



Product overview

Exchangeable units



BENZ[®]
Werkzeugsysteme

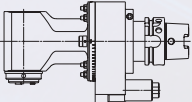
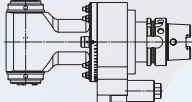
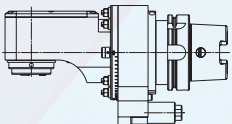
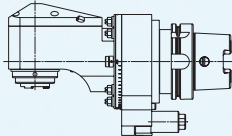
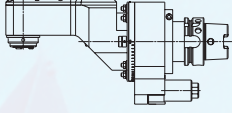
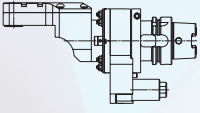
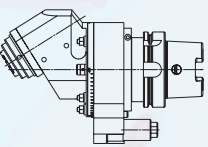
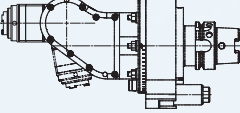
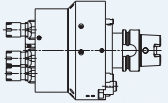
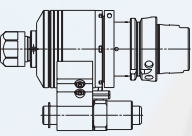
BENZ-Dependability and Quality

BENZ GmbH Werkzeugsysteme is a leading enterprise in the development and manufacturing of Exchangeable units for a variety of machining centers. Decades of experience and the high standards of Quality are the basis for a well-engineered product range. The skilled and motivated BENZ team accompanies you from competent evaluation to fast and reliable order processing up to the final product. And afterwards? The professional and dedicated BENZ service team ensures an optimum in guarantee.

Strong partner

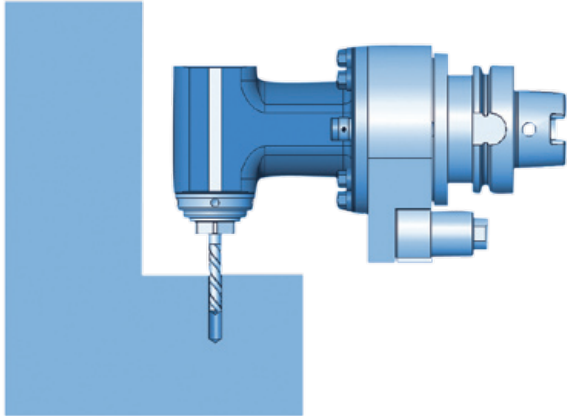
As a new member of the Zimmer-Group – since 01.01.2007- BENZ GmbH, with its more than 170 employees, is a strong and dependable partner.



	models	description	page
	WSX	Angle head 90°	20-23
	WZX	Two sided angle head 90°	24-27
	WWX	Offset angle head 90°	28-30
	WWX+IK	Offset angle head 90° with internal coolant	31-33
	WGX	Offset narrow angle 90°	34
	WGX spezial	Offset extreme narrow angle head 90°	35
	WFX + IK	Angle head fixed angle with internal coolant	36
	WDX + IK	Adjustable angle head 0-90° with internal coolant	37
	MSK	Multi spindle head	38-41
	SLS	High speed spindle	42-49

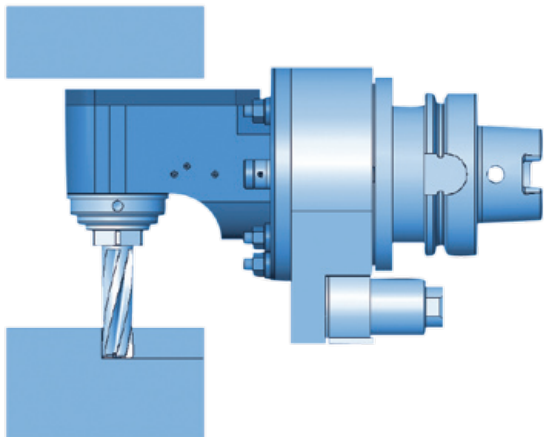
Application examples

Angle head 90° type WSX



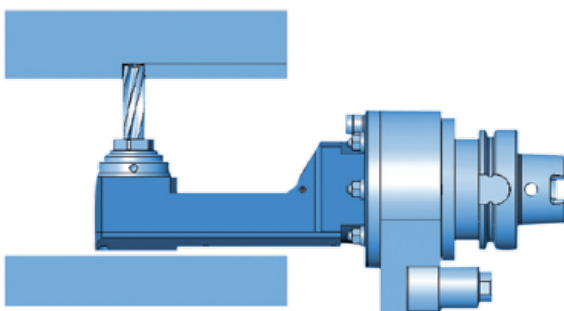
For single milling and boring operations without clearance issues.

Angle head 90° offset form type WWX



Compared to our type WS it has an increased usable tool length (in case of limited space in the tool magazine), internal coolant is an option.

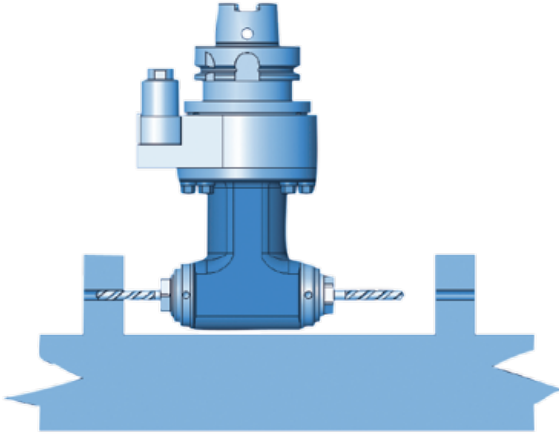
Angle head 90° narrow form type WGX



To slide into small bores or when clearance issues/space restrictions are an issue.

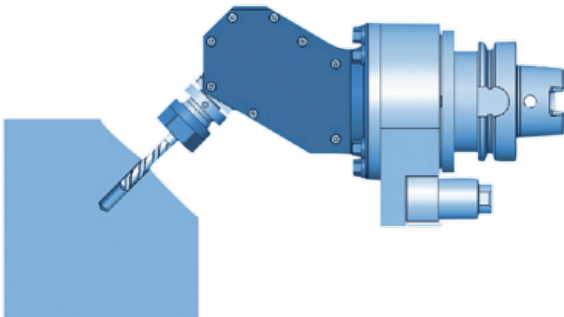
Application examples

Two sides angle head 90° type WZX



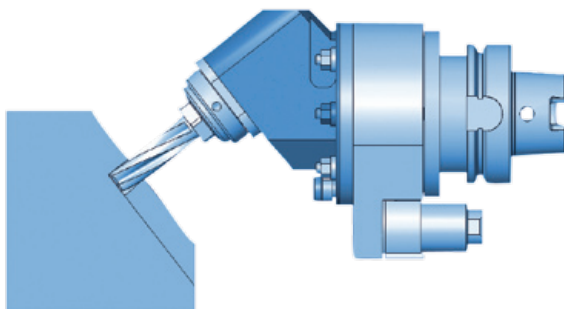
For two milling and boring operations in opposite directions.

Adjustable angle head 0-90° type WDX



For boring or light duty milling applications at any angle.

Fixed angle head type WFX



For milling and boring operations at a fixed angle.





Advantages that convince

▲ **X-line**

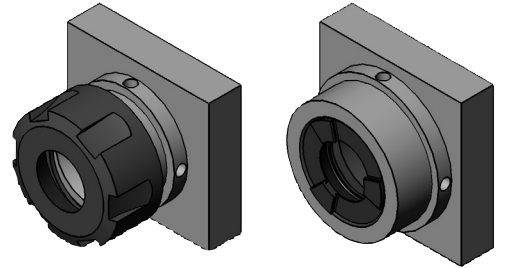
- ▲ Increased running performance by using a new gear concept
- ▲ Increased throughput capacity with reduced tool change weight
- ▲ Increased system rigidity by optimizing alignment of bearings
- ▲ Improved noise behaviour
- ▲ Maximum coolant pressure 70 bar at 10,000 rpm
- ▲ High flexibility - suitable for use with coolants, lubricants and MQL (minimum quantity lubrication)
- ▲ Increase of the useable tool length through a shorter design
- ▲ Prebalanced, rotation-symmetrical components
- ▲ Available in all sizes as standard design
- ▲ Available for all types of toolchangers and machines
- ▲ Increase the capability of your machine with the added functionality of a c-axis
- ▲ Integration of automatically adjustable working axis
- ▲ Easy integration to existing machining centers



COLLET SYSTEMS

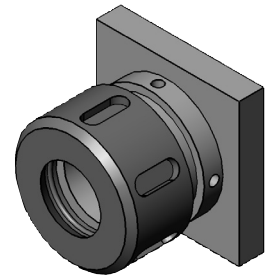
Regofix: DIN 6499

Size	BENZ Index	Clamping range
ER 8	E 0	1- 5 mm
ER 11	E 1	1- 7 mm
ER 16	E 3	1-10 mm
ER 20	E 4	1-13 mm
ER 25	E 5	1-16 mm
ER 32	E 6	2-20 mm
ER 40	E 7	2-30 mm
ER 50	E 8	4-34 mm



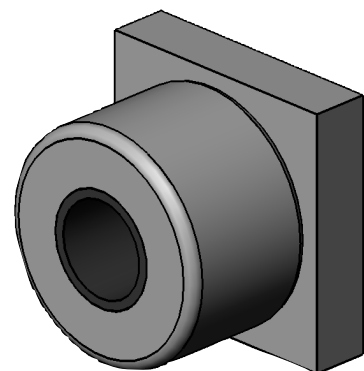
Ortlieb: DIN 6388

Size	BENZ Index	Clamping range
C 6	C 1	1- 6 mm
C 8	C 2	1- 8 mm
C 10	C 3	1-10 mm
C 12	C 4	1-12 mm
C 16	C 5	2-16 mm
C 25	C 6	4-25 mm
C 32	C 7	4-32 mm
C 40	C 8	6-40 mm
C 50	C 9	8-50 mm



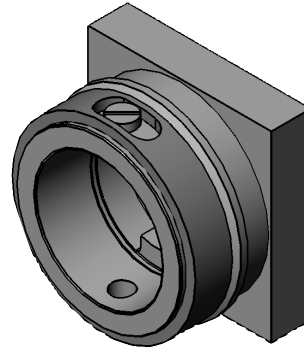
Hydraulic expansion chuck

Size	BENZ Index
Ø 6	X 3
Ø 8	X 5
Ø 10	X 7
Ø 12	X 9
Ø 14	Y 1
Ø 16	Y 3
Ø 20	Y 5
Ø 25	Y 7
Ø 32	Y 8
Ø 40	Y 9
Ø 50	Y 0



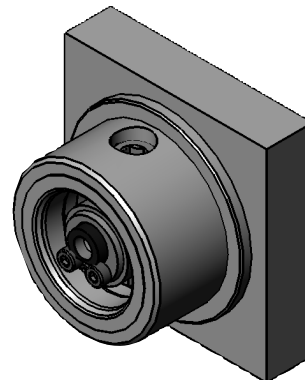
HSK Form A + C

Size	BENZ Index
HSK 25	H 1
HSK 32	H 2
HSK 40	H 3
HSK 50	H 4
HSK 63	H 5
HSK 80	H 6
HSK 100	H 7



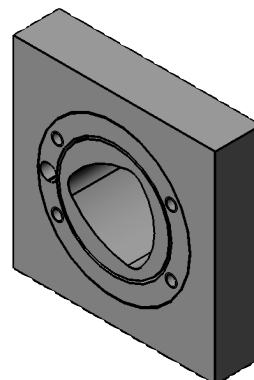
Kennametal™

Size	BENZ Index
KM 40	T4
KM 50	T5
KM 63	T6



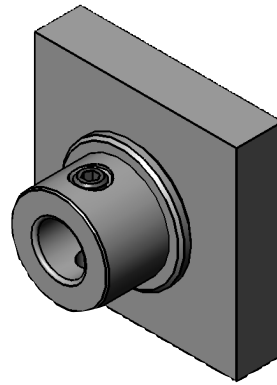
Coromant Capto®

Size	BENZ Index
C 3	L 3
C 4	L 4
C 5	L 5
C 6	L 6



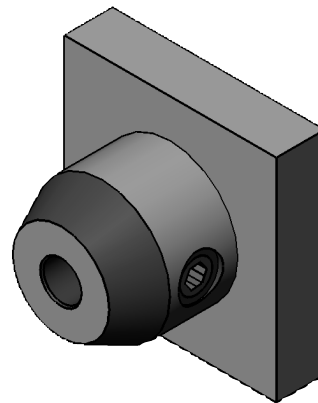
ABS® License KOMET®

Size	BENZ Index
ABS 20	A 1
ABS 25	A 2
ABS 32	A 3
ABS 40	A 4
ABS 50	A 5
ABS 63	A 6
ABS 80	A 7
ABS 100	A 8
ABS 125	A 9



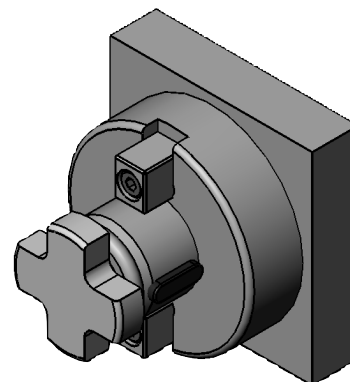
Weldon and Whistle-Notch combined

Size	BENZ Index
∅ 6	U 3
∅ 8	U 5
∅ 10	U 7
∅ 12	U 9
∅ 14	V 1
∅ 16	V 3
∅ 20	V 5
∅ 25	V 7
∅ 32	V 8
∅ 40	V 9
∅ 50	V 0



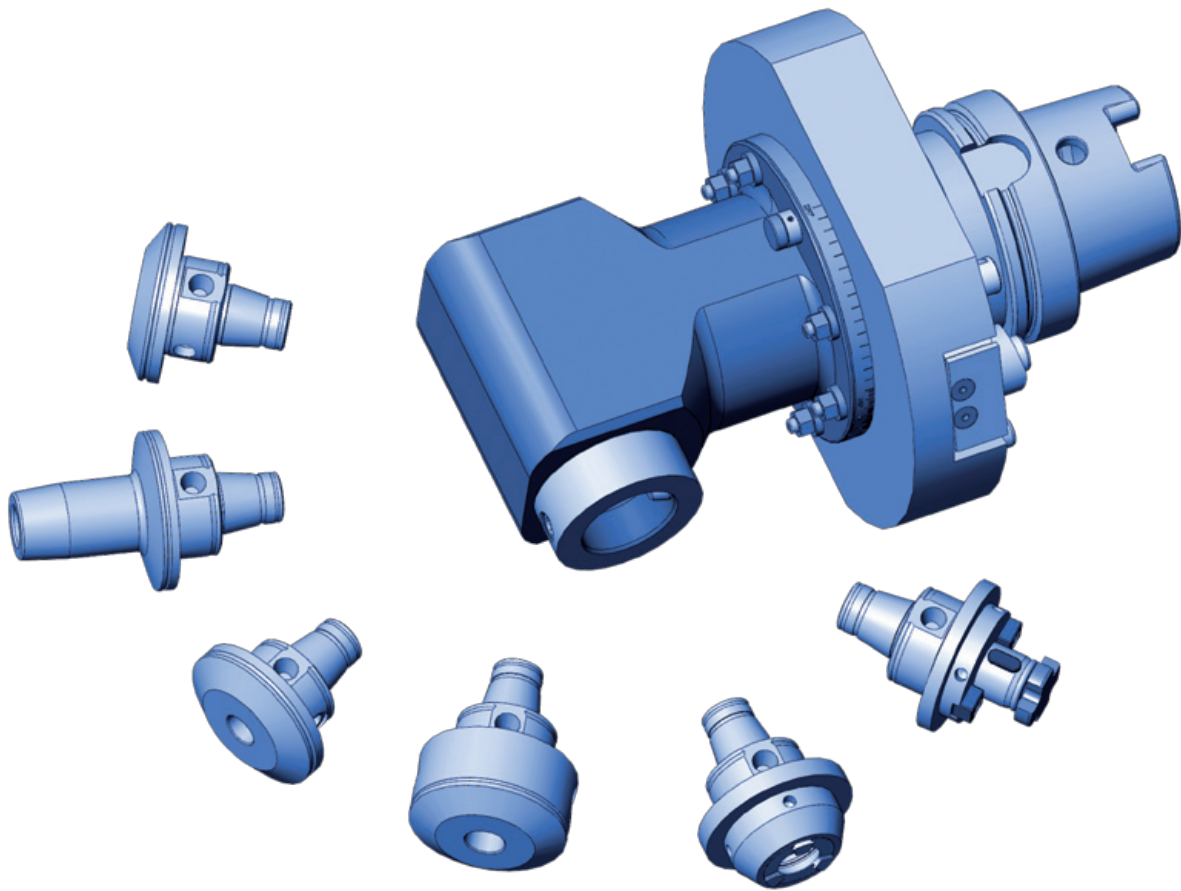
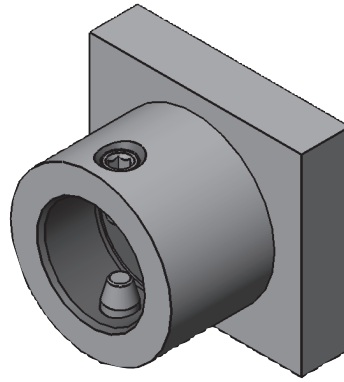
Face mill adaptor

Size	BENZ Index
∅ 10	G 1
∅ 13	G 2
∅ 16	G 3
∅ 22	G 4
∅ 27	G 5
∅ 32	G 6
∅ 40	G 7
∅ 50	G 8
∅ 60	G 9

