

# SWISS+TOOLS



*precision wins*

*Werkzeugsysteme  
für höchste Produktivität*



## Werkzeugsystem / Tooling System



# ER MULTI

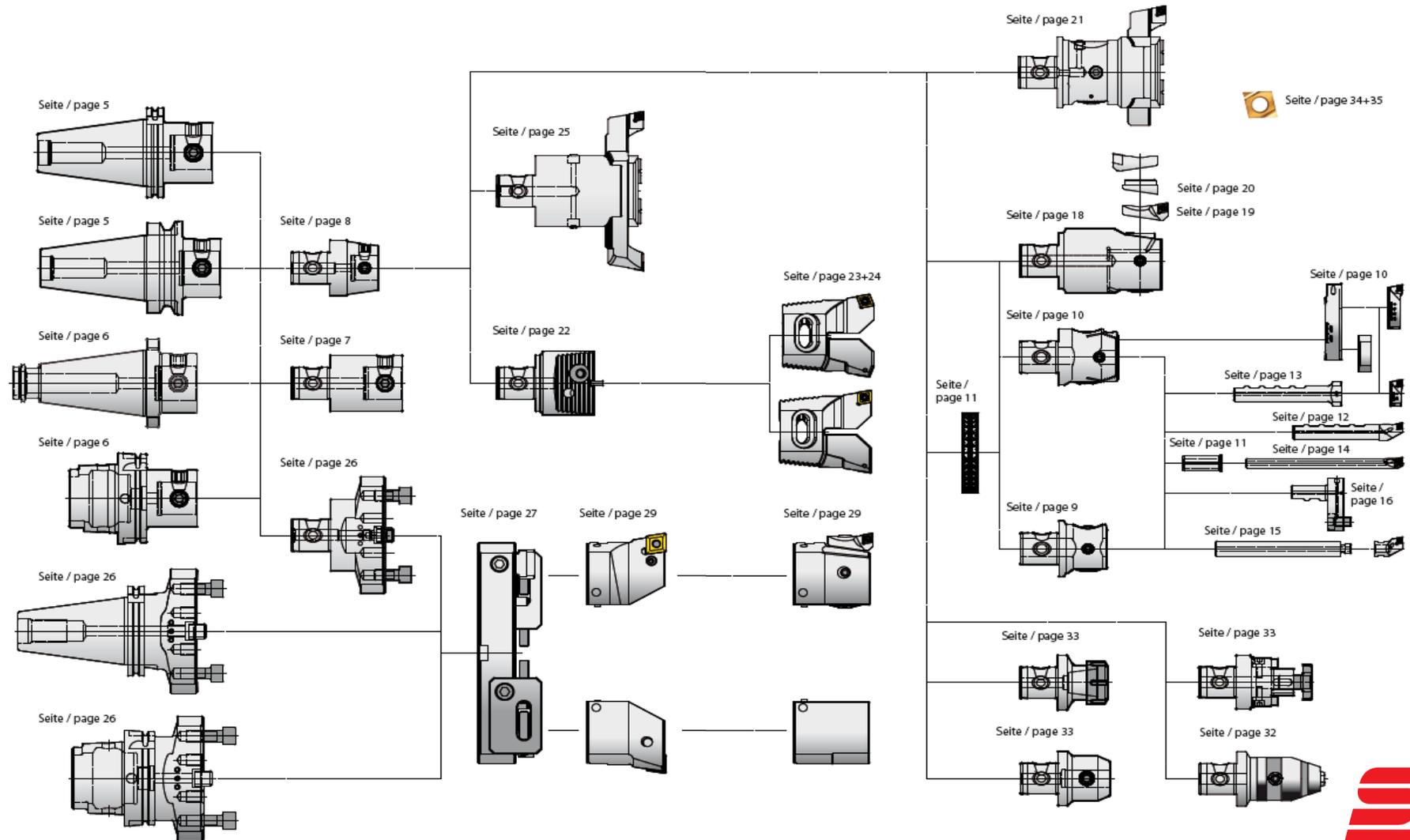
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CH-8575 Bürglen



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in  GROUP

SWISS  
MULTI

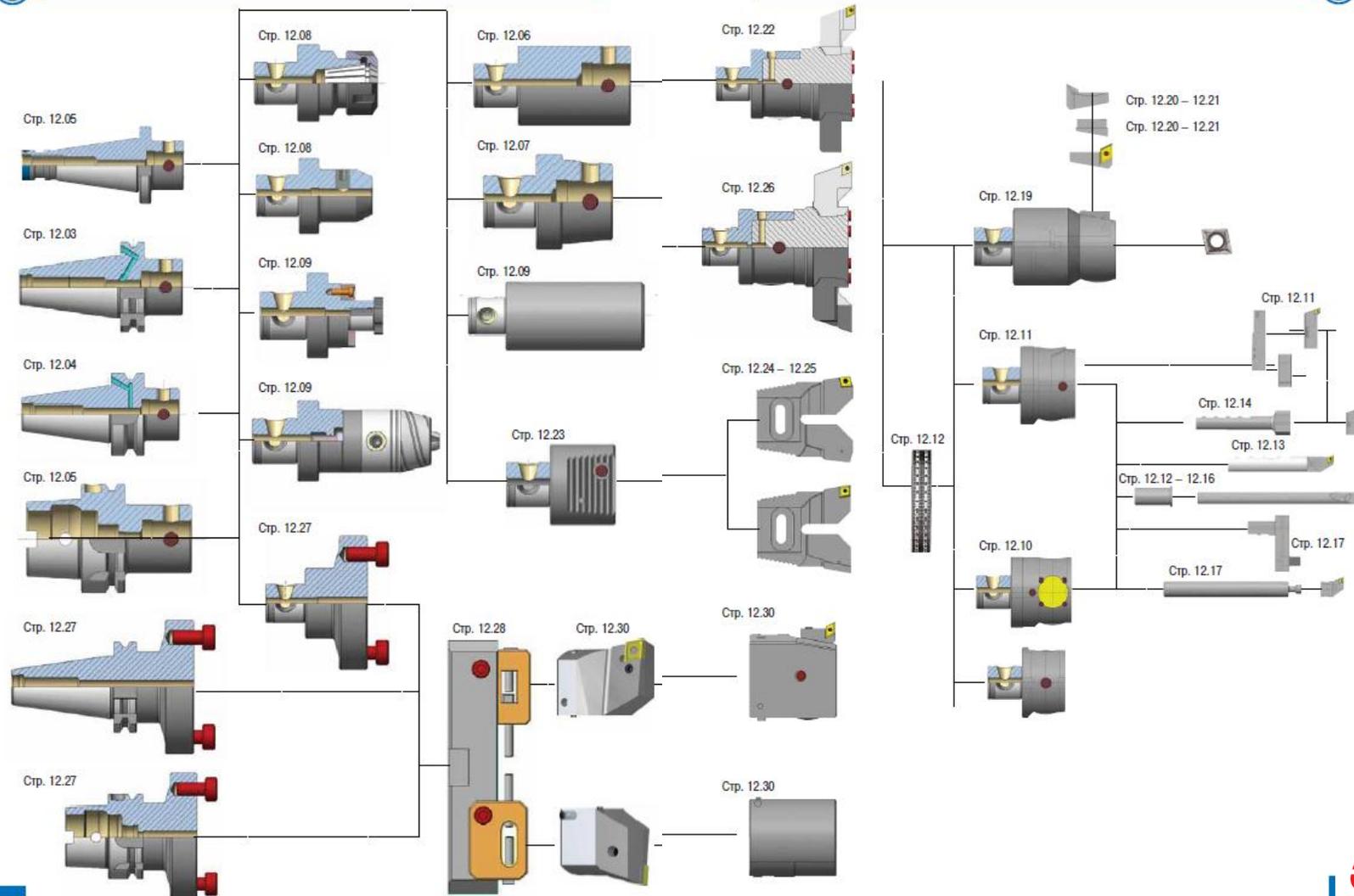
SWISS  
MULTI





EROGLU Расточные системы

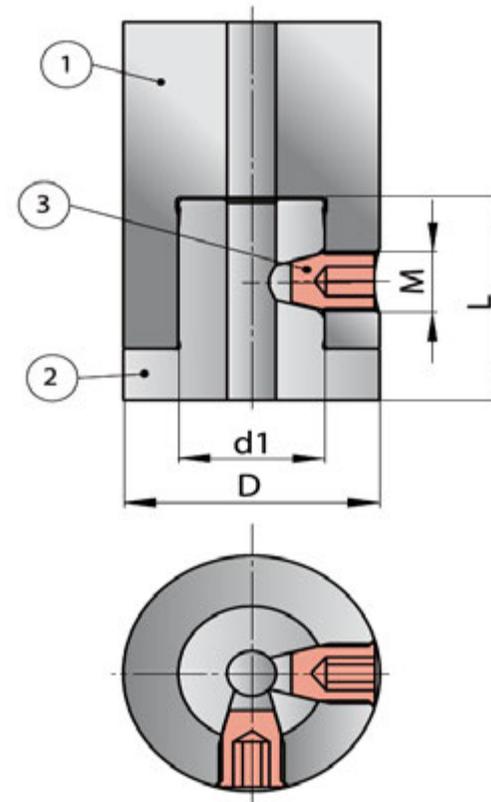
EROGLU Расточные системы



## Spannsystem WH

Durch die seitlichen Spannschrauben (3) wird der Zapfen (2) in die Aufnahme (1) gezogen. Dank grosser Auflageflächen und hoher Vorspannung wird eine sehr grosse Steifigkeit erzielt.

Während die Dimensionen WH1 und WH2 jeweils nur eine Spannschraube aufweisen, kommen ab WH3 zwei um 90° versetzte Spannschrauben zum Einsatz.



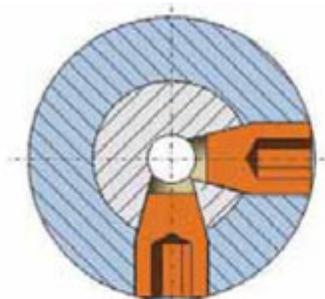
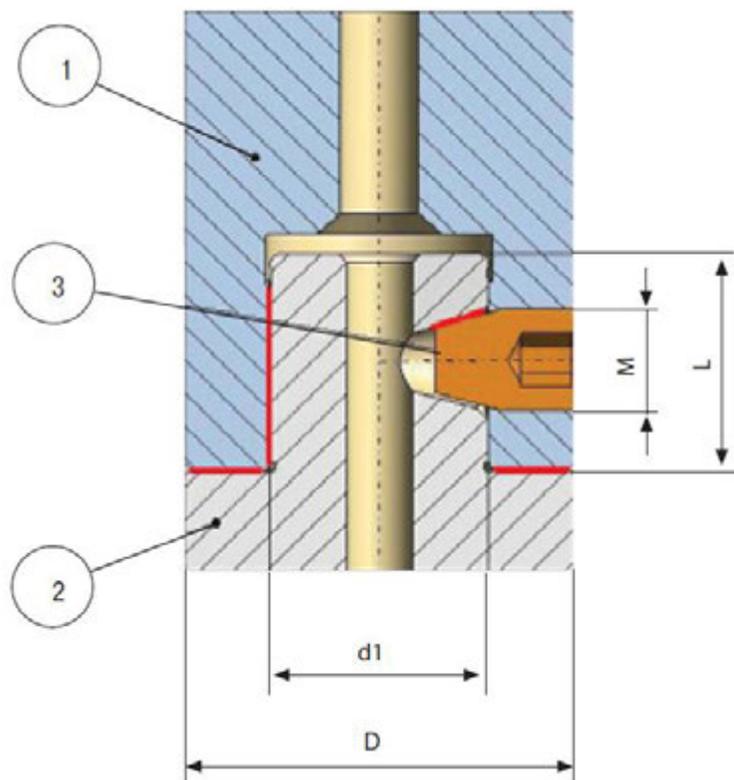
## quick-change coupling system WH

The male pilot (2) will be clamped into the female receptacle (1) by using radial clamping screws (3). A very high rigidity is achieved by a big contact surface and high prestress.

Meanwhile dimensions WH1 and WH2 are each containing just one clamping screw, WH3 and following dimensions are featuring two of these, shifted at 90°.

## Быстросменная модульная система

Хвостовик модульной системы (2) закрепляется в держателе (1) посредством конического зажимного винта (3), а центрирование осуществляется по диаметру  $d1$  за счет высокой точности сопрягаемых деталей. Такой вид закрепления позволяет достичь высокой жесткости и точности всего крепления за счет большой площади контактных поверхностей и высокой силы давления винта.



В держателях с  $d1=11$  и  $14$  мм при креплении используется 1 винт, на больших диаметрах 2 винта.

### Размеры

$d1$	$D$	$L$	$M$	Момент затяжки, Нм
11	20	13	M5x0.5	3.5
14	25	18	M8x1	12
18	32	22	M8x1	12
22	40	28	M10x1	22
28	50	28	M12x1	25
36	63	40	M16x1.5	30
36	80	40	M16x1.5	30

Clean the parts to be assembled and apply thin oxidation protection film. Tighten the screw with the correct torque.



### Базовые держатели с хвостовиком SK

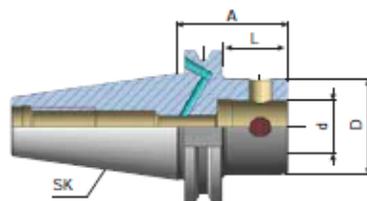
DIN 99871 AD/B



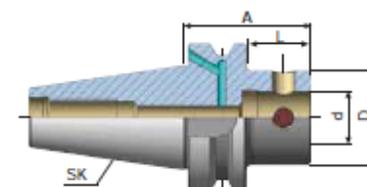
### Базовые держатели с хвостовиком BT

JIS B 6339 MAS 403 BT AD/B

Номер по каталогу	SK	d	D	A	L
302.70.28*	30	28	50	48	28.9
403.70.11	40	11	20	46	26.9
403.70.11.1	40	11	20	95	65.9
403.70.14	40	14	25	46	26.9
403.70.14.1	40	14	25	95	65.9
403.70.14.2	40	14	25	120	100.9
403.70.18	40	18	32	46	26.9
403.70.18.1	40	18	32	95	65.9
403.70.18.2	40	18	32	120	100.9
403.70.22	40	22	40	46	26.9
403.70.22.1	40	22	40	100	80.9
403.70.28	40	28	50	46	26.9
403.70.28.1	40	28	50	100	80.9
403.70.36	40	36	63	66	46.9
503.70.14.1	50	14	25	95	65.9
503.70.18	50	18	32	46	26.9
503.70.18.1	50	18	32	100	80.9
503.70.22	50	22	40	46	26.9
503.70.22.1	50	22	40	100	80.9
503.70.28	50	28	50	46	26.9
503.70.28.1	50	28	50	95	65.9
503.70.28.2	50	28	50	120	100.9
503.70.36	50	36	63	66	46.9
503.70.36.1	50	36	63	100	80.9
503.70.36.11	50	36	80	46	26.9
503.70.36.12	50	36	80	85	65.9



Номер по каталогу	BT	d	D	A	L
305.70.28*	30	28	50	49	27
406.70.11	40	11	20	54	27
406.70.11.1	40	11	20	93	66
406.70.14	40	14	25	54	27
406.70.14.1	40	14	25	93	66
406.70.14.2	40	14	25	127	100
406.70.18	40	18	32	54	27
406.70.18.1	40	18	32	93	66
406.70.18.2	40	18	32	127	100
406.70.22	40	22	40	54	27
406.70.22.1	40	22	40	107	80
406.70.28	40	28	50	54	27
406.70.28.1	40	28	50	107	80
406.70.36	40	36	63	64	37
506.70.14.1	50	14	25	104	66
506.70.18	50	18	32	65	27
506.70.18.1	50	18	32	118	80
506.70.22	50	22	40	65	27
506.70.22.1	50	22	40	118	80
506.70.28	50	28	50	65	27
506.70.28.1	50	28	50	104	66
506.70.28.2	50	28	50	138	100
506.70.36	50	36	63	75	37
506.70.36.1	50	36	63	104	66
506.70.36.11	50	36	80	75	37
506.70.36.12	50	36	80	104	66



\* форма AD

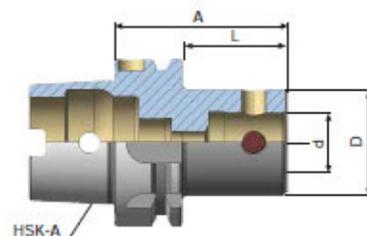
\* форма AD

### Базовые держатели с хвостовиком HSK

HSK – A DIN 69893 / ISO 12164 - 1



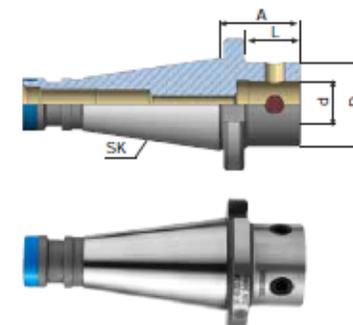
Номер по каталогу	HSK A	d	D	A	L
A63.70.11	63	11	20	42	16
A63.70.11.1	63	11	20	86	60
A63.70.14	63	14	25	42	16
A63.70.14.1	63	14	25	86	60
A63.70.14.2	63	14	25	126	100
A63.70.18	63	18	32	48	22
A63.70.18.1	63	18	32	100	74
A63.70.22	63	22	40	55	29
A63.70.22.1	63	22	40	100	74
A63.70.28	63	28	50	65	39
A63.70.28.1	63	28	50	100	74
A63.70.36	63	36	63	80	54
A100.70.28	100	28	50	65	36
A100.70.36	100	36	63	80	51
A100.70.36.11	100	36	80	80	51



### Базовые держатели с хвостовиком по DIN2080

DIN 2080

Номер по каталогу	SK	d	D	A	L
301.70.28	30	28	50	40	-
401.70.22	40	22	40	40	28.4
401.70.28	40	28	50	40	28.4
401.70.36	40	36	63	63	-
501.70.28	50	28	50	42	26.8
501.70.36	50	36	63	52	36.8
501.70.36.1	50	36	80	52	36.8



### Аксессуары

d	Номер по каталогу
Виты зажимной (1)	
d 11	J00.100.005.008
d 14	J00.100.008.010
d 18	J00.100.008.010
d 22	J00.100.010.015
d 28	J00.100.012.017
d 36	J00.100.016.021
d 36	J00.100.016.029



12.05

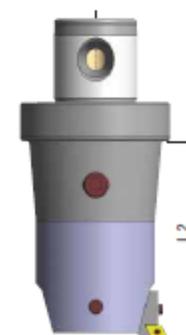
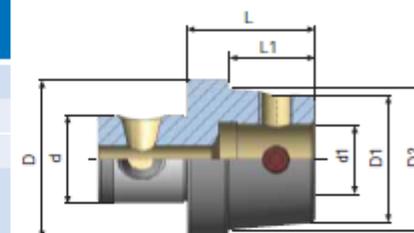
12



### Переходники-удлинители



Номер по каталогу	d	D	d1	D1	D2	L	L1	L2
774.14.11.36	14	25	11	20	23	36	26	69
774.18.11.38	18	32	11	20	23	38	26	69
774.18.14.38	18	32	14	25	29	38	26	82
774.22.11.40	22	40	11	20	23	40	26	69
774.22.14.40	22	40	14	25	29	40	26	82
774.22.18.40	22	40	18	32	38	40	26	92
774.28.11.44	28	50	11	20	23	44	28	73
774.28.11.80	28	50	11	20	23	80	64	107
774.28.14.44	28	50	14	25	29	44	28	84
774.28.14.90	28	50	14	25	29	90	74	128
774.28.18.44	28	50	18	32	38	44	28	94
774.28.18.100	28	50	18	32	38	100	84	148
774.28.22.44	28	50	22	40	48	44	28	103
774.28.22.115	28	50	22	40	48	115	99	172
774.36.11.50	36	63	11	20	23	50	32	77
774.36.11.100	36	63	11	20	23	100	82	125
774.36.14.50	36	63	14	25	29	50	32	88
774.36.14.110	36	63	14	25	29	110	92	146
774.36.18.50	36	63	18	32	38	50	32	98
774.36.18.120	36	63	18	32	38	120	102	166
774.36.22.50	36	63	22	40	48	50	32	122
774.36.22.140	36	63	22	40	48	140	122	195
774.36.28.50	36	63	28	50	60	50	32	142
774.36.28.160	36	63	28	50	60	160	142	230
774.36.36.60	36	80	36	63	75	60	40	180



### Популярные модели

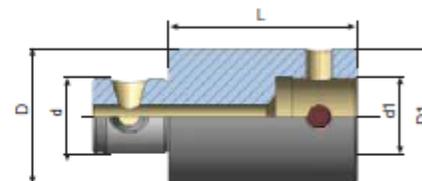
Номер	d	D	d1	D1	D2	L	L1	L2
774.14.11.36	14	25	11	20	23	36	26	69
774.18.11.38	18	32	11	20	23	38	26	69
774.18.14.38	18	32	14	25	29	38	26	82
774.22.11.40	22	40	11	20	23	40	26	69
774.22.14.40	22	40	14	25	29	40	26	82
774.22.18.40	22	40	18	32	38	40	26	92
774.28.11.44	28	50	11	20	23	44	28	73
774.28.11.80	28	50	11	20	23	80	64	107
774.28.14.44	28	50	14	25	29	44	28	84
774.28.14.90	28	50	14	25	29	90	74	128
774.28.18.44	28	50	18	32	38	44	28	94
774.28.18.100	28	50	18	32	38	100	84	148
774.28.22.44	28	50	22	40	48	44	28	103
774.28.22.115	28	50	22	40	48	115	99	172
774.36.11.50	36	63	11	20	23	50	32	77
774.36.11.100	36	63	11	20	23	100	82	125
774.36.14.50	36	63	14	25	29	50	32	88
774.36.14.110	36	63	14	25	29	110	92	146
774.36.18.50	36	63	18	32	38	50	32	98
774.36.18.120	36	63	18	32	38	120	102	166
774.36.22.50	36	63	22	40	48	50	32	122
774.36.22.140	36	63	22	40	48	140	122	195
774.36.28.50	36	63	28	50	60	50	32	142
774.36.28.160	36	63	28	50	60	160	142	230
774.36.36.60	36	80	36	63	75	60	40	180

Диаметр	Длина	Вес
14	36	0,12
18	38	0,15
22	40	0,18
28	44	0,25
36	50	0,35



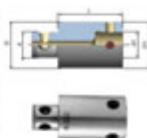
### Удлинитель

Номер по каталогу	d	D	d1	D1	L
772.11.25	11	20	11	20	25
772.11.35	11	20	11	20	35
772.14.30	14	25	14	25	30
772.14.45	14	25	14	25	45
772.18.40	18	32	18	32	40
772.18.60	18	32	18	32	60
772.22.50	22	40	22	40	50
772.22.80	22	40	22	40	80
772.28.50	28	50	28	50	50
772.28.70	28	50	28	50	70
772.28.100	28	50	28	50	100
772.36.75	36	63	36	63	75
772.36.135	36	63	36	63	135
772.36.80.100	36	80	36	80	100
772.36.80.180	36	80	36	80	180



### Каталог

Номер	d	D	d1	D1	L
772.11.25	11	20	11	20	25
772.11.35	11	20	11	20	35
772.14.30	14	25	14	25	30
772.14.45	14	25	14	25	45
772.18.40	18	32	18	32	40
772.18.60	18	32	18	32	60
772.22.50	22	40	22	40	50
772.22.80	22	40	22	40	80
772.28.50	28	50	28	50	50
772.28.70	28	50	28	50	70
772.28.100	28	50	28	50	100
772.36.75	36	63	36	63	75
772.36.135	36	63	36	63	135
772.36.80.100	36	80	36	80	100
772.36.80.180	36	80	36	80	180



### Детали

№	Наименование
1	Корпус
2	Поршень
3	Пружина
4	Шайба
5	Штифт
6	Штифт
7	Штифт
8	Штифт
9	Штифт
10	Штифт
11	Штифт
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13	Штифт
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99	Штифт
100	Штифт







### Merkmale:

Grundkörper und Wendepplattenhalter verfügen über eine Kerbverzahnung.

