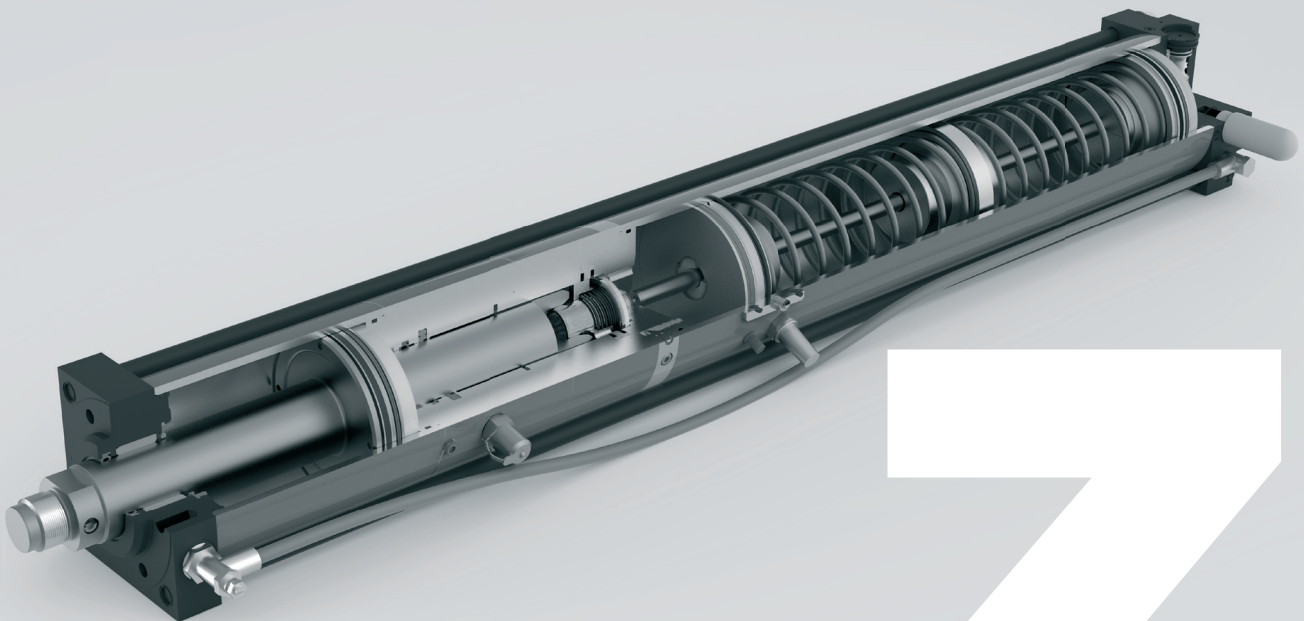


TOX®-Powerpackage Accessories



Data
sheet
10.10

2017/11



TOX® PRESSOTECHNIK GmbH & Co. KG
Riedstrasse 4
D-88250 Weingarten

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

TOX®-Powerpackage Accessories

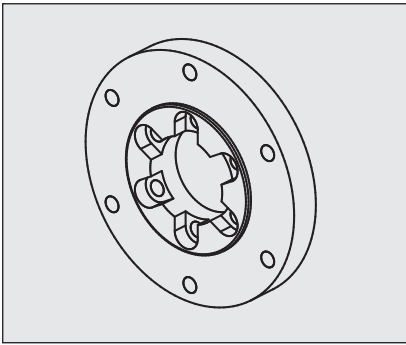
Accessories for TOX®-Powerpackages

Mounting accessories ZFV, ZFH	3
Mounting accessories ZGH, ZGK	4
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Oil level monitor ZU	6
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Mini ram guide ZMS	16
Mounting bracket ZMP, High-pressure measuring hose ZHM	17

Mounting accessories

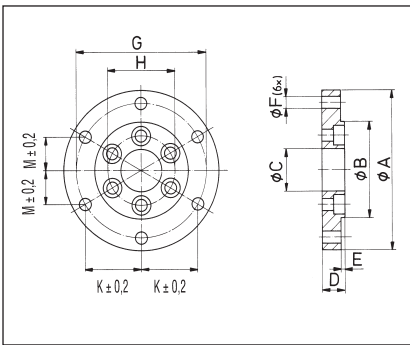
For TOX®-Powerpackages, different mounting options are available:

Front mounting plate **ZFV**



Compatible with:

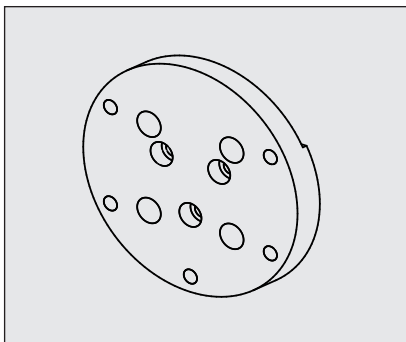
- TOX®-Powerpackages line-Q, line-X and type S/K/AT
- TOX®-Powerpackages with larger intensifier section $A_2 > A$: Dimensions on request.



