

TSF-C

Self centering
Floating jaws

TSR-C

Self centering
Rigid jaws

High precision pull-down chuck Ø 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

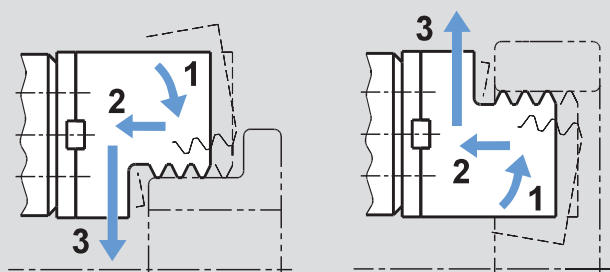
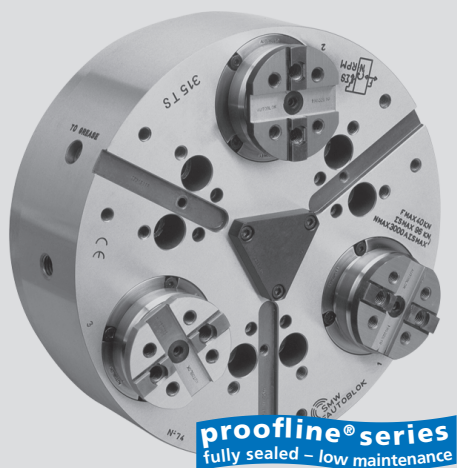
- Active pull-down
- Centrifugal force compensation
- TONGUE & GROOVE base jaws
- Central bore for coolant and / or air
- Permanent grease lubrication
- **proofline® chucks** = fully sealed - low maintenance

Standard equipment

3-jaw chuck
Mounting bolts

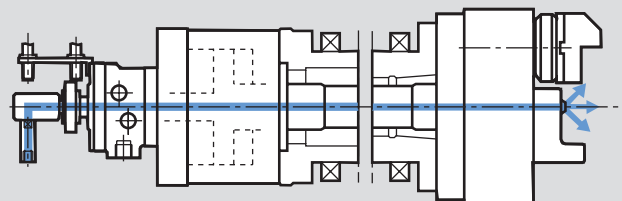
Ordering example

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



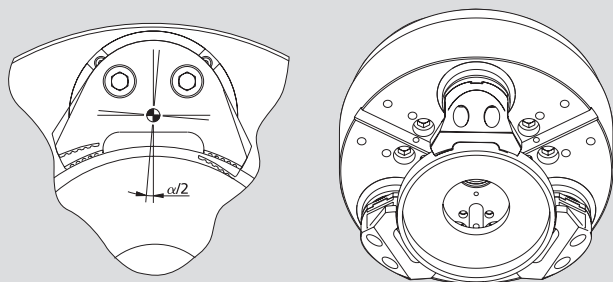
Principle of function:

- 1 pre-clamping - 2 active pull-down - 3 clamping
- For O.D. and I.D. clamping.



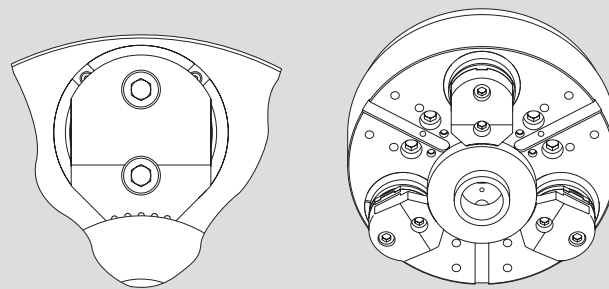
- TSF-C and TSR-C chucks operated with a SIN-S cylinder with central bore for air sensing / coolant flush.

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 pre-machined diameters with 3-point-contact.

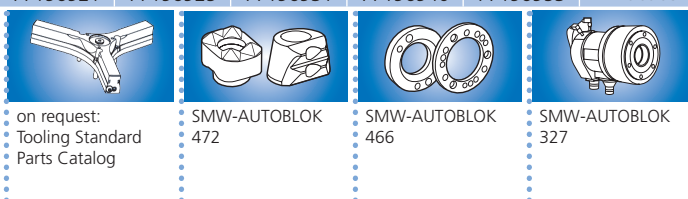
Technical data

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·m²	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

