

Closed center cylinders ■ Open center cylinders

Double piston cylinders



SIN-S

Closed center rotating hydraulic cylinders

- up to 70 bar
- central bore for air or coolant
- stroke control via proximity switch or LPS

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VNK-T2

Open center rotating hydraulic cylinders

- up to 45 bar
- through hole Ø 37.5 - 127.5 mm
- extra short overall dimensions
- stroke control via proximity switch or LPS

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VSG

Open center rotating hydraulic cylinders

- up to 30 bar
- EXTRA LARGE THROUGH HOLE Ø 165 - 204 mm
- stroke control via proximity switch

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SIN-HL

Closed center rotating hydraulic cylinders

- up to 70 bar
- high-low gripping force clamping
- central bore for air, coolant or oil
- stroke control via proximity switch or LPS

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SIN-L

Closed center rotating hydraulic cylinders

- up to 70 bar
- EXTRA LONG STROKE
- central bore for air, coolant or oil
- stroke control via proximity switch or LPS

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DCN DCU DCR

Double piston rotating hydraulic cylinders

- up to 70 bar
- modular system for different piston strokes
- central bore for air, coolant or oil
- stroke control via proximity switch or LPS

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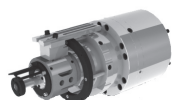


ZHVD-SZ

Double piston rotating hydraulic cylinders

- up to 80 bar
- central bore for air, coolant or oil
- stroke control via proximity switch or LPS

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DCE

Double piston rotating hydraulic cylinders

- up to 70 bar
- central bore for air, coolant or oil
- stroke control via proximity switch or LPS

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CSN

Closed center rotating pneumatic cylinders

- up to 7 bar
- stroke control
- optional safety valve

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LPS-XS, LPS-X, LPS-NT®

Linear positioning system cylinder stroke

- analog or digital output signal
- monitoring of the entire cylinder stroke
- LPS-XS and LPS-X io Link measuring range = 16 mm
- LPS-X and LPS-X io Link measuring range = 50 mm
- LPS-NT measuring range = 100 mm

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RU-1-10, RU-1-16, RU-2-22

Rotary union for media supply for rotating cylinders

- universal for air, oil or coolant
- RU-1-10/RU-1-16 = 1 medium
- RU-2-22 = 2 media

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SIN-S

Closed center
rotating hydraulic cylinder

Closed center rotating hydraulic cylinder

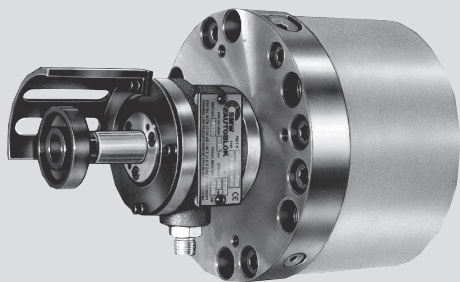
- up to 70 bar
- central bore for media supply
- stroke control via proximity switch or linear positioning system

Application/customer benefits

- Actuation of power chucks/closed or partial open center mounting applications

Technical features

- Pressure range 7–70 bar
- Horizontal or vertical installation
- Central bore for coolant, oil or air with thread for rotary union
- Safety valves and excess pressure relief valve
- Mounting from the rear or from the front side
- Stroke control via proximity switch or linear positioning system
- A 10 µm filter in pressure line is requested
- Use oil HM32 ISO 3448



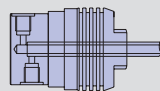
SIN-S standard version

- Central bore + thread for rotary union

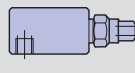
Ordering example

SIN-S standard version

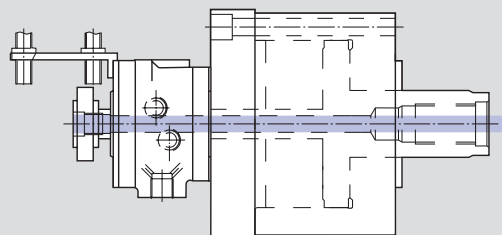
- Cylinder SIN-S 125 Id. No. 33093112
- Rotary union Id. No. 043271 (proximity switch not included)



RU-2-22
Id. No. 044970



RU-1-16
Id. No. 043271



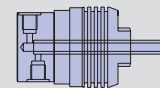
SIN-PXP with linear positioning system

- Central bore + thread for rotary union

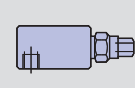
Ordering example

SIN-S standard version

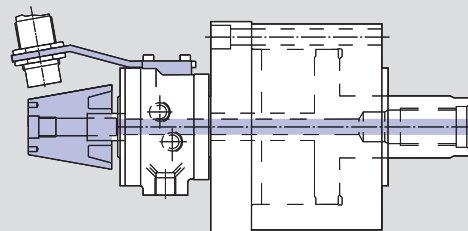
- (1)* Cylinder SIN-S 125 prepared for PXP/LPS Id. No. 77093112
- (2)* Kit PXP (braket and taper) Id. No. 60557915 (sensor not included)
- Rotary union Id. No. 044970



RU-2-22
Id. No. 044970



RU-1-16
Id. No. 043271



* **Attention:** PARTS (1) and PART (2) can be supplied as assembled with the single part number 33092912 (see table below "SIN-S equipped with kit PXP")

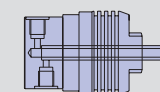
SIN-LPS-X with linear positioning system

- Central bore + thread for rotary union

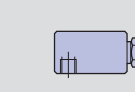
Ordering example

SIN-S standard version

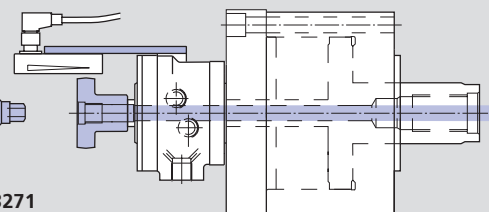
- Cylinder SIN-S 125 prepared for PXP/LPS Id. No. 77093112
- Kit LPS-X (braket and cam) Id. No. 044503 (LPS-X not included see general catalog page 275)
- Rotary union Id. No. 044970



RU-2-22
Id. No. 044970



RU-1-16
Id. No. 043271



Technical data

SMW-AUTOBLOK Type		SIN-S 50	SIN-S 70	SIN-S 85	SIN-S 100	SIN-S 125	SIN-S 150	SIN-S 175	SIN-S 200	SIN-S 250
SIN-S standard version		33093105	33093107	33093109	33093110	33093112	33093115	33093117	33093120	33093125
SIN prepared for PXP/LPS		77093105	77093107	77093109	77093110	77093112	77093115	77093117	77093120	77093125
Kit PXP		60557910	60557915	60557910	60557910	60557915	60557915	60557915	60557920	60557920
Kit LPS-X		044503	044503	044503	044503	044503	044503	044503	044496	60557625
SIN-S equipped with kit PXP		33092905	33092907	33092909	33092910	33092912	33092915	33092917	33092920	33092925
Piston area	cm ²	14	28	48	66	103	157	212	280	457
Max. pressure	bar	70	70	70	70	70	70	70	70	50
Draw pull at 40 bar	kN	5.5	11	19	26	41	62	84	112	180
Oil leakage ¹	dm ³ /min	1	1	1	1	1	1	1	2	2
Max. speed	r.p.m.	7000	7000	7000	7000	6000	6000	5000	4000	2000
Weight	kg	8.5	8.5	8	11	16	20	24	45	88
Moment of inertia	kg·m ²	0.012	0.012	0.012	0.016	0.04	0.08	0.12	0.32	0.92

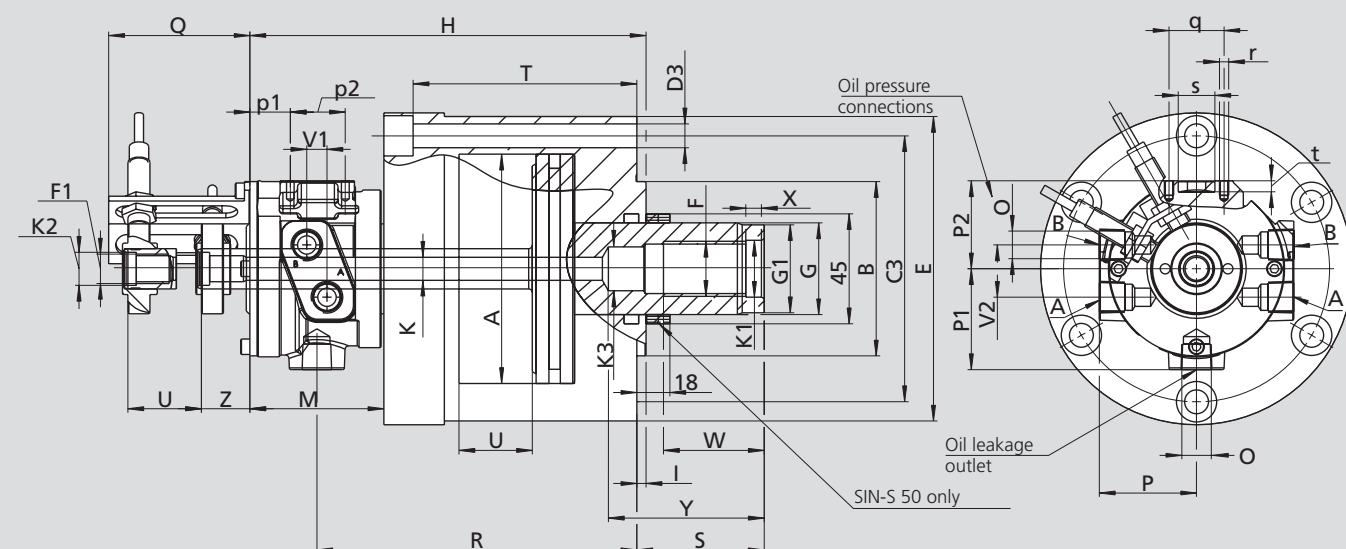
¹ Total at 30 bar and 50°C

Closed center rotating hydraulic cylinder

- up to 70 bar
- central bore for media supply
- stroke control via proximity switch or linear positioning system