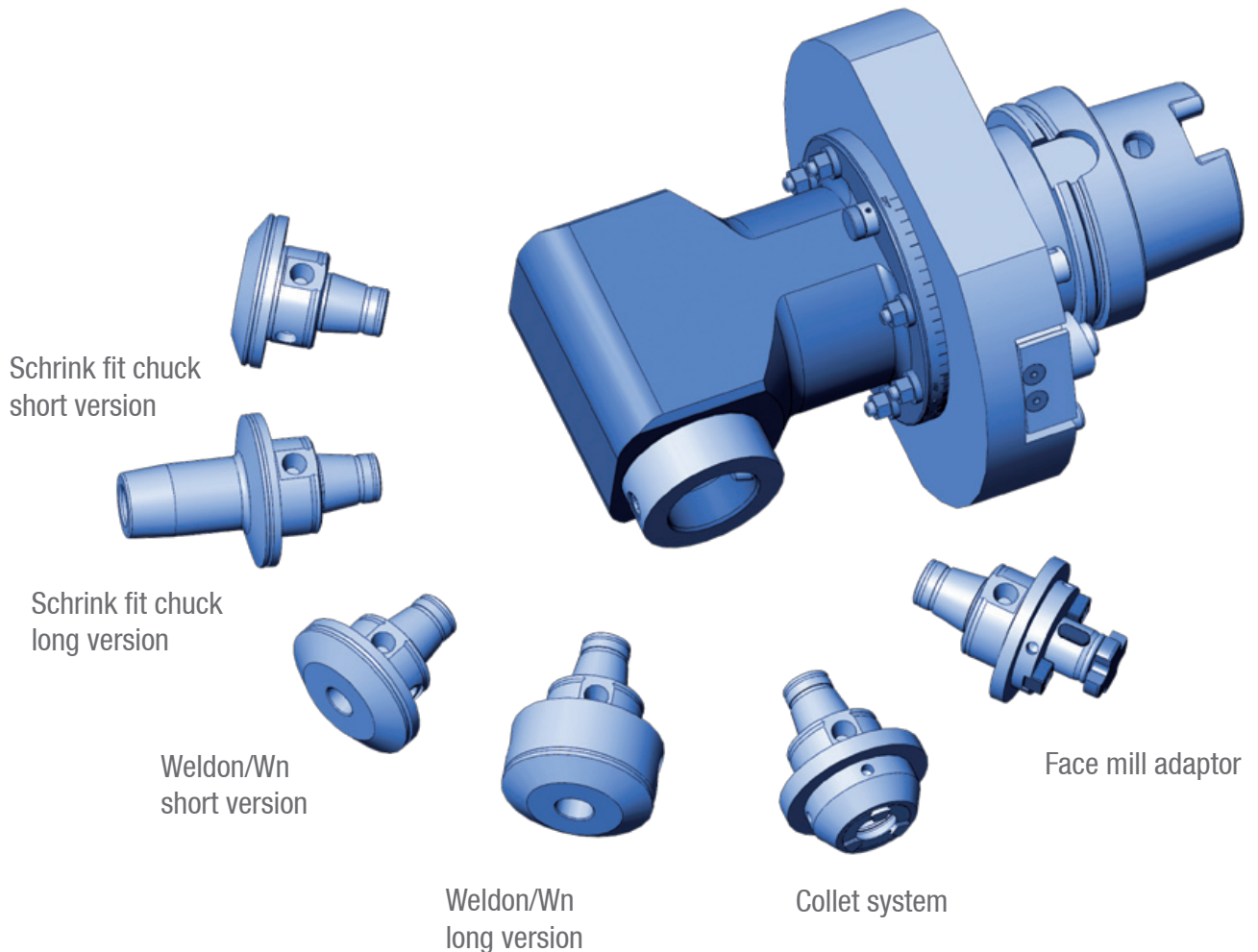


BMS-SPINDLE

Size	BENZ Index
BMS 32	P 3
BMS 40	P 4
BMS 50	P 5



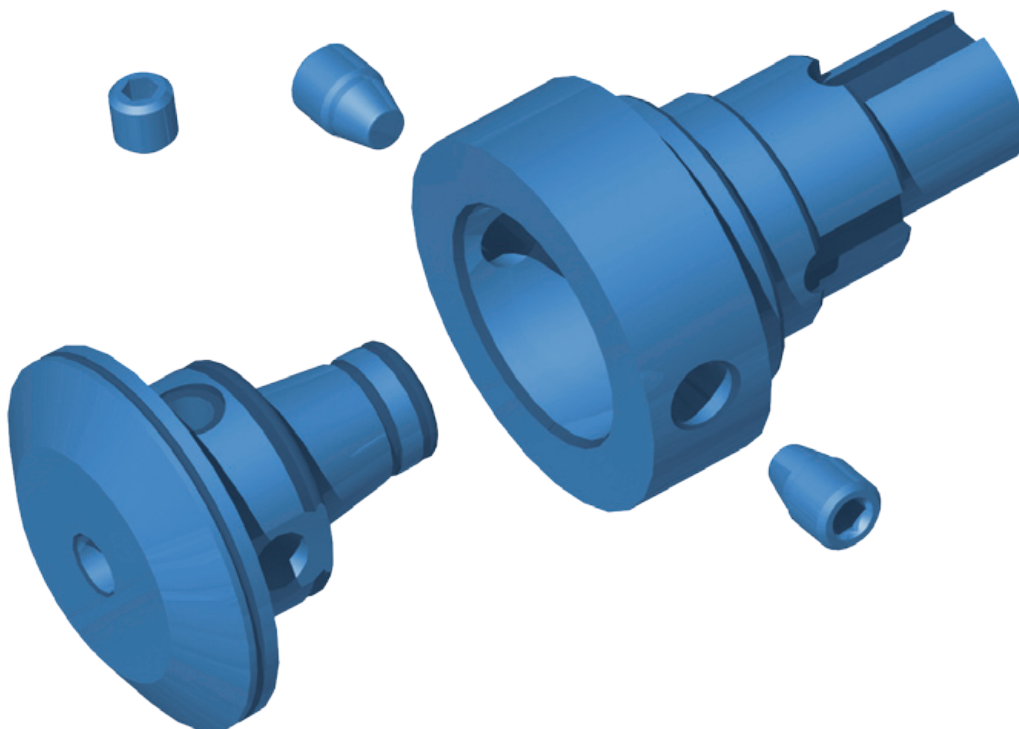
 As well as customer specific solutions



The demands for a „modular disconnect“ for the X-Line generation were very high. With the BMS system a disconnect has been created that even exceeded our goals set, in reference to rigidity, concentricity and clamping tolerance. This modular clamping system uses the geometrical conditions optimally in reference to force distribution, bearing-out and added rigidity, creating significant advantages compared to the systems known up to now.

Advantages at a glance

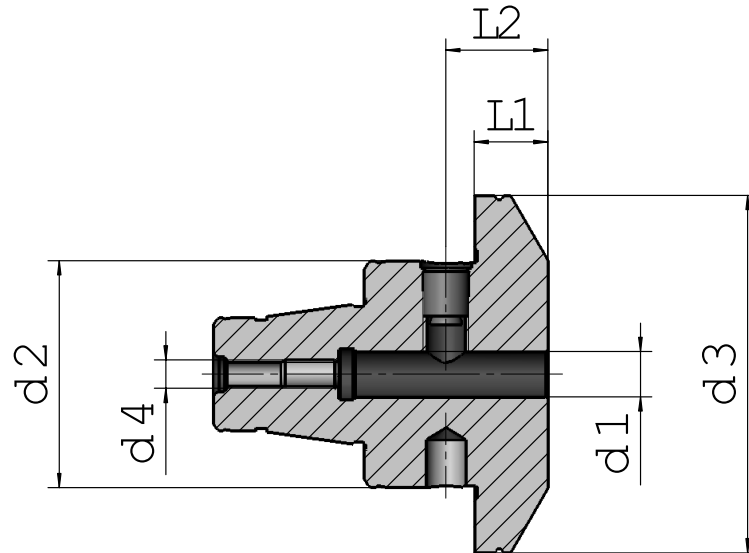
- ▲ Short taper with surface plane
- ▲ Extremely high rigidity by using additional tension on the surface area
- ▲ Lateral clamping by use of two tapered, threaded pins
- ▲ No backlash (tolerance) between the coupled elements
- ▲ Highest concentricity and accuracy in the repeatability of the tool change
- ▲ Compatibility with all commonly used spindle systems
- ▲ All tapers have an internal coolant system





BMS insert for X-line

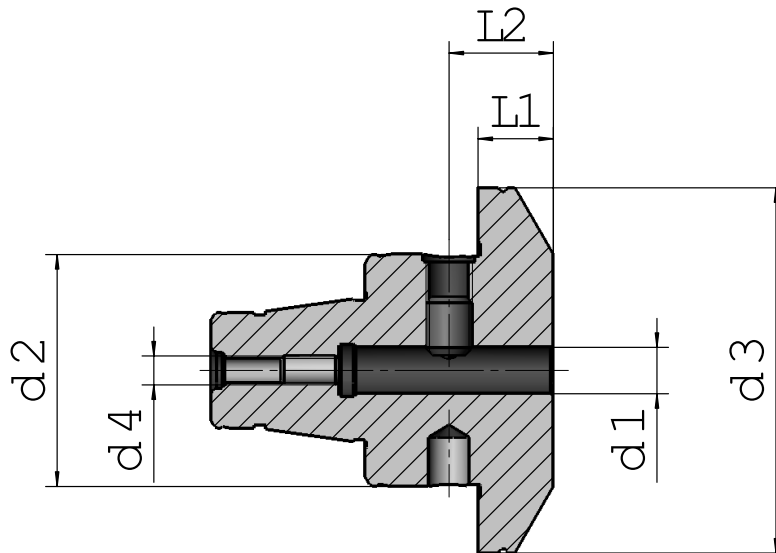
Whistle-Notch-collet chuck



	Size	no	d1	d2	d3	d4	d5	L1	L2
BMS 32	Ø 6	663.1410611	6	32	50	M5	-	11	18
	Ø 8	663.1410811	8	32	50	M5	-	11	18
	Ø 10	663.1411011	10	32	50	M8	-	11	20
	Ø 12	663.1411215	12	32	50	M8	-	15	22,5
	Ø 14	663.1411431	14	32	50	M8	-	31	22,5
	Ø 16	663.1411644	16	32	50	M8	-	44	24
	Ø 18	663.1411844	18	32	50	M8	-	44	24
	Ø 20	663.1412047	20	32	50	M8	-	47	25
BMS 40	Ø 6	664.1410613	6	40	63	M5	-	13	18
	Ø 8	664.1410813	8	40	63	M5	-	13	18
	Ø 10	664.1411012	10	40	63	M8	-	12	20
	Ø 12	664.1411214	12	40	63	M10	-	14,5	22,5
	Ø 14	664.1411414	14	40	63	M10	-	14,5	22,5
	Ø 16	664.1411634	16	40	63	M12	-	34	24
	Ø 18	664.1411834	18	40	63	M12	-	34	24
	Ø 20	664.1412036	20	40	63	M12	-	36	25
BMS 50	Ø 6	665.1410613	6	48	75	M5	-	13	18
	Ø 8	665.1410813	8	48	75	M5	-	13	18
	Ø 10	665.1411014	10	48	75	M8	-	13	20
	Ø 12	665.1411215	12	48	75	M10	-	15	22,5
	Ø 14	665.1411415	14	48	75	M10	-	15	22,5
	Ø 16	665.1411615	16	48	75	M12	-	15	24
	Ø 18	665.1411815	18	48	75	M12	-	15	24
	Ø 20	665.1412015	20	48	75	M12	-	15	25

BMS insert for X-line

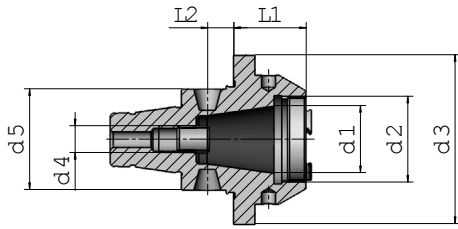
Weldon-collet chuck,
short construction



	size	no	d1	d2	d3	d4	d5	L1	L2
BMS 32	Ø 6	663.1400611	6	32	50	M5	-	11	18
	Ø 8	663.1400811	8	32	50	M5	-	11	18
	Ø 10	663.1401011	10	32	50	M8	-	11	20
	Ø 12	663.1401215	12	32	50	M8	-	15	22,5
	Ø 14	663.1401431	14	32	50	M8	-	31	22,5
	Ø 16	663.1401644	16	32	50	M8	-	44	24
	Ø 18	663.1401844	18	32	50	M8	-	44	24
	Ø 20	663.1402047	20	32	50	M8	-	47	25
BMS 40	Ø 6	664.1400613	6	40	63	M5	-	13	18
	Ø 8	664.1400813	8	40	63	M5	-	13	18
	Ø 10	664.1401012	10	40	63	M8	-	12	20
	Ø 12	664.1401214	12	40	63	M10	-	14,5	22,5
	Ø 14	664.1401414	14	40	63	M10	-	14,5	22,5
	Ø 16	664.1401634	16	40	63	M12	-	34	24
	Ø 18	664.1401834	18	40	63	M12	-	34	24
	Ø 20	664.1402036	20	40	63	M12	-	36	25
BMS 50	Ø 6	665.1400613	6	48	75	M5	-	13	18
	Ø 8	665.1400813	8	48	75	M5	-	13	18
	Ø 10	665.1401014	10	48	75	M8	-	13	20
	Ø 12	665.1401215	12	48	75	M10	-	15	22,5
	Ø 14	665.1401415	14	48	75	M10	-	15	22,5
	Ø 16	665.1401615	16	48	75	M12	-	15	24
	Ø 18	665.1401815	18	48	75	M12	-	15	24
	Ø 20	665.1402015	20	48	75	M12	-	15	25

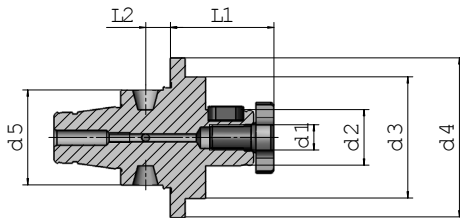
BMS insert for X-line

Collet chuck



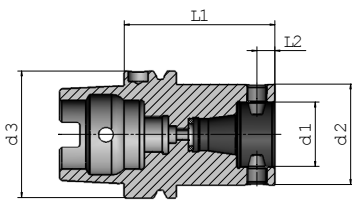
	size	no	d1	d2	d3	d4	d5	L1	L2
BMS 32	ER 16	663.130E338	16	M22x1,5	50	M8	32	27,5	8,8
	ER 16	663.130E3A16	16	M24x1	50	M8	32	16	8,8
	ER 25	663.130E540	25	M32x1,5	50	M8	32	28,5	8,8
	ER 25	663.130E5A36	25	M32x1,5	50	M8	32	36	8,8
BMS 40	ER 25	664.130E540	25	M32x1,5	63	M10	40	28,5	9,75
	ER 25	664.130E5A27	25	M32x1,5	63	M10	40	27	9,75
	ER 32	664.130E644	32	M40x1,5	63	M10	40	44	9,75
	ER 32	664.130E6A43	32	M40x1,5	63	M10	40	43	9,75
BMS 50	ER 32	665.130E6A43	32	M40x1,5	75	M10	48	43	10
	ER 40	665.130E7A50	40	M50x1,5	75	M10	48	50	10

Milling machine adaptor



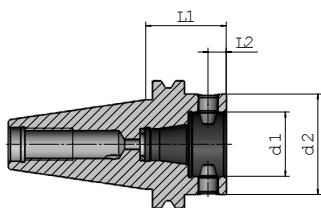
	size	no	d1	d2	d3	d4	d5	L1	L2
BMS 32	Ø 16	663.2311614	M8	16	48	50	32	38	8,8
	Ø 22	663.2312214	M10	22	48	50	32	41	8,8
BMS 40	Ø 16	664.2311614	M8	16	48	63	40	38	9,75
	Ø 22	664.2312214	M10	22	48	63	40	41	9,75
	Ø 27	664.2312720	M12	27	55	63	40	49	9,75
BMS 50	Ø 22	665.231214	M10	22	48	70	48	14	10
	Ø 27	665.231714	M12	27	55	70	48	14	10
	Ø 32	665.231215	M16	32	58	70	48	15	10
	Ø 40	665.231015	M20	40	70	70	48	15	10

Modular adaptor HSK

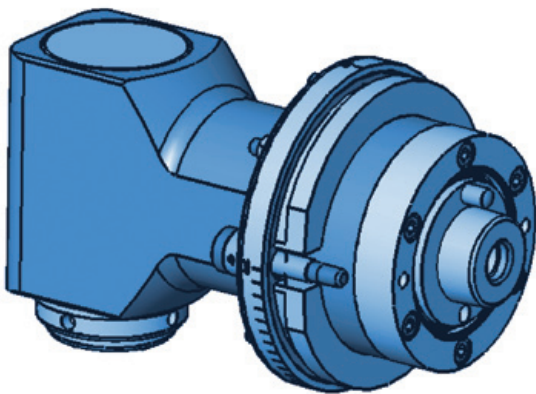


	size	no	d1	d2	d3	d4	d5	L1	L2
BMS 32	HSK 63	711.250P3075	32	50	63	-	-	75	9
BMS 40	HSK 80	712.250P4080	40	63	80	-	-	80	10
	HSK 100	713.250P4090	40	63	100	-	-	90	10
BMS 50	HSK 100	713.250P5090	50	75	100	-	-	90	10

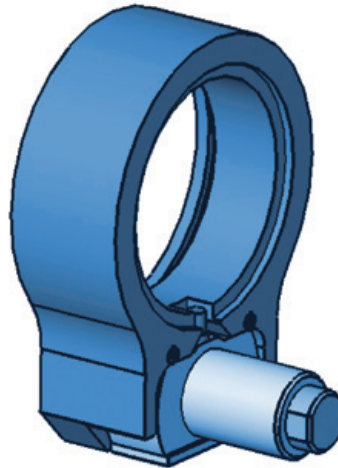
Modular adaptor SK



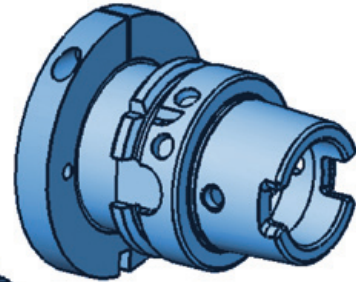
	size	no	d1	d2	d3	d4	d5	L1	L2
BMS 32	SK 40	040.250P3040	32	50	-	-	-	40	9
BMS 40	SK 50	042.250P4050	40	63	-	-	-	50	10
BMS 50	SK 50	042.250P5050	50	75	-	-	-	50	10



Angle head with spindle



Torque arm



Drive taper

Angle head with spindle

Choose design and size according to your application from examples on pages 20 to 37.
The spindle is standard DIN 6499 (ER system).
Other configurations upon request.
Speeds from 3,000 - 12,000 rpm

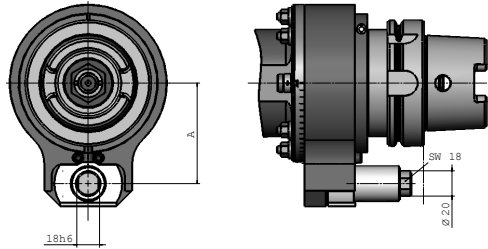
Torque arm

Fastens the angle head on the spindle to avoid twisting.
Built standard according to your machine specifications.
Detailed machine specifications (spindle connection drawings) are necessary.

