Rough Boring Heads

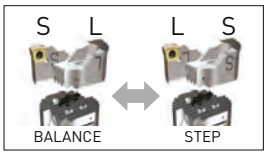
B.1

MW Rough Boring Head

Small and powerful rough boring head: The MW comes with cylindrical shank and permits extremely fast roughing of small holes.
Ø 16 - 21 mm

SW Rough Boring Head

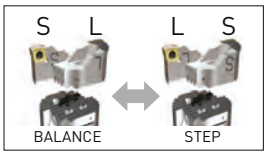
Super-versatile rough boring head for highest cutting performance: Thanks to its clever design, the SW can be used for stepped and balances roughing by simply switching the insert holders. Various accessories are available for chamfering, back boring and face grooving.
Ø 20 - 203 mm, CKB1-CKB7 and CKN6-CKN7



B.1

SW-AL Rough Boring Head

The fastest solution for deep roughing: SW-AL, built of high quality aluminum, fits perfectly on CKN components. Long tool combinations are therefore up to 50% lighter than similar tools built of steel which enhances the productivity drastically.
Ø 68 - 203 mm, CKN6-CKN7



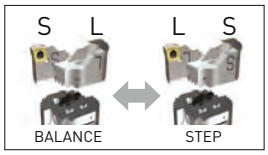
SW Smart Damper Rough Boring Head

The solution for vibration-free rough boring. Its built-in patented Smart Damper technology is located close to the cutting edge and lifts the performance of rough boring on a new level.
Ø 41 - 100 mm, CKB4-CKB6

The Rough Boring Head TWN series will be removed from the BIG KAISER product range as of December 31, 2022.

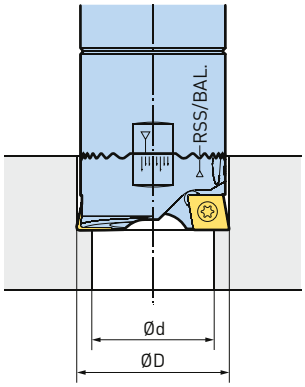
The current articles will continue to be available until the end of the year.

Application Examples for SW



Rough Boring Balance

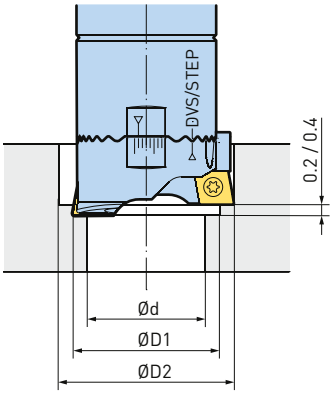
Insert Holders: Type CC/SP/SC
Ø 20 - 203 mm
High feed rates



Application Examples for SW

Rough Boring Step

Insert Holders: Type CC
Ø 20 - 203 mm
Double stock removal, half the feed rate

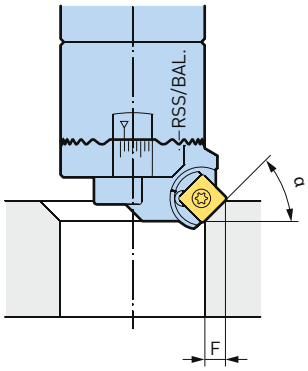


Application Examples for SW

B.1

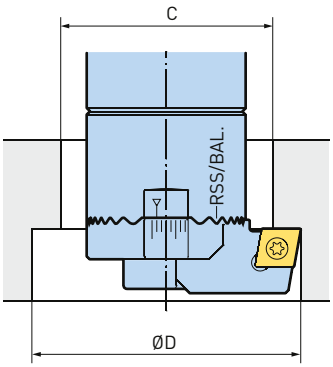
Chamfering

Ø 30 - 210 mm
Adjustable chamfer angle 15° - 75°



Back Boring

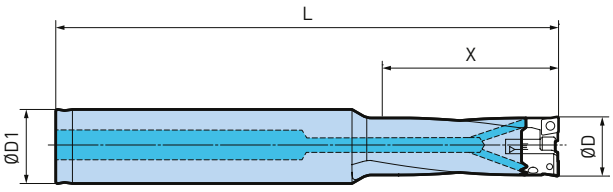
Ø 44 - 211 mm
Lead angle 90°



MW Rough Boring Heads, Ø 16 - 21

The MW rough boring heads permit extremely fast roughing of small holes (Ø 16-21 mm).

Coolant Through Hole



Rough Boring
Blind holes

Rough Boring
Through holes

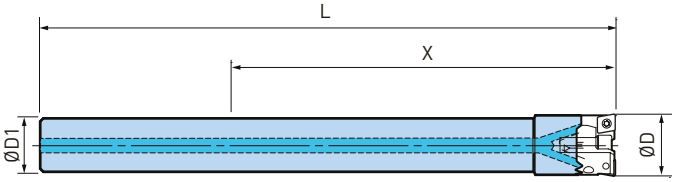
Model	Order No.	ØD	ØD1	L	X
ST20-MW1619-45	**807.540**	16 - 19	20	136	45
ST20-MW1619-60	**472.051**	16 - 19	20	150	60
ST20-MW1821-50	**807.541**	18 - 21	20	141	50
ST20-MW1821-65	**472.061**	18 - 21	20	155	65

