

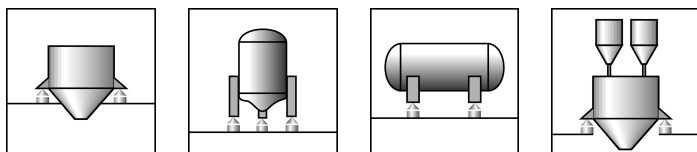


# Z6... Load cells

## Special features



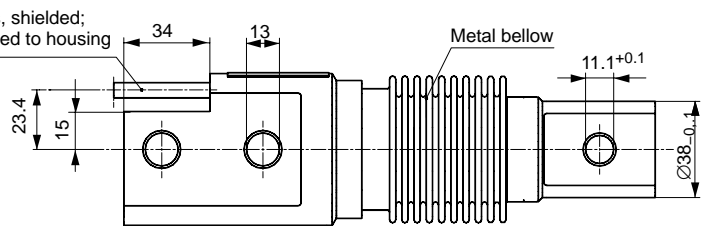
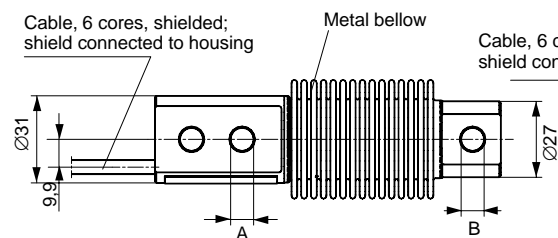
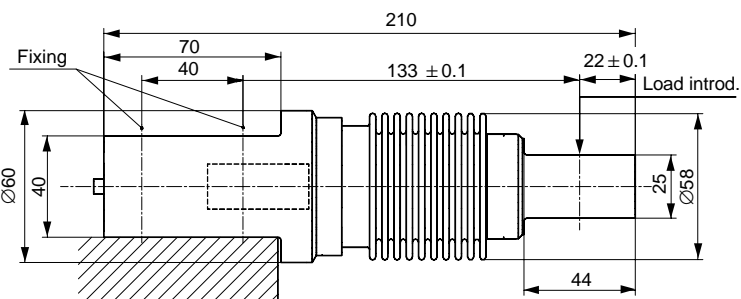
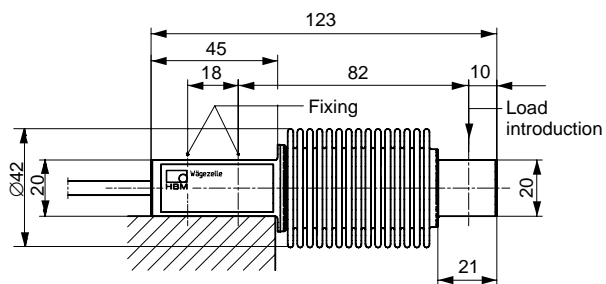
- Welded on metal bellow
- Max. capacities 5 kg...1 t
- Load cells and mounting aids entirely made from stainless material
- Complies with OIML R60 regulations up to 6000 d
- Six-wire circuit
- Optimized for parallel connection with corner-preadjustment
- Meets today EMC/ESD requirements according to EN 45501
- Explosion proof version acc. to ATEX 95 optional



Dimensions (in mm; 1 mm = 0.03937 inches)

