ALLIED MACHINE & ENGINEERING | WOHLHAUPTER®

Holemaking Solutions for Today's Manufacturing

Drilling

Reaming

Burnishing

Threading

Specials

Wohlhaupter®

▶ *BORING*

UPA Facing and Boring Heads

WOHLHAUPTER®

SECTION

B10-J

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 for the most up-to-date information and procedures.

Universal Versatile Boring Heads Table of Contents

Introduction

UPA Product Overview . . . . . 2 - 3

UPA 3 Boring System

UPA 3 Boring Head and Accessories . . . . . 4 - 5

UPA 3 Shanks . . . . . 6 - 7

UPA 4 and 5s6 Boring System

UPA 4 Boring Head and Accessories . . . . . 8 - 9

UPA 5-S 6 Boring Heads and Accessories . . . . . 10 - 11

UPA 4 and 5-S 6 Shanks . . . . . 12 - 13

Technical Information 14

Chip Production Values 15

UPA Boring System Diagram . . . . . 16 - 17

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 Boring Head
FACING AND BORING

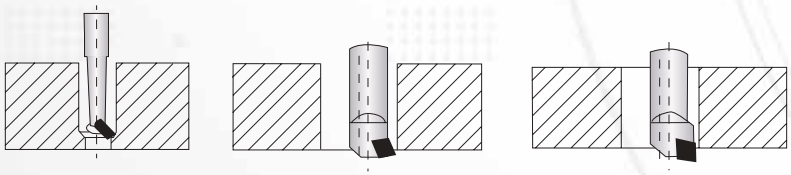
Universal Facing and Boring Heads

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.

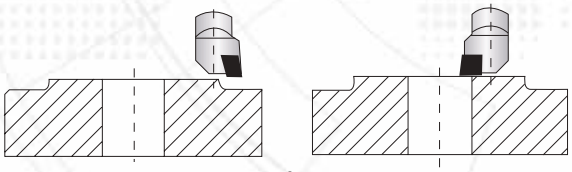
Precise and ***versatile*** boring heads.

- 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*



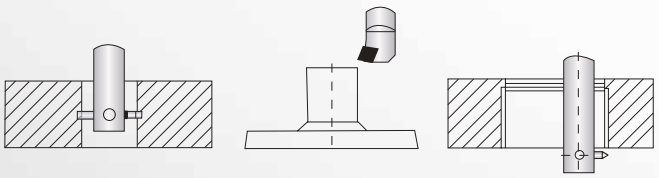
Boring with different tools



Facing

From inside outward

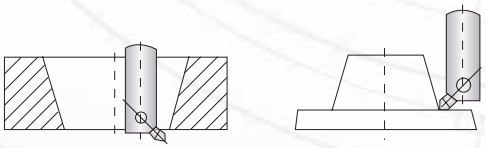
From outside inward



Recessing

Outside Turning

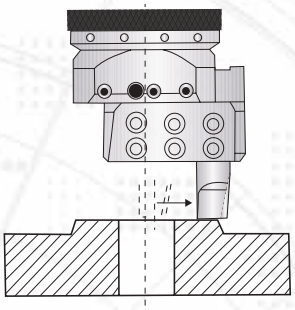
Thread Cutting



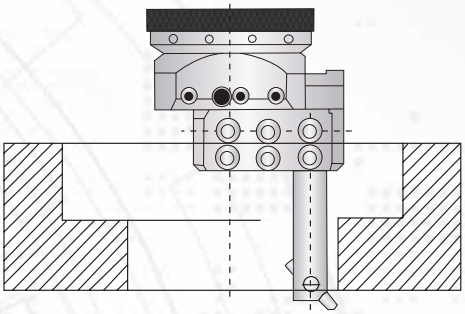
Taper Turning

UNIVERSAL

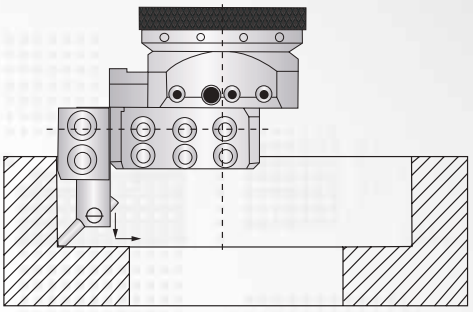
FACING & BORING *Application Examples*



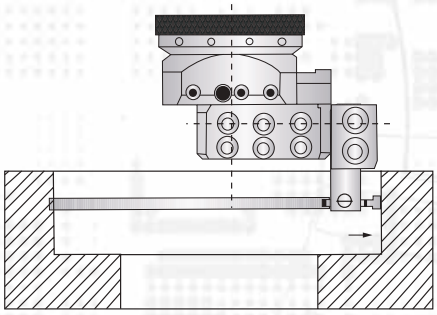
Facing with boring bar directly in slide



