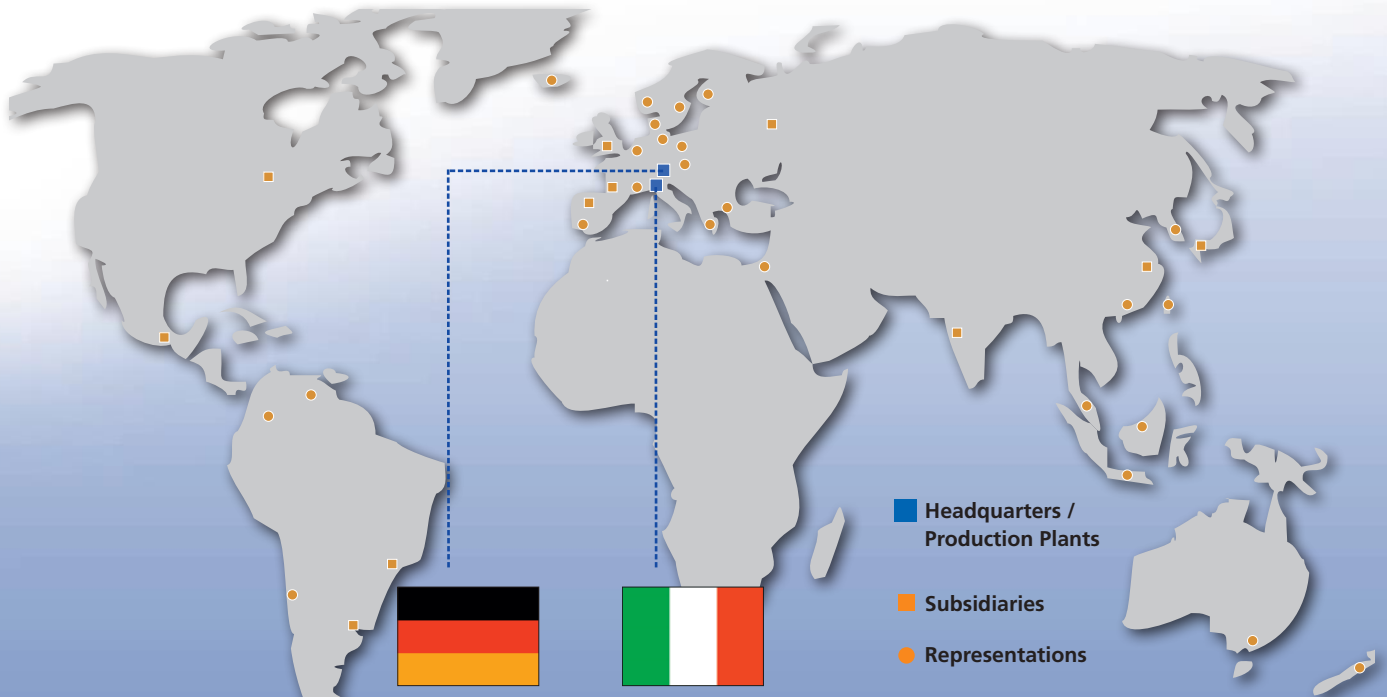


# GRINDING 15E

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## Free web applications

**JAW FINDER**  
 free application to search for jaws very quick and easy  
[www.smw-autoblok.de](http://www.smw-autoblok.de)



- ▶ Free application to search for jaws quick and easy
- ▶ Covers all common chuck manufacturers
- ▶ 3D models for all standard jaws available

**D-Vario Configurator**  
 free application to configurate your set up  
[www.smw-autoblok.de](http://www.smw-autoblok.de)



- ▶ Free application to configurate your set up
- ▶ Save and quick configuration for different gears
- ▶ Export of configuration to your computer possible

**Update GFT-X**  
 online firmware update available  
[www.smw-autoblok.de](http://www.smw-autoblok.de)



- ▶ Free update software for the firmware of the Gripping force meter GFT-X\*
- ▶ Firmware update to download from website\*
- ▶ Takes only a few minutes for a complete update

\* Registration required  
[www.smw-autoblok.de](http://www.smw-autoblok.de)

# Overview Grinding Applications



Chapter 1

## SRG

High precision grinding Steady Rests  
Grinding diameter  $\varnothing$  3 - 126 mm

- Fine adjustment of the grinding center
- Retractable arms
- Suitable for follow-down grinding
- High rigidity

## Workpieces

Camshafts

Crankshafts

Shafts



Chapter 2

## AcuGrind

High precision air chucks  
Chuck sizes  $\varnothing$  80 - 250 mm

- For OD and ID clamping
- Built-in pneumatic actuation
- For universal grinding applications

## Workpieces

Bearing rings  
Bearing parts

Bolts

Camshafts  
Shafts



Chapter 3

## Diaphragm Technology

Diaphragm chucks  
Chuck sizes  $\varnothing$  210 - 400 mm

- Diaphragm technology for highest precision
- External or pitchline clamping
- With or without open center

## Workpieces

Gears

Gear shafts



Chapter 4

## FDG

High precision face drivers  
for machining between center pins

- Machining of the entire surface of the workpiece with one single operation
- Power operated on the side of the spindle
- Highest run-out accuracy

## Workpieces

Camshafts

Gear shafts

Shafts



Chapter 5

## CPG

Pneumatic pancake cylinder for diaphragm chuck  
D-VARIO and face driver FDG

- Easy installation for grinding and turning machines without hydraulic unit
- Operating pressure 2-8 bar
- Medium feed for air / coolant



Chapter 6

## EM-S

Segment sleeve mandrel  
Clamping diameter  $\varnothing$  18 - 105 mm

- For ID clamping
- Very rigid design

## Workpieces

Bearing rings  
Bearing parts



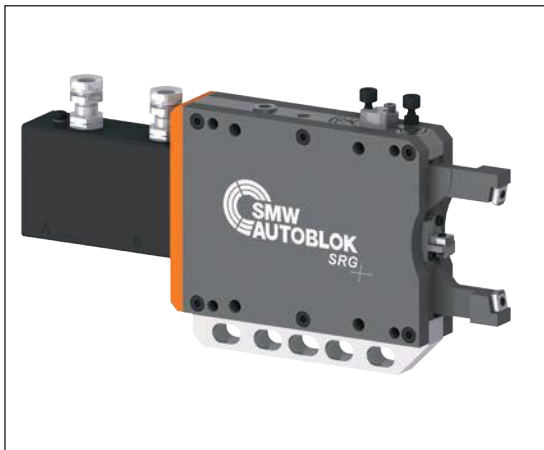




## SRG

High precision grinding Steady Rests  
Grinding diameter  $\varnothing$  3 - 126 mm

- Fine adjustment of the grinding center
- Retractable arms
- Suitable for follow down grinding
- High rigidity



## Application / customer benefits

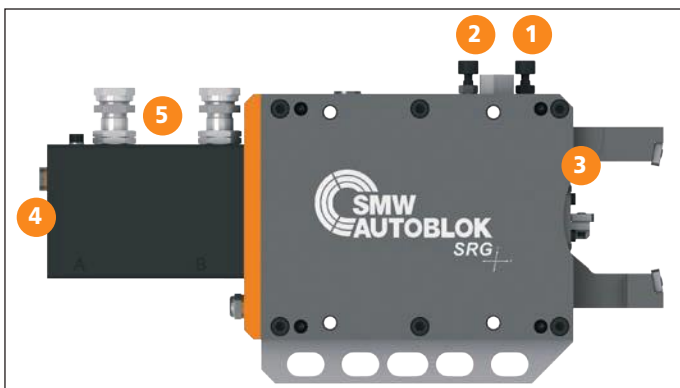
- Support of shaft type workpieces on grinding machines
- Particularly suitable for the machining of crankshafts and camshafts
- Rapid set up of the Steady Rest to the grinding center with the fine adjustment
- Suitable for Follow down grinding

## Standard equipment

- Basic Grinding Steady Rest SRG
- Delivery in transport box

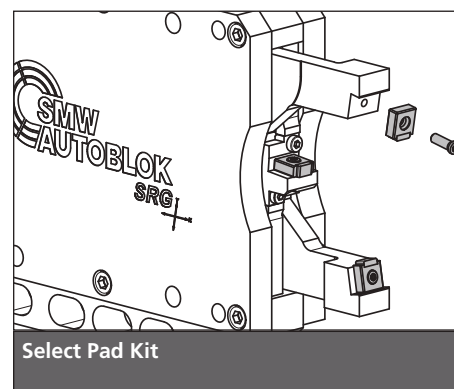
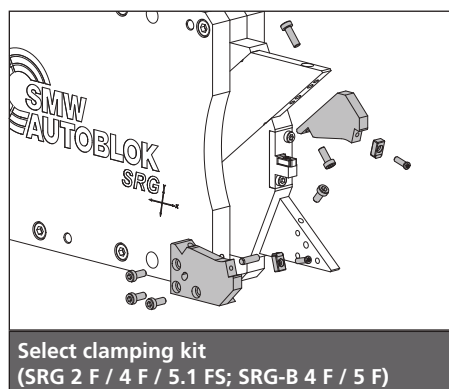
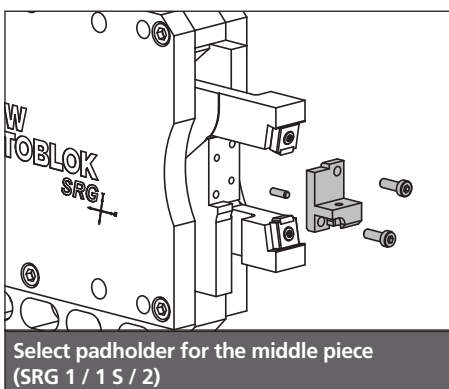
(Padholder for the middle piece, Clamping Kit and Pad Kits are not scope of delivery. See therefor the overview for the configurations below.)

## Technical Features



1. Horizontal fine adjustment of the grinding center
2. Vertical fine adjustment of the grinding center
3. Retractable Steady Rest arms
4. Port for compressed air against dust and coolant
5. Monitoring of end positions with proximity switches (switches not included)

## Overview Configuration



### Padholder for the middle piece (\*)

- Consisting of padholder middle piece (incl. mounting material)
- 3 versions available:  
0 degree,  $\pm 5$  degree,  $\pm 7$  degree
- Can be rotated by 180 degrees

### Clamping Kit for the arms (\*\*)

- Consisting of 2 nests for the arms and 1 padholder for the middle piece (incl. mounting material)
- The different clamping ranges can be covered by different clamping kits

### Pad Kit (\*\*\*)

- Consisting of 3 pads incl. 3 mounting screws
- Standard for clamping range as shown on the Steady Rest
- Special for shifting of the clamping range -5 mm

\* Consisting of padholder for the middle piece incl. mounting material

\*\* Consisting of padholder for the middle piece and the nests for the arms incl. mounting material

\*\*\* Consisting of 3 pads and 3 mounting bolts

# SRG/ SRG-B

Grinding Steady Rests

Ordering review

SMW-AUTOBLOK Type Basic Steady Rest		SRG 0.8 223250	SRG 1 221175	SRG 1 S 223060	SRG 2 221871
Clamping range	mm	3-18	20-35	20-35	30-60
Padholder 0 degree*	Id. No.	-	203977	205191	203985
Padholder ± 5 degree*	Id. No.	-	203978	205196	203986
Padholder ± 7 degree*	Id. No.	-	203979	205197	203987
Pad Kit Standard	Id. No.	205439	203976	204161	203976
Pad Kit Special ***	Id. No.	-	203939	-	203939
Working pressure	bar	20-50	15-30	20-50	15-30
Follow down grinding		Yes	Yes	Yes	Yes

SMW-AUTOBLOK Type Basic Steady Rest		SRG 2 F 222260			SRG 4 F 221930						SRG 5.1 FS 222665				
Clamping range	mm	12-60			22-100						96-126				
Clamping kit		I	II	III	I	II	III	IV	V	VI	I	II	III	IV	V
Clamping range	mm	12-28	28-44	44-60	22-35	35-48	48-61	61-74	74-87	87-100	96-102	102-108	108-114	114-120	120-126
Clamping kit 0 degree**	Id. No.	204383	204382	204381	205000	205001	205002	205003	205004	205005	-	-	-	-	-
Clamping kit -2 degree**	Id. No.	-	-	-	205006	205007	205008	205009	205010	205011	-	-	-	-	-
Clamping kit -3 degree**	Id. No.	-	-	-	-	-	-	-	-	-	205200	205201	205202	205203	205204
Clamping kit -5 degree**	Id. No.	206349	206348	206347	-	-	-	-	-	-	-	-	-	-	-
Clamping kit -7 degree**	Id. No.	206346	206345	206344	-	-	-	-	-	-	-	-	-	-	-
Pad Kit Standard	Id. No.	203976			204161						204161				
Pad Kit Special***	Id. No.	203939			-						-				
Working pressure	bar	15-30			7-25						7-25				
Follow down grinding		Yes			Yes						Yes				

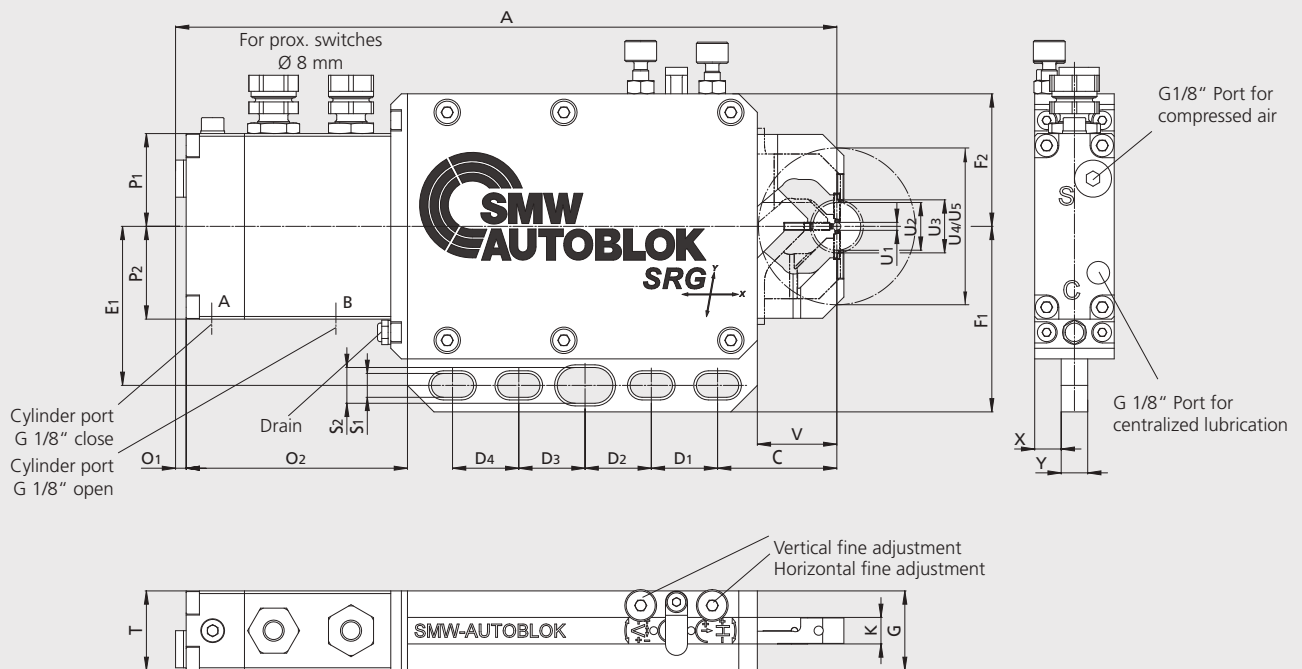
SMW-AUTOBLOK Type Basic Steady Rest		SRG-B 4 F 223140						SRG-B 5 F 222530			
Clamping range	mm	22-100						48-136			
Clamping kit		I	II	III	IV	V	VI	I	II	III	IV
Clamping range	mm	22-35	35-48	48-61	61-74	74-87	87-100	48-70	70-92	92-114	114-136
Clamping kit 0 degree**	Id. No.	205000	205001	205002	205003	205004	205005	-	-	-	-
Clamping kit -2 degree**	Id. No.	205006	205007	205008	205009	205010	205011	205018	205019	205020	205021
Clamping kit -3 degree**	Id. No.	-	-	-	-	-	-	-	-	-	-
Pad Kit Standard	Id. No.	204161						204161			
Pad Kit Special***	Id. No.	-						-			
Working pressure	bar	10-30						10-30			
Follow down grinding		Yes						Yes			

\* Consisting of padholder for the middle piece incl. mounting material

\*\* Consisting of padholder for the middle piece and the nests for the arms incl. mounting material

