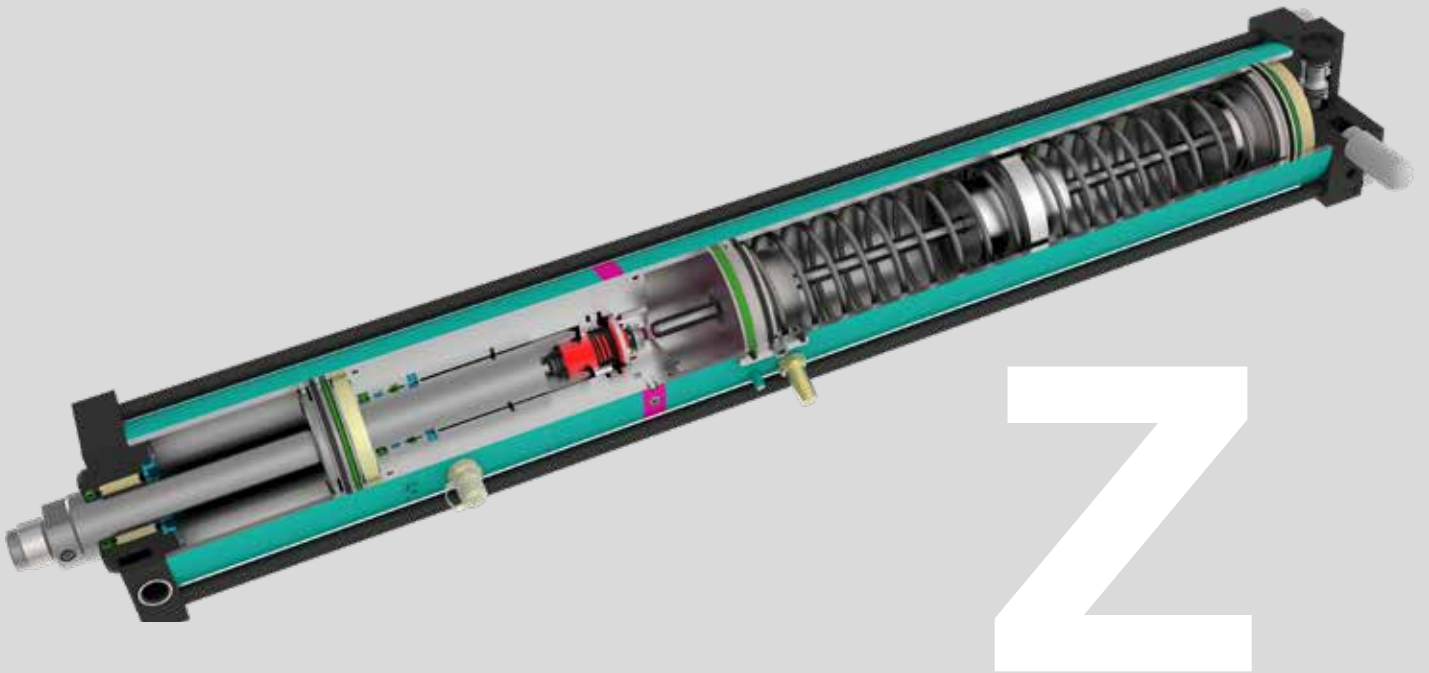


TOX®-Powerpackage Accessories

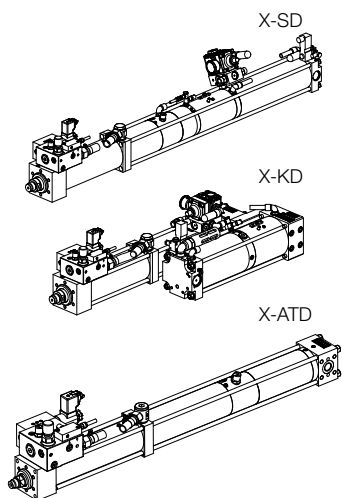
Data sheet 10.10
2022/03



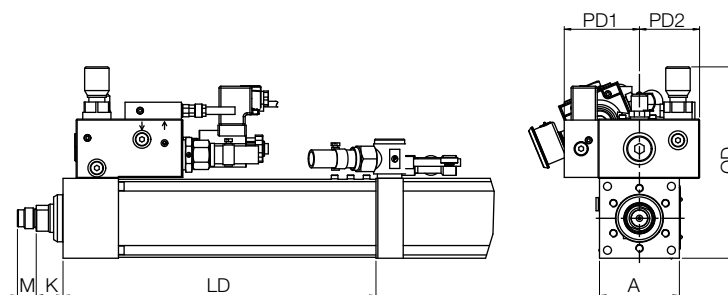
TOX®-Powerpackage Accessories

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TOX®-Powerpackage with adjustable damping ZED



The TOX®-Powerpackage with adjustable damping ZED is ideal for optimal, even pressing and punching with reduced impact. The approach- and return force are lower than for TOX®-Powerpackages without adjustable damping ZED.



Type	at 6 bar air pressure						L _D mm	O _D mm	P _{D1} mm	P _{D2} mm	For TOX®-Powerpackage type
	Total stroke mm	Approach force N	Return force N	Average approach speed* [mm/s]	Average return speed* mm/s	Average power stroke speed* mm/s					
ZED 02	200	1160	1000	390	383	96	330	146	80	64	X-S/X-K/X-AT 02
	300						430				
	400						530				
ZED 04	200	1560	1320	345	299	58	335	154	80	64	X-S/X-K/X-AT 04
	300						435				
	400						535				
ZED 08	200	2970	2490	210	252	31	350	166	72	72	X-S/X-K/X-AT 08
	300						450				
	400						550				
ZED 15	200	4650	3280	296	241	56	359	198.5	84	84	X-S/X-K/X-AT 15
	300						459				
	400						559				
ZED 30	200	7620	4640	257	221	36	359	221	84	84	X-S/X-K/X-AT 30
	300						459				
	400						559				
ZED 50	200	9630	5280	-	-	-	382	334	84	84	X-S/X-K/X-AT 50
	300						482				
	400						582				

Tolerance of ±50N und ±5 mm/s applies to all force and speed data
*all speed data valid without any opposing force and any tooling weight.

