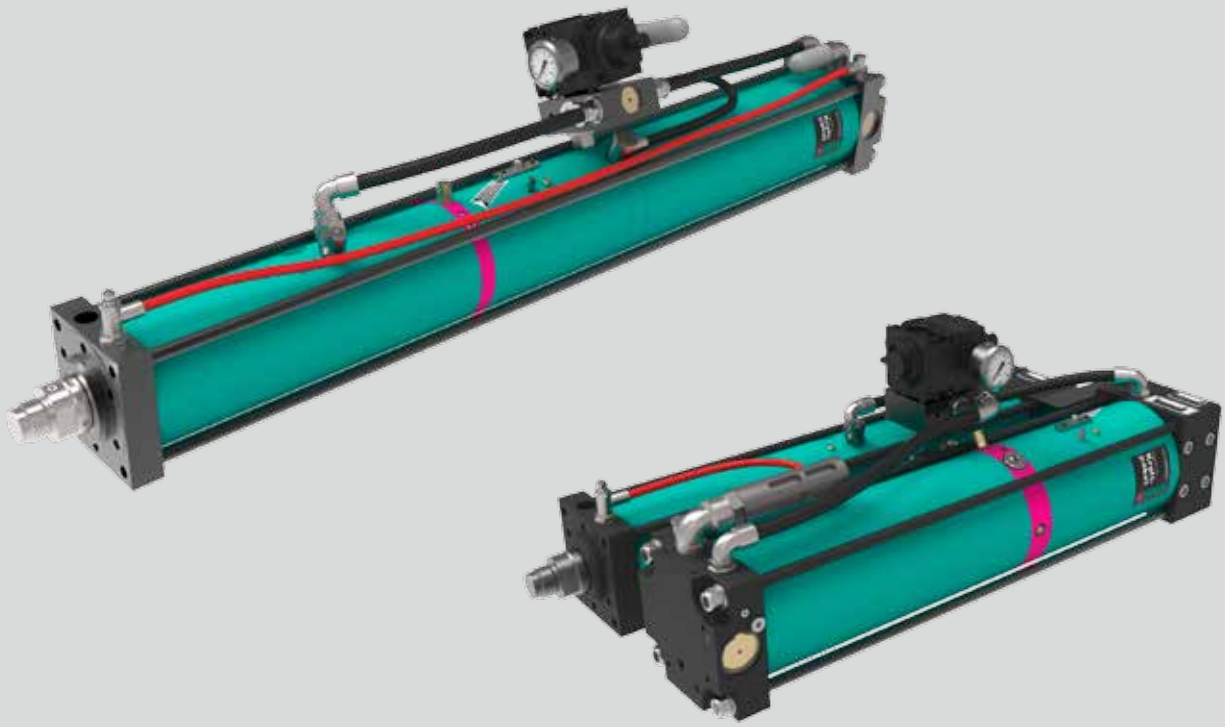
TOX® PRESSOTECHNIK

TOX®-Powerpackage line-X Type X-S and X-K

Data sheet 10.30
2018/11



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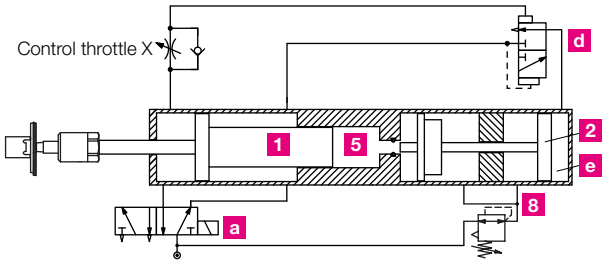
Find your local contact at: www.tox-pressotechnik.com

TOX®-Powerpackage line-X

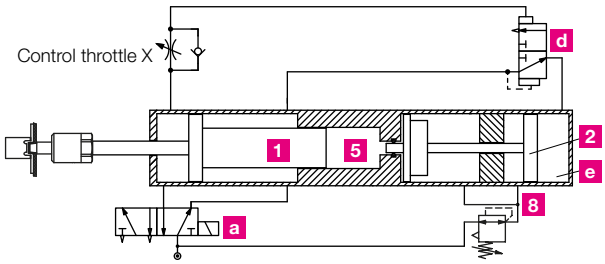
Advantages:

- Excellent controllability and adjustability
- Very efficient sealing technique
- Particularly applicable for punching applications
- Patented power bypass ZLB
- Hydraulic end position damping ZHD
- Significantly increased fast approach force at small size
- 10 million cycles within 12 months without work shift restrictions
- Venting in 3 main mounting positions (vertical down and up, horizontal)
- Prepared for stroke monitoring ZHU (up to design size 030)
- Prepared for external linear position sensor ZHW (up to design size 030)
- Fixed stop with elastomer cushioning
- Type X-K with patented circular buffer design for shorter overall length

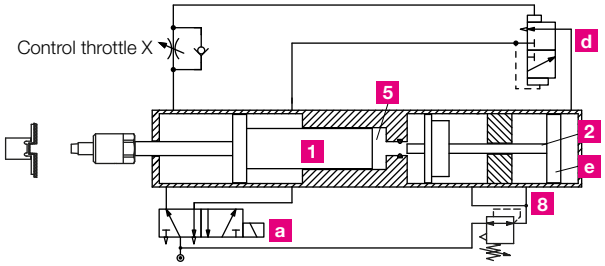
Functioning of the TOX®-Powerpackage



Fast approach – the main control valve **a** is switched. The working piston **1** extends, initially with a fast approach stroke, until it meets resistance at any point. It stopps and the integrated power stroke valve **d** is shifted. Air flows into chamber **e**.