\*\*\* Clamping range -5 mm

SRG-B Side mounted cylinder



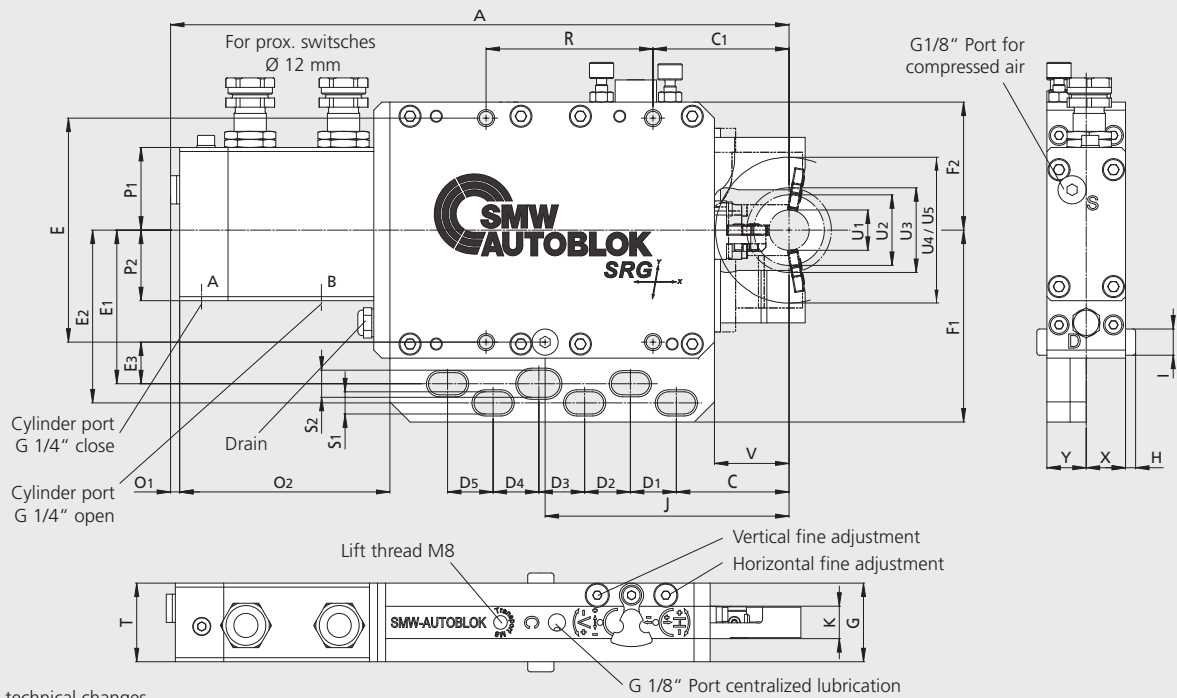
Subjected to technical changes.  
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 0.8
Id. No.			223250
Minimum clamping diameter	U1	mm	3
Maximum clamping diameter	U2	mm	18
Max. loading diameter (vertical, steady open)	U3	mm	58
Max. axial clearance diameter (steady open)	U4	mm	58
Max. swing diameter	U5	mm	58
Horizontal adjustment range		mm	± 0.05
Vertical adjustment range		mm	± 0.05
	A	mm	249.5
	C	mm	45
	D1	mm	25
	D2	mm	25
	D3	mm	25
	D4	mm	25
	E1	mm	60
	F1	mm	70
	F2	mm	50
	G	mm	30
	K	mm	10
	O1	mm	4
	O2	mm	83.5
	P1	mm	35
	P2	mm	35
	S1	mm	9 (4x)
	S2	mm	13.46 (1x)
	T	mm	30
	V	mm	30
	X	mm	10
	Y	mm	10
Cylinder stroke		mm	43
Piston area		cm <sup>2</sup>	3.14
Operating pressure max.		bar	50
Working pressure		bar	20-50
Repeatability accuracy		mm	±0.001
Mass		kg	4.3

# SRG 1

Grinding Steady Rests

Dimensions and technical data



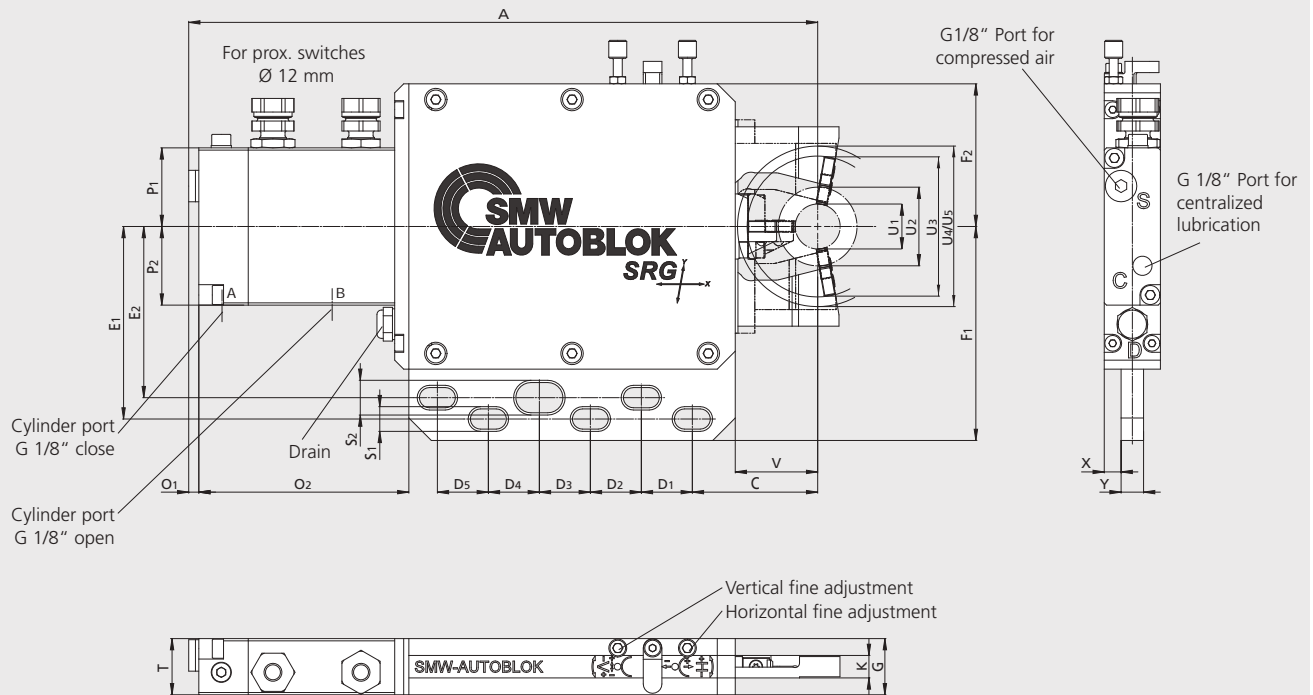
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For more detailed information please ask our customer service.

SMW-AUTOBLOK Type Id. No.			SRG 1 221175
Minimum clamping diameter	U1	mm	20
Maximum clamping diameter	U2	mm	35
Max. loading diameter (vertical, steady open)	U3	mm	72
Max. axial clearance diameter (steady open)	U4	mm	72
Max. swing diameter	U5	mm	72
Horizontal adjustment range		mm	± 0.20
Vertical adjustment range		mm	± 0.10
	A	mm	306.8
	C	mm	55.9
	C1	mm	67.5
	D1	mm	22.8
	D2	mm	22.7
	D3	mm	22.7
	D4	mm	22.7
	D5	mm	22.6
	E	mm	111.1
	E1	mm	76.2
	E2	mm	85.7
	E3	mm	20.65
	F1	mm	95.2
	F2	mm	63.5
	G	mm	39
	H	mm	5
	I	mm	13
	J	mm	121
	K	mm	16.1
	O1	mm	4.5
	O2	mm	104.3
	P1	mm	41
	P2	mm	35
	R	mm	82.8
	S1	mm	11 (5x)
	S2	mm	13.46 (1x)
	T	mm	39
	V	mm	37
	X	mm	19.5
	Y	mm	19.5
Cylinder stroke		mm	73.4
Piston area		cm <sup>2</sup>	7.07
Operating pressure max.		bar	45
Working pressure		bar	15-30
Repeatability accuracy		mm	±0.001
Mass		kg	8.5

# SRG 1 S

## Dimensions and technical data

## Grinding Steady Rests



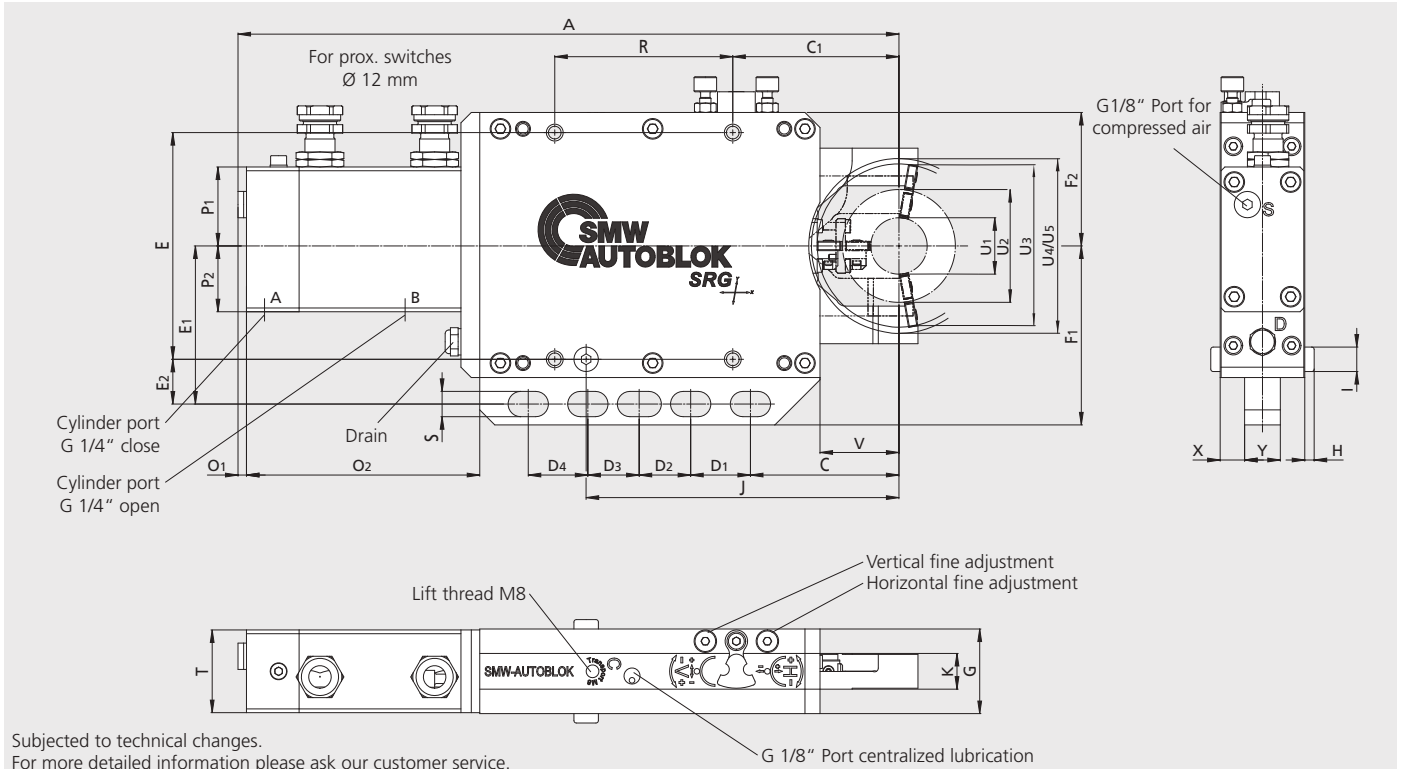
Subjected to technical changes.  
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type Id. No.			SRG 1 S 223060
Minimum clamping diameter	U1	mm	20
Maximum clamping diameter	U2	mm	35
Max. loading diameter (vertical, steady open)	U3	mm	62
Max. axial clearance diameter (steady open)	U4	mm	72
Max. swing diameter	U5	mm	72
Horizontal adjustment range		mm	± 0.20
Vertical adjustment range		mm	± 0.10
	A	mm	280
	C	mm	55.8
	D1	mm	22.7
	D2	mm	22.7
	D3	mm	22.7
	D4	mm	22.7
	D5	mm	22.7
	E1	mm	85.7
	E2	mm	76.2
	F1	mm	95.25
	F2	mm	63.5
	G	mm	25
	K	mm	10
	O1	mm	4.5
	O2	mm	93.5
	P1	mm	35
	P2	mm	35
	S1	mm	9 (5x)
	S2	mm	13.46 (1x)
	T	mm	25
	V	mm	36.7
	X	mm	7.5
	Y	mm	10
Cylinder stroke		mm	53
Piston area		cm <sup>2</sup>	2.01
Operating pressure max.		bar	50
Working pressure		bar	20-50
Repeatability accuracy		mm	±0.001
Mass		kg	4.8

# SRG 2

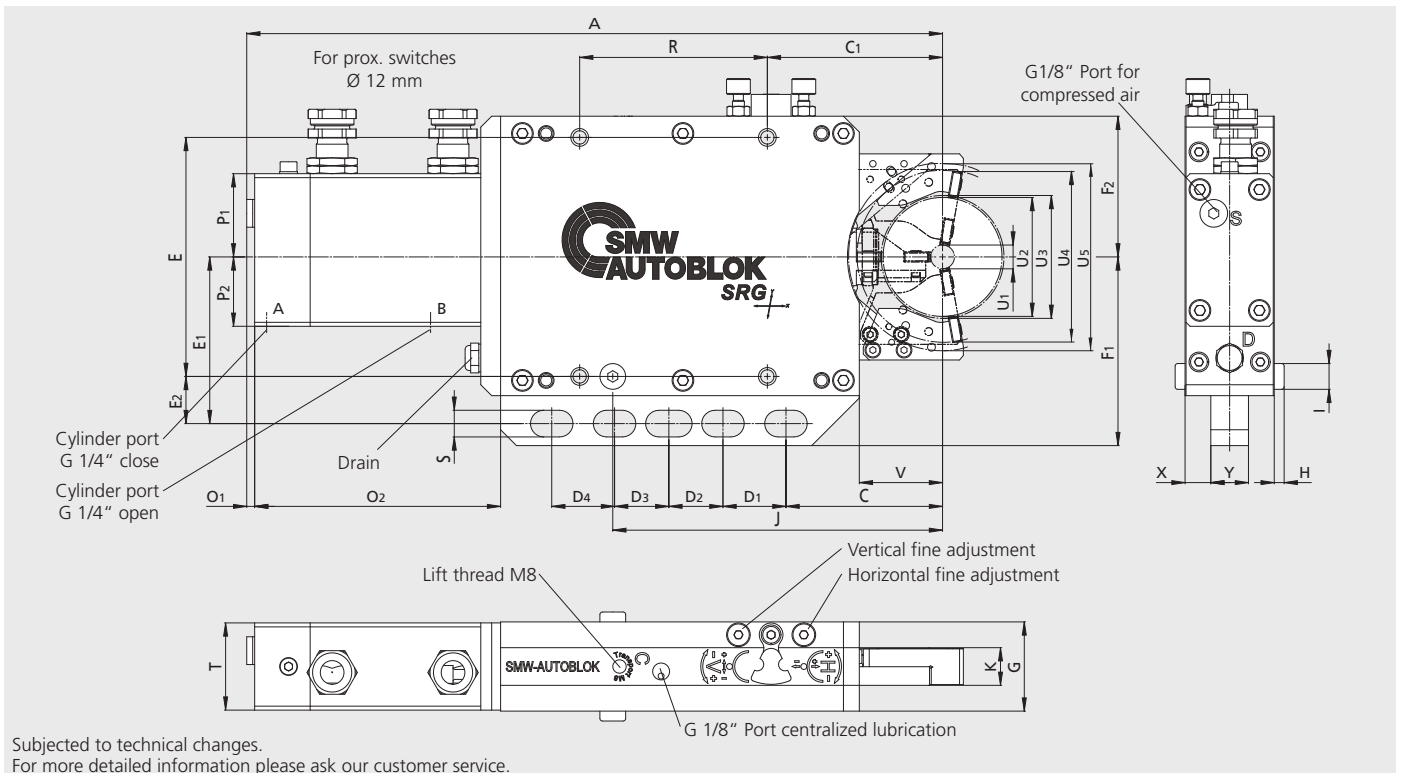
Grinding Steady Rests

Dimensions and technical data



Subjected to technical changes.  
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type Id. No.			SRG 2 221871
Minimum clamping diameter	U1	mm	30
Maximum clamping diameter	U2	mm	60
Max. loading diameter (vertical, steady open)	U3	mm	82
Max. axial clearance diameter (steady open)	U4	mm	95
Max. swing diameter	U5	mm	95
Horizontal adjustment range		mm	± 0.20
Vertical adjustment range		mm	± 0.14
	A	mm	351.6
	C	mm	79
	C1	mm	88.4
	D1	mm	31.8
	D2	mm	27.4
	D3	mm	27.3
	D4	mm	31.7
	E	mm	120.6
	E1	mm	84.1
	E2	mm	23.8
	F1	mm	95.2
	F2	mm	71
	G	mm	45
	H	mm	5
	I	mm	13
	J	mm	166.4
	K	mm	19
	O1	mm	4.5
	O2	mm	124.1
	P1	mm	42
	P2	mm	35
	R	mm	94.7
	S	mm	13.46 (5x)
	T	mm	44
	V	mm	42
	X	mm	13
	Y	mm	19
Cylinder stroke		mm	73.4
Piston area		cm <sup>2</sup>	7,07
Operating pressure max.		bar	45
Working pressure		bar	15-30
Repeatability accuracy		mm	±0.001
Mass		kg	11.8