Z6; Max. capacities 5 kg...500 kg

Z6; Max. capacity 1 t



	A	B
5...200 kg	8.2	8.2
500 kg	10.5	11.1



## Specifications

Type		Z6FD1	Z6FC3	Z6FC3MI	Z6FC4	Z6FC6			
Accuracy class according to OIML R 60		D1	C3	C3/M17.5	C4	C6			
Maximal numbers of load cell verif. intervals ( $n_{LC}$ )		1000	3000	3000	4000	6000			
Max. capacity ( $E_{max}$ )	kg	5; 10; 20; 50; 100; 200; 500	10; 20; 50; 100; 200; 500	50; 100; 200	20; 50; 100; 200; 500	50; 100; 200;			
	t	1	1	-	-	-			
Minimum load cell verification interval ( $v_{min}$ )	% of $E_{max}$	0.0360	0.0090	0.0066					
Min. dead load output return ( $D_{DR}$ )		-	-	$0.5 \cdot E_{max} / 7500$	-	-			
Sensitivity ( $C_n$ )	mV/V	2							
Tolerance on sensitivity	%	+1; -0.1	$\pm 0.05^1)$						
Temperature effect on sensitivity ( $TK_C$ ) <sup>2)</sup>	% of $C_n$	$\pm 0.0500$	$\pm 0.0080$	$\pm 0.0080$	$\pm 0.0070$	$\pm 0.0040$			
Temperature effect on zero balance ( $TK_0$ )	% of $C_n / 10$ K	$\pm 0.0500$	$\pm 0.0125$	$\pm 0.0093$	$\pm 0.0093$	$\pm 0.0093$			
Hysteresis error ( $d_{hy}$ ) <sup>2)</sup>		$\pm 0.0500$	$\pm 0.0170$	$\pm 0.0066$	$\pm 0.0130$	$\pm 0.0080$			
Linearity deviation ( $d_{lin}$ ) <sup>2)</sup>	% of $C_n$	$\pm 0.0500$	$\pm 0.0180$	$\pm 0.0180$	$\pm 0.0150$	$\pm 0.0110$			
Creep ( $d_{DR}$ ) in 30 min.		$\pm 0.0490$	$\pm 0.0166$	$\pm 0.0098$	$\pm 0.0125$	$\pm 0.0083$			
Input resistance ( $R_{LC}$ ) (black-blue)	$\Omega$	350...480							
Output resistance ( $R_0$ ) (red-white)		$356 \pm 0.2$	$356 \pm 0.12$						
Reference excitation voltage ( $U_{ref}$ )	V	5							
Nominal range of excitation voltage ( $B_U$ )		0.5...12							
Insulation resistance ( $R_{is}$ )	G $\Omega$	> 5							
Nominal temperature range ( $B_T$ )		-10...+40 [-15...+105]							
Service temperature range ( $B_{tu}$ )	$^{\circ}C$ [ $^{\circ}F$ ]	-30...+70 [-20...+160]							
Storage temperature range ( $B_{st}$ )		-50...+85 [-60...+185]							
Safe load limit ( $E_L$ )		150							
Breaking load ( $E_d$ )	% of $E_{max}$	$\geq 300$							
Max. capacity	kg	5	10	20	50	100	200	500	1000
Permissible dynamic load ( $F_{srel}$ )	% of $E_{max}$	100	100	100	100	100	100	70	100
Deflection at max. load, ( $s_{nom}$ ) approx. ( $\pm 15$ %)	mm	0.24	0.3	0.29	0.27	0.31	0.39	0.6	0.55
Weight (G), approx.	kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.3
Protection class (IP) acc. to EN60529 (IEC529)		IP 68 (more rigorous test conditions: 100 h at 1 m water column)							
Material	Measuring body Metal below Cable entrance Cable sheath	stainless steel stainless steel stainless steel / Viton® PVC							

1) With Z6FC3/10kg load cell:  $\leq \pm 0.1$  %.

2) The data for deviation of linearity, hysteresis and temperature effect on sensitivity are typical values. The sum of these data meets the requirements according to OIML R60.

### Options:

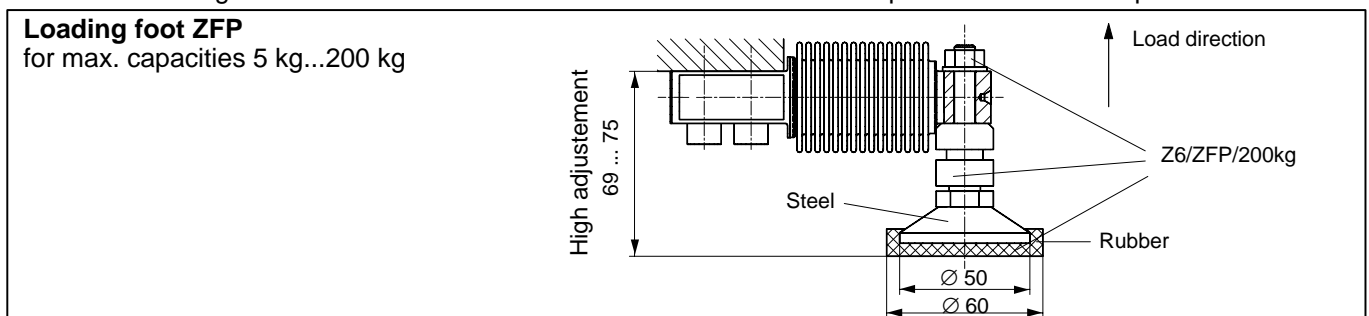
**Explosion-proof versions according to ATEX 95:**