Order no.	for TOX®-Powerpackage	A	B ₁₇	C ^{H8}	D	E	F	G	H	K	M
ZFV 1	S/K/AT 1	90	55	30	18	3	6,6	75	40	32.5	18.75
ZFV 2	S/K/AT 2	125	75	40	18	3	9	105	54	45.5	26.25
ZFV 4	S/K/AT 4	145	85	50	21	3	9	125	64	54.1	31.25
ZFV 8	S/K/AT 8	180	110	70	24	4	11	155	88	67.1	38.75
ZFV 15	S/K/AT 15	225	135	75	29	4	18	195	100	84.4	48.75

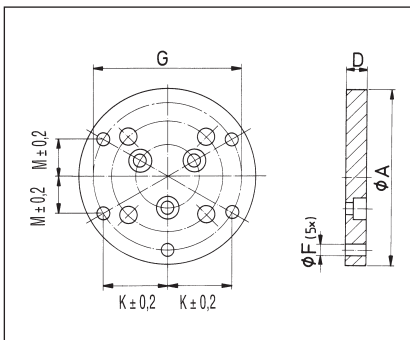
Dimensions in mm

Rear mounting plate **ZFH**



Compatible with:

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

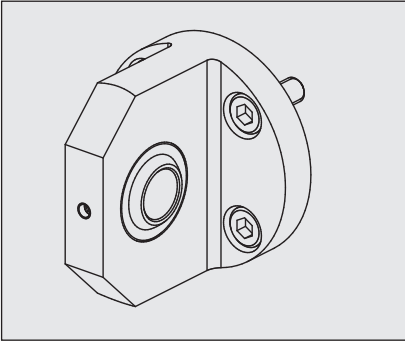


Order no.	for TOX®-Powerpackage	A	B ₁₇	C ^{H8}	D	E	F	G	H	K	M
ZFH 1	S/K/AT 1	90	55	30	18	3	6,6	75	40	32.5	18.75
ZFH 2	S/K/AT 2	125	75	40	18	3	9	105	54	45.5	26.25
ZFH 4	S/K/AT 4	145	85	50	21	3	9	125	64	54.1	31.25
ZFH 8	S/K/AT 8	180	110	70	24	4	11	155	88	67.1	38.75
ZFH 15	S/K/AT 15	225	135	75	29	4	18	195	100	84.4	48.75

Dimensions in mm

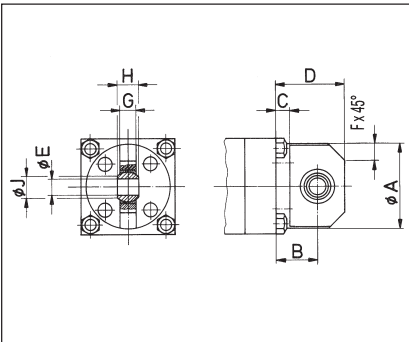
Mounting accessories

Rear spherical bearing mount **ZGH**



Compatible with:

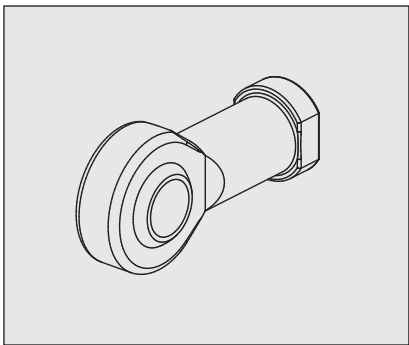
- TOX®-Powerpackages type S/K/AT/X-AT/X-K
- TOX®-Powerpackages with larger intensifier sections $A_2 > A$: Dimensions on request.
- Non retrofittable



Order no.	for TOX®-Power-package	A	B	C	D	E ^{H7}	F	G	H	J
ZGH 1	S/K 1	42	22	10	34	8	8	9	12	10.4
ZGH 2	S/K 2	62	30	10	50	12	12	12	16	15.4
ZGH 4	S/K 4	72	40	12	64	16	16	15	21	19.3
ZGH 8	S/K 8	90	45	12	70	22	20	20	28	25.8
ZGH 15	S/K 15	100	50	15	84	30	20	25	37	34.8

Dimensions in mm

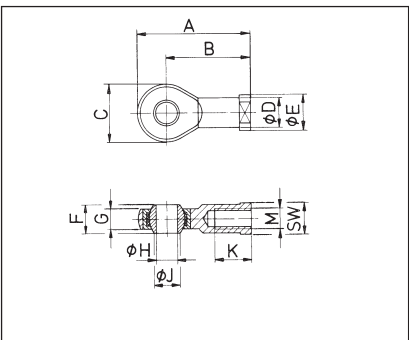
Front spherical rod end **ZGK**



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.



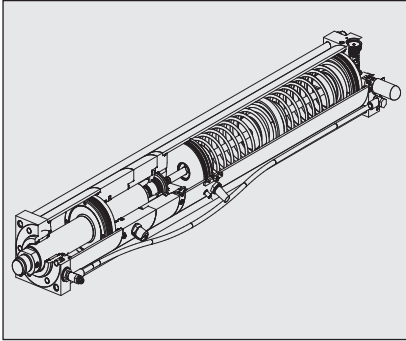
Order no.	for TOX®-Power-package	A	B	C	D	E	F	G	H ^{H7}	J	K	M	SW
ZGK 1	S/K 1	66	50	32	17,5	22	16	12	12	15.4	22	M12x1.5	19
ZGK 2	S/K 2	85	64	42	22	27	21	15	16	19.3	28	M16x1.5	22
ZGK 4	S/K 4	111	84	54	30	37	28	20	22	25.8	37	M22x2	32
ZGK 8	S/K 8	145	110	70	40	50	37	25	30	34.8	51	M30x2	41
ZGK 15	S/K 15	145	110	70	40	50	37	25	30	34.8	51	M30x2	41

Dimensions in mm

Power bypass with hydraulic end position cushion ZHD

Power bypass ZLB

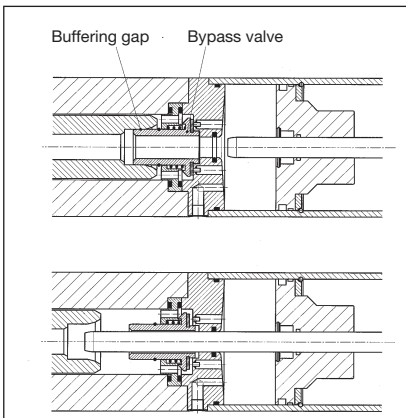
TOX®-Powerpackage with power bypass with hydraulic end position cushion ZHD in return stroke



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.