For TOX® pneumatic spring Powerpackages with total strokes different than those shown, the next size damping cylinder for the same capacity will be used, e.g. for a stroke of 100mm, the cylinder with 200mm stroke equal press force.

Scope of delivery:

- Stroke sensing ZHU (without sensors) up to version 30.
- Power bypass ZHD with end position damping for all series X-S, X-K, X-AT and starting from EL 04. For EL 02 and EK cylinders including power bypass ZLB.
- Positive stop with elastomeric damping FUD
- Additional HP connection for damping pressure monitoring
- External power stroke initiation including pneumatic valve (solenoid operated) and power stroke valve mounted on cylinder
- All necessary electrical connectors (without cables)
- Flow control valve provides throttling

Note:

For older Powerpackages of the series EL, EK and AT, the total stroke is reduced by 10mm due to the signal transducer of the stroke monitoring.

Accessories and options:

The TOX®-Powerpackage options are also available for these units (see TOX® data sheet 10.20).

Order no:

X-S 008.2030.100.12 – ZED



TOX[®]-Powerpackage Accessories

TOX[®]-Powerpackage with adjustable damping ZED

Function

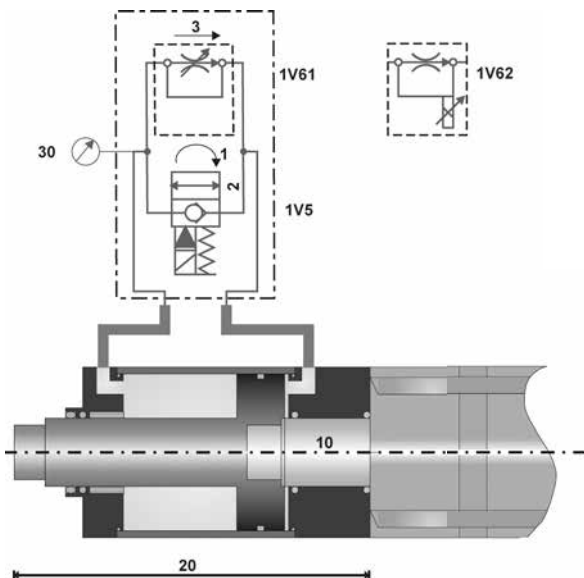
The TOX[®]-Powerpackage type ZED can be ordered either with a manually adjustable flow control valve or with a solenoid operated proportional flow control valve.

Solenoid operated proportional flow control valve:

- Positional accuracy for damping in approach and power strokes < +/- 0.03 mm. In order to achieve this accuracy, the desired position must be approached slowly (e.g. over a speed ramp).
- Minimum speed adjustment for closed flow control valve during power stroke: < 0.1 mm/s
- Minimum operating air pressure: 3.0 bar

Manual flow control valve:

- Reaction time and reaction distance when switching the damping during approach:
Reaction time
ZED 02/04/08 < 0.07 sec
ZED 15/30 < 0.14 sec
- Reaction distance dependent on the approach speed
ZED 02/04/08 min. 6 mm to max. 34 mm
ZED 15/30 min. 6 mm to max. 38 mm
(high approach speeds result in increased reaction distance)
- Switching repeatability during approach at max. speed:
ZED 02/04/08 < 4 mm
ZED 15/30 < 7 mm
- Minimum speed adjustment for closed flow control valve during power stroke:
ZED 02/04/08 < 0.1 mm/s
ZED 15/30 < 0.18 mm/s
- Minimum operating air pressure: 3.0 bar



The pneumatic activation of the approach stroke occurs in the same way as for a TOX[®]-Powerpackage with air spring. The power stroke activation is done electrically over a position sensor, as well as the switching on and off of the damping function (solenoid valve **1V5**). A magnetic piston guarantees for the timely switch point. The sensors are to be ordered separately.

The damping effect can be adjusted manual at the flow control valve **1V61** or electrically using a solenoid operated proportional flow control valve **1V62**. As option, this can be monitored over a display **30**.

The return stroke can be activated over a position signal or a force signal at any time due to the integrated check valve independent of the switching position of the solenoid valve **1V5**.

Function:

A hydraulic damping cylinder **20** is mounted on the working rod **10** of a standard TOX[®] pneumatic spring Powerpackage.

During the approach stroke, the oil flows, depending on the cylinder version either through a bi-directional manual flow control valve **1V61** or an electrically operated proportional flow control valve **1V62** from one side of the piston to the opposite side, thereby creating a constant, throttled volume stream **3** and thus a dampened movement.

For a rapid fast approach stroke, the solenoid valve **1V5** can be switched electrically **1** and the oil can flow without being throttled **2**.

Caution:

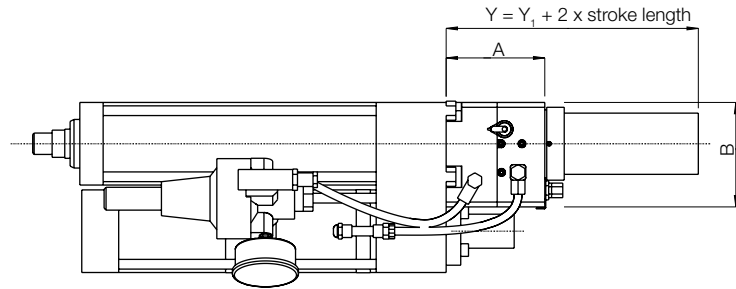
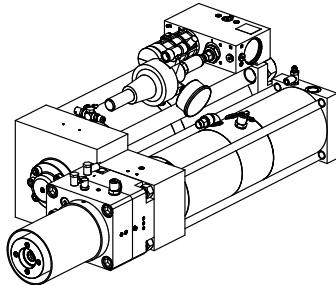
For TOX[®]-Powerpackages with the damping option ZED, the oil pressure can not be used to measure the force and to switch the valve.

