

# TSF-C

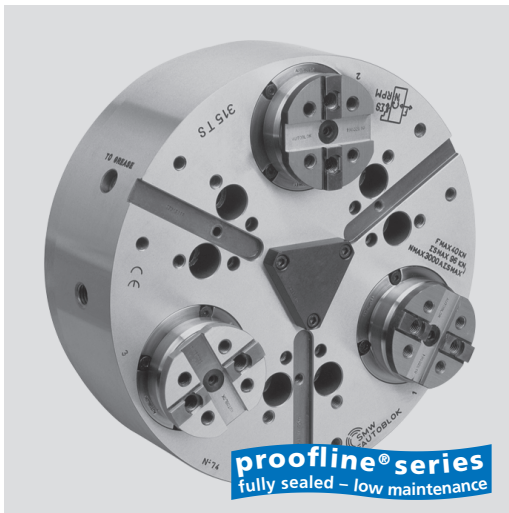
Self centering  
Floating jaws

# TSR-C

Self centering  
Rigid jaws

## High precision pull-down chuck $\varnothing$ 135 - 650 mm

- Active pull-down
- Tongue & groove
- 3 jaws



### Application/customer benefits

- Clamping of workpieces with highest demand for **parallelism**
  - **Highest productivity** with long maintenance intervals
  - Constant gripping force and long lifetime ensure constant **quality of workpieces**
- TSF-C:** Floating base jaws to clamp raw and easy deformed workpieces (6-point-contact)  
**TSR-C:** Rigid base jaws for precise clamping on pre machined diameters

### Technical features

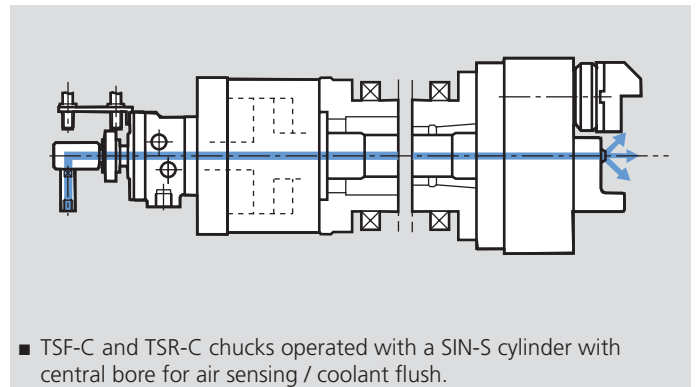
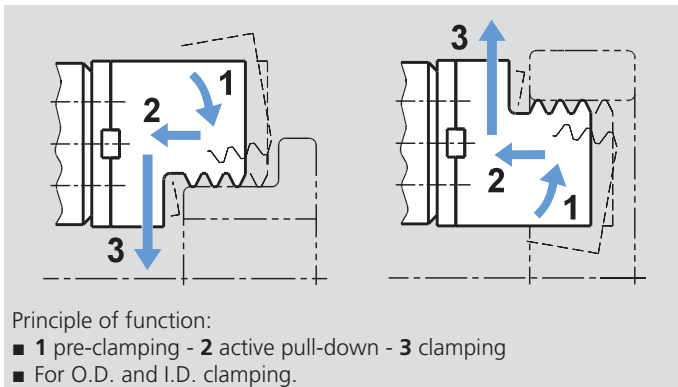
- Active pull-down
- Centrifugal force compensation
- TONGUE & GROOVE base jaws
- Central bore for coolant and / or air
- Permanent grease lubrication
- **proofline® chucks** = fully sealed - low maintenance

