



### Characteristics

Characteristic	Standard	Option
<b>Toothing</b>	Spiral toothed bevel gear set	See chapter 6.2.1
<b>Gear ratio</b>	1:1 to 6:1	
<b>Housing / Flanges</b>	Grey cast iron; steel	
<b>Threaded mounting hole</b>	On all housing surfaces without flange and on all flanges.	See chapter 6.2.3
<b>Shaft</b>	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
<b>Hollow shaft</b>	Material 1 C45, shafts greased Fit with ISO 7 tolerance with parallel keyway: according to DIN 6885 Sheet 1	See chapter 4.6.3
<b>Radial shaft seal ring</b>	NBR, form A	See chapter 4.8
<b>Ambient temperature</b>	-10°C to +90°C. The values of the performance tables are valid for +20°C	See chapter 4.9.3
<b>Circumferential backlash</b>	< 30 arcmin	See chapter 6.2.10
<b>Protection class</b>	IP 54	See chapter 4.5
<b>Corrosion protection</b>	Prime coat; layer thickness > 40 µm	See chapter 4.4.1
<b>Bearing life L10h</b>	more than 15,000h	See chapter 4.9.1
<b>Oil change intervals</b>	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
<b>Lubricant</b>	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	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	2.62	190	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	0.55	200	17	0.34	180	13	0.23	170	10	0.17	150	8	0.11	120

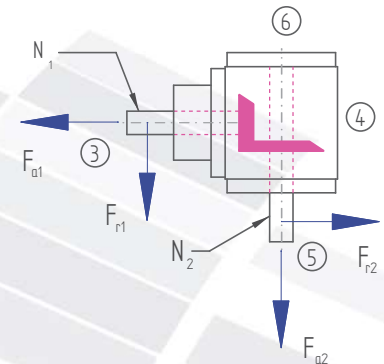
$P_{1Nt}$ [kW]	10.0	10.0	10.0	10.0	10.0	10.0
$T_{2max}$ [Nm]	430	210	320	280	280	200

## Permissible radial force $F_{r1}$ and axial force $F_{a1}$ on shaft $N_1$

$n_1$ [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]
< 140	700	350	870	435	1150	575	1370	685	1700	850	2000	1000
> 140	590	295	730	365	960	480	1140	570	1420	710	1670	835

## Permissible radial force $F_{r2}$ and axial force $F_{a2}$ on shaft $N_2$

$n_2$ [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]
< 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

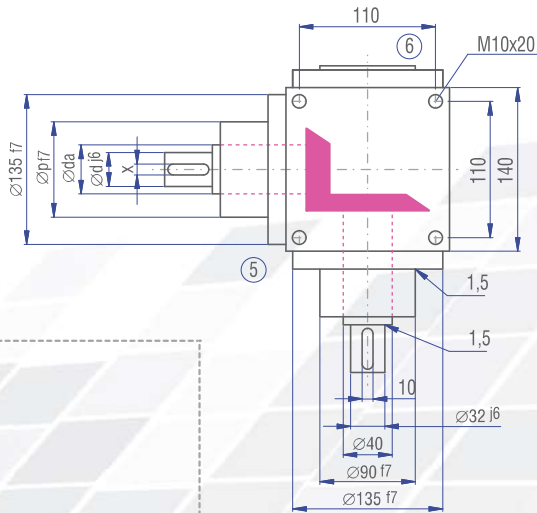
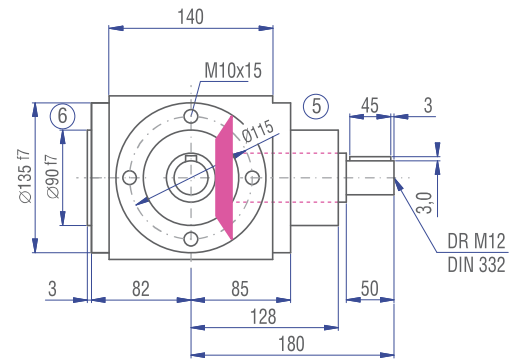
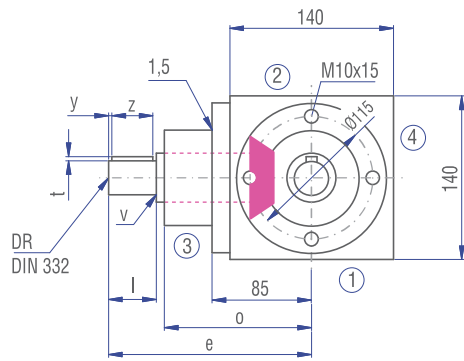
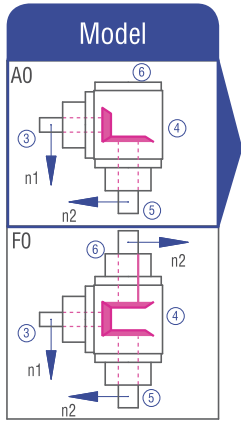