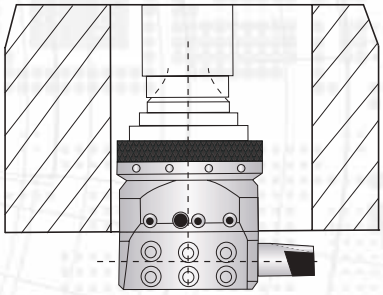
Boring with long boring bar



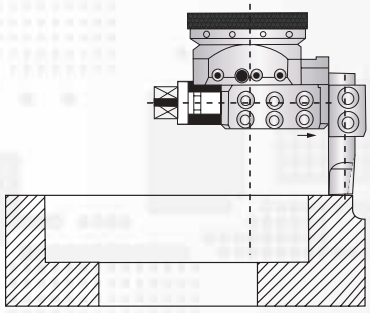
Boring and facing with short boring bar holder and a boring bar



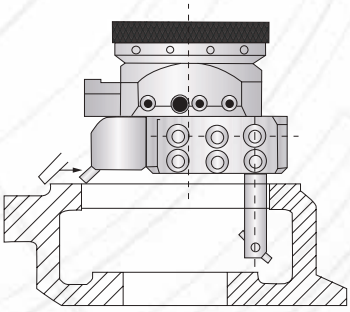
Recessing with short boring bar holder and a boring bar



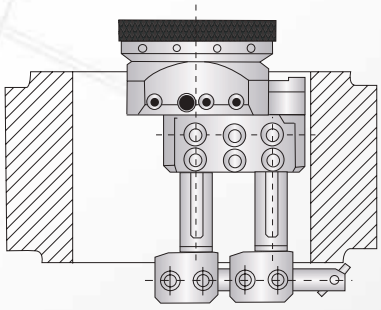
Deep hole boring with boring bar directly in slide



Large diameter facing with a long boring bar holder



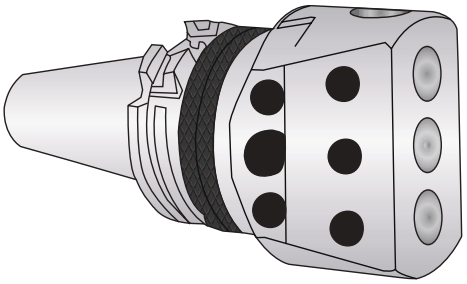
Facing in two areas with one boring bar and a boring bar holder

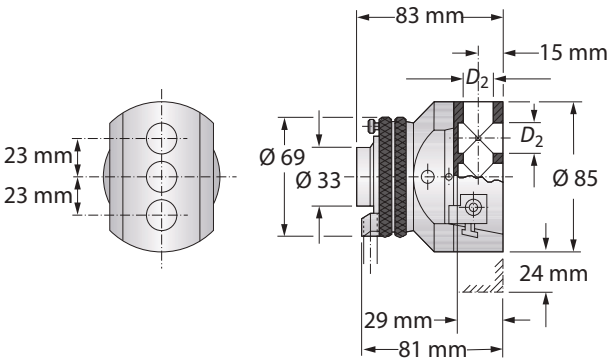


Facing the reverse side by using boring bar holders contained in attachment

UPA 3 Boring Head and Accessories

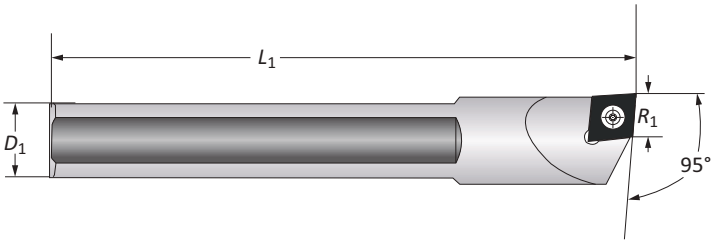
Diameter Range: 0.00 mm - 260.00 mm





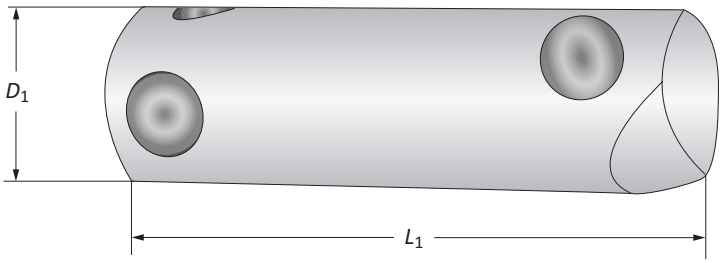
UPA 3 Boring Head

	Boring Range	Boring Head D_2	Weight	Part No.
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.
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**