Valve data

	Electric 2-way valve	Manual 2-way flow control valve	Electric proportional 2-way flow control valve	Proportional plug amplifier, mounted directly to 1V62
	1V5	1V61	1V62	–
Ambient temperature	Up to +50° C	Up to +50° C	Up to +50° C	–
Hydraulic temperature	Up to +70° C	Up to +70° C	Up to +70° C	–
Mounting orientation	Any	Any	Any	–
Function / operating modet	Solenoid, direct operated, normally closed	Manual, mechanic key actuation via open end wrench and screwdriver Operating distance = 2.5 mm Operating range = 900° (2.5 turns) Adjusting accuracy <= 1 %	Proportional solenoid push type	Proportional amplifier with clocked current regulator. The dither amplitude is variable. Min. and max. solenoid current separately adjustable. Integrated linear ramping. The input free/block allows for the block function. Stabilized output voltage provides an external setpoint device.
Electric parameters	Standard nominal voltage UN = 24VDC Nominal power = 26W Current tolerance +/-10 % dependent on nominal voltage Relative switch-on time 100 % ED	–	Standard nominal voltage UN = 24VDC Max. current IG = 680 mA Relative switch-on time 100 % ED Repeatability <= 2 % * Hysteresis <= 5 % * * under optimum dither signal	Supply voltage UN = 24VDC (Tolerance 22 – 36VDC) Setpoint input 0 – +10 VDC Input resistance >= 100 kOhm Stabilized output voltage 10VDC, max. load 2 mA Dither: Adjustable frequency 60 – 250 Hz Preset at 200 Hz No-load power 0.3W Min. current Imin adjustable 30 – 400 mA Preset at 150 mA Max. current Imax adjustable Imin – 1200 mA Preset at 700 mA Ramp up/down are set by the trimming potentiometers Ramp time 0.25 – 6 sec
Connection type	Cable socket ISO 4400 / DIN 43650	–	Cable socket EN 17501-803 / ISO 4400	Power plug can be rotated 180°, with 1.5 m long cable
Protection class	IP 65 per EN 60529	–	IP 65	IP 65, mounted per DIN 40050

TOX®-Powerpackage Accessories

TOX®-Powerpackage with cutting impact damping ZSD



Type	A	B	Y ₁	Y	For TOX®-Powerpackage type K*/AT with total stroke limiter version 51/81
ZSD 04	101.5	107.5	60	Y = Y ₁ + 2 x stroke length	for K/AT 04... for stroke 100 mm
ZSD 08	101.5	145	67		for K/AT 08... for stroke 100 mm
ZSD 15	120.5	181.5	83		for K/AT 15... for stroke 100 mm
ZSD 30	120.5	251	100		for K/AT 30... for stroke 100 mm
ZSD 50	122.5	295	105		for K/AT 50... for stroke 100 mm
ZSD 75/100	130	395	130		for K/AT 75.../K/AT 100 for stroke 100 mm

Further dimensions for total stroke adjustment on request.

*Type K in pneumatic spring execution Dimensions in mm

Ideal for damping in punching applications and for smooth operation of machines during approach or power strokes. Available for all TOX®-Powerpackages type EK*/AT with total stroke limiter.

Function:

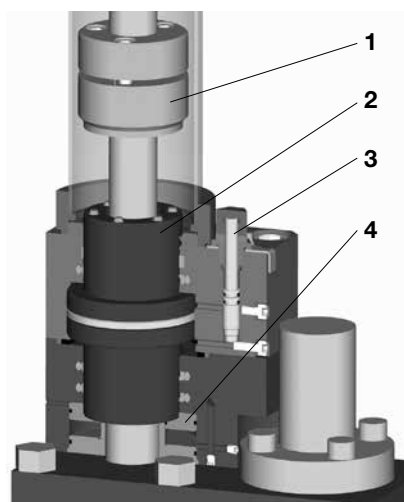
The adjusting nut (total stroke limiter) **1** contacts the damping piston **2** during approach or power stroke depending on the adjustment position. The damping piston **2** compresses hydraulic oil through the throttling needle **3**. The damping effect can be adjusted with the throttling needle **3**. During the return stroke, the damping piston **2** is pushed back to its original position by the pneumatic piston **4** and through the integrated bypass valves. The maximum damping stroke is approximately 7 mm.

Can be mounted in any orientation. The adjustable cutting impact damping works in any position.

The adjustable cutting impact damping is completely installed on the cylinder. No plumbing is required by customer.

Advantages:

- Hydraulic damping of end of stroke
- Cushioning infinitely adjustable
- Total stroke infinitely adjustable
- Can be mounted in any orientation
- Protects tooling and machine
- Reduces noise levels
- Maintenance-free



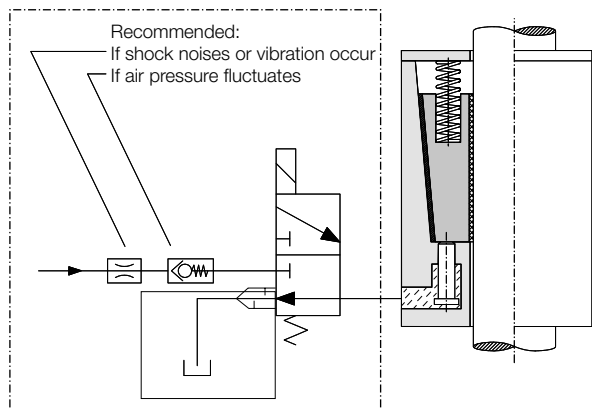
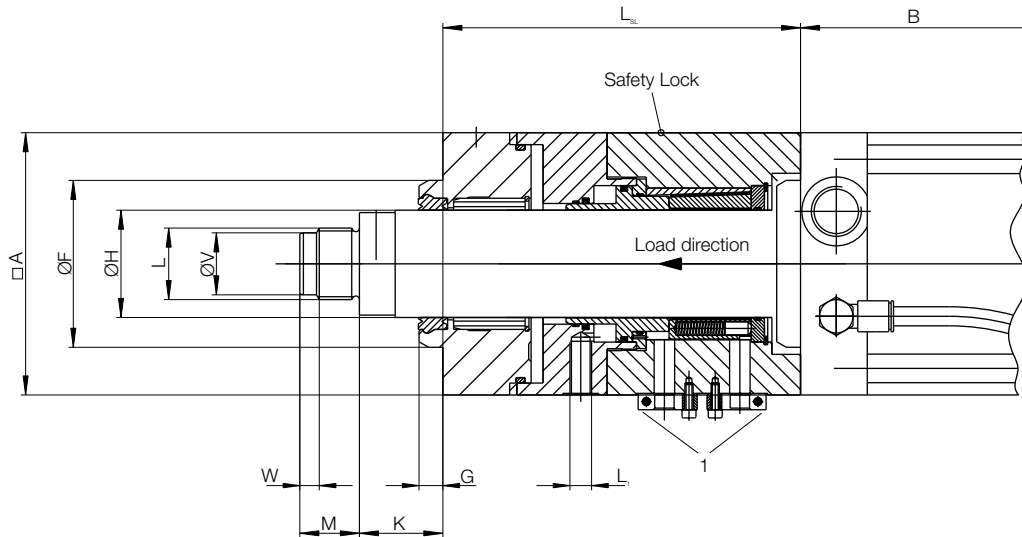
Order no.