SIN-S

Closed center
rotating hydraulic cylinder



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

SMW-AUTOBLOK Type			SIN-S 50	SIN-S 70	SIN-S 85	SIN-S 100	SIN-S 125	SIN-S 150	SIN-S 175	SIN-S 200	SIN-S 250
	A	mm	53	68	85	100	125	150	175	200	250
	B h6	mm	50	50	50	80	95	95	125	125	160
	C3	mm	100	100	100	120	145	170	195	225	275
	D3	mm	6 x 9	6 x 9	6 x 9	6 x 11	6 x 13	6 x 13	6 x 13	6 x 17	6 x 17
	E	mm	120	120	120	140	166	192	217	250	300
	F	mm	M20 x 1.5	M20 x 1.5	M20 x 1.5	M24	M30	M30	M36	M42 x 3	M42 x 3
lefthand for rotary union	F1	mm	M16 x 1.5	M16 x 1.5	M16 x 1.5	M16 x 1.5	M16 x 1.5	M16 x 1.5	M16 x 1.5	M16 x 1.5	M16 x 1.5
	G	mm	32	32	32	40	50	50	60	65	65
	G1 h7	mm	30	30	30	38	48	48	58	62	62
	H	mm	200	200	192	196	216	216	226	288	313
	I	mm	5	5	5	5	5	5	5	5	5
	K	mm	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	K1	mm	20.5	20.5	20.5	25	31	31	37	44	44
	K2 J6	mm	18	18	18	18	18	18	18	18	18
	K3 H8	mm	17	17	17	18	24	24	28	–	–
	M	mm	73	73	73	73	73	73	73	123	123
	O	inch	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 1/2"	G 1/2"
	P	mm	55	55	55	55	55	55	55	65	65
	P1	mm	55	55	55	55	55	55	55	65	65
	P2	mm	48	48	48	48	48	48	48	59	59
	Q	mm	77	77	77	77	77	77	77	97	97
	R	mm	158.5	158.5	150.5	154.5	174.5	174.5	184.6	238	268
max./min.	S	mm	55/30	55/15	47/15	47/15	70/30	70/30	70/25	80/30	85/25
	T	mm	112	112	104	104	122	122	132	140	160
piston stroke	U	mm	25	40	32	32	40	40	45	50	60
	V1	mm	10	10	10	10	10	10	10	12	12
	V2	mm	30	30	30	30	30	30	30	36	36
	W	mm	40	40	40	45	55	55	55	60	60
	X	mm	10	10	10	10	10	10	10	12	12
	Y	mm	67	67	67	72	85	85	92	–	–
	Z	mm	27	27	27	27	27	27	27	27	27
	p1	mm	23.5	23.5	23.5	23.5	23.5	23.5	23.5	36	36
	p2	mm	30	30	30	30	30	30	30	30	30
	q	mm	30	30	30	30	30	30	30	30	30
	r	mm	M5	M5	M5	M5	M5	M5	M5	M5	M5
	s H8	mm	20	20	20	20	20	20	20	20	20
	t	mm	6	6	6	6	6	6	6	6	6

VNK-T2

Open center
rotating hydraulic cylinder

- up to 45 bar
- THROUGH-HOLE Ø 37.5 - 127.5 mm
- short design/low mass
- stroke control via proximity switch or linear positioning system



Application/customer benefits

- Actuation of open center jaw and collet power chucks
- Machining of bars and tubes

Technical features

- Pressure range 8–45 bar
- Short design/low mass/low power consumption
- Horizontal installation only
- Safety valves and excess pressure relief valve
- Mounting from the rear side with bolts
- A 10 µm filter in pressure line is requested
- Use oil HM32 ISO 3448

VNK-T2

standard version

- mounting for bar guides standard
- bar guides not included

VNK-T2-PXP

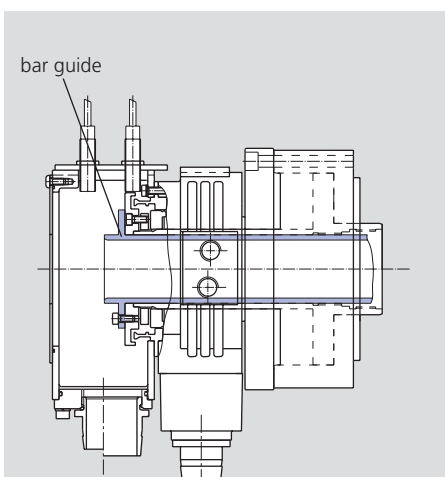
for linear positioning system

- mounting for bar guides standard
- bar guides not included
- Minikit PXP must be ordered separately
- Sensor PXP Ø 30mm not included

VNK-T2-LPS-X

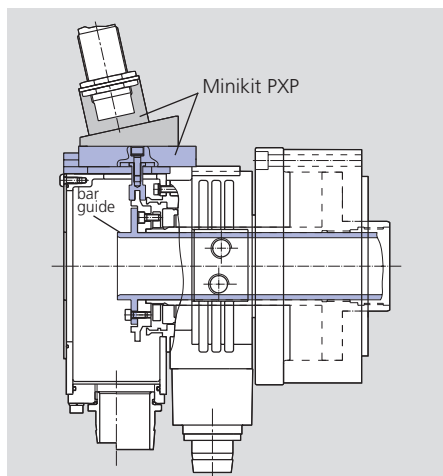
for linear positioning system LPS-X

- bar guides not included
- Minikit LPS-X must be ordered separately
- Sensor LPS-X not included see page 275



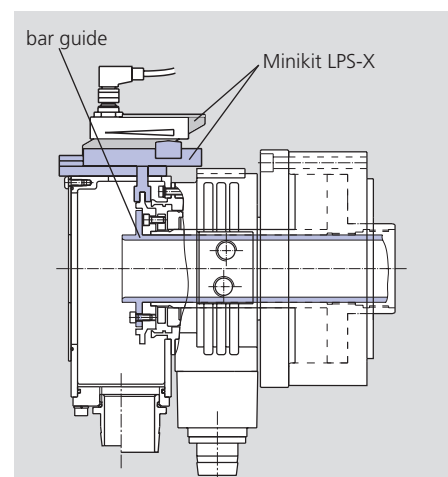
Ordering example VNK-T2 150-67

- Cylinder Id. No. 33092216



Ordering example VNK-T2 150-67-PXP

- Cylinder Id. No. 77091916
- Minikit PXP Id. No. 60367941***



Ordering example VNK-T2 150-67-LPS-X

- Cylinder Id. No. 77091916
- Minikit LPS-X Id. No. 60367741***

Technical data

SMW-AUTOBLOK Type VNK-T2		70-37	102-46	130-52	150-67	170-77	176-82	200-86	225-95	250-110	320-127
VNK-T2 Standard version		33092211	33092213	33092215	33092216	33092218	33092217	33092219	33092220	33092222	33092225
VNK-T2 prepared for PXP/LPS		77091911	77091913	77091915	77091916	77091918	77091917	77091919	77091920	77091922	77091925
Minikit PXP		60367941	60367941	60367941	60367941	60367941	60367941	60367941	60367941	60367941	60367941
Minikit LPS-X		60367741	60367741	60367741	60367741	60367741	60367741	60367741	60367741	60367741	60367741
Piston area	cm ²	70	103	131	152	170	176	197	226	247	325
Through-hole	mm	37.5	46.5	52.5	67.5	77	82	86	95	110	127.5
Max. pressure	bar	45	45	45	45	45	45	45	45	45	45
Draw pull at 45 bar	kN	32	47	59	68	76	79	89	102	110	144
Oil leakage*	dm ³ /min	2.5	3	3.5	4	4.5	4.5	5	7	9	12
Max. speed	r.p.m.	8000	7000	6300	5500	5000	5000	4500	4000	3600	3200
Weight	kg	8	12	15	20	23	25	27	30	49	61
Moment of inertia	kg·m ²	0.013	0.028	0.04	0.07	0.09	0.12	0.13	0.17	0.28	0.54
Power absorption**	kW	0.85	1	1.2	1.5	1.8	1.8	1.9	1.9	2.2	2.5

* Total at 30 bar / 50 °C

** At max. speed/ oil HM32 ISO 3448

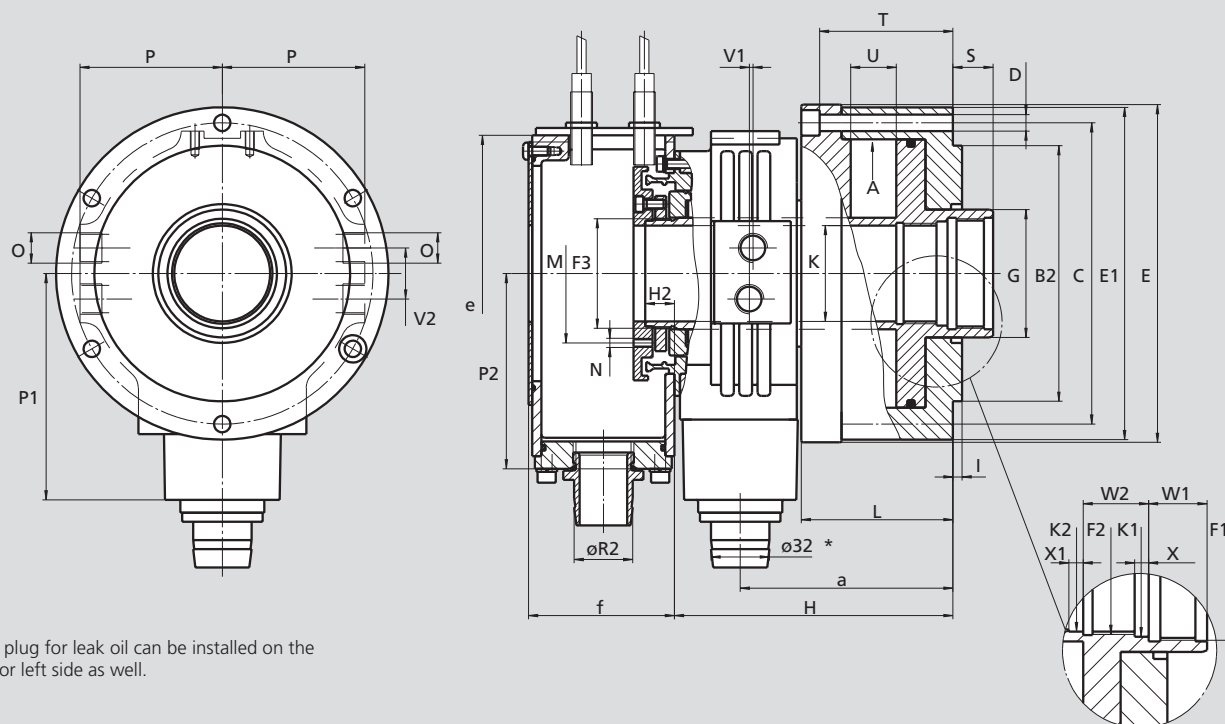
*** Sensor non included in minikit

Important: On higher pressure the leakage increases proportionally. On higher oil temperature the leakage increases over proportionally (the use of an oil cooler is recommended). When designing/checking the hydraulic unit please ask for our data sheets.

