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Holemaking Solutions for Today's Manufacturing



Drilling



Reaming



Burnishing



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Specials



**Wohlhaupter®**

▶ **BORING**

UPA Facing and Boring Heads

**WOHLHAUPTER®**





SECTION

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# B10-J

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UPA Versatile Boring Heads

# Wohlhaupter® UPA Versatile Boring Heads

UPA 3 | UPA 4 | UPA 5-S 6

▶ Diameter Range: 0.00 mm - 620.00 mm



## Operation Facing and Boring

In 1936, the first model of the Wohlhaupter Universal Facing and Boring head was developed to launch the start of Wohlhaupter boring products. It became a staple to the boring industry.

Universal Facing and Boring heads are used on universal milling and boring machines, boring mills, and jig boring machines for machining stationary workpieces in individual and batch productions.

## Applicable Industries



Aerospace



Agriculture



Automotive



Firearms



General  
Machining



Oil & Gas



Renewable  
Energy

Your safety and the safety of others is very important. This catalogue contains important safety messages. Always read and follow all safety precautions.



This triangle is a safety hazard symbol. It alerts you to potential safety hazards that can cause tool failure and serious injury.

When you see this symbol in the catalogue, look for a related safety message that may be near this triangle or referred to in the nearby text.

There are safety signal words also used in the catalogue. Safety messages follow these words.

### **WARNING**

**WARNING** (shown above) means that failure to follow the precautions in this message could result in tool failure and serious injury.

**NOTICE** means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in personal injury.

**NOTE** and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

Visit [www.alliedmachine.com](http://www.alliedmachine.com) for the most up-to-date information and procedures.

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Series	Diameter Range
	Metric (mm)
UPA 3	0.00 - 260.00
UPA 4	0.00 - 400.00
UPA 5-S 6	0.00 - 620.00

# UPA Product Overview



## UPA Boring Head FACING AND BORING

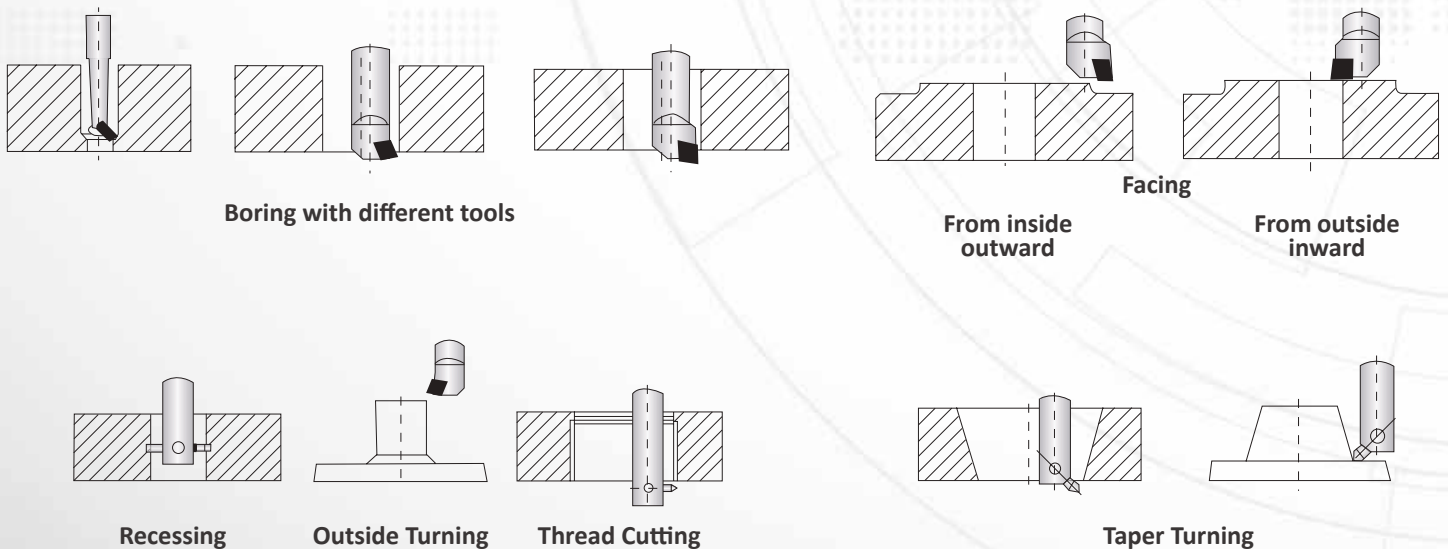
### Universal Facing and Boring Heads

The versatile Wohlhaupter UPA boring heads can be used for facing, boring, and taper turning. They can also be used for right- or left-handed types.

*Precise* and *versatile* boring heads.

- Diameter range: 0.00 mm - 620.00 mm.
- Slide adjustment up to 112.00 mm.
- Can be used in a variety of operations.

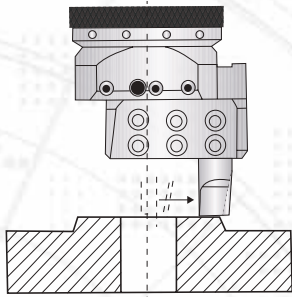
## UNIVERSAL FACING AND BORING Applications



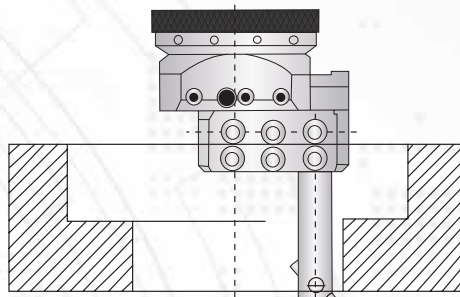


# UNIVERSAL

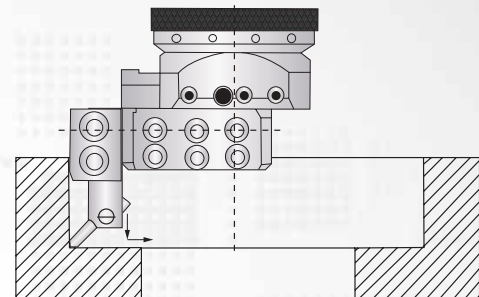
## FACING & BORING Application Examples



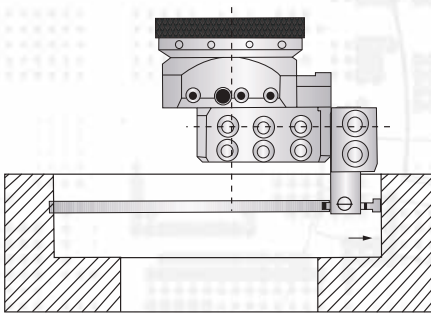
Facing with boring bar directly in slide



