

dertec[®]
Designed to Perform

Variable Speed Ball Variator
Continuously Adjustable.

bkd
Speed Ball Variator



The bkd variable-speed ball drive is an all-metal gearbox which can be infinitely-variably adjusted down to 0.

During operation of the bkd variable-speed ball drive the balls roll along roller tracks.

No running-in will occur. The variable-speed ball drive is extremely low-wearing.

This ensures a high service life. The range of applications for extends over the whole area of machine, plant and equipment construction.

The function of variable-speed ball drives is based on the principle of ball bearing technology. However unlike a ballbearing, a variable-speed ball drive consists of two outer and inner rings. The virtual ball turning axis can be changed by the axial displacement of one of the outer rings. This provides the possibility of infinitely-variable adjustment of the output speed down to $n_2 = 0 \text{ min}^{-1}$



Main features

Suitable for use in areas at risk of explosion, conforms with RL94/9/EC ATEX100A

Speed control range adjustable R=00 to 0

Torque increase during speed reduction

Can be set while stationary

Linear adjustment

Multiple adjustment options

Accurate reproducibility

IEC mounting dimensions for drive and output sided providing extensive combination options

Low noise operation 58-70 dB (A)

Optimum transmission with synthetic traction fluid

Can be overloaded briefly by up to 10 times the nominal torque

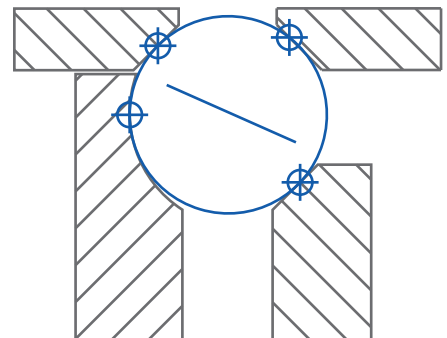
Variable installation position

Robust all-metal design.

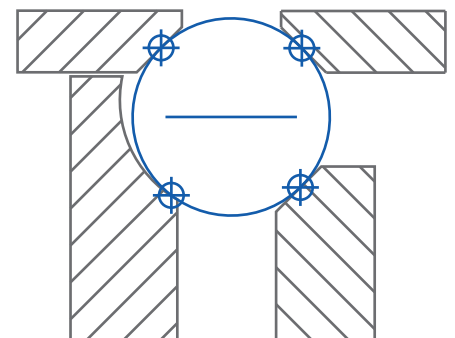
As a part of our standard procedure every drive is tested in our production facility in the Netherlands to ensure correct functioning.

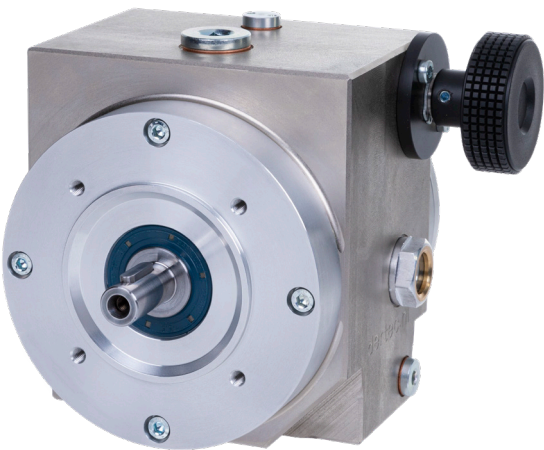
Working principle

Horizontal ball turning axis
= output speed $n_2 \text{ min}^{-1} = 0$

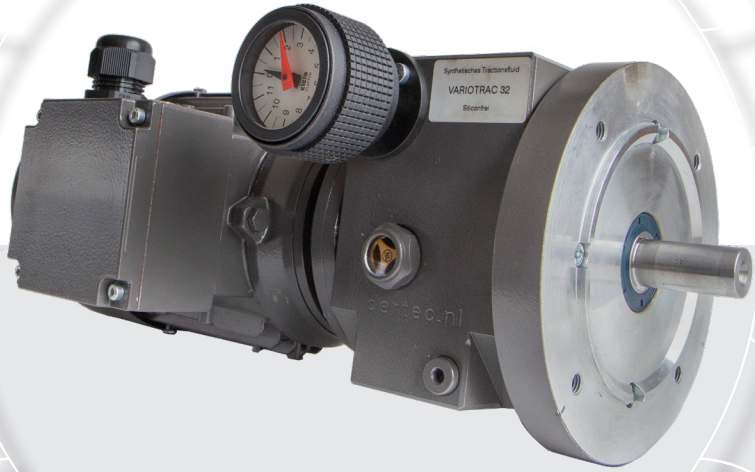


Maximum inclination of virtual ball turning axis
= output speed $n_2 \text{ max}$
= $0.5 \times$ input speed n_1





KR1		KR2	
Speed Range	0 - 0.5 x n_1	Ratio's	0 - 0.5 x n_1
Standard shaft	9 mm	Standard shaft	11 mm
Torque	Max. 2 Nm	Torque	Max. 5 Nm
Power	Max. 0.12 kW	Power	Max. 0.25 kW
KR3		KR4	
Ratio's	0 - 0.5 x n_1	Ratio's	0 - 0.5 x n_1
Standard shaft	14 mm	Standard shaft	19 mm
Torque	Max. 10 Nm	Torque	Max. 20 Nm
Power	Max. 0.75 kW	Power	Max. 2.2 kW





Selection List

Variator with 2 pole motor

Drive			Output					Type		
Motor	P ₁ kW	n ₁ min ⁻¹	n ₂ min ⁻¹	M ₂ max @ n ₂		M ₂ @ n ₂ max		P ₁ kW	Size	Fixing
				Nm	min ⁻¹	Nm	min ⁻¹			
IEC 56 B14a	0.09	2800	0 - 1400	1.5	0 - 470	0.5	1400	0.09 2 pole	KR 1	04, 03, 02, 14, 13, 12
IEC 56 B14a	0.12	2800	0 - 1400	1.5	0 - 560	0.6	1400	0.12 2 pole	KR 1	04, 03, 02, 14, 13, 12
IEC 56 B14a	0.12	2800	0 - 1400	3	0 - 280	0.6	1400	0.12 2 pole	KR 2	04, 03, 02, 14, 13, 12
IEC 63 B14a	0.18	2800	0 - 1400	3	0 - 420	0.9	1400	0.18 2 pole	KR 2	04, 03, 02, 14, 13, 12
IEC 63 B14a	0.25	2800	0 - 1400	3	0 - 600	1.3	1400	0.25 2 pole	KR 2	04, 03, 02, 14, 13, 12
IEC 63 B14a	0.25	2800	0 - 1400	6	0 - 300	1.3	1400	0.25 2 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 71 B14a	0.37	2800	0 - 1400	6	0 - 470	2.0	1400	0.37 2 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 71 B14a	0.55	2800	0 - 1400	6	0 - 670	2.9	1400	0.55 2 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 80 B14a	0.75	2800	0 - 1400	6	0 - 880	3.8	1400	0.75 2 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 80 B14a	0.75	2800	0 - 1400	12	0 - 440	3.8	1400	0.75 2 pole	KR 4	04, 03, 02, 14, 13, 12
IEC 80 B14a	1.1	2800	0 - 1400	12	0 - 650	5.6	1400	1.1 2 pole	KR 4	04, 03, 02, 14, 13, 12
IEC 90 B14a	1.5	2800	0 - 1400	12	0 - 880	7.5	1400	1.5 2 pole	KR 4	04, 03, 02, 14, 13, 12

P₁ kW
= Rated motor power

n₁ min⁻¹
= Output speed motor

n₂ min⁻¹
= Output speed Variator

M₂ max @ n₂
= Maximum permissible torque

M₂ @ n₂ max
= Torque at maximum speed

Variator with 4 pole motor

Drive			Output					Type		
Motor	P ₁ kW	n ₁ min ⁻¹	n ₂ min ⁻¹	M ₂ max @ n ₂		M ₂ @ n ₂ max		P ₁ kW	Size	Fixing
				Nm	min ⁻¹	Nm	min ⁻¹			
IEC 56 B14a	0.06	1400	0 - 700	2	0 - 230	0.65	700	0.06 4 pole	KR 1	04, 03, 02, 14, 13, 12
IEC 56 B14a	0.09	1400	0 - 700	2	0 - 350	1.0	700	0.09 4 pole	KR 1	04, 03, 02, 14, 13, 12
IEC 56 B14a	0.09	1400	0 - 700	4	0 - 170	1.0	700	0.09 4 pole	KR 2	04, 03, 02, 14, 13, 12
IEC 63 B14a	0.12	1400	0 - 700	4	0 - 230	1.3	700	0.12 4 pole	KR 2	04, 03, 02, 14, 13, 12
IEC 63 B14a	0.18	1400	0 - 700	4	0 - 350	2.0	700	0.18 4 pole	KR 2	04, 03, 02, 14, 13, 12
IEC 63 B14a	0.18	1400	0 - 700	8	0 - 180	2.0	700	0.18 4 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 71 B14a	0.25	1400	0 - 700	8	0 - 230	2.7	700	0.25 4 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 71 B14a	0.37	1400	0 - 700	8	0 - 330	3.8	700	0.37 4 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 80 B14a	0.55	1400	0 - 700	8	0 - 500	5.6	700	0.55 4 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 80 B14a	0.55	1400	0 - 700	16	0 - 240	5.6	700	0.55 4 pole	KR 4	04, 03, 02, 14, 13, 12
IEC 80 B14a	0.75	1400	0 - 700	16	0 - 330	7.7	700	0.75 4 pole	KR 4	04, 03, 02, 14, 13, 12
IEC 90 B14a	1.1	1400	0 - 700	16	0 - 500	11.3	700	1.1 4 pole	KR 4	04, 03, 02, 14, 13, 12