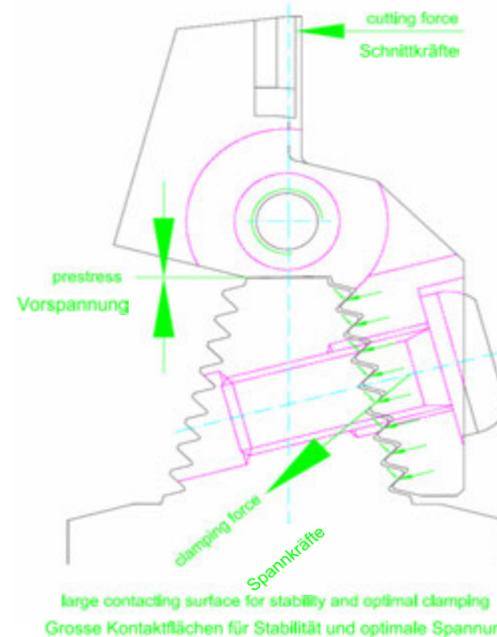
Schnittkräfte werden in den Grundkörper geleitet und wirken nicht gegen die Spannschraube.

### Features:

Main body and insert holders have a teeth profile

Cutting force effect to the main body not to the clamping screw.

	SWISSTOOLS	Kaiser	Wohlhaupter	Epb	Komet	Urma	D'Andrea
Stabilität / Stability	😊	😞	😐	😞	😞	😊	😞



Produktionskennlinie nach ISO 18418-1:2003 - group B1

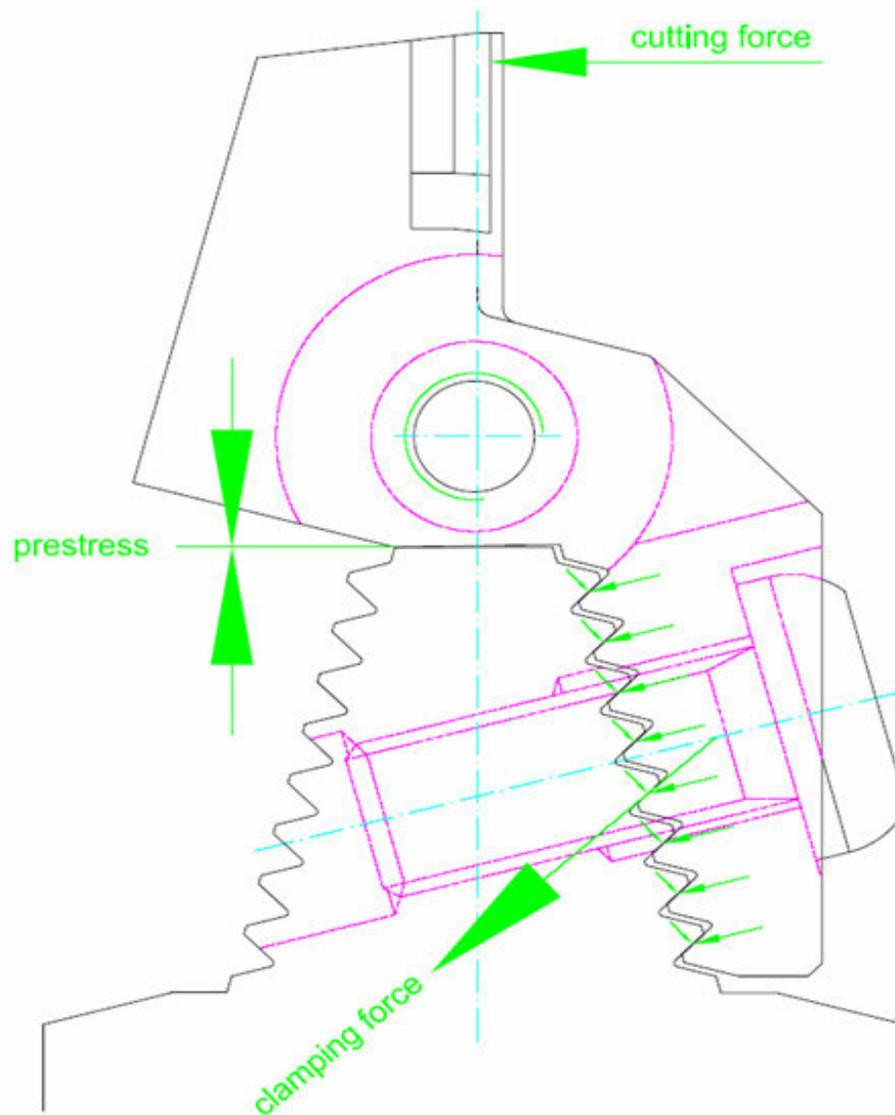
Werkstoff	W	A	W	W	W	W
SWISS-100-000	200	200	200	200	200	200
SWISS-100-001	200	200	200	200	200	200
SWISS-100-002	200	200	200	200	200	200
SWISS-100-003	200	200	200	200	200	200
SWISS-100-004	200	200	200	200	200	200
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SWISS-100-006	200	200	200	200	200	200
SWISS-100-007	200	200	200	200	200	200
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SWISS-100-014	200	200	200	200	200	200
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SWISS-100-016	200	200	200	200	200	200
SWISS-100-017	200	200	200	200	200	200
SWISS-100-018	200	200	200	200	200	200
SWISS-100-019	200	200	200	200	200	200
SWISS-100-020	200	200	200	200	200	200

Produktionskennlinie nach ISO 18418-1:2003 - group B1

Werkstoff	W	A	W	W	W	W
SWISS-100-021	200	200	200	200	200	200
SWISS-100-022	200	200	200	200	200	200
SWISS-100-023	200	200	200	200	200	200
SWISS-100-024	200	200	200	200	200	200
SWISS-100-025	200	200	200	200	200	200
SWISS-100-026	200	200	200	200	200	200
SWISS-100-027	200	200	200	200	200	200
SWISS-100-028	200	200	200	200	200	200
SWISS-100-029	200	200	200	200	200	200
SWISS-100-030	200	200	200	200	200	200
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SWISS-100-035	200	200	200	200	200	200
SWISS-100-036	200	200	200	200	200	200
SWISS-100-037	200	200	200	200	200	200
SWISS-100-038	200	200	200	200	200	200
SWISS-100-039	200	200	200	200	200	200
SWISS-100-040	200	200	200	200	200	200

Produktionskennlinie nach ISO 18418-1:2003 - group B1

Werkstoff	W	A	W	W	W	W
SWISS-100-041	200	200	200	200	200	200
SWISS-100-042	200	200	200	200	200	200
SWISS-100-043	200	200	200	200	200	200
SWISS-100-044	200	200	200	200	200	200
SWISS-100-045	200	200	200	200	200	200
SWISS-100-046	200	200	200	200	200	200
SWISS-100-047	200	200	200	200	200	200
SWISS-100-048	200	200	200	200	200	200
SWISS-100-049	200	200	200	200	200	200
SWISS-100-050	200	200	200	200	200	200



large contacting surface for stability and optimal clamping

Produktionsbereich Holzwerkzeuge SSK - group 01

Part No.	QTY	QTY	QTY	QTY
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100

Produktionsbereich Holzwerkzeuge SSK - group 01

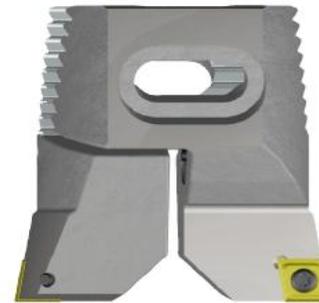
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01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100

Part No.	QTY	QTY	QTY	QTY
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100
01000000000	100	100	100	100



Wendepplattenhalter 90°

Insert holders 90°



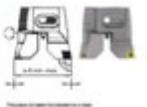
Wendepplattenhalter 70°

Insert holders 70°

**Специальный держатель вставок с радиальным сверлом**

Для использования с головкой серии D04.

Длина	Ø D	Ø d	Ø d <sub>1</sub>	Ø d <sub>2</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>
100 000 000 000	200	80	70	60	50	40	30
100 000 000 000	250	100	90	80	70	60	50
100 000 000 000	300	120	110	100	90	80	70
100 000 000 000	350	140	130	120	110	100	90
100 000 000 000	400	160	150	140	130	120	110
100 000 000 000	450	180	170	160	150	140	130
100 000 000 000	500	200	190	180	170	160	150
100 000 000 000	550	220	210	200	190	180	170
100 000 000 000	600	240	230	220	210	200	190
100 000 000 000	650	260	250	240	230	220	210
100 000 000 000	700	280	270	260	250	240	230
100 000 000 000	750	300	290	280	270	260	250
100 000 000 000	800	320	310	300	290	280	270
100 000 000 000	850	340	330	320	310	300	290
100 000 000 000	900	360	350	340	330	320	310
100 000 000 000	950	380	370	360	350	340	330
100 000 000 000	1000	400	390	380	370	360	350

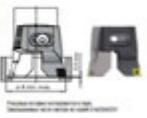


**Вращающийся держатель вставок с углом 70°**

Для использования с головкой серии D04.

Для обработки и радиального сверления.

Длина	Ø D	Ø d	Ø d <sub>1</sub>	Ø d <sub>2</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>
100 000 000 000	200	80	70	60	50	40	30
100 000 000 000	250	100	90	80	70	60	50
100 000 000 000	300	120	110	100	90	80	70
100 000 000 000	350	140	130	120	110	100	90
100 000 000 000	400	160	150	140	130	120	110
100 000 000 000	450	180	170	160	150	140	130
100 000 000 000	500	200	190	180	170	160	150
100 000 000 000	550	220	210	200	190	180	170
100 000 000 000	600	240	230	220	210	200	190
100 000 000 000	650	260	250	240	230	220	210
100 000 000 000	700	280	270	260	250	240	230
100 000 000 000	750	300	290	280	270	260	250
100 000 000 000	800	320	310	300	290	280	270
100 000 000 000	850	340	330	320	310	300	290
100 000 000 000	900	360	350	340	330	320	310
100 000 000 000	950	380	370	360	350	340	330
100 000 000 000	1000	400	390	380	370	360	350



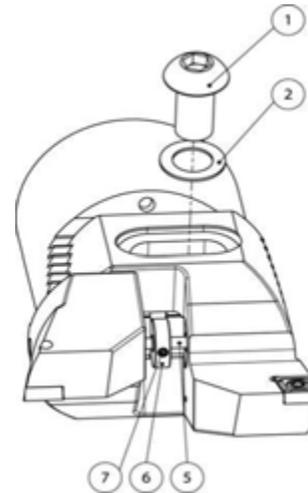
**Артикул**

Длина	Ø D	Ø d	Ø d <sub>1</sub>	Ø d <sub>2</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>
100 000 000 000	200	80	70	60	50	40	30
100 000 000 000	250	100	90	80	70	60	50
100 000 000 000	300	120	110	100	90	80	70
100 000 000 000	350	140	130	120	110	100	90
100 000 000 000	400	160	150	140	130	120	110
100 000 000 000	450	180	170	160	150	140	130
100 000 000 000	500	200	190	180	170	160	150
100 000 000 000	550	220	210	200	190	180	170
100 000 000 000	600	240	230	220	210	200	190
100 000 000 000	650	260	250	240	230	220	210
100 000 000 000	700	280	270	260	250	240	230
100 000 000 000	750	300	290	280	270	260	250
100 000 000 000	800	320	310	300	290	280	270
100 000 000 000	850	340	330	320	310	300	290
100 000 000 000	900	360	350	340	330	320	310
100 000 000 000	950	380	370	360	350	340	330
100 000 000 000	1000	400	390	380	370	360	350



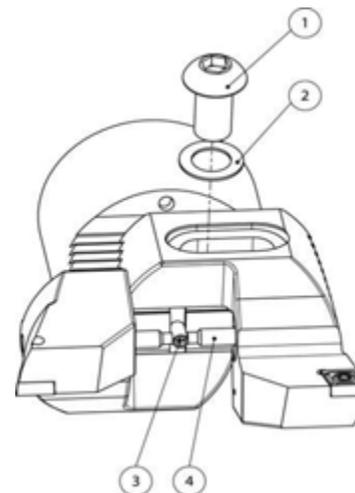
Synchron Verstellung

Synchronous adjustment



Einzelverstellung

Single adjustment



**Einzelverstellung** (Einzelverstellung) 

Для использования с головками серии DOA.

Модель	Длина	Ширина	Высота	Вес
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200

**Синхронная** (Synchron) 

Для использования с головками серии DOA.  
Для использования с головками серии DOA.

Модель	Длина	Ширина	Высота	Вес
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200
ST 2000000000	200	40	20	0,200

Длина	Ширина	Высота	Вес
200	40	20	0,200
200	40	20	0,200
200	40	20	0,200
200	40	20	0,200
200	40	20	0,200
200	40	20	0,200
200	40	20	0,200
200	40	20	0,200
200	40	20	0,200
200	40	20	0,200



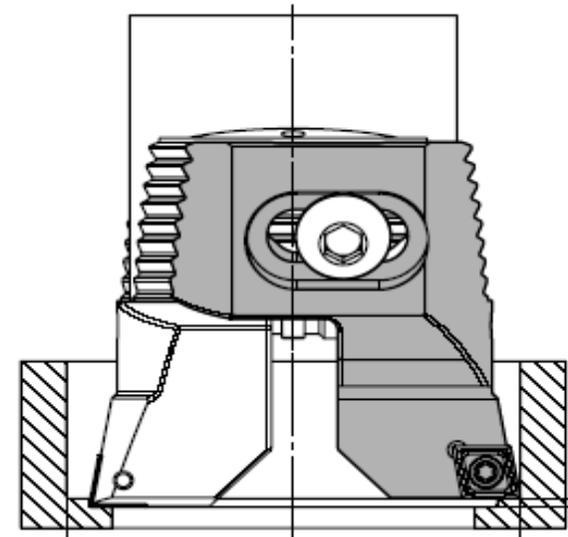
### Schnittaufteilung

Die in Durchmesser und Höhe versetzte Schneidanordnung erlaubt die Zerspaltung der doppelten Materialzugabe bei halbierten Vorschubwerten



### Staggered cutting

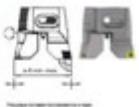
Diameter and height offset cutters allow the removal of twice the stock with half the feed rate



Специальный режим резания с разделением срезов

Для использования с головкой серии D04.

Длина	Ø D	Ø d	Ø d <sub>1</sub>	Ø d <sub>2</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>
100	100	50	50	50	50	50	50
150	150	75	75	75	75	75	75
200	200	100	100	100	100	100	100
250	250	125	125	125	125	125	125
300	300	150	150	150	150	150	150
350	350	175	175	175	175	175	175
400	400	200	200	200	200	200	200
450	450	225	225	225	225	225	225
500	500	250	250	250	250	250	250
550	550	275	275	275	275	275	275
600	600	300	300	300	300	300	300
650	650	325	325	325	325	325	325
700	700	350	350	350	350	350	350
750	750	375	375	375	375	375	375
800	800	400	400	400	400	400	400
850	850	425	425	425	425	425	425
900	900	450	450	450	450	450	450
950	950	475	475	475	475	475	475
1000	1000	500	500	500	500	500	500



Специальный режим резания с разделением срезов

Для использования с головкой серии D04.

Длина	Ø D	Ø d	Ø d <sub>1</sub>	Ø d <sub>2</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>
100	100	50	50	50	50	50	50
150	150	75	75	75	75	75	75
200	200	100	100	100	100	100	100
250	250	125	125	125	125	125	125
300	300	150	150	150	150	150	150
350	350	175	175	175	175	175	175
400	400	200	200	200	200	200	200
450	450	225	225	225	225	225	225
500	500	250	250	250	250	250	250
550	550	275	275	275	275	275	275
600	600	300	300	300	300	300	300
650	650	325	325	325	325	325	325
700	700	350	350	350	350	350	350
750	750	375	375	375	375	375	375
800	800	400	400	400	400	400	400
850	850	425	425	425	425	425	425
900	900	450	450	450	450	450	450
950	950	475	475	475	475	475	475
1000	1000	500	500	500	500	500	500



Длина	Ø D	Ø d	Ø d <sub>1</sub>	Ø d <sub>2</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>
100	100	50	50	50	50	50	50
150	150	75	75	75	75	75	75
200	200	100	100	100	100	100	100
250	250	125	125	125	125	125	125
300	300	150	150	150	150	150	150
350	350	175	175	175	175	175	175
400	400	200	200	200	200	200	200
450	450	225	225	225	225	225	225
500	500	250	250	250	250	250	250
550	550	275	275	275	275	275	275
600	600	300	300	300	300	300	300
650	650	325	325	325	325	325	325
700	700	350	350	350	350	350	350
750	750	375	375	375	375	375	375
800	800	400	400	400	400	400	400
850	850	425	425	425	425	425	425
900	900	450	450	450	450	450	450
950	950	475	475	475	475	475	475
1000	1000	500	500	500	500	500	500

## Twin cutter head Ø 23.5 - 153.1 mm

- Stable
- Stiff
- Synchronous adjustment
- Staggered cutting
- Maintenance-free



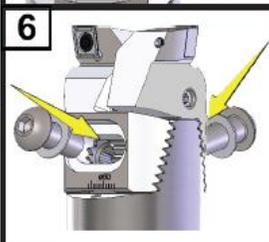
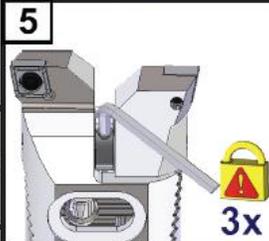
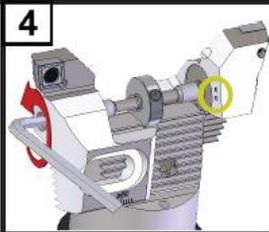
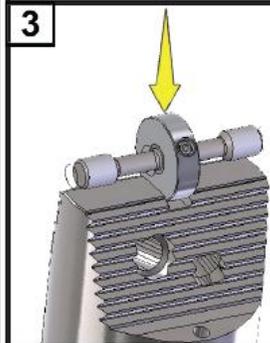
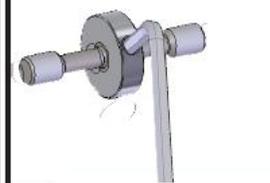
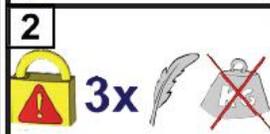
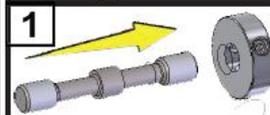
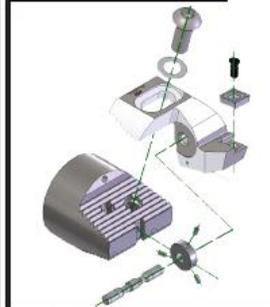
Feature	Function	Benefit
Diameter adjustment	The diameter adjustment can be done individually or synchronously. Different insert holders can be used on the same main body.	Short setup time and very easy to use.
Inserts	All insert holders use standard ISO insert. Both are positive and negative insert holders available.	No special inserts needed.
Balancing	The main body is balanced. The unbalance, which normally occurs when adjusting the tool, is reduced to a minimum.	The advantages of a balanced tool are: - better surface finish - higher tool life - maximum spindle life
Staggered cutting	By use of the insert holders for staggered cutting with an axial offset of 0.4mm more material can be removed in one pass.	- low cutting force - higher chip volume
layout / tooth profile	The insert holder is clamped on an angle of 75° on the main body. There is a large contact face between the insert holder and the body, because of the tooth profile. The cutting force presses the holder into the main body and is not working against the clamping screw.	- extremely stable layout - for hard roughing

**ECO LINE  
ROUGH BORING HEAD**

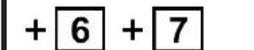
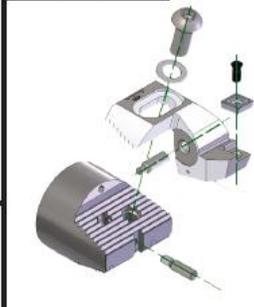


**assembling insertholder**

**synchronous adjustment**



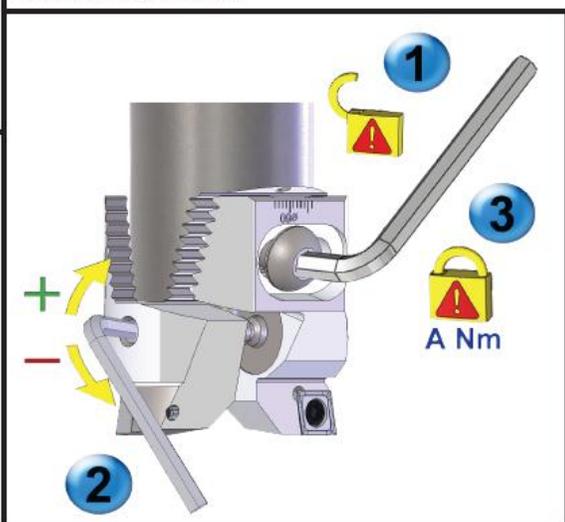
**single adjustment**

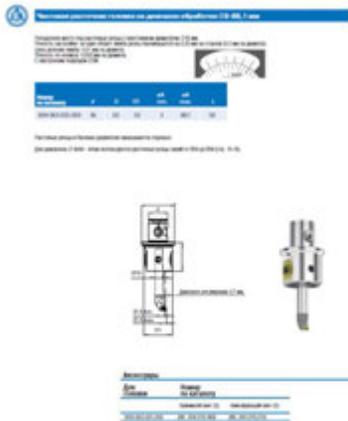


**torque / revolution**

Rough boring head	Nm	max. rpm
D20 / Ø 23.5 - 51.1	A = 2.4 Nm	12.000 rpm
D32 / Ø 30.5 - 40.1	A = 5.0 Nm	10.000 rpm

**diameter adjustment**





### Merkmale:

Der Ausdrehkopf ist zur Bearbeitung von Präzisionsbohrungen von  $\varnothing 3 - 88.1$  mm vorgesehen.

Für diesen Ausdrehbereich steht ein umfassendes Zubehör- Programm zur Verfügung.

Auswuchten des Werkzeuges möglich

als Monoblock- und Modularwerkzeug erhältlich

für Ausdrehstähle mit Schaftdurchmesser 16mm

Durchmessereinstellung mit geringstem Umkehrspiel

Zustellgenauigkeit 0.01mm resp. über Nonius 0.002mm im Durchmesser

mit Innenkühlung

Ausdrehstähle durchschiebbar

### Features:

The fine boring head for boring bars is designed for precision holes from diameter  $\varnothing 3 - 88.1$ mm (0.118 – 3.469”).

For this diameter range Swiss Tools supplies different equipment.

