

expandable.

# Mandrels 2013/2014

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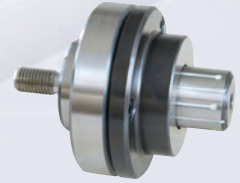
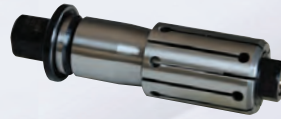
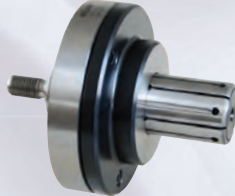
## Mandrels








Segment clamping mandrel ABSIS	7005
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# Orientation guide

	ABSIS	KFS/MFS	MZS	KFR
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<b>Application</b>	Turning, grinding, cutting, toothcutting, balancing, etc.	Turning, grinding, cutting, toothcutting, balancing, etc.	Turning, grinding, measuring, toothcutting	Turning, grinding, cutting, toothcutting, balancing, etc.
<b>Clamping</b>	internal	internal	internal	internal
<b>Actuation</b>	 	 		 




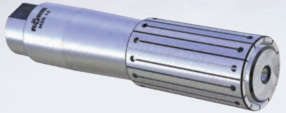






**Possible clamping surface:**

- smooth (standard)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- coated	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- cheched	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- tothing (clamping in pitch circle)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- form clamping (e.g. hexagon)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Axial component</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Clamping Ø</b>	20 - 106	15 - 140	15 - 140	14,5 - 131
<b>Work-stop possible</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Prepared for air sensing</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Mount</b>	cylindrical mount; combinable with intermediate adapter ISO 702-1 (DIN 55028)	cylindrical mount; combinable with intermediate adapter ISO 702-1 (DIN 55028)	between centers or cylindrical mount, can be caught at the shaft	cylindrical mount; combinable with intermediate adapter ISO 702-1 (DIN 55028)
<b>Features</b>	high hardness at the clamping sleeve; therefore wear-resistant, long service life of the clamping sleeve	rigid clamping, for long workpieces, resp. great span length	rigid clamping, for long workpieces, resp. great span length	for short clamping lengths, suitable for defined or without axial component
<b>Page</b>	7005	7013	7027	7029 / 7033

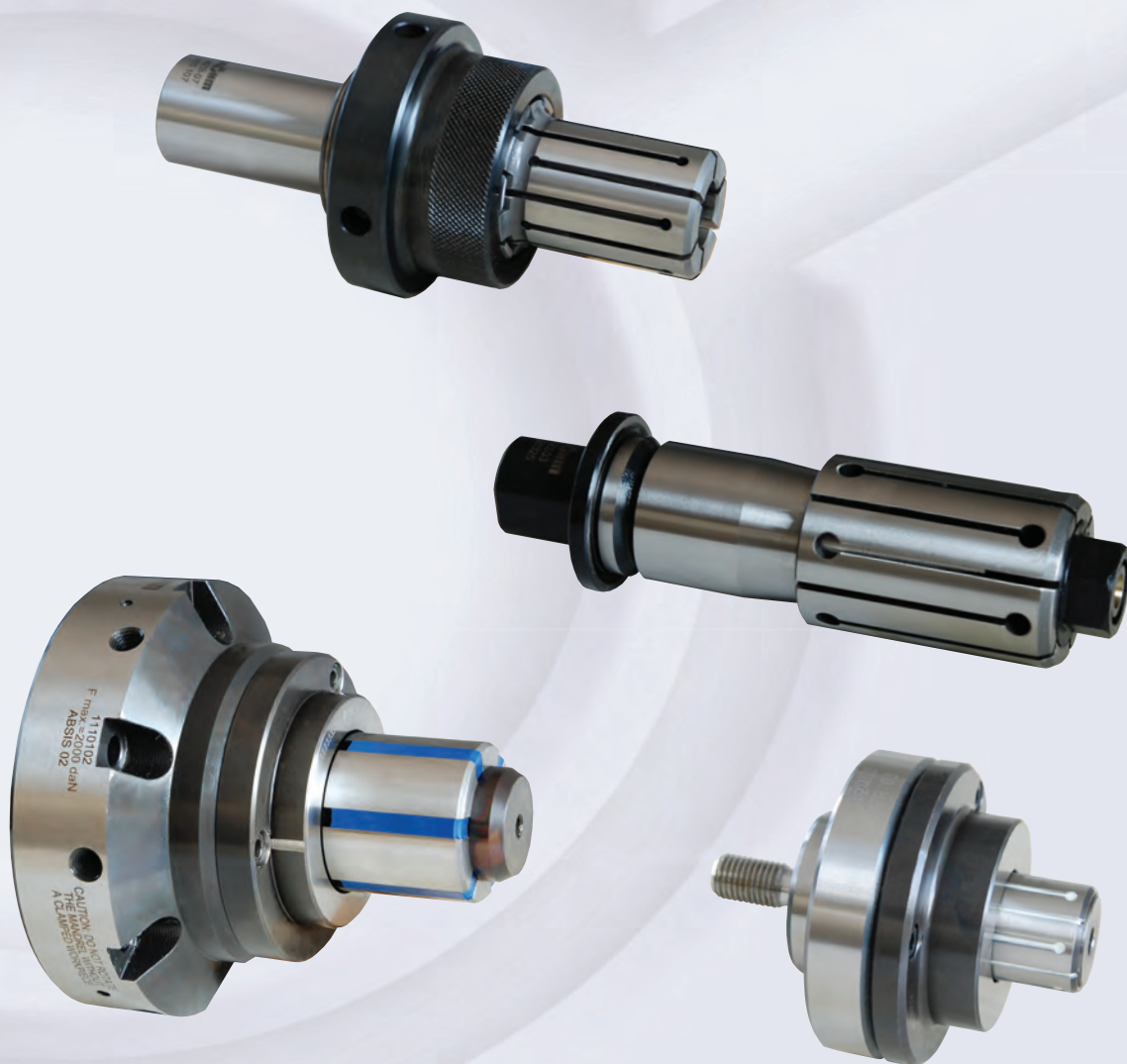
We have already realised special solutions in all areas of clamping systems, which differ partially relevant from the values gives ahead (e.g. clamping surfaces, clamping diameters or precisions). Apart from this standart clamping systems we offer a series of special systems such as HYKS, KFG, axial- and centering clamping systems or combined clampings. Furthermore we are focused on exceptional special solutions. Please contact us!



# Orientation guide

	AGILIS	KFB	MZB	MZE
				
<b>Application</b>	Turning, grinding, cutting, toothcutting, balancing, etc.	Turning, grinding, cutting, toothcutting, balancing, etc.	Turning, grinding, measuring	Measuring, grinding, slight turning operations
<b>Clamping</b>	internal	internal	internal	internal
<b>Actuation</b>				
<b>Possible clamping surface:</b>				
- smooth (standard)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- coated	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- cheched	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- tothing (clamping in pitch circle)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- form clamping (e.g. hexagon)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Axial component</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Clamping Ø</b>	10 - 130	5,5 - 29	5,5 - 78,7	8 - 230
<b>Work-stop possible</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Prepared for air sensing</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Mount</b>	cylindrical mount; combinable with intermediate adapter ISO 702-1 (DIN 55028)	cylindrical mount; combinable with intermediate adapter ISO 702-1 (DIN 55028)	between centers or cylindrical mount, can be caught at the shaft	between centers or cylindrical mount, can be caught at the shaft
<b>Features</b>	rigid system with a high portable torque for jobs with small Ø, for short clamping lengths (power-operated), high hardness of the clamping sleeve (power-operated)	rigid system with a high portable torque for jobs with small Ø, for short clamping lengths (power-operated)	rigid system with a high portable torque for jobs with small Ø, for short clamping lengths (hand-operated)	cost-effective system for scaling jobs, high precision
<b>Page</b>	7046	7052	7057	7061
<input checked="" type="checkbox"/> yes <input type="checkbox"/> optional <input checked="" type="checkbox"/> no  hand operated  power operated				

## Introduction



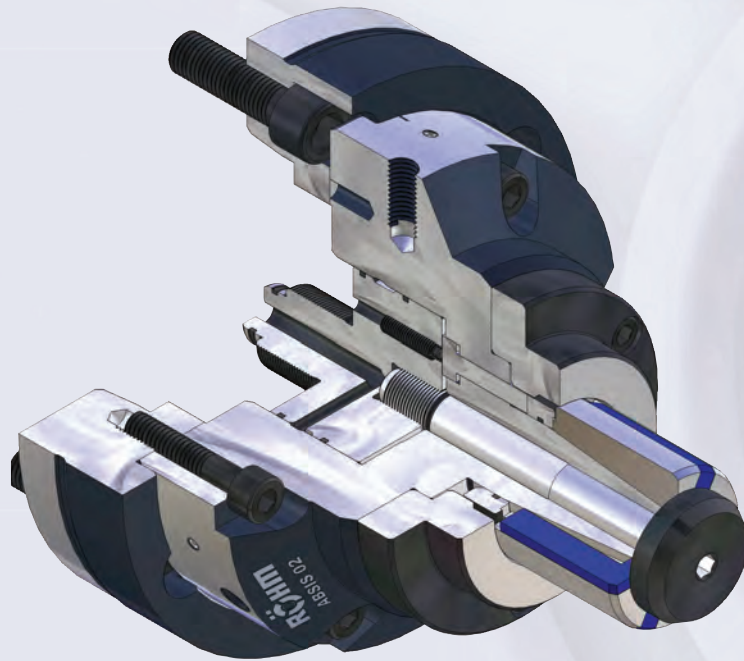
The modern production technology can abandon heavily the employment of clamping mandrels. In the fields of finishing, turning, grinding, tothing and control, cartridge mandrels take important jobs, which are linked with ambitious aims.

The different applications require a program with many variants, that reaches from hand- or power-operated versions with morse taper mount or adapter mount, to different clamping ranges and various features like repressive clamping or workpiece stop with or without blast air controll. Additionally vulcanized clamping sleeves, whose vulcanization protects against chips and dirt, are a part of it.

All products are available as special designs!  
Please contact us!



Power-operated segment mandrel with flanged seat, for internal clamping



**Application:**

Turning, grinding, cutting, toothcutting, balancing, measuring.

**Special features:**

Compact, solid design for precise machining, steady clamping by axial draw-in. The draw-in of the work-pieces against the rigid work-stop takes place independently via the operation of the mandrels.

Vibrations damping by the rate of rubber, the segment sleeve is including.

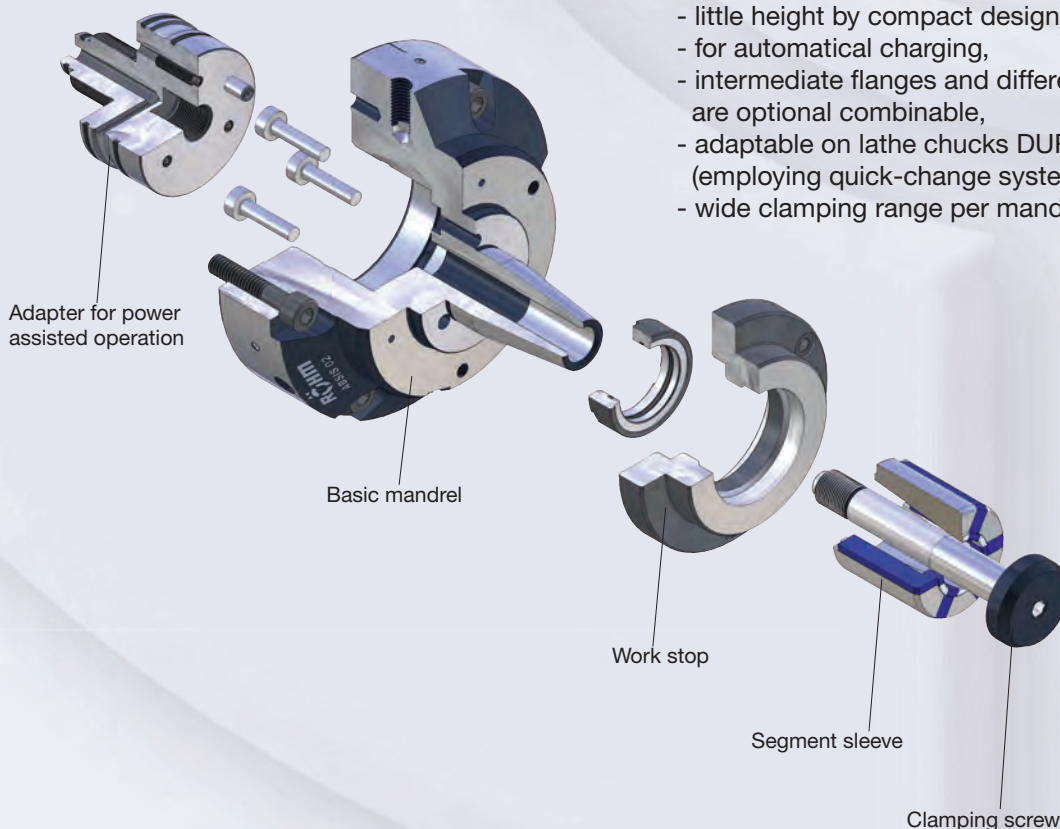
Prepared for air sensing.

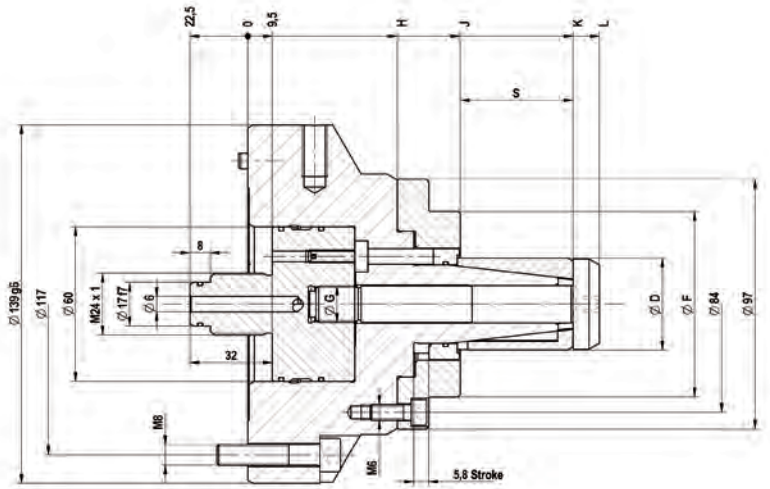
**Technical features:**

- high axial- and radial accuracy,
- high repeating accuracy,
- hardened low-wear construction,
- high accuracy by guiding the sleeves on the clamping mandrel,
- compatible with intermediate flange Type 269-90,
- integrated hand-operated lubrication,
- quick change of the clamping sleeves by the central tension screw,
- hardened (clamping-) segments (grade >60HRC).

**Customer advantage:**

- little height by compact design,
- for automatic charging,
- intermediate flanges and different mandrel sizes are optional combinable,
- adaptable on lathe chucks DURO-NC (employing quick-change systems),
- wide clamping range per mandrel size.





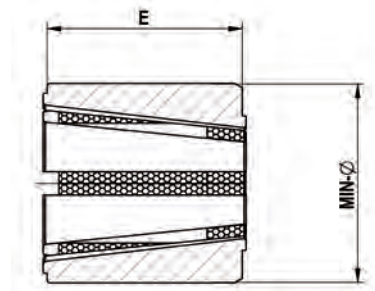
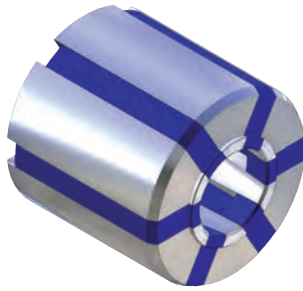
You will find the product video of our segment clamping mandrel on our Youtube-Channel RöhmTV

Tool group A 18  
 Type 269-00 **ABSIS** Segment clamping mandrel, **power-operated with flanged seat**; for internal clamping consists of basic mandrel, adapter, ejector ring, locking belt

	ABSIS 00	ABSIS 01	ABSIS 02	ABSIS 03	ABSIS 04
Segment clamping mandrel	1110000 ●	1110001 ●	1110002 ●	1110003 ●	1110004 ●
Basic mandrel	1110100 ●	1110101 ●	1110102 ●	1110103 ●	1110104 ●
Adapter power operated	1110040 ●	1110041 ●	1110042 ●	1110043 ●	1110044 ●
Ejector ring	1110020 ●	1110021 ●	1110022 ●	1110023 ●	1110024 ●
Locking bolt	1110060 ●	1110061 ●	1110062 ●	1110063 ●	1110064 ●
F max, in kN	7	10	20	25	30
Max, total clamping force approx, kN	32	46	92	115	138
D Min-Ø unclamped from	19,7	25,7	35,7	50,7	72,7
D Min-Ø unclamped to	27,7	38,7	54,7	81,7	105,7
Clamping-Ø max,	29	40	56	83	107
S	23	27	44	50	60
Ø F	58	58	72	90	120
Ø G	M6x0,75	M10x1	M14x1	M18x1	M20x1
H	55	55	58	58,5	60
J	75	75	82,5	84,5	86
K	98	102	126,3	134,5	146
L	103,5	108,5	136,5	146,5	160



## Accessories ABSIS



Tool group A 18

Type 269-55 **Segment clamping sleeve** - standard design

	ABSIS 00	ABSIS 01	ABSIS 02	ABSIS 03	ABSIS 04
Expansion in Ø	1,2	1,2	1,2	1,2	1,2
Total length E	23	27	44	50	60
Min-Ø	19,7	25,7	35,7	50,7	72,7
<b>Segment sleeve</b>	<b>1111400</b> ●	<b>1111409</b> ●	<b>1111423</b> ●	<b>1111443</b> ●	<b>1111475</b> ●
Work stop	1110070 ●	1110071 ●	1110072 ●	1110073 ●	1110074 ●
Min-Ø	20,7	26,7	36,7	51,7	73,7
<b>Segment sleeve</b>	<b>1111401</b> ●	<b>1111410</b> ●	<b>1111424</b> ●	<b>1111444</b> ●	<b>1111476</b> ●
Work stop	1110070 ●	1110071 ●	1110072 ●	1110073 ●	1110074 ●
Min-Ø	21,7	27,7	37,7	52,7	74,7
<b>Segment sleeve</b>	<b>1111402</b> ●	<b>1111411</b> ●	<b>1111425</b> ●	<b>1111445</b> ●	<b>1111477</b> ●
Work stop	1110070 ●	1110071 ●	1110072 ●	1123341 ●	1123372 ●
Min-Ø	22,7	28,7	38,7	53,7	75,7
<b>Segment sleeve</b>	<b>1111403</b> ●	<b>1111412</b> ●	<b>1111426</b> ●	<b>1111446</b> ●	<b>1111478</b> ●
Work stop	1110070 ●	1110071 ●	1110072 ●	1123342 ●	1123373 ●
Min-Ø	23,7	29,7	39,7	54,7	76,7
<b>Segment sleeve</b>	<b>1111404</b> ●	<b>1111413</b> ●	<b>1111427</b> ●	<b>1111447</b> ●	<b>1111479</b> ●
Work stop	1110070 ●	1110071 ●	1110072 ●	1123343 ●	1123374 ●
Min-Ø	24,7	30,7	40,7	55,7	77,7
<b>Segment sleeve</b>	<b>1111405</b> ●	<b>1111414</b> ●	<b>1111428</b> ●	<b>1111448</b> ●	<b>1111480</b> ●
Work stop	1110070 ●	1110071 ●	1110072 ●	1123344 ●	1123375 ●
Min-Ø	25,7	31,7	41,7	56,7	78,7
<b>Segment sleeve</b>	<b>1111406</b> ●	<b>1111415</b> ●	<b>1111429</b> ●	<b>1111449</b> ●	<b>1111481</b> ●
Work stop	1110070 ●	1110071 ●	1110072 ●	1123345 ●	1123376 ●
Min-Ø	26,7	32,7	42,7	57,7	79,7
<b>Segment sleeve</b>	<b>1111407</b> ●	<b>1111416</b> ●	<b>1111430</b> ●	<b>1111450</b> ●	<b>1111482</b> ●
Work stop	1123305 ●	1110071 ●	1123327 ●	1123346 ●	1123377 ●
Min-Ø	27,7	33,7	43,7	58,7	80,7
<b>Segment sleeve</b>	<b>1111408</b> ●	<b>1111417</b> ●	<b>1111431</b> ●	<b>1111451</b> ●	<b>1111483</b> ●
Work stop	1123306 ●	1123315 ●	1123328 ●	1123347 ●	1123378 ●
Min-Ø		34,7	44,7	59,7	81,7
<b>Segment sleeve</b>		<b>1111418</b> ●	<b>1111432</b> ●	<b>1111452</b> ●	<b>1111484</b> ●
Work stop		1123316 ●	1123329 ●	1123348 ●	1123379 ●
Min-Ø		35,7	45,7	60,7	82,7
<b>Segment sleeve</b>		<b>1111419</b> ●	<b>1111433</b> ●	<b>1111453</b> ●	<b>1111485</b> ●
Work stop		1123317 ●	1123330 ●	1123349 ●	1123380 ●
Min-Ø		36,7	46,7	61,7	83,7
<b>Segment sleeve</b>		<b>1111420</b> ●	<b>1111434</b> ●	<b>1111454</b> ●	<b>1111486</b> ●
Work stop		1123318 ●	1123331 ●	1123350 ●	1123381 ●
Min-Ø		37,7	47,7	62,7	84,7
<b>Segment sleeve</b>		<b>1111421</b> ●	<b>1111435</b> ●	<b>1111455</b> ●	<b>1111487</b> ●
Work stop		1123319 ●	1123332 ●	1123351 ●	1123382 ●
Min-Ø		38,7	48,7	63,7	85,7
<b>Segment sleeve</b>		<b>1111422</b> ●	<b>1111436</b> ●	<b>1111456</b> ●	<b>1111488</b> ●
Work stop		1123320 ●	1123333 ●	1123352 ●	1123383 ●
Min-Ø			49,7	64,7	86,7
<b>Segment sleeve</b>			<b>1111437</b> ●	<b>1111457</b> ●	<b>1111489</b> ●
Work stop			1123334 ●	1123353 ●	1123384 ●
Min-Ø			50,7	65,7	87,7
<b>Segment sleeve</b>			<b>1111438</b> ●	<b>1111458</b> ●	<b>1111490</b> ●
Work stop			1123335 ●	1123354 ●	1123385 ●
Min-Ø			51,7	66,7	88,7
<b>Segment sleeve</b>			<b>1111439</b> ●	<b>1111459</b> ●	<b>1111491</b> ●
Work stop			1123336 ●	1123355 ●	1123386 ●

# Accessories ABSIS

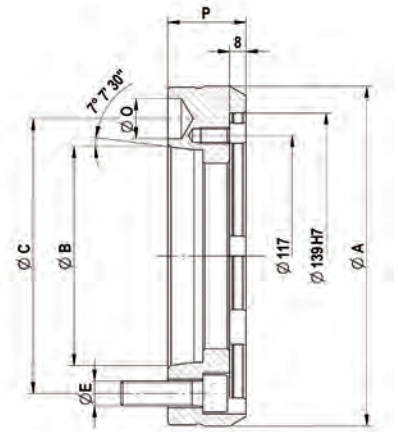
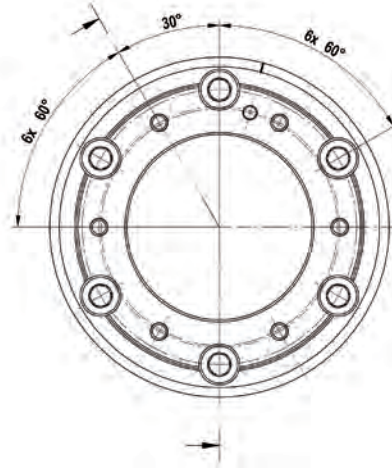
Tool group A 18

 Type 269-55 **Segment clamping sleeve** - standard design

	ABSIS 00	ABSIS 01	ABSIS 02	ABSIS 03	ABSIS 04
Expansion in Ø	1,2	1,2	1,2	1,2	1,2
Total length E	23	27	44	50	60
Min-Ø			52,7	67,7	89,7
<b>Segment sleeve</b>			<b>1111440</b> ●	<b>1111460</b> ●	<b>1111492</b> ●
Work stop			1123337 ●	1123356 ●	1123387 ●
Min-Ø			53,7	68,7	90,7
<b>Segment sleeve</b>			<b>1111441</b> ●	<b>1111461</b> ●	<b>1111493</b> ●
Work stop			1123338 ●	1123357 ●	1123388 ●
Min-Ø			54,7	69,7	91,7
<b>Segment sleeve</b>			<b>1111442</b> ●	<b>1111462</b> ●	<b>1111494</b> ●
Work stop			1123339 ●	1123358 ●	1123389 ●
Min-Ø				70,7	92,7
<b>Segment sleeve</b>				<b>1111463</b> ●	<b>1111495</b> ●
Work stop				1123359 ●	1123390 ●
Min-Ø				71,7	93,7
<b>Segment sleeve</b>				<b>1111464</b> ●	<b>1111496</b> ●
Work stop				1123360 ●	1123391 ●
Min-Ø				72,7	94,7
<b>Segment sleeve</b>				<b>1111465</b> ●	<b>1111497</b> ●
Work stop				1123361 ●	1123392 ●
Min-Ø				73,7	95,7
<b>Segment sleeve</b>				<b>1111466</b> ●	<b>1111498</b> ●
Work stop				1123362 ●	1123393 ●
Min-Ø				74,7	96,7
<b>Segment sleeve</b>				<b>1111467</b> ●	<b>1111499</b> ●
Work stop				1123363 ●	1123394 ●
Min-Ø				75,7	97,7
<b>Segment sleeve</b>				<b>1111468</b> ●	<b>1111500</b> ●
Work stop				1123364 ●	1123395 ●
Min-Ø				76,7	98,7
<b>Segment sleeve</b>				<b>1111469</b> ●	<b>1111501</b> ●
Work stop				1123365 ●	1123396 ●
Min-Ø				77,7	99,7
<b>Segment sleeve</b>				<b>1111470</b> ●	<b>1111502</b> ●
Work stop				1123366 ●	1123397 ●
Min-Ø				78,7	100,7
<b>Segment sleeve</b>				<b>1111471</b> ●	<b>1111503</b> ●
Work stop				1123367 ●	1123398 ●
Min-Ø				79,7	101,7
<b>Segment sleeve</b>				<b>1111472</b> ●	<b>1111504</b> ●
Work stop				1123368 ●	1123399 ●
Min-Ø				80,7	102,7
<b>Segment sleeve</b>				<b>1111473</b> ●	<b>1111505</b> ●
Work stop				1123369 ●	1123400 ●
Min-Ø				81,7	103,7
<b>Segment sleeve</b>				<b>1111474</b> ●	<b>1111506</b> ●
Work stop				1123370 ●	1123401 ●
Min-Ø					104,7
<b>Segment sleeve</b>					<b>1111507</b> ●
Work stop					1123402 ●
Min-Ø					105,7
<b>Segment sleeve</b>					<b>1111508</b> ●
Work stop					1123403 ●



# Accessories ABSIS



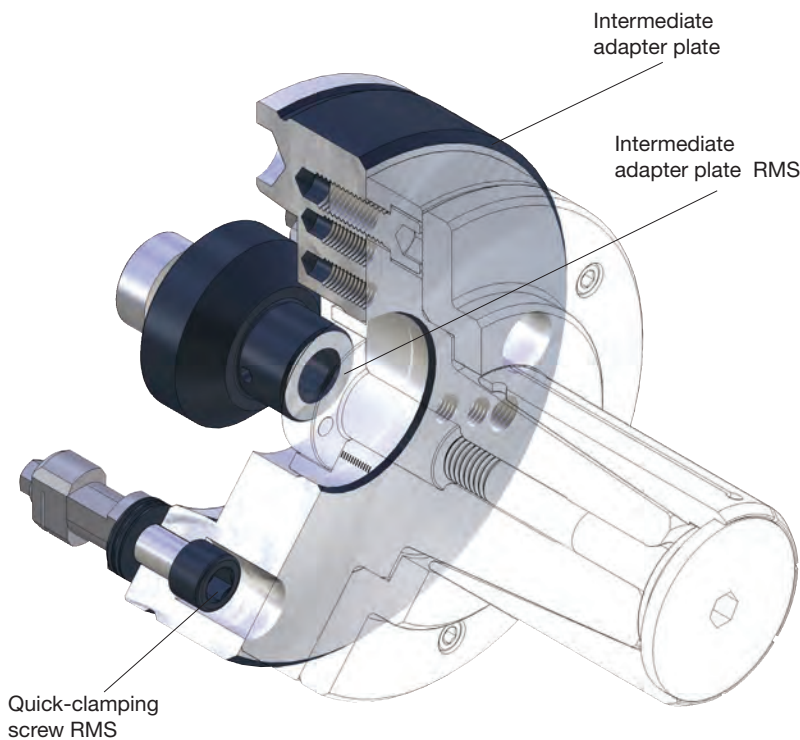
Tool group A 18

Type 269-90 Intermediate flange ISO 702-1 (DIN 55028)

	No. 5 (A 05)	No. 6 (A 06)	No. 8 (A 08)	No. 11 (A 11)
<b>Intermediate flange</b>	<b>1110005</b> ●	<b>1110006</b> ●	<b>1110008</b> ●	<b>1110011</b> ▲
Ø A	165	170	220	282
Ø B	82,563	106,375	139,719	196,869
Ø C	104,8	133,4	171,4	235
Ø M	M10	M12	M16	M20
Ø O	16,3	19,45	24,2	29,4
P	36	38	45	45

# Accessories ABSIS

Hand-operated quick-change system for clamping devices  
Compatible for ABSIS (269-00) and AGILIS (296-00)



**Application:**

Hand-operated change of clamping devices with few time exponsure.

**Special features:**

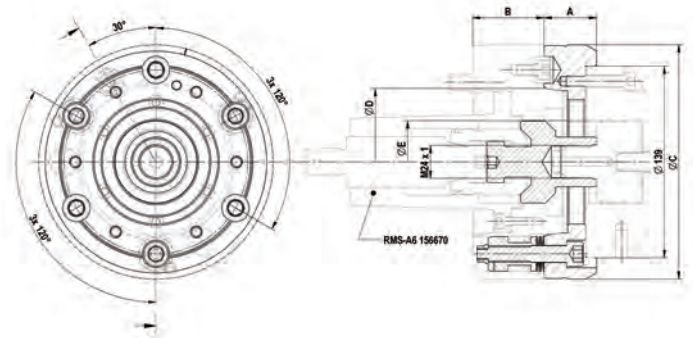
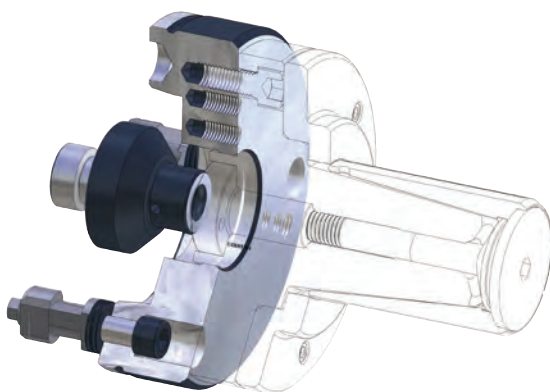
Hand-operated change of clamping devices in ca. 30 seconds, high change accuracy within 0,005mm, for central lubrication and/or air-sensing.

**Technical features:**

- Quick-change system suitable for Tool carrier assy RMS (please see product group power chucks - cylinders)
- Suitable for segment clamping mandrel ABSIS (269-00) and AGILIS (296-00),
- For central lubrication and/or air-sensing,
- Corresponding to the german employer's liability insurance association in connection with the ROHM-safety clamping cylinders OVS and LVS, change precision 0,005mm.

**Customer advantage:**

Quick changing of different clamping devices with few time exponsure, similar to the automatic or semiautomatic change-system of the clamping devices.



Tool group C18  
Type 299-90 **RMS quick-change system**; hand-operated for clamping devices

	KK 06	KK 08
<b>RMS - complete (flange incl, Quick-clamping screw)</b>	1160028 ▲	1160029 ▲
<b>Adapters RMS</b>	1183312 ■	1183313 ■
A	38	45
Ø B	170	220
Ø C	133,4	171,4
Ø D	106,375	139,719
Ø E	M8	M8
Ø F	139 H7	139 H7



► **ABSIS Segment clamping mandrel - nominal Ø38.43mm**

**Application:**

Tooth gear cutting, turning.

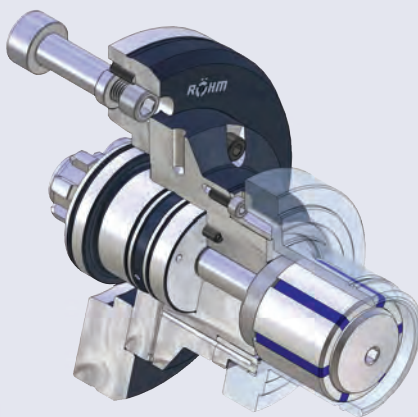
ABSIS clamping mandrel for clamping on a toothed gear cutting machine.

Centering takes place using the segment sleeve and clamping is undertaken using the pendulum bell.

Clamping mandrel with rapid exchange system on basic socket.

**Customer advantage:**

- Sturdy clamping due to axial traction
- Radial run-out accuracy of 0.01mm
- Ample tooling flexibility (cutting discharge)
- Designed for wet processing



► **ABSIS Segment clamping mandrel - nominal Ø60.5mm**

**Application:**

Turning.

ABSIS clamping mandrel for clamping on a turning machine.

Clamping mandrel with rapid exchange system on basic socket.

Fixed workpiece hard stop with air system control.

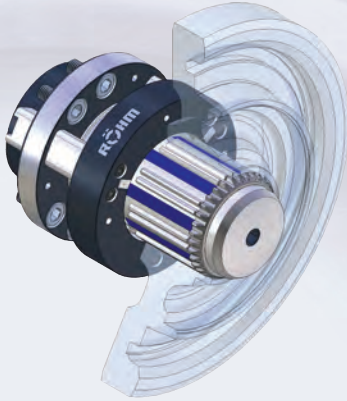
Clamping screw recessed in the segment sleeve to guarantee tooling flexibility.

Various clamping mandrel sizes with clamping diameter from 25mm to 105mm diameter (ABSIS sizes 00 to 04).

**Customer advantage:**

- Sturdy clamping due to axial traction
- Radial run-out accuracy of 0.01mm
- Simple exchange of the workpiece hard stop and clamping sleeves
- Ample tooling flexibility





► **ABSIS Segment clamping mandrel TK Ø88mm**

**Application:**

Turning.

ABSIS clamping mandrel for clamping in the tooth gear.

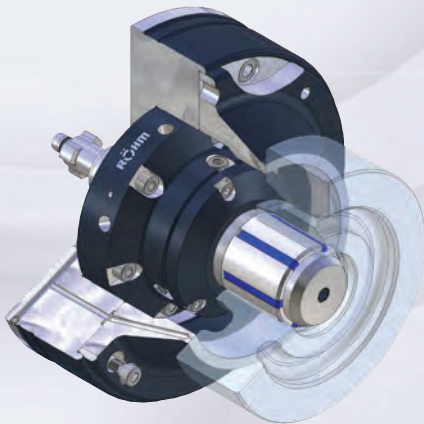
The toothed segment sleeve accurately clamps the workpiece in the flanks of the teeth.

The centering disc helps to load the workpiece.

Workpiece can be retracted using the connecting rod with air system control.

**Customer advantage:**

- Workpiece flexibility due to retractable hard stop
- Radial run-out accuracy of 0.01mm



► **ABSIS Segment clamping mandrel Ø55.33mm**

**Application:**

Turning a tooth gear blank.

Power operated ABSIS standard clamping mandrel with rapid exchange system.

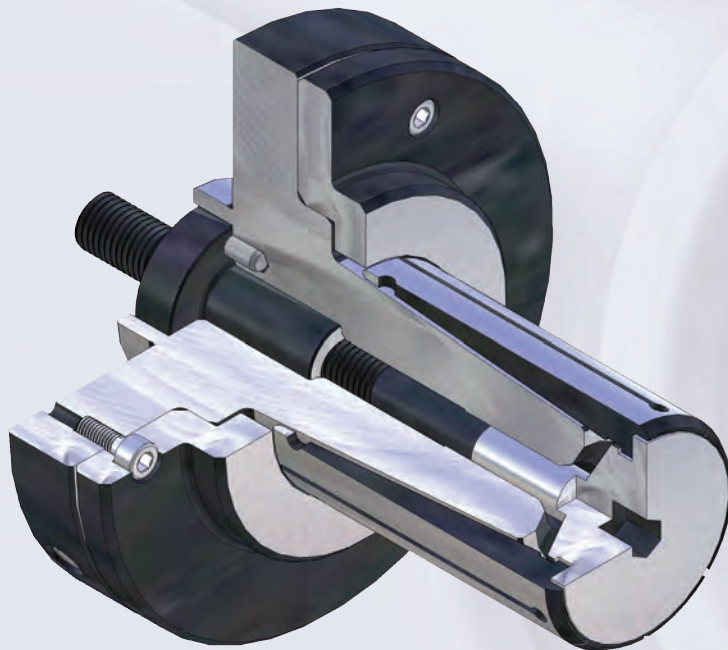
The hard stop diameter is far above the clamping diameter.