VNK-T2

Open center
rotating hydraulic cylinder

- up to 45 bar
- THROUGH-HOLE Ø 37.5 - 127.5 mm
- short design/low mass
- stroke control via proximity switch or linear positioning system



* Drain plug for leak oil can be installed on the right or left side as well.

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

SMW-AUTOBLOK Type VNK-T2			70-37	102-46	130-52	150-67	170-77	176-82	200-86	225-95	250-110	320-127
	A	mm	107	130	147	163	175	180	190	205	220	250
	B2 h6	mm	110	130	140	160	160	168	180	210	210	250
	C	mm	125	147	165	180	195	205	210	227	240	270
	D	mm	6 x Ø 9	6 x Ø 9	6 x Ø 9	6 x Ø 11	6 x Ø 11	6 x Ø 11	6 x Ø 11	6 x Ø 11	6 x Ø 11	6 x Ø 13
	E	mm	145	165	185	202	217	228	234	249	266	295
	E1	mm	140	162	182	197	214	222	228	245	266	290
	F1	mm	M44 x 1.5	M55 x 2.0	M60 x 1.5	M75 x 2.0	M85 x 2.0	M90 x 2.0	M95 x 2.0	M105 x 2.0	M120 x 2.0	M135 x 2.0
	F2	mm	M42 x 1.5	M50 x 1.5	M55 x 2.0	M72 x 1.5	M80 x 2.0	M85 x 2.0	M90 x 2.0	M100 x 2.0	M115 x 2.0	-
	F3	mm	M42 x 1.5	M52 x 1.5	M60 x 1.5	M74 x 1.5	M84 x 1.5	M89 x 1.5	M94 x 2.0	M104 x 2.0	M120 x 2.0	M138 x 2.0
	G	mm	50	61	70	85	95	100	105	115	130	145
	H	mm	151	152	152	178	178	182.5	203	208	245	265
	H2	mm	16	16	16	21	21	24.5	21	21	26	36.5
	I	mm	5	5	5	8	8	8	8	8	8	5
through-hole	K	mm	37.5	46.5	52.5	67.5	77	82	86.5	95.5	110.5	127.5
	K1 H8	mm	42.5	52.5	57	72.5	82	87	92	102.5	117.5	132
	K2 H8	mm	40	47	52.5	69	77	82	87	97	112	-
	L	mm	83	83	83	95	95	97	107	107	116	134
	M	mm	Ø 53	Ø 68	Ø 70	Ø 91	Ø 91	Ø 101	Ø 116	Ø 120	Ø 130	-
	N	mm	M6 (2x)	M6 (2x)	M6 (2x)	M6 (4x)	M6 (2x)	M6 (2x)	M6 (2x)	M6 (2x)	M6 (2x)	-
oil connections	O	inch	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 3/8"
	P	mm	67	76	78	89	94	94	104	112	115	128
	P1	mm	111	122	128	138	143	143	153	165	185	198
	P2	mm	100	100	107	127	127	127	127	127	162	162
standard max.	R2*	mm	32	32	32	32	32	32	32	32	32	32
	S	mm	24	22	22	25	25	25	31	31	31	44
	T	mm	67	73	73	83	83	85	95	95	103	119
piston stroke	U	mm	26	25	25	29	29	29	34	34	35	40
	V1	mm	9	9	9	10	10	10	11	11	13	15
	V2	mm	28	28	28	36	36	36	36	36	36	36
	W1	mm	20	25	25	25	25	25	32	32	32	32
	W2	mm	22	25	28	28	28	28	30	30	30	-
	X	mm	5	6	6	6	6	6	6	6	6	6
	X1	mm	5	20	10.5	6	10	10	10	6	6	-
	a	mm	114.5	117	117	134	134	136.5	146	151	180	198
	e	mm	128	128	144	184	184	184	184	184	230	230
standard	f	mm	65	65	80	90	90	90	90	90	100	100

* R₂ also Ø 40 or Ø 60 (optional)

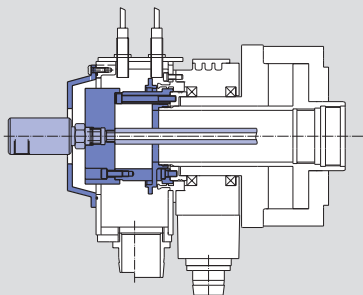
VNK-T2

Open center
rotating hydraulic cylinder

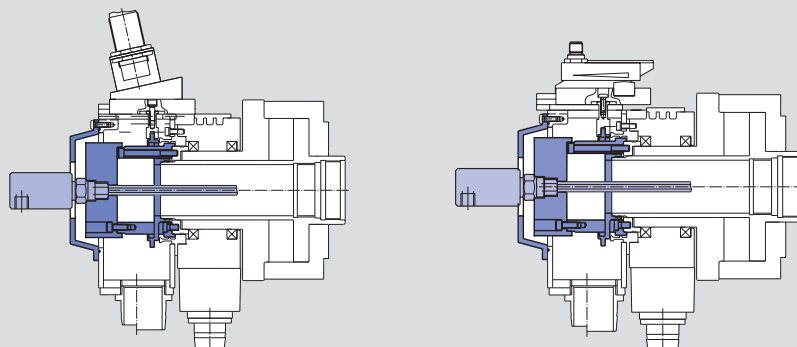
Kits for VNK-T2 cylinders (optional)

- Kit CP3 for rotary union
- Kit adjusting workstop

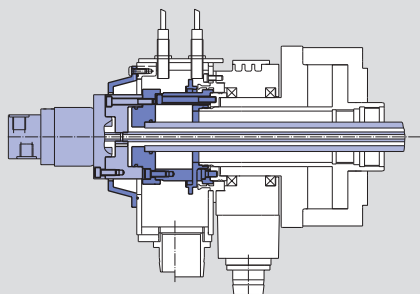
Kit CP3 for VNK-T2 standard 1 medium rotary union



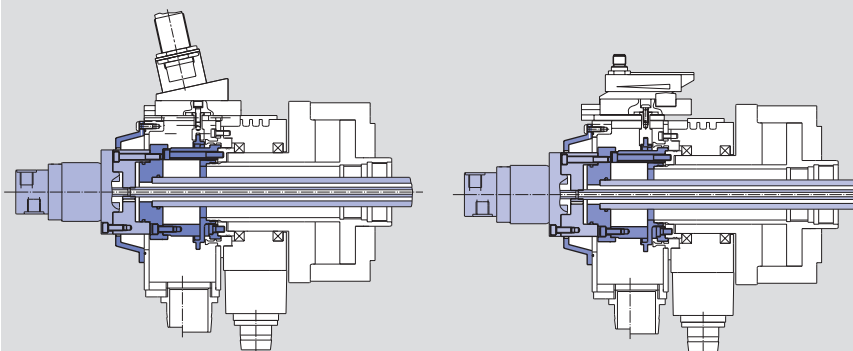
Kit CP3 for VNK-T2-PXP/VNK-T2-LPS 1 medium rotary union



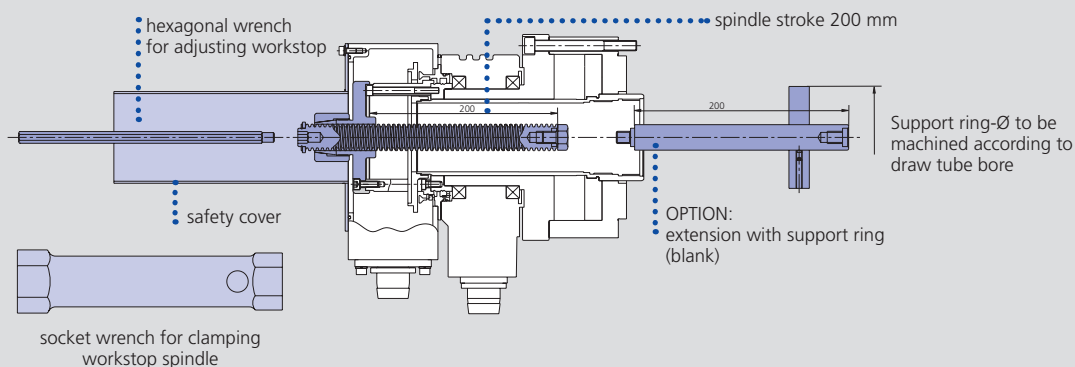
Kit CP3 for VNK-T2 standard 2 media rotary union



Kit CP3 for VNK-T2-PXP/VNK-T2-LPS 2 media rotary union



Kit adjustable workstop (only for cylinders with Kit CP3 mounted)



SMW-AUTOBLOK Type VNK-T2	70-37	102-46	130-52	150-67	170-77	200-86	225-95	250-110	320-127
Id. No. adjusting workstop	044540	044542	044544	044546	044548	044550	044552	044554	044556

Important:

The basis to mount the axial workstop is a VNK-T2 cylinder **with the CP-3 standard unit** mounted.
The spindle of the work stop can have a through hole for media as an option.