Power stroke – the intensifier piston **2** closes the high pressure chamber **5** and compresses the oil in the working area up to 400 bar. This oil pressure applies pressure to the back of the working piston **1** and triggers the power stroke.



Return stroke – after the changeover of the main control valve **a** the power stroke valve **d** automatically vents the chamber **e**. The intensifier piston **2** and the working piston **1** return to their initial position one after the other.

Example for ordering:

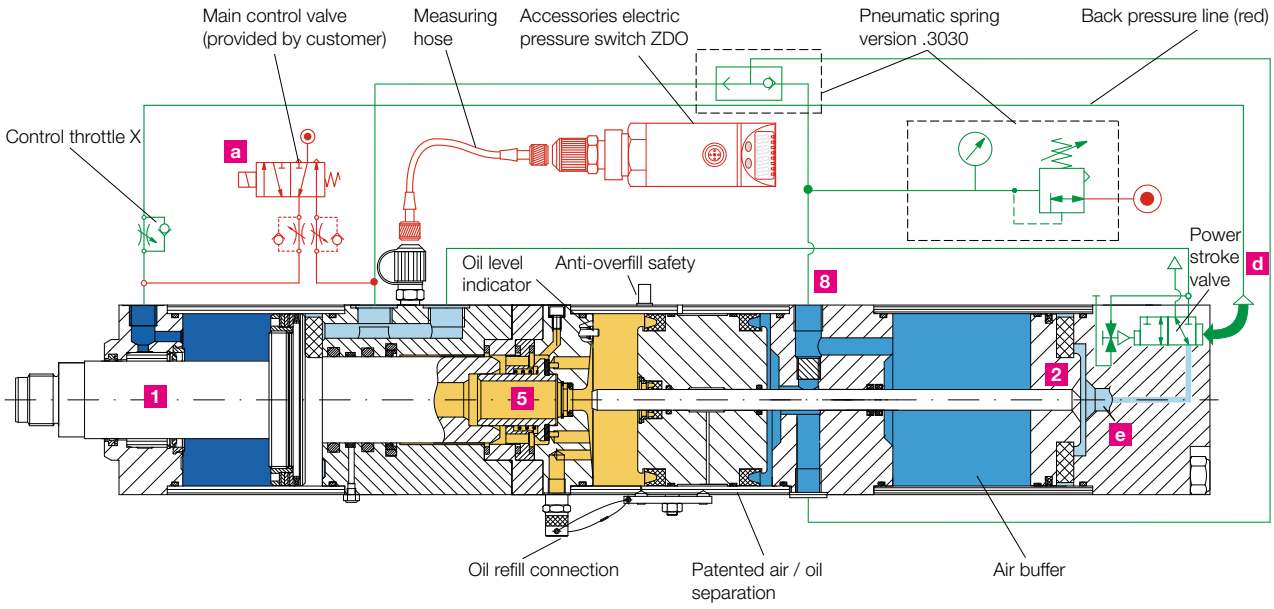
X-S 001.3030.100.22

- Power stroke (mm)
- Total stroke (mm)
- Version
- Press force category (t)
- Type

Pneumatic control Version .3030

The TOX®-Powerpackages line-X version .3030 are offered in two designs type X-S and X-K. They are equipped with pneumatic spring, power stroke valve and fast approach stroke support. Beside a maximum approach force and high stroke frequencies, this allows longest maintenance intervals. Three pneumatic connections are required for forward stroke, return stroke and permanent supply of the pneumatic spring.

All drives are provided with dynamic pressure switch (control throttle X). Optional control variants such as pressure regulation in the power stroke line, external switch-on of the power stroke or external power stroke release are possible (see TOX®-Data Sheet 10.16).