- II 2 G EEx ia IIC T4 resp. T6 (Zone 1) \*)
- II 3 G EEx nA II T6 (Zone 2)
- II 2 D IP68 T80 $^{\circ}C$  (Zone 21) \*)
- II 3 D IP68 T80 $^{\circ}C$  (Zone 22 for non-conductive dust)

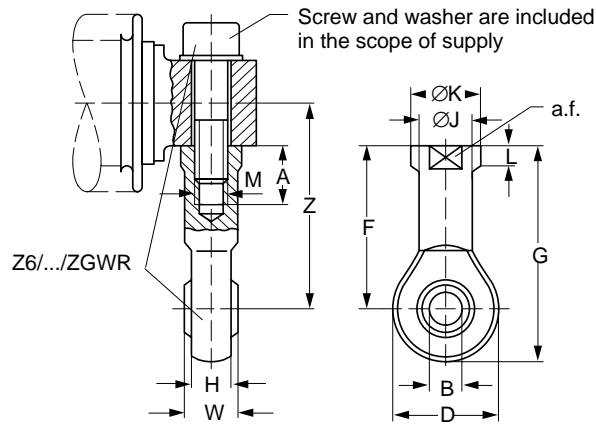
\*) with EC-type examination certificate

**Mounting aids**, not included in scope of supply (Dimensions in mm; 1 mm = 0.03937 inches)

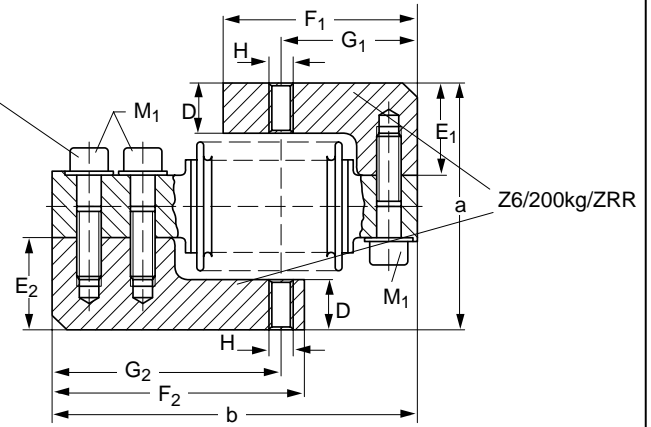
**Note:** All mounting aids are made from stainless material. The ZEL rubber parts are from chloroprene caoutchouc.



**ZGWR Knuckle eye (maintenance-free)**  
for max. capacities of 5 kg...1 t



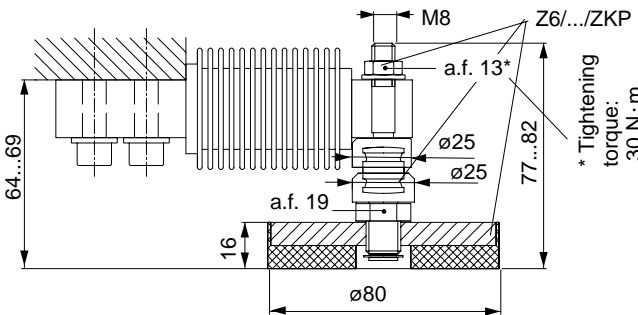
**ZRR Fold-back arm for max. capacities of 5 kg...200 kg**



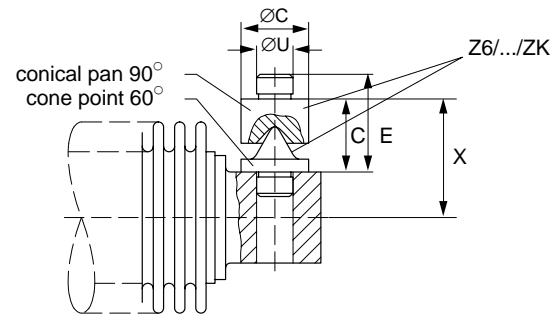
Max. capacity	ZGWR Knuckle eye	A	B	D	F	G	H	Ø J	Ø K	L	M	a.f.	W	Z
5 kg...200 kg	Z6/200kg/ZGWR	16	8 <sup>H7</sup>	24	36	48	9	12.5	16	5	M8	14	12	46
500 kg/1 t	Z6/1t/ZGWR	20	10 <sup>H7</sup>	28	43	57	10.5	15	19	6.5	M10	17	14	53/55.5