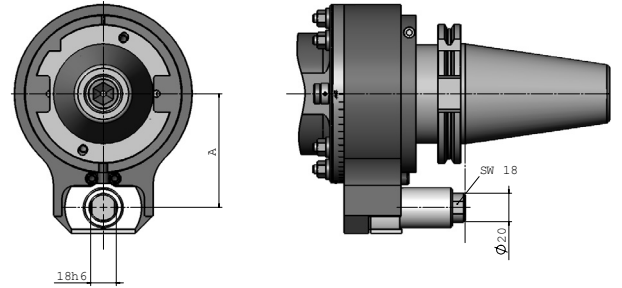
Drive taper

Interface to your machine spindle.
All standard systems are available, e.g. HSK, SK, BT, CAT, Coromant Capto[®]...

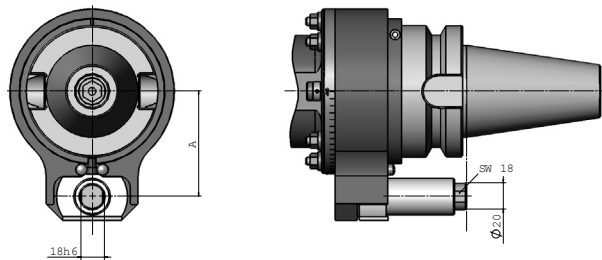
Standard taper HSK 63 A / HSK 80 / HSK 100



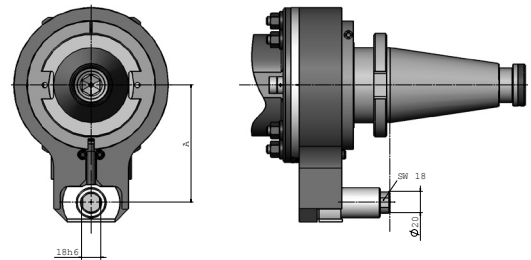
Standard taper SK 40 / SK 50



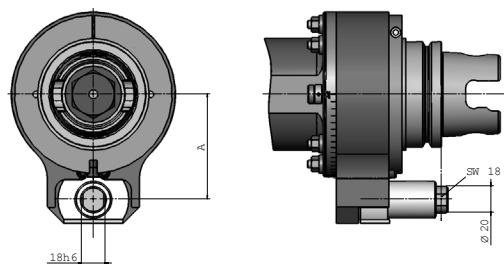
Taper BT 40 / BT 50



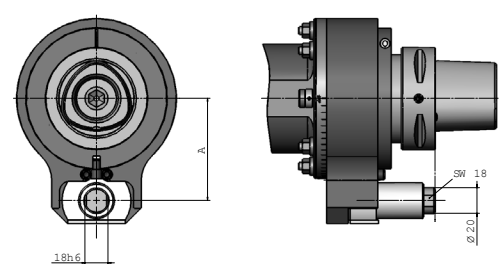
DIN 2080 NMTB



KM licenced by Kennametal

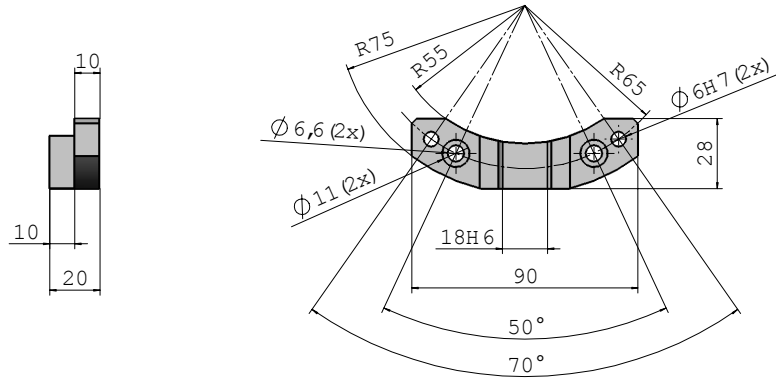


Coromant Capto®

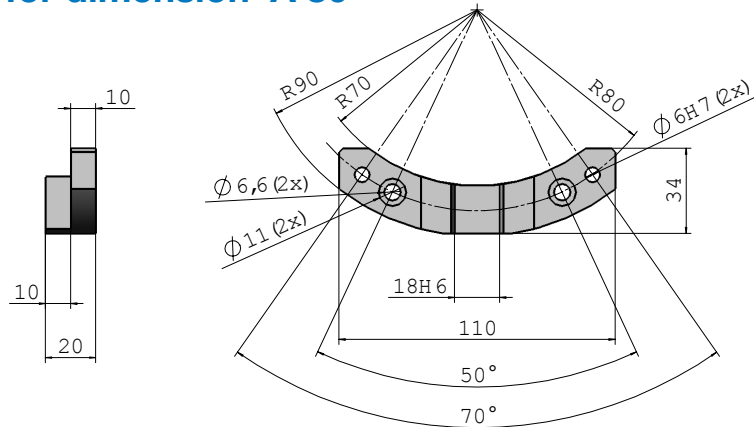


The following machine adaptations are standards, built according to ISO 9524. The customer can use those to fit the aggregate unto the machine himself. There are three BENZ stop blocks available.
 General rule: torque arm and stop block on the machine center must be made to fit each other.

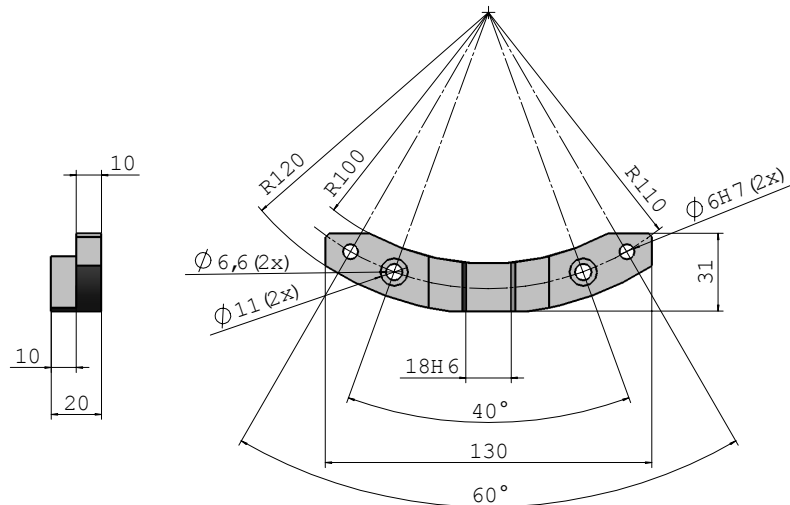
K00600-055/075 suitable for dimension A 65



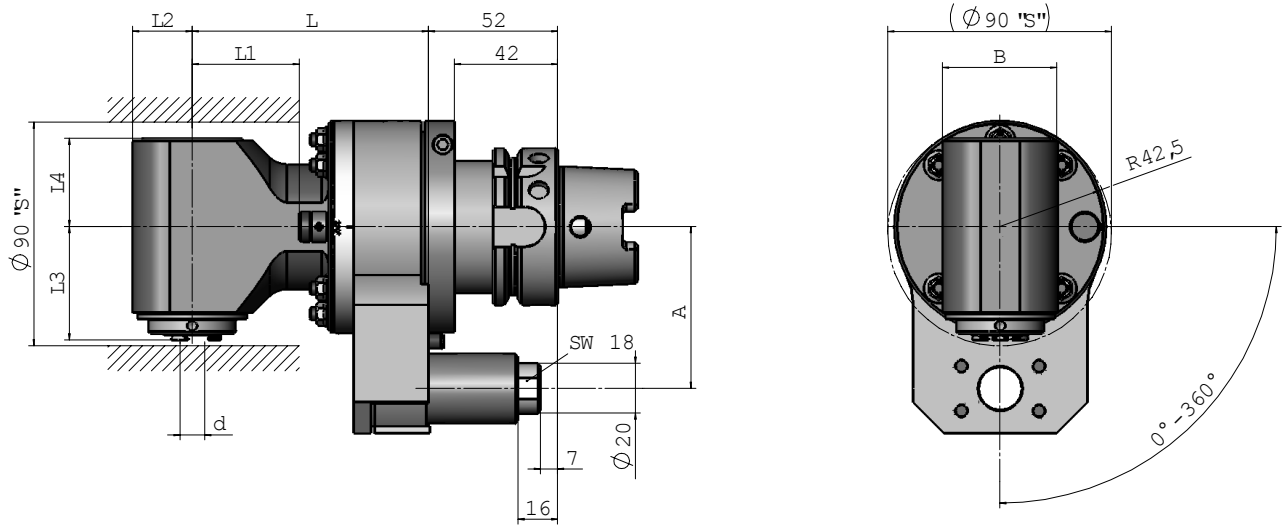
K00600-070/090 suitable for dimension A 80



K00600-100/120 suitable for dimension A 110



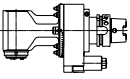
Caution!
 The Stop block is not included with standard delivery and must be ordered separately.



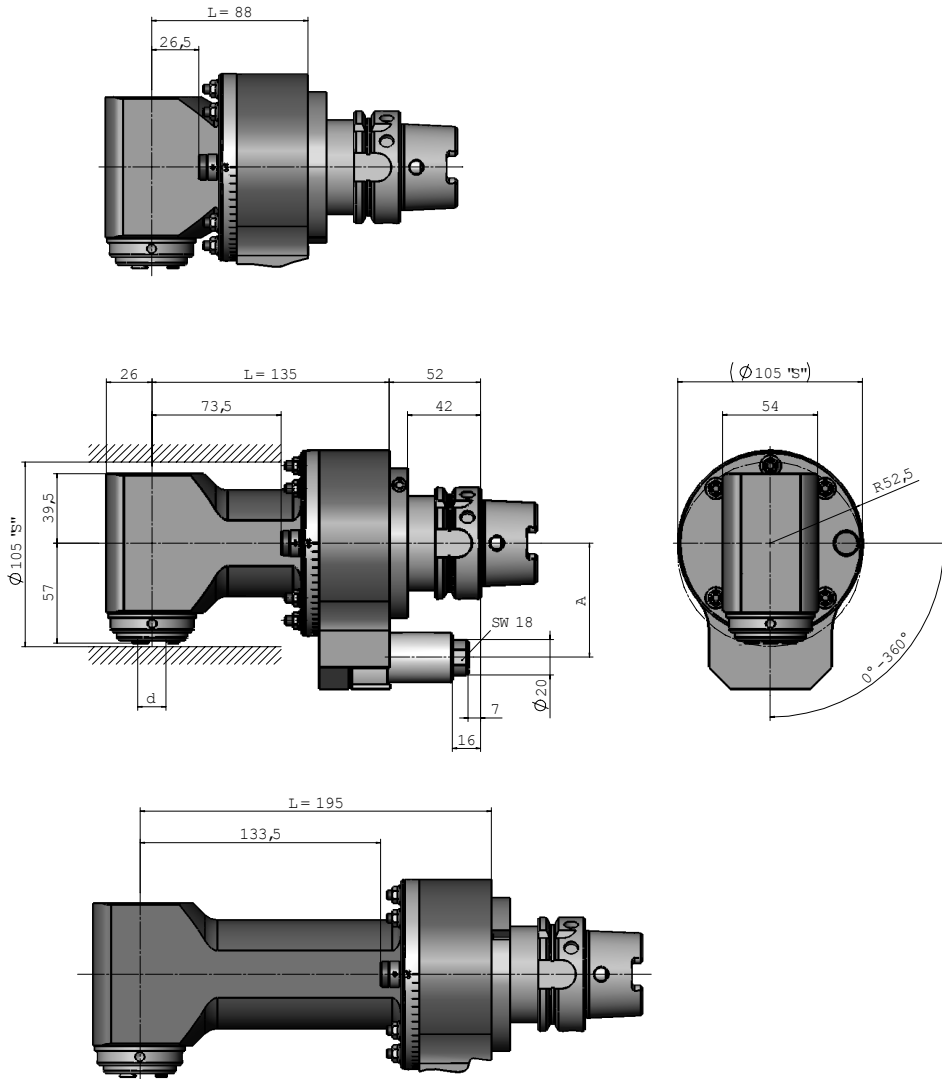
size	collet	torque	L2	L3	L4	d	R	B	S	i	A	drive	L	L1	no	kg
03	ER 11	8	16	41	20,5	1-7	35	40	65	1:1	42,5	HSK40	65	29	769WS00203E1A-65	2,8
													105	69	769WS00203E1A-105	3,5
04	ER 16	12	18,5	62,5	29	1-10	42,5	46	98	1:1	65	HSK63	105	69	771WS00204E3A-105	4,3
													155	104	771WS00204E3A-155	5
04	ER 16	15	24	46	36	1-10	42,5	46	98	1:1	65	HSK 63	105	69	771WSX00204E3A-105	4,5
													155	119	771WSX00204E3A-155	5
													250	214	771WSX00204E3A-250	6,5
04	ER 16	15	24	46	36	1-10	52,5	46	98	1:1	80	HSK100	105	69	772WSX00204E3A-105	4,5
													155	119	772WSX00204E3A-155	5
													250	199	772WSX00204E3A-250	6
													305	265	772WSX00204E3A-305	6,5

The marked articles are standard

* We reserve the right to modify technical contents .



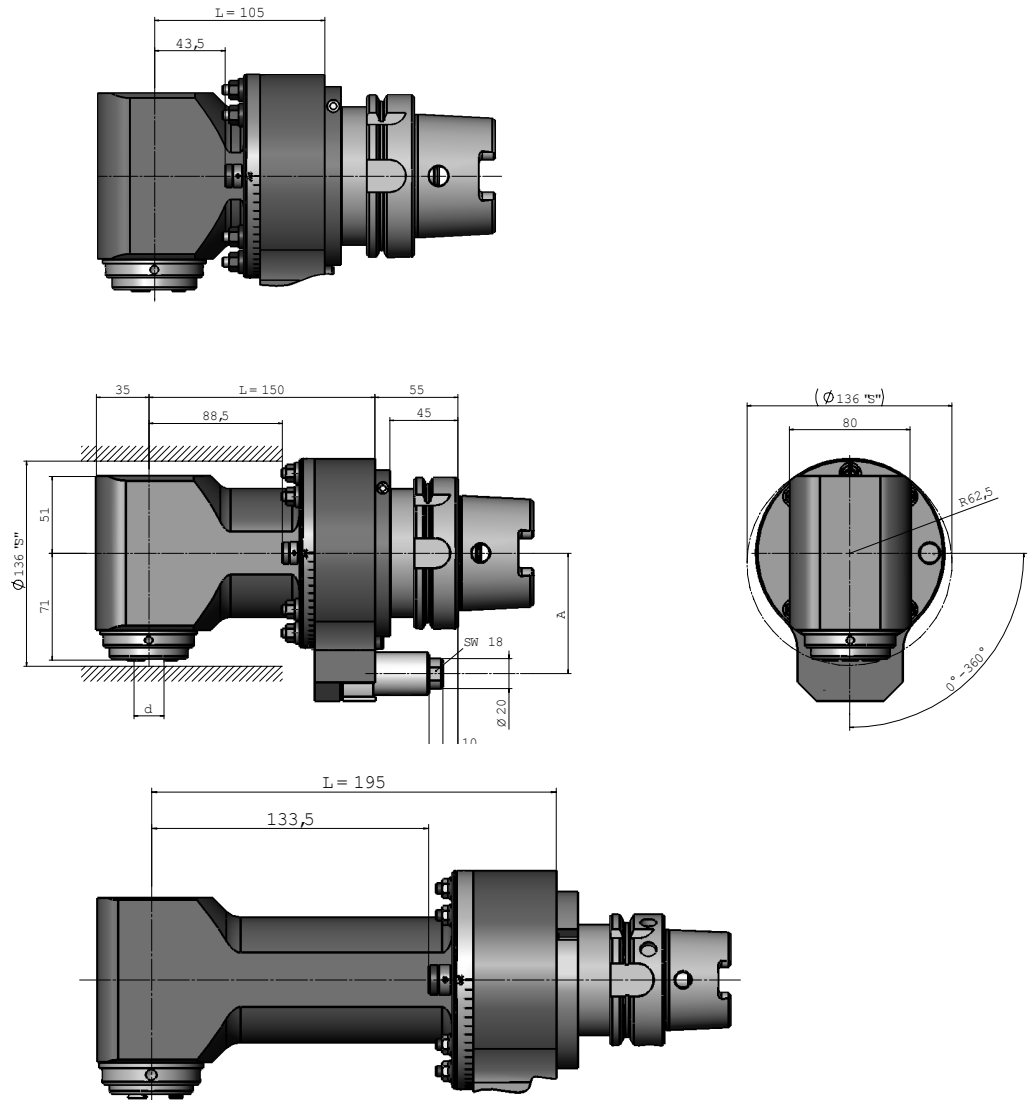
WSX



size	collet	torque	i	A	drive	R	L	L1	no	kg
05	ER 25	30	1:1	65	HSK 63	52,5	88	26,5	771WSX00205E5A-88	5,5
	ER 25	30	1:1	65	HSK 63	52,5	135	73,5	771WSX00205E5A-135	6,5
	ER 25	30	1:1	65	HSK 63	52,5	195	133,5	771WSX00205E5A-195	7,5
05	ER 25	30	1:1	80	HSK 100	52,5	88	26,5	772WSX00205E5A-88	6,5
	ER 25	30	1:1	80	HSK 100	52,5	135	73,5	772WSX00205E5A-135	7,5
	ER 25	30	1:1	80	HSK 100	52,5	195	133,5	772WSX00205E5A-195	8,5
without picture	ER 25	30	1:1	80	HSK 100	62,5	380	318,5	772WSX00205E5A-380	12