- up to 30 bar
- EXTRA LARGE THROUGH HOLE Ø 165 - 204 mm
- stroke control via proximity switch

Application/customer benefits

- Actuation of EXTRA LARGE THROUGH HOLE power chucks
- Clamping of very big and long components

Technical features

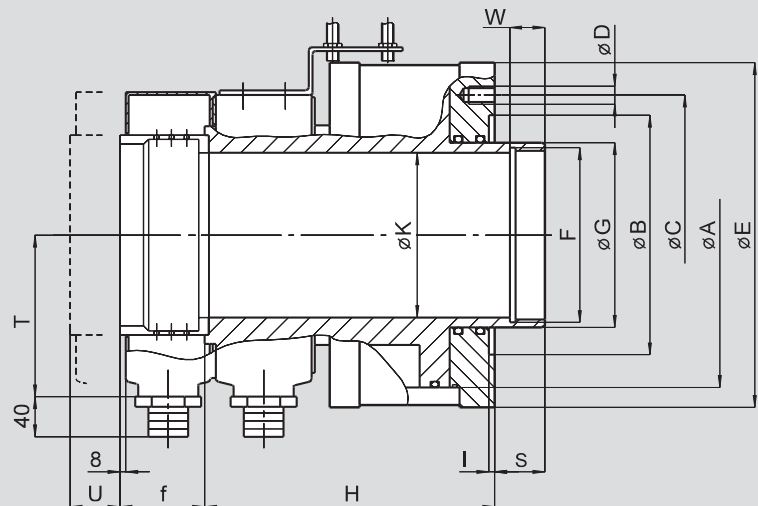
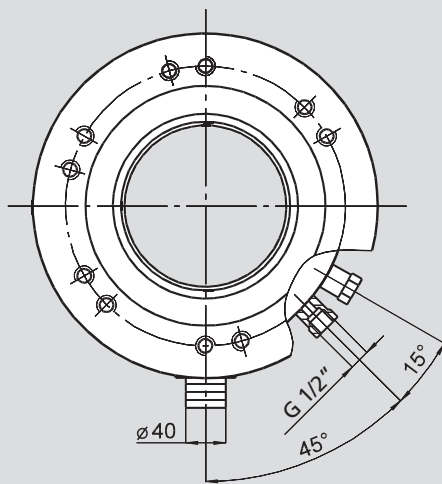
- Short design/low mass/low power consumption
- Pressure range 8–30 bar
- EXTRA LARGE THROUGH HOLE
- Horizontal installation only
- Mounting from the front side into tapped holes
- A 10 µm filter in pressure line is requested
- Use Oil HM32 ISO 3448

Standard equipment

Open center hydraulic cylinder with
coolant collector CP1
Bracket for proximity switches
(for stroke control)
Without proximity switch and mounting bolts

Ordering example

Open center hydraulic cylinder
VSG 450-165
or
Open center hydraulic cylinder
VSG 550-205



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

Dimensions

SMW-AUTOBLOK Type	Id. No.	A	B	C	D	E	F	G	H	I	K	S	T	U stroke	W	f
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
VSG 450-165	33094130	305	240	280	6 x M16	345	M175 x 3	185	290	6	165	50	162	51	35	85
VSG 550-205	33094135	350	280	320	6 x M20	390	M215 x 3	228	314	6	204	50	200	51	35	85

Technical data

SMW-AUTOBLOK Type	Piston area		Max. Druck bar	Draw pull (at 25 bar) kN	Oil leakage* dm³/min.	Max. speed r.p.m.	Weight kg	Moment of inertia kg·m²
	Pull cm²	Push cm²						
VSG 450-165	460	350	30	115	9	2000	100	1.4
VSG 550-205	550	405	30	137	10	1600	135	2.4

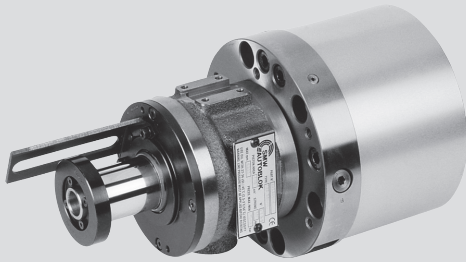
* Total at 30 bar / 50 °C / max. speed / oil HM32 ISO 3448

Important: On higher pressure the leakage increases proportionally. On higher oil temperature the leakage increases over proportionally (the use of an oil cooler is recommended). When designing/checking the hydraulic unit please ask for our data sheets.

SIN-HL

Closed center
rotating hydraulic cylinder

- HIGH-LOW CLAMPING
- up to 70 bar
- central bore for media supply
- stroke control via proximity switch or linear positioning system



Application/customer benefits

- Actuation of power chucks used for high-low clamping of thin-walled components in combination with SMW-AUTOBLOK chucks type KNCS-N, KNCS-NB, KNCS-NBX, HFK-N, IEP or TS
- Closed or partial open center mounting applications

Technical features

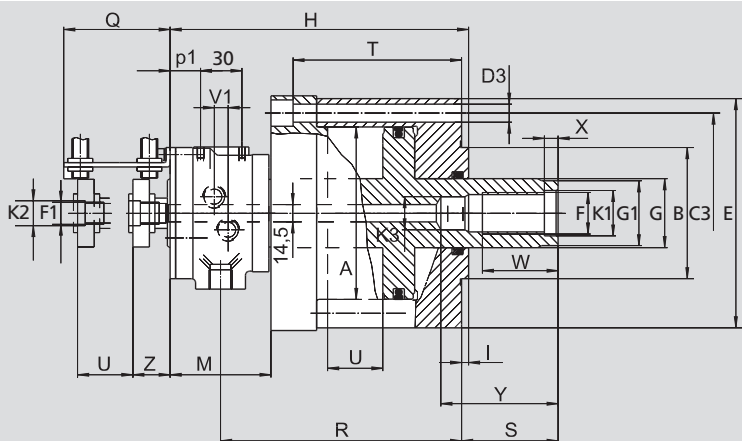
- Symmetric piston areas for high-low clamping
- Pressure range 8–70 bar
- Horizontal or vertical installation
- Safety valves and excess pressure relief valve
- Central bore for coolant, oil or air with thread for rotary union
- Mounting from the rear side with bolts
- Stroke control via proximity switch or linear positioning system
- A 10 µm filter in pressure line is requested. Use oil HM32 ISO 3448

Standard equipment

Closed center hydraulic cylinder with
stroke control and mounting bolts
(without proximity switch)

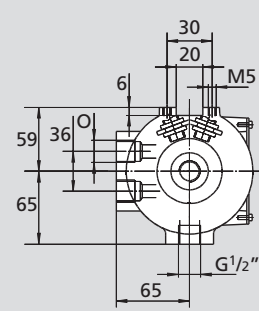
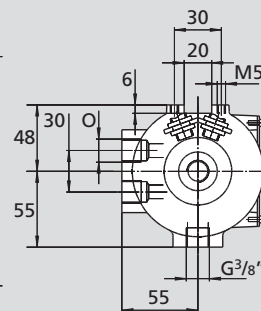
Ordering example

Closed center cylinder
SIN-HL 125 Id. No. 33093812
with rotary union (optional)



SIN-HL 85 + 100

SIN-HL 125, 150, 175



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

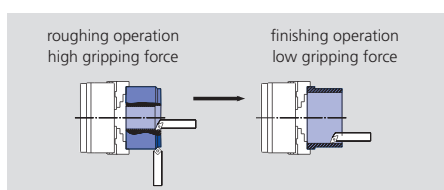
Dimensions and technical data

SMW-AUTOBLOK Type	Id. No.	A	B	C3	D3	E	F	F1	G	G1	H	I	K1	K2	K3	M	O	Q
		mm	h6 mm	mm	(6x60°) mm	mm	mm	mm	mm	g6 mm	mm	mm	mm	mm	mm	mm	inch	mm
SIN-HL 85	33093809	85	80	120	11	140	M24	M16x1.5 LH	32	30 x 10	192	5	25	18	18	75	G3/8"	77
SIN-HL 100	33093810	100	80	120	11	140	M24	M16x1.5 LH	32	30 x 10	192	5	25	18	18	75	G3/8"	77
SIN-HL 125	33093812	125	95	145	13	166	M30	M16x1.5 LH	40	38 x 12	231	5	31	18	24	93	G1/2"	97
SIN-HL 150	33093815	150	95	170	13	192	M36	M16x1.5 LH	50	48 x 12	237	5	37	18	28	97	G1/2"	97
SIN-HL 175	33093817	175	125	195	13	217	M36	M16x1.5 LH	50	48 x 12	259	5	37	18	28	97	G1/2"	97

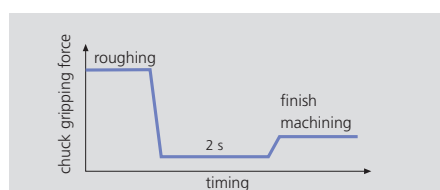
SMW-AUTOBLOK Type	R	S	T	U	V1	W	X	Y	Z	p1	Piston area	Max. pressure	Draw	Oil leakage*	Max. speed	Weight	Moment of inertia
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	cm²	bar	(at 40 bar) kN	dm³/min.	r.p.m.	kg	kg·m²
SIN-HL 85	149.5	47	95	32	10	40	10	62	27	23	49	70	19	1.5	7000	11	0.016
SIN-HL 100	149.5	47	95	32	10	45	10	62	27	23	70	70	28	1.5	7000	11	0.016
SIN-HL 125	181	70	121	40	12	55	10	75	27	37	110	70	44	1.5	6000	18	0.045
SIN-HL 150	183	70	121	40	12	55	10	75	27	41	157	70	62	1.5	6000	23	0.092
SIN-HL 175	205	72	143	52	12	55	10	75	27	41	220	70	88	1.5	5000	30	0.15

* Total at 30 bar and 50°C

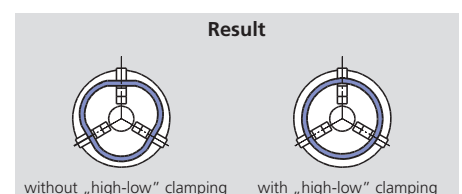
„High-low“ clamping for thin-walled components



For easily deformed components SMW-AUTOBLOK offers „high-low“ clamping. The gripping force of the chuck can be reduced from a large amount of gripping force used in roughing, to a smaller amount of gripping force for a finishing cut.