K 04.51.200.20 - ZSD

└─ Cutting impactdamping

└─ Order no. TOX®-Powerpackage

TOX®-Powerpackage with holding brake „Safety Lock“ ZSL



----- Not included

Electrical control

The electrical control of single acting locking brakes must be realized by the customer observing all applicable local and national safety regulations for power driven presses.

Clamps 1 for Ø 12 mm sensors are included with unit (sensors are not included). Nominal switching distance of 2 mm (flush mountable).

Type	L _{SL}	L ₁	permissible load* kN	For TOX®-Powerpackage	Required length of sensors
ZSL 04	200	G1/4	10	S/K/X-S/X-K/X-AT 04	45
ZSL 08	200	G1/4	10	S/K/X-S/X-K/X-AT 08	45
ZSL 15	250	G1/4	15	S/K/X-S/X-K/X-AT 15	45
ZSL 30	256	G1/4	20	S/K/X-S/X-K/X-AT 30	70
ZSL 50	275	G3/8	25	S/K/X-S/X-K/X-AT 50	70
ZSL 100	on request	G3/8	on request	S/K/X-S/X-K/X-AT 75, 100	
ZSL 170	414	G3/8	60	S/K/X-S/X-K/X-AT 170	

* Attention: max. retraction force of the cylinder must be considered.

Dimensions in mm

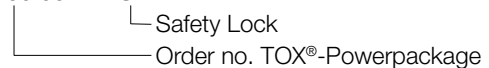
Accessories

to be ordered separately:

- Sensor M12x 1x45
- Sensor M12x 1x70
- Cable box incl. cable (5 m)

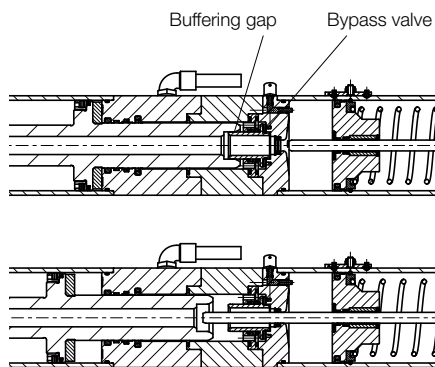
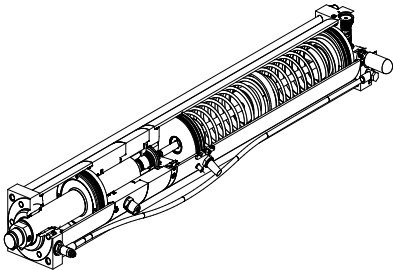
Order no.

S04.100.06D - ZSL



TOX®-Powerpackage Accessories

TOX®-Powerpackage with power bypass ZLB with hydraulic end position cushion ZHD in return stroke



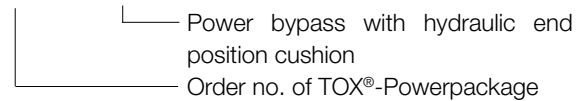
A patented further development of the power bypass ZLB, the integrated hydraulic end position dampening (non adjustable) provides optimum cushioning of the working piston at the end of the return stroke. This feature is especially useful in applications with heavy tooling weight and high cycle speeds. This results in longer tool life and reduced noise level of the TOX®-Powerpackage, even on severe working conditions.

Compatible with:

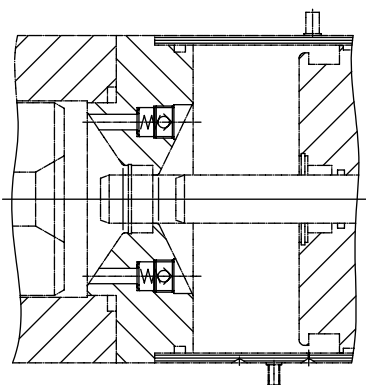
- The TOX®-Powerpackages Q-S, Q-K, X-S, X-K, X-AT, S 4 – S 170, K 75 – K 170 are equipped as standard with bypass and end position dampening.
- TOX®-Powerpackages type K 2 – K 50 are available with ZHD on request. Please note: The overall length of the TOX®-Powerpackage K type will be increased.

Example for ordering

K 4.100.10 - ZHD



TOX®-Powerpackage with power bypass ZLB



In the event of control errors, or in case of special applications (particularly punching operations), the strong acceleration of the working piston after punching through the material may cause an underpressure in the high-pressure oil chamber of the TOX®-Powerpackage, and so lead to malfunctions. Such an underpressure can be prevented with the patented, integrated power bypass system ZLB available for the TOX®-Powerpackage.

It is also possible to use the bypass system for the realization of long power strokes. This allows fast sequential power strokes with only partial back stroke. e.g. for pressing in bushings.

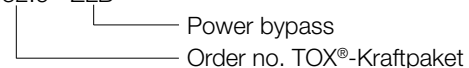
When using the application, please consider the reduced working speed.

Compatible with:

- The ZLB option can be ordered for the types K and S 1 – S 2.
- All other TOX®-Powerpackages are equipped as standard with ZHD or can be ordered with this type of option (see above).

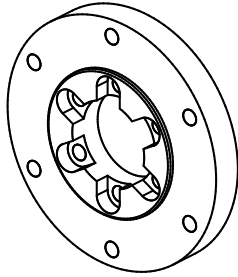
Order no.