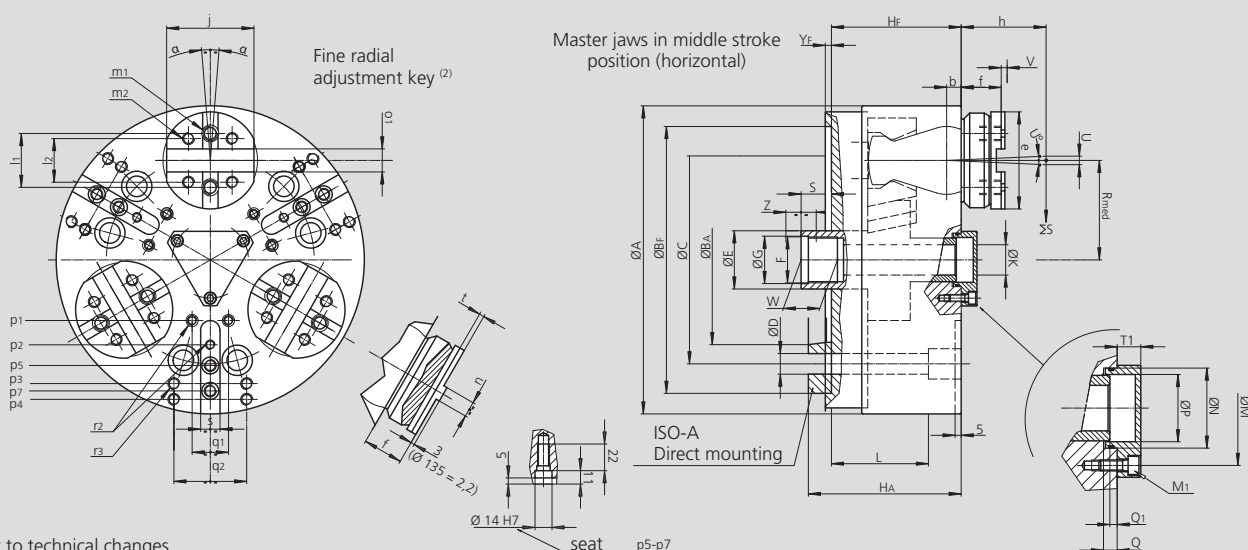
- Active pull-down
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Subject to technical changes.
For more detailed information please ask our customer service.

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
Through-hole	A	mm	135		173				212		254		315		390		535	
	Bf/BA H6	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
	C	mm	82.6		104.8		133.4		133.4		171.4		171.4		235		330.2	
	D	mm	11		11.5		13.5		13.5		17		17		21		25	
	E	mm	25		36				38		48		48		75		75	
Thread / depth	F	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	
	G H8	mm	20.5		29				33		39		39		61		61	
	Hf/HA	mm	64.5	72.5	83	98	83	100	100	117	107	126	107	126	127	148	132	155
	K	mm	8.3		14				18		25		25		52		52	
	L	mm	52.5		56				82		80		80		74		77	
At middle stroke	M	mm	41		36				42		63		63		90		90	
	M1	mm	M4 / 9		M5 / 13				M6 / 11		M6 / 12		M6 / 12		M8 / 17		M8 / 17	
	N H8	mm	28		28				34		44		44		75		75	
	P	mm	16		23				28.5		37		37		66		66	
	Q	mm	6		6				5.5		7.5		7.5		9		9	
Radial stroke	Q1	mm	0.5		3				2		4		4		4		4	
Radial stroke	Rmed	mm	42		55				64		82		107		130		190	
Radial stroke	S	mm	8		18				20		25		25		25		20	
Radial stroke	T1	mm	10		10				13		13		13		15		15	
Radial stroke	U°	deg.	5°		5.2°				5.2°		4.9°		4.9°		4.7°		4.7°	
Radial stroke	h ⁽¹⁾	mm	3.4		5.3				6.3		7		7		7.5		7.5	
Pull-down s/d (option)	V	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)	
Axial wedge stroke	W	mm	17		25				25		25		25		25		25	
Only TSF-C	Z	mm	16		21				25		25		25		30		30	
Only TSF-C	α	deg.	±2°		±2°				±2°		±1.5°		±1.5°		±1.5°		±1.5°	
Reference height	b	mm	8		9				10		12		12		12		12	
	e	mm	38		60				75		80		80		105		105	
	f	mm	13.8		27				33		33		33		32		32	
	h	mm	39		50				60		70		70		80		80	
	j	mm	42		55				65		72		72		100		100	
	l1	mm	19		32				38		44.4		44.4		63.5		63.5	
	l2	mm	15		24				32		36		36		48		48	
Thread / depth	m1	mm	M6 / 10		M10 / 16				M12 / 18		M12 / 18		M12 / 18		M16 / 22		M16 / 22	
Thread / depth	m2	mm	M5 / 12		M8 / 14				M10 / 14		M10 / 14		M10 / 14		M12 / 22		M12 / 22	
	n h8	mm	6.35		7.94				7.94		12.7		12.7		12.7		12.7	
	o1 H7	mm	7.94		12.68				12.68		19.03		19.03		19.03		19.03	
	p1	mm	-		-				30		50		60		80		(*)	
	p2	mm	-		35				-		70		80		110		(*)	
	p3	mm	-		65				80		102		102		140		(*)	
	p4	mm	-		-				-		-		135		170		(*)	
	p5	mm	-		-				87		87		-		-		(*)	
	p7	mm	57.5		-				-		108		108		-		(*)	
	q1	mm	-		-				8		30		30		36		(*)	
	q2	mm	18		36				45		60		60		80		(*)	
Thread / depth	r2	mm	-		M6 / 12				M6 / 12		M8 / 15		M8 / 15		M10 / 19		(*)	
Thread / depth	r3	mm	M6 / 14		M8 / 17				M8 / 17		M10 / 19		M10 / 19		M12 / 22		(*)	
	s	mm	-		16				16		16		16		20		(*)	
	t	mm	3.2		4				4		4		4		7		7	
	yF	mm	5		5				5		5		5		5		5	

⁽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.