### Standard equipment

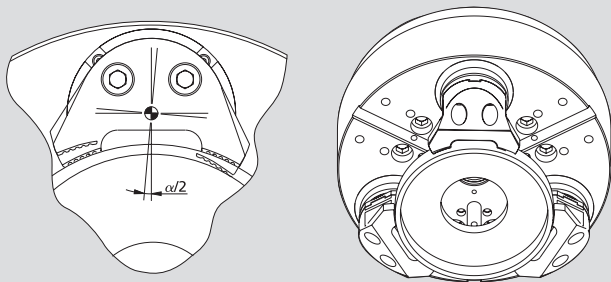
3-jaw chuck  
Mounting bolts

### Ordering example

3-jaw chuck TSF-C 210 / A6  
or  
3-jaw chuck TSR-C 315 / Z220

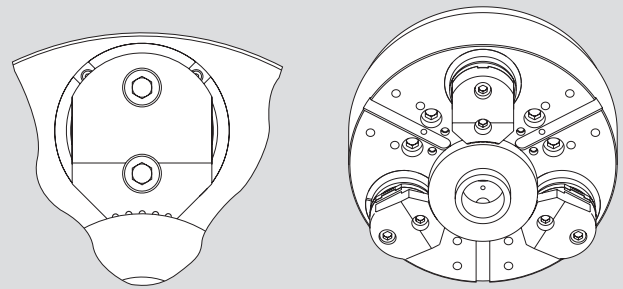


### TSF-C



**TSF-C: Floating jaws** for clamping raw / easy deformed workpieces with 6-point-contact.

### TSR-C



**TSR-C: Rigid jaws** for precise clamping on premachined diameters with 3-point-contact.

### Technical data

SMW-AUTOBLOK Type		TSF-C 135 TSR-C 135	TSF-C 170 TSR-C 170	TSF-C 210 TSR-C 210	TSF-C 250 TSR-C 250	TSF-C 315 TSR-C 315	TSF-C 400 TSR-C 400	TSF-C 530 TSR-C 530	TSF-C 650 TSR-C 650
Angular jaw stroke U°	deg.	5°	5.2°	5.2°	4.9°	4.9°	4.7°	4.7°	5°
Radial jaw stroke at distance h	mm	3.4	5.3	6.3	7	7	7.5	7.5	9.8
Pull down movement (standard)	mm	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4
Axial piston stroke	mm	16	21	25	25	25	30	30	32
Max. draw pull**	kN	12	18	25	40	40	50	60	100
Max. gripping force at distance h**	kN	29	44	60	96	96	120	150	180
Max. speed*	r.p.m.	8000	5000	4500	3800	3000	2200	1800	1600
Weight (without top jaws)	kg	4.5	15	27	41	66	115	196	386
Moment of inertia	kg·m <sup>2</sup>	0.015	0.06	0.16	0.34	0.83	2.3	7	21
Recommended actuating cylinders	SIN-S	70	85	100	125	125	150	150-175	150-175-200
Id. No. TSF-C (center mounting)		77196813	77196817***	77196821	77196825	77196831	77196840	77196853	77196865
Id. No. TSR-C (center mounting)		77196913	77196917***	77196921	77196925	77196931	77196940	77196953	77196965

\* The above maximum speed is allowed with standard weight / height top jaws and applying the full draw pull only. For more information please contact SMW-AUTOBLOK.

\*\* For internal clamping reduce the draw pull by 30%.

\*\*\* TSF-C 170 Z140 / 170 Z160 77196818.  
TSR-C 170 Z140 / 170 Z160 77196918.