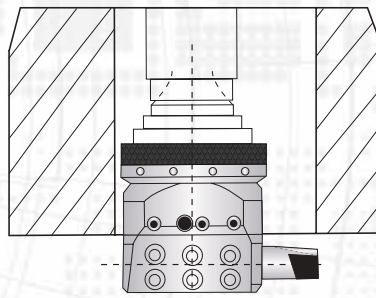
Boring with long boring bar



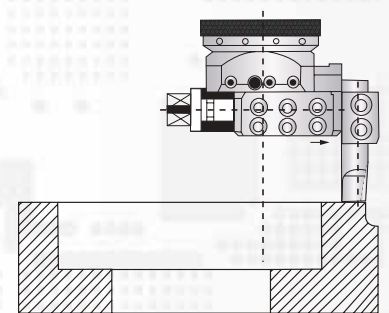
Boring and facing with short boring bar holder and a boring bar



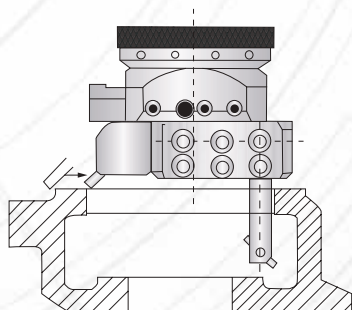
Recessing with short boring bar holder and a boring bar



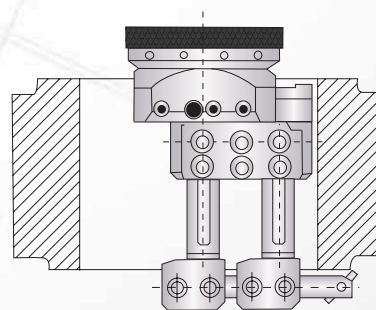
Deep hole boring with boring bar directly in slide



Large diameter facing with a long boring bar holder



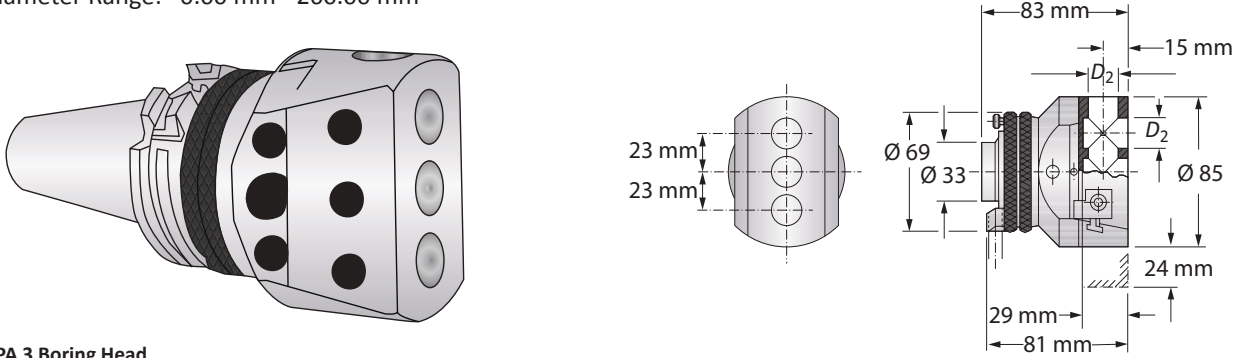
Facing in two areas with one boring bar and a boring bar holder



Facing the reverse side by using boring bar holders contained in attachment

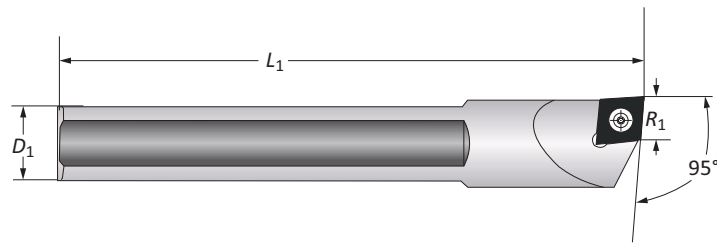
### UPA 3 Boring Head and Accessories

Diameter Range: 0.00 mm - 260.00 mm



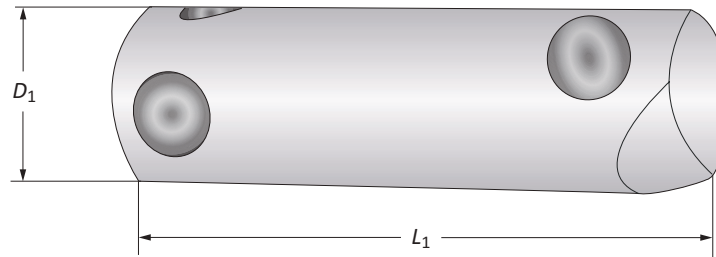
UPA 3 Boring Head

Boring Head			
Boring Range	$D_2$	Weight	Part No.
$\text{m}$ 0.00 - 260.00	18.00	2.10 (kg)	005020



UPA 3 Boring Bars

Boring Bar						
$D_1$	$L_1$	$R_1$	Weight	Type	Insert Form	Part No.
$\text{m}$ 18.00	80.00	13.50	0.10 (kg)	Right	103	081087
18.00	80.00	13.50	0.10 (kg)	Left	103	218088



UPA 3 Boring Bars

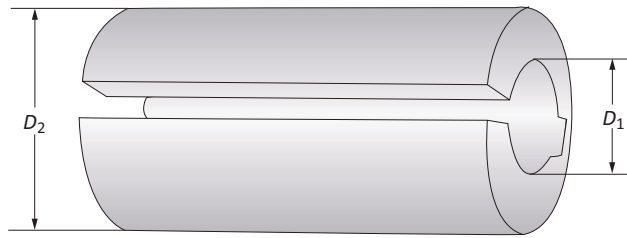
Boring Bar				
$D_1$	$L_1$	Boring Depth	Designation	Part No.
$\text{m}$ 18.00	60.00	30.00	B 306	073003
18.00	90.00	60.00	B 309	073004
18.00	120.00	90.00	B 312	073005

