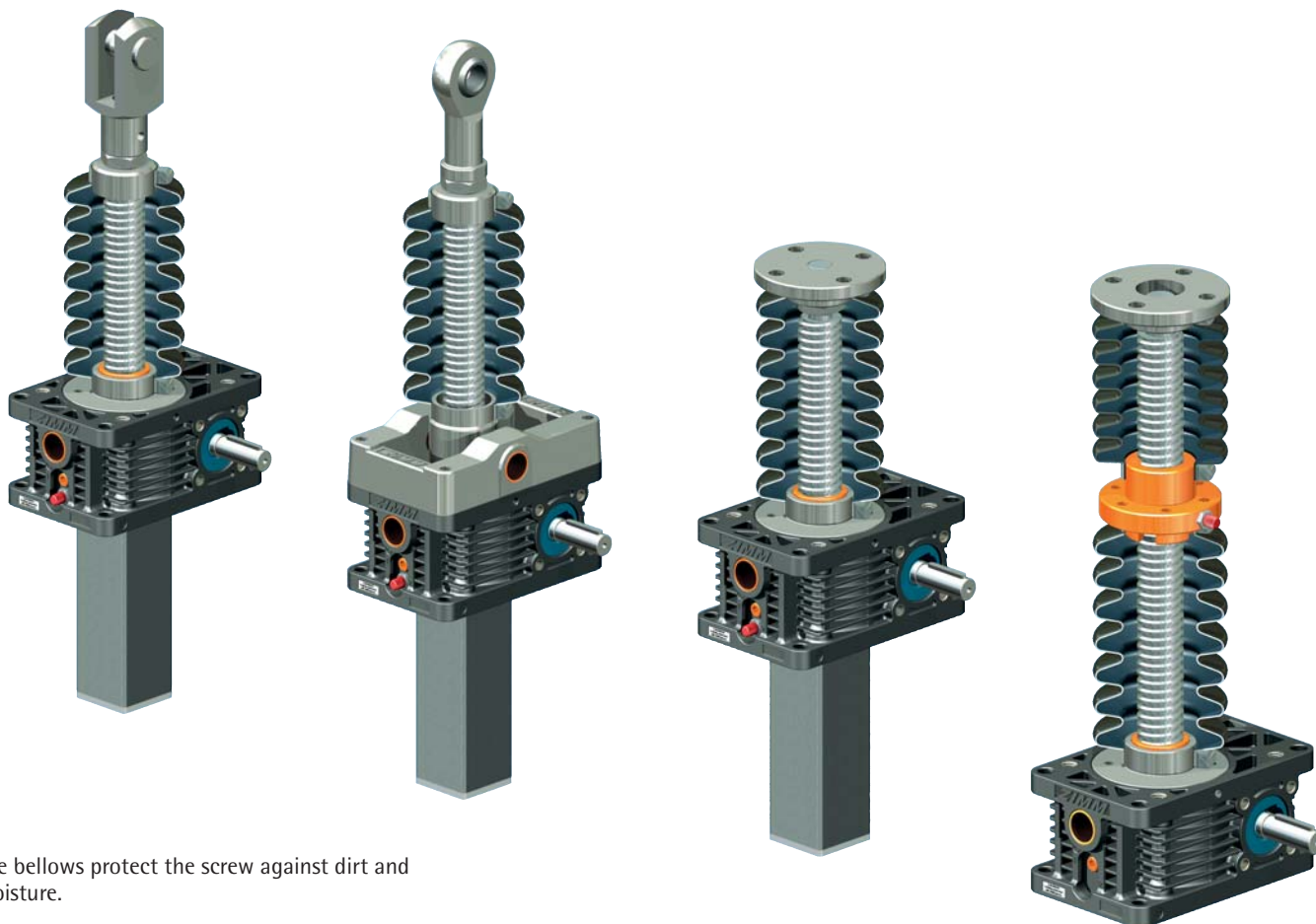


Fitting the bellows



The bellows protect the screw against dirt and moisture.

PLEASE NOTE:

The bellows must not be compressed to less than the ZD dimension nor extended beyond the AZ dimension.

If the stroke is longer than 1000 mm, fit a bellows with an extension block. Take into consideration that when the bellows is fitted

horizontally it must not touch the screw: Risk of serious damage! Use support rings to avoid such damage.

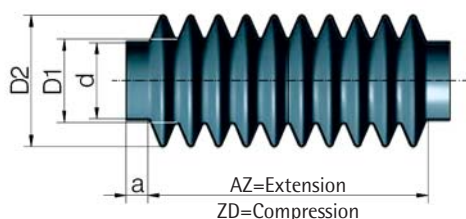
Protect the screws, especially during on-site assembly, against: building site dust, grinding dust from angle grinders,

weld spatter, etc. Protect the bellows against direct sunshine.

Take into consideration also that the thermal insulation effect of the bellows reduces the maximum duty cycle of the screw jack.



Bellows Z-...-FB, round



Part no.	a	d	ZD	AZ	Stroke	D1	D2	kg
GSZ-2-FB 182	11	26	38	220	182	26	55	0.08
GSZ-2-FB 364	11	26	98	462	364	26	55	0.16
Z-5-FB-265	10	29	35	300	265	40	76	0.15
Z-10-FB-340	10	39	80	420	340	40	80	0.21
Z-25-FB-300	15	46	70	370	300	50	83	0.25
Z-35/50-FB-390	18	60	85	475	390	66	102	0.43
Z-100-FB-285	15	85	75	360	285	85	118	0.29
Z-150-FB-350	15	90	50	400	350	92	141	0.44
Z-250-FB-390	15	120	90	480	390	125	166	1.10
Z-350-FB-600	15	145	100	700	600	172	236	2.40

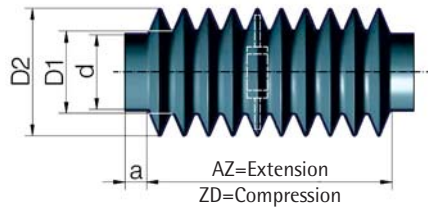
Material: PVC, NBR (GSZ-2), operating temperature -20°C to +70°C (max. +85°C), cold fracture temperature -32°C, incl. 2 galvanised hose clips.

CAUTION: For screw extensions, see Sections 2+3 identical to the previous MSZ type

Bellows FB



Bellows Z-...-FB, polygonal



Material: Polyurethane-coated polyester fabric type OZ-23, temperature stability -15°C to +70°C, incl. 2 galvanised hose clips.

For screw extensions, see Sections 2+3

CAUTION:

For special bellows, dimensions ZD, AZ and DZ may be different!

Part no.	a	d	ZD	AZ	Stroke	D1	D2	kg
Z-5-FB-500	10	29	100	600	500	38	68	0.19
Z-5-FB-800	10	29	120	920	800	38	68	0.30
Z-10-FB-700	10	39	100	800	700	38	75	0.23
Z-10-FB-1000	10	39	150	1150	1000	38	75	0.32
Z-25-FB-700	15	46	100	800	700	63	105	0.32
Z-25-FB-1000	15	46	120	1120	1000	63	105	0.43
Z-35/50-FB-600	15	60	72	672	600	63	105	0.23
Z-35/50-FB-1000	15	60	130	1130	1000	63	105	0.42
Z-35/50-FB-1200	15	60	125	1325	1200	63	105	0.42
Z-35/50-FB-1500	15	60	180	1680	1500	63	105	0.51
Z-100-FB-600	15	85	72	672	600	63	105	0.29
Z-100-FB-1000	15	85	130	1130	1000	63	105	0.40
Z-100-FB-1500	15	85	180	1680	1500	63	105	0.44
Z-150-FB-600	15	90	72	672	600	110	150	0.40
Z-150-FB-1000	15	90	130	1130	1000	110	150	0.60
Z-150-FB-1500	15	90	180	1680	1500	110	150	0.82
Z-250-FB-600	15	120	72	672	600	110	150	0.40
Z-250-FB-1000	15	120	130	1130	1000	110	150	0.60
Z-250-FB-1500	15	120	180	1680	1500	110	150	0.82
Z-350-FB-900	15	145	108	1008	900	150	200	0.70
Z-350-FB-1500	15	145	180	1680	1500	150	200	1.10

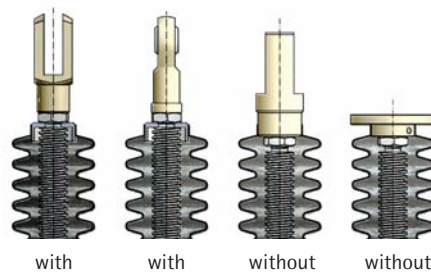
IMPORTANT! When ordering, please specify:

When mounted horizontally, the bellows must be fitted with suitable support rings, so as to avoid wear due to rubbing against the trapezoidal thread of the screw.

For lengths longer than 1000 mm, an extension block is necessary. Compatible with the previous MSZ types



Bellows fixing ring Z-...-FBR



The fixing ring FBR is used to secure the bellows FB to the forked end GK or rod end KGK. Identical to the previous MSZ types

If a forked end GK or rod end KGK is included in the scope of the order, the fixing ring is supplied automatically. Otherwise, please order it separately.



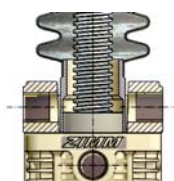
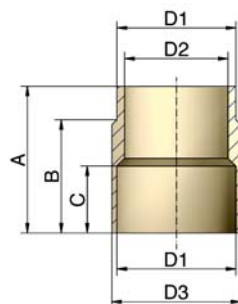
Ordering example:

Z-25-FBR

Material: POM (plastic)



Bellows adapter Z-...-FBA

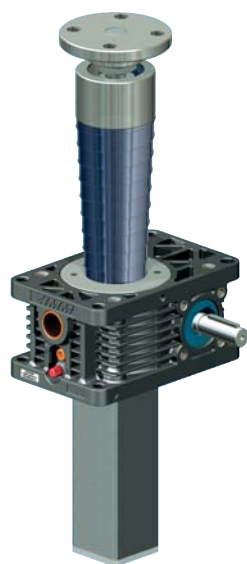


Use of a pivot bearing plate KAR on the face towards the screw

Part no.	D1	D2	D3	A	B	C
Z-5-FBA	29	25	32	44	32	20
Z-10-FBA	39	30	42	42	32	22
Z-25-FBA	46	40	50	57	42	26
Z-35/50-FBA	60	52	65	70	52	40
Z-100-FBA	85	80	90	90	72	50
Z-150-FBA	90	85	95	100	82	50
Z-250-FBA	120	115	125	118	100	60
Z-350-FBA	145	140	150	130	112	60
Z-500-FBA	170	150	180	172	152	70

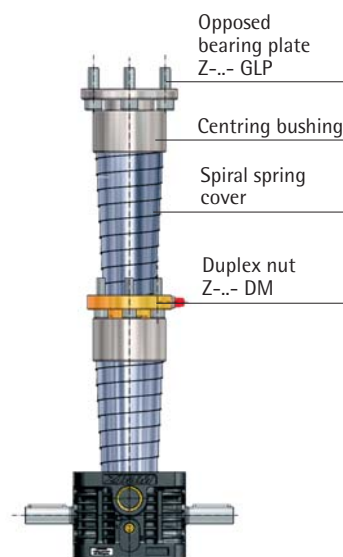
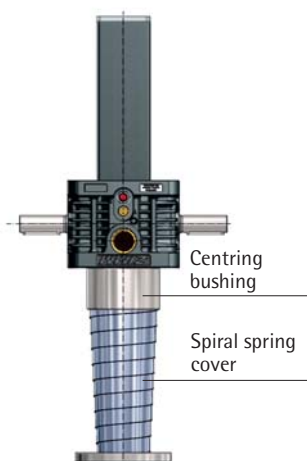
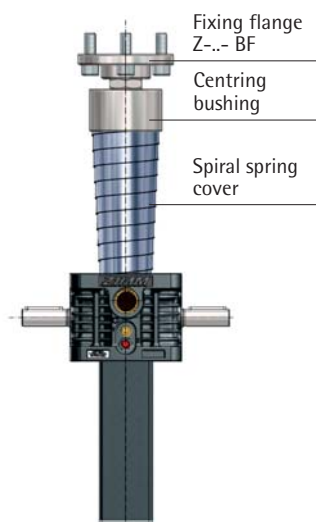
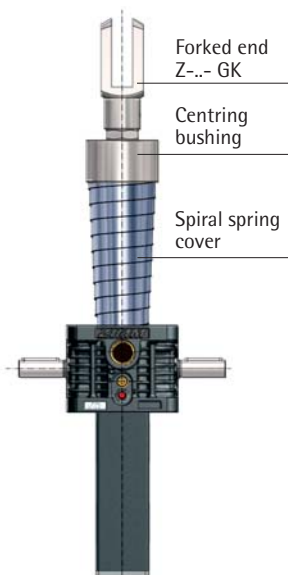
Material: Aluminium, corrosion-resistant

Spiral spring attachment



Spiral spring cover attachment for types SN/SL

Spiral spring cover attachment for types RN/RL



Fitting instructions:

Spiral springs can be used on chip-generating and non-chip generating machines. The illustrations show how to fit different types of spiral spring covers to various screw jacks.

Centring bushings are required when assembling combinations of different parts; we can include these in our quotation on request.

IMPORTANT:

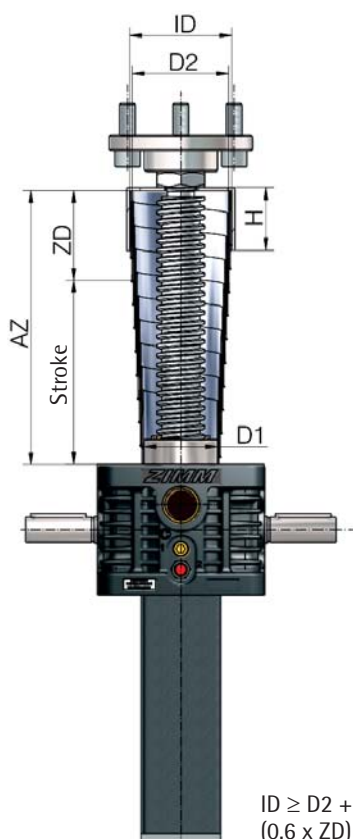
Spiral springs must under no circumstances be allowed to uncoil. For technical reasons, please specify in your enquiry whether the spiral spring is to be installed horizontally or vertically.

If installation is to be vertical, we recommend that the larger diameter is at the top,

as shown; if it is to be horizontal, the taper should be away from the direction of flow of the chips or other particulate.

A slight film of oil on the spiral spring improves its operation and extends its service life.

Spiral spring cover SF



$$ID \geq D2 + 4 \text{ mm}$$

$$(0.6 \times ZD) \leq H \leq (ZD - 2 \text{ mm})$$

Material:

SF: Spring band steel, blued (on request we can also supply versions in stainless steel)

Centring bushing: Plastic (other materials on request)

CAUTION:

The spring travel quoted is the maximum possible. For practical operation, please allow a margin of safety to prevent damage! We recommend preparation of a drawing to determine the fitting position and dimensions of spiral springs.

