

## 6.3.6 Type V 065 – Standard bevel gearboxes



### Characteristics

Characteristic	Standard	Option
<b>Toothing</b>	Spiral toothed bevel gear set	See chapter 6.2.1
<b>Gear ratio</b>	1:1 to 3:1	
<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

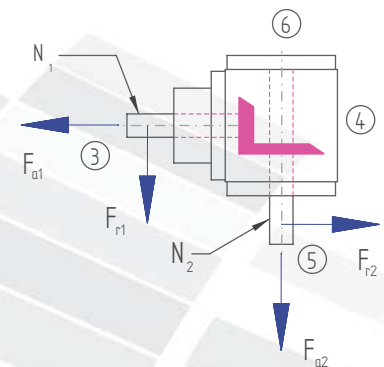
$n_1$ [rpm]	1:1			1.5:1			2:1			3:1			4:1			5:1			6:1			
	$n_2$ [rpm]	$P_{1N}$ [kW]	$T_{2N}$ [Nm]	$n_2$ [rpm]	$P_{1N}$ [kW]	$T_{2N}$ [Nm]	$n_2$ [rpm]	$P_{1N}$ [kW]	$T_{2N}$ [Nm]	$n_2$ [rpm]	$P_{1N}$ [kW]	$T_{2N}$ [Nm]	$n_2$ [rpm]	$P_{1N}$ [kW]	$T_{2N}$ [Nm]	$n_2$ [rpm]	$P_{1N}$ [kW]	$T_{2N}$ [Nm]	$n_2$ [rpm]	$P_{1N}$ [kW]	$T_{2N}$ [Nm]	
3000	3000	3.31	10	2000	2.20	10	1500	1.65	10	1000	1.10	10										
2400	2400	2.65	10	1600	1.76	10	1200	1.32	10	800	0.88	10										
1500	1500	1.82	11	1000	1.21	11	750	0.91	11	500	0.61	11										
1000	1000	1.32	12	667	0.88	12	500	0.66	12	333	0.44	12										
750	750	1.07	13	500	0.72	13	375	0.54	13	250	0.33	12										
500	500	0.83	15	333	0.55	15	250	0.41	15	167	0.24	13										
250	250	0.47	17	167	0.31	17	125	0.23	17	83	0.12	13										
50	50	0.10	18	33	0.07	18	25	0.05	18	17	0.03	14										
$P_{1Nt}$ [kW]	1.6			1.6			1.6			1.6												
$T_{2max}$ [Nm]	25			25			25			23												

## 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]
< 12	180	90	250	125	300	150	350	175	450	225	550	275
> 12	150	75	210	105	250	125	290	145	380	190	460	230

## 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]
< 12	300	150	400	200	500	250	650	325	750	375	900	450
> 12	250	125	330	165	420	210	540	270	630	315	750	375

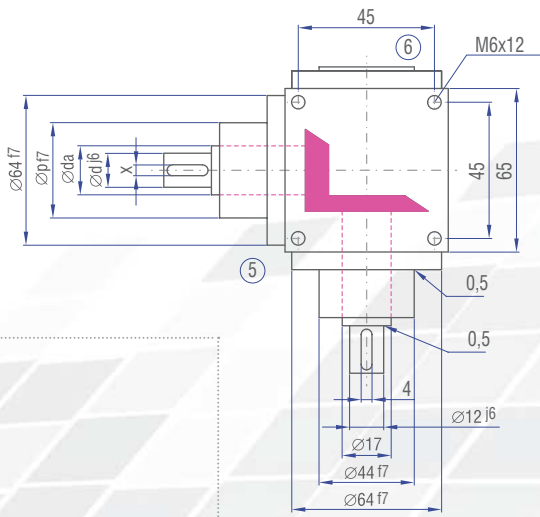
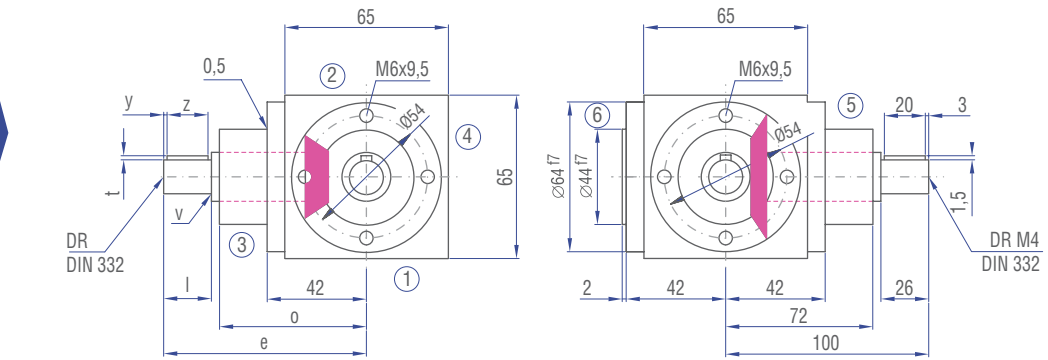
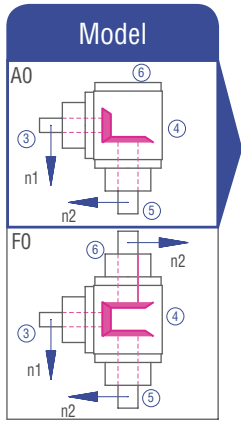


