

TOX®-Powerpackage line-Q

! the new preference series !

- Pneumatic Forces from 10 – 300 kN

NEW Very short delivery-dates
NEW Attractive price
NEW Stroke inquiry easy to realize
NEW Latest sealing and guidance technology
NEW Prolonged maintenance intervals

TOX®-Powerpackage line-Q

The new preference series

NEW Stroke inquiry easy to realize
NEW Latest sealing and guidance technology
NEW Prolonged maintenance intervals

Advantages of the TOX®-Powerpackage line-Q:

The line-Q drives offer the known advantages of the TOX®-Powerpackages which have already proven their quality in applications all over the world. Most interesting are the short delivery-dates and the attractive price.

+ We guarantee for 10 million strokes within 12 months without shift limitation.

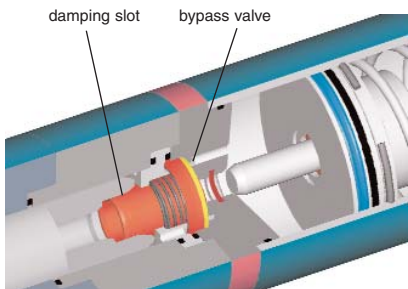
Well tried TOX® quality:

- + Pure pneumatic operation (no hydraulic unit required)
- + Controlled as any double acting pneumatic cylinder (easy to handle)
- + Absolute air-oil separation
- + Extremely low air consumption
- + High stroke frequency
- + High wear resistance due to the low number of moving parts
- + Double-supported working rod (optimal guidance and very rugged)

- + Any mounting position possible due to the oil pretension of the reservoir volume by means of a compression spring
- + Prepared for stroke inquiry
- + Tool protection and noise reduction due to low impact forces of the fast approach stroke
- + defined positive stop with damping in BDC
- + High-pressure connection generally provided (can be used for sequential controls)
- + Oil level indicator (easy to maintain)

Advantages in detail:

The **patented power bypass** prevents an under-pressure in the oil system. Therefore a universal application as e.g. punching, edging etc. or at high stroke speeds is possible. The power bypass is the basic requirement for a troublefree application of each pneumo-hydraulic system with such applications.



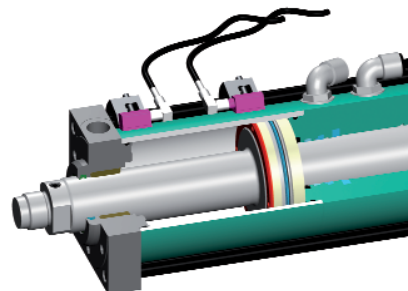
Patented, hydraulic end position damping in the DC for a quiet and material-protecting operation.

The **double-bearing** arrangement of the working rod ensures an extraordinary good guidance.

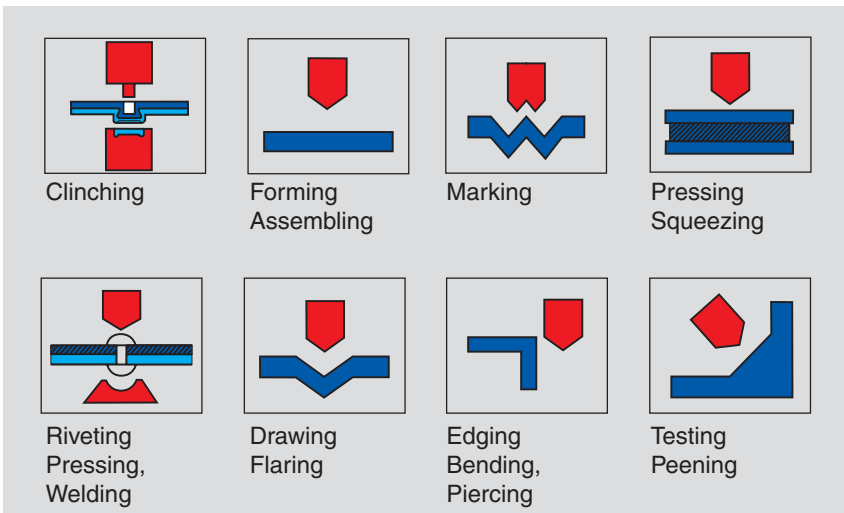
The absolute **air/oil separation** is a prerequisite for a troublefree operation.