$\text{m}$  = Metric (mm)



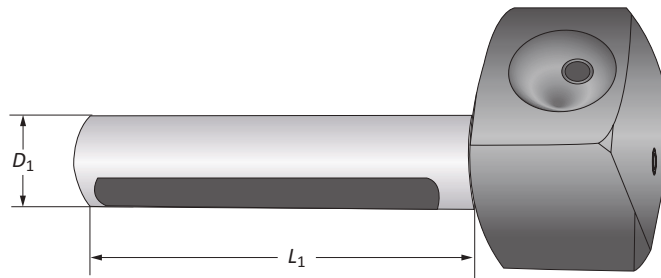
## UPA 3 Accessories

Reducing Sleeves | Boring Bar Holders



### UPA 3 Reducing Sleeves

Reducing Sleeve		Weight	Part No.
$D_2$	$D_1$		
18.00	8.00	0.10 (kg)	071103
18.00	10.00	0.10 (kg)	071104
18.00	12.00	0.10 (kg)	071105
18.00	14.00	0.10 (kg)	071106

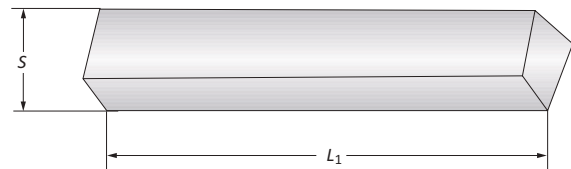


### UPA 3 Boring Bar Holders

Boring Bar Holder		Working Diameter Range	Designation	Part No.
$D_1$	$L_1$			
18.00	82.00	85.00 - 190.00	BH 308	075001
18.00	120.00	160.00 - 260.00	BH 312	075002

### UPA 3 Square Turning Bit

Square Turning Bit		Weight	Part No.
$S$	$L_1$		
6.00	40.00	11 (g)	089001



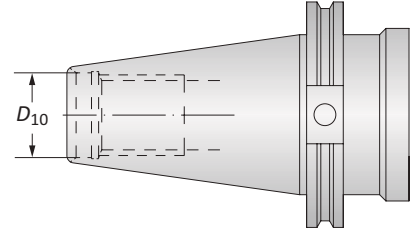
 = Metric (mm)

## UPA 3 Master Shanks

CAT | SK (DIN 69871) | DIN 2080

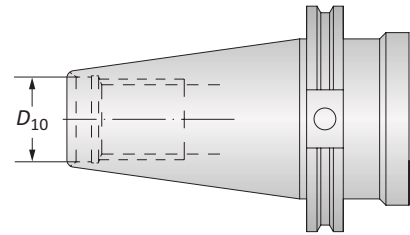
### CAT Shanks

Shank				
	Style	$D_{10}$	Weight	Part No.
m	CAT 40	M16 x 2	1.06 (kg)	<b>130001T016960</b>
	CAT 50	M24 x 3	3.20 (kg)	<b>130001T016962</b>



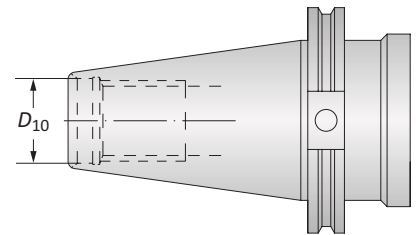
### SK (DIN 69871)

Shank				
	Style	$D_{10}$	Weight	Part No.
m	ISO 40	M16	1.00 (kg)	<b>130001T013815</b>



### DIN 2080

Shank				
	Style	$D_{10}$	Weight	Part No.
m	ISO 30	M12	0.40 (kg)	<b>130001T003673</b>
	ISO 40	M16 (chucking groove)	0.80 (kg)	<b>130001T010229</b>
	ISO 40	M16 (cap screw clamping)	1.00 (kg)	<b>130001T003703</b>
	ISO 50	M24	2.80 (kg)	<b>130001T003704</b>
	ISO 50	M24 (chucking groove)	2.80 (kg)	<b>130001T010048</b>




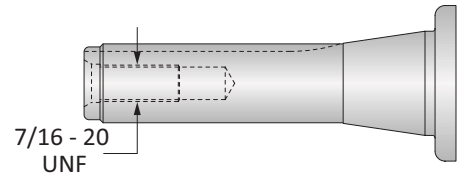
m = Metric (mm)

## UPA 3 Master Shanks


R-8 | NMTB | Morse Taper | Norm Taper

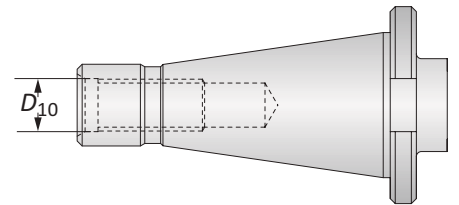
### R-8 Shanks

Shank		Part No.
Weight		
	0.48 (kg)	<b>130001T007166</b>




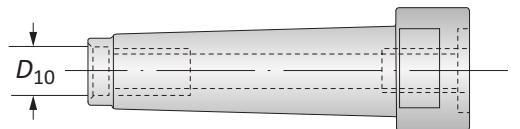
### NMTB Shanks

Shank				Part No.
Style	$D_{10}$	Weight		
	NMTB 40	$\frac{5}{8}$ - 11	0.90 (kg)	<b>130001T004498</b>
	NMTB 50	1 - 8	2.63 (kg)	<b>130001T004480</b>




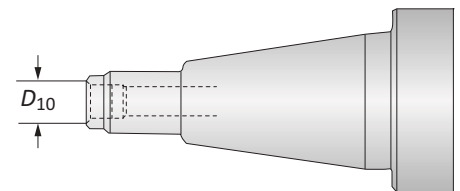
### Morse Taper Shanks

Shank					Part No.
Style	Type	$D_{10}$	Weight		
	MT 3	DIN 1806	–	0.30 (kg)	<b>130001T004509</b>
	MT 4	DIN 2207	M16	0.70 (kg)	<b>130001T004256</b>
	MT 4	–	M14 SIP	1.00 (kg)	<b>130001T004255</b>




### Norm Taper

Shank				Part No.
Style	$D_{10}$	Weight		
	40 x S 20 x 2 with bolts DECKEL	M12 x 1	1.00 (kg)	<b>130001T005070</b>