P₁ kW
= Rated motor power

n₁ min⁻¹
= Output speed motor

n₂ min⁻¹
= Output speed Variator

M₂ max @ n₂
= Maximum permissible torque

M₂ @ n₂ max
= Torque at maximum speed

Variator with 6 pole motor

Drive			Output				Type			
Motor	P ₁ kW	n ₁ min ⁻¹	n ₂ min ⁻¹	M ₂ max @ n ₂		M ₂ @ n ₂ max		P ₁ kW	Size	Fixing
				Nm	min ⁻¹	Nm	min ⁻¹			
IEC 63 B14a	0.09	900	0 - 450	5	0 - 150	1.7	450	0.09 6 pole	KR 2	04, 03, 02, 14, 13, 12
IEC 63 B14a	0.12	900	0 - 450	5	0 - 210	2.3	450	0.12 6 pole	KR 2	04, 03, 02, 14, 13, 12
IEC 63 B14a	0.12	900	0 - 450	10	0 - 100	2.3	450	0.09 6 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 71 B14a	0.18	900	0 - 450	10	0 - 140	3.0	450	0.18 6 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 71 B14a	0.25	900	0 - 450	10	0 - 190	4.2	450	0.25 6 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 80 B14a	0.37	900	0 - 450	10	0 - 270	5.9	450	0.37 6 pole	KR 3	04, 03, 02, 14, 13, 12
IEC 80 B14a	0.37	900	0 - 450	20	0 - 130	5.9	450	0.37 6 pole	KR 4	04, 03, 02, 14, 13, 12
IEC 80 B14a	0.55	900	0 - 450	20	0 - 200	8.7	450	0.55 6 pole	KR 4	04, 03, 02, 14, 13, 12
IEC 90 B14a	0.75	900	0 - 450	20	0 - 270	12	450	0.75 6 pole	KR 4	04, 03, 02, 14, 13, 12

P₁ kW
= Rated motor power

n₁ min⁻¹
= Output speed motor

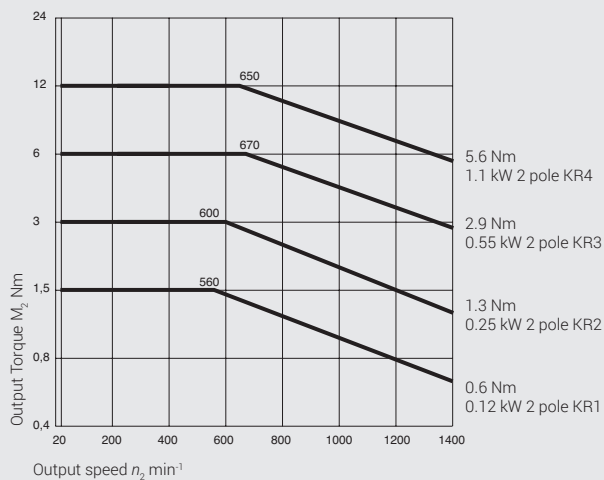
n₂ min⁻¹
= Output speed Variator

M₂ max @ n₂
= Maximum permissible torque

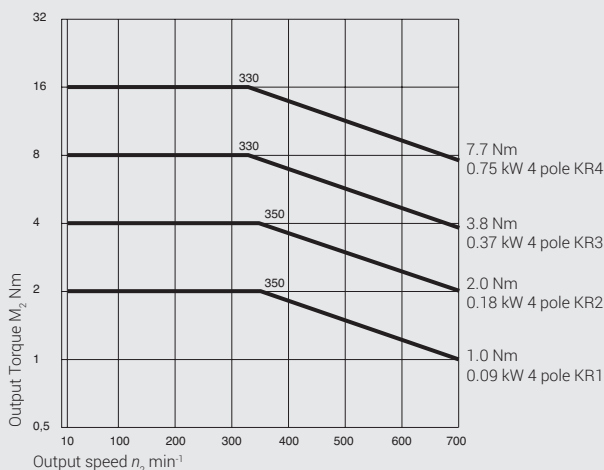
M₂ @ n₂ max
= Torque at maximum speed

Torque tables

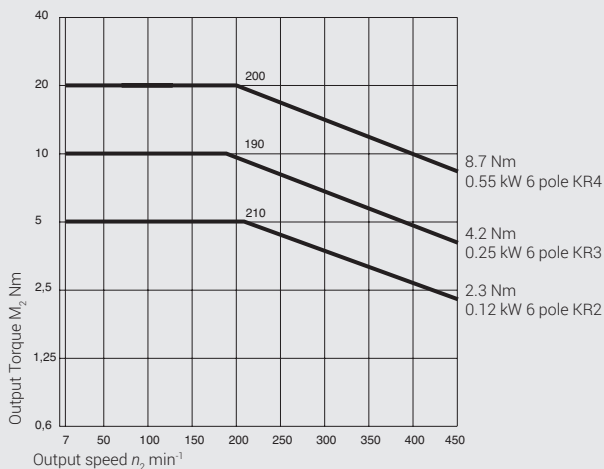
BKD variator with 2 pole motor
 Type KR with contact force controller
 Driving speed $n_1 = 2800 \text{ min}^{-1}$

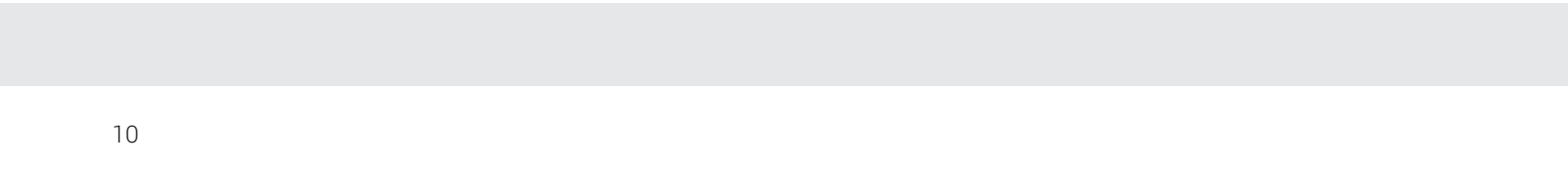


BKD variator with 4 pole motor
 Type KR with contact force controller
 Driving speed $n_1 = 1400 \text{ min}^{-1}$



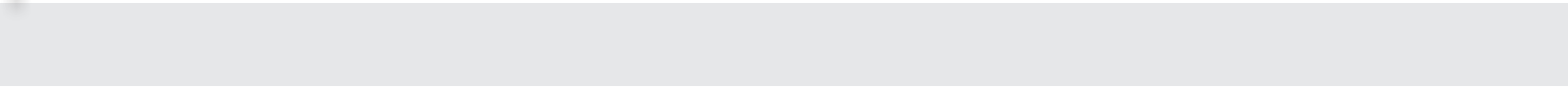
BKD variator with 6 pole motor
 Type KR with contact force controller
 Driving speed $n_1 = 900 \text{ min}^{-1}$