1. Insert holder is to be ordered separately.

MW Rough Boring Heads, Ø 16 - 21 Carbide

Coolant Through Hole

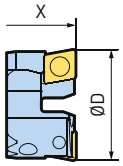
B.1



Model	Order No.	ØD	ØD1	L	X
ST14W-MW16-110	**807.552**	16 - 19	14	151	110
ST16W-MW18-115	**807.553**	18 - 21	16	172	115

1. Insert holder is to be ordered separately.
2. Exclusive use for through holes. Do not use with blind holes.

Insert Holders MW



Accessories & Spare Parts

Insert Holders MW	Inserts MW
	
▶ 382	▶ 475

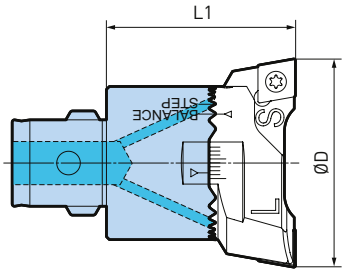
Model	Order No.	ØD	X	Insert
MW1619E	**472.052**	68 - 90	64	MW 04
MW1821E	**472.062**	88 - 110	72	MW 04

1. Consisting of two insert holders, clamping screws and wrench.
2. Inserts are to be ordered separately.

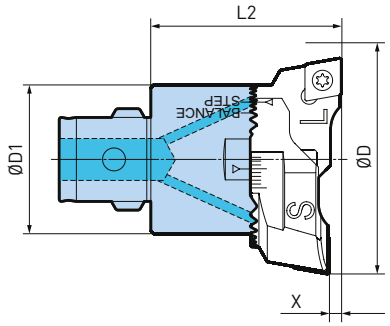
SW Rough Boring Heads, Ø 20 - 203

The short and compact design of the components combined with a positive and friction locked connection between the tool body and insert holders provide maximum rigidity and highest cutting performance.

Coolant Through Hole



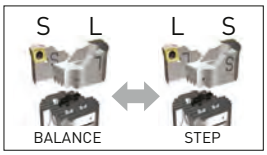
RSS: Balance Cut



DVS: Step Cut

Model	Order No.	CK	ØD	ØD1	L1	L2	X
SW20-31CKB1	**319.101**	CKB1	20 - 31	19	32.5	32.6	0.2
SW25-40CKB2	**319.201**	CKB2	25 - 40	24	35.5	35.6	0.2
SW32-51CKB3	**319.301**	CKB3	32 - 51	31	40	40.1	0.2
SW41-66CKB4	**319.401**	CKB4	41 - 66	39	47	47.2	0.4
SW53-86CKB5	**319.501**	CKB5	53 - 86	50	57	57.2	0.4
SW68-110CKB6	**319.601**	CKB6	68 - 110	63.5	71	71.2	0.4
SW68-110CKN6	**319.601N**	CKN6	68 - 110	63.5	71	71.2	0.4
SW98-153CKN6	**319.602N**	CKN6	98 - 153	90	71	71.2	0.4
SW98-153CKB6	**319.602**	CKB6	98 - 153	90	71	71.2	0.4
SW148-203CKB6	**319.603**	CKB6	148 - 203	140	71	71.2	0.4
SW148-203CKN6	**319.603N**	CKN6	148 - 203	140	71	71.2	0.4
SW148-203CKB7	**319.703**	CKB7	148 - 203	140	117	117.2	0.4
SW148-203CKN7	**319.703N**	CKN7	148 - 203	140	117	117.2	0.4
SW98-153CKB7-87	**319.701**	CKB7	98 - 153	90	87	87.2	0.4
SW98-153CKN7-87	**319.701N**	CKN7	98 - 153	90	87	87.2	0.4
SW98-153CKB7-117	**319.702**	CKB7	98 - 153	90	117	117.2	0.4
SW98-153CKN7-117	**319.702N**	CKN7	98 - 153	90	117	117.2	0.4

1. X = difference length of insert holders for DVS step rough boring
2. For information on CKN and CKB connections, kindly see next page



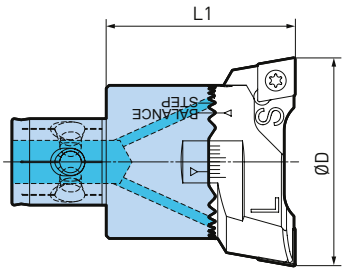
Accessories & Spare Parts

Insert Holders Type CC	Insert Holders Type SC/SP	Insert Holders Type WC	Insert Holders Chamfering for SW	Insert Holders Back Boring for SW
				
▶ 387	▶ 388	▶ 389	▶ 390	▶ 391

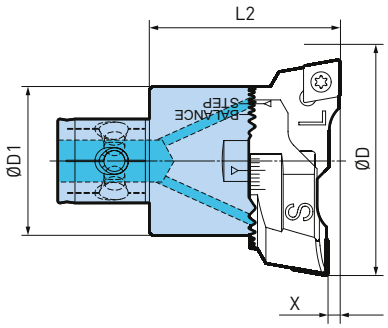
SW-AL Rough Boring Heads, Ø 68 - 203

Tool body made of high strength aluminium with CKN connection.

