,10 Ft.Lbs	0,787"

Recommended for

**Tube facing ■ Tube bevelling ■ Weld removal**

Air consumption:	55 cfm	1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	11,4 Lbs	5,2 kg
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## CUTTER HEADS



**STANDARD**  
60 mm | 2,36"



OPTIONAL  
88 mm | 3,46"



NA

## LEVER FEED LM



A heavy duty feed handle ideal for heavy wall tube and pipe bevelling. Also well suited for strength and seal weld removal applications.

## MULTI FEED MM



Practical and easy to use multi feed system with Star Wheel and build in ratchet mechanism and handle.

**MINI SHAFT**

A system with 3 interchangeable guide shafts 12.4, 13.9 and 16.9 mm. A complete jaw set to cover 12.5 to 23 mm (0.492" to 0.905") inside diameter.

[JAWS FOR MINI SHAFT, PAGE 55](#)

**SHAFT 20**

Shaft with jaw sets to cover 20 to 74 mm (0.787" to 2.914") inside diameter.

[JAWS FOR SHAFT 20, PAGE 54](#)

**SPEED REDUCER**

An optional speed reducer can be used for seal and strength weld removal applications including duplex, super duplex and other hard to machine alloys.

[SPEED REDUCER, PAGE 4](#)

**PNEUMATIC LOCK**

This optional pneumatic lock decreases the cycle time between end preps by up to four times and is ideal for fabrication shops.

[CLAMPING SYSTEM, PAGE 4](#)

**OBMH**

Custom, precisely designed head. Dedicated for 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.

[TABLE FOR OBMH, PAGE 51](#)

**STWRMH**

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

[TABLE FOR STWRMH, PAGE 50](#)

**SWROTC**

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

[TABLE FOR SWROTC, PAGE 52](#)

**MRBMH**

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

[TABLE FOR MMRBMH/PMRBMH, PAGE 53](#)

**EXAMPLE TOOL APPLICATION**

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



Completed strength weld removal.

# MiniMill 300

The MiniMill-300 fast facing and end preparation lathe is designed 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 12,5 to 23 mm ID (0.490" to 0.905")



Strength weld removal on 1" x 12 MW tubes, leaving a perfect weld prep for re-welding once tubes have been removed. Speed reducer recommended.



	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>MiniMill 300</b>	<b>12,5 – 38 mm</b>	<b>12,5 – 23,0 mm</b>	<b>300 Rpm</b>	<b>1,3 Hp</b>	<b>43 Nm</b>	<b>20 mm</b>
	<b>0,492 – 1,496 "</b>	<b>0,490 – 0,905"</b>			<b>31,71 Ft.Lbs</b>	<b>0,787"</b>

Recommended for **Tube facing ▪ Tube bevelling**

Air consumption:	55 cfm 1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	11,4 Lbs 5,2 kg
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## CUTTER HEADS



**STANDARD**  
**60 mm | 2,36"**



**OPTIONAL**  
**88 mm | 3,46"**



NA

## LEVER FEED LM



A heavy duty feed handle ideal for heavy wall tube and pipe bevelling. Also well suited for strength and seal weld removal applications.

## MULTI FEED MM



Practical and easy to use multi feed system with Star Wheel and build in ratchet mechanism and handle.

**MINI SHAFT**

A system with 3 interchangeable guide shafts 12.4, 13.9 and 16.9 mm. A complete jaw set to cover 12.5 to 23 mm (0.492" to 0.905") inside diameter.

[JAWS FOR MINI SHAFT, PAGE 55](#)

**SHAFT 20**

Shaft with jaw sets to cover 20 to 74 mm (0.787" to 2.914") inside diameter.

[JAWS FOR SHAFT 20, PAGE 54](#)

**SPEED REDUCER**

An optional speed reducer can be used for seal and strength weld removal applications including duplex, super duplex and other hard to machine alloys.

[SPEED REDUCER, PAGE 4](#)

**PNEUMATIC LOCK**

This optional pneumatic lock decreases the cycle time between end preps by up to four times and is ideal for fabrication shops.

[CLAMPING SYSTEM, PAGE 4](#)

**TFMH**

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

[TABLE FOR TFMH, PAGE 51](#)

**STWRMH**

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

[TABLE FOR STWRMH, PAGE 50](#)

**SWROTC**

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

[TABLE FOR SWROTC, PAGE 52](#)

**TFMHL LONG REACH FACING HEAD**

Long reach facing head, designed to trim back tubes that are positioned very close to the shell or channels of heat exchangers.

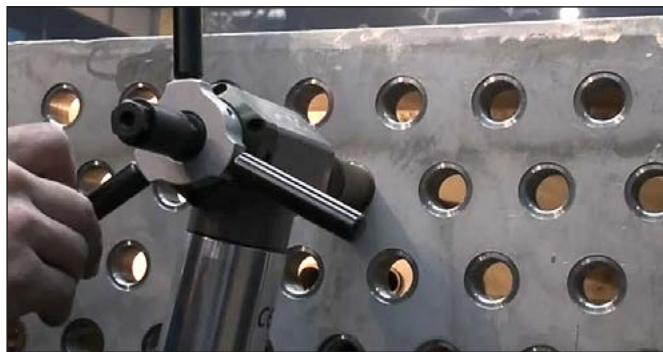
[TABLE FOR TFMHL, PAGE 52](#)



# MiniMill 300FF



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



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

	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>MiniMill 300FF</b>	12,5 – 51,0 mm 0,492 – 2,000"	Depends on Attachment	300 Rpm	1,3 Hp	43 Nm 31,71 Ft.Lbs	20 mm 0,787"
Recommended for	<b>FinFan cooler tube facing</b>					

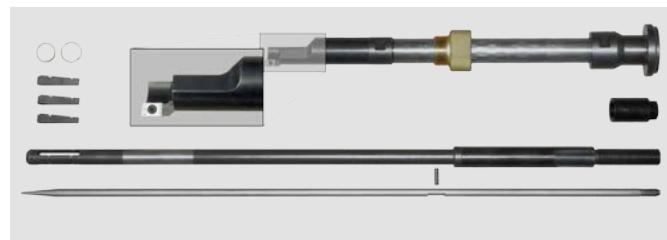
Air consumption:	55 cfm 1,3 m³/min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	13,2 Lbs 6 kg
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## FINFAN ATTACHMENT



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

## FINFAN SEAL WELD REMOVAL ATTACHMENT



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

**LEVER FEED LM**

A heavy duty feed handle ideal for heavy wall tube and pipe bevelling. Also well suited for strength and seal weld removal applications.

**MULTI FEED MM**

Practical and easy to use multi feed system with Star Wheel and built in ratchet mechanism and handle.

**SPEED REDUCER**

An optional speed reducer can be used for seal and strength weld removal applications including duplex, super duplex and other hard to machine alloys.