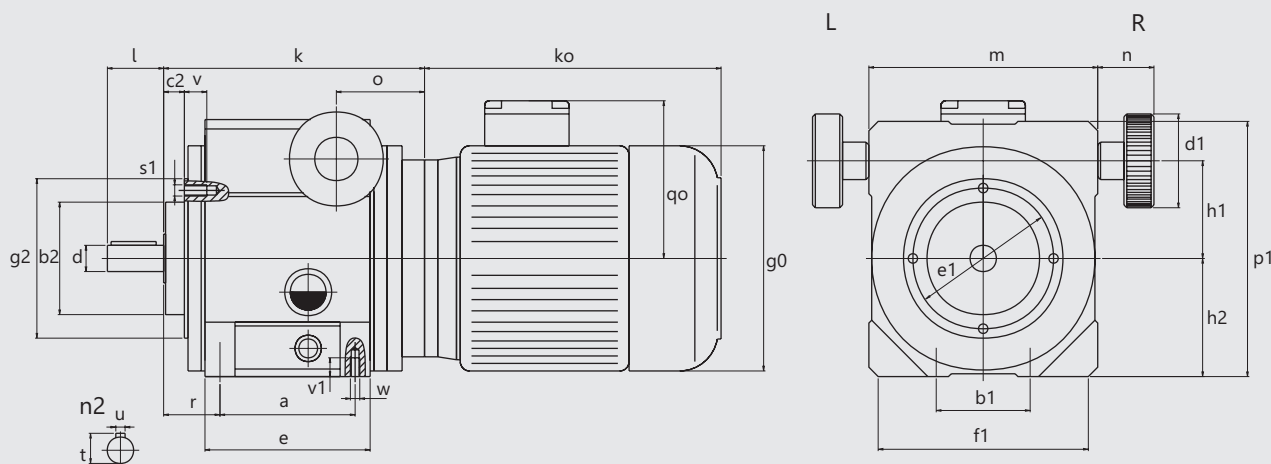




Dimensions



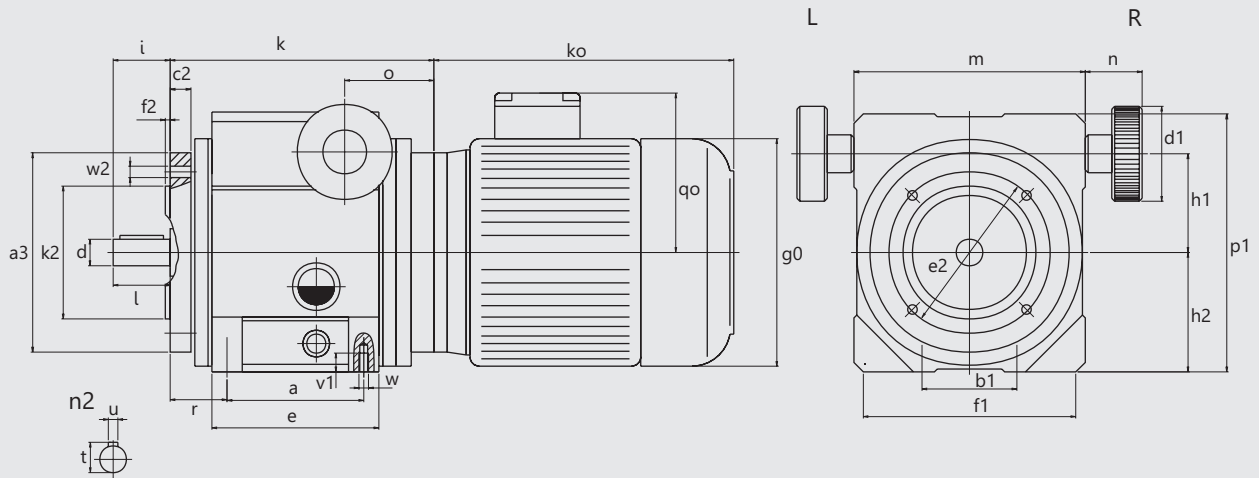
Fixing 04 Similar to B14



Motor type	Variator	a	b1	b2f7	c2	d1	e	e1	f1	g2	h1	h2	k	m	n
IEC 56 B14a	KR 1	46	32	40	11	40	56	47	66	55	34	36	99	72	32
IEC 56 B14a	KR 2	60	38	50	11	50	75	60	84	70	43	48	122	92	38
IEC 63 B14a	KR 2	60	38	50	11	50	75	60	84	70	43	48	122	92	38
IEC 63 B14a	KR 3	72	50	60	11	50	88	75	112	85	53	63	144	122	38
IEC 71 B14a	KR 3	72	50	60	11	50	88	75	112	85	53	63	144	122	38
IEC 80 B14a	KR 3	72	50	60	11	50	88	75	112	85	53	63	156	122	38
IEC 80 B14a	KR 4	90	70	80	17	50	117	100	140	115	70	80	194	152	38
IEC 90 B14a	KR 4	90	70	80	17	50	117	100	140	115	70	80	204	152	38

Gearbox	Variator	o	p1	r	s1	v	v1	w	dh6	l	t	u	Zentr.	g0	k0	q0
IEC 56 B14a	KR 1	39	84	22	M4	8	8	M4	9	20	10,2	3	M4	120	175	100
IEC 56 B14a	KR 2	46	108	26	M5	10	10	M5	11	23	12,5	4	M4	130	175	100
IEC 63 B14a	KR 2	46	108	26	M5	10	10	M5	11	23	12,5	4	M4	130	207	110
IEC 63 B14a	KR 3	52	136	30	M6	12	10	M5	14	30	16	5	M5	130	207	110
IEC 71 B14a	KR 3	52	136	30	M6	12	10	M5	14	30	16	5	M5	145	230	152
IEC 80 B14a	KR 3	64	136	30	M6	12	10	M5	14	30	16	5	M5	165	255	177
IEC 80 B14a	KR 4	70	172	43	M8	16	12	M6	19	40	21,5	6	M6	165	255	177
IEC 90 B14a	KR 4	80	172	43	M8	16	12	M6	19	40	21,5	6	M6	185	265	190

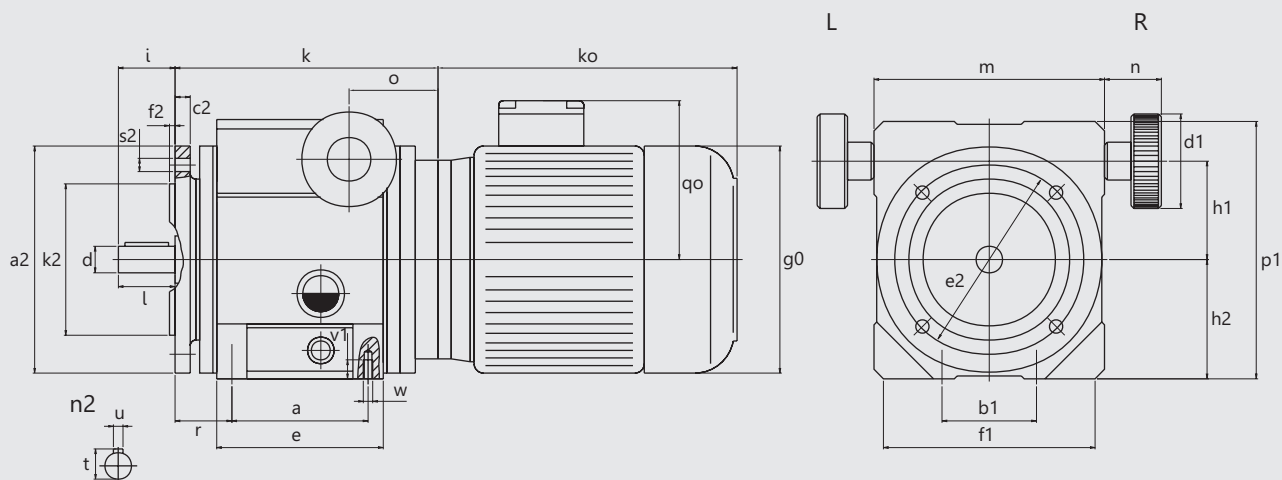
Fixing 03 Flange B14a



Motor type	Variator	a	a3	b1	c2	d1	e	e2	f1	f2	h1	h2	i	k	k2f7	m
IEC 56 B14a	KR 1	46	80	32	11	40	56	65	66	2,5	33,5	36	20	99	50	72
IEC 56 B14a	KR 2	60	90	38	11	40	75	75	84	2,5	42,5	48	23	122	60	92
IEC 63 B14a	KR 2	60	90	38	11	40	75	75	84	2,5	42,5	48	23	122	60	92
IEC 63 B14a	KR 3	72	105	50	11	50	88	85	112	2,5	53	63	30	144	70	122
IEC 71 B14a	KR 3	72	105	50	11	50	88	85	112	2,5	53	63	30	144	70	122
IEC 80 B14a	KR 3	72	105	50	11	50	88	85	112	2,5	53	63	30	144	70	122
IEC 80 B14a	KR 4	90	120	70	17	50	117	100	140	3	70	80	40	194	80	152
IEC 90 B14a	KR 4	90	120	70	17	50	117	100	140	3	70	80	40	194	80	152

Gearbox	Variator	n	o	p1	r	v1	w	w2	dh6	l	t	u	Zentr.	g0	k0	q0
IEC 56 B14a	KR 1	32	39	84	22	8	M4	M5	9	20	10,2	3	M4	120	175	100
IEC 56 B14a	KR 2	38	46	108	26	10	M5	M5	11	23	12,6	4	M4	130	175	100
IEC 63 B14a	KR 2	38	46	108	26	10	M5	M5	11	23	12,6	4	M4	130	207	110
IEC 63 B14a	KR 3	38	52	136	30	10	M5	M6	14	30	16	5	M5	130	207	110
IEC 71 B14a	KR 3	38	52	136	30	10	M5	M6	14	30	16	5	M5	145	230	152
IEC 80 B14a	KR 3	38	64	136	30	10	M5	M6	14	30	16	5	M5	165	255	177
IEC 80 B14a	KR 4	38	70	172	43	12	M6	M6	19	40	21,5	6	M6	165	255	177
IEC 90 B14a	KR 4	38	80	172	43	12	M6	M6	19	40	21,5	6	M6	185	265	190

