



### Characteristics

Characteristic	Standard	Option
<b>Toothing</b>	Spiral toothed bevel gear set	See chapter 7.2.2
<b>Gear ratios</b>	1:1 to 3:1	
<b>Housing / Flanges</b>	1.4581 / 1.4305	See chapter 7.2.1
<b>Threaded mounting holes</b>	Customer-specific	See chapter 7.2.4
<b>Shaft</b>	1.4305, 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>	1.4305, 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 7.2.11
<b>Protection class</b>	IP 56	See chapter 4.5
<b>Corrosion protection</b>	-	See chapter 7.2.12
<b>Bearing life L10h:</b>	more than 15,000h	See chapter 4.9.1
<b>Oil change intervals</b>	Not required	See chapter 7.2.9
<b>Lubricants</b>	Synthetic lubricant, NSF-approved (NOTOX)	See chapter 7.2.9
<b>Type plate</b>	Etched	

## 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]	1.4			1.4			1.4			1.4												
$T_{2max}$ [Nm]	25			25			25			23												

The mass of the gearbox may deviate depending on the gear ratio.

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

The permissible radial forces depend on torque, rotational speed and direction.

They must be calculated for the respective case of application. Please enquire these.

$n_1$ [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 $N_2$

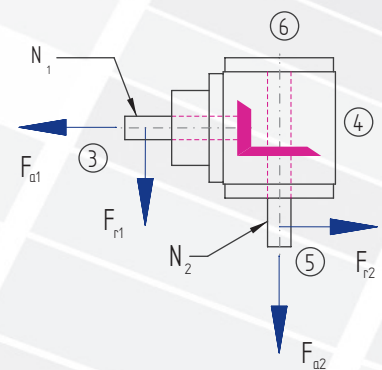
$n_2$ [rpm]	3000		1000		500		250		100		50	
$T_2$ [Nm]	$F_r$ [N]	$F_a$ [N]	$F_r$ [N]	$F_a$ [N]	$F_r$ [N]	$F_a$ [N]	$F_r$ [N]	$F_a$ [N]	$F_r$ [N]	$F_a$ [N]	$F_r$ [N]	$F_a$ [N]
< 12	300	150	400	200	500	250	650	325	750	375	900	450
> 12	250	125	330	165	420	210	540	270	630	315	750	375

### Inertia moments/mass

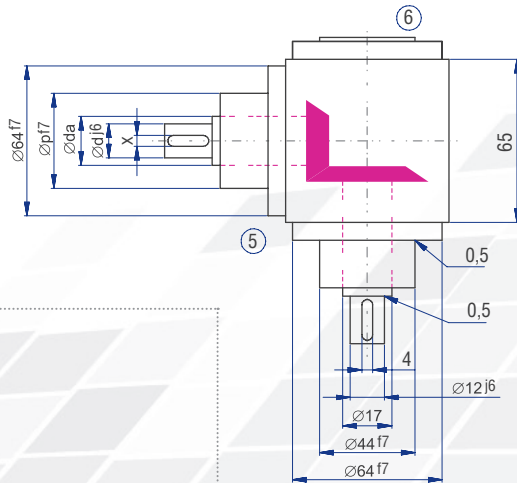
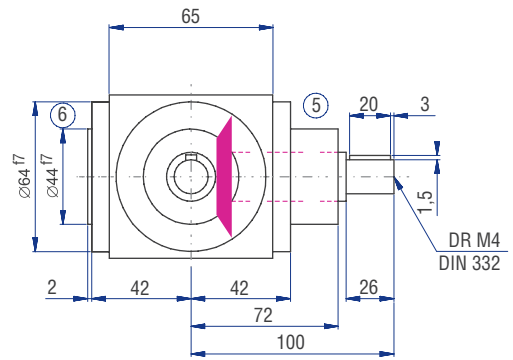
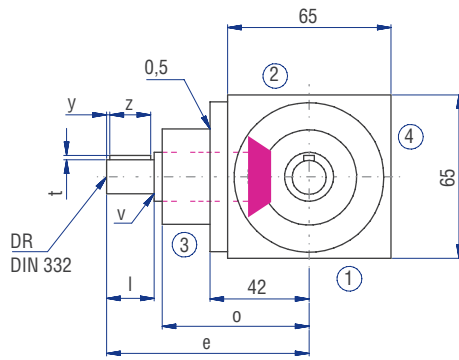
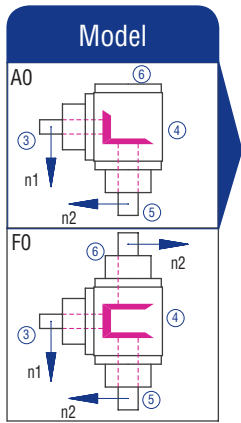
The mass of the gearbox may deviate depending on the gear ratio.

Model	Inertia moment [kgcm <sup>2</sup> ]						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
AO	0.3888	0.2406	0.1839	0.1036			
BO	0.4231	0.3111	0.2330	0.1001			
CO	0.4231	0.3111	0.2330	0.1001			
DO	0.4330	0.3155	0.2355	0.1012			
EON	0.4754	0.3634	0.2853	0.1524			
EOS	0.6012	0.4892	0.4111	0.2782			
FO	0.5832	0.3270	0.2325	0.1252			
GO	0.6175	0.4653	0.3683	0.1821			
HO	0.6175	0.4653	0.3683	0.1821			
JO	0.6274	0.4697	0.3708	0.1832			
KON	0.6698	0.5176	0.4206	0.2344			
KOS	0.7956	0.6434	0.5464	0.3602			