**SPEED REDUCER, PAGE 4**

**FINFAN ATTACHMENT PART NUMBERS**

FINFAN ATTACHMENT	TUBE CAPACITY			INSERT	NO. INSERTS	SCREW	STANDARD LENGTH		MINIMUM LENGTH		JAWS COVER	
	[INCH]	[MM]	BWG				[INCH]	[MM]	[INCH]	[MM]	MIN	MAX
601-FinFan-1-12"	1,000	25,40	12-23	CI	3	1 1/8	12	304,8	5	127	207MM#36	213MM#36
603-FinFan-1-1/8-12"	1,125	28,58	12-23	CI	3	1 1/4	12	304,8	5	127	211MM#36	217MM#36
605-FinFan-1-1/4-12"	1,250	31,75	11-23	CI	3	1 3/8	12	304,8	5	127	103MM#36	107MM#36
607-FinFan-1-1/2-12"	1,500	38,10	11-23	CI	3	1 5/8	12	304,8	5	127	107MM#36	111MM#36
609-FinFan-1-3/4-12"	1,750	44,45	9-23	CI	3	1 7/8	12	304,8	5	127	111MM#36	115MM#36
611-FinFan-2-12"	2,000	50,80	9-23	CI	3	2 1/8	12	304,8	5	127	115MM#36	119MM#36

**FINFAN ATTACHMENTS AVAILABLE LENGTHS**

	601-FINFAN-XX-8	601-FINFAN-XX-8	601-FINFAN-XX-10	601-FINFAN-XX-14	601-FINFAN-XX-16
Length	[inch]	6	8	10	14
	[mm]	152,4	203,2	254	355,6

**EXAMPLE TOOL APPLICATION**

Water box demonstration of the simplicity of machine operation.



Operator trimming back tubes prior to seal welding



# MiniMill 300GFF

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



→ Safely re-machine gasket surfaces in seconds.



	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>MiniMill 300GFF</b>	1 1/8 – 2 1/8	Special fit to plug thread	300 Rpm	1,3 Hp	43 Nm	20 mm
	12 TPI				31,71 Ft.Lbs	0,787"

Recommended for **FinFan cooler gasket seat facing**

Air consumption:	55 cfm	1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	11 Lbs	5 kg
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## LEVER FEED LM



A heavy duty feed handle ideal for heavy wall tube and pipe bevelling. Also well suited for strength and seal weld removal applications.

## 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.

TABLE FOR MINI SHAFT, PAGE 55

## PNEUMATIC LOCK



This optional pneumatic lock decreases the cycle time between end preps by up to four times and is ideal for fabrication shops.

CLAMPING SYSTEM, PAGE 4

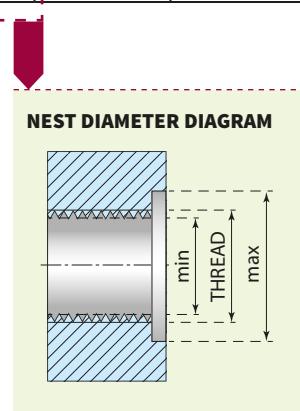
**GASKET SEAT FACING HEAD NUMBERS**

HEAD TYPE	PLUG SIZE			NEST DIAMETER				INSERT	NO. OF INSERTS
	[INCH]	[MM]	TPI	MIN [INCH]	MAX [INCH]	MIN [MM]	MAX [MM]		
FFGSMH-1125	1,125	28,58	12	0,940	1,496	24,00	38,00	CI 5x5	4
FFGSMH-1250	1,250	31,75	12	1,063	1,614	27,00	41,00	CI 5x5	4
FFGSMH-1350	1,375	34,93	12	1,220	1,772	31,00	45,00	CI 5x5	4
FFGSMH-1500	1,500	38,10	12	1,339	1,890	34,00	48,00	CI 5x5	4
FFGSMH-1625	1,625	41,27	12	1,457	2,008	37,00	51,00	CI 5x5	4
FFGSMH-1750	1,750	44,45	12	1,590	2,140	40,40	54,40	CI 5x5	4
FFGSMH-1875	1,875	47,62	12	1,720	2,270	43,60	57,6	CI 5x5	4

**JAWS FOR GASKET SEAT FACING**

JAWS SET NUMBER	PLUG SIZE		TPI	PILOT
	[INCH]	[MM]		
701MM #36-1-1/8-GFF	1,125	28,575	12	PGFF-1125
703MM #36-1-1/4-GFF	1,250	31,750	12	PGFF-1250
705MM #36-1-3/8-GFF	1,375	34,925	12	PGFF-1350
707MM #36-1-1/2-GFF	1,500	38,100	12	PGFF-1500
709MM #36-1-5/8-GFF	1,625	41,275	12	PGFF-1625
711MM #36-1-3/4-GFF	1,750	44,450	12	PGFF-1750
713MM #36-1-7/8-GFF	1,875	47,625	12	PGFF-1875
715MM #36-2-GFF	2,000	50,800	12	PGFF-2000
717MM #36-2-1/8-GFF	2,125	53,975	12	PGFF-2125

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".

**EXAMPLE TOOL APPLICATION**

FinFan cooler before maintenance



Plug hole before re machining the gasket seat



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



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

# MiniMill 300LP

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.



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



	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>MiniMill 300LP</b>	<b>12,5 – 38,0 mm</b>	<b>12,5 – 23,0 mm</b>	<b>300 Rpm</b>	<b>1,3 Hp</b>	<b>43 Nm</b>	<b>20 mm</b>
	<b>0,492 – 1,500"</b>	<b>0,492 – 0,900"</b>			<b>32 Ft.Lbs</b>	<b>0,787"</b>

Recommended for **Tube facing and trimming ▪ Seal weld removal**

Air consumption:	55 cfm	1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	15,43 Lbs	7 kg
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## LEVER FEED LM



A heavy duty feed handle ideal for heavy wall tube and pipe bevelling. Also well suited for strength and seal weld removal applications.

## MINI SHAFT



A system with 3 interchangeable guide shafts 12.4, 13.9 and 16.9 mm. A complete jaw set to cover 12.5 to 23 mm (0.492" to 0.905") inside diameter.

JAWS FOR MINI SHAFT, PAGE 55

## SHAFT 20



Shaft with jaw sets to cover 20 to 74 mm (0.787" to 2.914") inside diameter.

JAWS FOR SHAFT 20, PAGE 54

## SHAFT 22



Shaft with increased cross sectional diameter within the jaw retaining section. Enhances machining rigidity.

JAWS FOR SHAFT 22, PAGE 54

**STAR FEED SM**

The most universal feed system that is suitable for facing, bevelling, seal and strength weld removal.