Fixing 02 Flange B5

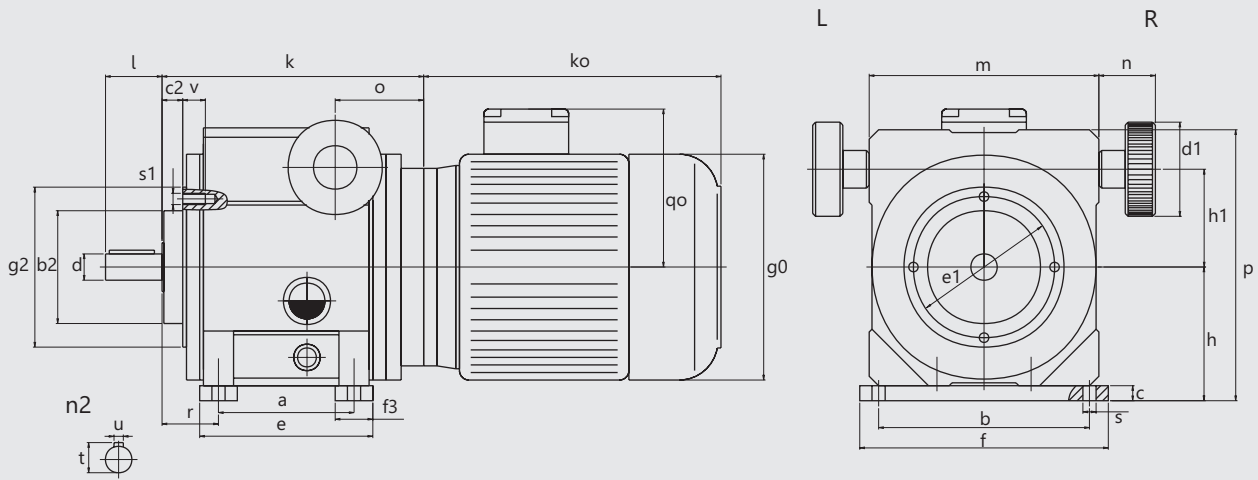


Motor type	Variator	a	a2	b1	c2	d1	e	e2	f1	f2	h1	h2	i	k	k2f7	m	n
IEC 56 B14a	KR 1	46	120	32	7	40	56	100	66	3	34	36	20	119	80	72	32
IEC 56 B14a	KR 2	60	140	38	8	50	75	115	84	3	43	48	23	142	95	92	38
IEC 63 B14a	KR 2	60	140	38	8	50	75	115	84	3	43	48	23	142	95	92	38
IEC 63 B14a	KR 3	72	160	50	9	50	88	130	112	3,5	53	63	30	164	110	122	38
IEC 71 B14a	KR 3	72	160	50	9	50	88	130	112	3,5	53	63	30	164	110	122	38
IEC 80 B14a	KR 3	72	160	50	9	50	88	130	112	3,5	53	63	30	176	110	122	38
IEC 80 B14a	KR 4	90	200	70	10	50	117	165	140	3,5	70	80	40	214	130	152	38
IEC 90 B14a	KR 4	90	200	70	10	50	117	165	140	3,5	70	80	40	224	130	152	38

Gearbox	Variator	o	p1	r	rR	rA	s2	v1	w	dh6	l	t	u	Zentr.	g0	k0	q0
IEC 56 B14a	KR 1	39	84	22	X	X	7	8	M4	9	20	10,2	3	M4	120	175	100
IEC 56 B14a	KR 2	46	108	26	46	56	9	10	M5	11	23	12,5	4	M4	130	175	100
IEC 63 B14a	KR 2	46	108	26	46	56	9	10	M5	11	23	12,5	4	M4	130	207	110
IEC 63 B14a	KR 3	52	136	30	50	70	9	10	M5	14	30	16	5	M5	130	207	110
IEC 71 B14a	KR 3	52	136	30	50	70	9	10	M5	14	30	16	5	M5	145	230	152
IEC 80 B14a	KR 3	64	136	30	50	70	9	10	M5	14	30	16	5	M5	165	255	177
IEC 80 B14a	KR 4	70	172	43	63	93	11	12	M6	19	40	21,5	6	M6	165	255	177
IEC 90 B14a	KR 4	80	172	43	63	93	11	12	M6	19	40	21,5	6	M6	185	265	190

rR = Reinforced Execution
 rA = Agitator Execution

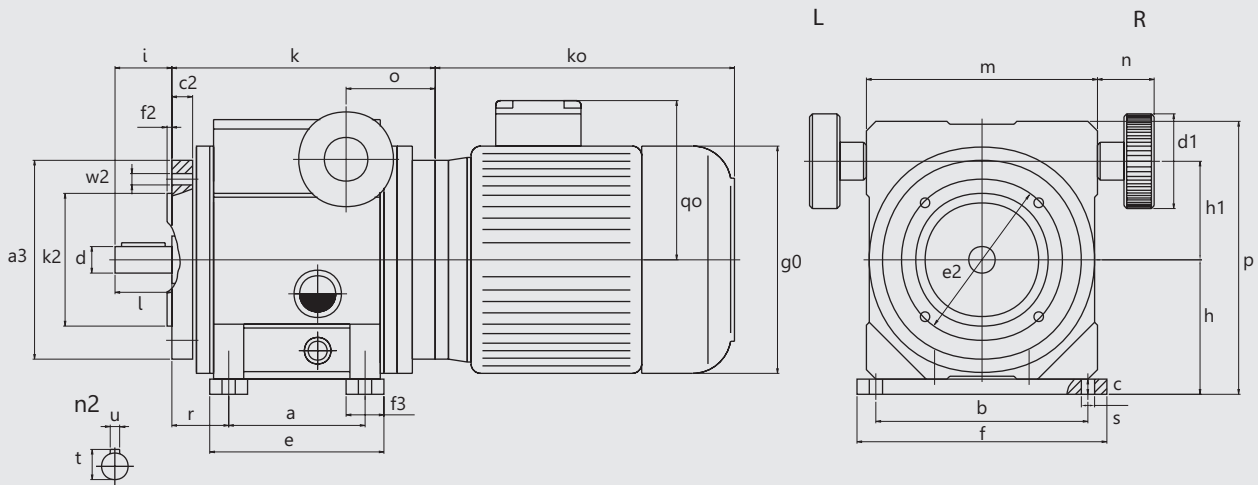
Fixing 14 Footmounted similar to B14



Motor type	Variator	a	b	b2f7	c	c2	d1	e	e1	f	f3	g2	h	h1	k	m
IEC 56 B14a	KR 1	46	65	40	6	11	40	61	47	80	15	55	42	34	96	72
IEC 56 B14a	KR 2	60	90	50	8	11	50	80	60	110	20	70	56	43	122	92
IEC 63 B14a	KR 2	60	90	50	8	11	50	80	60	110	20	70	56	43	122	92
IEC 63 B14a	KR 3	72	112	60	8	11	50	92	75	132	20	85	71	53	144	122
IEC 71 B14a	KR 3	72	112	60	8	11	50	92	75	132	20	85	71	53	144	122
IEC 80 B14a	KR 3	72	112	60	8	11	50	92	75	132	20	85	71	53	156	122
IEC 80 B14a	KR 4	90	140	80	10	17	50	120	100	170	30	115	90	70	194	152
IEC 90 B14a	KR 4	90	140	80	10	17	50	120	100	170	30	115	90	70	204	152

Gearbox	Variator	n	o	p	r	s	s1	v	dh6	l	t	u	Zentr.	g0	k0	q0
IEC 56 B14a	KR 1	32	39	90	22	6	M4	8	9	20	10,2	3	M4	120	175	100
IEC 56 B14a	KR 2	38	46	116	26	6	M5	10	11	23	12,5	4	M4	130	175	100
IEC 63 B14a	KR 2	38	46	116	26	6	M5	10	11	23	12,5	4	M4	130	207	110
IEC 63 B14a	KR 3	38	52	144	30	7	M6	12	14	30	16	5	M5	130	207	110
IEC 71 B14a	KR 3	38	52	144	30	7	M6	12	14	30	16	5	M5	145	230	152
IEC 80 B14a	KR 3	38	64	144	30	7	M6	12	14	30	16	5	M5	165	255	177
IEC 80 B14a	KR 4	38	70	182	43	9	M8	16	19	40	21,5	6	M6	165	255	177
IEC 90 B14a	KR 4	38	80	182	43	9	M8	16	19	40	21,5	6	M6	185	265	190

