

High precision power chucks



APL-D

INCH serration

High precision fully sealed power chucks
Ø 500 - 1000 mm

- Closed center
- 3 jaws – LONG STROKE
- Proofline chuck = fully sealed – low maintenance

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APL-C

Tongue & Groove



KNCS-2G

QUICK JAW CHANGE fully sealed

Quick jaw change power chucks
Ø 210 - 630 mm

- LARGE THROUGH HOLE
- Protection against dust and swarf
- High flexibility: jaws radially adjustable/reversible
- 3 Jaws

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IEP-D

2+2+2 equalising INCH serration

High precision 6 jaw chucks Ø 400 - 800 mm

- Closed center
- 6 jaws (2+2+2) all sizes
- Centrifugal force compensation
- Proofline chuck = fully sealed – low maintenance

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IEP-C

2+2+2 equalising Tongue & groove



SJL

6 jaw (2+2+2) equalising Self centering

High precision power chucks Ø 225 - 400 mm

- For thin walled or deformation sensitive components
- Tongue & groove/ metric serration
- Centrifugal force compensation
- Jaws equalising as a pair/ mechanism lockable
- Proofline chuck = fully sealed – low maintenance

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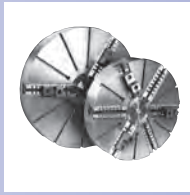
TPT-C

2+2 independent jaw movement, tongue & groove

High precision power chucks Ø 500 - 800 mm

- Closed center
- Tongue & groove

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IR-C

Tongue & groove serration Radial setting of jaws

High precision power chucks
Ø 1000 - 2500 mm

- Closed center
- 3-6 jaws (all diameters)

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IN-D

Module 2 serration

High precision power chucks
Ø 1000 - 1600 mm

- Closed center
- 3 and 6 jaws (all diameters)

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IL-D

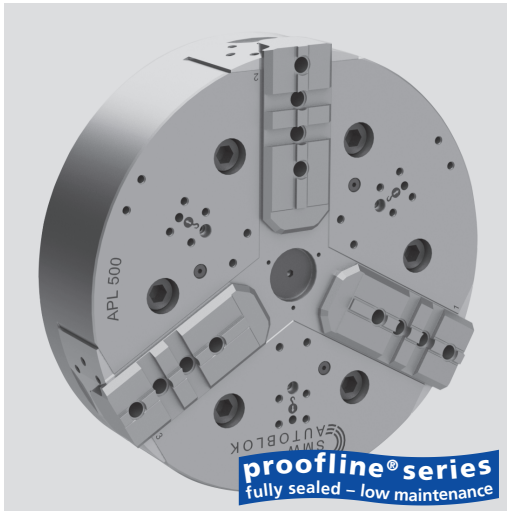
Module 2 serration Long stroke

APL-DINCH
serration**APL-C**

Tongue & groove

High precision power chucks Ø 500 - 1000 mm

- Closed center
- LONG STROKE
- 3 jaws
- proofline® chucks = fully sealed – low maintenance

**Application/customer benefits**

- For large batch production
- Fully sealed, ideal for dry machining of castings and forgings or if high pressure coolant is used
- Large clamping range

APL-D: INCH serration master jaws**APL-C:** Tongue & groove master jaws (American Standard)**Technical features**

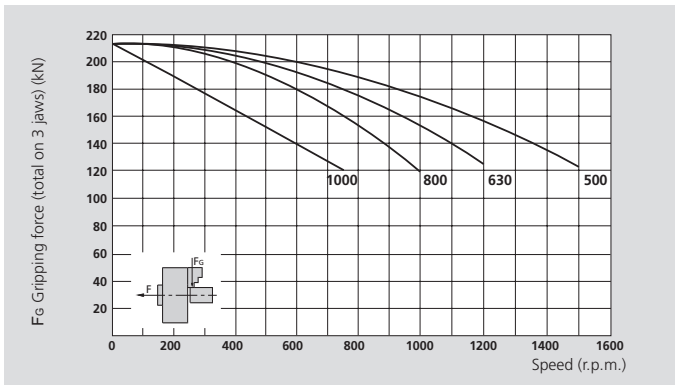
- Extra long jaw stroke
- Constant gripping force with permanent grease lubrication
- Center bore for coolant and/or air
- Chuck body and internal parts case hardened
- **proofline® chucks** = fully sealed – low maintenance

Standard equipment

- 3 jaw chuck
- 1 set T-nuts and bolts (no APL-C)
- 1 set soft top jaws (no APL-C)
- mounting bolts

Ordering example

3 jaw chuck APL-C 630 Z380

Actual gripping force diagrams

The data in the diagrams refer to 3-jaw-chucks, newly maintained according to their service manuals using SMW-AUTOBLOK K67 grease. The static and dynamic gripping forces have been measured using standard soft top jaws, placed in a position not exceeding the outer diameter of the chuck.

△ Safety advice/danger of damage:

When using taller/heavier jaws and/or clamping on a bigger diameter reduce draw pull/rotating speed accordingly.

Technical data

SMW-AUTOBLOK Type		APL-D 500 APL-C 500	APL-D 630 APL-C 630	APL-D 800 APL-C 800	APL-D 1000 APL-C 1000
Radial jaw stroke	mm	13.3	13.3	13.3	13.3
Axial piston stroke	mm	33	33	33	33
Max. draw pull*	kN	120	120	120	120
Max. gripping force*	kN	215	215	215	215
Max. speed	r.p.m.	1400	1000	800	750
Weight (without top jaws)	kg	170	297	535	840
Moment of inertia	kg·m ²	5.5	14.6	44	105
Recommended actuating cylinders	Type	SIN-S 175/200	SIN-S 175/200	SIN-S 175/200	SIN-S 175/200

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

High precision power chucks \varnothing 500 - 1000 mm

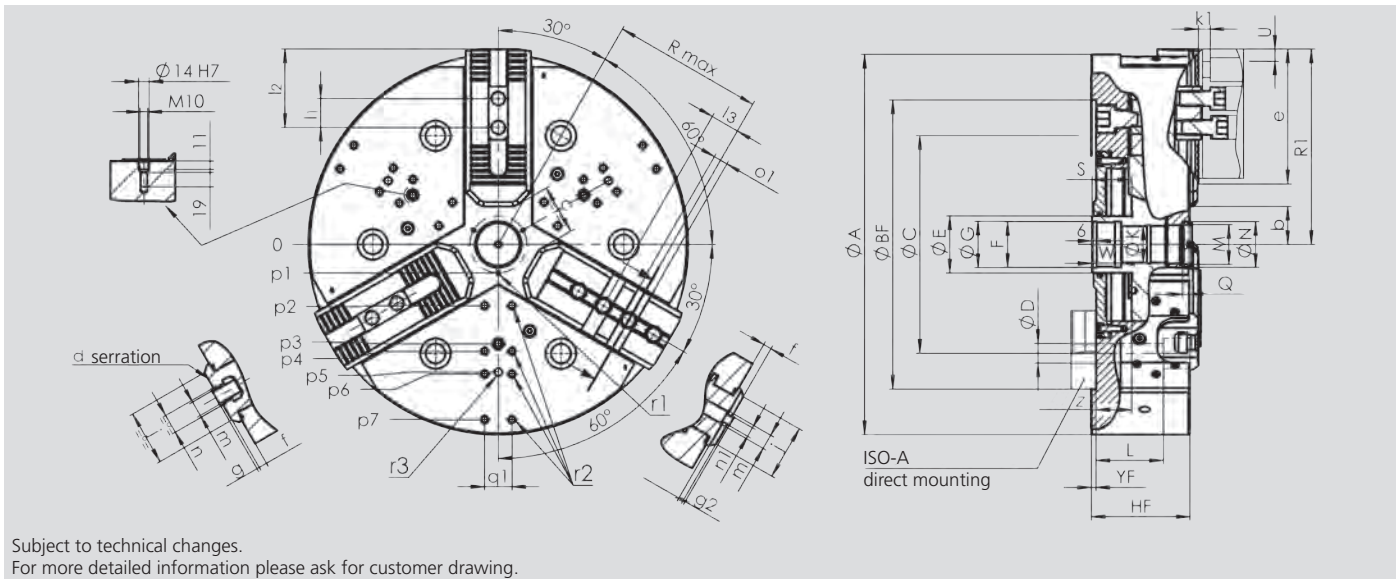
- Closed center
- LONG STROKE
- 3 jaws
- proofline® chucks = fully sealed – low maintenance

APL-D

INCH
serration

APL-C

Tongue & groove



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

SMW-AUTOBLOK Type			APL-D 500 APL-C 500	APL-D 630 APL-C 630	APL-D 800 APL-C 800	APL-D 1000 APL-C 1000
Mounting			Z380	Z380	Z520	Z520
	A	mm	500	630	800	1000
	Bf H6	mm	380	380	520	520
	C	mm	330.2	330.2	463.6	463.6
	D	mm	26	26	26	26
	E	mm	75	75	75	75
	F	mm	M60 x 1.5	M60 x 1.5	M60 x 1.5	M60 x 1.5
	G H8	mm	61	61	61	61
	Hf	mm	130	140	150	150
	K	mm	48	48	48	48
	L	mm	89	89	89	89
	M	mm	M52 x 1.5	M52 x 1.5	M52 x 1.5	M52 x 1.5
	N H8	mm	60	60	60	60
	Q	mm	7.5	7.5	7.5	7.5
Chuck open	R1	mm	257	322	407	507
max.	R	mm	198	250	351	465
Jaw stroke	S	mm	52	52	52	52
	U	mm	13.3	13.3	13.3	13.3
	W	mm	38	38	38	38
max./min.	Z	mm	47/14	57/24	57/24	67/34
min.	b	mm	36.5	36.5	36.5	36.5
min.	c	mm	42	42	42	42
	d	mm	3/32x90°	3/32x90°	3/32x90°	3/32x90°
	e	mm	177	242	327	457
	f	mm	11	11	11	11
	g	mm	3.5	3.5	3.5	3.5
	g2	mm	3	3	3	3
	g3	mm	6.5	6.5	6.5	6.5
	j	mm	72	72	72	72
	k1	mm	16	16	16	16
	l1	mm	38	38	38	38
max./min.	l2	mm	145/54	210/54	295/54	393/54
	l3	mm	38.1	38.1	38.1	38.1
	m	mm	M20	M20	M20	M20
	n H8	mm	25.5	25.5	25.5	25.5
	n1 H8	mm	12.7	12.7	12.7	12.7
	o1	mm	19.03	19.03	19.03	19.03
	p1	mm	37.5	37.5	37.5	37.5
	p2	mm	80	80	-	80
	p3	mm	130	130	130	130
	p4	mm	140	170	200	170
	p5	mm	167.5	280	280	280
	p6	mm	170	-	290	260
	p7	mm	230	260	380	350
	q1	mm	36	36	36	36
	r1	mm	M6	M6	M6	M6
	r2	mm	M10	M10	M10	M10
	r3	mm	M12	M16	M16	M16
	Yf	mm	6	6	6	6
Number of „o1“ cross grooves (only for APL-C)			2	3	6	9
Number of „m“ threads (only for APL-C)			4	5	8	10

IEP-D

2+2+2 movement
INCH serration

IEP-C

2+2+2 movement
Tongue & groove

High precision 6 jaw chucks 2+2+2 equalising Ø 400 - 800 mm

- closed center
- Equalising mechanism lockable



Application/customer benefits

- Clamping of thin walled workpieces
- Low radial deformation with 2+2+2 clamping
- Suitable for horizontal and vertical machines

IEP-D: Master jaws with INCH serration
(3/32" x 90° sizes 500-630-800, 1/16" x 90° size 400)

IEP-C: Master jaws with Tongue & groove

Technical features

- Adjustable to 6 jaw 2+2+2 or true 6 jaw clamping
- Possibility to regulate the equalizing stroke from full for OP10 to very small for OP20
- Constant gripping force with permanent lubrication
- Centrifugal compensation for high spindle speed
- **proofline® chucks** = fully sealed – low maintenance

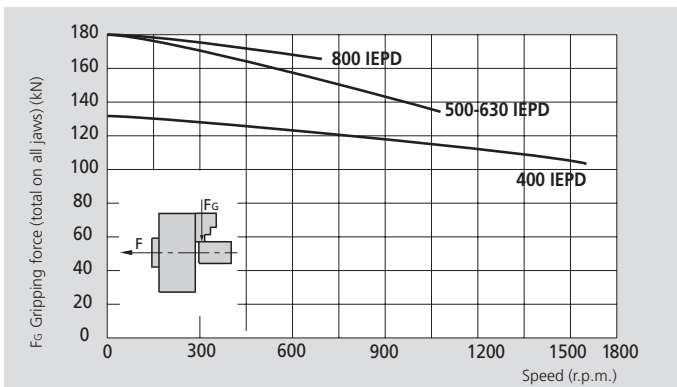
Standard equipment

- chuck with mounting bolts
- 1 set of soft top jaws
- 1 equalizing stroke regulating key

Ordering example

IEP-D 500/Z380

Actual gripping force diagram



The data in the diagram refer to 6-jaw-chucks, newly maintained according to their service manuals using the original oil. The static and dynamic gripping forces have been measured using standard soft top jaws, placed in a position not exceeding the outer diameter of the chuck.