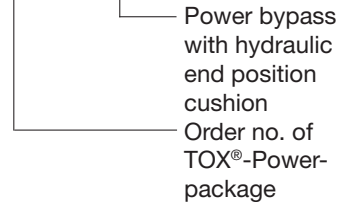
Compatible with:

- 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.

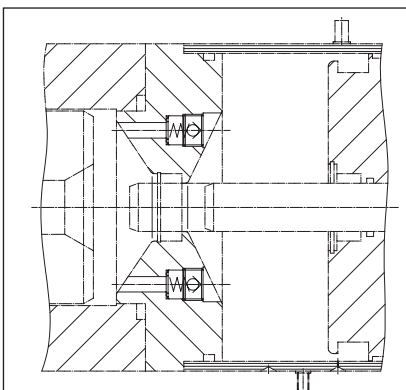


Example for ordering

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.

Compatible with:

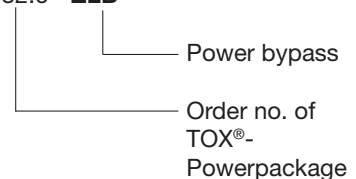
- The ZLB option can be ordered for the types S 1 – S 2 and K 1.
- All other TOX®-Powerpackages are equipped as standard with ZHD or can be ordered with this type of option (see above).

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.

Order no.

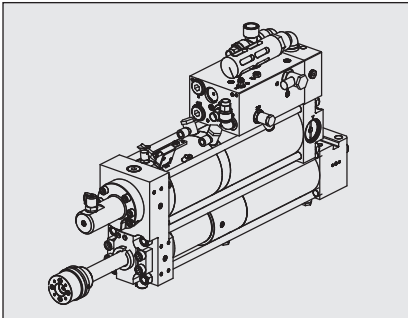
S 1.32.6 - ZLB



Oil level monitor ZU

Positive stop with elastomeric damping in forward stroke FUD

Oil level monitor ZU



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

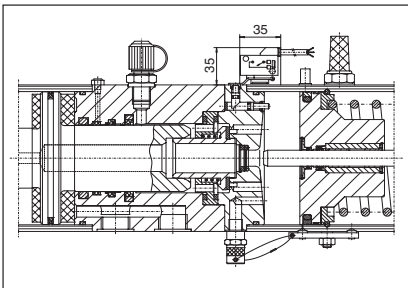
Type ZU 03 = as for ZU 02, but with quick connector

Compatible with:

Can be retrofitted to all TOX®-Powerpackages.

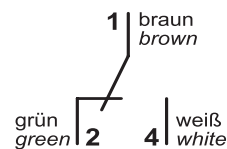
Order no.

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



Dimensions in mm

Pin assignment switch



Positive stop FUD

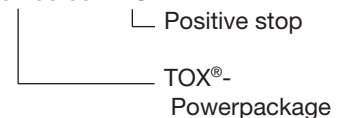
A positive stop is required in the TOX®-Powerpackage if the working piston in power stroke meets the internal end stop in the front flange. This is necessary, if the end stop in the power stroke cannot be realized by the tool or the bow. Especially for punching processes, where the working piston moves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

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, HZO.

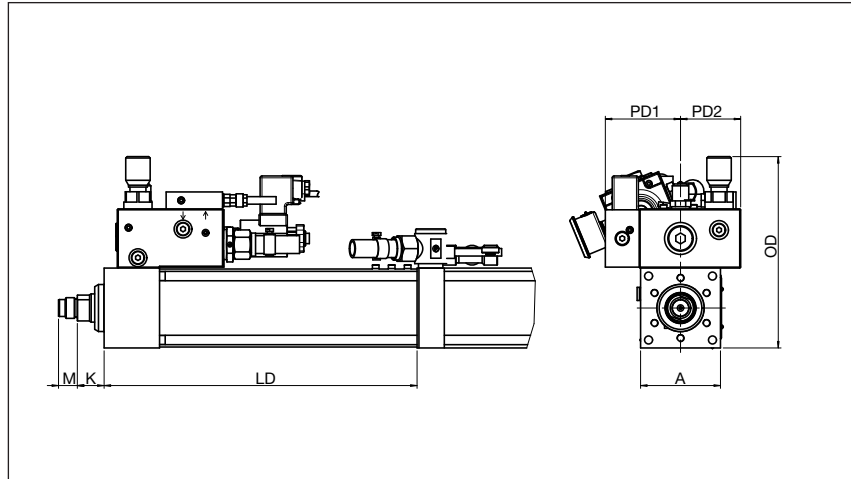
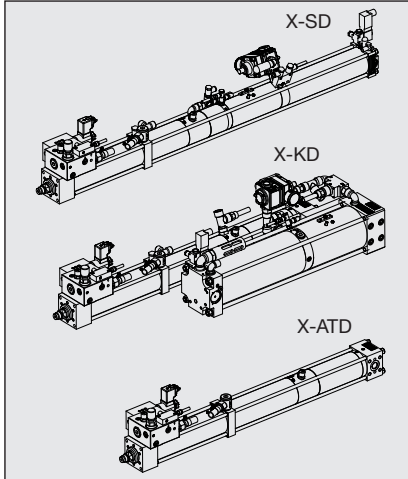
Order no.