Coolant Through Hole



RSS: Balance Cut

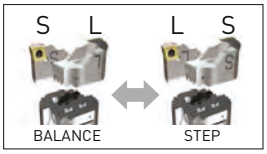


DVS: Step Cut

Model	Order No.	CK	ØD	ØD1	L1	L2	X
SW68-110CKN6AL	**319.604N**	CKN6	68 - 110	63.5	71	71.2	0.4
SW98-153CKN6AL	**319.605N**	CKN6	98 - 153	90	71	71.2	0.4
SW148-203CKN6AL	**319.607N**	CKN6	148 - 203	140	71	71.2	0.4
SW148-203CKN7-AL	**319.707N**	CKN7	148 - 203	140	117	117.2	0.4
SW98-153CKN7-87AL	**319.705N**	CKN7	98 - 153	90	87	87.2	0.4
SW98-153CKN7-117AL	**319.706N**	CKN7	98 - 153	90	117	117.2	0.4

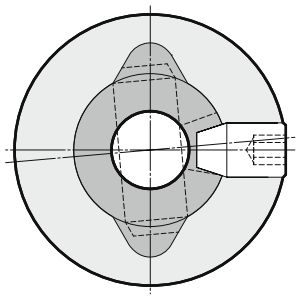
1. X = difference length of insert holders for DVS step rough boring

Exclusively made to fit on CKN components

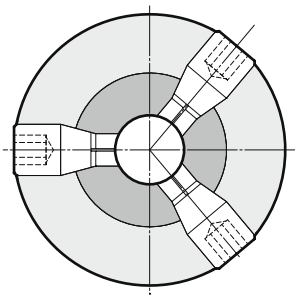


Difference CKB and CKN Connection

CKB: The most common CK connection with single clamping CK srew. Ideal for simple, efficient operations.



CKN: The most powerful CK connection with triple clamping CK screw. Ideal for long tool combinations and challenging operations. High interchange accuracy, less than 0.002 mm radial change error, is guaranteed.



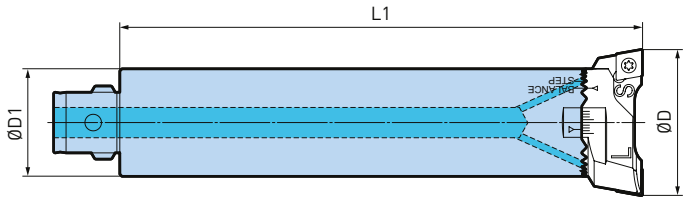
Accessories & Spare Parts

Insert Holders Type CC	Insert Holders Type SC/SP	Insert Holders Type WC	Insert Holders Chamfering for SW	Insert Holders Back Boring for SW
				
▶ 387	▶ 388	▶ 389	▶ 390	▶ 391

SW Smart Damper Rough Boring Heads, Ø 41 - 100

The boring head with dynamic damping unit reduces chatter.

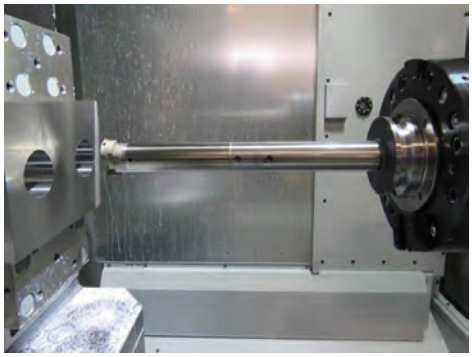
Coolant Through Hole



Model	Order No.	CK	ØD	ØD1	L1
CKB4-SW41DP-190	**806.921**	CKB4	41 - 66	39	190
CKB5-SW53DP-220	**806.922**	CKB5	53 - 86	50	220
CKB6-SW68DP-245	**806.923**	CKB6	68 - 110	64	245
CKB6-SW98DP-260	**100042.001.0**	CKB6	98 - 153	64	260
CKB6-SW148DP-260	**100042.002.0**	CKB6	148 - 203	64	260
CKB7-SW98DP-260	**100042.003.0**	CKB7	98 - 153	90	260
CKB7-SW148DP-260	**100042.004.0**	CKB7	148 - 203	90	260

B.1

Application Exemple



Horizontal Machine	
Smart Damper	SW41-66CKB4-200DP
Holder	BBT50-CKB4-178
Cutting Speed	200 m/min
D.O.C	Ø 4 mm
Feed	0.35 mm/rev
Coolant	Emulsion
Material	C55

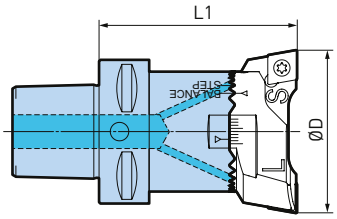
Accessories & Spare Parts

Insert Holders Type CC	Insert Holders Type SC/SP
	
▶ 387	▶ 388

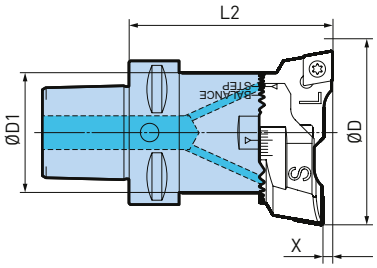
SW BIG CAPTO Rough Boring Heads, Ø 25 - 203

BIG CAPTO monobloc execution provide highest rigidity.