⚠ Safety advice/danger of damage:

When using taller/heavier jaws and/or clamping on a bigger diameter reduce draw pull/rotating speed accordingly.

Technical data

SMW-AUTOBLOK Type		IEP-D 400	IEP-C 400	IEP-D 500	IEP-C 500	IEP-D 630	IEP-C 630	IEP-D 800	IEP-C 800
Number of jaws		2+2+2		2+2+2		2+2+2		2+2+2	
Radial jaw stroke	mm	10		15		15		15	
Jaw compensation	mm	±2.5		±4		±4		±4	
Axial piston stroke	mm	20		30		30		30	
Max. draw pull**	kN	90		120		120		120	
Max. gripping force**	kN	130		180		180		180	
Max. speed	r.p.m.	1600		1100		800		650	
Weight (without top jaws)	kg	145		260		410		670	
Moment of inertia	kg·m ²	2.9		8.5		20		55	
Hard top jaw (set of 3*) for IEP-D	Id. No.	12083036		12084546		12084546		12084546	
Soft top jaw (piece) for IEP-D	Id. No.	12073000		12074040		12075050		12075050	
Soft top jaw (piece) for IEP-C	Id. No.	12043060		12044050		12045050		12045050	
Recommended actuating cylinders	Type	SIN-S 100/125/150		SIN-S 150/175/200		SIN-S 150/175/200		SIN-S 150/175/200	

* 2 sets (=6 pieces) per chuck are required.

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

High precision 6 jaw chucks 2+2+2 equalising Ø 400 - 800 mm

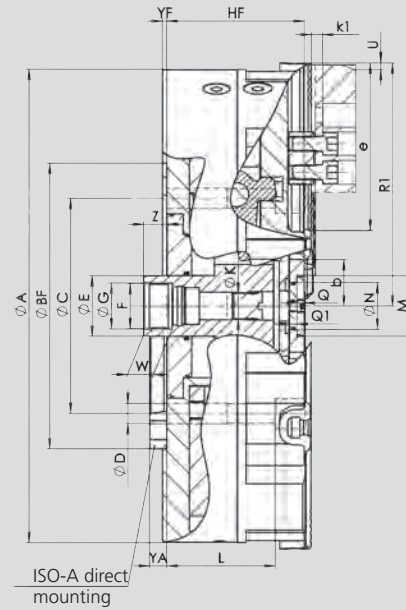
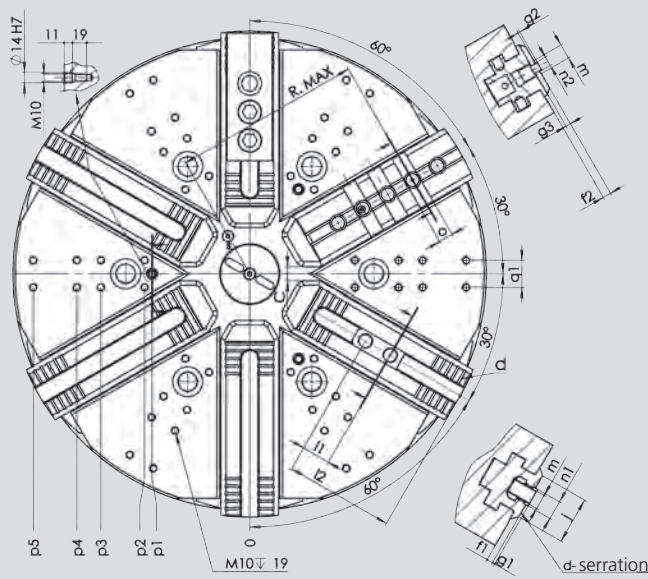
- closed center
- Equalising mechanism lockable

IEP-D

2+2+2 movement
INCH serration

IEP-C

2+2+2 movement
Tongue & groove



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

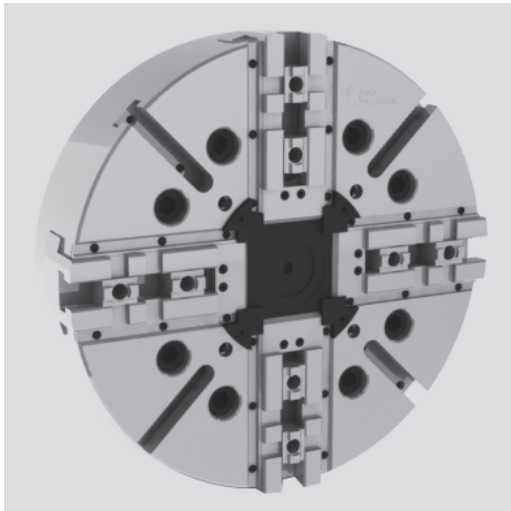
SMW-AUTOBLOK Type		IEP-D 400	IEP-C 400	IEP-D 500	IEP-C 500	IEP-D 630	IEP-C 630	IEP-D 800	IEP-C 800	
	A	mm	419	419	510	510	630	630	800	800
	BF H6	mm	300	300	380	380	380	380	520	520
	C	mm	235	235	330.2	330.2	330.2	330.2	463.6	463.6
	D	mm	21	21	25.5	25.5	25.5	25.5	25.5	25.5
	E	mm	75	75	80	80	80	80	80	80
	F	mm	M60 x 1.5	M60 x 1.5	M60 x 1.5	M60 x 1.5	M60 x 1.5	M60 x 1.5	M60 x 1.5	M60 x 1.5
	G H8	mm	61	61	61	61	61	61	61	61
	HF	mm	154	154	184	184	184	184	184	184
Through hole	K	mm	25.5	25.5	33	33	33	33	33	33
	L	mm	130	130	144	144	144	144	144	144
	M	mm	M80 x 2	M80 x 2	M80 x 2	M80 x 2	M80 x 2	M80 x 2	M80 x 2	M80 x 2
	N H8	mm	62	62	62	62	62	62	62	62
	Q	mm	10	10	10	10	10	10	10	10
	Q1	mm	10	10	10	10	10	10	10	10
Chuck open	R1	mm	212	212	263.5	263.5	323.5	323.5	408.5	408.5
Jaw stroke	U	mm	10	10	15	15	15	15	15	15
	W	mm	38	38	38	38	38	38	38	38
max/min.	Z	mm	16/-4	16/-4	61/31	61/31	61/31	61/31	61/31	61/31
min.	b	mm	45	45	46.5	46.5	46.5	46.5	46.5	46.5
min.	c	mm	2.9	2.9	3.5	3.5	3.5	3.5	3.5	3.5
	d	inch	1/16" x 90°	-	3/32" x 90°	-	3/32" x 90°	-	3/32" x 90°	-
	e	mm	150	150	174	174	234	234	319	319
	f1	mm	8	-	8	-	8	-	8	-
	f2	mm	-	8	-	11	-	11	-	11
	g1	mm	3.5	-	3.5	-	3.5	-	3.5	-
	g2	mm	-	3	-	3	-	3	-	3
	g3	mm	-	3.5	-	6.5	-	6.5	-	6.5
	j	mm	58	58	63	63	63	63	63	63
	k1	mm	9	9	15.5	15.5	15.5	15.5	15.5	15.5
	l1	mm	30	38.1	38	38.1	38	38.1	38	38.1
max./min.	l2	mm	108/43	-	138/54	-	198/54	-	283/54	-
	m	mm	M16	M16	M20	M20	M20	M20	M20	M20
	n1 h8	mm	21	-	25.5	-	25.5	-	25.5	-
	n2	mm	-	12.7	-	12.7	-	12.7	-	12.7
	o	mm	-	19.03	-	19.03	-	19.03	-	19.03
Radial position	p1	mm	150	150	130	130	130	130	130	130
Radial position	p2	mm	140	140	140	140	140	140	165	165
Radial position	p3	mm	195	195	-	-	198	198	200	200
Radial position	p4	mm	-	-	230	230	230	230	255	255
Radial position	p5	mm	-	-	-	-	288	288	290	290
	q1	mm	36	36	36	36	36	36	36	36
	Rmax	mm	-	139	-	198	-	250	-	351
	YF/YA	mm	6 23	6 23	6 23	6 23	6 23	6 23	6 23	6 23
Number of cross grooves (IEP-C)			-	1	-	2	-	3	-	6

TPT-C

2+2 independent jaw movement
Tongue & groove

High precision 2+2 jaw power chuck with self-centering independent jaw movement Ø 500 - 800 mm

- closed center
- tongue & groove



Application/customer benefits

- Clamping of rectangular and square workpieces, self-centering in two axes

Technical features

- 2+2 jaw chuck with 2 independent self-centering jaw drives (two wedge drives)
- jaw No. 1 + 3 (clamping jaws): power operated
- jaw No. 2 + 4 (centering jaws): spring operated or optionally power operated
- high quality cast iron body for lightweight and durability
- protection from contamination with seals along the master jaw profiles

Standard equipment

- 2+2 jaw chuck
- 1 set of T-nuts and bolts
- 1 set of soft top jaws
- Mounting bolts

Ordering example

- Power chuck TPT-C 500 2+2 Z380
- or
- Power chuck TPT-C 800 2+2 A15

A One wedge drive

- Operated by standard closed center cylinders.
- Jaws 2 and 4 are spring operated to center the component in one axis.
- Jaws 1 and 3 are power operated by the cylinder to center the component on the second axis and to apply the gripping force to drive the component.
- Only for external clamping.
- See specific draw pull, gripping force and maximum speed in the technical data table below.

B Two independent wedge drives*

- Operated by independent double piston cylinders.
- Jaws 2 and 4 are power operated (using the small cylinder) to center the component in one axis.
- Jaws 1 and 3 are also power operated (using the large cylinder) to center the component on the second axis and to apply the gripping force to drive the component.
- Since both pair of jaws are power operated the chuck can reach higher speeds.
- See specific draw pull, gripping force and maximum speed in the technical data table below.

***Note:** the chucks are always delivered as „one wedge drive“ version: To use them as „two independent wedge drives“ version, just remove the internal „spring assembly“ according to instruction manual.