The **ingenious** double function of the **mechanic spring** entails energy savings. No additional air is needed for the return stroke of the transducer and the automatic preloading of the feed piston allows for any mounting position of the cylinder.

For the **TDC/BDC inquiry** or, as **option, the stroke inquiry**, it is possible to fix sensors to the tie rods. All TOX®-Powerpackages of the line-Q are equipped with a special tube within the range of the working piston. A magnetic washer gives the signal (TOX® accessory stroke monitor ZHU see data sheet 10.00. Stroke is not shortened).



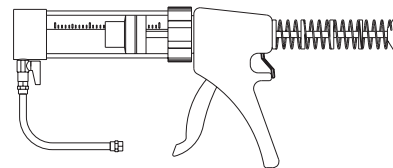
All application possibilities



Accessories:

Oil pump ZP 20.000

The guarantee for the optimal maintenance intervals.



For an easy, bubble-free **refilling** and **reduction** of the oil volume of the TOX®-Powerpackage. Body and filling hose are transparent so that the oil level of the pump can be controlled. Requires little force. Container filling volume 0,30 l.

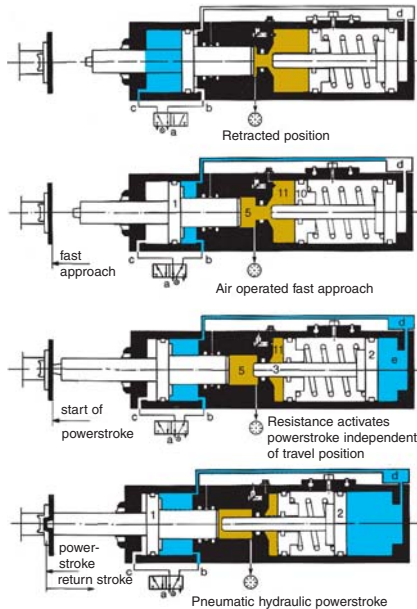
Order no.: ZP 20.000

The function of the TOX®-Powerpackage

The TOX® Powerpackage is a pneumatically operated cylinder with automatic engagement of the hydraulic power stroke.

The power stroke is automatically triggered as soon as the piston rod (tool) meets an opposed force, at any point of the total stroke.

The time needed for changeover can be set at the throttle. When the throttle is closed, no return stroke will take place.



Fast approach - the main control valve a) is switched. The working piston 1 extends at high speed until resistance is encountered at any point of the stroke. This resistance effects the changeover of the assembled power stroke valve.

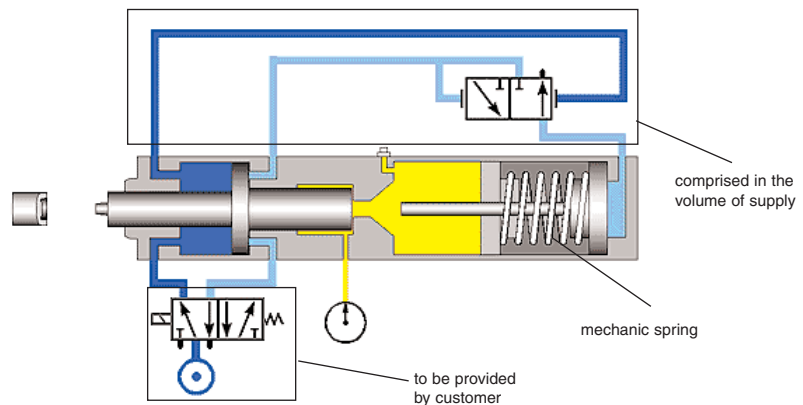
Powerstroke - the intensifier piston 2 closes the high pressure chamber and compresses the oil in working area 5 up to 400 bar. This oil pressure applies pressure to the back of working piston 1 and brings about the powerstroke.