Workpiece hard stop with air system control fixed to the intermediate adapter plate.

**Customer advantage:**

- Sturdy clamping due to axial traction
- Radial run-out accuracy of 0.01mm
- Cost-efficient due to standard components

Power-operated cartridge mandrel with flanged seat, for internal clamping



**Application:**

Turning, grinding, cutting, toothcutting, balancing, measuring.

**Special features:**

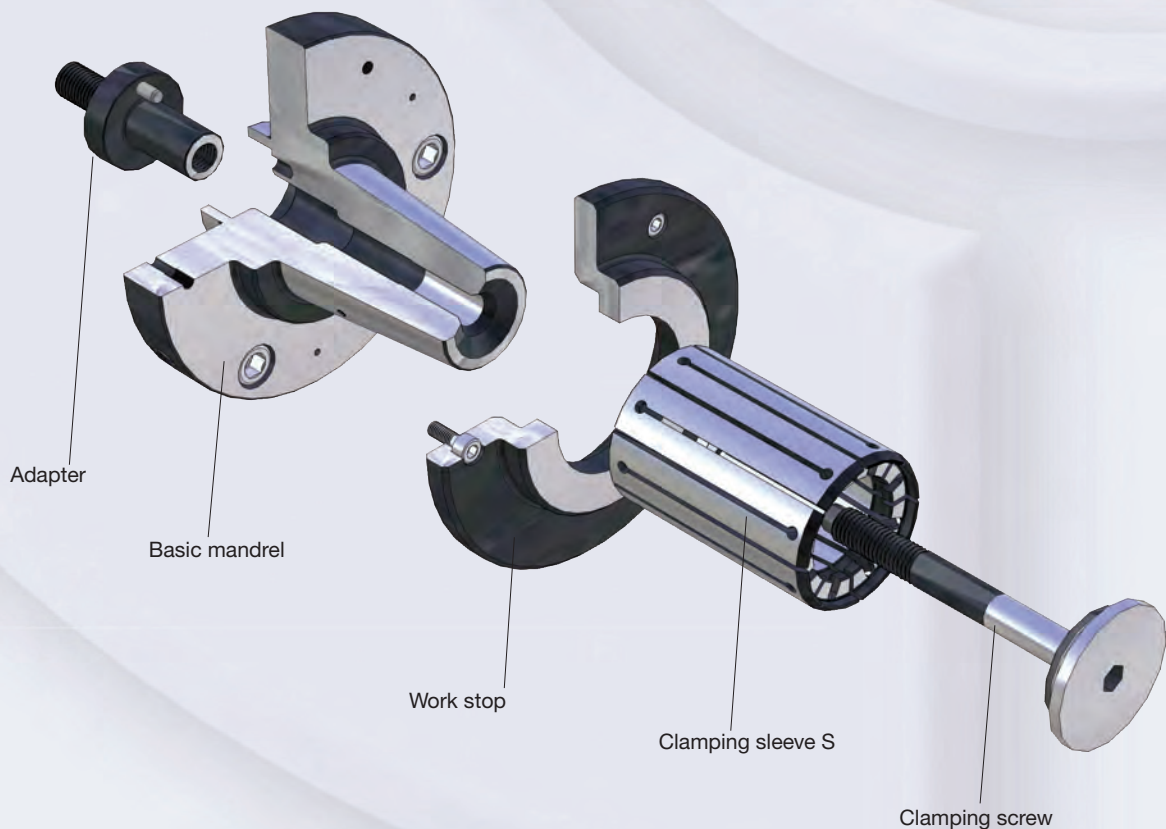
Compact design, steady clamping by axial draw-in. The draw-in of the work-pieces against the rigid work-stop takes place independently via the operation of the mandrels. Prepared for air sensing.

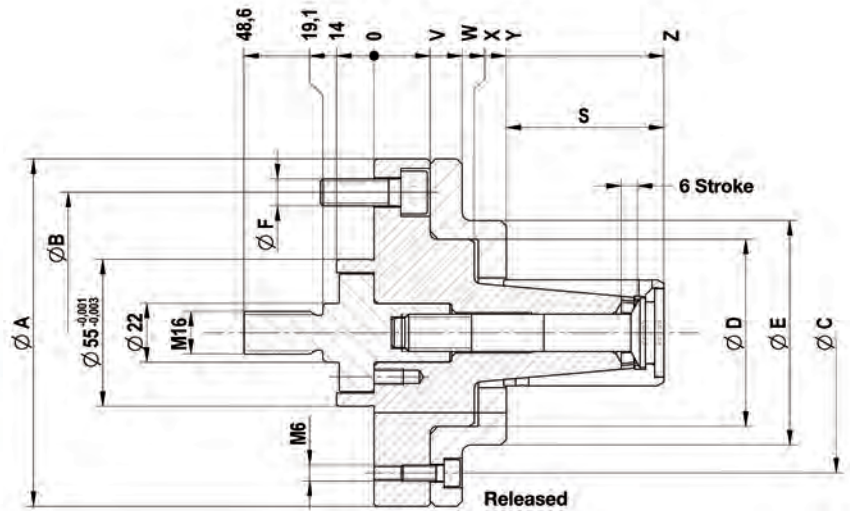
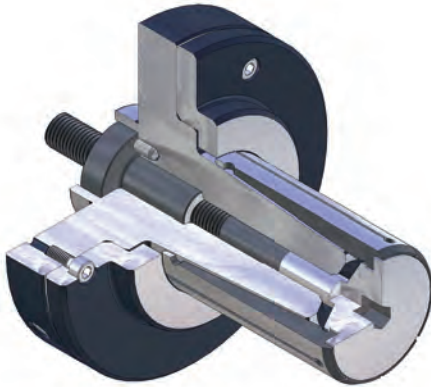
**Technical features:**

- Power-operated or hand operated (optional),
- High axial- and radial accuracy,
- High repeating accuracy,
- Hardened low-wear construction,
- High accuracy by guiding the sleeves on the clamping mandrel,
- Compatible with intermediate flange Type 255-9,
- Integrated hand-operated lubrication,
- Quick change of the clamping sleeves by the central tension screw.

**Customer advantage:**

- Little weight and little height by compact design,
- For automatical charging,
- For long workpieces



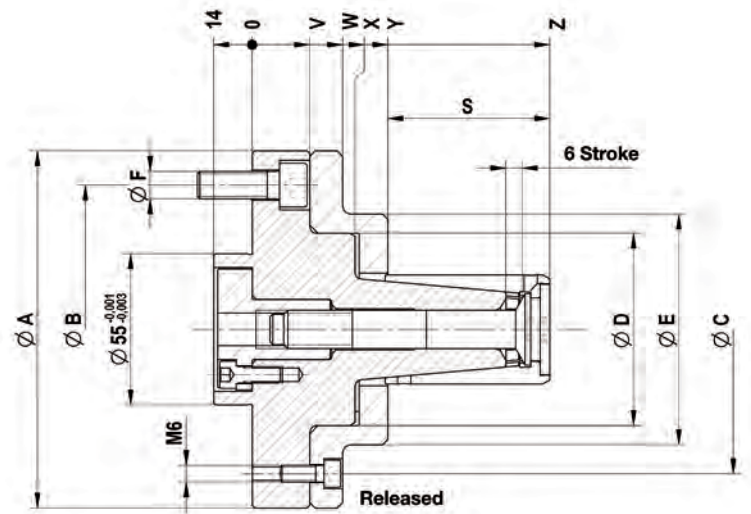
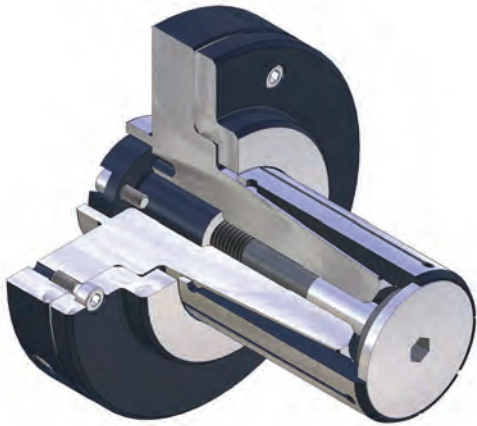


Tool group C18

Type 253-00 KFS cartridge mandrel; **power-operated with flanged seat**; for internal clamping; consists of basic mandrel and adapter

	KFS 00	KFS 01	KFS 02	KFS 03	KFS 04	KFS 05	KFS 06	KFS 07	KFS 08	KFS 09	KFS 10	KFS 11
<b>Cartridge Mandrel</b>	599800 ●	599801 ●	599802 ●	599803 ●	599804 ●	599805 ●	599806 ●	599807 ●	599808 ●	599809 ●	599810 ●	599811 ●
<b>Basic mandrel</b>	599820 ●	599821 ●	599822 ●	599823 ●	599824 ●	599825 ●	599826 ●	599827 ●	599828 ●	599829 ●	599830 ●	599831 ●
<b>Adapter power operated</b>	599833 ●	599834 ●	599980 ●	599981 ●	599982 ●	599983 ●	599984 ●	599984 ●	599984 ●	315456 ●	315456 ●	315456 ●
F max, in kN	7	9	12	12	15	15	20	20	25	25	25	25
Min-Ø unclamped from	14,7	19,7	24,7	29,7	34,7	39,7	44,7	54,7	64,7	81,7	100,7	119,7
Min-Ø unclamped to	19,7	24,7	29,7	34,7	39,7	44,7	54,7	64,7	81,7	100,7	119,7	139,7
Clamping-Ø max,	20,7	25,7	30,7	35,7	40,7	45,7	55,7	65,7	82,7	101,7	120,7	140,7
External-Ø A	100	100	100	100	100	130	130	130	160	160	160	160
Pitch diameter B	75	75	75	75	75	105	105	105	130	130	130	130
Pitch diameter C	75	75	75	75	75	105	105	105	130	130	130	149
Ø D	40	40	46	46	46	70	70	70	83	91	87	107
Ø E	54	54	60	60	60	84	84	84	103	160	160	160
Ø F	M10	M10	M10	M10	M10	M10	M10	M10	M12	M12	M12	M12
S	31,5	36	45	49	59	59	79	89	99	121	138,9	171
V	21	21	21	21	21	21	21	21	23	21	21	25
W	33	33	33	33	33	33	33	33	35	21	21	25
X	36	36	37	41	36,5	37,5	35,5	35,5	35	-	-	-
Y	47,5	47,5	48	51,5	46	49,5	47	47	47	33	37	57
Z	79	83,5	93	100,5	105	108,5	126	136	146	154	176	228



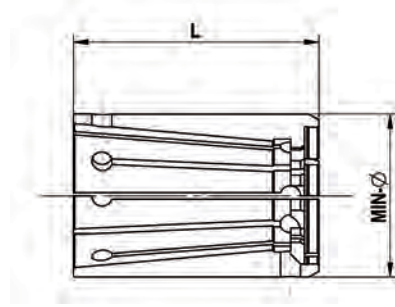


Tool group C18

Type 253-01 **MFS** cartridge mandrel; **hand-operated with flanged seat**; for internal clamping; consists of basic mandrel and adapter

	MFS 00	MFS 01	MFS 02	MFS 03	MFS 04	MFS 05	MFS 06
<b>Cartridge Mandrel</b>	1082800 ●	1082801 ●	1082802 ●	1082803 ●	1082804 ●	1082805 ●	1082806 ●
<b>Basic mandrel</b>	599820 ●	599821 ●	599822 ●	599823 ●	599824 ●	599825 ●	599826 ●
<b>Adapter hand-operated</b>	599985 ●	599986 ●	599987 ●	599988 ●	599989 ●	599990 ●	599991 ●
Min-Ø unclamped from	14,7	19,7	24,7	29,7	34,7	39,7	44,7
Min-Ø unclamped to	19,7	24,7	29,7	34,7	39,7	44,7	54,7
Clamping-Ø max,	20,7	25,7	30,7	35,7	40,7	45,7	55,7
External-Ø A	100	100	100	100	100	130	130
Pitch diameter B	75	75	75	75	75	105	105
Pitch diameter C	75	75	75	75	75	105	105
Ø D	40	40	46	46	46	70	70
Ø E	54	54	60	60	60	84	84
Ø F	M10	M10	M10	M10	M10	M10	M10
S	31,5	36	45	49	59	59	79
V	21	21	21	21	21	21	21
W	33	33	33	33	33	33	33
X	36	36	37	41	36,5	37,5	35,5
Y	47,5	47,5	48	51,5	46	49,5	47
Z	79	83,5	93	100,5	105	108,5	126

## Accessories KFS/MFS



### Tool group C18

Type 253-80 **Clamping set** KFS/MFS; (not vulcanized); consists of clamping sleeve and locking bolt

For size	00	01	02	03	04	05	06	07	08	09	10	11
Expansion in Ø	1	1	1	1	1	1	1	1	1	1	1	1
Length	35	40	46	50	60	60	80	90	100	122	140	180
Min-Ø	14,7	19,7	24,7	29,7	34,7	39,7	44,7	54,7	64,7	100,7	100,7	119,7
Clamping set	<b>1086311</b> ●	<b>1086322</b> ●	<b>1086333</b> ●	<b>1086344</b> ●	<b>1086355</b> ●	<b>1086366</b> ●	<b>1086377</b> ●	<b>1086388</b> ●	<b>1086399</b> ●	<b>1086436</b> ●	<b>1086437</b> ●	<b>1086457</b> ●
Clamping sleeve	315330 ●	315331 ●	315332 ●	315333 ●	315334 ●	315335 ●	315336 ●	315337 ●	315338 ●	650160 ●	315340 ●	315302 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599840 ●	599845 ●	599850 ●	599855 ●	599860 ●	599865 ●	599992 ●	599993 ●	599994 ●	599925 ●	599996 ●	599997 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	15,2	20,2	25,2	30,2	35,2	40,2	45,7	55,7	65,7	81,7	101,7	120,7
Clamping set	<b>1086312</b> ●	<b>1086323</b> ●	<b>1086334</b> ●	<b>1086345</b> ●	<b>1086356</b> ●	<b>1086367</b> ●	<b>1086378</b> ●	<b>1086389</b> ●	<b>1086400</b> ●	<b>1086417</b> ●	<b>1086438</b> ●	<b>1086458</b> ●
Clamping sleeve	650021 ●	650034 ●	650047 ●	650060 ●	650073 ●	650086 ●	650098 ●	650110 ●	650123 ●	315339 ●	650163 ●	650184 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599841 ●	599846 ●	599851 ●	599856 ●	599861 ●	599866 ●	599870 ●	599880 ●	599890 ●	599995 ●	599926 ●	599945 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	15,7	20,7	25,7	30,7	35,7	40,7	46,7	56,7	66,7	82,7	102,7	121,7
Clamping set	<b>1086313</b> ●	<b>1086324</b> ●	<b>1086335</b> ●	<b>1086346</b> ●	<b>1086357</b> ●	<b>1086368</b> ●	<b>1086379</b> ●	<b>1086390</b> ●	<b>1086401</b> ●	<b>1086418</b> ●	<b>1086439</b> ●	<b>1086459</b> ●
Clamping sleeve	315341 ●	315342 ●	315343 ●	315344 ●	315345 ●	315346 ●	315347 ●	315348 ●	315349 ●	650142 ●	315351 ●	315303 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599841 ●	599846 ●	599851 ●	599856 ●	599861 ●	599866 ●	599871 ●	599881 ●	599891 ●	599907 ●	599927 ●	599946 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	16,2	21,2	26,2	31,2	36,2	41,2	47,7	57,7	67,7	83,7	103,7	122,7
Clamping set	<b>1086314</b> ●	<b>1086325</b> ●	<b>1086336</b> ●	<b>1086347</b> ●	<b>1086358</b> ●	<b>1086369</b> ●	<b>1086380</b> ●	<b>1086391</b> ●	<b>1086402</b> ●	<b>1086419</b> ●	<b>1086440</b> ●	<b>1086460</b> ●
Clamping sleeve	650023 ●	650036 ●	650049 ●	650062 ●	650075 ●	650088 ●	650100 ●	650112 ●	650125 ●	315350 ●	650165 ●	650186 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599842 ●	599847 ●	599852 ●	599857 ●	599862 ●	599867 ●	599872 ●	599882 ●	599892 ●	599908 ●	599928 ●	599947 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	16,7	21,7	26,7	31,7	36,7	41,7	48,7	58,7	68,7	84,7	104,7	123,7
Clamping set	<b>1086315</b> ●	<b>1086326</b> ●	<b>1086337</b> ●	<b>1086348</b> ●	<b>1086359</b> ●	<b>1086370</b> ●	<b>1086381</b> ●	<b>1086392</b> ●	<b>1086403</b> ●	<b>1086420</b> ●	<b>1086441</b> ●	<b>1086461</b> ●
Clamping sleeve	315352 ●	315353 ●	315354 ●	315355 ●	315356 ●	315357 ●	315358 ●	315359 ●	315360 ●	650144 ●	315362 ●	315304 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599843 ●	599848 ●	599853 ●	599858 ●	599863 ●	599868 ●	599873 ●	599883 ●	599893 ●	599909 ●	599929 ●	599948 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	17,2	22,2	27,2	32,2	37,2	42,2	49,7	59,7	69,7	85,7	105,7	124,7
Clamping set	<b>1086316</b> ●	<b>1086327</b> ●	<b>1086338</b> ●	<b>1086349</b> ●	<b>1086360</b> ●	<b>1086371</b> ●	<b>1086382</b> ●	<b>1086393</b> ●	<b>1086404</b> ●	<b>1086421</b> ●	<b>1086442</b> ●	<b>1086462</b> ●
Clamping sleeve	650025 ●	650038 ●	650051 ●	650064 ●	650077 ●	650090 ●	650102 ●	650114 ●	650126 ●	315371 ●	650167 ●	650188 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599843 ●	599848 ●	599853 ●	599858 ●	599863 ●	599868 ●	599874 ●	599884 ●	599894 ●	599910 ●	599930 ●	599949 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	17,7	22,7	27,7	32,7	37,7	42,7	50,7	60,7	70,7	86,7	106,7	125,7
Clamping set	<b>1086317</b> ●	<b>1086328</b> ●	<b>1086339</b> ●	<b>1086350</b> ●	<b>1086361</b> ●	<b>1086372</b> ●	<b>1086383</b> ●	<b>1086394</b> ●	<b>1086405</b> ●	<b>1086422</b> ●	<b>1086443</b> ●	<b>1086463</b> ●
Clamping sleeve	315363 ●	315364 ●	315365 ●	315366 ●	315367 ●	315368 ●	315380 ●	315381 ●	315382 ●	650146 ●	315373 ●	315403 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599843 ●	599848 ●	599853 ●	599858 ●	599863 ●	599868 ●	599875 ●	599885 ●	599895 ●	599911 ●	599931 ●	599950 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	18,2	23,2	28,2	33,2	38,2	43,2	51,7	61,7	71,7	87,7	107,7	126,7
Clamping set	<b>1086318</b> ●	<b>1086329</b> ●	<b>1086340</b> ●	<b>1086351</b> ●	<b>1086362</b> ●	<b>1086373</b> ●	<b>1086384</b> ●	<b>1086395</b> ●	<b>1086406</b> ●	<b>1086423</b> ●	<b>1086444</b> ●	<b>1086464</b> ●
Clamping sleeve	650027 ●	650040 ●	650053 ●	650066 ●	650079 ●	650092 ●	650104 ●	650116 ●	650129 ●	315372 ●	650169 ●	650190 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599844 ●	599849 ●	599854 ●	599859 ●	599864 ●	599869 ●	599876 ●	599886 ●	599896 ●	599912 ●	599932 ●	599951 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	18,7	23,7	28,7	33,7	38,7	43,7	52,7	62,7	72,7	88,7	108,7	127,7
Clamping set	<b>1086319</b> ●	<b>1086330</b> ●	<b>1086341</b> ●	<b>1086352</b> ●	<b>1086363</b> ●	<b>1086374</b> ●	<b>1086385</b> ●	<b>1086396</b> ●	<b>1086407</b> ●	<b>1086424</b> ●	<b>1086445</b> ●	<b>1086465</b> ●
Clamping sleeve	315374 ●	315375 ●	315376 ●	315377 ●	315378 ●	315379 ●	315385 ●	315386 ●	315387 ●	650148 ●	315384 ●	315404 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599844 ●	599849 ●	599854 ●	599859 ●	599864 ●	599869 ●	599877 ●	599887 ●	599897 ●	599913 ●	599933 ●	599952 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	19,2	24,2	29,2	34,2	39,2	44,2	53,7	63,7	73,7	89,7	109,7	128,7
Clamping set	<b>1086320</b> ●	<b>1086331</b> ●	<b>1086342</b> ●	<b>1086353</b> ●	<b>1086364</b> ●	<b>1086375</b> ●	<b>1086386</b> ●	<b>1086397</b> ●	<b>1086408</b> ●	<b>1086425</b> ●	<b>1086446</b> ●	<b>1086466</b> ●
Clamping sleeve	650029 ●	650042 ●	650055 ●	650068 ●	650081 ●	650094 ●	650106 ●	650118 ●	650131 ●	315383 ●	650171 ●	650192 ●

## Accessories KFS/MFS

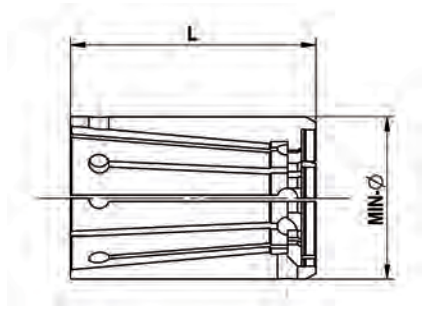
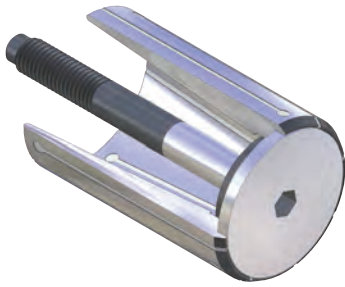
Tool group C18

Type 253-80 **Clamping set** KFS/MFS; (not vulcanized); consists of clamping sleeve and locking bolt

For size	00	01	02	03	04	05	06	07	08	09	10	11
Expansion in Ø	1	1	1	1	1	1	1	1	1	1	1	1
Length	35	40	46	50	60	60	80	90	100	122	140	180
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599966 ●	599967 ●	599968 ●	599969 ●	599970 ●	599971 ●	599972 ●	599973 ●	599974 ●	599975 ●	599976 ●	599977 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	19,7	24,7	29,7	34,7	39,7	44,7	54,7	64,7	74,7	90,7	110,7	129,7
Clamping set	<b>1086321</b> ●	<b>1086332</b> ●	<b>1086343</b> ●	<b>1086354</b> ●	<b>1086365</b> ●	<b>1086376</b> ●	<b>1086387</b> ●	<b>1086398</b> ●	<b>1086409</b> ●	<b>1086426</b> ●	<b>1086447</b> ●	<b>1086467</b> ●
Clamping sleeve	650030 ●	650043 ●	650056 ●	650069 ●	650082 ●	650095 ●	650107 ●	650119 ●	315390 ●	650150 ●	315389 ●	315405 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599966 ●	599967 ●	599968 ●	599969 ●	599970 ●	599971 ●	599972 ●	599973 ●	599974 ●	599975 ●	599976 ●	599977 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									75,7	91,7	111,7	130,7
Clamping set									<b>1086410</b> ●	<b>1086427</b> ●	<b>1086448</b> ●	<b>1086468</b> ●
Clamping sleeve									650133 ●	315388 ●	650173 ●	650194 ●
Locking bolt									315477 ●	315478 ●	315479 ●	599998 ●
Work stop									599900 ●	599916 ●	599936 ●	599955 ●
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									76,7	92,7	112,7	131,7
Clamping set									<b>1086411</b> ●	<b>1086428</b> ●	<b>1086449</b> ●	<b>1086469</b> ●
Clamping sleeve									315393 ●	650152 ●	315392 ●	315406 ●
Locking bolt									315477 ●	315478 ●	315479 ●	599998 ●
Work stop									599901 ●	599917 ●	599937 ●	599956 ●
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									77,7	93,7	113,7	132,7
Clamping set									<b>1086412</b> ●	<b>1086429</b> ●	<b>1086450</b> ●	<b>1086470</b> ●
Clamping sleeve									650135 ●	315391 ●	650175 ●	650196 ●
Locking bolt									315477 ●	315478 ●	315479 ●	599998 ●
Work stop									599902 ●	599918 ●	599938 ●	599957 ●
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									78,7	94,7	114,7	133,7
Clamping set									<b>1086413</b> ●	<b>1086430</b> ●	<b>1086451</b> ●	<b>1086471</b> ●
Clamping sleeve									315396 ●	650154 ●	315395 ●	315407 ●
Locking bolt									315477 ●	315478 ●	315479 ●	599998 ●
Work stop									599903 ●	599919 ●	599939 ●	599958 ●
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									79,7	95,7	115,7	134,7
Clamping set									<b>1086414</b> ●	<b>1086431</b> ●	<b>1086452</b> ●	<b>1086472</b> ●
Clamping sleeve									650137 ●	315394 ●	650177 ●	650198 ●
Locking bolt									315477 ●	315478 ●	315479 ●	599998 ●
Work stop									599904 ●	599920 ●	599940 ●	599959 ●
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									80,7	96,7	116,7	135,7
Clamping set									<b>1086415</b> ●	<b>1086432</b> ●	<b>1086453</b> ●	<b>1086473</b> ●
Clamping sleeve									315399 ●	650156 ●	315398 ●	315408 ●
Locking bolt									315477 ●	315478 ●	315479 ●	599998 ●
Work stop									599905 ●	599921 ●	599941 ●	599960 ●
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									81,7	97,7	117,7	136,7
Clamping set									<b>1086416</b> ●	<b>1086433</b> ●	<b>1086454</b> ●	<b>1086474</b> ●
Clamping sleeve									650139 ●	315397 ●	650179 ●	650200 ●
Locking bolt									315477 ●	315478 ●	315479 ●	599998 ●
Work stop									599906 ●	599922 ●	599942 ●	599961 ●
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø										98,7	118,7	137,7
Clamping set									<b>1086434</b> ●	<b>1086455</b> ●	<b>1086475</b> ●	
Clamping sleeve									650158 ●	315401 ●	315409 ●	
Locking bolt									315478 ●	315479 ●	599998 ●	
Work stop									599923 ●	599943 ●	599962 ●	
Montage mandrel clamping sets									724185 ▲	724186 ▲	724187 ▲	
Min-Ø										99,7	119,7	138,7
Clamping set									<b>1086435</b> ●	<b>1086456</b> ●	<b>1086476</b> ●	
Clamping sleeve									315400 ●	650181 ●	650202 ●	
Locking bolt									315478 ●	315479 ●	599998 ●	
Work stop									599924 ●	599944 ●	599963 ●	
Montage mandrel clamping sets									724185 ▲	724186 ▲	724187 ▲	
Min-Ø												139,7
Clamping set												<b>1086477</b> ●
Clamping sleeve												315410 ●
Locking bolt												599998 ●
Work stop												599964 ●
Montage mandrel clamping sets												724187 ▲



## Accessories KFS/MFS



Tool group C18

Type 253-85 **Clamping set KFS/MFS vulcanized** ; consists of clamping sleeve and locking bolt

For size	00	01	02	03	04	05	06	07	08	09	10	11
Expansion in Ø	1	1	1	1	1	1	1	1	1	1	1	1
Length	35	40	46	50	60	60	80	90	100	122	140	180
Min-Ø	14,7	19,7	24,7	29,7	34,7	39,7	44,7	54,7	64,7	100,7	100,7	119,7
Clamping set	<b>1086511</b> ●	<b>1086522</b> ●	<b>1086533</b> ●	<b>1086544</b> ●	<b>1086555</b> ●	<b>1086566</b> ●	<b>1086577</b> ●	<b>1086588</b> ●	<b>1086599</b> ●	<b>1086636</b> ●	<b>1086637</b> ●	<b>1086657</b> ●
Clamping sleeve vulcanized	315730 ●	315731 ●	315732 ●	315733 ●	315734 ●	315735 ●	315736 ●	315737 ●	315738 ●	651100 ●	315740 ●	315702 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599840 ●	599845 ●	599850 ●	599855 ●	599860 ●	599865 ●	599992 ●	599993 ●	599994 ●	599925 ●	599996 ●	599997 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	15,2	20,2	25,2	30,2	35,2	40,2	45,7	55,7	65,7	81,7	101,7	120,7
Clamping set	<b>1086512</b> ●	<b>1086523</b> ●	<b>1086534</b> ●	<b>1086545</b> ●	<b>1086556</b> ●	<b>1086567</b> ●	<b>1086578</b> ●	<b>1086589</b> ●	<b>1086600</b> ●	<b>1086617</b> ●	<b>1086638</b> ●	<b>1086658</b> ▲
Clamping sleeve vulcanized	650211 ●	650224 ●	650237 ●	650250 ●	650263 ●	650276 ●	650288 ●	651051 ●	651063 ●	315739 ●	651103 ●	651124 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599841 ●	599846 ●	599851 ●	599856 ●	599861 ●	599866 ●	599870 ●	599880 ●	599890 ●	599995 ●	599926 ●	599945 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	15,7	20,7	25,7	30,7	35,7	40,7	46,7	56,7	66,7	82,7	102,7	121,7
Clamping set	<b>1086513</b> ●	<b>1086524</b> ●	<b>1086535</b> ●	<b>1086546</b> ●	<b>1086557</b> ●	<b>1086568</b> ●	<b>1086579</b> ●	<b>1086590</b> ●	<b>1086601</b> ●	<b>1086618</b> ●	<b>1086639</b> ●	<b>1086659</b> ▲
Clamping sleeve vulcanized	315741 ●	315742 ●	315743 ●	315744 ●	315745 ●	315746 ●	315747 ●	315748 ●	315749 ●	651082 ●	315751 ●	315703 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599841 ●	599846 ●	599851 ●	599856 ●	599861 ●	599866 ●	599871 ●	599881 ●	599891 ●	599907 ●	599927 ●	599946 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	16,2	21,2	26,2	31,2	36,2	41,2	47,7	57,7	67,7	83,7	103,7	122,7
Clamping set	<b>1086514</b> ●	<b>1086525</b> ●	<b>1086536</b> ●	<b>1086547</b> ●	<b>1086558</b> ●	<b>1086569</b> ●	<b>1086580</b> ●	<b>1086591</b> ●	<b>1086602</b> ●	<b>1086619</b> ●	<b>1086640</b> ●	<b>1086660</b> ▲
Clamping sleeve vulcanized	650213 ●	650226 ●	650239 ●	650252 ●	650265 ●	650278 ●	650290 ●	651053 ●	651065 ●	315750 ●	651105 ●	651126 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599842 ●	599847 ●	599852 ●	599857 ●	599862 ●	599867 ●	599872 ●	599882 ●	599892 ●	599908 ●	599928 ●	599947 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	16,7	21,7	26,7	31,7	36,7	41,7	48,7	58,7	68,7	84,7	104,7	123,7
Clamping set	<b>1086515</b> ●	<b>1086526</b> ●	<b>1086537</b> ●	<b>1086548</b> ●	<b>1086559</b> ●	<b>1086570</b> ●	<b>1086581</b> ●	<b>1086592</b> ●	<b>1086603</b> ●	<b>1086620</b> ●	<b>1086641</b> ●	<b>1086661</b> ▲
Clamping sleeve vulcanized	315752 ●	315753 ●	315754 ●	315755 ●	315756 ●	315757 ●	315758 ●	315759 ●	315760 ●	651084 ●	315762 ●	315704 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599842 ●	599847 ●	599852 ●	599857 ●	599862 ●	599867 ●	599873 ●	599883 ●	599893 ●	599909 ●	599929 ●	599948 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	17,2	22,2	27,2	32,2	37,2	42,2	49,7	59,7	69,7	85,7	105,7	124,7
Clamping set	<b>1086516</b> ●	<b>1086527</b> ●	<b>1086538</b> ●	<b>1086549</b> ●	<b>1086560</b> ●	<b>1086571</b> ●	<b>1086582</b> ●	<b>1086593</b> ●	<b>1086604</b> ●	<b>1086621</b> ●	<b>1086642</b> ▲	<b>1086662</b> ▲
Clamping sleeve vulcanized	650215 ●	650228 ●	650241 ●	650254 ●	650267 ●	650280 ●	315769 ●	315770 ●	315771 ●	315761 ●	651107 ●	651128 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599843 ●	599848 ●	599853 ●	599858 ●	599863 ●	599868 ●	599874 ●	599884 ●	599894 ●	599910 ●	599930 ●	599949 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	17,7	22,7	27,7	32,7	37,7	42,7	50,7	60,7	70,7	86,7	106,7	125,7
Clamping set	<b>1086517</b> ●	<b>1086528</b> ●	<b>1086539</b> ●	<b>1086550</b> ●	<b>1086561</b> ●	<b>1086572</b> ●	<b>1086583</b> ●	<b>1086594</b> ●	<b>1086605</b> ●	<b>1086622</b> ●	<b>1086643</b> ▲	<b>1086663</b> ▲
Clamping sleeve vulcanized	315763 ●	315764 ●	315765 ●	315766 ●	315767 ●	315768 ●	315780 ●	315781 ●	315782 ●	651086 ●	315773 ●	315705 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599843 ●	599848 ●	599853 ●	599858 ●	599863 ●	599868 ●	599875 ●	599885 ●	599895 ●	599911 ●	599931 ●	599950 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	18,2	23,2	28,2	33,2	38,2	43,2	51,7	61,7	71,7	87,7	107,7	126,7
Clamping set	<b>1086518</b> ●	<b>1086529</b> ●	<b>1086540</b> ●	<b>1086551</b> ●	<b>1086562</b> ●	<b>1086573</b> ●	<b>1086584</b> ●	<b>1086595</b> ●	<b>1086606</b> ●	<b>1086623</b> ●	<b>1086644</b> ▲	<b>1086664</b> ▲
Clamping sleeve vulcanized	650217 ●	650230 ●	650243 ●	650256 ●	650269 ●	650282 ●	650294 ●	651057 ●	651069 ●	315772 ●	651109 ●	651130 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599844 ●	599849 ●	599854 ●	599859 ●	599864 ●	599869 ●	599876 ●	599886 ●	599896 ●	599912 ●	599932 ●	599951 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	18,7	23,7	28,7	33,7	38,7	43,7	52,7	62,7	72,7	88,7	108,7	127,7
Clamping set	<b>1086519</b> ●	<b>1086530</b> ●	<b>1086541</b> ●	<b>1086552</b> ●	<b>1086563</b> ●	<b>1086574</b> ●	<b>1086585</b> ●	<b>1086596</b> ●	<b>1086607</b> ●	<b>1086624</b> ●	<b>1086645</b> ▲	<b>1086665</b> ▲
Clamping sleeve vulcanized	315774 ●	315775 ●	315776 ●	315777 ●	315778 ●	315779 ●	315785 ●	315786 ●	315787 ●	651088 ●	315784 ●	315706 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ●
Work stop	599844 ●	599849 ●	599854 ●	599859 ●	599864 ●	599869 ●	599877 ●	599887 ●	599897 ●	599913 ●	599933 ●	599952 ●
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	19,2	24,2	29,2	34,2	39,2	44,2	53,7	63,7	73,7	89,7	109,7	128,7
Clamping set	<b>1086520</b> ●	<b>1086531</b> ●	<b>1086542</b> ●	<b>1086553</b> ●	<b>1086564</b> ●	<b>1086575</b> ●	<b>1086586</b> ●	<b>1086597</b> ●	<b>1086608</b> ●	<b>1086625</b> ●	<b>1086646</b> ▲	<b>1086666</b> ▲