**STWRMH**

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

[TABLE FOR STWRMH, PAGE 50](#)

**MMFH**

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

[TABLE FOR MMFH, PAGE 50](#)

**TFMH**

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

[TABLE FOR TFMH, PAGE 51](#)

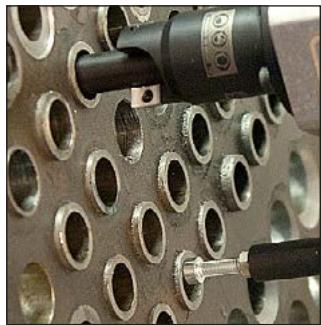
**SPEED REDUCER**

An optional speed reducer can be used for seal and strength weld removal applications including duplex, super duplex and other hard to machine alloys.

[SPEED REDUCER, PAGE 4](#)

**EXAMPLE TOOL APPLICATION**

☞ A real application where a customer is 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.

# MiniMill 600

MiniMill-600 is the fastest version of our MiniMill series tools. A standard machine comes complete with a 60 mm cutting head, a locking system including all jaw sets to cover sizes of 12,7 to 23 mm ID (0.500" to 0.906").



An auto lock and a handle feed can be added to all of the MiniMill series.



	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>MiniMill 600</b>	<b>12,5 – 25,6 mm</b>	<b>12,5 – 23,0 mm</b>	<b>600 Rpm</b>	<b>1,3 Hp</b>	<b>24 Nm</b>	<b>20 mm</b>
	<b>0,492 – 1,008 "</b>	<b>0,492 – 0,906 "</b>			<b>18 Ft.Lbs</b>	<b>0,787"</b>

Recommended for

**Tube facing ▪ Tube beveling ▪ Seal weld removal**

Air consumption:	55 cfm 1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	9 Lbs	4,5 kg
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## CUTTER HEADS



**STANDARD  
60 MM | 2,36"**



**OPTIONAL  
88 mm | 3,46"**



NA

## MINI SHAFT



A system with 3 interchangeable guide shafts 12.4, 13.9 and 16.9 mm. A complete jaw set to cover 12.5 to 23 mm (0.492" to 0.905") inside diameter.

JAWS FOR MINI SHAFT, PAGE 55

## SHAFT 20



Shaft with jaw sets to cover 20 to 74 mm (0.787" to 2.914") inside diameter.

JAWS FOR SHAFT 20, PAGE 54

## SHAFT 22



Shaft with increased cross sectional diameter within the jaw retaining section. Enhances machining rigidity.

JAWS FOR SHAFT 22, PAGE 54

**LEVER FEED LM**

A heavy duty feed handle ideal for heavy wall tube and pipe bevelling. Also well suited for strength and seal weld removal applications.

**SWRMH**

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

**TABLE FOR SWRMH, PAGE 53**

**MMFH**

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

**TABLE FOR MMFH, PAGE 50**

**SPEED REDUCER**

An optional speed reducer can be used for seal and strength weld removal applications including duplex, super duplex and other hard to machine alloys.

**SPEED REDUCER, PAGE 4**

**EXAMPLE TOOL APPLICATION**

☛ A seal weld removal head with carbide inserts.



☛ Micro shaft trimming of 5/8" stainless tubing.



☛ SA-179 tubing being trimmed back.



☛ 14 x 1mm tubing being trimmed back quickly and efficiently.

# Auto MiniMill PE



Auto MiniMill-PE is a fully automatic machine controlled by a pneumatic-electric control box with adjustable feed rate actuated with a foot switch, ideal for repetitive cycle works on condensers and heat exchangers. AutoMiniMill-PE is specially designed for trimming and weld removal. This tool is based on the MiniMill-300; it is a fast facing and end preparation lathe designed for various tubes including stainless steel and other high chromium alloys. It works with all MiniMill300 compatible cutter heads, see page 12 and charts on page 45.

	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>Auto MiniMill PE</b>	<b>12,5 – 38 mm</b>	<b>12,5 – 23 mm</b>	<b>300 Rpm</b>	<b>1,3 Hp</b>	<b>43 Nm</b>	<b>20 mm</b>
	<b>0,492 – 1,496 "</b>	<b>0,492 – 0,906 "</b>			<b>31,71 Ft.Lbs</b>	<b>0,787"</b>

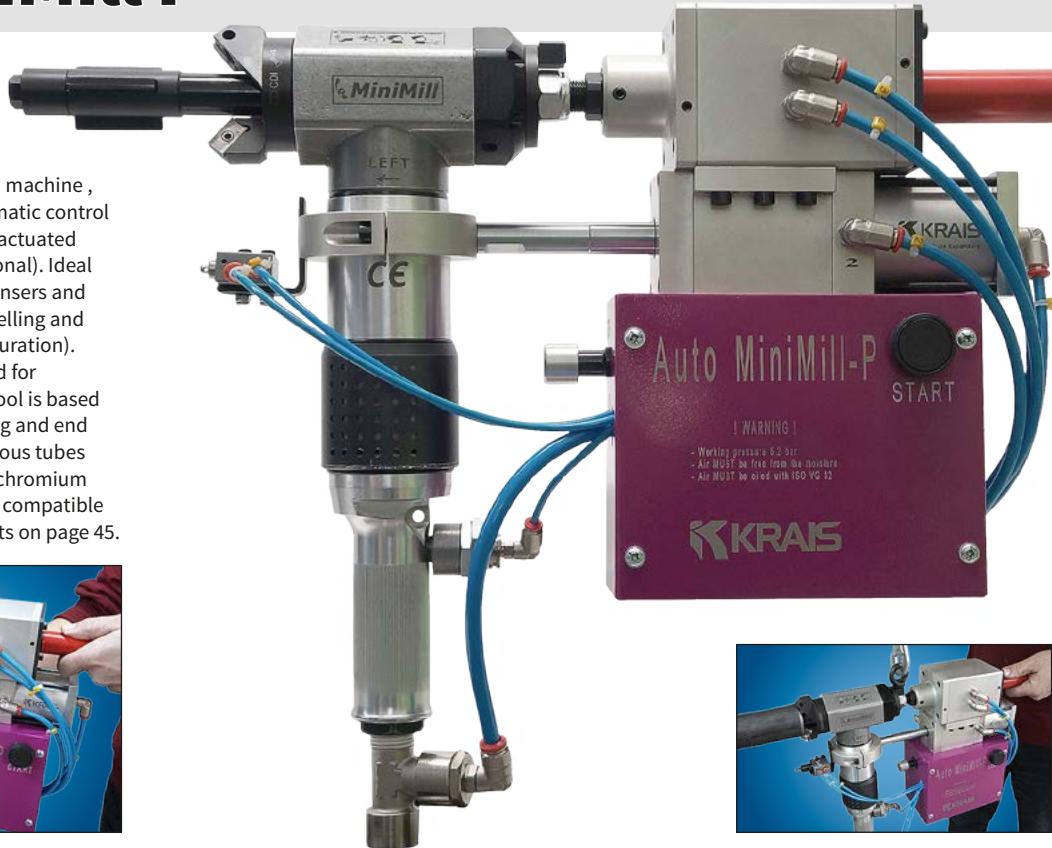
Recommended for **Tube facing ▪ Tube bevelling**

Air consumption:	55 cfm 1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	11,4 Lbs 5,2 kg
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# Auto MiniMill P

Auto MiniMill-P 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 (100 rpm configuration). AutoMiniMill-P is specially designed for trimming and weld removal. This tool is based on the MiniMill-300; it is a fast facing and end preparation lathe designed for various tubes including stainless and other high chromium alloys. It works with all MiniMill300 compatible cutter heads, see page 12 and charts on page 45.