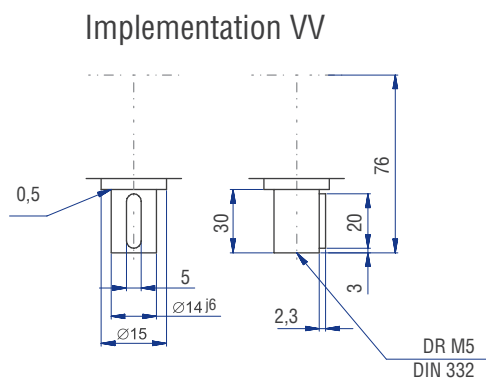
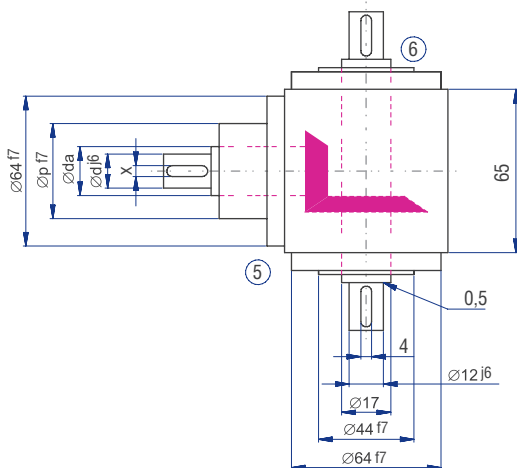
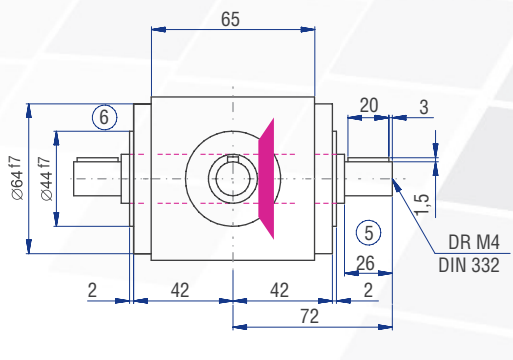
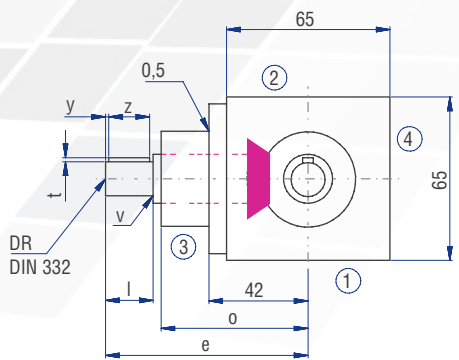
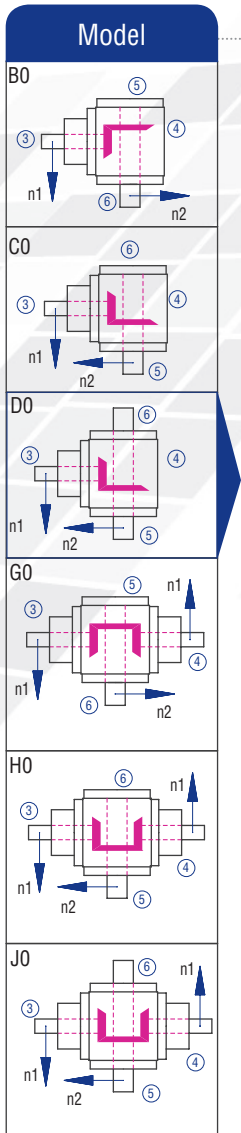
Mass [kg]
2.3
2.2
2.2
2.3
2.1
2.1
2.7
2.6
2.6
2.7
2.5
2.5

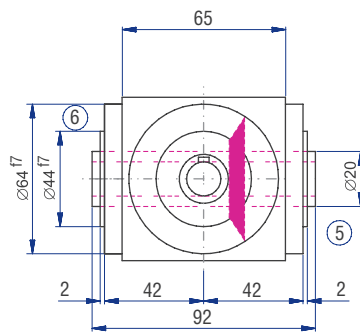
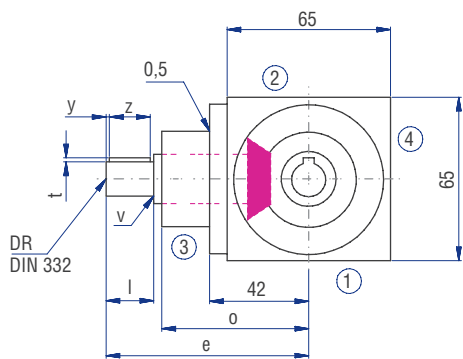


# 7.2.18 Type HDV 065 – Hygiene-design bevel gearboxes

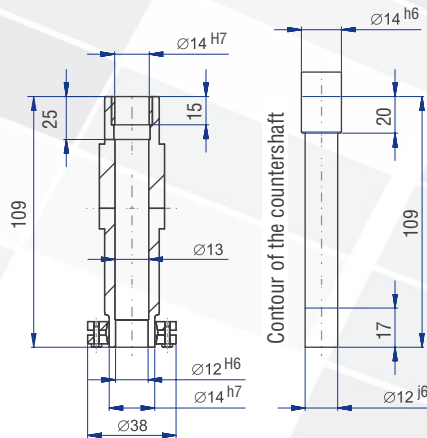
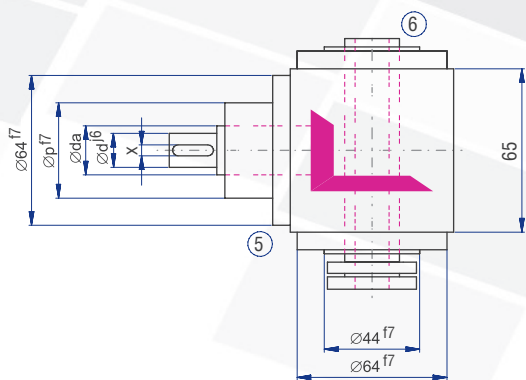
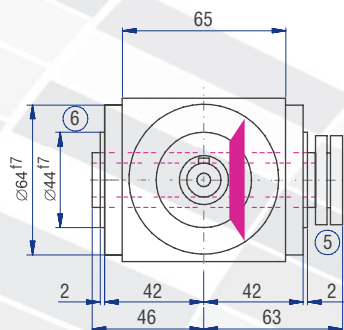
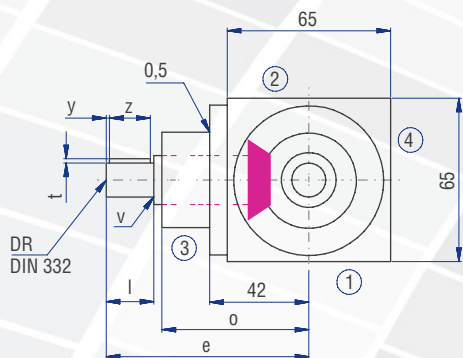
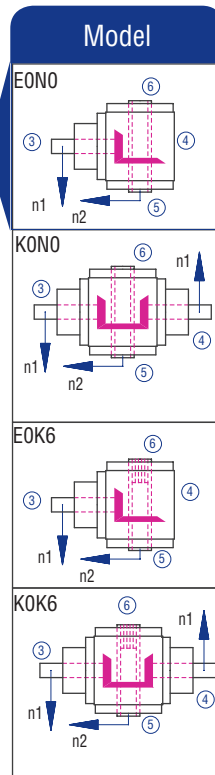
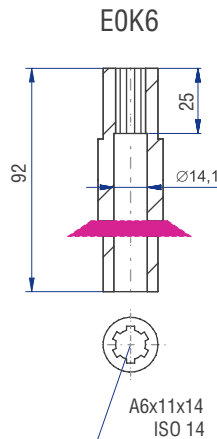
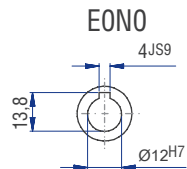
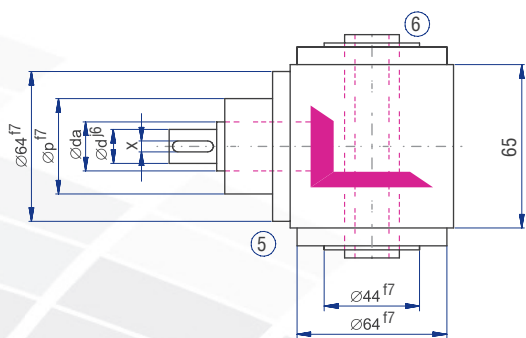