## Accessories KFS/MFS

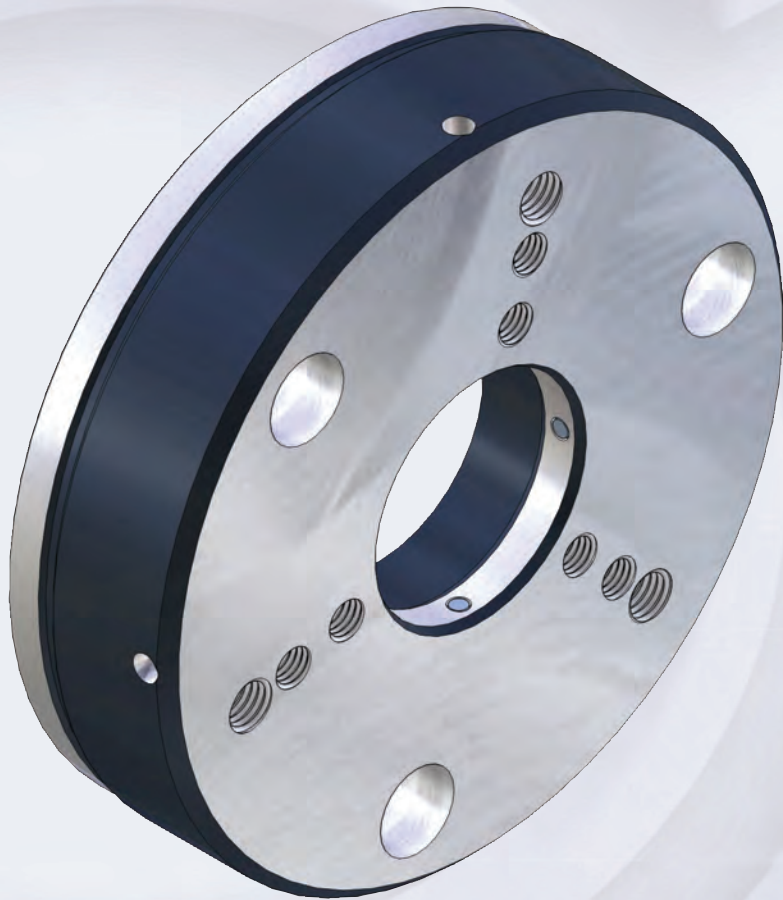
Tool group C18

Type 253-85 **Clamping set KFS/MFS vulcanized** ; consists of clamping sleeve and locking bolt

For size	00	01	02	03	04	05	06	07	08	09	10	11
Expansion in Ø	1	1	1	1	1	1	1	1	1	1	1	1
Length	35	40	46	50	60	60	80	90	100	122	140	180
Clamping sleeve vulcanized	650219 ●	650232 ●	650245 ●	650258 ●	650271 ●	650284 ●	650296 ●	651059 ●	651071 ●	315783 ■	651111 ■	651132 ■
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ■
Work stop	599966 ●	599967 ●	599968 ●	599969 ●	599970 ●	599971 ●	599878 ●	599888 ●	599898 ●	599914 ●	599934 ■	599953 ■
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø	19,7	24,7	29,7	34,7	39,7	44,7	54,7	64,7	74,7	90,7	110,7	129,7
Clamping set	<b>1086521 ●</b>	<b>1086532 ●</b>	<b>1086543 ●</b>	<b>1086554 ●</b>	<b>1086565 ●</b>	<b>1086576 ●</b>	<b>1086587 ●</b>	<b>1086598 ●</b>	<b>1086609 ●</b>	<b>1086626 ■</b>	<b>1086647 ▲</b>	<b>1086667 ▲</b>
Clamping sleeve vulcanized	650220 ●	650233 ●	650246 ●	650259 ●	650272 ●	650285 ●	650297 ●	651060 ●	315790 ●	651090 ●	315789 ●	315707 ●
Locking bolt	315469 ●	315470 ●	315471 ●	315472 ●	315473 ●	315474 ●	315475 ●	315476 ●	315477 ●	315478 ●	315479 ●	599998 ■
Work stop	599966 ●	599967 ●	599968 ●	599969 ●	599970 ●	599971 ●	599879 ●	599889 ●	599899 ●	599915 ●	599935 ■	599954 ■
Montage mandrel clamping sets	724176 ▲	724177 ▲	724178 ▲	724179 ▲	724180 ▲	724181 ▲	724182 ▲	724183 ▲	724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									75,7	91,7	111,7	130,7
Clamping set									<b>1086610 ●</b>	<b>1086627 ■</b>	<b>1086648 ▲</b>	<b>1086668 ▲</b>
Clamping sleeve vulcanized									651073 ●	315788 ■	651113 ■	651134 ■
Locking bolt									315477 ●	315478 ●	315479 ■	599998 ■
Work stop									599900 ●	599916 ●	599936 ■	599955 ■
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									76,7	92,7	112,7	131,7
Clamping set									<b>1086611 ●</b>	<b>1086628 ■</b>	<b>1086649 ▲</b>	<b>1086669 ▲</b>
Clamping sleeve vulcanized									651074 ●	651092 ■	651114 ■	651185 ■
Locking bolt									315477 ●	315478 ●	315479 ■	599998 ■
Work stop									599901 ●	599917 ●	599937 ■	599956 ■
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									77,7	93,7	113,7	132,7
Clamping set									<b>1086612 ●</b>	<b>1086629 ■</b>	<b>1086650 ▲</b>	<b>1086670 ▲</b>
Clamping sleeve vulcanized									651075 ●	651093 ■	651115 ■	651136 ■
Locking bolt									315477 ●	315478 ●	315479 ■	599998 ■
Work stop									599902 ●	599918 ●	599938 ■	599957 ■
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									78,7	94,7	114,7	133,7
Clamping set									<b>1086613 ●</b>	<b>1086630 ■</b>	<b>1086651 ▲</b>	<b>1086671 ▲</b>
Clamping sleeve vulcanized									315796 ●	651094 ■	315795 ■	315709 ■
Locking bolt									315477 ●	315478 ●	315479 ■	599998 ■
Work stop									599903 ●	599919 ●	599939 ■	599958 ■
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									79,7	95,7	115,7	134,7
Clamping set									<b>1086614 ●</b>	<b>1086631 ■</b>	<b>1086652 ▲</b>	<b>1086672 ▲</b>
Clamping sleeve vulcanized									651077 ●	315794 ■	651117 ■	651138 ■
Locking bolt									315477 ●	315478 ●	315479 ■	599998 ■
Work stop									599904 ●	599920 ●	599940 ■	599959 ■
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									80,7	96,7	116,7	135,7
Clamping set									<b>1086615 ●</b>	<b>1086632 ●</b>	<b>1086653 ▲</b>	<b>1086673 ▲</b>
Clamping sleeve vulcanized									315799 ●	651096 ■	315798 ■	315710 ■
Locking bolt									315477 ●	315478 ●	315479 ■	599998 ■
Work stop									599905 ●	599921 ●	599941 ■	599960 ■
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø									81,7	97,7	117,7	136,7
Clamping set									<b>1086616 ●</b>	<b>1086633 ●</b>	<b>1086654 ▲</b>	<b>1086674 ▲</b>
Clamping sleeve vulcanized									651079 ●	315797 ■	651119 ■	651140 ■
Locking bolt									315477 ●	315478 ●	315479 ■	599998 ■
Work stop									599906 ●	599922 ●	599942 ■	599961 ■
Montage mandrel clamping sets									724184 ▲	724185 ▲	724186 ▲	724187 ▲
Min-Ø										98,7	118,7	137,7
Clamping set									<b>1086634 ●</b>	<b>1086655 ▲</b>	<b>1086675 ▲</b>	
Clamping sleeve vulcanized									651098 ●	315801 ■	315711 ■	
Locking bolt									315478 ●	315479 ■	599998 ■	
Work stop									599923 ●	599943 ■	599962 ■	
Montage mandrel clamping sets									724185 ▲	724186 ▲	724187 ▲	
Min-Ø										99,7	119,7	138,7
Clamping set									<b>1086635 ●</b>	<b>1086656 ▲</b>	<b>1086676 ▲</b>	
Clamping sleeve vulcanized									315800 ■	651121 ■	651142 ■	
Locking bolt									315478 ●	315479 ■	599998 ■	
Work stop									599924 ●	599944 ■	599963 ■	
Montage mandrel clamping sets									724185 ▲	724186 ▲	724187 ▲	
Min-Ø												139,7
Clamping set												<b>1086677 ▲</b>
Clamping sleeve vulcanized												315712 ■
Locking bolt												599998 ■
Work stop												599964 ■
Montage mandrel clamping sets												724187 ▲

## Intermediate Adaptor Plates for KFS/MFS

For KFR (255-00) and KFS (253-00)



**Application:**

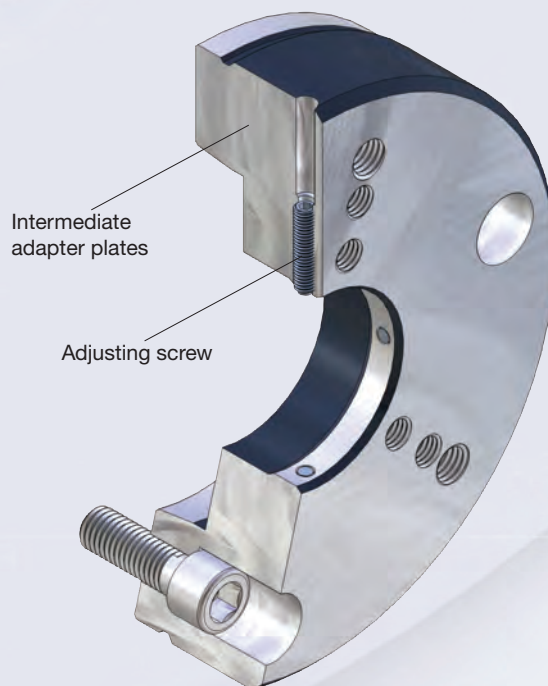
Adaption of cartridge mandrel KFR or KFS- on spindle nose DIN 55021/55022/55026 and 55027.

**Special features:**

Adaption of cartridge mandrel KFR (255-00) and KFS (253-00) on spindle nose, with or without adjusting screws, with or without grommet of air-sensing. Design ISO 702-1 (DIN 55028-A) or ISO 702-3 (DIN 55028-C), in sizes No.5, No.6, No.8, No.11 or No.5, No.6, No.8 (A5, A6, A8, A11 or C5, C6, C8).

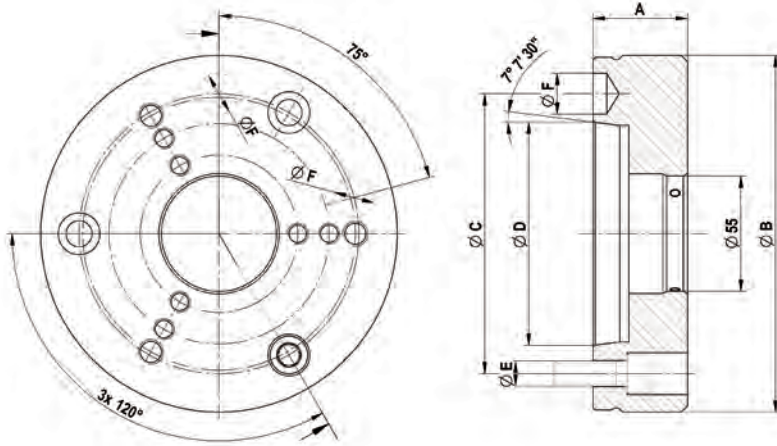
**Customer advantage:**

By changing the intermediate flange a cartridge mandrel can be entered on different machines.





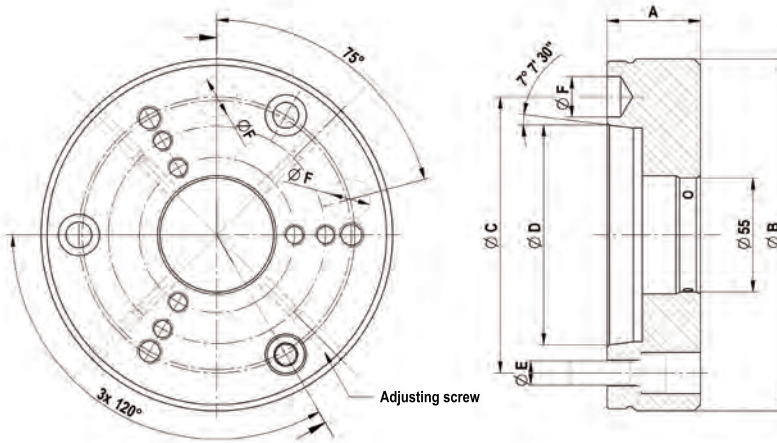
# Accessories KFS / MFS



Tool group A 18

Type 255-91 Intermediate adapter ISO 702-1 (DIN 55026/55021); without adjusting screws

	No. 5 (A 05)	No. 6 (A 06)	No. 8 (A 08)	No. 11 (A 11)
Intermediate flange	893975 ●	893976 ●	893977 ●	893978 ▲
Design	without air-sensing	without air-sensing	without air-sensing	without air-sensing
Mount-Ø 55	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001
A	45	45	50	50
Ø B	165	170	220	282
Ø C	104,8	133,4	171,4	235
Ø D	82,563	106,375	139,719	196,869
Ø E	M10	M12	M16	M20
Ø F	16,3	19,45	24,2	29,4

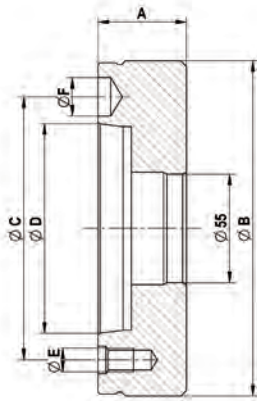
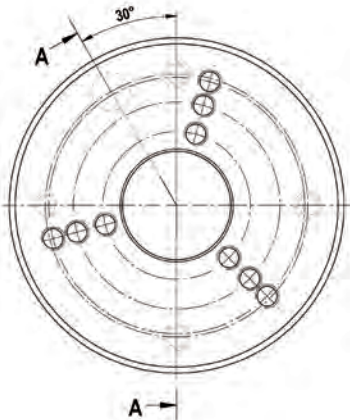


Tool group A 18

Type 255-92 Intermediate adapter ISO 702-1 (DIN 55026/55021) with adjusting screw

	No. 5 (A 05)	No. 6 (A 06)	No. 8 (A 08)
Intermediate flange	893979 ●	893980 ●	893981 ●
Design	without air-sensing	without air-sensing	without air-sensing
Mount-Ø 55	+0,05/+0,04	+0,05/+0,04	+0,05/+0,04
A	45	45	50
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M10	M12	M16
Ø F	16,3	19,45	24,2

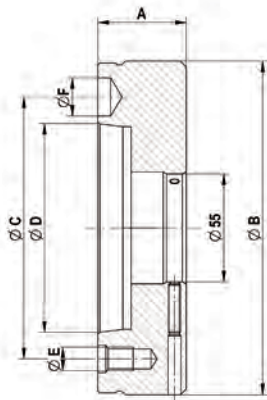
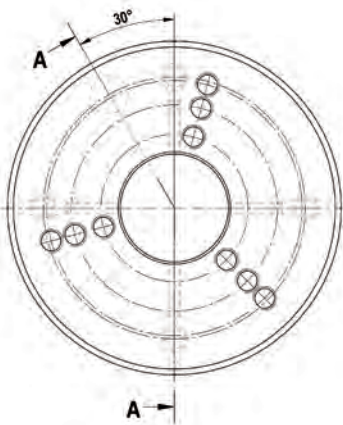
# Accessories KFS/MFS



Tool group A 18

Type 255-93 **Intermediate adapter ISO 702-3 (DIN 55027/55022) without adjusting screws**

	No. 5 (C 05)	No. 6 (C 06)	No. 8 (C 08)
<b>Intermediate flange</b>	<b>893982</b> ●	<b>893983</b> ●	<b>893984</b> ▲
Design	without air-sensing	without air-sensing	without air-sensing
Mount-Ø 55	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001
A	45	45	50
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M 10	M 12	M 16
Ø F	16,3	19,45	24,2

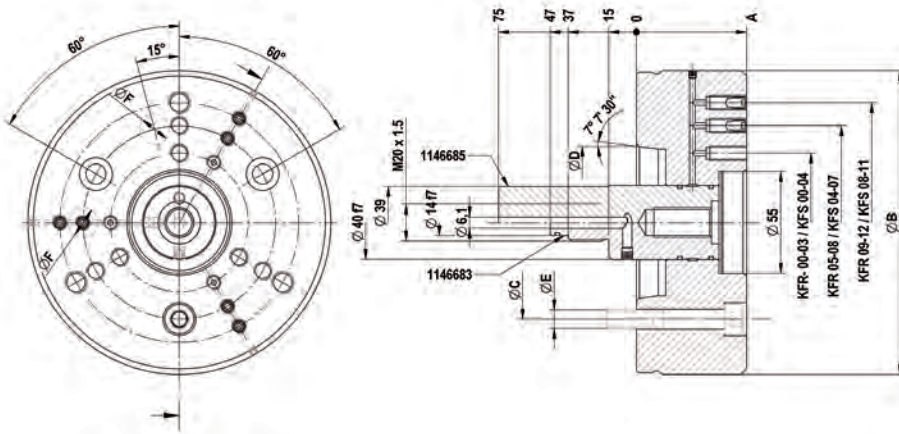


Tool group A 18

Type 255-94 **Intermediate adapter ISO 702-3 (DIN 55027/55022) with adjusting screws**

	No. 5 (C 05)	No. 6 (C 06)	No. 8 (C 08)
<b>Intermediate flange</b>	<b>893985</b> ▲	<b>893986</b> ▲	<b>893987</b> ■
Design	without air-sensing	without air-sensing	without air-sensing
Mount-Ø 55	+0,05/+0,04	+0,05/+0,04	+0,05/+0,04
A	45	45	50
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M 10	M 12	M 16
Ø F	16,3	19,45	24,2

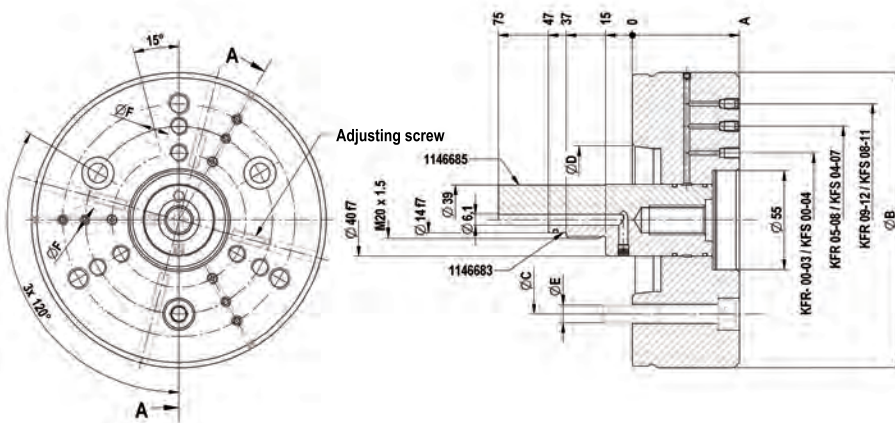
# Accessories KFS/MFS



Tool group C18

Type 255-95 Intermediate adapter ISO-702-1 (DIN 55026/55021) without adjusting screw

	No. 5 (A 05)	No. 6 (A 06)	No. 8 (A 08)
<b>Intermediate flange</b>	<b>1146680</b> ●	<b>1146681</b> ●	<b>1146682</b> ▲
Design	with air-sensing	with air-sensing	with air-sensing
Mount-Ø 55	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001
A	60	60	60
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M10	M12	M16
Ø F	16,3	19,45	24,2
<b>Draw piece for air-sensing</b>	<b>1146683</b>	<b>1146683</b>	<b>1146683</b>
<b>Raw draw piece for air-sensing</b>	<b>1146685</b>	<b>1146685</b>	<b>1146685</b>

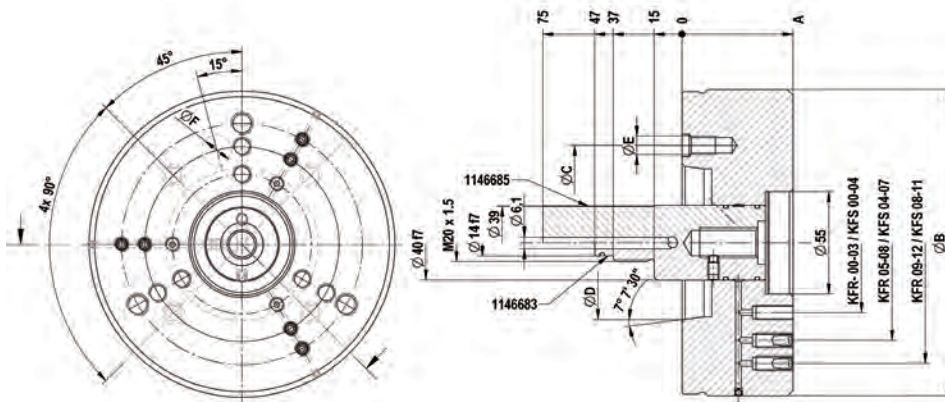


Tool group C18

Type 255-96 Intermediate adapter ISO-702-1 (DIN 55026/55021) with adjusting screw

	No. 5 (A 05)	No. 6 (A 06)	No. 8 (A 08)
<b>Intermediate flange</b>	<b>1160023</b> ▲	<b>1160024</b> ▲	<b>1160025</b> ▲
Design	with air-sensing	with air-sensing	with air-sensing
Mount-Ø 55	+0,05/+0,04	+0,05/+0,04	+0,05/+0,04
A	60	60	60
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M10	M12	M16
Ø F	16,3	19,45	24,2
<b>Draw piece for air-sensing</b>	<b>1146683</b>	<b>1146683</b>	<b>1146683</b>
<b>Raw draw piece for air-sensing</b>	<b>1146685</b>	<b>1146685</b>	<b>1146685</b>

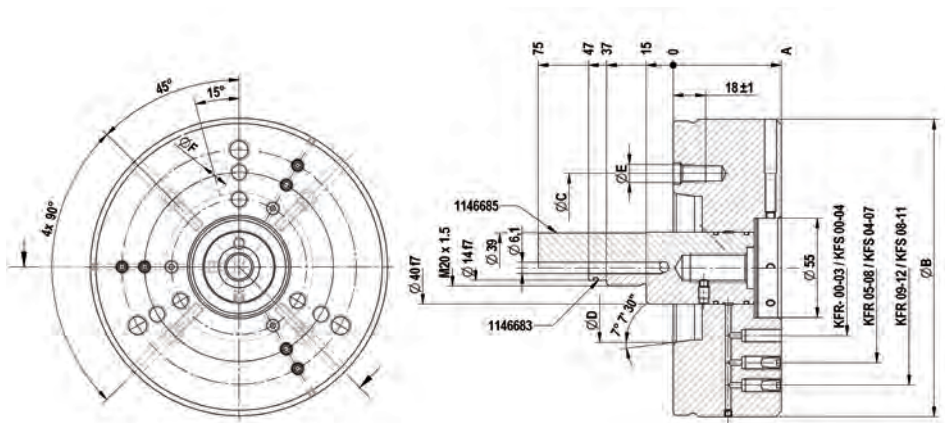
# Accessories KFS/MFS



Tool group C18

 Type 255-97 **Intermediate adapter ISO 702-3 (DIN 55027/55022) without adjusting screws**

	No. 5 (C 05)	No. 6 (C 06)	No. 8 (C 08)
<b>Intermediate flange</b>	<b>1160030 ▲</b>	<b>1160031 ▲</b>	<b>1160032 ▲</b>
Design	with air-sensing	with air-sensing	with air-sensing
Mount-Ø 55	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001
A	60	60	60
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M10	M12	M16
Ø F	16,3	19,45	24,2
<b>Draw piece for air-sensing</b>	<b>1146683</b>	<b>1146683</b>	<b>1146683</b>
<b>Raw draw piece for air-sensing</b>	<b>1146685</b>	<b>1146685</b>	<b>1146685</b>



Tool group C18

 Type 255-98 **Intermediate adapter ISO 702-3 (DIN 55027/55022) with adjusting screws**

	No. 5 (C 05)	No. 6 (C 06)	No. 8 (C 08)
<b>Intermediate flange</b>	<b>1160033 ▲</b>	<b>1160034 ▲</b>	<b>1160035 ▲</b>
Design	with air-sensing	with air-sensing	with air-sensing
Mount-Ø 55	+0,05/+0,04	+0,05/+0,04	+0,05/+0,04
A	60	60	60
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M10	M12	M16
Ø F	16,3	19,45	24,2
<b>Draw piece for air-sensing</b>	<b>1146683</b>	<b>1146683</b>	<b>1146683</b>
<b>Raw draw piece for air-sensing</b>	<b>1146685</b>	<b>1146685</b>	<b>1146685</b>







► **Cartridge mandrel KFS clamping Ø22,65mm**

**Application:**

Turning.

Special version of the clamping mandrel due to the tooling flexibility required.

Clamping takes place in the root of the toothed gear using diagonally slotted clamping sleeves.

Tilting in the toothed gear is prevented by the diagonal slots.

**Customer advantage:**

- Optimum clamping of the toothed workpiece
- High radial and axial run-out accuracy of 0.02mm



► **Cartridge mandrel KFS clamping Ø27.8mm**

**Application:**

Turning.

Clamping takes place using hexagon clamping sleeves with axial traction through the pull rod against a hard stop.

The workpiece hard stop is designed to be loaded with the workpiece on both sides.

**Customer advantage:**

- Clamping special shapes is possible
- Radial run-out accuracy of 0.05mm



► **Cartridge mandrel KFS clamping Ø34.3mm**

**Application:**

Turning/cutting.

Power-operated sleeve clamping mandrel with axial traction and hard stop.

Clamping sleeve contoured to cut the workpieces.

**Customer advantage:**

- Cost-efficient production of small parts
- Radial run-out accuracy of 0.01mm

Hand-operated by cartridge mandrel with center hole, for internal clamping



**Application:**

Turning, grinding, cutting, toothcutting, measuring.

**Special features:**

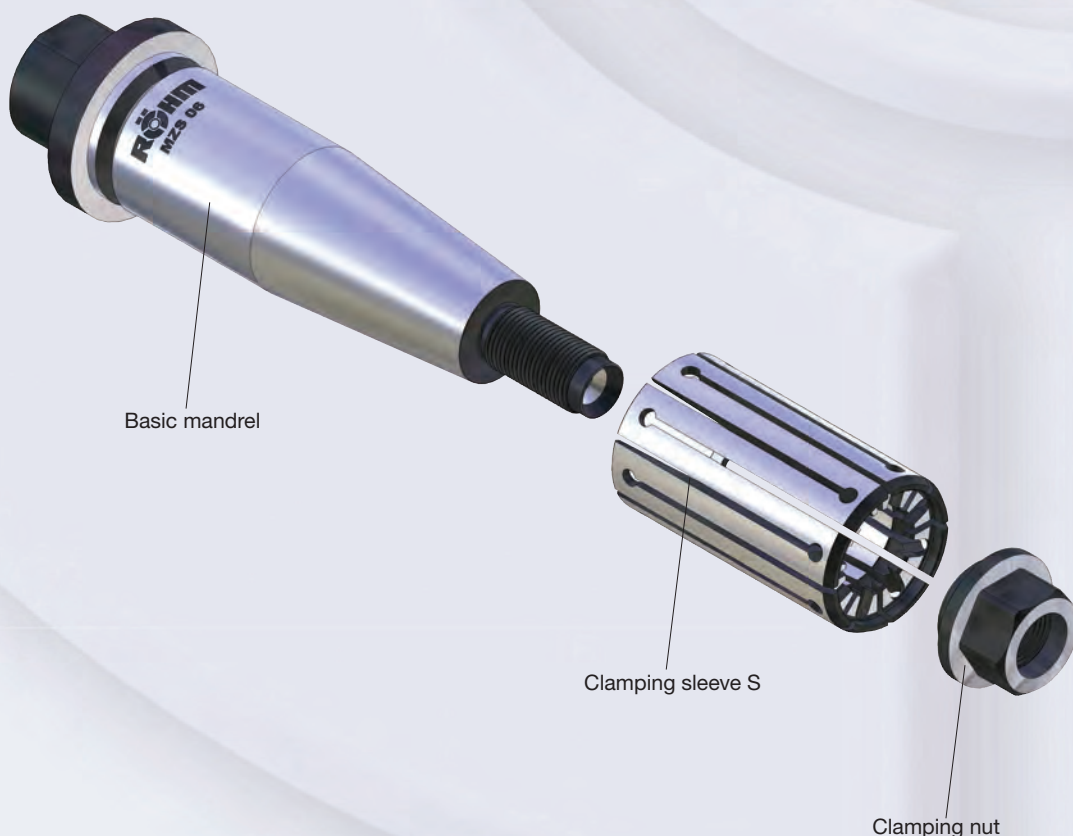
Compact design, steady clamping by axial draw-in. The draw-in of the work-pieces against the rigid work-stop takes place independently via the operation of the mandrels

**Technical features:**

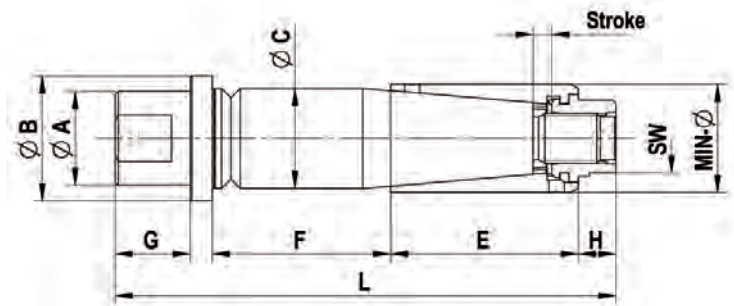
- Hand-operated,
- High axial- and radial accuracy,
- High repeating accuracy,
- Hardened low-wear construction,
- High accuracy by guiding the sleeves on the clamping mandrel,
- Quick change of the clamping sleeves by the central tension screw.

**Customer advantage:**

Little weight and little height by compact design, for automatical charging and for short span length.







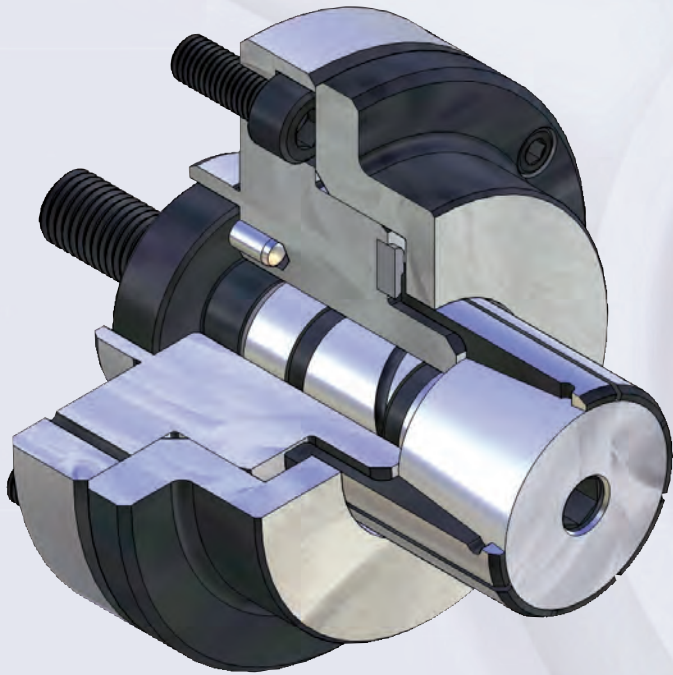
**Tool group**

Type 259-00 **MZS** Cartridge mandrel; **hand-operated with centre hole**; for internal clamping

	MZS 00	MZS 01	MZS 02	MZS 03	MZS 04	MZS 05	MZS 06	MZS 07	MZS 08	MZS 09	MZS 10
<b>Cartridge Mandrel</b>	1130432 ●	1130433 ●	1130434 ●	1130435 ●	1130436 ●	1130437 ●	1130438 ●	1130439 ●	1130440 ●	1130441 ●	1130442 ●
<b>Basic mandrel</b>	590322 ●	590323 ●	590324 ●	590325 ●	590326 ●	590327 ●	590328 ●	590329 ●	590330 ●	590331 ●	590332 ●
<b>Nut</b>	315422 ●	315423 ●	315424 ●	315425 ●	315426 ●	315427 ●	315428 ●	315429 ●	315430 ●	315431 ●	315432 ●
Min-Ø unclamped from	14,7	19,7	24,7	29,7	34,7	39,7	44,7	54,7	64,7	81,7	100,7
Min-Ø unclamped to	19,7	24,7	29,7	34,7	39,7	44,7	54,7	64,7	81,7	100,7	119,7
Clamping-Ø max.	20,7	25,7	30,7	35,7	40,7	45,7	56,7	66,7	83,7	102,7	121,7
Stroke	6	6,5	6	6	6	6	12	12	12	12	8,5
Ø A	13	18	20	20	30	30	35	35	55	55	70
Ø B	20	28	32	36	40	45	54	64	74	91	106
Ø Cg6	15	20	24	28	32	37	42	52	62	75	90
Key-width SW	11	11	17	17	22	22	27	27	36	36	41
E	35	40	46	50	60	60	80	90	100	122	140
F	38	33	46	42	57	57	72	62	119	97	107
G	10	10	20	20	24	24	24	24	24	24	24
H	8	8	9	9	12	12	15	15	18	18	20
L	95	95	125	125	160	160	200	200	270	270	300



Power-operated segment mandrel with flanged seat, for internal clamping



**Application:**

Turning, grinding, cutting, toothcutting, balancing, measuring.

**Special features:**

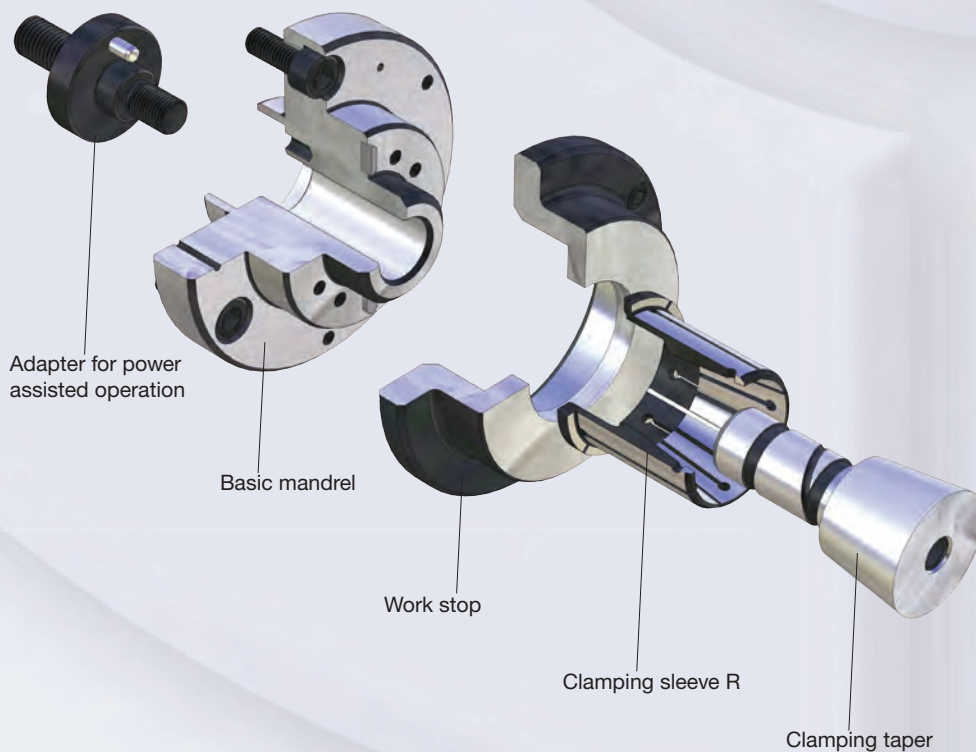
Compact, solid design for precise machining, without axial tightening respectively optional with defined axial tightening (e.g. 0,5mm); as a result there's no deformation of the workpiece. The draw-in of the work-pieces against the rigid work-stop takes place independently via the operation of the mandrels. Prepared for air- sensing.

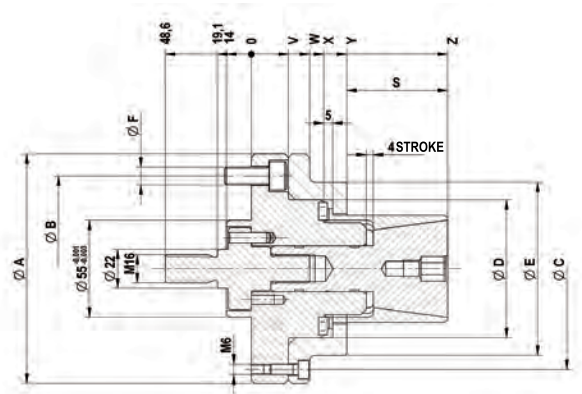
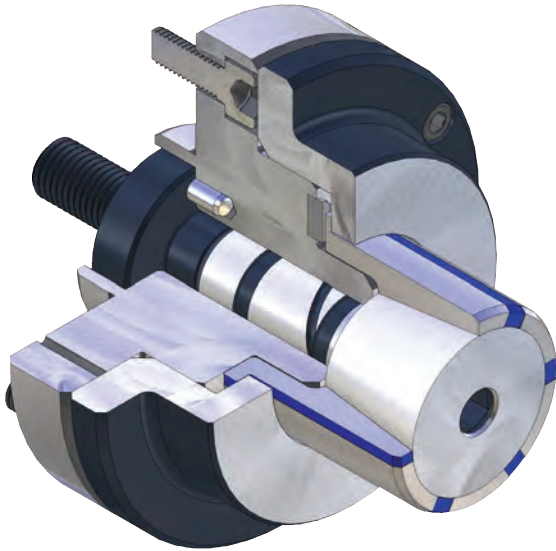
**Technical features:**

- Power-operated or hand operated (optional),
- High axial- and radial accuracy,
- High repeating accuracy,
- Hardened low-wear construction,
- Compatible with intermediate flange Type 255-9,
- Integrated hand-operated lubrication.