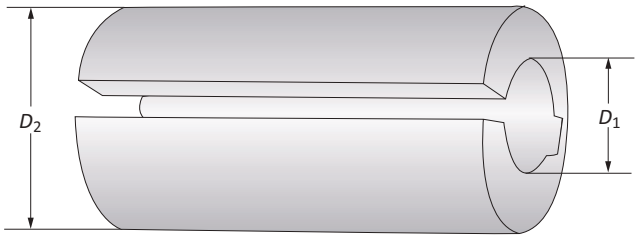
UPA 3 Boring Bars

	Boring Bar D_1	L_1	Boring Depth	Designation	Part No.
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**

m = Metric (mm)

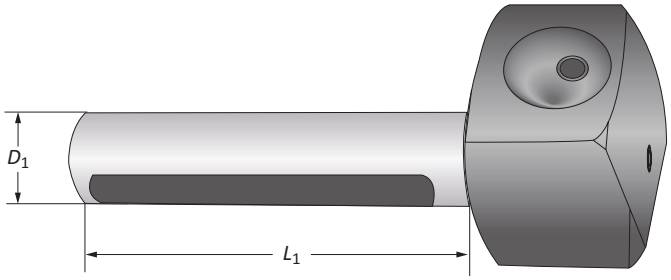
UPA 3 Accessories

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**

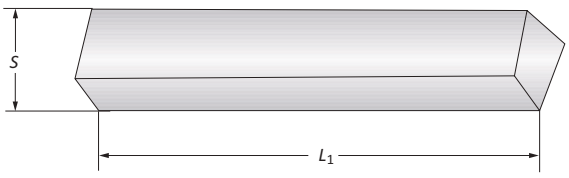


UPA 3 Boring Bar Holders

	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**



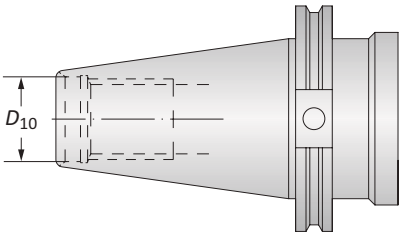
Ⓜ = Metric (mm)

UPA 3 Master Shanks

CAT | SK (DIN 69871) | DIN 2080

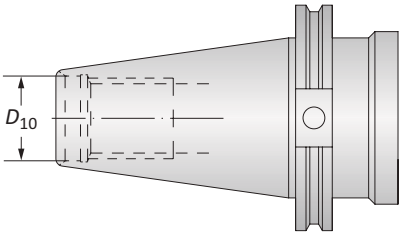
CAT Shanks

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



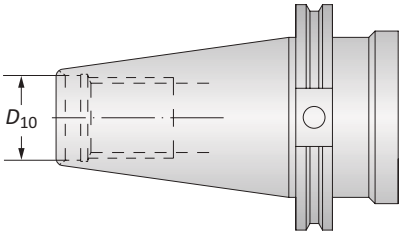
SK (DIN 69871)

	Shank			
	Style	D_{10}	Weight	Part No.
ⓜ	ISO 40	M16	1.00 (kg)	**130001T013815**



DIN 2080

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



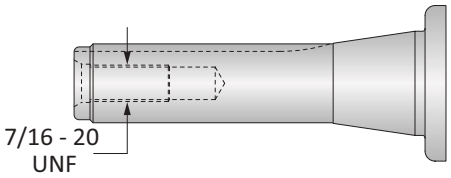
ⓜ = Metric (mm)

UPA 3 Master Shanks

R-8 | NMTB | Morse Taper | Norm Taper

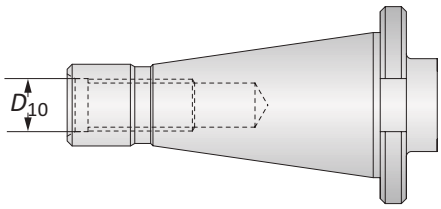
R-8 Shanks

	Shank Weight	Part No.
m	0.48 (kg)	**130001T007166**



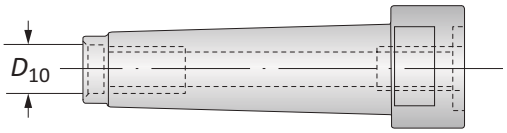
NMTB Shanks

	Shank Style	D_{10}	Weight	Part No.
m	NMTB 40	⅝ - 11	0.90 (kg)	**130001T004498**
	NMTB 50	1 - 8	2.63 (kg)	**130001T004480**