	Gear ratio						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
d [mm]	17	17	17	17			
da [mm]	12	12	12	12			
l [mm]	100	100	100	100			
v [mm]	26	26	26	26			
x [mm]	72	72	72	72			
y [mm]	44	44	44	44			
z [mm]	1.5	1.5	1.5	1.5			
t [mm]	0.5	0.5	0.5	0.5			
e [mm]	4	4	4	4			
o [mm]	3	3	3	3			
p [mm]	20	20	20	20			
DR M	4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

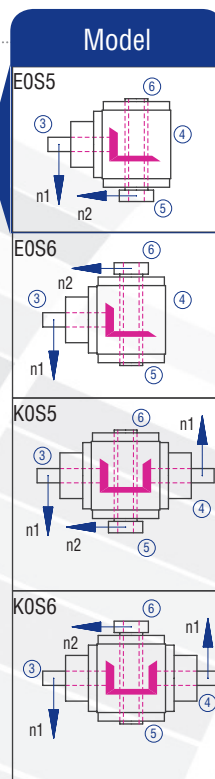




### Implementation



Contour of the countershaft





### Characteristics

Characteristic	Standard	Option
<b>Toothing</b>	Spiral toothed bevel gear set	See chapter 7.2.2
<b>Gear ratios</b>	1:1 to 6:1	
<b>Housing / Flanges</b>	1.4581 / 1.4305	See chapter 7.2.1
<b>Threaded mounting holes</b>	Customer-specific	See chapter 7.2.4
<b>Shaft</b>	1.4305, 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>	1.4305, 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 7.2.11
<b>Protection class</b>	IP 56	See chapter 4.5
<b>Corrosion protection</b>	-	See chapter 7.2.12
<b>Bearing life L10h:</b>	more than 15,000h	See chapter 4.9.1
<b>Oil change intervals</b>	Not required	See chapter 7.2.9
<b>Lubricants</b>	Synthetic lubricant, NSF-approved (NOTOX)	See chapter 7.2.9
<b>Type plate</b>	Etched	

## 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	8.93	27	2000	5.51	25	1500	3.80	23	1000	2.54	23	750	1.90	23	600	1.52	23	500	1.25	23
2400	2400	7.41	28	1600	4.59	26	1200	3.17	24	800	2.12	24	600	1.65	25	480	1.32	25	400	1.09	25
1500	1500	5.29	32	1000	3.20	29	750	2.23	27	500	1.49	27	375	1.12	27	300	0.89	27	250	0.74	27
1000	1000	3.75	34	667	2.35	32	500	1.71	31	333	1.14	31	250	0.85	31	200	0.68	31	167	0.53	29
750	750	3.06	37	500	1.93	35	375	1.32	32	250	0.88	32	188	0.66	32	150	0.53	32	125	0.40	29
500	500	2.20	40	333	1.36	37	250	0.94	34	167	0.63	34	125	0.47	34	100	0.37	34	83	0.27	29
250	250	1.21	44	167	0.74	40	125	0.50	36	83	0.33	36	63	0.25	36	50	0.20	36	42	0.14	30
50	50	0.28	50	33	0.16	45	25	0.10	37	17	0.07	37	13	0.05	37	10	0.04	37	8	0.03	33
$P_{1Nt}$ [kW]	3.4			3.4			3.4			3.4			3.4			3.4			3.4		
$T_{2max}$ [Nm]	105			45			80			70			70			60			50		

The mass of the gearbox may deviate depending on the gear ratio.

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

The permissible radial forces depend on torque, rotational speed and direction.

They must be calculated for the respective case of application. Please enquire these.

$n_1$ [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]
< 30	300	150	400	200	470	235	580	290	700	350	800	400
> 30	250	125	330	165	390	195	490	245	590	295	670	335

### 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]
< 30	500	250	660	330	800	400	950	475	1250	625	1500	750
> 30	420	210	550	275	670	335	790	395	1040	520	1250	625

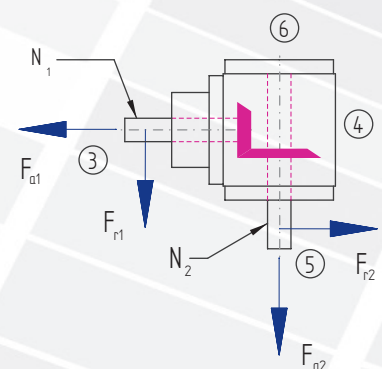
### Inertia moments/mass

The mass of the gearbox may deviate depending on the gear ratio.