Technical data

SMW-AUTOBLOK Type		TPT-C 500	TPT-C 630	TPT-C 800
Number of jaws		2+2	2+2	2+2
Radial jaw stroke	mm	8.5	10	10
Wedge stroke	mm	32	38	38
Weight (plain back without top jaws)	kg	180	325	550
Moment of inertia	kg·m ²	6	16	44

A ONE wedge drive

SMW-AUTOBLOK Type		TPT-C 500	TPT-C 630	TPT-C 800
Number of jaws		2+2	2+2	2+2
Max. draw pull (clamping wedge, jaw 1 + 3)	kN	80	80	80
Max. gripping force jaw 1 + 3* (power operated)	kN	160	160	160
Max. centering force jaw 2 + 4 (spring operated)	kN	30	30	30
Max. speed	r.p.m.	800	630	500
Recommended actuating cylinders	Type	SIN-S 175-200	SIN-S 175-200	SIN-S 175-200

B TWO independent wedge drives

SMW-AUTOBLOK Type		TPT-C 500	TPT-C 630	TPT-C 800
Number of jaws		2+2	2+2	2+2
Max. draw pull (clamping wedge, jaw 1 + 3)	kN	67	67	67
Max. draw pull (centering wedge, jaw 2 + 4)	kN	50	50	50
Max. gripping force jaw 1 + 3* (power operated)	kN	160	160	160
Max. centering force jaw 2 + 4 (power operated)	kN	120	120	120
Max. speed	r.p.m.	1200	850	700
Recommended actuating cylinders**	Type	DCE 140/140	DCE 140/140	DCE 140/140

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

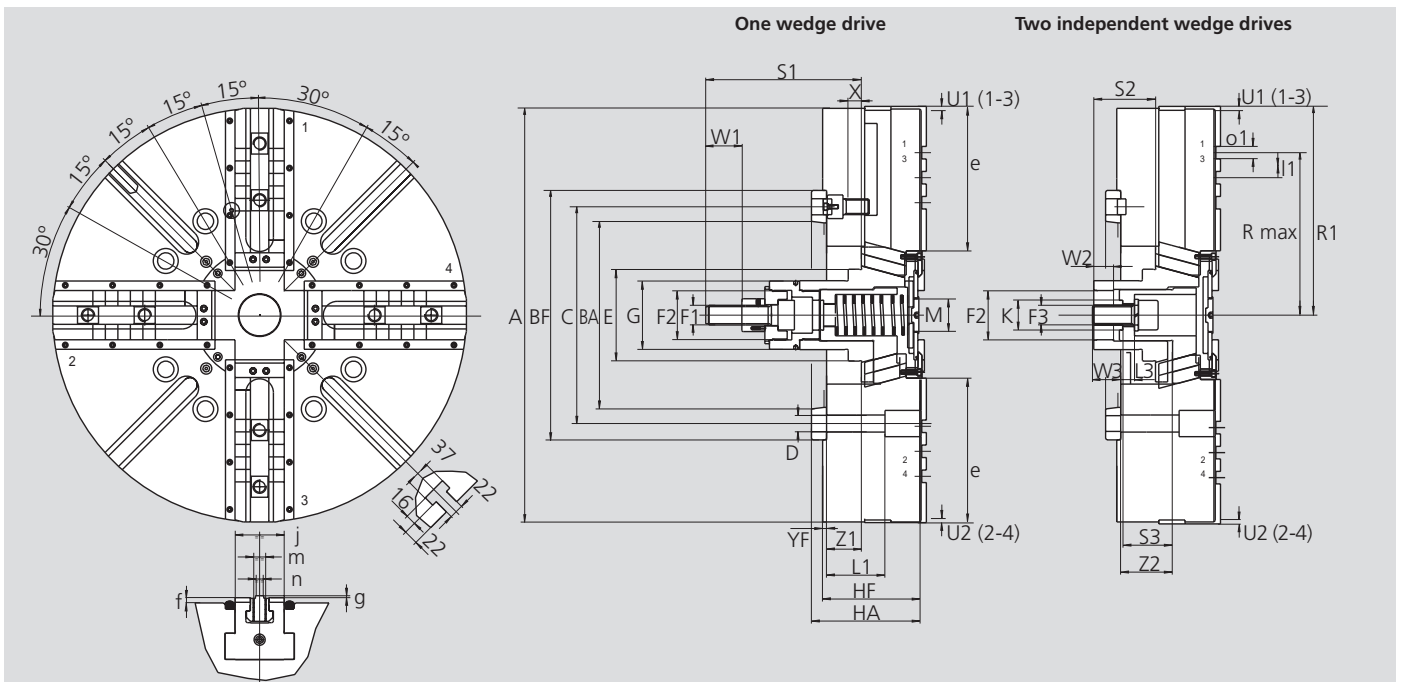
** SMW-AUTOBLOK 272: technical details of DCE cylinders see general catalog

High precision 2+2 jaw power chuck with self-centering independent jaw movement Ø 500 - 800 mm

TPT-C

- closed center
- tongue & groove

2+2 independent jaw movement
Tongue & groove



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

SMW-AUTOBLOK Type			TPT-C 500		TPT-C 630		TPT-C 800	
Mounting			Z380	A15	Z380	A15	Z380	A15
	A	mm	510		630		800	
	Bf/BA H6	mm	380	285.775	380	285.775	380	285.775
	C	mm	330.2		330.2		330.2	
	D	mm	25		25		25	
	E	mm	140		140		140	
	F1	mm	M30		M30		M30	
	F2	mm	M75 x 2		M75 x 2		M75 x 2	
	F3	mm	M30		M30		M30	
	G	mm	104		104		104	
Chuck height	Hf/HA	mm	130	147	150	167	150	167
	K	mm	45		45		45	
	L1	mm	89		89		89	
	L3	mm	18		18		18	
	M	mm	M52 x 1.5		M52 x 1.5		M52 x 1.5	
	R1	mm	263		318		405	
	Rmax	mm	209.5		247.5		349	
	S1	mm	237		237		237	
	S2	mm	94		94		94	
	S3	mm	76		76		76	
Jaw stroke (power 1 + 3)	U1	mm	8.5		10		10	
Jaw stroke (power / spring 2 + 4)	U2	mm	6.5		8		8	
	W1	mm	55		55		55	
	W2	mm	30		30		30	
	W3	mm	46		46		46	
	X	mm	20		20		20	
	Yf/YA	mm	6/23		6/23		6/23	
Wedge 1 max./min.	Z1	mm	33/1		53/15		53/15	
Wedge 2 max./min.	Z2	mm	59/27		79/41		79/41	
	e	mm	165		220		307	
	f	mm	8		8		8	
	g	mm	3		3		3	
	j	mm	75		75		75	
	l1	mm	38.1		38.1		38.1	
	m	mm	20		20		20	
	n	mm	12.7		12.7		12.7	
	o1	mm	19.03		19.03		19.03	

- Radial setting of jaws
- Closed center
- 3 and 6 jaws (all diameters)



Application/customer benefits

- Chucking operations of very large components
- Suitable for vertical machines thanks to the front protection of the slide ways

IR-C: manual radial setting of master jaws, tongue & groove (type "American Standard") (all diameters)

Technical features

- Gripping force transmission via wedge hook
- Front protection of the slide ways against swarf and chips penetration
- IR-C chucks with manual radial setting of master jaws for the workpiece centering

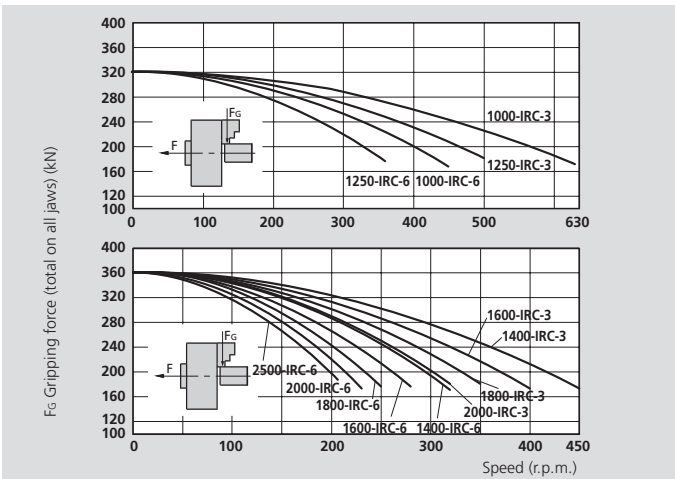
Standard equipment

3 or 6 jaws chuck
1 set soft top jaws
mounting bolts and grease gun

Ordering example

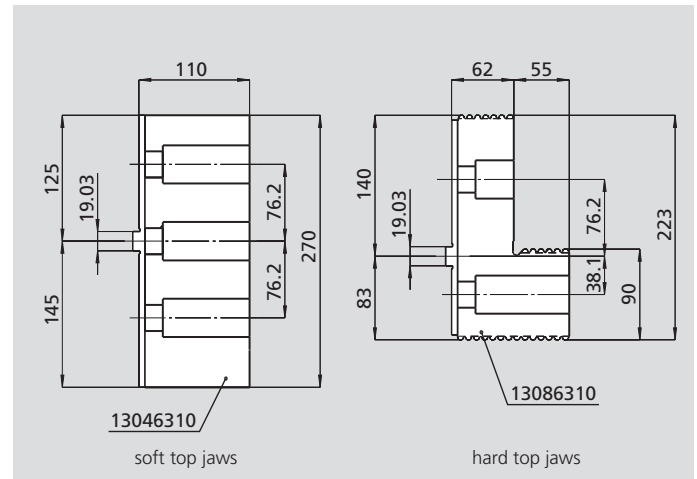
6 jaw chuck IR-C 1600/Z720

Actual gripping force diagrams



The data in the diagram refer to 3-6 jaw-chucks, newly maintained according to their service manuals using SMW-AUTOBLOK K05 grease. The static and dynamic gripping forces have been measured using standard soft top jaws, placed in a position not exceeding the outer diameter of the chuck.

Soft and hard top jaws for IR-C



⚠ Safety advice/danger of damage:

When using taller/heavier jaws and/or clamping on a bigger diameter reduce draw pull/rotating speed accordingly.

