VARIO BORE

Precision Boring Head

Featuring the…

UNIVERSAL Digital Module

Range…
0.016″ to 5.984″ (0,4 to 152mm)

Accuracy…
.0001″ (0,002mm) on diameter

Radial Stroke Adjustment…
.098″ (2,5mm)

Speeds…
up to 30,000 rpm

WOHLHAUPTER

THE FINEST IN PRECISION

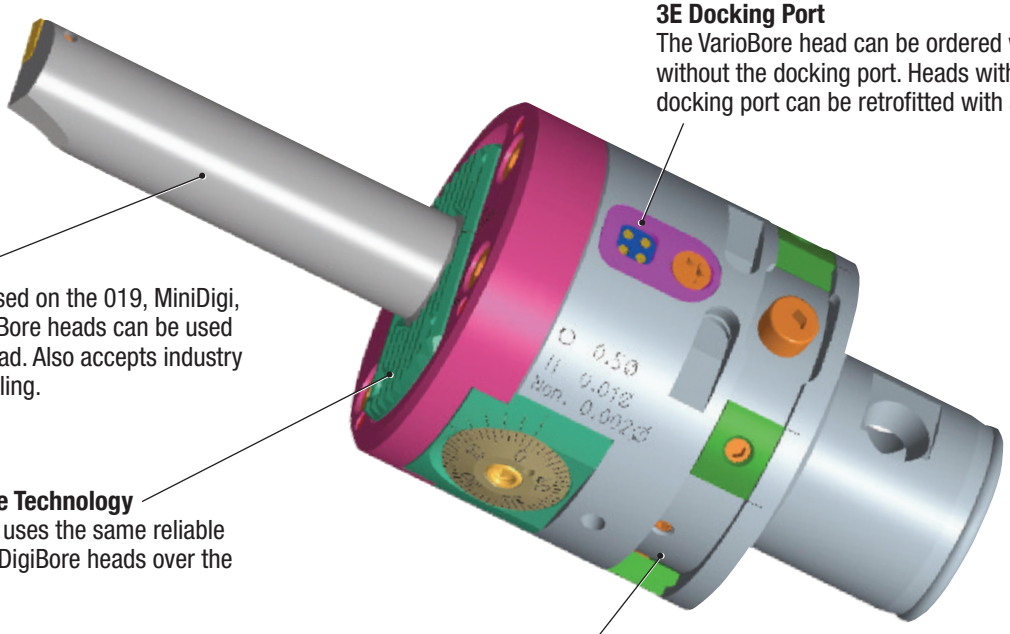
VARIO BORE
Wohlhaupter's First Tool to be 3E Tech ready!

- **Boring Range: 0.016" – 5.984" (0,4 – 152mm)**
- **Accuracy: .0001" (0,002mm) on diameter**
- **Radial Stroke Adjustment: .098" (2,5mm)**
- **Speeds: up to 30,000rpm**
- **Balancing: manual mechanism**
- **Standard Tooling: uses standard inserts and carbide bars**
- **Coolant: Internal throughout the system**

However… even without integrating 3E Tech… the VarioBore Head offers great versatility, flexibility and precision in it's own right.

It is able to produce a wide range of precision bores from 0.016" to 5.984" (0,4 to 152mm)… and it can also provide outside turning capabilities from 0.079" to 2.283" (2,0 to 58mm).

In providing these capabilities, it can utilize many of the Wohlhaupter tools used with their other boring heads. Plus, it can accommodate industry standard 16mm tooling.



3E Docking Port
The VarioBore head can be ordered with or without the docking port. Heads without a docking port can be retrofitted with a 3E port.

Tool Utilization
Many of the tools used on the 019, MiniDigi, PrimeBore and DigiBore heads can be used on the VarioBore head. Also accepts industry standard 16mm tooling.

Adjustment & Slide Technology
The VarioBore head uses the same reliable technology used in DigiBore heads over the past twelve years.

Machining Attributes
Simple mechanical balancing allows effective speeds & feeds… producing excellent roundness, surface quality and insert life.

Balancing
The head is manually balanced via external counter weights… as used in the high-speed MiniDigi digital boring head.

Versatility…

3E TECH*

Universal Digital Readout Module

Universal – because a single module can be used to set any number of tools having ports.

Accurate – to .0001” (0,002mm) on diameter with μ accurate ± setting.

Setting/Adjusting – setting and adjusting is done on the tool. No need to remove the tool.

Damage Protection – at 2,000 rpm, the module is automatically released from the tool… preventing accidental damage.

Coolant Sealed – sealed up to IP 65.

Battery Life – allows up to 5,000 settings. It automatically turns itself off after 30 seconds of inactivity.

*** Easy – External Electronic**

VARIO BORE Boring Head

Range: 0.016” – 5.984” (0,4 – 152mm)

Accuracy: .0001” (0,002mm) on diameter

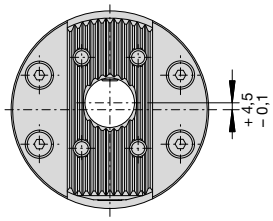
Radial Stroke Adjustment: .098” (2,5mm)

