

6.3.11 Type V 200 – Standard bevel gearboxes



Characteristics

Characteristic	Standard	Option
Toothing	Spiral toothed bevel gear set	See chapter 6.2.1
Gear ratio	1:1 to 6:1	
Housing / Flanges	Grey cast iron; steel	
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
Lubricant	Synthetic lubricants	See chapter 6.2.8

Performance data

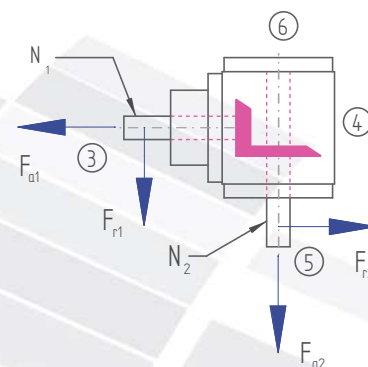
n ₁ [rpm]	1:1			1.5:1			2:1			3:1			4:1			5:1			6:1		
	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]	n ₂ [rpm]	P _{1N} [kW]	T _{2N} [Nm]
3000				2000	72.75	330	1500	51.25	310	1000	46.29	420	750	28.93	350	600	19.84	300	500	11.45	208
2400				1600	63.49	360	1200	45.24	342	800	39.24	445	600	26.45	400	480	17.99	340	400	9.60	218
1500	1500	74.40	450	1000	48.17	437	750	35.13	425	500	28.38	515	375	18.81	455	300	12.57	380	250	6.54	237
1000	1000	56.21	510	667	37.13	505	500	27.56	500	333	20.37	555	250	13.36	485	200	9.26	420	167	4.74	258
750	750	45.88	555	500	30.31	550	375	22.32	540	250	15.98	580	188	10.54	510	150	7.27	440	125	3.98	289
500	500	34.17	620	333	22.57	615	250	16.81	610	167	11.04	600	125	7.23	525	100	5.18	470	83	2.79	304
250	250	19.56	710	167	12.70	690	125	9.37	680	83	5.76	630	63	3.79	550	50	2.78	505	42	1.44	311
50	50	4.13	750	33	2.73	750	25	2.07	750	17	1.29	690	13	0.80	580	10	0.58	525	8	0.28	306
P _{1Nt} [kW]	26.0			26.0			26.0			26.0			26.0			26.0			26.0		
T _{2max} [Nm]	1090			980			980			910			860			860			625		

Permissible radial force F_{r1} and axial force F_{a1} on shaft N₁

n ₁ [rpm]	3000		1000		500		250		100		50	
T ₂ [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]
< 500	2200	1100	1700	850	3200	1600	3900	1950	5000	2500	6200	3100
> 500	1840	920	1420	710	2670	1335	3250	1625	4170	2085	5170	2585

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

n ₂ [rpm]	3000		1000		500		250		100		50	
T ₂ [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]
< 500	3200	1600	4300	2150	5000	2500	6500	3250	8000	4000	10000	5000
> 500	2670	1335	3580	1790	4170	2085	5420	2710	6670	3335	8330	4165

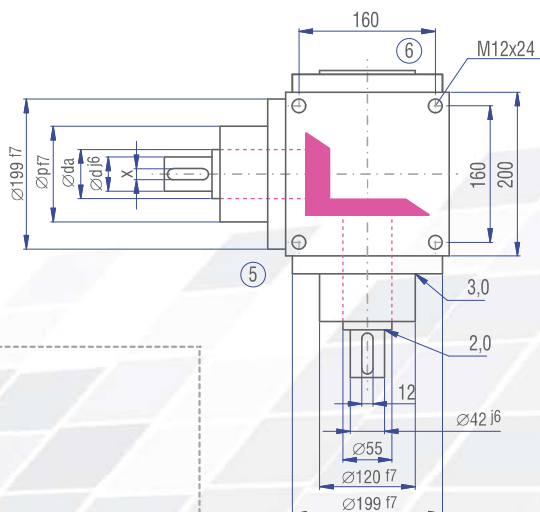
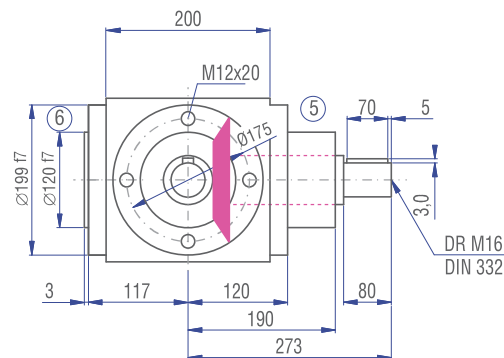
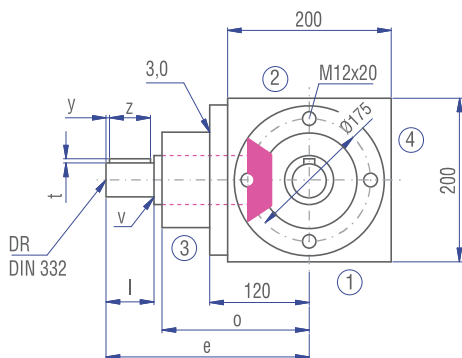
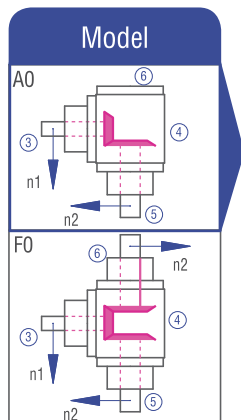


