

9.4.8 Type SL 063 – Type S with flange for motor mounting



Characteristics

Characteristic	Standard	Option
Toothing	Hardened and ground worm shaft / bronze worm gear	See chapter 9.2.1
Gear ratio	5:1 to 83:1	
Housing / Flanges	Grey cast iron	
Threaded mounting hole	On gearbox side 1 and on the flanges	See chapter 9.2.3
Shaft	Material 1 C45, shaft ends greased Fit with ISO j6 tolerance with parallel keyway: according to DIN 6885 Sheet 1	See chapter 4.6.2
Hollow shaft	Material 1 C45, shafts greased Fit with ISO H7 tolerance with parallel keyway: according to DIN 6885 Sheet 1	See chapter 4.6.3
Radial shaft seal ring	NBR, form A	See chapter 4.8
Ambient temperature	-10°C to +90°C. The values of the performance tables are valid for 20°C	See chapter 4.9.3
Cumferential backlash	< 30 arcmin	See chapter 9.2.10
Protection class	IP 54	See chapter 4.5
Corrosion protection	Prime coat; layer thickness > 40 µm	See chapter 4.4.1
Bearing life L10h	more than 15,000h	See chapter 4.9.1
Oil change intervals	Not required if the oil temperature is kept below 90°C. The lifetime of the bearings can be increased by the factor 1.5 if the oil is changed after the first 500 service hours and then every 5000 service hours.	See chapter 9.2.8
Lubricants	Synthetic lubricants	See chapter 9.2.8
Flange	Suited for the mounting of IEC motors, models IM B5 and B14	
Coupling	Three-piece claw coupling	

Performance data

i	i ist		n ₁ [rpm]					
			3000	1500	1000	750	500	150
5:1	29:6	n ₂ [rpm]	600.0	300.0	200.0	150.0	100.0	30.0
		P _{1N} [kW]	6.37	4.96	3.77	3.11	2.31	0.91
		T _{2N} [Nm]	94	145	165	180	198	247
		P _{1NT} [kW]	5.80	4.25	3.56	3.15	2.67	0.00
		Efficiency	0.96	0.95	0.95	0.94	0.93	0.88
7.5:1	29:4	n ₂ [rpm]	400.0	200.0	133.0	100.0	66.0	20.0
		P _{1N} [kW]	4.89	3.62	2.78	2.37	1.79	0.72
		T _{2N} [Nm]	106	157	179	201	223	280
		P _{1NT} [kW]	4.63	3.26	2.72	2.41	2.06	0.00
		Efficiency	0.94	0.94	0.93	0.92	0.90	0.84
10:1	39:4	n ₂ [rpm]	300.0	150.0	100.0	75.0	50.0	15.0
		P _{1N} [kW]	4.15	2.94	2.26	1.83	1.30	0.51
		T _{2N} [Nm]	121	170	194	207	216	265