The marked articles are standard

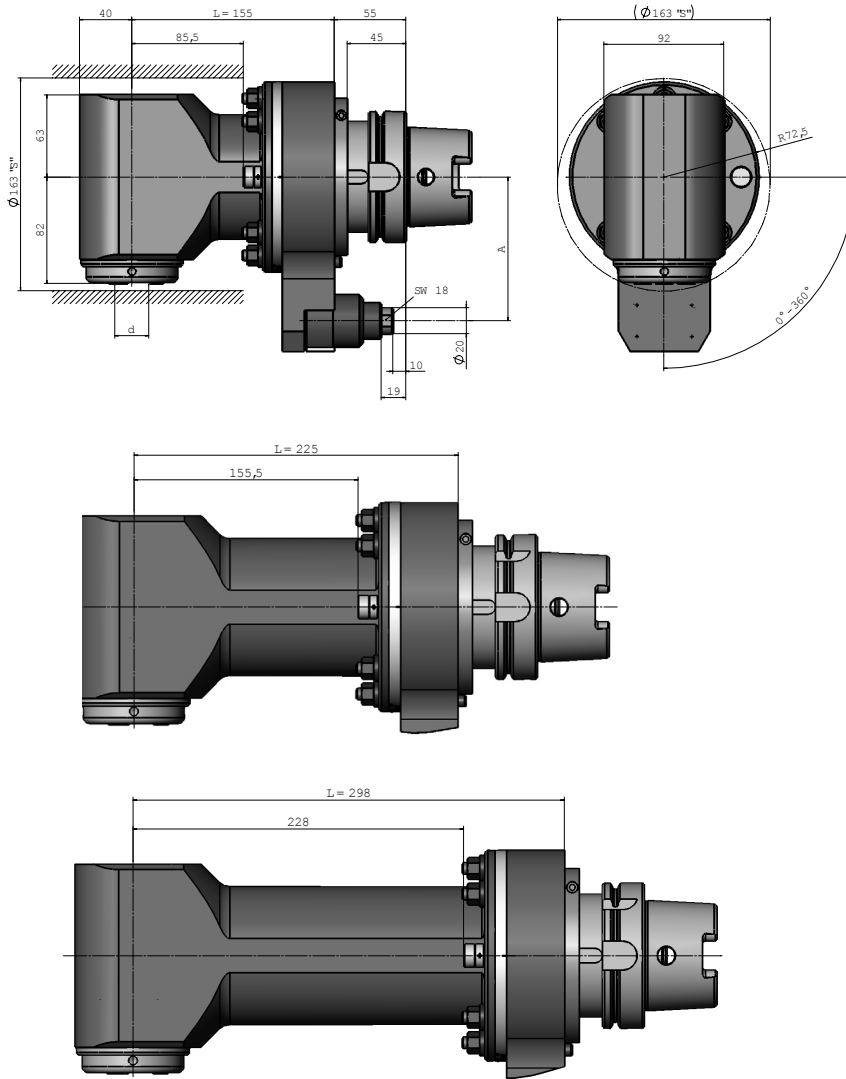
* We reserve the right to modify technical contents .



size	collet	tor- que	i	A	drive	R	L	L1	no	kg
07	ER 32	70	1:1	65	HSK 63	62,5	105	43,5	771WSX00207E6A-105	8
	ER 32	70	1:1	65	HSK 63	62,5	150	88,5	771WSX00207E6A-150	9
	ER 32	70	1:1	65	HSK 63	62,5	215	153,5	771WSX00207E6A-215	10
07	ER 32	70	1:1	80	HSK 100	62,5	105	43,5	772WSX00207E6A-105	9
	ER 32	70	1:1	80	HSK 100	62,5	150	88,5	772WSX00207E6A-150	10
	ER 32	70	1:1	80	HSK 100	62,5	215	153,5	772WSX00207E6A-215	11
without picture	ER 32	70	1:1	80	HSK 100	72,5	270	208,5	772WSX00207E6A-270	12
without picture	ER 32	70	1:1	80	HSK 100	72,5	420	350	772WSX00207E6A-420	14

The marked articles are standard

* We reserve the right to modify technical contents .



size	collet	torque	i	A	drive	R	L	L1	no	kg
15	ER 40	150	1:1	110	HSK100	72,5	155	85,5	772WSX00415E7A-135	16
	ER 40	150	1:1	110	HSK 100	72,5	225	155,5	772WSX00415E7A-225	18
	ER 40	150	1:1	110	HSK 100	72,5	298	228	772WSX00415E7A-298	20
without picture	ER 40	150	1:1	110	HSK 100	86	420	350	772WSX00415E6A-420	26

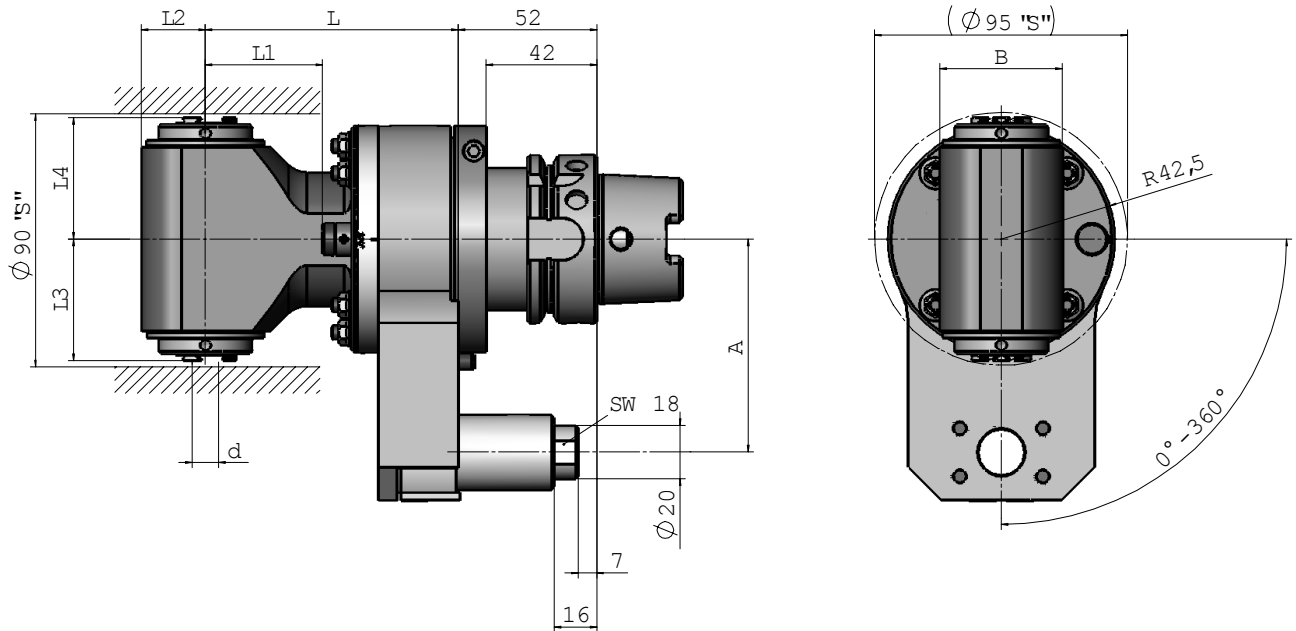
The marked articles are standard

* We reserve the right to modify technical contents .



TWO SIDED ANGLE HEAD 90°

SIZE
04



size	collet	tor- que	L2	L3	L4	d	R	B	S	i	A	drive	L	L1	no	kg
03	ER11	8	16	41	41	1-7	35	40	65	1:1	42,5	HSK40	65	29	769WZ00203E1A-65	2,8
													105	69	769WZ00203E1A-105	3,5
04	ER16	12	18,5	62,5	63	1-10	42,5	46	98	1:1	65	HSK63	105	69	771WZ00204E3A-105	4,3
													155	104	771WZ00204E3A-155	5
04	ER 16	15	24	46	46	1-10	42,5	46	98	1:1	65	HSK 63	105	69	771WZX00204E3A-105	4,5
													155	119	771WZX00204E3A-155	5
													250	214	771WZX00204E3A-250	6,5
04	ER 16	15	24	46	46	1-10	52,5	46	98	1:1	80	HSK100	105	69	772WZX00204E3A-105	4,5
													155	119	772WZX00204E3A-155	5
													250	199	772WZX00204E3A-250	6
													305	265	772WZX00204E3A-305	6,5

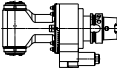
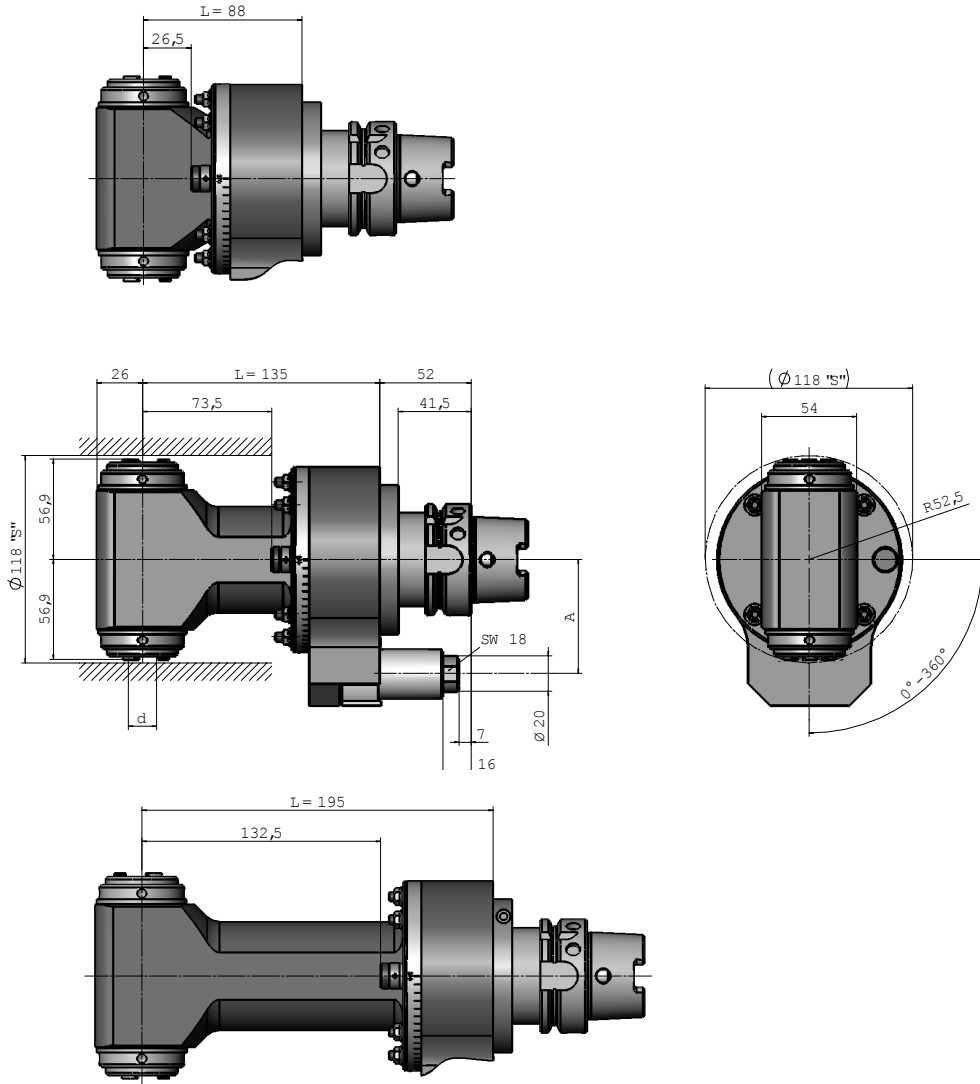
The marked articles are standard

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TWO SIDED ANGLE HEAD 90°

SIZE
05



WZX

size	collet	torque	i	A	drive	R	L	L1	no	kg
05	ER 25	30	1:1	65	HSK 63	52,5	88	26,5	771WZX00205E5A-88	5,5
	ER 25	30	1:1	65	HSK 63	52,5	135	73,5	771WZX00205E5A-135	6,5
	ER 25	30	1:1	65	HSK 63	52,5	195	132,5	771WZX00205E5A-195	7,5
	ER 25	30	1:1	80	HSK 100	52,5	88	26,5	772WZX00205E5A-88	6,5
	ER 25	30	1:1	80	HSK 100	52,5	135	73,5	772WZX00205E5A-135	7,5
	ER 25	30	1:1	80	HSK 100	52,5	195	132,5	772WZX00205E5A-195	8,5
without picture	ER 25	30	1:1	80	HSK 100	62,5	380	317,5	772WZX00205E5A-380	12

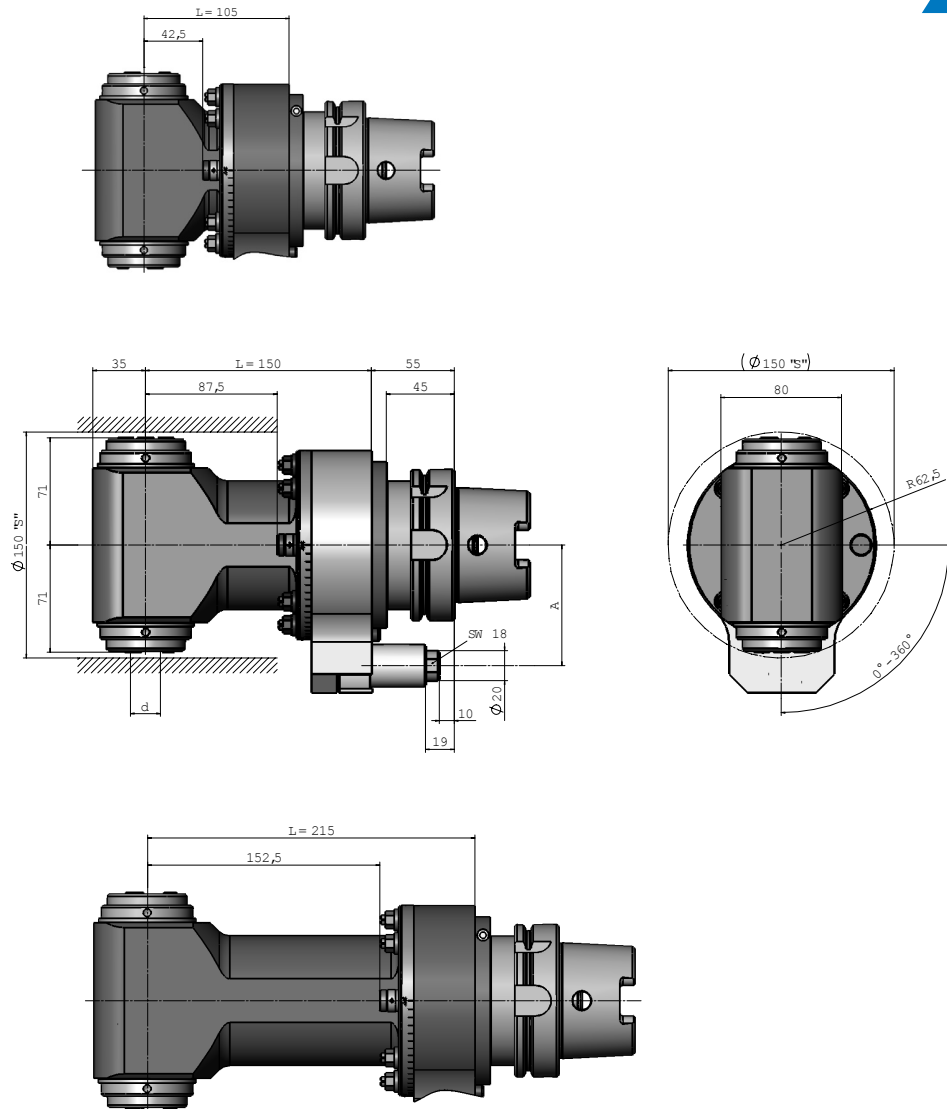
The marked articles are standard

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TWO SIDED ANGLE HEAD 90°

SIZE
07



size	collet	tor- que	i	A	drive	R	L	L1	no	kg
07	ER 32	70	1:1	65	HSK 63	62,5	105	42,5	771WZX00207E6A-105	8
	ER 32	70	1:1	65	HSK 63	62,5	150	87,5	771WZX00207E6A-150	9
	ER 32	70	1:1	65	HSK 63	62,5	215	152,5	771WZX00207E6A-215	10
	ER 32	70	1:1	80	HSK 100	62,5	105	42,5	772WZX00207E6A-105	9
	ER 32	70	1:1	80	HSK 100	62,5	150	87,5	772WZX00207E6A-150	10
	ER 32	70	1:1	80	HSK 100	62,5	215	152,5	772WZX00207E6A-215	11
without picture	ER 32	70	1:1	80	HSK 100	72,5	270	209,5	772WZX00207E6A-270	12
without picture	ER 32	70	1:1	80	HSK 100	72,5	420	357,5	772WZX00207E6A-420	14