Return stroke - after the changeover of main control valve a) the powerstroke valve d) automatically vents chamber e). The working piston 1 and the intensifier piston 2 return to their initial position.

(Clinching is used as an application example)

Controls

It is operated like a pneumatic cylinder and has the pressforce of a hydraulic cylinder. This means for you: The TOX®-Powerpackage is initiated like a normal double-acting pneumatic cylinder via a 4/2- or 5/2-way valve. The changeover from fast to power stroke takes place automatically whenever the working rod hits an opposing force during its fast approach.



Investment

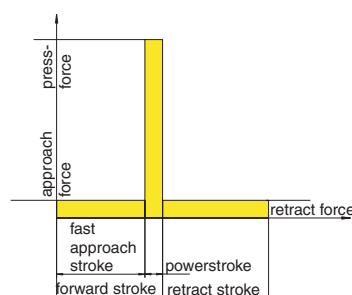
On comparable technical conditions, TOX®-Powerpackages are up to 20 % less expensive than hydraulic, pneumatic or toggle joint systems.

Capacity

The TOX®-Powerpackage behaves like a pneumatic cylinder in its operation and with regard to the stroke speed. With smallest dimensions it does hard work at high forces as known from hydraulic systems but, however, without the use of an expensive hydraulic unit, in a clean, reliable way and for a long period of life.

Energy consumption

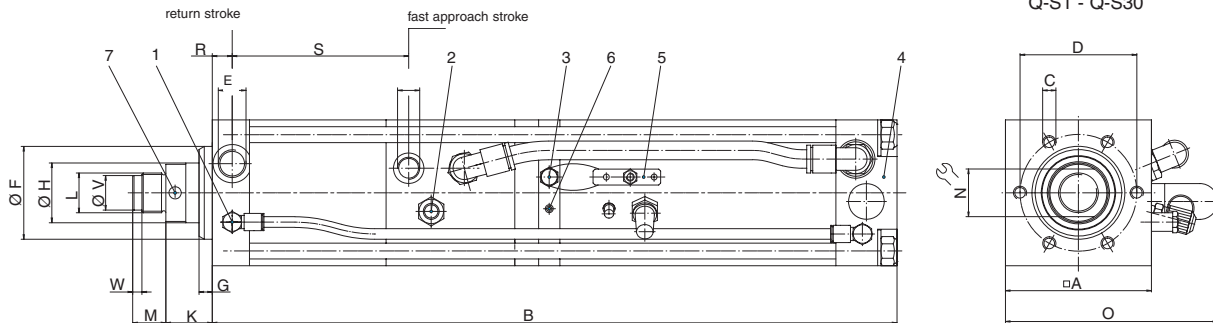
With the TOX®-Powerpackage up to 90 % energy cost in comparison with pneumatic or hydraulic cylinders can be saved, as only the powerstroke is operated at full power but not the fast and return stroke!



Environment

The TOX®-Powerpackage has an extremely low noise level due to the hydraulic end position damping in BDC. Only little noise of outgoing air and reduced air consumption. No oil disposal or oil contamination from leakages, no noise creation from a running hydraulic pump.