		P _{1NT} [kW]	4.16	2.89	2.41	2.15	1.86	0.00
		Efficiency	0.94	0.93	0.92	0.91	0.89	0.83
13:1	51:4	n ₂ [rpm]	230.0	115.0	76.0	57.0	38.0	11.0
		P _{1N} [kW]	3.31	1.81	1.29	1.00	0.71	0.26
		T _{2N} [Nm]	125	135	141	145	151	170
		P _{1NT} [kW]	3.68	2.53	2.12	1.90	1.66	0.00
		Efficiency	0.93	0.92	0.90	0.89	0.87	0.82
15:1	29:2	n ₂ [rpm]	200.0	100.0	66.0	50.0	33.0	10.0
		P _{1N} [kW]	3.12	2.23	1.77	1.51	1.16	0.48
		T _{2N} [Nm]	128	183	213	240	266	333
		P _{1NT} [kW]	2.80	1.95	1.62	1.44	1.23	0.00
		Efficiency	0.89	0.00	0.00	0.86	0.83	0.75
20:1	39:2	n ₂ [rpm]	150.0	75.0	50.0	37.0	25.0	7.5
		P _{1N} [kW]	2.95	1.70	1.32	1.14	0.86	0.34
		T _{2N} [Nm]	161	186	212	237	259	310
		P _{1NT} [kW]	2.52	1.73	1.44	1.29	1.12	0.00
		Efficiency	0.88	0.88	0.86	0.84	0.81	0.74
26:1	51:2	n ₂ [rpm]	115.0	57.0	38.0	28.0	19.0	5.8
		P _{1N} [kW]	1.89	1.25	0.90	0.71	0.51	0.19
		T _{2N} [Nm]	132	173	181	187	195	222
		P _{1NT} [kW]	2.21	1.52	1.27	1.14	1.01	0.00
		Efficiency	0.86	0.85	0.83	0.81	0.78	0.71
30:1	29:1	n ₂ [rpm]	100.0	50.0	33.0	25.0	16.0	5.0
		P _{1N} [kW]	1.94	1.38	1.11	0.97	0.75	0.36
		T _{2N} [Nm]	143	204	237	268	296	403
		P _{1NT} [kW]	1.66	1.15	0.97	0.86	0.75	0.00
		Efficiency	0.80	0.80	0.77	0.75	0.71	0.61
40:1	39:1	n ₂ [rpm]	75.0	37.0	25.0	18.0	12.0	3.8
		P _{1N} [kW]	1.54	1.08	0.85	0.74	0.57	0.24
		T _{2N} [Nm]	149	207	237	264	288	348
		P _{1NT} [kW]	1.50	1.04	0.87	0.78	0.69	0.00
		Efficiency	0.78	0.77	0.75	0.72	0.68	0.59
53:1	51:1	n ₂ [rpm]	57.0	28.0	18.0	14.0	9.4	2.8
		P _{1N} [kW]	1.16	0.80	0.58	0.47	0.34	0.14
		T _{2N} [Nm]	143	191	200	207	217	248
		P _{1NT} [kW]	1.34	0.96	0.78	0.71	0.63	0.00
		Efficiency	0.76	0.74	0.71	0.68	0.65	0.56
62:1	61:1	n ₂ [rpm]	48.0	24.0	16.0	12.0	8.1	2.4
		P _{1N} [kW]	0.82	0.66	0.53	0.46	0.34	0.12
		T _{2N} [Nm]	110	175	202	221	226	226
		P _{1NT} [kW]	1.10	0.76	0.65	0.59	0.52	0.00
		Efficiency	0.69	0.68	0.65	0.62	0.57	0.47
83:1	82:1	n ₂ [rpm]	36.0	18.0	12.0	9.0	6.0	1.8
		P _{1N} [kW]	0.75	0.46	0.33	0.26	0.19	0.07
		T _{2N} [Nm]	129	152	152	152	152	152
		P _{1NT} [kW]	0.99	0.69	0.59	0.54	0.49	0.00
		Efficiency	0.66	0.63	0.59	0.56	0.52	0.44