Inertia moments/mass

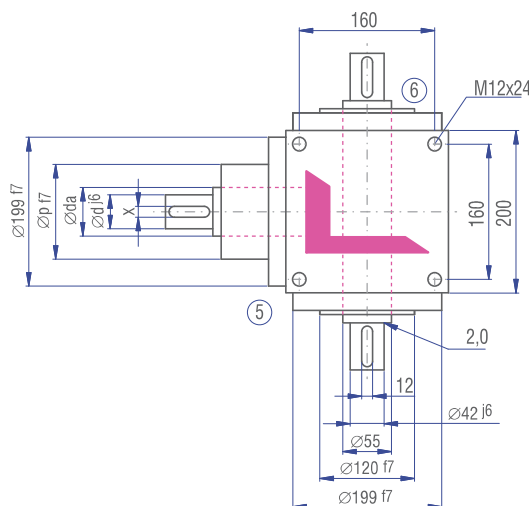
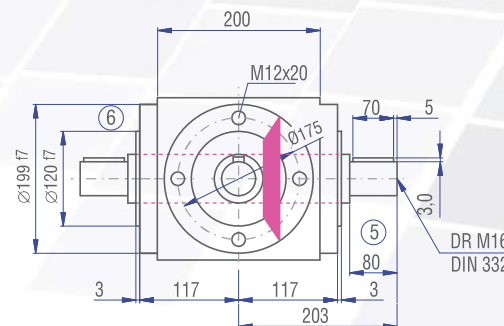
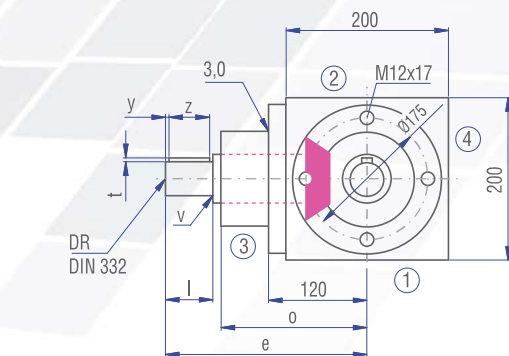
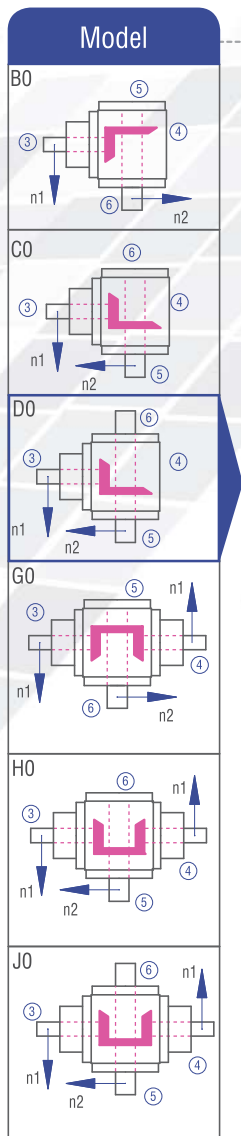
Inertia moment J₁ related to the fast-rotating shaft (N₁)