**Ordering example:**

SF-030-0450-030-H **SFZ-ID57-H20**

Spiral spring
Least diameter D1
Greatest length AZ*
Least length ZD
H=horizontal installation
V=vertical installation

Centring bushing
Inner diameter
Height

Screw jack Z-5						Bushing			
Type SF	D1	D2	ZD	Stroke	kg	ID	AD	H	
030-0450-030-V	30	53	30	420	0.30	57	61	20	
030-0450-030-H	30	53	30	360	0.30	57	61	20	

Screw jack Z-10						Bushing			
Type SF	D1	D2	ZD	Stroke	kg	ID	OD	H	
040-0450-040-V	40	64	40	410	0.53	69	73	30	
040-0450-040-H	40	64	40	350	0.53	69	73	30	
040-0900-060-V	40	70	60	840	1.09	74	78	36	
040-0900-060-H	40	70	60	720	1.09	74	78	36	
040-1300-075-V	40	84	75	1225	2.20	88	92	50	
040-1300-075-H	40	84	75	1075	2.20	88	92	50	

Screw jack Z-25						Bushing			
Type SF	D1	D2	ZD	Stroke	kg	ID	OD	H	
050-0450-050-V	50	70	50	400	0.64	74	78	36	
050-0450-050-H	50	70	50	300	0.64	74	78	36	
050-0750-060-V	50	80	60	690	1.07	84	88	40	
050-0750-060-H	50	80	60	570	1.07	84	88	40	
050-1200-075-V	50	94	75	1125	2.45	98	104	50	
050-1200-075-H	50	94	75	975	2.45	98	104	50	
050-1500-100-V	50	88	100	1400	2.70	92	96	60	
050-1500-100-H	50	88	100	1200	2.70	92	96	60	

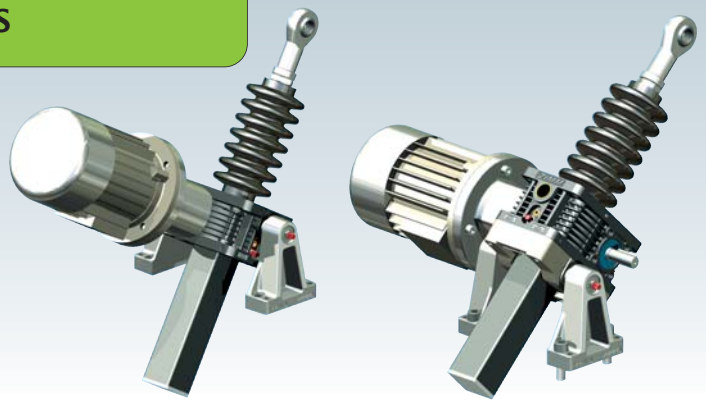
Screw jacks Z-35, Z-50						Bushing			
Type SF	D1	D2	ZD	Stroke	kg	ID	OD	H	
065-0450-050-V	65	88	50	400	0.64	92	96	35	
065-0450-050-H	65	88	50	300	0.64	92	96	35	
065-1100-075-V	65	107	75	1025	2.50	112	118	60	
065-1100-075-H	65	107	75	825	2.50	112	118	60	
065-1500-100-V	65	108	100	1400	3.80	112	118	60	
065-1500-100-H	65	108	100	1200	3.80	112	118	60	
065-2100-120-V	65	113	120	1980	5.65	118	124	80	
065-2100-120-H	65	113	120	1740	5.65	118	124	80	

Screw jack Z-50/Tr50, Z-100						Bushing			
Type SF	D1	D2	ZD	Stroke	kg	ID	AD	H	
090-0650-075-V	90	124	75	575	2.80	128	134	50	
090-0650-075-H	90	124	75	425	2.80	128	134	50	
090-1300-100-V	90	132	100	1200	4.90	136	142	60	
090-1300-100-H	90	132	100	1000	4.90	136	142	60	

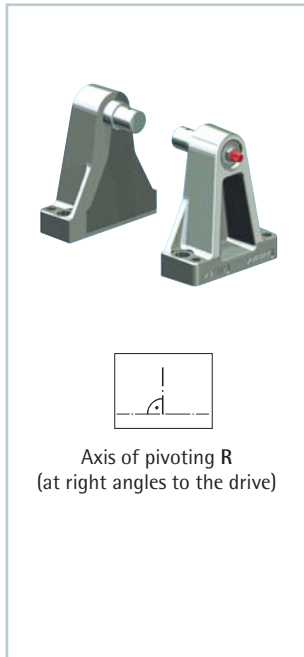
Screw jack Z-150						Bushing			
Type SF	D1	D2	ZD	Stroke	kg	ID	AD	H	
100-0800-075-V	100	138	75	725	3.70	143	149	51	
100-0800-075-H	100	138	75	575	3.70	143	149	51	
100-1500-100-V	100	146	100	1400	6.00	150	156	75	
100-1500-100-H	100	146	100	1200	6.00	150	156	75	



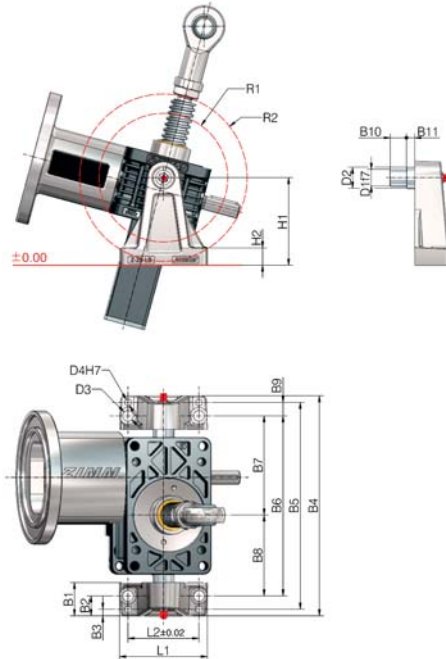
Other sizes of spiral springs are available on request.



Pivoting – Z-5 to Z-25



Pivot mounts LB



Dimensions	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Z-5 (Z-5/10-LB)	40	25	10	200	180	150	84	66	15	15	6
Z-10 (Z-5/10-LB)	40	25	10	220	200	170	95	75	15	15	6
Z-25 (Z-25-LB)	40	24	08	264	248	216	119	97	16	20	10

Dimensions	D1	D2	D3	D4	H1	H2	L1	L2	R1	R2	kg (set)
Z-5 (Z-5/10-LB)	16	22	11	8	80	18	90	70	57	63	0.72
Z-10 (Z-5/10-LB)	16	22	11	8	80	18	90	70	68	74	0.72
Z-25 (Z-25-LB)	20	25	13	8	105	21	105	85	78	100	1.30

Integrated pivot bearing

Simple and economical design:
Pivot bushes are incorporated in the gearbox housing.

Lubrication

The bronze bushes are PTFE-coated and therefore require no lubrication in normal service. We recommend regular lubrication for high loadings.

Design tip

For large motors, long strokes and high load cycles, the variant with the pivot bearing plate KAR is preferable, because the weight of the motor is then taken by the pivoting points and does not affect the screw.

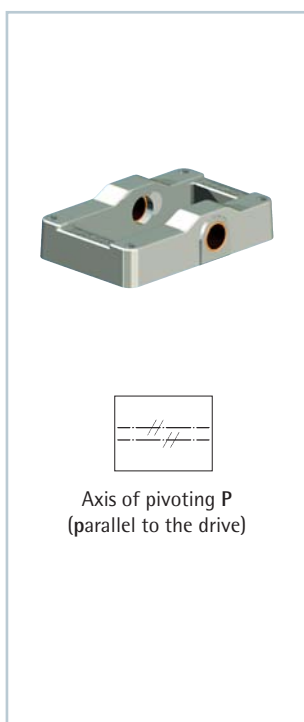
i **F** Refer to the permissible loads listed in Section 8

Material: Aluminium, corrosion-resistant
Bolt: Stainless steel

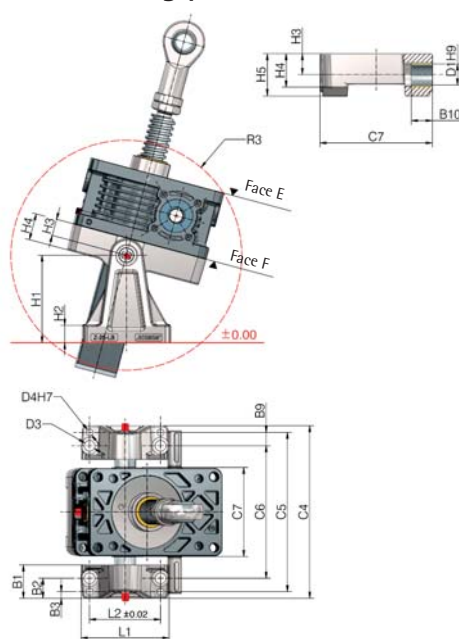


Part no.:

Z-5/10-LB set (2 items)
Z-25-LB set (2 items)



Pivot bearing plate KAR



Dimensions	B1	B2	B3	B9	B10	C4	C5	C6	C7	D1	D3
Z-5-KAR	40	25	10	15	15	166	146	116	74	16	11
Z-10-KAR	40	25	10	15	15	179	159	129	87	16	11
Z-25-KAR	40	24	08	16	20	207	191	159	107	20	13

Dimensions	D4	H1	H2	H3	H4	H5	L1	L2	R3	kg
Z-5-KAR	8	80	18	15	21	30	90	70	100	0.24
Z-10-KAR	8	80	18	15	24	30	90	70	116	0.33
Z-25-KAR	8	105	21	20	32	40	105	85	138	0.80

Multi-jack systems

The KAR pivot bearing plate allows several jacks to be arranged in a row.

Lubrication

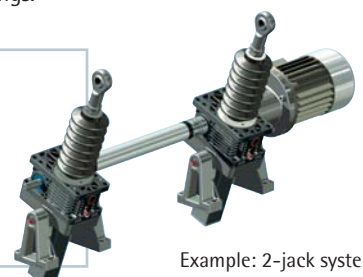
The bronze bushes are PTFE-coated and therefore require no lubrication in normal service. We recommend regular lubrication for high loadings.



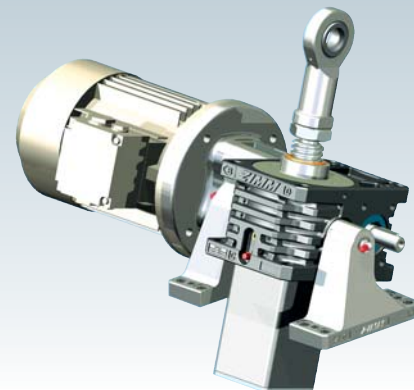
Part no.:

Z-5-KAR
Z-10-KAR
Z-25-KAR

Please specify: mounted
on face E or face F

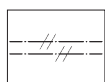
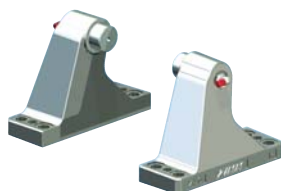


Example: 2-jack system

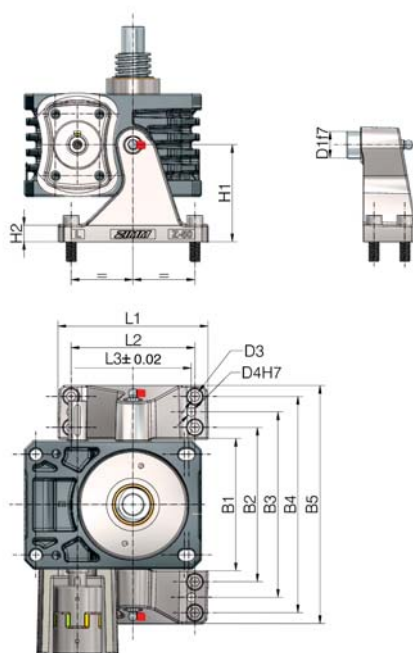


Pivoting – Z-35 to Z-1000

Pivot mounts LB



Axis of pivoting P
(parallel to the drive)



Material: Cast steel, quenched and tempered, corrosion-resistant

From Z-500 the gearbox is mounted the opposite way round, since the footplate is broader than the rest of the housing:



Dimensions	D1	D3	D4	H1	H2	L1	L2
Z-35-LB	28	11	8	85	18	130	106
Z-50-LB	30	13	10	110	18	170	140
Z-100-LB	40	22	20	120	22	260	180
Z-150-LB	50	22	20	135	24	280	200
Z-250-LB	60	26	20	170	32	285	230
Z-350-LB	80	33	25	210	36	380	310

Dimensions	L3	B1	B2	B3	B4	B5	kg (set)
Z-35-LB	106	124	146	174	202	224	3.2
Z-50-LB	140	150	175	210	245	270	5.0
Z-100-LB	225	210	250	290	330	370	11.8
Z-150-LB	235	222	262	312	362	402	18.0
Z-250-LB	220	265	325	400	475	535	31
Z-350-LB	300	302	372	462	552	622	66

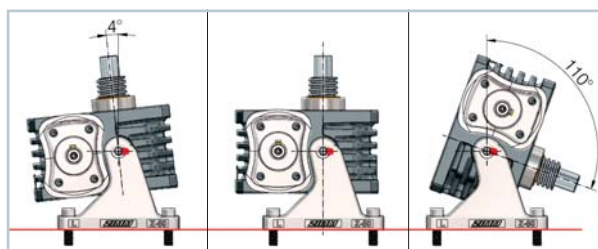
Integrated pivot bearing

Simple and economical design:

Pivot bushes are incorporated in the gearbox housing.

Lubrication

The bronze bushes are PTFE-coated and therefore require no lubrication in normal service. We recommend regular lubrication for high loadings.



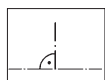
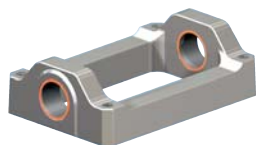
F Refer to the permissible loads listed in Section 8



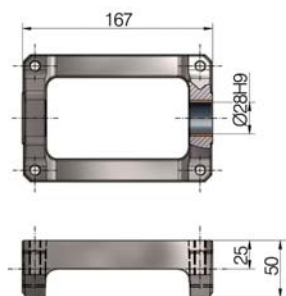
Part no.:

Z-50-LB set
(1x right-handed, 1x left-handed)

Pivot bearing plate Z-35-KAR



Axis of pivoting R
(at right angles to the drive)



Material: GGG-50

Pivot bearing plate from Z-35

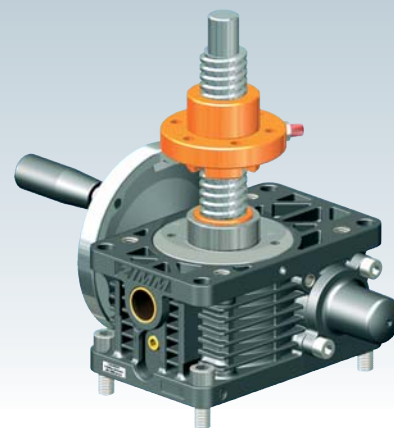
The use of the pivot mounts LB directly within the gearbox housing is the best and most economical solution. Design considerations may in some cases necessitate the use of a pivot bearing plate.

Other sizes of pivot arrangements "R" and "P" are available on request.



Part no.:

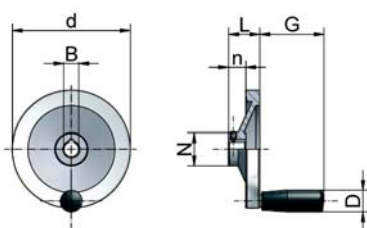
Z-35-KAR



For the S and R version



Handwheel HR



Part no.	d	N	b	n	L	G	D	B H7	B H7	kg
HR-80	80	26	13.0	16	26	42.5	18	8	9/11	0.16
HR-125	125	31	15.0	18	33	67.5	23	6	11/14	0.30
HR-160	160	36	18.0	20	39	82.5	26	14	14/16/19	0.50
HR-200	200	42	20.5	24	45	82.5	26	16	16/19/20	1.00
HR-250	250	48	23.0	28	51	92.5	28	20	20/25	1.30

Material: Aluminium, plastic (handle)

Design: No more than max. 50 - 60 N force should be required at the handle



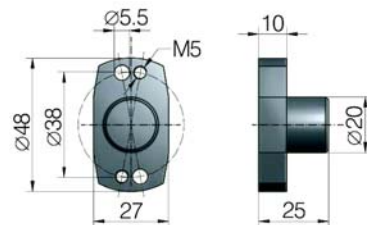
Ordering example:

Diameter
Bore
N = with keyway and set screw
V = only pilot hole

HR-125-11-N

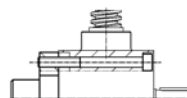


Protective cap GSZ-2-SK

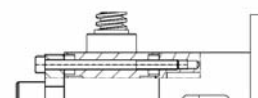


incl. screws
Material: Hard anodised aluminium

Part no.	D	d	E	F	Screws DIN 912	kg
GSZ-2-SK	20	5.5/M5	25	10	M5x55	0.05



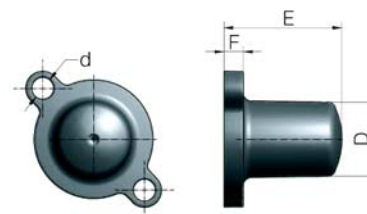
M5x55
Screws are included with the protective cap



M5x70
Screws are included with the motor flange / bevel gearbox



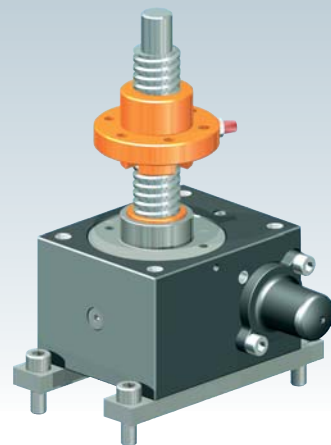
Protective cap Z-...-SK



incl. screws
Material: Z-5 to Z-150: PA6 GF15,
up to 120°C, briefly 180°C
Material: Z-250 to Z-1000: POM,
up to 100°C, briefly 140°C

Suitable for screw jacks Z, GSZ, MSZ
(MSZ up to size 50) and
bevel gearboxes KSZ, KGZ

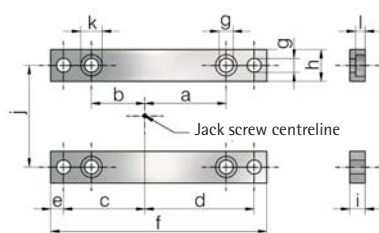
Part no.	D	d	E	F	Screws DIN 912	kg
Z-5-SK	25	7	32	8	M6x16	0.02
Z-10-SK	30	9	32	8	M8x16	0.04
Z-25-SK	31	9	49	8	M8x16	0.05
Z-35-SK	35	11	54	8	M10x20	0.07
Z-50-SK	35	11	55	8	M10x20	0.08
Z-100/150-SK	46	13.5	74	8	M12x25	0.12
Z-250-SK	60	17.5	82	25	M16x30	0.70
Z-350-SK	75	20	85	30	M18x30	0.90
Z-500-SK	90	22	125	35	M20x40	1.20
Z-750-SK	110	22	122	28	M20x40	1.50
Z-1000-SK	100	26	142	30	M24x40	2.20



For the S and R version



Fixing strips BFL

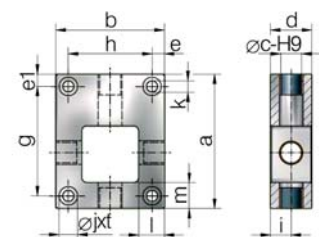


Part no.	a	b	c	d	e	f	g	h	i	j	k	l	kg
GSZ-2-BFL	32	16	29.5	45.5	7.5	90	6.6	14	10	38	11	6.4	0.16
GSZ-5-BFL	39	21	41	59	10	120	9	20	10	52	14	6	0.32
GSZ-10-BFL	49	29	50	70	10	140	9	20	14	63	14	6	0.50
GSZ-25-BFL	64	42	64	86	10	170	11	25	12	81	17	7.5	0.75
GSZ-50-BFL	87	63	90	114	13	230	13	30	20	115	19	7	2.00
GSZ-100-BFL	100	66	101	135	17	270	18	40	25	131	26	11	3.70