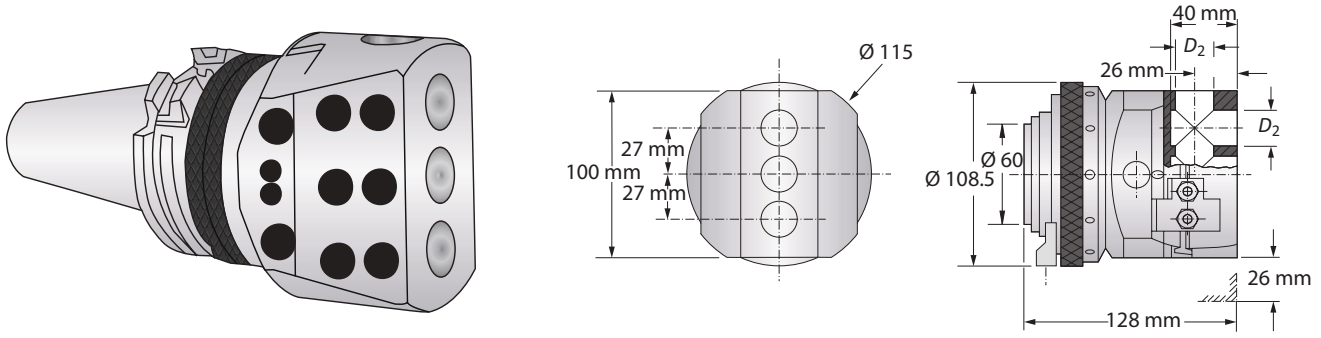
### Differential Screw

Thread	Weight	Part No.	
	M16 x 2	0.03 (kg)	<b>KW9208</b>

 = Metric (mm)

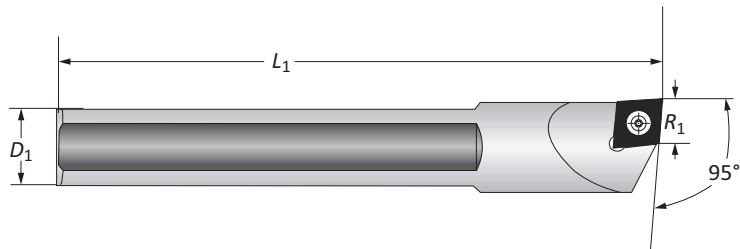
### UPA 4 Boring Heads and Accessories

Diameter Range: 0.000" - 15.748" (0.00 mm - 400.00 mm)



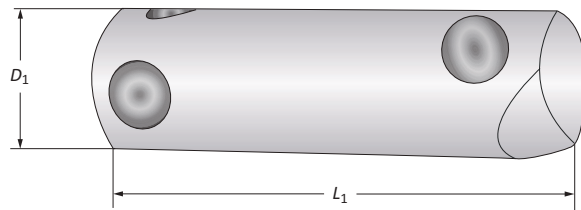
#### UPA 4 Boring Heads

		Boring Head		
Boring Range	$D_2$	Weight	Part No.	
0.00 - 400.00	22.00	6.50 (kg)	007020	



#### UPA 4 Boring Bars

		Boring Bar					
$D_1$	$L_1$	$R_1$	Weight	Type	Insert Form	Part No.	
22.00	100.00	13.50	0.10 (kg)	Right	103	081092	
22.00	100.00	13.50	0.10 (kg)	Left	103	218089	



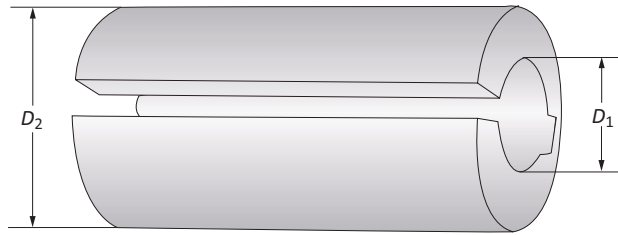
#### UPA 4 Boring Bars

		Boring Bar				
$D_1$	$L_1$	Boring Depth	Designation	Part No.		
22.00	85.00	45.00	B 408	073006		
22.00	125.00	85.00	B 412	073007		
22.00	165.00	125.00	B 416	073008		

= Metric (mm)

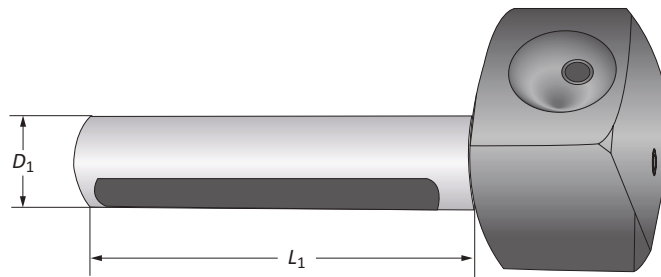
## UPA 4 Accessories

Reducing Sleeves | Boring Bar Holders



### UPA 4 Reducing Sleeves

Reducing Sleeve				
	$D_2$	$D_1$	Weight	Part No.
m	22.00	8.00	0.10 (kg)	071107
	22.00	10.00	0.10 (kg)	071108
	22.00	12.00	0.10 (kg)	071109
	22.00	14.00	0.08 (kg)	071110
	22.00	18.00	0.08 (kg)	071111

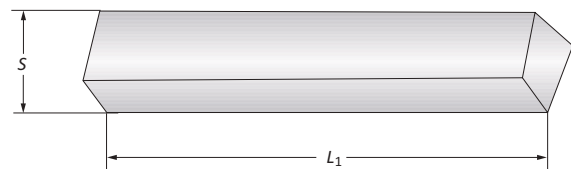


### UPA 4 Boring Bar Holders

Boring Bar Holder					
	$D_1$	$L_1$	Designation	Working Diameter Range	Part No.
m	22.00	98.00	BH 410	115.00 - 240.00	075003
	22.00	180.00	BH 418	220.00 - 400.00	075004