S 1.32.6 - ZLB



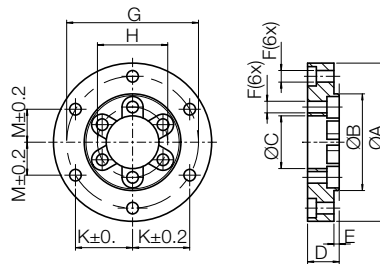
For TOX®-Powerpackages, different mounting options are available:

Front mounting plate ZFV



Compatible with:

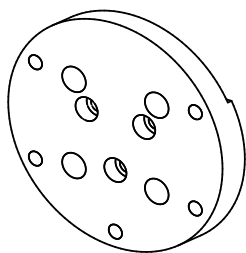
- TOX®-Powerpackages line-Q, line-X and type S/K/AT
- TOX®-Powerpackages with larger intensifier section
 $A_2 > A$: Dimensions on request.



Order no.	For TOX®-Powerpackage	A	B _r	C ^m	D	E	F	G	H	K	M
ZFV 1	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 1	90	55	30	18	3	6.6	75	40	32.5	18.75
ZFV 2	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 2	125	75	40	18	3	9	105	54	45.5	26.25
ZFV 4	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 4	145	85	50	21	3	9	125	64	54.1	31.25
ZFV 8	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 8	180	110	70	24	4	11	155	88	67.1	38.75
ZFV 15	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 15	225	135	75	29	4	18	195	100	84.4	48.75

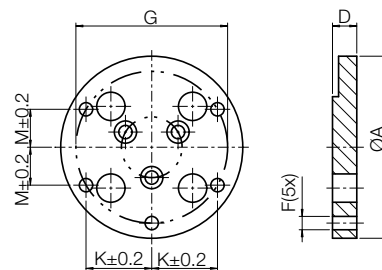
Dimensions in mm

Rear mounting plate ZFH



Compatible with:

- TOX®-Powerpackages type S/K/AT
- Non retrofittable

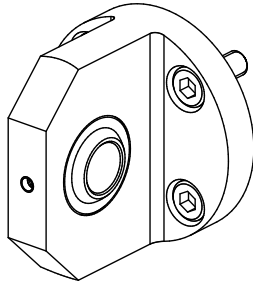


Order no.	For TOX®-Powerpackage	A	B _r	C ^m	D	E	F	G	H	K	M
ZFH 1	S/K/AT 1	90	55	30	18	3	6.6	75	40	32.5	18.75
ZFH 2	S/K/AT 2	125	75	40	18	3	9	105	54	45.5	26.25
ZFH 4	S/K/AT 4	145	85	50	21	3	9	125	64	54.1	31.25
ZFH 8	S/K/AT 8	180	110	70	24	4	11	155	88	67.1	38.75
ZFH 15	S/K/AT 15	225	135	75	29	4	18	195	100	84.4	48.75

Dimensions in mm

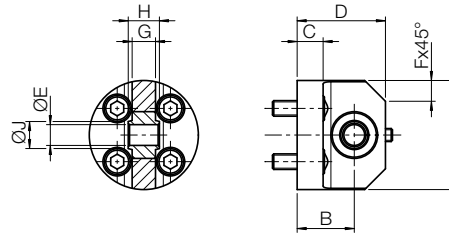
TOX®-Powerpackage Accessories

Rear spherical bearing mount ZGH



Compatible with:

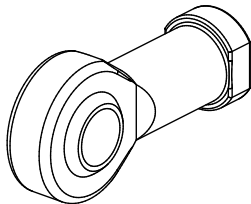
- TOX®-Powerpackages type S/K/AT/X-AT/X-K
- TOX®-Powerpackages with larger intensifier sections
A₂ > A: Dimensions on request.
- Non retrofittable



Order no.	For TOX®-Powerpackage	A	B	C	D	E ^r	F	G	H	J
ZGH 1	S/K/AT/X-K 1	42	22	10	34	8	8	9	12	10.4
ZGH 2	S/K/AT/X-K/X-AT 2	62	30	10	50	12	12	12	16	15.4
ZGH 4	S/K/AT/X-K/X-AT 4	72	40	12	64	16	16	15	21	19.3
ZGH 8	S/K/AT/X-K/X-AT 8	90	45	12	70	22	20	20	28	25.8
ZGH 15	S/K/AT/X-K/X-AT 15	100	50	15	84	30	20	25	37	34.8

Dimensions in mm

Front spherical rod end ZGK

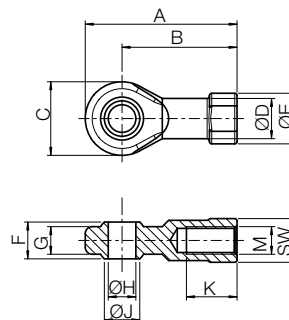


Compatible with:

- Retrofittable for all TOX®-Powerpackages

Attention:

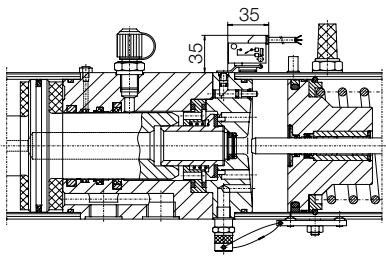
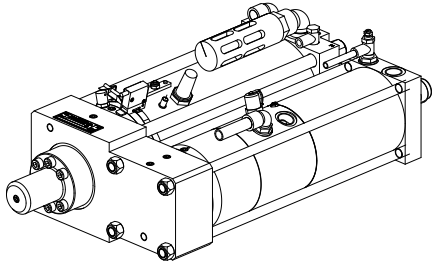
The rod end must be screwed securely against the shoulder on the working piston. Length compensation over the thread is not permissible.