The combination between the SIN-HL cylinder and a SMW-AUTOBLOK „high-low“ suitable chuck allows a monitored reduction in the gripping force. The component remains clamped in the chuck safely, however, the stress of the component can be released.



The result are round components with a minimum of deformation. The „high-low“ cycle is programmable and is finished completely within 2-4 sec.
For additional information please ask our engineers.

DCN/DCU/DCR

Rotating hydraulic cylinder
with 2 independent pistons

- modular system for different piston strokes
- up to 70 bar
- central bore for air/coolant/oil
- stroke control via proximity switch or linear positioning system



Application/customer benefits

- Actuation of retractable jaw chuck with power operated face drivers
- Actuation of power chuck with part-ejector
- Actuation of power chucks with retractable axial stop/finger chucks with power operated centering fixture/chucks typ TPT-C with 2 piston actuation

Technical features

- Double piston cylinder with 4 way oil manifold for separate actuation of the 2 cylinders
- Pressure range 8–70 bar
- Modular system for different piston strokes: DCN, DCU and DCR
- Horizontal or vertical installation
- Stroke control on each cylinder, safety valves on the big cylinder
- Central bore for coolant, oil or air with thread for rotary union
- Mounting from the rear side with bolts
- A 10 µm filter in pressure line is requested.
- Use oil HM32 ISO 3448

Standard equipment

Double piston cylinder
Mounting screws
Stroke control on each cylinder
Proximity bracket (without proximity switch)

Ordering example

Double piston cylinder DCN 125-30
or
Double piston cylinder DCN 125-30
with rotary union (optional)

Technical data

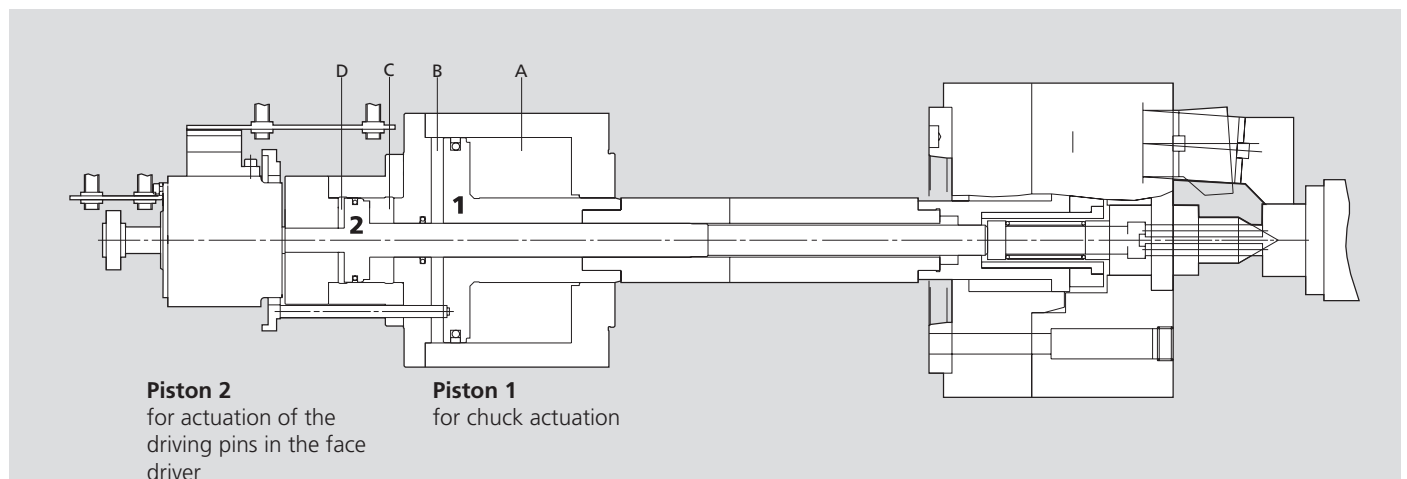
SMW-AUTOBLOK Type		60/20		125/30				170/40	170/60	170/40
		DCN 55-38	DCR 32-38	DCN 70-25	DCN 87-40	DCU 40-40	DCR 40-80	DCN 95-50	DCU 50-48	DCR 50-95
Id. No.		33705206	33705406	33705213	33705214	33705313	33705413	33705215	33705315	33705415
Piston stroke	mm	55-38	32-38	70-25	87-40	40-40	40-80	95-50	50-48	50-95
Piston area A	cm ²	48	48	111	111	111	111	146	146	146
Piston area B	cm ²	60	60	125	125	125	125	168	168	168
Piston area C	cm ²	21	21	27	27	27	27	36	56	36
Piston area D	cm ²	21	21	30	30	30	30	40	60	40
A piston force max.	kN	33.5	33.5	77	77	77	77	102	102	102
B piston force max.	kN	42	42	87	87	87	87	118	118	118
C piston force max.	kN	14.5	14.5	19	19	19	19	25	39	25
D piston force max.	kN	14.5	14.5	21	21	21	21	28	42	28
Max. speed	r.p.m.	5000	5000	5000	5000	5000	5000	4000	4000	4000
Weight	kg	16.2	15.3	23.2	24	22.5	23	32	30	31
Moment of inertia	kg·m ²	0.027	0.026	0.088	0.091	0.085	0.087	0.15	0.14	0.14
Operating pressure max.	bar	70	70	70	70	70	70	70	70	70
Operating pressure min.	bar	8	8	8	8	8	8	8	8	8
Oil leakage (*)	dm ³ /min	3	3	3	3	3	3	3	3	3

* Total at 30 bar / 50 °C

** At max. speed/ oil HM32 ISO 3448

Important: On higher pressure the leakage increases proportionally. On higher oil temperature the leakage increases over proportionally (the use of an oil cooler is recommended). When designing/checking the hydraulic unit please ask for our data sheets.
Option: LPS-NT Linear stroke control. Rotary union for oil/coolant/air.

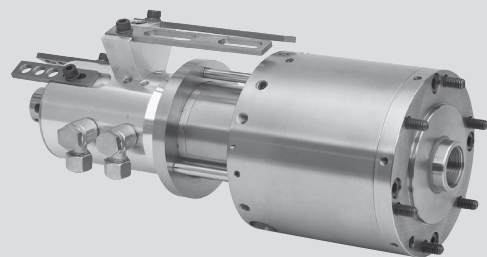
Cylinder DCN for retractable jaw chucks type W or GSA with face drivers with fixed center



ZHVD-SZ

Rotating hydraulic cylinder
with 2 independent pistons

- up to 80 bar
- central bore for air/coolant/oil
- stroke control via proximity switch or linear positioning system



Application/customer benefits

- Actuation of retractable jaw chuck with power operated face drivers
- Actuation of power chuck with part-ejector
- Actuation of power chucks with retractable axial stop/finger chucks with power operated centering fixture

Technical features

- Double piston cylinder with 4 way oil manifold for separate actuation of the cylinders
- Horizontal or vertical installation
- Stroke control on each cylinder, safety valves on the big cylinder
- Central bore for coolant, oil or air with thread for rotary union
- Mounting from the rear side with bolts
- A 10 µm filter in pressure line is requested. Use oil HM32 ISO 3448
- Pressure range 8-80 bar

Standard equipment

Double piston cylinder
Mounting screws
Stroke control on each cylinder
Proximity bracket (without proximity switch)

Ordering example

Double piston cylinder ZHVD-SZ 068-17
or
Double piston cylinder ZHVD-SZ 068-17
with rotary union (optional)

Technical data

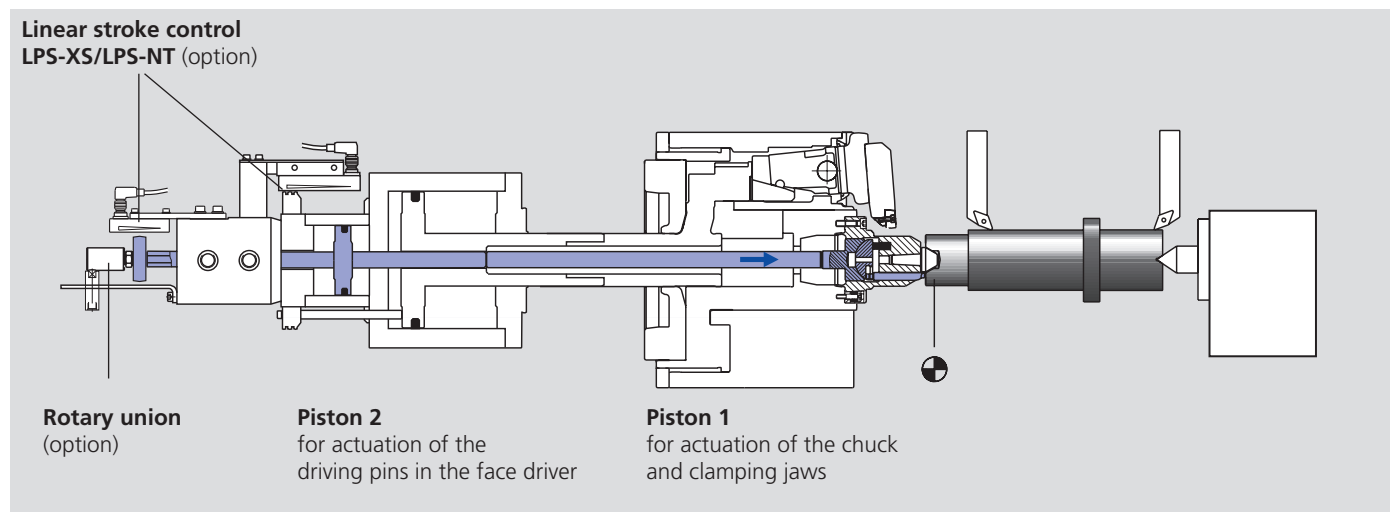
SMW-AUTOBLOK Type		ZHVD-SZ 068-17	ZHVD-SZ 110-25	ZHVD-SZ 240-40
Id. No.		044429	044577	045220
Piston stroke	mm	70/15	90/15	105/20
Piston area A/piston force max.	cm²/kN	68/54	110/88	241/144
Piston area B/piston force max.	cm²/kN	60/48	92/73	222/133
Piston area C/piston force max.	cm²/kN	16/12	25/20	40/24
Piston area D/piston force max.	cm²/kN	14/11	21/16	36/21.6
Speed max.	r.p.m.	5000	4000	4000
Weight	kg	26	37	68
Moment of inertia	kg·m²	0.065	0.125	0.42
Operating pressure max.	bar	80	80	60
Operating pressure min.	bar	8-10	8-10	8-10
Oil leakage (*)	dm³/min	3	3	3