### UPA 4 Square Turning Bit

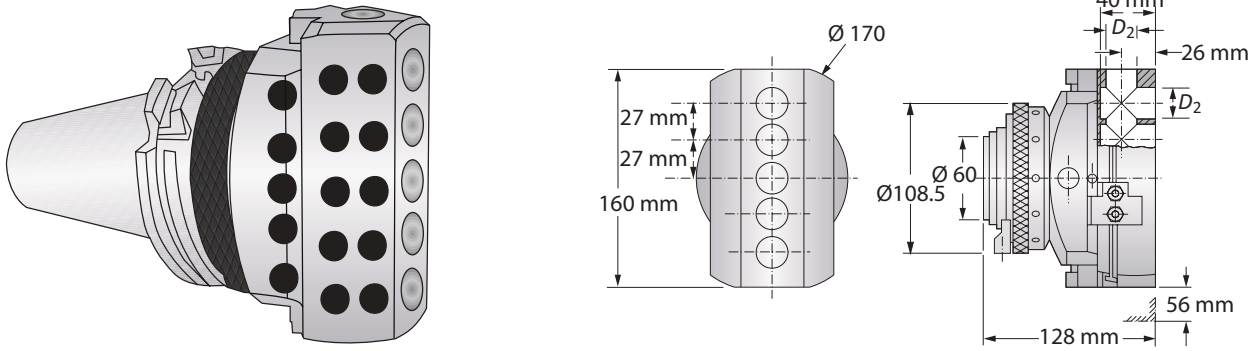
Square Turning Bit				
	$S$	$L_1$	Weight	Part No.
m	6.00	40.00	11 (g)	089001



m = Metric (mm)

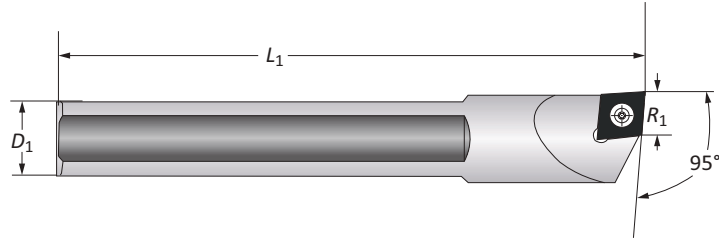
**UPA 5-S 6 Boring Heads and Accessories**

Diameter Range: 0.00 mm - 620.00 mm



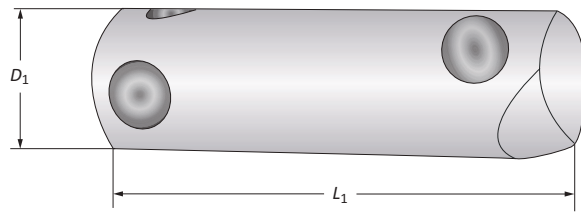
**UPA 5-S 6 Boring Heads**

		Boring Head		
Boring Range	$D_2$	Weight	Part No.	
0.00 - 620.00	22.00	7.90 (kg)	013020	



**UPA 5-S 6 Boring Bars**

		Boring Bar					
$D_1$	$L_1$	$R_1$	Weight	Type	Insert Form	Part No.	
22.00	100.00	13.50	0.10 (kg)	Right	103	081092	
22.00	100.00	13.50	0.10 (kg)	Left	103	218089	



**UPA 5-S 6 Boring Bars**

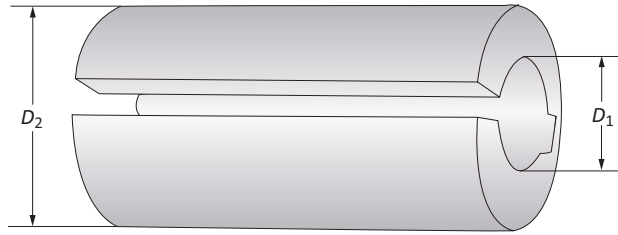
		Boring Bar			
$D_1$	$L_1$	Boring Depth	Designation	Part No.	
22.00	85.00	45.00	B 408	073006	
22.00	125.00	85.00	B 412	073007	
22.00	165.00	125.00	B 416	073008	

= Metric (mm)



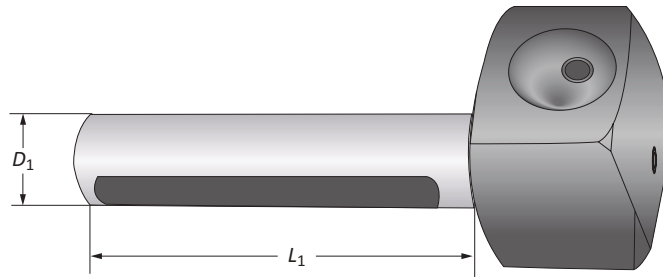
## UPA 5-S 6 Accessories

Reducing Sleeves | Boring Bar Holders



### UPA 5-S 6 Reducing Sleeves

Reducing Sleeve				
	$D_2$	$D_1$	Weight	Part No.
mm	22.00	8.00	0.10 (kg)	071107
	22.00	10.00	0.10 (kg)	071108
	22.00	12.00	0.10 (kg)	071109
	22.00	14.00	0.08 (kg)	071110
	22.00	18.00	0.08 (kg)	071111

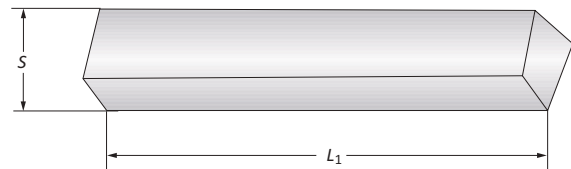


### UPA 5-S 6 Boring Bar Holders

Boring Bar Holder					
	$D_1$	$L_1$	Designation	Working Diameter Range	Part No.
mm	22.00	228.00	BH 513	120.00 - 400.00	075003
	22.00	230.00	BH 523	270.00 - 620.00	075004

### UPA 5-S 6 Square Turning Bit

Square Turning Bit				
	$S$	$L_1$	Weight	Part No.
mm	6.00	40.00	11 (g)	089001

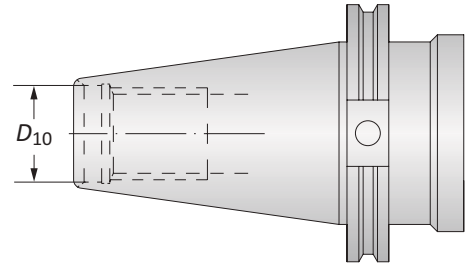


## UPA 4 and 5-S 6 Master Shanks

CAT | SK (DIN 69871) | DIN 2080

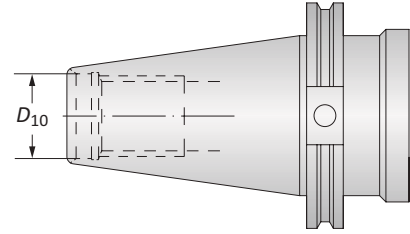
### CAT Shanks

Shank				
	Style	$D_{10}$	Weight	Part No.
i	CAT 40	M16 x 2	1.45 (kg)	<b>130005T016960</b>
	CAT 50	M24 x 3	3.20 (kg)	<b>130005T016962</b>