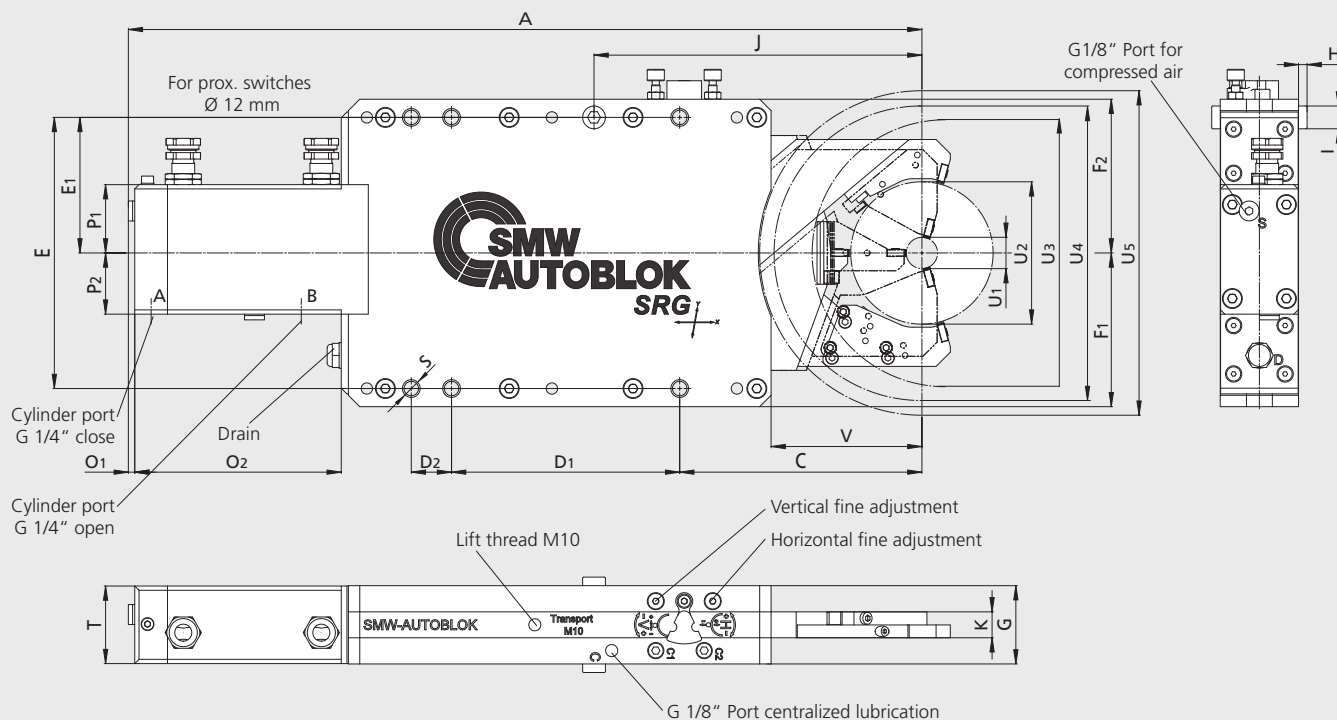
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For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 2 F		
Id. No.			222260		
Clamping kit			I	II	III
Minimum clamping diameter	U1	mm	12	28	44
Maximum clamping diameter	U2	mm	28	44	60
Max. loading diameter (vertical, steady open)	U3	mm	82	82	82
Max. axial clearance diameter (steady open)	U4	mm	94	94	94
Max. swing diameter	U5	mm		94	
Horizontal adjustment range		mm		± 0.20	
Vertical adjustment range		mm		± 0.14	
	A	mm		351.1	
	C	mm		79	
	C1	mm		88.4	
	D1	mm		31.8	
	D2	mm		27.3	
	D3	mm		27.4	
	D4	mm		31.7	
	E	mm		120.6	
	E1	mm		84.1	
	E2	mm		23.8	
	F1	mm		95.2	
	F2	mm		71	
	G	mm		45	
	H	mm		5	
	I	mm		13	
	J	mm		166.4	
	K	mm		19	
	O1	mm		4.5	
	O2	mm		124.1	
	P1	mm		42	
	P2	mm		35	
	R	mm		94.7	
	S	mm		13.46 (5x)	
	T	mm		44	
	V	mm		42	
	X	mm		13	
	Y	mm		19	
Cylinder stroke		mm		66.4	
Piston area		cm <sup>2</sup>		7.07	
Operating pressure max.		bar		45	
Working pressure		bar		15-30	
Repeatability accuracy		mm		±0.001	
Mass		kg		11.2	

# SRG 4 F

Grinding Steady Rests

Dimensions and technical data



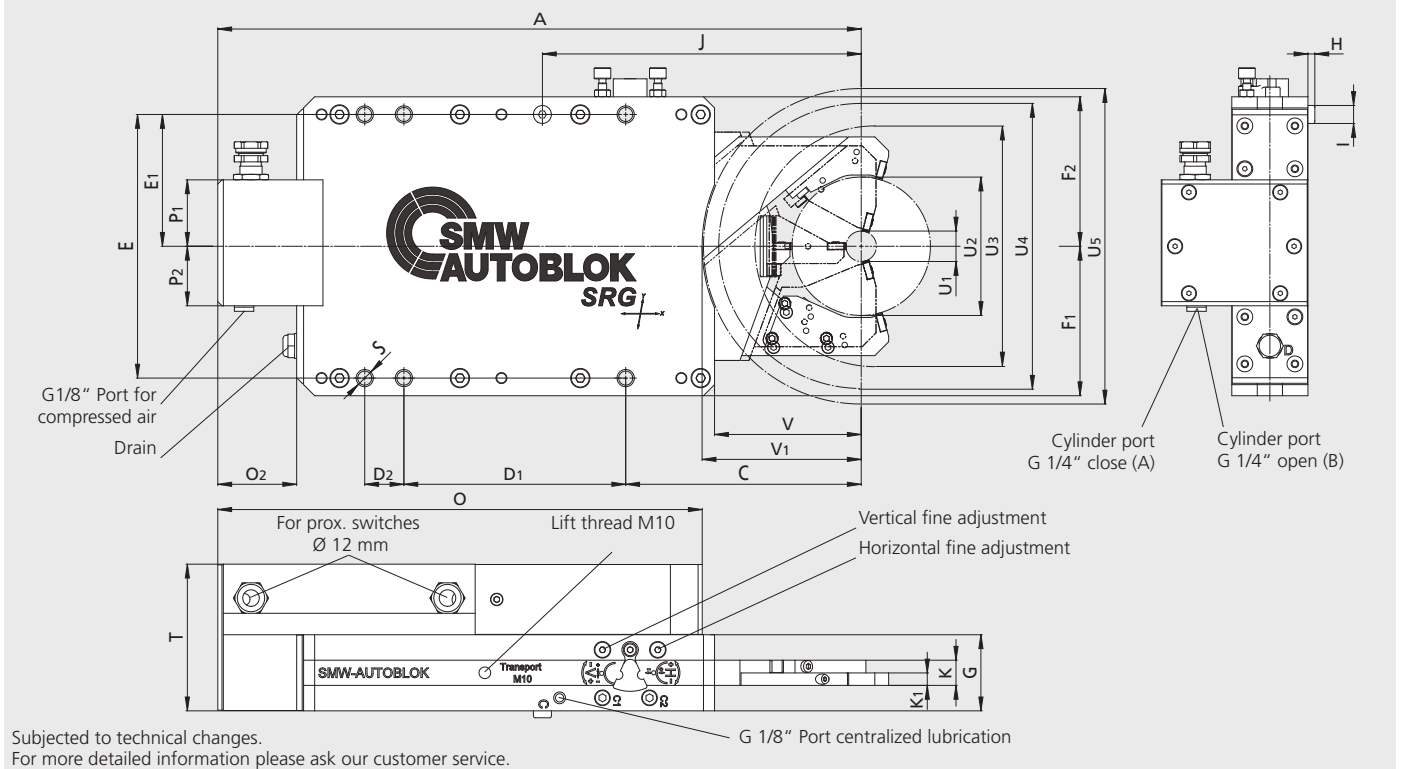
Subjected to technical changes.  
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 4 F					
Id. No.			221930					
Clamping kit			I	II	III	IV	V	VI
Minimum clamping diameter	U1	mm	22	35	48	61	74	87
Maximum clamping diameter	U2	mm	35	48	61	74	87	100
Max. loading diameter (vertical, steady open)	U3	mm	206	204	200	196	194	190
Max. axial clearance diameter (steady open)	U4	mm	218	219	219	220	222	224
Max. swing diameter	U5	mm	228					
Horizontal adjustment range		mm	± 0.20					
Vertical adjustment range		mm	± 0.14					
	A	mm	557.6					
	C	mm	170.2					
	D1	mm	160.3					
	D2	mm	28.3					
	E	mm	190.5					
	E1	mm	95.25					
	F1	mm	108					
	F2	mm	108					
	G	mm	55					
	H	mm	6					
	I	mm	16					
	J	mm	230.4					
	K	mm	18.2					
	O1	mm	4.5					
	O2	mm	145.1					
	P1	mm	48					
	P2	mm	43					
	S	mm	M12 (6x)					
	T	mm	54.5					
	V	mm	106					
Cylinder stroke		mm	127.2					
Piston area		cm <sup>2</sup>	12.56					
Operating pressure max.		bar	30					
Working pressure		bar	7-25					
Repeatability accuracy		mm	±0.001					
Mass		kg	30					

# SRG-B 4 F

Grinding Steady Rests

Dimensions and technical data

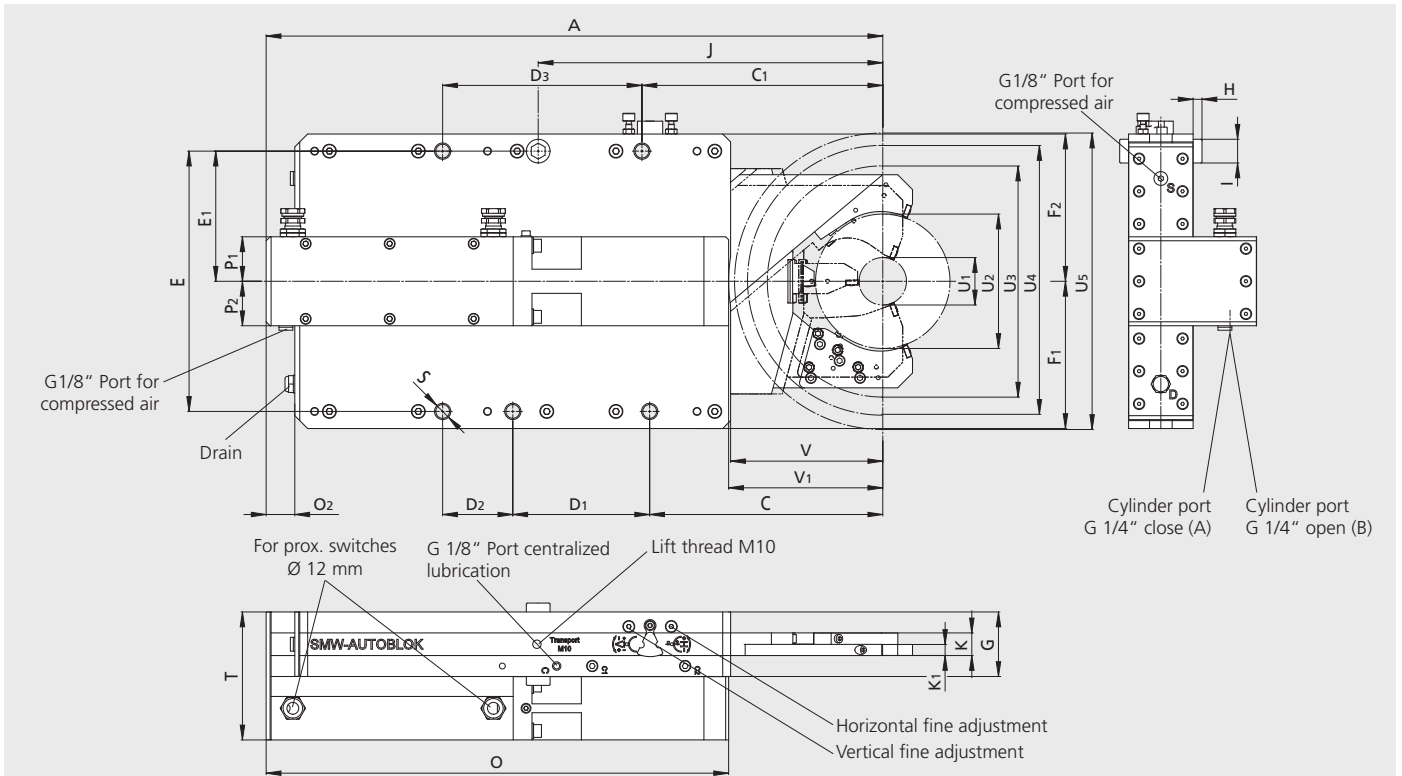


Subjected to technical changes.

For more detailed information please ask our customer service.

G 1/8" Port centralized lubrication

SMW-AUTOBLOK Type			SRG-B 4 F					
Id. No.			223140					
Clamping kit			I	II	III	IV	V	VI
Minimum clamping diameter	U1	mm	22	35	48	61	74	87
Maximum clamping diameter	U2	mm	35	48	61	74	87	100
Max. loading diameter (vertical, steady open)	U3	mm	206	204	200	196	194	190
Max. axial clearance diameter (steady open)	U4	mm	218	218	218	220	222	224
Max. swing diameter	U5	mm	228					
Horizontal adjustment range		mm	± 0.20					
Vertical adjustment range		mm	± 0.14					
	A	mm	465					
	C	mm	170.2					
	D1	mm	160.3					
	D2	mm	28.3					
	E	mm	190.5					
	E1	mm	95.25					
	F1	mm	108					
	F2	mm	108					
	G	mm	55					
	H	mm	5					
	I	mm	13					
	J	mm	230.4					
	K	mm	18.2					
	K1	mm	9					
	O	mm	350.1					
	O2	mm	57					
	P1	mm	48					
	P2	mm	43					
	S	mm	M12 (6x)					
	T	mm	106					
	V	mm	106					
	V1	mm	115					
Cylinder stroke		mm	127.2					
Piston area		cm <sup>2</sup>	10.02					
Operating pressure max.		bar	35					
Working pressure		bar	10-30					
Repeatability accuracy		mm	±0.001					
Mass		kg	37.8					



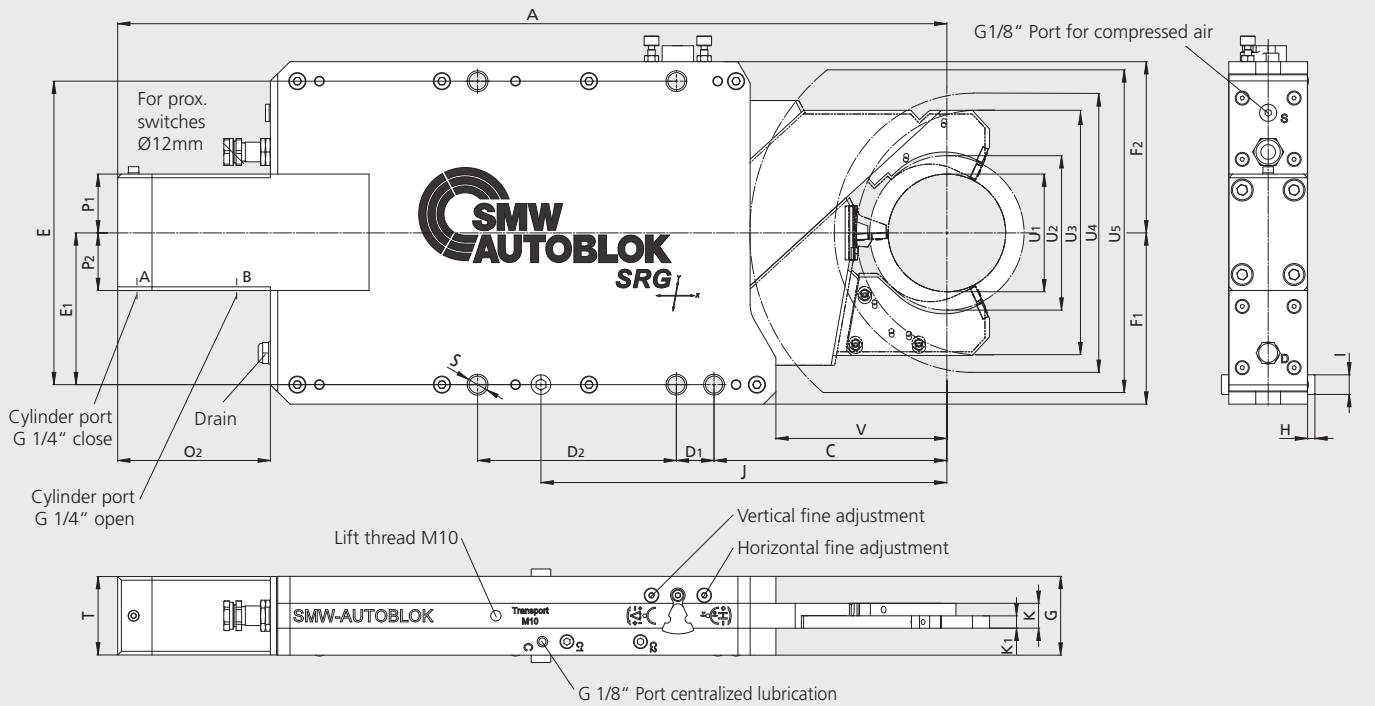
Subjected to technical changes.  
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG-B 5 F			
Id. No.			222530			
Clamping kit			I	II	III	IV
Minimum clamping diameter	U1	mm	48	70	92	114
Maximum clamping diameter	U2	mm	70	92	114	136
Max. loading diameter (vertical, steady open)	U3	mm	273	267	263	257
Max. axial clearance diameter (steady open)	U4	mm	298	298	298	299
Max. swing diameter	U5	mm	310			
Horizontal adjustment range		mm	± 0.20			
Vertical adjustment range		mm	± 0.14			
	A	mm	624			
	C	mm	235.9			
	C1	mm	243.7			
	D1	mm	138.5			
	D2	mm	71			
	D3	mm	201.7			
	E	mm	263.4			
	E1	mm	131.7			
	F1	mm	149			
	F2	mm	149			
	G	mm	65.3			
	H	mm	9			
	I	mm	24			
	J	mm	348.7			
	K	mm	22.9			
	K1	mm	11.1			
	O	mm	468			
	O2	mm	29			
	P1	mm	45			
	P2	mm	45			
	S	mm	M16 (5x)			
	T	mm	129.5			
	V	mm	154			
	V1	mm	156			
Cylinder stroke		mm	179			
Piston area		cm <sup>2</sup>	16.49			
Operating pressure max.		bar	35			
Working pressure		bar	10-30			
Repeatability accuracy		mm	±0.002			
Mass		kg	76.4			

# SRG 5.1 FS

## Dimensions and technical data

## Grinding Steady Rests



Subjected to technical changes.  
For more detailed information please ask our customer service.