## Inertia moments/mass

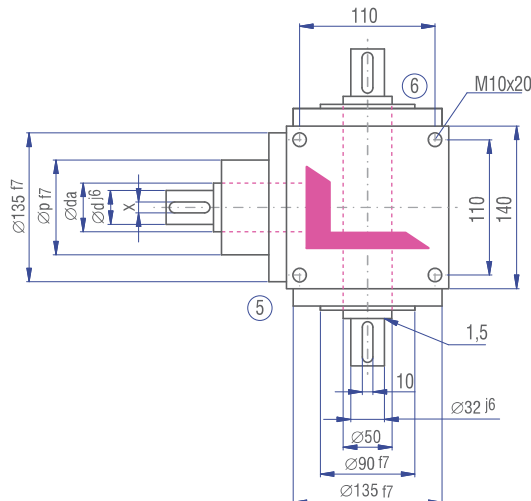
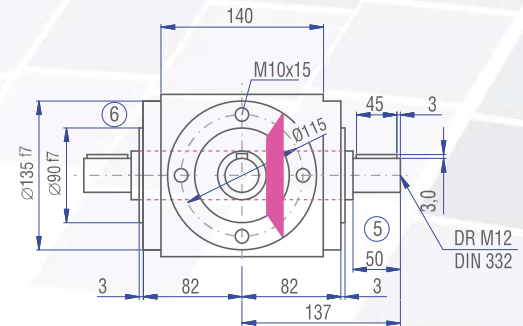
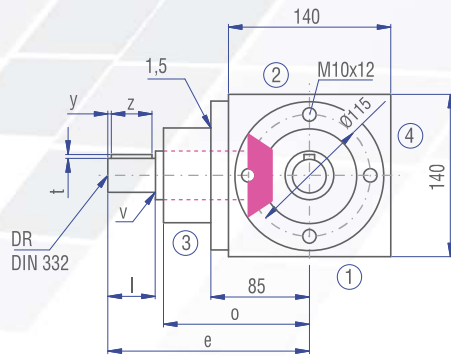
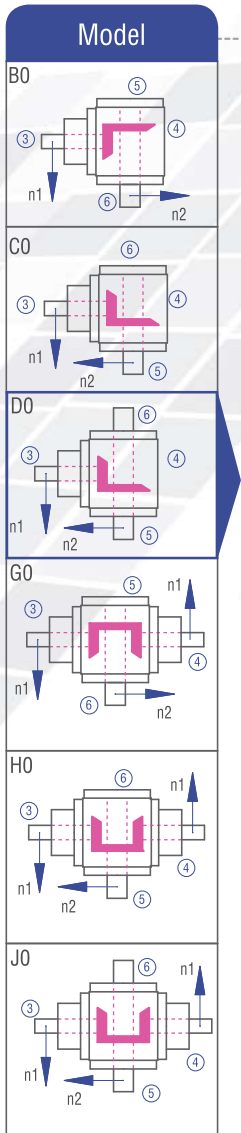
Inertia moment  $J_1$  related to the fast-rotating shaft ( $N_1$ )