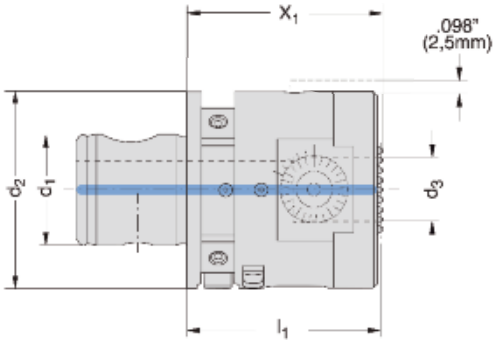
Speeds: up to 30,000rpm

Balancing: manual mechanism

Cutting Edge: Self-indexing

Coolant: Internal throughout the system





Head Type	MVS Connection		Dimensions						Boring Range		Weight		Order No.	
			d_3		X_1		l_1		A					
	d_2	d_1	in	mm	in	mm	in	mm	in	mm	lbs	kg	in	mm
Standard	50	28	.63	16	1.969	50	1.949	49,5	.157-5.984	4-152	1.323	0,6	563 001	536 001
3E Tech	50	28	.63	16	1.969	50	1.949	49,5	.157-5.984	4-152	1.323	0,6	563 002	536 002

3E TECH

Universal Digital Readout Module…

Description	Order No.	
	in	mm
3E Tech Module	563 010	536 010

VarioBore head's incredible compatibility

Tools compatible with…

MINI DIGI

Mini-Boring Tools, Coated Carbide
Ø .118" – .256" (Ø 0,3 – 6,5mm) WHC 126

Tool Holders in Tool Steel
Ø .236" – .787" (Ø 6 – 20mm) · WSP-Form 20, 101, 337

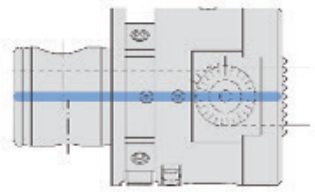
Tool Holders in Carbide
Ø .236" – .787" (Ø 6 – 20mm) · WSP-Form 20, 101, 337

Serrated Tool Bodies in Tool Steel
Ø .787" – 1.339" (Ø 20 – 34mm)

Serrated Tool Bodies in Carbide
Ø .787" – 1.339" (Ø 20 – 34mm)

Reducing Sleeves
D16:
4, 5, 6, 7, 8,
10, 12 mm

Universal Digital Module



VARIO BORE

Tools compatible with...

019 Head

Tool Holder in Heavy Metal
Ø .237" – .394: (Ø 6 – 10mm) · WSP-Form 211

Tool Holders in Steel
Ø .237" – 1.063" (Ø 6 – 27mm) · WSP-Form 20, 101, 211

Tool Holders in Carbide
Ø .394" – .787" (Ø 10 – 20mm) · WSP-Form 20, 101

Insert Holders
Form 20, 101

Serrated Tool Bodies
Ø .787" – 1.260" (Ø 20 – 32mm)

Insert Holders
Ø 1.142" – 2.087" (Ø 29 – 53mm)
Form 20, 101

Serrated Tool Bodies
Ø 1.142" – 2.087" (Ø 29 – 53mm)

Outside Turning
Ø .157" – 2.598" (Ø4 – 66mm)
Form 20

Insert Holders
Ø 2.047" – 4.016"
(Ø 52 – 102mm)
Form 20, 101

Serrated Slides
Ø 2.677" – 5.984"
(Ø 68 – 152mm)

Insert Holders
Ø 2.677" – 5.984"
(Ø 68 – 152mm)
Form 20, 101

Outside Turning
Ø 0.079" – 2.283"
(Ø 2 – 58mm)

Coolant Delivery Section

Counter Weight

Tools compatible with…

DIGI BORE

VARIO BORE
STARTER KITS

Boring Range: Ø.394” to 1.181” (Ø10 – 30mm)
Insert Style: Form 101

Kit Order No.	Head Type	Head Part No.
104 050	Standard (in)	563 001
103 050	Standard (mm)	536 001
104 046	3E Tech (in)	563 002
103 046	3E Tech (mm)	536 002

VarioBore kits offer you cost-effective and versatile precision boring

First and foremost… all of the kits incorporate the revolutionary, new VarioBore head.

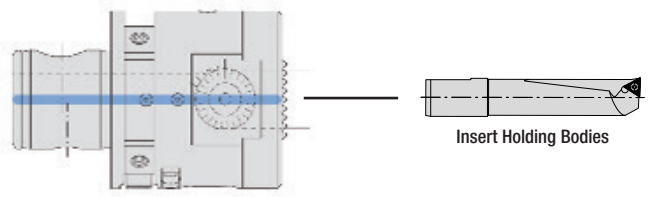
The kits provide two basic boring ranges… .394” to 1.181” (10 to 30mm)… and .394” to 4.016” (10 to 102mm).

At speeds upt to 30,000 rpm, they can provide a bore diameter accuracy up to .0001” (0,002mm).

The VarioBore heads are available …with or without 3E Tech capabilities* …and are also available with either inch or metric notations.

Wohlhaupter assembled these kits hoping to make it easier for you to take advantage of all the benefits that their VarioBore boring head can provide.

*Standard VarioBore can be up-graded to incorporate the 3E Tech docking port.