Balancing of the tool is possible

As monobloc- or modular tool available

For boring bars with shank diameter 16mm (0.63”)

Diametrical adjustment nearly without reversal backlash

0.01mm (0.0004”) diametrical adjustment resp. 0.002mm (0.00008”) by nonius

With inner coolant supply

Boring bar go through the head



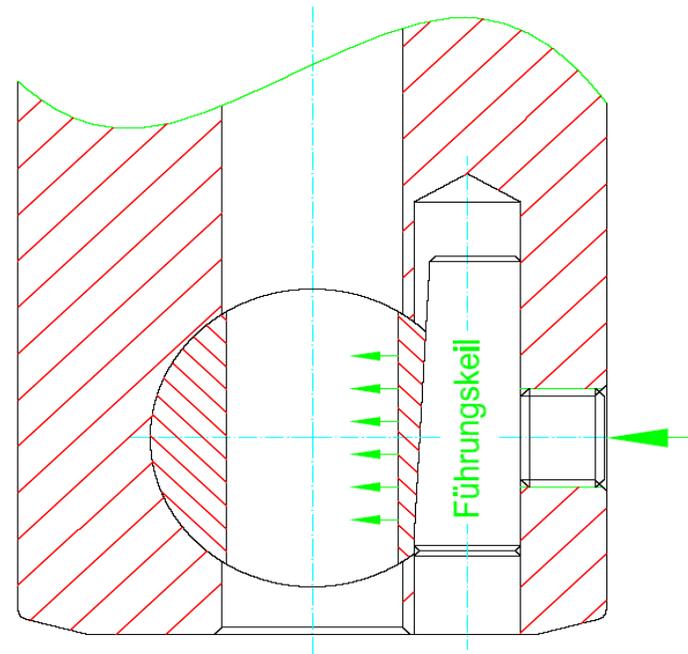
Technische Zeichnung  
 1:1  
 100 mm  
 0 10 20 30 40 50 60 70 80 90 100  
 0 10 20 30 40 50 60 70 80 90 100

	SWISSTOOLS	Kaiser	Wohl haupter	Epb	Komet	Urma	D'Andrea
Ø-Bereich / Ø-range	😊 3 - 88	😐 2 - 54	😊 3 - 102	😞 3 - 32	😞 8 - 36	😞 10 - 40	😞 3 - 30
Längeneinstellung / length adjustment	😊	😊	😞	😞	😞	😞	😞
Bohrstangenangebot	😊 Stahl / Hartmetall/ verstellbare Bohrstangen	😊 Stahl / Hartmetall/ verstellbare Bohrstangen	😐 Stahl / verstellbare Bohrstangen	😐 Stahl/Hart metall	😐 Stahl / verstellbare Bohrstangen	😐 Stahl / Hartmetall -	😊 Stahl / Hartmetall/ verstellbare Bohrstangen



Klemmung der Feinverstellung

Clamping of the micro adjustment



Spannschraube

### Technical drawing of the fine boring head (1:1)

Technical drawing showing the fine boring head with dimensions and a scale bar.

Technical drawing showing the fine boring head with dimensions and a scale bar.

Technical drawing showing the fine boring head with dimensions and a scale bar.



Technical drawing showing the fine boring head with dimensions and a scale bar.





### Ausdrehstähle Ø 9.75 – 88.1

mit Innenkühlung

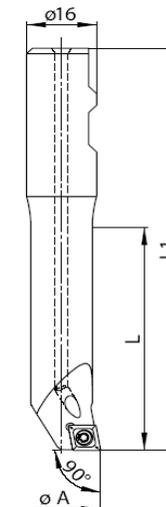
werden die Ausdrehstähle zentrisch gespannt  
(Weldonfutter) kann mit Ø Amin ausgedreht werden

### Boring bars Ø 9.75 – 88.1

with inner coolant supply

If the boring bars are clamped centrally (weld on adapter) the minimum diameter Ø A min is provided

ø A min.	ø A max.	L	L1	Wendeplatte / Insert
9.75	15.1	30	75	CC..06 02..
11.75	17.1	35	80	CC..06 02..
13.75	19.1	40	85	CC..06 02..
14.75	20.1	45	90	CC..06 02..
15.75	21.1	50	95	CC..06 02..
17.75	23.1	55	100	CC..06 02..
19.75	25.1	60	105	CC..06 02..
19.75	25.1	60	105	CC..09 T3..
21.75	27.1	85	110	CC..09 T3..
24.75	30.1	85	115	CC..06 02..
24.75	30.1	85	115	CC..09 T3..
27.75	33.1	85	115	CC..09 T3..
29.75	35.1	85	115	CC..06 02..
31.75	37.1	85	115	CC..09 T3..
34.75	40.1	85	115	CC..06 02..
34.75	40.1	85	115	CC..09 T3..
38.75	44.1	85	115	CC..09 T3..
42.75	48.1	85	115	CC..09 T3..
47.75	53.1	85	115	CC..09 T3..
52.75	58.1	85	115	CC..09 T3..
57.75	63.1	85	115	CC..09 T3..
62.75	68.1	85	115	CC..09 T3..
67.75	73.1	-	62	CC..09 T3..
72.75	78.1	-	62	CC..09 T3..
77.75	83.1	-	62	CC..09 T3..
82.75	88.1	-	62	CC..09 T3..



Резьбовый посадочный элемент Ø 9.75-88.1  
С внутренним охлаждением СОЖ

Ø A min.	Ø A max.	L	L1	Wendeplatte / Insert
9.75	15.1	30	75	CC..06 02..
11.75	17.1	35	80	CC..06 02..
13.75	19.1	40	85	CC..06 02..
14.75	20.1	45	90	CC..06 02..
15.75	21.1	50	95	CC..06 02..
17.75	23.1	55	100	CC..06 02..
19.75	25.1	60	105	CC..06 02..
19.75	25.1	60	105	CC..09 T3..
21.75	27.1	85	110	CC..09 T3..
24.75	30.1	85	115	CC..06 02..
24.75	30.1	85	115	CC..09 T3..
27.75	33.1	85	115	CC..09 T3..
29.75	35.1	85	115	CC..06 02..
31.75	37.1	85	115	CC..09 T3..
34.75	40.1	85	115	CC..06 02..
34.75	40.1	85	115	CC..09 T3..
38.75	44.1	85	115	CC..09 T3..
42.75	48.1	85	115	CC..09 T3..
47.75	53.1	85	115	CC..09 T3..
52.75	58.1	85	115	CC..09 T3..
57.75	63.1	85	115	CC..09 T3..
62.75	68.1	85	115	CC..09 T3..
67.75	73.1	-	62	CC..09 T3..
72.75	78.1	-	62	CC..09 T3..
77.75	83.1	-	62	CC..09 T3..
82.75	88.1	-	62	CC..09 T3..

Ø A min.	Ø A max.	L	L1	Wendeplatte / Insert
9.75	15.1	30	75	CC..06 02..
11.75	17.1	35	80	CC..06 02..
13.75	19.1	40	85	CC..06 02..
14.75	20.1	45	90	CC..06 02..
15.75	21.1	50	95	CC..06 02..
17.75	23.1	55	100	CC..06 02..
19.75	25.1	60	105	CC..06 02..
19.75	25.1	60	105	CC..09 T3..
21.75	27.1	85	110	CC..09 T3..
24.75	30.1	85	115	CC..06 02..
24.75	30.1	85	115	CC..09 T3..
27.75	33.1	85	115	CC..09 T3..
29.75	35.1	85	115	CC..06 02..
31.75	37.1	85	115	CC..09 T3..
34.75	40.1	85	115	CC..06 02..
34.75	40.1	85	115	CC..09 T3..
38.75	44.1	85	115	CC..09 T3..
42.75	48.1	85	115	CC..09 T3..
47.75	53.1	85	115	CC..09 T3..
52.75	58.1	85	115	CC..09 T3..
57.75	63.1	85	115	CC..09 T3..
62.75	68.1	85	115	CC..09 T3..
67.75	73.1	-	62	CC..09 T3..
72.75	78.1	-	62	CC..09 T3..
77.75	83.1	-	62	CC..09 T3..
82.75	88.1	-	62	CC..09 T3..



### High Speed Ausdrehstähle Ø 8.75 – 40.1 (Hartmetallschaft)

zum Ausdrehen von langen Bohrungen

sehr gute Dämpfungseigenschaften durch  
Hartmetallschaft

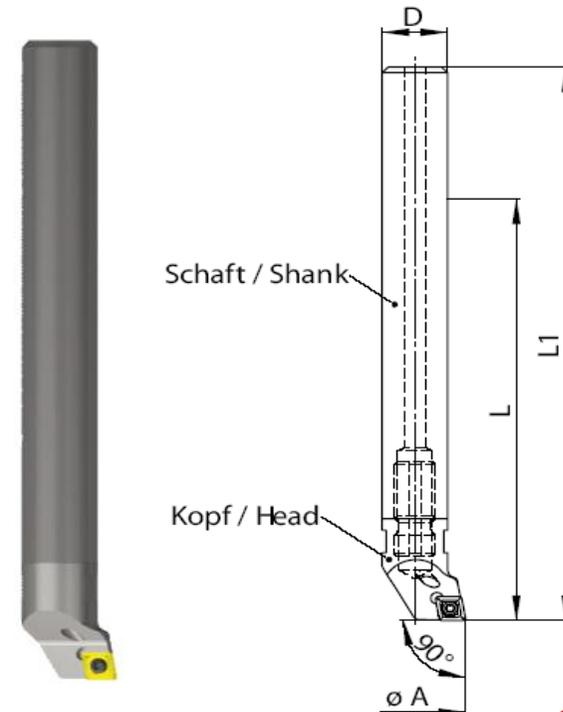
mit Innenkühlung

### High-Speed boring bars Ø 9.75 – 40.1 (solid carbide shank)

to machine long holes

high end absorbability by solid carbide shank  
with inner coolant supply

ø A min.	ø A max.	D	L	L1	Wende- platte / Insert
8.75	14.1	8	56	91	CC..06 02..
9.75	15.1	9	63	98	CC..06 02..
10.75	16.1	10	70	105	CC..06 02..
11.75	17.1	11	77	112	CC..06 02..
12.75	18.1	12	84	119	CC..06 02..
13.75	19.1	13	91	126	CC..06 02..
14.75	20.1	14	98	133	CC..06 02..
15.75	21.1	14	98	133	CC..06 02..
16.75	22.1	16	112	147	CC..06 02..
17.75	23.1	16	112	147	CC..06 02..
19.75	25.1	16	112	147	CC..06 02..
21.75	27.1	16	112	147	CC..06 02..
24.75	30.1	16	112	147	CC..06 02..
27.75	33.1	16	112	147	CC..06 02..
31.75	37.1	16	112	147	CC..06 02..
34.75	40.1	16	112	147	CC..06 02..



#### Расчет оправки для выемочной обработки (Ø 8,75-40,1)

На диаметры (Ø 8,75-40,1 мм) (предельный вынос)

Предельно допустимый вынос оправки



Verstellbare  
Ausdrehstäbe  $\varnothing$  29.75 – 88.1  
sehr gute Dämpfungseigenschaften  
mit Innenkühlung

Adjustable  
boring bars  $\varnothing$  29.75 – 88.1  
high end absorbability  
with inner coolant supply

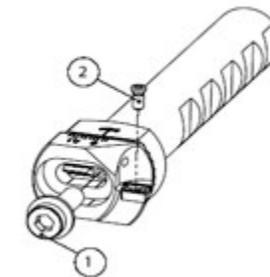
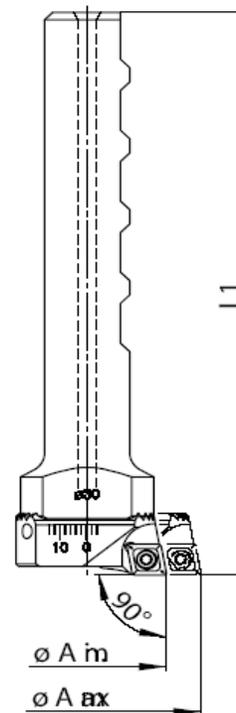
**Изменяемый расточный станок** (29.75-88.1)  
Конструкция расточной головки

**Описание и размеры головки (29.75)**

Параметр	29.75	41.25	52.75	64.25
Высота головки	100	100	100	100
Высота хвостовика	100	100	100	100
Высота расточной головки	100	100	100	100

**Размеры хвостовика и корпуса головки (29.75)**

Параметр	29.75	41.25	52.75	64.25
Диаметр хвостовика	29.75	41.25	52.75	64.25
Диаметр расточной головки	29.75	41.25	52.75	64.25
Диаметр корпуса головки	29.75	41.25	52.75	64.25



Изображение	Обозначение	Материал	Изображение	Материал
	1	AlSi10Mg		AlSi10Mg
	2	AlSi10Mg		AlSi10Mg



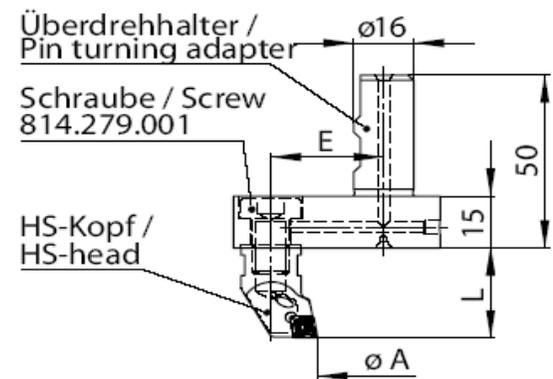
Überdrehhalter Ø 29.75 – 88.1  
mit Innenkühlung

Pin turning adapter Ø 29.75 – 88.1  
with inner coolant supply



Адаптеры для сверления / адаптеры для сверления с Ø 29.75 – 88.1 мм  
Для использования с различными головками серий B04 и B10  
С внутренним подачей СОЖ

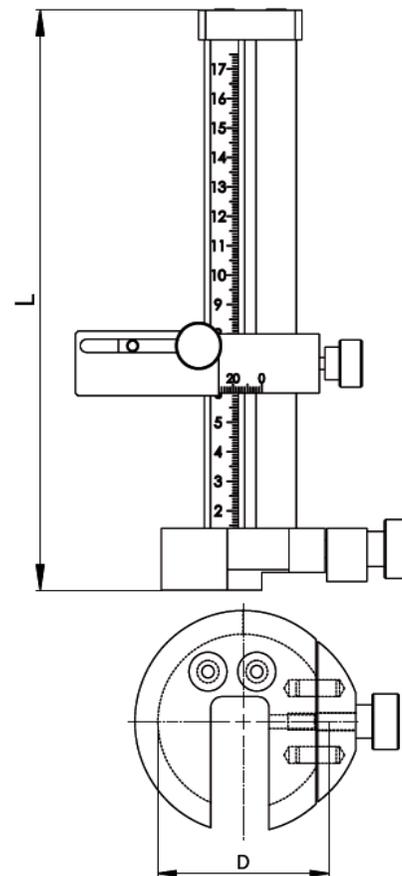
Сверло	Сверло	Ø	Л	Ø	Ø	Ø
814.279.001	814.279.001	12	30	30	30	30
814.279.002	814.279.002	12	30	30	30	30
814.279.003	814.279.003	12	30	30	30	30
814.279.004	814.279.004	12	30	30	30	30
814.279.005	814.279.005	12	30	30	30	30
814.279.006	814.279.006	12	30	30	30	30
814.279.007	814.279.007	12	30	30	30	30
814.279.008	814.279.008	12	30	30	30	30
814.279.009	814.279.009	12	30	30	30	30
814.279.010	814.279.010	12	30	30	30	30
814.279.011	814.279.011	12	30	30	30	30
814.279.012	814.279.012	12	30	30	30	30
814.279.013	814.279.013	12	30	30	30	30
814.279.014	814.279.014	12	30	30	30	30
814.279.015	814.279.015	12	30	30	30	30
814.279.016	814.279.016	12	30	30	30	30
814.279.017	814.279.017	12	30	30	30	30
814.279.018	814.279.018	12	30	30	30	30
814.279.019	814.279.019	12	30	30	30	30
814.279.020	814.279.020	12	30	30	30	30
814.279.021	814.279.021	12	30	30	30	30
814.279.022	814.279.022	12	30	30	30	30
814.279.023	814.279.023	12	30	30	30	30
814.279.024	814.279.024	12	30	30	30	30
814.279.025	814.279.025	12	30	30	30	30
814.279.026	814.279.026	12	30	30	30	30
814.279.027	814.279.027	12	30	30	30	30
814.279.028	814.279.028	12	30	30	30	30
814.279.029	814.279.029	12	30	30	30	30
814.279.030	814.279.030	12	30	30	30	30
814.279.031	814.279.031	12	30	30	30	30
814.279.032	814.279.032	12	30	30	30	30
814.279.033	814.279.033	12	30	30	30	30
814.279.034	814.279.034	12	30	30	30	30
814.279.035	814.279.035	12	30	30	30	30
814.279.036	814.279.036	12	30	30	30	30
814.279.037	814.279.037	12	30	30	30	30
814.279.038	814.279.038	12	30	30	30	30
814.279.039	814.279.039	12	30	30	30	30
814.279.040	814.279.040	12	30	30	30	30
814.279.041	814.279.041	12	30	30	30	30
814.279.042	814.279.042	12	30	30	30	30
814.279.043	814.279.043	12	30	30	30	30
814.279.044	814.279.044	12	30	30	30	30
814.279.045	814.279.045	12	30	30	30	30
814.279.046	814.279.046	12	30	30	30	30
814.279.047	814.279.047	12	30	30	30	30
814.279.048	814.279.048	12	30	30	30	30
814.279.049	814.279.049	12	30	30	30	30
814.279.050	814.279.050	12	30	30	30	30
814.279.051	814.279.051	12	30	30	30	30
814.279.052	814.279.052	12	30	30	30	30
814.279.053	814.279.053	12	30	30	30	30
814.279.054	814.279.054	12	30	30	30	30
814.279.055	814.279.055	12	30	30	30	30
814.279.056	814.279.056	12	30	30	30	30
814.279.057	814.279.057	12	30	30	30	30
814.279.058	814.279.058	12	30	30	30	30
814.279.059	814.279.059	12	30	30	30	30
814.279.060	814.279.060	12	30	30	30	30
814.279.061	814.279.061	12	30	30	30	30
814.279.062	814.279.062	12	30	30	30	30
814.279.063	814.279.063	12	30	30	30	30
814.279.064	814.279.064	12	30	30	30	30
814.279.065	814.279.065	12	30	30	30	30
814.279.066	814.279.066	12	30	30	30	30
814.279.067	814.279.067	12	30	30	30	30
814.279.068	814.279.068	12	30	30	30	30
814.279.069	814.279.069	12	30	30	30	30
814.279.070	814.279.070	12	30	30	30	30
814.279.071	814.279.071	12	30	30	30	30
814.279.072	814.279.072	12	30	30	30	30
814.279.073	814.279.073	12	30	30	30	30
814.279.074	814.279.074	12	30	30	30	30
814.279.075	814.279.075	12	30	30	30	30
814.279.076	814.279.076	12	30	30	30	30
814.279.077	814.279.077	12	30	30	30	30
814.279.078	814.279.078	12	30	30	30	30
814.279.079	814.279.079	12	30	30	30	30
814.279.080	814.279.080	12	30	30	30	30
814.279.081	814.279.081	12	30	30	30	30
814.279.082	814.279.082	12	30	30	30	30
814.279.083	814.279.083	12	30	30	30	30
814.279.084	814.279.084	12	30	30	30	30
814.279.085	814.279.085	12	30	30	30	30
814.279.086	814.279.086	12	30	30	30	30
814.279.087	814.279.087	12	30	30	30	30
814.279.088	814.279.088	12	30	30	30	30
814.279.089	814.279.089	12	30	30	30	30
814.279.090	814.279.090	12	30	30	30	30
814.279.091	814.279.091	12	30	30	30	30
814.279.092	814.279.092	12	30	30	30	30
814.279.093	814.279.093	12	30	30	30	30
814.279.094	814.279.094	12	30	30	30	30
814.279.095	814.279.095	12	30	30	30	30
814.279.096	814.279.096	12	30	30	30	30
814.279.097	814.279.097	12	30	30	30	30
814.279.098	814.279.098	12	30	30	30	30
814.279.099	814.279.099	12	30	30	30	30
814.279.100	814.279.100	12	30	30	30	30





### Setting Jig

- alignment of the cutting edge
- adjustment of the boring bar projection length
- coarse diameter adjustment



#### Расчет оправки для цилиндрической обработки (S 15-40.1)

На диаметры (D), 7,5-40,1 мм (предельный шаг резания)