Model	Inertia moment [kgcm <sup>2</sup> ]							Mass [kg]
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1	
A0	26.2670	11.8569	8.6762	6.43560	1.84320	1.53200	1.37080	19.0
B0	36.0994	18.7513	12.2785	7.95470	2.69780	2.21130	1.84260	18.5
C0	36.0994	18.7513	12.2785	7.95470	2.69780	2.21130	1.84260	18.5
D0	37.0815	19.1878	12.5241	8.06390	2.75920	2.25060	1.86980	19.0
E0N	32.6630	17.2240	11.4194	7.57290	2.48300	2.07390	1.74710	18.0
E0S	39.0643	20.0691	13.0198	8.28420	2.88310	2.32990	1.92490	18.7
F0	39.4005	17.6940	11.9596	7.89490	2.66410	2.05740	1.73560	23.0
G0	49.2329	24.7711	17.6713	12.9310	3.72020	3.21800	2.84860	22.7
H0	49.2329	24.7711	17.6713	12.9310	3.72020	3.21800	2.84860	22.7
J0	50.2150	25.2076	17.9169	13.0402	3.78160	3.25730	2.87580	23.2
K0N	45.7965	23.2438	16.8122	12.5492	3.50540	3.08060	2.75310	22.2
K0S	52.1978	26.0889	18.4126	13.2605	3.90550	3.33660	2.93090	22.9

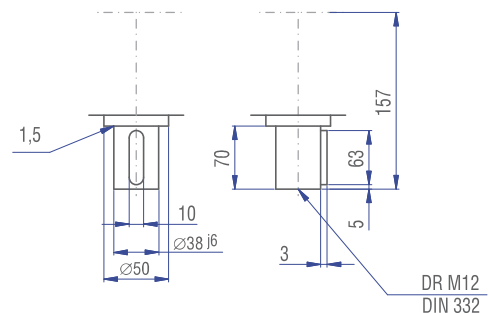
# 6.3.9 Type V 140 – Standard bevel gearboxes

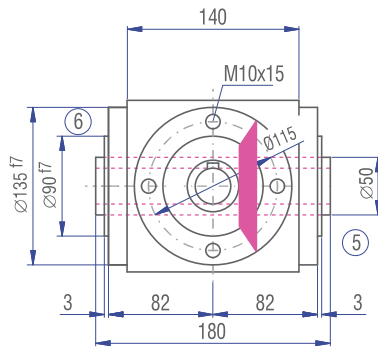
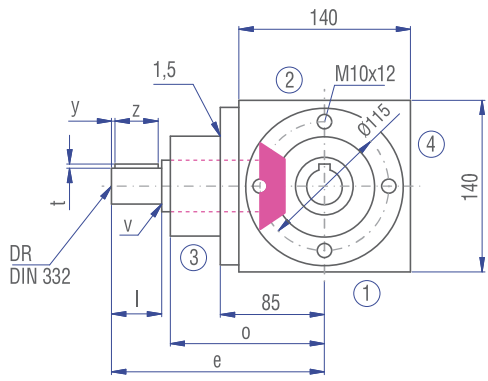


	Gear ratio						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
d [mm]	32	32	32	28	24	24	24
da [mm]	40	40	40	40	40	40	40
l [mm]	50	50	50	50	50	50	50
v [mm]	1.5	1.5	1.5	1	1	1	1
x [mm]	10	10	10	8	8	8	8
y [mm]	3	3	3	3	3	3	3
z [mm]	45	45	45	45	45	45	45
t [mm]	3	3	3	3	3	3	3
e [mm]	180	180	180	180	195	195	195
o [mm]	128	128	128	128	143	143	143
p [mm]	90	90	90	90	85	85	85
DR M	12	12	12	10	8	8	8



## Implementation VV





Implementation