Identical to the previous MSZ types
Material: Steel, corrosion-resistant / GSZ-2-BFL: Stainless steel
Incl. screws



Pivot bearing plate KAR

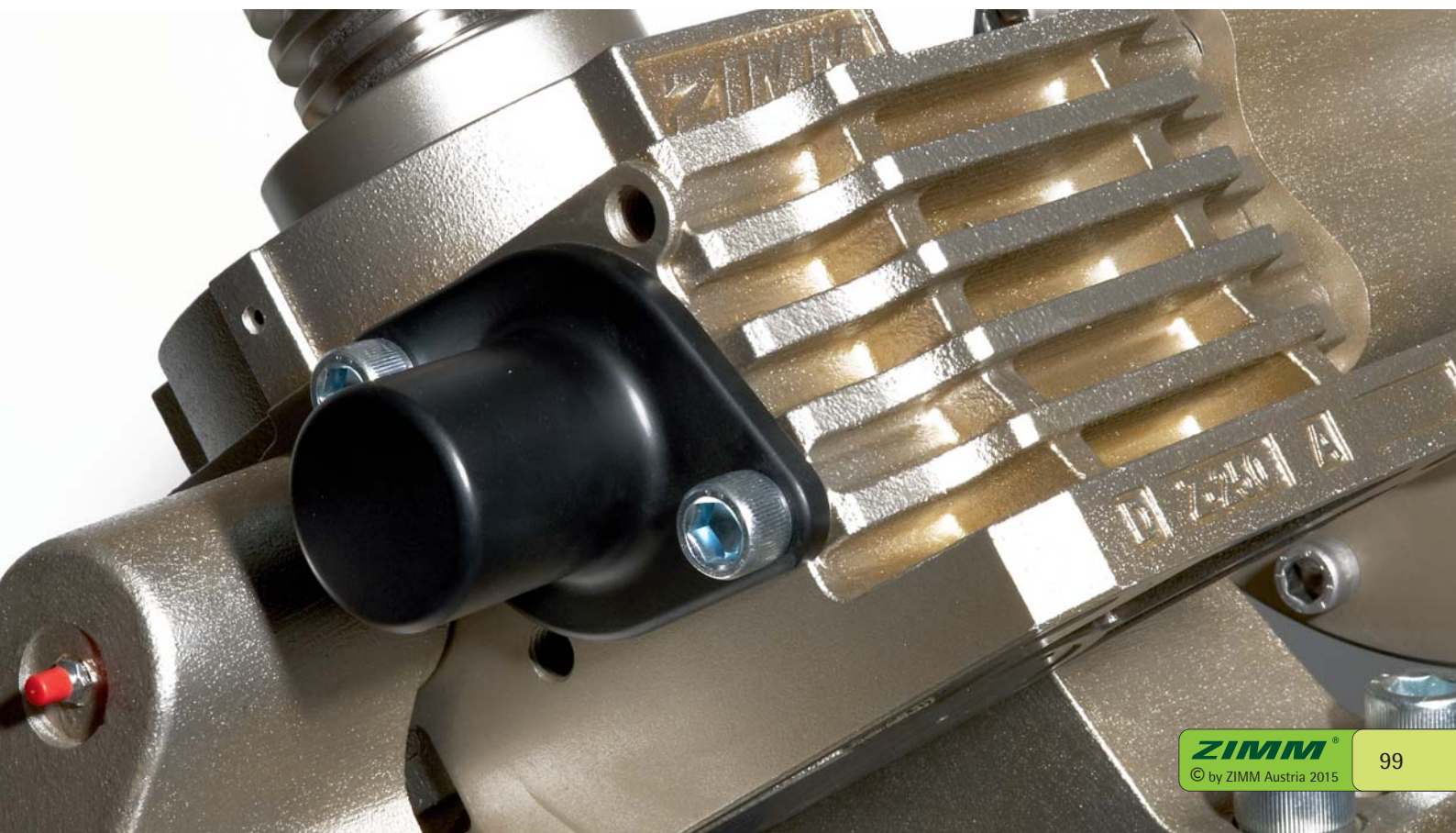


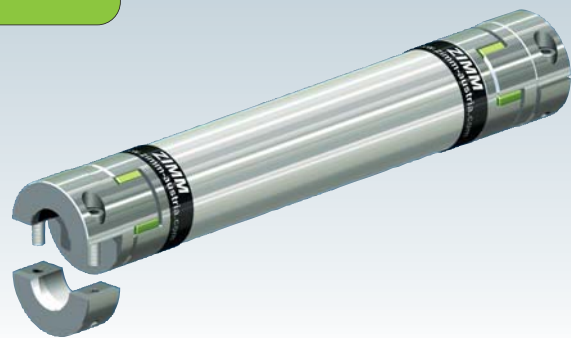
Part no.	a	b	c	d	e	e1	g	h	i	j	k	l	m	t	kg
GSZ-2-KAR ¹⁾	70	50	16	30	6	6	48	38	13	13	6.6	11	13	8	0.16
GSZ-5-KAR	80	72 ²⁾	16	30	10	10	60	52	15	15	9	18	10	9	0.80
GSZ-10-KAR	100	85 ²⁾	16	30	11	11	78	63	15	15	9	16	11	9	1.15
GSZ-25-KAR	130	105 ²⁾	20	40	12	12	106	81	20	18	11	25	25	11	2.80
GSZ-50-KAR	180	145	30	50	15	15	150	115	25	20	13	24	30	13	5.30
GSZ-100-KAR	200	175	40	70	22	17	166	131	35	26	17	40	30	18	11.1

Identical to the previous MSZ types
Material: Steel, corrosion-resistant / GSZ-2-KAR: Aluminium, corrosion-resistant
Incl. screws

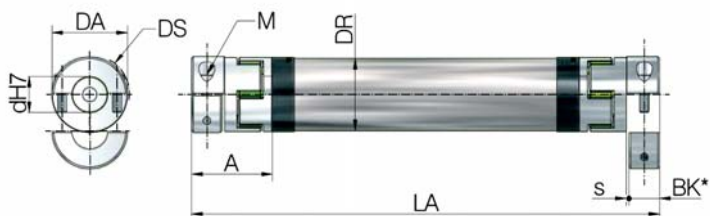
¹⁾Pivot mounts GSZ-2-LB available (Z-5/10-LB with shorter journals)

²⁾CAUTION: 2 mm narrower than Z-...-KAR





Connecting shaft VWZ



Standard bores "d" [mm]

VWZ-30	8, 9, 10, 11, 12, 14, 15, 16
VWZ-40	9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 22
VWZ-60	10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32
VWZ-60V	12, 15, 16, 18, 20, 22, 24, 25, 28, 30, 32, 35
VWZ-80	16, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45
VWZ-100	25, 28, 32, 38, 40, 42, 45, 48, 50, 55

Dimensions, technical data

Size	Dimensions							Clamping screw		Moment of inertia		Torsional stiffness		Weight	
	DA	DS	DR	BK*	s	A	LA min	M	Tightening torque	per coupling	tube/m	per star	per tube/m	both couplings	tube/m
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	10.9	[Nm]	[10 ⁻³ kgm ²]	[10 ⁻³ kgm ²]	C _{Tdyn} [Nm/rad]	C _{Tdyn} [Nm/rad]	[kg]	[kg]
VWZ-30	32	32	30	15	1.5	34	99	M4	4	0.01	0.11	1375	1104	0.14	0.58
VWZ-40	42	44.5	40	17	1.5	46	133	M5	8	0.08	0.2	3700	2332	0.36	0.76
VWZ-60	56	57	60	30	2	63	177	M6	15	0.24	0.8	9917	8292	0.94	0.97
VWZ-60V	67	68	60	35	2	73	205	M8	35	0.46	0.8	24417	8292	1.42	0.97
VWZ-80	82	85	80	40	2	84	249	M10	70	2.4	3	33667	29102	2.98	2.00
VWZ-100	102	105	100	50	2	97	283	M12	120	6	5.8	67667	58178	4.62	2.47

*BK = shaft extension clamping length

Torques

Size	Elastomer star		Maximum transmittable torque by clamp hub depending on the bore diameter (clamp force)																		Coupling type
	Rated torque [Nm]	Max. torque [Nm]	Ø9	Ø11	Ø14	Ø16	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø38	Ø40	Ø42	Ø45	Ø48	Ø55	
			[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	[Nm]	
VWZ-30	12	25	21	26	33	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	KUZ-KK-16
VWZ-40	17	34	-	41	52	60	70	74	81	-	-	-	-	-	-	-	-	-	-	-	KUZ-KK-24
VWZ-60	60	120	-	60	76	87	104	109	120	131	136	153	164	175	-	-	-	-	-	-	KUZ-KK-32
VWZ-60V	160	320	-	-	-	120	-	188	206	-	235	-	-	301	-	-	-	-	-	-	KUZ-KK-35
VWZ-80	325	650	-	-	-	325	386	406	447	488	508	568	610	650	772	-	854	915	-	-	KUZ-KK-45
VWZ-100	530	1060	-	-	-	-	-	-	-	-	570	638	-	730	866	914	960	1029	1097	1250	KUZ-KK-60

The max. torque is limited either by the star or by the clamping force

Shafts with split shells

- Split shells permit easy radial insertion
- High concentricity
- High clamping forces
- Low moment of inertia
- Stepless adjustment facility thanks to the clamp hub rather than a fitted drive key
- Drive keyway available on request
- Material: High-tensile aluminium (stainless steel on request)

Elastomer star

- Permanently free of play, dampens vibration
- Shore hardness 64D
- Colour: ZIMM green
- Temperature range: 0°C to +70°C reduced to -20°C, to +100°C (Mx0.55)



Ordering example:

VWZ-60-LA 1800-20/25

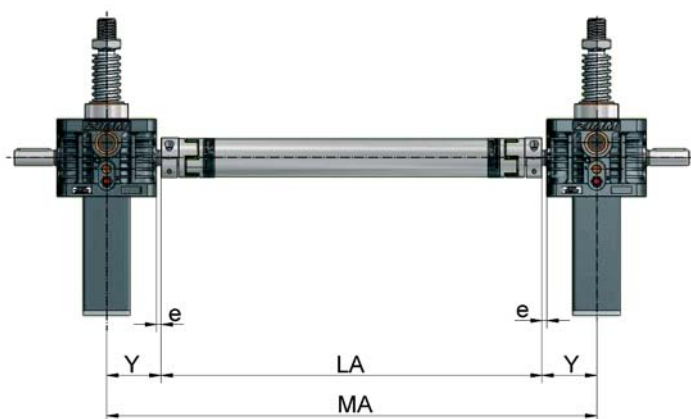
Size

Length

Bores for couplings

n=1500 rpm (specify the speed)

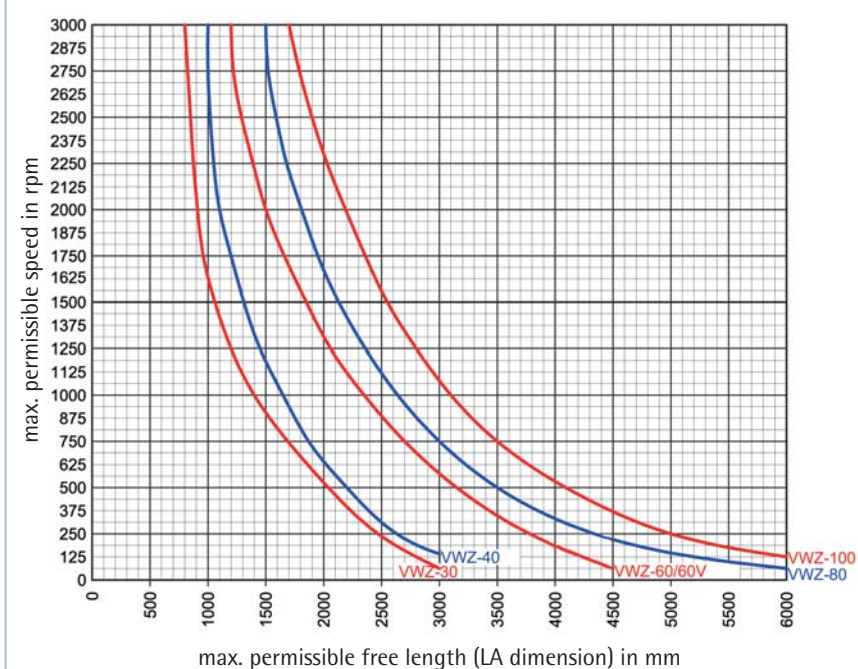
VWZ length calculation (identical for Z and GSZ)



LA = External length (incl. coupling)
MA = Distance between centres of gearboxes



Maximum length – dependent on speed



Screw jack	Connecting shaft	e	Y	A
GSZ-2	VWZ-30	6	31	34
Z-5	VWZ-30	9	45	34
Z-5	VWZ-40	7	43	46
Z-5	VWZ-60	2	38	63
Z-10	VWZ-30	12.5	55	34
Z-10	VWZ-40	10.5	53	46
Z-10	VWZ-60	2.5	45	63
Z-25	VWZ-40	28	80.5	46
Z-25	VWZ-60	15	67.5	63
Z-25	VWZ-80	5	57.5	84
Z-35	VWZ-40	28	84	46
Z-35	VWZ-60	15	71	63
Z-35	VWZ-60V*	10	66	73
Z-35	VWZ-80*	5	61	84
Z-50	VWZ-60	17.5	90	63
Z-50	VWZ-60V	12.5	85	73
Z-50	VWZ-80*	7.5	80	84
Z-100	VWZ-60	30	124	63
Z-100	VWZ-60V	25	119	73
Z-100	VWZ-80	20	114	84
Z-150	VWZ-60	30	130	63
Z-150	VWZ-60V	25	125	73
Z-150	VWZ-80	20	120	84
Z-250	VWZ-80	24	144	84
Z-250	VWZ-100	14	134	97
Z-350	VWZ-80	35	175	84
Z-350	VWZ-100	25	165	97
Z-500	VWZ-80	75	240	84
Z-500	VWZ-100	65	230	97

*cannot be fitted with pivot mounts LB

max. permissible offset

Lateral offset:



Kr max. 1.5 mm per 100 mm LI

Angular offset:



max. 2° (1° per coupling)

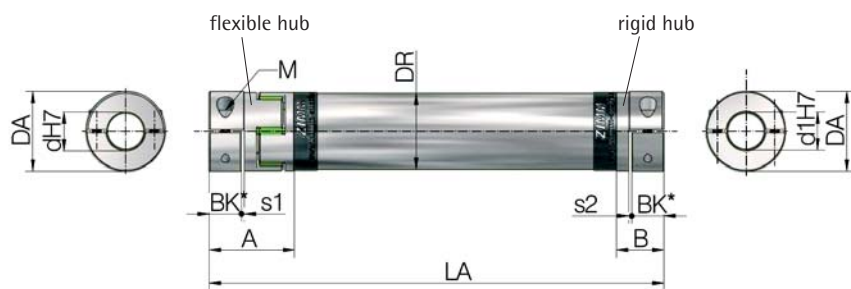
Axial offset:



ca. +/- 1 bis 2 mm

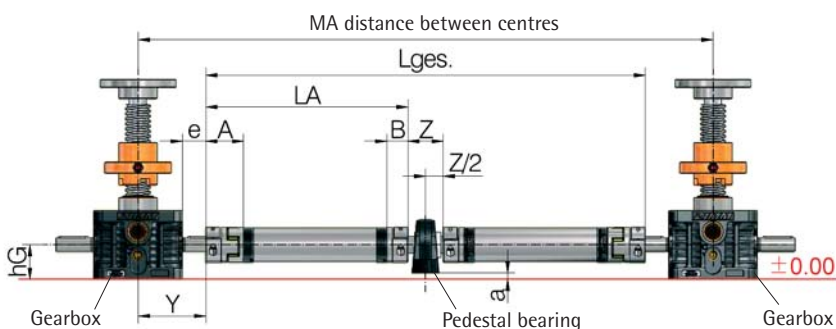


VWZ with rigid hub, for pedestal bearing use



Size	A	B	s1	s2	Bk*	d1	LA min
VWZ-30	34	20	2	1.2	15	15	85
VWZ-40	46	25	2	1.6	17	20	112
VWZ-60	63	40	2	2	30	20	154
VWZ-60V	73	42	2	2	35	30	175
VWZ-80	84	55	2	2	40	30	220
VWZ-100	97	65	2	2	50	50	251

*BK=shaft extension clamping length



Pedestal bearing: YES/NO?

The installation situation is very important when selecting shaft dimensions. For example, the cost of a larger diameter connecting shaft not requiring additional pedestal bearing support can be considerably less than the cost of a smaller connecting shaft requiring costly sub-structures for the additional pedestal bearing.

For this version we use the rigid hub version so that no radial misalignment can occur in the pedestal bearing.