SMW-AUTOBLOK Type			SRG 5.1 FS				
Id. No.			222665				
Clamping kit			I	II	III	IV	V
Minimum clamping diameter	U1	mm	96	102	108	114	120
Maximum clamping diameter	U2	mm	102	108	114	120	126
Max. loading diameter (vertical, steady open)	U3	mm	236	234	232	229	228
Max. axial clearance diameter (steady open)	U4	mm	272	272	272	272	272
Max. swing diameter	U5	mm	320				
Horizontal adjustment range		mm	± 0.22				
Vertical adjustment range		mm	± 0.17				
	A	mm	676.6				
	C	mm	190				
	D1	mm	30.7				
	D2	mm	162.2				
	E	mm	247.6				
	E1	mm	123.8				
	F1	mm	139.7				
	F2	mm	139.7				
	G	mm	64.3				
	H	mm	6				
	I	mm	16				
	J	mm	331.2				
	K	mm	20.25				
	K1	mm	10				
	O2	mm	124.6				
	P1	mm	48				
	P2	mm	47				
	S	mm	17 (5x)				
	T	mm	64				
	V	mm	139.5				
Cylinder stroke		mm	167.1				
Piston area		cm <sup>2</sup>	19.63				
Operating pressure max.		bar	23				
Working pressure		bar	8-18.5				
Repeatability accuracy		mm	±0.002				
Mass		kg	54.8				



## AcuGrind

High precision air chucks

Chuck sizes Ø 80 - 250 mm

- For OD and ID clamping
- Built-in pneumatic actuation, no hydraulic cylinder required
- For universal grinding applications

- with built-in pneumatic actuating cylinder
- fully sealed



### Application/customers benefits

- Sealed standard chuck for high-precision turning and grinding
- Highest accuracy - runout and repeatability
- Built-in pneumatic actuation, no hydraulic cylinder required

### Technical features

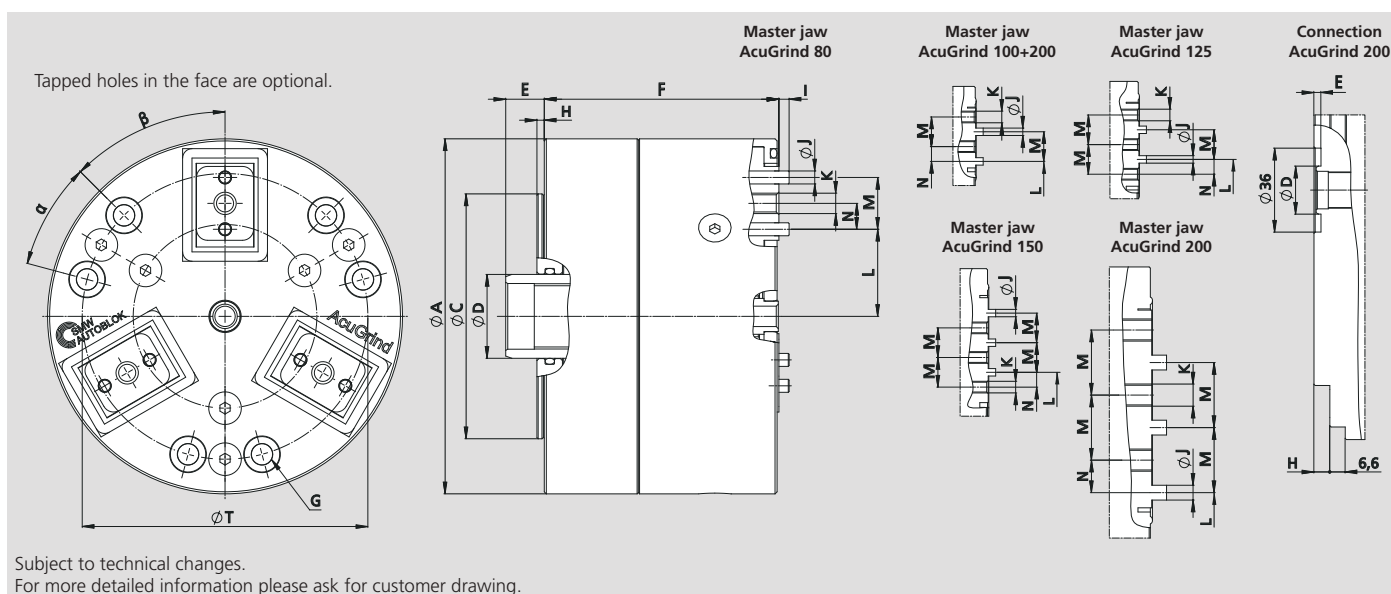
- Base jaws case hardened
- Repeatability < 0.002 mm
- **proofline® chucks** = fully sealed - low maintenance

### Standard equipment

- Power chuck
- Boring ring for I.D. clamping
- Boring ring for O.D. clamping
- Lubricating oil

### Ordering example

AcuGrind 150, Id.No. 5302503

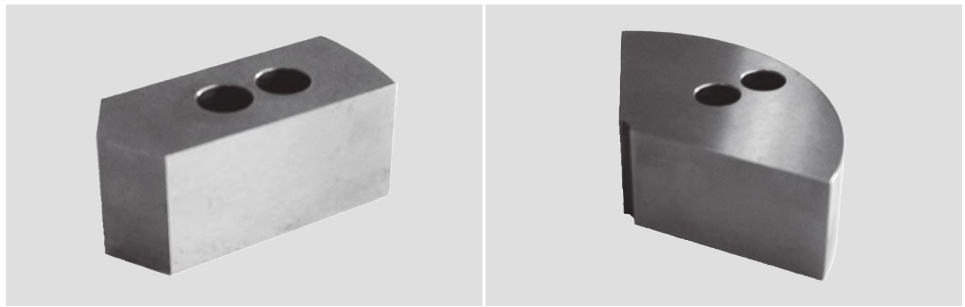


## Technical data

SMW-AUTOBLOK Type		AcuGrind 80	AcuGrind 100	AcuGrind 125	AcuGrind 150	AcuGrind 200	AcuGrind 250
Order number	Id. No.	5302500	5302501	5302502	5302503	5302504	5302505
Outside Ø	A	87	107	135	157	214	265
Centering Ø	C	60	82.55	101.6	125	167.6	215.8
Distributor Ø	D	20.55	20.55	20.6	20.6	20.6	20.6
min. / max.	E	9.5 / 17.0	10 / 17.5	8 / 15.5	10.5 / 18	-3 / 10.5	12.75 / 20.25
Height	F	57.5	56.5	60.3	56.2	81.5	74.6
Chuck mounting bolts	G	6 x M5	6 x M5	6 x M6	6 x M6	6 x M10	6 x M10
	H	1.8	2	2.2	2.2	6.8	7.2
	I	2.5	3.2	3.2	3.2	6.35	6.35
Pin Ø	J	3.18	3.18	3.18	3.18	6.35	6.35
Jaw mounting bolts	K	M5	M5	M5	M5	3/8" - 24 UNF	3/8" - 24 UNF
Distance to 1. pin max. / min.	L	21.34 / 20.09	21.34 / 20.09	34.05 / 32.8	34.05 / 32.8	38.05 / 36.8	35.7 / 34.45
	M	12.7	12.7	12.7	12.7	27.9	27.9
	N	6.35	6.35	6.35	6.35	13.95	13.95
Bolt circle Ø	T	70	88.9	110	135.75	183	233.7
	α	30°	6 x 60°	6 x 60°	6 x 60°	6 x 60°	6 x 60°
	β	45°	30°	30°	30°	30°	30°
Repeatability	mm	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Radial jaw stroke	mm	1.25	1.25	1.25	1.25	1.25	1.25
Speed max.	min <sup>-1</sup>	5000	5500	5500	5000	2500	2500
Clamping force at 6 bar	kN	2.65	4.85	9.5	10.5	28	31
Operating pressure	bar	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6
Weight	kg	2.5	3.5	6.5	7.5	21	28

2-jaw and 4-jaw power chucks available on request.

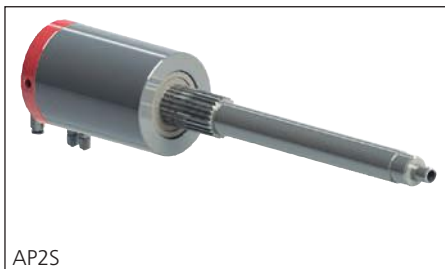
Top jaws for AcuGrind



WAK Soft top jaws      SBK Segment jaws 120°

Chuck type	Material	Id. No.	Height	Id. No.	Height
AcuGrind 80	Aluminium	5302511	25	5302545	25
		5302512	38	5302546	38
	Steel	5302513	25	5302547	25
		5302514	38	5302548	38
AcuGrind 100	Aluminium	5302515	25	5302549	25
		5302516	38	5302550	50
				5302551	75
				5302552	100
	Steel	5302517	25	5302553	20
		5302518	38	5302554	38
5302519		50	5302555	50	
AcuGrind 125	Aluminium	5302520	25	5302556	25
		5302521	38	5302557	38
		5302522	50	5302558	50
		5302523	75	5302559	75
	Steel	5302524	25	5302560	20
		5302525	38	5302561	25
		5302526	50	5302562	38
				5302563	50
AcuGrind 150	Aluminium	5302527	25	5302564	25
		5302528	38	5302565	38
		5302529	50	5302566	50
		5302530	75	5302567	75
	Steel			5302568	100
		5302531	25	5302569	25
		5302532	38	5302570	38
		5302533	50	5302571	50
		5302534	75	5302572	75
AcuGrind 200	Aluminium	5302535	50	5302573	38
		5302536	75	5302574	50
		5302537	100	5302575	75
	Steel	5302538	50	5302576	50
		5302539	75	5302577	75
		5302540	100		
AcuGrind 250	Aluminium	5302541	50	5302578	75
		5302542	75	5302579	100
	Steel	5302543	50	5302580	75
		5302544	75	5302581	100

Top jaws in special version on request.



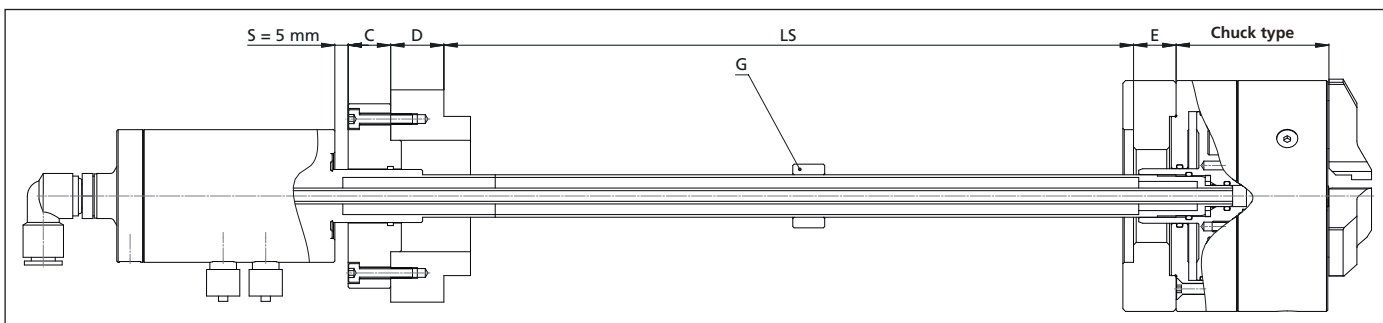
AP2S



AP3S

SMW-AUTOBLOK Type	Speed max. (min <sup>-1</sup> )	Version
AP2S	5.000	2 airways
AP3S	5.000	3 airways

AP2S/AP3S = with serration



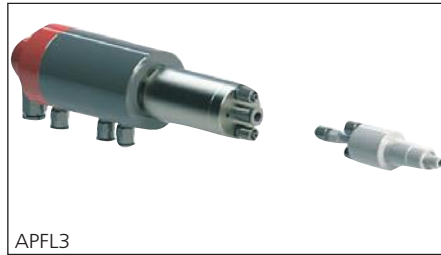
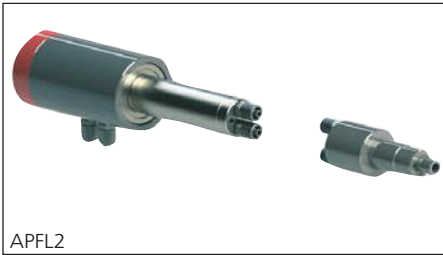
<b>LS</b>	Spindle length
<b>E</b>	Chuck adaptor
<b>C</b>	Bushing (included in scope of delivery of the air feed tubes type AP)
<b>D</b>	Adaptor (mounting ring manufactured by the customer)
<b>S</b>	Safety distance
<b>F</b>	AcuGrind chuck
<b>G</b>	Support ring for tube bundle longer 600mm

### Ordering example

**NOTE** In case of an order of the air feed tubes type AP, the length of the air feed tube is necessary.

For calculating the correct length of the air feed tube (LR) are the following dimensions necessary: LS, E, C, D and the chuck type!

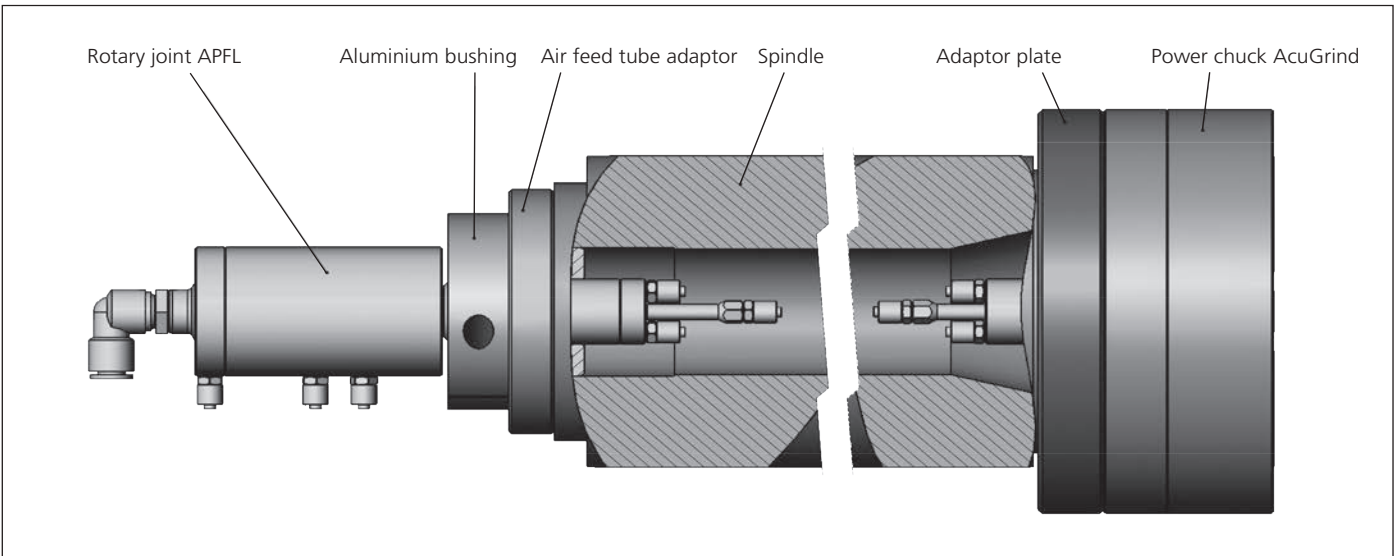
**NOTE** Use only with clean and oiled air.