Coolant Through Hole



RSS: Balance Cut



DVS: Step Cut

Model	Order No.	BIG CAPTO	ØD	ØD1	L1	L2	X
SW25-40C3	**472.201**	C3	25 - 40	24	80	80.1	0.2
SW32-51C3	**472.301**	C3	32 - 51	31	55	55.1	0.2
SW41-66C4	**472.401**	C4	41 - 66	39	67	67.2	0.4
SW53-86C5	**472.501**	C5	53 - 86	50	77	77.2	0.4
SW68-110C6	**472.601**	C6	68 - 110	63.5	92	92.2	0.4
SW98-153C6 *	**472.602**	C6	98 - 153	90	92.4	92.6	0.4
SW98-153C8	**472.701**	C8	98 - 153	90	117	117.2	0.4
SW148-203C8	**472.703**	C8	148 - 203	140	117	117.2	0.4

B.1

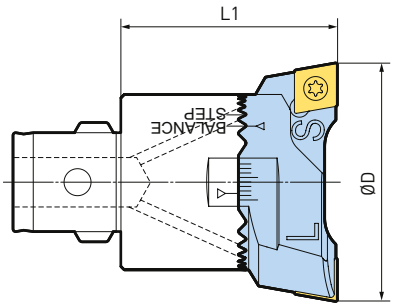
1. X = difference length of insert holders for DVS step rough boring
2. * Only on request, not available from stock.

Accessories & Spare Parts

Insert Holders Type CC	Insert Holders Type SC/SP	Insert Holders Type WC	Insert Holders Chamfering for SW	Insert Holders Back Boring for SW
				
▶ 387	▶ 388	▶ 389	▶ 390	▶ 391

Insert Holders Type CC

Standard insert holders for CC- type inserts with 90° lead angle.
Suitable for balanced cut amd Stepped Cut for through and blind holes.



Model	Order No.	Head	ØD	L1	Insert Holder S	Insert Holder L	Insert
IH1SW20C	**639.413**	SW20	20 - 26	32.5	639.411	639.412	CC 06
IH2SW20C	**639.417**	SW20	25 - 31	32.5	639.415	639.416	CC 06
IH1SW25C	**639.423**	SW25	25 - 33	35.5	639.421	639.422	CC 06
IH2SW25C	**639.427**	SW25	32 - 40	35.5	639.425	639.426	CC 06
IH1SW32C	**639.433**	SW32	32 - 42	40	639.431	639.432	CC 09
IH2SW32C	**639.437**	SW32	41 - 51	40	639.435	639.436	CC 09
IH1SW41C	**639.443**	SW41	41 - 54	47	639.441	639.442	CC 09
IH2SW41C	**639.447**	SW41	53 - 66	47	639.445	639.446	CC 09
IH1SW53C	**639.453**	SW53	53 - 70	57	639.451	639.452	CC 12
IH2SW53C	**639.457**	SW53	69 - 86	57	639.455	639.456	CC 12
IH1SW68C	**639.463**	SW68	68 - 90	71	639.461	639.462	CC 12
IH1SW68C16	**639.563**	SW68	68 - 90	71	639.561	639.562	CC 16
IH2SW68C	**639.467**	SW68	88 - 110	71	639.465	639.466	CC 12
IH2SW68C16	**639.567**	SW68	88 - 110	71	639.565	639.566	CC 16
IH1SW98C	**639.473**	SW98	98 - 126	71 / 87 / 117 *	639.471	639.472	CC 12
IH1SW98C16	**639.573**	SW98	98 - 126	71 / 87 / 117 *	639.571	639.572	CC 16
IH2SW98C	**639.477**	SW98	125 - 153	71 / 87 / 117 *	639.475	639.476	CC 12
IH2SW98C16	**639.577**	SW98	125 - 153	71 / 87 / 117 *	639.575	639.576	CC 16
IH1SW148C	**639.483**	SW148	148 - 176	71 / 117 *	639.481	639.482	CC 12
IH1SW148C16	**639.583**	SW148	148 - 176	71 / 117 *	639.581	639.582	CC 16
IH2SW148C	**639.487**	SW148	175 - 203	71 / 117 *	639.485	639.486	CC 12
IH2SW148C16	**639.587**	SW148	175 - 203	71 / 117 *	639.585	639.586	CC 16

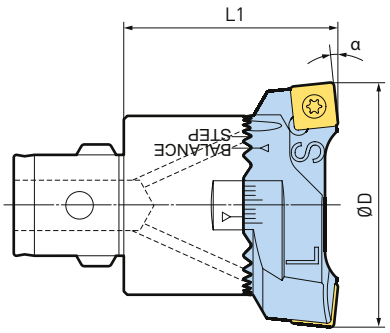
1. Consisting of two insert holders with different lengths, type S (short) and L (long).
2. The insert holders are also available by the piece as spare parts.
3. * L1 depends on the length of the boring head.

Accessories & Spare Parts

Insert Holders Short CC	Insert Holders Long CC	Inserts CC
		
▶ 501	▶ 501	▶ 475

Insert Holders Type SC/SP

Inserts inclined 6° Balance cut for trough hole. Only for rotationally-symmetrical application (Balance cut).