	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>Auto MiniMill 300P</b>	12,5 – 38,1 mm	12,5 – 23 mm	300 Rpm	1,3 Hp	43 Nm	20 mm
	0,492 – 1,500"	0,492 – 0,906"			32 Ft.Lbs	0,787"

Recommended for **Tube facing ▪ Tube bevelling**

Air consumption:	55 cfm	1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	25 Lbs	11,5 kg
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	APPLICATION RANGE	STD. LOCKING RANGE	FREE SPEED	POWER	TORQUE	FEED STROKE
<b>Auto MiniMill 100P</b>	20 – 63,5 mm	12,0 – 58 mm	100 Rpm	1,3 Hp	140 Nm	20 mm
	0,787 – 2,500"	0,472 – 2,283"			105 Ft.Lbs	0,787"

Recommended for **Tube facing ▪ Tube bevelling**

Air consumption:	55 cfm	1,3 m <sup>3</sup> /min	Body width:	2,32"	59 mm	Body height:	13,1"	335 mm	Body weight:	25 Lbs	11,5 kg
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CHAPTER FIVE

# Accessories for beveling tools



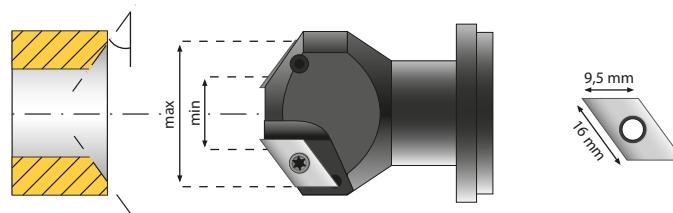
# MiniMill Special Heads

## 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.



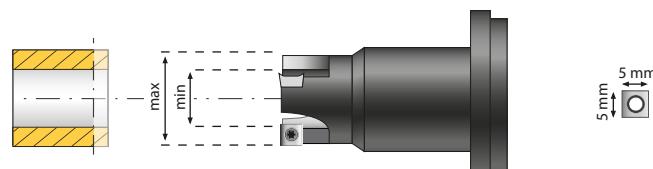
HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	SHAFT
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			
STWRMH-190	0,750	19,05	12-23	0,530	1,46	13,50	37,00	WRI	2	901 MM#151 12,4 mm
STWRMH-222	0,875	22,23	12-23	0,650	1,496	16,50	38,00	WRI	2	905 MM#151 13,9 mm
STWRMH-254	1,000	25,40	10-23	0,732	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	915 MM#151 20 mm
STWRMH-317	1,250	31,75	9-23	0,945	1,850	24,00	47,00	WRI	2	STD shaft 20 mm or 22
STWRMH-381	1,500	38,10	8-23	1,142	2,047	29,00	52,00	WRI	2	STD shaft 20 mm or 23
STWRMH-444	1,750	44,45	8-23	1,417	2,244	36,00	57,00	CDI	2	STD shaft 20 mm or 24
STWRMH-508	2,000	50,80	6-23	1,575	2,480	40,00	63,00	CDI	2	STD shaft 20 mm or 25
STWRMH-571	2,250	57,15	6-23	1,811	2,717	46,00	69,00	CDI	2	STD shaft 20 mm or 26
STWRMH-603	2,375	60,33	6-23	1,949	2,854	49,50	72,50	CDI	2	STD shaft 20 mm or 27
STWRMH-635	2,500	63,50	6-23	2,067	2,972	52,50	75,50	CDI	2	STD shaft 20 mm or 28
STWRMH-762	3,000	76,20	6-23	2,579	3,484	65,50	88,50	CDI	2	STD shaft 20 mm or 29
STWRMH-889	3,500	88,90	6-23	3,071	3,976	78,00	101,00	CDI	2	STD shaft 20 mm or 30
STWRMH-900	4,000	101,60	6-23	3,563	4,469	90,50	113,50	CDI	2	STD shaft 20 mm or 31

## MMFH

TUBE FACING MILLING HEAD  
BIT: CARBIDE  
DEGREE: 90,0°



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



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

**OBMH**

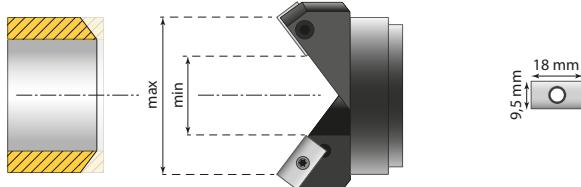
OUTSIDE BEVEL MILING HEAD

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			
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 mm or 22
OBMH-381	1,500	38,10	6-23	0,984	1,850	25,00	47,00	CDI	2	STD shaft 20 mm or 23
OBMH-444	1,750	44,45	6-23	1,024	1,890	26,00	48,00	CDI	2	STD shaft 20 mm or 24
OBMH-508	2,000	50,80	6-23	1,181	2,047	30,00	52,00	CDI	2	STD shaft 20 mm or 25
OBMH-571	2,250	57,15	6-23	1,417	2,283	36,00	58,00	CDI	2	STD shaft 20 mm or 26
OBMH-603	2,375	60,33	6-23	1,535	2,402	39,00	61,00	CDI	2	STD shaft 20 mm or 27
OBMH-635	2,500	63,50	6-23	1,654	2,559	42,00	65,00	CDI	2	STD shaft 20 mm or 28
OBMH-762	3,000	76,20	6-23	2,165	3,031	55,00	77,00	CDI	2	STD shaft 20 mm or 29
OBMH-889	3,500	88,90	6-23	2,677	3,543	68,00	90,00	CDI	2	STD shaft 20 mm or 30
OBMH-900	4,000	101,60	6-23	3,150	4,016	80,00	102,00	CDI	2	STD shaft 20 mm or 31