Max. capacity	ZRR Fold-back arm	D	E <sub>1</sub>	E <sub>2</sub>	F <sub>1</sub>	F <sub>2</sub>	G <sub>1</sub>	G <sub>2</sub>	H	M <sub>1</sub>	a	b	Width
5 kg...200 kg	Z6/200kg/ZRR	16	30	30	65	85	46	77	M8	M8x30	80 ± 1.1	123	15

**Loading foot ZKP for max. capacities 5 kg...200 kg**

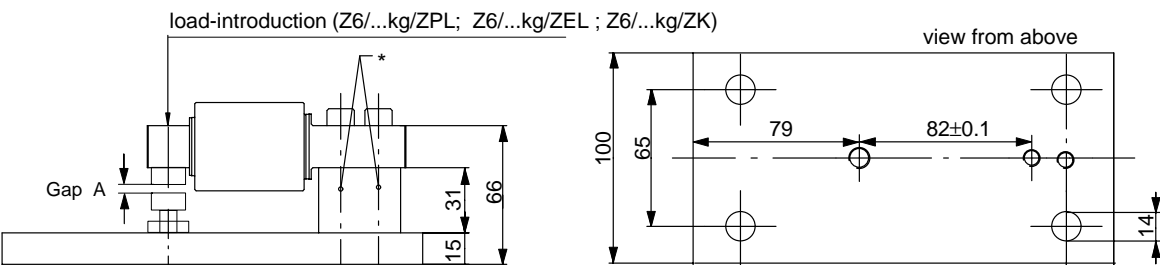


**Cone and conical pan ZK for max. capacities 5 kg...1 t**



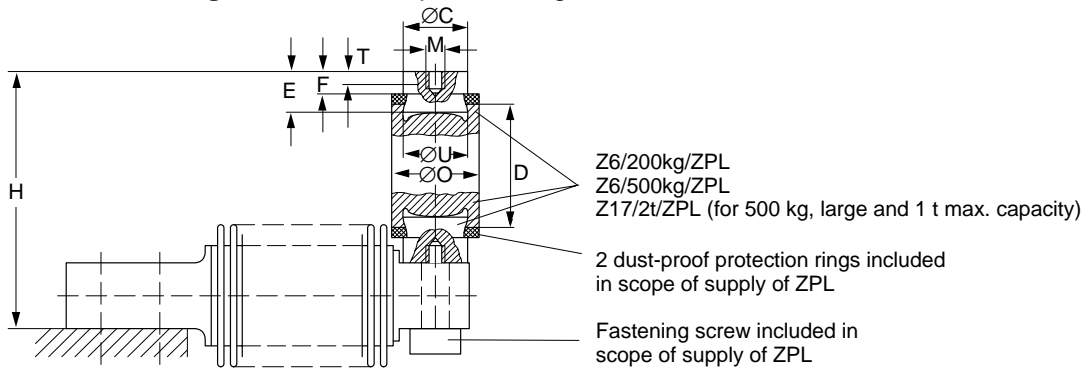
Max. capacity	Cone and conical pan ZK	Ø C	D	E	Ø U	X
5...200 kg	Z6/200kg/ZK	15	16	21	8.1 <sub>-0.05</sub>	26
500 kg	Z6/1t/ZK	18	24	32	11 <sub>-0.05</sub>	34
1 t	Z6/1t/ZK	18	24	32	11 <sub>-0.05</sub>	36.5

**Base plate/ Mounting kit for max. capacities 5 kg (Z6/ZPU/200kg) ... 500 kg (Z6/ZPU/500kg)**



\* Tightening torque  $M_A$ : 23 N·m (200 kg); 45 N·m (500 kg)  
Gap A: With the load cell loaded up to its maximum capacity, the gap width should be 0.05 mm