Technical data

SMW-AUTOBLOK Type		IR-C 1000	IR-C 1250	IR-C 1400	IR-C 1600	IR-C 1800	IR-C 2000	IR-C 2500
Number of jaws		3 6	3 6	3 6	3 6	3 6	3 6	6
Radial jaw stroke + (manual setting)	mm	23 + (30)	23 + (30)	24 + (40)	24 + (40)	24 + (40)	24 + (40)	30 + (40)
Axial piston stroke	mm	57	57	60	60	60	60	60
Max. draw pull*	kN	180	180	200	200	200	200	270
Max. gripping force*	kN	320	320	360	360	360	360	380
Max. speed	r.p.m.	630 450	500 360	450 320	400 280	350 250	320 230	200
Weight (without top jaws)	kg	600	800	1200	1600	1800	2500	5100
Moment of inertia	kg·m ²	68	145	280	500	750	1250	3860
Hard top jaw (piece)	Id. No.	13086310	13086310	13086310	13086310	13086310	13086310	13086310
Soft top jaw (piece)	Id. No.	13046310	13046310	13046310	13046310	13046310	13046310	13046310
Recommended actuating cylinders	Type	SIN-S 250	SIN-S 250	SIN-S 250	SIN-S 250	SIN-S 250	SIN-S 250	SIN-S 250

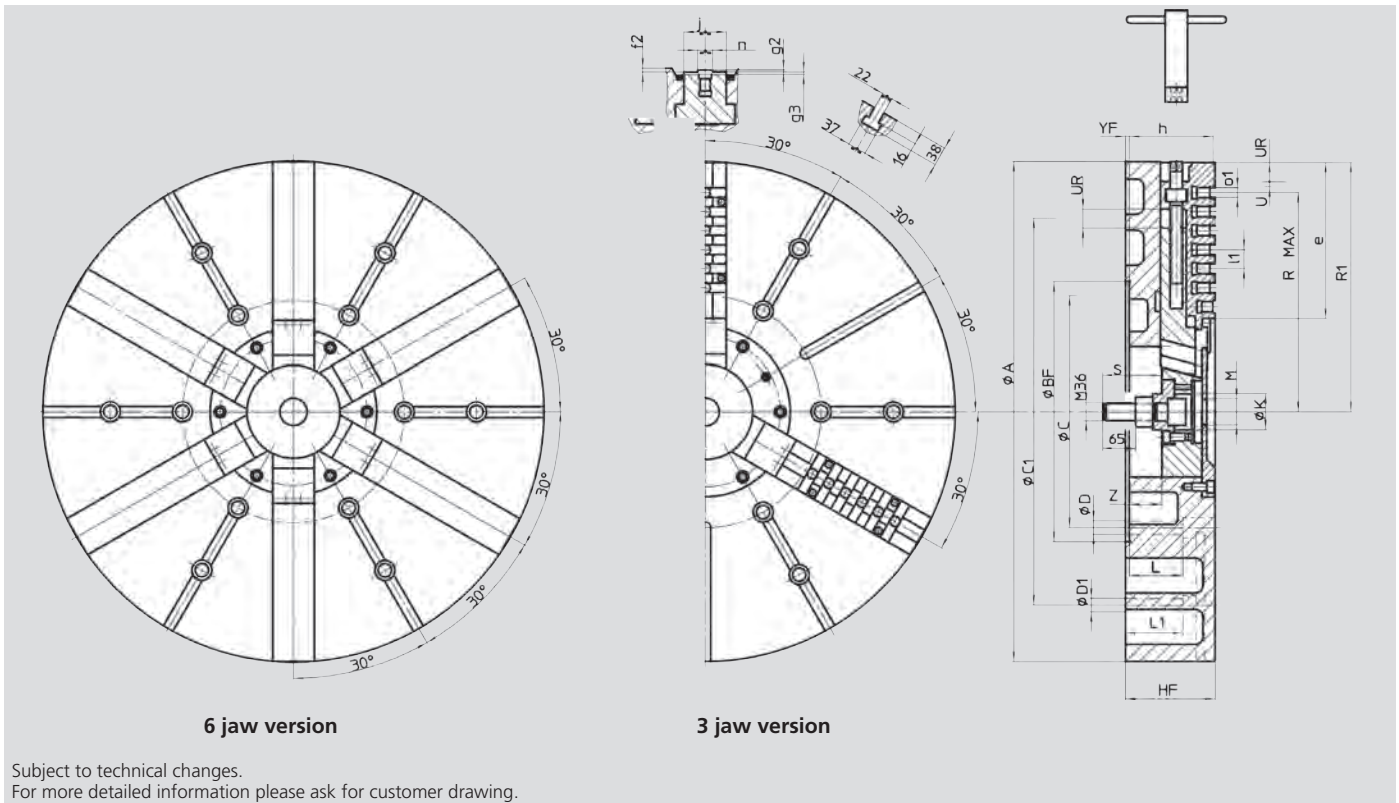
* For internal clamping reduce the draw pull by 30 %

High precision power chucks \varnothing 1000 - 2500 mm

IR-C

- Radial setting of jaws
- Closed center
- 3 and 6 jaws (all diameters)

Tongue & groove



6 jaw version

3 jaw version

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

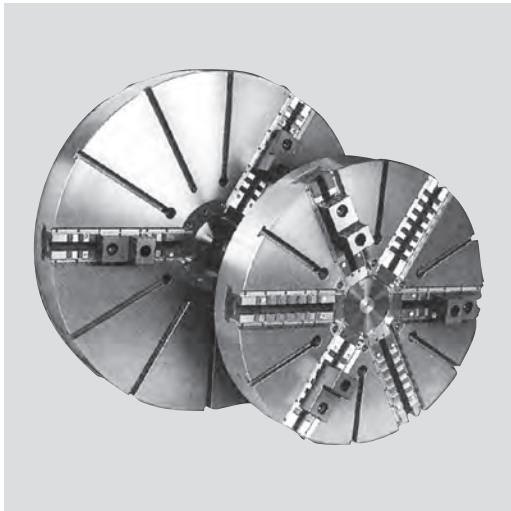
SMW-AUTOBLOK Type			IR-C 1000		IR-C 1250		IR-C 1400		IR-C 1600		IR-C 1800		IR-C 2000		IR-C 2500	
Mounting			Z520	A20	Z520	A20	Z720	Z720	Z720	Z720	Z720	Z720	Z720	Z720	Z720	Z720
	A	mm	1005		1250		1400		1600		1800		2000		2500	
	BF H6	mm	520		520		720		720		720		720		720	
	C	mm	463.6		463.6		647.6		647.6		647.6		647.6		647.6	
	C1	mm	700		700		1110		1110		1110		1110		1640	
	D	mm	27		27		33		33		33		33		33	
	D1	mm	27		27		27		27		27		27		27	
	HF	mm	184		184		222		222		222		240		280	
	K	mm	72		72		72		72		72		72		72	
	L	mm	121		121		159		159		159		177		182	
	L1	mm	97		97		130		130		130		148		205	
	M	mm	M52 x 1.5		M52 x 1.5		M52 x 1.5		M52 x 1.5		M52 x 1.5		M52 x 1.5		-	
Chuck open	R1	mm	502		623		696		796		896		996		1248	
Chuck open	Rmax	mm	457		563		657		738		838		914		1176	
	S	mm	100		100		100		100		100		100		30	
Radial stroke	U	mm	23		23		24		24		24		24		40	
Setting stroke	UR	mm	30		30		40		40		40		40		15	
	YF	mm	8		8		8		8		8		8		8	
max.	Z	mm	59		59		82		82		82		100		-	
min.	Z	mm	2		2		22		22		22		40		-	
	e	mm	295		416		446		546		639		739		959	
	f2	mm	8		8		8		8		8		8		8	
	g2	mm	4		4		4		4		4		4		4	
	g3	mm	7		7		7		7		7		7		7	
	h	mm	168		168		206		206		206		224		261	
	j	mm	85		85		110		110		110		110		110	
	l1	mm	38.1		38.1		38.1		38.1		38.1		38.1		38.1	
	m	mm	M24		M24		M24		M24		M24		M24		M24	
	n h8	mm	30		30		30		30		30		30		30	
	o1 H7	mm	19.03		19.03		19.03		19.03		19.03		19.03		19.03	
Number of „o1“ cross grooves			6		9		10		12		14		16		21	
Number of „m“ threads			7		10		11		13		15		17		21	

IN-D**IL-D****High precision power chucks Ø 1000 - 1600 mm**

MODULE 2 serration

Long jaw stroke
MODULE 2 serration

- Closed center
- LONG JAW STROKE
- 3 and 6 jaws (all diameters)

**Application/customer benefits**

- Chucking operations of very large components
- Suitable for vertical machines thanks to the front protection of the slide ways

IN-D/ IL-D: MODULE 2 serrated master jaws (pitch 6.28 mm)
(Ø 1000 - 1600 mm)

Technical features

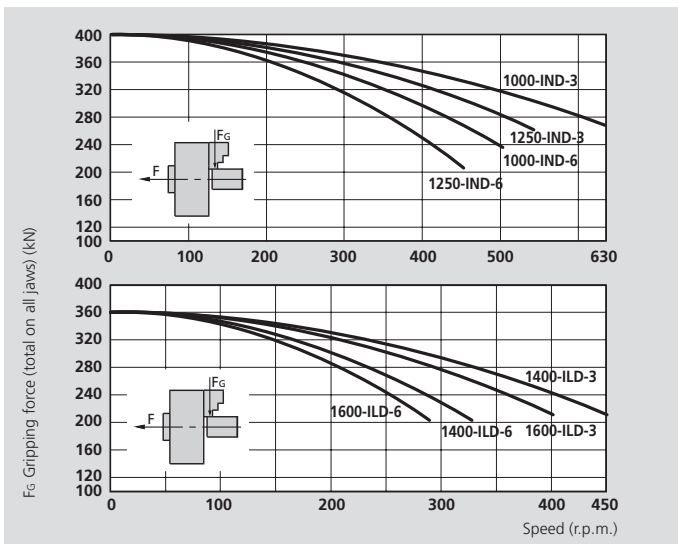
- Gripping force transmission via wedge hook
- Front protection of the slide ways against swarf and chips penetration

Standard equipment

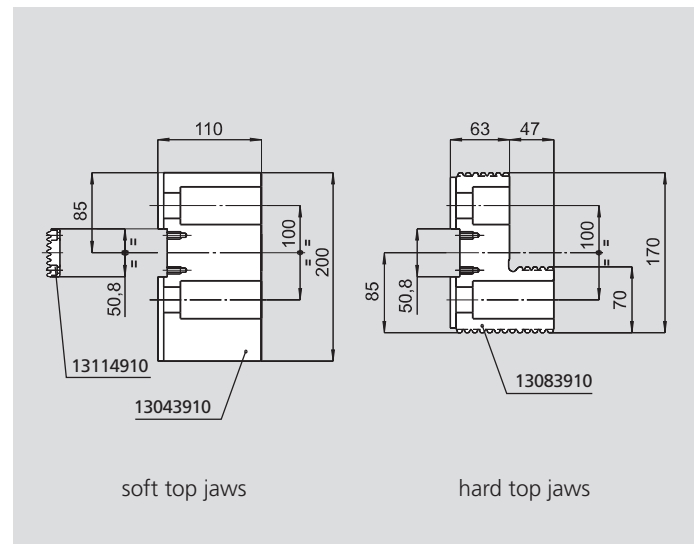
3 or 6 jaws chuck
1 set T-nuts with bolts
1 set soft top jaws with cross keys
Mounting bolts
Grease gun

Ordering example

3 jaw chuck IL-D 1600/Z720
or
6 jaw chuck IL-D 1600/Z720

Actual gripping force diagrams

The data in the diagram refer to 3-6 jaw-chucks, newly maintained according to their service manuals using SMW-AUTOBLOK K05 grease. The static and dynamic gripping forces have been measured using standard soft top jaws, placed in a position not exceeding the outer diameter of the chuck.

Soft and hard top jaws for IN-D and IL-D**△ Safety advice/danger of damage:**

When using taller/heavier jaws and/or clamping on a bigger diameter reduce draw pull/rotating speed accordingly.