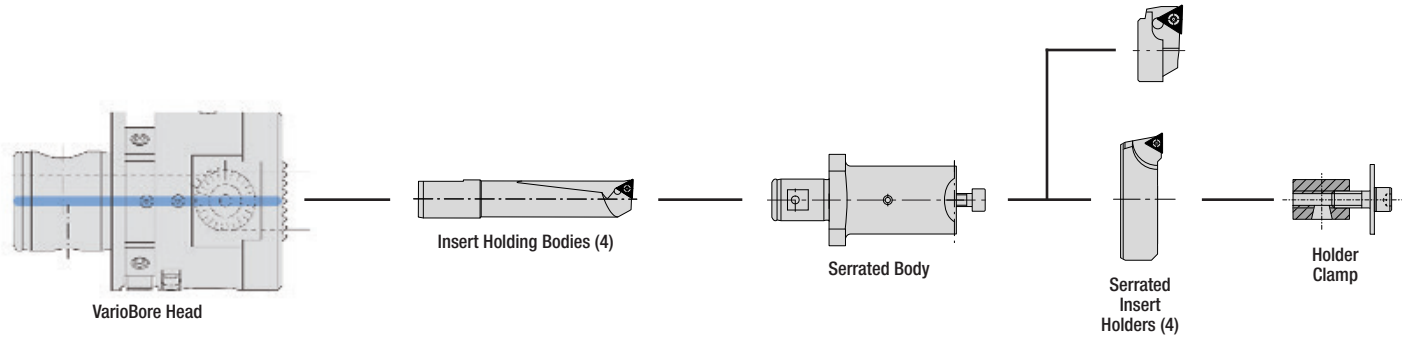
Kit Boring Tools (Form 101)

Insert Holding Body		
in	mm	Part No.
.394-.591	10-15	218 048
.591-.787	15-20	081 041
.787-.984	20-25	081 042
.984-1.181	25-30	081 043

Driver/Wrenches	
Type	Part No.
s2,5	115 575
s4,0	215 403
T7	115 591

Boring Range: Ø.399” to 4.016” (Ø10 – 102mm)
Insert Style: Form 101

Kit Order No.	Head Type	Head Part No.
104 052	Standard (in)	563 001
103 052	Standard (mm)	536 001
104 048	3E Tech (in)	563 002
103 048	3E Tech (mm)	536 002

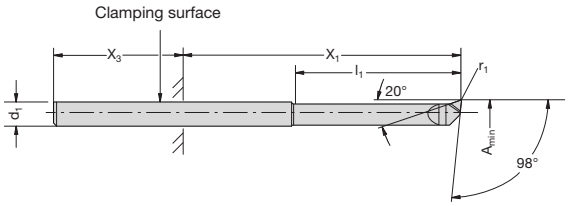


Kit Boring Tools (Form 101)

Insert Holding Body			Serrated Body	Serrated Insert Holder			Holder Clamp	Driver/Wrenches	
in	mm	Part No.		in	mm	Part No.		Type	Part No.
.394-.591	10-15	218 059		1.142-1.614	29-41	236 023		s2,5	115 575
.591-.787	15-20	081 045	236 021	1.575-2.087	40-53	236 025	236 020	s4,0	215 403
.787-.984	20-25	081 046		2.047-3.031	52-77	236 027		s5,0	215 521
.984-1.181	25-30	081 047		2.992-4.016	76-102	236 029		T8	115 590

Smaller Diameter Tools for VARIO BORE
Compatible with MINI DIGI

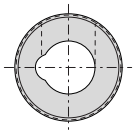
Mini-Boring Tools, Coated Carbide
WHC 126, Ø .16" – .256" (Ø 0,4 – 6,5mm)

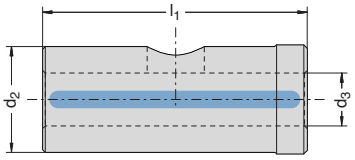


Boring Range				511 001, 510 004, 510 005				511 021, 510 024								Order No.
A_{min}		d_1		X_1		X_3		X_1		$X_{3\,min}$		l_1		r_1		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
.110	2,8	.157	4*	.591-1.496	15,0-38,0	.63	16	.591-1.142	15,0-29,0	.98	25	.551	14,0	.003	0,07	081 408
.138	3,5	.157	4*	.748-1.654	19,0-42,0	.63	16	.748-1.299	19,0-33,0	.98	25	.689	17,5	.004	0,10	081 409
.157	4,0	.157	4*	.827-1.732	21,0-44,0	.63	16	.827-1.378	21,0-35,0	.98	25	.787	20,0	.004	0,10	081 410
.197	5,0	.197	5*	1.043-1.969	26,5-50,0	.63	16	1.043-1.614	26,5-41,0	.98	25	.984	25,0	.005	0,12	081 411

* Fixture through reducing sleeves
Other versions on request

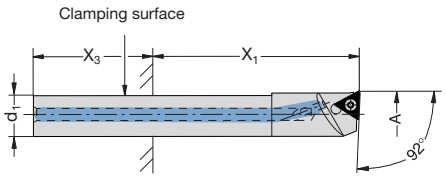
Reducing Sleeves





Dimensions						Order No.
d_2		d_3		l_1		
in	mm	in	mm	in	mm	
.630	16	.157	4	1.260	32	450 129
.630	16	.197	5	1.260	32	450 130
.630	16	.276	7	1.260	32	450 132
.630	16	.315	8	1.260	32	450 133
.630	16	.397	10	1.260	32	450 134
.630	16	.472	12	1.260	32	450 135
.630	16	.556	14	1.260	32	450 136

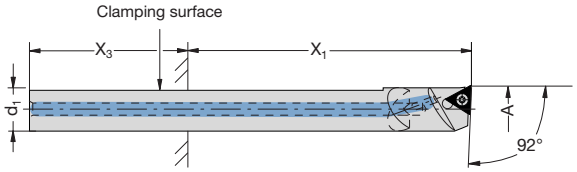
Tool Holders in Tool Steel with 92° Approach Angle
Ø .236" – .787" (Ø 6 – 20mm)