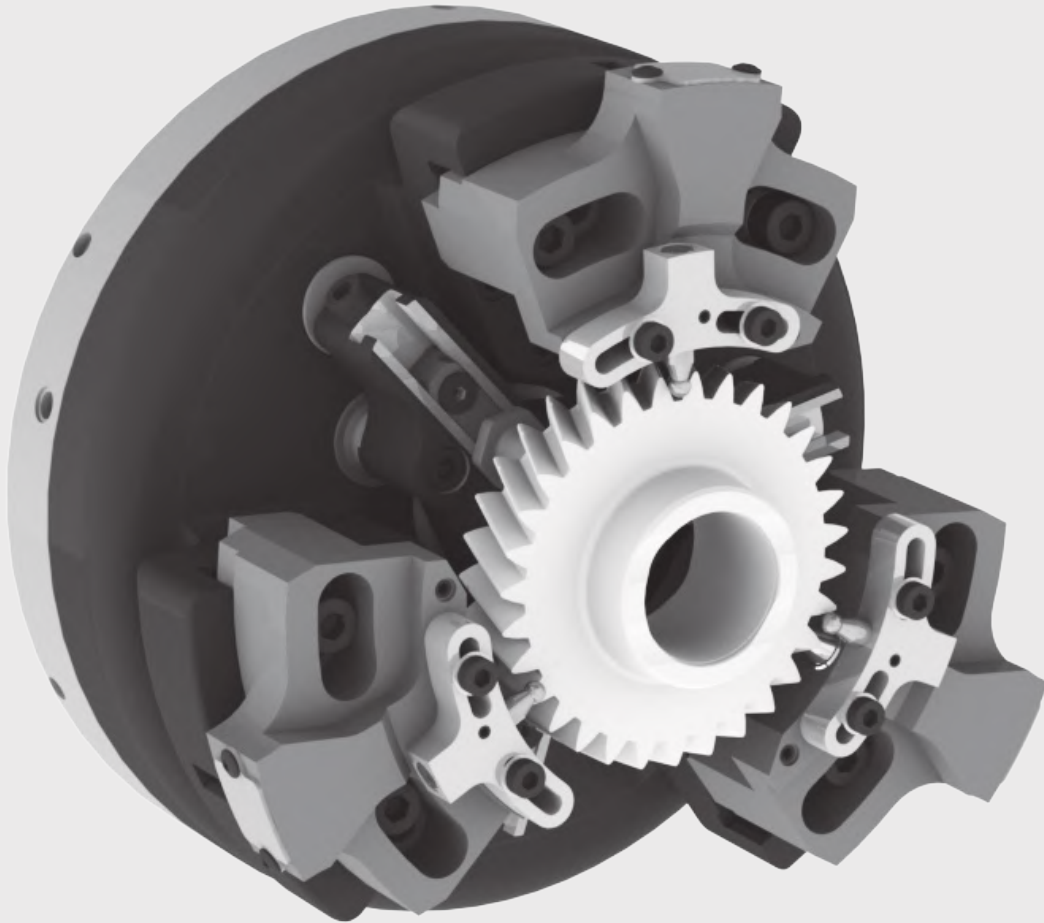
SMW-AUTOBLOK Type	Id. No.	Speed max. (min <sup>-1</sup> )	Version
APFL2	5302594	6.000	2 airways
APFL3	5302595	6.000	3 airways



SMW-AUTOBLOK Typ	PH 6-2	PH 6-3
Id.-Nr.	5302585	5302586
Number of airways	2	3
Airways outside Ø (mm)	6	6
Airways inside Ø (mm)	4	4
Medium	air	air
Max. operating pressure (MPa) at 20 °C	0.8	0.8
Operating temperature	-20 °C - +60 °C	-20 °C - +60 °C
Length (mm)	525	505
Max. working distance (mm)	1.500	1.000
Outside Ø coil (mm)	37	37
Material	Polyurethan	Polyurethan
Colour	black	black







## Diaphragm Technology

Diaphragm chuck

Chuck sizes Ø 210 - 400 mm

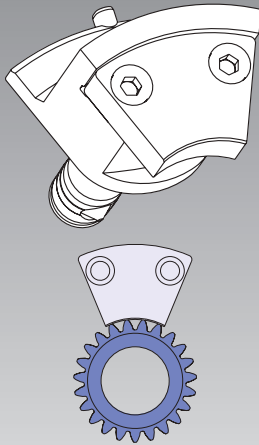
- Diaphragm technology for highest precision
- Pitch line clamping or O.D. clamping
- With or without open center

# D

Diaphragm chuck  
QUICK JAW CHANGE SYSTEMS

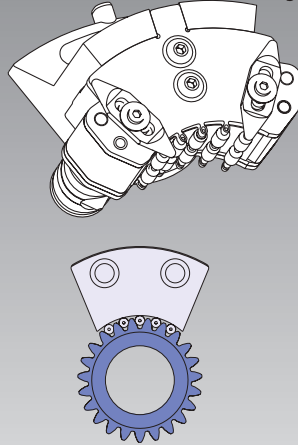
- Clamping jaws
- Closed center rotating cylinder
- Installation

Jaws Type A



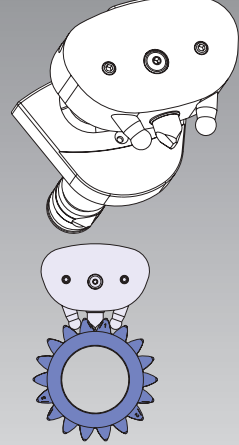
External clamping

Jaws Type B



Pitchline clamping with roller cage

Jaws Type C



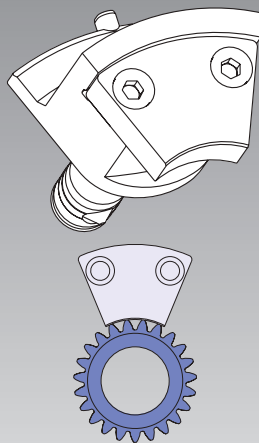
Pitchline clamping with clamping pin

# D-KOMBI®

Radial-axial clamping  
QUICK JAW CHANGE SYSTEMS

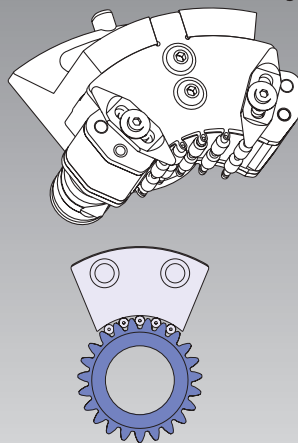
- Clamping jaws
- Rotating double piston cylinder
- Installation

Jaws Type A



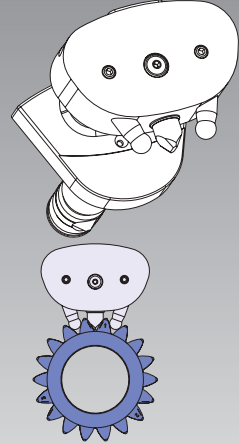
External clamping

Jaws Type B



Pitchline clamping with roller cage

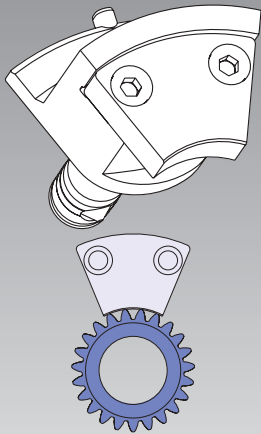
Jaws Type C



Pitchline clamping with clamping pin

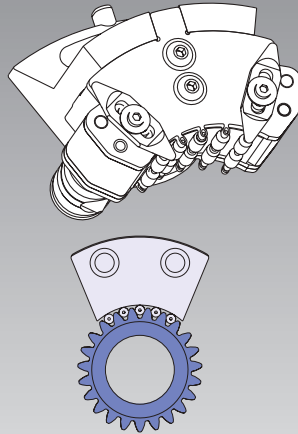
- Radial O.D. or pitch line clamping
- With central bore
- Centrifugal force compensation

## Jaws Type A



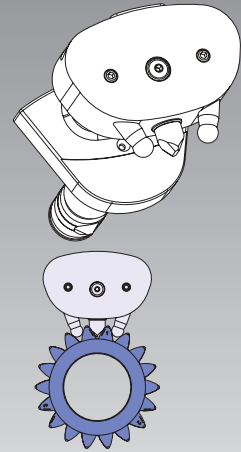
External clamping

## Jaws Type B



Pitchline clamping with roller cage

## Jaws Type C

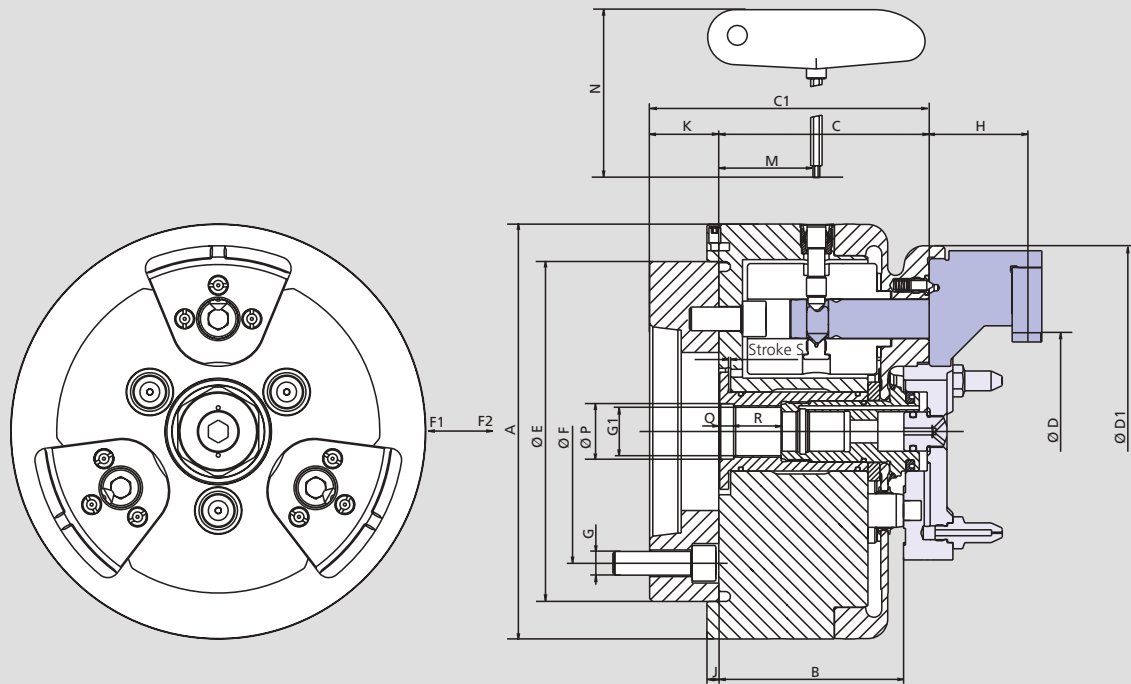


Pitchline clamping with clamping pin

# D

## Diaphragm chuck QUICK JAW CHANGE SYSTEMS

## Main dimensions and technical data



Subject to technical changes.  
For more detailed information please ask for customer drawing.

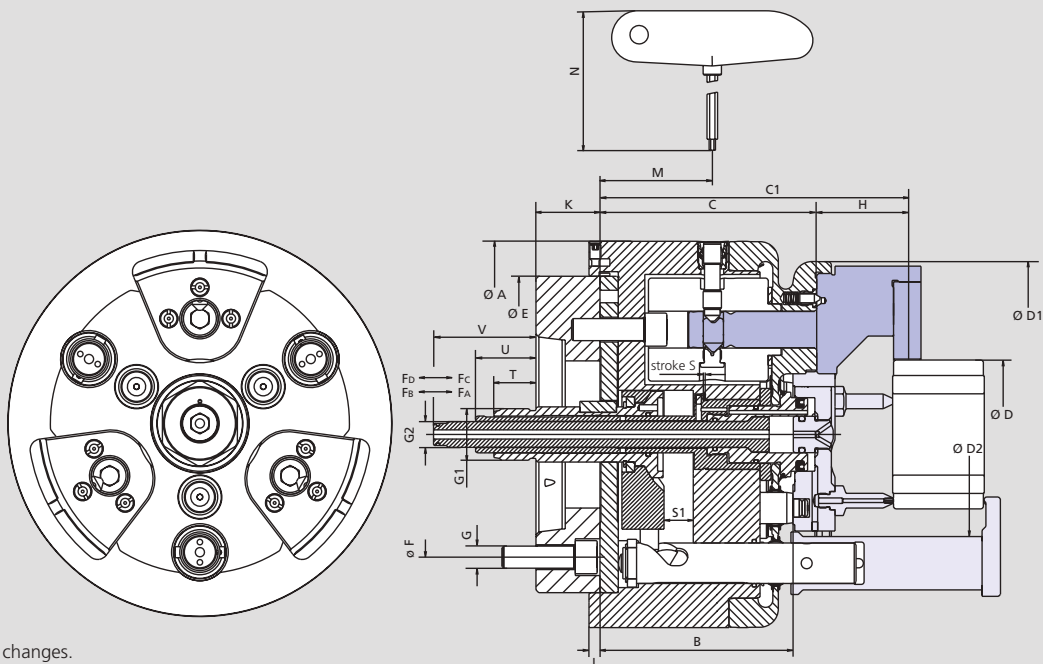
SMW-AUTOBLOK Type			D-210		D-260		D-315
Mounting	Size		A5	A6	A6	A8	A8
	A	mm	210		260		315
	B	mm	93.5		108		111
	C	mm	106.5		120		125
	C1	mm	146.5		156		173
Clamping range min./max.	D	mm	20-175		40-220		60-275
	D1	mm	188		227		275
	E	mm	172		225		275
	F	mm	104.8	133.4	133.4	171.4	171.4
	G		M10	M12	M12	M16	M16
	G1		M26 x 1.5		M26 x 1.5		M30 x 1.5
Jaw height	H	mm	52		62		64
	J	mm	6		6		6
	K	mm	40		48		48
	M	mm	49.4		53		57
	N	mm	185		185		185
	P H6	mm	28		28		32
	Q	mm	7		7		7
	R	mm	24		24		29.5
Piston stroke min./max.	S	mm	1.0		1.5		1.7
Jaw stroke at distance H			1.0		1.1		1.2
Draw pull min./max.*	F1	kN	0-25		0-25		0-25
Draw push for chuck open	F2	kN	30		30		30
Moment of inertia		kg·m <sup>2</sup>	0.16		0.45		0.75
Weight without top tooling		kg	30		44		60
Recommended actuating cylinders	Type		SIN-DFR		SIN-DFR		SIN-DFR

\* Additional actuation force to the diaphragm spring clamping force applied by the clamping cylinder

**Advice:** The max. allowed speed for the application is permanently marked on the corresponding top jaws and must not be exceeded.

**Advice:** Please note, that it is important, that the cylinder force for pushing and pulling can be set to different values independently.

**Important:** Never rotate the chuck without inserted jaws, otherwise the centrifugal force compensation mechanism will get damaged.



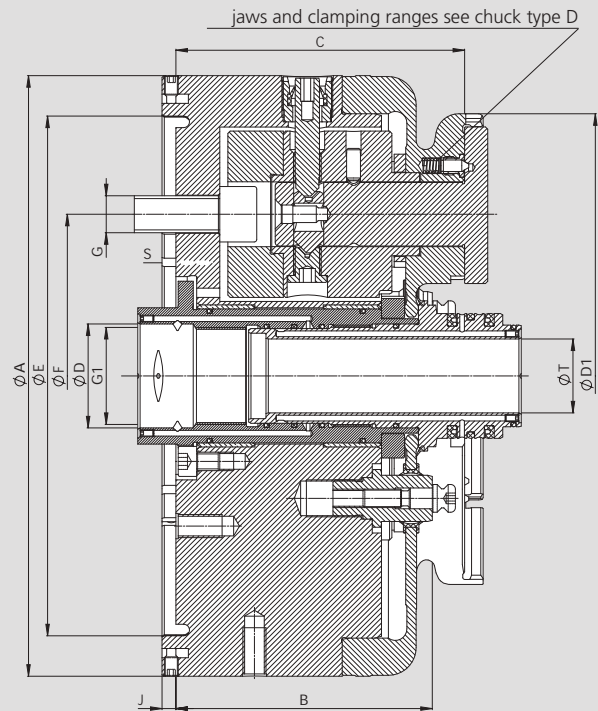
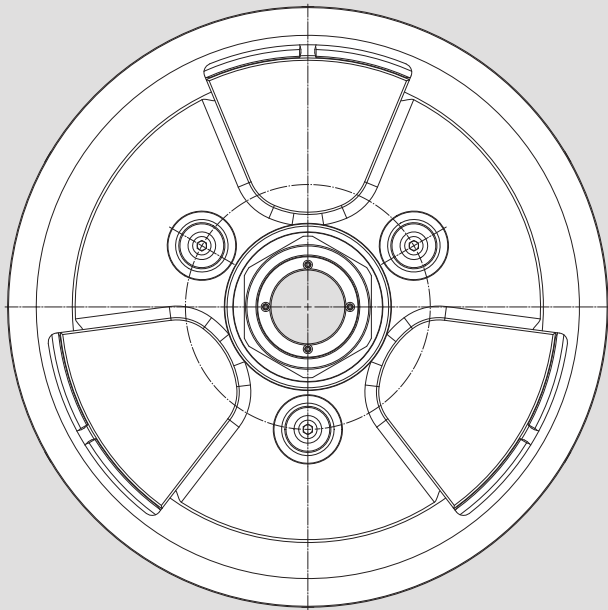
Subject to technical changes.  
For more detailed information please ask for customer drawing.

SMW-AUTOBLOK Type			D-210 KOMBI		D-260 KOMBI		D-315 KOMBI	D-400 KOMBI	
Mounting	Size		A5	A6	A6	A8	A8	A8	A11
	<b>A</b>	mm	210		260		315	400	
	<b>B</b>	mm	105.5		111		116	123	
	<b>C</b>	mm	118.5		130		130	136	
	<b>C1</b>	mm	170.5		187		192	-	
Clamping range without fingers	<b>D</b>	mm	20-175		40-220		60-275	126-350	
	<b>D1</b>	mm	188		227		275	354	
Clamping range with fingers	<b>D2</b>	mm	111		153		203	268	
	<b>E</b>	mm	172		225		275	350	
	<b>F</b>	mm	104.8	133.4	133.4	171.4	171.4	171.4	235
	<b>G</b>		M10	M12	M12	M16	M16	M16	M20
	<b>G1</b>		M28 x 1.5		M28 x 1.5		M28 x 1.5	M28 x 1.5	
	<b>G2</b>		M14 x 1.0		M14 x 1.0		M14 x 1.0	M14 x 1.0	
Jaw height	<b>H</b>	mm	52		62		64	-	
	<b>J</b>	mm	6		6		6	6	
	<b>K</b>	mm	40		48		48	50	
	<b>M</b>	mm	61.4		61.9		61.9	66.5	
	<b>N</b>	mm	185		185		185	185	
Piston stroke	<b>S</b>	mm	1.0		1.5		1.5	1.5	
Axial stroke swing clamps	<b>S1</b>	mm	16		16		16	16	
	<b>T</b>	mm	18		10		10	8	
	<b>U</b>	mm	28		20		20	18	
	<b>V</b>	mm	51		43		43	41	
Jaw stroke at distance H		mm	1.0		1.1		1.2	0.87	
Draw pull min./max. *	<b>F<sub>D</sub></b>	kN	0-25		0-25		0-25	0-25	
Draw push for chuck open	<b>F<sub>C</sub></b>	kN	20		20		20	20	
Draw pull swing clamps max.	<b>F<sub>B</sub></b>	kN	6		9		9	18	
Draw push swing clamps open	<b>F<sub>A</sub></b>	kN	2		2		2	2	
Moment of inertia		kg·m <sup>2</sup>	0.16		0.45		0.75	2.26	
Weight without top tooling		kg	30		44		60	109	
Recommended actuating cylinder	<b>Type</b>		ZHVD-DFR		ZHVD-DFR		ZHVD-DFR	ZHVD-DFR	

\* Additional draw pull to the diaphragme force actuated by the actuating cylinder

**Advice:** The max. allowed speed for the application is permanently marked on the corresponding top jaws and must not be exceeded.