S 08.00.100.06 – FUD



TOX®-Powerpackage with adjustable damping ZED

Technical data



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	Total stroke [mm]	at 6 bar air pressure					L _D [mm]	O _D [mm]	P _{D1} [mm]	P _{D2} [mm]	For TOX®- Powerpackage type
		Approach force [daN]	Return force [daN]	Average approach speed* [mm/s]	Average return speed* [mm/s]	Average power stroke speed* [mm/s]					
ZED 02	200	116	100	390	383	96	330	146	80	64	X-S/X-K/X-AT 02
	300						430	146	80	64	
ZED 04	200	156	132	345	299	58	335	154	80	64	X-S/X-K/X-AT 04
	300						435	154	80	64	
ZED 08	200	297	249	210	252	31	350	166	72	72	X-S/X-K/X-AT 08
	300						450	166	72	72	
ZED 15	200	465	328	296	241	56	359	198.5	84	84	X-S/X-K/X-AT 15
	300						459	198.5	84	84	
ZED 30	200	762	464	257	221	36	359	221	84	84	X-S/X-K/X-AT 30
	300						459	221	84	84	

Tolerance of ±5 daN 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 100 mm, the cylinder with 200 mm stroke equal press force.

Scope of delivery:

- Stroke sensing ZHU (without sensors).
- Power bypass ZHD with end position damping for all series X-S, X-K, X-AT and starting from S 04. For S 02 and K 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:

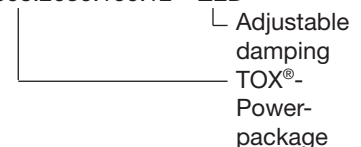
For Powerpackages of the series S, K and AT, the total stroke is reduced by 10 mm due to the signal transducer of the stroke monitoring.

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 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.

Manual flow control valve:

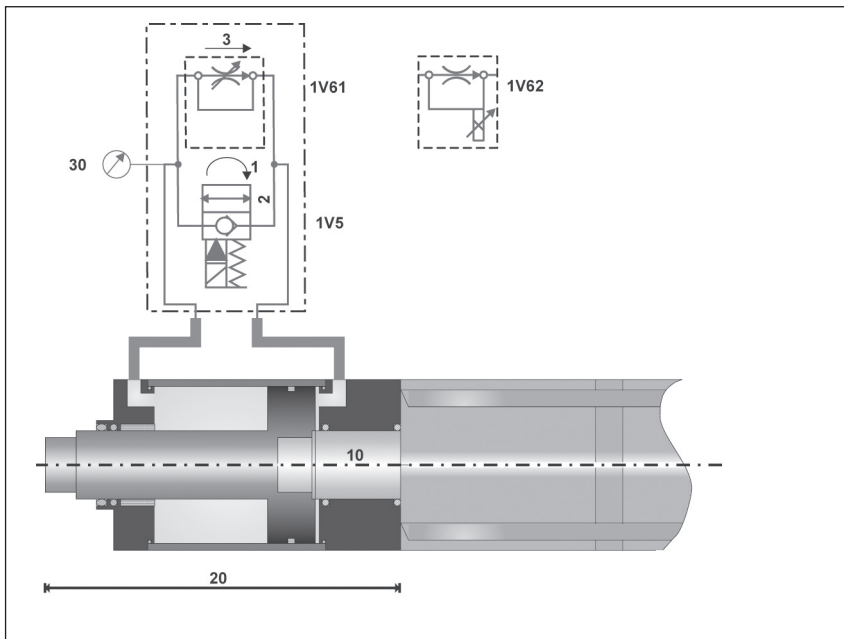
- Reaction time and reaction distance when switching the damping during approach:
Reaction time
ZED 02/04/08 < 0.07 sec
ZED 15/30 < 0.14 sec
- Reaction distance dependent on the approach speed
ZED 02/04/08 min. 6 mm to max. 34 mm
ZED 15/30 min. 6 mm to max. 38 mm

(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

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



Function:

A hydraulic damping cylinder 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 or an electrically operated proportional flow control valve from one side of the piston to the opposite side, thereby creating a constant, throttled volume stream and thus a dampened movement.

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

Controls:

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 either manually using 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).

Caution:

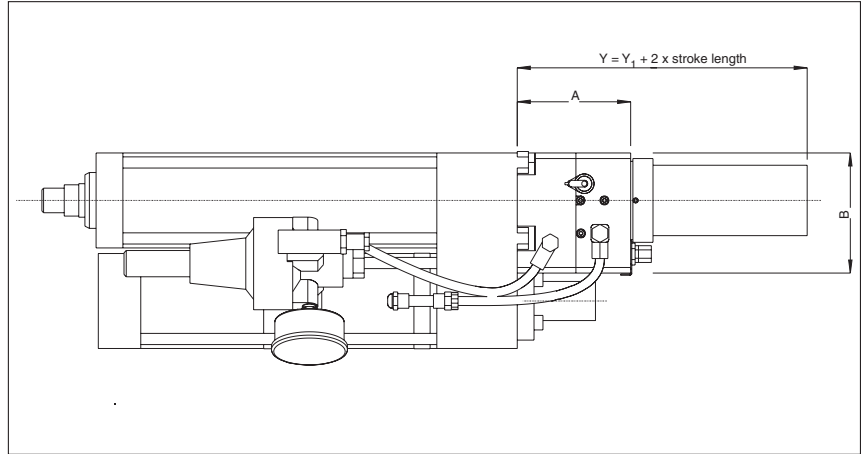
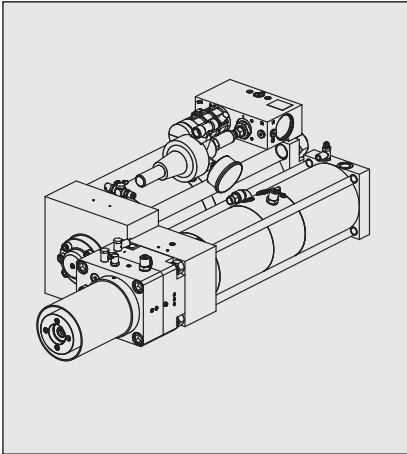
For TOX[®]-Powerpackages with the damping option ZED, the oil pressure can not be used to measure the force and to switch the valve.

TOX®-Powerpackage with adjustable damping ZED

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 mode	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 = 24 VDC Nominal power = 26 W Current tolerance +/-10 % dependent on nominal voltage Relative switch-on time 100 % ED		Standard nominal voltage UN = 24 VDC Max. current IG = 680 mA Relative switch-on time 100 % ED Repeatability <= 2 % * Hysteresis <= 5 % * * under optimum dither signal	Supply voltage UN = 24 VDC (Tolerance 22 – 36 VDC) Setpoint input 0 – +10 VDC Input resistance >= 100 kOhm Stabilized output voltage 10 VDC, max. load 2 mA Dither: Adjustable frequency 60 – 250 Hz Preset at 200 Hz No-load power 0.3 W 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 with cutting impact damping ZSD



Type	A	B	Y ₁	Y	For TOX [®] -Powerpackage type EK/AT with total stroke limiter version 51/81
ZSD 04	101.5	107.5	60	Y = Y ₁ + 2 x stroke length	for EK/AT 04... for stroke 100 mm
ZSD 08	101.5	145	67		for EK/AT 08... for stroke 100 mm
ZSD 15	120.5	181.5	83		for EK/AT 15... for stroke 100 mm
ZSD 30	120.5	251	100		for EK/AT30... for stroke 100 mm
ZSD 50	122.5	295	105		for EK/AT 50... for stroke 100 mm
ZSD 75/100	130	395	130		for EK/AT 75...EK/AT 100 for stroke 100 mm

Dimensions in mm

Further dimensions for total stroke adjustment on request.

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.

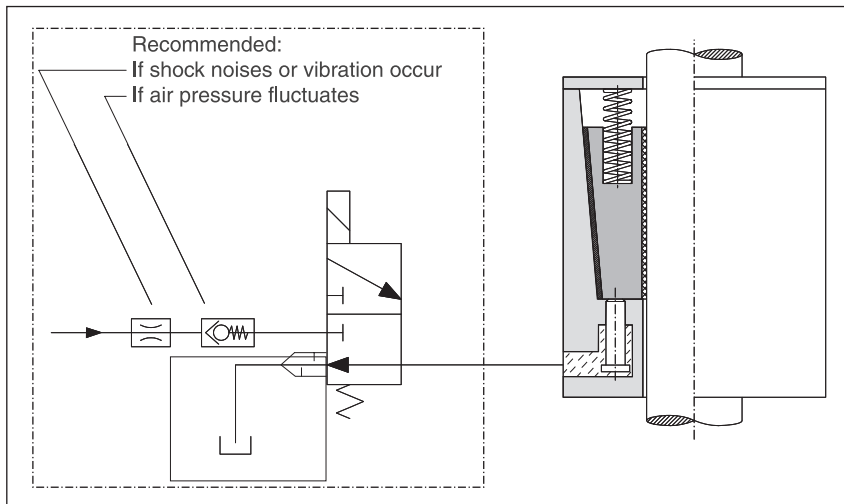
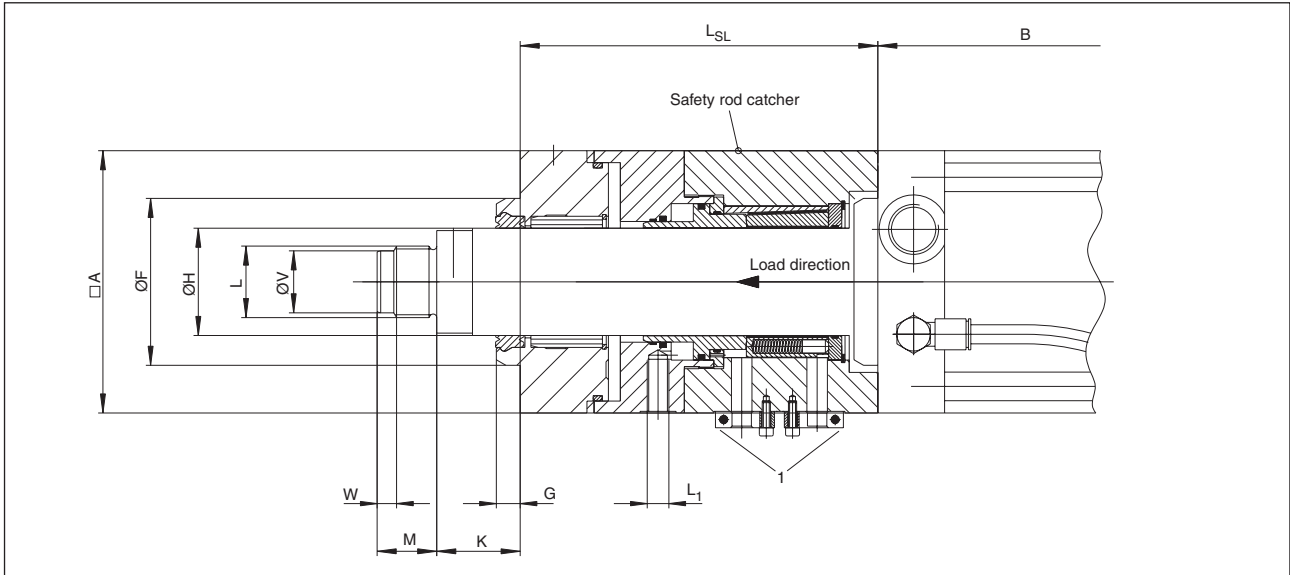
Order no.