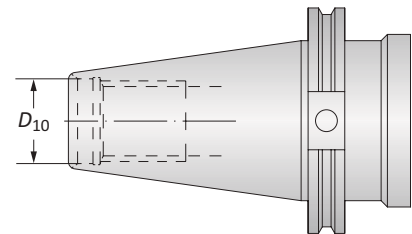
### SK (DIN 69871)

Shank				
	Style	$D_{10}$	Weight	Part No.
m	ISO 40	M16	1.60 (kg)	<b>130005T013815</b>
	ISO 40	M24	3.00 (kg)	<b>130005T013960</b>



### DIN 2080

Shank				
	Style	$D_{10}$	Weight	Part No.
m	ISO 40	M16 (cap nut clamps)	1.20 (kg)	<b>130005T003703</b>
	ISO 50	M24	2.90 (kg)	<b>130005T003704</b>
	ISO 40	M16 (chucking groove)	1.20 (kg)	<b>130005T010229</b>
	ISO 50	M24 (chucking groove)	3.00 (kg)	<b>130005T010048</b>




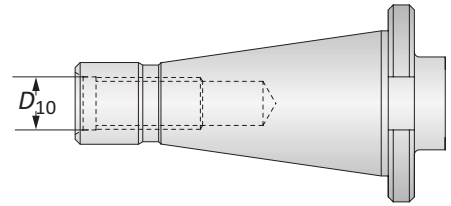
m = Metric (mm)

## UPA 4 and 5-S 6 Master Shanks


NMTB | Morse Taper (DIN 1806) | Norm Taper

### NMTB Shanks

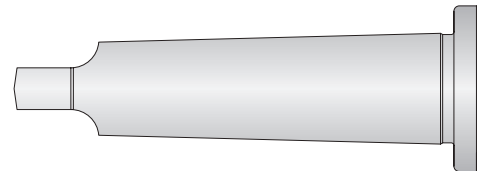
		Shank		
	Style	$D_{10}$	Weight	Part No.
	NMTB 40	$\frac{5}{8}$ - 11	1.30 (kg)	130005T004498
	NMTB 40	$\frac{5}{8}$ - 11	1.30 (kg)	130005T010327
	NMTB 50	1 - 8	2.90 (kg)	130005T004480




### Morse Taper Shanks (DIN 1806)

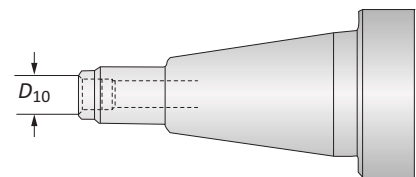
		Shank		
	Style	Weight	Part No.	
	MT 4	0.86 (kg)	130005T003590*	
	MT 5	1.65 (kg)	130005T003920	

\*Shank can only be used with UPA 4 boring heads.




### Norm Taper

		Shank		
	Style	$D_{10}$	Weight	Part No.
	40 x S 20 x 2 with bolts DECKEL	M12 x 1	1.20 (kg)	130005T005070



### Differential Screw

	Thread	Weight	Part No.
	M20 x 2.5	0.07 (kg)	KW9209

 = Metric (mm)



## Technical Information


A

B

C

D

### Technical Data

Type	UPA 3	UPA 4	UPA 5-S 6
Working accuracy	±0.005	±0.005	±0.005
Diameter range	25.00	35.00	45.00
MT shank	3.00	4.00	5.00
ISO shank	30.00	40.00	40.00
Facing and boring range	0.00 - 260.00	0.00 - 400.00	0.00 - 620.00
Adjustment of slide (max)	48.00	52.00	112.00
Self-activated feed of slide per revolution	0.05	0.02, 0.04, 0.06, 0.08, 0.10, 0.12, 0.14, 0.16, 0.18, 0.20, 0.22, 0.24	0.02, 0.04, 0.06, 0.08, 0.10, 0.12, 0.14, 0.16, 0.18, 0.20, 0.22, 0.24
 Fine adjustment of one division	0.01	0.01	0.01
Fine adjustment of one revolution	1.00	0.40	0.40
Rapid return per revolution	1.00	–	–
Rapid return setting per revolution	–	6.00	6.00
Largest diameter of slide	85.00	115.00	170.00
Height of boring head without shank	81.00	128.00	128.00
Tool locations in slide	18.00	22.00	22.00
Max permissible revolutions	1000	600	600
End cut off accuracy	±0.05	±0.05	±0.05

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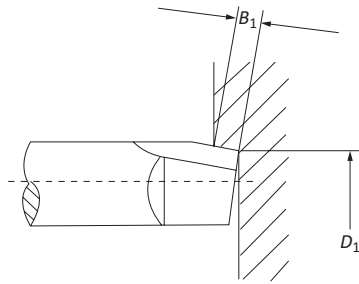
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INDEX