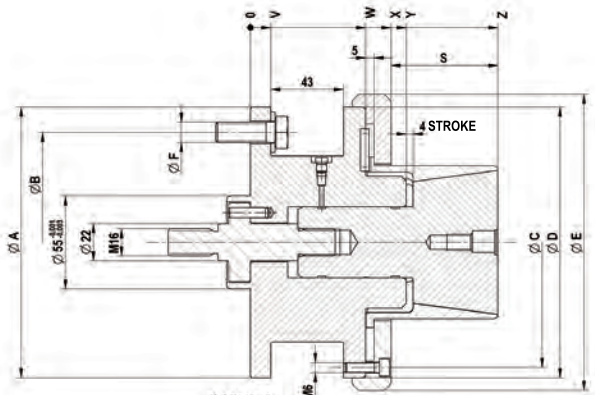
**Customer advantage:**

- Little weight and little height by compact design,
- For automatical charging,
- For short span length.





KFR-SE 00-08  
Released

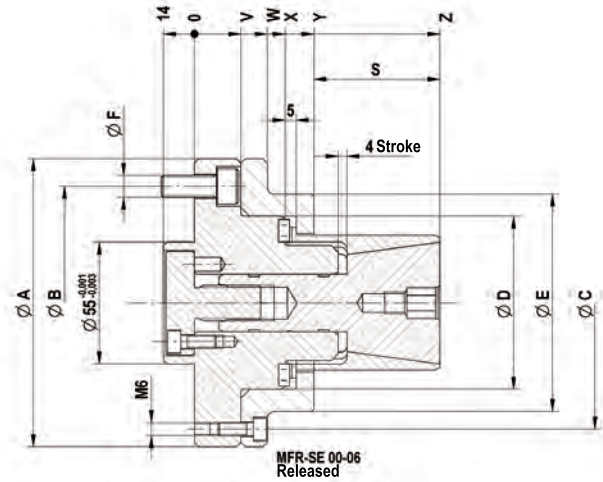
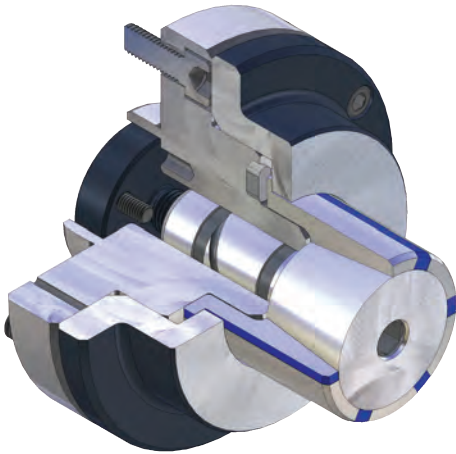


KFR-SE 09-12  
Released

**Tool group C18**

Type 255-04 **KFR** segment clamping mandrel, **power-operated with flanged seat**; for internal clamping consists of base bolt, clamping taper, adapter, nut

	KFR 00	KFR 01	KFR 02	KFR 03	KFR 04	KFR 05	KFR 06	KFR 07	KFR 08	KFR 09	KFR 10	KFR 11	KFR 12
<b>Segment clamping mandrel</b>	1171410	1171411	1171412	1171413	1171414	1171415	893966	893967	893968	893969	893970	893971	893972
<b>Base bolt</b>	893800	893801	893802	893803	893804	893805	893806	893807	893807	893809	893809	893809	893809
<b>Clamping taper</b>	1171436	1171437	1171438	1171439	1171440	1171441	650346	650347	650348	650349	650350	650351	650352
<b>Adapter power operated</b>	1199848	1199849	1199850	893819	893820	893820	893821	893822	893822	893822	893822	893822	893822
<b>Nut</b>	893814	893814	893814	-	-	-	-	-	-	-	-	-	-
F max, in kN	4,65	13,1	19,5	24,4	26,8	33	33	33	33	33	33	33	33
Max, total clamping force approx, kN	20	56	83	104	114	140	140	140	140	140	140	140	140
Min-Ø unclamped from	14,2	19,7	24,7	35,7	40,7	50,7	60,7	70,7	80,7	90,7	100,7	110,7	120,7
Min-Ø unclamped to	19,7	24,7	35,7	40,7	50,7	60,7	70,7	80,7	90,7	100,7	110,7	120,7	130,7
Clamping-Ø max,	20,7	25,7	36,7	41,7	51,7	61,7	71,7	81,7	91,7	101,7	111,7	121,7	131,7
External-Ø A	100	100	100	100	130	130	130	160	160	160	160	160	160
Pitch diameter B	75	75	75	75	105	105	105	130	130	130	130	130	130
Pitch diameter C	85	85	85	85	114	114	114	145	145	148	148	148	148
Ø D	50	50	50	50	78	78	78	100	100	160	160	160	160
Ø E	70	70	70	70	98	98	98	130	130	175	175	175	175
Ø F	M10	M10	M10	M10	M10	M10	M10	M12	M12	M12	M12	M12	M12
S	21	27	27	27	42	42	57	55	55	63	63	63	63
V	21	21	21	21	21	21	21	32	32	12	12	12	12
W	33	33	33	33	33	33	33	50	50	68	68	68	68
X	39	39	39	39	41	41	41	58	58	83	83	83	83
Y	50	52	52	52	54	54	54	73	73	92	92	92	92
Z	71	79	79	79	96	96	111	128	128	146	146	146	146

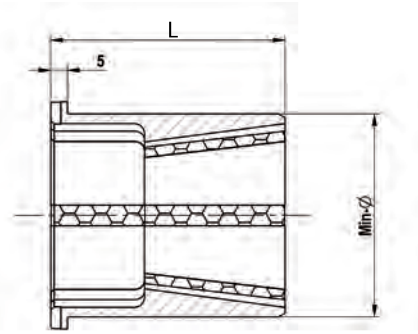
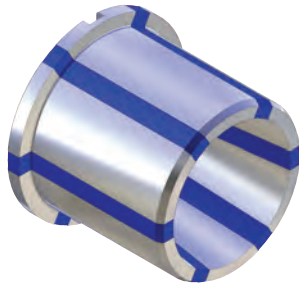


Tool group C18

Type 255-05 **MFR** segment clamping mandrel, **hand-operated with flanged seat**; for internal clamping consists of base bolt, clamping taper, adapter

	MFR 00	MFR 01	MFR 02	MFR 03	MFR 04	MFR 05	MFR 06
Segment clamping mandrel	1171423 <span style="color: yellow;">■</span>	1171424 <span style="color: yellow;">■</span>	1171425 <span style="color: yellow;">■</span>	1171426 <span style="color: yellow;">■</span>	1171427 <span style="color: yellow;">■</span>	1171428 <span style="color: yellow;">■</span>	1077706 <span style="color: green;">●</span>
Base bolt	893800 <span style="color: green;">●</span>	893801 <span style="color: green;">●</span>	893802 <span style="color: green;">●</span>	893803 <span style="color: green;">●</span>	893804 <span style="color: green;">●</span>	893805 <span style="color: green;">●</span>	893806 <span style="color: green;">●</span>
Clamping taper	1171436 <span style="color: green;">●</span>	1171437 <span style="color: green;">●</span>	1171438 <span style="color: green;">●</span>	1171439 <span style="color: green;">●</span>	1171440 <span style="color: green;">●</span>	1171441 <span style="color: green;">●</span>	650346 <span style="color: green;">●</span>
Adapter hand-operated	893823 <span style="color: green;">●</span>	893824 <span style="color: green;">●</span>	893825 <span style="color: green;">●</span>	893826 <span style="color: green;">●</span>	893827 <span style="color: green;">●</span>	893827 <span style="color: green;">●</span>	893828 <span style="color: green;">●</span>
Min-Ø unclamped from	14,7	19,7	24,7	35,7	40,7	50,7	60,7
Min-Ø unclamped to	19,7	24,7	35,7	40,7	50,7	60,7	70,7
Clamping-Ø max,	20,7	25,7	36,7	41,7	51,7	61,7	71,7
External-Ø A	100	100	100	100	130	130	130
Pitch diameter B	75	75	75	75	105	105	105
Pitch diameter C	85	85	85	85	114	114	114
Ø D	50	50	50	50	78	78	78
Ø E	70	70	70	70	98	98	98
S	21	27	27	27	42	42	57
V	21	21	21	21	21	21	21
W	33	33	33	33	33	33	33
X	39	39	39	39	41	41	41
Y	50	52	52	52	54	54	54
Z	71	79	79	79	96	96	111

## Accessories KFR / MFR

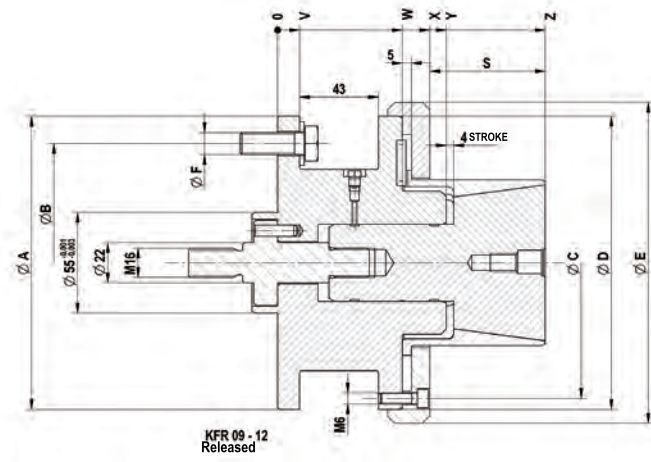
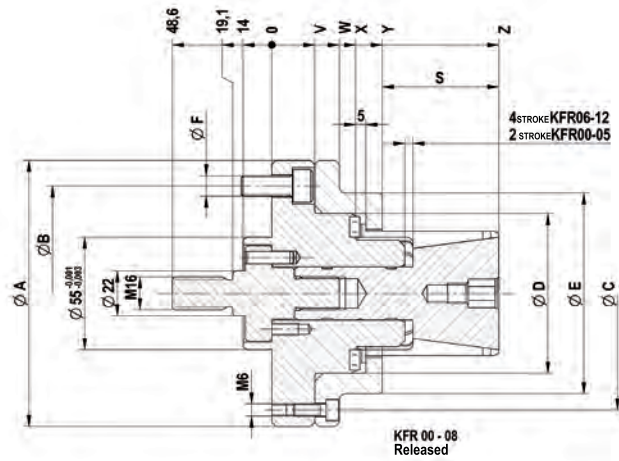
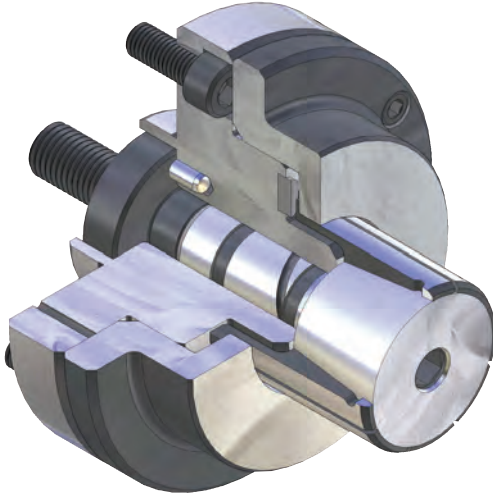


Tool group C18  
Type 255-54 Segment sleeve KFR/MFR

For size	00	01	02	03	04	05	06	07	08	09	10	11	12
Expansion in Ø	1	1	1	1	1	1	1	1	1	1	1	1	1
Total length	32	40	40	40	55	55	70	70	70	78	78	78	78
Min-Ø	14,7	19,7	24,7	35,7	40,7	50,7	60,7	70,7	80,7	90,7	100,7	110,7	120,7
<b>Segment sleeve</b>	<b>1171000 ▲</b>	<b>1171006 ▲</b>	<b>1171012 ▲</b>	<b>1171024 ▲</b>	<b>1171030 ▲</b>	<b>1171041 ▲</b>	<b>1171052 ▲</b>	<b>1171063 ▲</b>	<b>1171074 ▲</b>	<b>1171085 ▲</b>	<b>1171096 ▲</b>	<b>1171107 ▲</b>	<b>1171118 ▲</b>
<b>Stop</b>	893830 ●	893836 ●	893842 ●	893852 ●	893857 ●	893867 ●	893878 ●	893888 ●	893897 ●	893907 ●	893917 ●	893927 ●	893937 ●
Min-Ø	15,7	20,7	25,7	36,7	41,7	51,7	61,7	71,7	81,7	91,7	101,7	111,7	121,7
<b>Segment sleeve</b>	<b>1171001 ▲</b>	<b>1171007 ▲</b>	<b>1171013 ▲</b>	<b>1171025 ▲</b>	<b>1171031 ▲</b>	<b>1171042 ▲</b>	<b>1171053 ▲</b>	<b>1171064 ▲</b>	<b>1171075 ▲</b>	<b>1171086 ▲</b>	<b>1171097 ▲</b>	<b>1171108 ▲</b>	<b>1171119 ▲</b>
<b>Stop</b>	893831 ●	893837 ●	893842 ●	893853 ●	893858 ●	893868 ●	893879 ●	893889 ●	893898 ●	893908 ●	893918 ●	893928 ●	893938 ●
Min-Ø	16,7	21,7	26,7	37,7	42,7	52,7	62,7	72,7	82,7	92,7	102,7	112,7	122,7
<b>Segment sleeve</b>	<b>1171002 ▲</b>	<b>1171008 ▲</b>	<b>1171014 ▲</b>	<b>1171026 ▲</b>	<b>1171032 ▲</b>	<b>1171043 ▲</b>	<b>1171054 ▲</b>	<b>1171065 ▲</b>	<b>1171076 ▲</b>	<b>1171087 ▲</b>	<b>1171098 ▲</b>	<b>1171109 ▲</b>	<b>1171120 ▲</b>
<b>Stop</b>	893832 ●	893838 ●	893843 ●	893854 ●	893859 ●	893869 ●	893880 ●	893890 ●	893899 ●	893909 ●	893919 ●	893929 ●	893939 ●
Min-Ø	17,7	22,7	27,7	38,7	43,7	53,7	63,7	73,7	83,7	93,7	103,7	113,7	123,7
<b>Segment sleeve</b>	<b>1171003 ▲</b>	<b>1171009 ▲</b>	<b>1171015 ▲</b>	<b>1171027 ▲</b>	<b>1171033 ▲</b>	<b>1171044 ▲</b>	<b>1171055 ▲</b>	<b>1171066 ▲</b>	<b>1171077 ▲</b>	<b>1171088 ▲</b>	<b>1171099 ▲</b>	<b>1171110 ▲</b>	<b>1171121 ▲</b>
<b>Stop</b>	893833 ●	893839 ●	893844 ●	893855 ●	893860 ●	893870 ●	893881 ●	893891 ●	893900 ●	893910 ●	893920 ●	893930 ●	893940 ●
Min-Ø	18,7	23,7	28,7	39,7	44,7	54,7	64,7	74,7	84,7	94,7	104,7	114,7	124,7
<b>Segment sleeve</b>	<b>1171004 ▲</b>	<b>1171010 ▲</b>	<b>1171016 ▲</b>	<b>1171028 ▲</b>	<b>1171034 ▲</b>	<b>1171045 ▲</b>	<b>1171056 ▲</b>	<b>1171067 ▲</b>	<b>1171078 ▲</b>	<b>1171089 ▲</b>	<b>1171100 ▲</b>	<b>1171111 ▲</b>	<b>1171122 ▲</b>
<b>Stop</b>	893834 ●	893840 ●	893845 ●	893856 ●	893861 ●	893871 ●	893882 ●	893892 ●	893901 ●	893911 ●	893921 ●	893931 ●	893941 ●
Min-Ø	19,7	24,7	29,7	40,7	45,7	55,7	65,7	75,7	85,7	95,7	105,7	115,7	125,7
<b>Segment sleeve</b>	<b>1171005 ▲</b>	<b>1171011 ▲</b>	<b>1171017 ▲</b>	<b>1171029 ▲</b>	<b>1171035 ▲</b>	<b>1171046 ▲</b>	<b>1171057 ▲</b>	<b>1171068 ▲</b>	<b>1171079 ▲</b>	<b>1171090 ▲</b>	<b>1171101 ▲</b>	<b>1171112 ▲</b>	<b>1171123 ▲</b>
<b>Stop</b>	893835 ●	893841 ●	893846 ●	893856 ●	893862 ●	893872 ●	893883 ●	893893 ●	893902 ●	893912 ●	893922 ●	893932 ●	893942 ●
Min-Ø			30,7		46,7	56,7	66,7	76,7	86,7	96,7	106,7	116,7	126,7
<b>Segment sleeve</b>			<b>1171018 ▲</b>		<b>1171036 ▲</b>	<b>1171047 ▲</b>	<b>1171058 ▲</b>	<b>1171069 ▲</b>	<b>1171080 ▲</b>	<b>1171091 ▲</b>	<b>1171102 ▲</b>	<b>1171113 ▲</b>	<b>1171124 ▲</b>
<b>Stop</b>			893847 ●		893863 ●	893873 ●	893884 ●	893894 ●	893903 ●	893913 ●	893923 ●	893933 ●	893943 ●
Min-Ø			31,7		47,7	57,7	67,7	77,7	87,7	97,7	107,7	117,7	127,7
<b>Segment sleeve</b>			<b>1171019 ▲</b>		<b>1171037 ▲</b>	<b>1171048 ▲</b>	<b>1171059 ▲</b>	<b>1171070 ▲</b>	<b>1171081 ▲</b>	<b>1171092 ▲</b>	<b>1171103 ▲</b>	<b>1171114 ▲</b>	<b>1171125 ▲</b>
<b>Stop</b>			893848 ●		893864 ●	893874 ●	893885 ●	893895 ●	893904 ●	893914 ●	893924 ●	893934 ●	893944 ●
Min-Ø			32,7		48,7	58,7	68,7	78,7	88,7	98,7	108,7	118,7	128,7
<b>Segment sleeve</b>			<b>1171020 ▲</b>		<b>1171038 ▲</b>	<b>1171049 ▲</b>	<b>1171060 ▲</b>	<b>1171071 ▲</b>	<b>1171082 ▲</b>	<b>1171093 ▲</b>	<b>1171104 ▲</b>	<b>1171115 ▲</b>	<b>1171126 ▲</b>
<b>Stop</b>			893849 ●		893865 ●	893875 ●	893886 ●	893947 ●	893905 ●	893915 ●	893925 ●	893935 ●	893945 ●
Min-Ø			33,7		49,7	59,7	69,7	79,7	89,7	99,7	109,7	119,7	129,7
<b>Segment sleeve</b>			<b>1171021 ▲</b>		<b>1171039 ▲</b>	<b>1171050 ▲</b>	<b>1171061 ▲</b>	<b>1171072 ▲</b>	<b>1171083 ▲</b>	<b>1171094 ▲</b>	<b>1171105 ▲</b>	<b>1171116 ▲</b>	<b>1171127 ▲</b>
<b>Stop</b>			893850 ●		893866 ●	893876 ●	893887 ●	893896 ●	893906 ●	893916 ●	893926 ●	893936 ●	893946 ●
Min-Ø			34,7		50,7	60,7	70,7	80,7	90,7	100,7	110,7	120,7	130,7
<b>Segment sleeve</b>			<b>1171022 ▲</b>		<b>1171040 ▲</b>	<b>1171051 ▲</b>	<b>1171062 ▲</b>	<b>1171073 ▲</b>	<b>1171084 ▲</b>	<b>1171095 ▲</b>	<b>1171106 ▲</b>	<b>1171117 ▲</b>	<b>1171128 ▲</b>
<b>Stop</b>			893851 ●		893867 ●	893877 ●	893887 ●	893896 ●	893906 ●	893916 ●	893926 ●	893936 ●	893946 ●
Min-Ø			35,7										
<b>Segment sleeve</b>			<b>1171023 ▲</b>										
<b>Stop</b>			893852 ●										



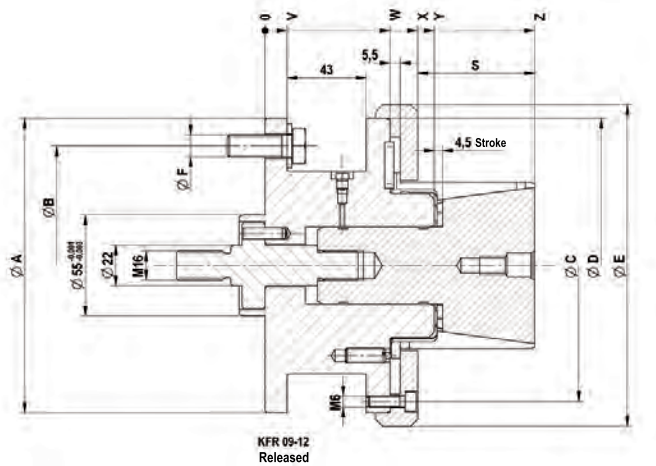
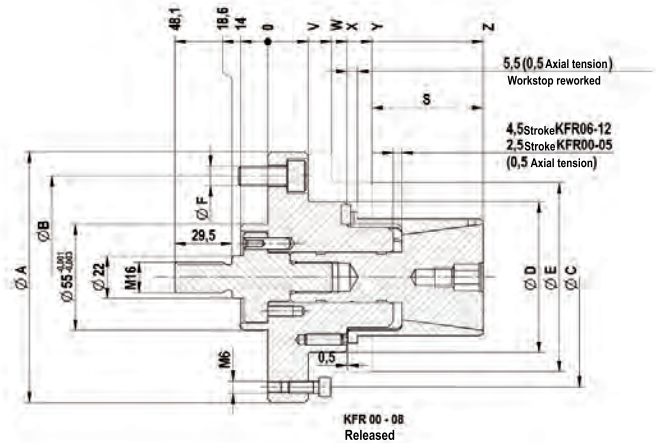
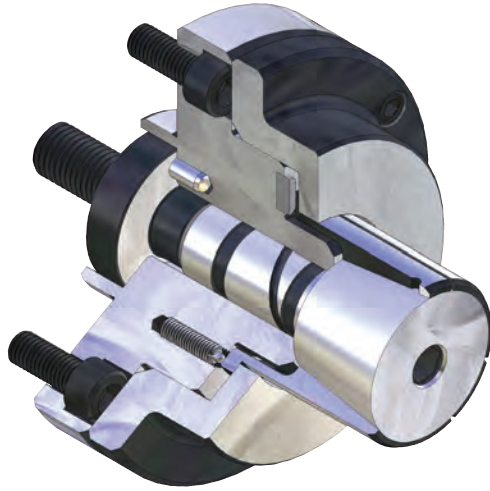
# KFR - without axial tightening



Tool group C18  
 Type 255-00 KFR cartridge mandrel, **power-operated with flanged seat**; for internal clamping  
 consists of base bolt, clamping taper, adapter, nut

	KFR 00	KFR 01	KFR 02	KFR 03	KFR 04	KFR 05	KFR 06	KFR 07	KFR 08	KFR 09	KFR 10	KFR 11	KFR 12
<b>Cartridge Mandrel</b>	893960 ●	893961 ●	893962 ●	893963 ●	893964 ●	893965 ●	893966 ●	893967 ●	893968 ●	893969 ●	893970 ●	893971 ●	893972 ●
<b>Base bolt</b>	893800 ●	893801 ●	893802 ●	893803 ●	893804 ●	893805 ●	893806 ●	893807 ●	893807 ●	893809 ●	893809 ●	893809 ●	893809 ●
<b>Clamping taper</b>	650340 ●	650341 ●	650342 ●	650343 ●	650344 ●	650345 ●	650346 ●	650347 ●	650348 ●	650349 ●	650350 ●	650351 ●	650352 ●
<b>Adapter power operated</b>	893816 ●	893817 ●	893818 ●	893819 ●	893820 ●	893820 ●	893821 ●	893822 ●	893822 ●	893822 ●	893822 ●	893822 ●	893822 ●
<b>Nut</b>	893814 ●	893814 ●	893814 ●	-	-	-	-	-	-	-	-	-	-
F max, in kN	4,65	13,1	19,5	24,4	26,8	33	33	33	33	33	33	33	33
Min-Ø unclamped from	14,2	19,7	25,2	35,2	40,2	50,2	60,7	70,7	80,7	90,7	100,7	110,7	120,7
Min-Ø unclamped to	19,7	25,2	35,2	40,2	50,2	60,7	70,7	80,7	90,7	100,7	110,7	120,7	130,7
Clamping-Ø max,	20,2	25,7	35,72	40,7	61,2	61,2	71,7	81,7	91,7	101,7	111,7	121,7	131,7
External-Ø A	100	100	100	100	130	130	130	160	160	160	160	160	160
Pitch diameter B	75	75	75	75	105	105	105	130	130	130	130	130	130
Pitch diameter C	85	85	85	85	114	114	114	145	145	148	148	148	148
Ø D	50	50	50	50	78	78	78	100	100	160	160	160	160
Ø E	70	70	70	70	98	98	98	130	130	175	175	175	175
Ø F	M10	M10	M10	M10	M10	M10	M10	M12	M12	M12	M12	M12	M12
S	21	27	27	27	42	42	57	55	55	63	63	63	63
V	21	21	21	21	21	21	21	32	32	12	12	12	12
W	33	33	33	33	33	33	33	50	50	68	68	68	68
X	39	39	39	39	41	41	41	58	58	83	83	83	83
Y	50	52	52	52	54	54	54	73	73	92	92	92	92
Z	71	79	79	79	96	96	111	128	128	146	146	146	146

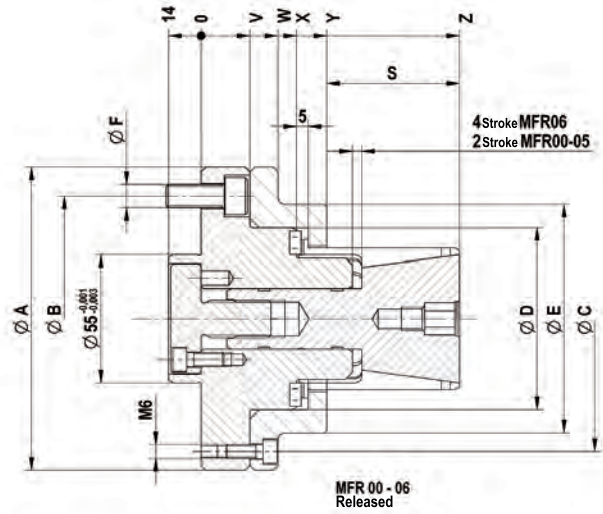
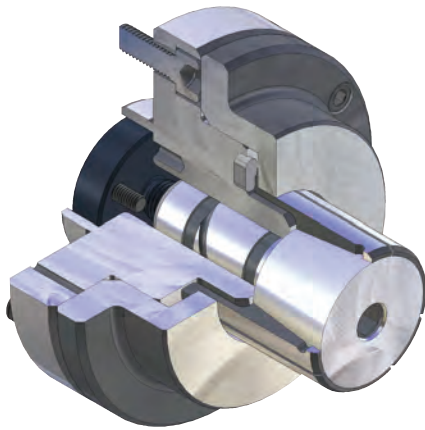
# KFR - with axial tightening



Tool group C18  
Type 255-01 **KFR** cartridge mandrel, **power-operated with flanged seat**; for internal clamping  
consists of base bolt, clamping taper, adapter, nut

	KFR 00	KFR 01	KFR 02	KFR 03	KFR 04	KFR 05	KFR 06	KFR 07	KFR 08	KFR 09	KFR 10	KFR 11	KFR 12
Cartridge Mandrel	1077600	1077601	1077602	1077603	1077604	1077605	1077606	1077607	1077608	1077609	1077610	1077611	1077612
Base bolt	1077620	1077621	1077622	1077623	1077624	1077625	1077626	1077627	1077627	1077628	1077628	1077628	1077628
Clamping taper	650340	650341	650342	650343	650344	650345	650346	650347	650348	650349	650350	650351	650352
Adapter power operated	1061892	1061919	1077615	1061921	1050020	1050020	1050021	1077619	1077619	1077619	1077619	1077619	1077619
Nut	893814	893814	893814	-	-	-	-	-	-	-	-	-	-
F max, in kN	4,65	13,1	19,5	24,4	26,8	33	33	33	33	33	33	33	33
Max, total clamping force approx, kN	20	56	83	104	114	140	140	140	140	140	140	140	140
Min-Ø unclamped from	14,2	19,7	25,2	35,2	40,2	50,2	60,7	70,7	80,7	90,7	100,7	110,7	120,7
Min-Ø unclamped to	19,7	25,2	35,2	40,2	50,2	60,7	70,7	80,7	90,7	100,7	110,7	120,7	130,7
Clamping-Ø max,	20,2	25,7	35,7	40,7	50,7	61,3	71,7	81,7	91,7	101,7	111,7	121,7	131,7
External-Ø A	100	100	100	100	130	130	130	160	160	160	160	160	160
Pitch diameter B	75	75	75	75	105	105	105	130	130	130	130	130	130
Pitch diameter C	85	85	85	85	114	114	114	145	145	148	148	148	148
Ø D	50	50	50	50	78	78	78	100	100	160	160	160	160
Ø E	70	70	70	70	98	98	98	130	130	175	175	175	175
Ø F	M10	M10	M10	M10	M10	M10	M10	M12	M12	M12	M12	M12	M12
S	21,5	27,5	27,5	27,5	42,5	42,5	57,5	55,5	55,5	63,5	63,5	63,5	63,5
V	21	21	21	21	21	21	21	32	32	12	12	12	12
W	33	33	33	33	33	33	33	50	50	68	68	68	68
X	39	39	39	39	41	41	41	58	58	92	92	92	92
Y	50	52	52	52	54	54	54	73	73	83	83	83	83
Z	71,5	79,5	79,5	79,5	96,5	96,5	111,5	128,5	128,5	146,5	146,5	146,5	146,5

## MFR

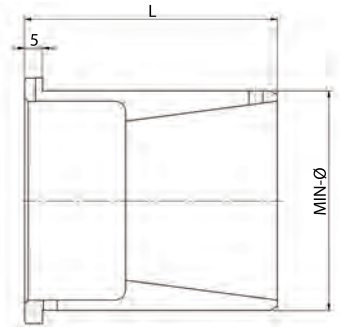
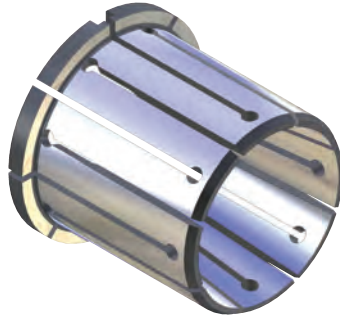


Tool group C18

Type 255-02 **MFR** cartridge mandrel; **hand-operated with flanged seat**; for internal clamping consists of base bolt, clamping taper, adapter

	MFR 00	MFR 01	MFR 02	MFR 03	MFR 04	MFR 05	MFR 06
Cartridge Mandrel	1077700 ●	1077701 ●	1077702 ●	1077703 ●	1077704 ●	1077705 ●	1077706 ●
Base bolt	893800 ●	893801 ●	893802 ●	893803 ●	893804 ●	893805 ●	893806 ●
Clamping taper	650340 ●	650341 ●	650342 ●	650343 ●	650344 ●	650345 ●	650346 ●
Adapter hand-operated	893823 ●	893824 ●	893825 ●	893826 ●	893827 ●	893827 ●	893828 ●
Min-Ø unclamped from	14,2	19,7	25,2	35,2	40,2	50,2	60,7
Min-Ø unclamped to	19,7	25,2	35,2	40,2	50,2	60,7	70,7
Clamping-Ø max,	20,2	25,7	35,7	40,7	50,7	61,2	71,7
External-Ø A	100	100	100	100	130	130	130
Pitch diameter B	75	75	75	75	105	105	105
Pitch diameter C	85	85	85	85	114	114	114
Ø D	50	50	50	50	78	78	78
Ø E	70	70	70	70	98	98	98
Ø F	M10	M10	M10	M10	M10	M10	M10
S	21	27	27	27	42	42	57
V	21	21	21	21	21	21	21
W	33	33	33	33	33	33	33
X	39	39	39	39	41	41	41
Y	50	52	52	52	54	54	54
Z	71	79	79	79	96	96	111

## Accessories KFR / MFR



Tool group A 18

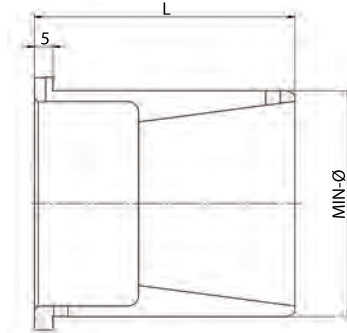
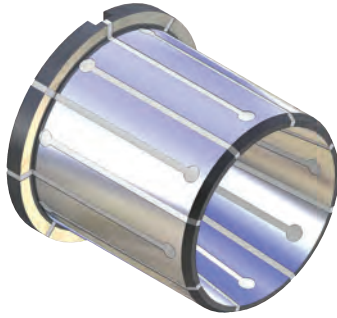
Type 255-50 Clamping sleeve Type R - standard design; (not vulcanized)