Model	Order No.	Head	ØD	L1	α	Insert Holder S	Insert Holder L	Insert
IH1SW20S	**639.113**	SW20	20 - 26	32.5	6°	639.111	639.112	SP 06
IH1SW25S	**639.123**	SW25	25 - 33	35.5	6°	639.121	639.122	SP 06
IH1SW32S	**639.133**	SW32	32 - 42	40	6°	639.131	639.132	SC 09
IH2SW32S	**639.137**	SW32	41 - 51	40	6°	639.135	639.136	SC 09
IH1SW41S	**639.143**	SW41	41 - 54	47	6°	639.141	639.142	SC 09
IH2W41S	**639.147**	SW41	53 - 66	47	6°	639.145	639.146	SC 09
IH1SW53S	**639.153**	SW53	53 - 70	57	6°	639.151	639.152	SC 12
IH2SW53S	**639.157**	SW53	69 - 86	57	6°	639.155	639.156	SC 12
IH1SW68S	**639.163**	SW68	68 - 90	71	6°	639.161	639.162	SC 12
IH2SW68S	**639.167**	SW68	88 - 110	71	6°	639.165	639.166	SC 12
IH1SW98S	**639.173**	SW98	98 - 126	71 / 87 / 117 *	6°	639.171	639.172	SC 12
IH2SW98S	**639.177**	SW98	125 - 153	71 / 87 / 117 *	6°	639.175	639.176	SC 12
IH1SW148S	**639.183**	SW148	148 - 176	71 / 117 *	6°	639.181	639.182	SC 12
IH2SW148S	**639.187**	SW148	175 - 203	71 / 117 *	6°	639.185	639.186	SC 12

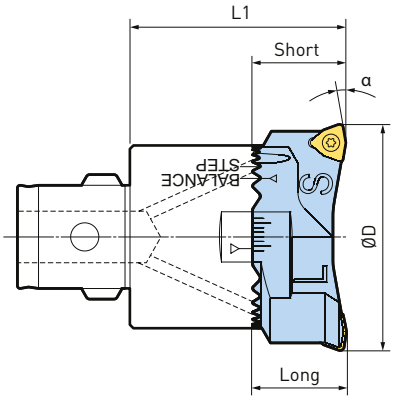
1. Consisting of two insert holders with different lengths, type S (short) and L (long).
2. The insert holders are also available by the piece as spare parts.
3. * L1 depends on the length of the boring head.

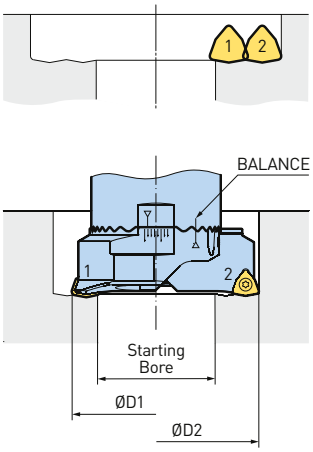
Accessories & Spare Parts

Insert Holders Short SC-SP	Insert Holders Long SC-SP	Inserts SC	Inserts SP
			
▶ 501	▶ 501	▶ 480	▶ 479

Insert Holders Type WC

Full profile roughing permits boring with balance cut for large stroke with allowances (30 mm and more in Ø) in a single operation with relatively low drive power.





Model	Order No.	Head	ØD	L1	α	Insert Holder S	Insert Holder L	Insert
IH1SW41W	**639.243**	SW41	49 - 62	47	10°	639.241	639.242	WC 04
IH1SW53W	**639.253**	SW53	59 - 76	57	10°	639.251	639.252	WC 05
IH2SW53W	**639.257**	SW53	69 - 86	57	10°	639.255	639.252	WC 05
IH1SW68W	**639.263**	SW68	73 - 95	71	10°	639.261	639.262	WC 06
IH2SW68W	**639.267**	SW68	90 - 112	71	10°	639.265	639.266	WC 06
IH1SW98W	**639.273**	SW98	106 - 134	71 / 87 / 117 *	10°	639.271	639.272	WC 06
IH2SW98W	**639.277**	SW98	131 - 159	71 / 87 / 117 *	10°	639.275	639.276	WC 06
IH1SW148W	**639.283**	SW148	156 - 184	71 / 117 *	10°	639.281	639.282	WC 06
IH2SW148W	**639.287**	SW148	191 - 209	71 / 117 *	10°	639.285	639.286	WC 06

1. Consisting of two insert holders with different lengths, type S (short) and L (long).
2. The insert holders are also available by the piece as spare parts.
3. * L1 depends on the length of the boring head.

B.1

For Boring Head	Insert Holder Order No.	Starting Bore Ø	ØD1	ØD2
SW41	**639.243**	35 - 37.9	49	51 - 62
		38 - 41	52	54 - 62
SW53	**639.253**	41 - 44.9	59	61 - 76
		45 - 50	63	65 - 76
	639.257	51 - 54.9	69	76 - 86
		55 - 60	73	81 - 86
SW68	**639.263**	50 - 55.9	73	75 - 93
		56 - 61.9	79	81 - 93
		62 - 67	85	87 - 93
	639.267	67 - 72.9	90	92 - 110
		73 - 78.9	96	98 - 110
		79 - 85	102	104 - 110

For Boring Head	Insert Holder Order No.	Starting Bore Ø	ØD1	ØD2
SW98	**639.273**	84 - 89.9	107	109 - 129
		90 - 95.9	113	115 - 133
		96 - 102.9	119	121 - 133
		103 - 109	126	128 - 133
	639.277	108 - 114.9	131	133 - 154
		115 - 121.9	138	140 - 159
		122 - 128.9	145	147 - 159
		129 - 135	152	154 - 159
SW148	**639.283**	134 - 139.9	157	159 - 179
		140 - 145.9	163	165 - 183
		146 - 152.9	169	171 - 183
		153 - 159	176	178 - 183
	639.287	158 - 164.9	181	183 - 204
		165 - 171.9	188	190 - 209
		172 - 178.9	195	197 - 209
		179 - 185	202	204 - 209