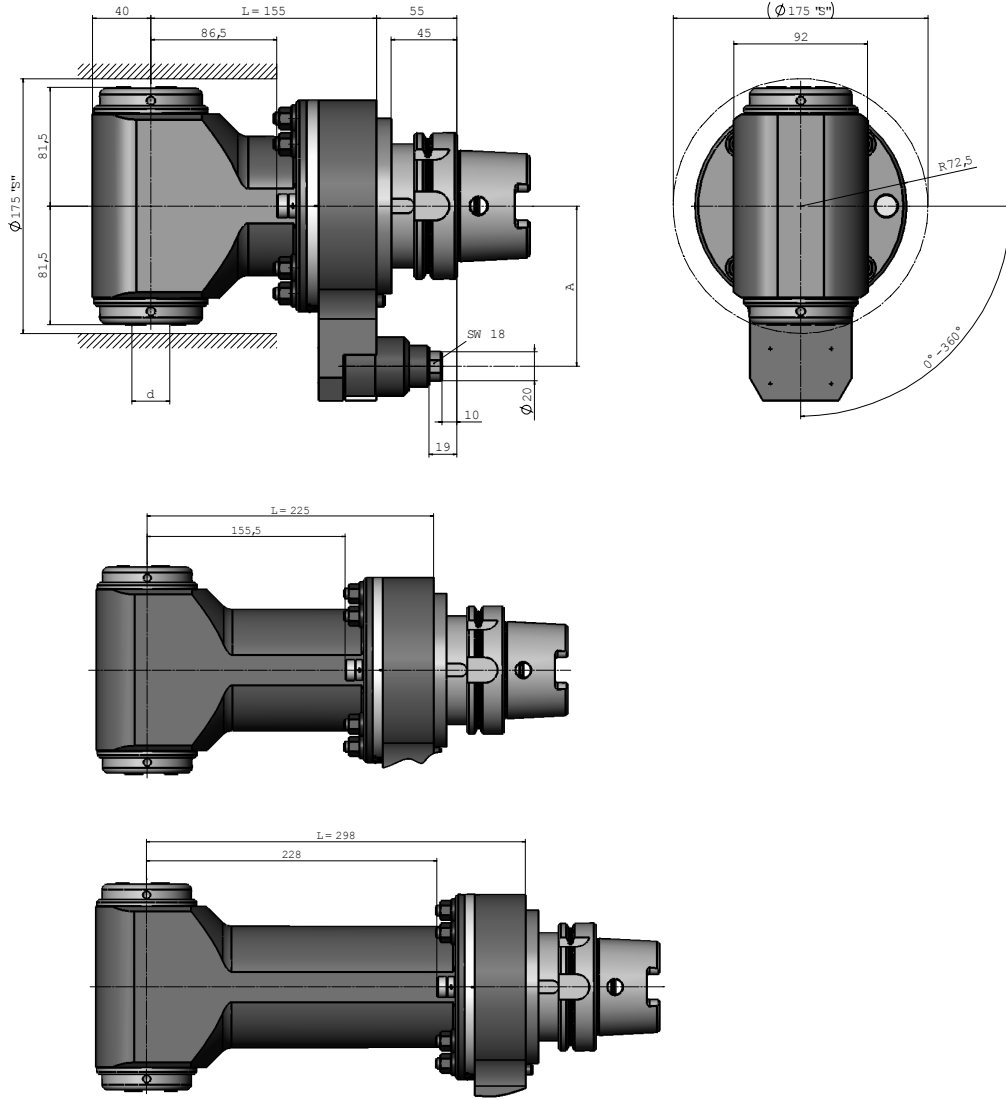
The marked articles are standard

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TWO SIDED ANGLE HEAD 90°

SIZE
15



size	collet	torque	i	A	drive	R	L	L1	no	kg
15	ER 40	150	1:1	110	HSK100	72,5	155	86,5	772WZX00415E7A-135	16
	ER 40	150	1:1	110	HSK 100	72,5	225	155,5	772WZX00415E7A-225	18
	ER 40	150	1:1	110	HSK 100	72,5	297,5	226	772WZX00415E7A-298	20
without picture	ER 40	150	1:1	110	HSK 100	86	420	351,5	772WZX00415E6A-420	26

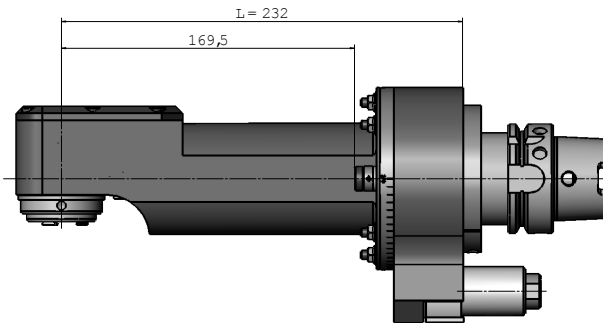
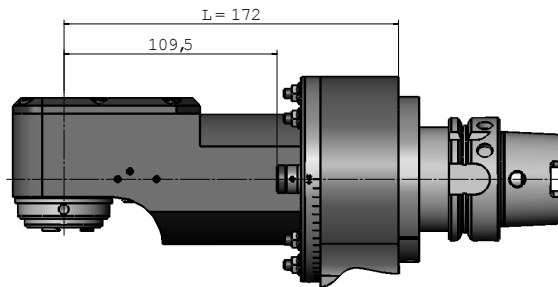
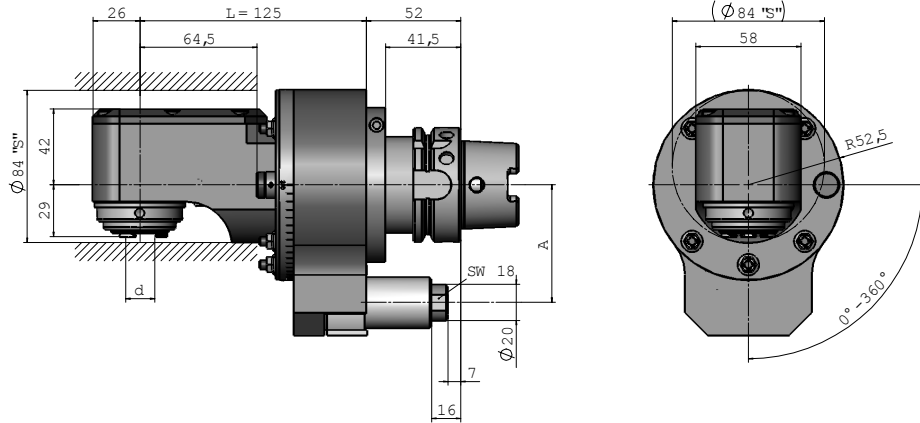
The marked articles are standard

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OFFSET ANGLE HEAD 90°



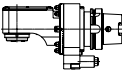
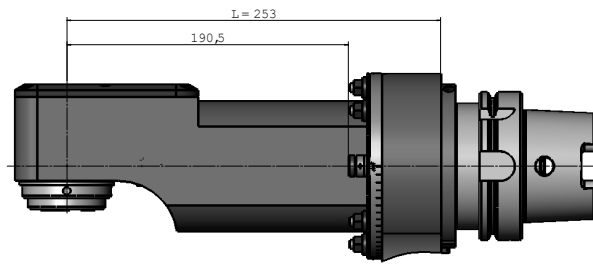
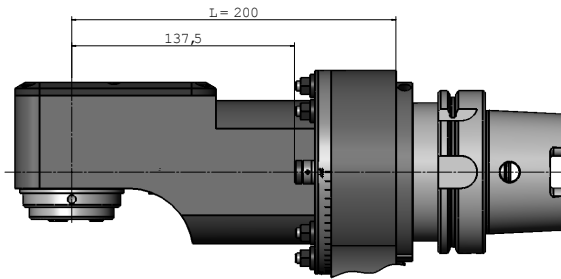
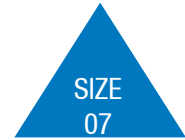
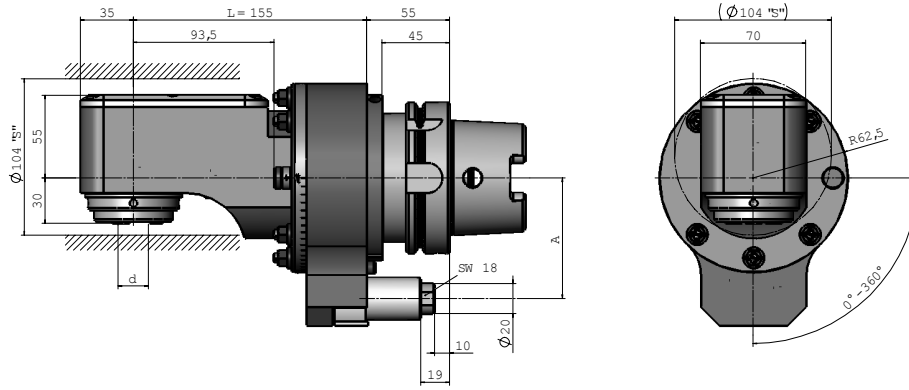
size	collet	tor- que	i	A	drive	R	L	L1	no	kg
05	ER 25	30	1:1	65	HSK 63	52,5	125	64,5	771WWX00205E5A-125	5,5
	ER 25	30	1:1	65	HSK 63	52,5	172	109,5	771WWX00205E5A-172	6,5
	ER 25	30	1:1	65	HSK 63	52,5	232	169,5	771WWX00205E5A-232	7,5
	ER 25	30	1:1	80	HSK 100	52,5	125	64,5	772WWX00205E5A-125	6,5
	ER 25	30	1:1	80	HSK 100	52,5	172	109,5	772WWX00205E5A-172	7,5
	ER 25	30	1:1	80	HSK 100	52,5	232	169,5	772WWX00205E5A-232	8,5
without picture	ER 25	30	1:1	80	HSK 100	62,5	417	355,5	772WWX00205E5A-417	12

The marked articles are standard

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OFFSET ANGLE HEAD 90°



WWX

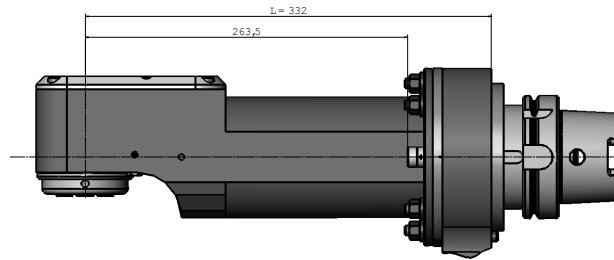
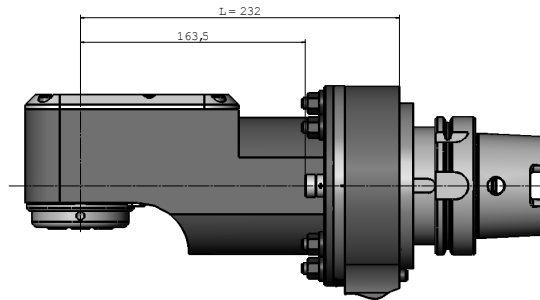
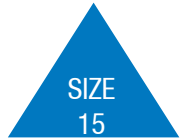
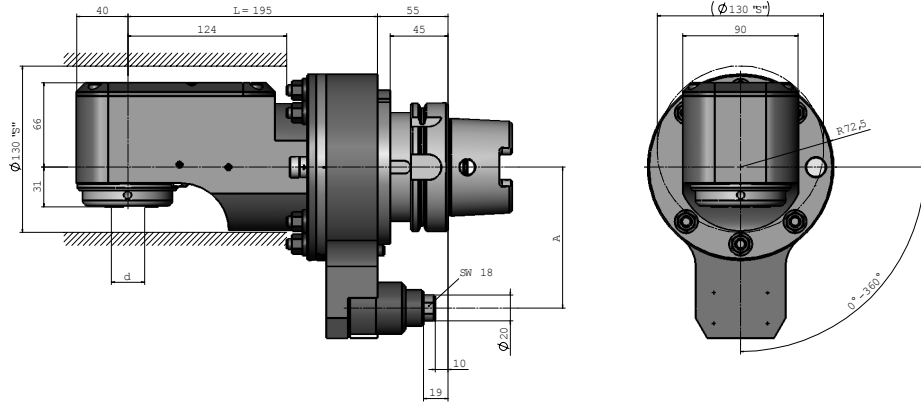
size	collet	torque	i	A	drive	R	L	L1	no	kg
07	ER 32	70	1:1	65	HSK 63	62,5	155	93,5	771WWX00207E6A-155	8
	ER 32	70	1:1	65	HSK 63	62,5	200	137,5	771WWX00207E6A-200	9
	ER 32	70	1:1	65	HSK 63	62,5	253	190,5	771WWX00207E6A-253	10
	ER 32	70	1:1	80	HSK 100	62,5	155	93,5	772WWX00207E6A-155	9
	ER 32	70	1:1	80	HSK 100	62,5	200	137,5	772WWX00207E6A-200	10
	ER 32	70	1:1	80	HSK 100	62,5	253	190,5	772WWX00207E6A-253	11
without picture	ER 32	70	1:1	80	HSK 100	72,5	320	249	772WWX00207E6A-320	12
without picture	ER 32	70	1:1	80	HSK 100	72,5	420	349	772WWX00207E6A-420	14

The marked articles are standard

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OFFSET ANGLE HEAD 90°



size	collet	tor-que	i	A	drive	R	L	L1	no	kg
15	ER 40	150	1:1	110	HSK100	72,5	195	124	772WWX00415E7A-195	16
	ER 40	150	1:1	110	HSK 100	72,5	232	163,5	772WWX00415E7A-232	18
	ER 40	150	1:1	110	HSK 100	72,5	332	268,5	772WWX00415E7A-332	20
without picture	ER 40	150	1:1	110	HSK 100	86	420	349	772WWX00415E7A-420	26

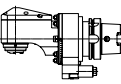
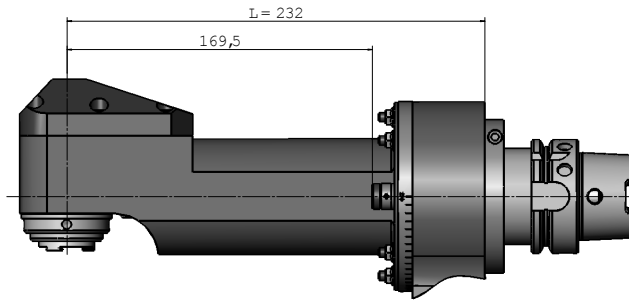
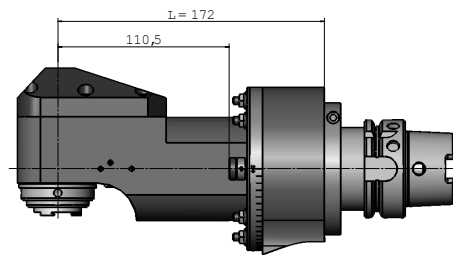
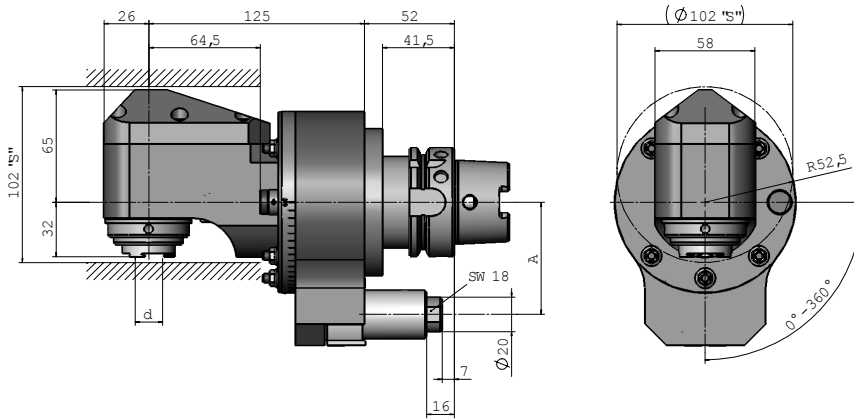
The marked articles are standard

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OFFSET ANGLE HEAD 90° WITH INTERNAL COOLANT

SIZE
05



WWX
+IK

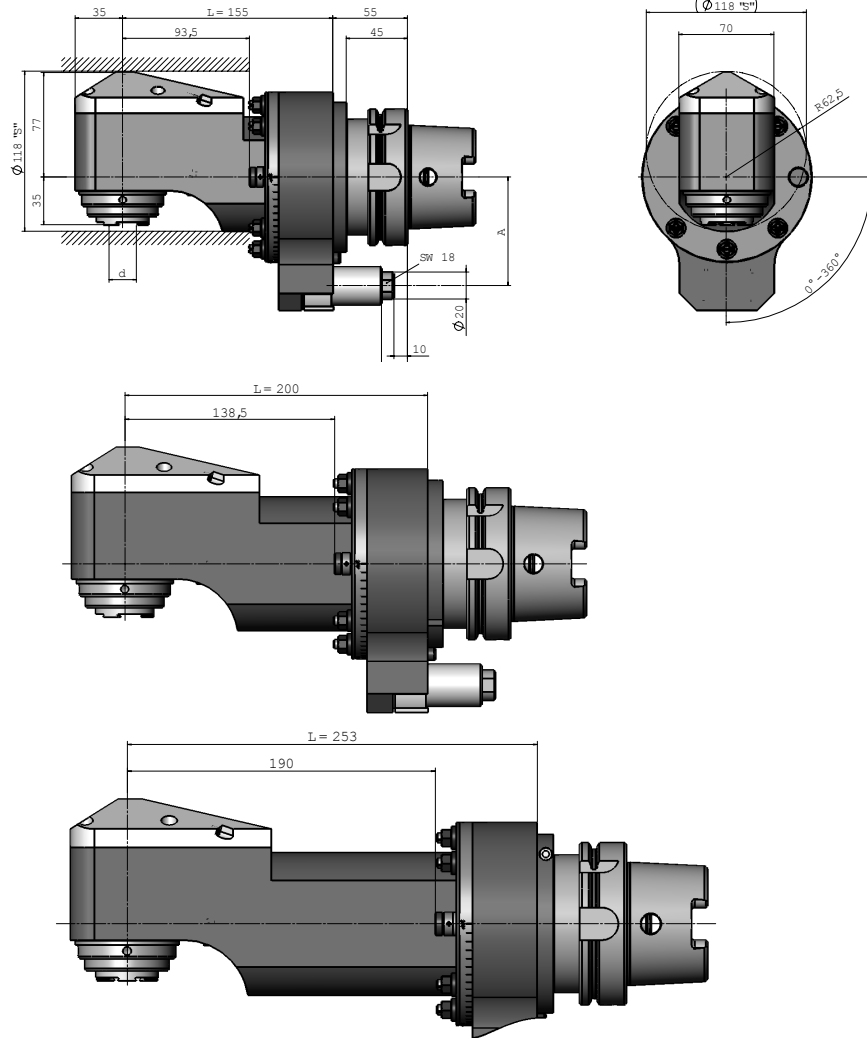
size	collet	torque	i	A	drive	R	L	L1	no	kg
05	ER 25	30	1:1	65	HSK 63	52,5	125	64,5	771WWX00205E5A-125	5,5
	ER 25	30	1:1	65	HSK 63	52,5	172	110,5	771WWX00205E5A-172	6,5
	ER 25	30	1:1	65	HSK 63	52,5	232	169,5	771WWX00205E5A-232	7,5
without picture	ER 25	30	1:1	80	HSK 100	52,5	125	64,5	713WWX00207E5A-125	6,5
	ER 25	30	1:1	80	HSK 100	52,5	172	110,5	713WWX00207E5A-172	7,5
	ER 25	30	1:1	80	HSK 100	52,5	232	169,5	713WWX00207E5A-232	8,5
without picture	ER 25	30	1:1	80	HSK 100	62,5	380	318,5	713WWX00207E5A-380	12