	00	01	02	03	04	05	06	07	08	09	10	11	12
For size	00	01	02	03	04	05	06	07	08	09	10	11	12
Expansion in Ø	0,5	0,5	0,5	0,5	0,5	0,5	1	1	1	1	1	1	1
Total length	32	40	40	40	55	55	70	70	70	78	78	78	78
Min-Ø	14,2	19,7	25,2	35,2	40,2	50,2	60,7	70,7	80,7	100,7	100,7	110,7	120,7
<b>Clamping sleeve</b>	<b>1015500</b>	<b>1015513</b>	<b>1015526</b>	<b>1015548</b>	<b>1015560</b>	<b>1015582</b>	<b>1015605</b>	<b>1015617</b>	<b>1015629</b>	<b>1015651</b>	<b>1015653</b>	<b>1015665</b>	<b>1015677</b>
Work stop	893830	893836	893842	893852	893857	893867	893878	893888	893897	893916	893917	893927	893937
Min-Ø	14,7	20,2	25,7	35,7	40,7	50,7	61,7	71,7	81,7	90,7	101,7	111,7	121,7
<b>Clamping sleeve</b>	<b>1015501</b>	<b>1015514</b>	<b>1015527</b>	<b>1015549</b>	<b>1015561</b>	<b>1015583</b>	<b>1015606</b>	<b>1015618</b>	<b>1015630</b>	<b>1015641</b>	<b>1015654</b>	<b>1015666</b>	<b>1015678</b>
Work stop	893830	893836	893842	893852	893857	893867	893879	893889	893898	893907	893918	893928	893938
Min-Ø	15,2	20,7	26,2	36,2	41,2	51,2	62,7	72,7	82,7	91,7	102,7	112,7	122,7
<b>Clamping sleeve</b>	<b>1015502</b>	<b>1015515</b>	<b>1015528</b>	<b>1015550</b>	<b>1015562</b>	<b>1015584</b>	<b>1015607</b>	<b>1015619</b>	<b>1015631</b>	<b>1015642</b>	<b>1015655</b>	<b>1015667</b>	<b>1015679</b>
Work stop	893830	893837	893842	893852	893857	893867	893880	893890	893899	893908	893919	893929	893939
Min-Ø	15,7	21,2	26,7	36,7	41,7	51,7	63,7	73,7	83,7	92,7	103,7	113,7	123,7
<b>Clamping sleeve</b>	<b>1015503</b>	<b>1015516</b>	<b>1015529</b>	<b>1015551</b>	<b>1015563</b>	<b>1015585</b>	<b>1015608</b>	<b>1015620</b>	<b>1015632</b>	<b>1015643</b>	<b>1015656</b>	<b>1015668</b>	<b>1015680</b>
Work stop	893831	893837	893843	893853	893858	893868	893881	893891	893900	893909	893920	893930	893940
Min-Ø	16,2	21,7	27,2	37,2	42,2	52,2	64,7	74,7	84,7	93,7	104,7	114,7	124,7
<b>Clamping sleeve</b>	<b>1015504</b>	<b>1015517</b>	<b>1015530</b>	<b>1015552</b>	<b>1015564</b>	<b>1015586</b>	<b>1015609</b>	<b>1015621</b>	<b>1015633</b>	<b>1015644</b>	<b>1015657</b>	<b>1015669</b>	<b>1015681</b>
Work stop	893831	893838	893843	893853	893858	893868	893882	893892	893901	893910	893921	893931	893941
Min-Ø	16,7	22,2	27,7	37,7	42,7	52,7	65,7	75,7	85,7	94,7	105,7	115,7	125,7
<b>Clamping sleeve</b>	<b>1015505</b>	<b>1015518</b>	<b>1015531</b>	<b>1015553</b>	<b>1015565</b>	<b>1015587</b>	<b>1015610</b>	<b>1015622</b>	<b>1015634</b>	<b>1015645</b>	<b>1015658</b>	<b>1015670</b>	<b>1015682</b>
Work stop	893832	893838	893844	893854	893859	893869	893883	893893	893902	893911	893922	893932	893942
Min-Ø	17,2	22,7	28,2	38,2	43,2	53,2	66,7	76,7	86,7	95,7	106,7	116,7	126,7
<b>Clamping sleeve</b>	<b>1015506</b>	<b>1015519</b>	<b>1015532</b>	<b>1015554</b>	<b>1015566</b>	<b>1015588</b>	<b>1015611</b>	<b>1015623</b>	<b>1015635</b>	<b>1015646</b>	<b>1015659</b>	<b>1015671</b>	<b>1015683</b>
Work stop	893832	893839	893844	893854	893859	893869	893884	893894	893903	893912	893923	893933	893943
Min-Ø	17,7	23,2	28,7	38,7	43,7	53,7	67,7	77,7	87,7	96,7	107,7	117,7	127,7
<b>Clamping sleeve</b>	<b>1015507</b>	<b>1015520</b>	<b>1015533</b>	<b>1015555</b>	<b>1015567</b>	<b>1015589</b>	<b>1015612</b>	<b>1015624</b>	<b>1015636</b>	<b>1015647</b>	<b>1015660</b>	<b>1015672</b>	<b>1015684</b>
Work stop	893833	893839	893845	893855	893860	893870	893885	893895	893904	893913	893924	893934	893944
Min-Ø	18,2	23,7	29,2	39,2	44,2	54,2	68,7	78,7	88,7	97,7	108,7	118,7	128,7
<b>Clamping sleeve</b>	<b>1015508</b>	<b>1015521</b>	<b>1015534</b>	<b>1015556</b>	<b>1015568</b>	<b>1015590</b>	<b>1015613</b>	<b>1015625</b>	<b>1015637</b>	<b>1015648</b>	<b>1015661</b>	<b>1015673</b>	<b>1015685</b>
Work stop	893833	893840	893845	893855	893860	893870	893886	893947	893905	893914	893925	893935	893945
Min-Ø	18,7	24,2	29,7	39,7	44,7	54,7	69,7	79,7	89,7	98,7	109,7	119,7	129,7
<b>Clamping sleeve</b>	<b>1015509</b>	<b>1015522</b>	<b>1015535</b>	<b>1015557</b>	<b>1015569</b>	<b>1015591</b>	<b>1015614</b>	<b>1015626</b>	<b>1015638</b>	<b>1015649</b>	<b>1015662</b>	<b>1015674</b>	<b>1015686</b>
Work stop	893834	893840	893846	893856	893861	893871	893887	893896	893906	893915	893926	893936	893946
Min-Ø	19,2	24,7	30,2	40,2	45,2	55,2	70,7	80,7	90,7	99,7	110,7	120,7	130,7
<b>Clamping sleeve</b>	<b>1015510</b>	<b>1015523</b>	<b>1015536</b>	<b>1015558</b>	<b>1015570</b>	<b>1015592</b>	<b>1015615</b>	<b>1015627</b>	<b>1015639</b>	<b>1015650</b>	<b>1015663</b>	<b>1015675</b>	<b>1015687</b>
Work stop	893834	893841	893846	893856	893861	893871	893887	893896	893906	893916	893926	893936	893946
Min-Ø	19,7	25,2	30,7		45,7	55,7							
<b>Clamping sleeve</b>	<b>1015511</b>	<b>1015524</b>	<b>1015537</b>		<b>1015571</b>	<b>1015593</b>							
Work stop	893835	893841	893847		893862	893872							
Min-Ø			31,2		46,2	56,2							
<b>Clamping sleeve</b>			<b>1015538</b>		<b>1015572</b>	<b>1015594</b>							
Work stop			893847		893862	893872							
Min-Ø			31,7		46,7	56,7							
<b>Clamping sleeve</b>			<b>1015539</b>		<b>1015573</b>	<b>1015595</b>							
Work stop			893848		893863	893873							
Min-Ø			32,2		47,2	57,2							
<b>Clamping sleeve</b>			<b>1015540</b>		<b>1015574</b>	<b>1015596</b>							
Work stop			893848		893863	893873							
Min-Ø			32,7		47,7	57,7							
<b>Clamping sleeve</b>			<b>1015541</b>		<b>1015575</b>	<b>1015597</b>							
Work stop			893849		893864	893874							
Min-Ø			33,2		48,2	58,2							
<b>Clamping sleeve</b>			<b>1015542</b>		<b>1015576</b>	<b>1015598</b>							
Work stop			893849		893864	893874							
Min-Ø			33,7		48,7	58,7							
<b>Clamping sleeve</b>			<b>1015543</b>		<b>1015577</b>	<b>1015599</b>							
Work stop			893850		893865	893875							
Min-Ø			34,2		49,2	59,2							
<b>Clamping sleeve</b>			<b>1015544</b>		<b>1015578</b>	<b>1015600</b>							
Work stop			893850		893865	893875							
Min-Ø			34,7		49,7	59,7							
<b>Clamping sleeve</b>			<b>1015545</b>		<b>1015579</b>	<b>1015601</b>							
Work stop			893851		893866	893876							
Min-Ø			35,2		50,2	60,2							
<b>Clamping sleeve</b>			<b>1015546</b>		<b>1015580</b>	<b>1015602</b>							
Work stop			893851		893866	893876							
Min-Ø						60,7							
<b>Clamping sleeve</b>						<b>1015603</b>							
Work stop						893877							

Different chucking Ø and profiled clamping sleeves on request



## Accessories KFR / MFR



Tool group A 18

Type 255-55 Clamping sleeve Type R - vulcanized

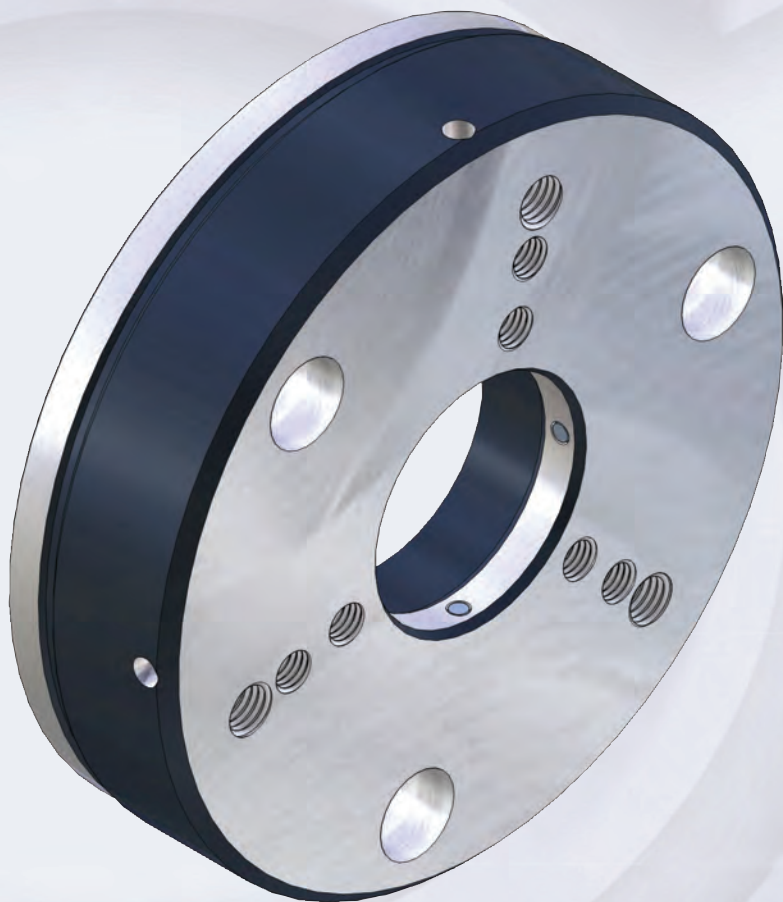
For size	00	01	02	03	04	05	06	07	08	09	10	11	12
Expansion in Ø	0,5	0,5	0,5	0,5	0,5	0,5	1	1	1	1	1	1	1
Total length	32	40	40	40	55	55	70	70	70	78	78	78	78
Min-Ø	14,2	19,7	25,2	35,2	40,2	50,2	60,7	70,7	80,7	100,7	100,7	110,7	120,7
<b>Clamping sleeve</b>	<b>1015700</b> ●	<b>1015713</b> ●	<b>1015726</b> ▲	<b>1015748</b> ●	<b>1015760</b> ▲	<b>1015782</b> ▲	<b>1015805</b> ▲	<b>1015817</b> ▲	<b>1015829</b> ▲	<b>1015851</b> ▲	<b>1015853</b> ▲	<b>1015865</b> ▲	<b>1015877</b> ▲
Work stop	893830 ●	893836 ●	893842 ●	893852 ●	893857 ●	893867 ●	893878 ●	893888 ●	893897 ●	893916 ●	893917 ●	893927 ●	893937 ●
Min-Ø	14,7	20,2	25,7	35,7	40,7	50,7	61,7	71,7	81,7	90,7	101,7	111,7	121,7
<b>Clamping sleeve</b>	<b>1015701</b> ●	<b>1015714</b> ●	<b>1015727</b> ●	<b>1015749</b> ▲	<b>1015761</b> ●	<b>1015783</b> ●	<b>1015806</b> ▲	<b>1015818</b> ▲	<b>1015830</b> ▲	<b>1015841</b> ▲	<b>1015854</b> ▲	<b>1015866</b> ▲	<b>1015878</b> ▲
Work stop	893830 ●	893836 ●	893842 ●	893852 ●	893857 ●	893867 ●	893879 ●	893889 ●	893898 ●	893907 ●	893918 ●	893928 ●	893938 ●
Min-Ø	15,2	20,7	26,2	36,2	41,2	51,2	62,7	72,7	82,7	91,7	102,7	112,7	122,7
<b>Clamping sleeve</b>	<b>1015702</b> ●	<b>1015715</b> ●	<b>1015728</b> ▲	<b>1015750</b> ●	<b>1015762</b> ●	<b>1015784</b> ●	<b>1015807</b> ▲	<b>1015819</b> ▲	<b>1015831</b> ▲	<b>1015842</b> ▲	<b>1015855</b> ▲	<b>1015867</b> ▲	<b>1015879</b> ▲
Work stop	893830 ●	893837 ●	893842 ●	893852 ●	893857 ●	893867 ●	893880 ●	893890 ●	893899 ●	893908 ●	893919 ●	893929 ●	893939 ●
Min-Ø	15,7	21,2	26,7	36,7	41,7	51,7	63,7	73,7	83,7	92,7	103,7	113,7	123,7
<b>Clamping sleeve</b>	<b>1015703</b> ●	<b>1015716</b> ●	<b>1015729</b> ●	<b>1015751</b> ●	<b>1015763</b> ●	<b>1015785</b> ●	<b>1015808</b> ▲	<b>1015820</b> ▲	<b>1015832</b> ▲	<b>1015843</b> ▲	<b>1015856</b> ▲	<b>1015868</b> ▲	<b>1015880</b> ▲
Work stop	893831 ●	893837 ●	893843 ●	893853 ●	893858 ●	893868 ●	893881 ●	893891 ●	893900 ●	893909 ●	893920 ●	893930 ●	893940 ●
Min-Ø	16,2	21,7	27,2	37,2	42,2	52,2	64,7	74,7	84,7	93,7	104,7	114,7	124,7
<b>Clamping sleeve</b>	<b>1015704</b> ●	<b>1015717</b> ●	<b>1015730</b> ●	<b>1015752</b> ▲	<b>1015764</b> ●	<b>1015786</b> ▲	<b>1015809</b> ▲	<b>1015821</b> ▲	<b>1015833</b> ▲	<b>1015844</b> ▲	<b>1015857</b> ▲	<b>1015869</b> ▲	<b>1015881</b> ▲
Work stop	893831 ●	893837 ●	893843 ●	893853 ●	893858 ●	893868 ●	893882 ●	893892 ●	893901 ●	893910 ●	893921 ●	893931 ●	893941 ●
Min-Ø	16,7	22,2	27,7	37,7	42,7	52,7	65,7	75,7	85,7	94,7	105,7	115,7	125,7
<b>Clamping sleeve</b>	<b>1015705</b> ●	<b>1015718</b> ●	<b>1015731</b> ●	<b>1015753</b> ●	<b>1015765</b> ●	<b>1015787</b> ▲	<b>1015810</b> ▲	<b>1015822</b> ▲	<b>1015834</b> ▲	<b>1015845</b> ▲	<b>1015858</b> ▲	<b>1015870</b> ▲	<b>1015882</b> ▲
Work stop	893832 ●	893838 ●	893844 ●	893854 ●	893859 ●	893869 ●	893883 ●	893893 ●	893902 ●	893911 ●	893922 ●	893932 ●	893942 ●
Min-Ø	17,2	22,7	28,2	38,2	43,2	53,2	66,7	76,7	86,7	95,7	106,7	116,7	126,7
<b>Clamping sleeve</b>	<b>1015706</b> ●	<b>1015719</b> ●	<b>1015732</b> ●	<b>1015754</b> ●	<b>1015766</b> ●	<b>1015788</b> ▲	<b>1015811</b> ▲	<b>1015823</b> ▲	<b>1015835</b> ▲	<b>1015846</b> ▲	<b>1015859</b> ▲	<b>1015871</b> ▲	<b>1015883</b> ▲
Work stop	893832 ●	893838 ●	893844 ●	893854 ●	893859 ●	893869 ●	893884 ●	893894 ●	893903 ●	893912 ●	893923 ●	893933 ●	893943 ●
Min-Ø	17,7	23,2	28,7	38,7	43,7	53,7	67,7	77,7	87,7	96,7	107,7	117,7	127,7
<b>Clamping sleeve</b>	<b>1015707</b> ●	<b>1015720</b> ●	<b>1015733</b> ▲	<b>1015755</b> ●	<b>1015767</b> ●	<b>1015789</b> ▲	<b>1015812</b> ▲	<b>1015824</b> ▲	<b>1015836</b> ▲	<b>1015847</b> ▲	<b>1015860</b> ▲	<b>1015872</b> ▲	<b>1015884</b> ▲
Work stop	893833 ●	893839 ●	893845 ●	893855 ●	893860 ●	893870 ●	893885 ●	893895 ●	893904 ●	893913 ●	893924 ●	893934 ●	893944 ●
Min-Ø	18,2	23,7	29,2	39,2	44,2	54,2	68,7	78,7	88,7	97,7	108,7	118,7	128,7
<b>Clamping sleeve</b>	<b>1015708</b> ●	<b>1015721</b> ●	<b>1015734</b> ●	<b>1015756</b> ●	<b>1015768</b> ●	<b>1015790</b> ▲	<b>1015813</b> ▲	<b>1015825</b> ▲	<b>1015837</b> ▲	<b>1015848</b> ▲	<b>1015861</b> ▲	<b>1015873</b> ▲	<b>1015885</b> ▲
Work stop	893833 ●	893839 ●	893845 ●	893855 ●	893860 ●	893870 ●	893886 ●	893947 ●	893905 ●	893914 ●	893925 ●	893935 ●	893945 ●
Min-Ø	18,7	24,2	29,7	39,7	44,7	54,7	69,7	79,7	89,7	98,7	109,7	119,7	129,7
<b>Clamping sleeve</b>	<b>1015709</b> ●	<b>1015722</b> ●	<b>1015735</b> ●	<b>1015757</b> ●	<b>1015769</b> ●	<b>1015791</b> ▲	<b>1015814</b> ▲	<b>1015826</b> ▲	<b>1015838</b> ▲	<b>1015849</b> ▲	<b>1015862</b> ▲	<b>1015874</b> ▲	<b>1015886</b> ▲
Work stop	893834 ●	893840 ●	893846 ●	893856 ●	893861 ●	893871 ●	893887 ●	893896 ●	893906 ●	893915 ●	893926 ●	893936 ●	893946 ●
Min-Ø	19,2	24,7	30,2	40,2	45,2	55,2	70,7	80,7	90,7	99,7	110,7	120,7	130,7
<b>Clamping sleeve</b>	<b>1015710</b> ●	<b>1015723</b> ●	<b>1015736</b> ●	<b>1015758</b> ●	<b>1015770</b> ▲	<b>1015792</b> ▲	<b>1015815</b> ▲	<b>1015827</b> ▲	<b>1015839</b> ▲	<b>1015850</b> ▲	<b>1015863</b> ▲	<b>1015875</b> ▲	<b>1015887</b> ▲
Work stop	893834 ●	893840 ●	893846 ●	893856 ●	893861 ●	893871 ●	893887 ●	893896 ●	893906 ●	893916 ●	893926 ●	893936 ●	893946 ●
Min-Ø	19,7	25,2	30,7		45,7	55,7							
<b>Clamping sleeve</b>	<b>1015711</b> ●	<b>1015724</b> ●	<b>1015737</b> ●		<b>1015771</b> ▲	<b>1015793</b> ▲							
Work stop	893835 ●	893841 ●	893847 ●		893862 ●	893872 ●							
Min-Ø			31,2		46,2	56,2							
<b>Clamping sleeve</b>			<b>1015738</b> ●		<b>1015772</b> ▲	<b>1015794</b> ▲							
Work stop			893847 ●		893862 ●	893872 ●							
Min-Ø			31,7		46,7	56,7							
<b>Clamping sleeve</b>			<b>1015739</b> ●		<b>1015773</b> ●	<b>1015795</b> ▲							
Work stop			893848 ●		893863 ●	893873 ●							
Min-Ø			32,2		47,2	57,2							
<b>Clamping sleeve</b>			<b>1015740</b> ●		<b>1015774</b> ●	<b>1015796</b> ▲							
Work stop			893848 ●		893863 ●	893873 ●							
Min-Ø			32,7		47,7	57,7							
<b>Clamping sleeve</b>			<b>1015741</b> ●		<b>1015775</b> ●	<b>1015797</b> ▲							
Work stop			893849 ●		893864 ●	893874 ●							
Min-Ø			33,2		48,2	58,2							
<b>Clamping sleeve</b>			<b>1015742</b> ●		<b>1015776</b> ▲	<b>1015798</b> ▲							
Work stop			893849 ●		893864 ●	893874 ●							
Min-Ø			33,7		48,7	58,7							
<b>Clamping sleeve</b>			<b>1015743</b> ●		<b>1015777</b> ●	<b>1015799</b> ▲							
Work stop			893850 ●		893865 ●	893875 ●							
Min-Ø			34,2		49,2	59,2							
<b>Clamping sleeve</b>			<b>1015744</b> ●		<b>1015778</b> ●	<b>1015800</b> ▲							
Work stop			893850 ●		893865 ●	893875 ●							
Min-Ø			34,7		49,7	59,7							
<b>Clamping sleeve</b>			<b>1015745</b> ●		<b>1015779</b> ●	<b>1015801</b> ▲							
Work stop			893851 ●		893866 ●	893876 ●							
Min-Ø			35,2		50,2	60,2							
<b>Clamping sleeve</b>			<b>1015746</b> ●		<b>1015780</b> ●	<b>1015802</b> ▲							
Work stop			893851 ●		893866 ●	893876 ●							
Min-Ø						60,7							
<b>Clamping sleeve</b>						<b>1015803</b> ▲							
Work stop						893877 ●							

Different chucking Ø and profiled clamping sleeves on request

● from stock    ▲ 4 - 6 weeks    ▲ on request

## Intermediate Adaptor Plates for KFR/MFR

For KFR (255-00) and KFS (253-00)



**Application:**

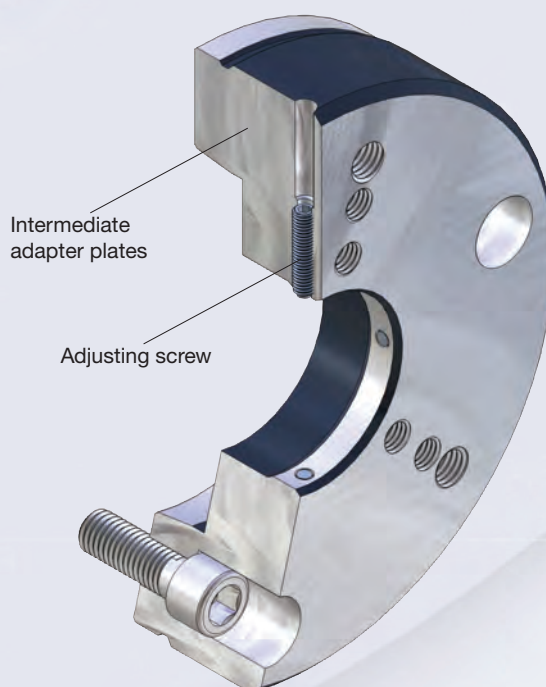
Adaption of cartridge mandrel KFR or KFS- on spindle nose DIN 55021/55022/55026 and 55027.

**Special features:**

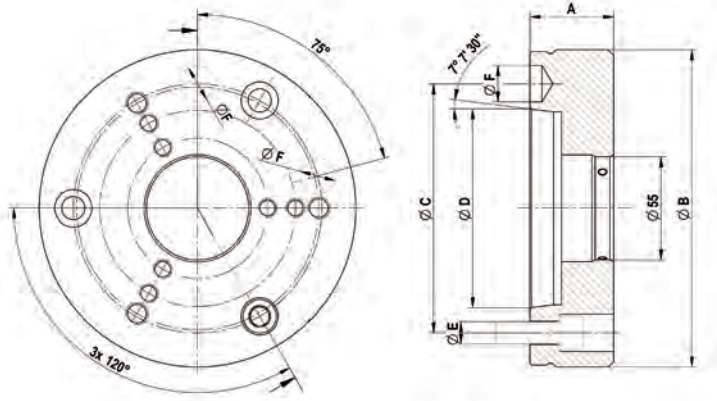
Adaption of cartridge mandrel KFR (255-00) and KFS (253-00) on spindle nose, with or without adjusting screws, with or without grommet of air-sensing. Design ISO 702-1 (DIN 55028-A) or ISO 702-3 (DIN 55028-C), in sizes No.5, No.6, No.8, No.11 or No.5, No.6, No.8 (A5, A6, A8, A11 or C5, C6, C8).

**Customer advantage:**

By changing the intermediate flange a cartridge mandrel can be entered on different machines.



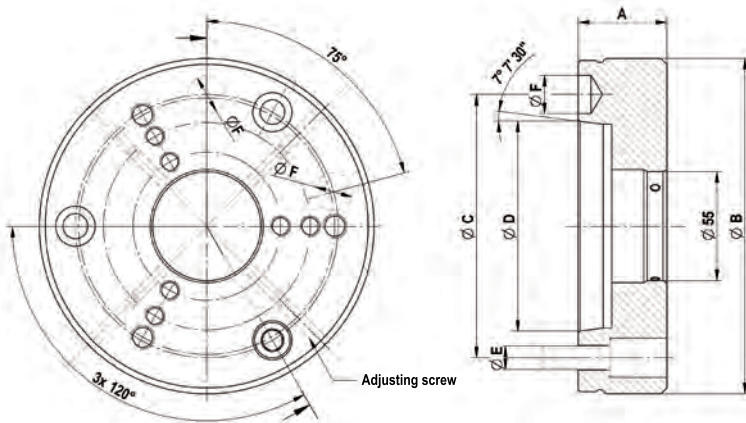
# Accessories KFR / MFR



Tool group A 18

Type 255-91 **Intermediate adapter ISO 702-1 (DIN 55026/55021); without adjusting screws**

	No. 5 (A 05)	No. 6 (A 06)	No. 8 (A 08)	No. 11 (A 11)
<b>Intermediate flange</b>	<b>893975</b> ●	<b>893976</b> ●	<b>893977</b> ●	<b>893978</b> ▲
Design	without air-sensing	without air-sensing	without air-sensing	without air-sensing
Mount-Ø 55	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001
A	45	45	50	50
Ø B	165	170	220	282
Ø C	104,8	133,4	171,4	235
Ø D	82,563	106,375	139,719	196,869
Ø E	M10	M12	M16	M20
Ø F	16,3	19,45	24,2	29,4

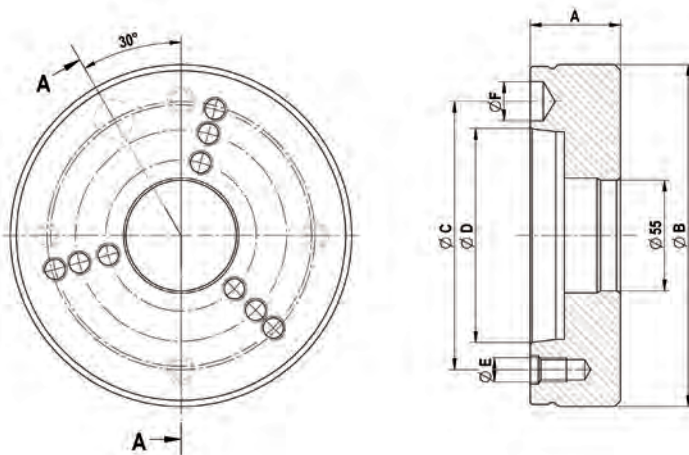


Tool group A 18

Type 255-92 **Intermediate adapter ISO 702-1 (DIN 55026/55021) with adjusting screw**

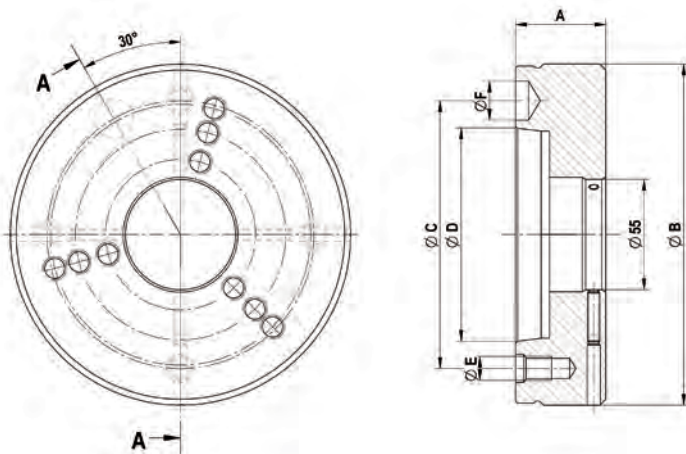
	No. 5 (A 05)	No. 6 (A 06)	No. 8 (A 08)
<b>Intermediate flange</b>	<b>893979</b> ●	<b>893980</b> ●	<b>893981</b> ●
Design	without air-sensing	without air-sensing	without air-sensing
Mount-Ø 55	+0,05/+0,04	+0,05/+0,04	+0,05/+0,04
A	45	45	50
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M10	M12	M16
Ø F	16,3	19,45	24,2

# Accessories KFR / MFR



Tool group A 18  
Type 255-93 Intermediate adapter ISO 702-3 (DIN 55027/55022) without adjusting screws

	No. 5 (C 05)	No. 6 (C 06)	No. 8 (C 08)
<b>Intermediate flange</b>	<b>893982</b> ●	<b>893983</b> ●	<b>893984</b> ▲
Design	without air-sensing	without air-sensing	without air-sensing
Mount-Ø 55	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001
A	45	45	50
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M 10	M 12	M 16
Ø F	16,3	19,45	24,2



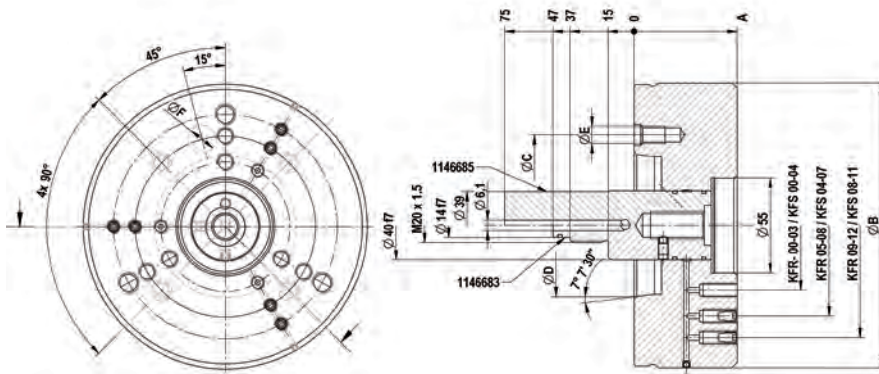
Tool group A 18  
Type 255-94 Intermediate adapter ISO 702-3 (DIN 55027/55022) with adjusting screws

	No. 5 (C 05)	No. 6 (C 06)	No. 8 (C 08)
<b>Intermediate flange</b>	<b>893985</b> ▲	<b>893986</b> ▲	<b>893987</b> ■
Design	without air-sensing	without air-sensing	without air-sensing
Mount-Ø 55	+0,05/+0,04	+0,05/+0,04	+0,05/+0,04
A	45	45	50
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M 10	M 12	M 16
Ø F	16,3	19,45	24,2





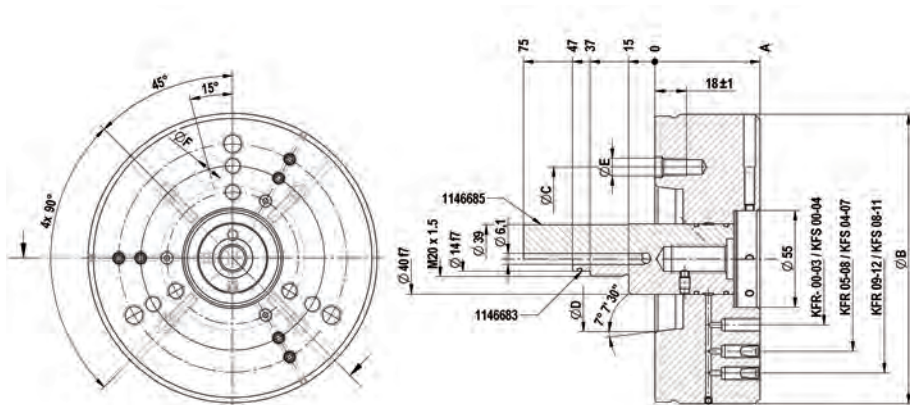
# Accessories KFR / MFR



Tool group C18

Type 255-97 **Intermediate adapter** ISO 702-3 (DIN 55027/55022) **without adjusting screws**

	No. 5 (C 05)	No. 6 (C 06)	No. 8 (C 08)
<b>Intermediate flange</b>	<b>1160030 ▲</b>	<b>1160031 ▲</b>	<b>1160032 ▲</b>
Design	with air-sensing	with air-sensing	with air-sensing
Mount-Ø 55	+0,003/+0,001	+0,003/+0,001	+0,003/+0,001
A	60	60	60
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M10	M12	M16
Ø F	16,3	19,45	24,2
<b>Draw piece for air-sensing</b>	<b>1146683</b>	<b>1146683</b>	<b>1146683</b>
<b>Raw draw piece for air-sensing</b>	<b>1146685</b>	<b>1146685</b>	<b>1146685</b>



Tool group C18

Type 255-98 **Intermediate adapter** ISO 702-3 (DIN 55027/55022) **with adjusting screws**

	No. 5 (C 05)	No. 6 (C 06)	No. 8 (C 08)
<b>Intermediate flange</b>	<b>1160033 ▲</b>	<b>1160034 ▲</b>	<b>1160035 ▲</b>
Design	with air-sensing	with air-sensing	with air-sensing
Mount-Ø 55	+0,05/+0,04	+0,05/+0,04	+0,05/+0,04
A	60	60	60
Ø B	165	170	220
Ø C	104,8	133,4	171,4
Ø D	82,563	106,375	139,719
Ø E	M10	M12	M16
Ø F	16,3	19,45	24,2
<b>Draw piece for air-sensing</b>	<b>1146683</b>	<b>1146683</b>	<b>1146683</b>
<b>Raw draw piece for air-sensing</b>	<b>1146685</b>	<b>1146685</b>	<b>1146685</b>





## KFR / MFR



► **Cartridge mandrel KFR clamping Ø45mm**

**Application:**

Turning a pressed part.

Power-assisted operation of the cartridge mandrel using the pull rod.

The clamping mandrel is designed for different workpieces. Hard stop with damping ring, air system control and ejector.

**Customer advantage:**

- Easy retrofitting to other clamping diameters by changing the clamping sleeve and/or hard stop
- Radial run-out accuracy of 0.01 mm



► **Cartridge mandrel KFR clamping ØTK-Ø90mm**

**Application:**

Turning.

Power-operated cartridge mandrel with toothed clamping sleeve to clamp in the tooth flanks.

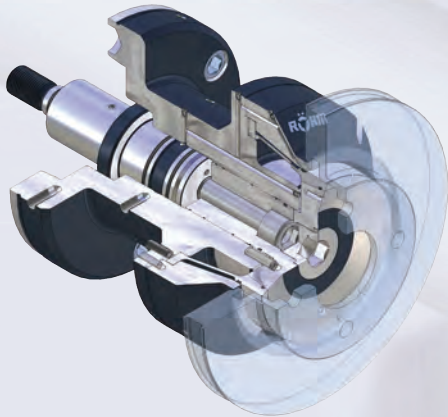
Collet with rapid exchange system.

**Customer advantage:**

- Radial run-out accuracy for tooth gearing
- Radial run-out accuracy of 0.03mm



KFR / MFR



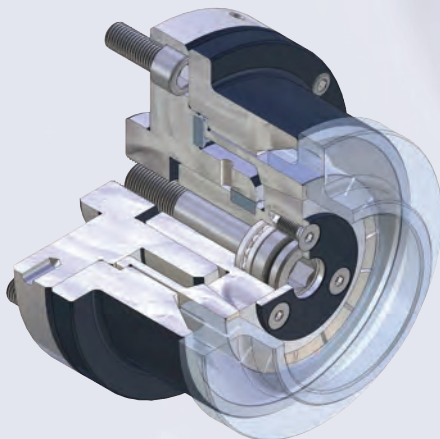
► **Cartridge mandrel KFR clamping Ø136mm**

**Application:**

- Turning brake discs.
- Power-assisted operation of the clamping sleeve using the pull rod.
- Sealed to protect against chips.
- Hard stop with air system control.

**Customer advantage:**

- Sturdy design of the clamping mandrel
- Radial run-out accuracy of 0.02mm



► **Cartridge mandrel MFR clamping Ø88mm**

**Application:**

- Milling/drilling for stationary use on clamping devices.
- Special version of manually-operated cartridge mandrel.
- Operation takes place using the hexagon socket.

**Customer advantage:**

- Simple operation due to the light bearings
- Radial run-out accuracy of 0.015mm

**Power-operated cartridge mandrel with flanged seat, for internal clamping**



**Application:**

Turning, milling, grinding, drilling, measuring.