**Important:** Never rotate the chuck without inserted jaws, otherwise the centrifugal force compensation mechanism will get damaged.



Subject to technical changes.  
For more detailed information please ask for customer drawing.

SMW-AUTOBLOK Type			D-PLUS-260	D-PLUS-315
<b>Mounting</b>	<b>Size</b>		<b>225</b>	<b>275</b>
	<b>A</b>	mm	260	315
	<b>B</b>	mm	111	111
	<b>C</b>	mm	125	125
	<b>D1</b>	mm	227	275
	<b>E</b>	mm	225	275
	<b>F</b>	mm	140	171.4
	<b>G</b>		M16	M16
	<b>G1</b>		M42x1.5	M60x1.5
	<b>J</b>	mm	6	6
	<b>P</b> H6	mm	45	63
Piston stroke	<b>S</b>	mm	1.5	1.5
Through hole	<b>T</b>	mm	32	50
Draw pull min./max. *	<b>F1</b>	kN	0-25	0-30
Draw push for chuck open	<b>F2</b>	kN	25	30
Moment of inertia		kg·m <sup>2</sup>	0.45	0.75
Weight without top tooling		kg	44	65
Recommended actuating cylinders	<b>Type</b>		<b>SIN-DFR</b>	<b>SIN-DFR</b>

\* Additional actuation force to the diaphragm spring clamping force applied by the clamping cylinder.

**Advice:** The max. allowed speed for the application is permanently marked on the corresponding top jaws and must not be exceeded.

**Advice:** Please note, that it is important, that the cylinder force for pushing and pulling can be set to different values independently!

**Important:** Never rotate the chuck without inserted jaws, otherwise the centrifugal force compensation mechanism will get damaged.

# D-VARIO

Diaphragm chuck  
FLEXIBLE MODULAR SYSTEM

## Main dimensions and technical data

### Application/customer benefits

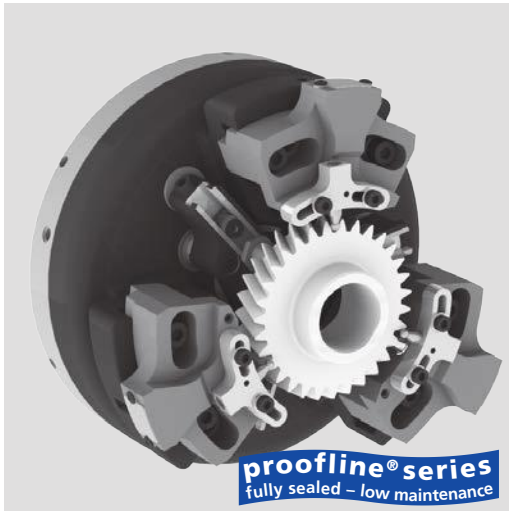
- Flexible solution for grinding with quick adjustment for short set up times

### Technical features

- Adjustable, modular jaw system for clamping different work pieces with the same jaws
- Key Lock System for quick positioning of the pitch of different work pieces
- Micrometer fine adjustment of the center line
- For small, medium and large batch sizes
- Workstop with medium feed for air sensing and integrated coolant nozzles optional
- Jaws for O.D. clamping (Type A) optional
- D-Vario Configurator: free application to configurate your set up ([www.smw-autoblok.de/qr/vario](http://www.smw-autoblok.de/qr/vario))

### Standard equipment

Diaphragm chuck D-Vario (with mounting bolts)



### Optional accessories in the modular system:

#### Pitch line clamping

- 6 different jaw sets for different outside diameters
- Key Lock System for different pitches of gears (see figure A, B and C)
- Clamping pins for different modules (Dia. of ball  $\varnothing$  3,0 mm to 6,0 mm)
- Locators

#### O.D. clamping (Type A)

- 4 different jaw blanks for different outside diameters
- Factory finished jaws
- Locators

### D-VARIO Configurator Software:



- Safe and quick configuration of all set-ups for different gears
- Web-APP: from anywhere with any device feasible (internet access needed)
- Data export possible

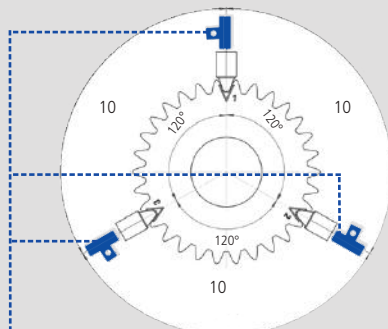
With this free of charge D-Vario configurator a complete top jaw and the corresponding locator with the locator pins can be configured for your gears.

The export function allows you to save your results on your PC.

Start Web-App: [www.smw-autoblok.de/qr/dvario](http://www.smw-autoblok.de/qr/dvario)

#### A: Number of teeth is divisible by 3

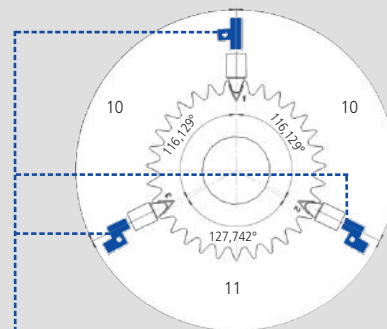
Example of application:  
gear with number of teeth  $[z] = 30$



- ▶ Specification of Key Lock System:  
3x Key straight

#### B: Number of teeth is not divisible by 3

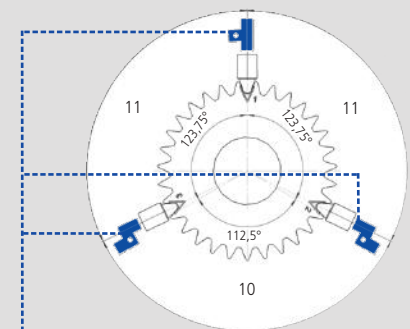
Example of application:  
gear with number of teeth  $[z] = 31$



- ▶ Specification of Key Lock System:  
1x Key straight,  
2x Key for number of teeth 31

#### C: Number of teeth is not divisible by 3

Example of application:  
gear with number of teeth  $[z] = 32$



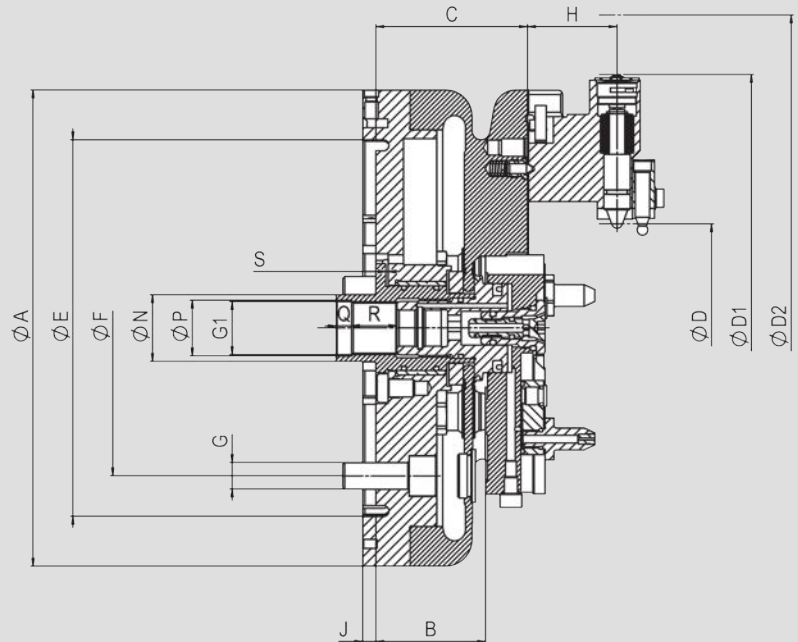
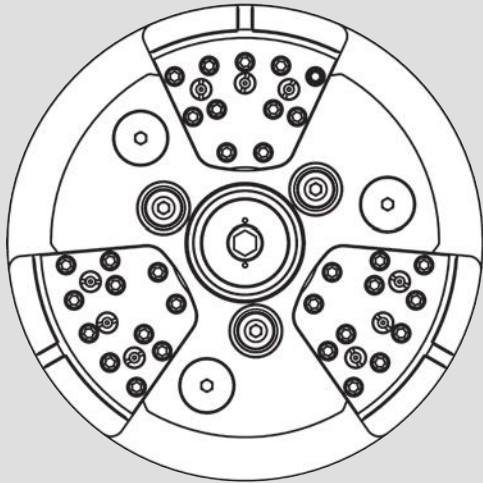
- ▶ Specification of Key Lock System:  
1x Key straight,  
2x Key for number of teeth 32

# D-VARIO

Diaphragm chuck  
FLEXIBLE MODULAR SYSTEM

## Main dimensions and technical data

Top jaws and locator base are optional.



Subject to technical changes.  
For more detailed information please ask for customer drawing.

SMW-AUTOBLOK Type			D-VARIO 215
<b>Mounting</b>			<b>Z170</b>
Id. No.			069100
	<b>A</b>	mm	215
Locating Face for Locator	<b>B</b>	mm	49.5
	<b>C</b>	mm	68.5
Clamping range min./max.	<b>D</b>	mm	24 - 144
Swing min.	<b>D1</b>	mm	215
Swing max.	<b>D2</b>	mm	264
	<b>E</b>	mm	170
	<b>F</b>	mm	133.4
	<b>G</b>		M12
	<b>G1</b>		M24x1.5
Jaw height	<b>H</b>	mm	40.5
	<b>J</b>	mm	6
	<b>P H8</b>	mm	25
	<b>Q</b>	mm	7
	<b>R</b>	mm	20
Piston stroke	<b>S</b>	mm	1.0
Jaw stroke at distance H		mm	0.95
Draw pull min./max.*		kN	0-15
Draw push for chuck open		kN	15
Moment of inertia		kg·m <sup>2</sup>	0.082
Weight without top tooling		kg	12.2
<b>Recommended actuating cylinders</b>	<b>Type</b>		<b>SIN-DFR</b>

\* Additional draw pull to the diaphragm force actuated by the actuating cylinder

**Advice:** Please note: It is important, that the cylinder force for pushing and pulling can be set to different values independently.

# D-VARIO

Diaphragm chuck  
FLEXIBLE MODULAR SYSTEM

## ■ Overview clamping kit

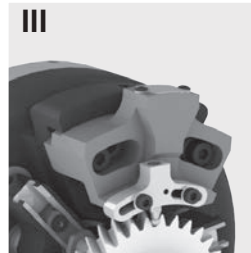
### Configuration of the set up for pitch line clamping within only 5 steps:



First you have to choose your matching top jaw (size 1 - 6) for the outside diameter [d<sub>a</sub>] of the gear to be machined. Each size of top jaw can cover 20 mm outside diameter using two different types of clamping pins (Type A and B). One set of top jaw consists of 3 pieces including 1 straight Key Lock insert.



The determination of the spherical clamping pins is made according to the ball dimension of the gear. There are 2 types of clamping pins: Type A for the first 10 mm of the clamping range of the top jaws. Type B for the second 10 mm of the clamping range of the top jaws.



Optionally prelocator pins are available. Prelocator pins are used at automatic loading. The determination is made according to the clamping pins used.

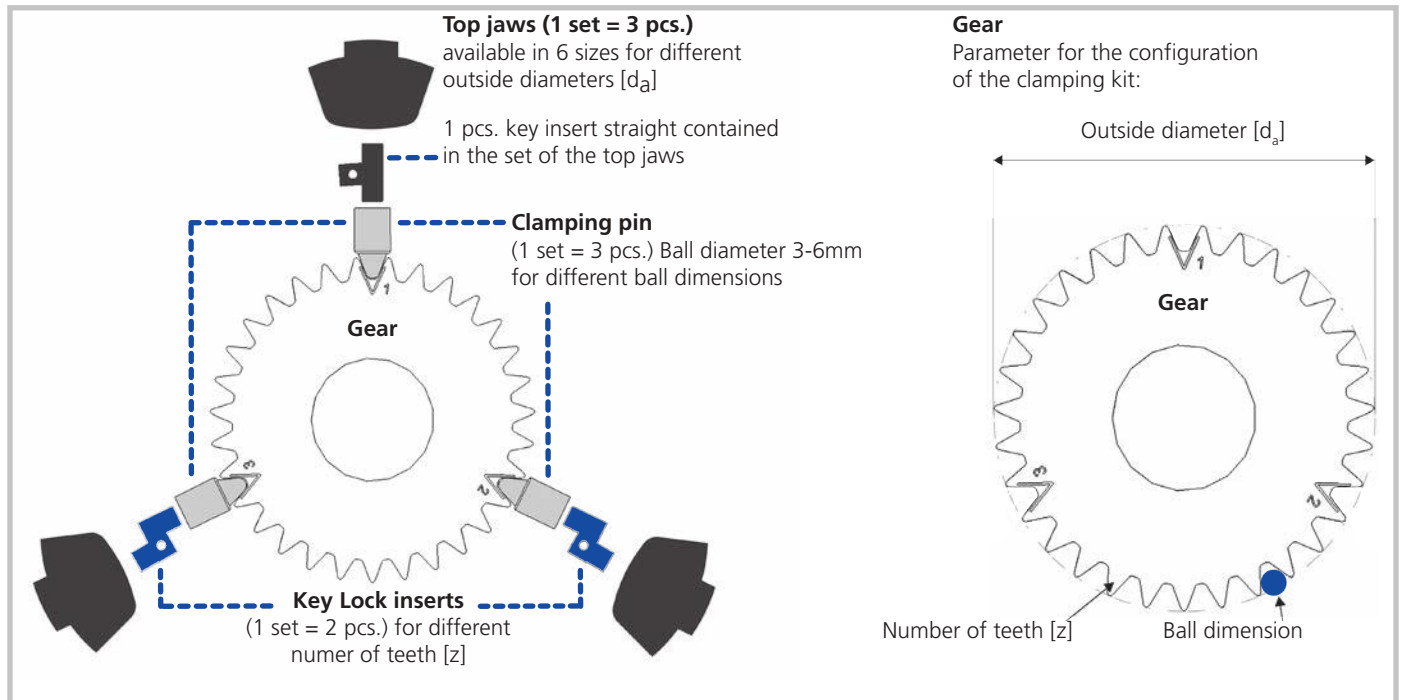


One set of Key Lock insert consists of 2 keys. Gears, which number of teeth that is divisible by 3 can be machined with 3 of the same type Key Lock insert (straight). For all gears, which number of teeth is not divisible by 3, there are different key insert sets available according to the number of teeth. The Key Lock inserts are the same for all 6 sizes of top jaws.



The following types of locator bases are available:  
Type A: without air sensing / without nozzle for coolant  
Type B: without air sensing / with nozzle for coolant  
Type C: with air sensing / with nozzle for coolant  
The height of the locator posts is depending on the gear.

### Overview of the clamping kit:



#### D-Vario Configurator

free application to configure your set up  
[www.smw-autoblok.de](http://www.smw-autoblok.de)



## ■ Configuration of the clamping kit

### I. Determination of the top jaws

Top Jaws		Size	1	2	3	4	5	6
Outside diameter of gear	$d_a$	mm	24-44	44-64	64-84	84-104	104-124	124-144
Number of teeth	$z$	number	16-37	14-44	13-86	13-86	13-86	13-86
Inside clearance diameter of jaws		mm	48	68	88	108	128	148
Swing diameter		mm	164	184	204	224	244	264
Weight / set		kg	2.9	3.0	3.0	3.1	3.1	3.1
Order number / set of 3 pieces		Id. No.	630741	630742	630743	630744	630745	630746

Clamping pin Type		A	B	A	B	A	B	A	B	A	B	A	B
Clamping range	mm	24-34	34-44	44-54	54-64	64-74	74-84	84-94	94-104	104-114	114-124	124-134	134-144

### II. / III. Determination of the clamping pins (and optional prelocator pins)

Clamping pin type	Set	Type A	Available prelocator pins	Type B	Available prelocator pins
Ball diameter $\varnothing$ 3,0	Id. No.	630851B	339835	630844B	339843
Ball diameter $\varnothing$ 3,5	Id. No.	630852B	339836	630845B	339844
Ball diameter $\varnothing$ 4,0	Id. No.	630853B	339837	630846B	339845
Ball diameter $\varnothing$ 4,5	Id. No.	630854B	339838	630847B	339846
Ball diameter $\varnothing$ 5,0	Id. No.	630855B	339839	630848B	339847
Ball diameter $\varnothing$ 5,5	Id. No.	630856B	339840	630849B	339848
Ball diameter $\varnothing$ 6,0	Id. No.	630857B	339841	630850B	339849

### Clamping pins

#### Clamping pin type A



Ball diameter  
 $\varnothing$  3; 3,5; 4; 4,5; 5; 5,5; 6

	Top jaw 1	$\varnothing$ 24-34 mm
	Top jaw 2	$\varnothing$ 44-54 mm
	Top jaw 3	$\varnothing$ 64-74 mm
	Top jaw 4	$\varnothing$ 84-94 mm
	Top jaw 5	$\varnothing$ 104-114 mm
	Top jaw 6	$\varnothing$ 124-134 mm

#### Clamping pin type B



Ball diameter  
 $\varnothing$  3; 3,5; 4; 4,5; 5; 5,5; 6

	Top jaw 1	$\varnothing$ 34-44 mm
	Top jaw 2	$\varnothing$ 54-64 mm
	Top jaw 3	$\varnothing$ 74-84 mm
	Top jaw 4	$\varnothing$ 94-104 mm
	Top jaw 5	$\varnothing$ 114-124 mm
	Top jaw 6	$\varnothing$ 134-144 mm

► **Clamping pin type A**  
For the first 10 mm of the clamping range of the top jaws.

► **Clamping pin type B**  
For the second 10 mm of the clamping range of the top jaws.

► **Compatibility**  
All types and sizes of clamping pins are compatible to all top jaws.