Boring Range		Dimensions								Insert Form		Insert Form	
A		d_1		X_1		$X_{3\ min}$		weight			Order No.		Order No.
in	mm	in	mm	in	mm	in	mm	lbs	kg				
.236-.315	6-8	.197*	5*	.492-1.772	12,5-45,0	.630	16	.022	0,01	337	514 001	–	–
.315-.394	8-10	.276*	7*	.689-2.205	17,5-56,0	.630	16	.044	0,02	337	514 002	–	–
.394-.472	10-12	.315*	8	.787-2.362	20,0-60,0	.748	19	.066	0,03	101	514 003	20	514 004
.236-.315	6-8	.197*	5*	.492-1.772	12,5-45,0	.984	25	.022	0,01	337	514 001	–	–
.315-.394	8-10	.276*	7*	.689-2.205	17,5-56,0	.984	25	.044	0,02	337	514 002	–	–
.394-.472	10-12	.315*	8*	.787-2.362	20,0-60,0	.984	25	.066	0,03	101	514 003	20	514 004
.472-.551	12-14	.394*	10*	.984-2.953	25,0-75,0	.984	25	.110	0,05	101	514 005	20	514 006
.551-.630	14-16	.472*	12*	1.181-3.307	30,0-84,0	1.181	30	.198	0,09	101	514 007	20	514 008
.630-.709	16-18	.551	14	2.205-3.583	56,0-91,0	1.181	30	.287	0,13	101	514 009	20	514 010
.709-.787	18-20	.551	14	2.205-3.583	56,0-91,0	1.181	30	.287	0,13	101	514 011	20	514 012

* Fixture through reducing sleeves

Tool Holders in Carbide with 92° Approach Angle
Ø .236" – .787" (Ø 6 – 20mm)



Boring Range		Dimensions								Insert Form		Insert Form	
A		d_1		X_1		$X_{3\ min}$		weight			Order No.		Order No.
in	mm	in	mm	in	mm	in	mm	lbs	kg				
.236-.315	6-8	.197*	5*	.492-2.559	12,5-65,0	.630	16	.044	0,02	337	514 013	–	–
.315-.394	8-10	.276*	7*	.827-3.307	21,0-84,0	.630	16	.110	0,05	337	514 014	–	–
.394-.472	10-12	.315*	8*	2.047-3.622	52,0-92,0	.748	19	.154	0,07	101	514 015	20	514 016
.236-.315	6-8	.197*	5*	.492-2.559	12,5-65,0	.984	25	.044	0,02	337	514 013	–	–
.315-.394	8-10	.276*	7*	.827-3.307	21,0-84,0	.984	25	.110	0,05	337	514 014	–	–
.394-.472	10-12	.315*	8*	.866-3.622	22,0-92,0	.984	25	.154	0,07	101	514 015	20	514 016
.472-.551	12-14	.394*	10*	2.008-4.528	51,0-115,0	.984	25	.287	0,13	101	514 017	20	514 018
.551-.630	14-16	.472*	12*	2.677-5.197	68,0-132,0	1.181	30	.485	0,22	101	514 019	20	514 020
.630-.709	16-18	.551	14	3.031-4.409	77,0-112,0	1.181	30	.573	0,26	101	514 021	20	514 022
.630-.709	16-18	.551	14	4.409-5.787	112,0-147,0	1.181	30	.827	0,33	101	514 023	20	514 024
.709-.787	18-20	.551	14	3.031-4.409	77,0-112,0	1.181	30	.573	0,26	101	514 025	20	514 026
.709-.787	18-20	.551	14	4.409-5.787	112,0-147,0	1.181	30	.827	0,33	101	514 027	20	514 028

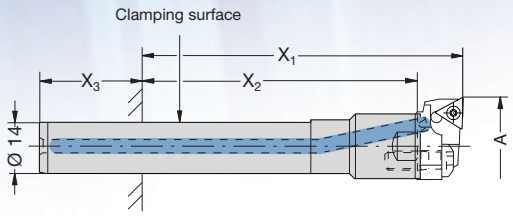
* Fixture through reducing sleeves

Smaller Diameter Tools for VARIO BORE
Compatible with MINI DIGI

Serrated Tool Bodies Ø .787" – 1.339" (Ø 20 – 34mm)

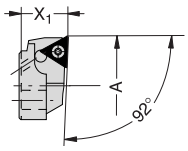
In Carbide

In Tool Steel



Serrated Tool Bodies	Boring Range		Dimensions								Order No.
	A		X_1		X_2		$X_{3\ min}$		weight		
	in	mm	in	mm	in	mm	in	mm	lbs	kg	
In Tool Steel	.787-1.339	20-34	1.929-3.307	49-84	1.457-2.835	37-72	1.181	30	.287	0,13	514 029
In Carbide	.787-1.339	20-34	3.031-4.409	77-112	2.559-3.937	65-100	1.181	30	.551	0,25	514 030
	.787-1.339	20-34	4.409-5.787	112-147	3.937-5.315	100-135	1.181	30	.728	0,33	514 031

Insert Holders with 92° Approach Angle
Ø .787" – 1.339" (Ø 20 – 34mm)

