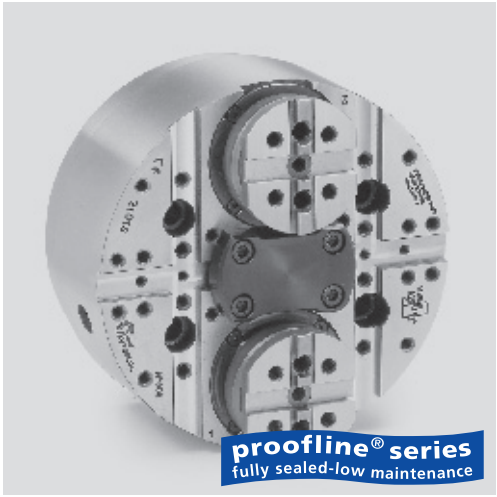
TSF-C

Self centering
Floating jaws

High precision pull-down chucks Ø 170 - 315 mm

- **active pull-down**
- **tongue & groove**
- **2 jaws**



Application/customer benefits

- Clamping of workpieces with highest demand for **parallelism**
- **Highest productivity** with long maintenance intervals
- Constant grip force and long lifetime ensure **constant quality of workpieces**

Technical features

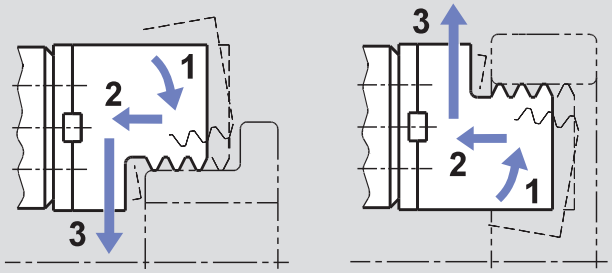
- 2-jaw-design
- active pull-down
- floating base jaws for 4 point contact
- centrifugal force compensation
- tongue & groove base jaws
- central bore for coolant and/or air
- permanent grease lubrication
- **proofline® chucks** = fully sealed – low maintenance

Standard equipment

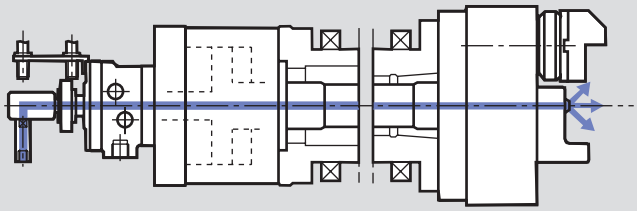
2-jaw-chuck
Mounting bolts and grease gun

Ordering example

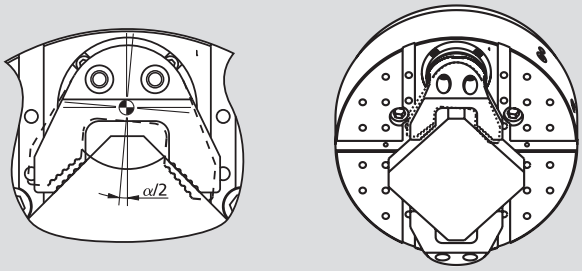
2-jaw-chuck TSF-C 210/A6



Principle of function:
- **1** pre-clamping - **2** active pull-down - **3** clamping
- For O.D. and I.D. clamping



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

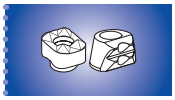


TSF-C: Floating jaws for clamping raw/asymmetric workpieces with 4-point-contact

Technical data

SMW-AUTOBLOK Type		TSF-C 170	TSF-C 210	TSF-C 250	TSF-C 315
Angular jaw stroke	deg.	5.2°	5.2°	4.9°	4.9°
Radial jaw stroke at distance **h**	mm	5.3	6.3	7	7
Pull down movement (standard)	mm	0.1	0.1	0.1	0.1
Axial piston stroke	mm	21	25	25	25
Max. draw pull**	kN	12	17	27	27
Max. gripping force** at distance **h**	kN	30	40	64	64
Max. speed*	r.p.m.	5000	4500	3800	3000
Weight (plain back without top jaws)	kg	15	27	41	66
Moment of inertia	kg·m²	0.06	0.16	0.34	0.83
Recommended actuating cylinders		**SIN-S 70**	**SIN-S 85**	**SIN-S 100**	**SIN-S 100**

* The above maximum speed is allowed with standard weight/height top jaws and applying the full draw pull only. For more informations please contact SMW-AUTOBLOK.
** For internal clamping reduce the draw pull by 30 %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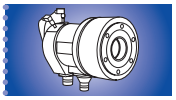
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High precision pull-down chucks Ø 170 - 315 mm