# D-VARIO

Diaphragm chuck  
FLEXIBLE MODULAR SYSTEM

■ Configuration of the clamping kit

## IV. Key Lock inserts for different number of teeth of gears

### Id. No. Key Lock insert for gears which number of teeth is not divisible by 3 (1 set = 2 pcs.)

<b>z = 10</b>	<b>z = 11</b>	<b>z = 13</b>	<b>z = 14</b>	<b>z = 16</b>	<b>z = 17</b>	<b>z = 19</b>	<b>z = 20</b>	<b>z = 22</b>	<b>z = 23</b>
339911	339912	339913	339914	339915	339916	339917	339918	339919	339920
<b>z = 25</b>	<b>z = 26</b>	<b>z = 28</b>	<b>z = 29</b>	<b>z = 31</b>	<b>z = 32</b>	<b>z = 34</b>	<b>z = 35</b>	<b>z = 37</b>	<b>z = 38</b>
339921	339922	339923	339924	338725	339925	339926	339927	339928	339929
<b>z = 40</b>	<b>z = 41</b>	<b>z = 43</b>	<b>z = 44</b>	<b>z = 46</b>	<b>z = 47</b>	<b>z = 49</b>	<b>z = 50</b>	<b>z = 52</b>	<b>z = 53</b>
339930	339931	339932	339933	339934	339935	339936	339937	339938	339939
<b>z = 55</b>	<b>z = 56</b>	<b>z = 58</b>	<b>z = 59</b>	<b>z = 61</b>	<b>z = 62</b>	<b>z = 64</b>	<b>z = 65</b>	<b>z = 67</b>	<b>z = 68</b>
339940	339941	339942	339943	339944	339945	339946	339947	339948	339949
<b>z = 70</b>	<b>z = 71</b>	<b>z = 73</b>	<b>z = 74</b>	<b>z = 76</b>	<b>z = 77</b>	<b>z = 79</b>	<b>z = 80</b>	<b>z = 82</b>	<b>z = 83</b>
339950	339951	339952	339953	339954	339955	339956	339957	339958	339959
<b>z = 85</b>	<b>z = 86</b>								
339960	339961								

### Id. No. Key Lock insert for gears which number of teeth is divisible by 3 (1 set = 2 pcs.)

<b>straight</b>									
338724									

### Order Example:

Gear with number of teeth 32

▶ not divisible by 3

▶ Id. No. 339925 (1 set = 2 pcs.)

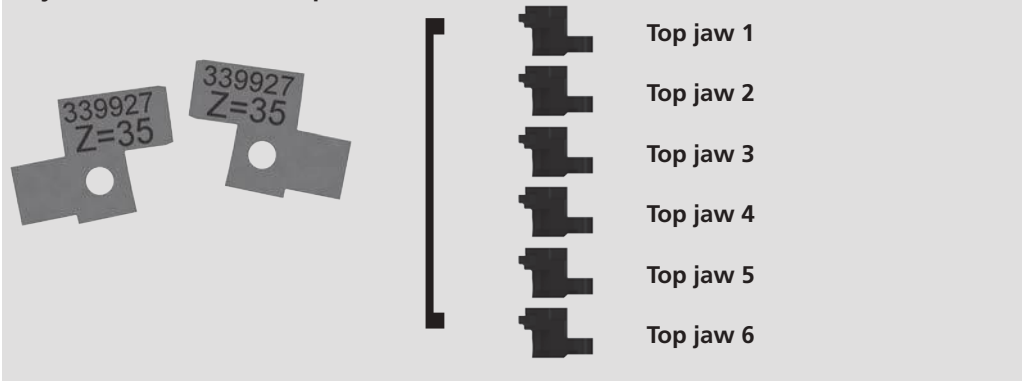
Gear with number of teeth 33

▶ divisible by 3

▶ Id. No. 338724 (1 set = 2 pcs.)

1 straight Key Lock that comes with the chuck always remains in use.

### Key Lock insert (1 set = 2 pcs.)



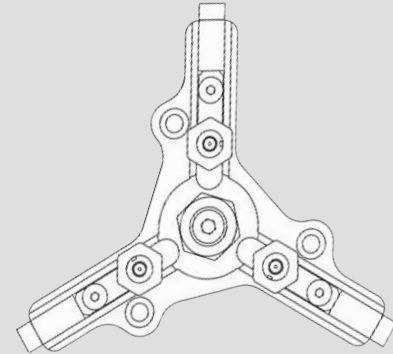
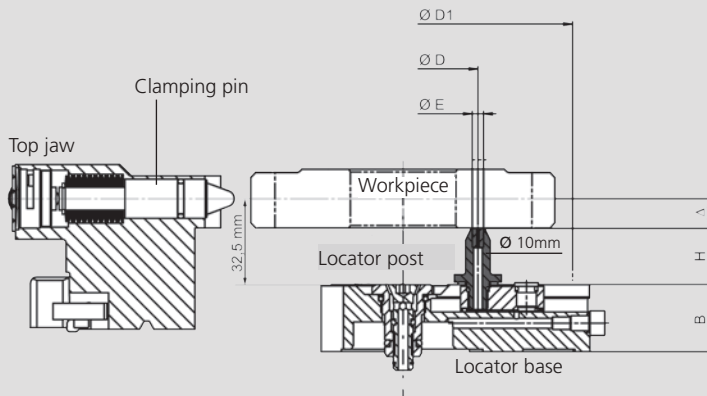
### ► Compatibility

All Key Lock inserts are compatible to all top jaws.

## ■ Configuration of the clamping kit

### V. Locator base

#### Locator base



Determination of height of locator posts:  
 $\Delta$  = Distance between clamping position and locating face  
 Height of locator posts [H] = 32,5 mm -  $\Delta$

Clamping position = 1/2 serration length / at longer serrations it is the requested clamping position.  
 In case the lowest face is not the locating face, please ask our customer service.

Locator base			Type A	Type B	Type C
Medium feed for air sensing			-	-	X
Nozzle for coolant			-	X	X
Locating diameter min.	D	min.	22	47	47
Locating diameter max.	D1	max.	136	136	136
Width	B	mm	27	27	27
Order Number		Id. No.	339860	339859	339858

Locator posts with contact face diameter [E] 2.5 mm	
Height [H] = 12.5 mm	339861
Height [H] = 15.0 mm	339862
Height [H] = 17.5 mm	339863
Height [H] = 20.0 mm	339864
Height [H] = 22.5 mm	339865
Height [H] = 25.0 mm	339866
Height [H] = 27.5 mm	339867
Height [H] = 30.0 mm	339868
Height [H] = 32.5 mm	339869
Height [H] = 35.0 mm	339870
Height [H] = 37.5 mm	339871
Height [H] = 40.0 mm	339872
Height [H] = 42.5 mm	339873
Height [H] = 45.0 mm	339874
Height [H] = 47.5 mm	339875
Height [H] = 50.0 mm	339876

I.D. Number is for one set (=3 pieces)

Locator posts with contact face diameter [E] 4.5 mm	
Height [H] = 12.5 mm	339877
Height [H] = 15.0 mm	339878
Height [H] = 17.5 mm	339879
Height [H] = 20.0 mm	339880
Height [H] = 22.5 mm	339881
Height [H] = 25.0 mm	339882
Height [H] = 27.5 mm	339883
Height [H] = 30.0 mm	339884
Height [H] = 32.5 mm	339885
Height [H] = 35.0 mm	339886
Height [H] = 37.5 mm	339887
Height [H] = 40.0 mm	339888
Height [H] = 42.5 mm	339889
Height [H] = 45.0 mm	339890
Height [H] = 47.5 mm	339891
Height [H] = 50.0 mm	339892

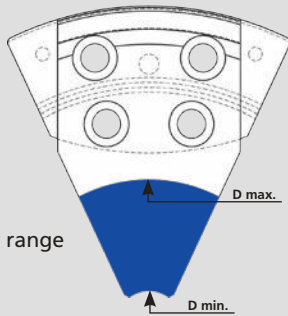
I.D. Number is for one set (=3 pieces)

# D-VARIO

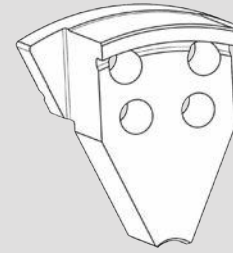
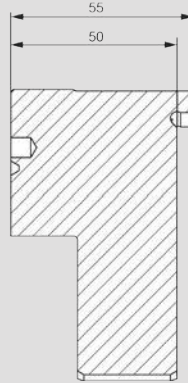
Diaphragm chuck  
FLEXIBLE MODULAR SYSTEM

■ Jaws type A for O.D. clamping

## Jaws type A



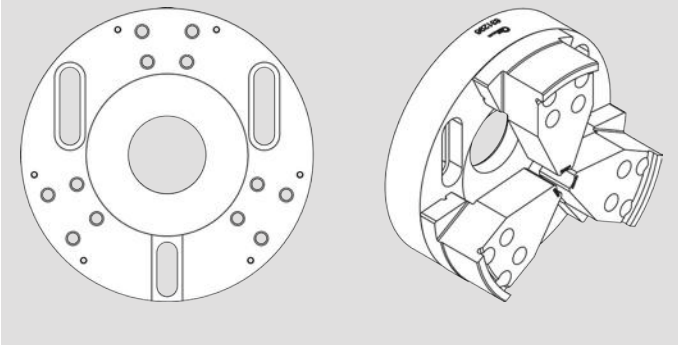
Clamping diameter range



Jaws type A		1	2	3	4	5	6
Clamping Range $\varnothing$ D min. - D max.	mm	20-40	40-60	60-80	80-100	100-120	120-140
Weight / set	kg	1.1	1.1	1.0	1.0	1.0	0.8
Blank jaws (set of 3 pcs.)	Id. No.	631484		631485		631486	631487
Jaws factory finished* (set of 3 pcs.)	Id. No.	631488	631489	631490	631491	631492	631493

\* Jaws are factory finished according to the specified clamping diameter.  
Note: The clamping diameter must be specified in case of order.

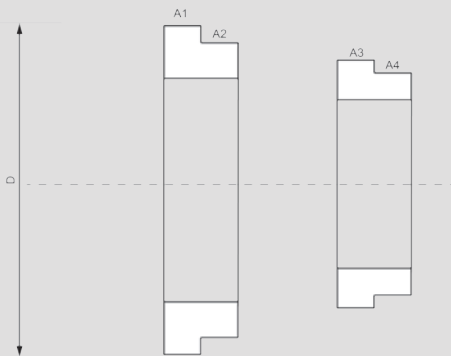
## Device



## Device for machining of the blank jaws type A

Jaws type A sizes 1 - 6      631296

## Grinding rings (1 Set = 2 pcs.)



## Recommended grinding rings (1 Set = 2 pcs.)

Jaws type A sizes 1 - 6      631309

The device is needed to pre-machine the blank jaws type A. Then, the jaws must be finish ground to the clamping diameter on the D-Vario chuck. For this operation, the jaws have to be clamped with the grinding rings.

## Grinding data:

1. Grinding	A1	D = 177.0 mm	residual jaw stroke 0.25 mm
2. Grinding	A2	D = 176.9 mm	residual jaw stroke 0.20 mm
3. Grinding	A3	D = 176.8 mm	residual jaw stroke 0.15 mm
4. Grinding	A4	D = 176.7 mm	residual jaw stroke 0.10 mm

The clamping diameter A1 is used for the first finish grinding process. The smaller clamping diameter of the grinding rings (A2-A4) are used to regrind worn or damaged existing jaws.





## FDG

### High precision face drivers for machining between center pins

- Machining of the entire surface of the workpiece with one single operation
- Power operated on the side of the spindle
- Highest run-out accuracy

■ Power operated on the side of the spindle



### Application/customers benefits

- Machining of the entire surface of the workpiece in one single operation
- For the machining of the surface of soft and hardened workpieces
- Center pin with carbide insert for highest running accuracy

### Technical features

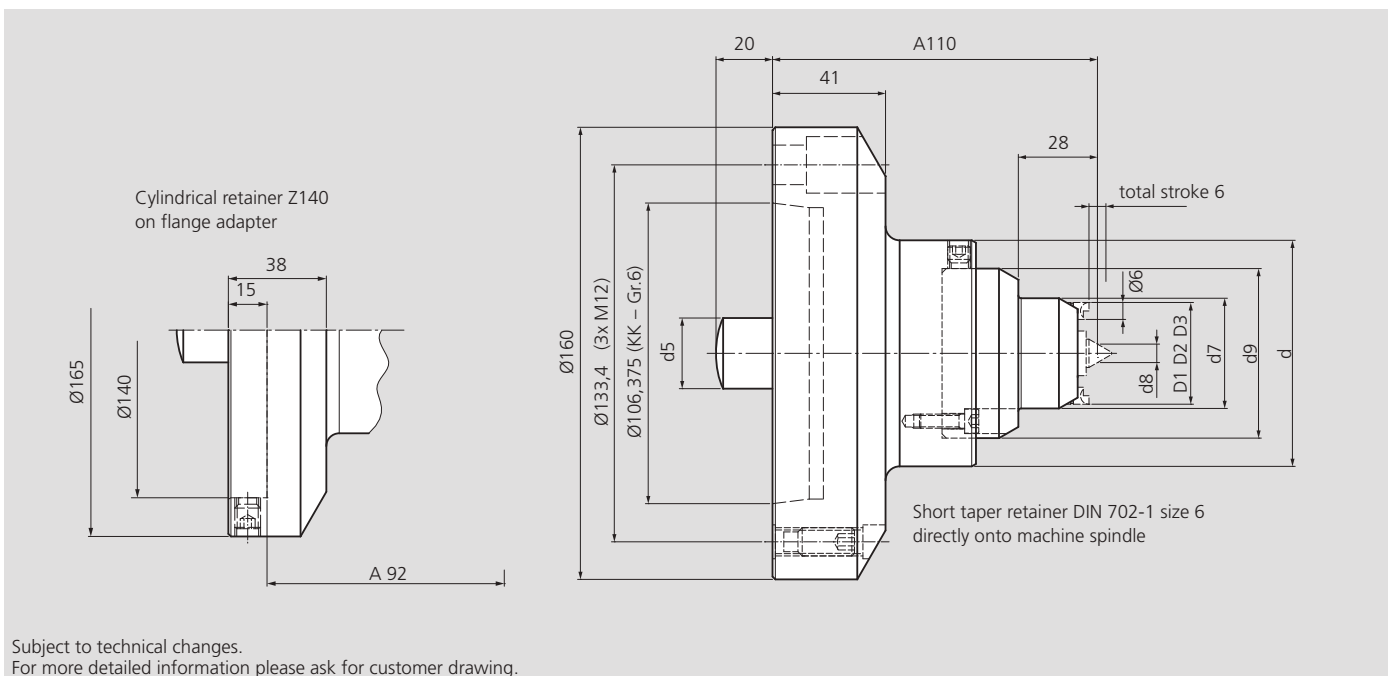
- Highest run-out accuracy < 0.003 mm
- Compensating drive elements
- Retractable drive pins in case of on- or off-loading
- Fine adjustment at face drivers for highest run-out requirements

### Standard equipment

Face driver FDG  
without changeable parts

### Ordering example

Pneumatic pancake cylinder CPG-FDG  
Id. No. 045891



## Technical Data

Id. No. Z140	Id. No. KK Gr. 6	Type	d	Center Ø	d5	d7	d8	d9	Clamping-Ø		
									D1	D2	D3
204869	204876	FDG 0	65	1 - 3	18	16	1,5	48	6	9	15
204870	204877	FDG 1	65	1 - 5	18	18	3	48	8	11	17
204871	204878	FDG 2	65	2 - 6,5	18	21	4,25	48	11	14	20
204872	204879	FDG 3	65	4 - 8,5	18	25	6,25	48	15	18	24
204873	204880	FDG 4	77	4 - 9	25	38	6,5	60	27	30	36
204874	204881	FDG 5	85	6 - 11	25	46	8,5	68	35	38	44
204875	204882	FDG 6	110	10 - 15	25	62	12,5	85	50	53	59

Face drivers with morse taper retainer according to DIN 228 available on request.

### NOTE

Pancake cylinder CPG for the pneumatic actuation of face drivers FDG available.