Technical data

SMW-AUTOBLOK Type		IN-D 1000		IN-D 1250		IL-D 1400		IL-D 1600	
Number of jaws		3	6	3	6	3	6	3	6
Radial jaw stroke	mm	15	15	15	15	24	24	24	24
Axial piston stroke	mm	57	57	57	57	60	60	60	60
Max. draw pull*	kN	180	180	180	180	200	200	200	200
Max. gripping force*	kN	400	400	400	400	360	360	360	360
Max. speed	r.p.m.	630	500	500	450	450	320	400	280
Weight (without top jaws)	kg	600	800	800	1200	1600			
Moment of inertia	kg-m ²	68	145	145	347	562			
Hard top jaw (piece)	Id. No.	13083910	13083910	13083910	13083910	13083910	13083910	13083910	13083910
Soft top jaw (piece)	Id. No.	13043910	13043910	13043910	13043910	13043910	13043910	13043910	13043910
Recommended actuating cylinders	Type	SIN-S 250		SIN-S 250		SIN-S 250		SIN-S 250	

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

High precision power chucks \varnothing 1000 - 1600 mm

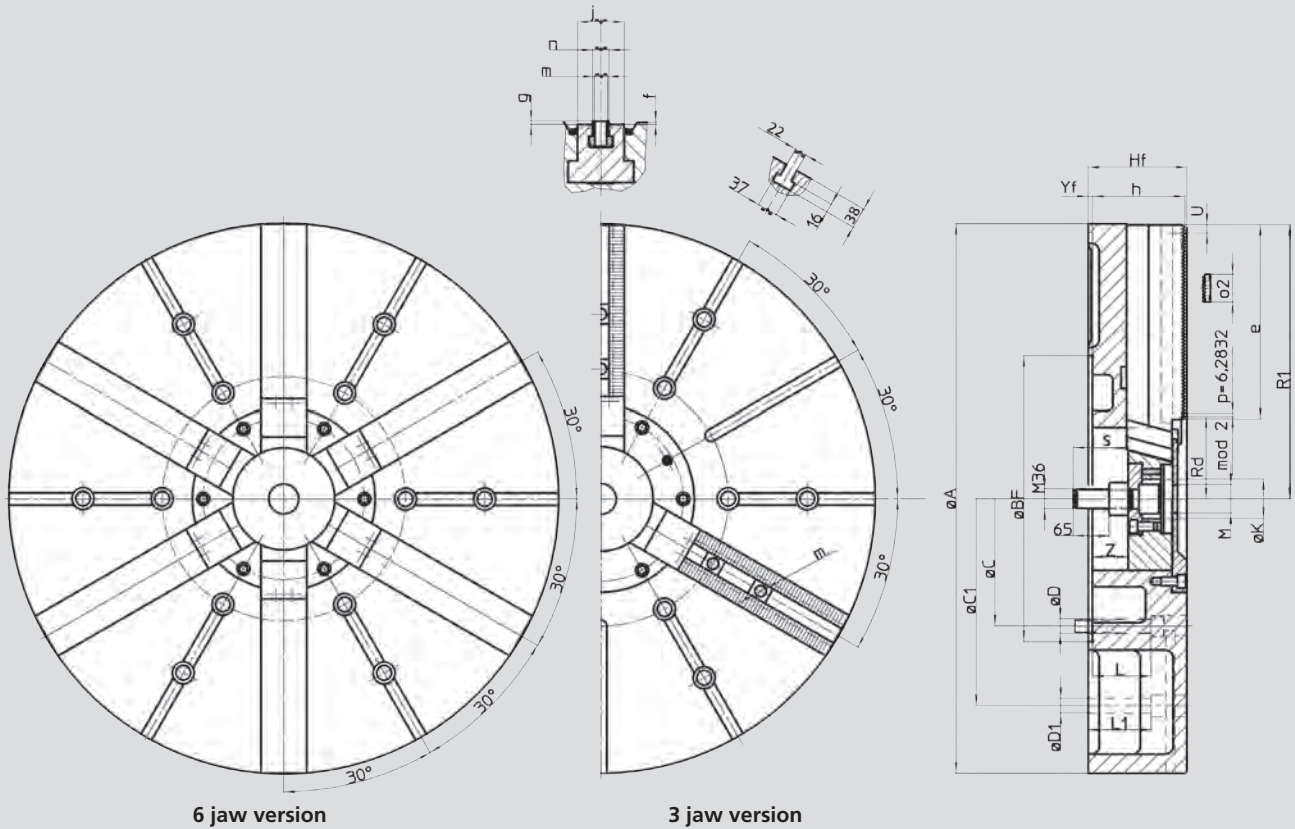
IN-D

IL-D

- Closed center
- LONG JAW STROKE
- 3 and 6 jaws (all diameters)

MODULE 2 serration

Long jaw stroke
MODULE 2 serration



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

SMW-AUTOBLOK Type			IN-D 1000		IN-D 1250		IL-D 1400	IL-D 1600
Mounting			Z520	A20	Z520	A20	Z720	Z720
	A	mm	1005		1250		1400	1600
	BF H6	mm	520		520		720	720
	C	mm	463.6		463.6		647.6	647.6
	C1	mm	700*		700*		1110	1110
	D	mm	27		27		33	33
	D1	mm	27*		27*		27	27
	HF	mm	184		184		222	222
	K	mm	72		72		72	72
	L	mm	108		108		179	179
	L1	mm	116*		116*		154	154
	M	mm	M52 x 1.5		M52 x 1.5		M52 x 1.5	M52 x 1.5
Chuck open	R1	mm	498		623		696	796
Chuck open	Rd	mm	148.5		148.5		179.5	179.5
Radial stroke	U	mm	15		15		24	24
	S	mm	100		100		100	100
	Yf	mm	8		8		8	8
max.	Z	mm	65		65		82	82
min.	Z	mm	8		8		22	22
	e	mm	353		478		519	619
	f	mm	8		8		8	8
	g	mm	4		4		4	4
	h	mm	168		168		206	206
	j	mm	85		85		110	110
	m	mm	M24		M24		M24	M24
	n h8	mm	30		30		30	30
	o2 h6	mm	50.8		50.8		50.8	50.8

* on request only

NEW GENERATION

The most flexible production chuck in the world

KNCS-2G

Customer Benefits

	KNCS-N	KNCS-2G
Minimized set up times due to the quick jaw change system	■	■
Highest accuracy of the jaw change	■	■
Universal	■	■
Vertical mounting of chuck possible	■	■
Case hardened parts	■	■
Wedge bar drive	■	■
Jaw safety interlock	■	■
Sealed base jaws		■
Sealed chuck body		■
Optimized lubrication in the jaw guides		■
Low maintenance		■

Economic and Efficiency

Example: Maintenance costs at high accumulation of dirt / coolant

	KNCS-N	KNCS-2G
Lubrication interval	every shift	every 3rd shift
Required time for lubricating	10 Min.	10 Min.
Working days/year	230	230
Required time/year	2.300 Min.	767 Min.
Machine costs/hour	€ 60.-	€ 60.-
Total costs per year	€ 2.300.-	€ 767.-
Profit per year	at 1-shift operation	€ 1.533.-
	at 2-shift operation	€ 3.066.-
	at 3-shift operation	€ 4.599.-

Clamping glossary

KNCS-2G: Evolution of the quick jaw change power chuck KNCS-N. The KNCS-2G features additional seals and an improved lubrication system for low maintenance. The chuck still offers all the advantages same as the KNCS-N. The proven wedge bar drive guarantees unmatched accuracy and rigidity. A low loss of grip force due to centrifugal force makes the chuck ideal for high speed applications. This design does not require any counterbalance weights which allows highest speeds without vibration.

Sealing: The KNCS-2G is sealed by seals attached to both faces of the base jaws and additional seals in the chuck body. The seals protect the chuck against penetration of dirt and swarf. Also the wedge bars are protected by mechanical seals.

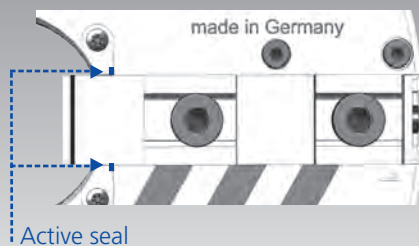
Low Maintenance: The lubrication system of the KNCS-2G is optimized. Additional lubrication channels and grease pockets integrated in the jaw guide ways ensure constant clamping force. The lubrication intervals are significantly longer reducing down times and cost for maintenance.

Mass production: The sealing and the new lubrication system make the KNCS-2G also suitable for mass production.

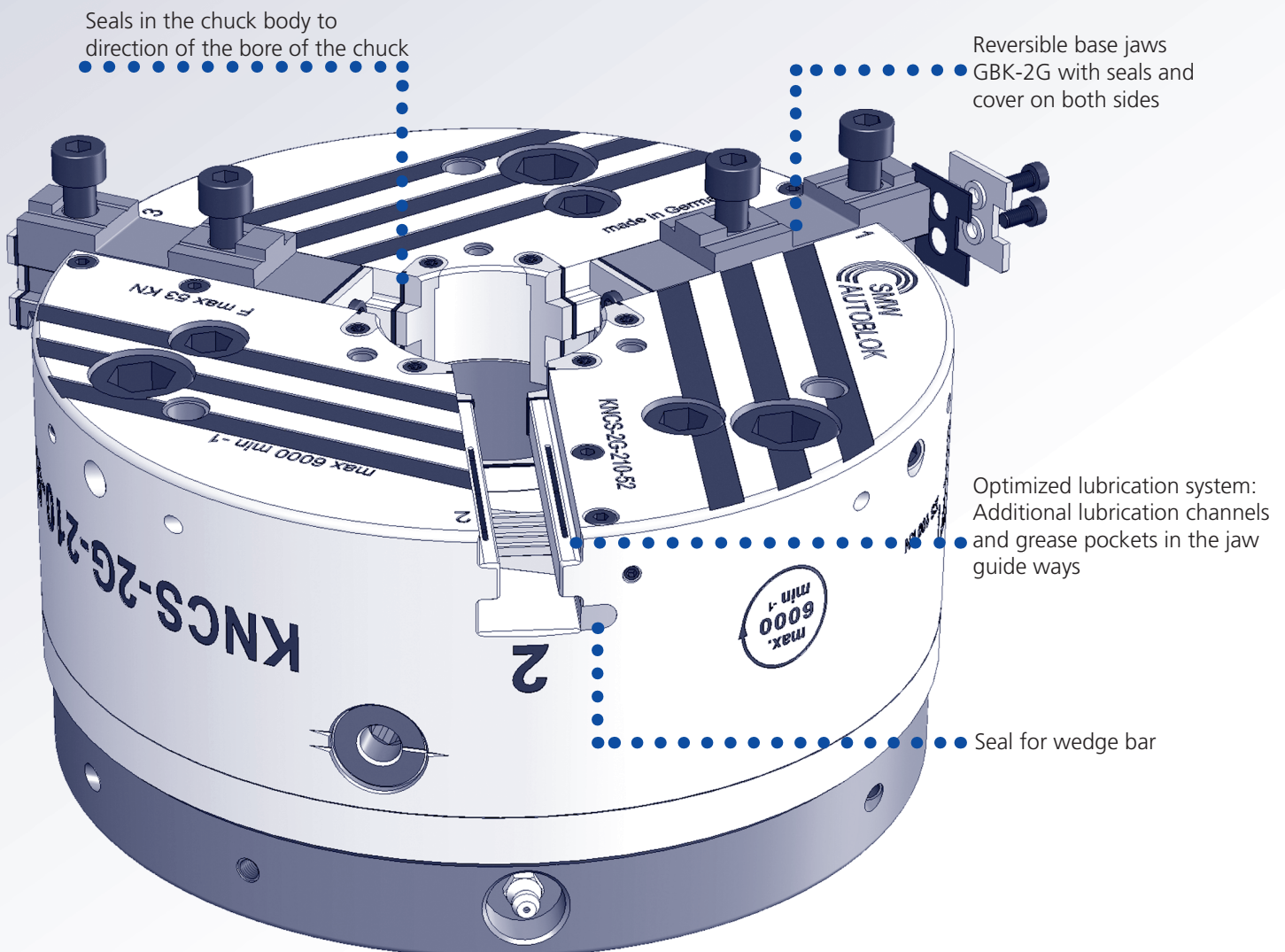
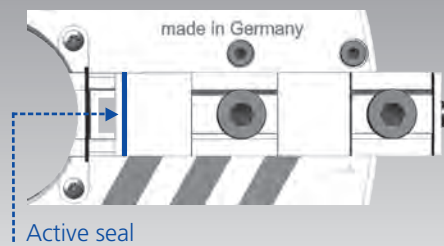
Compatibility: The KNCS-2G is interchangeable with the standard series of quick jaw change chucks KNCS-N. Existing master jaws still can be used without sealing. A small modification made to the master jaws and a mounting kit can upgrade existing master jaws to become 2G master jaws.