## Pendulum bearing ZPL for max. capacities 5 kg...1 t

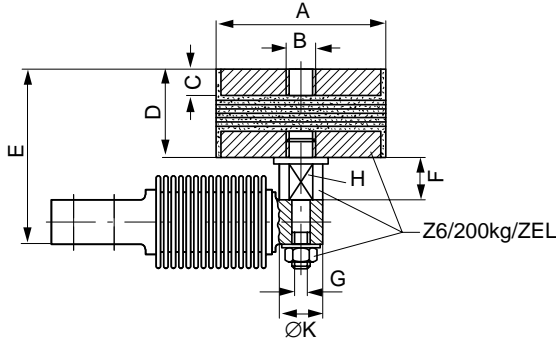


Max. capacity	Pendulum bearing ZPL	$\varnothing C$	D	H	M	$\varnothing O$	T	E	F	$\varnothing U$	$F_R^*$ (% of applied load)	$S_{max}^{**}$ (mm)
5...200 kg	Z6/200kg/ZPL	20 <sub>-0.2</sub>	45	89 <sup>+0.6</sup> <sub>-0.8</sub>	M8	30	6.5	17	9	20 <sup>D10</sup>	2.8	3.5
500 kg	Z6/1t/ZPL	20 <sub>-0.2</sub>	45	89 <sup>+0.6</sup> <sub>-0.8</sub>	M8	30	6.5	17	9	20 <sup>D10</sup>	2.8	3.5
1 t	Z6/1t/ZPL	30 <sub>-0.1</sub>	60	126.5	M10	46	8	22	14	20 <sup>D10</sup>	2	7.5

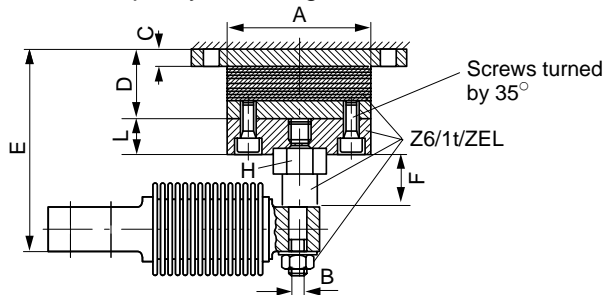
\*  $F_R$ : restoring force in N for  $s = 1$  mm

\*\*  $S_{max}$ : max. lateral displacement of load introduction loaded with max. capacity

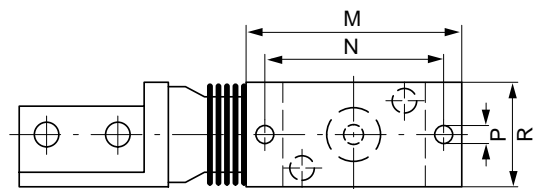
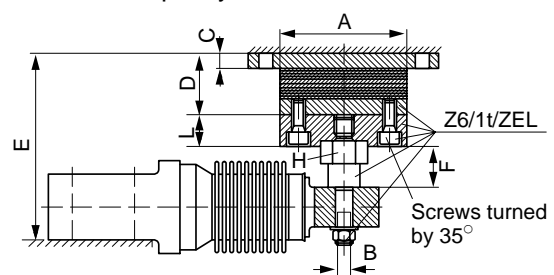
## ZEL Rubber-metal bearing for max. capacities of 5 kg...200 kg



for max. capacity of 500 kg



## ZEL Rubber-metal bearing for max. capacity 1 t



Correct mounting position of the rubber metal bearing

Max. capacity	ZEL Rubber-metal bearing	A	B	C	D	E	F	G	H	K	L	M	N	P	R	$F_R^*$ (N)	$S_{max}^{**}$ (mm)
5 kg...200 kg	Z6/200kg/ZEL	75	M12	12	40	79 ± 1.3	18.5	M8	a.f. 17	19	-	-	-	-	-	163	3
500 kg	Z6/1t/ZEL	80	M10	10	39	105 <sup>+2.1</sup> <sub>-2.2</sub>	26	-	a.f. 27	-	20	120	100	9	60	400	4.5
1 t	Z6/1t/ZEL	80	M10	10	39	117 <sup>+2.1</sup> <sub>-2.2</sub>	26	-	a.f. 27	-	20	120	100	9	60	400	4.5

\*  $F_R$  = restoring force in N for 1 mm lateral displacement

\*\*  $S_{max}$ : = in mm, max. lateral displacement of load introduction loaded with max. capacity



measurement with confidence