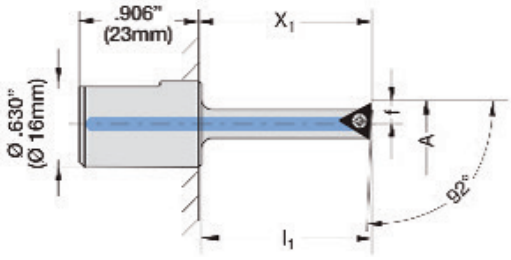


Boring Range				Dimensions						Insert Form		Insert Form	
A_{opt}		A_{max}		X_1		f		weight			Order No.		Order No.
in	mm	in	mm	in	mm	in	mm	lbs	kg				
.787-.866	20-22	(.787-.945)	(20-24)	.472	12	.386	9,8	.022	0,01	101	502 052	20	502 046
.866-.945	22-24	(.866-1.024)	(22-26)	.472	12	.425	10,8	.022	0,01	101	502 053	20	502 047
.945-1.024	24-26	(.945-.1.102)	(24-28)	.472	12	.465	11,8	.022	0,01	101	502 054	20	502 048
1.024-1.102	26-28	(1.024-1.181)	(26-30)	.472	12	.504	12,8	.022	0,01	101	502 055	20	502 049
1.102-1.181	28-30	(1.102-1.260)	(28-32)	.472	12	.543	13,8	.022	0,01	101	502 056	20	502 050
1.181-1.260	30-32	(1.181-1.339)	(30-34)	.472	12	.583	14,8	.022	0,01	101	502 057	20	502 051

A_{opt} = Optimized balanced for highest revolutions
A_{max} = Maximum approved range of application

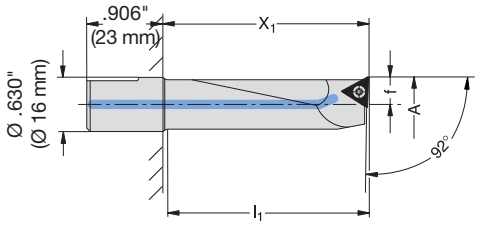
Small/Mid-Range Boring Tools for VARIO BORE
Compatible with ***019 Head***

Tool Holders in Heavy Metal, with
92° Lead Angle for Greater Boring Depths
Ø .236" – .394" (Ø 6 – 10mm)



Boring Range		Dimensions								Insert Form	
A		X_1		l_1		f		weight			
in	mm	in	mm	in	mm	in	mm	lbs	kg		
.236-.315	6-8	1.260	32	1.142	29	.110	2,8	.176	0,08	211	081 055
.315-.394	8-10	1.772	45	1.654	42	.150	3,8	.198	0,09	211	218 072

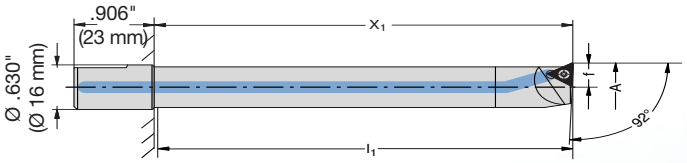
Tool Holders in Tool Steel with 92° Lead Angle
Ø .236” – 1.26” (Ø 6 – 27mm)



Boring Range				Dimensions								Insert Form		Insert Form	
A_{opt}		A_{max}		X_1		l_1		f		weight			Order No.		Order No.
in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg				
.236-.315	6-8	(.236-.512)	(6-13)	.866	22	.748	19	.110	2,8	.07	0,03	–	–	211	081 053
.315-.394	8-10	(.315-.591)	(8-15)	1.181	30	1.063	27	.150	3,8	.09	0,04	210	081 054	211	218 071
.394-.472	10-12	(.394-.669)	(10-17)	1.772	45	1.654	42	.189	4,8	.11	0,05	–	–	20	081 044
.394-.472	10-12	(.394-.669)	(10-17)	.984	25	.866	22	.189	4,8	.09	0,04	101	218 047	20	218 058
.394-.472	10-12	(.394-.669)	(10-17)	1.378	35	1.260	32	.189	4,8	.11	0,05	101	218 048	20	218 059
.472-.551	12-14	(.472-.748)	(12-19)	1.181	30	1.063	27	.228	5,8	.11	0,05	101	218 012	20	218 014
.472-.551	12-14	(.472-.748)	(12-19)	1.772	45	1.654	42	.228	5,8	.13	0,06	101	218 049	20	218 060
.551-.630	14-16	(.551-.827)	(14-21)	1.378	35	1.260	32	.268	6,8	.13	0,06	101	218 050	20	218 061
.551-.630	14-16	(.551-.827)	(14-21)	1.969	50	1.850	47	.268	6,8	.18	0,08	101	218 051	20	218 062
.591-.669	15-17	(.591-.866)	(15-22)	1.457	37	1.339	34	.291	7,4	.13	0,06	–	–	20	081 048
.591-.669	15-17	(.591-.866)	(15-22)	2.362	60	2.244	57	.291	7,4	.18	0,08	101	081 041	20	081 045
.630-.709	16-18	(.630-.906)	(16-23)	1.575	40	1.457	37	.307	7,8	.18	0,08	101	218 052	20	218 063
.630-.709	16-18	(.630-.906)	(16-23)	2.362	60	2.244	57	.307	7,8	.20	0,09	101	218 053	20	218 064
.787-.866	20-22	(.787-1.063)	(20-27)	1.457	37	1.299	33	.386	9,8	.15	0,07	–	–	20	081 049
.787-.866	20-22	(.787-1.063)	(20-27)	2.756	70	2.480	63	.386	9,8	.24	0,11	101	081 042	20	081 046
.984-1.063	25-27	(.984-1.260)	(25-32)	1.457	37	1.299	33	.484	12,3	.15	0,07	–	–	20	081 050
.984-1.063	25-27	(.984-1.260)	(25-32)	2.756	70	2.638	67	.484	12,3	.24	0,11	101	081 043	20	081 047