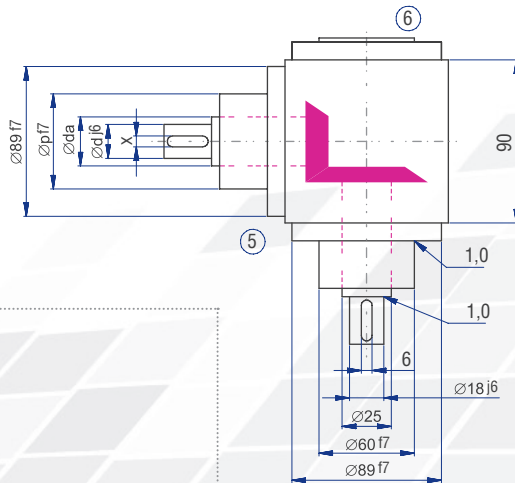
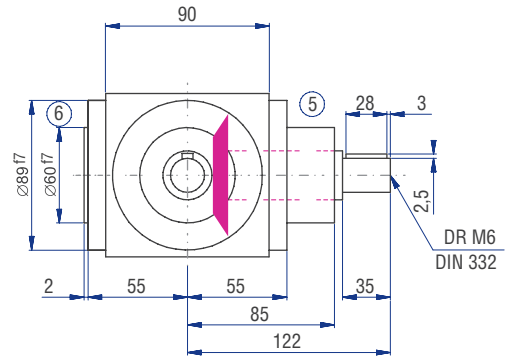
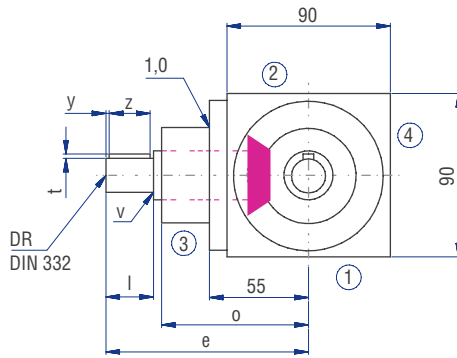
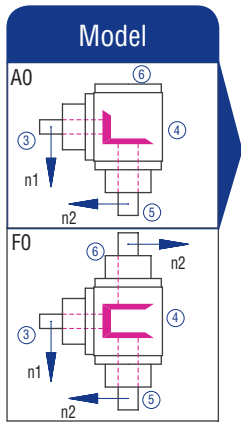
Model	Inertia moment [kgcm <sup>2</sup> ]						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
AO	2.5590	1.4822	1.1437	0.8884	0.3631	0.3248	0.3062
BO	3.3543	2.1833	1.3652	1.0465	0.4607	0.3933	0.3502
CO	3.3543	2.1833	1.3652	1.0465	0.4607	0.3933	0.3502
DO	3.3827	2.1959	1.3723	1.0496	0.4625	0.3945	0.3510
EON	3.2507	2.1372	1.3393	1.0350	0.4542	0.3892	0.3473
EOS	3.9213	2.4353	1.5069	1.1095	0.4961	0.4160	0.3660
FO	3.8385	2.0508	1.4636	1.0305	0.4430	0.3760	0.3418
GO	4.6338	3.0968	2.1890	1.7927	0.7438	0.6669	0.6209
HO	4.6338	3.0968	2.1890	1.7927	0.7438	0.6669	0.6209
JO	4.6622	3.1094	2.1961	1.7958	0.7456	0.6681	0.6217
KON	4.5302	3.0507	2.1631	1.7812	0.7373	0.6628	0.6180
KOS	5.2008	3.3488	2.3307	1.8557	0.7792	0.6896	0.6367

Mass  
[kg]

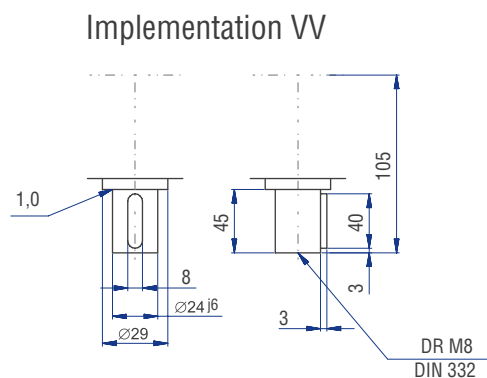
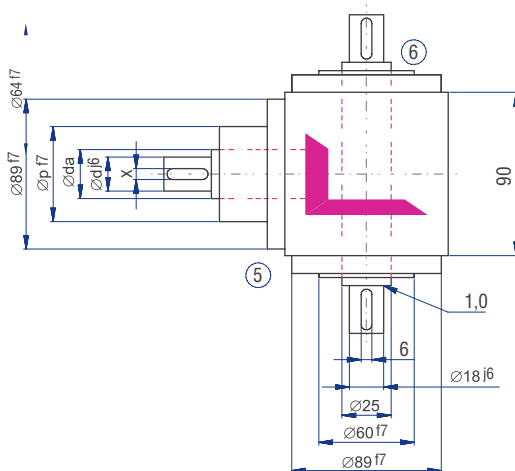
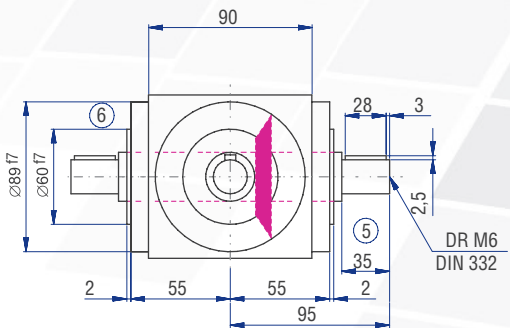
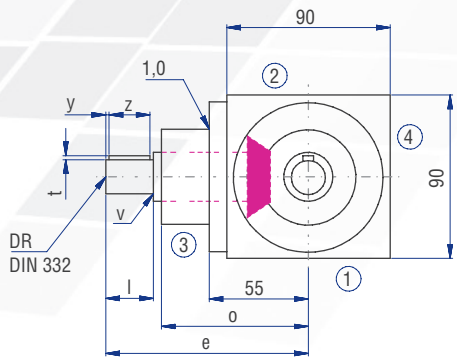
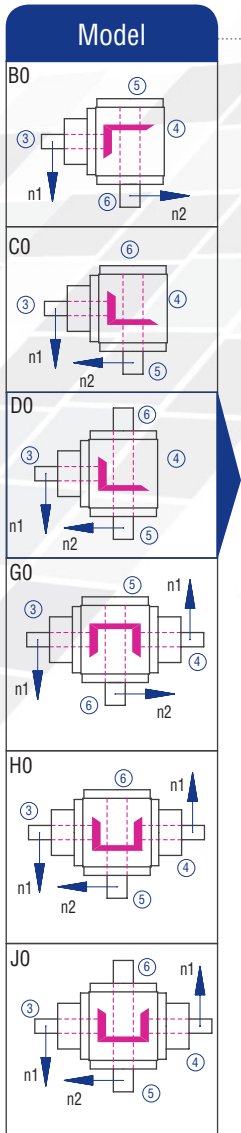
5.1
5.4
5.4
5.5
5.0
5.2
6.3
6.9
6.9
7.0
6.5
6.7