K 04.51.200.20 - ZSD

└─ Cutting impact damping

└─ Order no. TOX[®]-Powerpackage

TOX®-Powerpackage with Safety Lock ZSL



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.

----- Not included

Clamps 1 for Ø2mm sensors are included with unit (sensors are not included).
Nominal switching distance of 2 mm (flush mountable).

Type	L _{SL} [mm]	L ₁	permissible load* [kN]	For TOX®-Powerpackage	required length of sensors [mm]
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 100	
ZSL 170	414	G3/8	60	S/K/X-S/X-K/X-AT 170	

Order no.

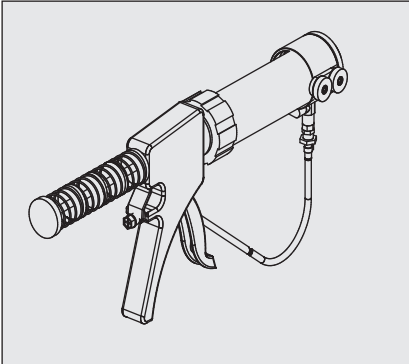
S04.100.06D - ZSL
 └─ Safety Rod Catcher
 └─ Order no. TOX®-Powerpackage

Accessories (to be ordered separately):

- Sensor M12 x 1x45
- Sensor M12 x 1x70
- Cable box incl. cable (5m)

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

Oil pump ZP Tool set ZWS



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 for seal kit of TOX®-Powerpackage

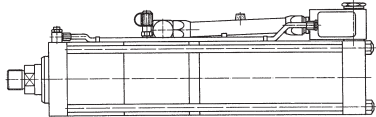
Special tools facilitate the removal and installation of seals. Including documentation.

Order no.

ZWS 01

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.

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

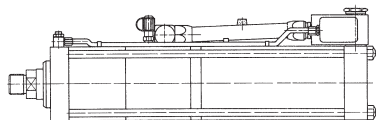
TOX®-Powerpackages are used in industrial food manufacturing, processing, filling and packaging machines, as well as in the pharmaceutical and cosmetics industry.

Order no.
S 1.32.6 - **ZLM**

└─ Food-grade version

└─ 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 chromium-plated, 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)

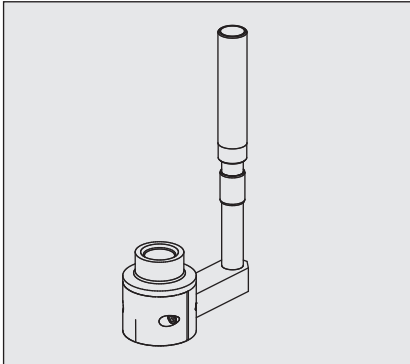
Order no.
S 1.32.6 - **ZRO**

└─ Anti-rust version

└─ Order no. of TOX®-Powerpackage

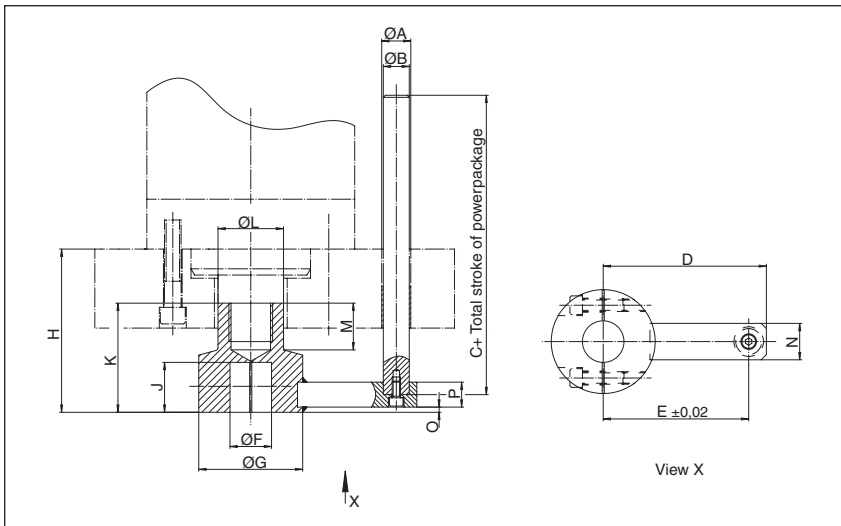
On request, we can provide TOX®-Powerpackages as stainless steel version. Please contact us!