Order no.	For TOX®-Powerpackage	A	B	C	D	E	F	G	H ^{H7}	J	K	M	SW
ZGK 1	S/K/Q-S/Q-K/X-S/X-K/AT 1	66	50	32	17.5	22	16	12	12	15.4	22	M12x1.5	19
ZGK 2	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 2	85	64	42	22	27	21	15	16	19.3	28	M16x1.5	22
ZGK 4	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 4	111	84	54	30	37	28	20	22	25.8	37	M22x2	32
ZGK 8	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 8	145	110	70	40	50	37	25	30	34.8	51	M30x2	41
ZGK 15	S/K/Q-S/Q-K/X-S/X-K/X-AT/AT 15	145	110	70	40	50	37	25	30	34.8	51	M30x2	41

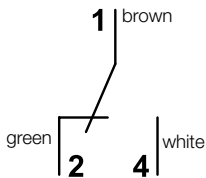
Dimensions in mm

Oil level monitor ZU



Dimensions in mm

Pin assignment switch



Positive stop FUD

A positive stop is required in the TOX®-Powerpackage if the working piston in power stroke meets the internal end stop in the front flange. This is necessary, if the end stop in the power stroke cannot be realized by the tool or the bow. Especially for punching processes, where the working piston moves through to the internal end stop at high speed after punching, a positive stop is recommended.

If the minimum oil level is reached, the indicator pin integrated in the TOX®-Powerpackage actuates a switch (pneumatic or electric). Mounted via steel strip. Manual reset.

Type ZU 01 = potential-free contact set with step function (open/close), contact load rating 0–30VDC, constant current 5 A, cable length 2 m.

Type ZU 02 = 3/2-way valve with locking zero setting (normally open contact) connecting thread M5

Type ZU 03 = as for ZU 02, but with quick connector

Compatible with:

- Can be retrofitted to all TOX®-Powerpackages.

Order no.

- ZU 01 electric
- ZU 02 pneumatic (connecting thread M5)
- ZU 03 pneumatic (quick connector)

Compatible with:

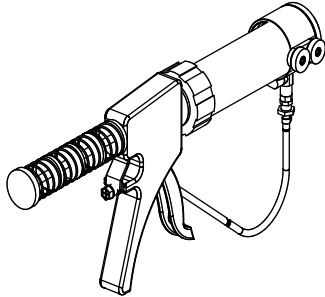
- TOX®-Powerpackages of the series Q-S, Q-K, X-S, X-K, X-AT, RZS, RZK are equipped with a positive stop with elastomer damping by default. For these devices, the positive stop can be used at any time. The elastomer damping occurs approx. 2 mm before impact and the design of the damping allows compression only in power stroke. As a result, the dampening stroke of the TOX®-Powerpackage is reduced by approx. 2 mm in fast approach stroke.
- For the following series, the positive stop FUD is available as an option: S, K, HZL, AT.

Order no.

- S 08.00.100.06 – FUD
 - Positive stop
 - TOX®-Powerpackage

TOX[®]-Powerpackage Accessories

Oil pump ZP



It guarantees the optimum maintenance concept and extended maintenance intervals. For easy, air-free refilling and reduction of the oil volume of the TOX[®]-Powerpackage. Clear body and refill hose allow easy monitoring of the oil level in the pump. Little operator effort required.

Pumping medium: hydraulic oil DIN 51524 HL or HPL with 32 cSt viscosity at 40°C.

- Pump capacity: 9 ml/stroke
- Container filling volume 0.3l
- Max. permissible back pressure 10 bar
- Hose length 800 mm
- Magnetic fixture

Order no.

ZP 20.000

Version for special oil types on request.

Tool set ZWS

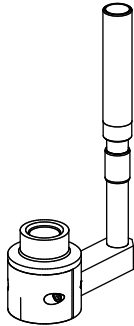


Special tools for seal kit of TOX[®]-Powerpackage facilitate the removal and installation of seals.

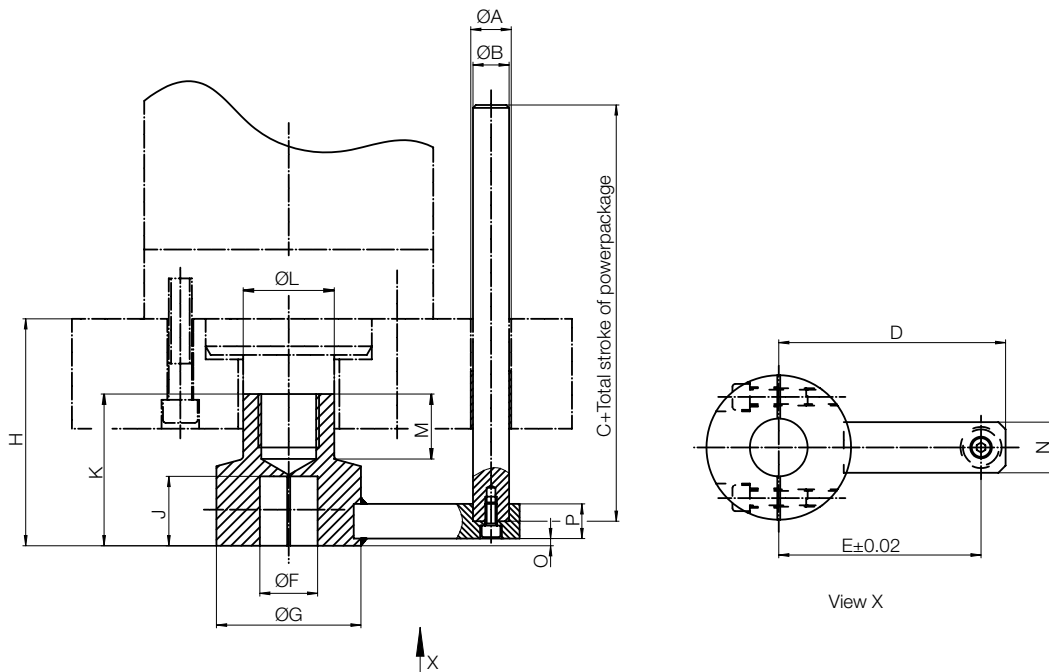
Order no.

ZWS 01

Tool holding fixture with anti-rotation lock V



The guide pin and bushing are included in the delivery package. Please indicate the total travel of the TOX®-Powerpackage when ordering. The center of the guide bushing bore must be set at dimension E from the centerline of the cylinder.