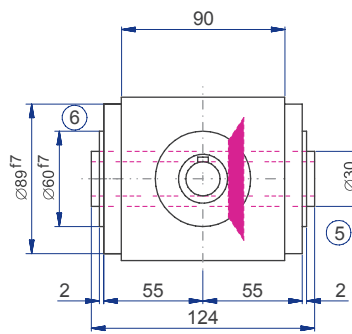
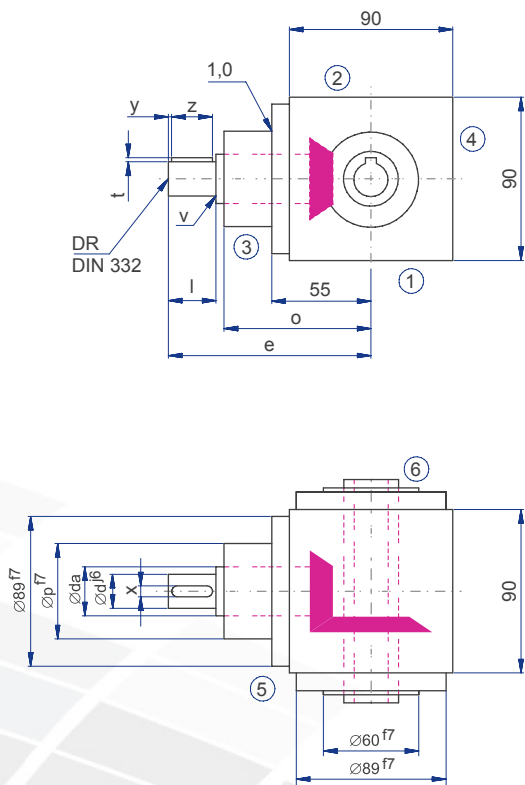
# 7.2.19 Type HDV 090 – Hygiene-design bevel gearboxes



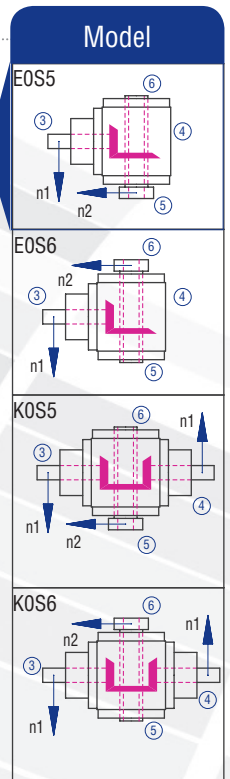
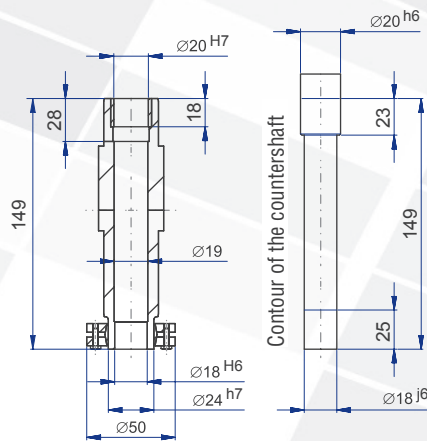
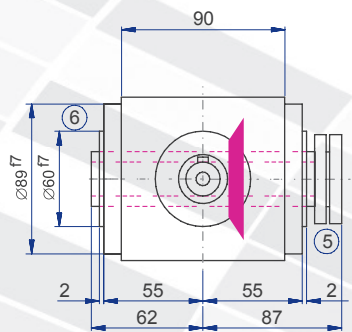
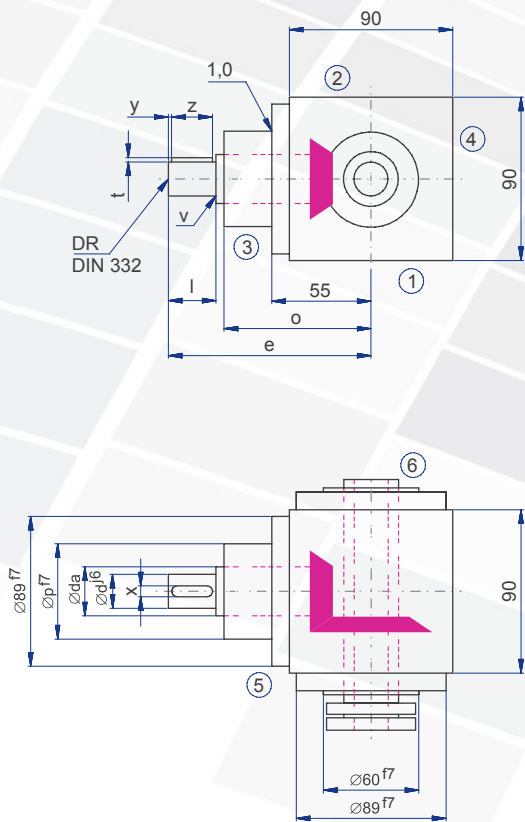
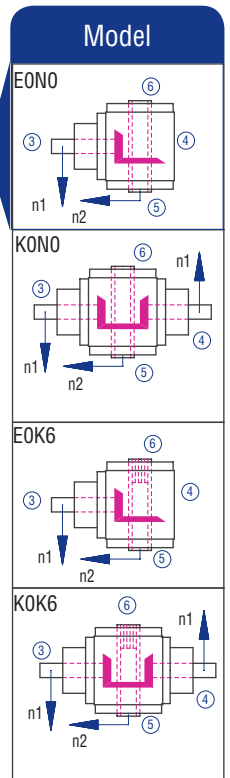
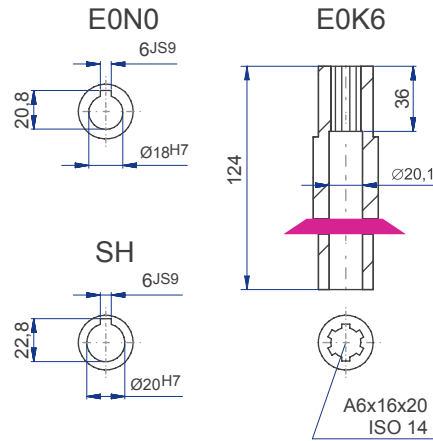
	Gear ratio						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
d [mm]	25	25	25	20	20	20	20
da [mm]	18	18	18	12	12	12	12
l [mm]	122	122	122	122	132	132	132
v [mm]	35	35	35	35	35	35	35
x [mm]	85	85	85	85	95	95	95
y [mm]	60	60	60	60	60	60	60
z [mm]	2.5	2.5	2.5	1.5	1.5	1.5	1.5
t [mm]	1	1	1	0.5	0.5	0.5	0.5
e [mm]	6	6	6	4	4	4	4
o [mm]	3	3	3	3	3	3	3
p [mm]	28	28	28	28	28	28	28
DR M	6	6	6	4	4	4	4