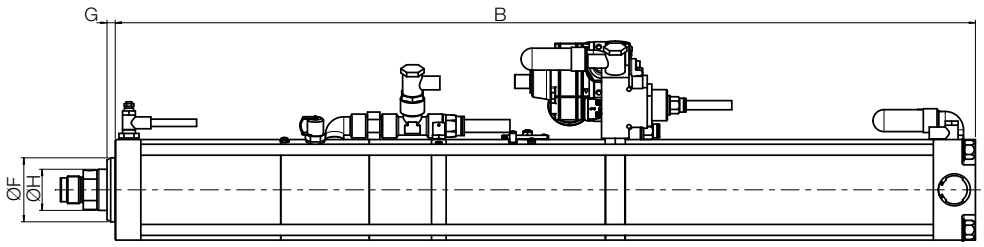
Within the TOX®-Powerpackage, the oil pretension is effected by compressed air applied to the piston surface in the intensifier chamber. The air pressure is set with a pressure regulator (set at the factory to a pressure of 0.8 bar). Also, air is connected to connector **8** of the pneumatic spring pressure regulator (minimum pressure 2.5 bar). This pressurizes the oil reservoir to assist the oil flow during approach stroke and allows the cylinder to operate in any mounting orientation. In addition, the air pressure is used to retract the intensifier piston during the return stroke.

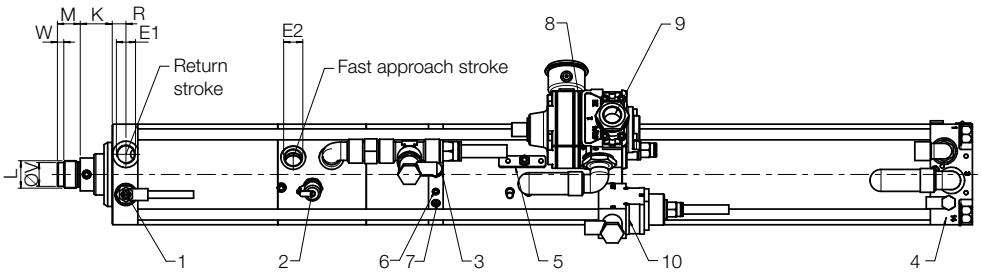
Legend:

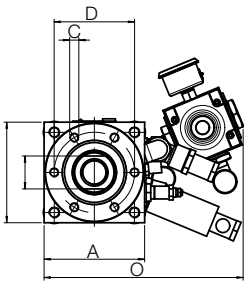
- **1** Working piston
- **2** Intensifier piston
- **5** High pressure chamber
- **8** Connection for pneumatic spring regulator
- **a** Main control valve
- **d** Power stroke valve
- **e** Buffer area of the intensifier piston

TOX®-Powerpackage line-X, Type X-S

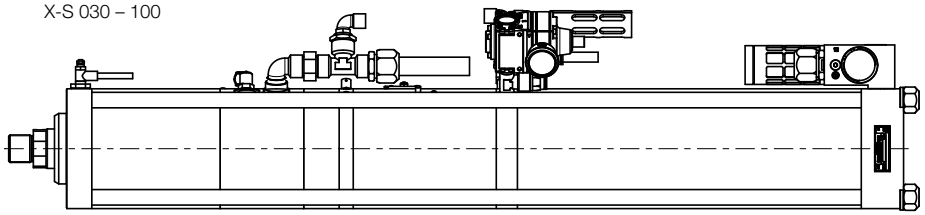
X-S 001 – 015

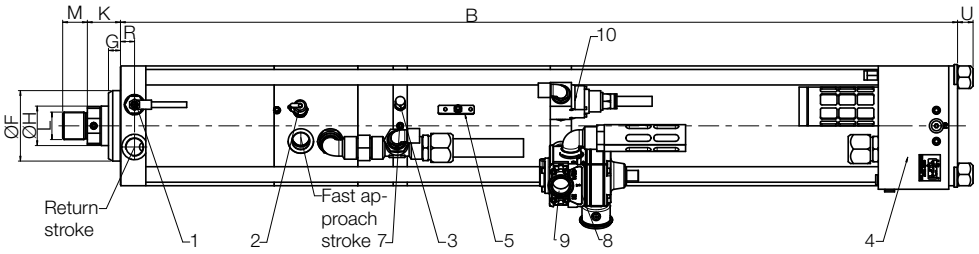






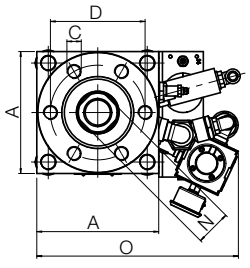
X-S 030 – 100



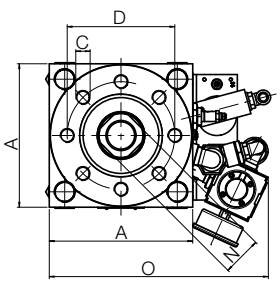


1 Control throttle X
2 High-pressure measuring hose
3 Oil filling nipple
4 Change over valve fast approach stroke/power stroke
5 Bleed plate
6 Oil level indicator
7 Bleed screw
8 Pneumatic spring with manometer
9 Pneumatic spring connection (permanent pressure)
10 Fast approach stroke support

