

6.5.10 Type VL 160 – Type V with flange for motor mounting



Characteristics

Characteristic	Standard	Option
Toothing	Bevel gear set, spiral-toothed	See chapter 6.2.1
Gear ratio	1:1 to 6:1	
Housing / Flanges	Grey cast iron	
Threaded mounting hole	On all housing surfaces without flange and on all flanges.	See chapter 6.2.3
Shaft	Material 1 C45, shaft ends greased Fit with ISO 6 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 7 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
Circumferential backlash	< 30 arcmin	See chapter 6.2.10
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 < 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 6.2.8
Lubricants	Synthetic lubricants	See chapter 6.2.8
Flange	Suited for the mounting of IEC motors	
Coupling	Three-piece claw coupling	

Performance data

n ₁ [rpm]	1:1		1.5:1			2:1			3:1			4:1			5:1			6:1						
	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]			
3000				2000	40.78	185	1500	28.11	170	1000	20.94	190	750	14.88	180	600	11.90	180	500	7.09	129			
2400	2400	57.67	218	1600	36.15	205	1200	25.53	193	800	17.81	202	600	13.23	200	480	10.48	198	400	5.98	136			
1500	1500	42.99	260	1000	27.78	252	750	20.25	245	500	12.68	230	375	9.09	220	300	7.11	215	250	3.95	143			
1000	1000	31.96	290	667	20.59	280	500	14.88	270	333	8.99	245	250	6.61	240	200	4.96	225	167	3.01	164			
750	750	25.63	310	500	16.26	295	375	11.57	280	250	6.89	250	188	5.17	250	150	3.97	240	125	2.43	176			
500	500	18.19	330	333	11.56	315	250	8.27	300	167	4.79	260	125	3.58	260	100	2.76	250	83	1.72	187			
250	250	9.64	350	167	6.07	330	125	4.41	320	83	2.56	280	63	1.86	270	50	1.49	270	42	0.92	199			
50	50	2.09	380	33	1.29	355	25	0.88	320	17	0.57	305	13	0.39	280	10	0.32	290	8	0.18	197			
P _{1Nt} [kW]		15.0		15.0			15.0			15.0			15.0			15.0			15.0					
T _{2max} [Nm]		660		360			320			457			422			420			350					

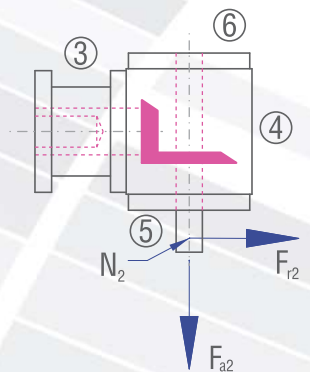
Permissible radial force F_{r2} and axial force F_{a2} on shaft N₂

n ₂ [rpm]	3000		1000		500		250		100		50	
T _{2N} [Nm]	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	2000	1000	2800	1400	3300	1650	4000	2000	5000	2500	6500	3250
> 220	1670	835	2340	1170	2750	1375	3340	1670	4170	2085	5420	2710