Gearbox	Connecting shaft	e	Y	A	B	Z	L _{WZ}	d1	hG	hL	a
Z-5	VWZ-30	9	45	34	20	44	74	15	31	30.2	0.8
Z-5	VWZ-40	7	43	46	25	42	76	20	31	33.3	-2.3
Z-5	VWZ-60	2	38	63	40	42	102	20	31	33.3	-2.3
Z-10	VWZ-30	12.5	55	34	20	44	74	15	37	30.2	6.8
Z-10	VWZ-40	10.5	53	46	25	42	76	20	37	33.2	3.8
Z-10	VWZ-60	2.5	45	63	40	42	102	20	37	33.2	3.8
Z-25	VWZ-40	28	80.5	46	25	42	76	20	41	33.2	7.8
Z-25	VWZ-60	15	67.5	63	40	42	102	20	41	33.2	7.8
Z-25	VWZ-80	5	57.5	84	55	50	130	30	41	42.9	-1.9
Z-35	VWZ-40	28	84	46	25	42	76	20	50	33.2	16.8
Z-35	VWZ-60	15	71	63	40	42	102	20	50	33.2	16.8
Z-35	VWZ-60V*	10	66	73	42	60	130	30	50	42.9	7.1
Z-35	VWZ-80*	5	61	84	55	50	130	30	50	42.9	7.1
Z-50	VWZ-60	17.5	90	63	40	42	102	20	58	33.3	24.7
Z-50	VWZ-60V	12.5	85	73	42	60	130	30	58	42.9	15.1
Z-50	VWZ-80*	7.5	80	84	55	50	130	30	58	42.9	15.1
Z-100	VWZ-60	30	124	63	40	42	102	20	80	33.2	46.8
Z-100	VWZ-60V	25	119	73	42	60	130	30	80	42.9	37.1
Z-100	VWZ-80	20	114	84	55	50	130	30	80	42.9	37.1
Z-150	VWZ-60	30	130	63	40	42	102	20	92.5	33.2	59.3
Z-150	VWZ-60V	25	125	73	42	60	130	30	92.5	42.9	49.6
Z-150	VWZ-80	20	120	84	55	50	130	30	92.5	42.9	49.6
Z-250	VWZ-80	24	144	84	55	50	130	30	105	42.9	62.1
Z-250	VWZ-100	14	134	97	65	70	170	50	102	57.2	44.8
Z-350	VWZ-80	35	175	84	55	50	130	30	115	42.9	72.1
Z-350	VWZ-100	25	165	97	65	70	170	50	115	57.2	57.8
Z-500	VWZ-80	75	240	84	55	50	130	30	130	42.9	87.1
Z-500	VWZ-100	65	230	97	65	70	170	50	130	57.2	72.8

*cannot be fitted with pivot mounts LB



Ordering example:

VWZ-60-LA1800-25/20S

Size

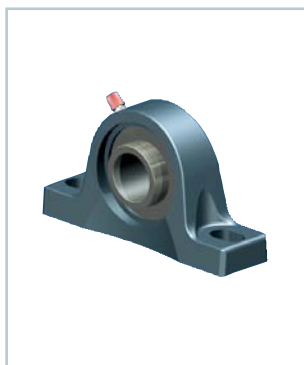
Length

Bore 1st side

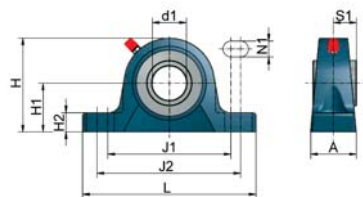
Bore 2nd side (S = rigid hub)

n=1500 rpm (specify the speed)

Pedestal bearing, shaft extension



Pedestal bearing STL
for connecting shaft VWZ

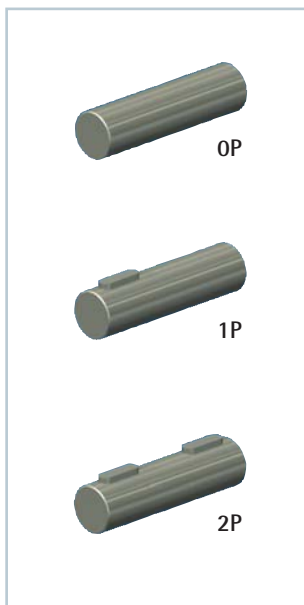
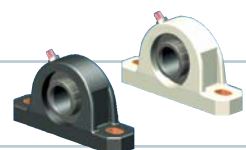


Part no.	d1	A	H	H1	H2	J1	J2	L	N1	S1	kg
STL-15-G	15	32	56	30.2	14	88	106	127	11.5	15.3	0.47
STL-20-G	20	32	65	33.3	14	88	106	127	11.5	18.3	0.59
STL-30-G	30	40	82.5	42.9	17	108	127	152	14	22.2	1.10
STL-40-G	40	48	99	49.2	19	125	146	175	14	30.2	1.85
STL-50-G	50	54	114.5	57.2	22	149	165	203	18	32.6	2.70

We use high-quality pedestal bearings.
Housing material: Grey cast iron, primed in blue
Bearing material: Roller bearing steel
Temperature range: -30°C to +120°C



Pedestal bearings of plastic "black" or "white" (foodstuffs applications) on request.
CAUTION: Dimensions may change!



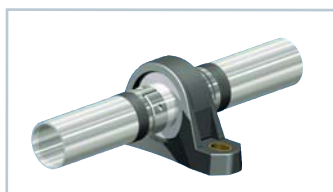
Shaft extension



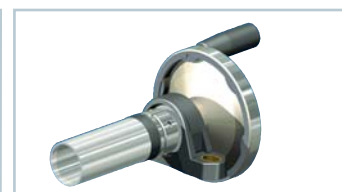
Material: Steel, ground

Part no.	d1	Lwz	kg
WZ-15/74-?P	15	74	0.10
WZ-20/76-?P	20	76	0.19
WZ-20/102-?P	20	102	0.25
WZ-30/130-?P	30	130	0.72
WZ-40/170-?P	40	170	1.67
WZ-50/170-?P	50	170	2.61

Examples:



VWZ with rigid hub, for pedestal bearings



Pedestal bearing with handwheel for driving the VWZ shaft

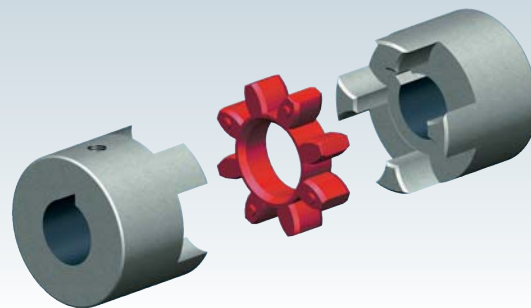
Shaft extension without fitted key (0P)

Shaft extensions with fitted key at one end (1P)

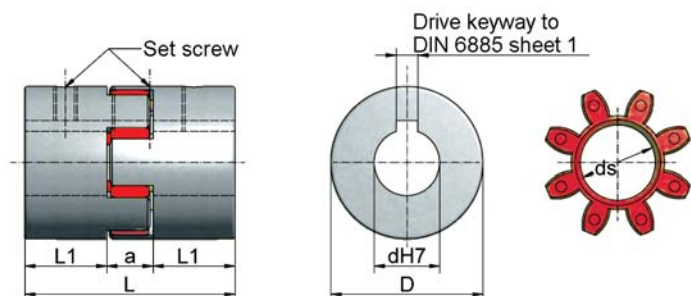


ZIMM VWZ shafts of 500 mm length and more are checked for concentricity as standard!





Standard coupling KUZ



Dimensions

Size	D	L	L1	a	ds _{star}	L1 _{long hub}	Set screw	Tightening torque [Nm]
KUZ-09	20	30	10	10	-	-	M4	1.5
KUZ-14	27.5	44	16	12	-	-	M6 (M4)	4.8 (1.5)
KUZ-19	34.5	51	19	13	12	-	M6	4.8
KUZ-24	40	66	25	16	17	40	M5	2
KUZ-28	55	78	30	18	26	-	M5	2
KUZ-38	65	90	35	20	29	60	M6	4.8
KUZ-45	80	114	45	24	37	-	M8	10
KUZ-55	95	126	50	26	45	-	M8	10
KUZ-60	105	140	56	28	50	-	M8	10
KUZ-70	120	160	65	30	59	-	M10	17
KUZ-75	135	185	75	35	67	-	M10	17
KUZ-90	160	210	85	40	79	-	M10	17

Technical data

Size	Rated torque [Nm]	max. Torque [Nm]	max. speed [rpm]	Shore hardness Star	Material*	Weight, drilled [kg]	Torsional stiffness C _{tdyn} [Nm/rad]	Moment of inertia [10 ⁻³ kgm ²]
KUZ-09	3	6	28000	92A	A	0.05	-	-
KUZ-14	4.5	4.5	20000	55D	S	0.14	254	0.02
KUZ-19	7.3	7.3	14000	55D	S	0.27	274	0.03
KUZ-24	17	34	14000	98A	S	0.34	2920	0.1
KUZ-28	60	120	10600	98A	S	0.9	9930	0.4
KUZ-38	160	320	8500	98A	S	1.5	26770	1.4
KUZ-45	325	650	7100	98A	G	2.35	48570	2.5
KUZ-55	450	900	6000	98A	G	3.55	54500	6.1
KUZ-60	525	1050	5600	98A	G	4.85	65290	10.2
KUZ-70	625	1250	4750	98A	G	7.4	94970	20.3
KUZ-75	900	1300	4250	98A	G	10.8	129510	37.1
KUZ-90	1500	3000	3550	98A	G	17.7	197500	84

*A = Aluminium, S = Sintered steel, G = Cast iron

Standard bores "d" [mm]

KUZ-09	U, 5*, 6, 7, 8, 9
KUZ-14	U, 9, 11, 14
KUZ-19	U, 11, 14, 16, 19
KUZ-24	U, 11, 14, 16, 19, 19L, 20, 24
KUZ-28	U, 14, 16, 19, 20, 24, 25, 28
KUZ-38	U, 25, 28, 28L, 32, 38
KUZ-45	U, 25, 28, 32, 38, 42, 45
KUZ-55	U, 28, 42, 48, 55

Other diameters available on request

U = not drilled (KUZ-14 and KUZ-19 pre-drilled Ø6.3)

L = long hub

*Coupling with set screw, without keyway

Coupling with keyway and set screw

- standard coupling with keyway and set screw
- provides rotational resilience
- maintenance-free
- material: as shown in the table

Elastomer star

- material: Polyurethane
- medium to good damping
- very good long-term strength
- temperature range: -20°C to +70°C reduced to -30°C, up to +100°C (Mx0.55)



Ordering example:

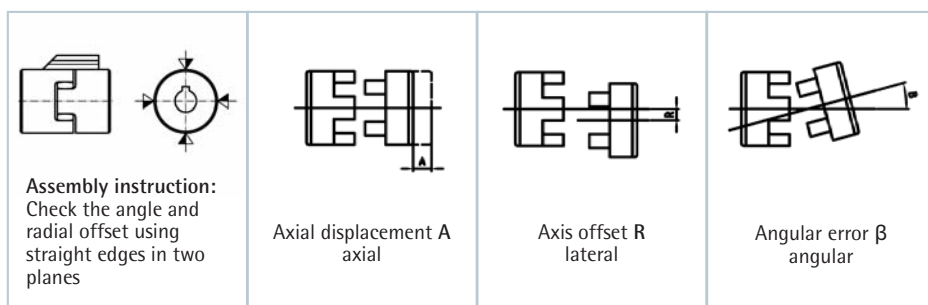
KUZ-24-20/24

Size

Bore d end 1

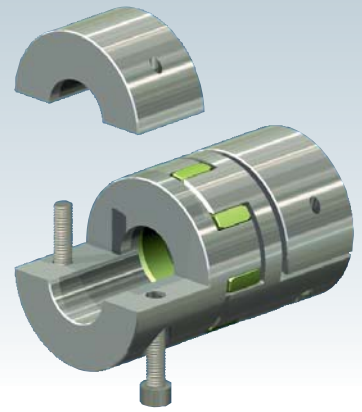
Bore d end 2

Potential assembly errors

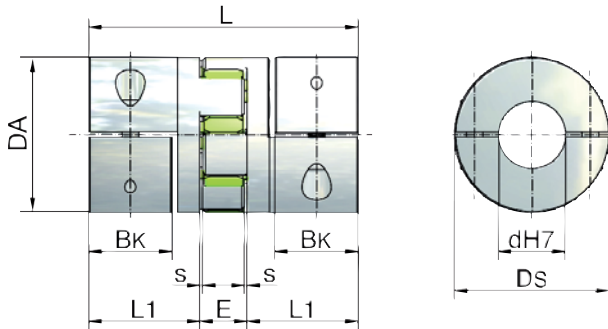


Permissible assembly errors

Size	A	R	β
KUZ-09	0.8	0.15	1.0°
KUZ-14	0.75	0.4	0.5°
KUZ-19	0.75	0.4	0.5°
KUZ-24	1.2	0.2	0.9°
KUZ-28	1.4	0.22	0.9°
KUZ-38	1.5	0.25	0.9°
KUZ-45	1.8	0.28	1.0°
KUZ-55	2	0.32	1.0°
KUZ-60	2.1	0.36	1.1°
KUZ-70	2.2	0.38	1.1°
KUZ-75	2.6	0.42	1.2°
KUZ-90	3	0.48	1.2°



Clamp coupling KUZ-KK



*BK=shaft extension clamping length

Standard bores "d" [mm]

KUZ-KK-16	8, 9, 10, 11, 12, 14, 15, 16
KUZ-KK-24	9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 22
KUZ-KK-32	10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32
KUZ-KK-35	12, 15, 16, 18, 20, 22, 24, 25, 28, 30, 32, 35
KUZ-KK-45	16, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45
KUZ-KK-60	25, 28, 32, 38, 40, 42, 45, 48, 50, 55

Coupling with split shells

- Split shells permit easy radial insertion
- High concentricity
- High clamping forces
- Low moment of inertia

- Stepless adjustment facility thanks to the clamp hub rather than a fitted drive key
- Keyway available on request
- Material: high-tensile aluminium

Elastomer star

- Permanently free of play, dampens vibration
- Shore hardness 64D
- Colour: ZIMM green
- Temperature range: 0°C to +70°C reduced to -20°C, to +100°C (Mx0.55)

Dimensions, technical data

Coupling size	Dimensions							Clamping screw M	Tightening torque [Nm]	Moment of inertia [10 ⁻³ kgm ²]	Torsional stiffness C _{tdyn} [Nm/rad]	Weight [kg]
	DA [mm]	DS [mm]	L [mm]	L1 [mm]	BK* [mm]	s [mm]	E [mm]					
KUZ-KK-16	32	32	54	21	15	1.5	12	M4	4	0.01	1375	0.10
KUZ-KK-24	42	44.5	66	25	17	1.5	16	M5	8	0.08	3700	0.20
KUZ-KK-32	56	57	98	40	30	2	18	M6	15	0.24	9917	0.55
KUZ-KK-35	67	68	114	47	35	2	20	M8	35	0.51	24417	0.90
KUZ-KK-45	82	85	134	55	40	2	24	M10	70	2.4	33667	1.60
KUZ-KK-60	102	105	156	65	50	2	26	M12	120	6	67667	2.70



Ordering example:

KUZ-KK-32-20/24

Size

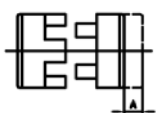
Bore d end 1

Bore d end 2

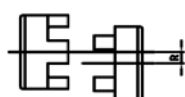
Torques

Coupling size	Elastomer star		Maximum transmittable torque of clamp hub depending on the bore diameter (clamp force)																	
	Rated torque [Nm]	Max. torque [Nm]	Ø9 [Nm]	Ø11 [Nm]	Ø14 [Nm]	Ø16 [Nm]	Ø19 [Nm]	Ø20 [Nm]	Ø22 [Nm]	Ø24 [Nm]	Ø25 [Nm]	Ø28 [Nm]	Ø30 [Nm]	Ø32 [Nm]	Ø38 [Nm]	Ø40 [Nm]	Ø42 [Nm]	Ø45 [Nm]	Ø48 [Nm]	Ø55 [Nm]
KUZ-KK-16	12	25	21	26	33	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KUZ-KK-24	17	34	-	41	52	60	70	74	81	-	-	-	-	-	-	-	-	-	-	-
KUZ-KK-32	60	120	-	60	76	87	104	109	120	131	136	153	164	175	-	-	-	-	-	-
KUZ-KK-35	160	320	-	-	-	120	-	188	206	-	235	-	-	301	-	-	-	-	-	-
KUZ-KK-45	325	650	-	-	-	325	386	406	447	488	508	568	610	650	772	-	854	915	-	-
KUZ-KK-60	530	1060	-	-	-	-	-	-	-	-	570	638	-	730	866	914	960	1029	1097	1250

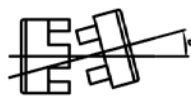
1. Axial offset - axial



2. Axial offset - lateral



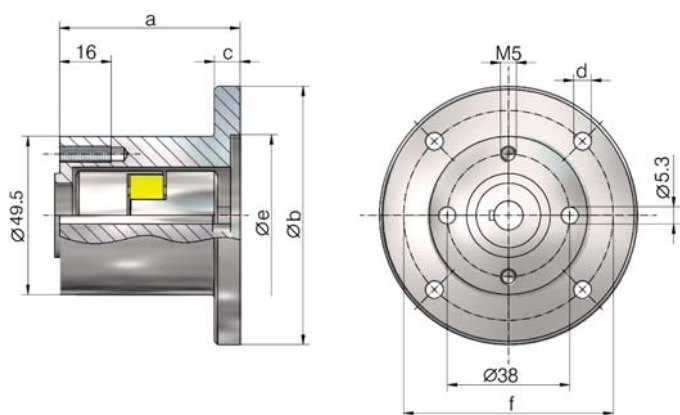
3. Angular error - angular



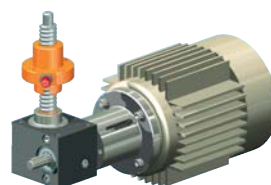
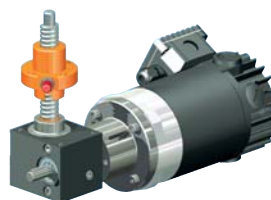
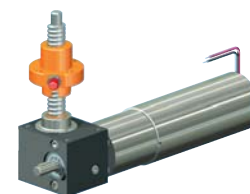
Size	max. axial offset in mm (axial)	max. axial offset in mm (lateral)	max. angular error in degrees (angular)
KUZ-KK-16	±1	0.08	1°
KUZ-KK-24	±2	0.08	1°
KUZ-KK-32	±2	0.10	1°
KUZ-KK-35	±2	0.15	1°
KUZ-KK-45	±2	0.12	1°
KUZ-KK-60	±2	0.14	1°