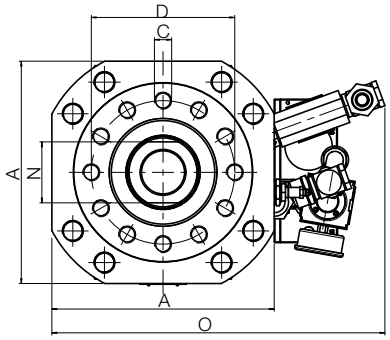
X-S 030



X-S 050



X-S 075-100



TOX®-Powerpackage line-X, Type X-S

Type	Total stroke	Incl. Power stroke	at 6 bar compressed air: max. press force kN	at 6 bar compressed air: Fas approach force daN	at 6 bar compressed air: Retracting daN	Pneumatic connection: E_1	Pneumatic connection: E_2	Pneumatic connection: LF	Weight kg
X-S 001.3030.050.23 X-S 001.3030.100.22	050 100	23 22	10.9	170	146	G1/4	G1/4	G1/4	14 15
X-S 002.3030.050.12 X-S 002.3030.100.12	050 100	12 12	16.9	170	146	G1/4	G1/4	G1/4	14 15
X-S 004.3030. 050.12 X-S 004.3030. 100.12	050 100	12 12	36.2	243	187	G3/8	G3/8	G1/4	22 23
X-S 008.3030. 050.12 X-S 008.3030. 100.12	050 100	12 12	70.9	432	318	G1/2	G1/2	G1/2	37 40
X-S 015.3030. 050.12 X-S 015.3030. 100.12	050 100	12 12	119.2	678	518	G1/2	G1/2	G1/2	62 65
X-S 030.3030. 100.12	100	12	264.2	1117	874	G3/4	G3/4	G3/4	119
X-S 050.3030. 100.08	100	08	500.4	1423	1083	G1	G1	G3/4	174
X-S 075.3030. 100.12	100	12	806.7	2752	1972	G1	G1	G3/4	396
X-S 100.3030. 100.08	100	08	1030.6	2752	1972	G1	G1	G3/4	396
X-S 170.3030. 100.06	100	06	1727.5	3983	2447	G1	G1	G3/4	735

Dimensions in mm

Type	A	B	C	D	F_{f7}	G	H	K	L	M	N	O	R	U	V_{g6}	W	*IV
X-S 001.3030.050.23 X-S 001.3030.100.22	70	638 738	6xM8x12	54	40	9	20	26	M16x1.5	15	17	180	13	–	–	–	■
X-S 002.3030.050.12 X-S 002.3030.100.12	70	638 738	6xM8x12	54	40	9	20	26	M16x1.5	15	17	180	13	–	–	–	■
X-S 004.3030. 050.12 X-S 004.3030. 100.12	85	811 911	6xM8x15	64	50	10	30	28.5	M22x2	20	24	190	14	–	18	7	■
X-S 008.3030. 050.12 X-S 008.3030. 100.12	110	841 941	6xM10x16	88	70	9	45	35	M30x2	25	36	220	15	–	26	7	■
X-S 015.3030. 050.12 X-S 015.3030. 100.12	135	878 978	6xM16x25	100	75	15	50	36	M30x2	25	41	244	17.5	–	26	7	■
X-S 030.3030. 100.12	170	1188	6xM20x30	132	100	17	56	47	M39x2	35	50	281	20	22	–	–	–
X-S 050.3030. 100.08	200	1294	8xM20x30	150	115	25	63	52	M42x2	40	55	306	23	30	–	–	–
X-S 075.3030. 100.12	310	1387	12xM24x40	200	150	20	100	60	M64x2	60	85	474	40	30	–	–	–
X-S 100.3030. 100.08	310	1387	12xM24x40	200	150	20	100	60	M64x2	60	85	474	40	30	–	–	–
X-S 170.3030. 100.06	420	1562	18xM30x55	320	240	35	150	70	M80x2	80	4xØ16	523	99	30	–	–	–

*IV = with integrated power stroke valve

Dimensions in mm

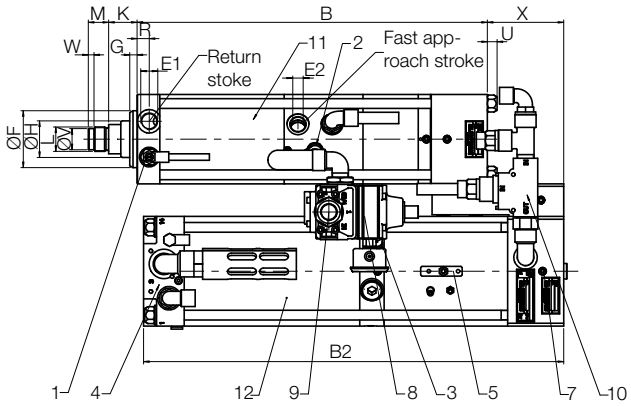
Pneumatic connection sizes

Connection	Nominal sizes/Inside-Ø hose
G1/4“	7 - 8 mm
G3/8“	8 - 9 mm
G1/2“	10 - 11 mm
G3/4“	19 - 20 mm
G1“	25 mm
G1 1/2“	38 mm

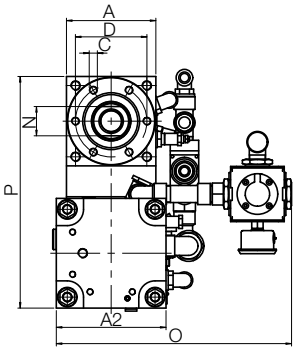
Notes

All TOX®-Powerpackage types up to X-S 030 are prepared for stroke monitoring ZHU and external linear position sensor ZHW. Please order the required number of sensors ZHS and mounting brackets ZMP separately (see TOX®-Data Sheet 110.00).