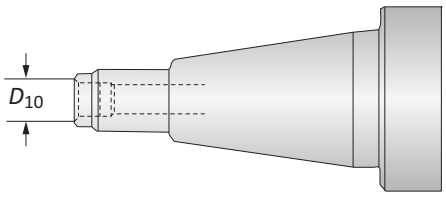
Morse Taper Shanks

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



Norm Taper

	Shank Style	D_{10}	Weight	Part No.
m	40 x S 20 x 2 with bolts DECKEL	M12 x 1	1.00 (kg)	**130001T005070**



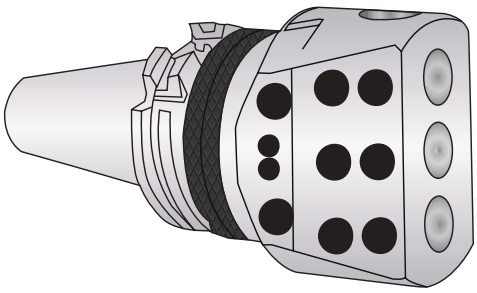
Differential Screw

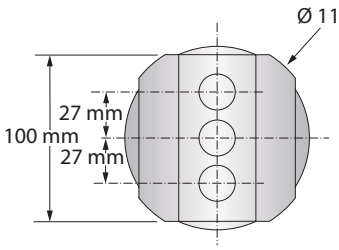
	Thread	Weight	Part No.
m	M16 x 2	0.03 (kg)	**KW9208**

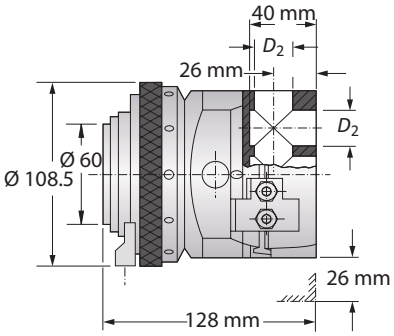
m = Metric (mm)

UPA 4 Boring Heads and Accessories

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

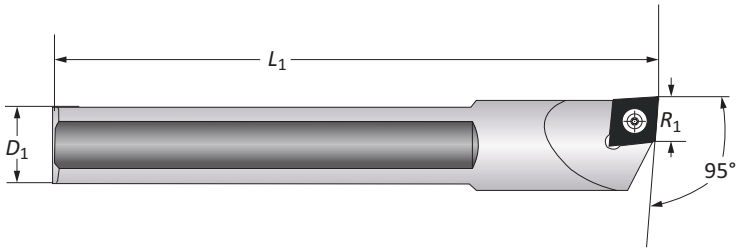






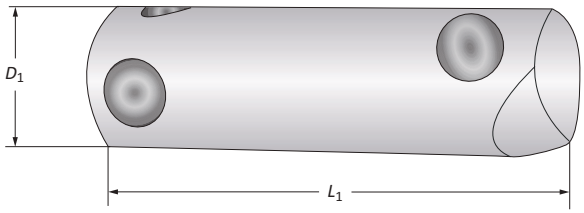
UPA 4 Boring Heads

	Boring Range	Boring Head D_2	Weight	Part No.
m	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.
m	22.00	100.00	13.50	0.10 (kg)	Right	103	**081092**
	22.00	100.00	13.50	0.10 (kg)	Left	103	**218089**



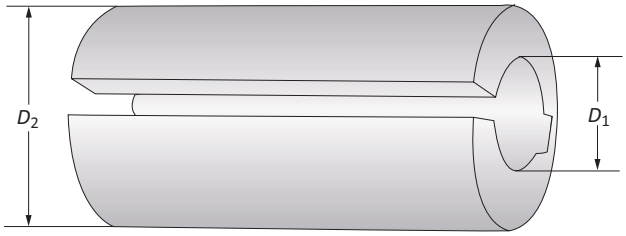
UPA 4 Boring Bars

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

m = Metric (mm)

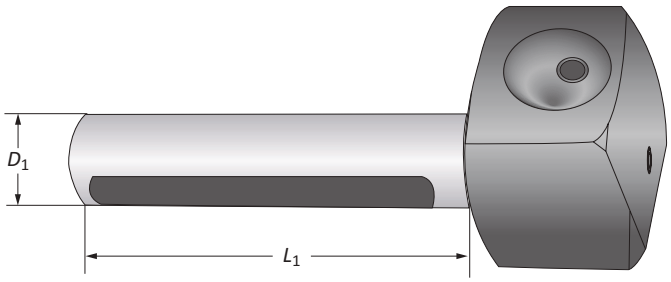
UPA 4 Accessories

Reducing Sleeves | Boring Bar Holders



UPA 4 Reducing Sleeves

	Reducing Sleeve			
	D_2	D_1	Weight	Part No.
	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**

