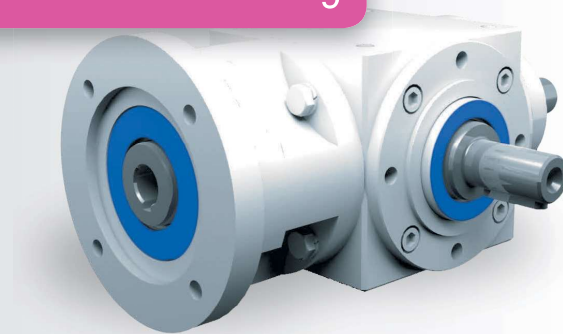


6.5.9 Type VL 140 – Type V with flange for motor mounting



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	3000	39.68	120	2000	24.91	113	1500	16.53	100	1000	12.12	110	750	8.51	103	600	6.61	100	500	5.18	94					
2400	2400	37.04	140	1600	22.22	126	1200	14.68	111	800	11.46	130	600	7.34	111	480	5.56	105	400	4.58	104					
1500	1500	26.78	162	1000	17.08	155	750	11.41	138	500	8.05	146	375	4.96	120	300	3.80	115	250	2.95	107					
1000	1000	20.28	184	667	12.87	175	500	8.38	152	333	5.87	160	250	3.75	136	200	2.73	124	167	2.06	112					
750	750	16.20	196	500	10.47	190	375	6.86	166	250	4.60	167	188	3.06	148	150	2.15	130	125	1.61	117					
500	500	11.46	208	333	7.34	200	250	4.96	180	167	3.20	174	125	2.12	154	100	1.50	136	83	1.09	119					
250	250	5.92	215	167	3.76	204	125	2.48	180	83	1.62	177	63	1.12	162	50	0.79	143	42	0.56	121					
50	50	1.21	220	33	0.76	210	25	0.50	180	17	0.34	180	13	0.23	170	10	0.17	150	8	0.11	120					
P _{1Nt} [kW]		10.0			10.0			10.0			10.0			10.0			10.0			10.0						
T _{2max} [Nm]		430			210			180			280			280			250			200						

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

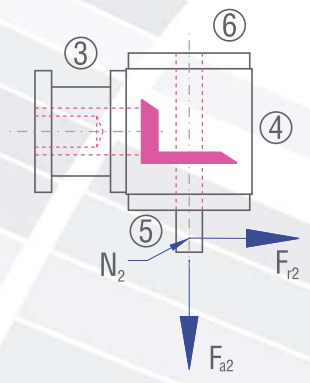
n ₂ [rpm]	3000		1000		500		250		100		50	
T _{2N} [Nm]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]
< 140	1300	650	1700	850	2000	1000	2500	1250	3000	1500	3800	1900
> 140	1082	541	1420	710	1670	835	2080	1040	2500	1250	3170	1585