Tool holding fixture with anti-rotation lock V



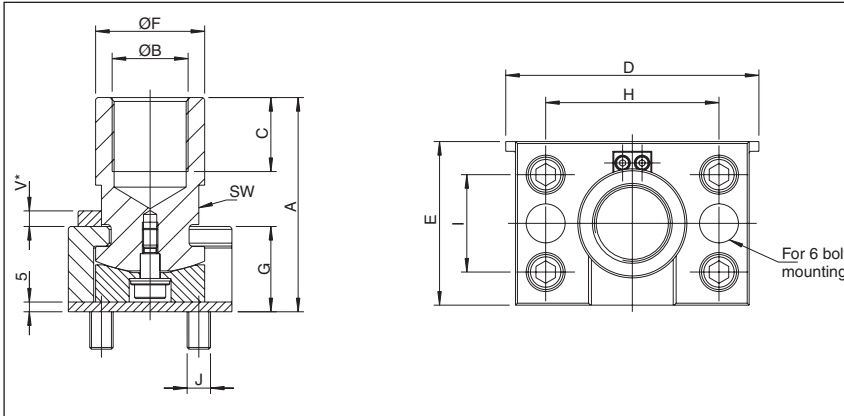
Tool holding fixture with anti-rotation lock V

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 ^{H7}	B	C	D	E	F ^{H7}	G	H	J	K	L	M	N	O	P
V 1	S 1/K 1	14	12	60	94	75	20	38	69.0	30	45	16	10	16	5	17
V 2	S 2/K 2	14	12	62	109	90	20	38	71.0	30	45	20	10	16	5	17
V 4	S 4/K 4	18	16	77	132	110	20	48	88.5	30	60	30	25	25	5	20
V 8	S 8/K 8	23	20	105	145	120	40	68	115.0	50	80	45	22	30	5	24
V 15	S 15/K 15	23	20	106	165	140	40	68	116.0	50	80	50	23	30	5	24
V 30	S 30/K 30	28	25	125	195	170	40	88	137.0	50	90	56	30	35	5	24
V 50	S 50/K 50	28	25	145	205	180	40	98	157.0	50	105	63	45	35	5	24
V 75	S 75/-	28	25	67	255	235	40	98	190.0	50	136	98	-	35	5	24
V 100	S 100/-	28	25	67	255	235	40	98	190.0	50	136	98	-	35	5	24

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

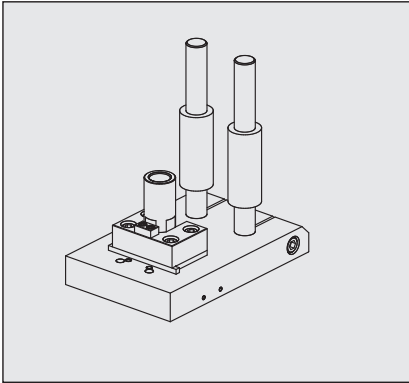
ZWK 001.060.000
 ↳ Version
 ↳ Coupling height in mm
 ↳ Force
 ↳ Coupling set

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]
ZWK 001.060.000	S 1/K 1	60	M12x1,5	16	74	44	22	27.9	43.5	22	4xM6x9	8	19	20	2.5
ZWK 001.070.000															
ZWK 001.080.000															
ZWK 002.060.000	S 2/K 2	60	M16x1,5	16	74	44	22	27.9	43.5	22	4xM6x9	8	19	20	2.5
ZWK 002.070.000															
ZWK 002.080.000															
ZWK 004.060.000	S 4/K 4	60	M22x2	21	84	52	30	28.0	52.5	30	4xM8x12	8	27	52	3.5
ZWK 004.070.000															
ZWK 004.080.000															
ZWK 004.090.000															
ZWK 004.100.000															
ZWK 008.070.000	S 8/K 8	70	M30x2	26	108	74	45	31.2	72.0	44	4xM10x15	8	41	108	6.0
ZWK 008.080.000															
ZWK 008.090.000															
ZWK 008.100.000															
ZWK 008.110.000															
ZWK 008.120.000															
ZWK 015.070.000	S 15/K 15	70	M30x2	26	108	74	50	33.5	74.0	44	4xM10x15	8	46	192	9.5
ZWK 015.090.000															
ZWK 015.100.000															
ZWK 015.110.000															
ZWK 015.120.000															
ZWK 015.140.000															
ZWK 015.150.000															
ZWK 015.180.000															
ZWK 030.110.010	S 30/K 30	110	M39x2	36	130	84	56	43.8	89.0	50	4xM12x19	20	50	325	16.0
ZWK 030.130.010															
ZWK 030.160.010															
ZWK 030.180.010															
ZWK 030.190.010															
ZWK 030.210.010															
ZWK 030.240.010															
ZWK 050.140.010	S 50/K 50	140	M42x2	41	130	84	63	47.2	92.5	56	6xM12x19	20	55	500	20.0
ZWK 050.160.010															
ZWK 050.180.010															
ZWK 050.210.010															
ZWK 050.230.010															
ZWK 050.240.010															
ZWK 075.170.010	S 75/K 75 S 100/K 100	170	M64x2	63	170	124	100	54.5	130.5	90	6xM12x19	25	85	1000	40.0
ZWK 075.190.010															
ZWK 075.210.010															
ZWK 075.230.010															
ZWK 075.250.010															
ZWK 075.270.010															
ZWK 075.310.010															
ZWK 075.330.010															
ZWK 200.180.000	S 170/K 170	180	M80x2	85	240	190	150	80.5	191.0	140	6xM16x25	25	140	2000	50.0
ZWK 200.200.000															
ZWK 200.220.000															
ZWK 200.240.000															
ZWK 200.260.000															
ZWK 200.280.000															
ZWK 200.300.000															
ZWK 200.320.000															