**Special features:**

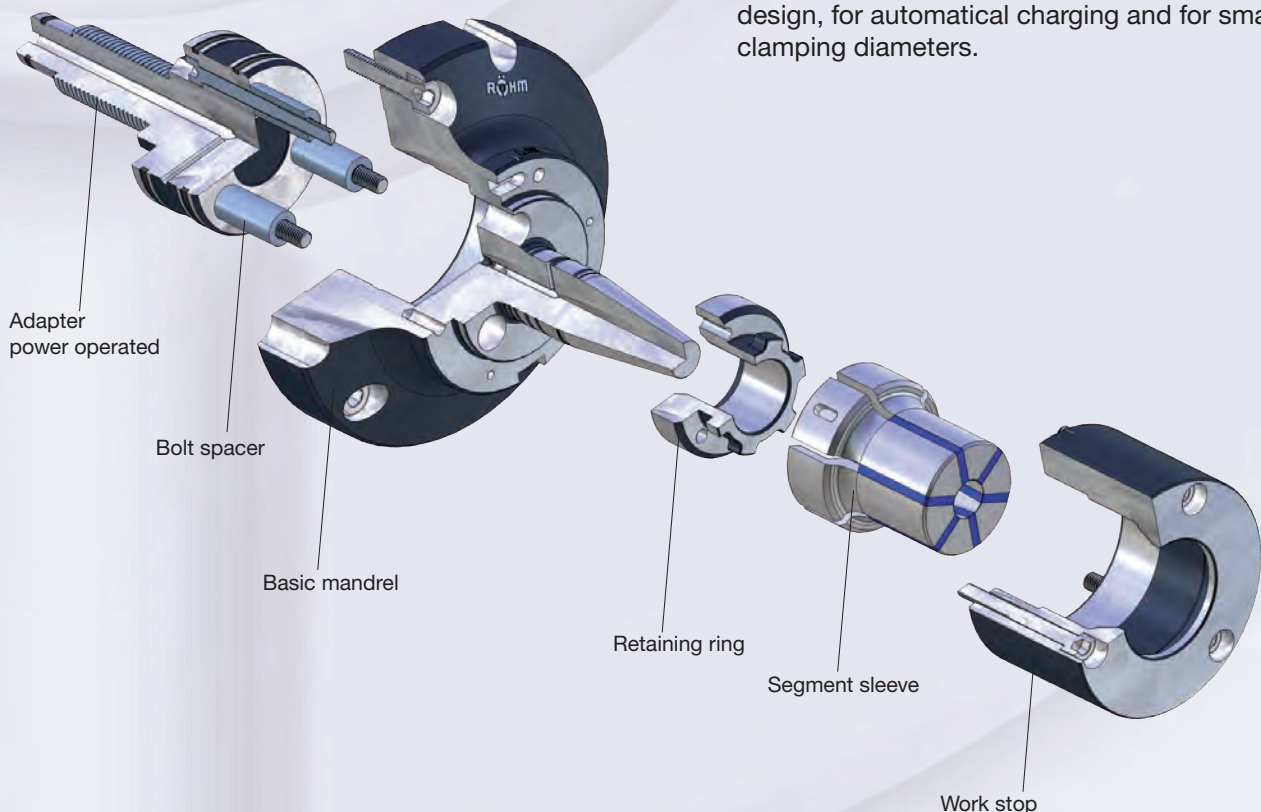
For a very small clamping diameter from Ø10mm, steady clamping by axial draw-in. The draw-in of the work-pieces against the rigid work-stop takes place independently via the operation of the mandrels. Quick change of the taper sleeves possible. For short span length.

**Technical features:**

- High accuracy up to a maximal concentricity tolerance of 0,01mm,
- Power-operated,
- High clamping-accuracy for repetitions,
- Hardened (clamping-) segments (grade >60HRC),
- Hardened guides,
- Precise guide of the clamping sleeve on the clamping mandrel,
- Compatible intermediate flanges Type 269-90 resp. 267-20.

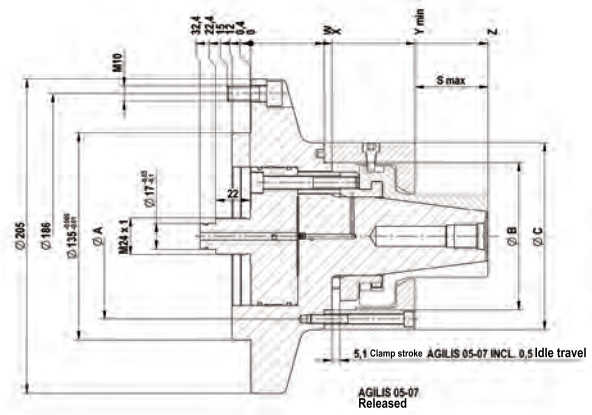
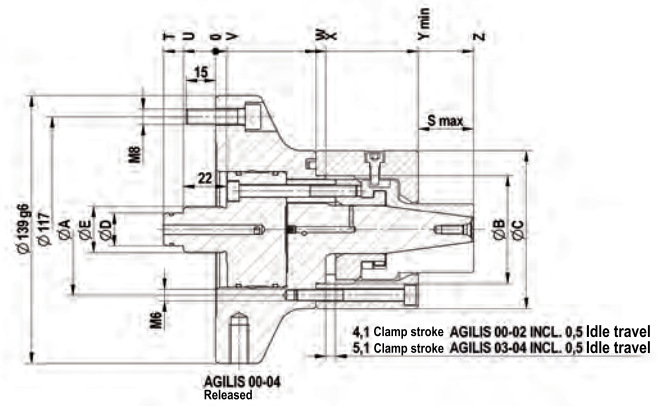
**Customer advantage:**

Little weight and little height by compact design, for automatical charging and for small clamping diameters.





You will find the product video AGILIS on our Youtube-Channel Röhm TV



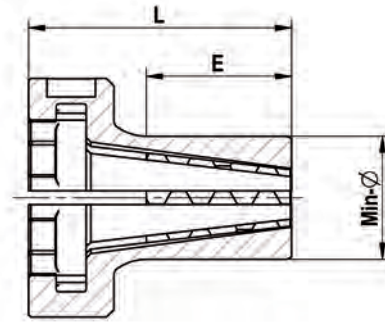
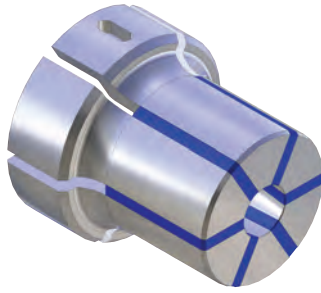
Tool group A 18

Type 296-00 **AGILIS** Segment clamping mandrel; **power-operated with flanged seat**; for internal clamping

	AGILIS 00	AGILIS 01	AGILIS 02	AGILIS 03	AGILIS 04	AGILIS 05	AGILIS 06	AGILIS 07
Segment clamping mandrel	1180000 ●	1180001 ●	1180002 ●	1180003 ●	1180004 ●	1180005 ●	1180006 ●	1180007 ●
Basic mandrel	1180010 ■	1180011 ■	1180012 ■	1180013 ■	1180014 ■	1180015 ■	1180016 ■	1180017 ■
Adapter power operated	1180030 ■	1180030 ■	1180032 ■	1180032 ■	1180034 ■	1180035 ■	1180036 ■	1180037 ■
Bolt spacer	1180060 ■	1180060 ■	1180062 ■	1180063 ■	1180064 ■	1180065 ■	1180066 ■	1180066 ■
Retaining ring	1180050 ■	1180050 ■	1180052 ■	1180052 ■	1180054 ■	1180055 ■	1180056 ■	1180057 ■
F max, in kN	5	7,5	15	20	25	30	35	35
Max, total clamping force approx, kN	26	39	79	85	106	127	149	149
Min-Ø unclamped from	9,7	13,7	18,7	26,7	36,7	53,7	71,7	94,7
Min-Ø unclamped to	15,7	24,7	34,7	44,7	64,7	84,7	104,7	129,7
Pitch diameter A	54	54	69	69	88	108	127	152
Guide diameter B	42	42	56	56	75	96	114	135
Ø C	68	68	82	82	101	122	140	169
Ø D	12	12	17	17	17	-	-	-
Ø E	M 16	M 16	M 24x1	M 24x1	M 24x1	-	-	-
S max,	16,8	18,8	23,8	28,1	42,1	46,1	57,1	67,1
T	27,7	27,7	25,4	26,4	26,4	-	-	-
U	17,7	17,7	15,4	16,4	16,4	-	-	-
V	4,3	4,3	6,6	5,6	5,6	-	-	-
W	41,5	41,5	52	51	52	47	49	49
X	46,5	46,5	57,2	56	57	52	54	54
Y min,	80	80	103	103	108	105	109	109
Z	96,8	98,8	126,8	131,1	150,1	151,1	166,1	176,1



## Accessories AGILIS



Tool group C18

Type 296-55 **Segment clamping sleeves AGILIS**

	AGILIS 00	AGILIS 01	AGILIS 02	AGILIS 03	AGILIS 04	AGILIS 05	AGILIS 06	AGILIS 07
Expansion in Ø	0,6	0,6	0,6	1,2	1,2	1,2	1,2	1,2
Total length	38	40	52,5	57	76	82	95	105
Min-Ø	9,7	13,7	18,7	26,7	36,7	53,7	71,7	94,7
<b>Segment sleeve</b>	<b>1180100</b> ●	<b>1180120</b> ●	<b>1180140</b> ●	<b>1180170</b> ■	<b>1180190</b> ●	<b>1180220</b> ■	<b>1180250</b> ■	<b>1180290</b> ■
Work stop	1180400 ■	1180420 ■	1180440 ■	1180470 ■	1180490 ■	1180520 ■	1180550 ■	1180590 ■
Min-Ø	10,2	14,2	19,2	27,7	37,7	54,7	72,7	95,7
<b>Segment sleeve</b>	<b>1180101</b> ●	<b>1180121</b> ●	<b>1180141</b> ●	<b>1180171</b> ●	<b>1180191</b> ●	<b>1180221</b> ■	<b>1180251</b> ■	<b>1180291</b> ■
Work stop	1180401 ■	1180421 ■	1180441 ■	1180471 ■	1180491 ■	1180521 ■	1180551 ■	1180591 ■
Min-Ø	10,7	14,7	19,7	28,7	38,7	55,7	73,7	96,7
<b>Segment sleeve</b>	<b>1180102</b> ●	<b>1180122</b> ●	<b>1180142</b> ●	<b>1180172</b> ●	<b>1180192</b> ●	<b>1180222</b> ■	<b>1180252</b> ■	<b>1180292</b> ■
Work stop	1180402 ■	1180422 ■	1180442 ■	1180472 ■	1180492 ■	1180522 ■	1180552 ■	1180592 ■
Min-Ø	11,2	15,2	20,2	29,7	39,7	56,7	74,7	97,7
<b>Segment sleeve</b>	<b>1180103</b> ●	<b>1180123</b> ●	<b>1180143</b> ●	<b>1180173</b> ●	<b>1180193</b> ●	<b>1180223</b> ■	<b>1180253</b> ■	<b>1180293</b> ■
Work stop	1180403 ■	1180423 ■	1180443 ■	1180473 ■	1180493 ■	1180523 ■	1180553 ■	1180593 ■
Min-Ø	11,7	15,7	20,7	30,7	40,7	57,7	75,7	98,7
<b>Segment sleeve</b>	<b>1180104</b> ●	<b>1180124</b> ●	<b>1180144</b> ●	<b>1180174</b> ●	<b>1180194</b> ●	<b>1180224</b> ■	<b>1180254</b> ■	<b>1180294</b> ■
Work stop	1180404 ■	1180424 ■	1180444 ■	1180474 ■	1180494 ■	1180524 ■	1180554 ■	1180594 ■
Min-Ø	12,2	16,2	21,2	31,7	41,7	58,7	76,7	99,7
<b>Segment sleeve</b>	<b>1180105</b> ●	<b>1180125</b> ●	<b>1180145</b> ●	<b>1180175</b> ●	<b>1180195</b> ●	<b>1180225</b> ■	<b>1180255</b> ■	<b>1180295</b> ■
Work stop	1180405 ■	1180425 ■	1180445 ■	1180475 ■	1180495 ■	1180525 ■	1180555 ■	1180595 ■
Min-Ø	12,7	16,7	21,7	32,7	42,7	59,7	77,7	100,7
<b>Segment sleeve</b>	<b>1180106</b> ●	<b>1180126</b> ●	<b>1180146</b> ●	<b>1180176</b> ●	<b>1180196</b> ●	<b>1180226</b> ■	<b>1180256</b> ■	<b>1180296</b> ■
Work stop	1180406 ■	1180426 ■	1180446 ■	1180476 ■	1180496 ■	1180526 ■	1180556 ■	1180596 ■
Min-Ø	13,2	17,2	22,2	33,7	43,7	60,7	78,7	101,7
<b>Segment sleeve</b>	<b>1180107</b> ●	<b>1180127</b> ●	<b>1180147</b> ●	<b>1180177</b> ●	<b>1180197</b> ●	<b>1180227</b> ■	<b>1180257</b> ■	<b>1180297</b> ▲
Work stop	1180407 ■	1180427 ■	1180447 ■	1180477 ■	1180497 ■	1180527 ■	1180557 ■	1180597 ■
Min-Ø	13,7	17,7	22,7	34,7	44,7	61,7	79,7	102,7
<b>Segment sleeve</b>	<b>1180108</b> ●	<b>1180128</b> ●	<b>1180148</b> ●	<b>1180178</b> ●	<b>1180198</b> ●	<b>1180228</b> ■	<b>1180258</b> ■	<b>1180298</b> ▲
Work stop	1180408 ■	1180428 ■	1180448 ■	1180478 ■	1180498 ■	1180528 ■	1180558 ■	1180598 ■
Min-Ø	14,2	18,2	23,2	35,7	45,7	62,7	80,7	103,7
<b>Segment sleeve</b>	<b>1180109</b> ●	<b>1180129</b> ●	<b>1180149</b> ●	<b>1180179</b> ●	<b>1180199</b> ●	<b>1180229</b> ■	<b>1180259</b> ■	<b>1180299</b> ▲
Work stop	1180409 ■	1180429 ■	1180449 ■	1180479 ■	1180499 ■	1180529 ■	1180559 ■	1180599 ■
Min-Ø	14,7	18,7	23,7	36,7	46,7	63,7	81,7	104,7
<b>Segment sleeve</b>	<b>1180110</b> ●	<b>1180130</b> ●	<b>1180150</b> ●	<b>1180180</b> ●	<b>1180200</b> ●	<b>1180230</b> ■	<b>1180260</b> ■	<b>1180300</b> ▲
Work stop	1180410 ■	1180430 ■	1180450 ■	1180480 ■	1180500 ■	1180530 ■	1180560 ■	1180600 ■
Min-Ø	15,2	19,2	24,2	37,7	47,7	64,7	82,7	105,7
<b>Segment sleeve</b>	<b>1180111</b> ●	<b>1180131</b> ●	<b>1180151</b> ●	<b>1180181</b> ●	<b>1180201</b> ●	<b>1180231</b> ■	<b>1180261</b> ■	<b>1180301</b> ▲
Work stop	1180411 ■	1180431 ■	1180451 ■	1180481 ■	1180501 ■	1180531 ■	1180561 ■	1180601 ■
Min-Ø	15,7	19,7	24,7	38,7	48,7	65,7	83,7	106,7
<b>Segment sleeve</b>	<b>1180112</b> ●	<b>1180132</b> ●	<b>1180152</b> ●	<b>1180182</b> ●	<b>1180202</b> ●	<b>1180232</b> ■	<b>1180262</b> ■	<b>1180302</b> ▲
Work stop	1180412 ■	1180432 ■	1180452 ■	1180482 ■	1180502 ■	1180532 ■	1180562 ■	1180602 ■
Min-Ø		20,2	25,2	39,7	49,7	66,7	84,7	107,7
<b>Segment sleeve</b>		<b>1180133</b> ●	<b>1180153</b> ●	<b>1180183</b> ●	<b>1180203</b> ●	<b>1180233</b> ■	<b>1180263</b> ■	<b>1180303</b> ▲
Work stop		1180433 ■	1180453 ■	1180483 ■	1180503 ■	1180533 ■	1180563 ■	1180603 ■
Min-Ø		20,7	25,7	40,7	50,7	67,7	85,7	108,7
<b>Segment sleeve</b>		<b>1180134</b> ●	<b>1180154</b> ●	<b>1180184</b> ●	<b>1180204</b> ●	<b>1180234</b> ■	<b>1180264</b> ■	<b>1180304</b> ▲
Work stop		1180434 ■	1180454 ■	1180484 ■	1180504 ■	1180534 ■	1180564 ■	1180604 ■
Min-Ø		21,2	26,2	41,7	51,7	68,7	86,7	109,7
<b>Segment sleeve</b>		<b>1180135</b> ●	<b>1180155</b> ●	<b>1180185</b> ●	<b>1180205</b> ●	<b>1180235</b> ■	<b>1180265</b> ■	<b>1180305</b> ▲
Work stop		1180435 ■	1180455 ■	1180485 ■	1180505 ■	1180535 ■	1180565 ■	1180605 ■
Min-Ø		21,7	26,7	42,7	52,7	69,7	87,7	110,7
<b>Segment sleeve</b>		<b>1180136</b> ●	<b>1180156</b> ●	<b>1180186</b> ●	<b>1180206</b> ●	<b>1180236</b> ■	<b>1180266</b> ■	<b>1180306</b> ▲
Work stop		1180436 ■	1180456 ■	1180486 ■	1180506 ■	1180536 ■	1180566 ■	1180606 ■



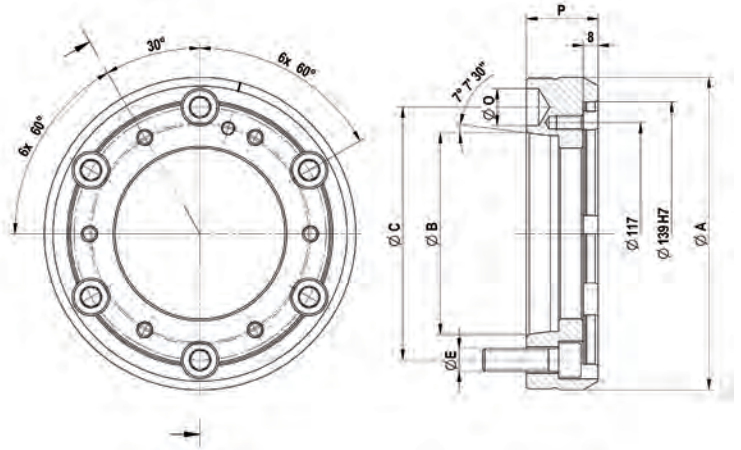
## Accessories AGILIS

Tool group C18

Type 296-55 Segment clamping sleeves AGILIS

	AGILIS 00	AGILIS 01	AGILIS 02	AGILIS 03	AGILIS 04	AGILIS 05	AGILIS 06	AGILIS 07
Expansion in Ø	0,6	0,6	0,6	1,2	1,2	1,2	1,2	1,2
Total length	38	40	52,5	57	76	82	95	105
Min-Ø		22,2	27,2	43,7	53,7	70,7	88,7	111,7
<b>Segment sleeve</b>		<b>1180137</b> ●	<b>1180157</b> ●	<b>1180187</b> ●	<b>1180207</b> ●	<b>1180237</b> ■	<b>1180267</b> ■	<b>1180307</b> ▲
Work stop		1180437 ■	1180457 ■	1180487 ■	1180507 ■	1180537 ■	1180567 ■	1180607 ■
Min-Ø		22,7	27,7	44,7	54,7	71,7	89,7	112,7
<b>Segment sleeve</b>		<b>1180138</b> ●	<b>1180158</b> ●	<b>1180188</b> ●	<b>1180208</b> ●	<b>1180238</b> ■	<b>1180268</b> ■	<b>1180308</b> ▲
Work stop		1180438 ■	1180458 ■	1180488 ■	1180508 ■	1180538 ■	1180568 ■	1180608 ■
Min-Ø		23,2	28,2		55,7	72,7	90,7	113,7
<b>Segment sleeve</b>		<b>1180139</b> ●	<b>1180159</b> ●		<b>1180209</b> ●	<b>1180239</b> ■	<b>1180269</b> ■	<b>1180309</b> ▲
Work stop		1180439 ■	1180459 ■		1180509 ■	1180539 ■	1180569 ■	1180609 ■
Min-Ø		23,7	28,7		56,7	73,7	91,7	114,7
<b>Segment sleeve</b>		<b>1180350</b> ▲	<b>1180160</b> ●		<b>1180210</b> ●	<b>1180240</b> ■	<b>1180270</b> ■	<b>1180310</b> ▲
Work stop		1180630 ■	1180460 ■		1180510 ■	1180540 ■	1180570 ■	1180610 ■
Min-Ø		24,2	29,2		57,7	74,7	92,7	115,7
<b>Segment sleeve</b>		<b>1180351</b> ▲	<b>1180161</b> ●		<b>1180211</b> ●	<b>1180241</b> ■	<b>1180271</b> ■	<b>1180311</b> ▲
Work stop		1180631 ■	1180461 ■		1180511 ■	1180541 ■	1180571 ■	1180611 ■
Min-Ø		24,7	29,7		58,7	75,7	93,7	116,7
<b>Segment sleeve</b>		<b>1180352</b> ▲	<b>1180162</b> ●		<b>1180212</b> ●	<b>1180242</b> ■	<b>1180272</b> ■	<b>1180312</b> ▲
Work stop		1180632 ■	1180462 ■		1180512 ■	1180542 ■	1180572 ■	1180612 ■
Min-Ø			30,2		59,7	76,7	94,7	117,7
<b>Segment sleeve</b>			<b>1180163</b> ●		<b>1180213</b> ●	<b>1180243</b> ■	<b>1180273</b> ■	<b>1180313</b> ▲
Work stop			1180463 ■		1180513 ■	1180543 ■	1180573 ■	1180613 ■
Min-Ø			30,7		60,7	77,7	95,7	118,7
<b>Segment sleeve</b>			<b>1180164</b> ●		<b>1180214</b> ●	<b>1180244</b> ■	<b>1180274</b> ■	<b>1180314</b> ▲
Work stop			1180464 ■		1180514 ■	1180544 ■	1180574 ■	1180614 ■
Min-Ø			31,2		61,7	78,7	96,7	119,7
<b>Segment sleeve</b>			<b>1180165</b> ●		<b>1180215</b> ●	<b>1180245</b> ■	<b>1180275</b> ■	<b>1180315</b> ▲
Work stop			1180465 ■		1180515 ■	1180545 ■	1180575 ■	1180615 ■
Min-Ø			31,7		62,7	79,7	97,7	120,7
<b>Segment sleeve</b>			<b>1180166</b> ●		<b>1180216</b> ●	<b>1180246</b> ■	<b>1180276</b> ■	<b>1180316</b> ▲
Work stop			1180466 ■		1180516 ■	1180546 ■	1180576 ■	1180616 ■
Min-Ø			32,2		63,7	80,7	98,7	121,7
<b>Segment sleeve</b>			<b>1180167</b> ●		<b>1180217</b> ●	<b>1180247</b> ■	<b>1180277</b> ■	<b>1180317</b> ▲
Work stop			1180467 ■		1180517 ■	1180547 ■	1180577 ■	1180617 ■
Min-Ø			32,7		64,7	81,7	99,7	122,7
<b>Segment sleeve</b>			<b>1180168</b> ●		<b>1180218</b> ●	<b>1180248</b> ■	<b>1180278</b> ■	<b>1180318</b> ▲
Work stop			1180468 ■		1180518 ■	1180548 ■	1180578 ■	1180618 ■
Min-Ø			33,2			82,7	100,7	123,7
<b>Segment sleeve</b>			<b>1180169</b> ●			<b>1180249</b> ■	<b>1180279</b> ■	<b>1180319</b> ▲
Work stop			1180469 ■			1180549 ■	1180579 ■	1180619 ■
Min-Ø			33,7			83,7	101,7	124,7
<b>Segment sleeve</b>			<b>1180360</b> ▲			<b>1180370</b> ▲	<b>1180280</b> ■	<b>1180320</b> ▲
Work stop			1180640 ■			1180650 ■	1180580 ■	1180620 ■
Min-Ø			34,2			84,7	102,7	125,7
<b>Segment sleeve</b>			<b>1180361</b> ▲			<b>1180371</b> ▲	<b>1180281</b> ■	<b>1180321</b> ▲
Work stop			1180641 ■			1180651 ■	1180581 ■	1180621 ■
Min-Ø			34,7				103,7	126,7
<b>Segment sleeve</b>			<b>1180362</b> ▲				<b>1180282</b> ■	<b>1180322</b> ▲
Work stop			1180642 ■				1180582 ■	1180622 ■
Min-Ø							104,7	127,7
<b>Segment sleeve</b>							<b>1180283</b> ■	<b>1180323</b> ▲
Work stop							1180583 ■	1180623 ■
Min-Ø								128,7
<b>Segment sleeve</b>								<b>1180324</b> ▲
Work stop								1180624 ■
Min-Ø								129,7
<b>Segment sleeve</b>								<b>1180325</b> ▲
Work stop								1180625 ■

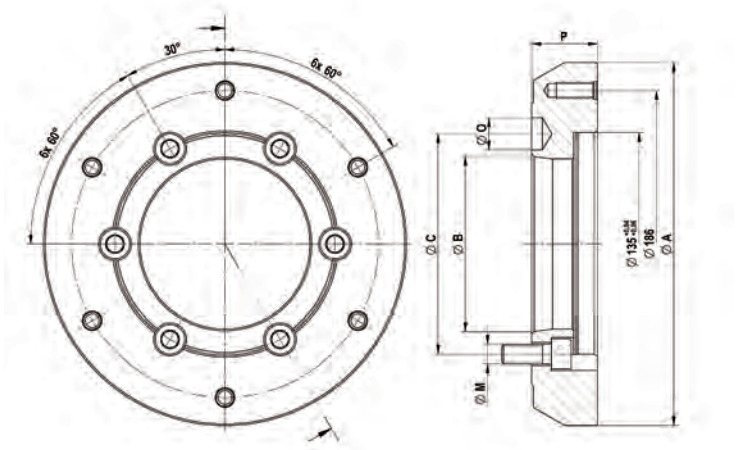
# Accessories AGILIS



Tool group A 18

Type 269-90 **Intermediate flange ISO 702-1** (DIN 55028); For size 00-04

	No. 5 (A 05)	No. 6 (A 06)	No. 8 (A 08)	No. 11 (A 11)
<b>Intermediate flange</b>	<b>1110005</b> ●	<b>1110006</b> ●	<b>1110008</b> ●	<b>1110011</b> ▲
Ø A	165	170	220	282
Ø B	82,563	106,375	139,719	196,869
Ø C	104,8	133,4	171,4	235
Ø M	M10	M12	M16	M20
Ø O	16,3	19,45	24,2	29,4
P	36	38	45	45



Tool group A 18

Type 267-20 **Intermediate flange ISO 702-1** (DIN 55028); For size 05-07

	A 05	A 06	A 08
<b>Intermediate flange</b>	<b>1072115</b> ■	<b>1072117</b> ■	<b>1072119</b> ■
For	KZF-S 80/AGILIS 05-07	KZF-S 120/AGILIS 05-07	KZF-S 120/AGILIS 05-07
Short-taper-Ø B	82,563	106,375	139,719
Short-taper pitch circle Ø C	104,8	133,4	171,4
Flange outer-Ø A	220	220	220
Ø D	135	135	135
Ø F	186	186	186
Ø O	16,3	19,45	24,2
Thread-Ø M	M10	M12	M16
Total length flange P	40	40	40

# Accessories AGILIS

Hand-operated quick-change system for clamping devices  
Compatible for ABSIS (269-00) and AGILIS (296-00)

**Application:**

Hand-operated change of clamping devices with few time expanseure.

**Special features:**

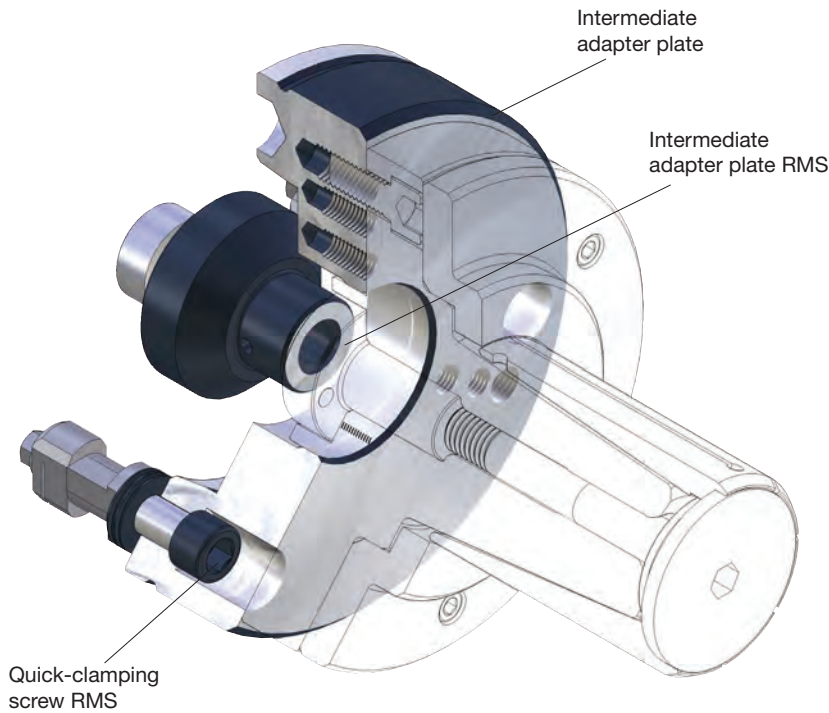
Hand-operated change of clamping devices in ca. 30 seconds, high change accuracy within 0,005mm, for central lubrication and/or air-sensing.

**Technical features:**

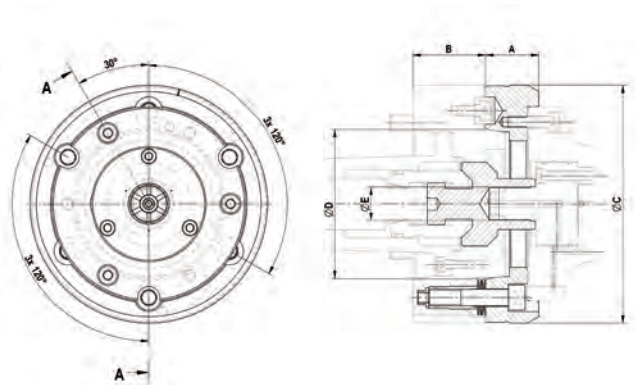
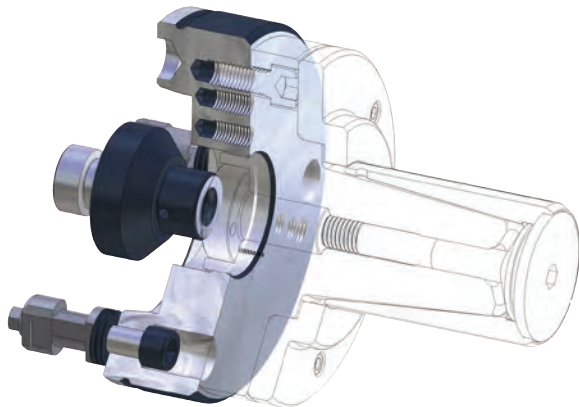
- Quick-change system suitable for Tool carrier assy RMS (please see product group power chucks - cylinders)
- Suitable for segment clamping mandrel ABSIS (269-00) and AGILIS (296-00),
- For central lubrication and/or air-sensing,
- Corresponding to the german employer's liability insurance association in connection with the ROHM-safety clamping cylinders OVS and LVS, change precision 0,005mm.

**Customer advantage:**

Quick changing of different clamping devices with few time expanseure, similar to the automatic or semiautomatic change-system of the clamping devices.



Quick-clamping screw RMS



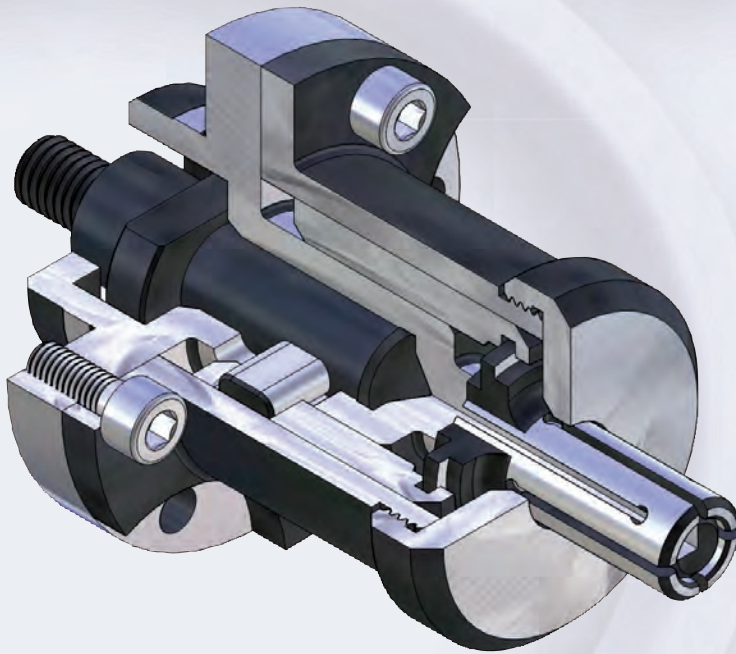
Tool group C18  
Type 299-90 **RMS quick-change system**; hand-operated for clamping devices

	A 06					A 08				
For	AGILIS 00-04 296-00					AGILIS 00-04 296-00				
<b>RMS - complete (flange incl. Quick-clamping screw)</b>	<b>1180340 ▲</b>					<b>1180342 ▲</b>				
A	38					45				
Ø B	170					215				
Ø C	133,4					171,4				
Ø D	106,375					139,719				
Ø E	M12					M16				
Ø F	139 H7					139 H7				
<b>Intermediate piece RMS</b>	<b>AGILIS 00</b>	<b>AGILIS 01</b>	<b>AGILIS 02</b>	<b>AGILIS 03</b>	<b>AGILIS 04</b>	<b>AGILIS 00</b>	<b>AGILIS 01</b>	<b>AGILIS 02</b>	<b>AGILIS 03</b>	<b>AGILIS 04</b>
	1180070 ■	1180070 ■	1180072 ■	1180073 ■	1180074 ■	1180330 ■	1180330 ■	1180332 ■	1180333 ■	1180334 ■

compatible intermediate pieces RMS KK6 and RMS KK8 you can find in the table of the segment clamping sleeve AGILIS Type 296-00  
Further sizes on request



**Power-operated cartridge mandrel with flanged seat, for internal clamping**



**Application:**

Turning, grinding, measuring, cutting.

**Special features:**

For a very small clamping diameter from Ø5,5mm, steady clamping by axial draw-in.

The draw-in of the work-pieces against the rigid work-stop takes place independently via the operation of the mandrels.

Quick change of the taper sleeves possible, for short span length.

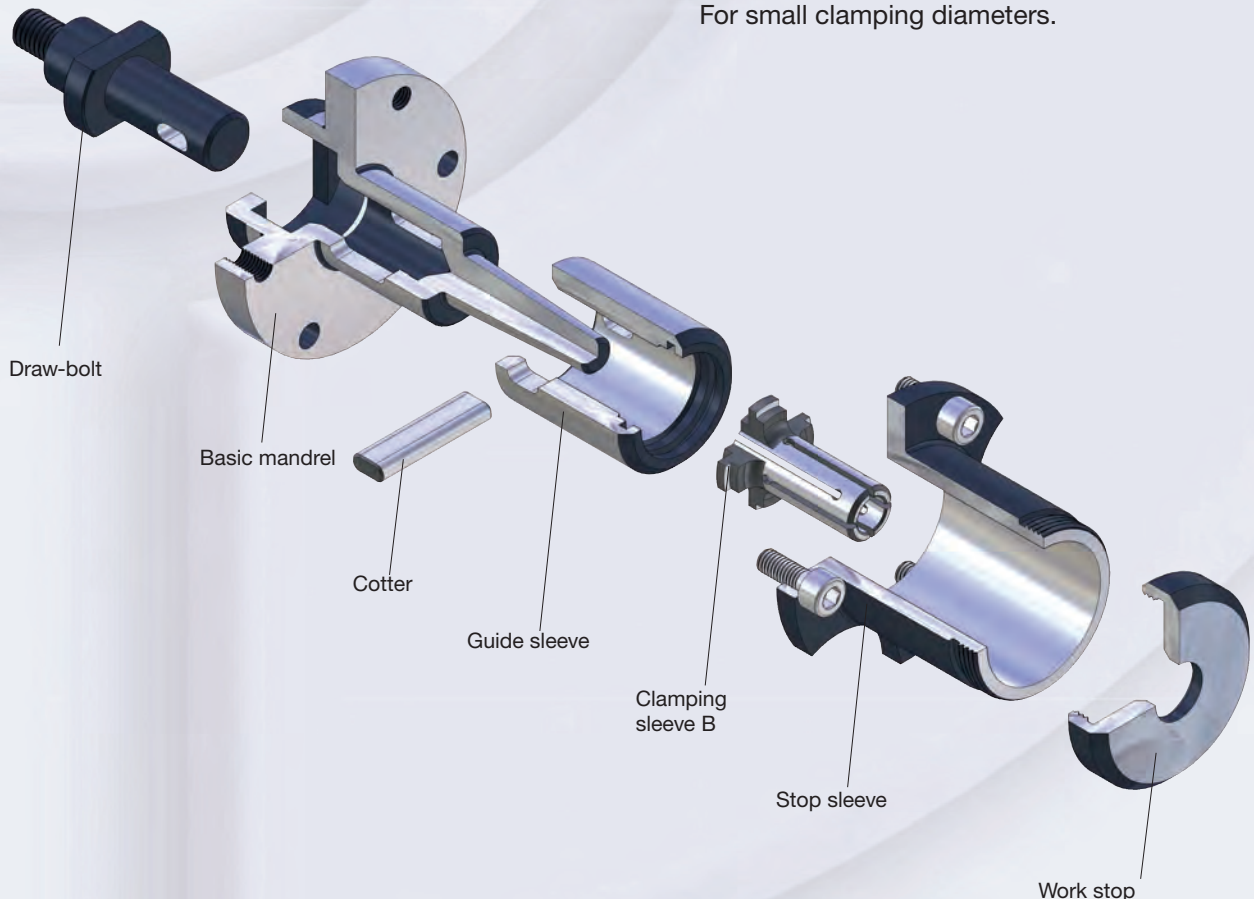
**Technical features:**

- High accuracy up to a maximal concentricity tolerance of 0,01mm,
- Power- operated,
- High clamping-accuracy for repetitions,
- Rigid clamping,
- Hardened guides,
- Precise guide of the clamping sleeve on the clamping mandrel.