Inertia moments/mass

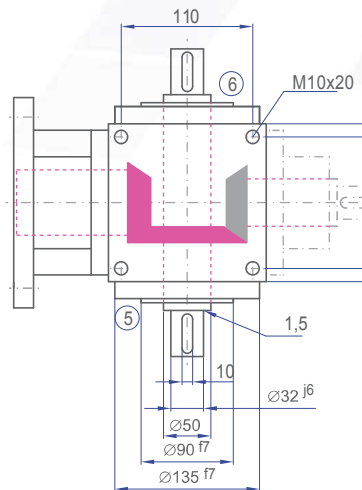
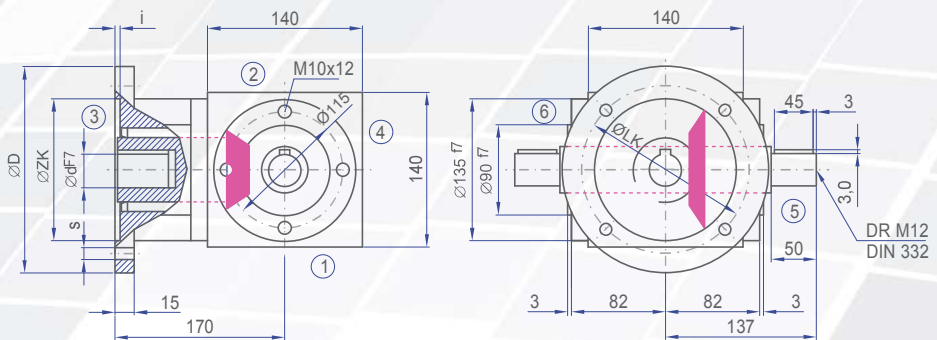
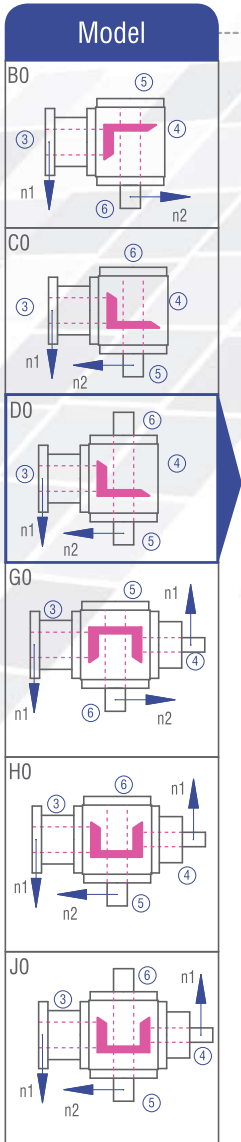
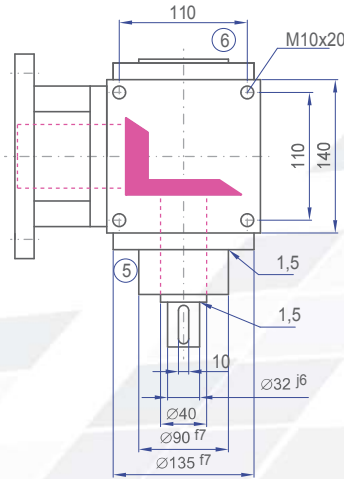
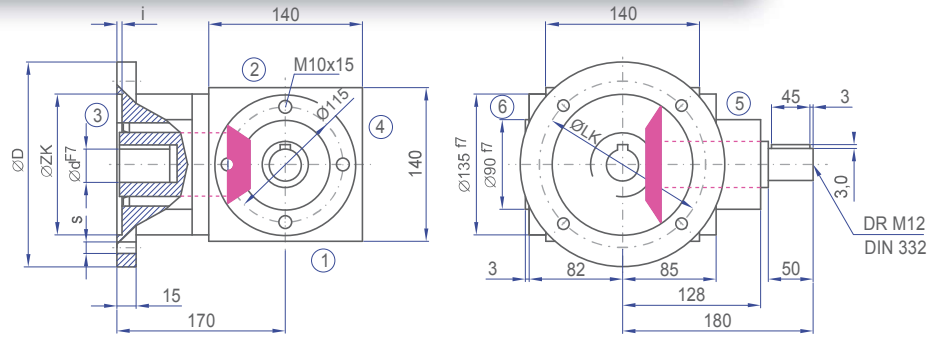
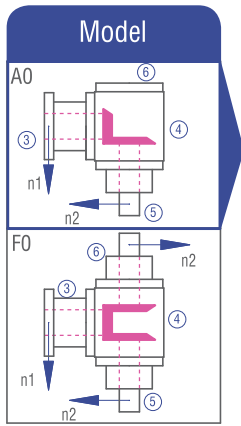
Inertia moment J₁ related to the fast-rotating shaft (N₁)