Other tool holders on request
A_{opt} = Optimized balanced for highest revolutions
A_{max} = Maximum approved range of application

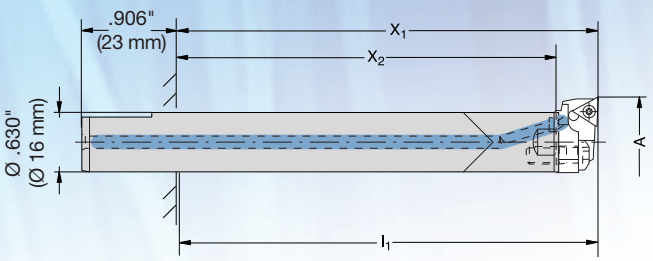
Tool Holders in Carbide, with
92° Lead Angle for Greater Boring Depths
Ø .394” – .787” (Ø 10 – 20mm)



Boring Range		Dimensions								Insert Form		Insert Form	
A		X_1		l_1		f		weight			Order No.		Order No.
in	mm	in	mm	in	mm	in	mm	lbs	kg				
.394-.472	10-12	2.165	55	2.047	52	.189	4,8	.154	0,07	101	218 042	20	218 037
.394-.472	10-12	2.953	75	2.835	72	.189	4,8	.198	0,09	101	218 032	20	218 029
.472-.551	12-14	2.756	70	2.638	67	.228	5,8	.220	0,10	101	218 043	20	218 038
.472-.551	12-14	3.543	90	3.425	87	.228	5,8	.331	0,15	101	218 033	20	218 030
.551-.630	14-16	2.953	75	2.835	72	.268	6,8	.353	0,16	101	218 044	20	218 039
.551-.630	14-16	3.937	100	3.819	97	.268	6,8	.441	0,20	101	218 045	20	218 040
.630-.787	16-20	3.543	90	3.425	87	.307	7,8	.573	0,26	101	218 046	20	218 041
.630-.787	16-20	4.724	120	4.606	117	.307	7,8	.728	0,33	101	218 034	20	218 031

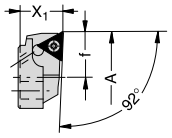
Small/Mid-Range Boring Tools for VARIO BORE
Compatible with ***019 Head***

Serrated Tool Body, Carbide
Ø .787” – 1.260” (Ø 20 – 32mm)



Boring Range		Dimensions								Order No.
A		X_1		X_2		l_1		weight		
in	mm	in	mm	in	mm	in	mm	lbs	kg	
.787-1.260	20-32	4.724	120	4.252	108	4.606	117	.882	0,4	236 091

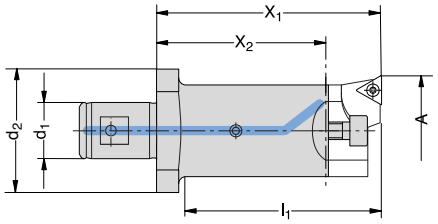
Insert Holder with 92° Lead Angle



Boring Range				Dimensions						Insert Form		Insert Form	
A_{opt}		A_{max}		X_1		f		weight			Order No.		Order No.
in	mm	in	mm	in	mm	in	mm	lbs	kg				
.787-.866	20-22	(.787-.945)	(20-24)	.472	12	.386	9,8	.022	0,01	101	502 052	20	502 046
.866-.945	22-24	(.866-1.024)	(22-26)	.472	12	.425	10,8	.022	0,01	101	502 053	20	502 047
.945-1.024	24-26	(.945-.1.102)	(24-28)	.472	12	.465	11,8	.022	0,01	101	502 054	20	502 048
1.024-1.102	26-28	(1.024-1.181)	(26-30)	.472	12	.504	12,8	.022	0,01	101	502 055	20	502 049
1.102-1.181	28-30	(1.102-1.260)	(28-32)	.472	12	.543	13,8	.022	0,01	101	502 056	20	502 050
1.181-1.260	30-32	(1.181-1.339)	(30-34)	.472	12	.583	14,8	.022	0,01	101	502 057	20	502 051

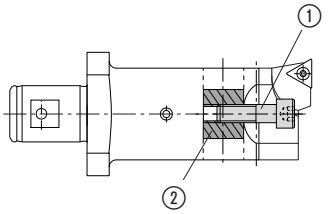
A_{opt} = Optimized balanced for highest revolutions
A_{max} = Maximum approved range of application

Serrated Tool Bodies
Ø 1.142” – 2.087” (Ø 29 – 53mm)



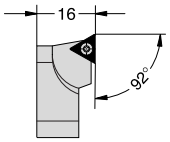
Connection				Boring Range		Dimensions								Order No.
d_1		d_2		A		X_1		X_2		l_1		weight		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg	
.630	16	1.379	35	1.142-2.087	29-53	2.520	64	1.890	48	2.205	56	.441	0,2	236 021
.630	16	1.379	35	1.142-2.087	29-53	3.937	100	3.307	84	3.622	92	.661	0,3	236 031

Cap Screw ①	Hex Size	Clamping Piece ②
Order No.	mm	Order No.
027 154	s4	145 184

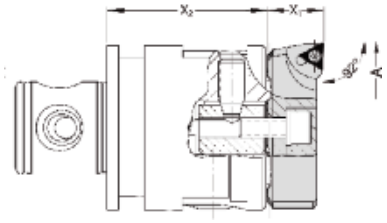


Insert Holders with 92° Lead Angle

Turning Range A		Weight		Insert Form	Order No.
in	mm	lbs	kg		
1.142-1.614	29-41	.088	0,04	20	236 022
1.142-1.614	29-41	.088	0,04	101	236 023
1.575-2.087	40-53	.132	0,06	20	236 024
1.575-2.087	40-53	.132	0,06	101	236 025