## Chip Production Values

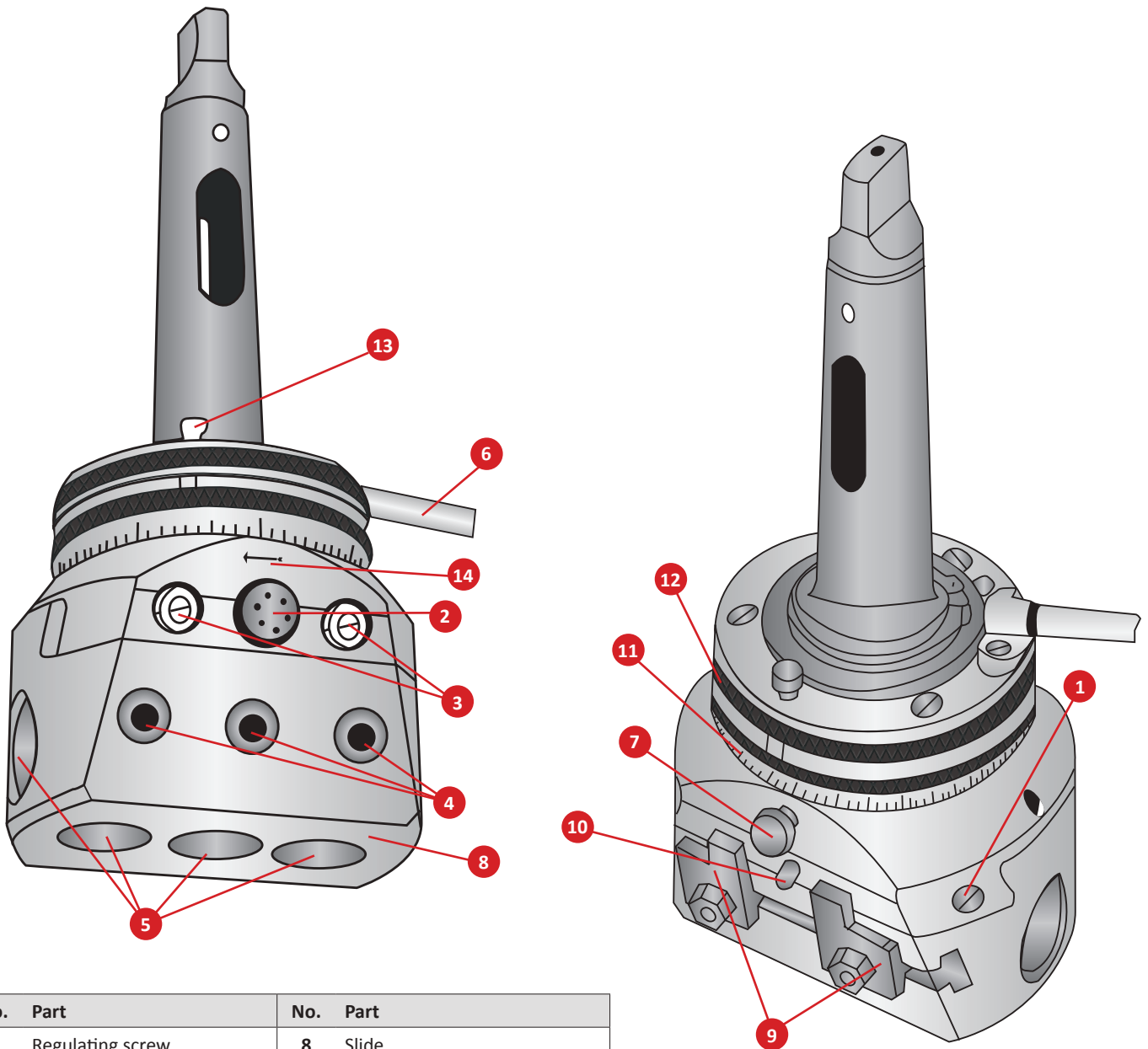


### Chip Production Values

Chip Cutting Guide	Type	UPA 3	UPA 4	UPA 5-5 6
Max load	kW	2.50	7.00	9.50
With slide feed	mm/rev.	0.05	0.08, 0.12, 0.24	0.08, 0.12, 0.24
For smaller working $\varnothing$	$D_1$	60.00	150.00	200.00
Maximum width of chip	$B_1$	4.00	7.00, 6.00, 4.00	8.00, 7.00, 5.00
Maximum working $\varnothing$	$D_1$	260.00	400.00	500.00 / 620.00
Max width of clip without reinforcement rings	$B_1$	2.00	2.20, 2.00, 1.50	2.50, 2.00, 1.50
Max width of clip with reinforcement rings*	$B_1$	–	4.50, 4.00, 3.00	5.00, 4.00, 3.00

\*By using the reinforcement rings contained in the normal attachment, chip cutting capacity is increased by 100%.