Model	Inertia moment [kgcm ²]							Mass [kg]
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1	
A0	121.2522	57.6950	36.3095	18.8322	14.2651	6.1470	5.3881	52.0
B0	174.7000	103.5829	71.6215	34.1931	22.7181	12.8770	10.0616	48.0
C0	174.7000	103.5829	71.6215	34.1931	22.7181	12.8770	10.0616	48.0
D0	177.8173	104.9684	72.4008	34.5395	22.9130	13.0016	10.1482	50.0
E0N	201.3904	109.0276	76.4341	35.2209	23.3588	13.8070	10.7075	48.0
E0S	222.4124	118.3707	81.6896	37.5567	24.6726	14.6479	11.2914	49.3
F0	181.8783	84.6400	51.4661	25.5685	18.0543	8.5721	7.0721	60.0
G0	235.3261	134.3330	92.7745	46.2891	33.1941	16.5990	13.7656	58.0
H0	235.3261	134.3330	92.7745	46.2891	33.1941	16.5990	13.7656	58.0
J0	238.4434	135.7185	93.5538	46.6355	33.3890	16.7236	13.8522	60.0
K0N	262.0165	139.7777	97.5871	47.3169	33.8348	17.5290	14.4115	58.0
K0S	283.0385	149.1208	102.8426	49.6527	35.1486	18.3699	14.9954	59.3

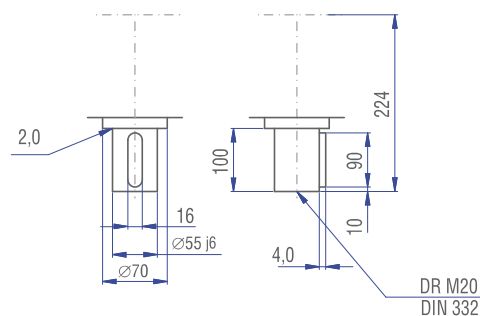
6.3.11 Type V 200 – Standard bevel gearboxes

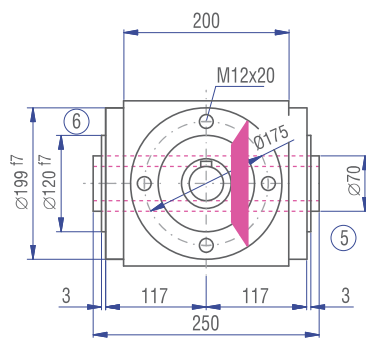
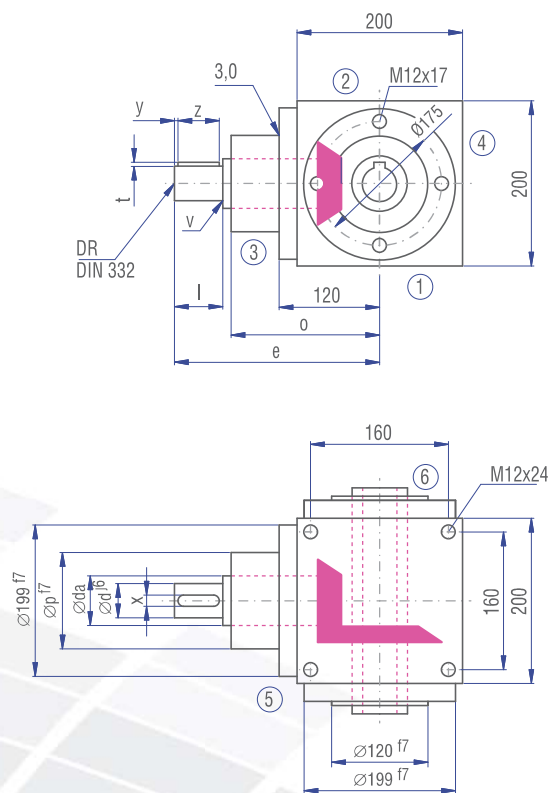


	Gear ratio						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
d [mm]	42	42	42	35	35	28	28
da [mm]	55	55	55	40	40	30	30
l [mm]	80	80	80	68	68	68	68
v [mm]	2	2	2	1	1	0	0
x [mm]	12	12	12	10	10	8	8
y [mm]	5	5	5	3	3	3	3
z [mm]	70	70	70	63	63	63	63
t [mm]	3	3	3	3	3	3	3
e [mm]	273	273	273	261	261	261	261
o [mm]	190	190	190	190	190	190	190
p [mm]	120	120	120	120	120	110	110
DR M	16	16	16	12	12	10	10