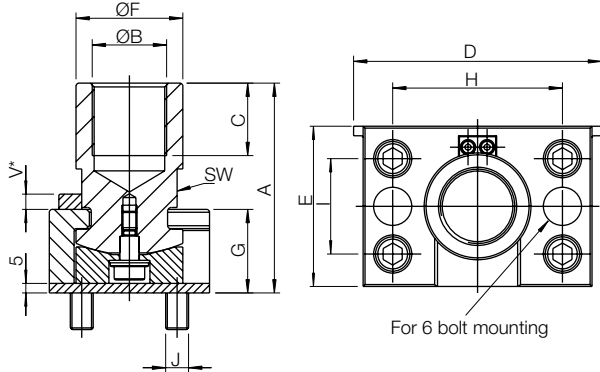


Order no.	For TOX®-Powerpackage	A ^m	B	C	D	E	F ^m	G	H	J	K	L	M	N	O	P
V 1	S/K/AT 1	14	12	60	94	75	20	38	69.0	30	45	16	10	16	5	17
V 2	Q-S/Q-K/X-S/X-K 1 Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 2	14	12	62	109	90	20	38	71.0	30	45	20	10	16	5	17
V 4	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 4	18	16	77	132	110	20	48	88.5	30	60	30	25	25	5	20
V 8	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 8	23	20	105	145	120	40	68	115.0	50	80	45	22	30	5	24
V 15	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 15	23	20	106	165	140	40	68	116.0	50	80	50	23	30	5	24
V 30	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 30	28	25	125	195	170	40	88	137.0	50	90	56	30	35	5	24
V 50	X-S/X-K/S/K/X-AT/AT 50	28	25	145	205	180	40	98	157.0	50	105	63	45	35	5	24
V 75	X-S/X-K 75	28	25	67	255	235	40	98	190.0	50	136	98	-	35	5	24
V 100	X-S/X-K/X-AT 100	28	25	67	255	235	40	98	190.0	50	136	98	-	35	5	24

Dimensions in mm

TOX®-Powerpackage Accessories

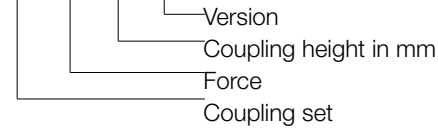
Coupling ZWK



This coupling provides a flexible connection between the TOX®-Powerpackage and die set, thereby preventing any side loads. Includes anti-rotation device. Is threaded directly on the working rod of the TOX®-Powerpackage.

Example for ordering

ZWK 001.060.000

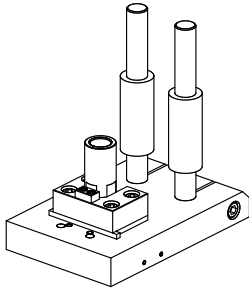


Order no.	For TOX®-Powerpackage	A	ØB	C	D	E	ØF	G	H	I	J	V*	SW	Max. press force kN	Max. retract force kN statically
ZWK 001.060.000		60													
ZWK 001.070.000	S/K/AT 1	70	M12x1.5	16	74	44	22	27.9	43.5	22	4xM6x9	8	19	20	2.5
ZWK 001.080.000		80													
ZWK 002.060.000	Q-S/Q-K/X-S/X-K 1	60													
ZWK 002.070.000	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 2	70	M16x1.5	16	74	44	22	27.9	43.5	22	4xM6x9	8	19	20	2.5
ZWK 002.080.000		80													
ZWK 004.060.000		60													
ZWK 004.070.000		70													
ZWK 004.080.000	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 4	80	M22x2	21	84	52	30	28.0	52.5	30	4xM8x12	8	27	52	3.5
ZWK 004.090.000		90													
ZWK 004.100.000		100													
ZWK 008.070.000		70													
ZWK 008.080.000		80													
ZWK 008.090.000	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 8	90	M30x2	26	108	74	45	31.2	72.0	44	4xM10x15	8	41	108	6.0
ZWK 008.100.000		100													
ZWK 008.110.000		110													
ZWK 008.120.000		120													
ZWK 015.070.000		70													
ZWK 015.090.000		90													
ZWK 015.100.000		100													
ZWK 015.110.000	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 15	110	M30x2	26	108	74	50	33.5	74.0	44	4xM10x15	8	46	192	9.5
ZWK 015.120.000		120													
ZWK 015.140.000		140													
ZWK 015.150.000		150													
ZWK 015.180.000		180													
ZWK 030.110.010		110													
ZWK 030.130.010		130													
ZWK 030.160.010		160													
ZWK 030.180.010	Q-S/Q-K/X-S/X-K/S/K/X-AT/AT 30	180	M39x2	36	130	84	56	43.8	89.0	50	4xM12x19	20	50	325	16.0
ZWK 030.190.010		190													
ZWK 030.210.010		210													
ZWK 030.240.010		240													
ZWK 050.140.010		140													
ZWK 050.160.010		160													
ZWK 050.180.010	X-S/X-K/S/K/X-AT/AT 50	180	M42x2	41	130	84	63	47.2	92.5	56	6xM12x19	20	55	500	20.0
ZWK 050.210.010		210													
ZWK 050.230.010		230													
ZWK 050.240.010		240													
ZWK 075.170.010		170													
ZWK 075.190.010		190													
ZWK 075.210.010		210													
ZWK 075.230.010	X-S/X-K 75	230	M64x2	63	170	124	100	54.5	130.5	90	6xM12x19	25	85	1000	40.0
ZWK 075.250.010	X-S/X-K/X-AT/AT 100	250													
ZWK 075.270.010		270													
ZWK 075.310.010		310													
ZWK 075.330.010		330													
ZWK 200.180.000		180													
ZWK 200.200.000		200													
ZWK 200.220.000		220													
ZWK 200.240.000	X-S/X-K 170	240	M80x2	85	240	190	150	80.5	191.0	140	6xM16x25	25	140	2000	50.0
ZWK 200.260.000		260													
ZWK 200.280.000		280													
ZWK 200.300.000		300													
ZWK 200.320.000		320													