* Total at 30 bar / 50 °C

** At max. speed/ oil HM32 ISO 3448

Important: On higher pressure the leakage increases proportionally. On higher oil temperature the leakage increases over proportionally (the use of an oil cooler is recommended). When designing/checking the hydraulic unit please ask for our data sheets

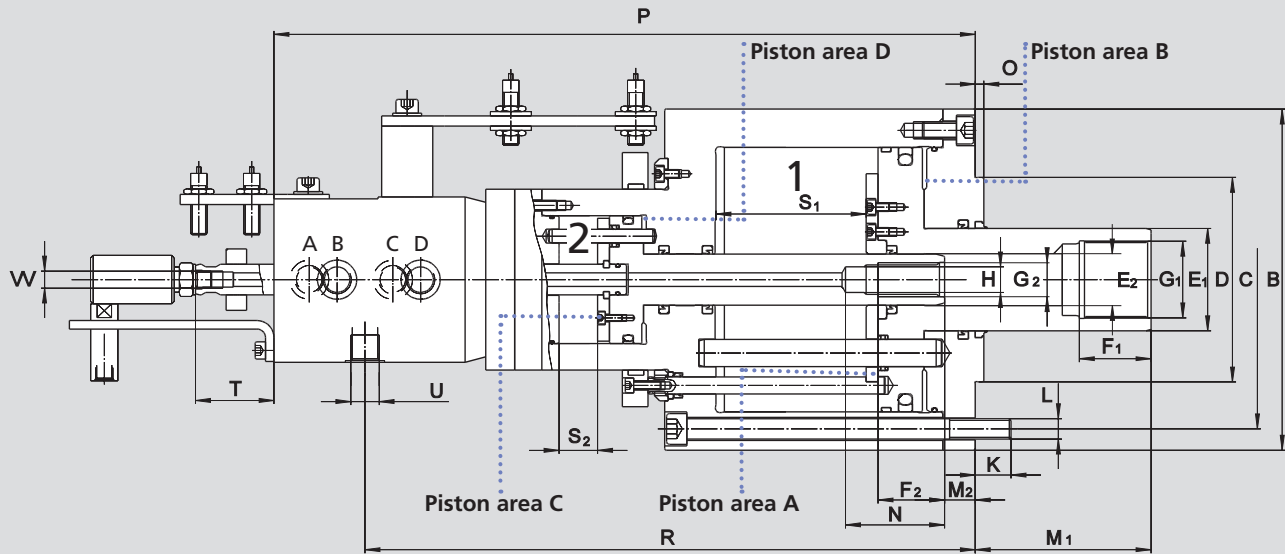
ZHVD-SZ cylinder with retractable jaw chuck and power operated face driver



ZHVD-SZ

- up to 80 bar
- central bore for air/coolant/oil
- stroke control via proximity switch or linear positioning system

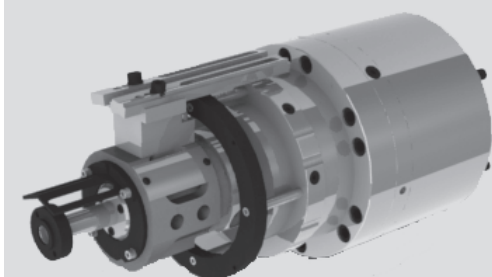
Rotating hydraulic cylinder
with 2 independent pistons



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

SMW-AUTOBLOK Type			ZHVD-SZ 068-17	ZHVD-SZ 110-25	ZHVD-SZ 240-40
Id. No.			044429	044577	045220
	B	mm	165	198	230
Fixing bolts circle	C	mm	145	175	205
Centering rim	D h6	mm	105	120	160
	E1	mm	45	60	60
	E2	mm	25	30	30
	F1	mm	33	42	42
	F2	mm	28	41	39
Piston rod thread 1	G1	mm	M36 x 1.5	M45 x 1.5	M50 x 1.5
Piston rod thread 2	G2	mm	M16	M20	M20
	H	mm	13.5	15	15
	K	mm	15	15	21
Fixing bolts/number	L	mm	M10 / 6x	M12 / 6x	M12 / 6x
max./min.	M1	mm	82/12	105/15	106/1
max./min.	M2	mm	33/18	33/18	67/47
	N	mm	50	58	58
	O	mm	5	5	5
	P	mm	370.5	400	442
	R	mm	305	348	389
Stroke Piston 1	S1	mm	70	90	105
Stroke Piston 2	S2	mm	15	15	20
max./min.	T	mm	48/33	52/37	77/57
	U	mm	G3/8"	G3/8"	G3/8"
	W	mm	M10 x 1	M10 x 1	M10 x 1

Option: LPS-NT Linear stroke control
Rotary union for oil/coolant/air



Application/customer benefits

- Actuation of 2 + 2 power chucks type TPT with 2 piston actuation
- Actuation of power chuck with part ejector
- Actuation of power chucks with retractable axial stop/finger chucks with power operated centering fixture

Technical features

- Double piston cylinder with 4 way oil manifold for separate actuation of the 2 cylinders
- Pressure range 8–70 bar
- Horizontal or vertical installation
- Stroke control on each cylinder, safety valves only on the biggest cylinders
- Central bore for air, coolant or oil with thread for rotary union
- Mounting from the rear side with bolts
- A 10 µm filter in pressure line is requested
- Use oil HM32 ISO 3448

Standard equipment

Double piston cylinder
Mounting screws
Stroke control on each cylinder
Proximity bracket (without proximity switch)

Ordering example

Double piston cylinder DCE 64-64
or
Double piston cylinder DCE 64-64
with rotary union (optional)

Technical data

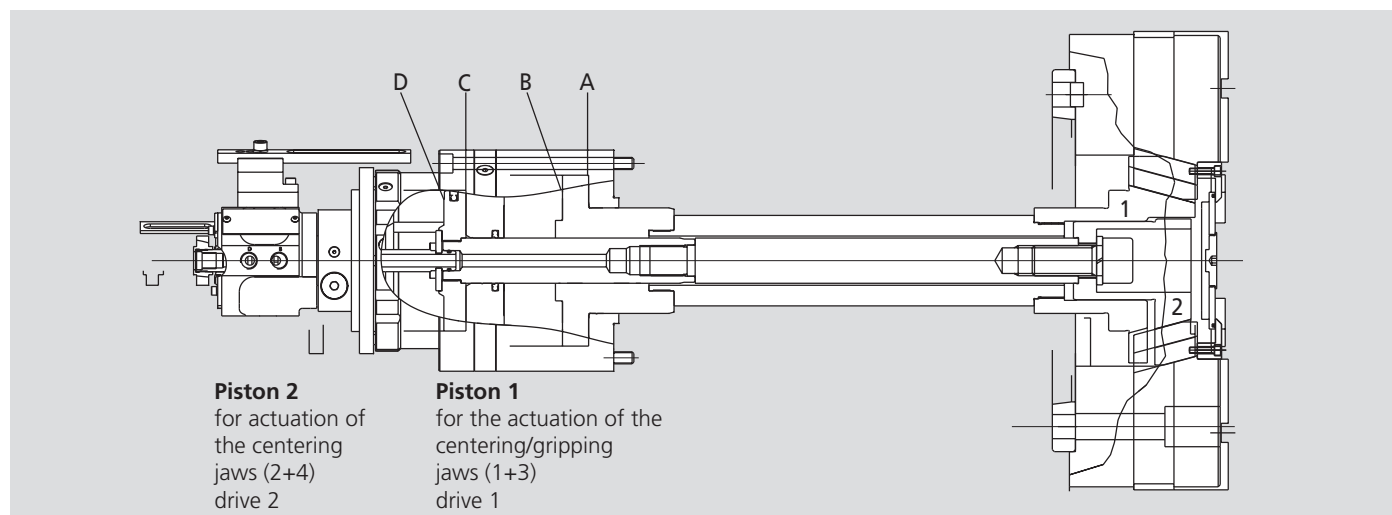
SMW-AUTOBLOK Type		DCE 64-64/30-40	DCE 140-140/50-50	DCE 240-240/60-60
Id. No.		33705212	33705217	33705221
Piston strokes	mm	30-40	50-50	60-60
A Piston area	cm ²	66	140	238
B Piston area	cm ²	63	211	340
C Piston area	cm ²	63	138	238
D Piston area	cm ²	66	150	254
A piston force max.	kN	46	98	118
B piston force max.	kN	44	147	118
C piston force max.	kN	44	97	118
D piston force max.	kN	46	105	127
Max. speed	r.p.m.	5000	4000	3200
Weight	kg	28.6	42.5	116
Moment of inertia	kg·m ²	0.074	0.18	1
Operating pressure max.	bar	70	70	60
Operating pressure min.	bar	8	8	8
Oil leakage (*)	dm ³ /min	3	3	3