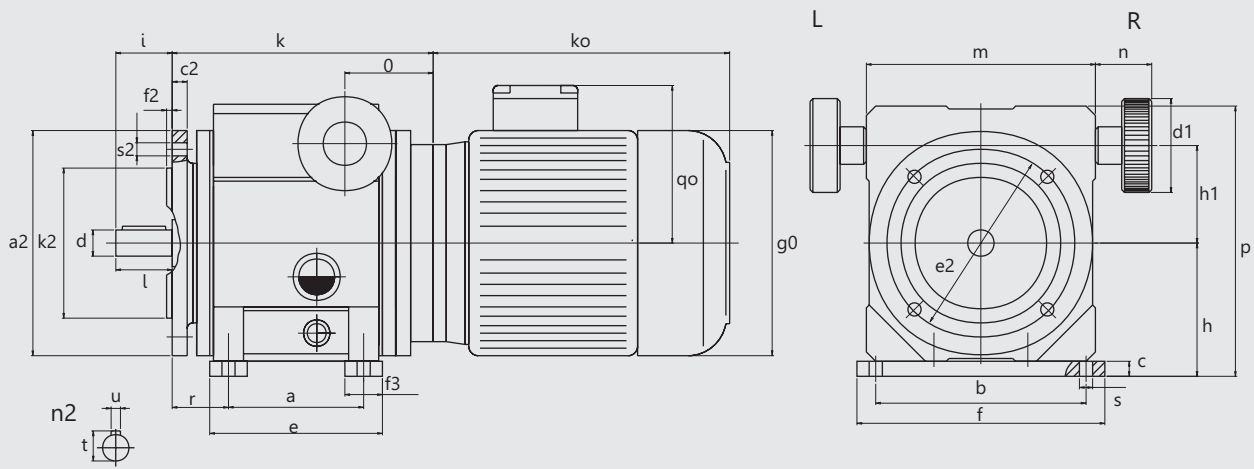
Fixing 13 Foot mounted / Flange B14a



Motor type	Variator	a	a3	b	c2	d1	e	e2	f	f2	f3	h1	h	i	k	k2f7
IEC 56 B14a	KR 1	46	80	65	11	40	61	65	80	2,5	15	34	42	20	99	50
IEC 56 B14a	KR 2	60	90	90	11	50	80	75	110	2,5	20	43	56	23	122	60
IEC 63 B14a	KR 2	60	90	90	11	50	80	75	110	2,5	20	43	56	23	122	60
IEC 63 B14a	KR 3	72	105	112	11	50	92	85	132	2,5	20	53	71	30	144	70
IEC 71 B14a	KR 3	72	105	112	11	50	92	85	132	2,5	20	53	71	30	144	70
IEC 80 B14a	KR 3	72	105	112	11	50	92	85	132	2,5	20	53	71	30	156	70
IEC 80 B14a	KR 4	90	120	140	17	50	120	100	170	3	30	70	90	40	194	80
IEC 90 B14a	KR 4	90	120	140	17	50	120	100	170	3	30	70	90	40	204	80

Gearbox	Variator	m	n	o	p	r	c	s	w2	dh6	l	t	u	Zentr.	g0	k0	q0
IEC 56 B14a	KR 1	72	32	39	90	22	6	6	M5	9	20	10,2	3	M4	120	175	100
IEC 56 B14a	KR 2	92	38	46	116	26	8	6	M5	11	23	12,5	4	M4	130	175	100
IEC 63 B14a	KR 2	92	38	46	116	26	8	6	M5	11	23	12,5	4	M4	130	207	110
IEC 63 B14a	KR 3	122	38	52	144	30	8	7	M6	14	30	16	5	M5	130	207	110
IEC 71 B14a	KR 3	122	38	52	144	30	8	7	M6	14	30	16	5	M5	145	230	152
IEC 80 B14a	KR 3	122	38	64	144	30	8	7	M6	14	30	16	5	M5	165	255	177
IEC 80 B14a	KR 4	152	38	70	182	43	10	9	M6	19	40	21,5	6	M6	165	255	177
IEC 90 B14a	KR 4	152	38	80	182	43	10	9	M6	19	40	21,5	6	M6	185	265	190

Fixing 12 Foot mounted / Flange B5



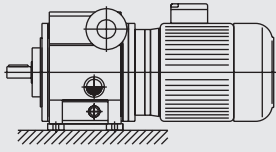
Motor type	Variator	a	a2	b	c	c2	d1	e	e2	f	f2	f3	h1	h	i	k	k2f7
IEC 56 B14a	KR 1	46	120	65	6	7	40	61	100	80	3	15	34	42	20	119	80
IEC 56 B14a	KR 2	60	140	90	8	8	50	80	115	110	3	20	43	56	23	142	95
IEC 63 B14a	KR 2	60	140	90	8	8	50	80	115	110	3	20	43	56	23	142	95
IEC 63 B14a	KR 3	72	160	112	8	9	50	92	130	132	3,5	20	53	71	30	164	110
IEC 71 B14a	KR 3	72	160	112	8	9	50	92	130	132	3,5	20	53	71	30	164	110
IEC 80 B14a	KR 3	72	160	112	8	9	50	92	130	132	3,5	20	53	71	30	176	110
IEC 80 B14a	KR 4	90	200	140	10	10	50	120	165	170	3,5	30	70	90	40	214	130
IEC 90 B14a	KR 4	90	200	140	10	10	50	120	165	170	3,5	30	70	90	40	224	130

Gearbox	Variator	m	n	o	p	r	rR	rA	s	s2	dh6	l	t	u	Zentr.	g0	k0	q0
IEC 56 B14a	KR 1	72	32	39	90	42	X	X	6	7	9	20	10,2	3	M4	120	175	100
IEC 56 B14a	KR 2	92	38	46	116	46	66	76	6	9	11	23	12,5	4	M4	130	175	100
IEC 63 B14a	KR 2	92	38	46	116	46	66	76	6	9	11	23	12,5	4	M4	130	207	110
IEC 63 B14a	KR 3	122	38	52	144	50	70	90	7	9	14	30	16	5	M5	130	207	110
IEC 71 B14a	KR 3	122	38	52	144	50	70	90	7	9	14	30	16	5	M5	145	230	152
IEC 80 B14a	KR 3	122	38	64	144	50	70	90	7	9	14	30	16	5	M5	165	255	177
IEC 80 B14a	KR 4	152	38	70	182	63	83	113	9	11	19	40	21,5	6	M6	165	255	177
IEC 90 B14a	KR 4	152	38	80	182	63	83	113	9	11	19	40	21,5	6	M6	185	265	190

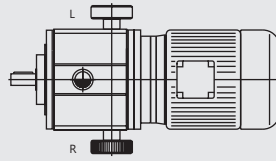
rR = Reinforced Execution
 rA = Agitator Execution

Mounting Positions

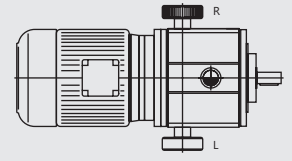
Horizontal



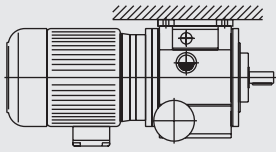
B3
Frame mounted



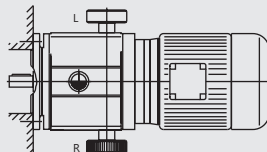
B6
Wall mounted
Output left



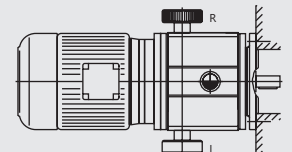
B7
Wall mounted
Output right



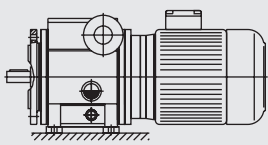
B8
Ceiling mounted



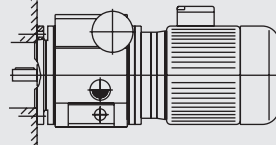
B5A
Wall mounted
Output Left
Flange B5



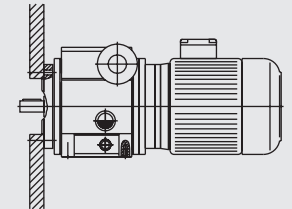
B5B
Wall mounted
Output right
Flange B5



B3 / B5
Frame mounted
Additional Flange B5

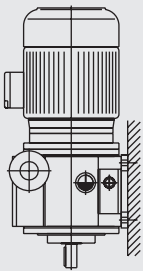


B5
Wall mounted
Output Left
Flange B5

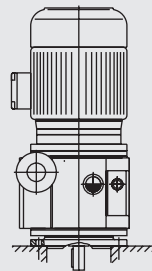


B14
Wall mounted
Flange B5

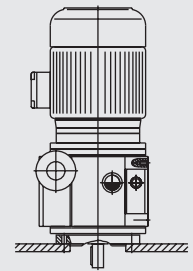
Vertical



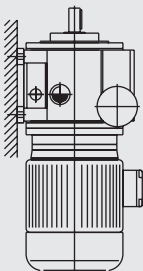
V5
Wall mounted
Output bottom



V1
Wall mounted
Output at bottom
Flange B5



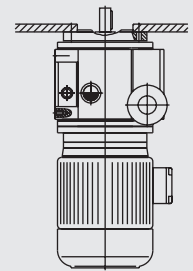
V18
Wall mounted
Output bottom
Flange B14



V6
Wall mounted
Output at top



V3
Wall mounted
Output at top
Flange B5



V19
Wall mounted
Output at top
Flange B14

**Selection List
Variator with
free input shaft**

Variator with Free input shaft

Capacity range : $P_1 = 0.09 \text{ kW} - 1.1 \text{ kW}$
 Input speed : $n_1 = 20 \text{ min}^{-1} - 3360 \text{ min}^{-1}$
 Output speed : $n_2 = 0 - 0.5 \times n_1 \text{ min}^{-1}$