on request:  
Tooling Standard  
Parts Catalog

SMW-AUTOBLOK  
472

SMW-AUTOBLOK  
466

SMW-AUTOBLOK  
327

# High precision pull-down chuck Ø 135 - 650 mm

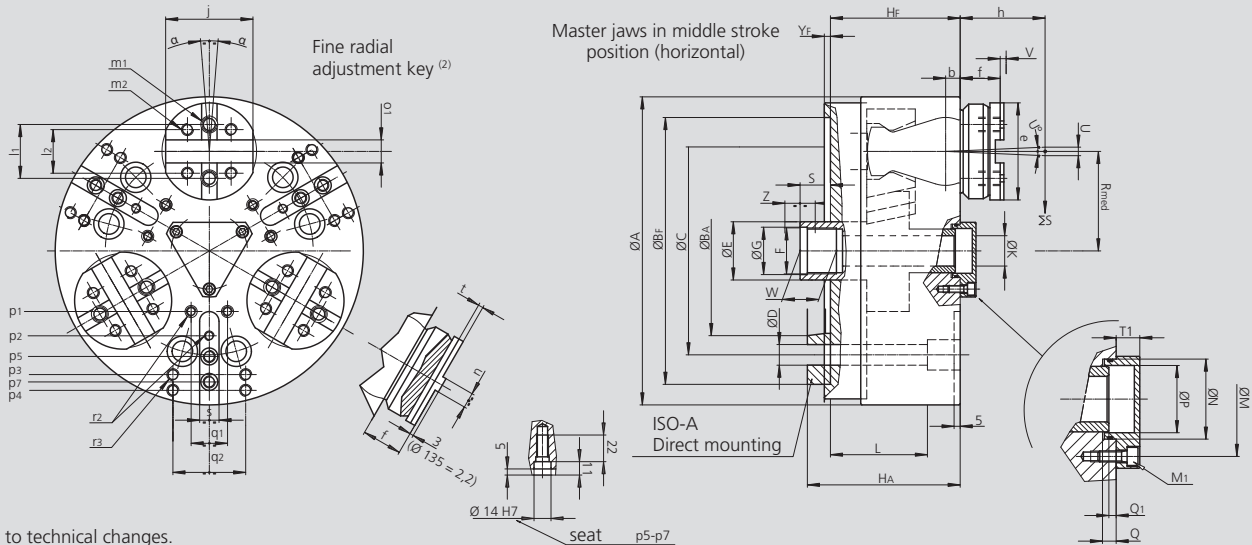
## TSF-C

## TSR-C

- Active pull-down
- Tongue & groove
- 3 jaws

Self centering  
Floating jaws

Self centering  
Rigid jaws



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

SMW-AUTOBLOK Type			TSF-C 135 TSR-C 135		TSF-C 170 TSR-C 170			TSF-C 210 TSR-C 210		TSF-C 250 TSR-C 250		TSF-C 315 TSR-C 315		TSF-C 400 TSR-C 400		TSF-C 530 TSR-C 530		TSF-C 650 TSR-C 650		
Mounting			Z115	A4	Z140	A5	Z160	A6	Z170	A6	Z220	A8	Z220	A8	Z300	A11	Z380	A15	Z380	A15
	<b>A</b>	mm	135		173			212		254		315		390		535		650		
	<b>Bf/BA H6</b>	mm	115	65.513	140	82.563	160	106.375	170	106.375	220	139.719	220	139.719	300	196.869	380	285.775	380	285.775
	<b>C</b>	mm	82.6		104.8			133.4		171.4		171.4		235		330.2		330.2		
	<b>D</b>	mm	11		11.5			13.5		13.5		17		21		25		25		
	<b>E</b>	mm	25		36			38		48		48		75		75		100		
	<b>F</b>	mm	M20 x 1.5		M28 x 1.5			M32 x 1.5		M38 x 1.5		M38 x 1.5		M60 x 1.5		M60 x 1.5		M80 x 2		
	<b>G H8</b>	mm	20.5		29			33		39		39		61		61		81		
	<b>Hf/HA</b>	mm	64.5	72.5	83	98	83	100	100	117	107	126	107	126	127	148	132	155	155	178
Through-hole	<b>K</b>	mm	8.3		14			18		25		25		52		52		75		
	<b>L</b>	mm	52.5		56			82		80		80		74		77		97		
	<b>M</b>	mm	41		36			42		63		63		90		90		128		
Thread / depth	<b>M1</b>	mm	M4 / 9		M5 / 13			M6 / 11		M6 / 12		M6 / 12		M8 / 17		M8 / 17		M8 / 17		
	<b>N H8</b>	mm	28		28			34		44		44		75		75		150		
	<b>P</b>	mm	16		23			28.5		37		37		66		66		101		
	<b>Q</b>	mm	6		6			5.5		7.5		7.5		9		9		19		
At middle stroke	<b>Q1</b>	mm	0.5		3			2		4		4		4		4		21		
At middle stroke	<b>Rmed</b>	mm	42		55			64		82		107		130		190		245		
At middle stroke	<b>S</b>	mm	8		18			20		25		25		25		20		20		
Radial stroke	<b>T1</b>	mm	10		10			13		13		13		15		15		15		
Radial stroke	<b>U°</b>	deg.	5°		5.2°			5.2°		4.9°		4.9°		4.7°		4.7°		5°		