The marked articles are standard
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OFFSET ANGLE HEAD 90° WITH INTERNAL COOLANT

**SIZE
07**



size	collet	tor- que	i	A	drive	R	L	L1	no	kg
07	ER 32	70	1:1	65	HSK 63	62,5	155	93,5	711WWX00207E6A-155	8
	ER 32	70	1:1	65	HSK 63	62,5	200	138,5	711WWX00207E6A-200	9
	ER 32	70	1:1	65	HSK 63	62,5	265	190	711WWX00207E6A-265	10
	ER 32	70	1:1	80	HSK 100	62,5	155	93,5	713WWX00207E6A-155	9
	ER 32	70	1:1	80	HSK 100	62,5	200	138,5	713WWX00207E6A-200	10
	ER 32	70	1:1	80	HSK 100	62,5	265	190	713WWX00207E6A-253	11
without picture	ER 32	70	1:1	80	HSK 100	72,5	320	258	713WWX00207E6A-320	12
without picture	ER 32	70	1:1	80	HSK 100	72,5	420	358	713WWX00207E6A-420	14

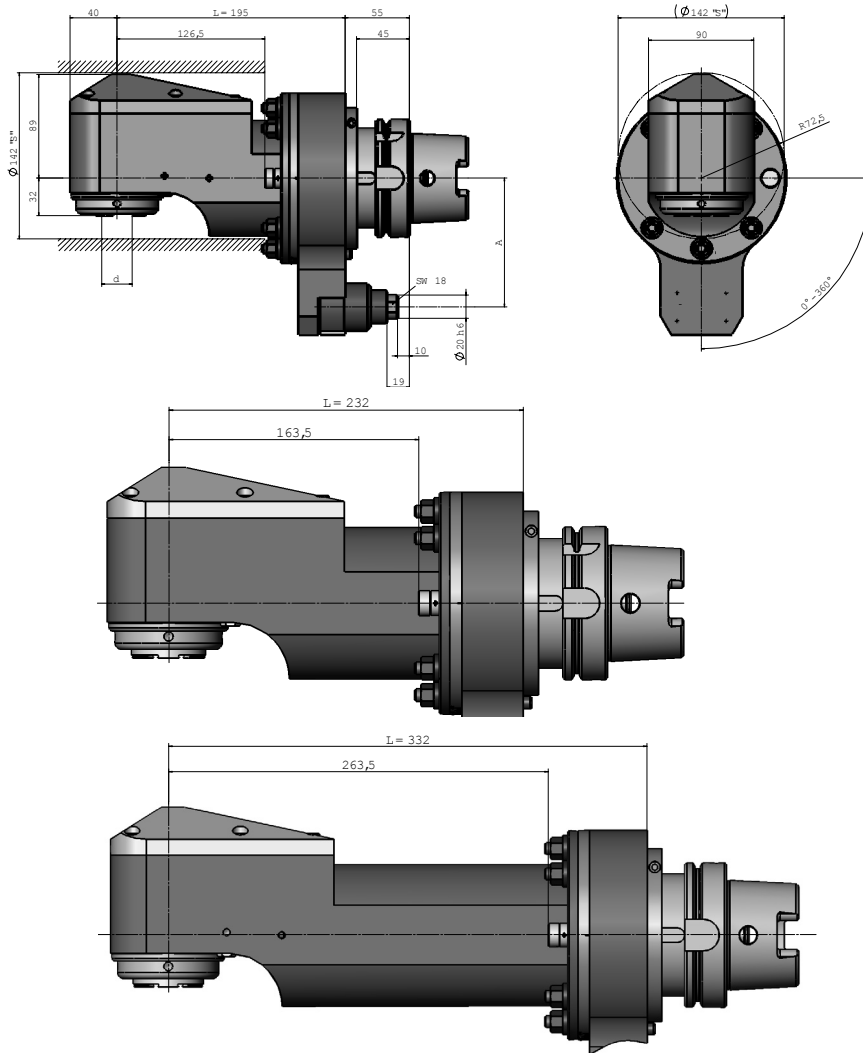
The marked articles are standard

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OFFSET ANGLE HEAD 90° WITH INTERNAL COOLANT

SIZE
15



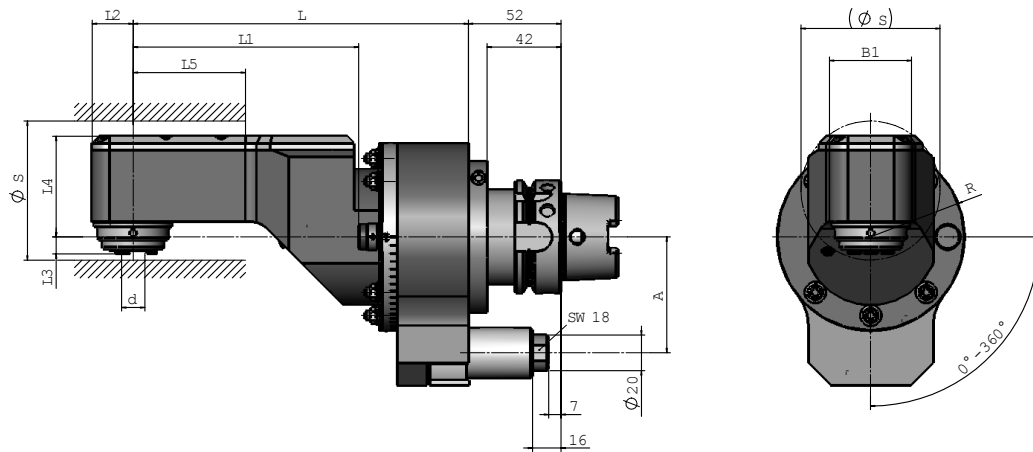
size	collet	tor-que	i	A	drive	R	L	L1	no	kg
15	ER 40	150	1:1	110	HSK100	72,5	195	126,5	713WWX00415E7A-195	16
	ER 40	150	1:1	110	HSK 100	72,5	232	163,5	713WWX00415E7A-232	18
	ER 40	150	1:1	110	HSK 100	72,5	332	263,5	713WWX00415E7A-332	20
without picture	ER 40	150	1:1	110	HSK 100	86	420	34,8	713WWX00415E7A-420	26

The marked articles are standard

* We reserve the right to modify technical contents .



OFFSET NARROW ANGLE HEAD 90°



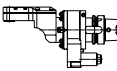
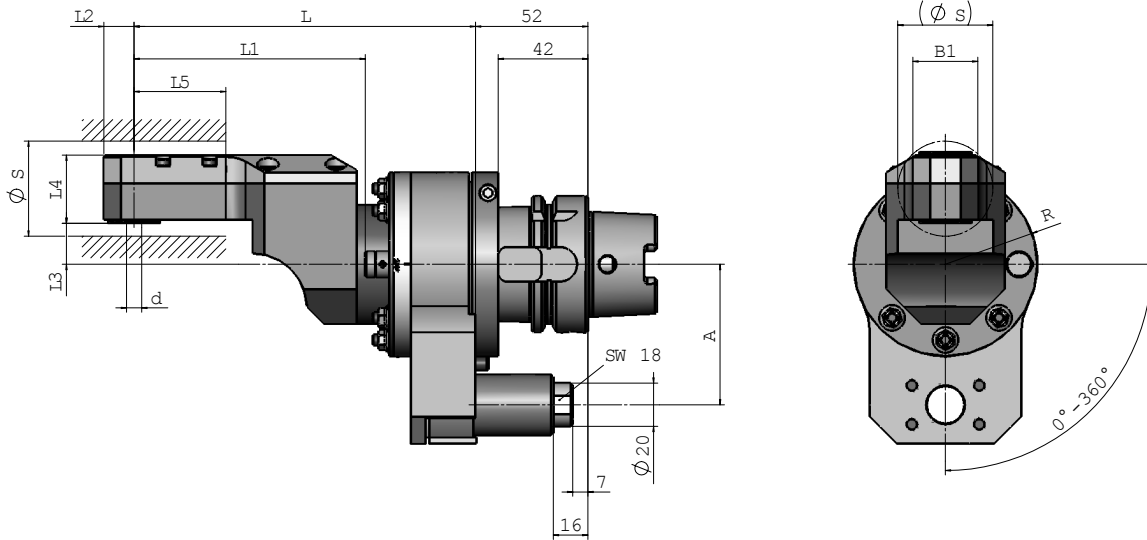
size	collet	tor- que	L2	L3	L4	d	R	B1	S	i	A	drive	L	L1	L5	no	kg
05	ER 20	15	23	9,5	56	1-13	52,5	46	77	1:1	65	HSK 63	156	95	31	771WG00205E4A-156	7
													188	125	63	771WG00205E4A-188	7,2
													220	157	95	771WG00205E4A-220	7,5
													284	221	159	771WG00205E4A-284	8
													348	286	223	771WG00205E4A-348	8,6
													498	432	389	771WG00205E4A-498	10
05	ER 20	15	23	9,5	56	1-13	52,5	46	77	1:1	80	HSK 100	156	95	31	772WG00205E4A-156	7
													188	125	63	772WG00205E4A-188	7,2
													220	157	95	772WG00205E4A-220	7,5
													284	221	159	772WG00205E4A-284	8
													348	286	223	772WG00205E4A-348	8,6
													498	432	389	772WG00205E4A-498	10
07	ER 25	35	26	4	65	1-16	62,5	52	88	1:1	80	HSK 100	215	152	85	772WG00205E5A-215	10
													305	242	175	772WG00205E5A-305	12
													425	362	295	772WG00205E5A-425	13
15	ER 32	75	40	27	66	2-20	72,5	70	102	1:1	110	HSK 100	180	110	30	772WG00205E6A-180	14
													280	210	130	772WG00205E6A-280	16

The marked articles are standard

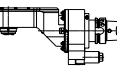
* We reserve the right to modify technical contents .



OFFSET EXTREME NARROW ANGLE HEAD 90°



WGX
spezial



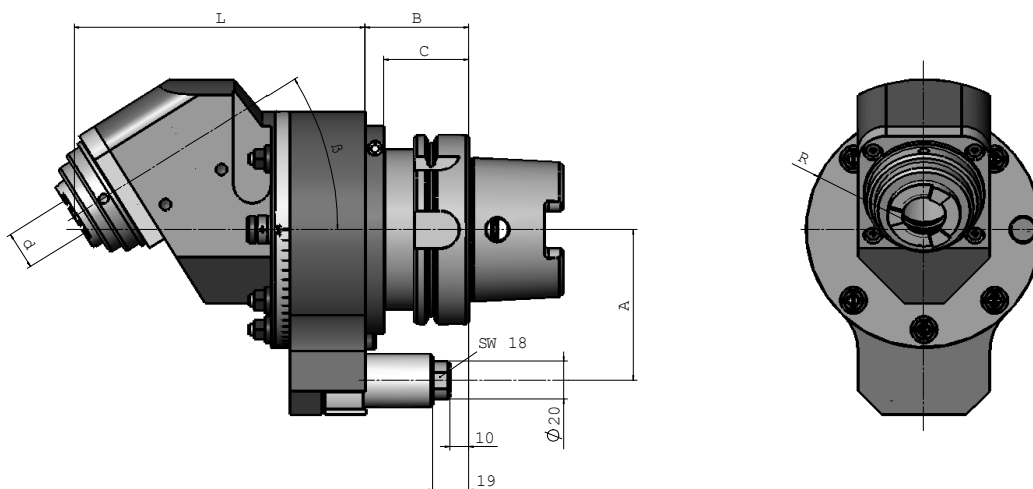
WGX

size	collet	tor- que	L2	L3	L4	d	R	B1	S	i	A	drive	L	L1	L5	no	kg
04	ER 603	10	14	14	38	1-6	42,5	30	44	1:1,4	65	HSK 63	155	103	55	771WG00204E00-155	5
													175	123	60	771WG00204E00-175	5
													204	152	104	771WG00204E00-204	5
													269	217	169	771WG00204E00-269	6
04	ER 11	10	14	5	46	1-7	42,5	30	56	1:1,4	65	HSK 63	155	103	55	771WG00204E1-155	5
													175	123	60	771WG00204E1-175	6
													204	152	104	771WG00204E1-204	6
													269	217	169	771WG00204E1-269	5,5
04	fix Ø	8	19,5	18	4	42,5	23	24	1:1,3	65	HSK 63	99	60	41	771WG00204U1-99	5	
				20	5	42,5	25	26	1:1,3	65	100	61	41	771WG00204U2-100	5		
				12,5	22	6,3	52,5	24	26	1:1,3	65	134	110	44	771WG00204U0-134	6	
05	fix Ø	12	9,5	23	3,2	52,5	20	34	1:1,8	65	HSK 63	188	128	93	771WG00205U0-188	6	
				13,5	13	5,4	34	36	157	97	29	771WG00205U2-157	6				
				13,5	15	4	34	36	191	131	53	771WG00205U0-191	6,5				
				14,2	23	6,5	34	36	215	155	77	771WG00205U0-215	7				
				13,5	23	4	34	36	205	145	77	771WG00205U0-205	7				
				12,7	13	2,7	15	22	179	119	50	771WG00205U0-179	9				
05	fix Ø	8	7,5	55	1,5	52,5	45	70	1:1,4	65	HSK 63	155		50	771WG00205E0-155	7	

* We reserve the right to modify technical contents .



ANGLE HEAD FIXED ANGLE WITH INTERNAL COOLANT



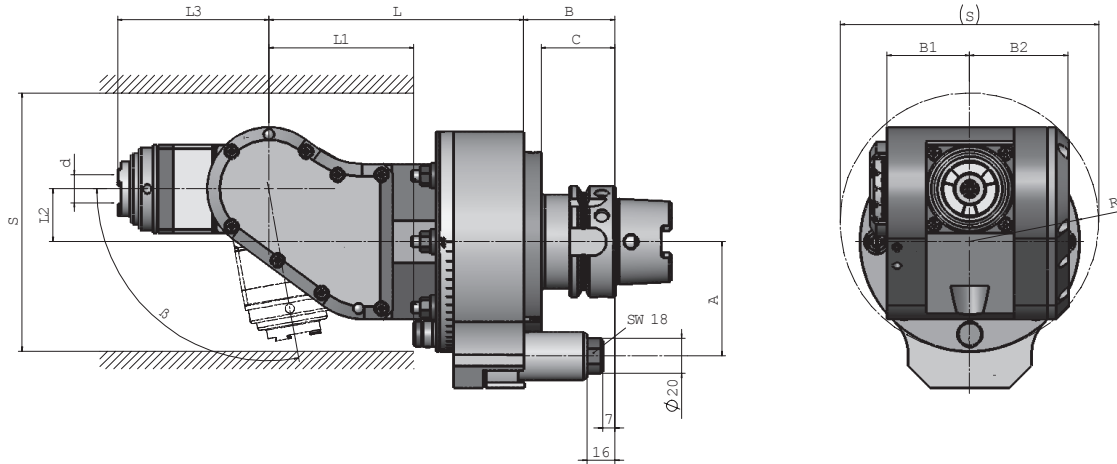
size	torque	collet	fixed angle	R	B	A	drive	L	no. with IC	kg
05	30	ER 25	15°	52,5	54	65	HSK 63	160	711WFX00205E5A-15	5
			30°					155	711WFX00205E5A-30	5
			45°					155	711WFX00205E5A-45	5
			60°					165	711WFX00205E5A-60	5
			75°					160	711WFX00205E5A-75	5
05	30	ER 25	15°	52,5	54	80	HSK 100	160	713WFX00205E5A-15	6,5
			30°					155	713WFX00205E5A-30	6,5
			45°					155	713WFX00205E5A-45	6,5
			60°					165	713WFX00205E5A-60	6,5
			75°					160	713WFX00205E5A-75	6,5
07	70	ER 32	15°	62,5	80	80	HSK 100	180	713WFX00207E6A-15	10
			30°					175	713WFX00207E6A-30	10
			45°					175	713WFX00207E6A-45	10
			60°					175	713WFX00207E6A-60	10
			75°					160	713WFX00207E6A-75	10
15	150	ER 40	15°	72,5	92	110	HSK 100	200	713WFX00415E7A-15	14
			30°					195	713WFX00415E7A-30	14
			45°					195	713WFX00415E7A-45	14
			60°					195	713WFX00415E7A-60	14
			75°					190	713WFX00415E7A-75	14

Also available without internal coolant.

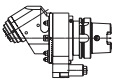
* We reserve the right to modify technical contents .