**TFMH**

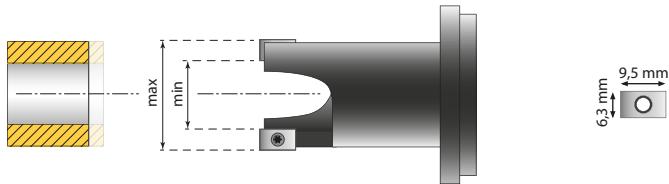
TUBE FACING MILING HEAD

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	TUBE CAPACITY			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 10MM
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 mm
TFMH-317	1,250	31,75	9-23	0,949	1,366	24,10	34,70	CSS	2	915 MM#151 20 mm
TFMH-381	1,500	38,10	9-23	1,197	1,614	30,40	41,00	CSS	2	915 MM#151 20 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

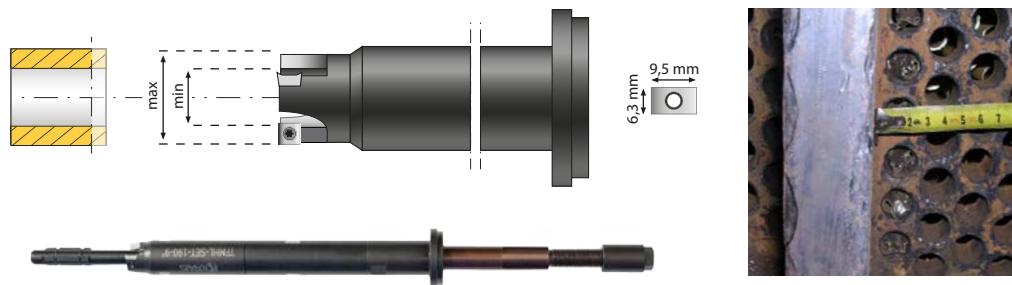
**TFMHL**

TUBE FACING MILLING HEAD - LONG

BIT: HSS 6% Cobalt

DEGREE: 90.0°

Long reach facing head, designed to trim back tubes that are positioned very close to the shells or channels of heat exchangers



HEAD NR	TUBE CAPACITY			RANGE [INCH]		RANGE [MM]		INSERT	NO. OF INSERTS	STANDARD LENGTH	
	[INCH]	[MM]	BWG	MIN	MAX	MIN	MAX			[INCH]	[MM]
TFMHL-190-5	0,750	19,05	12-23	0,531	1,004	13,50	25,50	CSS	2	5	127
TFMHL-222-5	0,875	22,23	12-23	0,654	1,004	16,60	25,50	CSS	2	5	127
TFMHL-254-5	1,000	25,40	11-23	0,764	1,122	19,40	28,50	CSS	2	5	127
TFMHL-285-5	1,125	28,58	11-23	0,890	1,240	22,60	31,50	CSS	2	5	127
TFMHL-317-5	1,250	31,75	9-23	0,917	1,732	23,30	44,00	CSS	2	5	127
TFMHL-381-5	1,500	38,10	9-23	0,984	1,850	25,00	47,00	CSS	2	5	127

		TFMHL-XXX-8	TFMHL-XXX-10	TFMHL-XXX-12
Length	[inch]	8	10	12
	[mm]	203,2	254	304,8

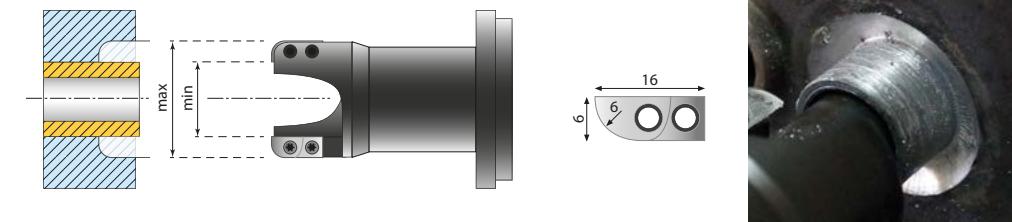
**SWROTC**

TUBE FACING MILLING HEAD

BIT: HSS 6% Cobalt



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



HEAD NR	TUBE CAPACITY		CUTTER RANGE				INSERT	NO. OF INSERTS	SHAFT	
	[INCH]	[MM]	MIN [INCH]	MAX [INCH]	MIN [MM]	MAX [MM]			[INCH]	[MM]
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 mm
SWROTC-318	1,250	31,7	1,250	1,722	31,75	43,75	CSWR	2	915 MM#151	20 mm
SWROTC-381	1,500	38,1	1,500	1,969	38,10	50,01	CSWR	2	915 MM#151	20 mm

**SWRMH**

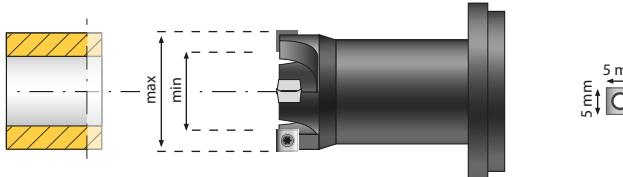
SEAL WELD REMOVAL HEAD

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 insets.



HEAD NR	TUBE CAPACITY			CUTTER RANGE				INSERT	NO. OF INSERTS	SCREW
	[INCH]	[MM]	[BWG]	MIN [INCH]	MAX [INCH]	MIN [MM]	MAX [MM]			
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