Предельно допустимые отклонения

Размеры в миллиметрах

Диаметр (D)	Шаг резания (mm)	Диаметр (D)	Шаг резания (mm)
7,5	0,1	10,0	0,1
7,5	0,15	10,0	0,15
7,5	0,2	10,0	0,2
7,5	0,25	10,0	0,25
7,5	0,3	10,0	0,3
7,5	0,35	10,0	0,35
7,5	0,4	10,0	0,4
7,5	0,45	10,0	0,45
7,5	0,5	10,0	0,5
7,5	0,55	10,0	0,55
7,5	0,6	10,0	0,6
7,5	0,65	10,0	0,65
7,5	0,7	10,0	0,7
7,5	0,75	10,0	0,75
7,5	0,8	10,0	0,8
7,5	0,85	10,0	0,85
7,5	0,9	10,0	0,9
7,5	0,95	10,0	0,95
7,5	1,0	10,0	1,0
7,5	1,05	10,0	1,05
7,5	1,1	10,0	1,1
7,5	1,15	10,0	1,15
7,5	1,2	10,0	1,2
7,5	1,25	10,0	1,25
7,5	1,3	10,0	1,3
7,5	1,35	10,0	1,35
7,5	1,4	10,0	1,4
7,5	1,45	10,0	1,45
7,5	1,5	10,0	1,5
7,5	1,55	10,0	1,55
7,5	1,6	10,0	1,6
7,5	1,65	10,0	1,65
7,5	1,7	10,0	1,7
7,5	1,75	10,0	1,75
7,5	1,8	10,0	1,8
7,5	1,85	10,0	1,85
7,5	1,9	10,0	1,9
7,5	1,95	10,0	1,95
7,5	2,0	10,0	2,0
7,5	2,05	10,0	2,05
7,5	2,1	10,0	2,1
7,5	2,15	10,0	2,15
7,5	2,2	10,0	2,2
7,5	2,25	10,0	2,25
7,5	2,3	10,0	2,3
7,5	2,35	10,0	2,35
7,5	2,4	10,0	2,4
7,5	2,45	10,0	2,45
7,5	2,5	10,0	2,5
7,5	2,55	10,0	2,55
7,5	2,6	10,0	2,6
7,5	2,65	10,0	2,65
7,5	2,7	10,0	2,7
7,5	2,75	10,0	2,75
7,5	2,8	10,0	2,8
7,5	2,85	10,0	2,85
7,5	2,9	10,0	2,9
7,5	2,95	10,0	2,95
7,5	3,0	10,0	3,0
7,5	3,05	10,0	3,05
7,5	3,1	10,0	3,1
7,5	3,15	10,0	3,15
7,5	3,2	10,0	3,2
7,5	3,25	10,0	3,25
7,5	3,3	10,0	3,3
7,5	3,35	10,0	3,35
7,5	3,4	10,0	3,4
7,5	3,45	10,0	3,45
7,5	3,5	10,0	3,5
7,5	3,55	10,0	3,55
7,5	3,6	10,0	3,6
7,5	3,65	10,0	3,65
7,5	3,7	10,0	3,7
7,5	3,75	10,0	3,75
7,5	3,8	10,0	3,8
7,5	3,85	10,0	3,85
7,5	3,9	10,0	3,9
7,5	3,95	10,0	3,95
7,5	4,0	10,0	4,0
7,5	4,05	10,0	4,05
7,5	4,1	10,0	4,1
7,5	4,15	10,0	4,15
7,5	4,2	10,0	4,2
7,5	4,25	10,0	4,25
7,5	4,3	10,0	4,3
7,5	4,35	10,0	4,35
7,5	4,4	10,0	4,4
7,5	4,45	10,0	4,45
7,5	4,5	10,0	4,5
7,5	4,55	10,0	4,55
7,5	4,6	10,0	4,6
7,5	4,65	10,0	4,65
7,5	4,7	10,0	4,7
7,5	4,75	10,0	4,75
7,5	4,8	10,0	4,8
7,5	4,85	10,0	4,85
7,5	4,9	10,0	4,9
7,5	4,95	10,0	4,95
7,5	5,0	10,0	5,0
7,5	5,05	10,0	5,05
7,5	5,1	10,0	5,1
7,5	5,15	10,0	5,15
7,5	5,2	10,0	5,2
7,5	5,25	10,0	5,25
7,5	5,3	10,0	5,3
7,5	5,35	10,0	5,35
7,5	5,4	10,0	5,4
7,5	5,45	10,0	5,45
7,5	5,5	10,0	5,5
7,5	5,55	10,0	5,55
7,5	5,6	10,0	5,6
7,5	5,65	10,0	5,65
7,5	5,7	10,0	5,7
7,5	5,75	10,0	5,75
7,5	5,8	10,0	5,8
7,5	5,85	10,0	5,85
7,5	5,9	10,0	5,9
7,5	5,95	10,0	5,95
7,5	6,0	10,0	6,0
7,5	6,05	10,0	6,05
7,5	6,1	10,0	6,1
7,5	6,15	10,0	6,15
7,5	6,2	10,0	6,2
7,5	6,25	10,0	6,25
7,5	6,3	10,0	6,3
7,5	6,35	10,0	6,35
7,5	6,4	10,0	6,4
7,5	6,45	10,0	6,45
7,5	6,5	10,0	6,5
7,5	6,55	10,0	6,55
7,5	6,6	10,0	6,6
7,5	6,65	10,0	6,65
7,5	6,7	10,0	6,7
7,5	6,75	10,0	6,75
7,5	6,8	10,0	6,8
7,5	6,85	10,0	6,85
7,5	6,9	10,0	6,9
7,5	6,95	10,0	6,95
7,5	7,0	10,0	7,0
7,5	7,05	10,0	7,05
7,5	7,1	10,0	7,1
7,5	7,15	10,0	7,15
7,5	7,2	10,0	7,2
7,5	7,25	10,0	7,25
7,5	7,3	10,0	7,3
7,5	7,35	10,0	7,35
7,5	7,4	10,0	7,4
7,5	7,45	10,0	7,45
7,5	7,5	10,0	7,5
7,5	7,55	10,0	7,55
7,5	7,6	10,0	7,6
7,5	7,65	10,0	7,65
7,5	7,7	10,0	7,7
7,5	7,75	10,0	7,75
7,5	7,8	10,0	7,8
7,5	7,85	10,0	7,85
7,5	7,9	10,0	7,9
7,5	7,95	10,0	7,95
7,5	8,0	10,0	8,0
7,5	8,05	10,0	8,05
7,5	8,1	10,0	8,1
7,5	8,15	10,0	8,15
7,5	8,2	10,0	8,2
7,5	8,25	10,0	8,25
7,5	8,3	10,0	8,3
7,5	8,35	10,0	8,35
7,5	8,4	10,0	8,4
7,5	8,45	10,0	8,45
7,5	8,5	10,0	8,5
7,5	8,55	10,0	8,55
7,5	8,6	10,0	8,6
7,5	8,65	10,0	8,65
7,5	8,7	10,0	8,7
7,5	8,75	10,0	8,75
7,5	8,8	10,0	8,8
7,5	8,85	10,0	8,85
7,5	8,9	10,0	8,9
7,5	8,95	10,0	8,95
7,5	9,0	10,0	9,0
7,5	9,05	10,0	9,05
7,5	9,1	10,0	9,1
7,5	9,15	10,0	9,15
7,5	9,2	10,0	9,2
7,5	9,25	10,0	9,25
7,5	9,3	10,0	9,3
7,5	9,35	10,0	9,35
7,5	9,4	10,0	9,4
7,5	9,45	10,0	9,45
7,5	9,5	10,0	9,5
7,5	9,55	10,0	9,55
7,5	9,6	10,0	9,6
7,5	9,65	10,0	9,65
7,5	9,7	10,0	9,7
7,5	9,75	10,0	9,75
7,5	9,8	10,0	9,8
7,5	9,85	10,0	9,85
7,5	9,9	10,0	9,9
7,5	9,95	10,0	9,95
7,5	10,0	10,0	10,0

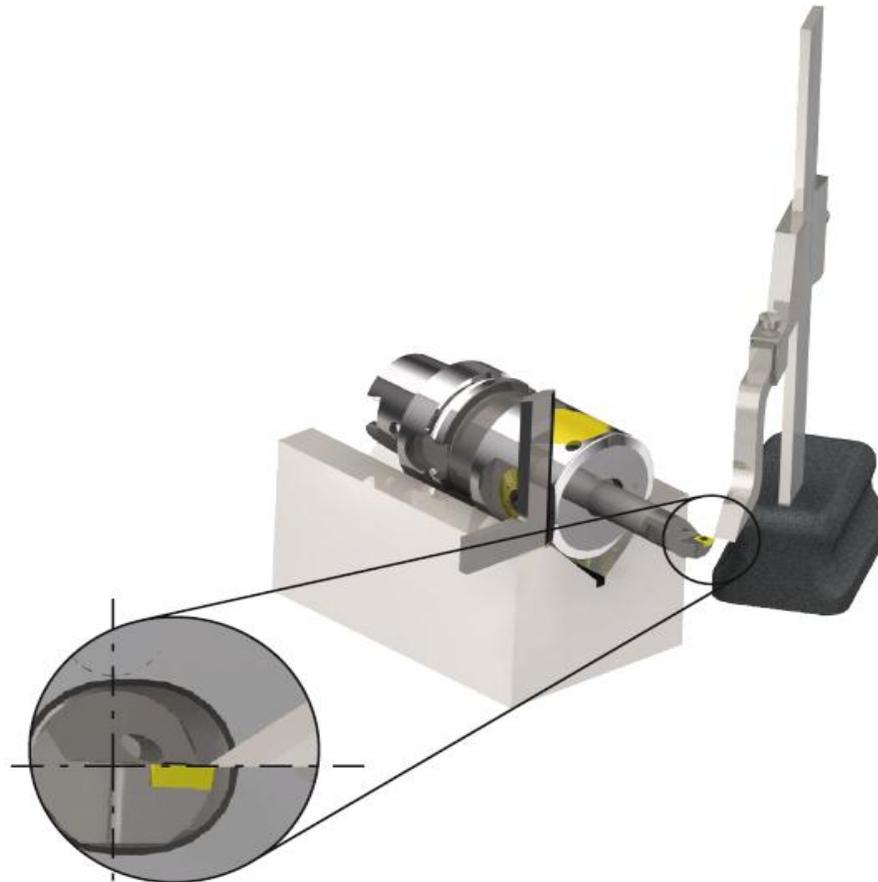
Специальные оправки для обработки диаметров от 7,5 до 40,1 мм. Для заказа необходимо указать диаметр и шаг резания. Размеры в миллиметрах.

Диаметр (D)	Шаг резания (mm)	Диаметр (D)	Шаг резания (mm)
7,5	0,1	10,0	0,1
7,5	0,15	10,0	0,15
7,5	0,2	10,0	0,2
7,5	0,25	10,0	0,25
7,5	0,3	10,0	0,3
7,5	0,35	10,0	0,35
7,5	0,4	10,0	0,4
7,5	0,45	10,0	0,45
7,5	0,5	10,0	0,5
7,5	0,55	10,0	0,55
7,5	0,6	10,0	0,6
7,5	0,65	10,0	0,65
7,5	0,7	10,0	0,7
7,5	0,75	10,0	0,75
7,5	0,8	10,0	0,8
7,5	0,85	10,0	0,85
7,5	0,9	10,0	0,9
7,5	0,95	10,0	0,95
7,5	1,0	10,0	1,0
7,5	1,05	10,0	1,05
7,5	1,1	10,0	1,1
7,5	1,15	10,0	1,15
7,5	1,2	10,0	1,2
7,5	1,25	10,0	1,25
7,5	1,3	10,0	1,3
7,5	1,35	10,0	1,35
7,5	1,4	10,0	1,4
7,5	1,45	10,0	1,45
7,5	1,5	10,0	1,5
7,5	1,55	10,0	1,55
7,5	1,6	10,0	1,6
7,5	1,65	10,0	1,65
7,5	1,7	10,0	1,7
7,5	1,75	10,0	1,75
7,5	1,8	10,0	1,8
7,5	1,85	10,0	1,85
7,5	1,9	10,0	1,9
7,5	1,95	10,0	1,95
7,5	2,0	10,0	2,0
7,5	2,05	10,0	2,05
7,5	2,1	10,0	2,1
7,5	2,15	10,0	2,15
7,5	2,2	10,0	2,2
7,5	2,25	10,0	2,25
7,5	2,3	10,0	2,3
7,5	2,35	10,0	2,35
7,5	2,4	10,0	2,4
7,5	2,45	10,0	2,45
7,5	2,5	10,0	2,5
7,5	2,55	10,0	2,55
7,5	2,6	10,0	2,6
7,5	2,65	10,0	2,65
7,5	2,7	10,0	2,7
7,5	2,75	10,0	2,75
7,5	2,8	10,0	2,8
7,5	2,85	10,0	2,85
7,5	2,9	10,0	2,9
7,5	2,95	10,0	2,95
7,5	3,0	10,0	3,0
7,5	3,05	10,0	3,05
7,5	3,1	10,0	3,1
7,5	3,15	10,0	3,15
7,5	3,2	10,0	3,2
7,5	3,25	10,0	3,25
7,5	3,3	10,0	3,3
7,5	3,35	10,0	3,35
7,5	3,4	10,0	3,4
7,5	3,45	10,0	3,45
7,5	3,5	10,0	3,5
7,5	3,55	10,0	3,55
7,5	3,6	10,0	3,6
7,5	3,65	10,0	3,65
7,5	3,7	10,0	3,7
7,5	3,75	10,0	3,75
7,5	3,8	10,0	3,8
7,5	3,85	10,0	3,85
7,5	3,9	10,0	3,9
7,5	3,95	10,0	3,95
7,5	4,0	10,0	4,0
7,5	4,05	10,0	4,05
7,5	4,1	10,0	4,1
7,5	4,15	10,0	4,15
7,5	4,2	10,0	4,2
7,5	4,25	10,0	4,25
7,5	4,3	10,0	4,3
7,5	4,35	10,0	4,35
7,5	4,4	10,0	4,4
7,5	4,45	10,0	4,45
7,5	4,5	10,0	4,5
7,5	4,55	10,0	4,55
7,5	4,6	10,0	4,6
7,5	4,65	10,0	4,65
7,5	4,7	10,0	4,7
7,5	4,75	10,0	4,75
7,5	4,8	10,0	4,8
7,5	4,85	10,0	4,85
7,5			



Einstellen der Schneidenhöhe auf  
Werkzeugzentrum für alle Ausdrehstähle  
ohne Spannfläche

Adjusting the tip height on tool centre for  
boring bars without clamping flat



**Различные варианты для выточенного отверстия** (с 10 до 1)

На диаметры (10, 7,5-40, 1 мм) (переходный вариант)

Применение для обработки стальных

Применение для обработки титановых сплавов

Применение для обработки алюминия

Диаметр	Длина	Вид	С	Т	А	В	С	Т	А	В
10	100	100	100	100	100	100	100	100	100	100
7,5	100	100	100	100	100	100	100	100	100	100
5	100	100	100	100	100	100	100	100	100	100
4	100	100	100	100	100	100	100	100	100	100
3	100	100	100	100	100	100	100	100	100	100
2	100	100	100	100	100	100	100	100	100	100
1,5	100	100	100	100	100	100	100	100	100	100
1	100	100	100	100	100	100	100	100	100	100



Спецификация и технические характеристики



### Universal Auswuchtringe

Einstelltabelle verfügbar womit die Unwucht über 90% reduziert wird

### Universal balancing rings

balancing charts are available in order to reduce unbalance by 90%



#### Technische Zeichnungen

Die technischen Zeichnungen sind in der Bedienungsanleitung zu finden.

Typ	M	N	L
Standardring	10	15	20
Standardring	10	15	20



#### Technische Zeichnungen

Typ	M	N	L
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1
Standardring	1	1	1



#### Technische Zeichnungen

Typ	M	N	L
Standardring	10	15	20
Standardring	10	15	20



Typ	M	N	L
Standardring	10	15	20
Standardring	10	15	20



### Manual FBHO Ø 3.0 - 88.1 mm

Technical drawing - view of the boring head (FB HO, 1 mm)



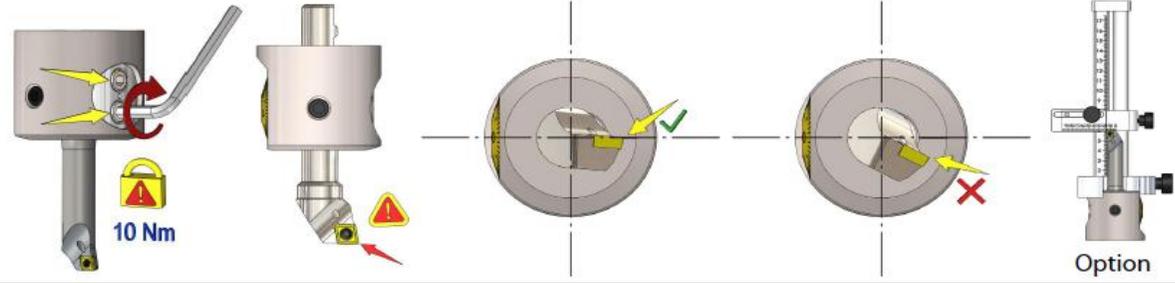
Technical drawing - view of the boring head (FB HO, 1 mm)

Technical drawing - view of the boring head (FB HO, 1 mm)

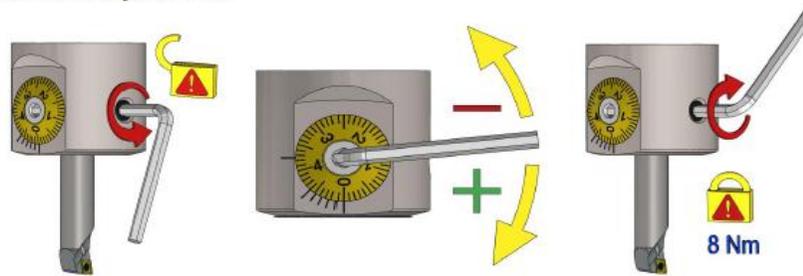


Accessories	Order
Boring bar	FBHO 10 mm
Boring bar	FBHO 12 mm
Boring bar	FBHO 16 mm
Boring bar	FBHO 20 mm
Boring bar	FBHO 25 mm
Boring bar	FBHO 32 mm
Boring bar	FBHO 40 mm
Boring bar	FBHO 50 mm
Boring bar	FBHO 63 mm
Boring bar	FBHO 80 mm
Boring bar	FBHO 100 mm

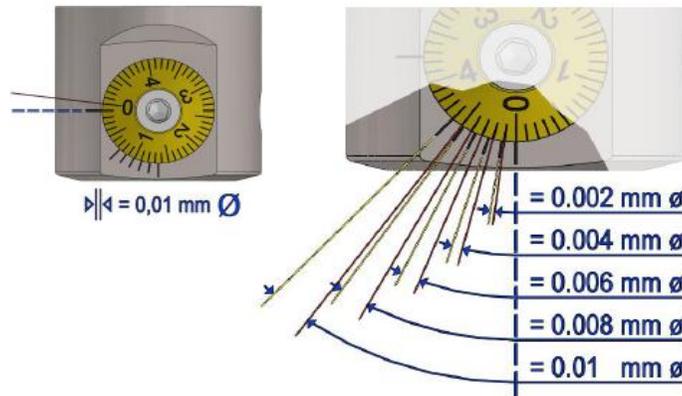
#### boring bar assembly



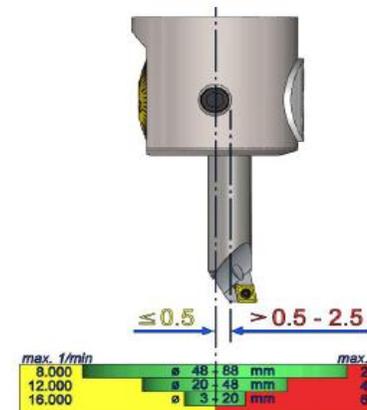
#### diameter adjustment



#### scale / nonius



#### max. revolution

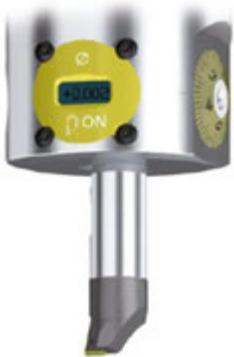


### Fine boring head Ø 3 - 88.1 mm

- Precise
- Universal
- Stiff
- Maintenance-free



Feature	Function	Benefit
Precise adjustment	Accuracy (2 µm) Large, easy to read dial Diameter adjustment with minimum backlash.	Short setup time and very easy to handle.
Length adjustment of the boring bar	As a result of the <i>Push Thru</i> technology of the fine boring head the boring bar could be adjusted in the length.	Higher productivity - there is minimal difference between the boring depth and the tool length.
Inserts	There is only one standard ISO insert size needed for the whole diameter range (CC.. 06 02..).	No special inserts needed.
Balancing of the fine boring head	The main body is balanced. The unbalance, which normally occurs when adjusting the boring bar, is reduced to a minimum. There are balancing rings available which reduce the unbalance 90-95%.	The advantages of a balanced tool are: - better surface finish - higher tool life - maximum spindle life
Diameter range	The diameter range of the fine boring head is from Ø3 up to 88.1mm (.118 - 3.46"). There are a lot of different boring bars available (carbide, steel, adjustable ....) .	The fine boring head is a high precision tool which is very stiff. The diameter from 10-88 can be achieved with 6 boring bars. High productivity with low investment.



### Merkmale:

Der digitale Ausdrehkopf ist zur Bearbeitung von Präzisionsbohrungen von  $\varnothing$  3 – 88.1 mm vorgesehen.

als Monoblock- und Modularwerkzeug erhältlich

für Ausdrehstähle mit Schaftdurchmesser 16mm

Auflösung der Digitalanzeige 0.001mm, d.h. 0.002mm im Durchmesser

direktes Wegmesssystem umkehrspielfrei  $\mu$ -genaue Masskorrekturen +/- möglich

das Einschalten erfolgt über einen Magnetschalter (kühlmitteldicht u. verschleissfest)

autom. Abschaltung (Batteriesparmodus)

mit Innenkühlung

Ausdrehstähle durchschiebbar

### Features:

The fine boring head for boring bars is designed for precision holes from diameter  $\varnothing$  3 – 88.1mm (0.118 – 3.469”).

For this diameter range Swiss Tools supplies different equipment.

As monobloc- or modular tool available

For boring bars with shank diameter 16mm (0.63”)

Direct measuring system – without reversal backlash

Switch on with a magnetic key (waterproof and wear resistant)

Switch off automatically – saving battery

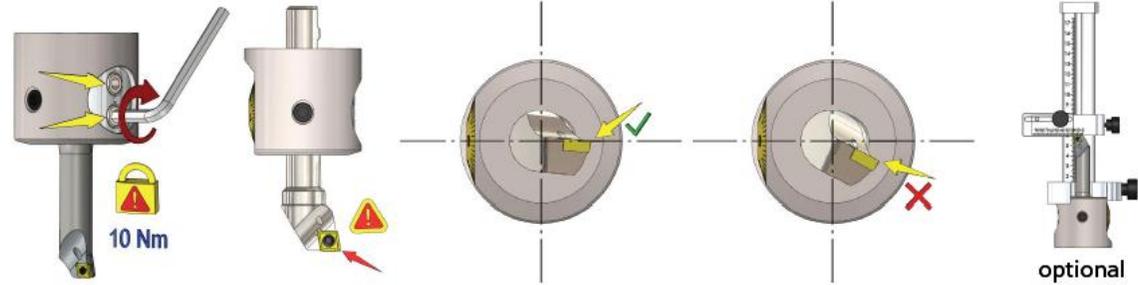
With inner coolant supply

Boring bar go through the head

INSTRUCTION MANUAL  
DIGI HEAD  
Ø 3.0 - 88.1 mm



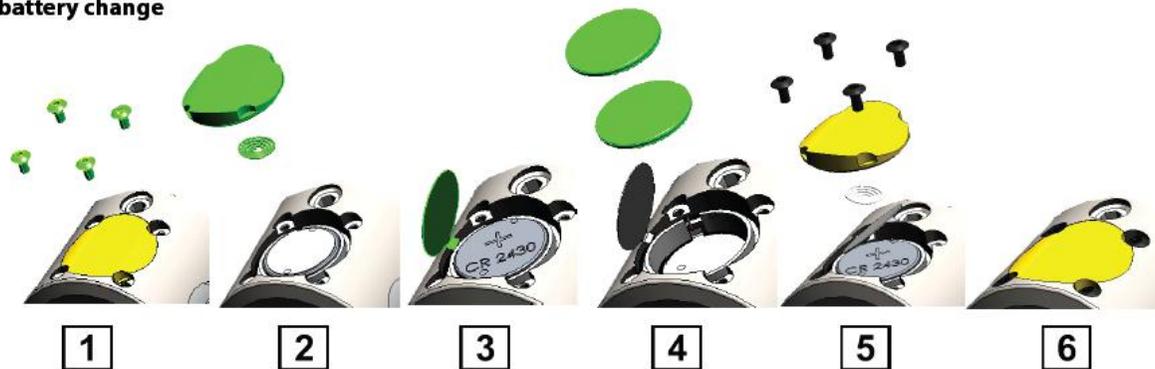
### assembling boring bar



### diameter adjustment



### battery change



### DIGI-HEAD Ø 3 - 88.1 mm

- Digital
- Innovative
- Precise
- Maintenance-free



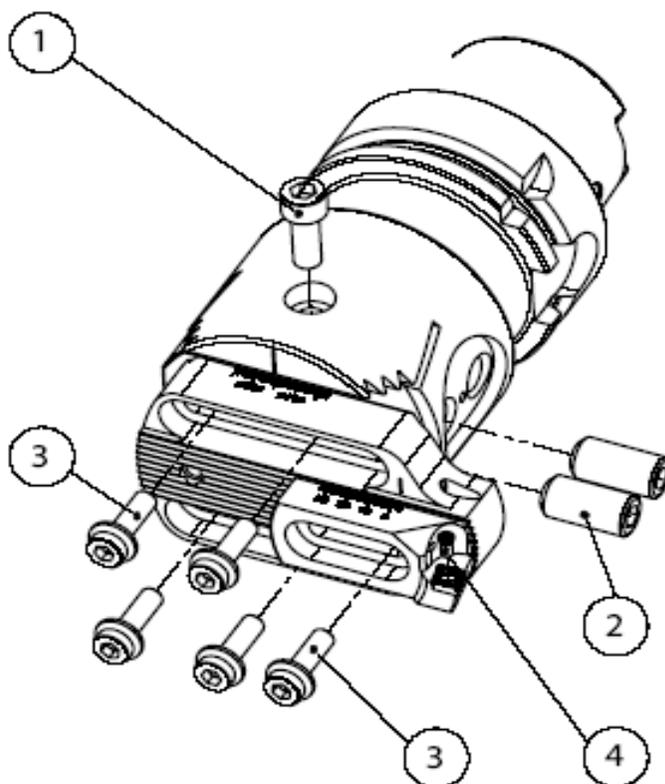
Feature	Function	Benefit
LCD display Precise fine adjustment	Accuracy (2 µm) Large, easy to read dial Direct measurement system without backlash.	Easy handling and very accurate adjustment. Short setup time.
Length adjustment of the boring bar	As a result of the <i>Push Thru</i> technology of the DIGI-HEAD the boring bar can be adjusted in length.	Higher productivity - there is not a big difference between the boring depth and the tool length.
Inserts	There is only one standard ISO insert size needed for the whole diameter range (CC.. 06 02..).	No special inserts needed.
Balancing of the DIGI-HEAD	The main body is balanced. The unbalance, which normally occurs when adjusting the boring bar, is reduced to a minimum. There are balancing rings available which reduce the unbalance 90-95%.	The advantages of a balanced tool are: - better surface finish - higher tool life - maximum spindle life
Diameter range	The diameter range of the DIGI-HEAD is from Ø3 up to 88.1mm (.118 - 3.46"). There are lot different boring bars available (carbide, steel, adjustable ....) .	The DIGI-HEAD is a very precise tool. The handling of this tool is very easy. Every adjustment is shown on the digital display: short setup time and high productivity
Magnetic switch	Contactless powering of the diplay by a magnetic switch. Automatically powers off to save battery life.	Low-wear and water resistant. Long battery life: minimum maintenance required.