Safe sealing in every position of the base jaw

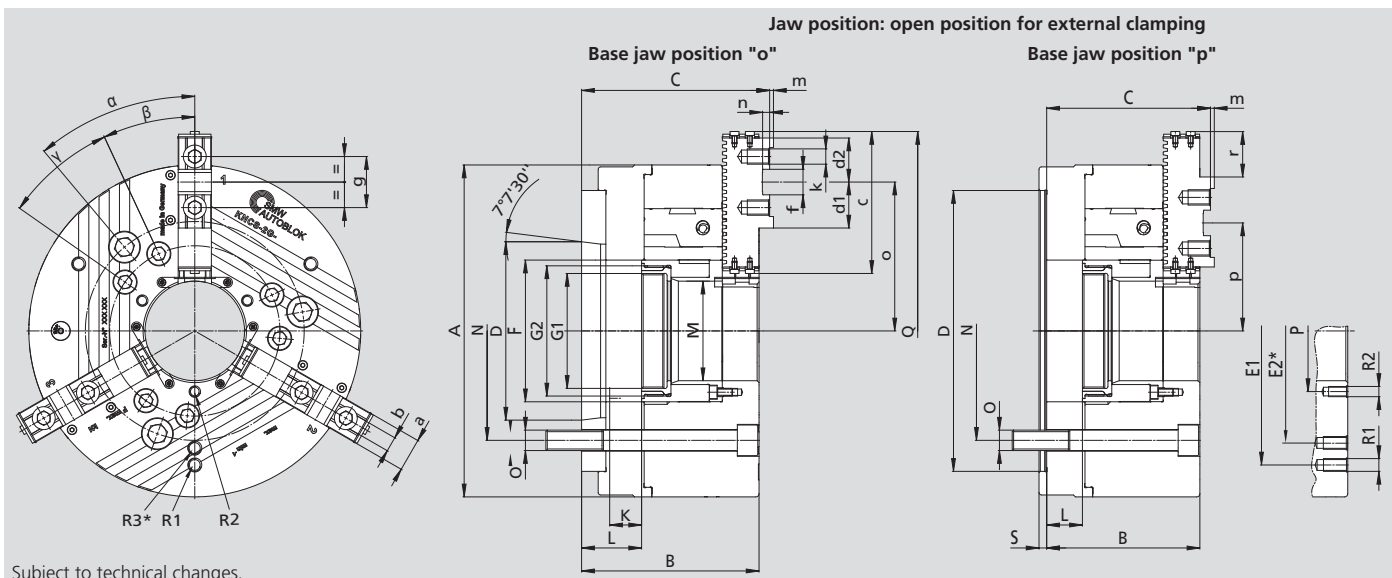
Position base jaw 1



Position base jaw 2



- Sealed
- Quick jaw change



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

* only KNCS-2G-630

Type KNCS-2G		210-52			225-66			260-78			
Mounting	Size	Z170	A6	A8	Z170	A6	A8	Z170	Z220	A6	A8
	A		215			225		260			
	B	105	122	124	105	122	124	120	120	137	139
	C	109.9	126.9	128.9	109.9	126.9	128.9	128.3	128.3	145.3	147.3
	D H6	170	106.39	139.73	170	106.39	139.73	170	220	106.39	139.73
	E		168			180		210			
	F		85			95		111			
Rotating ring nut/depth	G1		M60 x 1.5/16			M75 x 1.5/16		M90 x 2/20			
Piston thread/depth	G2		M75 x 2/19			M85 x 2/19		M102 x 2/23			
Piston stroke	K		22/25			22/25		25/28			
max.	L	25	42	44	25	42	44	28	28	45	47
	M		52			66		78			
Fixing bolt circle	N	133.4	133.4	171.4	133.4	133.4	171.4	133.4	171.4	133.4	171.4
Fixing bolt	O	M12	M12	M16	M12	M12	M16	M12	M16	M12	M16
	P		72			82		95			
	Q		268			278		313			
Thread/Thread depth	R1		M10/12			M10/12		M10/12			
Thread/Thread depth	R2		M6/10			M6/10		M8/16			
	S		6			6		6			
	a		22			22		26			
	b f7		10			10		12			
	c		92.2			92.2		111.2			
	d1		33			33		36			
	d2		31.5			31.5		34.5			
	f H7		20			20		20			
	g		40			40		40			
Thread/Thread depth	k		M8/13			M8/13		M12/15			
	l		4.9			4.9		8.3			
	m		2.5			2.5		3			
	n		4.5			4.5		5.5			
max./min.	o		96.6/68.3			102/69		116.6/83.6			
max./min.	p		77.6/49.3			83/50		84.6/51.6			
Base jaw tooth pitch	-		4.7			4.7		5.5			
Base jaw offset	r		28.3			33		33			
Base jaw offset	teeth		6			7		6 (5) **			
	α		deg. 46			deg. 46		deg. 40			
	β		deg. 34			deg. 34		deg. 25			
	Y		-			-		30			
Stroke per jaw at piston stroke K	mm	6.0		22	6.0		22	7.0			25
Stroke per jaw at piston stroke K max.	mm	7.0		25	7.0		25	8.0			28
max. actuating force 3-jaw chuck	kN		53			53		70			
max. total gripping force 3-jaw chuck	kN		100			100		135			
max. speed 3-jaw chuck	r.p.m.		6000			5500		4700			
Weight without jaws	kg	24	26	26	26	29	29	40	40	43	43
Moment of inertia	kg.m ²		0.11			0.2		0.38			
Rec. closed center cyl.	Type	SIN-S 125/150			SIN-S 125/150			SIN-S 150/175			
Rec. open center cyl.	Type	VNK-T2 130-52			VNK-T2 150-67			VNK-T2 170-77			

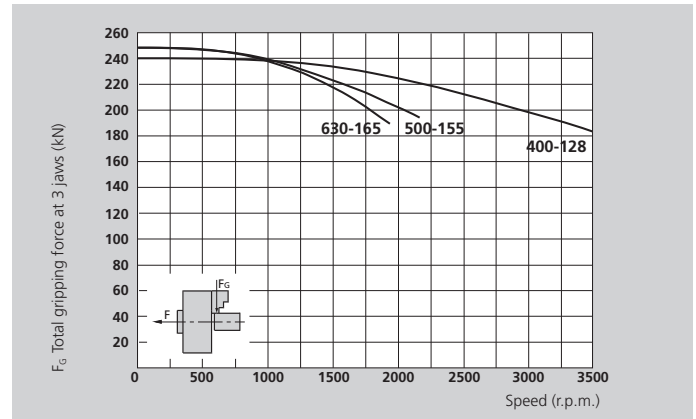
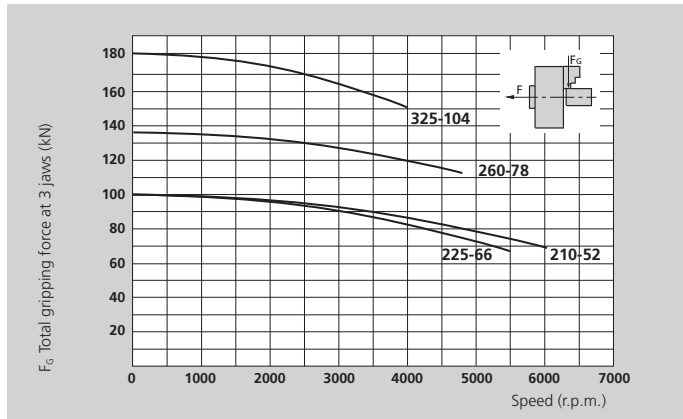
* indirect mounting

** Base jaw position „o“ = 5 teeth

- Sealed
- Quick jaw change

QUICK JAW CHANGE

For highest speeds: flat gripping force curve



The data in the diagrams refer to 3-jaw-chucks, newly maintained according to their service manuals using SMW-AUTOBLOK K05 grease. The static and dynamic gripping forces have been measured using standard soft top jaws, placed in a position not exceeding the outer diameter of the chuck.

⚠ Safety advice/danger of damage:

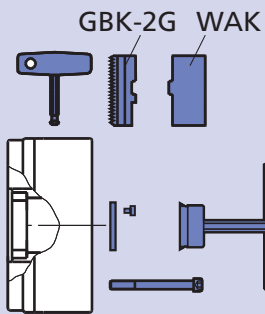
When using taller/heavier jaws and/or clamping on a bigger diameter reduce draw pull/rotating speed accordingly.

Type KNCS-2G		325-104				400-128				500-155				630-165	
Mounting	Size	Z220	Z300	A8	A11	Z300	Z380	A11	A15	Z300	Z380	A11	A15	Z380	A15
	A	324				400				500				630	
	B	130	130	149	151	140	140	161	163	174	174	195	197	174	197
	C	139.2	139.2	158.2	160.2	149.2	149.2	170.2	172.2	184	184	205	207	184	207
	D	220	300	139.73	196.88	300	380	196.88	285.77	300	380	196.88	285.77	380	285.77
	E1/E2	268				330				420				585	
	F	144				180				207				217	
Rotating ring nut/depth	G1	M115 x 2/22				M138 x 2/22				M165 x 2/25				M175 x 2/25	
Piston thread/depth	G2	M132 x 2/25				M160 x 2/25				M185 x 2/28				M195 x 2/28	
Piston stroke	K	25/28				32				42				42	
max.	L	28	28	47	49	32	32	53	55	42	42	63	65	42	65
	M	104				128				155				165	
Fixing bolt circle	N	171.4	235	171.4	235	235	330.2	235	330.2	235	330.2	235	330.2	330.2	330.2
Fixing bolt	O	M16	M20	M16	M20	M20	M24	M20	M24	M20	M24	M20	M24	M24	M24
	P	130				152				180				195	
	Q	391				461				552				650	
Thread/Thread depth	R1/R2	M10/16				M12/18				M16/25				M16/25	
Thread/Thread depth	R2	M10/16				M12/18				M12/18				M12/18	
	S	6				8				8				8	
	a	32				32				45				45	
	b f7	12				12				18				18	
	c	122.2				133.2				167.1				209.7	
	d1	36				43				53				53	
	d2	34				42				48.2				49.75	
	f H7	20				26				30				30	
	g	40				54				60				60	
Thread/Thread depth	k	M12/17				M12/17				M16/34				M16/34	
	l	9.3				9.3				10				10	
	m	3				3				4				4	
	n	6				7				9				9	
max./min.	o	155.7/106.2				182.3/121.8				225/141				270.5/179.5	
max./min.	p	111.7/62.2				143.3/82.2				164/80				170.5/79.5	
Base jaw tooth pitch	-	5.5				5.5				7				7	
Base jaw offset	r	49.5				60.5				84				91	
Base jaw offset	teeth	9				11				12				13	
α	deg.	40				40				40				40	
β	deg.	25				25				25				-	
γ	deg.	30				30				30				-	
Stroke per jaw at piston stroke K	mm	7.0													
Stroke per jaw at piston stroke K max.	mm	8.0				8.0				10.0				10.0	
max. actuating force 3-jaw chuck	kN	95				115				120				125	
max. total gripping force 3-jaw chuck	kN	180				240				250				250	
max. speed 3-jaw chuck	r.p.m.	4000				3500				2200				1700	
Weight without jaws	kg	65	65	68	68	111	111	116	116	225	225	231	231	390	398
Moment of inertia	kg·m ²	1.2				2.5				6.5				18	
Rec. closed center cyl.	Type	SIN-S 150/175/200				SIN-S 175/200				SIN-S 175/200				SIN-S 175/200	
Rec. open center cyl.	Type	VNK-T2 250-110				VNK-T2 320-127				VSG 450-165				VSG 450-165	