**UPA 3 Boring Head Diagram**

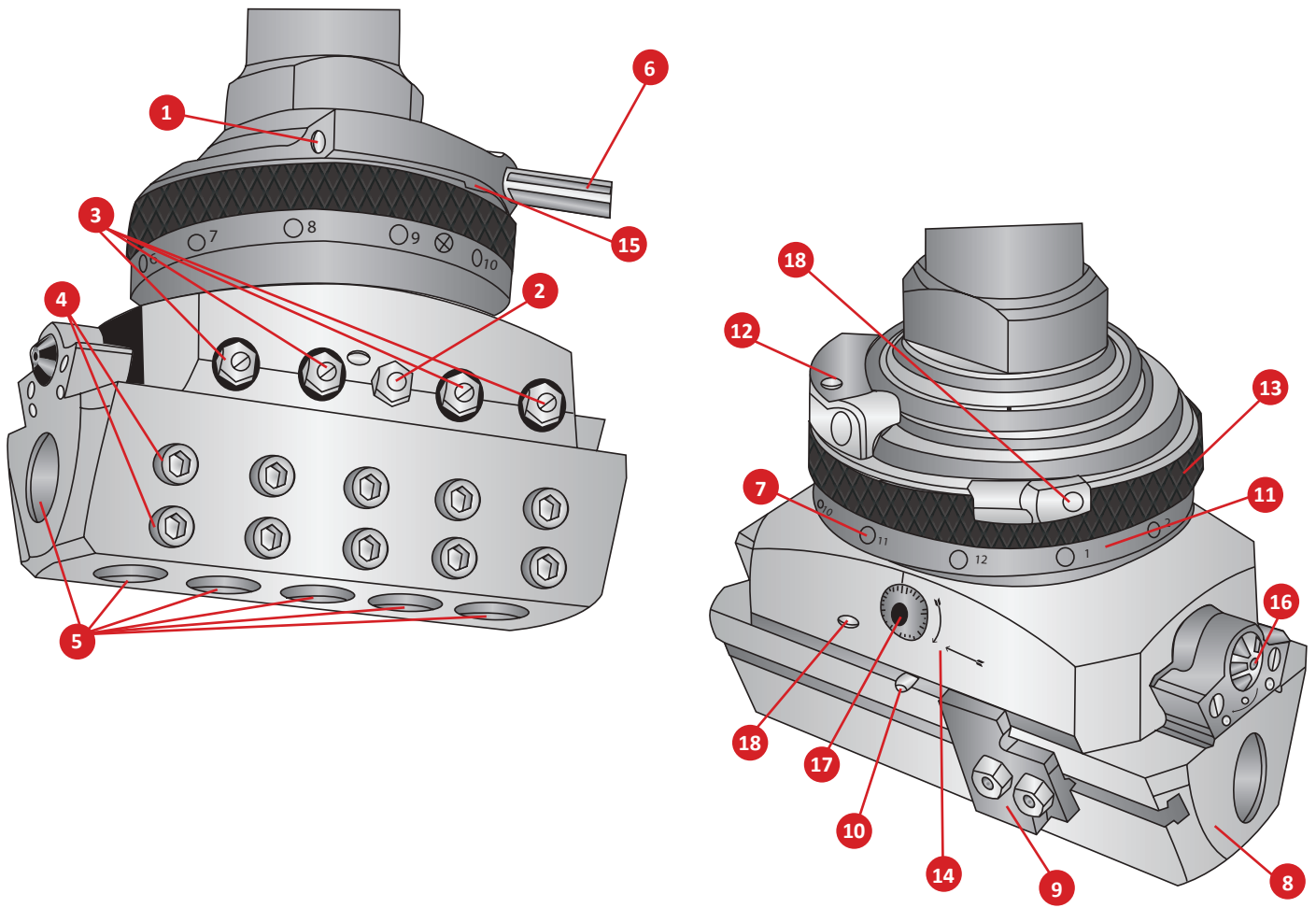


No.	Part	No.	Part
1	Regulating screw	8	Slide
2	Locking screw	9	Stop
3	Setting screws	10	Fixed pin
4	Fastening screw	11	Scale ring
5	Tool post holes	12	Holding ring
6	Holding rod	13	Button for return movement
7	Feed button	14	Arrow

m = Metric (mm)



UPA 4 / 5-S 6 Boring Heads Diagram



No.	Part	No.	Part
1	Regulating screw	10	Fixed pin
2	Locking screw	11	Scale ring
3	Setting screws	12	Retaining pin
4	Fastening screws	13	Feed ring
5	Tool post holes	14	Arrow
6	Holding rod	15	Recess
7	Feed buttons	16	Quick setting dial
8	Slide with rotation bores	17	Fine setting dial
9	Stop	18	Release ring

# Guaranteed Test / Demo Application Form

Distributor PO #	
------------------	--

The following must be filled out completely before your test will be considered

**IMPORTANT:** For processing, send purchase order to your Allied Field Sales Engineer (FSE). Please clearly mark the paperwork as "Test Order."

### Distributor Information

Company Name: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Account Number: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_

### End User Information

Company Name: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Industry: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_

### Current Process

List all tooling, coatings, substrates, speeds and feeds, tool life, and any problems you are experiencing

\_\_\_\_\_  
 \_\_\_\_\_

### Test Objective

List what would make this a successful test (i.e. penetration rate, finish, tool life, hole size, etc.)

\_\_\_\_\_  
 \_\_\_\_\_

### Application Information

Hole Diameter: _____ in/mm	Tolerance: _____	Material: _____ (4150, A36, cast iron, etc.)
Pre-existing Diameter: _____ in/mm	Depth of Cut: _____ in/mm	Hardness: _____ (BHN, Rc)
Required Finish: _____ RMS	State: _____ (Casting, hot rolled, forging)	

### Machine Information

Machine Type: _____ (Lathe, screw machine, machine center, etc.)	Builder: _____ (Haas, Mori Seiki, etc.)	Model #: _____
Shank Required: _____ (CAT50, Morse taper, etc.)		Power: _____ HP/KW
Rigidity: _____	Orientation: _____	Tool Rotating: _____
<input type="checkbox"/> Excellent	<input type="checkbox"/> Vertical	<input type="checkbox"/> Yes
<input type="checkbox"/> Good	<input type="checkbox"/> Horizontal	<input type="checkbox"/> No
<input type="checkbox"/> Poor		Thrust: _____ lbs/N

### Coolant Information

Coolant Delivery: _____ (Through tool, flood)	Coolant Pressure: _____ PSI / bar
Coolant Type: _____ (Air mist, oil, synthetic, water soluble, etc.)	Coolant Volume: _____ GPM / LPM

### Requested Tooling

QTY	Item Number

QTY	Item Number

**engineering.eu@alliedmachine.com**

Allied Machine & Engineering Co. (Europe) Ltd  
 93 Vantage Point, Pensnett Estate,  
 Kingswinford, DY6 7FR, United Kingdom

**+44 (0)1384 400 900**  
**www.alliedmachine.com**



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# ALLIED MACHINE & ENGINEERING

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Allied Machine’s sole and exclusive obligation under this warranty is limited to, at its option, without additional charge, replacing or repairing this product or issuing a credit. For this warranty to be applied, the product must be returned freight prepaid to the plant designated by an Allied Machine representative and which, upon inspection, is determined by Allied Machine to be defective in material and workmanship.

Complete information as to operating conditions, machine, setup, and the application of cutting fluid should accompany any product returned for inspection. This warranty shall not apply to any Allied Machine products which have been subjected to misuse, abuse, improper operating conditions, improper machine setup or improper application of cutting fluid or which have been repaired or altered if such repair or alteration, in the judgement of Allied Machine, would adversely affect the performance of the product.

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## Europe

### Allied Machine & Engineering Co. (Europe) Ltd.

93 Vantage Point  
Pensnett Estate  
Kingswinford  
West Midlands  
DY6 7FR England

#### Phone:

+44 (0) 1384.400900

### Wohlhaupter® GmbH

Maybachstrasse 4  
Postfach 1264  
72636 Frickenhausen  
Germany

#### Phone:

+49 (0) 7022.408.0

## United States

### Allied Machine & Engineering

120 Deeds Drive  
Dover OH 44622  
United States

#### Phone:

+1.330.343.4283

#### Toll Free USA and Canada:

800.321.5537

#### Toll Free USA and Canada:

800.223.5140

### Allied Machine & Engineering

485 W Third Street  
Dover OH 44622  
United States

#### Phone:

+1.330.343.4283

#### Toll Free USA and Canada:

800.321.5537

## Asia

### Wohlhaupter® India Pvt. Ltd.

B-23, 3rd Floor  
B Block Community Centre  
Janakpuri, New Delhi - 110058  
India

#### Phone:

+91 (0) 11.41827044

Your local Allied Machine representative:

[www.alliedmachine.com](http://www.alliedmachine.com)

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