Motor flange GSZ-2



Material: Hard anodised aluminium
Incl. screws**



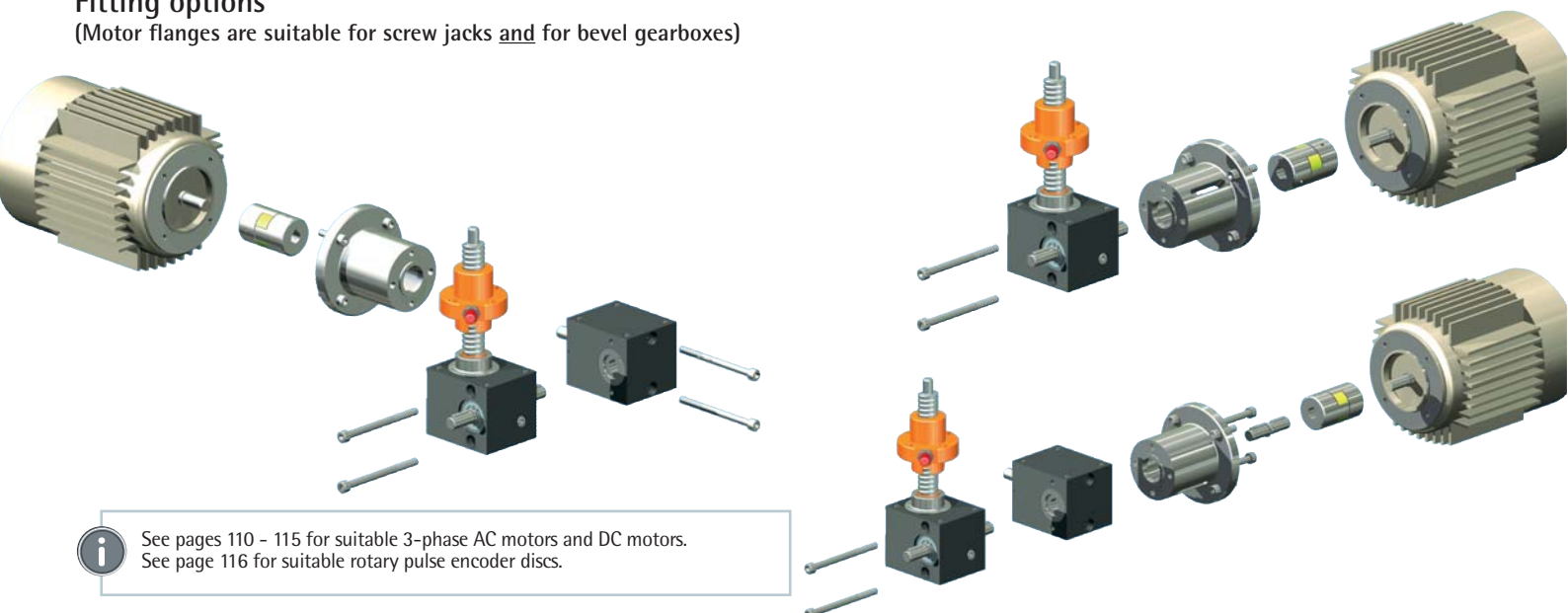
Motor flange Part no.	Motor type	Coupling part no.			2 of screws gearbox side DIN 912 (according to fitting)**	4 of screws motor side DIN 912 incl. spring washers	a	Øb	c	Ød	Øe	Øf	kg
		Size	Bore Ø	Motor									
GSZ-2-MF-49-51*	Ø53	KUZ-09	- 9 / 6		M5x55, M5x70	M4x30	51	49	-	4.3	25	36	0.19
GSZ-2-MF-80-51	56 B14C	KUZ-09	- 9 / 9		M5x55, M5x70	M5x20	51	80	9	5.5	50	65	0.22
GSZ-2-MF-80-41+P-120-15	63 B14B	KUZ-14	- 9 / 11		M5x55, M5x70, M5x45	M6x25	56	120	15	6.6	80	100	0.55
GSZ-2-MF-80-51+P-105-15	71 B14C	KUZ-14	- 9 / 14		M5x55, M5x70	M6x20	66	105	15	6.6	70	85	0.45

*GSZ-2-MF-49-51 is suitable only for GSZ-2 screw jacks, bevel gearboxes available for KSZ-2 on request

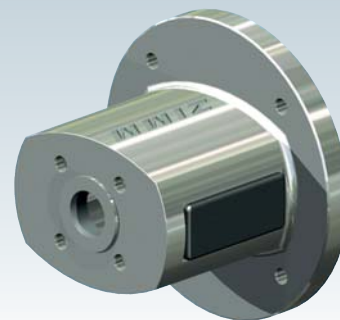
**Screws are included for all the various fitting options

Fitting options

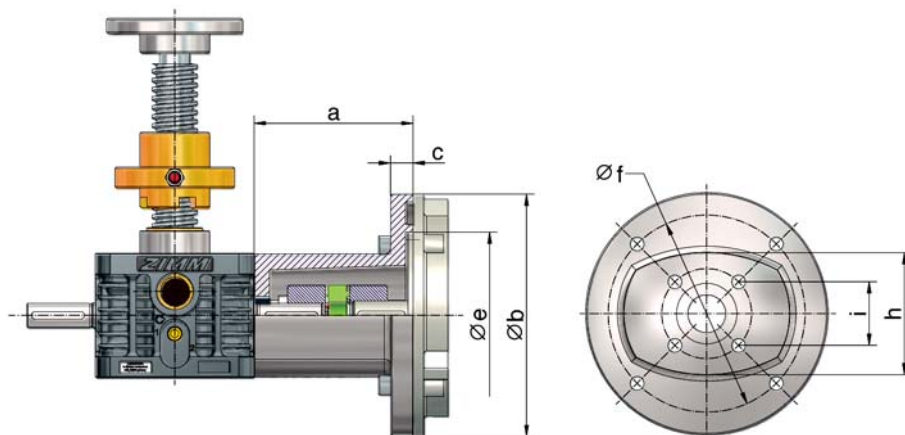
(Motor flanges are suitable for screw jacks and for bevel gearboxes)



See pages 110 - 115 for suitable 3-phase AC motors and DC motors.
See page 116 for suitable rotary pulse encoder discs.

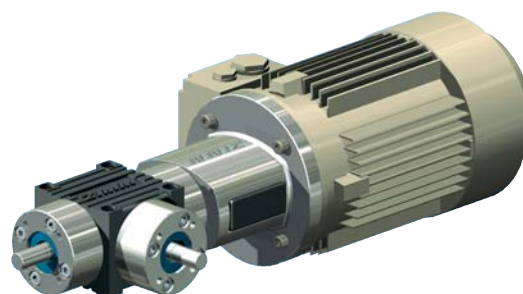


Motor flange Z-5 to Z-25

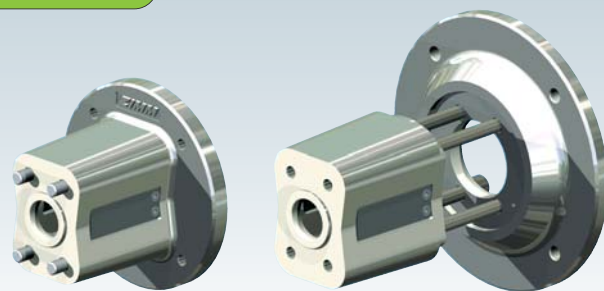


Material: Aluminium
Incl. screws

Motor flange Part no.	Motor type	Coupling part no. Size Bore Ø	4 of screws gearbox side 8.8	4 of socket head cap screws 8.8 DIN 912 for motor	a	b	c	e	f	h	i	kg
Z-5-MF-120-60	63 B14B	KUZ-14 - 11 / 11	M6x12 - DIN 7991	M6x20 + spring washers	60	120	10	80	100	61	32.5	0.33
Z-5-MF-105-68	71 B14C	KUZ-19 - 11 / 14	M6x12 - DIN 7991	M6x20 + spring washers	68	105	10	70	85	61	32.5	0.31
Z-10-MF-120-66	63 B14B	KUZ-19 - 14 / 11	M8x16 - DIN 7991	M6x20 + spring washers	66	120	10	80	100	73	35.4	0.42
Z-10-MF-160-75	71 B5	KUZ-19 - 14 / 14	M8x16 - DIN 7991	M8x35 + nuts	75	160	15	110	130	73	35.4	0.81
Z-10-MF-160-90	80 B14B	KUZ-24 - 14 / 19	M8x16 - DIN 7991	M8x30 + spring washers	90	160	15	110	130	73	35.4	0.88
Z-25-MF-160-105	71 B5	KUZ-28 - 16 / 14	M8x20 - DIN 7991	M8x35 + nuts	105	160	15	110	130	81	42	1.11
Z-25-MF-160-105	80 B14B	KUZ-24 - 16 / 19	M8x20 - DIN 7991	M8x30 + spring washers	105	160	15	110	130	81	42	1.11
Z-25-MF-160-105	90 B14B	KUZ-24 - 16 / 24	M8x20 - DIN 7991	M8x30 + spring washers	105	160	15	110	130	81	42	1.11
Z-25-MF-160-122	100 B14C	KUZ-28 - 16 / 28	M8x20 - DIN 7991	M8x30 + spring washers	122	160	15	110	130	81	42	1.25

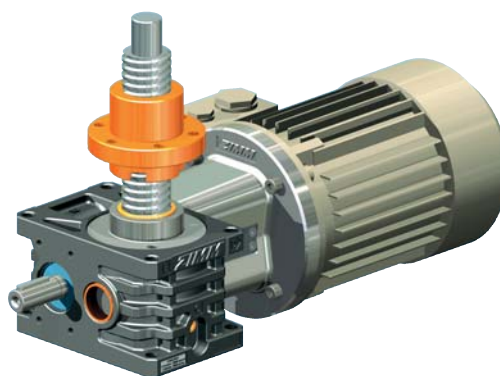
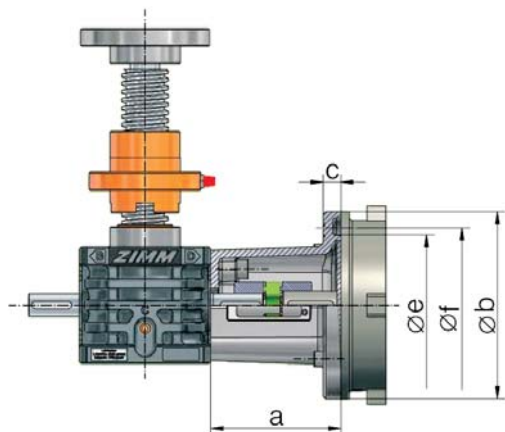


Motor flange for Z-5 to Z-50 are also suitable for bevel gearboxes KSZ and KGZ.

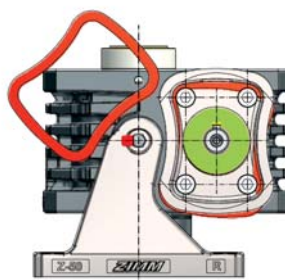
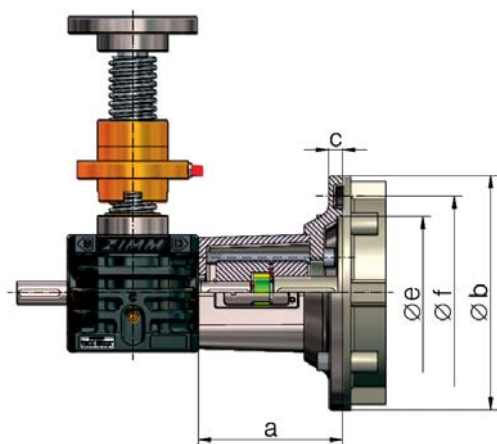


Motor flange for Z-35 to Z-150

Motor flange (one-piece)



Motor flange base + motor flange plate



Material: GGG-50, corrosion-resistant
Incl. screws

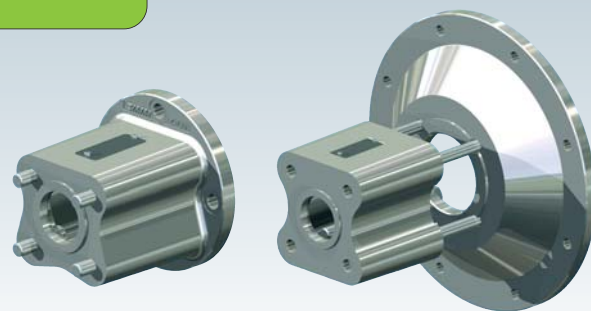
Motor flange Part no.	Motor type	Coupling part no.			4 of screws gearbox side DIN 912	4 of screws motor side DIN 912	a	b	c	e	f	kg
		Size	Bore Ø	Motor								
Z-35-MF-160-111	80 B14B	KUZ-24	- 19	/ 19	M10x30	M8x25 ¹⁾	111	160	15	110	130	2.6
Z-35-MF-160-111	90 B14B	KUZ-24	- 19	/ 24	M10x30	M8x25 ¹⁾	111	160	15	110	130	2.6
Z-35-MF-B + Z-35-MF-P-200	100 B14B	KUZ-28	- 19	/ 28	M10x120	M10x30 ¹⁾	123	200	12	130	165	3.6
Z-35-MF-B + Z-35-MF-P-200	112 B14B	KUZ-28	- 19	/ 28	M10x120	M10x30 ¹⁾	123	200	12	130	165	3.6
Z-35-MF-B + special plate	servomotors, geared motors, Nema motors,...											
Z-50-MF-200-116	90 B5	KUZ-28	- 20	/ 24	M10x30	M10x45 ²⁾	116	200	20	130	165	4.1
Z-50-MF-200-126	100 B14B	KUZ-28	- 20	/ 28	M10x30	M10x35 ¹⁾	126	200	20	130	165	4.3
Z-50-MF-200-126	112 B14B	KUZ-28	- 20	/ 28	M10x30	M10x35 ¹⁾	126	200	20	130	165	4.3
Z-50-MF-B + special plate	servomotors, geared motors, Nema motors,...											
Z-100/150-MF-200-138	100 B14B	KUZ-28	- 25	/ 28	M12x40 ⁴⁾	M10x35 ¹⁾	138 ³⁾	200	20	130	165	5.2
Z-100/150-MF-200-138	112 B14B	KUZ-28	- 25	/ 28	M12x40 ⁴⁾	M10x35 ¹⁾	138 ³⁾	200	20	130	165	5.2
Z-100/150-MF-B + P-200	132 B14C	KUZ-38	- 25	/ 38	M12x150 ⁴⁾	M10x65 ¹⁾	161 ³⁾	200	48	130	165	8.7
Z-100/150-MF-B + special plate	servomotors, geared motors, Nema motors,...											