Implementation VV



Implementation







### Characteristics

Characteristic	Standard	Option
<b>Toothing</b>	Spiral toothed bevel gear set	See chapter 7.2.2
<b>Gear ratios</b>	1:1 to 6:1	
<b>Housing / Flanges</b>	1.4581 / 1.4305	See chapter 7.2.1
<b>Threaded mounting holes</b>	Customer-specific	See chapter 7.2.4
<b>Shaft</b>	1.4305, 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>	1.4305, 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 7.2.11
<b>Protection class</b>	IP 56	See chapter 4.5
<b>Corrosion protection</b>	-	See chapter 7.2.12
<b>Bearing life L10h:</b>	more than 15,000h	See chapter 4.9.1
<b>Oil change intervals</b>	Not required	See chapter 7.2.9
<b>Lubricants</b>	Synthetic lubricant, NSF-approved (NOTOX)	See chapter 7.2.9
<b>Type plate</b>	Etched	

## 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	21.82	66	2000	13.45	61	1500	9.26	56	1000	6.39	58	750	4.96	60	600	3.97	60	500	2.95	54
2400	2400	18.52	70	1600	11.46	65	1200	8.07	61	800	5.56	63	600	4.43	67	480	3.44	65	400	2.53	57
1500	1500	13.56	82	1000	8.60	78	750	6.03	73	500	4.08	74	375	3.06	74	300	2.38	72	250	1.75	64
1000	1000	10.14	92	667	6.32	86	500	4.46	81	333	3.01	82	250	2.18	79	200	1.76	80	167	1.22	66
750	750	8.51	103	500	5.18	94	375	3.55	86	250	2.40	87	188	1.69	82	150	1.42	86	125	0.94	68
500	500	6.34	115	333	3.85	100	250	2.54	92	167	1.66	90	125	1.16	84	100	0.98	89	83	0.63	69
250	250	3.39	123	167	1.99	100	125	1.35	98	83	0.87	95	63	0.60	87	50	0.51	92	42	0.33	71
50	50	0.72	130	33	0.41	100	25	0.29	107	17	0.21	110	13	0.12	90	10	0.10	95	8	0.06	66
$P_{1Nt}$ [kW]	5.6			5.6			5.6			5.6			5.6			5.6			5.6		
$T_{2max}$ [Nm]	220			100			169			155			155			140			120		

The mass of the gearbox may deviate depending on the gear ratio.

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

The permissible radial forces depend on torque, rotational speed and direction.

They must be calculated for the respective case of application. Please enquire these.

$n_1$ [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]
< 80	470	235	620	310	720	360	900	450	1150	575	1400	700
> 80	390	195	520	260	600	300	750	375	960	480	1170	585

### 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]
< 80	750	375	1000	500	1250	625	1500	750	1900	950	2200	1100
> 80	630	315	830	415	1040	520	1250	625	1580	790	1830	915

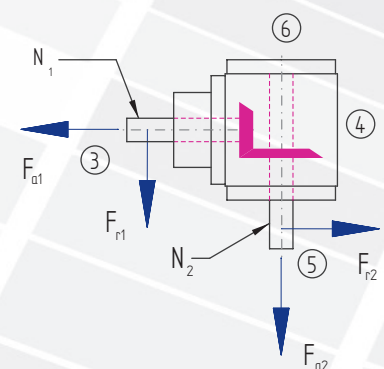
### Inertia moments/mass

The mass of the gearbox may deviate depending on the gear ratio.

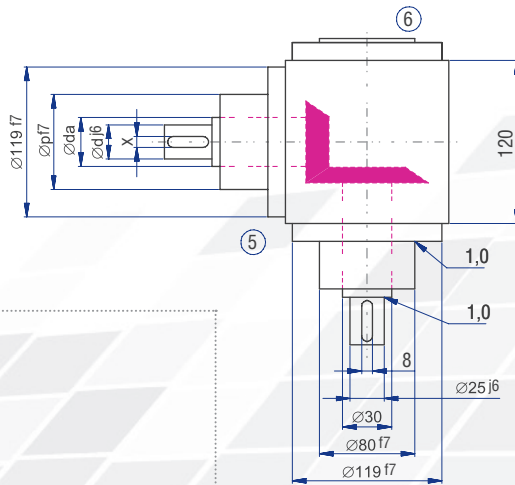
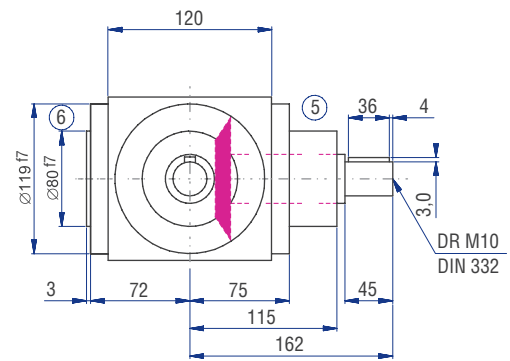
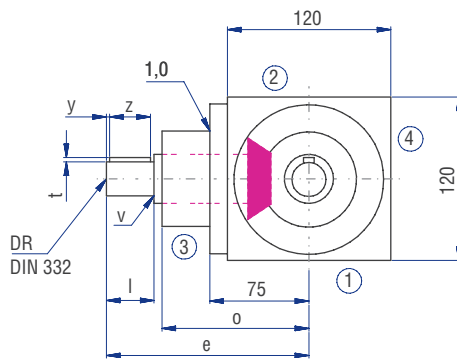
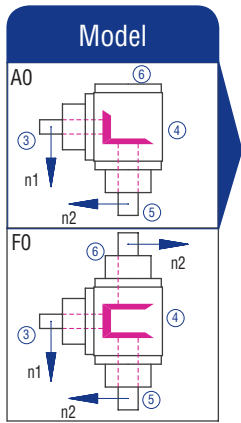
Model	Inertia moment [kgcm <sup>2</sup> ]						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
AO	10.4976	4.8409	3.6465	2.3159	1.2164	0.7516	0.6766
BO	15.3022	7.4441	4.9747	3.0123	1.6729	1.0593	0.8982
CO	15.3022	7.4441	4.9747	3.0123	1.6729	1.0593	0.8982
DO	15.5996	7.5762	5.0490	3.0453	1.6915	1.0712	0.9065
EON	15.1939	7.3959	4.9476	3.0003	1.6661	1.0550	0.8952
EOS	16.9812	8.1903	5.3944	3.1988	1.7778	1.1265	0.9449
FO	15.7464	7.1737	4.9587	2.8991	1.5444	0.9615	0.8224
GO	20.5510	9.9522	7.3090	4.7450	2.5612	1.6009	1.4290
HO	20.5510	9.9522	7.3090	4.7450	2.5612	1.6009	1.4290
JO	20.8484	10.0843	7.3833	4.7780	2.5798	1.6128	1.4373
KON	20.4427	9.9040	7.2819	4.7330	2.5544	1.5966	1.4260
KOS	22.2300	10.6984	7.7287	4.9315	2.6661	1.6681	1.4757