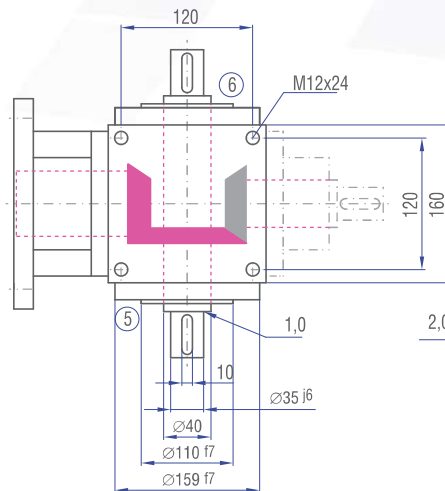
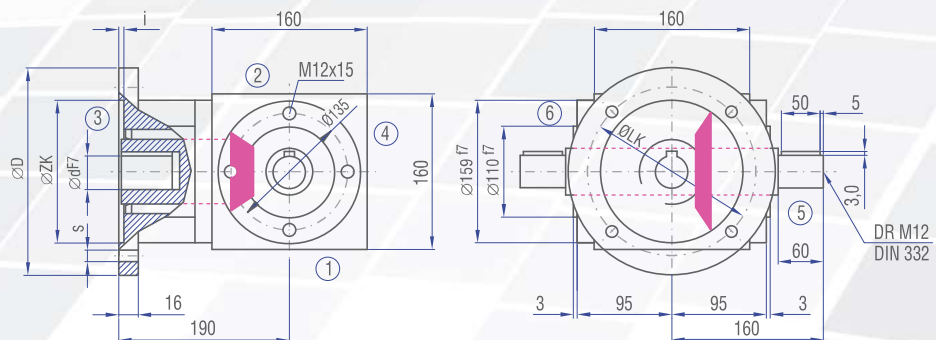
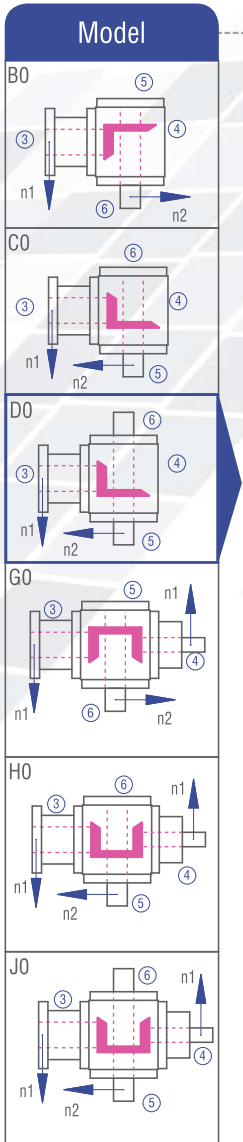
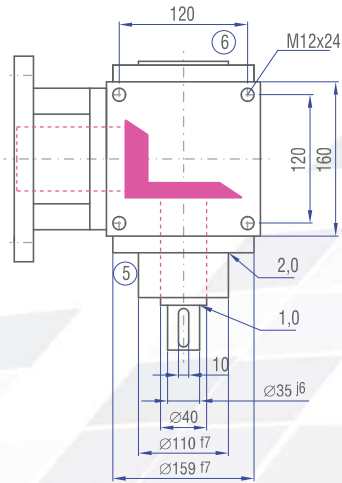
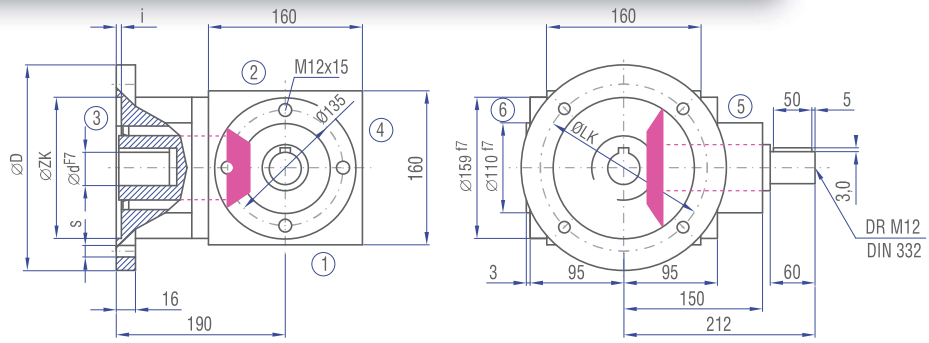
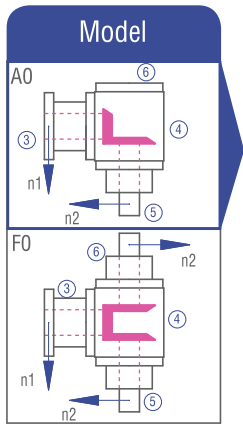
Inertia moments/mass