Radial stroke <sup>(1)</sup> @ h	<b>U</b>	mm	3.4		5.3			6.3		7		7		7.5		7.5		9.8		
Pull-down s/d (option)	<b>V</b>	mm	0.1		0.1 (0.6)			0.1 (0.6)		0.1 (0.6)		0.1 (0.6)		0.2 (0.8)		0.2 (0.8)		0.4		
	<b>W</b>	mm	17		25			25		25		25		25		25		36		
Axial wedge stroke	<b>Z</b>	mm	16		21			25		25		25		30		30		32		
Only TSF-C	<b>α</b>	deg.	±2°		±2°			±2°		±1.5°		±1.5°		±1.5°		±1.5°		±1.3°		
	<b>b</b>	mm	8		9			10		12		12		12		12		12		
	<b>e</b>	mm	38		60			75		80		80		105		105		127		
	<b>f</b>	mm	13.8		27			33		33		33		32		32		46		
Reference height	<b>h</b>	mm	39		50			60		70		70		80		80		100		
	<b>j</b>	mm	42		55			65		72		72		100		100		116		
	<b>l1</b>	mm	19		32			38		44.4		44.4		63.5		63.5		63.5		
	<b>l2</b>	mm	15		24			32		36		36		48		48		54		
Thread / depth	<b>m1</b>	mm	M6 / 10		M10 / 16			M12 / 18		M12 / 18		M12 / 18		M16 / 22		M16 / 22		M20 / 26		
Thread / depth	<b>m2</b>	mm	M5 / 12		M8 / 14			M10 / 14		M10 / 14		M10 / 14		M12 / 22		M12 / 22		M16 / 24		
	<b>n h8</b>	mm	6.35		7.94			7.94		12.7		12.7		12.7		12.7		12.7		
	<b>o1 H7</b>	mm	7.94		12.68			12.68		19.03		19.03		19.03		19.03		19.03		
	<b>p1</b>	mm	-		-			30		50		60		80		(*)		(*)		
	<b>p2</b>	mm	-		35			-		70		80		110		(*)		(*)		
	<b>p3</b>	mm	-		65			80		102		102		140		(*)		(*)		
	<b>p4</b>	mm	-		-			-		-		135		170		(*)		(*)		
	<b>p5</b>	mm	-		-			87		87		-		-		(*)		(*)		
	<b>p7</b>	mm	57.5		-			-		108		108		-		(*)		(*)		
	<b>q1</b>	mm	-		-			8		30		30		36		(*)		(*)		
	<b>q2</b>	mm	18		36			45		60		60		80		(*)		(*)		
Thread / depth	<b>r2</b>	mm	-		M6 / 12			M6 / 12		M8 / 15		M8 / 15		M10 / 19		(*)		(*)		
Thread / depth	<b>r3</b>	mm	M6 / 14		M8 / 17			M8 / 17		M10 / 19		M10 / 19		M12 / 22		(*)		(*)		
	<b>s</b>	mm	-		16			16		16		16		20		(*)		(*)		
	<b>t</b>	mm	3.2		4			4		4		4		7		7		7		
	<b>yF</b>	mm	5		5			5		5		5		5		5		6		

(1) Calculated at h distance from the chuck's face (where normally the clamping takes place).

\* For chuck Ø 135, Ø 530-650 please ask for customer drawing.

(2) SMW-AUTOBLOK 192: General catalog.