¹⁾ incl. spring washers

²⁾ incl. nuts

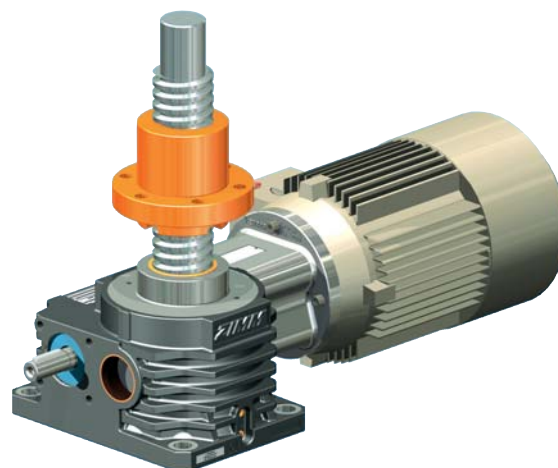
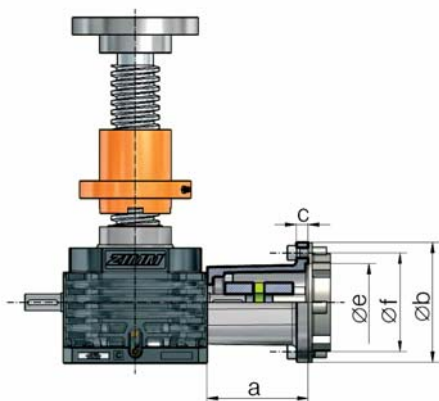
³⁾ for GSZ: +6 mm (plate)

⁴⁾ for GSZ: M12x45/M12x160

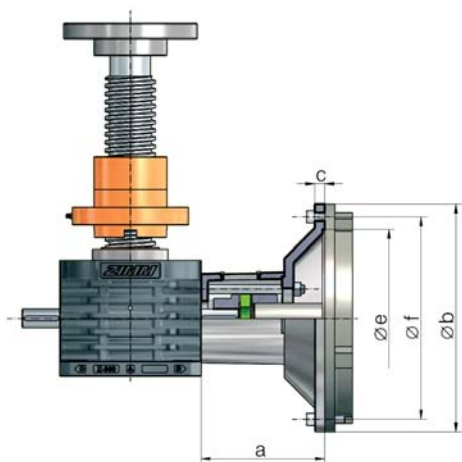


Motor flange Z-250 to Z-1000

Motor flange (one-piece)



Motor flange base + motor flange plate



Material: GGG-50, corrosion-resistant
Incl. screws

Motor flange Part no.	Motor type	Coupling part no. Size Bore Ø Gearbox Motor	4 of screws gearbox side DIN 912	4 of screws motor side DIN 912	a	b	c	e	f	kg
Z-250-MF-200-168	100 B14B	KUZ-38 - 28L / 28L	M16x55	M10x40 ¹⁾	168	200	20	130	165	8.5
Z-250-MF-200-168	112 B14B	KUZ-38 - 28L / 28L	M16x55	M10x40 ¹⁾	168	200	20	130	165	8.5
Z-250-MF-200-168	132 B14C	KUZ-38 - 28 / 38	M16x55	M10x40 ¹⁾	168	200	20	130	165	8.5
Z-250-MF-200-168 + P-350	160 B5	KUZ-45 - 28 / 42	M16x55	M16x70 ²⁾	198	350	30	250	300	20.5
Z-250-MF-200-168 + P-350	180 B5	KUZ-55 - 28 / 48	M16x55	M16x70 ²⁾	198	350	30	250	300	20.5
Z-250-MF-200-168 + P-400	200 B5	KUZ-55 - 28 / 55	M16x55	M16x70 ²⁾	200	400	32	300	350	25
Z-250-200-168 -MF-B + special plate	servomotors, geared motors, Nema motors,...									
Z-350-MF-B + P-350	180 B5	KUZ-55 - 38 / 48	4x M18 ³⁾	M16x60 ²⁾	211	350	19	250	300	24
Z-350-MF-B + P-400	200 B5	KUZ-55 - 38 / 55	4x M18 ³⁾	M16x60 ²⁾	211	400	19	300	350	27
Z-350-MF-B + P-450	225 B5	KUZ-60 - 38 / 60 ⁴⁾	4x M18 ³⁾	M16x60 ²⁾ (8x)	243	450	19	350	400	33
Z-350-MF-B + special plate	servomotors, geared motors, Nema motors,...									
Z-500-MF-B + P-400	200 B5	KUZ-55 - 40 / 55	5x M20 ³⁾	M16x60 ²⁾	251	400	19	300	350	32
Z-500-MF-B + P-450	225 B5	KUZ-60 - 40 / 60 ⁴⁾	5x M20 ³⁾	M16x60 ²⁾ (8x)	285	450	19	350	400	40
Z-500-MF-B + P-550	250 B5	KUZ-70 - 40 / 65 ⁴⁾	5x M20 ³⁾	M16x70 ²⁾ (8x)	285	550	21	450	500	55
Z-500-MF-B + special plate	servomotors, geared motors, Nema motors,...									

¹⁾ incl. spring washers

²⁾ incl. nuts and spring washers

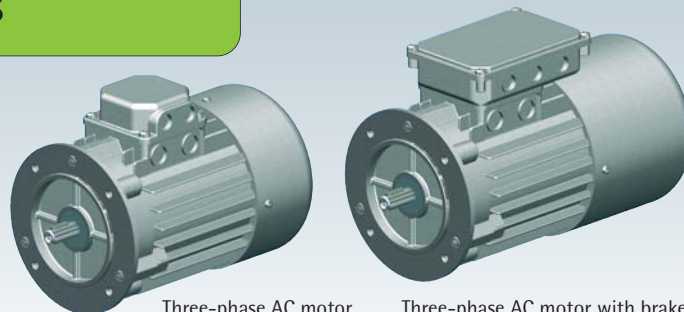
³⁾ set screws 8.8 with nuts and spring washers

⁴⁾ from size 225 check the shaft diameter, it can vary depending on the motor (these diameters should be suitable for 4, 6 and 8-pole motors)



Motor flange for Z-750 and Z-1000 on request

Overview

Three-phase AC motor

Three-phase AC motor with brake

Three-phase AC motors, three-phase AC motors with brakes

Standard three-phase motors (asynchronous)
No-load speed ~1500 rpm (other speeds on request)
230/400 V Δ 50 Hz, S1 or S3-75%, ISO F
Three-phase AC motors: IP 55
Three-phase AC motors with brakes: IP 54

Voltage ranges
220 - 240 V Δ 50 Hz
380 - 415 V Δ 50 Hz

380 - 415 V Y 50 Hz
660 - 690 V Y 50 Hz

Frame size	Power	Rated speed	Rated torque	Rated current at 400 V	for direct-on-line starting		Breakdown torque to rated torque	Moment of inertia J	Efficiency (at 100% load)	Power factor (at 100% load)	Weight without brake	Weight with brake
IEC	kW	rpm	Nm	A	Starting current to rated current	Starting torque to rated torque	M _k /M _N	approx. kgm ²	η %	cos	approx. kg	approx. kg
56	0.09	1300	0.66	0.35	2.5	1.8	2.0	0.0002	50.0	0.76	2.7	4.0
63	0.18	1330	1.30	0.65	2.3	1.9	1.9	0.0003	58.0	0.70	4.1	6.0
63	0.25*	1340	1.81	0.94	2.2	1.7	2.5	0.0004	60.0	0.76	4.2	6.5
71	0.37	1360	2.60	1.2	2.8	2.0	2.0	0.0008	63.0	0.70	6.0	8.0
71	0.75*	1370	5.33	2.1	2.9	2.1	2.4	0.0012	69.0	0.78	8.3	10.3
80	0.75	1410	5.10	2.0	4.5	2.2	2.8	0.0020	70.0	0.70	9.3	13.0
80	1.5*	1390	10.4	3.4	4.1	3.2	3.2	0.0026	72.0	0.70	11.5	15.2
90L	1.5	1410	10.3	3.7	4.9	3.0	3.0	0.0032	79.0	0.74	14.4	18.0
90L	2.2*	1400	15.2	5.2	4.5	2.7	2.7	0.0039	78.0	0.81	17.5	21.1
100L	2.2	1420	14.8	5.3	4.0	2.3	2.7	0.0046	83.0	0.74	19.2	25.5
100L	3.0	1410	20.3	6.7	3.9	2.3	2.5	0.0056	82.0	0.79	22.4	28.0
100L	4.0*	1420	27.0	8.9	4.0	2.2	2.2	0.0065	81.0	0.82	26.3	31.9
112M	4.0	1440	27.0	9.4	3.3	2.5	2.9	0.0133	83.0	0.75	30.4	38.0
112M	5.5*	1440	36.4	11.7	3.9	2.1	2.3	0.0139	84.0	0.83	33.0	40.6
132S	5.5	1440	36.0	12.0	5.8	3.0	3.0	0.0224	83.0	0.80	41.9	56.0
132M	7.5	1440	50.0	15.4	6.8	3.1	3.1	0.0293	86.0	0.82	51.0	66.0
132M	11*	1445	73.1	24.5	8.2	3.5	3.5	0.0458	83.0	0.80	74.0	89.0
160M	11	1460	72.1	20.7	7.6	2.1	2.4	0.0832	89.1	0.86	101.0	111.0
160L	15	1460	96.2	29.2	7.1	2.4	2.6	0.1506	89.4	0.83	110.0	120.0
180M	18.5	1465	119.0	34.3	7.1	2.3	2.6	0.1773	90.4	0.86	135.0	150.0
180L	22	1475	142.0	41.1	6.9	2.4	2.6	0.2936	90.9	0.85	145.0	160.0
200L	30	1475	190.0	54.0	6.6	2.1	2.3	0.6345	92.1	0.87	230.0	253.0
225S	37	1470	238.0	64.7	7.0	2.3	2.5	0.3251	92.8	0.89	338.0	361.0
225M	45	1470	286.0	77.9	7.4	2.3	2.4	0.7866	92.6	0.90	358.0	381.0
250M	55	1465	359.0	94.0	7.5	2.6	2.6	0.9483	93.4	0.90	482.0	517.0
250ML	75	1480	484.0	134.0	6.3	1.2	2.2	0.9988	94.0	0.80	535.0	570.0
280S	75	1475	476.0	136.0	6.8	2.1	2.5	1.8495	93.5	0.85	591.0	631.0
280M	90	1485	591.0	167.0	8.3	2.5	2.9	2.2306	93.6	0.85	662.0	702.0
280ML	110	1480	710.0	190.0	6.9	2.7	3.1	2.6800	94.0	0.89	750.0	790.0
315S	110	1485	709.0	199.0	7.5	2.3	2.5	2.8136	93.9	0.85	867.0	940.0
315M	132	1480	830.0	229.0	7.5	2.4	2.6	3.3435	94.7	0.88	990.0	1063.0
315M	160	1485	1040.0	277.0	7.3	2.7	2.7	3.3435	94.7	0.88	1003.0	1076.0
315M	200	1485	1277.0	349.0	7.6	2.4	2.6	3.3435	95.0	0.87	1003.0	1076.0
355M	250	1475	1619.0	432.0	7.5	2.4	2.5	5.8740	95.0	0.88	1380.0	1490.0
355M	315	1485	2024.0	542.0	6.9	2.5	2.6	6.8900	95.3	0.88	1600.0	1790.0

*Power is higher than the IEC standard (progressive)



Sizes 63 to 132 available on short lead times
Sizes 160 to 355 available on request

CAUTION:

Overdimensioning the motor power risks overstressing other components. The effects must be considered not only under load but also for the no-load case.

We supply motor brakes as standard for a connection voltage of 230V AC, operating voltage 205 V DC, with bridge rectifiers.



Ordering example:

90-P4-1.5-B5-B-2W

Size
Number of poles - speed
4-pole = 1500 rpm
Power [kW]
Design
with brake (if required)
with a second shaft end (if required)

Three-phase AC motors, general information

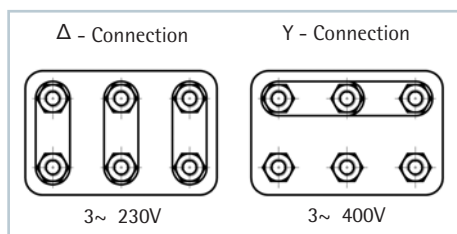


Connection arrangement

The motors usually have a terminal board with 6 terminals and a protective earth terminal in the terminal box. The stator winding can be switched into star or delta connection using the connection links.

Star/delta starting is not suitable for screw jack systems because full torque is required immediately on starting.

For motor windings 230/400V (example)



Operating voltage 230V delta:
Motor windings 230/400V

Operating voltage 400V delta:
Motor windings 400/660V

Direction of rotating

Motors can be arranged for either direction of rotation. When the line phases L1, L2, L3 are connected to the motor terminals U1, V1, W1, the direction of rotation is clockwise. Swapping over two of the supply lines reverses the direction of rotation.

Speeds

Three-phase AC motors have different rotational speeds depending on the number of poles. Generally we recommend our standard motor with 1500 rpm (4 poles).

Other numbers of poles are available on request. Pole-changing motors allow a choice of 2 different rotational speeds.

Speed (50 Hz)	Number of poles
3000	2
1500	4 (= preferred type)
1000	6
750	8
500	12

Geared motors

Geared motors are available for particular projects on request.

Operation with frequency converters

Especially for larger screw jacks and systems, we recommend the use of a frequency converter to achieve smooth start-up and brake ramps. This minimizes start-up noise and extends the service life of the gearbox.

When operating with a frequency converter, remember that if the motor is to be operated for extended periods at frequencies less than 25 Hz, its fan must be driven separately. This is necessary to ensure adequate motor cooling.

When operating a braked motor with a frequency converter, a separate actuation line for the brake must be provided via the frequency converter.

Braked motor

We recommend using a braked motor to minimise the overrun time of the system. Where a screw jack is fitted with a ball screw or a double-pitch screw, a braked motor is absolutely essential. We supply motor brakes as standard for a connection voltage of 230V AC / operating voltage 205V DC, with bridge rectifiers. Other connection voltages (24V DC, 400V AC, 500V AC) are available on request.

Temperature monitoring

Generally we do not supply temperature monitoring because screw jack duty cycles are normally quite low or the motor is adequately dimensioned.

Temperature control thermal resistor (PTC) or bimetal (TKÖ) is available on request.

Some types are available ex stock with thermal resistor (PTC).

Permanent-magnet DC motors



24V DC, IP 54, with terminal box

Frame size IEC	Power [P]	Speed [rpm]	Rated torque*** [Nm]	Starting torque [Nm]	Voltage [V]	Rated current [A]	Motor length (without shaft)	Weight [kg]
Ø53	60W	3000	0.17	1.4	24V DC	2.9	128	1.2
56, B14C Ø80	85W	1500**	0.53	1.5	24V DC	4.5	149*	2.7
56, B14C Ø80	165W	1500**	1.0	3.0	24V DC	8.8	196*	4.3
56, B14C Ø80	250W	1500**	1.6	4.5	24V DC	13.5	241*	5.6

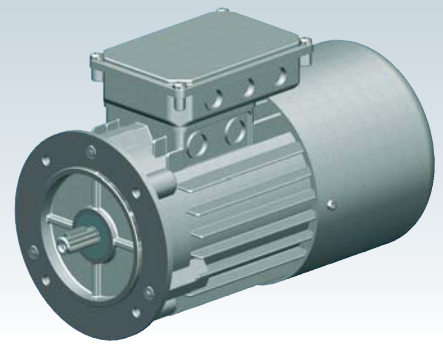
*Optional brake available (24V DC, 13W, 2 Nm, 1.1 kg), + 44 mm length

** 3000 rpm motor available on request, torque remains the same

*** Short-term operation at twice the torque is possible

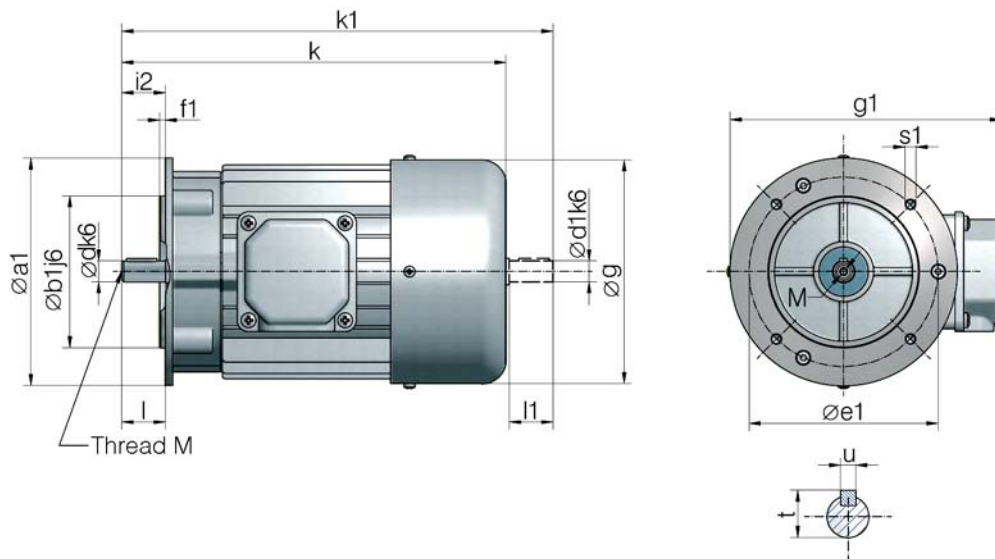


Other sizes available on request



Three-phase AC motors, three-phase AC motors with brakes, flange profile B14B, large flange

B14: Flange with internal thread
B: Large flange



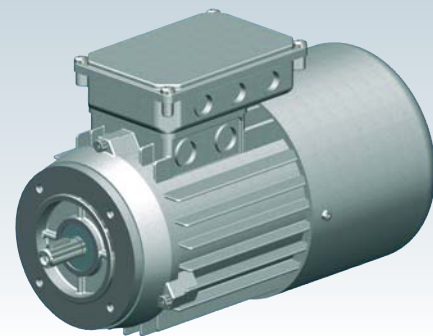
We reserve the right to change the dimensions without changing the motor designation.

Size	a1	b1	e1	f1	g	i2	s1	d	l	t	u
63	120	80	100	3.0	125	23	M6	11	23	12.5	4
71	140	95	115	3.0	141	30	M8	14	30	16.0	5
80	160	110	130	3.5	159	40	M8	19	40	21.5	6
90	160	110	130	3.5	179	50	M8	24	50	27.0	8
100	200	130	165	3.5	199	60	M10	28	60	31.0	8
112	200	130	165	3.5	223	60	M10	28	60	31.0	8

These dimensions are standardised and thus always remain the same.