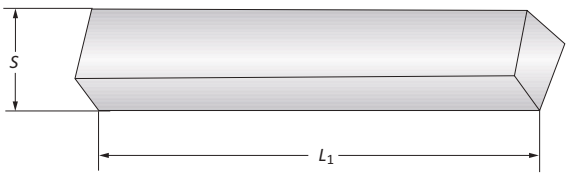


UPA 4 Boring Bar Holders

	Boring Bar Holder				
	D_1	L_1	Designation	Working Diameter Range	Part No.
Ⓜ	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

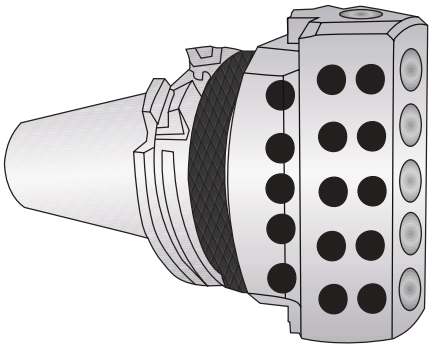
	Square Turning Bit			
	S	L_1	Weight	Part No.
Ⓜ	6.00	40.00	11 (g)	**089001**

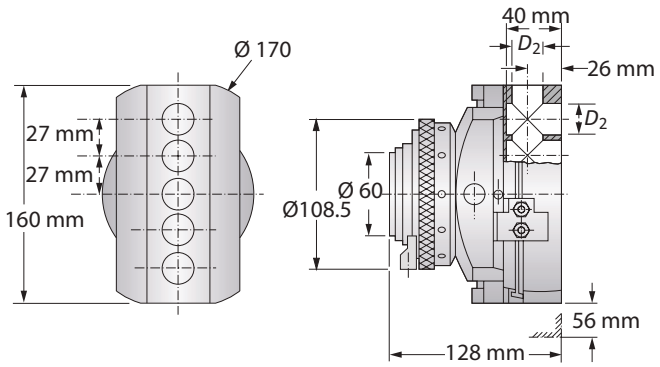


Ⓜ = Metric (mm)

UPA 5-S 6 Boring Heads and Accessories

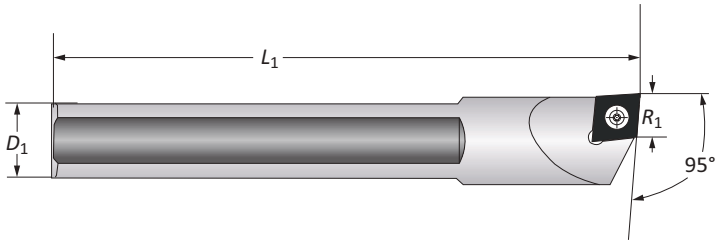
Diameter Range: 0.00 mm - 620.00 mm





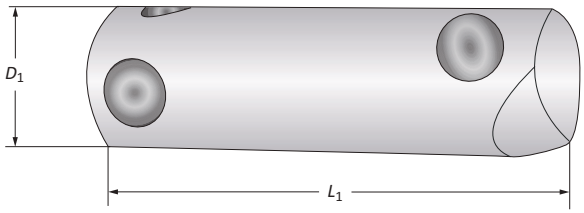
UPA 5-S 6 Boring Heads

	Boring Range	Boring Head D_2	Weight	Part No.
m	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.
m	22.00	100.00	13.50	0.10 (kg)	Right	103	**081092**
	22.00	100.00	13.50	0.10 (kg)	Left	103	**218089**



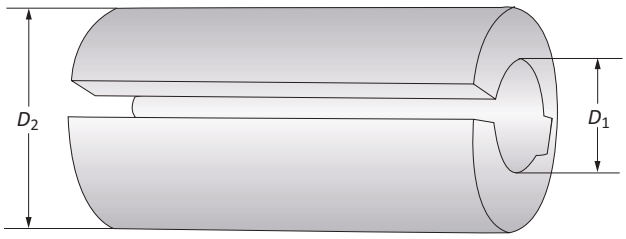
UPA 5-S 6 Boring Bars

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

m = Metric (mm)