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

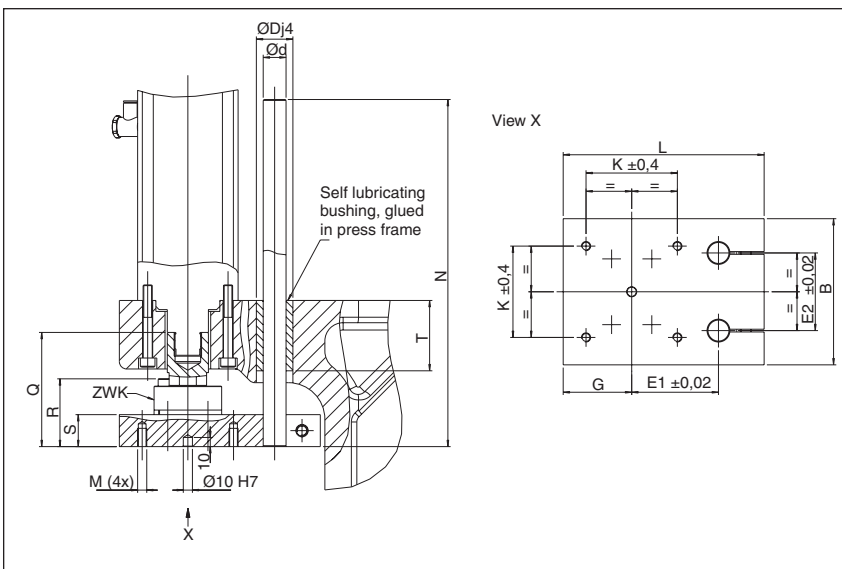
Dimensions in mm

Mini ram guide ZMS



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.



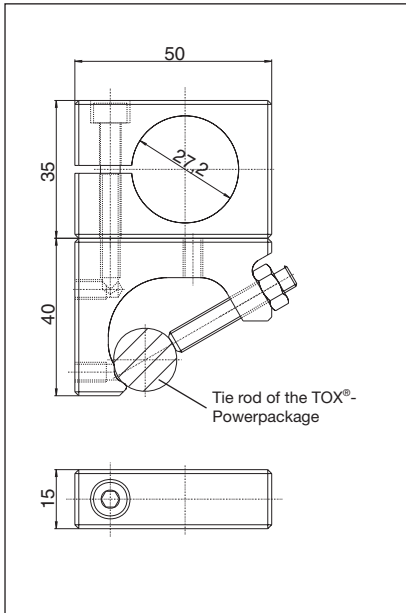
Order no.	for frame type	For TOX®- Power-package	corresponding ZWK	max. load capacity	L	B	Q	R	S	G	E1	E2	ØD	Ød	K	M	N	T	
ZMS 02.02.250-200	MCC 002	S 2/K 2	ZWK 002	see schedule coupling ZWK	140	100	100	65.9	30	45	70	45	32	20	60	M8	340	77	
ZMS 02.04.250-200	MCC 002	S 4/K 4	ZWK 004		207	130	110	66.0	30	62	90	60	32	20	100	M8	360	77	
ZMS 04.04.250-200	MCC 004	S 4/K 4	ZWK 004		220	160	125	74.2	35	75	95	85	40	25	100	M10	380	77	
ZMS 04.08.250-200	MCC 004	S 8/K 8	ZWK 008		240	200	160	81.5	40	95	105	120	40	25	150	M10	415	77	
ZMS 08.08.250-200	MCC 008	S 8/K 8	ZWK 008																
ZMS 08.15.250-200	MCC 008	S15/K15	ZWK 015																
ZMS 15.15.250-200	MCC 015	S15/K15	ZWK 015																
ZMS 15.30.250-200	MCC 015	S30/K30	ZWK 030																

Dimensions in mm

Mounting bracket ZMP

High-pressure measuring hose ZHM

Mounting bracket ZMP 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

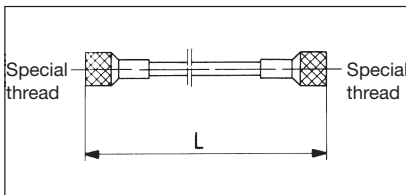
- HP measuring hose ZHM 630; for connection in case the pressure switch is mounted in other position ZHM 630-90

└── connection 90°
└── length 630 mm

Connection 1 x 90°, compl. assembled, filled and bled, secured against leaking of oil (optional 400, 1000, 1500, 2000 mm)

- cable box with cable (5 m)

High-pressure measuring hose ZHM 630



Pressure range up to 400 bar
Available lengths: 400, 630, 1000, 1500, 2000, 2500, 3000, 3500 mm.
Also available with 90° end connectors up to 2000 mm length.

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):

- S 1/K 1 = 0.8 mm,
- S 2/K 2 = 0.5 mm,
- S 4/K 4 = 0.25 mm,
- S 8/K 8 = 0.13 mm,
- negligible for larger TOX®-Powerpackages

Order no.	Length
ZHM	see text
Order example:	ZHM 630