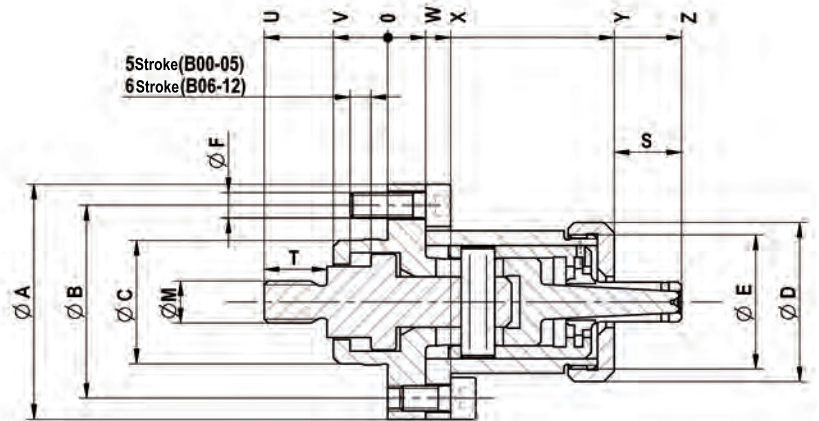
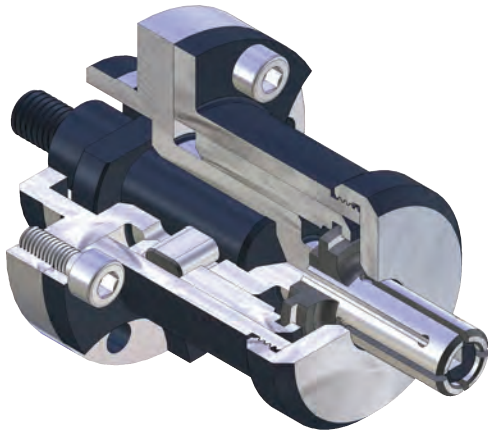
**Customer advantage:**

Little weight and little height by compact design, for automatical chargin.

For small clamping diameters.





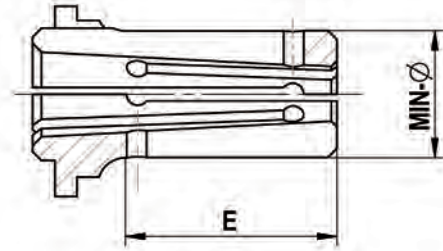
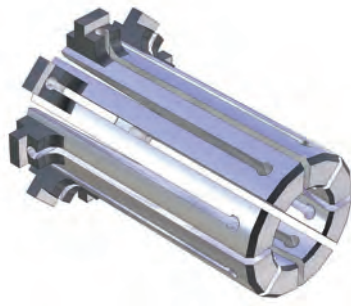


Tool group C18

Type 247-10 KFB Cartridge mandrel; **power-operated with flanged seat**; for internal clamping consists of basic mandrel, stop sleeve, guide sleeve, cotter, draw bolt

	KFB 00	KFB 01	KFB 02	KFB 03	KFB 04	KFB 05	KFB 06	KFB 07
<b>Cartridge Mandrel</b>	327586 ●	327587 ●	327588 ●	327589 ●	327590 ●	327591 ●	327592 ●	327593 ▲
<b>Basic mandrel</b>	323521 ●	323522 ●	323523 ●	323524 ●	323525 ●	323526 ●	323527 ●	323528 ●
<b>Stop sleeve</b>	323474 ●	323475 ●	323476 ●	323477 ●	323478 ●	323479 ●	323480 ●	323481 ●
<b>Guide sleeve</b>	323461 ●	323462 ●	323463 ●	323464 ●	323465 ●	323466 ●	323467 ●	323468 ●
<b>Cotter</b>	323508 ●	323509 ●	323510 ●	323511 ●	323512 ●	323513 ●	323514 ●	323515 ●
<b>Draw bolt</b>	323500 ●	323501 ●	323502 ●	323502 ●	323503 ●	323504 ●	323504 ●	323505 ●
F max, in kN	1,8	2,7	3,6	4,8	5,8	7,5	12	22
Max, total clamping force approx, kN	12	18	24	32	38	50	65	119
Min-Ø unclamped from	5,5	7,5	9,5	12	14,5	19,5	24,7	29,7
Min-Ø unclamped to	7	9	11,5	14,5	19	24,5	28,7	33,7
Clamping-Ø max,	7,5	9,5	12	15	19,5	25	29,7	34,7
External-Ø A	45	50	56	60	72	76	82	95
Pitch diameter B	36	39	46	50	60	64	70	80
Ø Ch6	25	25	30	30	40	40	40	60
Ø D	24	31	38	40	52	54	60	66
Ø E	M22x1,5	M27x1,5	M32x1,5	M36x1,5	M45x1,5	M48x1,5	M56x1,5	M60x1,5
Ø F	M5	M6	M6	M6	M6	M6	M6	M8
Stroke G	5	5	5	5	5	5	6	6
Ø M	M8	M8	M10	M10	M10	M12	M12	M12
S	9	13	15	20,5	24	30	36	40
T	14	14	15	15	15	18	18	18
U	27	27,5	29,5	29,5	30,5	33,5	33,5	36,5
V	11,5	12	13	13	14	14	14	17
W	7,5	8	9	9	10	10	10	12,5
X	12,5	13	15	15	16	16	16	18,5
Y	42	46	45	58	66	67	71	74
Z	51,5	58,5	70	78,5	90	97	107	114

# Accessories KFB

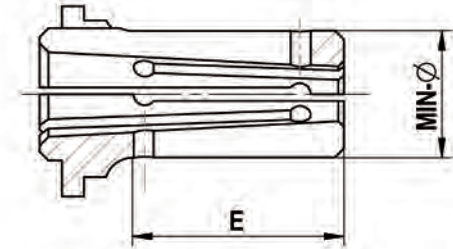
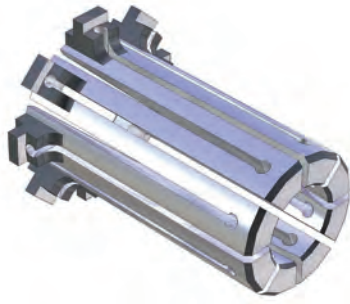


Tool group A 18

 Type 241-50 **Clamping sleeve Type B - Standard design; (not vulcanized)**

For size	KFB 00	KFB 01	KFB 02	KFB 03	KFB 04	KFB 05	KFB 06	KFB 07
Expansion in Ø	0,5	0,5	0,5	0,5	0,5	0,5	1	1
Total length	11,5	15	19	20,5	28,5	34	40	43,5
Min-Ø	5,5	7,5	9,5	12	14,5	19,5	24,7	29,7
<b>Clamping sleeve</b>	<b>315139</b> ●	<b>315140</b> ●	<b>315141</b> ●	<b>315142</b> ●	<b>315143</b> ●	<b>315144</b> ●	<b>315145</b> ●	<b>315146</b> ●
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●
Min-Ø	6	8	10	12,5	15	20	25,7	30,7
<b>Clamping sleeve</b>	<b>315152</b> ●	<b>315153</b> ●	<b>315154</b> ●	<b>315155</b> ●	<b>315156</b> ●	<b>315157</b> ●	<b>315158</b> ●	<b>315159</b> ●
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●
Min-Ø	6,5	8,5	10,5	13	15,5	20,5	26,7	31,7
<b>Clamping sleeve</b>	<b>315165</b> ●	<b>315166</b> ●	<b>315167</b> ●	<b>315168</b> ●	<b>315169</b> ●	<b>315170</b> ●	<b>315171</b> ●	<b>315172</b> ●
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●
Min-Ø	7	9	11	13,5	16	21	27,7	32,7
<b>Clamping sleeve</b>	<b>315178</b> ●	<b>315179</b> ●	<b>315180</b> ●	<b>315181</b> ●	<b>315182</b> ●	<b>315183</b> ●	<b>315184</b> ●	<b>315185</b> ●
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●
Min-Ø			11,5	14	16,5	21,5	28,7	33,7
<b>Clamping sleeve</b>			<b>315191</b> ●	<b>315192</b> ●	<b>315193</b> ●	<b>315194</b> ●	<b>315195</b> ●	<b>315196</b> ●
Work stop			315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●
Min-Ø				14,5	17	22		
<b>Clamping sleeve</b>				<b>315202</b> ●	<b>315203</b> ●	<b>315204</b> ●		
Work stop				315129 ●	315130 ●	315131 ●		
Min-Ø					17,5	22,5		
<b>Clamping sleeve</b>					<b>315209</b> ●	<b>315210</b> ●		
Work stop					315130 ●	315131 ●		
Min-Ø					18	23		
<b>Clamping sleeve</b>					<b>315215</b> ●	<b>315216</b> ●		
Work stop					315130 ●	315131 ●		
Min-Ø					18,5	23,5		
<b>Clamping sleeve</b>					<b>315221</b> ●	<b>315222</b> ●		
Work stop					315130 ●	315131 ●		
Min-Ø					19	24		
<b>Clamping sleeve</b>					<b>315227</b> ●	<b>315228</b> ●		
Work stop					315130 ●	315131 ●		
Min-Ø						24,5		
<b>Clamping sleeve</b>						<b>315233</b> ●		
Work stop						315131 ●		

# Accessories KFB

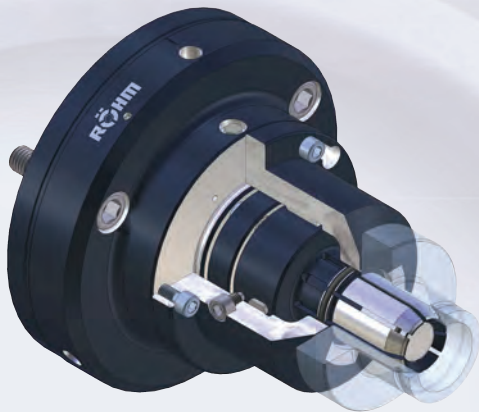


Tool group A 18

Type 241-55 **Clamping sleeve Type B - vulcanized** (protected against chips and dirt)

For size	KFB 00	KFB 01	KFB 02	KFB 03	KFB 04	KFB 05	KFB 06	KFB 07
Expansion in Ø	0,5	0,5	0,5	0,5	0,5	0,5	1	1
Total length	11,5	15	19	20,5	28,5	34	40	43,5
Min-Ø	5,5	7,5	10	12	14,5	19,5	24,7	29,7
<b>Clamping sleeve</b>	<b>323739</b> ●	<b>323740</b> ●	<b>323754</b> ●	<b>323742</b> ●	<b>323743</b> ●	<b>323744</b> ●	<b>323745</b> ●	<b>323746</b> ●
Work stop	323420 ●	323423 ●	323427 ●	323430 ●	323435 ●	323444 ●	323452 ●	323459 ●
Min-Ø	6	8	10,5	12,5	15	20	25,7	30,7
<b>Clamping sleeve</b>	<b>323752</b> ●	<b>323753</b> ●	<b>323767</b> ●	<b>323755</b> ●	<b>323756</b> ●	<b>323757</b> ●	<b>323758</b> ●	<b>323759</b> ●
Work stop	323421 ●	323424 ●	323428 ●	323431 ●	323436 ●	323445 ●	323453 ●	323460 ●
Min-Ø	6,5	8,5	11	13	15,5	20,5	26,7	31,7
<b>Clamping sleeve</b>	<b>323765</b> ●	<b>323766</b> ●	<b>323780</b> ●	<b>323768</b> ●	<b>323769</b> ●	<b>323770</b> ●	<b>323771</b> ●	<b>323772</b> ●
Work stop	323422 ●	323425 ●	323429 ●	323432 ●	323437 ●	323446 ●	323454 ●	323540 ●
Min-Ø	7	9	11,5	13,5	16	21	27,7	32,7
<b>Clamping sleeve</b>	<b>323778</b> ●	<b>323779</b> ●	<b>323791</b> ●	<b>323781</b> ●	<b>323782</b> ●	<b>323783</b> ●	<b>323784</b> ●	<b>323785</b> ●
Work stop	323487 ●	323488 ●	323489 ●	323433 ●	323438 ●	323447 ●	323455 ●	323541 ●
Min-Ø			9,5	14	16,5	21,5	28,7	33,7
<b>Clamping sleeve</b>			<b>323741</b> ●	<b>323792</b> ●	<b>323793</b> ●	<b>323794</b> ●	<b>323795</b> ●	<b>323796</b> ●
Work stop			323426 ●	323434 ●	323439 ●	323448 ●	323493 ●	323494 ●
Min-Ø				14,5	17	22		
<b>Clamping sleeve</b>				<b>323802</b> ●	<b>323803</b> ●	<b>323804</b> ●		
Work stop				323490 ●	323440 ●	323449 ●		
Min-Ø					17,5	22,5		
<b>Clamping sleeve</b>					<b>323809</b> ●	<b>323810</b> ●		
Work stop					323441 ●	323450 ●		
Min-Ø					18	23		
<b>Clamping sleeve</b>					<b>323815</b> ●	<b>323816</b> ●		
Work stop					323442 ●	323456 ●		
Min-Ø					18,5	23,5		
<b>Clamping sleeve</b>					<b>323821</b> ●	<b>323822</b> ●		
Work stop					323443 ●	323457 ●		
Min-Ø					19	24		
<b>Clamping sleeve</b>					<b>323827</b> ●	<b>323828</b> ●		
Work stop					323491 ●	323458 ●		
Min-Ø						24,5		
<b>Clamping sleeve</b>						<b>323833</b> ●		
Work stop						323492 ●		

Different chucking Ø and profiled clamping sleeves can be supplied on request



► **Cartridge mandrel KFB clamping Ø42mm**

**Application:**

Turning.

The workpiece is clamped with axial traction against the hard stop.

Clamping mandrel hermetically sealed against penetration of dirt and coolant.

The hard stop and clamping sleeve can be exchanged together using the rapid exchange system.

**Customer advantage:**

- Quick modification on various workpieces using the rapid exchange system
- Radial run-out accuracy of 0.015mm



► **Cartridge mandrel KFB clamping Ø114mm**

**Application:**

Turning.

Clamping takes place using the connecting rod with axial traction against hard stop.

Idle strokes enable easier stroke control in the clamping cylinder.

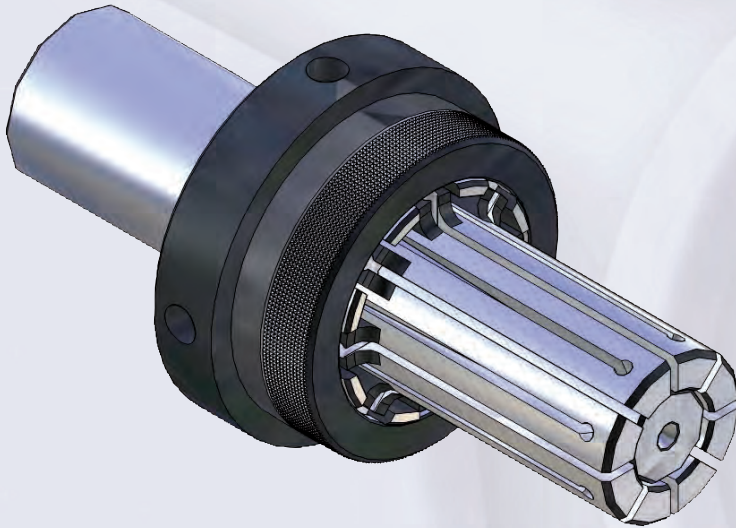
The workpiece hard stop can be rapidly exchanged using the bayonet system.

**Customer advantage:**

- Easy to handle
- Sturdy clamping due to axial traction
- Radial run-out accuracy of 0.01mm



Hand-operated by cartridge mandrel with center hole, for internal clamping



**Application:**

Turning, grinding, measuring.

**Special features:**

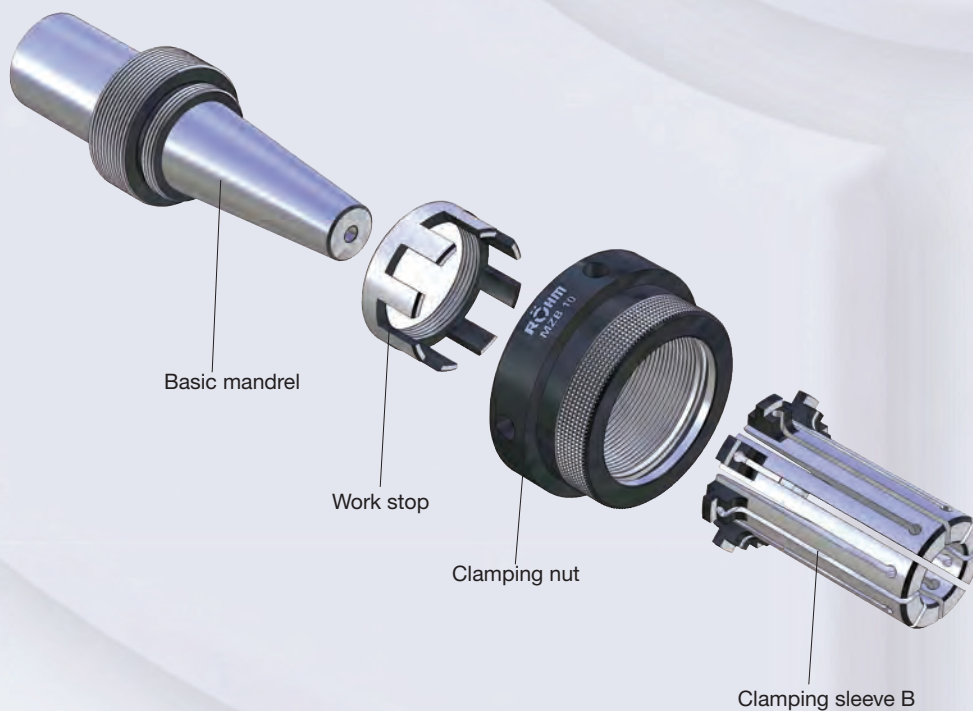
For a very small clamping diameter from Ø5,5mm, steady clamping by axial draw-in. The draw-in of the work-pieces against the rigid work-stop takes place independently via the operation of the mandrels. Quick change of the taper sleeves possible, for short span length.

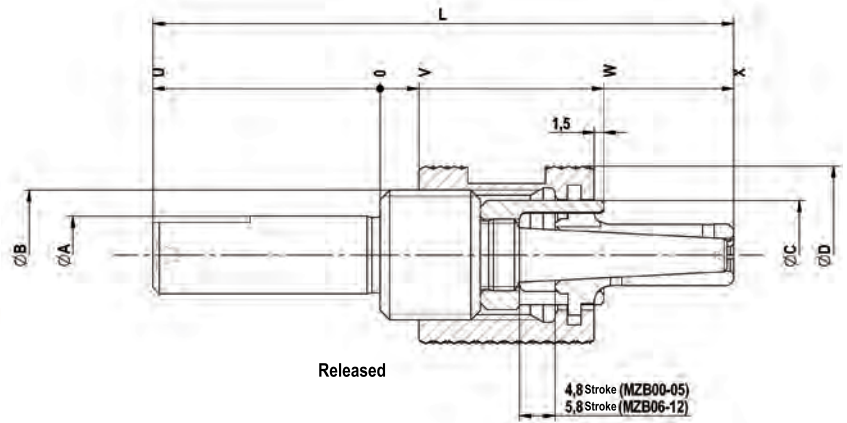
**Technical features:**

- High axial- and radial accuracy,
- High repeating accuracy,
- Hardened low-wear construction,
- High accuracy by guiding the sleeves on the clamping mandrel,
- Hand-operated.

**Customer advantage:**

Little weight and little height by compact design, for small clamping diameters and for short span length.



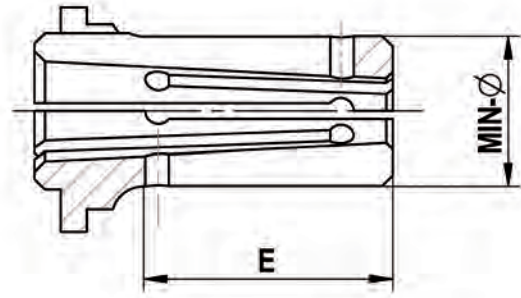
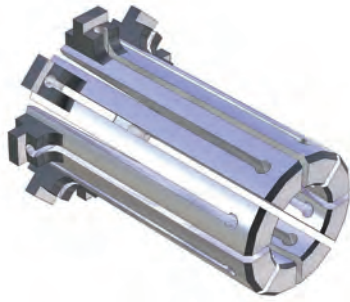


Tool group C18

Type 241-00 **MZB** Cartridge Mandrel; **hand-operated with centre hole**; for internal clamping

	MZB 00	MZB 01	MZB 02	MZB 03	MZB 04	MZB 05	MZB 06	MZB 07	MZB 08	MZB 09	MZB 10	MZB 11	MZB 12
<b>Cartridge Mandrel</b>	1130361 ●	1130362 ●	1130363 ●	1130364 ●	1130365 ●	1130366 ●	1130367 ●	1130368 ●	1130369 ●	1130370 ●	1130371 ●	1130372 ●	1130373 ●
<b>Basic mandrel</b>	315100 ●	315101 ●	315102 ●	315103 ●	315104 ●	315105 ●	315106 ●	315107 ●	315108 ●	315109 ●	315110 ●	315111 ●	315112 ●
<b>Nut</b>	315113 ●	315114 ●	315115 ●	315116 ●	315117 ●	315118 ●	315119 ●	315120 ●	315121 ●	315122 ●	315123 ●	315124 ●	315125 ●
Min-Ø unclamped from	5,5	7,5	9,5	12	14,5	19,5	24,7	29,7	34,7	39,7	44,7	54,7	64,7
Min-Ø unclamped to	7	9	11,5	14,5	19	24,5	28,7	33,7	38,7	43,7	53,7	63,7	78,7
Clamping-Ø max,	7,5	9,5	12	15	19,5	25	29,7	34,7	39,7	44,7	54,7	64,7	79,7
Ø A h6	10	12	12	14	18	20	25	30	40	40	45	50	50
Ø B	M14x1,5	M16x1,5	M20x1,5	M24x1,5	M30x1,5	M36x1,5	M42x1,5	M45x1,5	M52x1,5	M56x1,5	M65x1,5	M75x2	M95x2
Ø C	10,8	13	16,8	20,8	26,8	31,8	36,8	41,8	47,8	52,5	61,8	71,8	90,8
Ø D	19,5	23	28	31	38	47	54	57,5	66	74	83	93	108
Stroke G	5	5,5	5,5	5,5	5,5	6	6	6	6	6	6	6,5	7
L	74,5	79,5	89,5	97,5	102,5	113,5	136	144,5	156	166,5	197	208,5	221,5
U	30	30	35	35	35	40	45	50	55	60	67	67	67
V	5,5	6	6	6	6	6	7	7	7	7	7	7	7
W	29	33,5	34,5	36,5	37,5	37,5	48,5	48,5	48,5	48,5	53,5	56,5	58,5
X	44,5	48,5	53,5	61,5	66,5	72,5	89	92,5	99	104,5	128	139,5	152,5

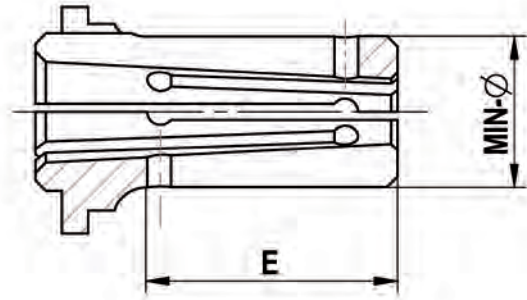
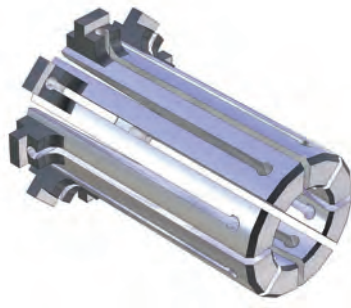
# Accessories MZB



Tool group A 18  
Type 241-50 Clamping sleeve Type B - Standard design; (not vulcanized)

For size	MZB 00	MZB 01	MZB 02	MZB 03	MZB 04	MZB 05	MZB 06	MZB 07	MZB 08	MZB 09	MZB 10	MZB 11	MZB 12
Expansion in Ø	0,5	0,5	0,5	0,5	0,5	0,5	1	1	1	1	1	1	1
Total length	11,5	15	19	20,5	28,5	34	40	43,5	50	55,5	74	82,5	93,5
Min-Ø	5,5	7,5	10	12	14,5	19,5	24,7	29,7	34,7	39,7	44,7	54,7	64,7
Clamping sleeve	315139 ●	315140 ●	315154 ●	315142 ●	315143 ●	315144 ●	315145 ●	315146 ●	315147 ▲	315148 ▲	315149 ▲	315150 ▲	315151 ▲
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø	6	8	10,5	12,5	15	20	25,7	30,7	35,7	40,7	45,7	55,7	65,7
Clamping sleeve	315152 ●	315153 ●	315167 ●	315155 ●	315156 ●	315157 ●	315158 ●	315159 ●	315160 ▲	315161 ▲	315162 ▲	315163 ▲	315164 ▲
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø	6,5	8,5	11	13	15,5	20,5	26,7	31,7	36,7	41,7	46,7	56,7	66,7
Clamping sleeve	315165 ●	315166 ●	315180 ●	315168 ●	315169 ●	315170 ●	315171 ●	315172 ●	315173 ▲	315174 ▲	315175 ▲	315176 ▲	315177 ▲
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø	7	9	11,5	13,5	16	21	27,7	32,7	37,7	42,7	47,7	57,7	67,7
Clamping sleeve	315178 ●	315179 ●	315191 ●	315181 ●	315182 ●	315183 ●	315184 ●	315185 ●	315186 ▲	315187 ▲	315188 ▲	315189 ▲	315190 ▲
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø			9,5	14	16,5	21,5	28,7	33,7	38,7	43,7	48,7	58,7	68,7
Clamping sleeve			315141 ●	315192 ●	315193 ●	315194 ●	315195 ●	315196 ●	315197 ▲	315198 ▲	315199 ▲	315200 ▲	315201 ▲
Work stop			315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø				14,5	17	22					49,7	59,7	69,7
Clamping sleeve				315202 ●	315203 ●	315204 ●					315205 ▲	315206 ▲	315207 ▲
Work stop				315129 ●	315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø					17,5	22,5					50,7	60,7	70,7
Clamping sleeve					315209 ●	315210 ●					315211 ▲	315212 ▲	315213 ▲
Work stop					315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø					18	23					51,7	61,7	71,7
Clamping sleeve					315215 ●	315216 ●					315217 ▲	315218 ▲	315219 ▲
Work stop					315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø					18,5	23,5					52,7	62,7	72,7
Clamping sleeve					315221 ●	315222 ●					315223 ▲	315224 ▲	315225 ▲
Work stop					315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø					19	24					53,7	63,7	73,7
Clamping sleeve					315227 ●	315228 ●					315229 ▲	315230 ▲	315231 ▲
Work stop					315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø						24,5							74,7
Clamping sleeve						315233 ●							315208 ▲
Work stop						315131 ●							315138 ●
Min-Ø													75,7
Clamping sleeve													315214 ▲
Work stop													315138 ●
Min-Ø													76,7
Clamping sleeve													315220 ▲
Work stop													315138 ●
Min-Ø													77,7
Clamping sleeve													315226 ▲
Work stop													315138 ●
Min-Ø													78,7
Clamping sleeve													315232 ▲
Work stop													315138 ●

# Accessories MZB



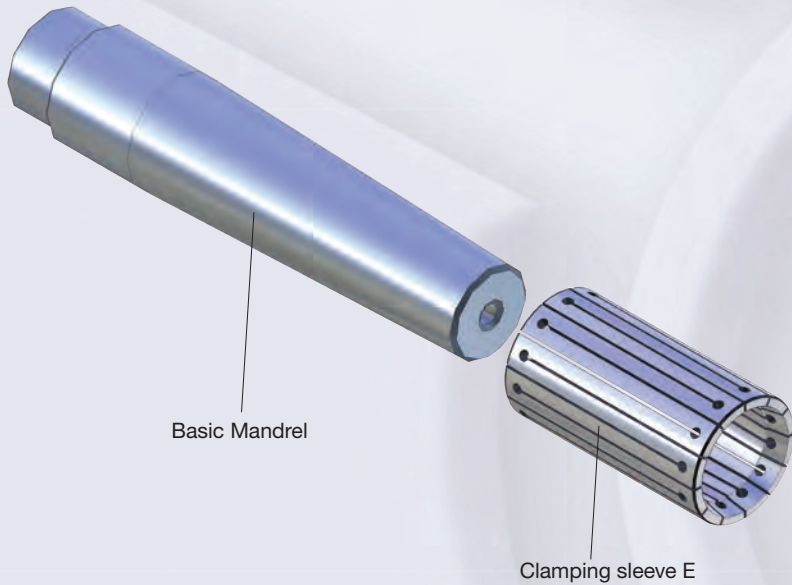
Tool group A 18  
Type 241-55 **Clamping sleeve** Type B - vulcanized (protected against chips and dirt)

For size	MZB 00	MZB 01	MZB 02	MZB 03	MZB 04	MZB 05	MZB 06	MZB 07	MZB 08	MZB 09	MZB 10	MZB 11	MZB 12
Expansion in Ø	0,5	0,5	0,5	0,5	0,5	0,5	1	1	1	1	1	1	1
Total length	11,5	15	19	20,5	28,5	34	40	43,5	50	55,5	74	82,5	93,5
Min-Ø	5,5	7,5	10	12	14,5	19,5	24,7	29,7	34,7	39,7	44,7	54,7	64,7
<b>Clamping sleeve</b>	<b>323739</b> ●	<b>323740</b> ●	<b>323754</b> ●	<b>323742</b> ●	<b>323743</b> ●	<b>323744</b> ●	<b>323745</b> ●	<b>323746</b> ●	<b>323747</b> ●	<b>323748</b> ●	<b>323749</b> ●	<b>323750</b> ●	<b>323751</b> ●
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø	6	8	10,5	12,5	15	20	25,7	30,7	35,7	40,7	45,7	55,7	65,7
<b>Clamping sleeve</b>	<b>323752</b> ●	<b>323753</b> ●	<b>323767</b> ●	<b>323755</b> ●	<b>323756</b> ●	<b>323757</b> ●	<b>323758</b> ●	<b>323759</b> ●	<b>323760</b> ●	<b>323761</b> ●	<b>323762</b> ●	<b>323763</b> ●	<b>323764</b> ●
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø	6,5	8,5	11	13	15,5	20,5	26,7	31,7	36,7	41,7	46,7	56,7	66,7
<b>Clamping sleeve</b>	<b>323765</b> ●	<b>323766</b> ●	<b>323780</b> ●	<b>323768</b> ●	<b>323769</b> ●	<b>323770</b> ●	<b>323771</b> ●	<b>323772</b> ●	<b>323773</b> ●	<b>323774</b> ●	<b>323775</b> ●	<b>323776</b> ●	<b>323777</b> ●
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø	7	9	11,5	13,5	16	21	27,7	32,7	37,7	42,7	47,7	57,7	67,7
<b>Clamping sleeve</b>	<b>323778</b> ●	<b>323779</b> ●	<b>323791</b> ●	<b>323781</b> ●	<b>323782</b> ●	<b>323783</b> ●	<b>323784</b> ●	<b>323785</b> ●	<b>323786</b> ●	<b>323787</b> ●	<b>323788</b> ●	<b>323789</b> ●	<b>323790</b> ●
Work stop	315126 ●	315127 ●	315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø			9,5	14	16,5	21,5	28,7	33,7	38,7	43,7	48,7	58,7	68,7
<b>Clamping sleeve</b>			<b>323741</b> ●	<b>323792</b> ●	<b>323793</b> ●	<b>323794</b> ●	<b>323795</b> ●	<b>323796</b> ●	<b>323797</b> ●	<b>323798</b> ●	<b>323799</b> ●	<b>323800</b> ●	<b>323801</b> ●
Work stop			315128 ●	315129 ●	315130 ●	315131 ●	315132 ●	315133 ●	315134 ●	315135 ●	315136 ●	315137 ●	315138 ●
Min-Ø				14,5	17	22					49,7	59,7	69,7
<b>Clamping sleeve</b>				<b>323802</b> ●	<b>323803</b> ●	<b>323804</b> ●					<b>323805</b> ●	<b>323806</b> ●	<b>323807</b> ●
Work stop				315129 ●	315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø					17,5	22,5					50,7	60,7	70,7
<b>Clamping sleeve</b>					<b>323809</b> ●	<b>323810</b> ●					<b>323811</b> ●	<b>323812</b> ●	<b>323813</b> ●
Work stop					315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø					18	23					51,7	61,7	71,7
<b>Clamping sleeve</b>					<b>323815</b> ●	<b>323816</b> ●					<b>323817</b> ●	<b>323818</b> ●	<b>323819</b> ●
Work stop					315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø					18,5	23,5					52,7	62,7	72,7
<b>Clamping sleeve</b>					<b>323821</b> ●	<b>323822</b> ●					<b>323823</b> ●	<b>323824</b> ●	<b>323825</b> ●
Work stop					315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø					19	24					53,7	63,7	73,7
<b>Clamping sleeve</b>					<b>323827</b> ●	<b>323828</b> ●					<b>323829</b> ●	<b>323830</b> ●	<b>323831</b> ●
Work stop					315130 ●	315131 ●					315136 ●	315137 ●	315138 ●
Min-Ø						24,5							74,7
<b>Clamping sleeve</b>						<b>323833</b> ●							<b>323808</b> ●
Work stop						315131 ●							315138 ●
Min-Ø													75,7
<b>Clamping sleeve</b>													<b>323814</b> ●
Work stop													315138 ●
Min-Ø													76,7
<b>Clamping sleeve</b>													<b>323820</b> ●
Work stop													315138 ●
Min-Ø													77,7
<b>Clamping sleeve</b>													<b>323826</b> ●
Work stop													315138 ●
Min-Ø													78,7
<b>Clamping sleeve</b>													<b>323832</b> ●
Work stop													315138 ●

Different chucking Ø and profiled clamping sleeves can be supplied on request



Hand-operated by cartridge mandrel with center hole, for internal clamping



**Application:**

Grinding, easy turning operations, measuring.

**Special features:**

Cost-effective system, clamping mandrel assortment available, specially suitable for measuring.

**Technical features:**

- High axial- and radial accuracy,
- High repeating accuracy,
- Hardened low-wear construction,
- High accuracy by guiding the sleeves on the clamping mandrel,
- Quick change of the clamping sleeves,
- Hand-operated.

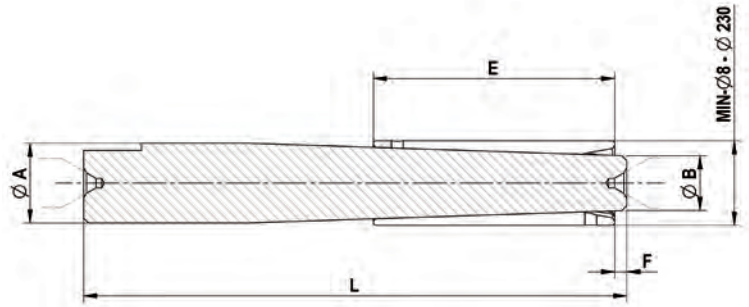
**Customer advantage:**

- Little weight by compact design,
- Cost-effective system for measuring,
- Clamping mandrel assortment available.



Being prepared for various jobs: We offer you complete clamping mandrel-sets in wooden boxes.