- active pull-down
- tongue & groove
- 2 jaws

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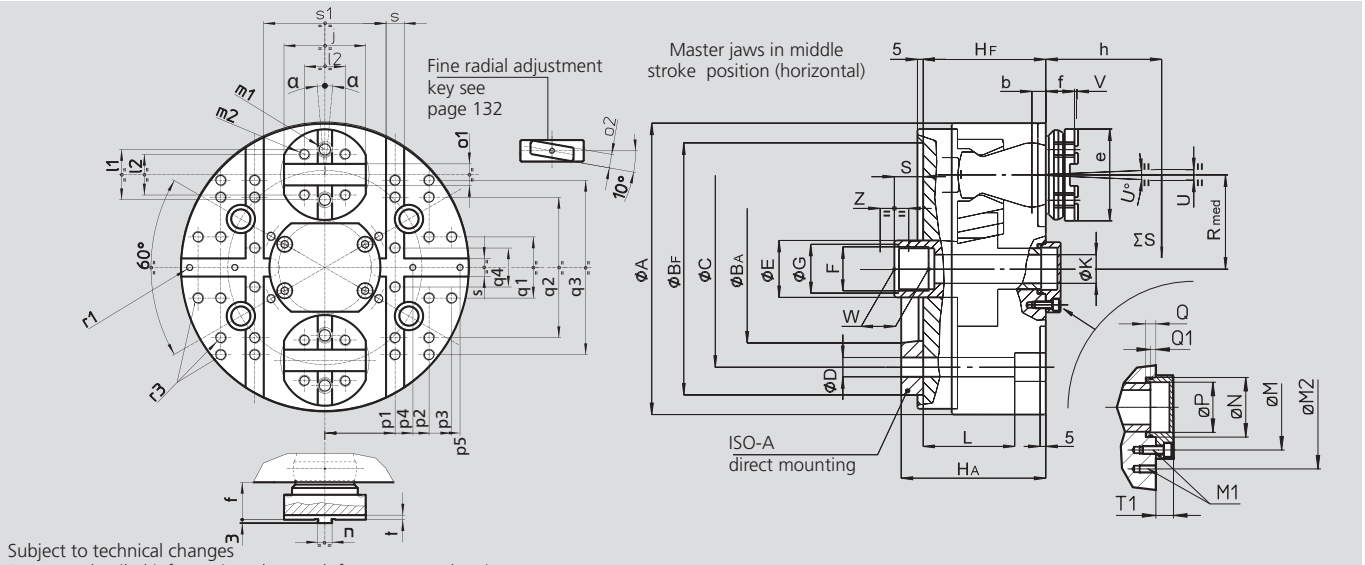


Subject to technical changes
For more detailed information please ask for customer drawing