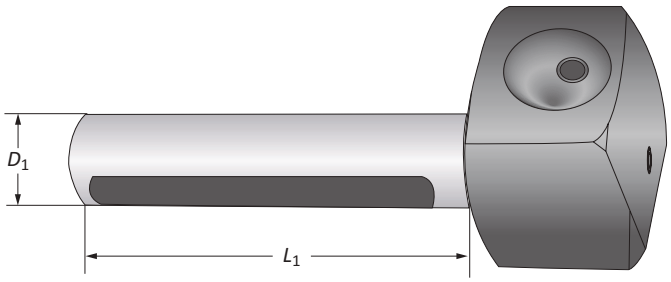
UPA 5-S 6 Accessories

Reducing Sleeves | Boring Bar Holders



UPA 5-S 6 Reducing Sleeves

	Reducing Sleeve			
	D_2	D_1	Weight	Part No.
	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**

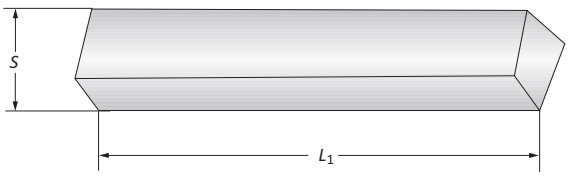


UPA 5-S 6 Boring Bar Holders

	Boring Bar Holder				
	D_1	L_1	Designation	Working Diameter Range	Part No.
Ⓜ	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.
Ⓜ	6.00	40.00	11 (g)	**089001**



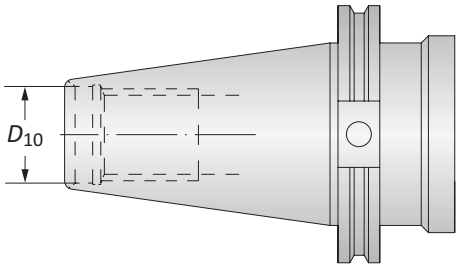
Ⓜ = Metric (mm)

UPA 4 and 5-S 6 Master Shanks

CAT | SK (DIN 69871) | DIN 2080

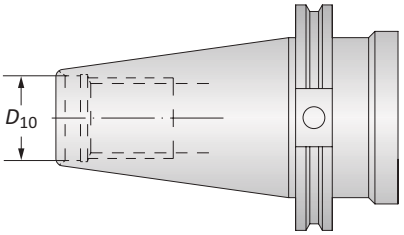
CAT Shanks

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



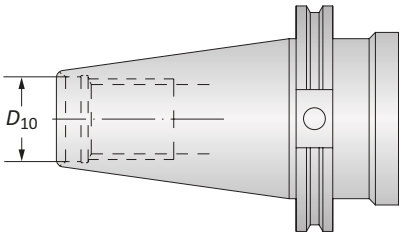
SK (DIN 69871)

	Shank Style	Shank D_{10}	Shank Weight	Part No.
ⓜ	ISO 40	M16	1.60 (kg)	**130005T013815**
	ISO 40	M24	3.00 (kg)	**130005T013960**



DIN 2080

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



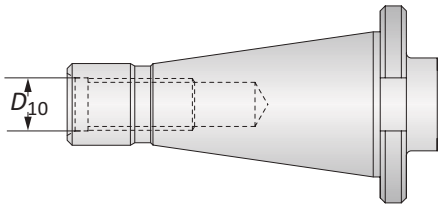
ⓜ = Metric (mm)

UPA 4 and 5-S 6 Master Shanks

NMTB | Morse Taper (DIN 1806) | Norm Taper

NMTB Shanks

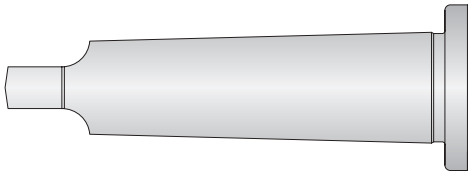
	Shank Style	D_{10}	Weight	Part No.
	NMTB 40	⅝ - 11	1.30 (kg)	**130005T004498**
ⓜ	NMTB 40	⅝ - 11	1.30 (kg)	**130005T010327**
	NMTB 50	1 - 8	2.90 (kg)	**130005T004480**



Morse Taper Shanks (DIN 1806)

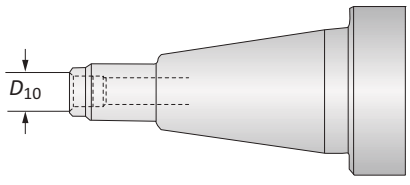
	Shank Style	Weight	Part No.
ⓜ	MT 4	0.86 (kg)	**130005T003590***
	MT 5	1.65 (kg)	**130005T003920**

*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**

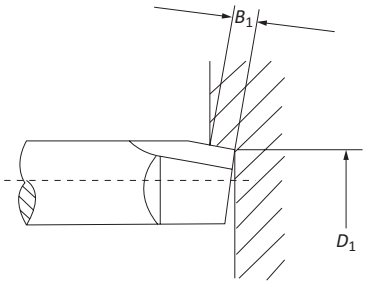
ⓜ = Metric (mm)