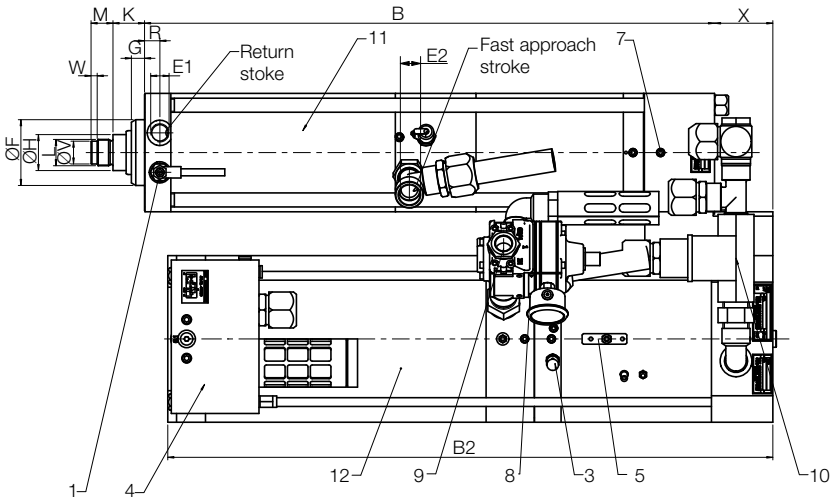
TOX®-Powerpackage line-X, Type X-K



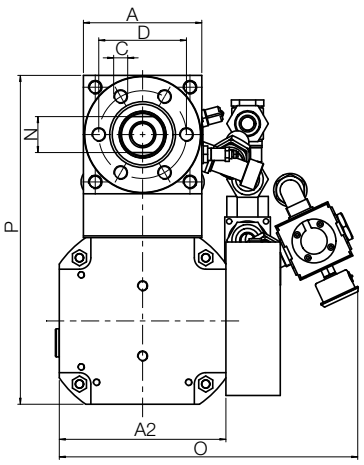
X-K 001-008



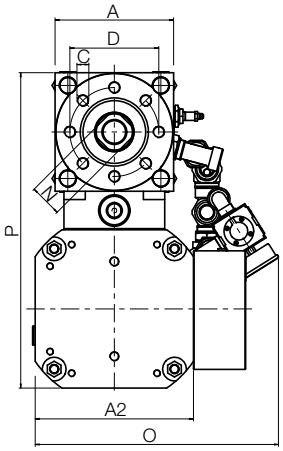
1 Control throttle X
2 High-pressure measuring hose
3 Oil filling nipple
4 Change over valve fast approach stroke / power stroke
5 Bleed plate
6 Oil level indicator
7 Bleed screw
8 Pneumatic spring with manometer
9 Pneumatic spring connection (permanent pressure)
10 Fast approach stroke support
11 Working part
12 Intensifier