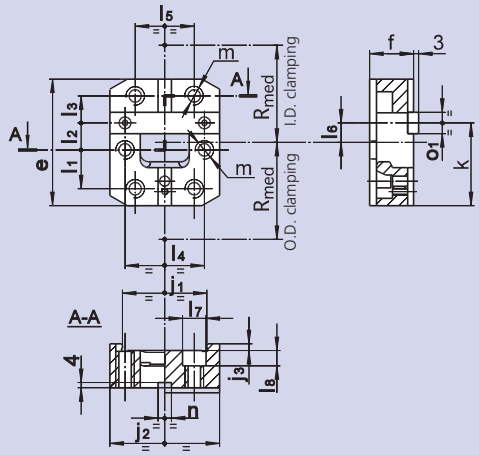
SMW-AUTOBLOK Type				TSF-C 170		TSF-C 210		TSF-C 250		TSF-C 315	
Mounting				Z140	A5	Z170	A6	Z220	A8	Z220	A8
	A		mm	173		212		254		315	
	BF/BA	H6	mm	140	82.563	170	106.375	220	139.719	220	139.719
	C		mm	104.8		133.4		171.4		171.4	
	D		mm	11.5		13.5		17		17	
	E		mm	36		38		48		48	
	F		mm	M28 x 1.5		M32 x 1.5		M38 x 1.5		M38 x 1.5	
	G	H8	mm	29		33		39		39	
	HF/HA		mm	83	98	100	117	107	126	107	126
Through-hole	**K**		mm	14		18		25		25	
	L		mm	56		82		80		80	
	M		mm	54		63		82		82	
Thread/depth	**M1**		mm	M8/16		M8/16		M8/16		M8/16	
	M2		mm	-		90		110		110	
	N	H5	mm	35		42		70		70	
	P		mm	30.2		36.5		56		56	
	Q		mm	6		7.5		7.5		7.5	
At middle stroke	**Q1**		mm	3.2		2.5		4.5		4.5	
At middle stroke	**Rmed**		mm	55		64		82		107	
At middle stroke	**S**		mm	18.2		20.5		25.5		25.5	
	T1		mm	11.5		14.5		14		14	
Radial stroke	**U°**		deg.	5.2°		5.2°		4.9°		4.9°	
Radial stroke (1) @ h	**U**		mm	5.3		6.3		7		7	
Pull-down s/d (option)	**V**		mm	0.1		0.1		0.1		0.1	
	W		mm	25		25		30		30	
Axial piston stroke	**Z**		mm	21		25		25		25	
	α		deg.	±2°		±2°		±1.5°		±1.5°	
	b		mm	9		10		12		12	
	e		mm	60		75		80		80	
	f		mm	27		33		33		33	
Reference height	**h**		mm	50		60		70		70	
	j		mm	55		65		72		72	
	l1		mm	32		38		44.4		44.4	
	l2		mm	24		32		36		36	
Thread/depth	**m1**		mm	M10/16		M12/18		M12/18		M12/18	
Thread/depth	**m2**		mm	M8/14		M10/14		M10/14		M10/14	
	n	h8	mm	7.94		7.94		12.7		12.7	
	o1	H7	mm	12.68		12.68		19.03		19.03	
	o2	h7	mm	9		9		12		12	
	p1		mm	50		55		62		62	
	p2		mm	66		80		92		92	
	p3		mm	78		95		112		122	
	p4		mm	60		55		62		62	
	p5		mm	80		80		92		92	
	q1		mm	30		30		54		54	
	q2		mm	84		110		128		128	
	q3		mm	-		-		-		202	
	q4		mm	20		30		54		54	
Thread/depth	**r1**		mm	M6/14		M6/14		M6/14		M6/14	
Thread/depth	**r3**		mm	M8/16		M8/17		M10/18		M10/18	
	s	H6	mm	16		16		16		16	
	s1	k5	mm	84		94		108		108	
	t		mm	4		4		4		4	

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

Accessories for TS chucks

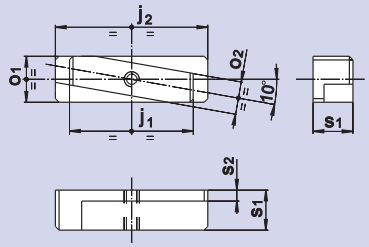
- quick jaw change pallets
- cross keys for top jaws fine adjustment

Quick change pallets for **TSF-RM** and **TSR-RM** chucks



Chuck type		170 TSF-RM 170 TSR-RM	210 TSF-RM 210 TSR-RM	250 TSF-RM 250 TSR-RM	315 TSF-RM 315 TSR-RM	400/530 TSF-RM 400/530 TSR-RM
Id. No.		19701716	19702116	19702516	19702516	19704016
e	mm	60	75	80	80	105
f	mm	21.5	26	28	28	34
j1	mm	44	50	55	55	80
j2	mm	55	65	72	72	100
j3	mm	3.5	4	4	4	4
k	mm	39.5	49	51	51	66.5
l1	mm	19	23	22	22	28
l2	mm	12.5	16	19	19	25
l3	mm	12.5	16	19	19	25
l4	mm	42	47	52	52	74
l5	mm	32	35	40	40	62
l6	mm	9.5	11.5	11	11	14
l7	mm	11	14	14	14	17
l8	mm	7	9	9	9	11
m	mm	M8	M10	M10	M10	M12
n (H7)	mm	7.94	7.94	12.7	12.7	12.7
o1 (h7)	mm	12.68	12.68	19.03	19.03	19.03
Rmed	mm	55	64	82	107	130

Cross keys for jaw radial fine adjustment



- Inclined key for radial fine adjustment of the top jaws, used when high concentricity for second operations is required.
- Used in second operation and sometimes in first or unique operations.

Chuck Ø		170	210	250	315	400/530
Id. No.		15711633	15712133	15712533	15712533	15714033
j1	mm	24	32	38	38	46
j2	mm	38	46	56	56	70
o1 (h7)	mm	12.68	12.68	19.03	19.03	19.03
o2 (h7)	mm	9	9	12	12	12
s1	mm	11	11	11	11	14.5
s2	mm	3	3	3	3	4.5