## Inertia moments/mass

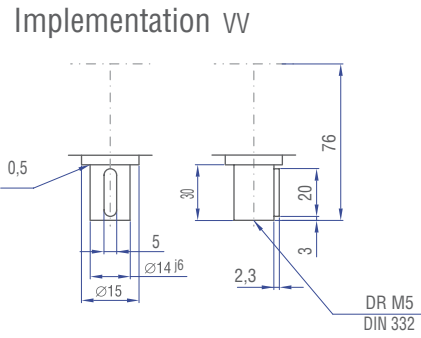
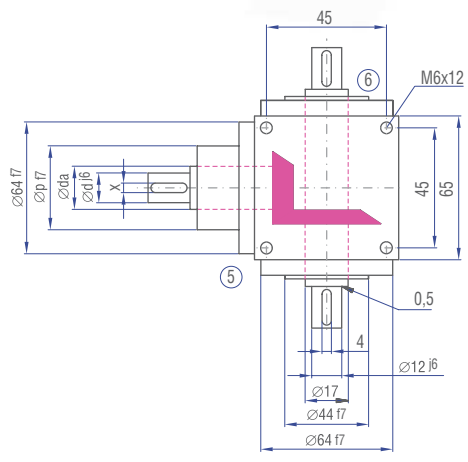
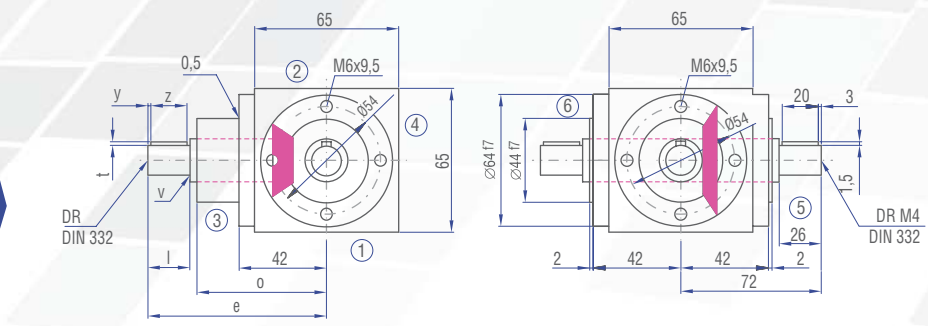
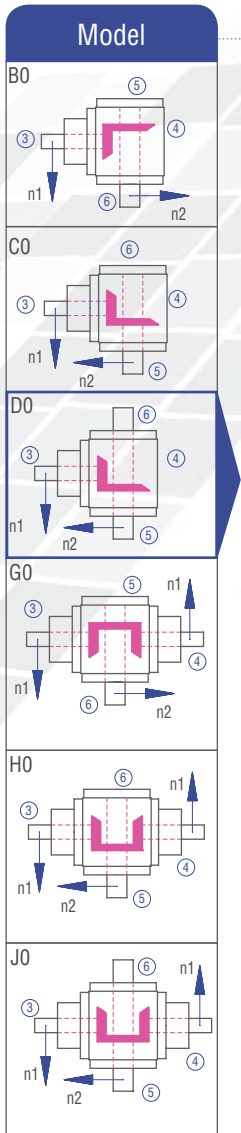
Inertia moment  $J_1$  related to the fast-rotating shaft ( $N_1$ )

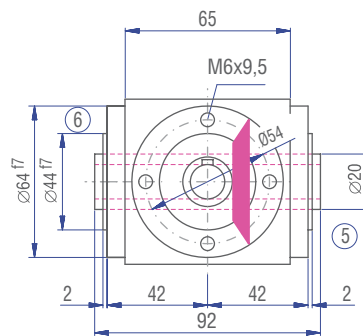
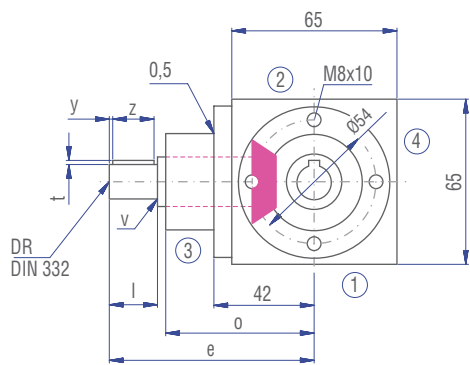
Model	Inertia moment [kgcm <sup>2</sup> ]							Mass [kg]
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1	
A0	0.38880	0.24060	0.18390	0.10360				2.3
B0	0.42310	0.31110	0.23300	0.10010				2.2
C0	0.42310	0.31110	0.23300	0.10010				2.2
D0	0.43300	0.31550	0.23550	0.10120				2.3
E0N	0.47540	0.36340	0.28530	0.15240				2.1
E0S	0.60120	0.48920	0.41110	0.27820				2.1
F0	0.58320	0.32700	0.23250	0.12520				2.7
G0	0.61750	0.46530	0.36830	0.18210				2.6
H0	0.61750	0.46530	0.36830	0.18210				2.6
J0	0.62740	0.46970	0.37080	0.18320				2.7
K0N	0.66980	0.51760	0.42060	0.23440				2.5
K0S	0.79560	0.64340	0.54640	0.36020				2.5

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	Gear ratio						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
d [mm]	12	12	12	12			
da [mm]	17	17	17	17			
l [mm]	26	26	26	26			
v [mm]	0.5	0.5	0.5	0.5			
x [mm]	4	4	4	4			
y [mm]	3	3	3	3			
z [mm]	20	20	20	20			
t [mm]	1.5	1.5	1.5	1.5			
e [mm]	100	100	100	100			
o [mm]	72	72	72	72			
p [mm]	44	44	44	44			
DR M	4	4	4	4			





Implementation