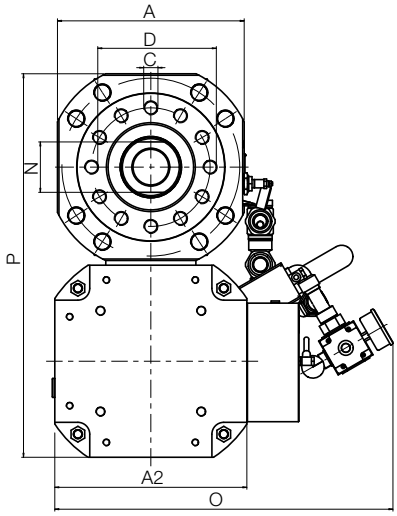
X-K 001-008



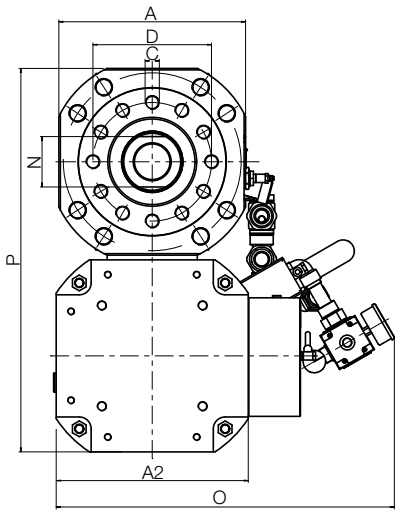
X-K 050



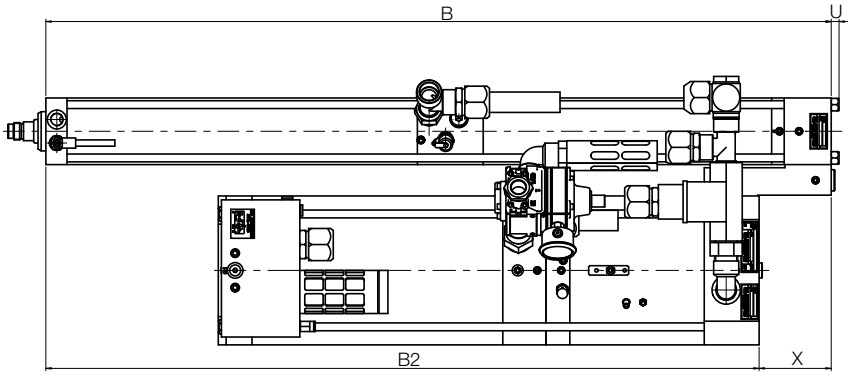
X-K 075-100

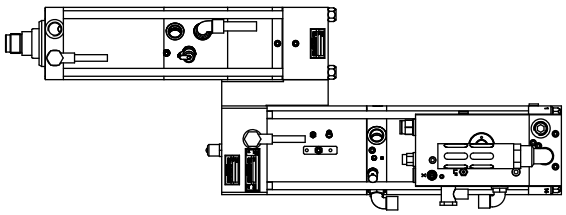


X-K 170



TOX®-Powerpackage line-X, Type X-K





Example: Model version Z form. Intermediate flange, mounting flange and pressured air connection are also available in twisted layout mounting. Additionally, the intermediate flange can be replaced by a hydraulic hose. These drives can be found in leaflet TOX®-Pneumohydraulic Unit X-KT.

Notes

- All TOX®-Powerpackage types up to X-K 030 are prepared for stroke monitoring ZHU and external linear position sensor ZHW. Please order the required number of sensors ZHS and mounting brackets ZMP separately (see TOX®-Data Sheet 110.00).
- In order to keep overall length to a minimum, the intermediate flange is rotated 180° when dimension B > B_2.

TOX®-Powerpackage line-X, Type X-K

			at 6 bar compressed air			Pneumatic connection			
Type	Total stroke	Incl. power stroke	Max. press force kN	Fast approach force daN	Retracting force daN	E_1	E_2	LF	Weight kg
X-K 001.3030.100.30	100	30	14.3	170	146	G1/4	G1/2	G3/8	39
X-K 001.3030.200.28	200	28	14.3	170	146	G1/4	G1/2	G3/8	43
X-K 001.3030.300.26	300	26	14.3	170	146	G1/4	G1/2	G3/8	47
X-K 002.3030.100.19	100	19	18.7	170	146	G1/4	G1/2	G3/8	39
X-K 002.3030.200.17	200	17	18.7	170	146	G1/4	G1/2	G3/8	43
X-K 002.3030.200.39	200	39	18.7	170	146	G1/4	G1/2	G1/2	46
X-K 002.3030.200.34	200	34	21.1	170	146	G1/4	G1/2	G3/8	55
X-K 002.3030.200.68	200	68	21.1	170	146	G1/4	G1/2	G1/2	65
X-K 002.3030.300.14	300	14	18.7	170	146	G1/4	G1/2	G3/8	46
X-K 002.3030.300.31	300	31	21.1	170	146	G1/4	G1/2	G1/2	62
X-K 002.3030.300.37	300	37	18.7	170	146	G1/4	G1/2	G1/2	49