	5:1	7.5:1	10:1	13:1	15:1	20:1	26:1	30:1	40:1	53:1	62:1	83:1
T _{2max} [Nm]	295	334	306	222	395	355	295	437	360	310	240	246

Permissible radial force F_{r2} and axial force F_{a2} on shaft N₂

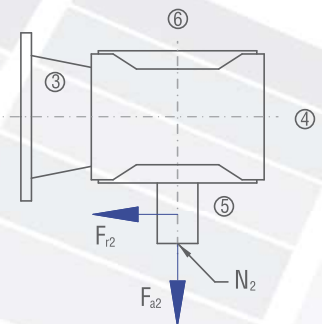
n ₂ [rpm]	200		125		75		50		30		10	
	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]
< 220	2700	1350	3150	1575	3800	1900	4500	2250	5200	2600	5200	2600
> 220	2080	1040	2420	1210	2920	1460	3460	1730	4000	2000	4000	2000

Inertia moments/mass

Inertia moment J₁ related to the fast-rotating shaft (N₁)

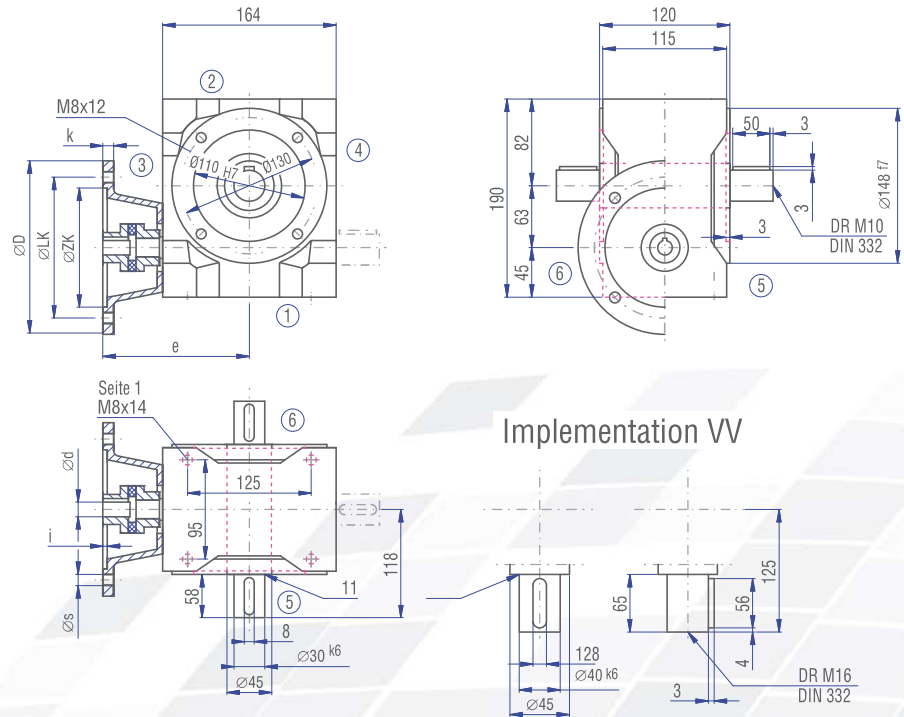
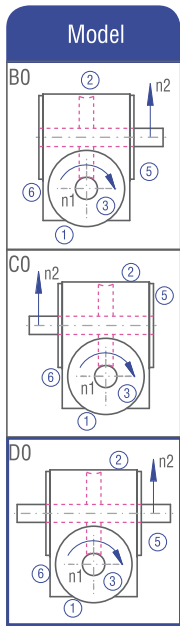
J ₁	Inertia moment [kgcm ²]											
	5:1	7.5:1	10:1	13:1	15:1	20:1	26:1	30:1	40:1	53:1	62:1	83:1
J ₁	3.25	2.72	2.22	2.02	2.41	2.02	1.90	2.33	1.98	1.87	2.05	1.88

Mass
ca. [kg]
21

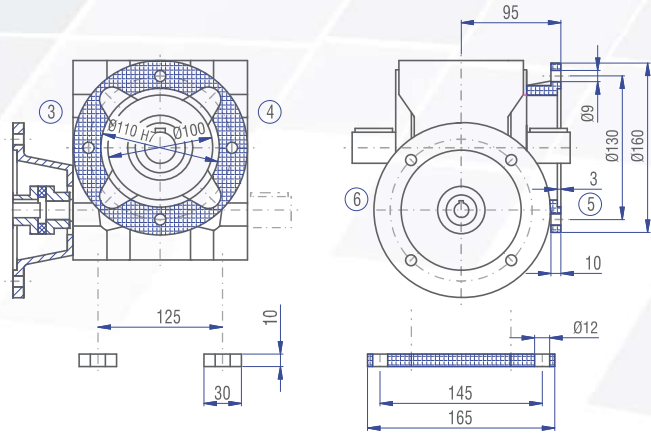
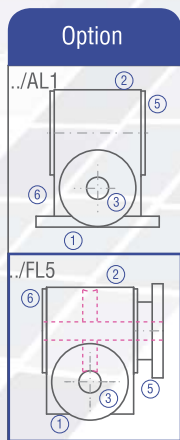
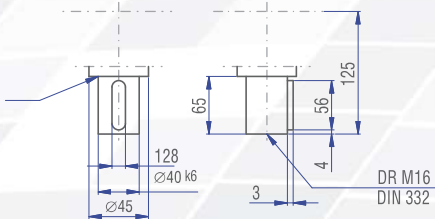


The mass of the gearbox may deviate depending on the flange size, the type and the gear ratio.