Bedienung:

Operation:



### Technische Parameter (Technische Angaben) (Technical Data)

Technische Parameter (Technische Angaben) (Technical Data)

Parameter	Value
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer

### Technische Parameter (Technische Angaben) (Technical Data)

Parameter	Value
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer

### Technische Parameter (Technische Angaben) (Technical Data)

Parameter	Value
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer

### Technische Parameter (Technische Angaben) (Technical Data)

Parameter	Value
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer

### Technische Parameter (Technische Angaben) (Technical Data)

Parameter	Value
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer
Spindelbohrer	Spindelbohrer



Zubehör:

Accessories:

### Feinbohrbrücken ø86-320

### Fine boring bridges ø86-320

#### Aluminium-Brücken

- mit Innenkühlung

#### Aluminium bridges

- with inner coolant supply

Bestell-Nr. / Order number	D	ø A min.	ø A max.
212.086.164.080	80	86	164
212.162.320.158	158	162	320



#### Wendepplattenhalter

- mit Innenkühlung

#### Insert holders

- with inner coolant supply

Bestell-Nr. / Order number	Wendepplatte / Insert	ø A min.	ø A max.
256.048.006.014	CC . . 06 02 . .	86	320
256.048.009.014	CC . . 09 T3 . .	86	320



#### Gegengewicht

- für hohe Drehzahlen

#### Counter weight

- for high revolution speed

Bestell-Nr. / Order number
212.038.045.012





**Техническое описание: только на диаметры от 10 до 250 мм** (10-250)

Техническое описание: только на диаметры от 10 до 250 мм

Диаметр	Высота	Вес	Ссылка
10-15	100	0,5	ST100100000
15-20	100	0,8	ST100150000
20-25	100	1,2	ST100200000
25-30	100	1,8	ST100250000
30-35	100	2,5	ST100300000
35-40	100	3,5	ST100350000
40-45	100	4,8	ST100400000
45-50	100	6,5	ST100450000
50-55	100	8,5	ST100500000
55-60	100	11,0	ST100550000
60-65	100	14,0	ST100600000
65-70	100	18,0	ST100650000
70-75	100	23,0	ST100700000
75-80	100	29,0	ST100750000
80-85	100	36,0	ST100800000
85-90	100	45,0	ST100850000
90-95	100	55,0	ST100900000
95-100	100	67,0	ST100950000
100-110	100	85,0	ST101000000
110-120	100	105,0	ST101100000
120-130	100	130,0	ST101200000
130-140	100	160,0	ST101300000
140-150	100	195,0	ST101400000
150-160	100	240,0	ST101500000
160-170	100	295,0	ST101600000
170-180	100	360,0	ST101700000
180-190	100	435,0	ST101800000
190-200	100	520,0	ST101900000
200-210	100	615,0	ST102000000
210-220	100	720,0	ST102100000
220-230	100	835,0	ST102200000
230-240	100	960,0	ST102300000
240-250	100	1100,0	ST102400000

**Техническое описание: только на диаметры от 10 до 250 мм** (10-250)

Техническое описание: только на диаметры от 10 до 250 мм

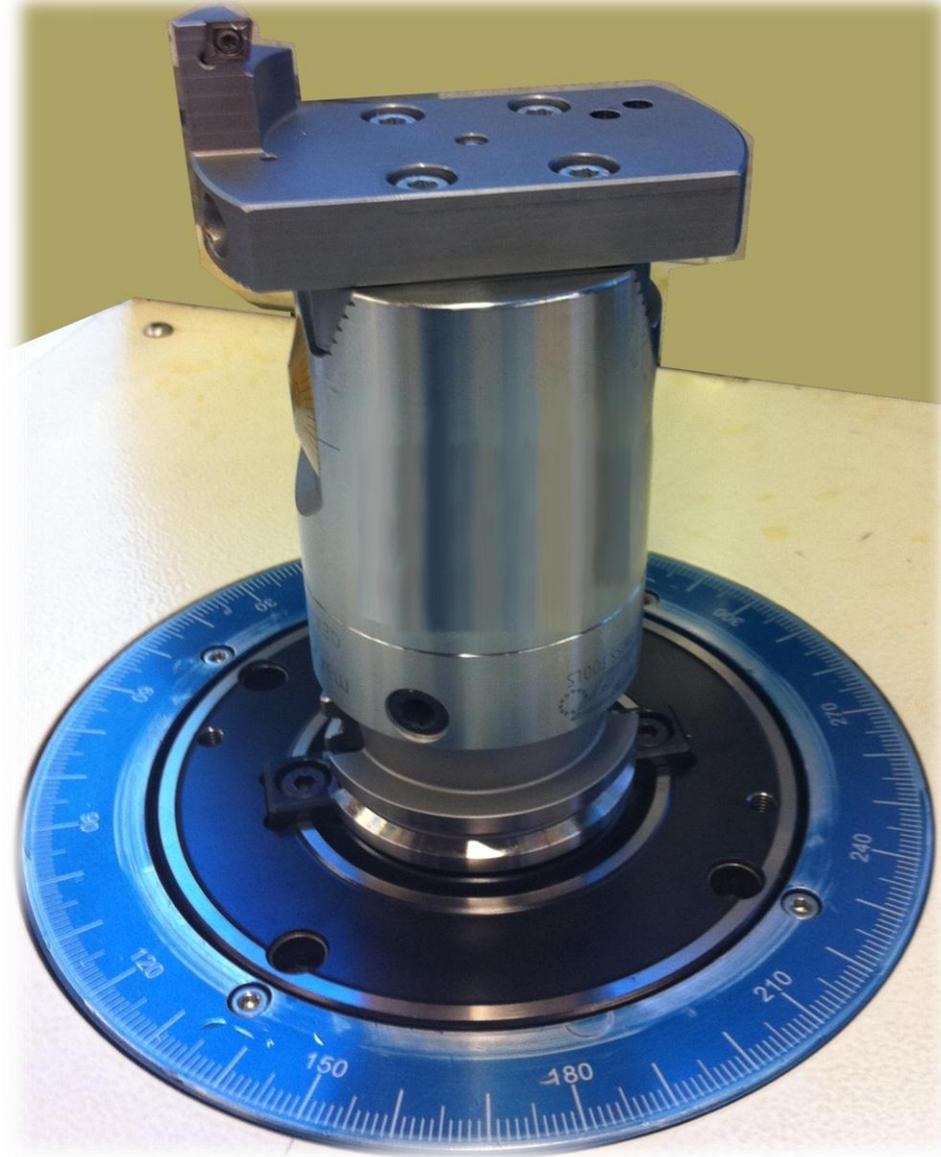
Диаметр	Высота	Вес	Ссылка
10-15	100	0,5	ST100100000
15-20	100	0,8	ST100150000
20-25	100	1,2	ST100200000
25-30	100	1,8	ST100250000
30-35	100	2,5	ST100300000
35-40	100	3,5	ST100350000
40-45	100	4,8	ST100400000
45-50	100	6,5	ST100450000
50-55	100	8,5	ST100500000
55-60	100	11,0	ST100550000
60-65	100	14,0	ST100600000
65-70	100	18,0	ST100650000
70-75	100	23,0	ST100700000
75-80	100	29,0	ST100750000
80-85	100	36,0	ST100800000
85-90	100	45,0	ST100850000
90-95	100	55,0	ST100900000
95-100	100	67,0	ST100950000
100-110	100	85,0	ST101000000
110-120	100	105,0	ST101100000
120-130	100	130,0	ST101200000
130-140	100	160,0	ST101300000
140-150	100	195,0	ST101400000
150-160	100	240,0	ST101500000
160-170	100	295,0	ST101600000
170-180	100	360,0	ST101700000
180-190	100	435,0	ST101800000
190-200	100	520,0	ST101900000
200-210	100	615,0	ST102000000
210-220	100	720,0	ST102100000
220-230	100	835,0	ST102200000
230-240	100	960,0	ST102300000
240-250	100	1100,0	ST102400000

**Применение для автоматической обработки**

Применение для автоматической обработки

Диаметр	Высота	Вес	Ссылка
10-15	100	0,5	ST100100000
15-20	100	0,8	ST100150000
20-25	100	1,2	ST100200000
25-30	100	1,8	ST100250000
30-35	100	2,5	ST100300000
35-40	100	3,5	ST100350000
40-45	100	4,8	ST100400000
45-50	100	6,5	ST100450000
50-55	100	8,5	ST100500000
55-60	100	11,0	ST100550000
60-65	100	14,0	ST100600000
65-70	100	18,0	ST100650000
70-75	100	23,0	ST100700000
75-80	100	29,0	ST100750000
80-85	100	36,0	ST100800000
85-90	100	45,0	ST100850000
90-95	100	55,0	ST100900000
95-100	100	67,0	ST100950000
100-110	100	85,0	ST101000000
110-120	100	105,0	ST101100000
120-130	100	130,0	ST101200000
130-140	100	160,0	ST101300000
140-150	100	195,0	ST101400000
150-160	100	240,0	ST101500000
160-170	100	295,0	ST101600000
170-180	100	360,0	ST101700000
180-190	100	435,0	ST101800000
190-200	100	520,0	ST101900000
200-210	100	615,0	ST102000000
210-220	100	720,0	ST102100000
220-230	100	835,0	ST102200000
230-240	100	960,0	ST102300000
240-250	100	1100,0	ST102400000

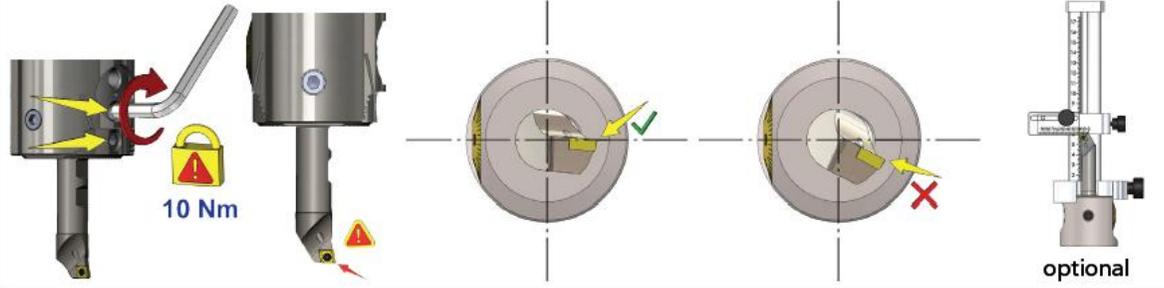
12



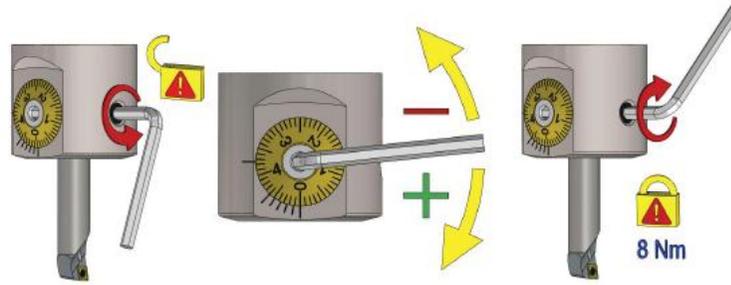
**INSTRUCTION MANUAL**  
**Multi-Head**  
**Ø 3-320 mm**



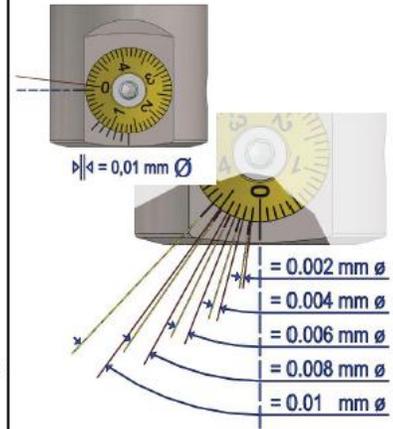
**assembling boring bar**



**diameter adjustment**



**scale / vernier**



**assembling Ø86-320mm**



**presetting scale**



### MULTI-HEAD Ø 3 - 320 mm

- Flexible
- Universal
- Compact
- Precise
- Cost-efficient

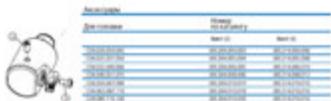


Feature	Function	Benefit
Precise adjustment	Accuracy (2 µm) Large, easy to read dial Diameter adjustment with minimum backlash.	Short setup time and very easy to use.
Length adjustment of the boring bar	As a result of the <i>Push Thru</i> technology of the MULTI-HEAD, the boring bar can be adjusted in length.	Higher productivity - there is minimal difference between the boring depth and the tool length.
Inserts	There is only one standard ISO insert size needed for the whole diameter range (CC.. 06 02..).	No special inserts needed
Balancing of the MULTI-HEAD	The main body is balanced. The unbalance, which normally occurs when adjusting the boring bar, is reduced to a minimum. The bridges are made of aluminium.	The advantages of a balanced tool are: - better surface finish - higher tool life - maximum spindle life
Diameter range	The diameter range of the MULTI-HEAD is from Ø3 up to 320 mm (.118 - 12.60").	The MULTI-HEAD is a very universal and flexible tool, which is very cost-efficient.





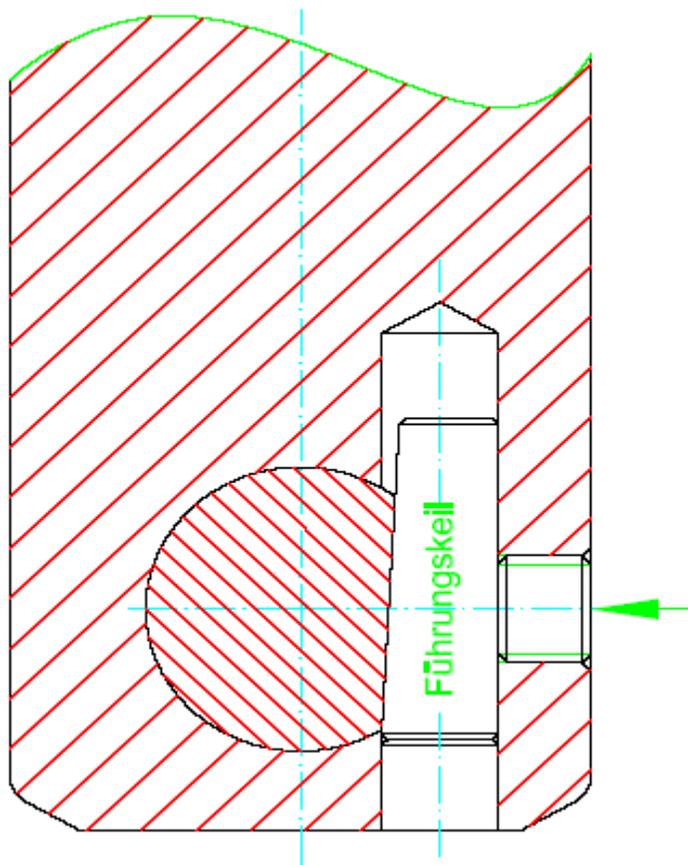
	SWISSTOOLS	Kaiser	Wohl haupter	Epb	Komet	Urma	D'Andrea
Ø-Bereich / Ø-range	 24 – 171	 20 - 203	 29 - 205	 15 - 205	 29 – 199	 20 – 153	 18 – 160
Anzahl / quantity	7	7	9	9	15	8	8





Klemmung der Feinverstellung

Clamping of the micro adjustment



Spannschraube

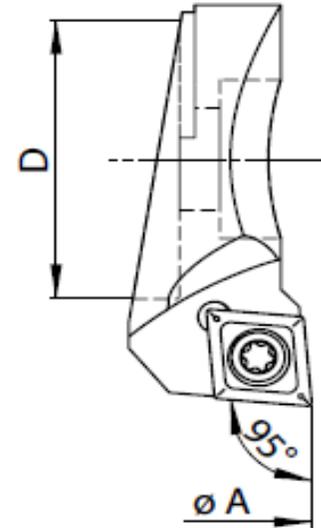
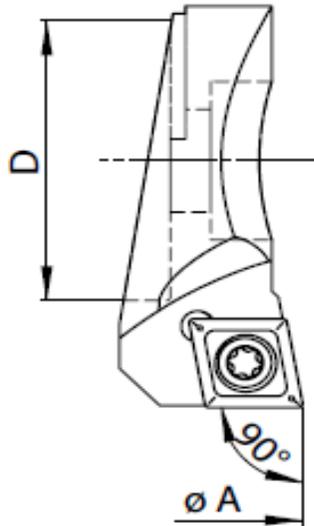
Technical drawing showing a scale and a small diagram of the tool's internal mechanism.

Bestellnummer	Bezeichnung	Material	Maße
1000000000	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000001	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000002	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000003	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000004	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000005	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000006	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000007	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000008	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000009	Feinbohrkopf	Alu	Ø 100 x 100 x 100
1000000010	Feinbohrkopf	Alu	Ø 100 x 100 x 100



Wendepplattenhalter 90° / 95°

Insert holder 90° / 95°



**Резцовые вставки для чашки серии CH**

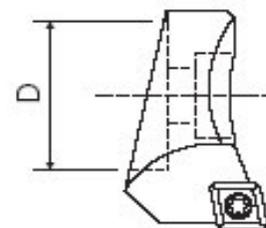
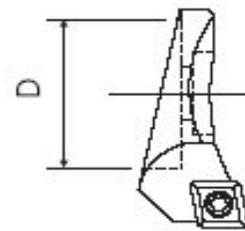
Для использования в головках серий CH4 и E30

Материал	Вид	Внешний диаметр	Внутренний диаметр	Высота	Длина
CH401000000	CH4	10,0	7,0	10,0	10,0
CH40100001	CH4	12,0	9,0	12,0	12,0
CH40100002	CH4	15,0	11,0	15,0	15,0
CH40100003	CH4	18,0	14,0	18,0	18,0
CH40100004	CH4	22,0	17,0	22,0	22,0
CH40100005	CH4	28,0	21,0	28,0	28,0
CH40100006	CH4	35,0	26,0	35,0	35,0
CH40100007	CH4	42,0	31,0	42,0	42,0
CH40100008	CH4	50,0	37,0	50,0	50,0
CH40100009	CH4	60,0	45,0	60,0	60,0
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CH40100012	CH4	90,0	70,0	90,0	90,0
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CH40100014	CH4	110,0	87,0	110,0	110,0
CH40100015	CH4	120,0	95,0	120,0	120,0
CH40100016	CH4	140,0	113,0	140,0	140,0
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CH40100018	CH4	180,0	149,0	180,0	180,0
CH40100019	CH4	200,0	167,0	200,0	200,0
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CH40100021	CH4	250,0	211,0	250,0	250,0
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CH40100023	CH4	320,0	271,0	320,0	320,0
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CH40100036	CH4	1280,0	1113,0	1280,0	1280,0
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CH40100038	CH4	1550,0	1331,0	1550,0	1550,0
CH40100039	CH4	1700,0	1455,0	1700,0	1700,0
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CH40100042	CH4	2210,0	1887,0	2210,0	2210,0
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CH40100104	CH4	32900,0	43715,0	32900,0	32900,0
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Erweiterter Durchmesserbereich

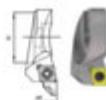
Extended boring range



Рекомендованные размеры для головки серии CH4

Для использования в головках серий CH4 и E50

Сверло	Ø D	Ø d	h	Вариант	Длина
SWISS+TOOLS CH4 200	200	150	15	100-200	200-200-200
SWISS+TOOLS CH4 250	250	175	15	100-250	250-250-250
SWISS+TOOLS CH4 300	300	175	15	100-300	300-300-300
SWISS+TOOLS CH4 350	350	175	15	100-350	350-350-350
SWISS+TOOLS CH4 400	400	175	15	100-400	400-400-400
SWISS+TOOLS CH4 450	450	175	15	100-450	450-450-450
SWISS+TOOLS CH4 500	500	175	15	100-500	500-500-500
SWISS+TOOLS CH4 550	550	175	15	100-550	550-550-550
SWISS+TOOLS CH4 600	600	175	15	100-600	600-600-600
SWISS+TOOLS CH4 650	650	175	15	100-650	650-650-650
SWISS+TOOLS CH4 700	700	175	15	100-700	700-700-700
SWISS+TOOLS CH4 750	750	175	15	100-750	750-750-750
SWISS+TOOLS CH4 800	800	175	15	100-800	800-800-800
SWISS+TOOLS CH4 850	850	175	15	100-850	850-850-850
SWISS+TOOLS CH4 900	900	175	15	100-900	900-900-900
SWISS+TOOLS CH4 950	950	175	15	100-950	950-950-950
SWISS+TOOLS CH4 1000	1000	175	15	100-1000	1000-1000-1000



Рекомендованные размеры для головки серии CH4

Для использования в головках серий CH4 и E50

Сверло	Ø D	Ø d	h	Вариант	Длина
SWISS+TOOLS CH4 200	200	150	15	100-200	200-200-200
SWISS+TOOLS CH4 250	250	175	15	100-250	250-250-250
SWISS+TOOLS CH4 300	300	175	15	100-300	300-300-300
SWISS+TOOLS CH4 350	350	175	15	100-350	350-350-350
SWISS+TOOLS CH4 400	400	175	15	100-400	400-400-400
SWISS+TOOLS CH4 450	450	175	15	100-450	450-450-450
SWISS+TOOLS CH4 500	500	175	15	100-500	500-500-500
SWISS+TOOLS CH4 550	550	175	15	100-550	550-550-550
SWISS+TOOLS CH4 600	600	175	15	100-600	600-600-600
SWISS+TOOLS CH4 650	650	175	15	100-650	650-650-650
SWISS+TOOLS CH4 700	700	175	15	100-700	700-700-700
SWISS+TOOLS CH4 750	750	175	15	100-750	750-750-750
SWISS+TOOLS CH4 800	800	175	15	100-800	800-800-800
SWISS+TOOLS CH4 850	850	175	15	100-850	850-850-850
SWISS+TOOLS CH4 900	900	175	15	100-900	900-900-900
SWISS+TOOLS CH4 950	950	175	15	100-950	950-950-950
SWISS+TOOLS CH4 1000	1000	175	15	100-1000	1000-1000-1000



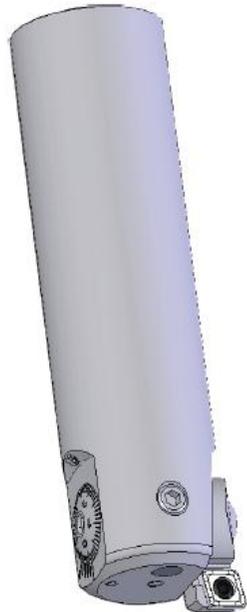
Важные моменты:

Сверло	Ø D	Ø d	h	Вариант	Длина
SWISS+TOOLS CH4 200	200	150	15	100-200	200-200-200
SWISS+TOOLS CH4 250	250	175	15	100-250	250-250-250
SWISS+TOOLS CH4 300	300	175	15	100-300	300-300-300
SWISS+TOOLS CH4 350	350	175	15	100-350	350-350-350
SWISS+TOOLS CH4 400	400	175	15	100-400	400-400-400
SWISS+TOOLS CH4 450	450	175	15	100-450	450-450-450
SWISS+TOOLS CH4 500	500	175	15	100-500	500-500-500
SWISS+TOOLS CH4 550	550	175	15	100-550	550-550-550
SWISS+TOOLS CH4 600	600	175	15	100-600	600-600-600
SWISS+TOOLS CH4 650	650	175	15	100-650	650-650-650
SWISS+TOOLS CH4 700	700	175	15	100-700	700-700-700
SWISS+TOOLS CH4 750	750	175	15	100-750	750-750-750
SWISS+TOOLS CH4 800	800	175	15	100-800	800-800-800
SWISS+TOOLS CH4 850	850	175	15	100-850	850-850-850
SWISS+TOOLS CH4 900	900	175	15	100-900	900-900-900
SWISS+TOOLS CH4 950	950	175	15	100-950	950-950-950
SWISS+TOOLS CH4 1000	1000	175	15	100-1000	1000-1000-1000

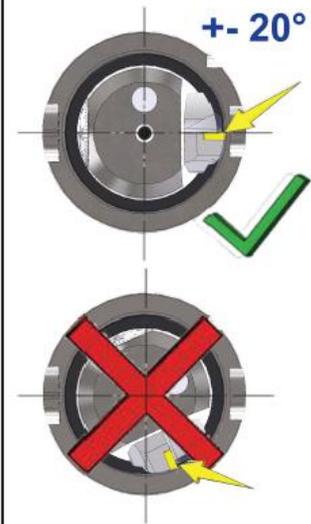




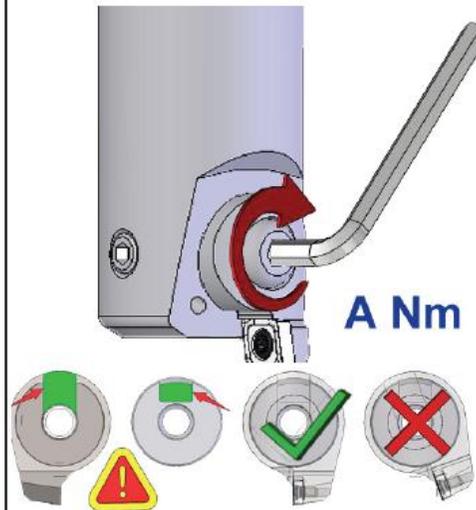
### ECO LINE FINE BORING HEAD



#### assembling boring head



#### assembling insertholder

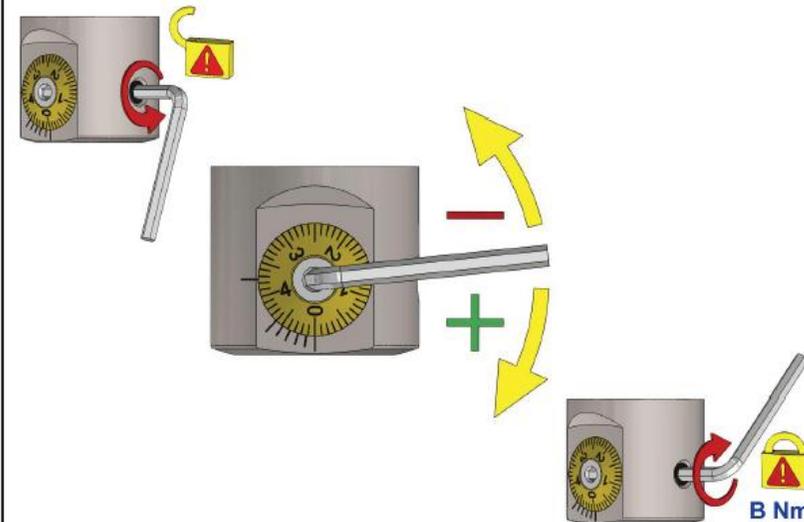


#### back boring (requires a reversal adapter)

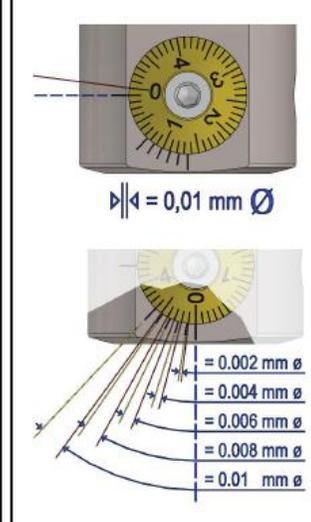


Fine boring head	Nm	max. rpm
D20 / Ø 23.5 - 31.1	A = 2.4 Nm	B = 1.4 Nm
	max. spindle spin	12.000 rpm
D25 / Ø 30.5 - 40.1	A = 5.0 Nm	B = 2.4 Nm
	max. spindle spin	9.000 rpm

#### diameter adjustment



#### scale / vernier



### Fine boring head Ø 23.9 - 153.1 mm

- Precise
- Stiff
- Stable
- Maintenance-free
- User to operate



Feature	Function	Benefit
Precise adjustment	Accuracy (2 µm) Large, easy to read dial Diameter adjustment with minimum backlash.	Short setup time and very easy to use.
Inserts	Utilizes standard ISO inserts.	No special inserts needed.
Balancing of the fine boring head	The main body is balanced. The unbalance, which normally occurs when adjusting the tool, is reduced to a minimum.	The advantages of a balanced tool are: <ul style="list-style-type: none"><li>- better surface finish</li><li>- higher tool life</li><li>- maximum spindle life</li></ul>
Diameter range	The diameter range of each head can be extended by using an insert holders with a bigger f measurement.	<ul style="list-style-type: none"><li>- higher flexibility</li><li>- minimum investment</li></ul>
Back boring	tool is designed for back boring by use of a reversal adapter.	<ul style="list-style-type: none"><li>- higher flexibility</li><li>- modular design is saves costs</li></ul>

## Чистовая расточная головка с резцовым блоком

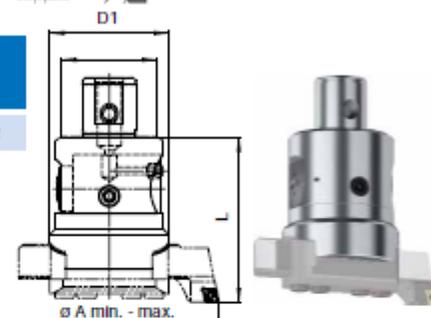
Ø86 - 402

Точность настройки: за один оборот лимба резец перемещается на 0,25 мм на сторону, (0,5 мм на диаметр).  
 Цена деления лимба: 0,01 мм на диаметр.  
 Точность по нониусу: 0,002 мм на диаметр.  
 С внутренним подводом СОЖ.



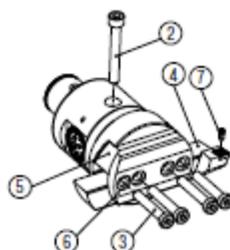
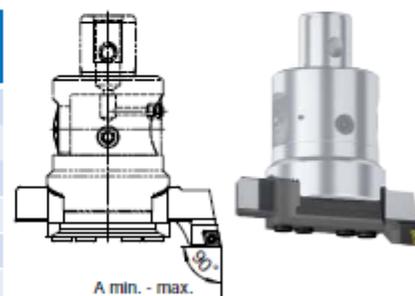
Номер по каталогу	Ø A min.	Ø A max.	D	D1	L
C44.080086.112	86	402	63/80	80	112

Резцовый блок из серии C54 заказывается отдельно.



## Резцовый блок

Номер по каталогу	Ø A min.	Ø A max.	Пластина
C54.086138.009	86	138	CC .. 09 T3 ..
C54.086138.012	86	138	CC .. 12 04 ..
C54.136220.009	136	220	CC .. 09 T3 ..
C54.136220.012	136	220	CC .. 12 04 ..
C54.188302.009	188	302	CC .. 09 T3 ..
C54.242402.009	242	402	CC .. 09 T3 ..





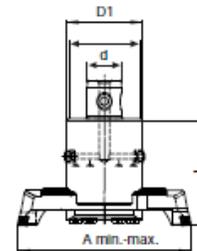
**Двухрезцовая черновая расточная головка с резцовыми блоками**

Ø86 - 402

С внутренним подводом СОЖ.

Номер по каталогу	φ A min.	φ A max.	d	D	D1	L
D44.080.086.112	68	402	36	63/80	80	112

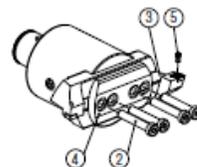
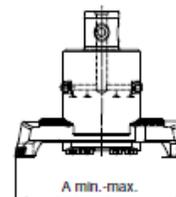
Резцовые блоки серии D54 под эти головки заказываются отдельно.



**Резцовые блоки**

Номер по каталогу	φ A min.	φ A max.	Пластина
D54.086.138.009	86	138	CC .. 09 T3 ..
D54.086.138.012	86	138	CC .. 12 04 ..
D54.136.220.009	136	220	CC .. 09 T3 ..
D54.136.220.012	136	220	CC .. 12 04 ..
D54.188.302.009	188	302	CC .. 09 T3 ..
D54.242.402.009	242	402	CC .. 09 T3 ..

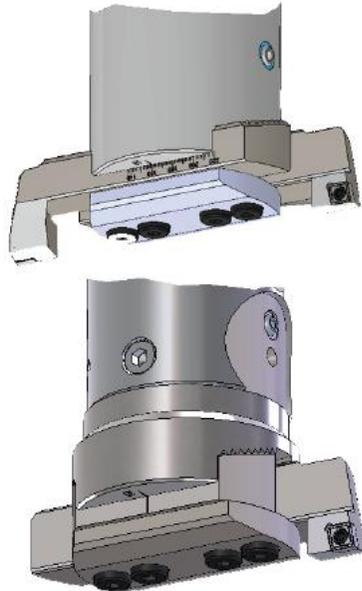
Поставляются в паре и с прижимной планкой.



**Аксессуары**

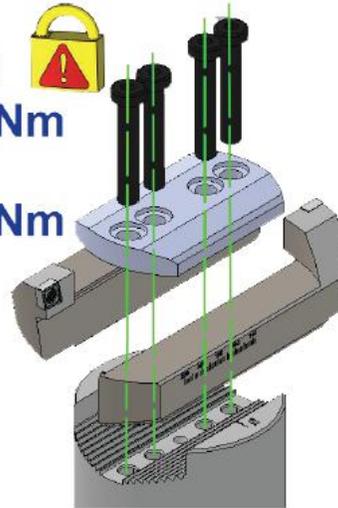
Для головки	Номер по каталогу
	Винт (2)
D44.080.086.112	J00.344.008.044
Для резцовых блоков	Номер по каталогу
	Державка (3)    Планка (4)    Винт (5)    Ключ

**INSTRUCTION MANUAL**  
**Fine + Rough boring head**  
**Ø 86 - 402 mm**

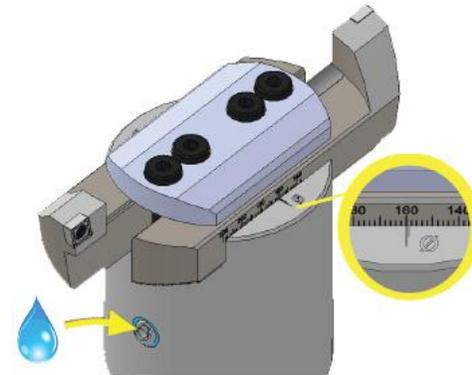


**assembling**

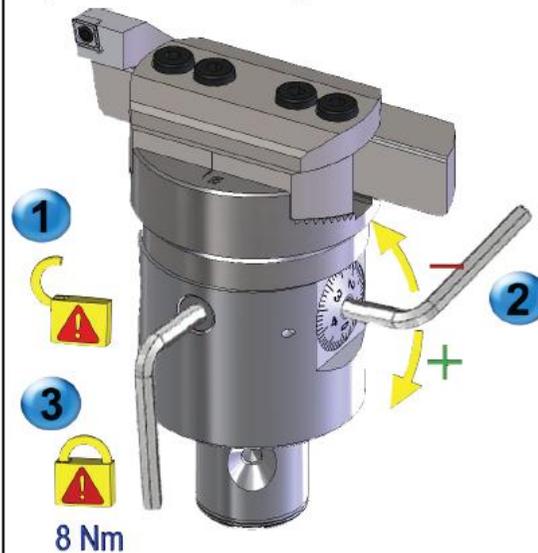
Ø86 - 138  
**2x 25Nm**  
 < Ø136  
**4x 25Nm**



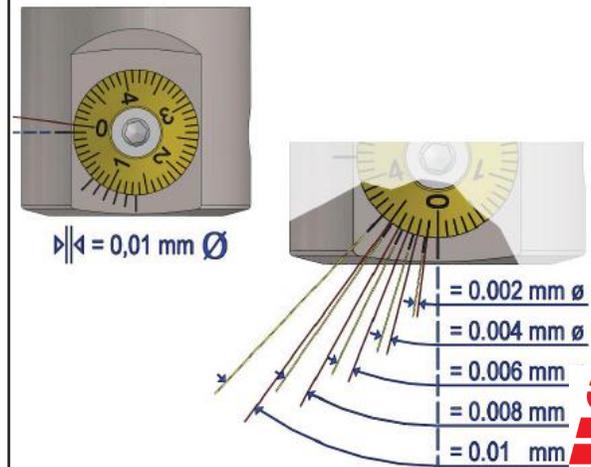
**pre adjustment / coolant**



**adjustment fine boring**



**scale / vernier**



**SWISS+TOOLS**

SWISS TOOL SYSTEMS AG Phone: +41 (0) 71 634 85 20  
 Wydenstrasse 28 Fax: +41 (0) 71 634 85 29  
 CH-8575 Bürglen www.swisstools.org



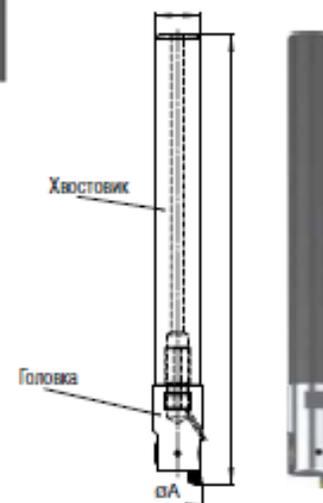
## Оправки со сменной микрометрической головкой для высокоскоростной обработки

Точность настройки: за один оборот лимба резец перемещается на 0,25 мм на сторону, (0,5 мм на диаметр).  
 Цена деления лимба: 0,01 мм на диаметр.  
 Точность по нониусу: 0,002 мм на диаметр.  
 С внутренним подводом СОЖ.



Головка (номер по каталогу)	Хвостовик (номер по каталогу)	ø A мп.	ø A max.	L	Вставка	
C00.014.015.040	B84.014.006.110	14.7	17.1	14	150	C02.005.017.002
C00.016.017.040	B84.016.010.120	16.7	20.1	16	160	C02.005.017.002
C00.019.020.040	B84.018.010.140	19.7	24.1	18	180	C02.005.017.002
C00.020.024.080	B84.020.010.170	23.9	31.1	20	250	C14.011.024.006
C00.025.031.100	B84.025.012.206	30.9	40.1	25	306	C14.013.031.006
C00.032.040.128	B84.032.016.252	39.9	51.1	32	380	C14.017.040.006

Хвостовик, головка и резцовая вставка заказываются по отдельности.  
 Резцовые вставки C14 на стр. 12.21.

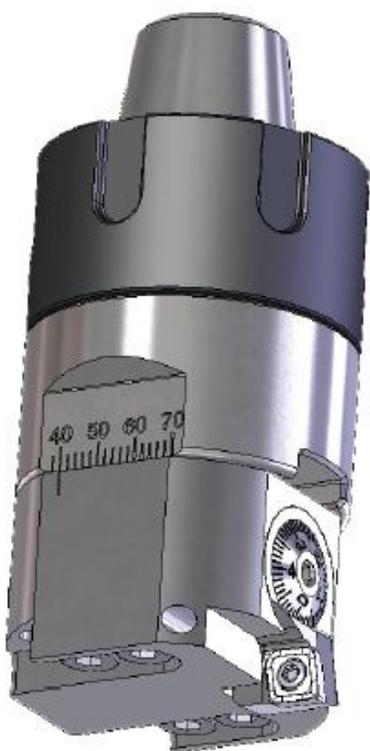


## Резцовая вставка

Номер по каталогу	Пластина	головку
		C00.014.015.040
C02.005.017.002	WC..02 01..	C00.016.017.040
		C00.019.020.040



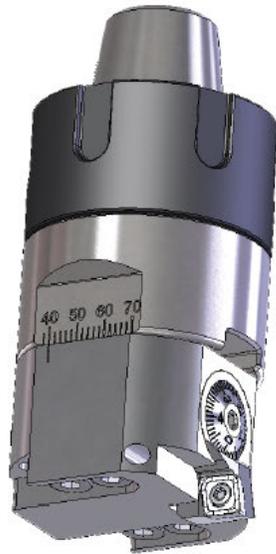
## ECO HEAD SET Ø 39.9 - 100.1 mm



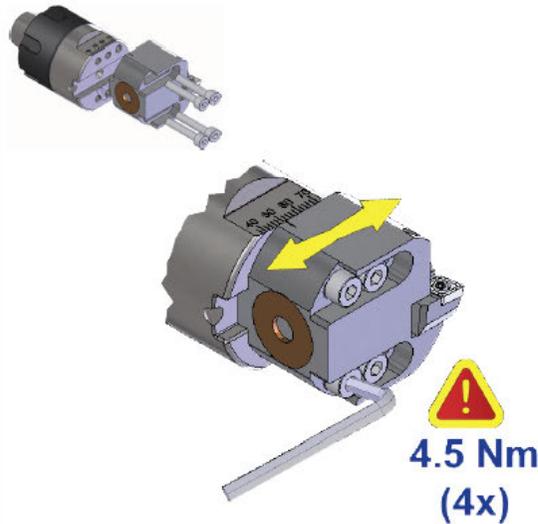
ER-connection is compatible to standard  
collet chucks



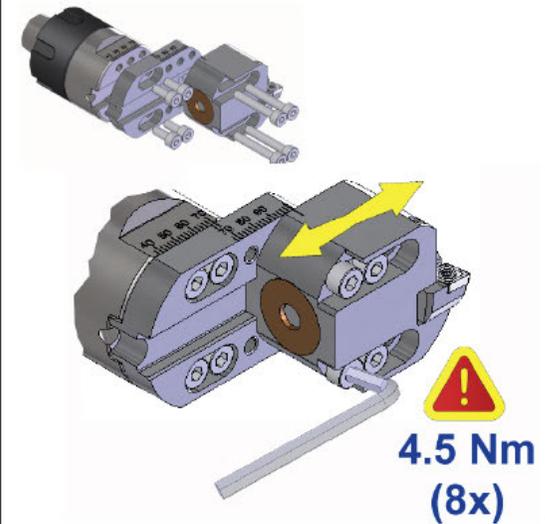
**INSTRUCTION MANUAL**  
**ECO HEAD**  
 Ø 39.9 - 100.1 mm



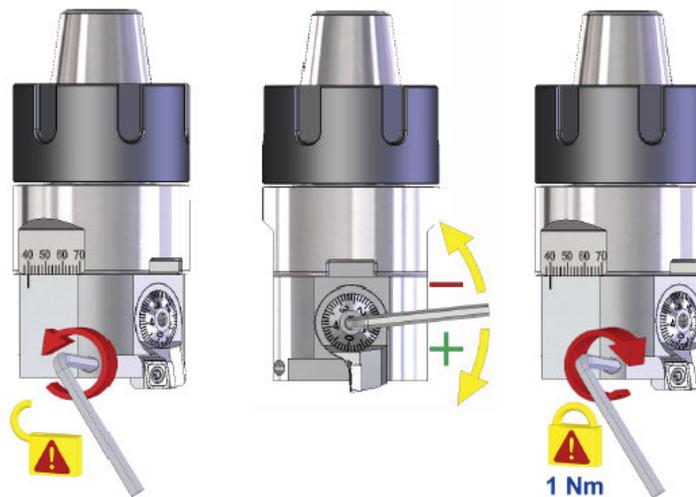
**assembling rough adjustment Ø 39.9 - 70.1mm**



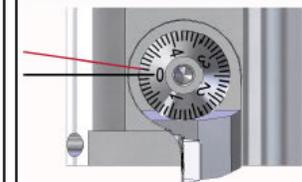
**assembling rough adjustment Ø 69.9 - 100.1mm**



**diameter fine adjustment**



**scale / vernier**



▷|◁ = 0,01 mm Ø

**maximum spindle speed**

**V<sub>max</sub> = 450 m/min (Ø40-70)**  
**V<sub>max</sub> = 250 m/min (Ø70-100)**

**SWISS+TOOLS**

SWISS TOOL SYSTEMS AG  
 Wydenstrasse 28  
 CH-8575 Bürglen

Phone: +41 (0) 71 634 85 00  
 Fax: +41 (0) 71 634 85 29  
 www.swisstools.org

## VARIO HEAD SET Ø 9.75 - 101.1 mm



## optional available accessories for upgrade diameter range to Ø 152.1 mm

Insert holder

Ø 105.75 - 119.0  
(Ø132.0)



Insert holder

Ø 125.75 - 139.0  
(Ø152.0)



Adapter F = 6.5 mm

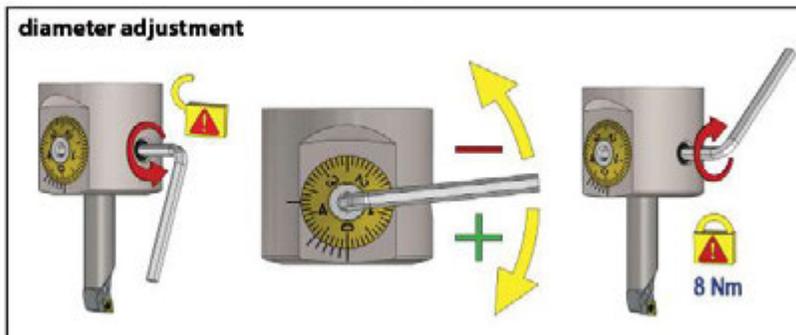
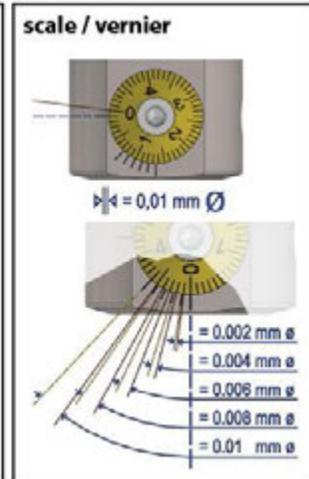
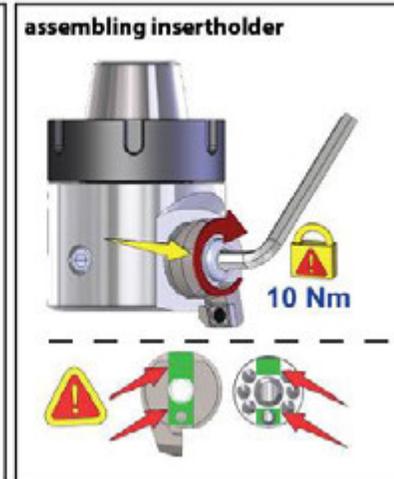
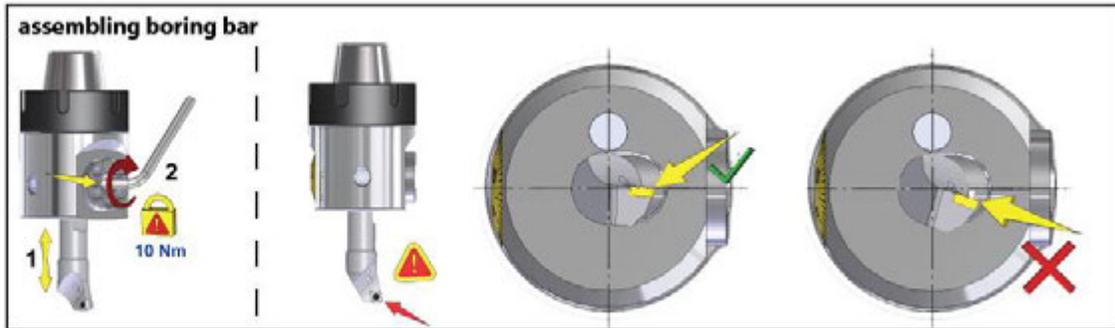
(Ø114.0)  
(Ø132.0)  
(Ø152.0)



ER-connection is compatible to standard  
collet chucks



**INSTRUCTION MANUAL**  
**VARIO HEAD**  
Ø 3 - 152 mm





**Merkmale:**

Das Ausdrehwerkzeug ist zur Vor- und Fertigbearbeitung von Präzisions-bohrungen in einem Arbeitsgang von Ø 150 – 2205mm vorgesehen.