* Total at 30 bar / 50 °C

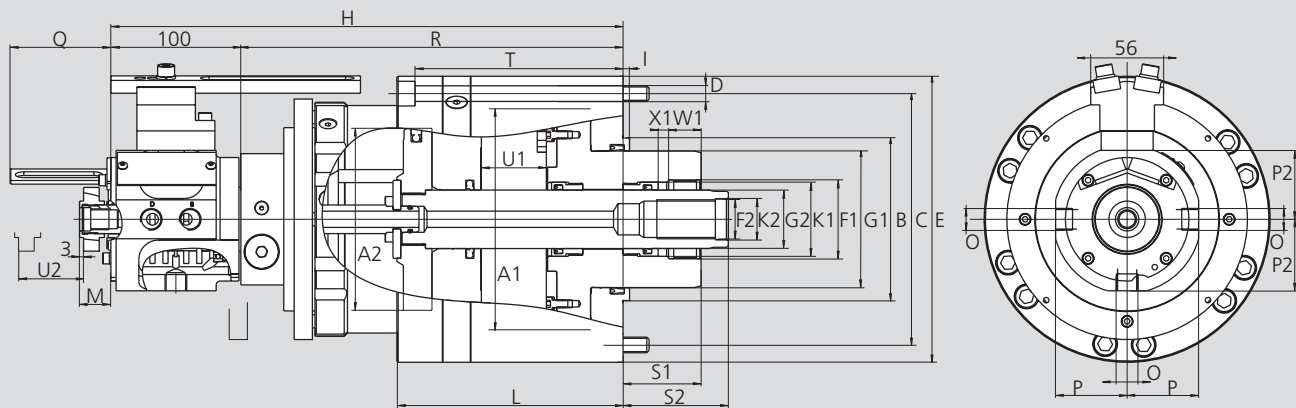
** At max. speed/ oil HM32 ISO 3448

Important: On higher pressure the leakage increases proportionally. On higher oil temperature the leakage increases over proportionally (the use of an oil cooler is recommended).
When designing/checking the hydraulic unit please ask for our data sheets.

Cylinder DCE for 2 + 2 chucks type TPT



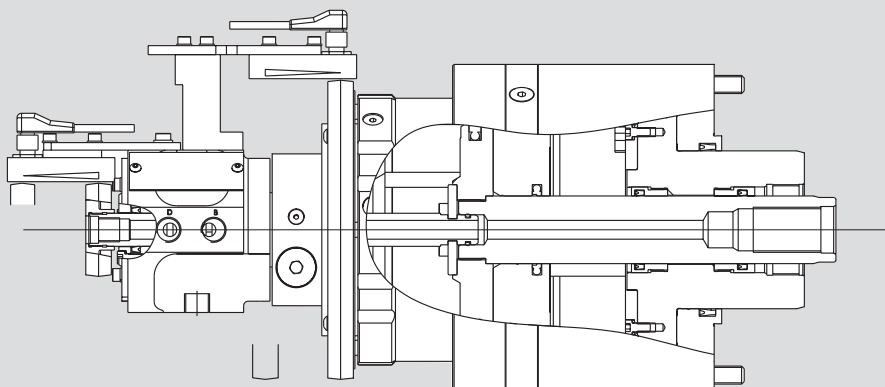
- double piston rotating hydraulic cylinder
- up to 70 bar
- central bore for air/coolant/oil
- stroke control via proximity switch or linear positioning system



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

SMW-AUTOBLOK Type			DCE 64-64/30-40	DCE 140-140/50-50	DCE 240-240/60-60
Piston diameter 1	A1	mm	125	170	215
Piston diameter 2	A2	mm	95	140	183
Centering rim	B h6	mm	105	125	160
Fixing bolt circle	C	mm	145	195	250
Fixing bolts	D	mm	6 x M10	6 x M12	6 x M16
	E	mm	174	220	280
Piston rod thread 1	F1	mm	M45 x 1.5	M60 x 1.5	M75 x 2
Piston rod thread 2	F2	mm	M20 x 1.5	M30	M36
	G1	mm	85	105	125
	G2	mm	30	45	55
	H	mm	362	394	451
	I	mm	5	5	5
	K1	mm	42	57	70
	K2	mm	20,5	31	37
	L	mm	164	174	213
max.	M	mm	31	24	28
	O	inch	G 3/8"	G 3/8"	G 1/2"
	P	mm	55	55	62
	P1	mm	55	55	63
	P2	mm	53	53	63
	Q	mm	77	77	97
	R	mm	262	294	326
min.	S1	mm	40	60	70
min.	S2	mm	76	81	110
	T	mm	151	160	197
Piston stroke cyl. 1	U1	mm	30	50	60
Piston stroke cyl. 2	U2	mm	40	50	60
	W1	mm	25	25	35
	W2	mm	30	45	50
	X1	mm	10	8	9
	X2	mm	10	10	10

DCE cylinder with optional LPS-X linear stroke control





Application/customer benefits

- Actuation of power chucks and special automatic clamping equipments
- Use on machines not equipped with hydraulic power unit as traditional lathes or special CNC machines

Technical features

- Operating pressure 1-7 bar
- Horizontal or vertical installation
- Air-manifold mounted on precision bearings
- Stroke control via proximity switch
- Double safety valve (option)
- CSN 100 and CSN 150 = mounting from the rear side
- CSN 200 and CSN 250 = mounting from the front side
- An airtservice unit with dryer, filter and oiler is needed

Standard equipment

Closed center pneumatic cylinder
with stroke control and proximity switch
support (without proximity switch)

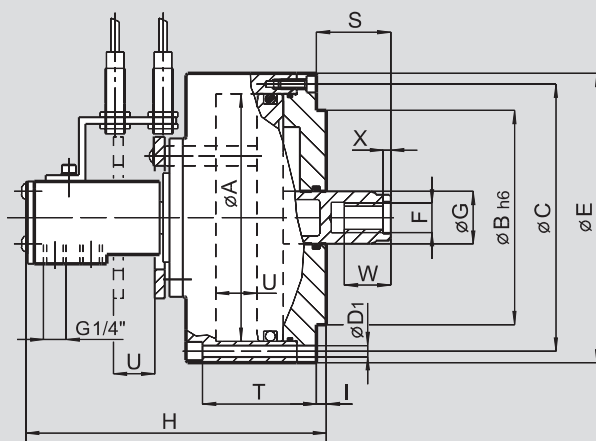
Ordering example

Cylinder type CSN 100 Id. No. 33072110
or
Cylinder type CSN 150 Id. No. 33072115
with safety valve (optional)

Technical data

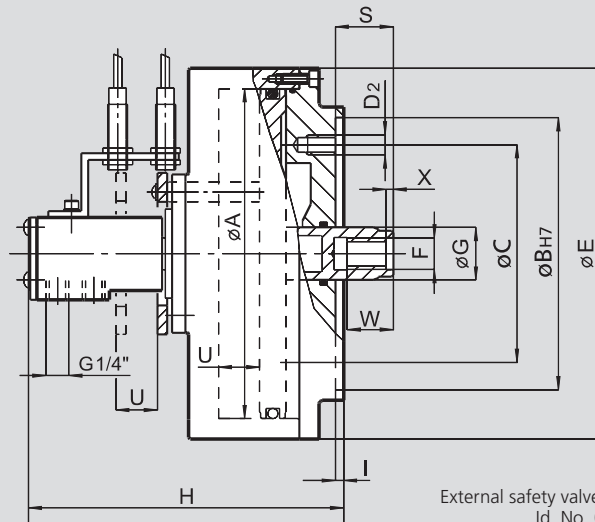
SMW-AUTOBLOK Type		CSN 100	CSN 150	CSN 200	CSN 250
Id. No.		33072110	33072115	33072120	33072124
Piston area	cm ²	71	176	306	482
Max. pressure	bar	7	7	7	7
Traction at 6 bar	kN	4.3	10	18	29
Max. speed	r.p.m.	4500	4500	4500	4500
Weight	kg	5	8	11	16
Moment of inertia	kg·m ²	0.01	0.03	0.06	0.18

CSN 100 - 150



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

CSN 200 - 250



External safety valve assembly
Id. No. 07941010

SMW-AUTOBLOK Type			CSN 100	CSN 150	CSN 200	CSN 250
Piston diameter	A	mm	100	150	200	250
Fixing bolts circle	B	mm	80	130	165	165
Fixing bolts diameter	C	mm	112	162	132	132
Threaded fixing holes	D1	mm	6 x Ø7	6 x Ø7	-	-
	D2	mm	-	-	3 x M12	6 x M12
	E	mm	125	175	225	275
	F	mm	M16	M16	M18	M18
	G	mm	30	30	32	32
	H	mm	171	171	190	190
	I	mm	5	5	5	5
max.	S	mm	35	35	35	35
	T	mm	60	60	-	-
Piston stroke	U	mm	20	20	25	25
	W	mm	20	20	30	30
	X	mm	4	4	5	5

Linear Position Sensor	LPS-XS	LPS-X	LPS-X	LPS-NT®
for SMW-Autoblok hydr. clamping cylinders	io Link Linear Position Sensor Measuring range 16 mm	Linear Position Sensor Measuring range 50 mm	io Link Linear Position Sensor Measuring range 50 mm	Linear Position Sensor Measuring range 100 mm



Application/customer benefits

- Monitoring of the entire cylinder stroke/safe controlling of any clamping position
- No repositioning of prox. switches when changing chucks

Technical features

- Inductive measuring principle (no magnet!)
- No interference from magnetic fields
- Measuring range LPS-XS = 16 mm/LPS-X = 50 mm/LPS-NT = 100 mm
- Compact design/simple installation
- Analog or binary output