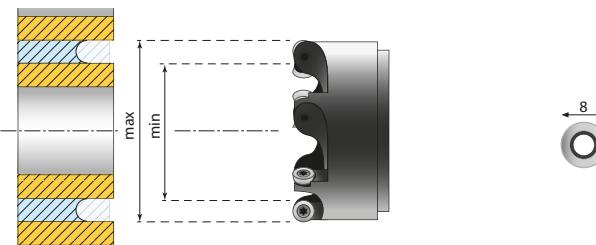
**MMRBMH/PMRBMH**

TUBE FACING MILING HEAD

BIT: CARBIDE



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	APPLICABLE MACHINE
	[INCH]	[MM]	MIN	MAX	MIN	MAX			
MMRBMH-254	1,000	25,40	1,000	1,630	25,40	41,40	PO8	4	MiniMill-100
MMRBMH-288	1,125	28,58	1,134	1,764	28,80	44,80	PO8	5	MiniMill-100
MMRBMH-317	1,250	31,75	1,248	1,878	31,70	47,70	PO8	5	MiniMill-100
MMRBMH-381	1,500	38,10	1,500	2,130	38,10	54,10	PO8	6	MiniMill-100
MMRBMH-444	1,750	44,45	1,748	2,378	44,40	60,40	PO8	6	MiniMill-100
MMRBMH-508	2,000	50,80	2,000	2,630	50,80	66,80	PO8	7	MiniMill-100
MMRBMH-571	2,250	57,15	2,252	2,882	57,20	73,20	PO8	7	MiniMill-100
MMRBMH-603	2,375	60,33	2,374	3,004	60,30	76,30	PO8	7	MiniMill-100
MMRBMH-635	2,500	63,50	2,500	3,130	63,50	79,50	PO8	7	MiniMill-100
MMRBMH-762	3,000	76,20	3,000	3,630	76,20	92,20	PO8	8	HyperMill-55
MMRBMH-889	3,500	88,90	3,500	4,130	88,90	104,90	PO8	8	HyperMill-55
MMRBMH-101	4,000	101,60	4,000	4,630	101,60	117,60	PO8	9	HyperMill-55
PMRBMH-254	1,000	25,40	1,000	1,630	25,40	41,40	PO8	4	PanelMill-63
PMRBMH-288	1,125	28,58	1,134	1,764	28,80	44,80	PO8	5	PanelMill-63
PMRBMH-317	1,250	31,75	1,248	1,878	31,70	47,70	PO8	5	PanelMill-63
PMRBMH-381	1,500	38,10	1,500	2,130	38,10	54,10	PO8	6	PanelMill-63
PMRBMH-444	1,750	44,45	1,748	2,378	44,40	60,40	PO8	6	PanelMill-63
PMRBMH-508	2,000	50,80	2,000	2,630	50,80	66,80	PO8	7	PanelMill-63
PMRBMH-571	2,250	57,15	2,252	2,882	57,20	73,20	PO8	7	PanelMill-100
PMRBMH-603	2,375	60,33	2,374	3,004	60,30	76,30	PO8	7	PanelMill-100
PMRBMH-635	2,500	63,50	2,500	3,130	63,50	79,50	PO8	7	PanelMill-100
PMRBMH-762	3,000	76,20	3,000	3,630	76,20	92,20	PO8	8	PanelMill-100
PMRBMH-889	3,500	88,90	3,500	4,130	88,90	104,90	PO8	8	PanelMill-100
PMRBMH-101	4,000	101,60	4,000	4,630	101,60	117,60	PO8	9	PanelMill-100

# MiniMill shafts and locking jaws

## SHAFT 20

JAWS COVER: 20 TO 74 MM | 0.787" to 2.913"



## SHAFT 22

JAWS COVER: 20 TO 74 MM | 0.787" to 2.913", INCREASED CROSS SECTIONAL DIAMETER



JAWS NR	RANGE [MM]		RANGE [INCH]		RECOMMENDED HEADS		
	MIN	MAX	MIN	MAX	H 60 mm	H 88 mm	
101 MM#36	20,00	23,00	0,787	0,906			
103 MM#36	22,60	26,40	0,890	1,039	H 60 mm	H 88 mm	
105 MM#36	25,60	29,40	1,008	1,157	H 60 mm	H 88 mm	
107 MM#36	28,40	32,20	1,118	1,268	H 60 mm	H 88 mm	
109 MM#36	31,40	35,20	1,236	1,386	H 60 mm	H 88 mm	
111 MM#36	34,20	38,00	1,346	1,496	H 60 mm	H 88 mm	
113 MM#36	37,40	41,00	1,472	1,614	H 60 mm	H 88 mm	
115 MM#36	40,40	44,00	1,591	1,732	H 60 mm	H 88 mm	
117 MM#36	43,40	47,00	1,709	1,850		H 88 mm	
119 MM#36	46,40	50,00	1,827	1,969		H 88 mm	
121 MM#36	49,40	53,00	1,945	2,087		H 88 mm	
123 MM#36	52,40	56,00	2,063	2,205		H 88 mm	
125 MM#36	55,40	59,00	2,181	2,323		H 88 mm	
127 MM#36	58,40	62,00	2,299	2,441		H 88 mm	
129 MM#36	61,40	65,00	2,417	2,559		H 88 mm	
131 MM#36	64,40	68,00	2,535	2,677		H 88 mm	
133 MM#36	67,40	71,00	2,654	2,795		H 88 mm	
135 MM#36	70,40	74,00	2,772	2,913		H 88 mm	
137 MM#36	73,40	77,00	2,890	3,031			H 106 mm
139 MM#36	76,40	80,00	3,008	3,150			H 106 mm
141 MM#36	79,40	83,00	3,126	3,268			H 106 mm
143 MM#36	82,40	86,00	3,244	3,386			H 106 mm
145 MM#36	85,40	89,00	3,362	3,504			H 106 mm
147 MM#36	88,40	92,00	3,480	3,622			H 106 mm
149 MM#36	91,40	95,00	3,598	3,740			H 106 mm
151 MM#36	94,40	98,00	3,717	3,858			H 106 mm
153 MM#36	97,40	101,00	3,835	3,976			H 106 mm
155 MM#36	100,40	104,00	3,953	4,094			H 106 mm
157 MM#36	103,40	107,00	4,071	4,213			H 106 mm

**MICRO SHAFT**

JAWS COVER: 10 TO 13 MM | 0.394" to 0.512"



SHAFT NUMBER	SIZE [INCH]	SIZE [MM]	SPRING
801 MM#151	0,394	10,00	DW-8,5
805 MM#151	0,453	11,50	DW-10

JAWS NR	RANGE [INCH]		RANGE [MM]	
	MIN	MAX	MIN	MAX
301 MM#36	0,394	0,433	10,00	11,00
303 MM#36	0,433	0,472	11,00	12,00
305 MM#36	0,472	0,512	12,00	13,00
307 MM#36	0,512	0,551	13,00	14,00
309 MM#36	0,551	0,591	14,00	15,00

**MINI SHAFT**

JAWS COVER: 12.5 TO 23 MM | 0.492" to 0.905"



SHAFT NUMBER	SIZE [INCH]	SIZE [MM]	SPRING
901 MM#151	0,492	12,40	DW-11
905 MM#151	0,547	13,90	DW-12,5
909 MM#151	0,665	16,90	DW-15,5
OPTIONAL: 915 MM#151	0,787	20,00	O-17

JAWS NR	RANGE [MM]		RANGE [INCH]	
	MIN	MAX	MIN	MAX
201 MM#36	12,40	14,50	0,488	0,571
203 MM#36	13,90	16,00	0,547	0,630
205 MM#36	15,90	18,00	0,626	0,709
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
215 MM#36	23,60	25,60	0,929	1,008
217 MM#36	25,20	27,20	0,992	1,071
219 MM#36	26,80	28,80	1,055	1,134
221 MM#36	28,40	30,40	1,118	1,197
223 MM#36	30,00	32,00	1,181	1,260
225 MM#36	31,60	33,60	1,244	1,323
227 MM#36	33,20	35,20	1,307	1,386
229 MM#36	34,80	36,80	1,370	1,449
231 MM#36	36,40	38,40	1,433	1,512
233 MM#36	38,00	40,00	1,496	1,575
235 MM#36	39,60	41,60	1,559	1,638
237 MM#36	41,20	43,20	1,622	1,701
239 MM#36	42,80	44,80	1,685	1,764
241 MM#36	44,40	46,40	1,748	1,827
243 MM#36	46,00	48,00	1,811	1,890