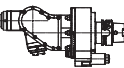
ADJUSTABLE ANGLE HEAD 0-90° WITH INTERNAL COOLANT



size	torque	collet	fixed angel	L2	L3	R	B1	B2	S	A	Antrieb	L	no. with IC	kg		
05	25	ER 16	50	30	58	52,5	45	41	127	65	HSK 63	112	711WD00205E3-112	5,5		
05	15	ER20	71	25	80,5	52,5	49,5	46	125	65	HSK 63	134	711WDX00205E4A-134	6		
												181	711WDX00205E4A-181	7,5		
												241	711WDX00205E4A-241	9,0		
												80	HSK100	134	713WDX00205E4A-134	7,0
												181	713WDX00205E4A-181	9,5		
												241	713WDX00205E4A-241	10,0		
07	35	ER 25	82	30	86	62,5	47	56	147	65	HSK 63	145	711WDX00205E5A-145	8,0		
												190	711WDX00205E5A-190	10,5		
												243	711WDX00205E5A-243	12,0		
												80	HSK 100	145	713WDX00205E5A-145	9,0
												190	713WDX00205E5A-190	11,5		
												243	713WDX00205E5A-243	13,0		
15	70	ER 32	136	35	107	72,5	70	66,5	181	110	HSK 100	205	713WDX00415E6A-205	18,0		
												342	713WDX00415E6A-342	20,0		



**WFX
+IK**

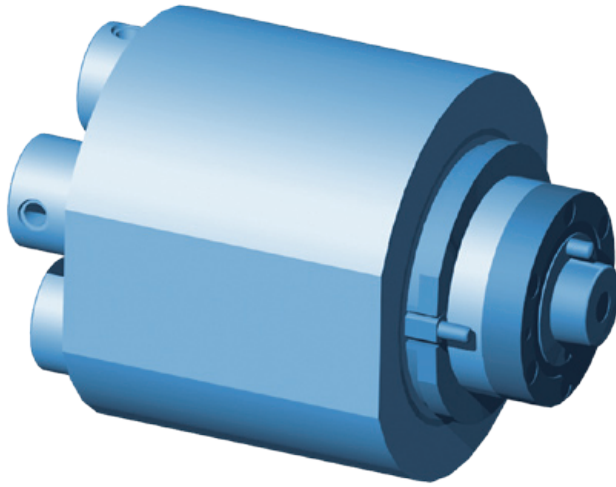


**WDX
+IK**

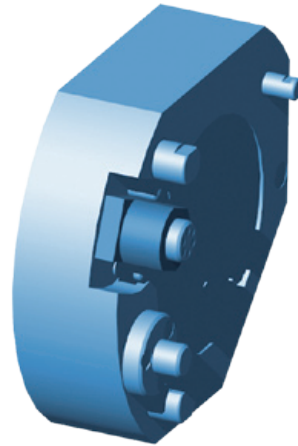
Also available without internal coolant.
* We reserve the right to modify technical contents .



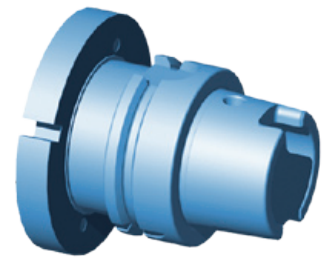
STRUCTURAL DESIGN MULTI SPINDLE HEAD



Multi spindle head



Torque arm



Drive taper

Multi spindle head

Drilling head diameter and spindle alignment according to your application.
Different spindle configurations are possible.
Speed depending on spindle design.

Torque arm

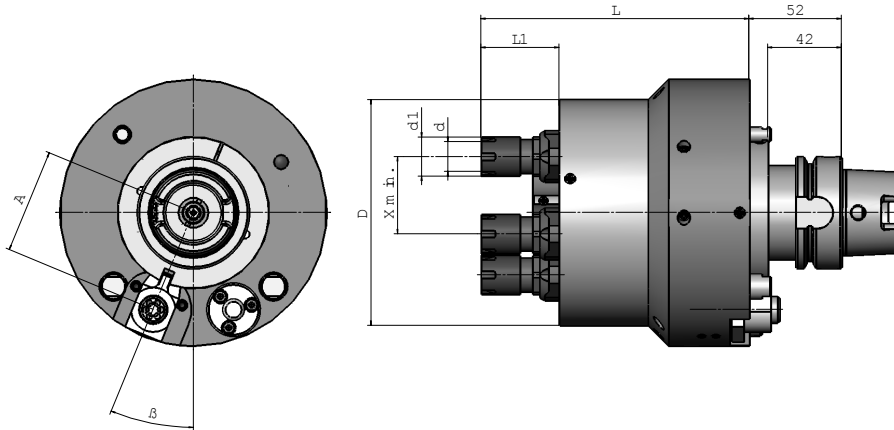
Built standard according to your machine specifications.
Detailed machine specifications (spindle connection drawings) are necessary.

Drive taper

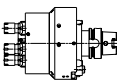
Interface to your machine spindle.
All standard systems are available, e.g. HSK, SK, BT, CAT, Coromant Capto[®]...



MULTI SPINDLE HEAD WITH ER-COLLET SPINDLE



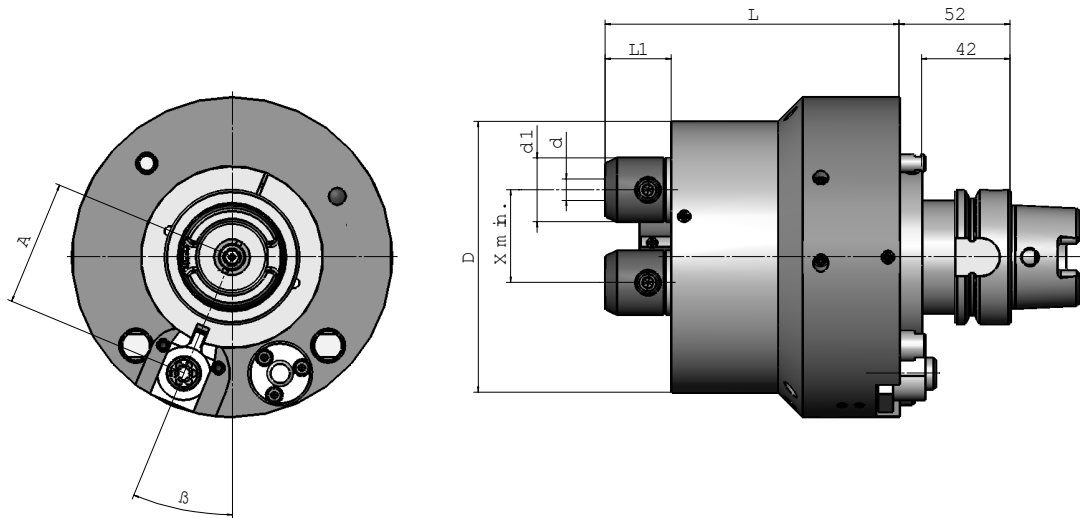
collet	L	L1	d	d1	D1	A	torque	β	D	drive	type of spindle
ER 8	148	23	1-4	11	20		11			HSK..	E0
ER 11	148	23	1-7	16	24	machine dependant	16	machine dependant	dependant	HSK..	E1
ER 16	153	28	1-10	22	38		22			HSK..	E3
ER 20	158	35	1-13	28	52		28			HSK..	E4
ER 25	158	40	2-16	35	52		35			HSK..	E5
ER 32	168	50	2-20	50	60		50			HSK..	E6



MSK



MULTI SPINDLE HEAD WITH WHISTLE NOTCH SPINDLE



L	L1	d	d1	A	torque	β	D	drive	type of spindle
152	24	4	16		16			HSK..	U1
154	26	5	16		16			HSK..	U2
154	26	6	20	machine dependant	24	machine dependant	drill hole-pattern dependant	HSK..	U3
156	28	8	24		HSK..			U5	
158	28	10	26		HSK..			U7	
161	40	12	28		HSK..			U9	
161	40	14	28		HSK..			V1	
164	40	16	32	HSK..	V3				
173	45	20	38		38		HSK..	V5	

Examples for multi-spindle weight with HSK 100:

D	with 2 spindles [kg]	with 4 spindles[kg]	with 6 spindles[kg]	with 8 spindles[kg]
106	8	9	10	11
146	12	13	14	15
186	16	17	18	19
226	23	24	25	26

L are maximum dimensions.

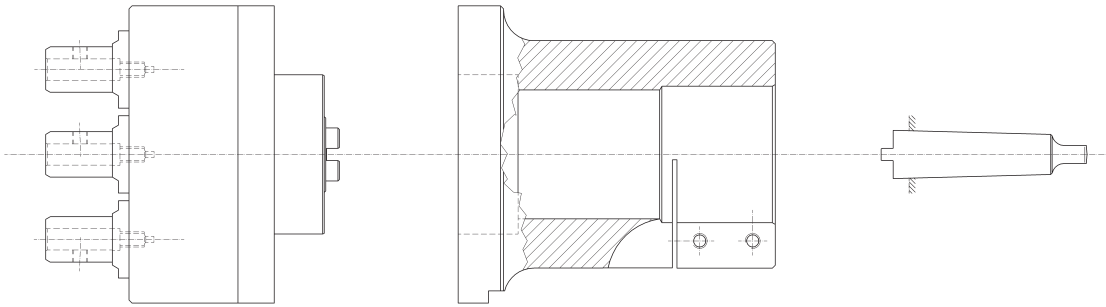
Depending on spindle distance shorter ones are available

* We reserve the right to modify technical contents .

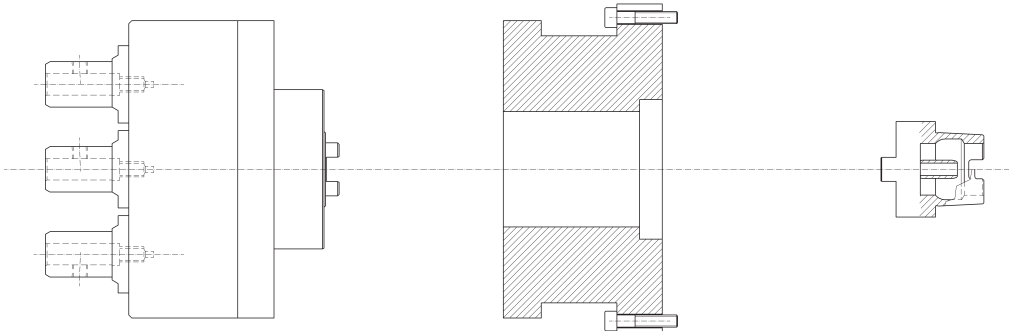


MULTI-SPINDLE HEAD

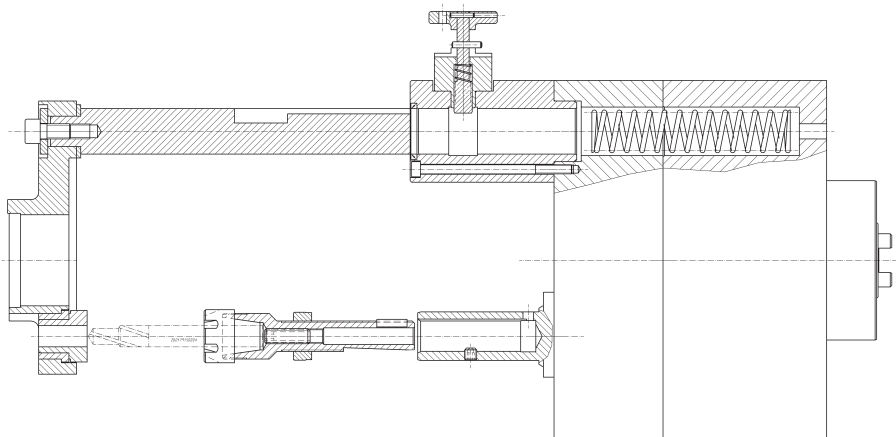
ALTERNATIVE MACHINE CONNECTIONS/ACCESSORIES



1. Multi spindle head with locking flange, drive trough morse taper e.g. column-type drilling machine.



2. Multi spindle head with screw-on-flange, different axle drive shaft e.g. boring units for special machine.



3. Drill guide plate fixed or spring-loaded, depends on application.



5-FOLD SPEED, IN USE BY THE 1000s

BENZ high speed spindles offer solutions for all applications where the existing machine rpm and the resulting cutting speeds do not allow for an efficient production.

New Generation

- ▲ Improved stability
- ▲ Temperature-optimized
- ▲ Weight-optimized

Specification

- With ceramic bearings for high speed cutting
- Revolutions up to 40.000 rpm
- Coolant pressure up to 80 bar
- High flexibility due to exchangeable torque arm
- All types of high speed spindles produced standard with jacket cooling. This reduces operating temperature and results in consistent operating parameters.
- Wide range of standard models



Series

Type SL:

With jacket cooling but without internal coolant.

Type SLI:

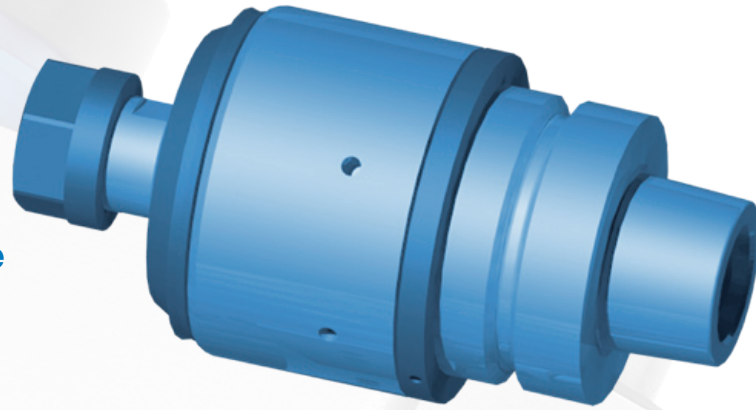
With internal coolant system (for tools with cooling channel) and with jacket cooling system.

Please note:

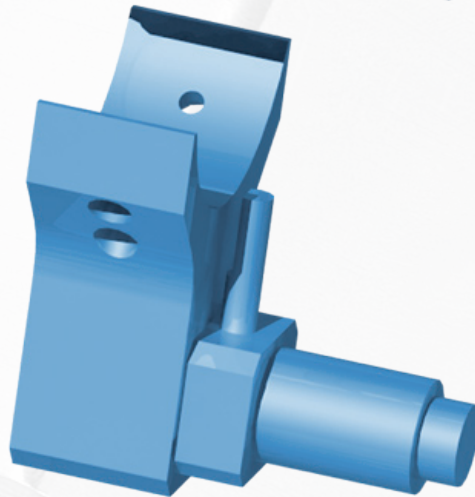
Internal coolant supply and jacket coolant is only possible if the machine spindle is equipped with an internal coolant supply as well.



High-Speed-Spindle



Torque arm for automatic tool change



Torque arm



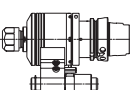
High-Speed-Spindle

Complete with drive taper and locking plate. The spindle is produced standard according to DIN 6499 (ER-system). Other types on request.

Torque arm for automatic tool change

Fastens the high speed spindle on the spindle to avoid twisting. Built standard according to your machine specifications. Detailed machine specifications (spindle connection drawings) are necessary.

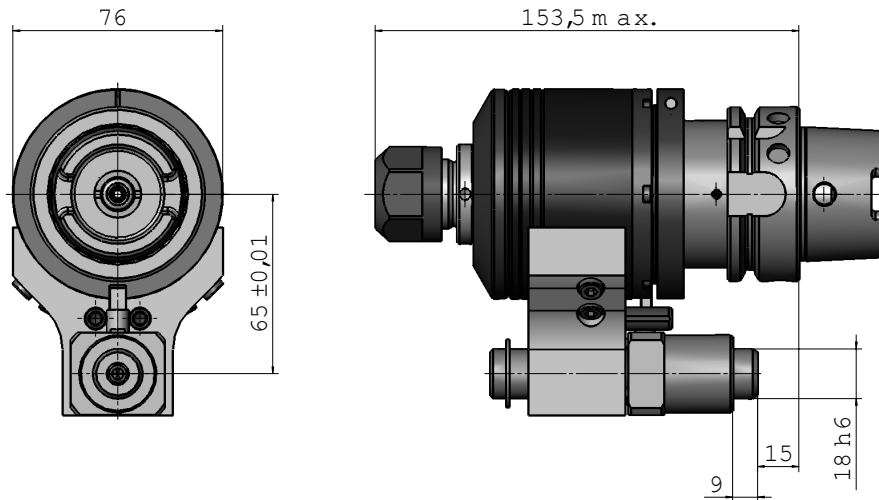
Torque arm





HIGH SPEED SPINDLE FOR AUTOMATIC CHANGE

SIZE
076



size	typ	collet	Ø	i	tor-que	drive	kg	IC	jacket coolant	rotational speeds			no
										dry running operation n max	n max 10%ED	wet running operation n max	
076	SLI	ER 20	0,5-13	1:5	3,5	HSK 63	3,5	X	X	dry running operation not permissible	-	40000	711S002D076E4
	SL	ER 20	0,5-13	1:5	3,5	HSK 63	3,5	-	X	25000	30000	40000	771S002D076E4

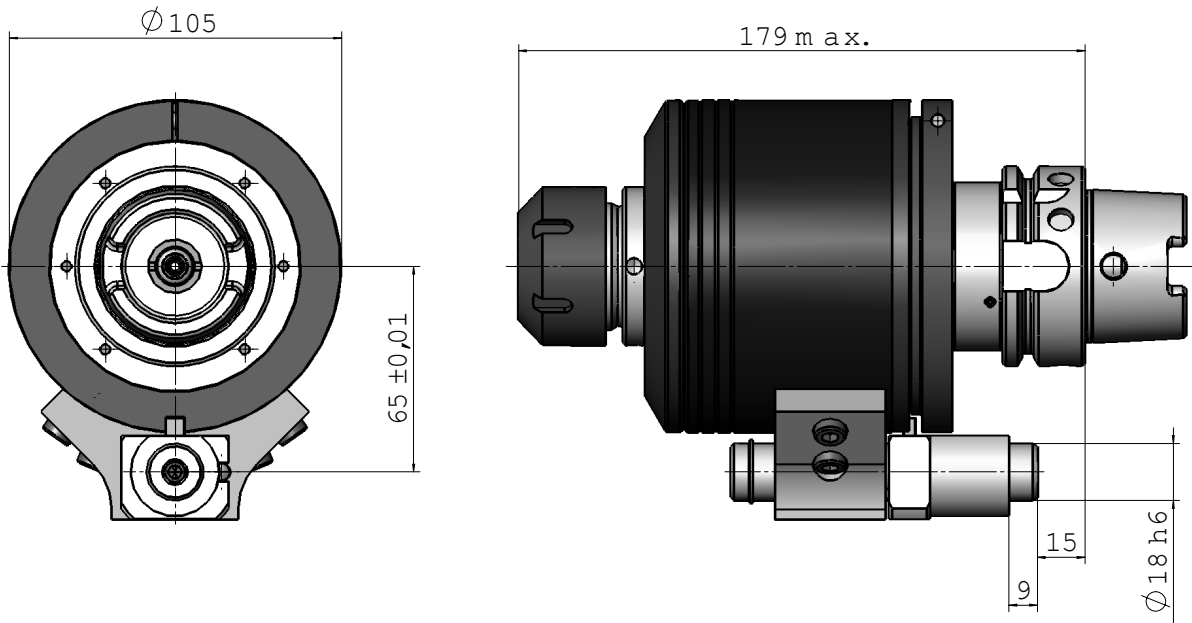
The marked articles are standard

* We reserve the right to modify technical contents .