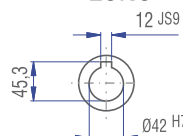
Implementation VV



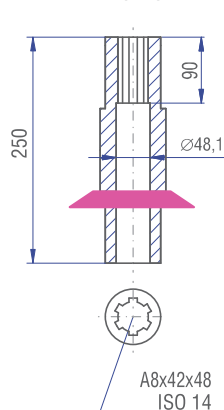


Implementation

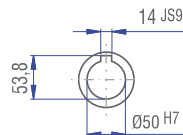
EON0



EOK6

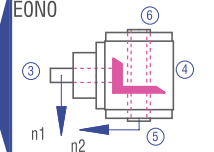


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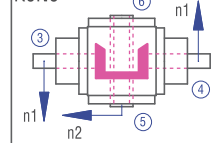


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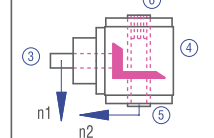
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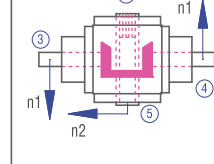
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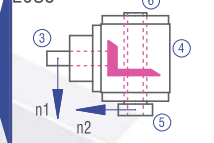


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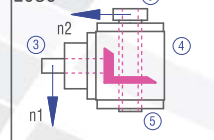


Model

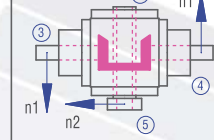
EOS5



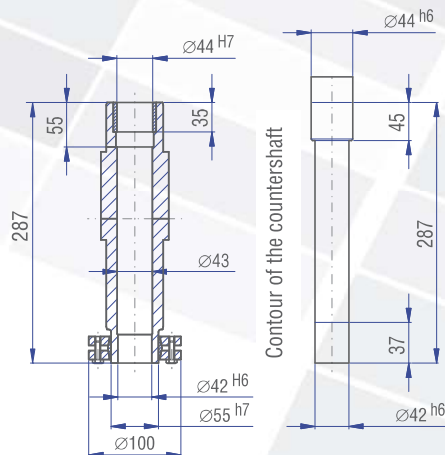
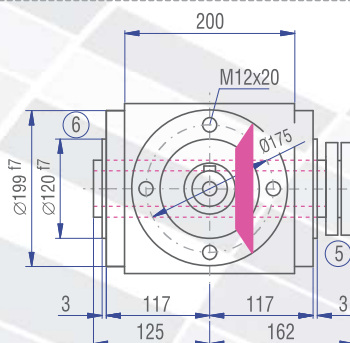
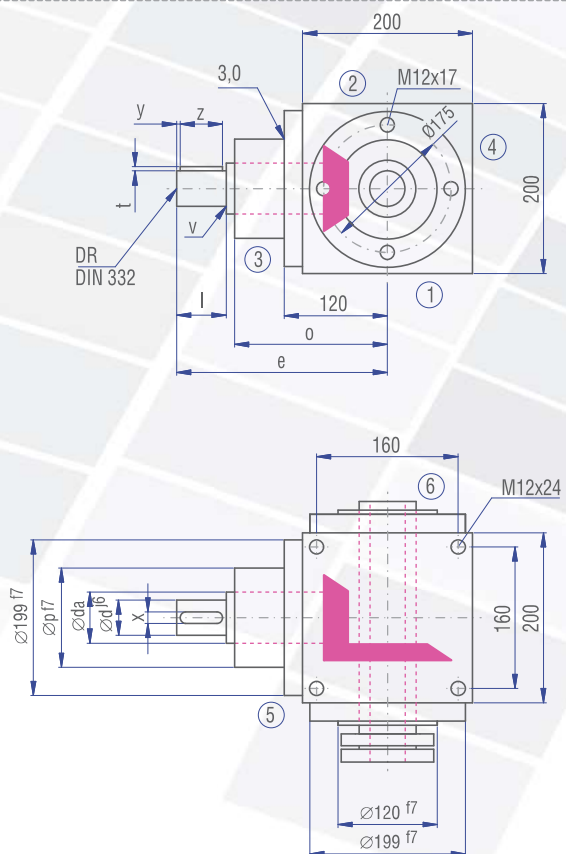
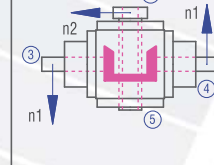
EOS6



KOS5



KOS6



Contour of the countershaft