Accessories & Spare Parts

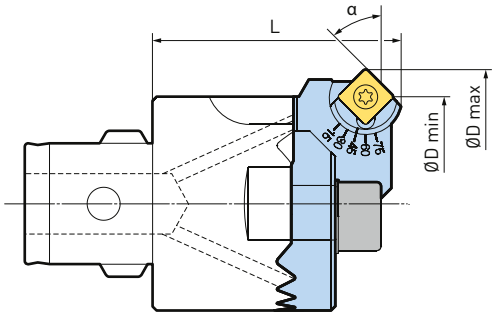
Insert Holders Short WC	Insert Holders Long WC	Inserts WC
		
▶ 501	▶ 501	▶ 470

Adjustment Instructions

- Mount the insert holders on mark «RSS/BALANCE»
- Set cutting edge 2 to the final bore diameter (ØD2)
- Set cutting edge 1 corresponding to the starting bore diameter, according to the table (column ØD1).

Insert Holders Chamfering for SW

These insert holders with step-less adjustable chamfer angle from 15° to 75° are made for front chamfering and, with limitations also for back chamfering, on the rough heads for roughing SW 41 to SW 148.



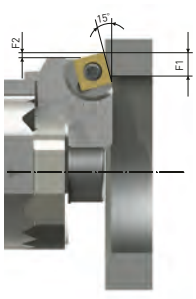
For Boring Head	Model	Order No.	Insert	Diameter Range ØD 15° min - max	30° min - max	45° min - max	60° min - max	75° min - max	L
SW41	IH1SW41CF	**639.104**	SC 09	33 - 60	36 - 62	39 - 63	43 - 63	45 - 62	51
SW53	IH1SW53CF	**639.105**		45 - 76	48 - 78	51 - 79	55 - 79	57 - 78	58
SW68	IH1SW68CF	**639.106**		61 - 97	64 - 99	67 - 100	71 - 100	73 - 99	68
SW98	IH1SW98CF	**639.107**	SC 12	77 - 126	81 - 128	86 - 129	90 - 128	94 - 127	73
	IH2SW98CF	**639.108**		104 - 153	108 - 155	113 - 156	117 - 155	121 - 154	
SW148	IH1SW148CF	**639.109**		131 - 180	135 - 182	140 - 183	144 - 182	148 - 181	73
	IH2SW148CF	**639.110**		158 - 207	162 - 209	167 - 210	171 - 209	175 - 208	
SW98	IH1SW98CF	**639.107**	SC 12	77 - 126	81 - 128	86 - 129	90 - 128	94 - 127	89 / 119
	IH2SW98CF	**639.108**		104 - 153	108 - 155	113 - 156	117 - 155	121 - 154	
SW148	IH1SW148CF	**639.109**		131 - 180	135 - 182	140 - 183	144 - 182	148 - 181	119
	IH2SW148CF	**639.110**		158 - 207	162 - 209	167 - 210	171 - 209	175 - 208	

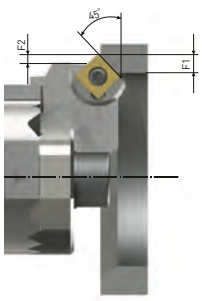
1. Consisting of two insert holders, clamping screws and wrench.
2. The insert holders are also available by the piece as spare parts.
3. Insert holders must be set for balance cut.
4. L in chart indicates max. tool length with 45° chamfer angle.

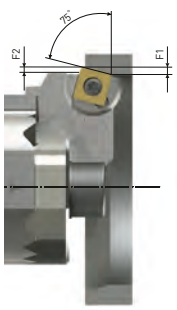
Max. radial chamfer length for front and back chamfering

Applicable for inserts with nose radius 0.4 mm

For Boring Head		Chamfer Angle 15° F1	15° F2	30° F1	30° F2	45° F1	45° F2	60° F1	60° F2	75° F1	75° F2
SW41	SC 09	7.7	0.7	6.9	1.4	5.7	1.8	4.0	1.7	2.1	1.2
SW53											
SW68											
SW98	SC 12	10.6	1.2	9.5	2.2	7.8	2.6	5.5	2.5	2.8	1.8
SW148											





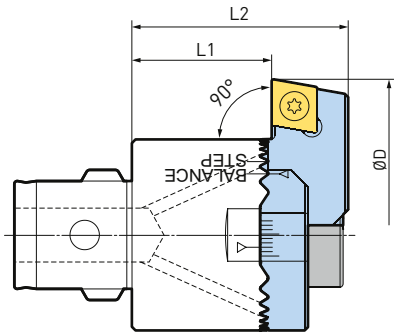


Accessories & Spare Parts

Insert holders for chamfering	Blind Piece SW
	
▶ 502	▶ 502

Insert Holders Back Boring for SW

These insert holders are made for back boring with the boring heads SW 32 to SW 148 and cover the diameter range from Ø 44 - 211 mm.
Insert holder with protection plate are available as set or as individual components.