HIGH SPEED SPINDLE FOR AUTOMATIC CHANGE

SIZE
105



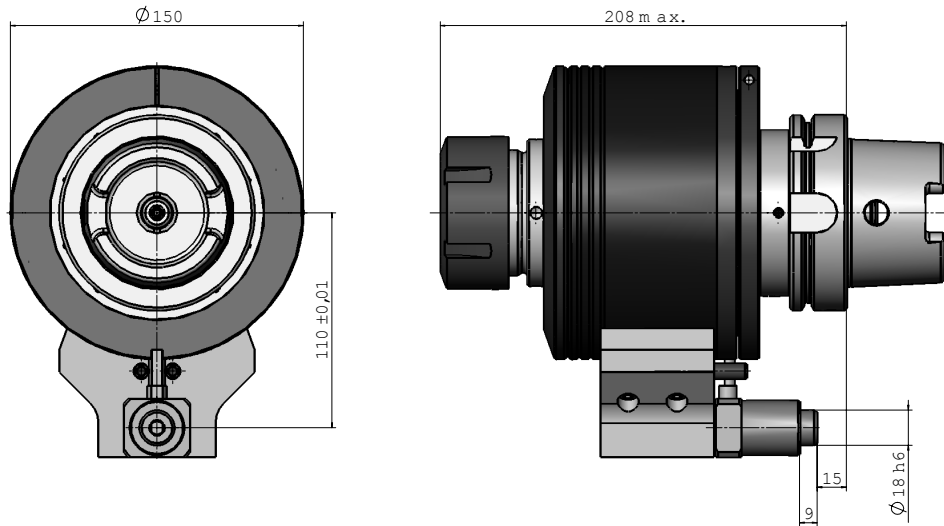
size	typ	collet	Ø	i	torque	drive	kg	IC	jacket coolant	rotational speeds			no
										dry running operation n max	n max 10%ED	wet running operation n max	
105	SLI	ER 32	1-20	1:5	9	HSK 63	7	X	X	dry running operation not permissible	-	25000	711S002D105E6
	SL	ER 32	0,5-13	1:5	3,5	HSK 63	3,5	-	X	15000	18000	25000	771S002D105E6

The marked articles are standard
* We reserve the right to modify technical contents .



HIGH SPEED SPINDLE FOR AUTOMATIC CHANGE

SIZE
150



size	typ	collet	Ø	i	torque	drive	kg	IC	jacket coolant	rotational speeds			no
										dry running operation n max	n max 10%ED	wet running operation n max	
150	SLI	ER 50	4-34	1:5	35	HSK 100	15,5	X	X	dry running operation not permissible	-	18000	713S004D150E8
	SL	ER 50	4-34	1:5	35	HSK 100	15,5	-	X	10000	12000	18000	772S00D150E8

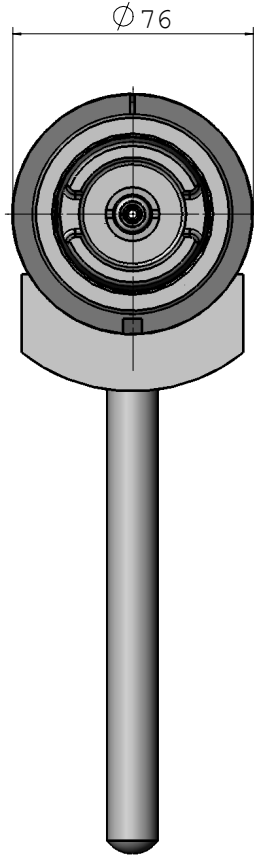
The marked articles are standard

* We reserve the right to modify technical contents .



HIGH SPEED SPINDLE FOR MANUAL TOOL CHANGE

SIZE
076



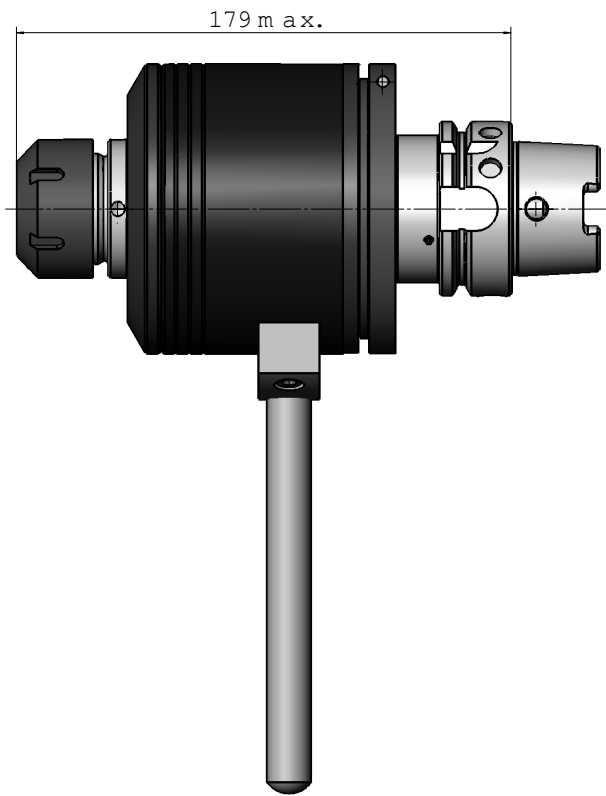
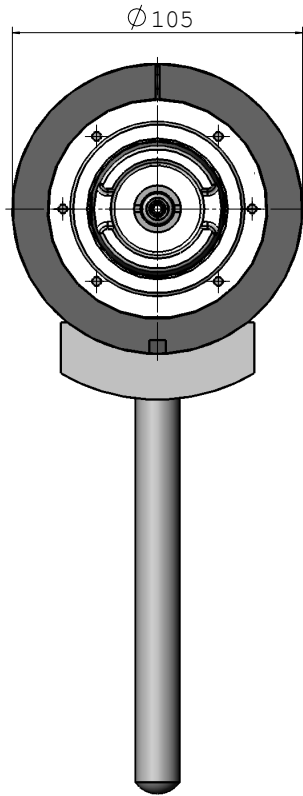
size	typ	collet	Ø	i	tor- que	drive	kg	IC	jacket coolant	rotational speeds			no
										dry running operation n max	n max 10%ED	wet running operation n max	
076	SLI	ER 20	0,5-13	1:5	3,5	HSK 63	3	X	X	dry running operation not permissible	-	40000	711.076D076E4
	SL	ER 20	0,5-13	1:5	3,5	HSK 63	3	-	X	25000	30000	40000	771.076D076E4

The marked articles are standard
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HIGH SPEED SPINDLE FOR MANUAL TOOL CHANGE

SIZE
105



size	typ	collet	Ø	i	tor- que	drive	kg	IC	jacket coolant	rotational speeds			no
										dry running operation n max	n max 10%ED	wet running operation n max	
105	SLI	ER 32	1-20	1:5	9	HSK 63	6,3	X	X	dry running operation not permissible	-	25000	711.076D105E6
	SL	ER 32	1-20	1:5	9	HSK 63	6,3	-	X	15000	18000	25000	771.076D105E6

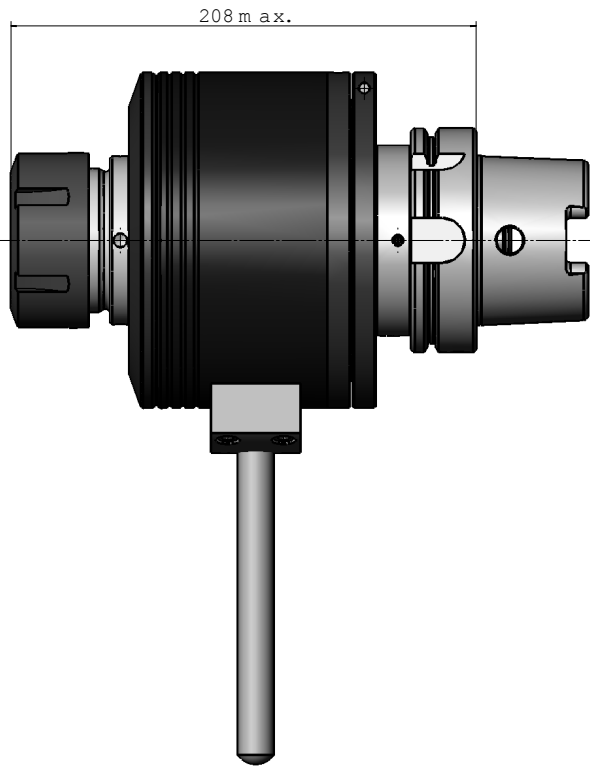
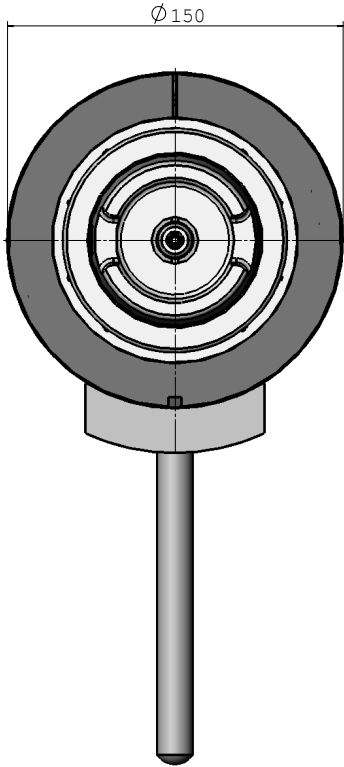
The marked articles are standard

* We reserve the right to modify technical contents .



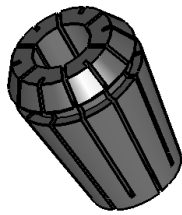
HIGH SPEED SPINDLE FOR MANUAL TOOL CHANGE

SIZE
150



size	typ	collet	Ø	i	tor-que	drive	kg	IC	jacket coolant	rotational speeds			no
										dry running operation n max	n max 10%ED	wet running operation n max	
150	SLI	ER 50	4-34	1:5	35	HSK 100	14,5	X	X	dry running operation not permissible	-	18000	713.076D150E8
	SL	ER 50	4-34	1:5	35	HSK 100	14,5	-	X	10000	12000	18000	713.076D150E8

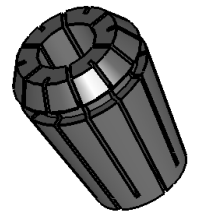
The marked articles are standard
* We reserve the right to modify technical contents .



COLLETS

Regofix: form B

ER	clamping range	d2	l1	increment	no	kg
11	1- 7	11,5	18	0,5	B134-424 E-...	0,02
16	1-10	17	27	1	B134-426 E-...	0,02
20	1-13	21	31	1	B134-428 E-...	0,03
25	1-16	26	35	1	B134-430 E-...	0,07
32	3-20	33	40	1	B134-470 E-...	0,14
40	4-26	41	46	1	B134-472 E-...	0,25



COLLETS

Regofix: with locking drive

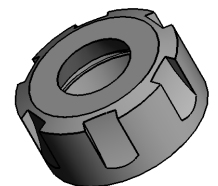
ER	clamping range	d2	l1	hole d1	no	kg
16	1-10	16	27,5	4,5- 9	B134-E-3...	0,02
20	1-13	20	31,5	4,5-11	B134-E-4...	0,03
25	1-16	25	34	4,5-16	B134-E-5...	0,06
32	3-20	32	40	4,5-20	B134-E-6...	0,10
40	4-26	40	46	7-22	B134-E-7...	0,20



COLLETS

Regofix: with locking drive

ER	clamping range	d2	l1	hole d1	no	kg
11	1- 7	11,5	18	1,4-3,5	B134-A2...	0,02
16	1-10	17	27	1,4- 6	B134-A3...	0,02
20	1-13	21	31	2,2- 7	B134-A4...	0,03
25	1-16	21	35	2,5-10	B134-A5...	0,06
32	3-20	33	40	4,5-12	B134-A6...	0,15
40	4-26	33	40	6-16	B134-A7...	0,31



CLAMPING NUT SYSTEM

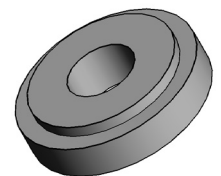
form D+E

ER	clamping range	d1	l1	no	kg
11	1- 7	19	11	B135-E1...	0,02
16	1-10	28	17	B135-E3...	0,02
20	1-13	34	19	B135-E4...	0,03
25	1-16	42	20	B135-E5...	0,06
32	3-20	50	22	B135-E6...	0,15
40	4-26	63	25	B135-E7...	0,31
50	10-34	78	35	B135-E8...	0,35



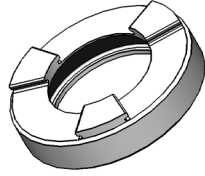
CLAMPING NUT SYSTEM for tools internal coolant

ER	clamping range	d1	l1	no	kg
16	1-10	128	22,5	B135-H3A...	0,02
20	1-13	34	24	B135-H4A...	0,02
25	2-16	42	25	B135-H5A...	0,06
32	2-20	50	27,5	B135-H6A...	0,10
40	4-26	63	30,5	B135-H7A...	0,20



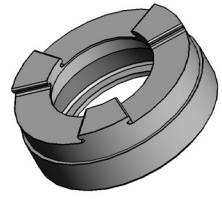
SEALING RINGS

ER	clamping range	increment	no	kg
16	1-10	0,5	B137-E3-...	0,01
20	1-13	0,5	B137-E4-...	0,01
25	2-16	0,5	B137-E5-...	0,01
32	2-20	0,5	B137-E6-...	0,01
40	4-26	0,5	B137-E7-...	0,01



INSIDE COLLET NUTS

ER	clamping range	no	kg
11	1- 7	B135-E1AX	0,02
16	1-10	B135-E2AX	0,02
20	1-13	B135-E3AX	0,03
25	1-16	B135-E4AX	0,06
32	3-20	B135-E5AX	0,15
40	4-26	B135-E6AX	0,31
50	10-34	B135-E7AX	0,35



INSIDE COLLET NUTS for tools with internal coolant

ER	clam. range	no	kg
11	1- 7	B135-E1AXC	0,02
16	1-10	B135-E2AXC	0,02
20	1-13	B135-E3AXC	0,03
25	1-16	B135-E4AXC	0,06
32	3-20	B135-E5AXC	0,15
40	4-26	B135-E6AXC	0,31
50	10-34	B135-E7AXC	0,35



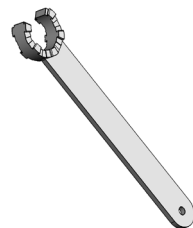
INSIDE COLLET NUTS for tools with internal coolant

ER	no
11	B136-E1
16	B136-E2
20	B136-E3
25	B136-E4
32	B136-E5
40	B136-E6
50	B136-E7



HOOK WRENCHES DIN 1810 form B

∅	no
12- 14	D0180B012014
16- 18	D0180B016018
20- 22	D0180B020022
25- 28	D0180B025028
30- 32	D0180B030032
34- 36	D0180B034036
40- 42	D0180B040042
45- 50	D0180B045050
52- 55	D0180B052055
58- 62	D0180B058062
68- 75	D0180B068075
80- 90	D0180B080090
95-100	D0180B095100



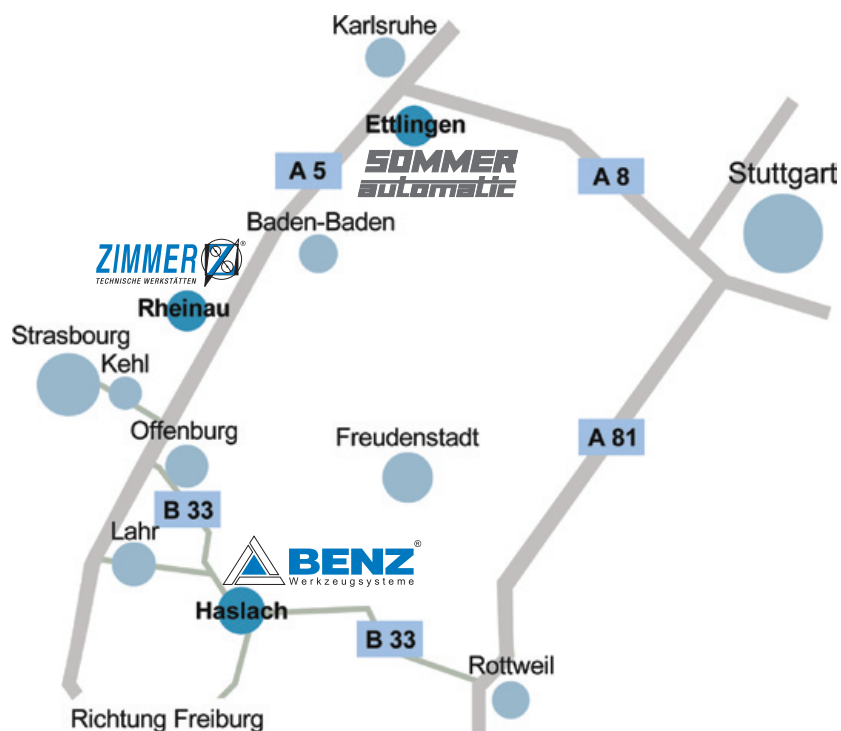
CLAMPING WRENCHES for inside clamping nuts D+E

ER	no
11	B136-E1AX
16	B136-E2AX
20	B136-E3AX
25	B136-E4AX
32	B136-E5AX
40	B136-E6AX
50	B136-E7AX



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