Model	Inertia moment [kgcm ²]						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
A0	34.6752	23.0606	18.4863	16.3939	15.2904	14.8851	14.6758
B0	45.8411	28.2365	21.6470	17.4945	15.7845	15.3137	14.9457
C0	45.8411	28.2365	21.6470	17.4945	15.7845	15.3137	14.9457
D0	46.8232	28.6730	21.8926	17.6037	15.8459	15.3530	14.9729
E0N	42.4047	26.7092	20.7879	17.1127	15.5697	15.1763	14.8502
E0S	48.8060	29.5543	22.3883	17.8240	15.9698	15.4323	15.0280
F0	46.4752	30.6161	22.2113	18.2717	16.4716	15.6611	15.2424
G0	58.9746	34.2563	27.0398	22.4708	16.8069	16.3204	15.9517
H0	58.9746	34.2563	27.0398	22.4708	16.8069	16.3204	15.9517
J0	59.9567	34.6928	27.2854	22.5800	16.8683	16.3597	15.9789
K0N	55.5382	32.7290	26.1807	22.0890	16.5921	16.1830	15.8562
K0S	61.9395	35.5741	27.7811	22.8003	16.9922	16.4390	16.0340

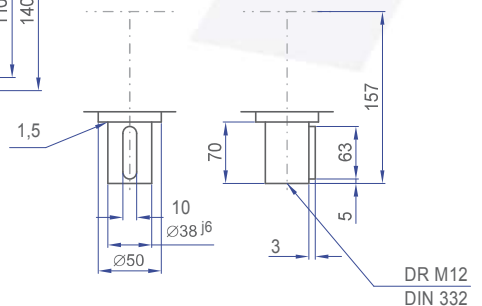
Mass [kg]
24.0
23.5
23.5
24.0
23.0
23.7
28.0
27.7
27.7
28.2
27.2
27.9



6.5.9 Type VL 140 – Type V with flange for motor mounting

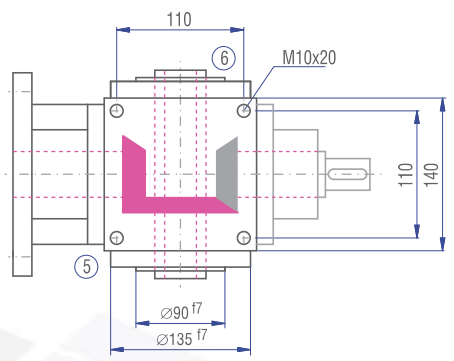
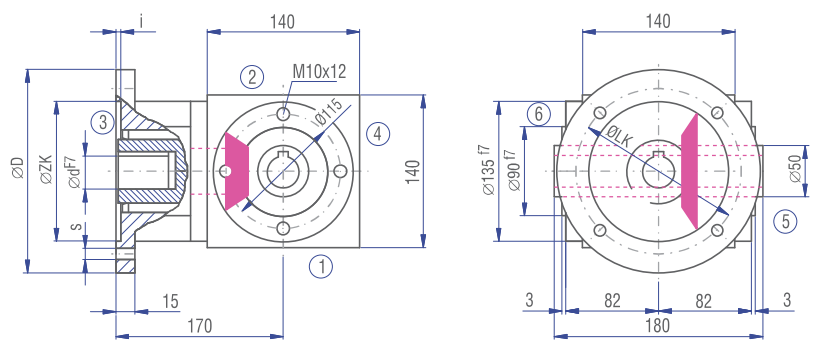