Model	Order No.	Head	ØD	ØD1	L1	L2	B	Insert
IH1SW32CBB	**639.403**	SW32	44 - 54	31	24	38	ØD-17 / min. 31	CC 09
IH1SW41CBB	**639.404**	SW41	53 - 66	39	29	44	ØD-21 / min. 39	CC 09
IH1SW53CBB	**639.405**	SW53	65 - 82	50	34	55	ØD-28 / min. 50	CC 12
IH1SW68CBB	**639.406**	SW68	81 - 103	63.5	41	66	ØD-27 / min. 63.5	CC 12
IH1SW98CBB	**639.407**	SW98	102 - 130	90	38 / 47 / 77	69 / 78 / 108	90	CC 12
IH2SW98CBB	**639.408**	SW98	129 - 157	90	38 / 47 / 77	69 / 78 / 108	90	CC 12
IH1SW148CBB	**639.409**	SW148	156 - 184	140	38 / 77	69 / 108	140	CC 12
IH2SW148CBB	**639.410**	SW148	183 - 211	140	38 / 77	69 / 108	140	CC 12

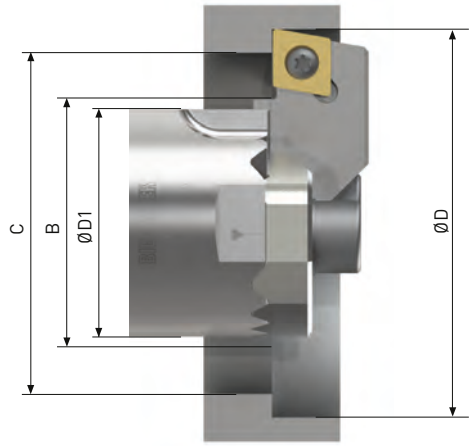
1. Consisting of two insert holders with back boring and protection piece.
2. The insert holders are also available by the piece as spare parts.
3. Insert holders must be set for balance cut.

B.1

Back boring

The back bore diameter «ØD» the diameter of the entry bore «C», the diameter of the interfering edge «B», respectively of the tool body «ØD1» are related to each other. In order to check the feasibility of the back boring operation and to select the best possible tool combination, these values can be calculated as follows:

Minimum entry bore diameter «C»:	$C = \frac{ØD + B}{2} + 0.5$
Max. diameter of the interfering edge «B»:	B = 2 (C - 0.5) -ØD
Clearance:	0.5 mm

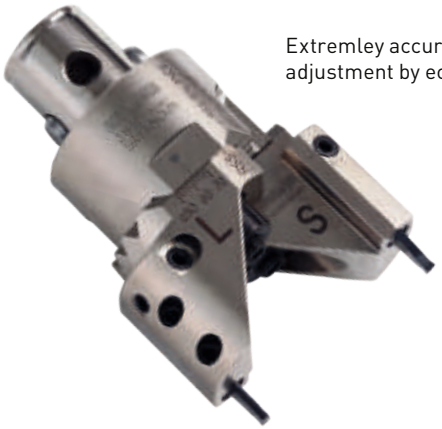


Accessories & Spare Parts

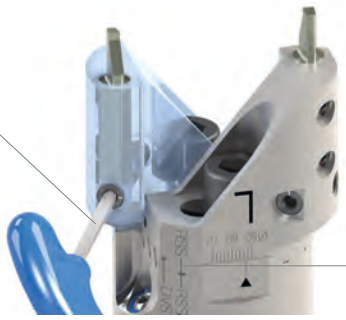
Insert Holders Back Boring for SW	Blind Piece SW	Inserts CC
		
▶ 502	▶ 502	▶ 475

Face Grooving Holders for SW Twin Cutter Set

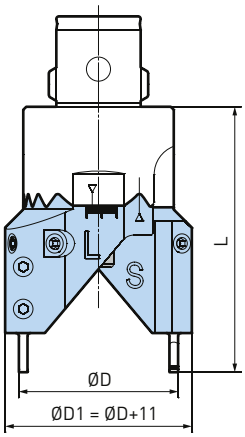
Upgrade your existing rough boring heads SW: the face grooving holder provide the possiblity to manufacture grooves in the diameter range from Ø 53 to 203 mm.

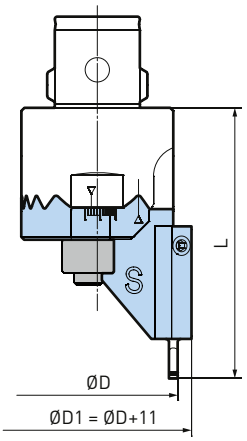


Extremley accurate tool length adjustment by eccentric bolt



Attention: Mount the face grooving holder on mark "RSS/ BALANCE"





B.1

Twin Head Type

Model	Order No.	Head	ØD	L
IH1SW53FG	**639.653**	SW53	53 - 70	88
IH1SW68FG	**639.663**	SW68	68 - 90	95
IH1SW98FG	**639.673**	SW98	98 - 126	113
IH2SW68FG	**639.667**	SW68	88 - 110	95
IH2SW98FG	**639.677**	SW98	125 - 153	113
IH1SW148FG	**639.683**	SW148	148 - 176	143
IH2SW148FG	**639.687**	SW148	175 - 203	143

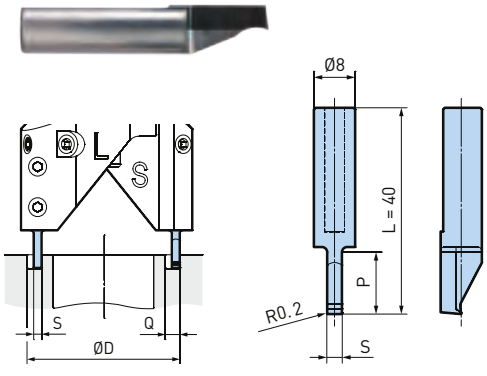
Single Head Type

Model	Order No.	Head	ØD	L
IH1SW53FGS	**639.654**	SW53	53 - 70	88
IH1SW68FGS	**639.664**	SW68	68 - 90	95
IH1SW98FGS	**639.674**	SW98	98 - 126	113
IH2SW68FGS	**639.668**	SW68	88 - 110	95
IH2SW98FGS	**639.678**	SW98	125 - 153	113
IH1SW148FGS	**639.684**	SW148	148 - 176	143
IH2SW148FGS	**639.688**	SW148	175 - 203	143

1. Inserts are to be ordered separately.
2. Consisting of two insert holders with different lengths, type S (short) and L (long).