X-K 002.3030.300.65	300	65	21.1	170	146	G1/4	G1/2	G3/8	64
X-K 004.3030.100.06	100	06	45.8	243	187	G3/8	G1/2	G1/2	43
X-K 004.3030.100.12	100	12	52.1	243	187	G3/8	G1/2	G3/8	61
X-K 004.3030.200.12	200	12	45.8	243	187	G3/8	G1/2	G3/8	51
X-K 004.3030.200.22	200	22	52.1	243	187	G3/8	G1/2	G3/8	69
X-K 004.3030.200.49	200	49	52.2	243	187	G3/8	G3/4	G1/2	113
X-K 004.3030.400.24	400	24	45.8	243	187	G3/8	G1/2	G3/8	74
X-K 004.3030.400.45	400	45	52.1	243	187	G3/8	G1/2	G1/2	103
X-K 004.3030.400.44	400	44	52.2	243	187	G3/8	G3/4	G1/2	124
X-K 008.3030.100.06	100	06	81.9	432	318	G1/2	G1/2	G1/2	71
X-K 008.3030.200.12	200	12	81.9	432	318	G1/2	G1/2	G1/2	85
X-K 008.3030.200.29	200	29	82.1	432	318	G1/2	G3/4	G1/2	126
X-K 008.3030.200.69	200	69	81.7	432	318	G1/2	G1	G3/4	236
X-K 008.3030.400.24	400	24	82.1	432	318	G1/2	G3/4	G1/2	145
X-K 008.3030.400.65	400	65	81.7	432	318	G1/2	G1	G3/4	257
X-K 015.3030.200.12	200	12	159.2	678	518	G1/2	G3/4	G1/2	154
X-K 015.3030.200.32	200	32	158.5	678	518	G1/2	G1	G3/4	259
X-K 015.3030.200.64	200	64	158.5	678	518	G1/2	G1	G3/4	325
X-K 015.3030.400.27	400	27	158.5	678	518	G1/2	G1	G3/4	286
X-K 015.3030.400.61	400	61	158.5	678	518	G1/2	G1	G3/4	336
X-K 030.3030.200.12	200	12	320.8	1117	874	G3/4	G1	G3/4	305
X-K 030.3030.200.27	200	27	320.8	1117	874	G3/4	G1	G3/4	378
X-K 030.3030.400.24	400	24	320.8	1117	874	G3/4	G1	G3/4	397
X-K 050.3030.200.15	200	15	498.0	1423	1083	G3/4	G1	G3/4	422
X-K 050.3030.400.11	400	11	498.0	1423	1083	G3/4	G1	G3/4	455
X-K 050.3030.400.23	400	23	498.0	1423	1083	G3/4	G1	G3/4	556
X-K 075.3030.300.21	300	21	771.6	2752	1972	G1	G1	G3/4	960
X-K 100.3030.300.10	300	10	1030.0	2752	1972	G1	G1	G3/4	960
X-K 170.3030.200.10	200	10	1627.0	3983	2447	G1	G1	G3/4	1580