Technical Information

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

Chip Production Values

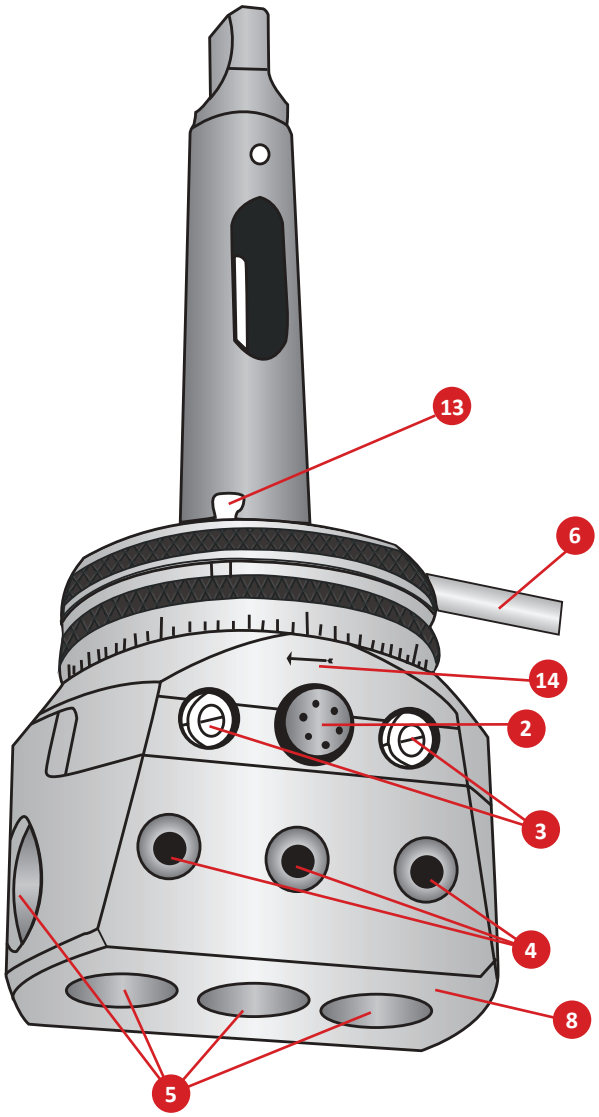


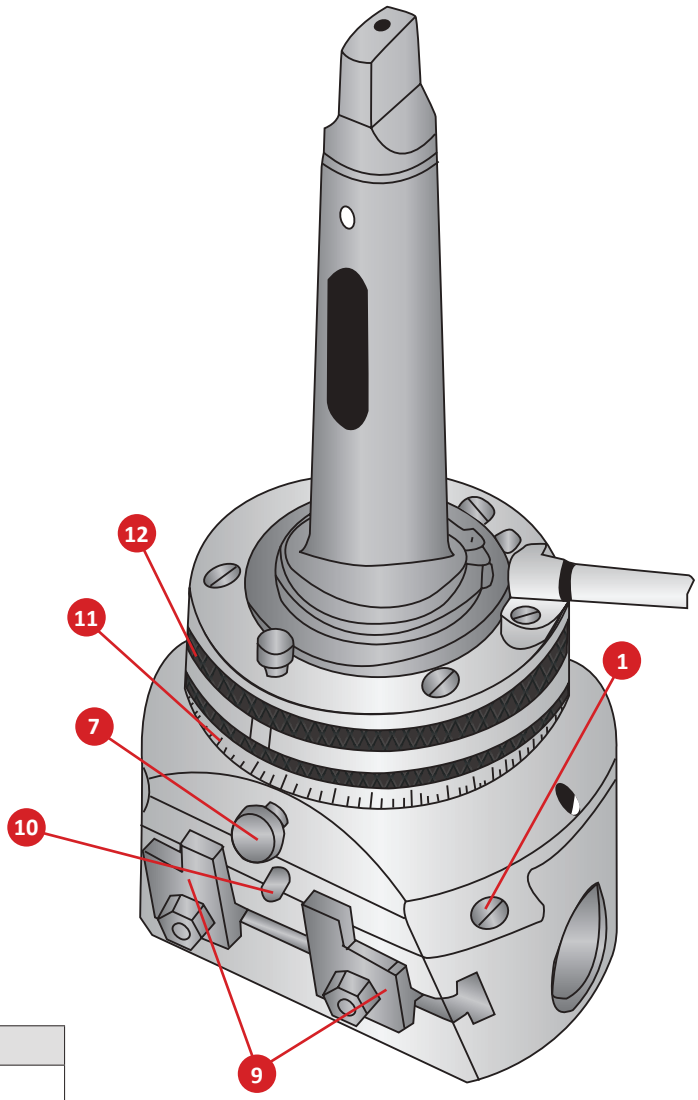
Chip Production Values

	Chip Cutting Guide	Type	UPA 3	UPA 4	UPA 5-S 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 Ø	D_1	60.00	150.00	200.00
(m)	Maximum width of chip	B_1	4.00	7.00, 6.00, 4.00	8.00, 7.00, 5.00
	Maximum working Ø	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