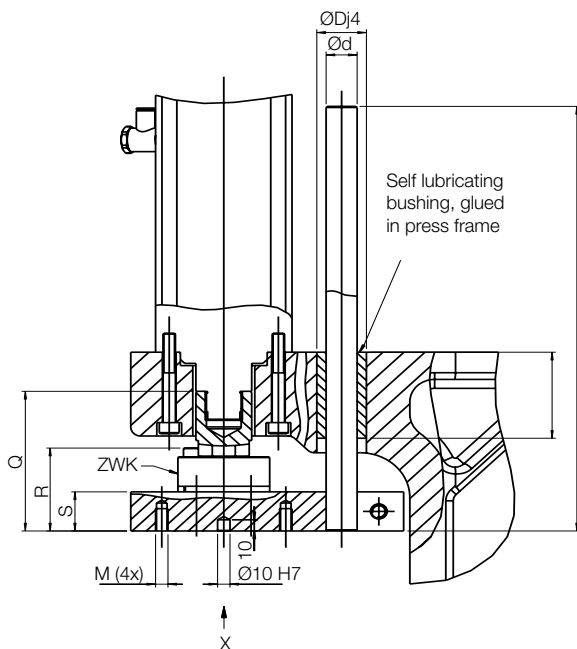
*anti-rotation device (can be removed if necessary)

Dimensions in mm

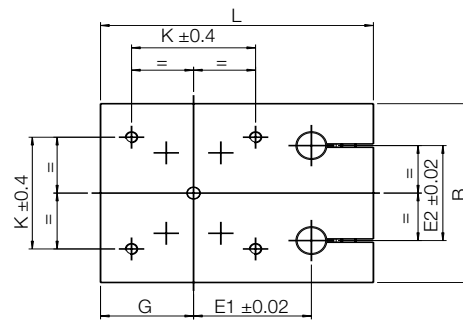
Mini ram guide ZMS with coupling ZWK



The center of the guide bushing bore must be set at dimension E1 from the centerline of the cylinder. The bushings, posts and the coupling ZWK are included in the delivery package. The centering hole allows accurate alignment of the ram plate for finishing work.



View X

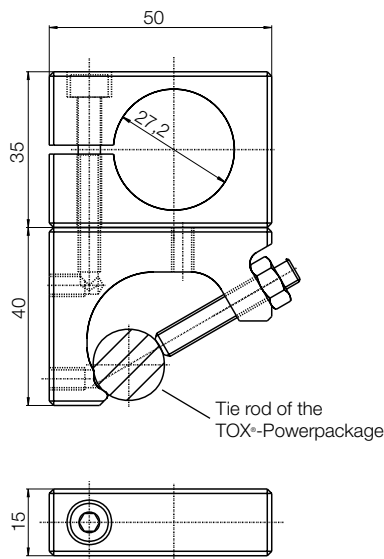


Order no.	For frame type	For TOX®-Powerpackage	Corresponding ZWK	Max. load capacity	L	B	Q	R	S	G	E1	E2	ØD	Ød	K	M	N	T
ZMS 02.02.250-200	MCC 002	Q-S/Q-K/X-S/X-K 1 Q-S/Q-K/X-S/X-K/ S/K/X-AT/AT 2	ZWK 002		140	100	100	65.9	30	45	70	45	32	20	60	M8	340	77
ZMS 02.04.250-200	MCC 002	Q-S/Q-K/X-S/X-K/ S/K/X-AT/AT 4	ZWK 004				100	66.0										
ZMS 04.04.250-200	MCC 004	Q-S/Q-K/X-S/X-K/ S/K/X-AT/AT 4	ZWK 004		207	130	110	66.0	30	62	90	60	32	20	100	M8	360	77
ZMS 04.08.250-200	MCC 004	Q-S/Q-K/X-S/X-K/ S/K/X-AT/AT 8	ZWK 008	see schedule coupling ZWK			110	69.2										
ZMS 08.08.250-200	MCC 008	Q-S/Q-K/X-S/X-K/ S/K/X-AT/AT 8	ZWK 008		220	160	125	74.2	35	75	95	85	40	25	100	M10	380	77
ZMS 08.15.250-200	MCC 008	Q-S/Q-K/X-S/X-K/ S/K/X-AT/AT 15	ZWK 015				125	76.5										
ZMS 15.15.250-200	MCC 015	Q-S/Q-K/X-S/X-K/ S/K/X-AT/AT 15	ZWK 015		240	200	160	81.5	40	95	105	120	40	25	150	M10	415	77
ZMS 15.30.250-200	MCC 015	Q-S/Q-K/X-S/X-K/ S/K/X-AT/AT 30	ZWK 030				170	91.8										

Dimensions in mm

TOX[®]-Powerpackage Accessories

Mounting bracket ZMP 001.002



Dimensions in mm

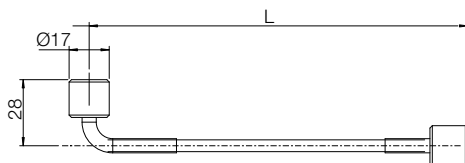
External attachment to the TOX[®]-Powerpackage with mounting plate, including protective caps for the display and the programming keys as well as the HP measuring terminal.

Accessories

to be ordered separately:

- Two-piece fastening strap with two screws M5, hole distance 44 mm
- ZMP 001.002
Mounting plate for attachment to the service side of TOX[®]-Powerpackage
- HP measuring hose ZHM 630; for connection in case the pressure switch is mounted in other position.
Connection 1 x 90°, compl. assem-bled, filled and bled, secured against leaking of oil (optional 400, 1000, 1500, 2000 mm)

High-pressure measuring hose ZHM 630



Pressure range up to 400 bar. Available lengths: 400, 630, 1000, 1500, 2000, 2500, 3000, 3500 mm. On request also available with 90° end connectors on both sides or straight end connectors on both sides, up to L = 2000 mm.

Attention:

Due to the compressibility of the oil, the following loss of power stroke occurs when the device is fitted to the TOX[®]-Powerpackage (given a hose length of 400 mm):

- Q-S/X-S 1/Q-K/X-K 1 = 0.8 mm,
- Q-S/X-S 2/Q-K/X-K 2 = 0.5 mm,
- Q-S/X-S 4/Q-K/X-K 4 = 0.25 mm,
- Q-S/X-S 8/Q-K/X-K 8 = 0.13 mm,
- Negligible for larger TOX[®]-Powerpackages

Order no.

ZHM 630-90

└─ Connection 90°
└─ Length 630 mm