Implementation VV

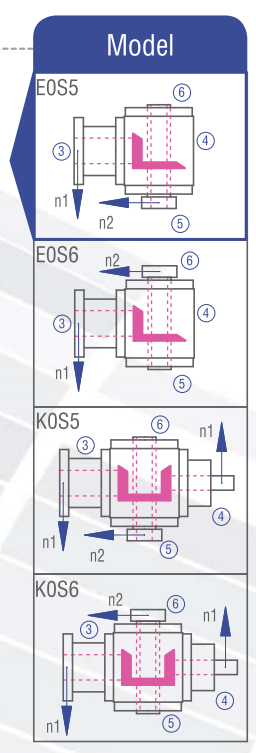
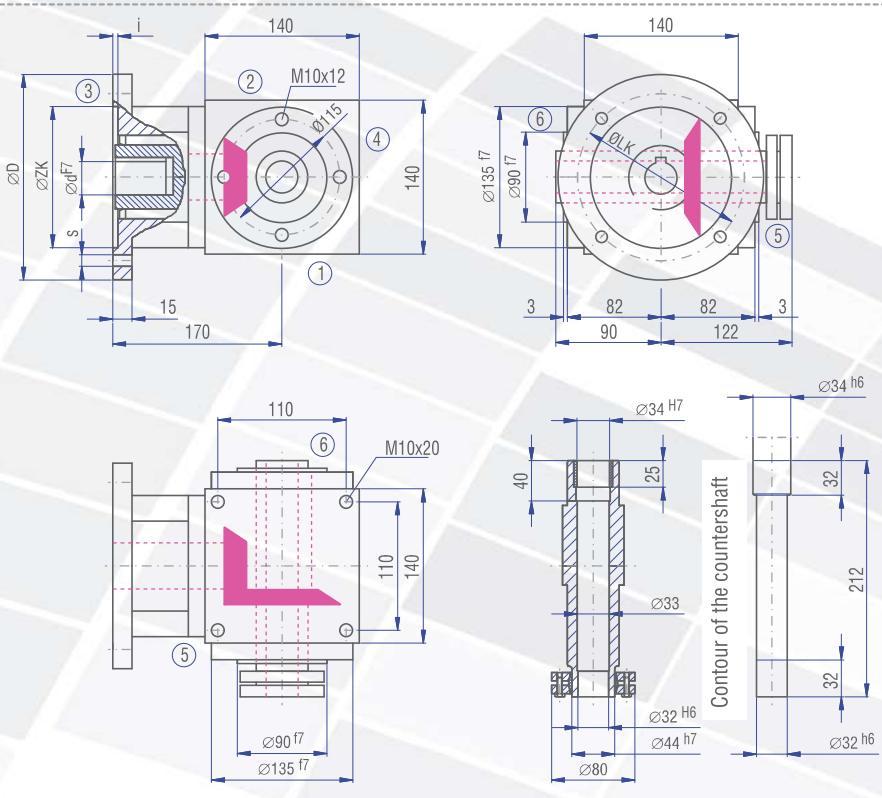
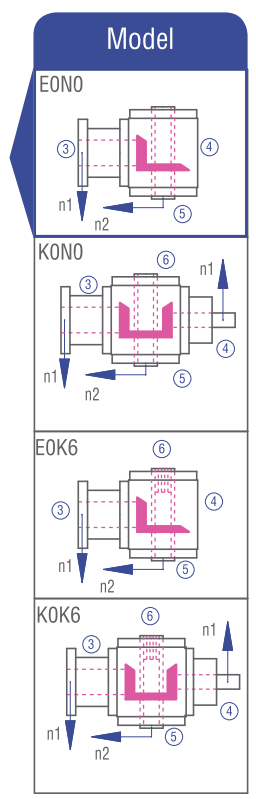
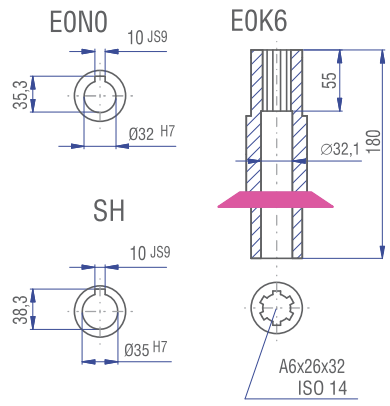


IEC motor	Model	Shaft (dxl)	D [mm]	LK [mm]	ZK [mm]	s [mm]	i [mm]
90	B14	24x50	160	130	110	9	4
	B5	24x50	200	165	130	11	4.5
100	B14	28x60	200	165	130	11	4.5
	B5	28x60	250	215	180	14	5
112	B14	28x60	200	165	130	11	4.5
	B5	28x60	250	215	180	14	5
132	B14	38x80	200	165	130	11	4.5
	B5	38x80	250	215	180	14	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.