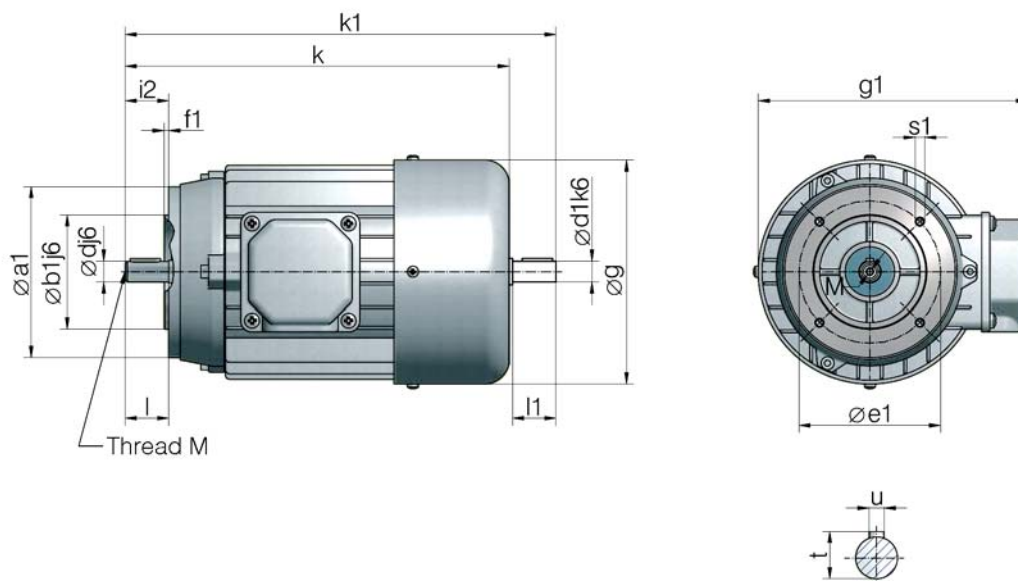
		without brake				with brake	with brake and second shaft end					
Size	kW (4-pole)	k	k1	d1	l1	k	k	k1	d1	l1	q1	M
63	0.18	212	238	11	23	261	261	285	9	20	172	4
63	0.25	212	238	11	23	239	261	285	9	20	172	4
71	0.37	248	281	14	30	263	295	325	11	23	188	5
71	0.75	248	281	14	30	263	295	325	11	23	188	5
80	0.75	277	315	19	40	310	330	375	19	40	211	6
80	1.5	277	315	19	40	310	330	375	19	40	211	6
90	1.5	329	378	24	50	390	390	432	19	40	227	8
90	2.2	329	378	24	50	348	390	432	19	40	227	8
100	3.0	369	429	28	60	451	433	487	24	50	248	10
100	4.0	369	429	28	60	451	433	487	24	50	248	10
112	5.5	391	448	28	60	456	456	511	24	50	266	10

These dimensions are our standard (4-pole), but may vary in individual cases.



Three-phase AC motors, three-phase AC motors with brakes, flange profile B14C, small flange

B14: Flange with internal thread
C: Small flange



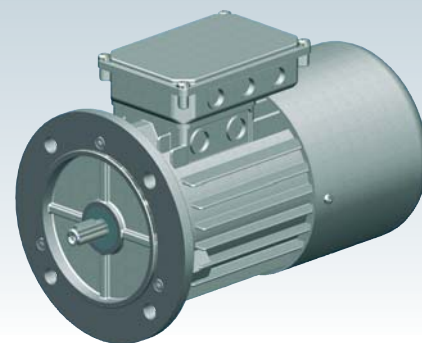
We reserve the right to change the dimensions without changing the motor designation.

Size	a1	b1	e1	f1	g	i2	s1	d	l	t	u
56	80	50	65	2.5	110	20	M5	9	20	10.2	3
63	90	60	75	2.5	125	23	M5	11	23	12.5	4
71	105	70	85	2.5	141	30	M6	14	30	16.0	5
80	120	80	100	3.0	159	40	M6	19	40	21.5	6
90	140	95	115	3.0	179	50	M8	24	50	27.0	8
100	160	110	130	3.5	199	60	M8	28	60	31.0	8
112	160	110	130	3.5	223	60	M8	28	60	31.0	8
132	200	130	165	4.0	258	80	M10	38	80	41.0	10

These dimensions are standardised and thus always remain the same.

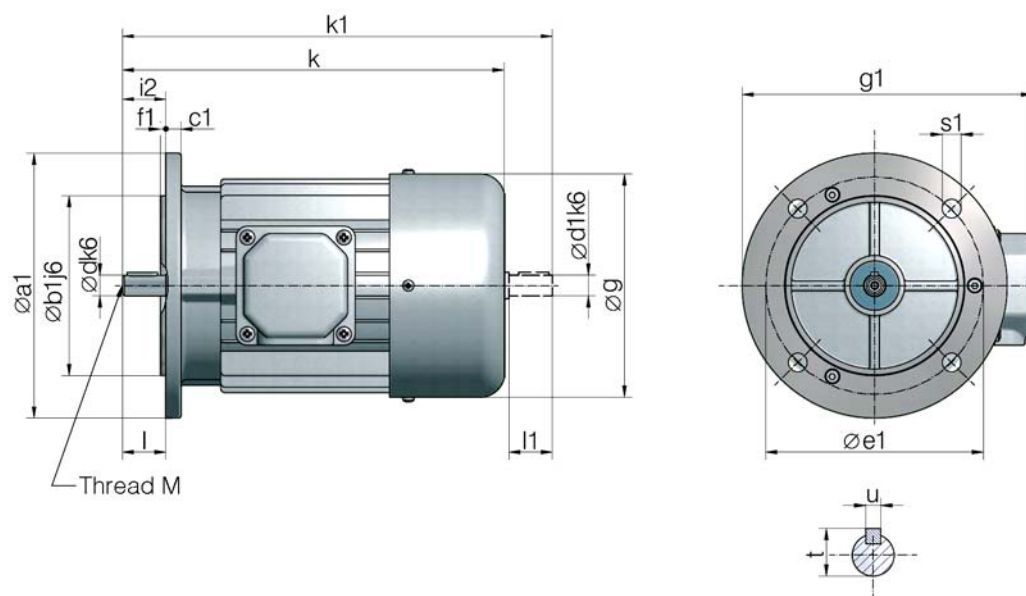
Size	kW (4-pole)	without brake				with brake	with brake and second shaft end				g1	M
		k	k1	d1	l1	k	k	k1	d1	l1		
56	0.09	189	212	9	20	243	243	-	-	-	161	4
63	0.18	212	238	11	23	261	261	285	9	20	172	4
63	0.25	212	238	11	23	239	261	285	9	20	172	4
71	0.37	248	281	14	30	263	295	325	11	23	188	5
71	0.75	248	281	14	30	263	295	325	11	23	188	5
80	0.75	277	315	19	40	310	330	375	19	40	211	6
80	1.5	277	315	19	40	310	330	375	19	40	211	6
90	1.5	329	378	24	50	390	390	432	19	40	227	8
90	2.2	329	378	24	50	348	390	432	19	40	227	8
100	3.0	369	429	28	60	451	433	487	24	50	248	10
100	4.0	369	429	28	60	451	433	487	24	50	248	10
112	5.5	391	448	28	60	456	456	511	24	50	266	10
132	7.5	490	570	38	80	585	-	-	-	-	326	12

These dimensions are our standard (4-pole), but may vary in individual cases.



Three-phase AC motors, three-phase AC motors with brakes, flange profile B5

B5: Flange with through holes



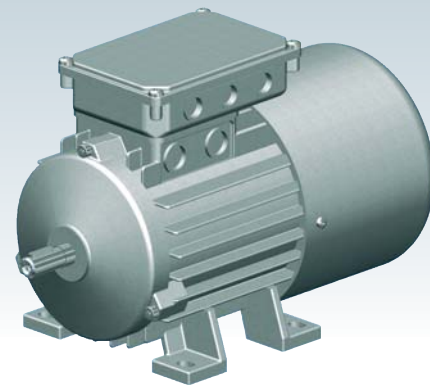
We reserve the right to change the dimensions without changing the motor designation.

Size	a1	b1	c1	e1	f1	g	i2	s1	d	l	t	u
63	140	95	5	115	3.0	125	23	9.5	11	23	12.5	4
71	160	110	7	130	3.5	141	30	9.5	14	30	16.0	5
80	200	130	8	165	3.5	159	40	11.5	19	40	21.5	6
90	200	130	8	165	3.5	179	50	11.5	24	50	27.0	8
100	250	180	10	215	4.0	199	60	14	28	60	31.0	8
112	250	180	10	215	4.0	223	60	14	28	60	31.0	8

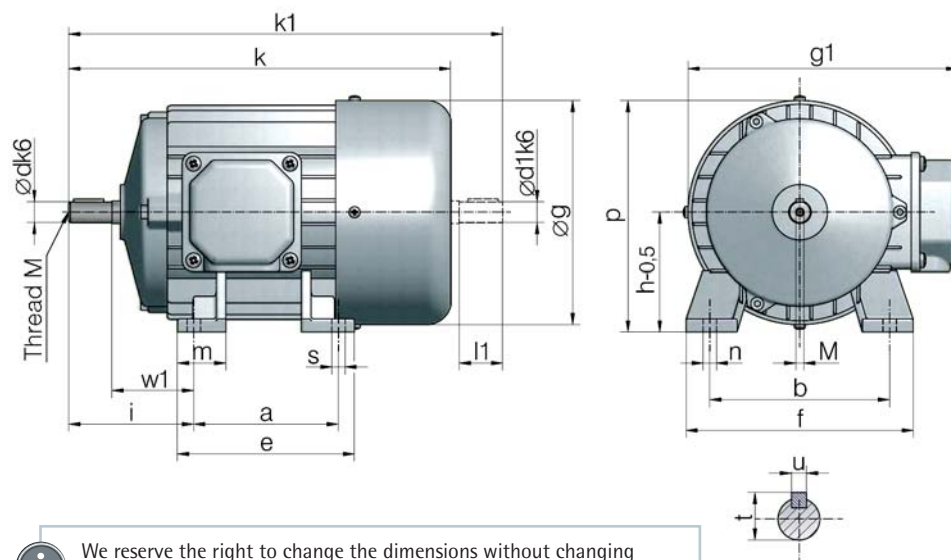
These dimensions are standardised and thus always remain the same.

		without brake				with brake	with brake and second shaft end					
Size	kW	k	k1	d1	l1	k	k	k1	d1	l1	g1	M
63	0.18	212	238	11	23	261	261	285	9	20	172	4
63	0.25	212	238	11	23	239	261	285	9	20	172	4
71	0.37	248	281	14	30	263	295	325	11	23	188	5
71	0.75	248	281	14	30	263	295	325	11	23	188	5
80	0.75	277	315	19	40	310	330	375	19	40	211	6
80	1.5	277	315	19	40	310	330	375	19	40	211	6
90	1.5	329	378	24	50	390	390	432	19	40	227	8
90	2.2	329	378	24	50	348	390	432	19	40	227	8
100	3.0	369	429	28	60	451	433	487	24	50	248	10
100	4.0	369	429	28	60	451	433	487	24	50	248	10
112	5.5	391	448	28	60	456	456	511	24	50	266	10

These dimensions are our standard (4-pole), but may vary in individual cases.



Three-phase AC motors, three-phase AC motors with brakes, pedestal mounted type B3



For this type, we can supply a flanged motor (e.g.: B14) with additional pedestal mounts fitted.

This version is generally available on a shorter lead time. The dimensions remain the same.

Please specify the terminal box position (top, right or left when looking at the motor shaft). If not otherwise specified, we deliver up to size 112 with the box on top and from size 132 with it on the right.

i We reserve the right to change the dimensions without changing the motor designation.

Size	a	b	g	h	i	p*	s	n	w1	d	l	t	u
63	80	100	125	63	63	126	7	11	40	11	23	12.5	4
71	90	112	141	71	75	142	7	7	45	14	30	16.0	5
80	100	125	159	80	90	160	9	17	50	19	40	21.5	6
90	125	140	179	90	106	180	9	17	56	24	50	27.0	8
100	140	160	199	100	123	200	12	20	63	28	60	31.0	8
112	140	190	223	112	130	224	12	21	70	28	60	31.0	8
132S	140	216	262	132	169	264	12	-	89	38	80	41.0	10
132M	178	216	262	132	169	264	12	-	89	38	80	41.0	10
160M	210	254	318	160	218	320	14	-	108	42	110	45.0	12
160L	254	254	318	160	218	320	14	-	108	42	110	45.0	12
180M	241	279	358	180	231	360	14	-	121	48	110	51.5	14
180L	279	279	358	180	231	360	14	-	121	48	110	51.5	14
200L	305	318	398	200	243	400	19	-	133	55	110	59.0	16

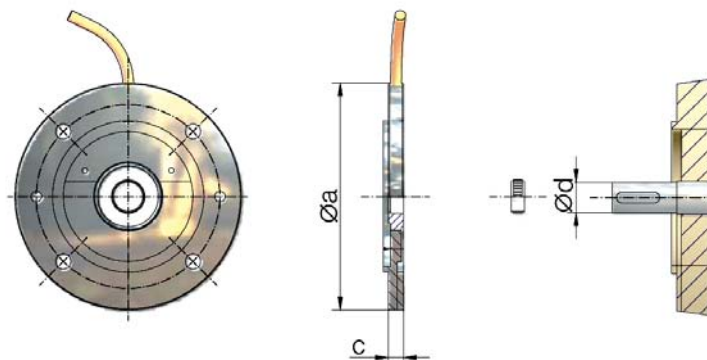
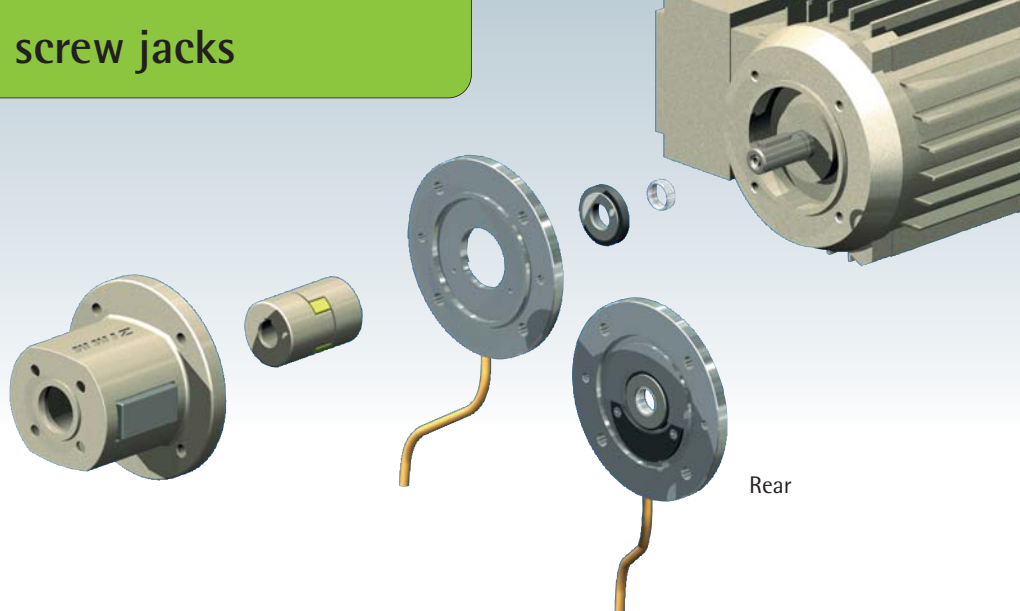
These dimensions are standardised and thus always remain the same.

* The height g1 is for top-mounted terminal boxes

Size	kW	without brake				with brake	with brake and second shaft end				c	e	f	g1	M
		k	k1	d1	l1	k	k	k1	d1	l1					
63	0.18	212	238	11	23	261	261	285	9	20	10	105	120	172	4
63	0.25	212	238	11	23	239	261	285	9	20	10	105	120	172	4
71	0.37	248	281	14	30	263	295	325	11	23	11	108	136	188	5
71	0.75	248	281	14	30	263	295	325	11	23	11	108	136	188	5
80	0.75	277	315	19	40	310	330	375	19	40	11	125	154	211	6
80	1.5	277	315	19	40	310	330	375	19	40	11	125	154	211	6
90	1.5	329	378	24	50	390	390	432	19	40	13	155	174	227	8
90	2.2	329	378	24	50	348	390	432	19	40	13	155	174	227	8
100	3.0	369	429	28	60	451	433	487	24	50	14	175	192	248	10
100	4.0	369	429	28	60	451	433	487	24	50	14	175	192	248	10
112	5.5	391	448	28	60	456	456	511	24	50	14	175	224	266	10
132S	5.5	452	-	-	-	547	-	-	-	-	16	180	256	326	12
132M	7.5	490	-	-	-	585	-	-	-	-	16	219	256	326	12
160M	11.0	608	-	-	-	-	-	-	-	-	23	264	320	395	16
160L	15.0	652	-	-	-	-	-	-	-	-	23	306	320	395	16

These dimensions are our standard (4-pole), but may vary in individual cases.

Rotary pulse encoder DIG incremental



Ordering example:

DIG-160-19-10-HTL

Flange diameter
Shaft diameter
Number of pulses
HTL or TTL

Rotary pulse encoder DIG

We have developed an intelligent intermediate flange which greatly simplifies recording speed and direction of rotation as well as connecting to supervisory control system. Previously this required complex assembly and additions to the drive system; the intelligent flange achieves this economically and is very easy to fit, even when retrofitting drives.

This magnetic pulse encoder is fitted as an intermediate flange between motor and motor flange. This considerably simplifies the integration of incremental encoders in drive systems, whether for purposes of speed matching, of positioning control (e.g. for dosage control) or for synchronisation. We supply a 2 m cable as standard.