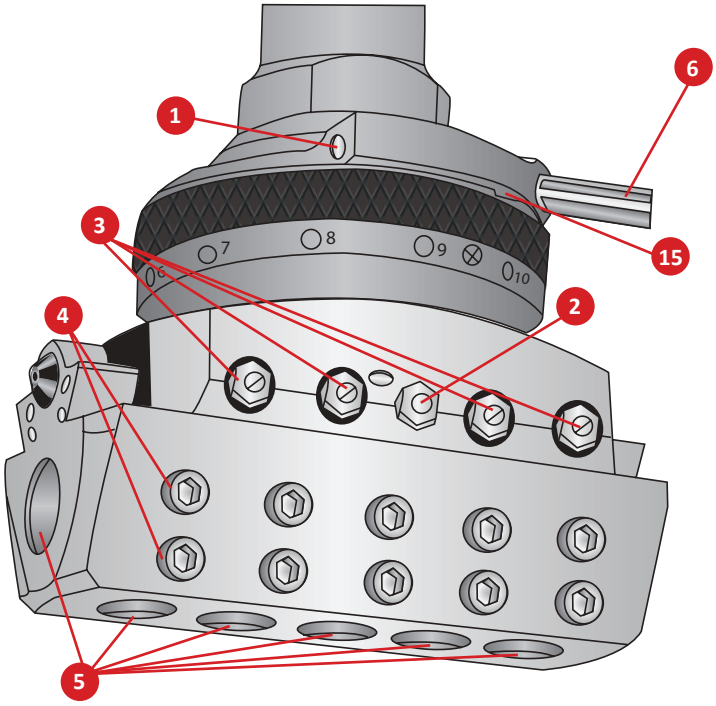


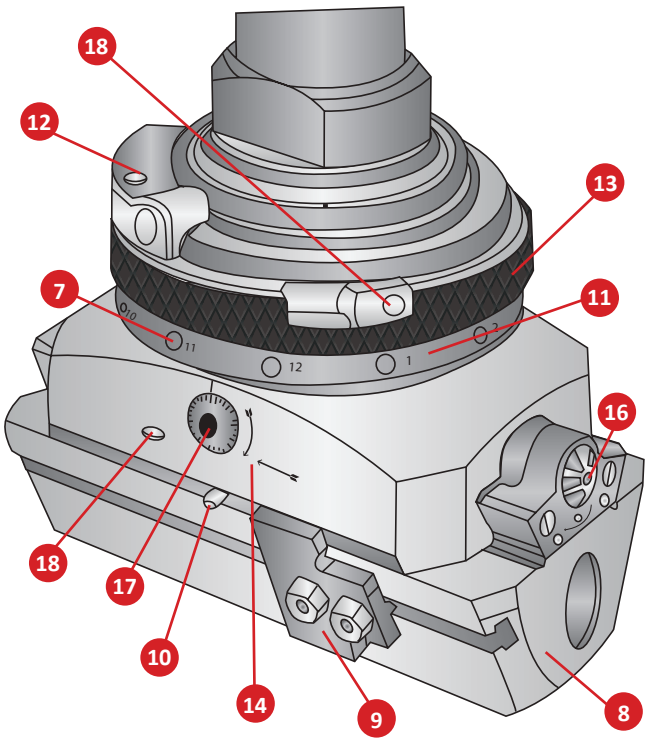


No.	Part	No.	Part
1	Regulating screw	8	Slide
2	Locking screw	9	Stop
3	Setting screws	10	Fixed pin
4	Fastening screw	11	Scale ring
5	Tool post holes	12	Holding ring
6	Holding rod	13	Button for return movement
7	Feed button	14	Arrow

ⓜ = 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

Allied Machine & Engineering

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:
- ☐ Excellent
- ☐ Good
- ☐ Poor

Orientation:
- ☐ Vertical
- ☐ Horizontal

Tool Rotating:
- ☐ Yes
- ☐ No

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

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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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Available Online Only: B10-J_EU-EN
Publish Date: December 2024