Changeable parts

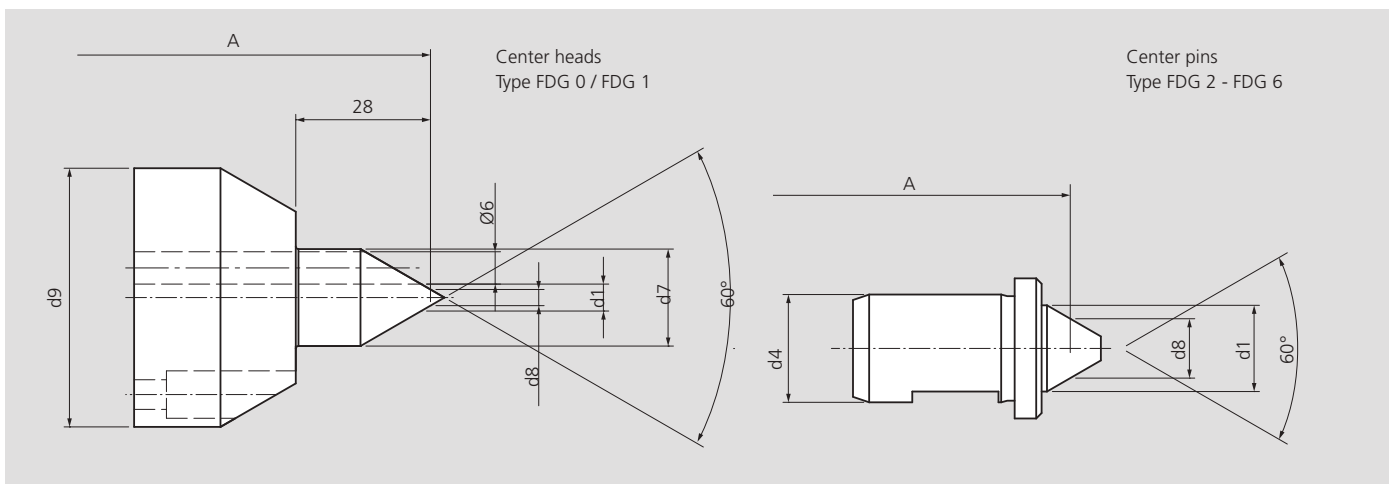
Center heads / Center pins



Application/customer benefits

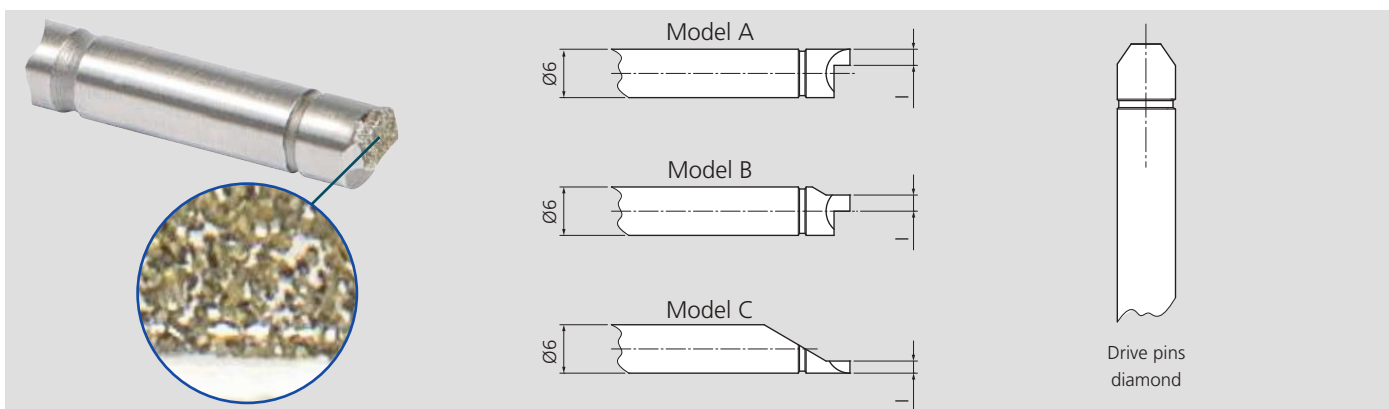
- Center pin with carbide insert
- Maximum rigidity
- Highest change accuracy
- Fixed safely via set screw and plane surface inside the face driver

Center heads Type FDG 0 and FDG 1 60° center with carbide coating.  
Center pins Type FDG 2 to FDG 6 carbide design.



Id.-No. Center pin	Type	d1	d4	Center Ø	d7	d8	d9
204883	FDG 0	3	-	1 - 3	18	1.5	48
204884	FDG 1	5	-	1 - 5	20	3	48
204885	FDG 2	7.8	6	2 - 6.5	-	4.25	-
204886	FDG 3	9.8	8	4 - 8.5	-	6.25	-
204887	FDG 4	10	14	4 - 9	-	6.5	-
204888	FDG 5	12	18	6 - 11	-	8.5	-
204889	FDG 6	16	20	10 - 15	-	12.5	-

Drive pins with diamond coating



Id. No. drive pin	Type	Clamping diameter	l	Model
204890	diamond	D1	1.5	C
204891	diamond	D2	3	B
204892	diamond	D3	3	A

- Drive pins for torque transmission onto the workpiece
- Drive pins with diamond coating
- High frictional coefficient

Clamping diameter D1/D2/D3 see technical data.

Further dimensions on request.





Example: CPG with D-VARIO diaphragm chuck

## CPG

### Pneumatic pancake cylinder for diaphragm chuck D-VARIO and face driver FDG

- Easy installation for grinding and turning machines without hydraulic unit
- Operating pressure 2-8 bar
- Medium feed for air / coolant



- Pneumatic actuation (2-8 bar)
- Easy installation for grinding and turning machines



Application example:  
CPG with D-VARIO diaphragm chuck

### Application/customer benefits

- For the actuation of diaphragm chuck D-VARIO and face driver FDG
- Easy installation for grinding and turning machines without hydraulic unit
- Compact design

### Technical features

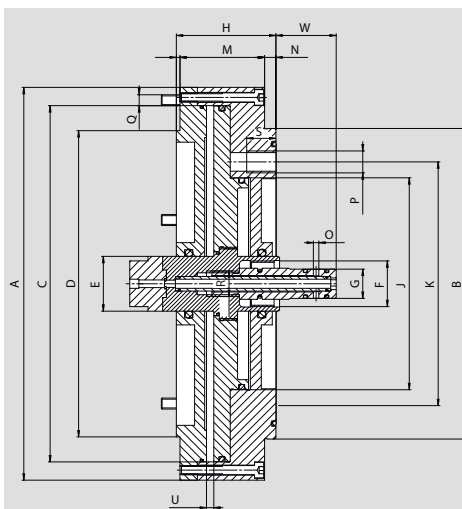
- Operating pressure 2-8 bar
- Maximum axial piston force push 21 kN and pull 7 kN
- 1 additional medium feed for air / coolant
- Air service unit with water separator and oil feed necessary
- Air feed tube necessary

### Standard equipment

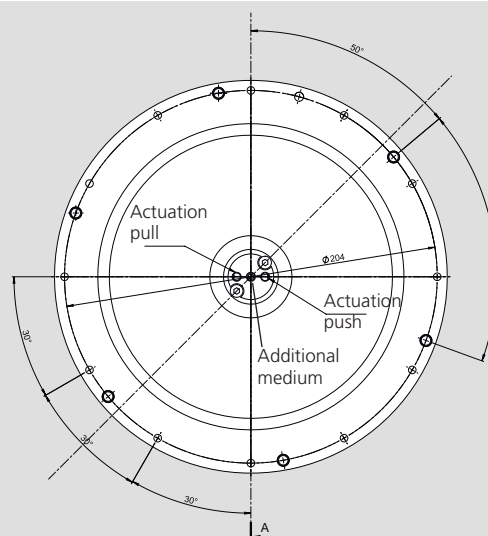
Pneumatic pancake cylinder  
(without air feed tube)

### Ordering example

Version D-VARIO Id.No. 045863  
Version FDG Id.No. 045891  
APFL3 Id.No. 5302595



Subject to technical changes.  
For more detailed information please ask for customer drawing.



### Accessory



APFL3 Air feed tube

3 Connections:  
1x Actuation „push“  
1x Actuation „pull“  
1x Additional medium channel for air/coolant

Id. No. 5302595

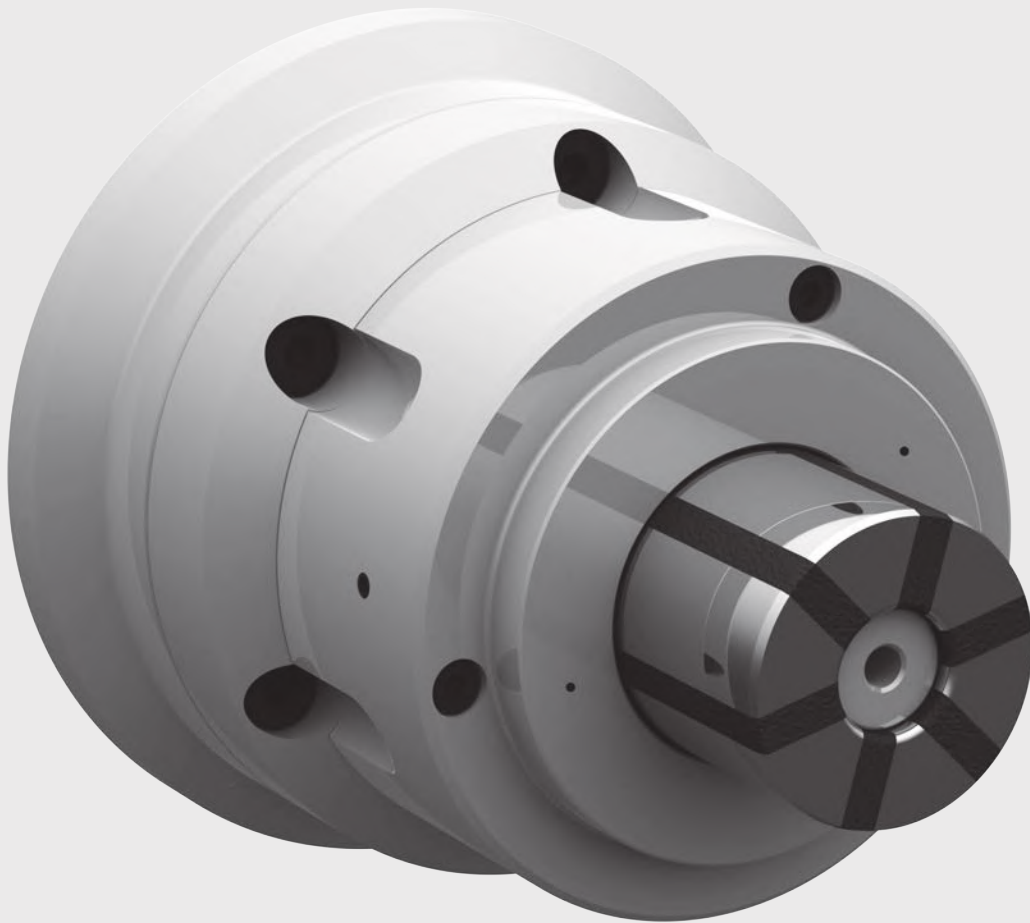
## Technical Data

SMW-AUTOBLOK Type			CPG 215
	A	mm	215
	B	mm	170
	C	mm	195
	D	mm	167.6
	E	mm	30
	F	mm	M25x1.5
	G	mm	16
	H	mm	54.5
	J	mm	116
	K	mm	133.4
	L	mm	2
	M	mm	46.3
	N	mm	6.2
	O	mm	3
	P	mm	3x M12x120°
	Q	mm	M6
	R	mm	M14
	S	mm	16
Piston stroke	U	mm	4
Axial force 6 bar (pull)		kN	5
Axial force at 6 bar (push)		kN	16
Moment of inertia		kg·m <sup>2</sup>	0.09
Max. speed		r.p.m.	2.500
Piston area (piston pull)		cm <sup>2</sup>	98
Piston area (piston push)		cm <sup>2</sup>	291
Operating pressure (**)		bar	2-8
Weight		kg	11.1

(\*) Version FDG contains reducing fl ange Z140. Total stroke max. 4mm.

(\*\*) Operating pressure for opening the D-VARIO chuck min. 6 bar





## EM-S

Segment sleeve mandrels

Clamping diameter  $\varnothing$  18 - 105 mm

- For ID clamping
- Rigid design



# Segment sleeve mandrel Ø 18 - 105 mm

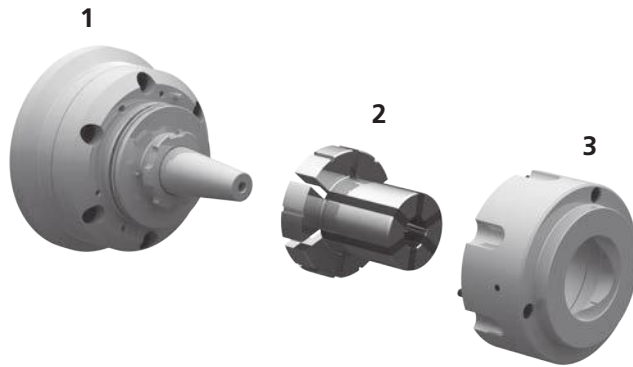
# EM-S

Segment sleeve mandrel  
power operated

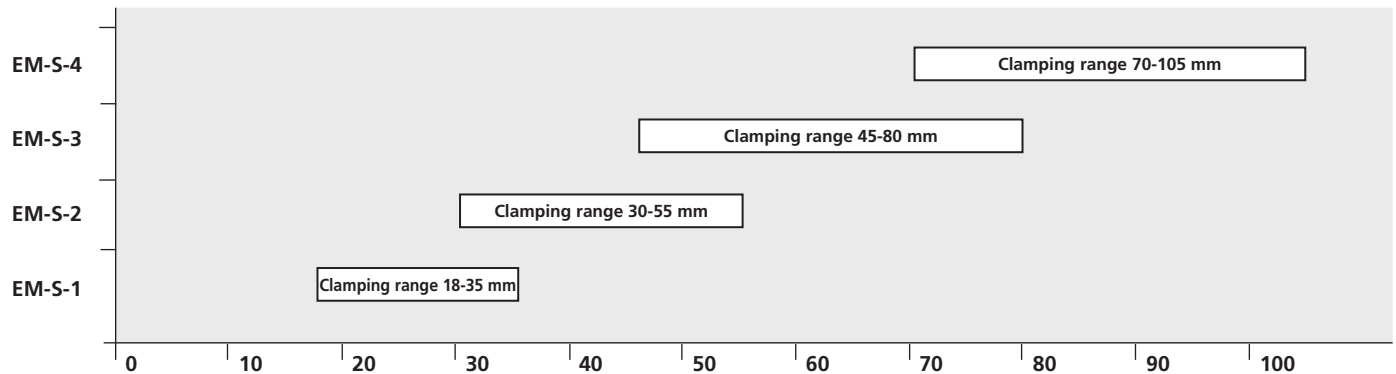
- Size 1 - 4
- Large expansibility

## Technical design

1. Basic body EM-S with spindle adapter
2. Segment sleeve mandrel (case hardened + vulcanized) with bayonet quick change.  
Clamping sleeves size EM-S-1 with three segments, clamping sleeves from size EM-S-2 on with six segments for better gripping force distribution.
3. Workstop



## Overview clamping ranges



## Clamping sleeves

### EM-S-1\*

Ø	18	19	20	21	22	23	24	25	26	27	28	29	30
Id. No.	204716	203026	203027	203028	203029	203030	203031	203032	203033	203034	203035	203036	203037
Ø	31	32	33	34	35								
Id. No.	203038	203039	203040	203041	203042								

### EM-S-2\*\*

Ø	30	31	32	33	34	35	36	37	38	39	40	41	42
Id. No.	203043	203044	203045	203046	203047	203048	203049	203050	203051	203052	203053	203054	203055
Ø	43	44	45	46	47	48	49	50	51	52	53	54	55
Id. No.	203056	203057	203058	203059	203060	203061	203062	203063	203064	203065	203066	203067	203068

### EM-S-3\*\*

Ø	45	46	47	48	49	50	51	52	53	54	55	56	57
Id. No.	203069	203070	203071	203072	203073	203074	203075	203076	203077	203078	203079	203080	203081
Ø	58	59	60	61	62	63	64	65	66	67	68	69	70
Id. No.	203082	203083	203084	203085	203086	203087	203088	203089	203090	203091	203092	203093	203094
Ø	71	72	73	74	75	76	77	78	79	80			
Id. No.	203095	203096	203097	203098	203099	203100	203101	203102	203103	203104			

### EM-S-4\*\*

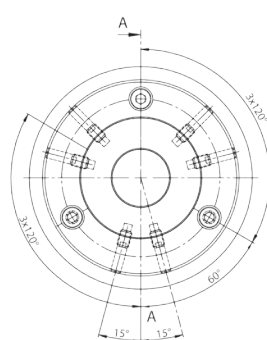
Ø	70	71	72	73	74	75	76	77	78	79	80	81	82
Id. No.	203434	203435	203436	203437	203438	203439	203440	203441	203442	203443	203444	203445	203446
Ø	83	84	85	86	87	88	89	90	91	92	93	94	95
Id. No.	203447	203448	203449	203450	203451	203452	203453	203454	203455	203456	203457	203458	203459
Ø	96	97	98	99	100	101	102	103	104	105			
Id. No.	203460	203461	203462	203463	203464	203465	203466	203467	203468	203469			

\* The clamping sleeves have a max. radial expansibility in diameter of ± 0.4 mm from the nominal diameter.

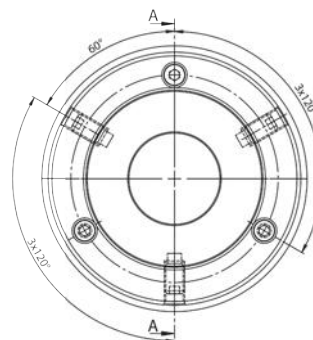
\*\* The clamping sleeves have a max. radial expansibility in diameter of ± 0.6 mm from the nominal diameter.

## Soft work stop blank

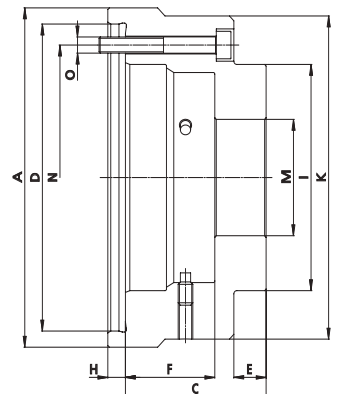
Type	EM-S-1	EM-S-2	EM-S-3	EM-S-4
Id. No.	203106	203107	203108	203433
A	93	105	113	142
C	47	59	75	82.5
D	80	95	88	115
E	12.5	22	27	30
F	27.5	30.5	40.5	45
H	6	6	-	-
I	50	70	88	116
K	82	100	114	143
M	19	31	46	71
N	66	82	100	128
O	M5	M5	M5	M5



EM-S-1



EM-S-2 / EM-S-3 / EM-S-4



# Notes

A series of horizontal lines for writing notes, alternating between light gray and white. The lines are evenly spaced and cover the majority of the page below the header.

# Notes

The page contains a series of alternating light gray and dark gray horizontal bands, serving as a template for notes. The bands are arranged in a repeating pattern of light gray, dark gray, light gray, dark gray, and so on, starting from the top of the page below the header and extending to the bottom.



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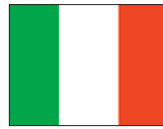
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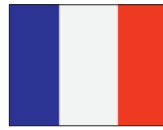
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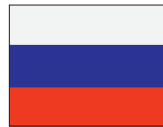
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