Die Baureihe besteht aus 10 Verlängerungskonsolen, die mit dem Feinbohrkopf, Gegengewicht oder mit Schrappwendeplattenhaltern bestückt werden können.

- Werkzeugseitig mit Kerbverzahnung zur form- und kraftschlüssigen Aufnahme von Feinbohrkopf, Gegengewicht oder Schrappwendeplattenhaltern

mit Innenkühlung

Zapfenbearbeitung möglich

**Features:**

The bridge tools are designed for roughing and finishing precision holes from diameter Ø 150 – 2205 mm (5.91 – 86.81”).

The diameter range can be reached with 10 extension bridges. The insert holders for roughing and finishing are assembled on the extension bridge.

The tools have a special teeth profile which is positive locking and actuated by adherence.

With inner coolant supply

Tools are able for pin turning

Compendium precision and performance series finishing 1 generation

Series	Ø	L	W
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150

Compendium precision and performance series finishing 2 generation

Series	Ø	L	W
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150

Series	Ø	L	W
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150
ST 1500 (1500)	150	150	150



	SWISSTOOLS	Kaiser	Wohl haupter	Epb	Komet	Urma	D'Andrea
Ø-Bereich / Ø-range	😊 150 - 2205	😐 150 -1080	😊 204-3255	😊 204-2205	😊 364-1438	😐 150 - 805	😐 200 - 800

Dimensioni tecniche per pontino a tre bracci - pontino a tre bracci

Modello	Ø	L	H
ST 1000	1000	1000	1000
ST 1500	1500	1500	1500
ST 2000	2000	2000	2000
ST 2500	2500	2500	2500
ST 3000	3000	3000	3000
ST 3500	3500	3500	3500
ST 4000	4000	4000	4000
ST 4500	4500	4500	4500
ST 5000	5000	5000	5000
ST 5500	5500	5500	5500
ST 6000	6000	6000	6000
ST 6500	6500	6500	6500
ST 7000	7000	7000	7000
ST 7500	7500	7500	7500
ST 8000	8000	8000	8000
ST 8500	8500	8500	8500
ST 9000	9000	9000	9000
ST 9500	9500	9500	9500
ST 10000	10000	10000	10000

Dimensioni tecniche per pontino a tre bracci - pontino a tre bracci

Modello	Ø	L	H
ST 1000	1000	1000	1000
ST 1500	1500	1500	1500
ST 2000	2000	2000	2000
ST 2500	2500	2500	2500
ST 3000	3000	3000	3000
ST 3500	3500	3500	3500
ST 4000	4000	4000	4000
ST 4500	4500	4500	4500
ST 5000	5000	5000	5000
ST 5500	5500	5500	5500
ST 6000	6000	6000	6000
ST 6500	6500	6500	6500
ST 7000	7000	7000	7000
ST 7500	7500	7500	7500
ST 8000	8000	8000	8000
ST 8500	8500	8500	8500
ST 9000	9000	9000	9000
ST 9500	9500	9500	9500
ST 10000	10000	10000	10000

Modello	Ø	L	H
ST 1000	1000	1000	1000
ST 1500	1500	1500	1500
ST 2000	2000	2000	2000
ST 2500	2500	2500	2500
ST 3000	3000	3000	3000
ST 3500	3500	3500	3500
ST 4000	4000	4000	4000
ST 4500	4500	4500	4500
ST 5000	5000	5000	5000
ST 5500	5500	5500	5500
ST 6000	6000	6000	6000
ST 6500	6500	6500	6500
ST 7000	7000	7000	7000
ST 7500	7500	7500	7500
ST 8000	8000	8000	8000
ST 8500	8500	8500	8500
ST 9000	9000	9000	9000
ST 9500	9500	9500	9500
ST 10000	10000	10000	10000

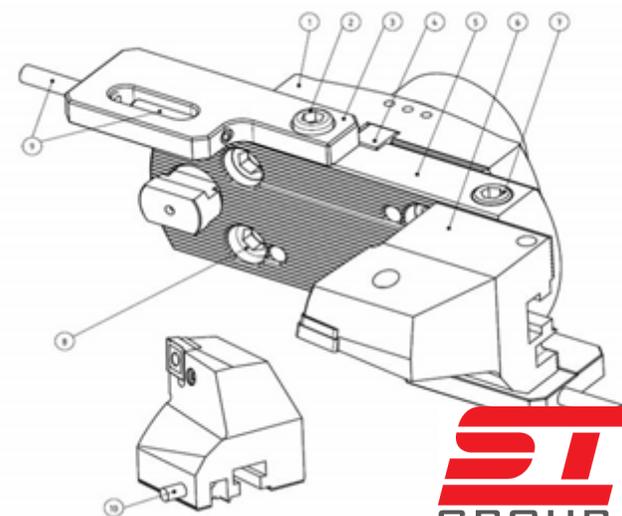
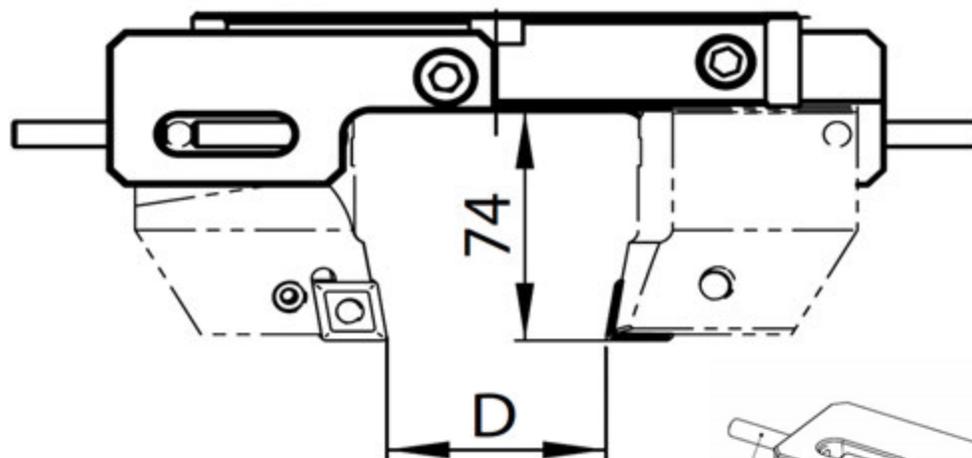






Zapfenbearbeitung Ø10 – 465

Pin turning Ø10 - 465



**Technische Zeichnung** 4700-465

Best.Nr.	Ø	L	W	H
4700-100-000	100	465	100	100
4700-120-000	120	465	100	100
4700-140-000	140	465	100	100
4700-160-000	160	465	100	100
4700-180-000	180	465	100	100
4700-200-000	200	465	100	100
4700-220-000	220	465	100	100
4700-240-000	240	465	100	100
4700-260-000	260	465	100	100
4700-280-000	280	465	100	100
4700-300-000	300	465	100	100



**Применение: обработка для изготовления деталей**

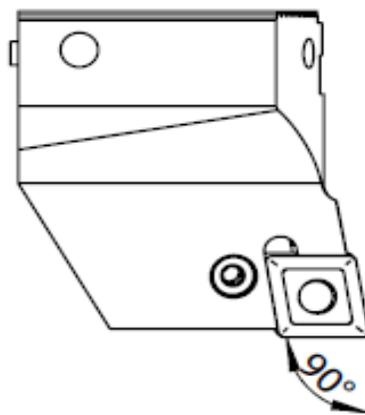
Best.Nr.	Ø	L	W	H
4700-100-000	100	465	100	100
4700-120-000	120	465	100	100
4700-140-000	140	465	100	100
4700-160-000	160	465	100	100
4700-180-000	180	465	100	100
4700-200-000	200	465	100	100
4700-220-000	220	465	100	100
4700-240-000	240	465	100	100
4700-260-000	260	465	100	100
4700-280-000	280	465	100	100
4700-300-000	300	465	100	100



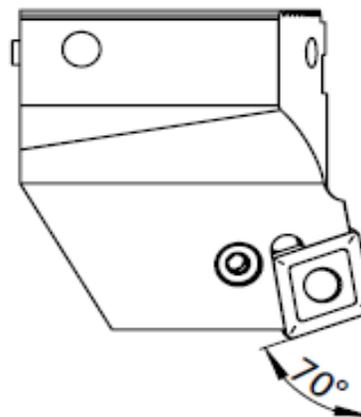
Best.Nr.	Ø	L	W	H
4700-100-000	100	465	100	100
4700-120-000	120	465	100	100
4700-140-000	140	465	100	100
4700-160-000	160	465	100	100
4700-180-000	180	465	100	100
4700-200-000	200	465	100	100
4700-220-000	220	465	100	100
4700-240-000	240	465	100	100
4700-260-000	260	465	100	100
4700-280-000	280	465	100	100
4700-300-000	300	465	100	100



Wendepplattenhalter 70° / 90°



Insert holder 70° / 90°



Preparation for use: see system report 001 + 004, page 07

Code	Accessories
0100000000	1 x 1, 1 x 1, 1 x 1
0100000000	1 x 1, 1 x 1
0100000000	1 x 1, 1 x 1

Preparation for use: see system report 001 + 004, page 07

Code	Accessories
0100000000	1 x 1, 1 x 1
0100000000	1 x 1, 1 x 1

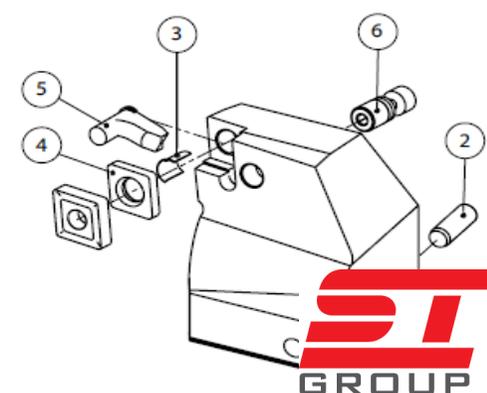
Technical specifications for use

Code	Accessories
0100000000	1 x 1, 1 x 1
0100000000	1 x 1, 1 x 1

Technical specifications for use

Code	Accessories
0100000000	1 x 1, 1 x 1
0100000000	1 x 1, 1 x 1

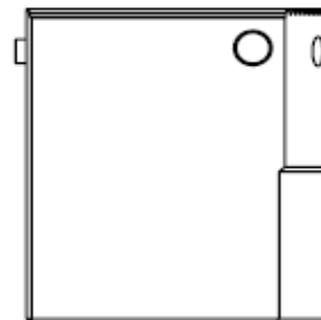
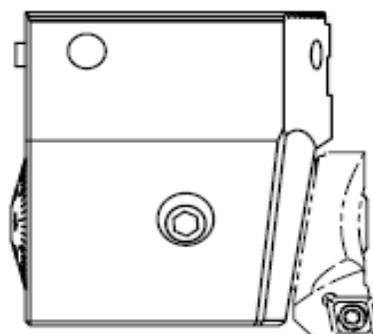
Code	Accessories
0100000000	1 x 1, 1 x 1
0100000000	1 x 1, 1 x 1





Feinbohrkopf / Gegengewicht

Fine boring head / counterweight



Proprietà tecniche per sistemi rapid 100 + 100, serie 107

Modello	Accessori
ST 107/100/100	ST 107/100/100
ST 107/100/100	ST 107/100/100
ST 107/100/100	ST 107/100/100

Proprietà tecniche per sistemi rapid 100 + 100, serie 107

Modello	Accessori
ST 107/100/100	ST 107/100/100
ST 107/100/100	ST 107/100/100

Caratteristiche tecniche

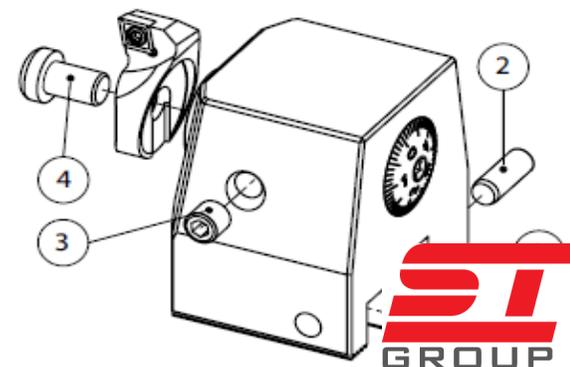
Caratteristiche tecniche e prestazioni per i sistemi rapid 100 + 100, serie 107. Per informazioni e prezzi visitate il sito [www.swissplus.com](http://www.swissplus.com).

Modello	Accessori
ST 107/100/100	ST 107/100/100
ST 107/100/100	ST 107/100/100

Caratteristiche tecniche

Modello	Accessori
ST 107/100/100	ST 107/100/100
ST 107/100/100	ST 107/100/100

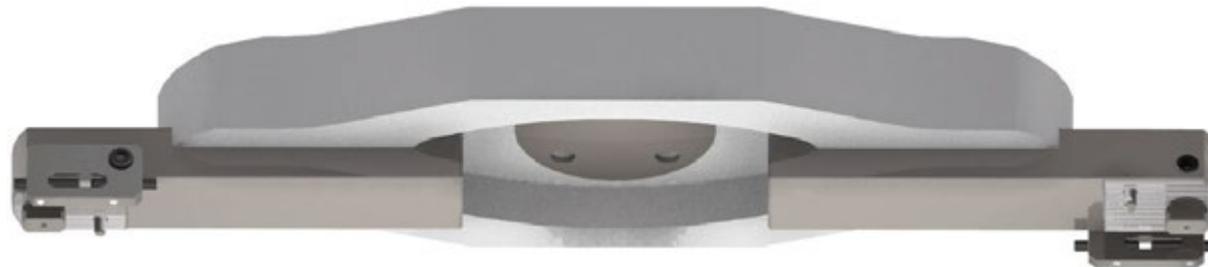
Modello	Accessori
ST 107/100/100	ST 107/100/100
ST 107/100/100	ST 107/100/100





Brückenwerkzeuge Ø 655 – 2205

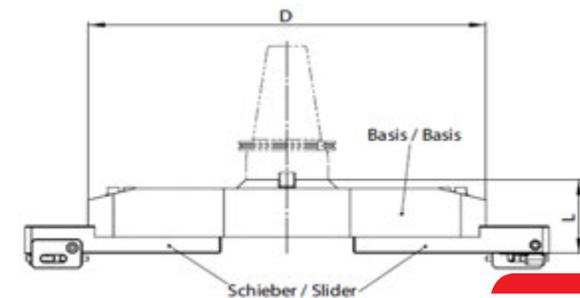
Bridge tools Ø 655 – 2205



- für die Verwendung auf Aufnahme-  
dorn  $\varnothing 60 / \varnothing 129$  DIN 6357
- Basis aus Aluminium
- fragen Sie uns an für optimierte Kom-  
plettlösungen

- for use on holding arbor  $\varnothing 60 / \varnothing 129$
- basis made of aluminium
- please get in touch with us for  
customized solutions

D	L	Ausdrehdurchmesser / Boring diameter
630	128	650 – 1105
1080	128	1100 - 1655
1630	128	1650 – 2205



Технически дан разликен диаметар од 650 мм е намен

За употреба со патроните за копачки теретки Брук по DIN 6357  $\varnothing 60 / \varnothing 129$ .  
Изработено во алуминиево сплав.

Должина	Диаметар	Серија
630	650 - 1105	ST 1000
1080	1100 - 1655	ST 1000
1630	1650 - 2205	ST 1000

Дополнително се достапни и други  
варијации на овој инструмент.



Технически дан разликен диаметар од 650 мм е намен

За употреба со патроните за копачки теретки Брук по DIN 6357  $\varnothing 60 / \varnothing 129$ .

Изработено во алуминиево сплав.

Дополнително се достапни и други  
варијации на овој инструмент.

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варијации на овој инструмент.

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варијации на овој инструмент.

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варијации на овој инструмент.

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варијации на овој инструмент.

Дополнително се достапни и други  
варијации на овој инструмент.

Дополнително се достапни и други  
варијации на овој инструмент.

Дополнително се достапни и други  
варијации на овој инструмент.



Технология для установки диаметров от 1000 мм и выше

Для использования с патрубками для кандалов термальной формы по DIN 3317 200-1126.

Изготовлено из закаленного стального сплава.

Диаметр	Длина	Вес	Материал
1000-1200	1000	1000	1000
1200-1400	1200	1200	1200
1400-1600	1400	1400	1400
1600-1800	1600	1600	1600

Дополнительные детали и аксессуары

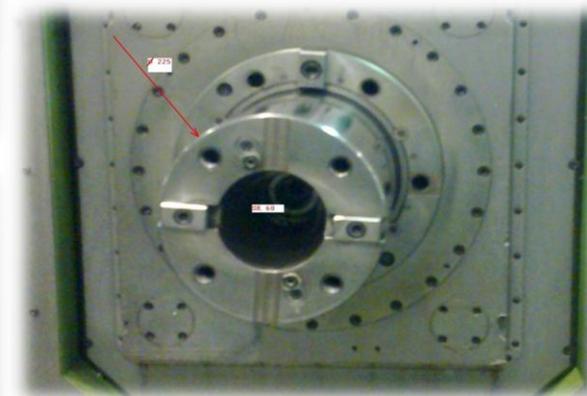
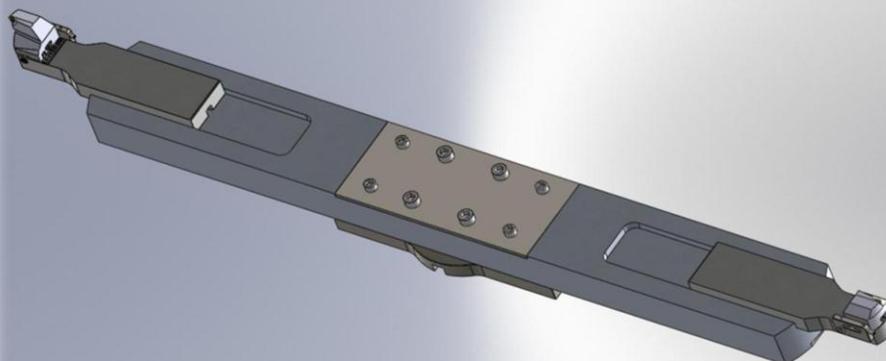
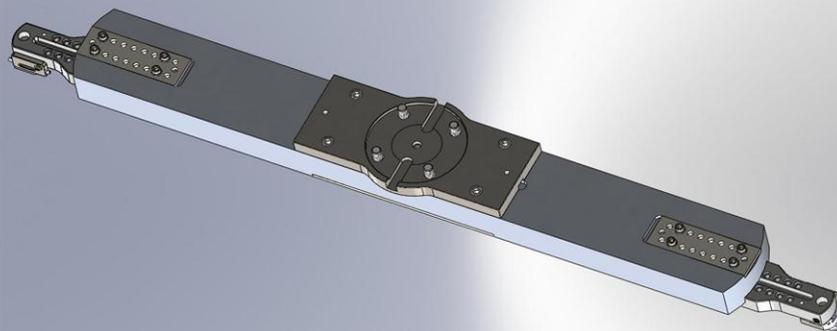


Технология для установки термальной формы для диаметров от 1000 мм

Диаметр	Длина	Вес	Материал
1000	1000	1000	1000
1200	1200	1200	1200
1400	1400	1400	1400
1600	1600	1600	1600

Аксессуары

Аксессуары	Код	Вес	Материал
1000-1200	1000-1200	1000	1000
1200-1400	1200-1400	1200	1200
1400-1600	1400-1600	1400	1400
1600-1800	1600-1800	1600	1600



Технически данни различия диаметра от 100 до 1 мм

Для использования с патронами для концевых сверл серии SWISS+TOOLS.

Диаметр	Длина	Вес	Материал
100 мм	100 мм	1,0 кг	Al 7075-T6
100 мм	150 мм	1,5 кг	Al 7075-T6
100 мм	200 мм	2,0 кг	Al 7075-T6
100 мм	250 мм	2,5 кг	Al 7075-T6
100 мм	300 мм	3,0 кг	Al 7075-T6

Длина сверла для концевых сверл серии SWISS+TOOLS.



Технически данни различия диаметра от 100 до 1 мм

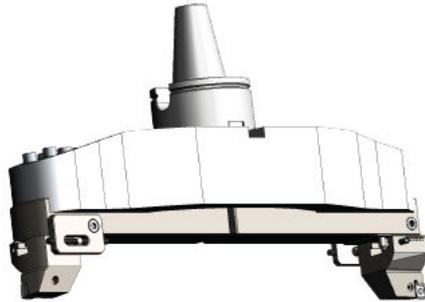
Диаметр	Длина	Вес	Материал
100 мм	100 мм	1,0 кг	Al 7075-T6
100 мм	150 мм	1,5 кг	Al 7075-T6
100 мм	200 мм	2,0 кг	Al 7075-T6
100 мм	250 мм	2,5 кг	Al 7075-T6
100 мм	300 мм	3,0 кг	Al 7075-T6

Длина сверла для концевых сверл серии SWISS+TOOLS.

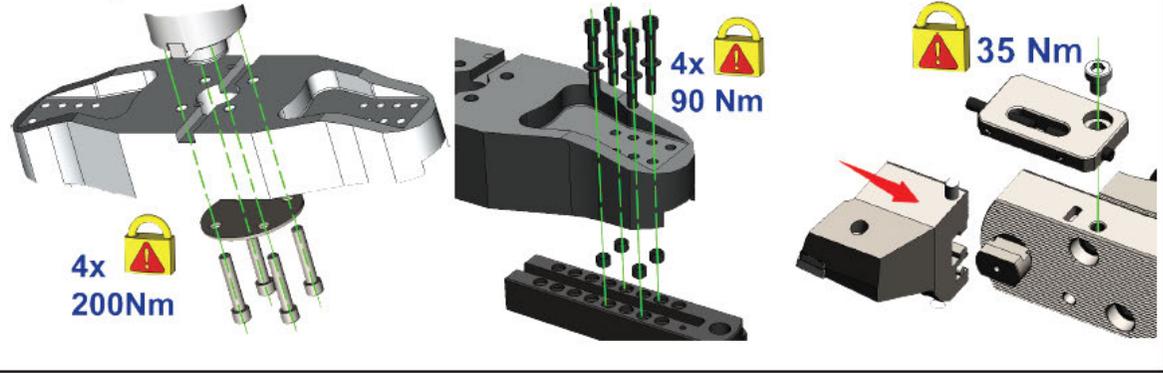
Диаметр	Длина	Вес	Материал
100 мм	100 мм	1,0 кг	Al 7075-T6
100 мм	150 мм	1,5 кг	Al 7075-T6
100 мм	200 мм	2,0 кг	Al 7075-T6
100 мм	250 мм	2,5 кг	Al 7075-T6
100 мм	300 мм	3,0 кг	Al 7075-T6

Длина сверла для концевых сверл серии SWISS+TOOLS.