# HyperMill shafts and locking jaws

## SHAFT HM20

JAWS COVER: 20 TO 44 MM | 0.787" to 1.732"



JAWS NR	RANGE [INCH]		RANGE [MM]	
	MIN	MAX	MIN	MAX
101 MM#36	20,00	23,00	0,787	0,906
103 MM#36	22,60	26,40	0,890	1,039
105 MM#36	25,60	29,40	1,008	1,157
107 MM#36	28,40	32,20	1,118	1,268
109 MM#36	31,40	35,20	1,236	1,386
111 MM#36	34,20	38,00	1,346	1,496
113 MM#36	37,40	41,00	1,472	1,614
115 MM#36	40,40	44,00	1,591	1,732

## SHAFT HM35

JAWS COVER: 35 TO 144 MM | 1.378" to 5.669"



JAWS NR	RANGE [MM]		RANGE [INCH]		STANDARD WITH MACHINE		
	MIN	MAX	MIN	MAX	HM-100	HM-50	HM-70
401 HM#36	35,00	40,00	1,378	1,575	HM-100	HM-50	HM-70
403 HM#36	39,00	44,00	1,535	1,732	HM-100	HM-50	HM-70
405 HM#36	43,00	48,00	1,693	1,890	HM-100	HM-50	HM-70
407 HM#36	47,00	52,00	1,850	2,047	HM-100	HM-50	HM-70
409 HM#36	51,00	56,00	2,008	2,205	HM-100	HM-50	HM-70
411 HM#36	55,00	60,00	2,165	2,362	HM-100	HM-50	HM-70
413 HM#36	59,00	64,00	2,323	2,520	HM-100	HM-50	HM-70
415 HM#36	63,00	68,00	2,480	2,677	HM-100	HM-50	HM-70
417 HM#36	67,00	72,00	2,638	2,835	HM-100	HM-50	HM-70
419 HM#36	71,00	76,00	2,795	2,992	HM-100	HM-50	HM-70
421 HM#36	75,00	80,00	2,953	3,150	HM-100	HM-50	HM-70
423 HM#36	79,00	84,00	3,110	3,307	HM-100	HM-50	HM-70
425 HM#36	83,00	88,00	3,268	3,465	HM-100	HM-50	HM-70
427 HM#36	87,00	92,00	3,425	3,622	HM-100	HM-50	HM-70
429 HM#36	91,00	96,00	3,583	3,780	HM-100	HM-50	HM-70
431 HM#36	95,00	100,00	3,740	3,937	HM-100	HM-50	HM-70
433 HM#36	99,00	104,00	3,898	4,094	HM-100	HM-50	HM-70
435 HM#36	103,00	108,00	4,055	4,252	HM-100	HM-50	HM-70
437 HM#36	107,00	112,00	4,213	4,409	HM-100	HM-50	HM-70
439 HM#36	111,00	116,00	4,370	4,567	HM-50	HM-70	
441 HM#36	115,00	120,00	4,528	4,724	HM-50	HM-70	
443 HM#36	119,00	124,00	4,685	4,882	HM-50	HM-70	
445 HM#36	123,00	128,00	4,843	5,039	HM-50	HM-70	
447 HM#36	127,00	132,00	5,000	5,197			HM-70
449 HM#36	131,00	136,00	5,157	5,354			HM-70
451 HM#36	135,00	140,00	5,315	5,512			HM-70
453 HM#36	139,00	144,00	5,472	5,669			HM-70
455 HM#36	143,00	148,00	5,630	5,827			
457 HM#36	147,00	152,00	5,787	5,984			
459 HM#36	151,00	156,00	5,945	6,142			
461 HM#36	155,00	160,00	6,102	6,299			
463 HM#36	159,00	164,00	6,260	6,457			
465 HM#36	163,00	168,00	6,417	6,614			

Only on request

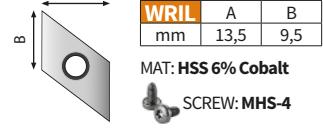
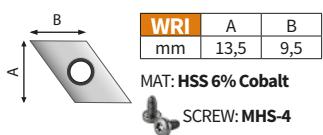
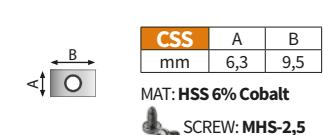
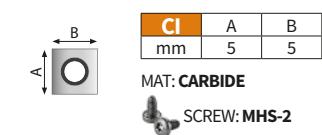
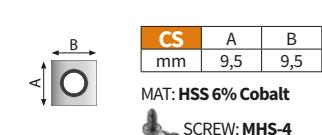
# Standard cutter heads and inserts

## Standard heads for Minimill and HyperMill series



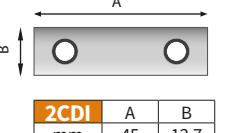
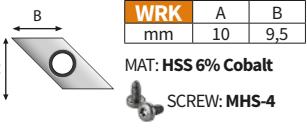
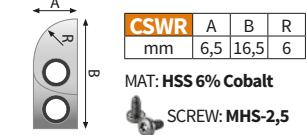
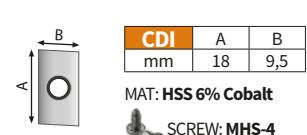
## Inserts

INSERTS FOR USE ONLY WITH HOLDERS OR SPECIAL HEADS



[mm]	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

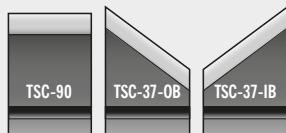
\* on request  
MAT: HSS 6% Cobalt  
SCREW: MHS-4



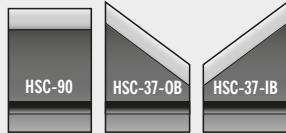
## Standard Cutters

FOR USE WITHOUT HOLDERS  
BIT: **HSS and HSS Cobalt**

For MiniMill series:



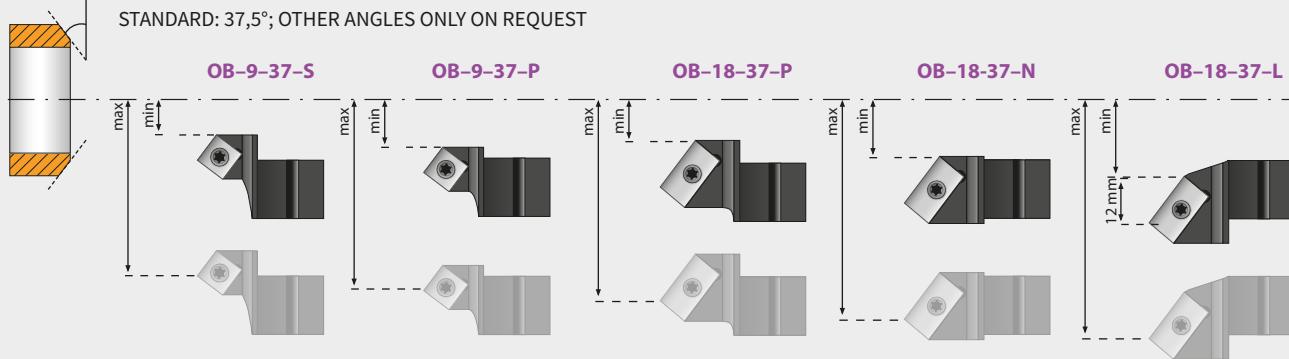
For HyperMill series:



# Holders

## OUTSIDE BEVELING HOLDERS

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

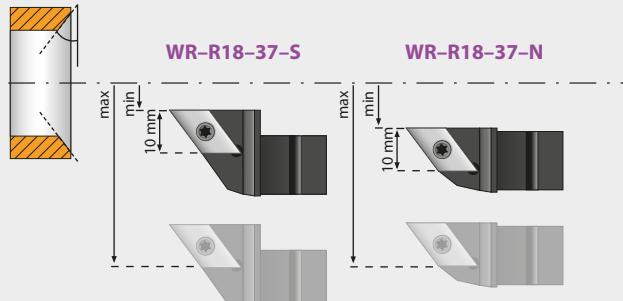


HOLDER NO.	BIT	HEAD	RANGE MM		RANGE INCH		DEGREE *
			MIN	MAX	MIN	MAX	
OB-9-37-S	CS	60	16,00	26,00	0,630	1,024	20; 30; 37,5; 45
		88	16,00	51,00	0,630	2,008	20; 30; 37,5; 45
OB-9-37-P	CS	60	24,00	34,00	0,945	1,339	20; 30; 37,5; 45
		88	24,00	58,00	0,945	2,283	20; 30; 37,5; 45
OB-18-37-P	CDI	106	28,00	72,00	1,102	2,835	20; 30; 37,5; 45
		60	24,00	47,00	0,945	1,850	20; 30; 37,5; 45
OB-18-37-P	CDI	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
OB-18-37-P	CDI	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
OB-18-37-P	CDI	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
OB-18-37-N	CDI	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
OB-18-37-N	CDI	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
OB-18-37-L	CDI	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
OB-18-37-L	CDI	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

## 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
WR-R18-37-N	WRI	106	19,50	75,00	0,768	2,953	20; 30; 37,5; 45
		60	30,00	50,00	1,181	1,969	20; 30; 37,5; 45
WR-R18-37-N	WRI	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
WR-R18-37-N	WRI	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
WR-R18-37-N	WRI	175	37,00	155,00	1,457	6,102	20; 30; 37,5; 45

## J PREP HOLDERS

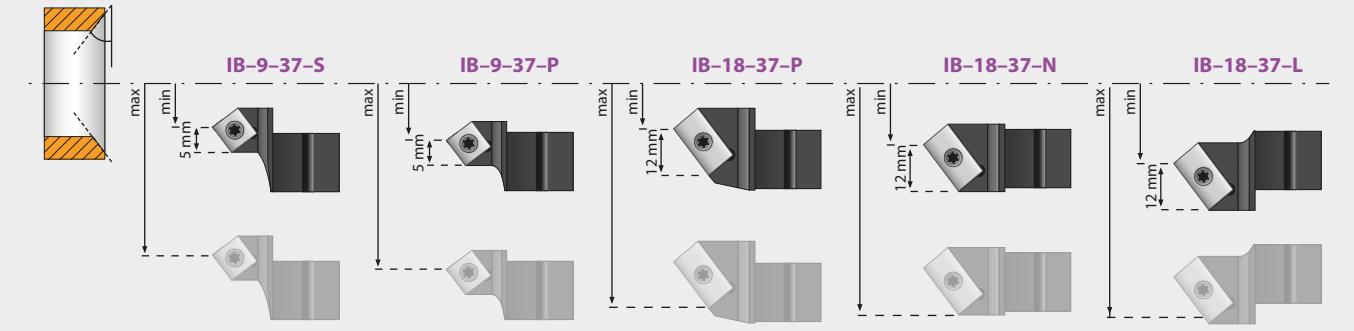
STANDARD: 10°; OTHER ANGLES ONLY ON REQUEST



HOLDER NO.	BIT	HEAD	RANGE MM		RANGE INCH		DEGREE **
			MIN	MAX	MIN	MAX	
OB-JP-18-**-R5	CDJ-X	60	24	101	0,965	3,976	8; 10; 11; 15; 22

## INSIDE BEVELING HOLDERS

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

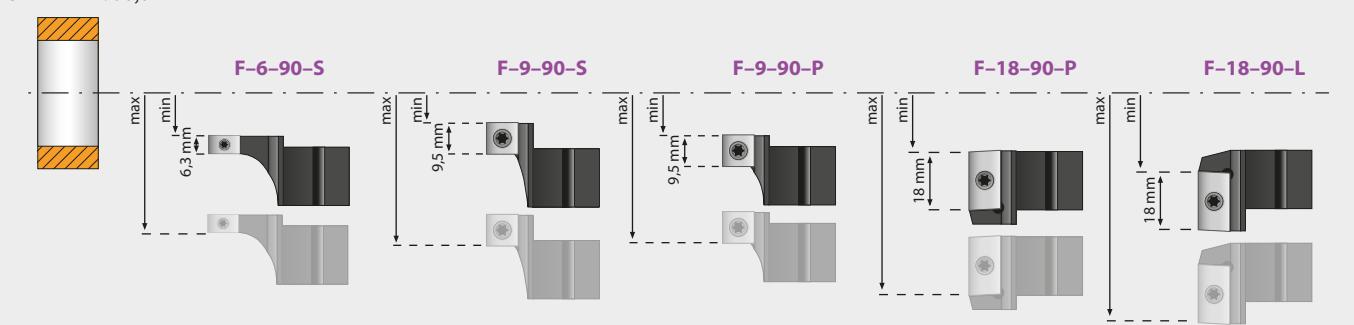


HOLDER NO.	BIT	HEAD	RANGE MM		RANGE INCH		DEGREE *
			MIN	MAX	MIN	MAX	
IB-9-37-S	CS	60	29,00	39,00	1,142	1,535	20; 30; <b>37,5; 45</b>
		88	29,00	63,00	1,142	2,480	20; 30; <b>37,5; 45</b>
		106	33,00	77,00	1,299	3,031	20; 30; <b>37,5; 45</b>
IB-9-37-P	CS	60	35,50	45,50	1,398	1,791	20; 30; <b>37,5; 45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

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

## FACING HOLDERS

STANDARD: 90,0°



HOLDER NO.	BIT	HEAD	RANGE MM		RANGE INCH		DEGREE *
			MIN	MAX	MIN	MAX	
F-6-90-S	CS	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
F-18-90-L	CDI	175	38,00	165,00	1,496	6,496	90



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