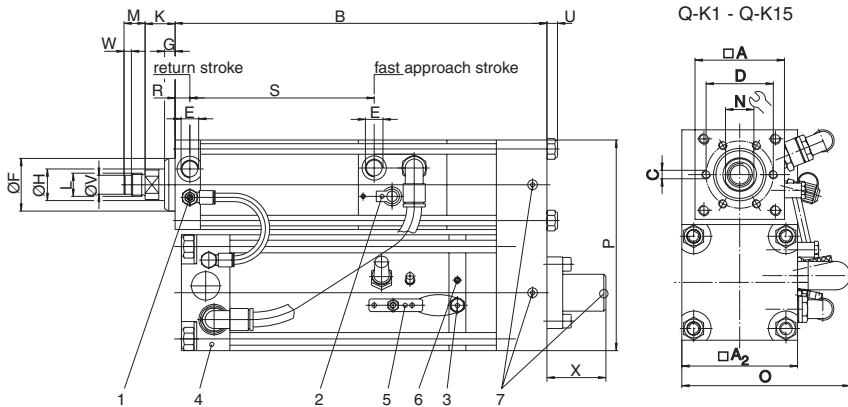
TOX®-Powerpackage line-Q type S at 6 bar 10 - 300 kN



order no.	incl. total power stroke	max. force at 6 bar compressed air kN	fast approach force N	retracting force N	A	B	C	D	E	F _{f7}	G	H	K	L	M	N	O	R	S	V _{g6}	W
Q-S 001.030.100.	22	11,5	1400	1500	70	738	6xM8x12	54	G1/4	40	9	20	26	M16x1,5	15	17	104	13	166	-	-
Q-S 002.030.100.	12	17,1	1400	1500	70	738	6xM8x12	54	G1/4	40	9	20	26	M16x1,5	15	17	104	13	166	-	-
Q-S 004.030.100.	12	38,1	1700	1950	85	821	6xM8x15	64	G3/8	50	10	30	28,5	M22x2	20	24	124	14	175	18	7
Q-S 008.030.100.	12	74,0	3150	3300	110	941	6xM10x16	88	G1/2	70	9	45	35	M30x2	25	36	165	15	183	26	7
Q-S 015.030.100.	12	133,7	4500	5450	135	978	6xM16x25	100	G1/2	75	15	50	36	M30x2	25	41	175	17,5	184,5	26	7
Q-S 030.030.100.	12	277,0	6600	9250	170	1207	6xM20x30	132	G3/4	100	17	56	47	M39x2	35	50	230	20	236	-	-

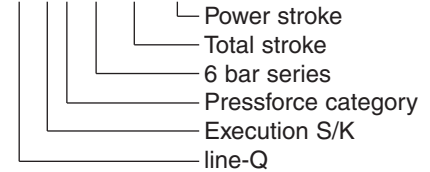
Dimensions in mm

TOX®-Powerpackage line-Q type K at 6 bar 10 - 150 kN



Sample order:

Q-S 8.30.100.12



- 1 Control throttle X
- 2 High-pressure measuring hose
- 3 Oil filling nipple
- 4 Change over valve fast approach stroke/power stroke
- 5 Venting plate
- 6 Oil level indicator
- 7 Vent screw

order no.	incl. total power stroke	max. force at 6 bar compressed air kN	fast approach force N	retracting force N	A	A ₂	B	C	D	E	F _{f7}	G	H	K	L	M	N	O	P	R	S	U	V _{g6}	W	X
Q-K 001.030.200.	52	11,3	1400	1500	70	85	571	6xM8x12	54	G1/4	40	9	20	26	M16x1,5	15	17	117	160	13	166	8	-	-	244,5
Q-K 002.030.200.	34	15,7	1400	1500	70	85	571	6xM8x12	54	G1/4	40	9	20	26	M16x1,5	15	17	117	160	13	166	8	-	-	244,5
Q-K 004.030.200.	13	47,0	1700	1950	85	110	597	6xM8x15	64	G3/8	50	10	30	28,5	M22x2	20	24	165	200	14	175	10	18	7	204,5
Q-K 008.030.200.	18	69,0	3150	3300	110	135	626	6xM10x16	88	G1/2	70	9	45	35	M30x2	25	36	177	250	15	183	12	26	7	229,5
Q-K 015.030.200.	12	140,0	4500	5450	135	170	645	6xM16x25	100	G1/2	75	15	50	36	M30x2	25	41	231	310	17,5	184,5	16	26	7	185,5

Dimensions in mm