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

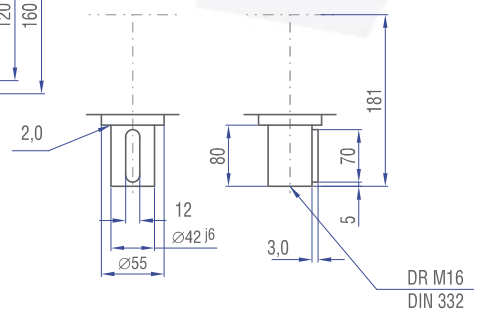
Model	Inertia moment [kgcm ²]							Mass [kg]
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1	
AO	42.4880	32.2050	25.0090	22.8169	21.8333	21.4119	21.2266	36.5
BO	44.3697	44.5919	32.7507	25.9456	23.8183	22.8273	22.0772	36.0
CO	44.3697	44.5919	32.7507	25.9456	23.8183	22.8273	22.0772	36.0
DO	45.3990	45.0494	33.0080	26.0600	23.8826	22.8685	22.1058	36.5
EON	47.2021	45.7092	33.3159	26.1968	23.9596	22.9177	22.1413	35.0
EOS	53.4920	48.5047	34.8883	26.8957	24.3527	23.1693	22.3160	35.6
FO	57.3235	38.7985	28.7179	24.4653	22.7605	22.0053	21.6387	43.0
GO	59.2052	57.6357	41.4007	33.2488	29.3259	24.5072	23.7552	42.5
HO	59.2052	57.6357	41.4007	33.2488	29.3259	24.5072	23.7552	42.5
JO	60.2345	58.0932	41.6580	33.3632	29.3902	24.5484	23.7838	43.0
KON	62.0376	58.7530	41.9659	33.5000	29.4672	24.5976	23.8193	41.5
KOS	68.3275	61.5485	43.5383	34.1989	29.8603	24.8492	23.9940	42.1



6.5.10 Type VL 160 – Type V with flange for motor mounting

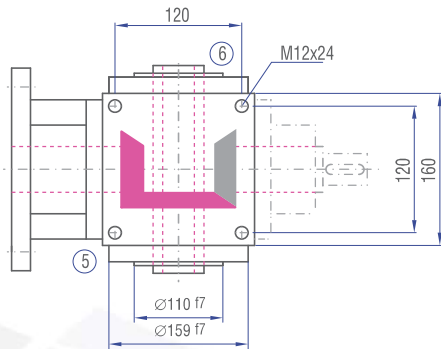
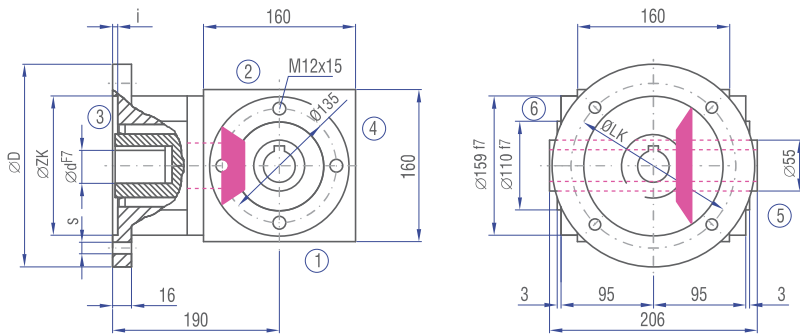