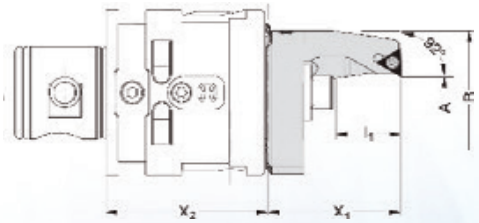
Insert Holders with 92° Lead Angle Ø 2.559” – 4.016” (Ø 65 – 102mm)



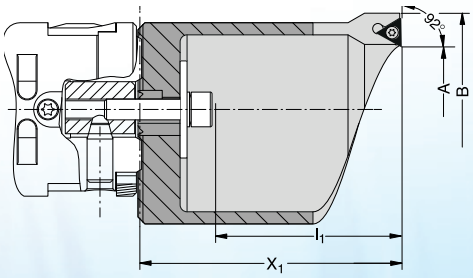
Boring Range A		Dimensions X_1		X_2		weight		Insert Form	Order No.
in	mm	in	mm	in	mm	lbs	kg		
2.559-3.031	65-77	2.598	66	1.949	49,5	.132	0,06	20	236 026
2.559-3.031	65-77	2.598	66	1.949	49,5	.132	0.06	101	236 027
2.992-4.016	76-102	2.598	66	1.949	49,5	.220	0,10	20	236 028
2.992-4.016	76-102	2.598	66	1.949	49,5	.220	0,10	101	236 029

Insert Holders for Outside Turning with 92° Lead Angle Ø .157” – 2.598” (Ø 4 – 66mm)

Type A



Type B



With through-the-tool coolant

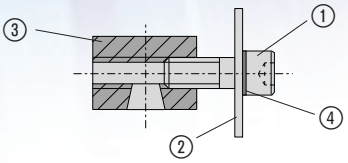
Turning Range A		Dimensions X_1		X_2		l_1		B		weight		Type	Insert Form*	Order No.
in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg			
.157-.689	4-17,5	3.543	90	1.949	49,5	.787	20	1.772	45,0	.220	0,1	A	20	236 081
.650-1.181	16,5-30	3.937	100	1.949	49,5	1.181	30	2.067	52,5	.220	0,1	A	20	236 082
1.142-1.732	29-44	4.921	125	1.949	49,5	2.126	54	2.482	63,5	.661	0,3	B	20	236 083
1.693-2.598	43-66	5.905	150	1.949	49,5	3.110	79	3.366	85,5	.882	0,4	B	20	236 084

* Clockwise and neutral execution

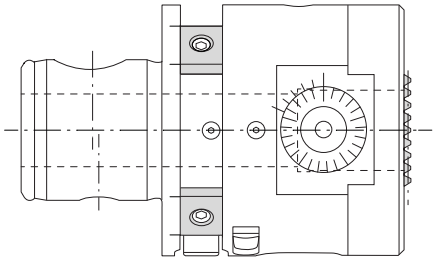
Small/Mid-Range Boring Tools for VARIO BORE
Compatible with ***019 Head***

Clamping Elements for Insert Holders

Boring Range A		Cap Screw ① Order No.	Hex Size	Washer ② Order No.	Clamping Piece ③ Order No.	Locking Washer ④ Order No.	Order No Compl.
in	mm		mm				
.157-1.181	4-30	070 153	s5	315 155	236 120	215 254	236 088
1.142-2.598	29-66	070 153	s5	315 156	236 120	215 254	236 089
2.047-4.016	52-102	115 147	s5	115 725	236 120	–	236 020



Balance Compensation

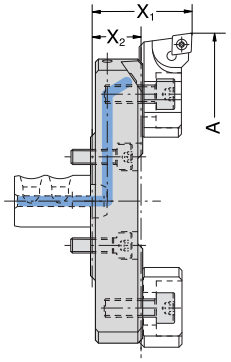


Insert Holding Body		
Nominal Size	Key Size / Type	Order No.
M8 x 8	1,2 x 6,5 / K	536 005

Larger Diameter Boring Tools for VARIO BORE
Compatible with DIGI BORE

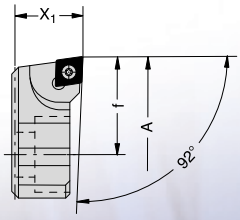
Serrated Slides
Ø 2.677" – 5.984" (Ø 68 – 152mm)

Boring Range A		Dimensions ALU LINE X_2		X_1		weight		Order No.
in	mm	in	mm	in	mm	lbs	kg	
2.677-3.780	68-96	.630	16	1.280	32,5	.220	0,10	501 054
3.780-4.881	96-124	.630	16	1.280	32,5	.220	0.10	501 055
4.881-5.984	124-152	.630	16	1.280	32,5	.441	0,20	501 056



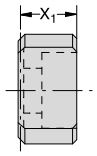
Insert Holder with 92° Lead Angle

Boring Range A		Dimensions X_1		f		weight		Insert Form	Order No.
in	mm	in	mm	in	mm	lbs	kg		
2.677-8.189	68-208	.650	16,5	.776	19,7	.110	0,05	101	502 064
2.677-8.189	68-208	.650	16,5	.776	19,7	.110	0.05	20	502 069