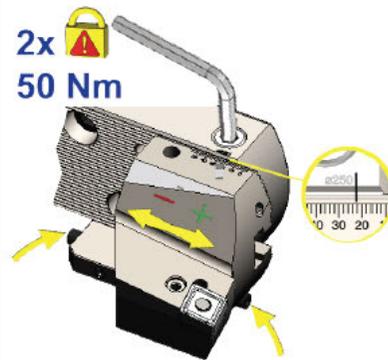
**INSTRUCTION MANUAL  
BRIDGE TOOLS  
Ø 650 - 2205 mm**



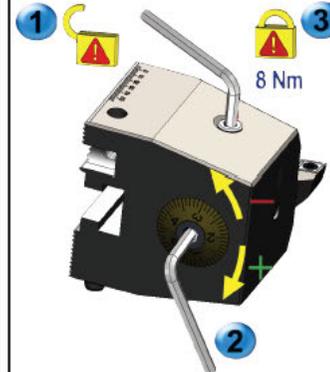
**assembling**



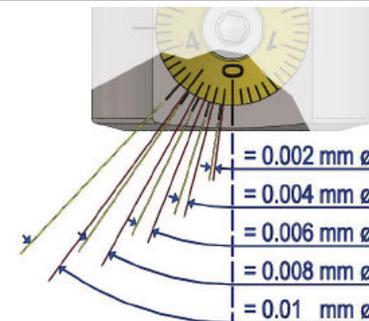
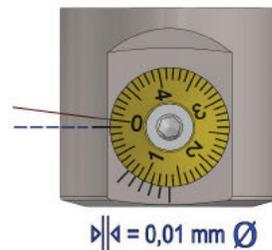
**pre adjustment**



**adjustment fine boring**



**scale / vernier**

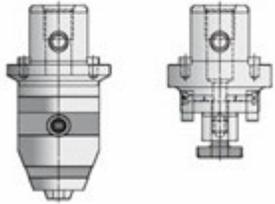
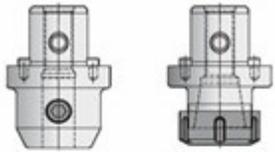


## Bridge tools Ø 150 - 2205mm

- Stable
- Stiff
- Roughing
- Finishing



Feature	Function	Benefit
Inserts	All insert holders use standard ISO insert. Both are positive and negative insert holders available.	No special inserts needed.
layout / tooth profile	There is a positive connection between the parts. Also a large contact face between the insert holder, bridges and the body, because of the tooth profile.	<ul style="list-style-type: none"> <li>- extremely stable layout</li> <li>- for hard roughing</li> </ul>
Diameter adjustment	To preadjust the tool move a plate to which the tool mounted. That plate also limits the min and max diameter range. The millimeter scale also helps with the adjustment.	<ul style="list-style-type: none"> <li>- easy to handle and very efficient</li> <li>- short setup time</li> </ul>
Balancing	By using a counter weight the unbalance is reduced to the a minimum.	<p>The advantages of a balanced tool are:</p> <ul style="list-style-type: none"> <li>- better surface finish</li> <li>- higher tool life</li> <li>- maximum spindle life</li> </ul>
Pin turning	For OD operations the insert holders can be turned 180° on the extension bridge.	<p>easy to handle</p> <p>there is no need of additional parts and investment</p>

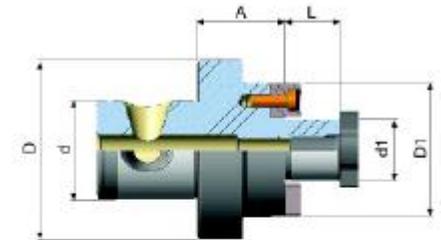
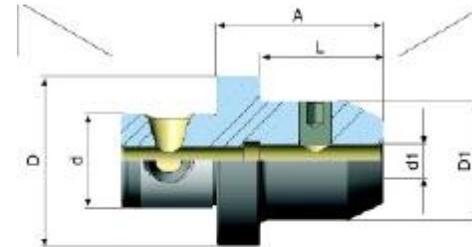
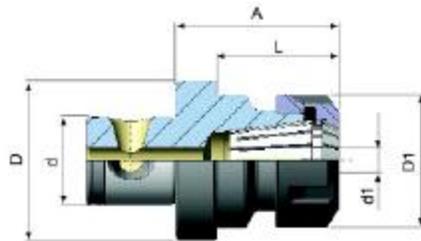


Werkzeugaufnahmen:

Spannfutter Weldon  
 Spannzangenfutter  
 Aufsteckfräsdorne  
 NC-Bohrfutter

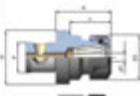
Toolholders:

Weldon  
 Collet chuck  
 Milling arbors  
 NC-Drillchucks



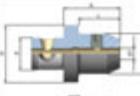
Spannfutter Weldon / Weldon Collet Chuck

Spannfutter Weldon	Weldon Collet Chuck	Spannfutter Weldon	Weldon Collet Chuck
SW-100-01	SW-100-01	SW-100-01	SW-100-01
SW-100-02	SW-100-02	SW-100-02	SW-100-02
SW-100-03	SW-100-03	SW-100-03	SW-100-03
SW-100-04	SW-100-04	SW-100-04	SW-100-04
SW-100-05	SW-100-05	SW-100-05	SW-100-05
SW-100-06	SW-100-06	SW-100-06	SW-100-06
SW-100-07	SW-100-07	SW-100-07	SW-100-07
SW-100-08	SW-100-08	SW-100-08	SW-100-08
SW-100-09	SW-100-09	SW-100-09	SW-100-09
SW-100-10	SW-100-10	SW-100-10	SW-100-10



Spannfutter Weldon / Weldon Collet Chuck

Spannfutter Weldon	Weldon Collet Chuck	Spannfutter Weldon	Weldon Collet Chuck
SW-100-11	SW-100-11	SW-100-11	SW-100-11
SW-100-12	SW-100-12	SW-100-12	SW-100-12
SW-100-13	SW-100-13	SW-100-13	SW-100-13
SW-100-14	SW-100-14	SW-100-14	SW-100-14
SW-100-15	SW-100-15	SW-100-15	SW-100-15
SW-100-16	SW-100-16	SW-100-16	SW-100-16
SW-100-17	SW-100-17	SW-100-17	SW-100-17
SW-100-18	SW-100-18	SW-100-18	SW-100-18
SW-100-19	SW-100-19	SW-100-19	SW-100-19
SW-100-20	SW-100-20	SW-100-20	SW-100-20



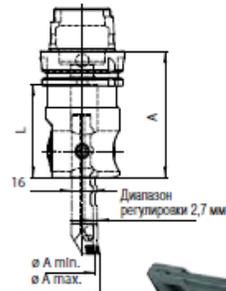


### Расточной набор на $\varnothing 9,75 - 88,1$ мм

$\varnothing 9,75 - 88,1$

d 36

Примечание: Набор может быть дополнен комплектом резца для обработки диапазона начиная с  $\varnothing 3$  мм.



Содержание набора смотрите на следующей странице

12.31

12

Номер по каталогу	d	D	D1	$\varnothing A$ min.	$\varnothing A$ max.	С головкой серии
G86.063.010.088	36	63	55	9.75	88.1	B04.063.025.050

DIN 69871 AD SK 40

Номер по каталогу	SK	L	A	$\varnothing A$ min.	$\varnothing A$ max.	С головкой серии
G86.415.010.088	40	70	90	9.75	88.1	B08.440.055.090

MAS 403 BT 40

Номер по каталогу	BT	L	A	$\varnothing A$ min.	$\varnothing A$ max.	С головкой серии
G86.412.010.088	40	63	90	9.75	88.1	B08.540.055.090

DIN 69893 HSK - A 63

Номер по каталогу	HSK - A	L	A	$\varnothing A$ min.	$\varnothing A$ max.	С головкой серии
G86.163.010.088	63	69	95	9.75	88.1	B08.806.055.095

### Расточной набор на $\varnothing 9,75 - 164$ мм

$\varnothing 9,75 - 164$



Примечание: Набор может быть дополнен комплектом резца для обработки диапазона начиная с 3 мм.

d 36

Номер по каталогу	d	D	D1	$\varnothing A$ min.	$\varnothing A$ max.	С головкой серии
G88.063.010.164	36	63	63	9.75	164	B10.063.025.060

DIN 69871 AD SK 40

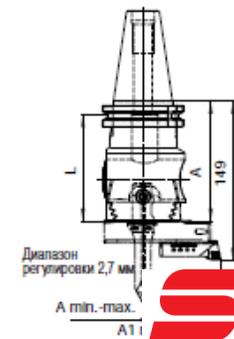
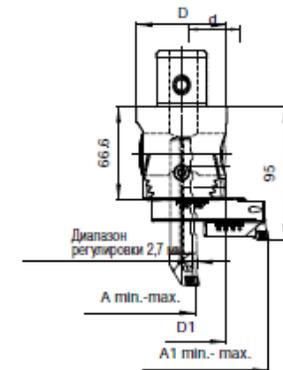
Номер по каталогу	SK	L	A	$\varnothing A$ min.	$\varnothing A$ max.	С головкой серии
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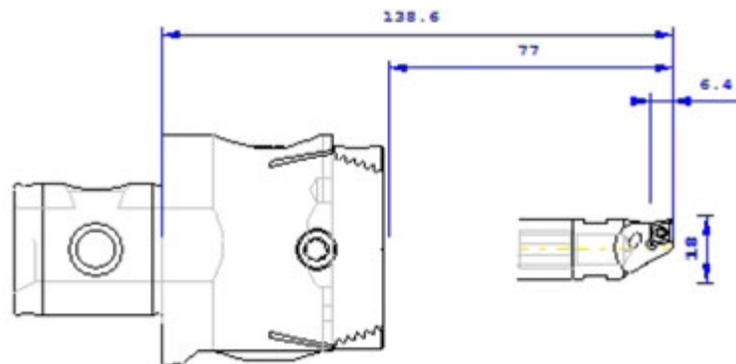
MAS 403 BT 40

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DIN 69893 HSK - A 63

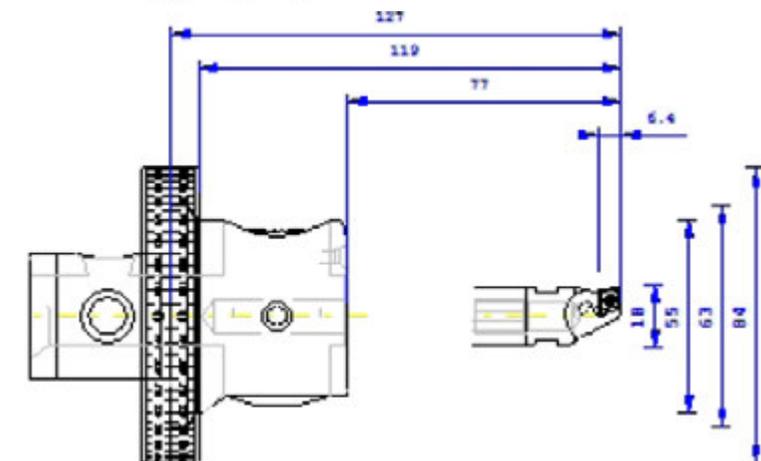
Номер по каталогу	HSK - A	L	A	$\varnothing A$ min.	$\varnothing A$ max.	С головкой серии
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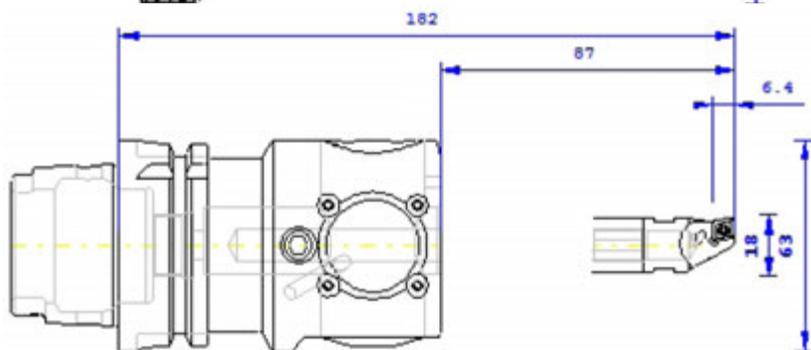
MULTI HEAD

- Ø 3 – 320



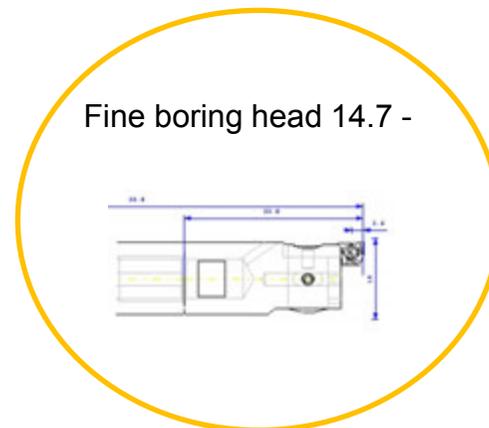
Fine boring head

- Ø 3 – 88

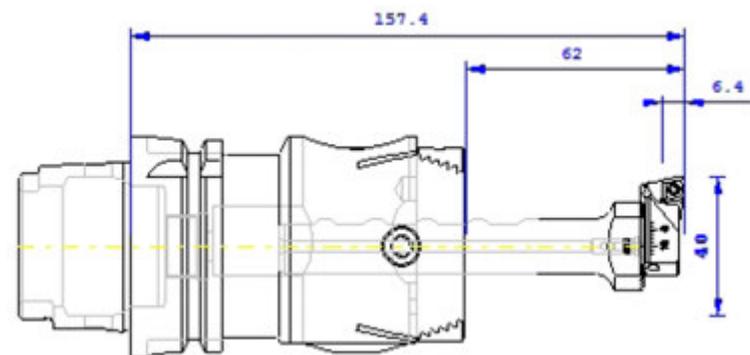


DIGITAL fine boring head

- Ø 3 – 88

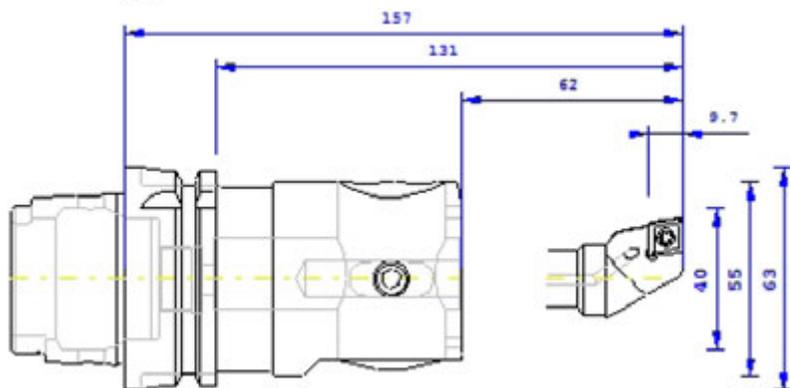


Fine boring head 14.7 -



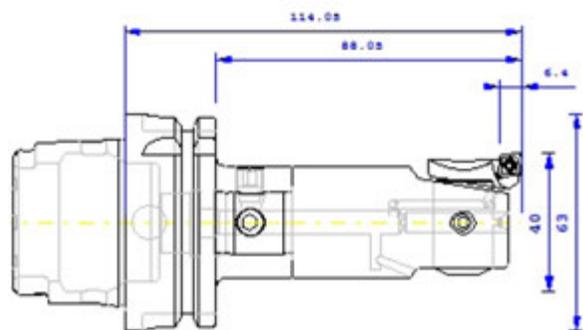
MULTI HEAD

- Ø 3 – 320



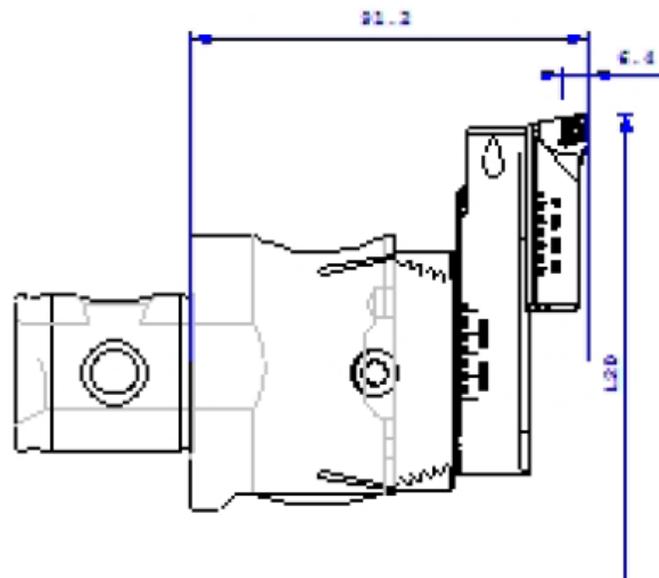
Fine boring head

- Ø 3 – 88



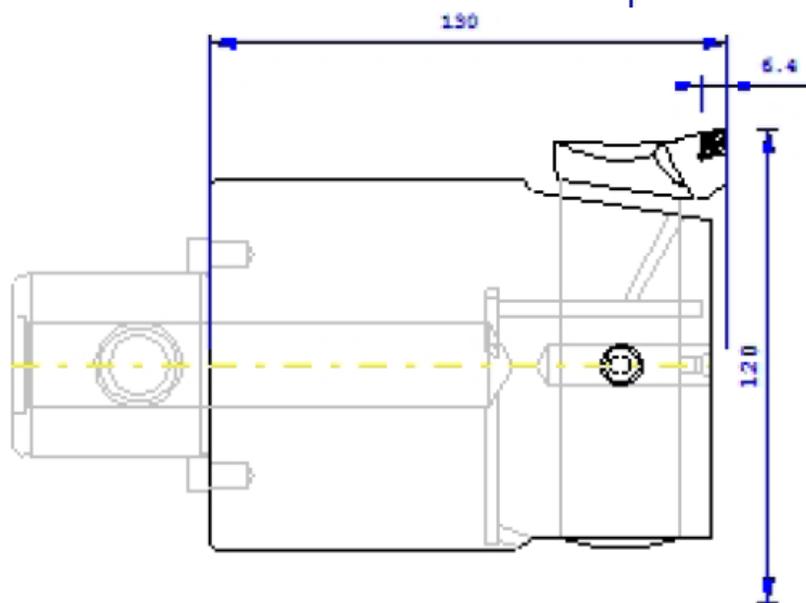
Fine boring head

- Ø 40 – 59.1



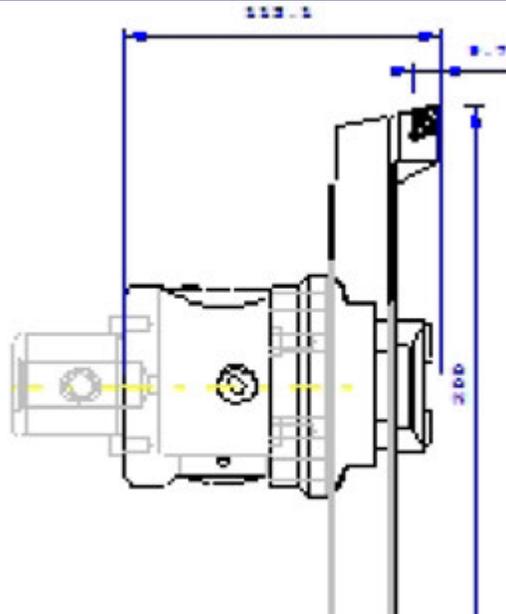
MULTI HEAD

-  $\varnothing 3 - 320$



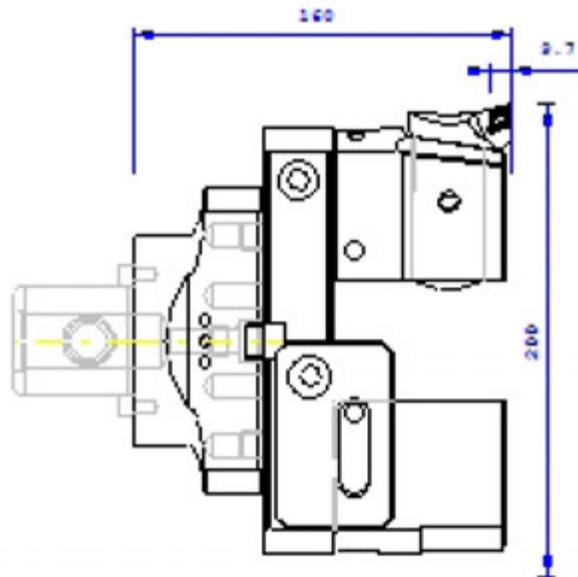
Fine boring head

-  $\varnothing 115.1 - 171.1$



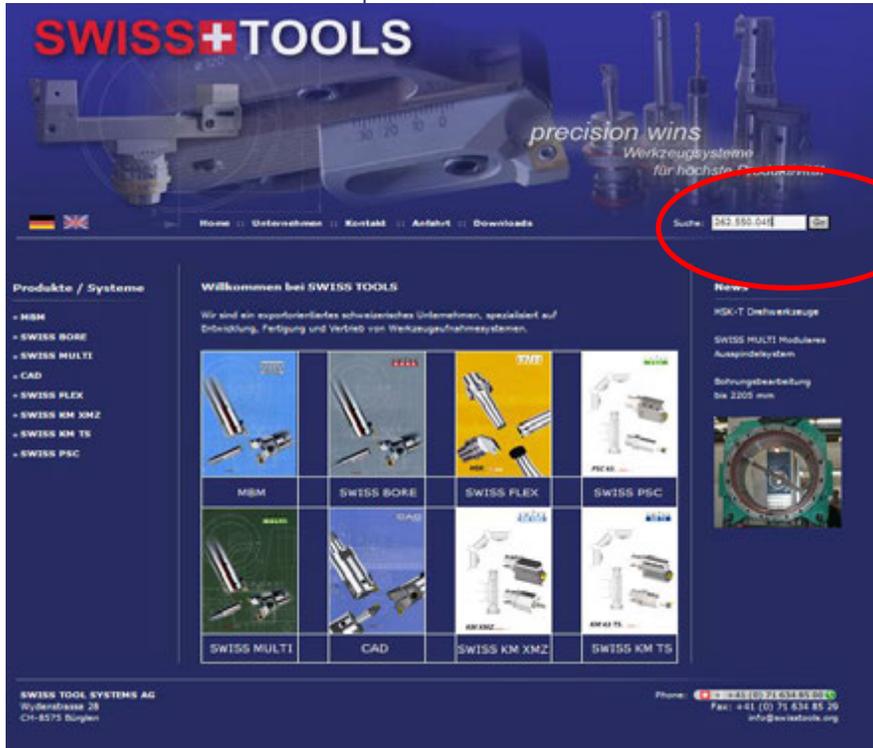
Fine boring head

-  $\varnothing 86 - 402$



Bridge tool with fine boring head

-  $\varnothing 150 - \dots$



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