Additional Features LPS-X io Link

- Bidirectional data transfer
- Status monitoring
- Process data monitoring

Standard equipment

LPS without cable

Ordering example

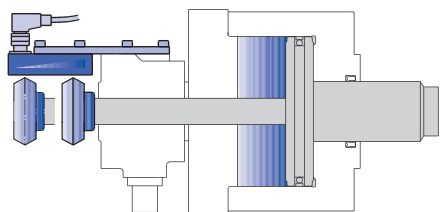
LPS-XA 50-V with analog output 0-10 V

Id. No. 197376

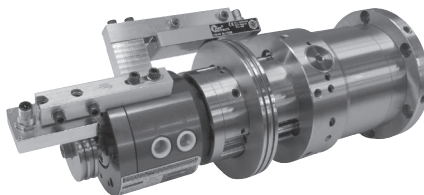
Cable with straight plug 5 m

Id. No. 195897

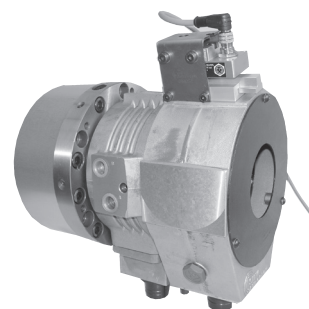
LPS-X mounted on cylinder SIN



LPS-NT® 100 + LPS-XS mounted on ZHVD-SZ cylinder with 2 independent pistons



LPS-X mounted on cylinder VNK



Technical data

SMW-AUTOBLOK Type	LPS-XSA 16-V	LPS-XA 50-V	LPS-NTA 100-V	LPS-XA 50-A	LPS-NTA100-A	LPS-X 50 io*	LPS-XS 16 io*
Id. No.	198825	197376	195921	199563	196381	198888	198899
Measuring range	16 mm	50 mm	100 mm	50 mm	100 mm	50 mm	16 mm
Signal	0-10 V / 4-20mA	0-10 V	0-10 V	4-20 mA	4-20 mA	io Link V1.0/V1.1	io Link V1.0/V1.1
Supply	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC
Reproducibility	0.05 mm	0.1 mm	0.2 mm	0.1 mm	0.2 mm	0.1 mm	0.05 mm
Linearity	0.10 mm	0.2 mm	0.4 mm	0.2 mm	0.4 mm	0.1 mm	0.1 mm
Temperature drift	0.15 mm	0.25 mm	0.25 mm	0.25 mm	0.25 mm	0.25	0.15
Operating temperature	0 - 70°	0 - 70°	0 - 70°	0 - 70°	0 - 70°	0 - 70°	0 - 70°
Protection class	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67
Case dimensions L x W x H	40 x 20 x 16	71.5 x 40 x 16	125 x 40 x 16	71.5 x 40 x 16	125 x 40 x 16	71.5 x 40 x 16	40 x 20 x 16

Cables for LPS-XSA 16-V	Length	Id. No.
Sensor connection cable straight plug M 9 x 0.5 8-pin	5 m	198982
	10 m	198983
	15 m	199643
Sensor connection cable elbow plug M 9 x 0.5 8-pin	5 m	198984
	10 m	198985
	15 m	198940

Cables for LPS-XA 50-V, LPS-NTA 100-V, LPS-NTA 100-A, LPS-X io Link*	Length	Id. No.
Sensor connection cable straight plug M 12 x 1 5-pin	5 m	195896
	10 m	195898
	15 m	198907
Sensor connection cable elbow plug M 12 x 1 5-pin	5 m	195897
	10 m	195899
	15 m	202320

* For detailed information about io Link please ask for separate data sheet.

Binary Interface Box for LPS-X/LPS-NT	
Id. No.	198067
Supply	24 V DC $\pm 10\%$ /120 mA
Signal	binary, 10 bits, pnp open collector
Resolution	0.05 mm = 1 Digit for 50 mm 0.1 mm = 1 Digit for 100 mm
Case dimensions L x W x H	125 x 80 x 58 mm
Protection class	IP 64
Operating temperature	0 - 70 °C
Connections	16-pin Zylrin R, style A, code N
Weight	650 g

RU-1-10 RU-1-16

Rotary union for 1 medium

- For closed and open center cylinders
- Media: air, oil or coolant

Application/customer benefits

- Rotary union for media supply for rotating cylinders

Technical features

RU-1-10: Medium: oil/coolant (**can not** rotate dry) through-hole approx. Ø 3 mm

RU-1-16: Medium: air/oil/coolant (**can** rotate dry, non-pressurised) through-hole approx. Ø 4.5 mm
Max. flow rate 30 l/min.

Note: The medium must be free of contamination.
Filter 25 µm requested

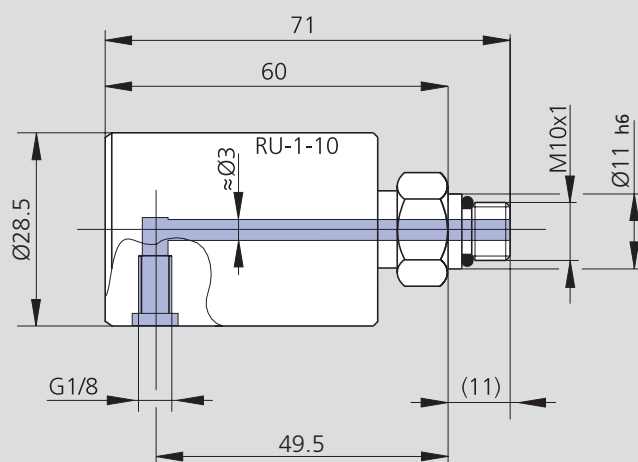
Standard equipment

RU-1-10 Id. No. 014604

RU-1-16 Id. No. 043271

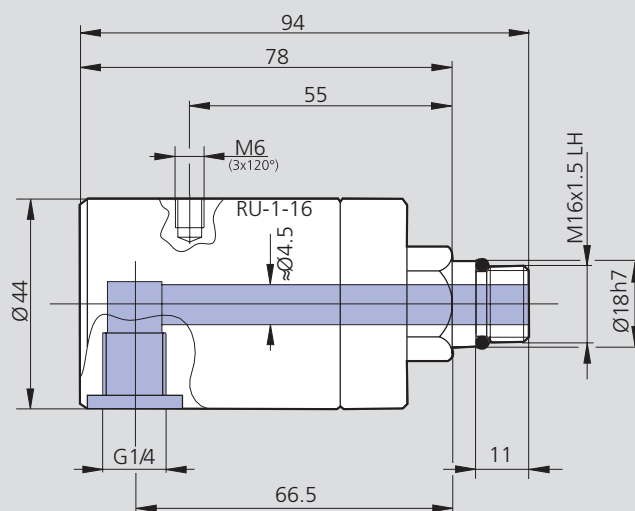


RU-1-10



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

RU-1-16



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

Technical data

SMW-AUTOBLOK Type	Id. No.	max. speed r.p.m.	max. pressure bar	Weight kg	Filter requested µm
RU-1-10	014604	7500	15	0.15	25
RU-1-16	043271	7000	30	0.40	25

- For closed or open center cylinders (not for ZHVD-DFR)
- Media: air + oil/air + coolant



Application/customer benefits

- Rotary union for media supply for rotating cylinders
- Universal for air + oil/air + coolant
- Can also rotate dry (non-pressurised)

Technical features

- Rotary union for 2 media
- Port A for air, oil and coolant, Port B for air

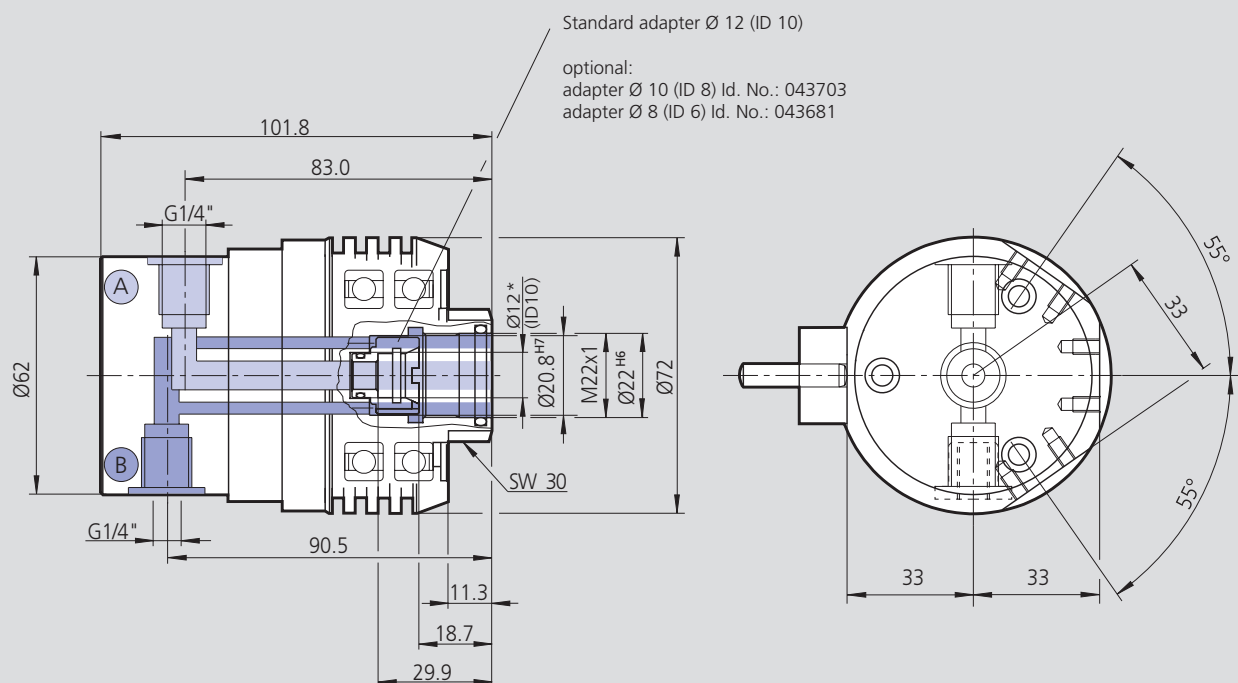
Note: The medium must be free of contamination
Filter 25 µm requested

Standard equipment

Rotary union RU-2-22
Anti rotation pin-blok
Adapter for tube Ø 12 mm (ID = 10mm)

Option:

Adapter for tube Ø 10 mm (ID = 8 mm) Id. No. 043703
Adapter for tube Ø 8 mm (ID = 6 mm) Id. No. 043681



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

Technical data

SMW-AUTOBLOK Type	Id. No.	max. speed r.p.m.	max. pressure port A media: air, oil, coolant		max. pressure port B media: air only		Weight kg	Filter requested µm
			bar	psi	bar	psi		
RU-2-22	044970	4000	40	580	10	145	0.94	25
		4500	35	507.5	10	145		
		5000	30	435	10	145		
		5500	25	362.5	10	145		
		6500	20	290	10	145		