Mass  
[kg]

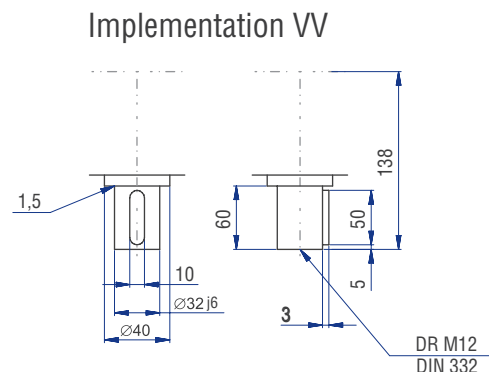
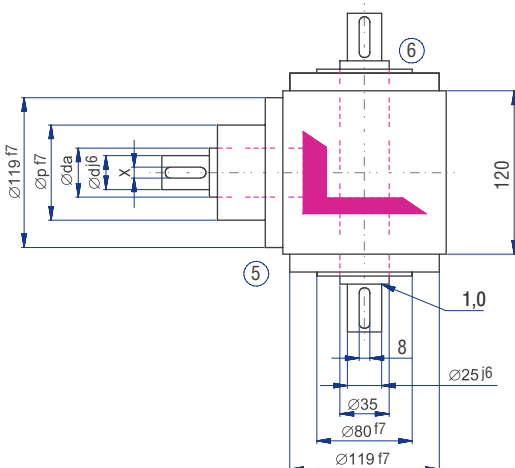
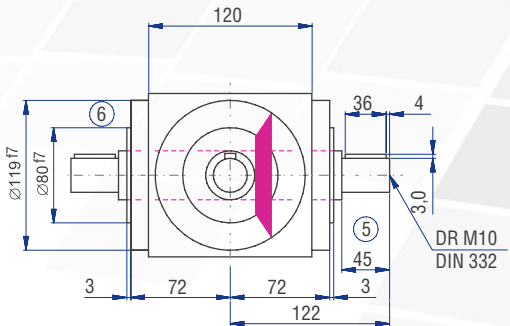
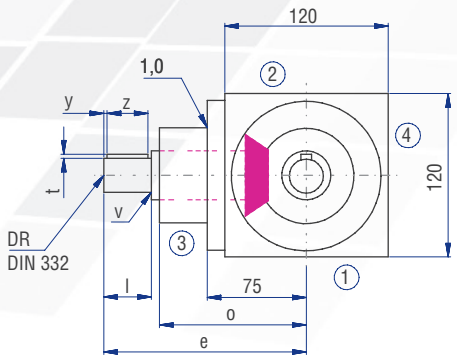
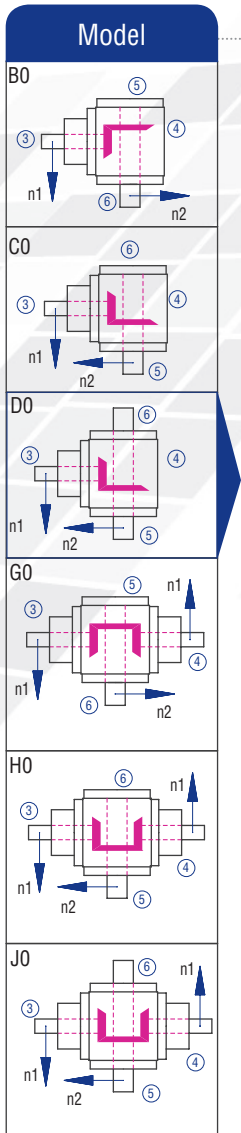
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14.7

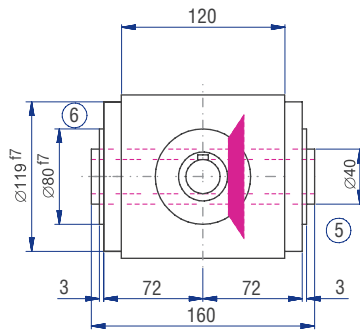
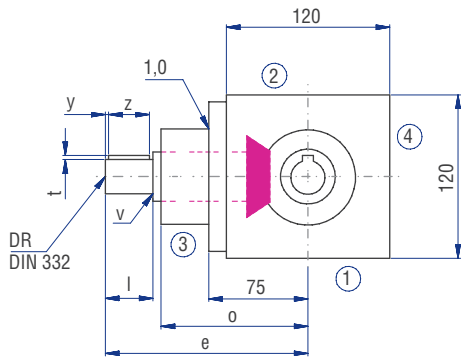