Drive			Output				Type		
Type	P ₁ kW	n ₁ min ⁻¹	n ₂ min ⁻¹	M ₂ max @ n ₂		M ₂ @ n ₂ max		Size	Fixing
				Nm	min ⁻¹	Nm	min ⁻¹		
KR 1	0.12	3000	0 - 1500	1.5	600	0.6	1500	KR 1	04, 03, 02, 14, 13, 12
KR 1	0.09	1500	0 - 750	1.8	350	0.9	700	KR 1	04, 03, 02, 14, 13, 12
KR 1	0.09	1000	0 - 500	2	300	1.2	500	KR 1	04, 03, 02, 14, 13, 12
KR 1	0.09	500	0 - 250	2.5	250	2.5	250	KR 1	04, 03, 02, 14, 13, 12
KR 2	0.25	3000	0 - 1500	3	600	1.2	1500	KR 2	04, 03, 02, 14, 13, 12
KR 2	0.18	1500	0 - 750	3.5	350	1.8	700	KR 2	04, 03, 02, 14, 13, 12
KR 2	0.18	1000	0 - 500	4	300	2.4	500	KR 2	04, 03, 02, 14, 13, 12
KR 2	0.18	500	0 - 250	5	250	5	250	KR 2	04, 03, 02, 14, 13, 12
KR 3	0.55	3000	0 - 1500	6	600	2.5	1500	KR 3	04, 03, 02, 14, 13, 12
KR 3	0.37	1500	0 - 750	7	350	3.6	700	KR 3	04, 03, 02, 14, 13, 12
KR 3	0.35	1000	0 - 500	8	300	4.8	500	KR 3	04, 03, 02, 14, 13, 12
KR 3	0.35	500	0 - 250	10	250	10	250	KR 3	04, 03, 02, 14, 13, 12
KR 4	1.1	3000	0 - 1500	12	600	5	1500	KR 4	04, 03, 02, 14, 13, 12
KR 4	0.75	1500	0 - 750	14	350	7.2	700	KR 4	04, 03, 02, 14, 13, 12
KR 4	0.7	1000	0 - 500	16	300	9.6	500	KR 4	04, 03, 02, 14, 13, 12
KR 4	0.7	500	0 - 250	20	250	20	250	KR 4	04, 03, 02, 14, 13, 12

P₁ kW
 =
 Rated motor power

n₁ min⁻¹
 =
 Output speed motor

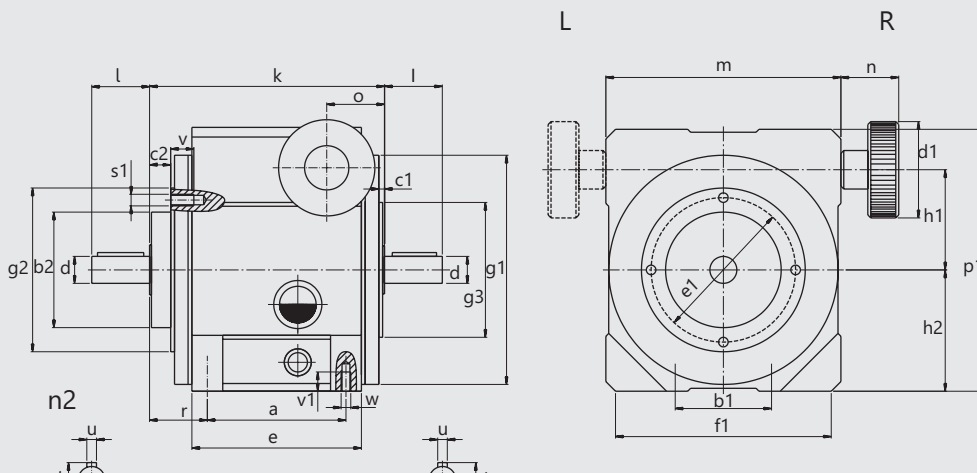
n₂ min⁻¹
 =
 Output speed Variator

M₂ max @ n₂
 =
 Maximum permissible torque

M₂ @ n₂ max
 =
 Torque at maximum speed

Dimensions Variator with Free Shafts

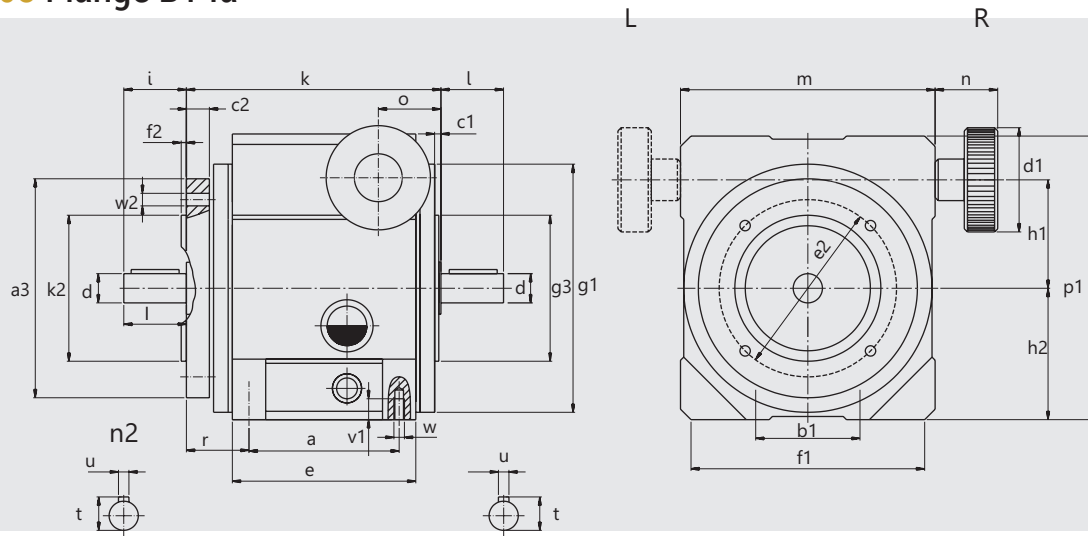
Fixing 04 Similar to B14



Variator	a	b1	b2f7	c1	c2	d1	e	e1	f1	g1	g2	g3f7	h1	h2
KR 1	46	32	40	3	11	40	56	47	66	70	55	50	34	36
KR 2	60	38	50	3	11	50	75	60	84	90	70	60	43	48
KR 3	72	50	60	3	11	50	88	75	112	120	85	70	53	63
KR 4	90	70	80	3	17	50	117	100	140	150	115	95	70	80

Variator	k	m	n	o	p1	r	s1	v	v1	w	dh6	l	t	u	Zentr.
KR 1	84	72	32	24	84	22	M4	8	8	M4	9	20	10,2	3	M4
KR 2	105	92	38	29	108	26	M5	10	10	M5	11	23	12,5	4	M4
KR 3	122	122	38	30	136	30	M6	12	10	M5	14	30	16	5	M5
KR 4	162	152	38	38	172	43	M8	16	12	M6	19	40	21,5	6	M6

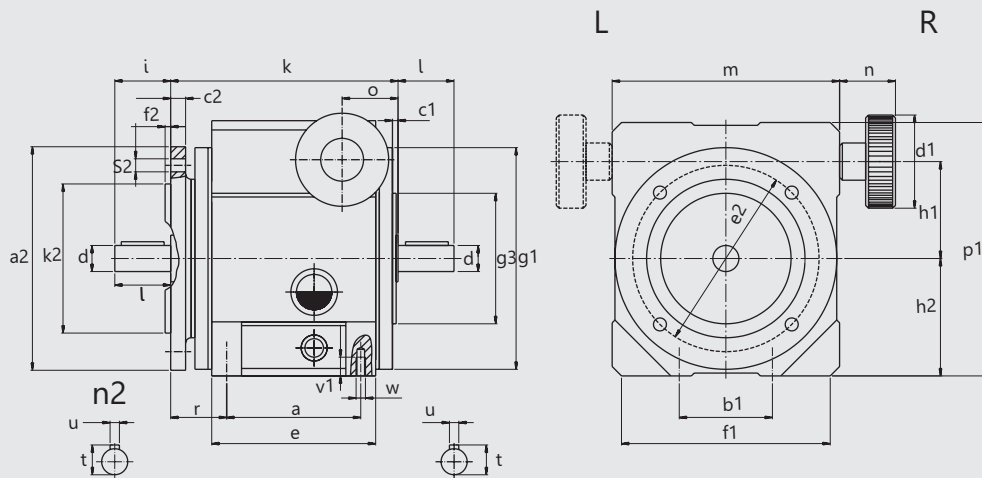
Fixing 03 Flange B14a



Variator	a	a3	b1	c1	c2	d1	e	e2	f1	f2	g1	g3f7	h1	h2	i
KR 1	46	80	32	3	11	40	56	65	66	2,5	70	50	34	36	20
KR 2	60	90	38	3	11	50	75	75	84	2,5	90	60	43	48	23
KR 3	72	105	50	3	11	50	88	85	112	2,5	120	70	53	63	30
KR 4	90	120	70	3	17	50	117	100	140	3	150	95	70	80	40

Variator	k	k2f7	m	n	o	p1	r	v1	w	w2	dh6	l	t	u	Zentr.
KR 1	84	50	72	32	24	84	22	8	M4	M5	9	20	10,2	3	M4
KR 2	105	60	92	38	29	108	26	10	M5	M5	11	23	12,5	4	M4
KR 3	122	70	122	38	30	136	30	10	M5	M6	14	30	16	5	M5
KR 4	162	80	152	38	38	172	43	12	M6	M6	19	40	21,5	6	M6