## MZE

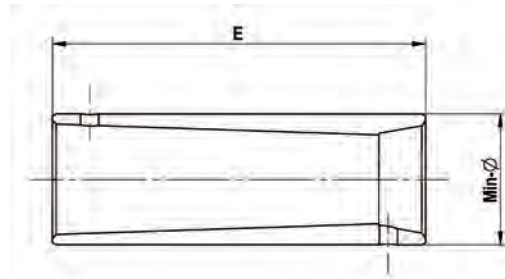
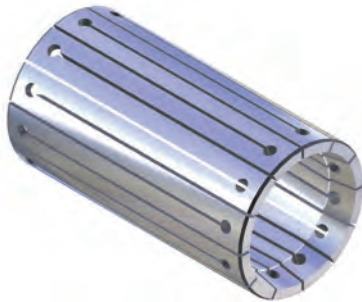


Tool group C18

Type 240-10 **MZE Basic mandrel; hand-operated with centre hole; for internal clamping**

	MZE 00	MZE 01	MZE 02	MZE 03	MZE 04	MZE 05	MZE 06	MZE 07	MZE 08	MZE 09	MZE 10	MZE 11	MZE 12	MZE 13	MZE 14	MZE 15
<b>Basic mandrel</b>	<b>315000</b>	<b>315001</b>	<b>315002</b>	<b>315003</b>	<b>315004</b>	<b>315005</b>	<b>315006</b>	<b>315007</b>	<b>315008</b>	<b>315009</b>	<b>315010</b>	<b>315011</b>	<b>315012</b>	<b>315013</b>	<b>315014</b>	<b>315015</b>
Min-Ø unclamped from	8	10	12	14	16	19	22	25	35	45	55	68	80	105	135	185
Min-Ø unclamped to	9	11	13	15	18	21	24	34	44	54	65	80	100	135	180	230
Clamping-Ø max.	10,5	12,5	15	17	20	23	26	37	47	59	70	85	105	140	185	235
Ø A	8	10	12	14	16	19	21	25	33	45	53	64	76	99	124	145,5
Ø B	4,1	5,3	5,7	6,9	8,5	10,7	12,2	14,6	22,6	31,1	38	48,2	60,9	80,4	97,4	122,4
E	40	45	60	70	70	80	80	100	100	125	135	150	150	170	180	200
F	3	3	4	4	4	4	4	4	5	5	5	5	5	5	82	63
L	75	110	125	140	150	170	175	225	225	300	330	350	350	400	442	443

## Accessories MZE



Tool group A 18

Type 240-50 **Clamping sleeve E - for basic mandrel MZE**

For size	MZE 00	MZE 01	MZE 02	MZE 03	MZE 04	MZE 05	MZE 06	MZE 07	MZE 08	MZE 09	MZE 10	MZE 11	MZE 12	MZE 13	MZE 14	MZE 15
Expansion in Ø	1,5	1,5	2	2	2	2	2	3	3	5	5	5	5	5	5	5
Total length	40	45	60	70	70	80	80	100	100	125	135	150	150	170	180	200
Min-Ø	8	10	12	14	16	19	22	25	35	45	55	68	80	105	135	185
<b>Clamping sleeve</b>	<b>315016</b>	<b>315017</b>	<b>315018</b>	<b>315019</b>	<b>315020</b>	<b>315021</b>	<b>315022</b>	<b>315023</b>	<b>315024</b>	<b>315025</b>	<b>315026</b>	<b>315027</b>	<b>315074</b>	<b>315029</b>	<b>315030</b>	<b>315031</b>
Min-Ø	9	11	13	15	17	20	23	26	36	48	58	70	80	110	140	190
<b>Clamping sleeve</b>	<b>315032</b>	<b>315033</b>	<b>315034</b>	<b>315035</b>	<b>315036</b>	<b>315037</b>	<b>315038</b>	<b>315039</b>	<b>315040</b>	<b>315041</b>	<b>315042</b>	<b>315043</b>	<b>315028</b>	<b>315045</b>	<b>315046</b>	<b>315047</b>
Min-Ø					18	21	24	28	38	50	60	72	85	115	145	195
<b>Clamping sleeve</b>					<b>315048</b>	<b>315049</b>	<b>315050</b>	<b>315051</b>	<b>315052</b>	<b>315053</b>	<b>315054</b>	<b>315055</b>	<b>315044</b>	<b>315057</b>	<b>315058</b>	<b>315059</b>
Min-Ø								30	40	52	62	75	90	120	150	200
<b>Clamping sleeve</b>								<b>315060</b>	<b>315061</b>	<b>315062</b>	<b>315063</b>	<b>315064</b>	<b>315056</b>	<b>315066</b>	<b>315067</b>	<b>315068</b>
Min-Ø								32	42	54	65	78	95	125	155	205
<b>Clamping sleeve</b>								<b>315069</b>	<b>315070</b>	<b>315071</b>	<b>315072</b>	<b>315073</b>	<b>315065</b>	<b>315075</b>	<b>315076</b>	<b>315077</b>
Min-Ø								34	44			80		130	160	210
<b>Clamping sleeve</b>								<b>315078</b>	<b>315079</b>			<b>315080</b>		<b>315081</b>	<b>315082</b>	<b>315083</b>
Min-Ø														135	165	215
<b>Clamping sleeve</b>														<b>315084</b>	<b>315085</b>	<b>315086</b>
Min-Ø															170	220
<b>Clamping sleeve</b>															<b>315087</b>	<b>315088</b>
Min-Ø															175	225
<b>Clamping sleeve</b>															<b>315089</b>	<b>315090</b>
Min-Ø															180	230
<b>Clamping sleeve</b>															<b>315091</b>	<b>315092</b>

Different chucking Ø and profiled clamping sleeves and vulcanization can be supplied on request



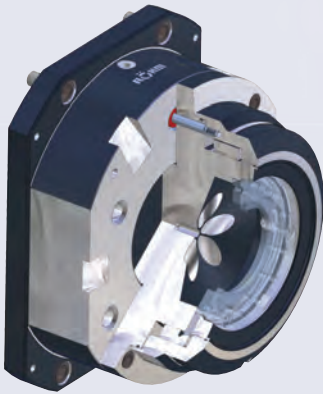
▶ **Sliding clamping mandrel KFG clamping Ø30mm**

**Application:**

Turning a differential housing.  
Clamping a differential housing in two clamping planes.  
Diameter differences between the clamping planes are balanced out.  
The workpiece hard stop is equipped with an air system control. The full clamping mandrel is sealed with sealing air.

**Customer advantage:**

- Two balanced out clamping planes
- Radial run-out accuracy of 0.02mm



▶ **Sliding clamping mandrel KFG clamping Ø155mm/Ø161mm**

**Application:**

Drilling two workpieces with different diameters.  
Clamping two clamping planes which are close together.  
The clamping of both clamping planes takes place using the springs.  
Slackening is undertaken pneumatically using a cylinder in the basic socket.  
Compact space-saving construction.  
Drainage drill holes for coolant.

**Customer advantage:**

- Construction height below 200mm
- Radial run-out accuracy of 0.03mm



▶ **Sliding clamping mandrel KFG clamping range from 98-113mm**

**Application:**

Turning cylinder bushes - blanks.  
Power-assisted operation of the left clamping plane using the pull rod.  
The right clamping plane is spring operated to balance out workpiece tolerances.  
Retractable hard stop.  
Different workpiece diameters can be clamped by changing the exchangeable jaws.

**Customer advantage:**

- Large clamping range elongation of 7mm
- Large transfer of torque due to the ribbed exchangeable jaws





► **Sliding clamping mandrel KFG with intermediate sleeves Ø104-120mm**

**Application:**

Turning cylinder bushes - finishing.

Power-assisted operation of the left clamping plane using the pull rod.

Power-assisted operation of the right clamping plane using the tailstock.

Retractable hard stop with the air system control.

Different workpiece diameters can be clamped by changing the intermediate sleeve.

**Customer advantage:**

- Intermediate sleeves can be exchanged
- High radial run-out accuracy of 0.015mm



► **Sliding clamping mandrel KFG clamping Ø39/Ø40**

**Application:**

Turning.

Clamping in clamping zone 1 takes place using the ribbed jaws for high torque transfer.

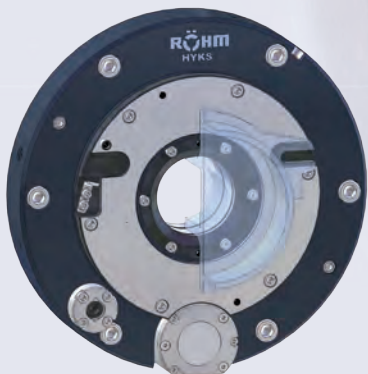
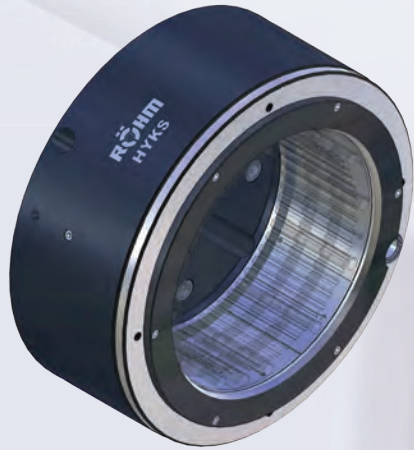
Clamping zone 2 is spring operated and is equipped with an intermediate sleeve.

**Customer advantage:**

- The intermediate sleeve protects the surface of the workpiece
- Radial run-out accuracy of 0.01mm



**Power-operated mandrel for internal or external clamping**



**Application:**

Turning, milling, grinding, measuring.

**Special features:**

The hydraulic fluid is pressurized by a piston. The sleeve can be expanded to max. 0,3% (with special material up to 1%) of its diameter. Chucking either directly with expanding sleeve or indirectly, using a cylindrical intermediate sleeve with slots on both sides.

**Technical features:**

- The steel membrane permits accurate cylindrical and round expansions to within 0,003 mm over the full chucking range,
- Power- or hand operated,
- Very high clamping force in the clamping range,
- Wear resistant surface,
- The snug fit of the expanding sleeve in the hole of the work piece causes an optimal damping, minimizes noise and substantially increases tool life during machining,
- The expanding systems may be used for rotating or stationary work and can be operated by means of hydraulic or air cylinders, directly by the hydraulic system of the machine or even manually by means of screw,
- Different work stops (optional): solid, retractable, external, oscillating, etc.

**Customer advantage:**

Less clamping devices because of larger clamping range; smaller set-up time; flexible; suitable for clamping unfinished parts.

## Special mandrel / Clamping fixture



### ► Special mandrels

**Application:**

Grinding and cutting.

Basic socket with various exchange chucks for clamping pistons.

Axial clamping using an internal traction piece.

Positional orientation using centering forks.

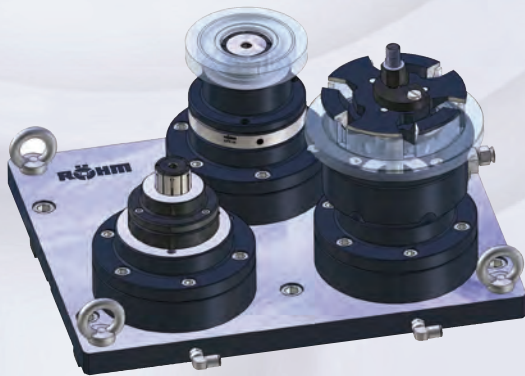
Insertion protection prevents incorrect loading.

Operation takes place using the RÖHM clamping cylinder OVS70.

Complete external contour can be processed.

**Customer advantage:**

- Clamping chuck with rapid exchange system
- Radial run-out accuracy of 0.005mm



### ► Clamping fixture

**Application:**

Cutting and drilling.

Clamping fixture with three basic units.

Clamping using spring force and slackening is pneumatic.

Two basic units equipped with KFR clamping mandrels.

One basic unit equipped with an axial chuck.

**Customer advantage:**

- Basic units can be equipped with various clamping systems.







# The headquarter: our parent plant in Sontheim/Brenz.

The RÖHM parent plant is located in Sontheim/Brenz. In this ultra-modern production facility comprising 41,000 m<sup>2</sup>, optimum conditions have been achieved in order to solve the extensive range of discerning construction and production tasks making the company even better, faster and more efficient in the future.



Sontheim/Brenz



All national and international activities are planned and co-ordinated at the administrative headquarters in Sontheim. Thanks to the excellent infrastructure and transport routes available, this location is ideal for a company relying on perfect product quality as well as maximum flexibility. Furthermore, the region around Sontheim offers another key basis for the success of our company: it is rich in quality awareness and motivated employees with the result that we are ideally prepared for the challenges of the future. The parent plant uniquely unites mass production, serial production and customised individual production under a single roof.

# Key locations for the company: Dillingen and St. Georgen.

Such strong growth on the part of the RÖHM Group is also obviously associated with higher requirements on development and production capacities. The demands of today and tomorrow can be complied with the two facilities in Dillingen and St. Georgen.



Dillingen/Danube



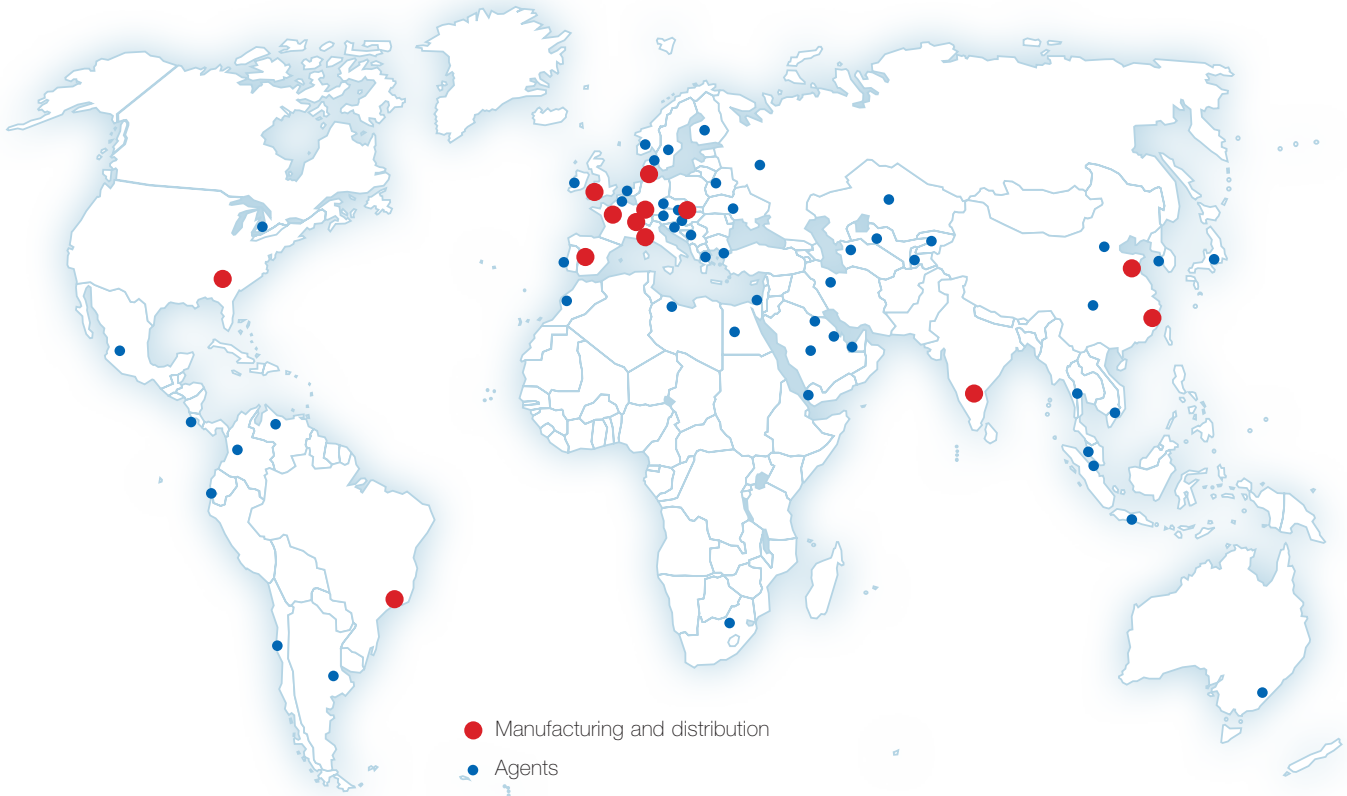
St. Georgen

**Plant: Dillingen/Danube** | This branch plant in Dillingen was put into operation by the RÖHM Group as early as 1953. Thanks to extremely positive development, the plant is subject to constant expansion and modernisation. For this reason, new modern production facilities were built in 1982 and 1991. In 2007 RÖHM built a new production hall for two portal turning and milling machines. This enables machining of workpieces up to 4 metres in length which will secure a leading market position for the RÖHM brand in the future.

More than 300 employees are primarily involved in engineering and manufacturing lathe chucks, machine vices and special clamping equipment for turning and milling machinery as well as for machining centres.

**Engineering and sales department St. Georgen** | Apart from standard mandrels, tailor-made solutions for a wide variety of requirements are also manufactured here in this small but accomplished high-tech forge. RÖHM retains mechanical or power-operated mandrels, sliding jaw mandrels and hydraulic mandrels for its customers for tensioning workpieces in drill holes or interior contours.





# Always close to our customers. With locations all around the world.

Customer orientation at RÖHM has less to do with marketing than with attitude. We consider customer proximity as an intensive dialogue with our partners as well as direct presence on key international markets.

The RÖHM manufacturing and distribution bases:



RÖHM IND. E COM. DE FERRAMENTAS DE FIXAÇÃO LTDA.  
Brazil



ROEHM China Co., Ltd.  
China



RÖHM Værktojs A. S.  
Denmark



RÖHM S. A. R. L.  
France



ROHM (Great Britain) LTD.  
Great Britain



RÖHM SLOVAKIA S.R.O.  
Slovakia



ROHM INDIA PVT. LTD.  
India



RÖHM Italia S. R. L.  
Italy



RÖHM Spanntechnik AG  
Switzerland



RÖHM Iberica S. A.  
Spain



ROHM Products of America  
USA

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# General conditions of sale and delivery

## § 1 Quotation, Formation of Contract and Content of Contract

1. The present General Terms of Sale and Delivery apply exclusively. We do not recognise any terms and conditions that are contradictory or different from our own, unless we have explicitly given our written agreement to do so. Our Terms of Sale and Delivery will also apply if we effect delivery to the Purchaser without any reservation in full awareness of the contradictory or different nature of the terms of the Purchaser, as compared to our own Terms.
2. Our quotations are always subject to change without notice unless they have been explicitly described as binding. The contract will only materialise upon our written confirmation and in line with the content thereof and by way of performance/delivery on our part. If delivery/service is immediately provided without any confirmation, the invoice will also be deemed to be the order confirmation.
3. Our General Terms of Sale and Delivery will only apply to a business entity as defined in Section 14 BGB [German Civil Code].
4. Costs for the compilation of drawings for specific constructions will be borne by the Orderer if, for reasons for which we are not responsible, the quotation does not lead to an order placement.
5. All particulars regarding weights, dimensions, services and technical data that feature in our printed matter, catalogues, price lists or in other contract documents are only approximate, unless they have been explicitly described as binding.
6. We retain the right to amend the construction and form of the subject of contract, providing this does not involve unreasonable alterations for the Orderer.
7. The documentation comprises an assembly layout, piece list with details of the wearing and spare parts, as well as operational and maintenance instructions; this is always in the German language. Documentation is only in paper form or in digital form. For digital forms, the texts are provided in the formats .TXT, .RTF or .DOC; drawings and piece lists are in the .TIF format (grid format). Any documentation in excess thereof will be billed and is subject to particular arrangement.
8. For testing, when specific temperatures, times and other measurements or control values are to apply, the appropriate measurement methods must be specified prior to delivery and acknowledged by both Parties. Unless such values are so defined, our own measurement methods will apply.
9. Samples will only be delivered subject to a fee.
10. Assurances given, ancillary agreements and changes to the contract will require the written form to be operative. It will not be possible to waive this requirement.
11. An order placement will be deemed irrevocable unless the Deliverer has agreed in writing to cancel it.
12. For export transactions, delivery will be subject to the conditions specified on the order confirmation; in addition, the respectively current version of the international trade definitions most commonly used in international sales contracts (incoterms 1953) will apply as devised by the International Chamber of Commerce.
13. In addition to the General Terms of Delivery and Sale, compliance with our "product information" sheets, the technical data sheets as well as other product-specific publications will apply, each in their current version.

## § 2 Prices

1. Failing specific written agreement, prices apply as in the Federal Republic of Germany, free house plus the value added tax required by law. For export transactions, the item to be delivered is deemed sold "ex works", unless the contract stipulates otherwise about the type of sale. For single orders for a value of goods less than 100.00 € net, a handling fee of 10.00 € plus the value added tax required by law will be charged throughout the country.
2. Please note that we only despatch the consignment at the request of the customer. Irrespective of this, the rulings laid down in Section 5 will apply.
3. We bill the prices that were valid when the contract was drawn up, based on the cost factors applicable at the time. Should these cost factors (particularly material, wages, energy etc.) alter during the period between the drawing up of contract and the agreed delivery time, we will be entitled to amend prices accordingly. For export transactions, the Deliverer will be entitled to cancel that part of the order that has not yet been completed or to adjust prices appropriately if the currency in which the contract was drawn up has devalued.
4. With an "ex works" contract, the goods will be transported at the expense and risk of the Orderer. For all consignments, the respectively current version of the provisions of incoterms 1953 will apply to the insurance and bearing of risk.
5. For parts/products that are produced in line with Purchaser requirements, we will notify the Purchaser of our production quantity. The Purchaser undertakes to take receipt of the quantity thus confirmed.
6. Over-deliveries and short-deliveries are admissible up to 5%; for special tooling up to 10% is admissible, at least, however, 2 (two) pieces. The respective delivery will be billed.

## § 3 Modalities of Payment

1. Failing specific arrangements, payment is due without deduction and without charges within 10 days of the date of invoice - even for delivery instalments.
2. We are not bound to accept cheques or bills. In the event cheques or bills are accepted subject to prior arrangement in individual circumstances, this will only be as conditional payment, taking due account of discount charges and collection fees that are to be paid immediately in cash by the Customer. The ultimate credit entry of bills of exchange and cheques will be after their redemption. The acceptance of cheques or bills will be without prejudice for subsequent commitments to payment. We will not be liable for the punctual presentation, protest, notification and return of a bill in the event it is not honoured.
3. Any overshooting of the payment deadline will incur interest to the amount of the banks' borrowing costs, at least, however 8% in excess of the respective basic interest rate of the European Central Bank.
4. If a bill or a cheque is not honoured on time or if a deadline for payment is over-reached, all receivables still outstanding, including those that are deferred and those for which bills or cheques have been given, will become due for immediate payment.
5. The Purchaser will only be entitled to offset if the counterclaims he asserts have been established by declaratory judgment, if they are undisputed or have been acknowledged by us. The Purchaser will be authorized to exercise a right of retention to the extent his counterclaim is derived from the same contractual relations.
6. For export transactions, payments will be paid subject to the modalities of payment contracted.

7. Costs of payment transactions, particularly bank charges of foreign payment transfers to us, are in principle for debits of the client.

## § 4 Delivery Period

1. The delivery period we specify begins to run providing all technical issues have been fully clarified. The delivery deadlines we give are in principle not binding and only constitute a probable delivery time.
2. The compliance with our commitment to deliver depends on the Purchaser having punctually and properly fulfilled his commitments, particularly his commitment to comply with the contracted terms of payment. The right to plea non-performance of contract will be retained. This right will also be derived from commitments that have not been satisfied in full from previous deliveries.
3. The period of delivery commences upon the despatch of the order confirmation, yet not before the Orderer has provided the documents, permits, clearance papers etc. to be procured and not before the agreed deposit has been received.
4. If a fixed delivery date has been arranged, the Deliverer will effect delivery on time. Compliance with the delivery period will be deemed given if the item to be delivered has left the works or the readiness for despatch has been notified before the expiry of said delivery period, subject to timely and accurate delivery from our own suppliers. If the Orderer amends parts of the consignment to be delivered, the delivery period will run anew upon confirmation of said amendment.
5. Force majeure, war, uprising, strike, lock-out or measures enforced by the authorities for whatever reason that impede delivery, as well as a lack of raw materials, means of transport and theft – even with our own suppliers – will release the Deliverer from his commitment to deliver within the specified period of time. The Orderer will be notified immediately of the occurrence of the hindrance and of the likely repercussions.
6. It is admissible to effect delivery prior to the expiry of the specified delivery period and to deliver in appropriate instalments.
7. Compliance with the delivery period depends on the fulfilment of all contractual duties of the Orderer.
8. In the event of delivery delays or of the impossibility of delivery, the provisions of Section 10 will apply.

## § 5 Transfer of Risk and Taking Receipt

1. Risk will pass to the Orderer at the latest with the despatch of the consignment, even if delivery is to be in instalments or if we still have other services to provide, e.g. despatch costs or transport and delivery as well as installation.
2. At the request and at the expense of the Orderer, we will ensure insurance cover of the consignment to be delivered for theft, breakage and damages from transportation, fire and water and for other insurable risks.
3. If despatch is delayed for reasons for which the Orderer is responsible, the risk will pass to the Orderer as from the date of readiness for despatch; nevertheless, we undertake to ensure insurance cover at the request and expense of the Orderer as called for by the Orderer.
4. Even if the delivered items feature insignificant defects, the Orderer will take receipt thereof irrespective of the rights laid down in Section 8.

## § 6 Default of Acceptance, Call-off Orders

1. If the Orderer fails to take receipt of the items contracted on time, we will be entitled to set the Orderer a subsequent period of grace after which we will be entitled to dispose of the items otherwise and supply the Orderer subject to a subsequently lengthened delivery period. Irrespective of this, we will be entitled to withdraw from the contract as defined in Section 326 BGB [German Civil Code] and to call for compensation for damages owing to non-performance. In the event we call for compensation for non-performance, we will be able to claim compensation of 25% of the agreed price plus value added tax without having to provide evidence. We retain the right to assert actual damages of a greater dimension.
2. Orders, which we confirm for call-off must be accepted within one year of the date of order placement at the latest - unless otherwise arranged. The same will apply to fixed reservations or to permanent "call-off" statuses. Section 6.1 will apply accordingly in the event the goods are not called off.

## § 7 Retention of Title

1. The items for delivery (the goods subject to the retention of title) will remain our property until all claims to which we are entitled from the Purchaser on the business relations have been satisfied in full. Where the value of all security interests to which we are entitled against the Purchaser exceeds all secured claims by more than 10%, we will release some of the security interests as appropriate at the request of the Purchaser.
2. During the period in which title to the goods is retained, the Purchaser is not allowed to pledge or assign the goods as security and is only permitted to resell to resellers in normal business transactions and only providing the reseller receives payment from its own customer or subjects the customer's ownership of the item to the full satisfaction of the customer's commitments to payment.
3. In the event of attachment, seizure or any other disposition or third-party intervention in respect of the goods, the Purchaser will notify us immediately so that we can file action subject to Section 771 ZPO [German Code of Civil Procedure]. If the third party is not able to reimburse us for the court and out-of-court costs of legal action pursuant to Section 771 ZPO, the Purchaser will be liable for the loss we thus incur.
4. The Purchaser undertakes to treat the item purchased with care. In particular, the Purchaser undertakes at his own expense to ensure it is adequately insured at reinstatement value against damages from fire, water and theft. Should maintenance and inspection work be required, the Purchaser will have this carried out in good time at his own expense.
5. In the event of breaches of duty on the part of the Purchaser, particularly with default in payment, we will be entitled to cancel the contract and to take back the goods; the Purchaser undertakes to surrender the goods. If we take back the goods and/or assert the retention of title, this does not mean we are cancelling the contract, unless we have explicitly declared as much.



# General conditions of sale and delivery

6. If the Purchaser has resold the item purchased in regular business transactions, the Purchaser herewith now assigns to us all claims to payment in the amount of the final invoice amount (including value added tax), such as due to the Purchaser from the resale to his customer or a third party, irrespective of whether the item purchased has been resold without or after further reworking. The Purchaser remains authorized to collect this payment, even after assignment. Our own authority to collect payment ourselves will not be affected hereby. However we undertake not to collect payment providing the Purchaser satisfies his own commitments to payment from the proceeds collected, does not default in payment and in particular providing the initiation of insolvency proceedings is not petitioned or payments cease to be made. Should this, however, be the case, we will be able to demand that the Purchaser provides us with details of the assigned payments and their debtors as well as all information necessary to collect payment, that he hands over the relevant documentation to us and notifies the debtors (third parties) of the assignment.

7. The processing or reworking of the item purchased by the Purchaser will always be carried out on our behalf. If the item purchased is processed with other items not belonging to us, we will acquire co-ownership to the new item to the value of the item purchased (final invoice amount including value added tax) in relation to the other processed items at the time of reworking. The same will apply to the thus newly created items as for the items delivered subject to retention of title.

8. If the item purchased is processed with other items not belonging to us, we will acquire co-ownership to the new item to the value of the item purchased (final invoice amount including value added tax) in relation to the other processed items at the time of reworking. If the intermixing is such that the Purchaser's item is to be deemed the main item, it is herewith agreed that the Purchaser will transfer co-ownership to us proportionately. The Purchaser will keep the property in which we hold exclusive ownership or co-ownership on our behalf.

## § 8 Quality Defects

We are liable for defects in quality as follows:

1. All parts or services will be remedied, at our discretion, free of charge or redelivered or provided again that are found to feature a quality defect during the statutory period of limitation - irrespective of service life - providing the origin thereof already existed at the time of the passing of risk.
2. Claims to quality defects will become statute-barred in 12 (twelve) months. The period of time commences with the passing of risk (Section 6).
3. The Purchaser will immediately file written objection to the quality defect with us.
4. In the event objections are filed, the Purchaser will be permitted to refrain from payment to an extent appropriate to the quality defects featured. The Purchaser will only be able to refrain from payment if an objection is asserted, the justification of which cannot be doubted. If the objection has been asserted unjustifiably, we will be entitled to call for the reimbursement of the expenses incurred by us.
5. Initially we will always be granted an opportunity to remedy a defect within an appropriate period of grace.
6. Should the remedy fail, the Purchaser – notwithstanding any claims to damages – will be able to cancel the contract or reduce remuneration. The Purchaser will only be able to call for the reimbursement of fruitless expenditure if the defect in question is attributable to our own wilful intent or gross carelessness for which we are responsible.
7. Claims to defects in quality are not given if the divergence from the agreed nature of the product is only minimal, if usability is only insignificantly impaired, in cases of natural depreciation or damages generated after passing of the risk as a result of faulty or negligent treatment, excessive exposure, unsuitable operating media or because of specific outer impact that was not to be expected given the contract, as well as in cases of non-reproducible software errors. If amendments or repair work is carried out improperly by the Purchaser or by third parties, there will be no claims to the defects resulting or the effects thereof. The same will apply to a lack of compliance with our instructions on handling and other instructions and if maintenance is not carried out properly.
8. Claims of the Purchaser to a refund of the expenses incurred for the purpose of remedy, such as costs of transport, travel, labour and materials will be ruled out, when such expenses increase because the item delivered was brought to a destination other than the Purchaser's branch premises, unless said relocation is in accordance with the intended use of the item.
9. Legal claims to recourse against us on the part of the Purchaser will only be given if the Purchaser has entered into no agreement with his customer in excess of those claims to defects regulated by the law.
10. Claims to compensation for damages will be governed by Section 9. Any farther-reaching claims to quality defects or others than those governed in this Section or in Section 9 will be ruled out.

## § 9 Industrial Property Rights and Copyrights, Defects of Title

Unless otherwise agreed, we undertake to only effect delivery free from proprietary rights and third party copyrights (referred to in the following as industrial property rights) in the country of the delivery destination. In the event a third party files justified claims against the Purchaser for a breach of industrial property rights derived from deliveries we effected that are being used as contracted, we will be liable towards the Purchaser for the period of time specified in Section 8.2 as follows:

1. At our discretion and at our own expense, we will either procure a licence for the deliveries in question, alter them so that there is no breach of industrial property rights or we will provide a substitute. Should this not prove possible at appropriate conditions, the Purchaser will be entitled to the rights of cancellation or reduction as laid down by the law. The Purchaser will only be able to call for the reimbursement of fruitless expenditure if we are to blame for wilful intent or gross negligence. Our commitment to provide compensation for damages is governed by Section 10.
2. The above commitments will only be given if the Purchaser has given us immediate, written notification of the claims asserted by the third party, does not recognise any breach of rights and if we retain the right to initiate defence measures and negotiate a settlement. If the Purchaser ceases to use the item delivered in order to reduce damages or for other good cause, the Purchaser undertakes to inform the third party that this discontinuation of use does not embody any acknowledgement of a breach of industrial property rights.
3. Claims of the Purchaser will be ruled out if the Purchaser is responsible for the breach of industrial property rights.
4. Any claims of the Purchaser will also be ruled out if the breach of industrial property

rights was derived from specific specifications of the Purchaser, from an application that we could not foresee or from the item delivered being altered by the Purchaser or used in combination with products that we have not delivered.

5. In the case of breaches of industrial property rights, the provisions of Sections 8.4, 8.5 and 8.9 will apply appropriately to the claims of the Purchaser governed by Section 13.

6. Any farther-reaching claims to defects of title of the Purchaser or claims other than those governed by the present Section 9 against us or our vicarious agents will be ruled out.

## § 10 Overall Liability

1. Claims of the Purchaser to compensation for damages – irrespective of the legal nature of the claim asserted – will be ruled out.
2. The exceptions are:
  - a) Damages due to the violation of major contractual duties (cardinal duties). However, in the case of simple negligence, liability for damages will be restricted to foreseeable, typically occurring damages.
  - b) Damages derived from injury to life and limb if we are responsibility for the breach of duty.
  - c) Damages attributable to wilfully intentional or negligent violations, said breach of duty on the part of our legal representatives or vicarious agents being of equal status to any breaches of duty on our part.
  - d) Claim to damages for impossibility or inability.
3. Any alteration of the onus of proof to the detriment of the Purchaser does not relate to the above provisions.
4. Liability subject to the Product Liability Act remains unaffected hereby.
5. Where liability for compensation is ruled out or restricted in our respect, this will also apply to the personal liability for damages of our employees, our trade representatives and our vicarious agents.

## § 11 Duties to Involvement of the Purchaser

1. The involvement of the Purchaser that has been agreed to explicitly or implicitly in the contract will be subject to no specific remuneration, unless otherwise explicitly agreed.
2. The Purchaser undertakes to inform us in good time of all facts, which indicate that stocks and products we have made available in the light of our notified production capacities cannot be used or not be used in full. Where stock remains, in the case of a premature change to his planning, the Purchaser will take over the remainder and any costs of destruction that might be incurred. This will also apply to products for which we have had to place orders for minimum quantities from our own suppliers, providing we previously advised the customer thereof.
3. The Purchaser guarantees that the products delivered by him for reworking are suitable for the purpose. We do not undertake to check the products delivered by the Purchaser for their quality and aptitude for reworking. In ongoing business relations and whenever an item for reworking has been initially checked, tested and released, the Purchaser undertakes to inform us in writing of each and every product amendment without actually being requested to do so. When items are being reworked, after every change in production conditions on his premises, in particularly when substituting tooling, machinery or introducing new production processes, the Purchaser also undertakes to examine the item to be processed by us for any divergence and alteration and to notify us in writing of any such divergence and alteration.
4. Instructions from our Purchaser, the selection of material or other specifications laid down by the Purchaser do not oblige us to check them for accuracy.
5. The Purchaser will hence check all instructions it issues as well as the quality of the material specified to us or made available to us for compliance with the law and technical regulations.
6. Should the Purchaser default in terms of its duties to provide or to become involved, we will be entitled to the rights stipulated by law.
7. In any case, goods may only be returned subject to the explicit consent of the Deliverer. Their return will be free-house and details of the order number and delivery date will be given as well as the original delivery packaging. The goods will be in their original condition, i.e. in an undamaged state. For the handling of a return, we charge 20% of the value of the goods, at least, however, 50.00 € plus value added tax. In individual circumstances, the Deliverer retains the right to charge the Orderer a higher sum based on evidence.

## § 12 Place of Performance and Jurisdiction/ Other

1. The place of performance and payment will be the registered office of our company in Sontheim/Brenz.
2. Exclusively the laws of the Federal Republic of Germany will govern the present contractual relations. The application of the United Nations Convention dated 11.04.80 on Contracts for the International Sale of Goods (CISG – "Wiener Kaufrecht") is ruled out.
3. For all disputes derived from contractual relations, if the Orderer is a registered businessperson, a legal entity under public law or a separate estate under public law, legal action will be filed with the court of law with jurisdiction for our registered office. We will also be entitled to file legal action at the location of the registered seat of the Orderer.
4. Should any one condition of our General Terms of Sale and Delivery be void for any reason whatsoever, the validity of the remaining provisions will not be affected hereby.
5. We will save your data in accordance with Section 23 BDSG [Federal Data Protection Act].

RÖHM GmbH

D-89565 Sontheim/Brenz

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” RÖHM – we’re here to serve you.

**We offer real partnership.**

We see this reflected in collaborative partnerships both with specialist dealers as well as directly with consumers. We offer sound advice, provide comprehensive support and do our utmost for you, so that you get exactly the right solution for meeting your targets safely and economically. And if there isn't a solution available yet, then we'll design it.





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