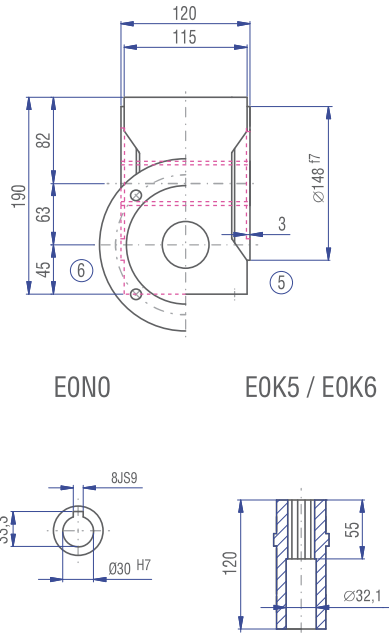
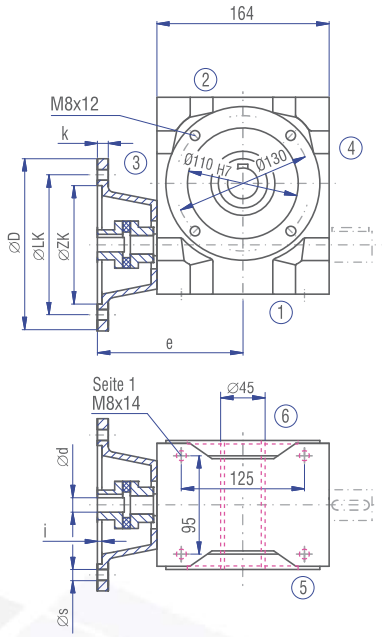
9.4.8 Type SL 063 – Type S with flange for motor mounting



Implementation VV

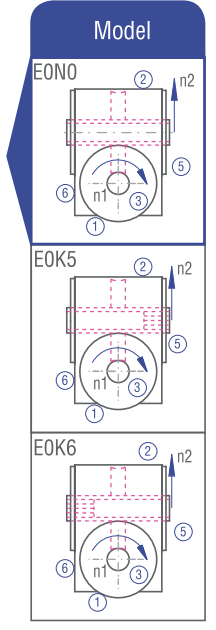
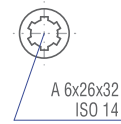


IEC motor	Model	Motor shaft (dxl)	Flange diameter D [mm]	LK [mm]	ZK [mm]	s [mm]	i [mm]	k [mm]	e [mm]
71	B5	14x30	160	130	110	9	4	10	163
	B14	19x40	160	130	110	9	4	10	163
80	B5	19x40	200	165	130	11	4	10	175
	B14	24x50	160a	130	110	9	4	10	175
90	B5	24x50	200	165	130	11	4	10	175
	B14	28x60	200a	165	130	11	4	20	185
100	B14	28x60	200a	165	130	11	4	20	185

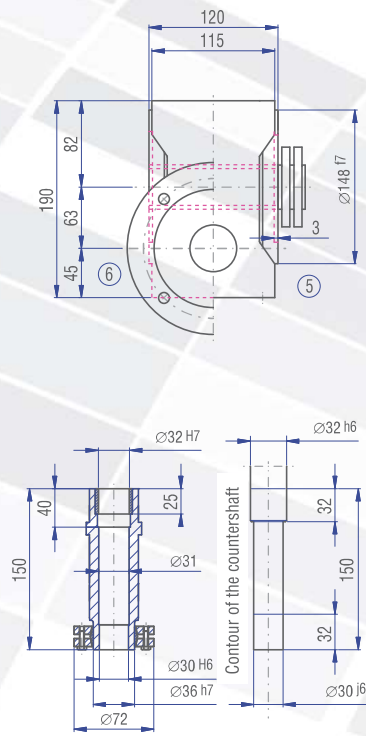
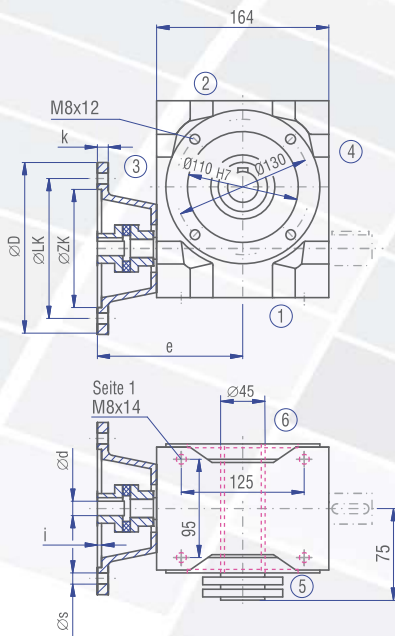


EON0

EOK5 / EOK6



Worm
gearboxes



Contour of the countershaft