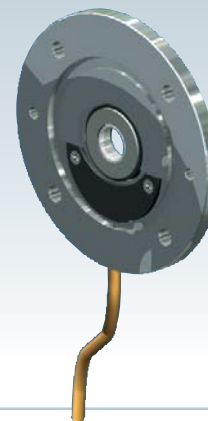
Advantages

- Compact design (7 to 12 mm thick)
- Simple and quick assembly
- Protected between motor and motor flange
- Protection class IP 20, with appropriate seal IP67
- Universal HTL signal for all conventional evaluations (PNP, NPN, PNP-NPN, RS 422) or TTL
- Short-circuit proof, protected against polarity reversal and protected against overvoltage transmitter electronics in SMD technology; fully integrated into the flange

Motor flange Part no.	Motor	Rotary pulse encoder DIG-Øa-Ød	c	Screw motor side DIN 912	coupling	Available numbers of pulses							Weight kg
						1	5	10	20	25	50	100 ²⁾	
GSZ-2-MF-80-41	56-B14C	DIG-080-09	10	M5x30	KUZ-09-9/9	X	X			X			0.25
GSZ-2-MF-80-41+P-120-10	63-B14B	DIG-120-11	7	M6x30	KUZ-14-9/11	X	X	X	X				0.27
GSZ-2-MF-80-41+P-105-15	71-B14C	DIG-105-14	7	M6x25	KUZ-14-9/14	X	X	X	X				0.25
Z-5-MF-120-60	63-B14B	DIG-120-11	7	M6x30	KUZ-19-11/11	X	X	X	X				0.27
Z-5-MF-105-68	71-B14C	DIG-105-14	7	M6x30	KUZ-19-11/14	X	X	X	X				0.25
Z-10-MF-120-66	63-B14B	DIG-120-11	7	M6x30	KUZ-19-14/11	X	X	X	X				0.27
Z-10-MF-160-75	71-B5	DIG-160-14	7	M8x45	KUZ-24-14/14	X	X	X	X	X	X	X	0.43
Z-10-MF-160-90	80-B14B	DIG-160-19	7	M8x35	KUZ-24-14/19	X	X	X	X	X	X	X	0.43
Z-25-MF-160-105	71-B5	DIG-160-14	7	M8x45	KUZ-28-16/14	X	X	X	X	X	X	X	0.43
Z-25-MF-160-105	80-B14B	DIG-160-19	7	M8x35	KUZ-28-16/19	X	X	X	X	X	X	X	0.43
Z-25-MF-160-105	90-B14B	DIG-160-24	10	M8x40	KUZ-28-16/24	X	X			X	X	X	0.43
Z-25-MF-160-122	100-B14C	DIG-160-28	10	M8x40	KUZ-28-16/28	X	X			X	X	X	0.43
Z-35-MF-160-111	80-B14B	DIG-160-19	7	M8x35	KUZ-24-19L/19	X	X	X	X	X	X	X	0.43
Z-35-MF-160-111	90-B14B	DIG-160-24	10	M8x35	KUZ-24-19L/24	X	X			X	X	X	0.43
Z-35-MF-B + P-200	100-B14B	DIG-200-28	10	M10x40	KUZ-28-19/28	X	X			X	X	X	0.93
Z-35-MF-B + P-200	112-B14B	DIG-200-28	10	M10x40	KUZ-28-19/28	X	X			X	X	X	0.93
Z-50-MF-200-116	90-B5	DIG-200-24	10	M10x55	KUZ-28-20/24	X	X			X	X	X	0.93
Z-50-MF-200-126	100-B14B	DIG-200-28	10	M10x45	KUZ-28-20/28	X	X			X	X	X	0.93
Z-50-MF-200-126	112-B14B	DIG-200-28	10	M10x45	KUZ-28-20/28	X	X			X	X	X	0.93
Z-100/150-MF-200-138	100-B14B	DIG-200-28	10	M10x50	KUZ-28-25/28	X	X			X	X	X	0.93
Z-100/150-MF-200-138	112-B14B	DIG-200-28	10	M10x50	KUZ-28-25/28	X	X			X	X	X	0.93
Z-100/150-MF-B + P-200	132-B14C	DIG-200-38	12	M10x80	KUZ-38-25/38	X	X			X	X	X	0.93
Z-250-MF-200-168	100-B14B	DIG-200-28	10	M10x50	KUZ-38-28L/28L	X	X			X	X	X	0.93
Z-250-MF-200-168	112-B14B	DIG-200-28	10	M10x50	KUZ-38-28L/28L	X	X			X	X	X	0.93
Z-250-MF-200-168	132-B14C	DIG-200-38	12	M10x50	KUZ-38-28L/38	X	X			X	X	X	0.93

NOTE: the fitted key on the motor shaft may have to be shortened.

²⁾Additional charge



DIG rotary pulse encoder

Mechanical values

Max. speed	6,000 rpm
Temperature range: Electronics	-40°C to +100°C at $I_{Load} \leq 20$ mA (+120°C at $I_{Load} \leq 15$ mA)
Cable	-40°C to +80°C
Flange material / hub material	Aluminium / steel
Connecting cable	PUR sheath / 4 x 0.25 / Ø 5 mm (TTL 6 x 0.14)
Cable length	2 m (other length on request)
Version with plug	4-pin plug / cable length 5 m or 10 m (not for TTL version)
Protection class	dependent on the seal between motor and motor flange (max. IP 67 e.g. when sealed with silicone)
Permissible vibration	100 m/s ²
Permissible shock	1000 m/s ²

Electrical values

HTL (Standard)

TTL version

Supply voltage	10 to 24V DC / + 20%	5V DC / $\pm 5\%$
Max. output frequency	20 kHz	20 kHz
Output signals	Square wave pulses (2-channel) A + B	Square wave pulses (2-channel) A + B and A + B inv.
Pulse sequence	A 90° B Tolerance $\pm 40^\circ$ el	A 90° B Tolerance $\pm 40^\circ$ el A 90° B inv. Tolerance $\pm 40^\circ$ el 180°:180° Tolerance $\pm 20^\circ$ el
Pulse/break ratio	180°:180° Tolerance $\pm 20^\circ$ el	180°:180° Tolerance $\pm 20^\circ$ el
Signal level	$U_{high} \geq U_B - 4V$ at $I_{Load} \leq 10$ mA $U_{low} \leq 1 V$	$U_{high} \geq 3.5V$ $U_{low} \leq 0.3V$
Max. load current	≤ 30 mA at $U_B = 10 V$ and ≤ 20 mA at $U_B = 24 V$	max. 30 mA
Insulation resistance	100 MΩ	100 MΩ
Insulation test	4 kV	4 kV
Short circuit-proof	yes	no
Protected against polarity reversal	yes	no

When evaluating the signals A + B and A + B inv. and $U_B = 10 - 24V$ DC
Please specify when ordering.

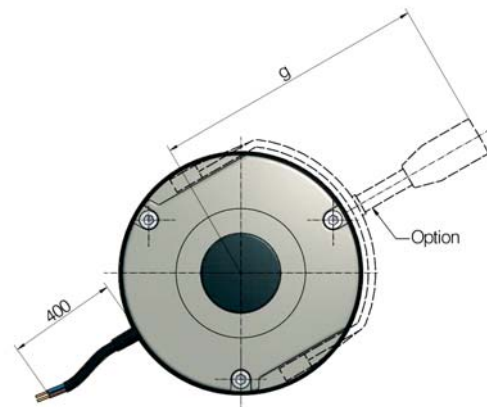
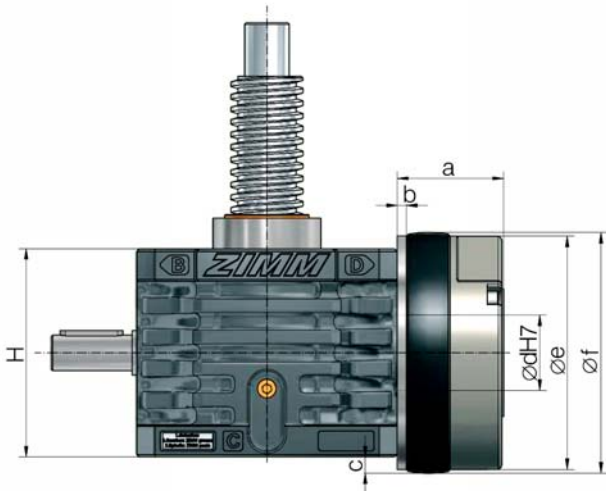
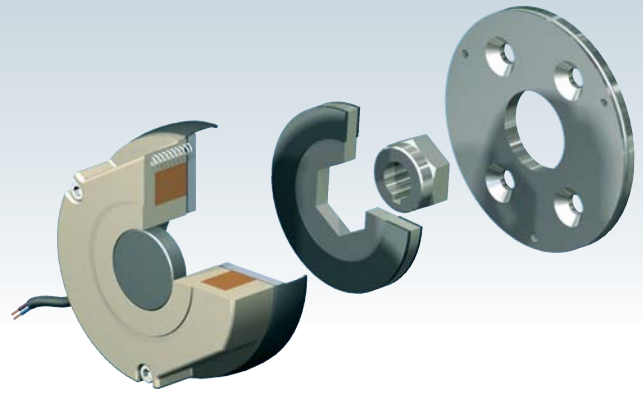
Tests

EMC test to EN 50081-1 (emission) and EN 50082-2 (immunity)

Connection arrangement

Connection	U_b	0 V	A	B	A' (TTL)	B' (TTL)
Cable / 4-core (TTL 6-core)	brown	white	yellow	green	pink	grey
Plug / 4-pin	brown	blue	white	black	-	-

Spring pressure brake FDB



Screw jack size Z/GSZ	Brakes		Braking torque M_B [Nm]	P [W]	H [mm]	Hub Ø [mm]	Dimensions							Weight [kg]
	new ZIMM Designation	old ZIMM Designation					a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	g [mm]	
Z-5	FDB 08	FDB 05	5	22	62	11	46	6	13.5	26	85	89	100	1
Z-10	FDB 08	FDB 05	5	22	74	14	46	6	7.5	26	85	89	100	1
	FDB 10	FDB 10	10	28	74	14	54	7	17.5	32	105	109	110	2
Z-25	FDB 10	FDB 10	10	28	82	16	54	7	13.5	32	105	109	110	2
	FDB 13	FDB 20	20	34	82	16	62	9	26.5	42	130	135	130	3
Z-35	FDB 13	FDB 20	20	34	100	19	62	9	17.5	42	130	135	130	3
	FDB 15	FDB 40	40	42	100	19	69	9	27.5	52	150	155	140	5
Z-50	FDB 13	FDB 20	20	34	116	20	62	9	9.5	42	130	135	130	3
	FDB 15	FDB 40	40	42	116	20	69	9	19.5	52	150	155	140	5
Z-100	FDB 15	FDB 40	40	42	160	25	69	9	-	52	150	155	140	5
	FDB 17	FDB 60	60	50	160	25	81	11	7.5	62	170	175	165	7
Z-150	FDB 15	FDB 40	40	42	185	25	69	9	-	52	150	155	140	5
	FDB 17	FDB 60	60	50	185	25	81	11	-	62	170	175	165	7
	FDB 20	FDB 80	100	64	185	25	91	11	8.0	72	195	201	186	10
Z-250	FDB 17	FDB 60	60	50	204	28	81	11	-	62	170	175	165	7
	FDB 23	FDB 150	150	76	204	28	101	11	13.5	80	225	231	196	15
Z-350	FDB 20	FDB 80	100	64	230	38	91	11	-	72	195	201	186	10
	FDB 26	new!	250	100	230	38	113	11	17.0	-	258	264	285	22

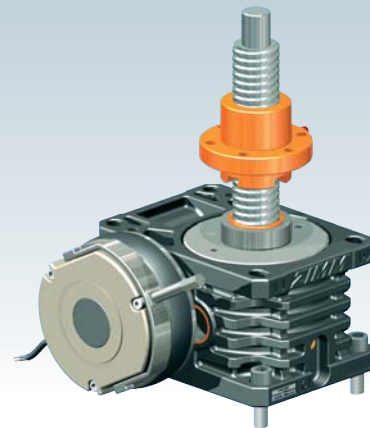


Other brakes up to Z-1000 available on request.

$$\text{For DC: } P = U \cdot I \rightarrow I = \frac{P}{U}$$

e.g.: FDB 17 at 205V DC coil voltage

$$I = \frac{50W}{205V} = 0.24 \text{ A}$$



Spring pressure brake FDB

Function

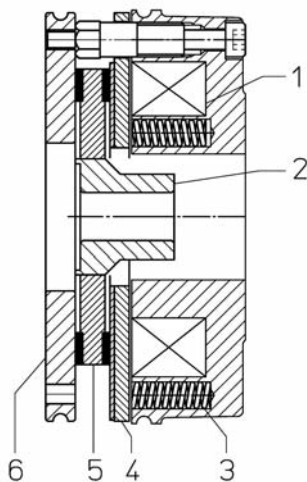
A spring pressure brake is used:

- when there is a lack of self-locking characteristics (high-pitch, double-pitch screws, ball screws KGT)
- where self-locking characteristics are doubtful (as a safety precaution)
- for increased accuracy of stopping position, independent of the lubrication situation

General

The braking torque is generated by compression springs when the brake is deenergised. The brake is released electromagnetically by the application of DC voltage. The protective rings shield the friction faces from external influences. The standard version has protection class IP 54.

Mode of operation



The compression springs (3) exert force on the armature disc (4) which is free to move axially and which presses the brake rotor (5) against the flange (6). The brake rotor in turn is tightly mounted on the hub (2).

The shaft is then braked. Application of DC voltage to the field windings (1) in the magnetic body generates a magnetic force which pulls the armature disc towards the magnetic body. The brake rotor is freed and the brake is released.

In the event of an emergency stop or a power failure, the spring pressure brake ensures that the load is safely braked to a stop.

Electrical supply

The spring pressure brake requires a DC supply. Half-wave and bridge rectifiers are available to provide the power supply to the brakes from the AC mains supply.

Because of the inductance of the solenoid coil, the release of the armature disc on loss of power is not immediate. When the switching off takes place in the AC line from the rectifier, this delay is relatively long. The delay in switching off can be reduced if the connections available between the rectifier are used to switch the DC line (6 times faster).

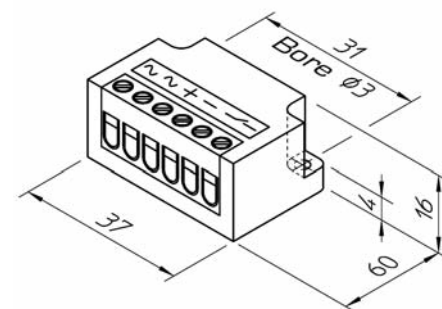
If the switching is performed on the AC side, a bridge should be made to the switch contacts.

Manual release

If a manual release lever is fitted, the brake can be released mechanically, e.g. in the event of a power failure.

Brake voltage

The brake voltage is derived from the mains phase voltage. For braked motors, the brake voltage is generally derived from the motor voltage in delta arrangement. The operating voltage of the brake is indicated on the solenoid casing.



All parts are corrosion-resistant!



Ordering example:

Gearbox size
Brake size
Brake operating DC voltage
Rectifier type (if required)
Manual release HL (if required)

Z-25-FDB 10-205V DC-GLB-HL

Supply voltage	Brake operating voltage	Rectifier
24V DC	24V DC	-
230V AC	205V DC	GLB Bridge rectifier (PMB 400-S)
230V AC 400V AC 500V AC	105V DC 180V DC 220V DC	GLE Half-wave rectifier (KSE 500/1-S)

Lubrication – screw



Lubricants



Always use the correct lubricants for a long service life!
These lubricants have been carefully selected to suit the screw jack requirements.
Caution should be exercised in using other greases! A "good" grease may not always be the "right" grease.



Trapezoidal screw

Inspect the trapezoidal screw regularly and regrease it depending on the operating cycle. Use the grease that we recommend. These greases are ideally matched to the operating requirements of our screw jack systems.



Standard grease:

Castrol Tribol GR 4020/460-2 PD (up to size 150)
Castrol Tribol GR 3020/1000-2 PD (from size 250)

As well as the standard greases we also offer greases for special applications:

- High temperature/high duty cycle
- Low temperature
- Heavy duty
- Food industry
- Clean room
- Vacuum, etc.

Most greases are available ex stock. The exact application and the load cycles are important when making the selection. The best strategy is to send us the completed enquiry checklist (Section 7).

The important question is whether it matches the respective requirements.

Ball screw KGT

Lubricate the ball screw KGT every 300 hours of effective operation. For heavy-duty systems every 100 hours.



Grease quantity:

Guidance value approx. 1 ml per cm screw diameter.

Standard grease:

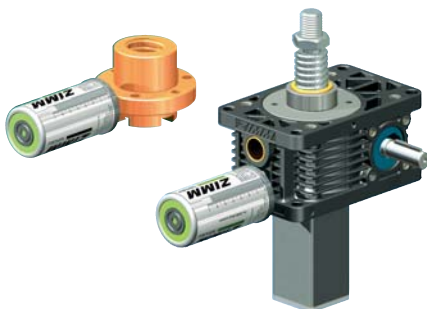
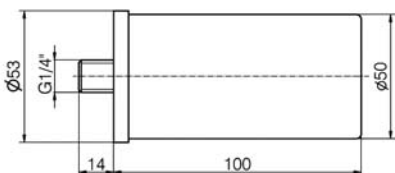
Castrol Tribol GR 4747/220-2 HT



Ordering example:

Castrol Tribol GR 4020/460-2 PD,
Cartridge 400g

Automatic lubricator Z-LUB



Infinitely adjustable from 1 to 12 months metering time

The ZIMM lubricator Z-LUB continuously supplies the screw with lubricant. The Z-LUB is activated when the run-time is set (1 to 12 months at 20°C) (gas generation cell). The filling level can be viewed all the time in the transparent housing.
Suitable for ball screws under certain conditions.

Metering time:	1 to 12 months, infinitely adjustable
Volume:	125 ml
Operating temperature:	+5°C to +55°C (standard grease, mineral-based) for synthetic greases down to -20°C
Thread:	G1/4"
Greases:	ZIMM screw greases



Ordering example:

Z-LUB, ZIMM lubricator
Filling: Castrol Tribol GR 4020/460-2 PD



Ordering example:

Reducer to G 1/8":
Part no. MSZ-SG-RS1