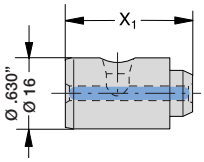
Counter Weight

Dimensions				Order No.
X_1		weight		
in	mm	lbs	kg	
.528	13,4	.110	0,05	502 165

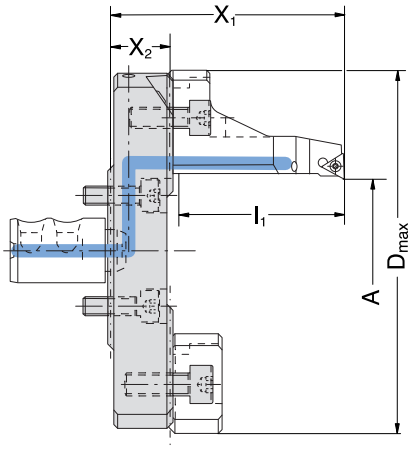


Coolant Delivery Section

Dimensions ALU LINE				Order No.
X_1		weight		
in	mm	lbs	kg	
1.004	25,5	.022	0,01	450 137



Outside Turning Tools for VARIO BORE
Compatible with the DIGI BORE *Head*



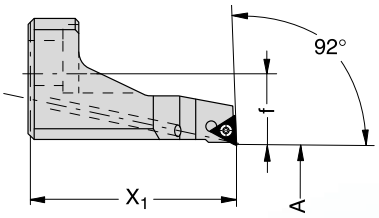
Outside Turning Ø .079" – 2.283" (Ø 2 – 58mm): Serrated Slides

Outside Turning Range		Dimensions ALU LINE								Interfering Ø		Order No.
A		X_2		X_1		l_1		weight		D_{max}		
in	mm	in	mm	in	mm	in	mm	lbs	kg	in	mm	
.079-1.181	2-30	.630	16	2.874	73	2.165	55	.220	0,10	3.976	101	501 055
1.181-2.283	30-58	.630	16	2.874	73	2.165	55	.441	0,20	5.079	129	501 056

Insert Holder Outside Turning

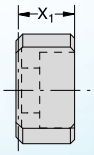
Outside Turning Range		Dimensions						Insert Form*	Order No.
A		X_1		f		weight			
in	mm	in	mm	in	mm	lbs	kg		
.079-4.488	2-114	2.244	57,0	.776	19,7	.331	0,15	20	502 082

* Clockwise and neutral execution



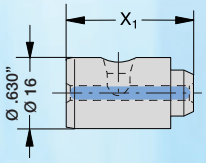
Counter Weight

Dimensions				Order No.
X_1		weight		
in	mm	lbs	kg	
.945	24,0	.331	0,15	502 183



Coolant Delivery Section

Dimensions ALU LINE				Order No.
X_1		weight		
in	mm	lbs	kg	
1.004	25,5	.022	0,01	450 137



...a history of

Continuous Innovation since 1929...

when Wohlhaupter began as a small tool making shop near Stuttgart, Germany

1937 - Facing & Boring Heads
UPA Heads were the first of their type of tool to be manufactured. They continue to be manufactured to this day for use in shops around the world.

In **1989** the APD Head was developed for use on CNC machining centers. It is also capable of back facing and grooving.

1973 - Modular Boring System
MultiBore was the first precision, boring system. It includes adaptors to fit every machine tool, intermediate modules, and many types of boring tools. All feature the precise MVS system connection.

1985 - Vernier Style Boring Heads
The 019 Head was introduced offering a finish boring range of 0.118" to 4.016" with a setting accuracy of .0001" on diameter.

In **2014** the PrimeBore Head was released at IMTS. It offers a range of .118" to 8.189", a setting accuracy of .0001", and a .177" radial stroke adjustment.

1993 - Balance Tools
The first boring tools featuring an automatic, internal balancing mechanism that compensates for imbalance resulting from diameter adjustments.

In **2010** digital readouts were incorporated in these tools & the boring range expanded to 1.968" - 8.071".

1998 - AluLine Tool Bodies
Since their introduction, these bodies have been incorporated in many MultiBore tools. They reduce the stress on spindles by reducing weight by up to 50%.

2001 - CombiLine Tools
These tools have two insert holders, one axially fixed and one radially adjustable. This offset offers what amounts to two cutting passes in one.

In **2004** the boring range of these tools was expanded to include bores from .965" to 128.15".

2003 - Digital Heads with DRO Scales
The world's first digital boring head incorporating DRO technology. They combine direct traverse measurement with digital technology... bringing a new level of precision to boring. They offer a boring range of .118" to 8.189" with .0001" adjustments on diameter.

In **2012** MiniDigi heads were released. Thay are smaller versions of the DigiBore Head and are able to produce smaller bores ranging from .015" to 1.339" at speeds up to 40,000 rpm.

In **2004** AluLine bodies and serrated slides were introduced for large diameter boring tools up to 128.15".

2009 - Digital Casettes
They were the first of their kind. The cassettes were designed for use on larger diameter boring tools up to 128.15" that incorporate serrated bodies and slides.

2014 - Dual System Connections
This unique, dual connection is compatible with both MVS and CK type tool systems. Digital & Vernier style heads plus reducers and extensions are offered with this connection.

WOHLHAUPTER
FOR BORING PAIN RELIEF

10542 Success Lane, Centerville, Ohio 45458 • Phone: 937/885-1878, Fax: 937/885-9613 • E-mail: mr@wohlhaupter.com • Internet: www.wohlhaupterus.com