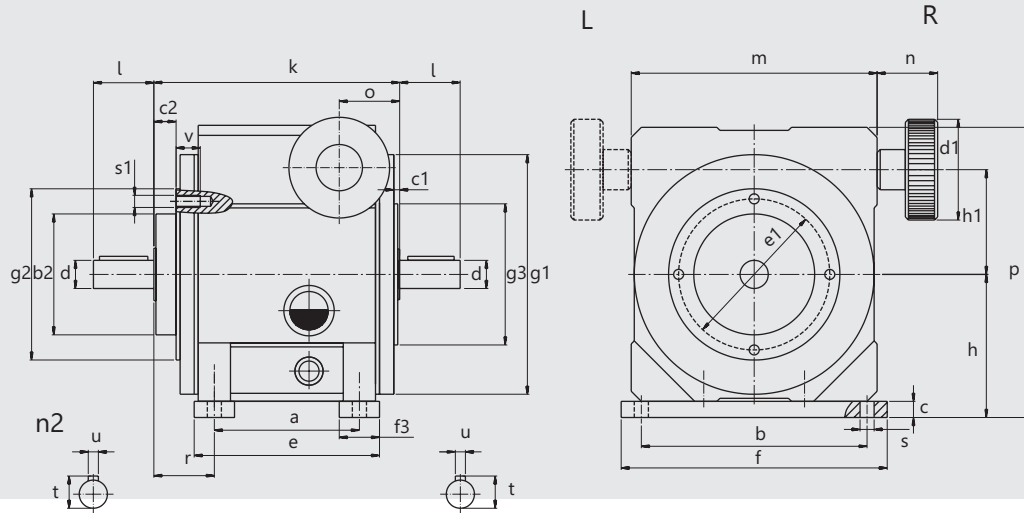
Fixing 02 Flange B5



Variator	a	a2	b1	c1	c2	d1	e	e2	f1	f2	g1	g3f7	h1	h2	i
KR 1	46	120	32	3	7	40	56	100	66	3	70	50	34	36	20
KR 2	60	140	38	3	8	50	75	115	84	3	90	60	43	48	23
KR 3	72	160	50	3	9	50	88	130	112	3,5	120	70	53	63	30
KR 4	90	200	70	3	10	50	117	165	140	3,5	150	95	70	80	40

Variator	k	k2f7	m	n	o	p1	r	s2	v1	w	dh6	l	t	u	Zentr.
KR 1	104	80	72	32	24	84	22	7	8	M4	9	20	10,2	3	M4
KR 2	125	95	92	38	29	108	26	9	10	M5	11	23	12,5	4	M4
KR 3	142	110	122	38	30	136	30	9	10	M5	14	30	16	5	M5
KR 4	182	130	152	38	38	172	43	11	12	M6	19	40	21,5	6	M6

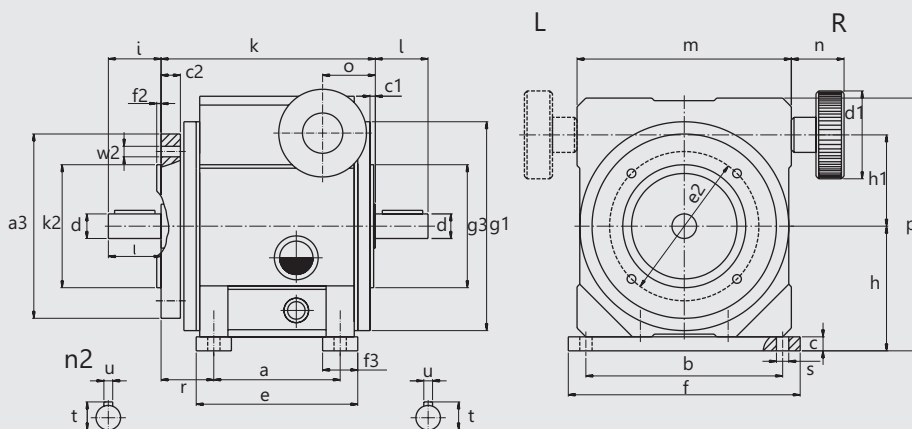
Fixing 14 Footmounted similar to B14



Variator	a	b	b2f7	c	c1	c2	d1	e	e1	f	f3	g1	g1	g3f7	h
KR 1	46	65	40	6	3	11	40	61	47	80	15	70	55	50	42
KR 2	60	90	50	8	3	11	50	80	60	110	20	90	70	60	56
KR 3	72	112	60	8	3	11	50	92	75	132	20	120	85	70	71
KR 4	90	140	80	10	3	17	50	120	100	170	30	150	115	95	90

Variator	h1	k	m	n	o	p	r	s	s1	v	dh6	l	t	u	Zentr.
KR 1	34	84	72	32	24	90	22	6	M4	8	9	20	10,2	3	M4
KR 2	43	105	92	38	29	116	26	6	M5	10	11	23	12,5	4	M4
KR 3	53	122	122	38	30	144	30	7	M6	12	14	30	16	5	M5
KR 4	70	162	152	38	38	182	43	9	M8	16	19	40	21,5	6	M6

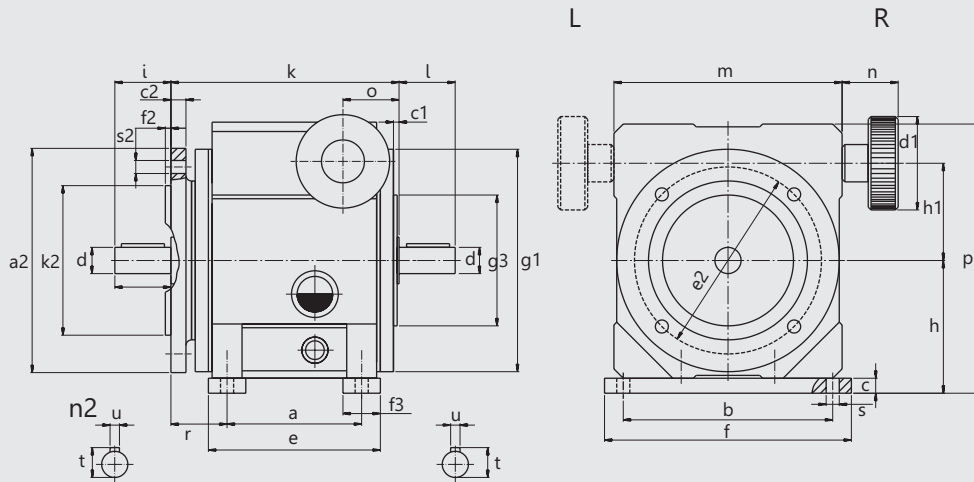
Fixing 13 Footmounted / Flange B14a



Variator	a	b	k2f7	c	c1	c2	d1	e	e2	f	f2	f3	g1	a3	g3f7
KR 1	46	65	50	6	3	11	40	61	65	80	2,5	15	70	80	50
KR 2	60	90	60	8	3	11	50	80	75	110	2,5	20	90	90	60
KR 3	72	112	70	8	3	11	50	92	85	132	2,5	20	120	105	70
KR 4	90	140	80	10	3	17	50	120	100	170	3	30	150	120	95

Variator	h	h1	i	k	m	n	o	p	r	s	w2	dh6	l	t	u	Zentr.
KR 1	42	34	20	84	72	32	24	90	22	6	M5	9	20	10,2	3	M4
KR 2	56	43	23	105	92	38	29	116	26	6	M5	11	23	12,5	4	M4
KR 3	71	53	30	122	122	38	30	144	30	7	M6	14	30	16	5	M5
KR 4	90	70	40	162	152	38	38	182	43	9	M6	19	40	21,5	6	M6

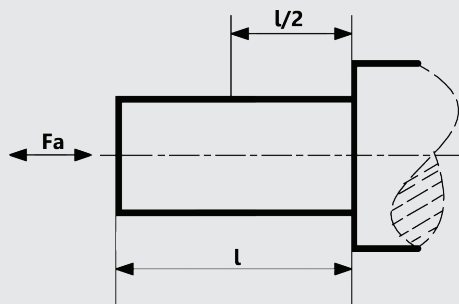
Fixing 12 Footmounted / Flange B5



Variator	a	b	k2f7	c	c1	c2	d1	e	e2	f	f2	f3	g1	a2	g3f7
KR 1	46	65	80	6	3	7	40	61	100	80	3	15	70	120	50
KR 2	60	90	95	8	3	8	50	80	115	110	3	20	90	140	60
KR 3	72	112	110	8	3	9	50	92	130	132	3,5	20	120	160	70
KR 4	90	140	130	10	3	10	50	120	165	170	3,5	30	150	200	95

Variator	h	h1	i	k	m	n	o	p	r	s	s2	dh6	l	t	u	Zentr.
KR 1	42	34	20	104	72	32	24	90	22	6	7	9	20	10,2	3	M4
KR 2	56	43	23	125	92	38	29	116	26	6	9	11	23	12,5	4	M4
KR 3	71	53	30	142	122	38	30	144	30	7	9	14	30	16	5	M5
KR 4	90	70	40	182	152	38	38	182	43	9	11	19	40	21,5	6	M6

Radial and Axial Forces



Permissible Radial Forces

F_r (N)

Variator	Fixing	
	03, 04, 13, 14	02, 12
KR 1	180	250
KR 2	300	450
KR 3	500	750
KR 4	800	1200

Permissible Axial Forces

F_a (N)