Dimensions in mm

TOX®-Powerpackage line-X, Type X-K

Type	A	A_2	B	B_2	C	D	F_{f7}	G	H	K	L	M	N	O	P	R	U	V_{g6}	W	X	*IV
X-K 001.3030.100.30	70	110	377	511.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	254	220	13	8	–	–	134	■
X-K 001.3030.200.28	70	110	577	522.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	254	220	13	8	–	–	55**	■
X-K 001.3030.300.26	70	110	777	722.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	254	220	13	8	–	–	55**	■
X-K 002.3030.100.19	70	110	377	511.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	254	220	13	8	–	–	134	■
X-K 002.3030.200.17	70	110	577	522.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	254	220	13	8	–	–	55**	■
X-K 002.3030.200.39	70	110	577	649.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	290	220	13	8	–	–	72	■
X-K 002.3030.200.34	70	135	577	527.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	254	245	13	8	–	–	50**	■
X-K 002.3030.200.68	70	135	577	732.5	6xM8x12	54	40	9	20	26	M16x1.5	15	17	290	245	13	8	–	–	155.5	■
X-K 002.3030.300.14	70	110	777	722.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	254	220	13	8	–	–	55**	■
X-K 002.3030.300.31	70	135	777	727.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	290	245	13	8	–	–	50**	■
X-K 002.3030.300.37	70	110	777	722.0	6xM8x12	54	40	9	20	26	M16x1.5	15	17	254	220	13	8	–	–	55**	■
X-K 002.3030.300.65	70	135	777	738.5	6xM8x12	54	40	9	20	26	M16x1.5	15	17	290	245	13	8	–	–	38.5**	■
X-K 004.3030.100.06	85	110	402	513.0	6xM8x15	64	50	10	30	28.5	M22x2	20	24	254	235	14	10	18	7	111	■
X-K 004.3030.100.12	85	135	402	528.0	6xM8x15	64	50	10	30	28.5	M22x2	20	24	254	260	14	10	18	7	126	■
X-K 004.3030.200.12	85	110	602	671.0	6xM8x15	64	50	10	30	28.5	M22x2	20	24	254	235	14	10	18	7	69	■
X-K 004.3030.200.22	85	135	602	753.0	6xM8x15	64	50	10	30	28.5	M22x2	20	24	290	260	14	10	18	7	151	■
X-K 004.3030.200.49	85	190	602	704.0	6xM8x15	64	50	10	30	28.5	M22x2	20	24	346	315	14	10	18	7	102	–
X-K 004.3030.400.24	85	110	1002	1071.0	6xM8x15	64	50	10	30	28.5	M22x2	20	24	254	235	14	10	18	7	69	■
X-K 004.3030.400.45	85	135	1002	1218.0	6xM8x15	64	50	10	30	28.5	M22x2	20	24	346	260	14	10	18	7	216	■
X-K 004.3030.400.44	85	190	1002	910.0	6xM8x15	64	50	10	30	28.5	M22x2	20	24	290	315	14	10	18	7	92**	–
X-K 008.3030.100.06	110	135	431	525.0	6xM10x16	88	70	9	45	35	M30x2	25	36	290	285	15	12	26	7	94	■
X-K 008.3030.200.12	110	135	631	717.0	6xM10x16	88	70	9	45	35	M30x2	25	36	290	285	15	12	26	7	86	■
X-K 008.3030.200.29	110	190	631	697.0	6xM10x16	88	70	9	45	35	M30x2	25	36	346	340	15	12	26	7	66	–
X-K 008.3030.200.69	110	267	631	778.0	6xM10x16	88	70	9	45	35	M30x2	25	36	411	417	15	12	26	7	147	–
X-K 008.3030.400.24	110	190	1031	967.0	6xM10x16	88	70	9	45	35	M30x2	25	36	346	340	15	12	26	7	64**	–
X-K 008.3030.400.65	110	267	1031	904.0	6xM10x16	88	70	9	45	35	M30x2	25	36	411	417	15	12	26	7	127**	–
X-K 015.3030.200.12	135	190	650	716.5	6xM16x25	100	75	15	50	36	M30x2	25	41	352	375	15	16	26	7	66.5	–
X-K 015.3030.200.32	135	267	650	792.5	6xM16x25	100	75	15	50	36	M30x2	25	41	411	452	15	16	26	7	142.5	–
X-K 015.3030.200.64	135	267	650	1189.5	6xM16x25	100	75	15	50	36	M30x2	25	41	411	452	15	16	26	7	539.5	–
X-K 015.3030.400.27	135	267	1050	925.5	6xM16x25	100	75	15	50	36	M30x2	25	41	411	452	15	16	26	7	124.5**	–
X-K 015.3030.400.61	135	267	1050	1192.5	6xM16x25	100	75	15	50	36	M30x2	25	41	411	452	15	16	26	7	142.5	–
X-K 030.3030.200.12	170	267	700	786.5	6xM20x30	132	100	17	56	47	M39x2	35	50	411	502	15	22	–	–	86.5	–
X-K 030.3030.200.27	170	267	700	1189.5	6xM20x30	132	100	17	56	47	M39x2	35	50	411	502	15	22	–	–	489.5	–
X-K 030.3030.400.24	170	267	1100	1186.5	6xM20x30	132	100	17	56	47	M39x2	35	50	411	502	15	22	–	–	86.5	–
X-K 050.3030.200.15	200	267	719	1208.0	8xM20x30	150	115	25	63	52	M42x2	40	55	411	532	23	30	–	–	489	–
X-K 050.3030.400.11	200	267	1119	1205.5	8xM20x30	150	115	25	63	52	M42x2	40	55	411	532	23	30	–	–	86.5	–
X-K 050.3030.400.23	200	267	1119	1741.5	8xM20x30	150	115	25	63	52	M42x2	40	55	411	532	23	30	–	–	622.5	–
X-K 075.3030.300.21	315	324	1337	1337.0	12xM24x40	200	150	25	100	60	M64x2	60	85	571	647	40	30	–	–	–	–
X-K 100.3030.300.10	315	324	1337	1337.0	12xM24x40	200	150	25	100	60	M64x2	60	85	571	647	40	30	–	–	–	–
X-K 170.3030.200.10	420	368	1404	1404.0	18xM30x55	320	240	35	150	70	M80x2	80	4xØ16	571	792	99	30	–	–	433	–

*IV = with integrated power stroke valve

**Intermediate flange between working part and intensifier twisted by 180° (B_2 + X = B)

Dimensions in mm

Pneumatic connection sizes

Connection	Nominal sizes/Inside-Ø hose
G1/4“	7 - 8 mm
G3/8“	8 - 9 mm
G1/2“	10 - 11 mm
G3/4“	19 - 20 mm
G1“	25 mm
G1 1/2“	38 mm

TOX®-Powerpackage special versions

TOX®-Powerpackage ZLM for use in the food industry

With the exception of line-Q, all TOX®-Powerpackages are available with food grade oil and grease lubrication. Both lubricants are certified according to USDA-H11 and are used wherever there is a chance of occasional, technically unavoidable contact between foodstuffs and lubricant.

TOX®-Powerpackages are used in industrial food manufacturing, processing, filling and packaging machines, as well as in the pharmaceutical and cosmetics industry.

Compatible with:
All TOX®-Powerpackages (without line-Q)

Order no.
S 1.32.6 - **ZLM**
- ZLM: Food-grade version
- S 1.32.6: Order no. of TOX®-Powerpackage

TOX®-Powerpackage in anti-rust version ZRO

With the exception of line-Q, all TOX®-Powerpackages can be supplied with rust protection. All individual parts are either plasma nitrided, galvanised or primed and painted. These devices are particularly suitable for use in the food and packaging industries.

Compatible with:
All TOX®-Powerpackages (without line-Q)

Order no.
S 1.32.6 - **ZRO**
- ZRO: Anti-rust version
- S 1.32.6: Order no. of TOX®-Powerpackage

On request, we can provide TOX®-Powerpackages as stainless steel version. Please contact us!