Inserts for face grooves

For boring head SW 53 - 148, Series 318



Model	Order No.	P	S	Q	Cutting material / coating
SS2-ST8-40K40	**958.601**	12	2	3.5	K40
SS2-ST8-40K40C	**958.611**	12	2	3.5	K40C
SS3-ST8-40K40	**958.602**	12	3	5.5	K40
SS3-ST8-40K40C	**958.612**	12	3	5.5	K40C
SS4-ST8-40K40	**958.603**	12	4	7.5	K40
SS4-ST8-40K40C	**958.613**	12	4	7.5	K40C
SS5-ST8-40K40	**958.604**	12	5	9.5	K40
SS5-ST8-40K40C	**958.614**	12	5	9.5	K40C

1. Insert consisting of one piece.

Guidelines

Insert Selection & Stock Allowance
BIG KAISER indexable inserts outlined in the Insert selection & cutting data tables have been selected to give optimum results. Grades and geometry do not have to be specified at time of order.
Insert radius is based upon 2 major factors:
1. Length/diameter ratio of tool
2. Depth of cut or material allowance

- Select the largest nose radius available for cutting edge strength & higher feeds
- Use small nose radius for light depth of cut & extreme L/D ratio

Insert Radius	Minimum D.O.C.	Maximum D.O.C.	L/D Ratio
0.2	0.25	1.5	>6:1
0.4	0.50	3.0	≤5:1
0.8	1.00	5.0	≤4:1
1.2	1.50	8.0	≤4:1

- D.O.C. is stock allowance/side (radius)

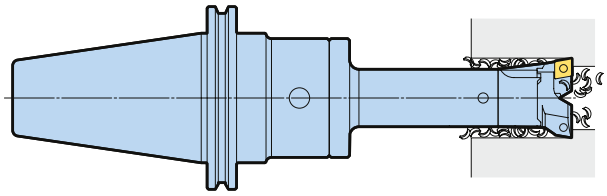
Feed
1. Feed: based on effective number of inserts, depending on roughing method

- Balanced cutting: 2 effective inserts
- Stepped cutting: 1 effective insert
- Full profile cutting: 1 effective insert

2. Under normal rough boring operations, the effective feed rate is about 50% of nose radius

Insert Radius	Feed (mm/rev)	
	Balanced Cutting	Stepped Cutting
0.2	0.2 - 0.3	0.1 - 0.15
0.4	0.3 - 0.4	0.15 - 0.2
0.8	0.4 - 0.5	0.3 - 0.4

General Rule:
Boring bar should always be smaller than original hole size.



Caution
- It is very important to allow for clearance (F) between boring bar and rough bore diameter.

Troubleshooting

Under certain conditions, it may be necessary to modify or adapt recommended cutting data and/or tooling configurations of the application. Below are general solutions to common problems.

Problem	Possible Cause	Remedy
Poor Chip Control	Feed rate too low	Increase feed rate
	Width of chip excessive (D.O.C.)	Preset tool for stepped cutting method
	Excessive stock allowance	Consult cutting data tables
Chatter & Vibration	Excessive speed	Reduce Vc, check cutting data tables
	Extreme length/diameter ratio	Shorten tool to increase stiffness
		Increase boring bar diameter to larger size
		Change boring bar to carbide or heavy metal
	Insert radius too large	Reduce nose radius of insert
	Unstable workpiece	Improve fixture and clamping support
	Lead angle on insert holders	Change to 90 degree insert holders (type CC)
Inserts Chipping or Breaking	Wrong insert	Change to tougher grade of carbide insert
		Use larger radius if available
	Severe interruption	Increase speed, decrease feed
	Chips packing and re-cutting	Check for boring bar/bore diameter clearance
		Improve chip control,increase feed
Poor Tool Life	Wrong insert	Change to higher wear resistant grade
	Excessive cutting speed	Reduce speed
	Inserts chipping	Check stock allowance and feed rate
	Coolant pressure too low	Increase through tool coolant pressure
		Adjust coolant ports of head if available
Chips Not Evacuating	Boring bar diameter too large	Reduce to smaller head and extended range holder
	Excessive stock allowance	Re-set tool for stepped cutting
	Inadequate space below bore	Elevate workpiece from table more
	Poor chip control	See above problem
Insufficient Machine Power	Excessive feed rate	Reduce feed; minimum 25% of insert radius
	Stock allowance excessive	Reset tool for stepped cutting method
	Low machine torque	RPM in area of low spindle torque; increase speed
		RPM in area of gear change; adjust RPM
		Change insert to higher rake angle
		Reduce depth of cut
Excessive Exit Burr	Excessive feed rate	Reduce feed rate
	CC type insert holders	Use square insert holders with 6 degree lead
	Cutting forces too high	Reduce depth of cut
		Reduce insert radius