KNCS-2G

QUICK JAW CHANGE

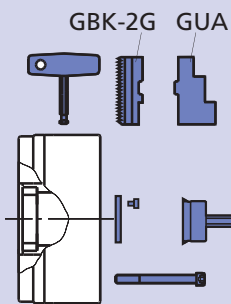
■ Ordering review



Supply range:

Chuck + key + mounting bolts + mounting key
 + 1 set hardened base jaws type GBK-2G
 + 1 set soft top jaws type WAK + set of coverplates

Spindle mounting \ Size	KNCS-2G 210-52	KNCS-2G 225-66	KNCS-2G 260-78	KNCS-2G 325-104	KNCS-2G 400-128	KNCS-2G 500-155	KNCS-2G 630-165
Centering rim small			Z 170 161551	Z 220 161571	Z 300 161591	Z 300 162106	
Centering rim large	Z 170 161180	Z 170 161582	Z 220 161550	Z 300 161500	Z 380 161592	Z 380 161980	Z 380 162120
A 05							
A 06	161563	161583	161553				
A 08	161564	161584	161554	161572			
A 11				161573	161593	162107	
A 15					161594	162108	162121

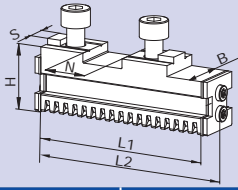


Supply range:

Chuck + key + mounting bolts + mounting key
 + 1 set hardened base jaws type GBK-2G
 + 1 set hardened, reversible top jaws type GUA, ground on chuck
 + set of coverplates

Spindle mounting \ Size	KNCS-2G 210-52	KNCS-2G 225-66	KNCS-2G 260-78	KNCS-2G 325-104	KNCS-2G 400-128	KNCS-2G 500-155	KNCS-2G 630-165
Centering rim small			Z 170 161559	Z 220 161578	Z 300 161599	Z 300 162109	
Centering rim large	Z 170 161568	Z 170 161588	Z 220 161560	Z 300 161579	Z 380 161600	Z 380 162110	Z 380 162122
A 05							
A 06	161569	161589	161561				
A 08	161570	161590	161562	161580			
A 11				161581	161601	162111	
A 15					161602	162112	162123

■ Base jaws



GBK-2G

Hardened base jaws

Consisting of 1 set (3 pcs.) base jaws GBK-2G with seals and mounting screws (6 pcs.) for top jaws.

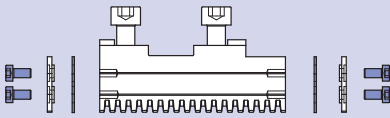
KNCS-2G	210	225	260	325	400	500	630
Jaw type	GBK-2G 200	GBK-2G 200	GBK-2G 250	GBK-2G 315	GBK-2G 400	GBK-2G 500	GBK-2G 630
Id. No.	161520	161520	161540	161329	161605	161843	161846
B	22	22	26	32	32	45	45
H	29.5	29.5	37	43	43	57	57
L1	82	82	101	112	123	157.5	199.5
L2 *	92.2	92.2	111.2	122.2	133.2	167.1	209.7
N	20	20	20	20	26	30	30
S	10	10	12	12	12	18	18
kg/set	1.0	1.0	1.8	2.7	3.0	7.7	9.5

* Dimension incl. seals, cover and screws

Seal Kit

for hardened base jaws GBK-2G

Consisting of seals (6 pcs.) and mounting screws (12 pcs.)

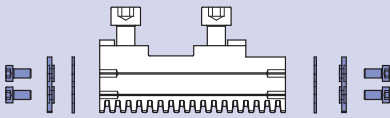


KNCS-2G	210	225	260	325	400	500	600
Jaw type	GBK-2G 200	GBK-2G 200	GBK-2G 250	GBK-2G 315/400	GBK-2G 315/400	GBK-2G 500	GBK-2G 630
Id. No.	205382	205382	205383	205384	205384	206915	206915

Mounting Kit

for hardened base jaws GBK-2G

Consisting of seals (6 pcs.), covers (6 pcs.) and mounting screws (12 pcs.)



KNCS-2G	210	225	260	325	400	500	630
Jaw type	GBK-2G 200	GBK-2G 200	GBK-2G 250	GBK-2G 315/400	GBK-2G 315/400	GBK-2G 500	GBK-2G 630
Id. No.	205386	205386	205387	205388	205388	206916	206916

Advice:

Existing master jaws still can be used without seals. A small modification made to the master jaws and a mounting kit can upgrade existing master jaws to become 2G master jaws (instruction for the rework on request).

Grease K05®

Special grease for manual and power chucks



Cartridge 14 Oz. (DIN 1284)
Grease content 500 g
Id. No. 016440

Can 1000 g
Id. No. 011881

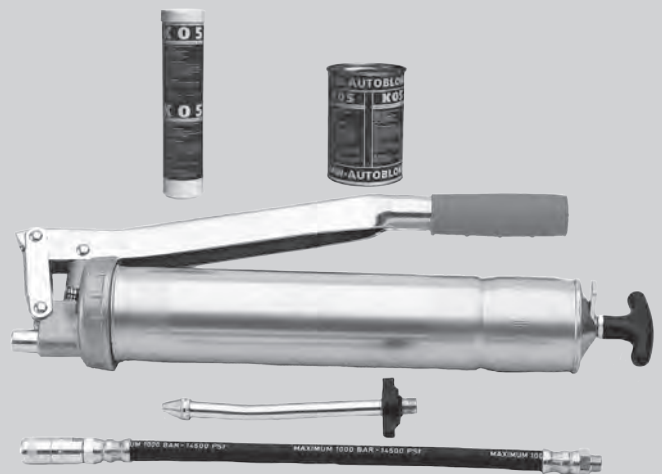


- High adhesion
- High resistance against coolant
- High load bearing capacity
- Low friction coefficient
- High gripping force
- Avoids tribocorrosion

Grease gun

Grease gun (DIN 1283) for cartridges 14 Oz. (DIN 1284).

■ Also refillable from grease can 1000 g.



Lubrication set Id. No. 083726

Supply range

- Grease gun
- 1 Adapter flexible for high pressure grease nipple
- 1 Adapter for cone grease nipple

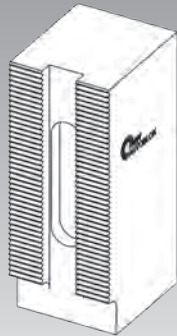
Clamping of easy deformed/ thin walled workpieces

High precision 6 jaw chucks (2+2+2) equalising

Tongue & groove



METRIC serration



SJL-C/-M 225
SJL-C/-M 290
SJL-C/-M 400

proofline® series
fully sealed – low maintenance

2+2+2 equalising

Is clamping with 6 jaws, where always 2 jaws are equalising as a pair. This allows to compensate inaccuracy of the workpiece roundness. The grip force is always distributed equally onto 6 jaws. The equal distribution of the grip forces results in a minimum of deformation.

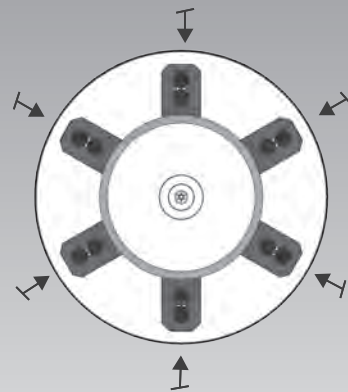


Application for:

Raw material clamping (1. Operation)

6 jaw self centering

Is clamping concentric with all 6 jaws, where no equalisation is done during clamping. All 6 jaws make the same radial movement towards the chucks center.

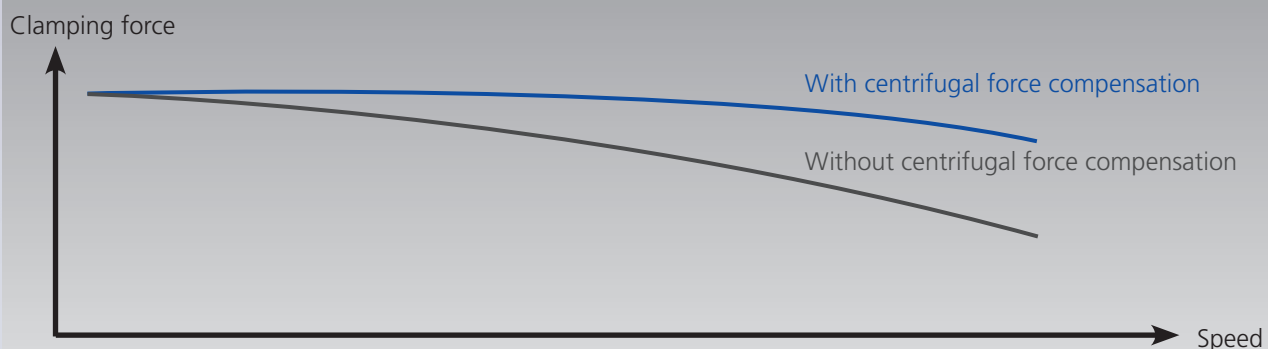


Application for:

Round, machined clamping diameters (2. Operation)

Centrifugal force compensation

The centrifugal forces of master- and top jaws are compensated by counter balance weights.



Clamping glossary

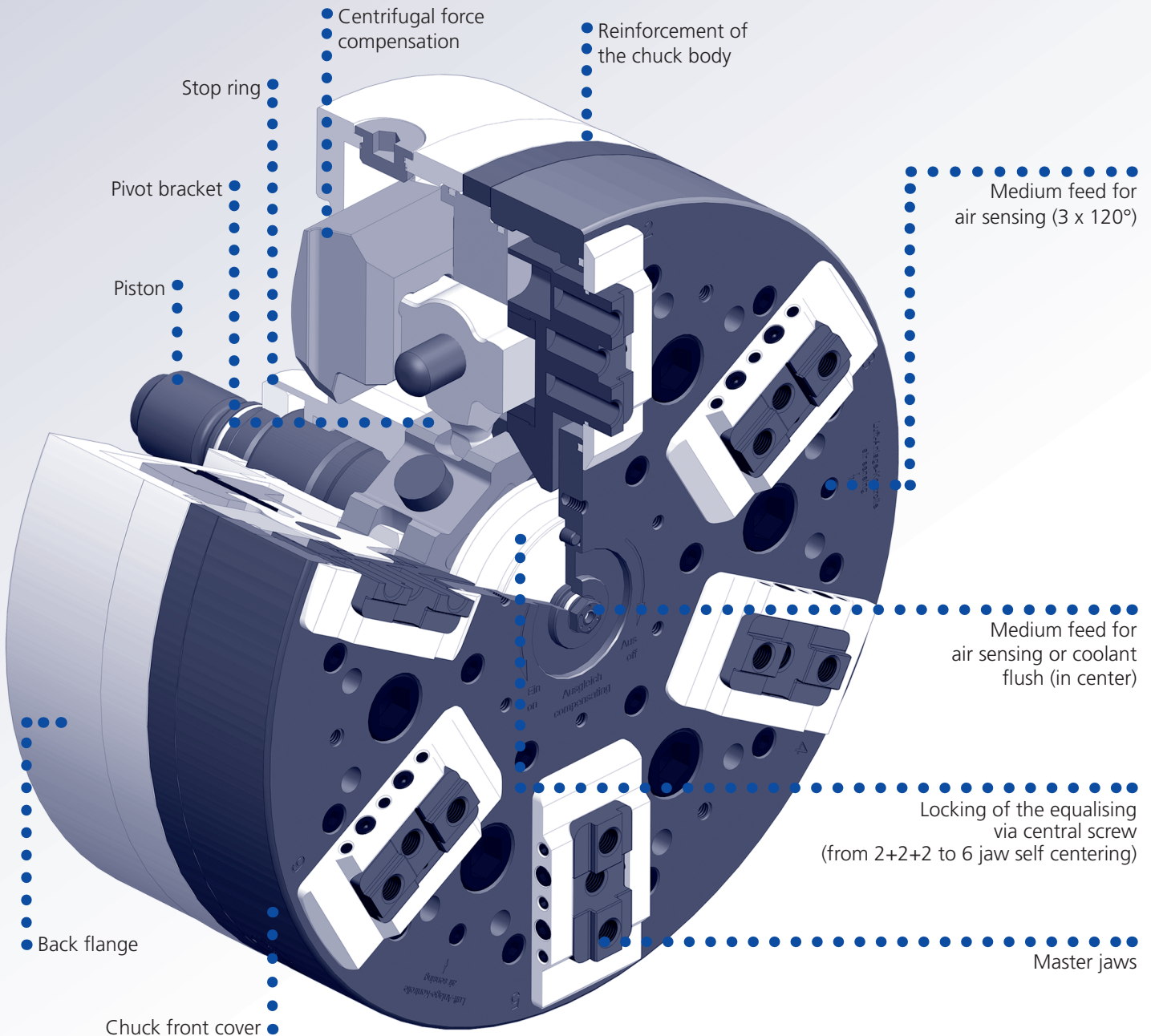
2+2+2 Equalisation: A system that allows 2 jaws in a pair to do a different radial jaw stroke. On raw material clamping the systems ensures, that all 6 jaws are in contact with the workpiece. The grip force is distributed onto all the 6 jaws, and reduces the deformation of the workpiece.