Implementation VV

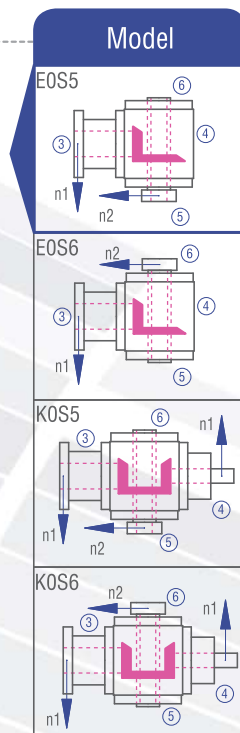
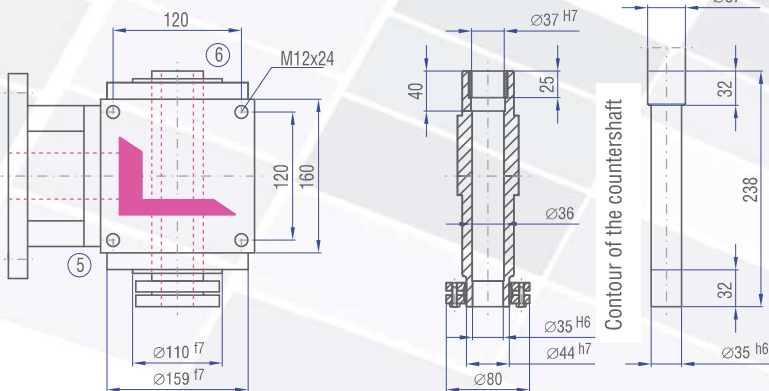
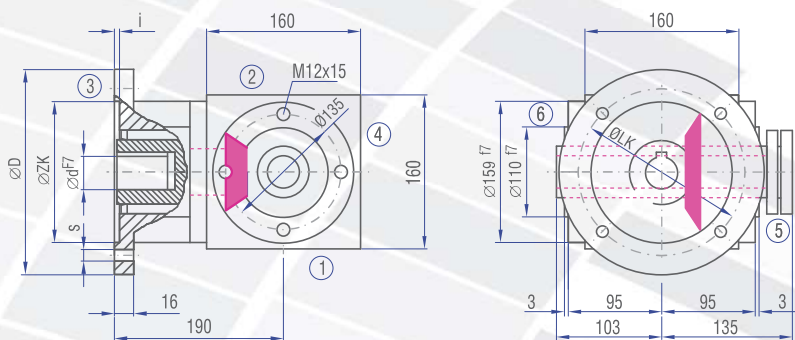
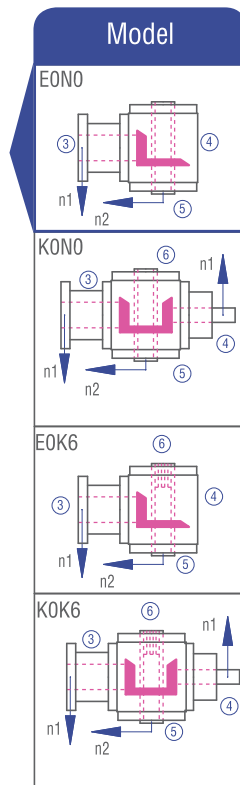
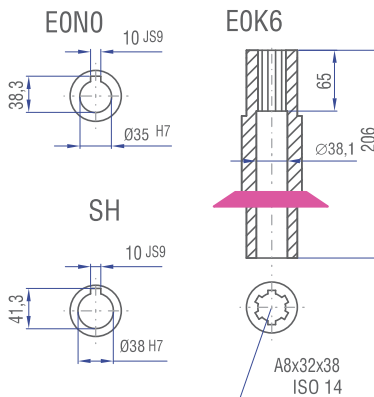


IEC motor	Model	Shaft (dxl)	D [mm]	LK [mm]	ZK [mm]	s [mm]	i [mm]
100	B14	28x60	200	165	130	11	4
	B5	28x60	250	215	180	14	5
112	B5	28x60	200	165	130	11	4
	B5	28x60	250	215	180	14	5
132	B14	38x80	200	165	130	11	4
	B5	38x80	300	265	230	14	5

Gear ratios 3:1 through 6:1 only with intermediate flange or shortened motor shaft.



Implementation



The dimensions of the Models not shown can be figured by mirroring available dimensions.
The shaft dimensions on side 4 follow from the dimensions of type A0.