Variator	Fixing	
	01, 03, 04, 12, 13, 14	
KR 1	150	
KR 2	250	
KR 3	400	
KR 4	700	

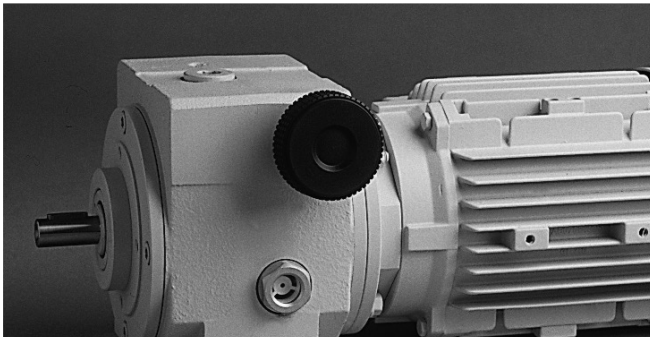
For combined radial and axial forces the force F_r is reduced by the value of the axial force F_a

Dimensions Control Devices

Control devices

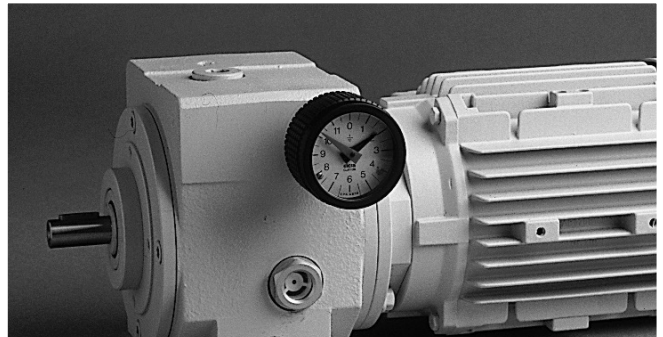
Control Knob Standard

H



Control Knob with scales

HS + HS(F)

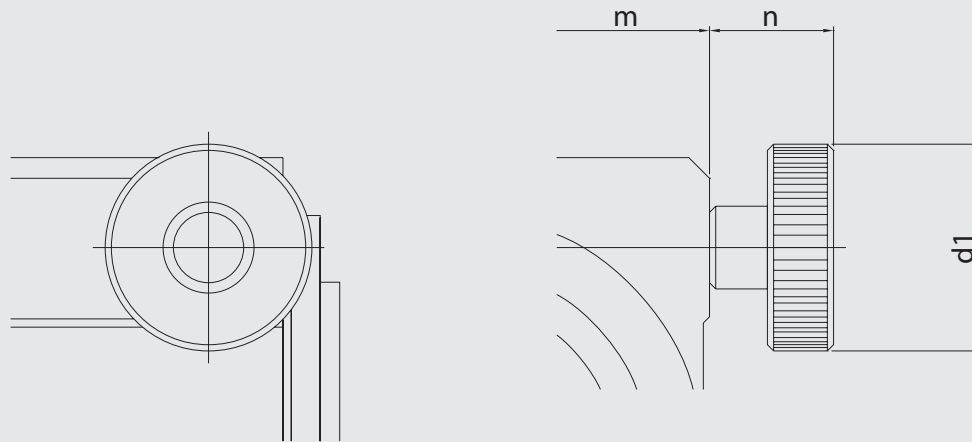


Control Knob with articulated joint

HGW

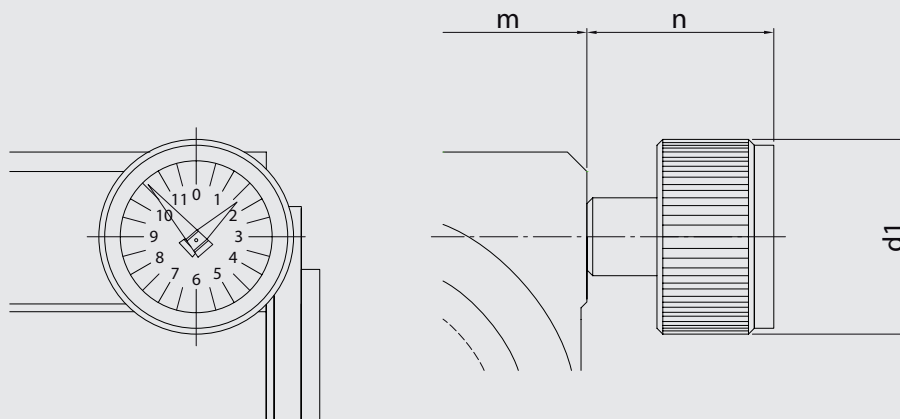


H Control Knob



Variator	Dimensions (mm)		
	m	n	d1
KR 1	72	56	50
KR 2	92	56	50
KR 3	122	56	50
KR 4	152	56	50

HS & HS(F) Control Knob with scales



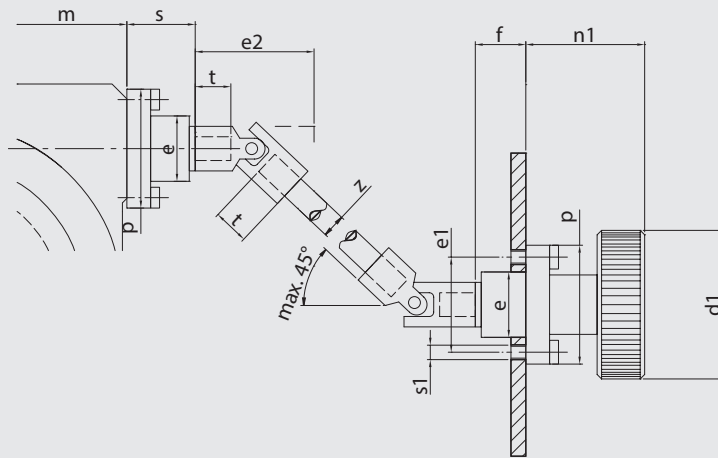
HS control knob with scales

Variator	Dimensions (mm)		
	m	n	d1
KR 1	72	56	50
KR 2	92	56	50
KR 3	122	56	50
KR 4	152	56	50

HS(F) control knob with scales

Variator	Dimensions (mm)		
	m	n	d1
KR 1	72	63	60
KR 2	92	63	60
KR 3	122	63	60
KR 4	152	63	60

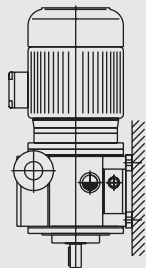
HGW Control Knob with articulated joint



Variator	Dimensions (mm)												
	m	s	s1	e	e1	e2	t	f	n1	d1	p	z	
KR 1	72	8	5,5	22	32	40	12	16	38	50	46	8	
KR 2	92	21	5,5	22	32	40	12	16	38	50	46	8	
KR 3	122	21	5,5	22	32	40	12	16	38	50	46	8	
KR 4	152	21	5,5	22	32	40	12	16	38	50	46	8	

Oil quantities

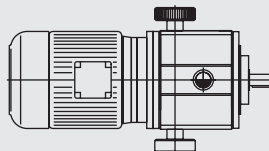
V1, V5, V18



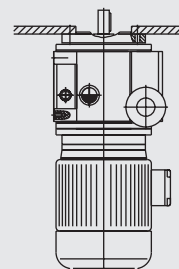
B3, B5, B14



B6, B7



V3, V6, V19

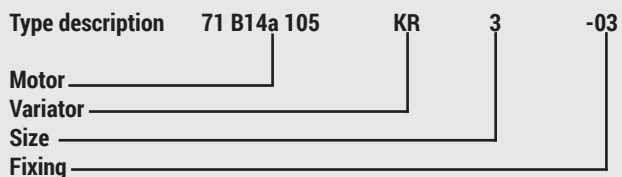


Variator	V1, V5, V18	B3, B5, B14	B6, B7	V3, V6, V19
KR 1	70 ml	70 ml	70 ml	70 ml
KR 2	225 ml	125 ml	150 ml	125 ml
KR 3	450 ml	275 ml	350 ml	275 ml
KR 4	1000 ml	550 ml	800 ml	500 ml

- Only the use of the following 2 synthetic traction fluid ensures full power transmission.
Santotrac 50 or Variotrac 32

- The warranty requires this oil type to be used
- The oil should be changed after 5000 operating hours or at least once a year.
- The oil change must not be carried out during operation
- No other maintenance work is required.

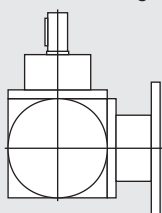
Type description



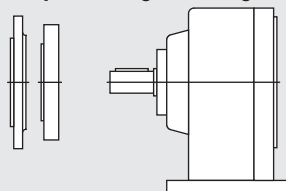
- Fixing:**
- 04 without support, without flange
 - 03 without support, with flange B14a
 - 02 without support, with flange B5
 - 14 with support, without flange
 - 13 with support, with flange B14a
 - 12 with support, with flange B5

Output options

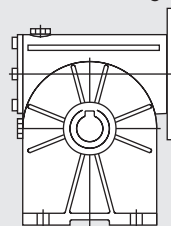
Bevel Gearing



Spur Gearing 1 & 2 stage



Worm Gearing



Input options

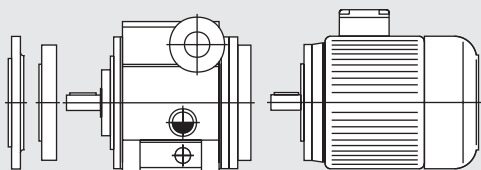
Input IEC motors

AC motors

Explosion proof motors Exe & Exd

DC motors

Special motors





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