Locking system for 6 jaw self centering: **SJL chuck** have a locking system, that allows to lock the 2+2+2 equalisation. In this setting the **SJL chuck** can be used like a standard 6 jaw chuck with 6 concentric jaws. This setting can be used to clamp thin walled workpieces that need an equal wall thickness.

Air sensing: Air is fed through the contact face of the work stop. When the work-piece is in contact with the work stop the airflow is stopped and converts into a signal. If the component is not correctly positioned or is lifted, the machine can not start or the spindle is stopped. The preparation for this important feature is standard on all **SJL Type** chucks.

Centrifugal force compensation: When jaw chucks are rotating the mass of the master jaws/ top jaws is subject to centrifugal force. This centrifugal force reduces the dynamic grip force, and thus limits the feeds and speeds for machining. All **SJL chuck** have a centrifugal force compensation system built in, that reduces this effect, and allows machining at higher speed with more aggressive feed rates.

Chuck body reinforcement: When chucks are rotating, the chuck body has to support against the static grip force, and against the centrifugal force caused by the rotation speed. On 6 jaw chucks, the centrifugal force caused by the jaws is the double compared to 3 jaw chucks. In order to increase the stiffness of the chuck body, **SJL chuck** have a reinforcement on the chuck body.



SJL-C

Self centering
Tongue & groove

SJL-M

Self centering
Metric serration

High precision 6 jaw chucks (2+2+2) equalising Ø 225 - 400 mm

- Jaws equalising as a pair
- Equalising mechanism lockable

Application / customer benefit

- Clamping of easy deformed workpieces
- Low deformation by means of 2+2+2 jaw clamping
- High radial and axial clamping accuracy
- Fully sealed and oil bath lubricated
- Ideal for high speeds

Technical data

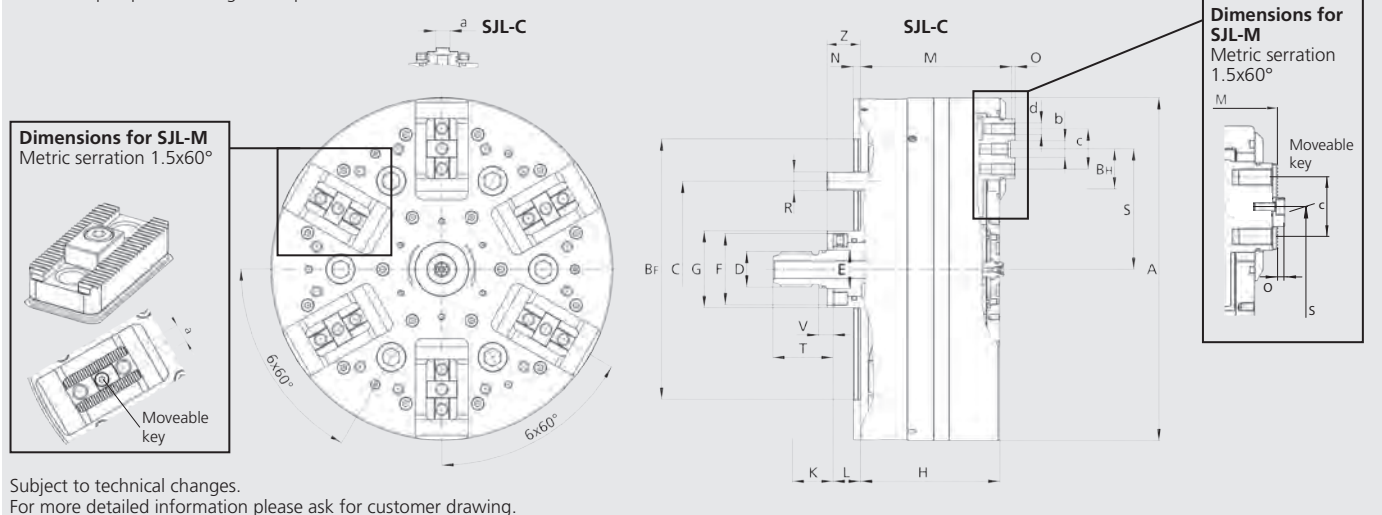
- Adjustable to 6 jaw 2+2+2 or true 6 jaw clamping
- Channels for air and / or coolant (2 medium feed)
- Centrifugal force compensation
- **proofline® chucks** = fully sealed - low maintenance

Standard equipment

6 jaw chuck with mounting bolts and adjustment key
Oil



Chuck in open position = right end position



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

SMW-AUTOBLOK Type			SJL-C-225	SJL-M-225	SJL-C-290	SJL-M-290	SJL-C-400	SJL-M-400
Mounting			Z170	Z170	Z220	Z220	Z300	Z300
	A	mm	225	225	290	290	400	400
	BF H6	mm	170	170	220	220	300	300
	C	mm	133.4	133.4	171.4	171.4	235	235
	D	mm	M24	M24	M30	M30	M42x3	M42x3
	E f7	mm	25	25	32	32	44	44
	F	mm	47	47	60	60	82	82
	G	mm	51	51	65	65	90	90
	H	mm	93	93	118	118	163	163
Piston stroke	K	mm	11.5	11.5	15	15	20,8	20,8
Piston position min.	L	mm	18	18	23	23	30,9	30,9
Piston position max.	L	mm	29.5	29.5	38	38	51,7	51,7
	M	mm	101	103,5	128	131	177	181
	N	mm	5	5	6	6	8	8
	O	mm	2.5	3	3	3,5	4	3,5
	R	mm	M12 (6x60°)	M12 (6x60°)	M16 (6x60°)	M16 (6x60°)	M20 (6x60°)	M20 (6x60°)
max.	S	mm	79	79	101.5	101.5	139	139
min.	S	mm	73	73	93.5	93.5	128	128
	T	mm	40	40	51	51	70	70
	V	mm	10	10	12.2	12.2	17	17
Protecting sleeve length	Z	mm	22.1	22.1	28.1	28.1	38,1	38,1
key width	a	mm	10	10	12	12	14	14
	b	mm	11	-	14	-	19	-
	c	mm	27 (2x13.5)	27 (2x13.5)	34 (2x17.0)	33 (2x16.5)	45 (2x22.5)	45 (2x22.5)
	d	mm	M8 (3x)	M8 (3x)	M10 (3x)	M10 (3x)	M12 (3x)	M12 (3x)

High precision 6 jaw chucks (2+2+2) equalising Ø 225 - 400 mm

- Jaws equalising as a pair
- Equalising mechanism lockable

SJL-C

Self centering
Tongue & groove

SJL-M

Self centering
Metric serration

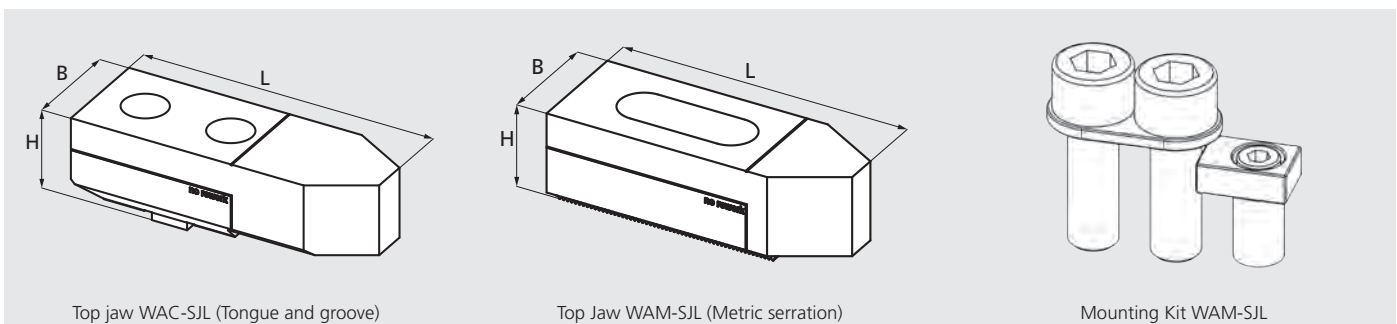
Technical data

SMW-AUTOBLOK Type		SJL-C-225	SJL-M-225	SJL-C-290	SJL-M-290	SJL-C-400	SJL-M-400
Stroke per jaw	BH	6	6	8	8	11	11
Equalising stroke at mid of jaw stroke	mm	+/- 1	+/- 1	+/- 1	+/- 1	+/- 2.5	+/- 2.5
Max. actuating force	kN	30	30	42	42	58	58
Max. gripping force	kN	45	45	65	65	90	90
Max. Speed	r.p.m.	4200	4200	3600	3600	2600	2600
Weight (without top jaws)	kg	26	26	51	51	136	136
Moment of inertia	kgm ²	0.16	0.16	0.5	0.5	2.75	2.75

Order review

SMW-AUTOBLOK Type	SJL-C-225	SJL-M-225	SJL-C-290	SJL-M-290	SJL-C-400	SJL-M-400
Mounting	Z170	Z170	Z220	Z220	Z300	Z300
Id. No.	160870	160922	160670	160940	160970	161001
Hex. Pin type socket wrench	202881		201064		203795	
Oil (RENOLIN CLPF 320 SUPER) 1 Ltr.			202532			

Top jaws for SJL



Top jaw WAC-SJL (Tongue and groove)

Top Jaw WAM-SJL (Metric serration)

Mounting Kit WAM-SJL

SMW-AUTOBLOK Type	SJL-C 225	SJL-M 225	SJL-C 290	SJL-M 290	SJL-C-400	SJL-M-400
Jaw type	WAC-SJL 225	WAM-SJL 225	WAC-SJL 290	WAM-SJL 290	WAC-SJL 400	WAM-SJL 400
Id. No. / set	5300950	539053	5300955	539055	5301053	5301052
Mounting Kit (only WAM) / set		203572		203573		204115
Length L	94	84	115	108	150	153
Width B	20	20	40	40	52	52
Height H	32	32	36	35	46	46
kg / set	2.4	2.4	5.4	4.8	12.6	12.6