# 7.2.20 Type HDV 120 – Hygiene-design bevel gearboxes

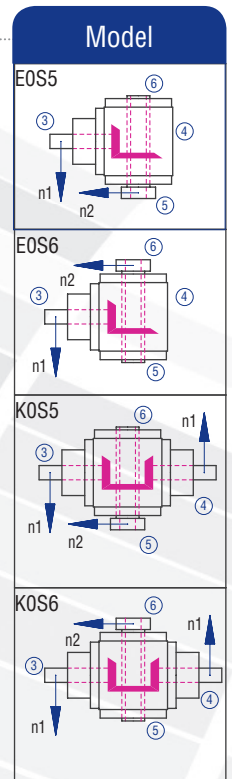
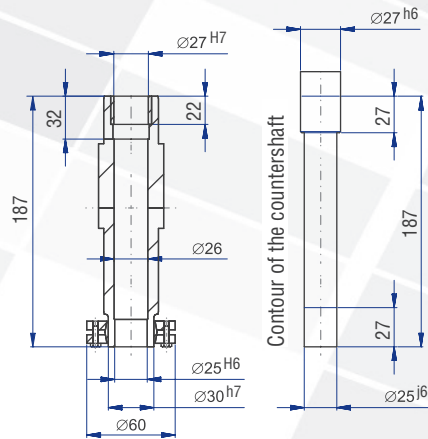
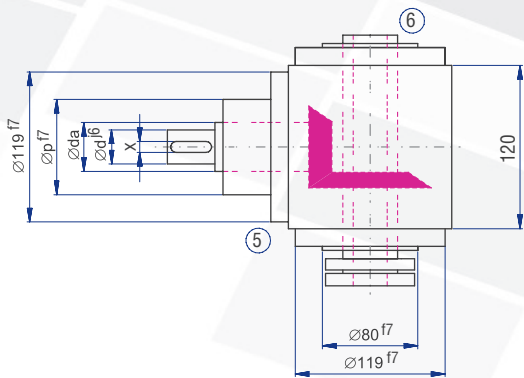
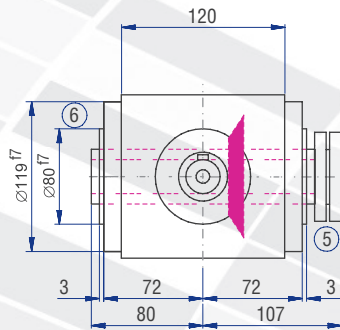
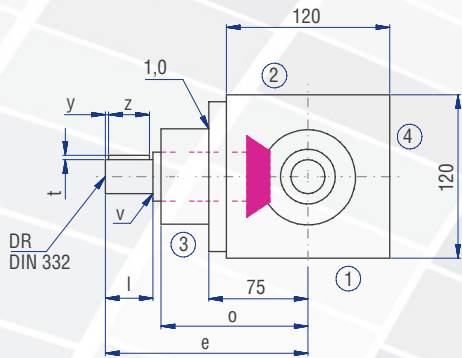
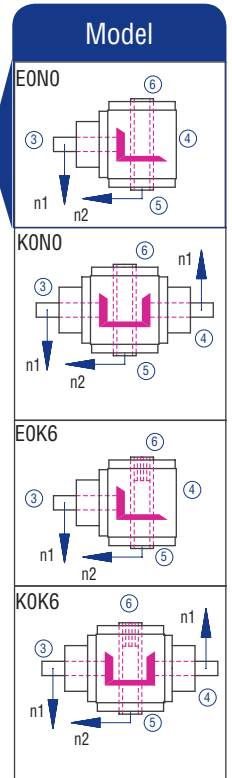
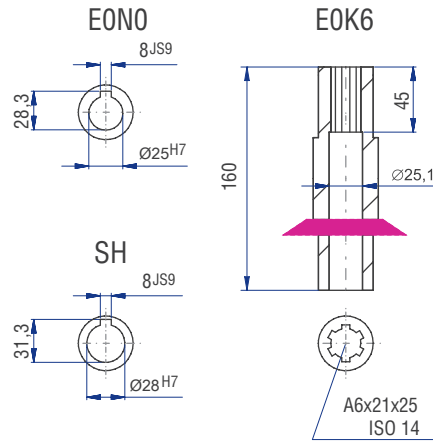
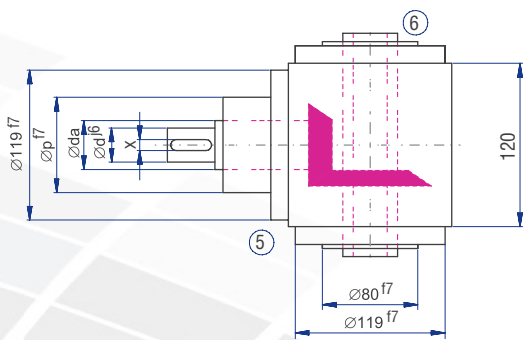


	Gear ratio						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
d [mm]	30	30	30	25	25	20	20
da [mm]	25	25	25	20	20	15	15
l [mm]	162	162	162	162	172	162	162
v [mm]	45	45	45	45	45	35	35
x [mm]	115	115	115	115	125	125	125
y [mm]	80	80	80	80	80	70	70
z [mm]	3	3	3	2.5	2.5	2	2
t [mm]	1	1	1	1	1	0.5	0.5
e [mm]	8	8	8	6	6	5	5
o [mm]	4	4	4	4	4	4	4
p [mm]	36	36	36	36	36	28	28
DR M	10	10	10	6	6	5	5





Implementation





### Characteristics

Characteristic	Standard	Option
<b>Toothing</b>	Spiral toothed bevel gear set	See chapter 7.2.2
<b>Gear ratios</b>	1:1 to 6:1	
<b>Housing / Flanges</b>	1.4581 / 1.4305	See chapter 7.2.1
<b>Threaded mounting holes</b>	Customer-specific	See chapter 7.2.4
<b>Shaft</b>	1.4305, 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>	1.4305, 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 7.2.11
<b>Protection class</b>	IP 56	See chapter 4.5
<b>Corrosion protection</b>	-	See chapter 7.2.12
<b>Bearing life L10h:</b>	more than 15,000h	See chapter 4.9.1
<b>Oil change intervals</b>	Not required	See chapter 7.2.9
<b>Lubricants</b>	Synthetic lubricant, NSF-approved (NOTOX)	See chapter 7.2.9
<b>Type plate</b>	Etched	

## 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]	9.0			9.0			9.0			9.0			9.0			9.0			9.0		
$T_{2max}$ [Nm]	430			210			320			280			280			250			200		

The mass of the gearbox may deviate depending on the gear ratio.

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

The permissible radial forces depend on torque, rotational speed and direction.

They must be calculated for the respective case of application. Please enquire these.

$n_1$ [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

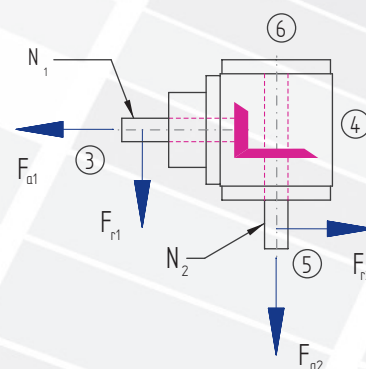
### Inertia moments/mass

The mass of the gearbox may deviate depending on the gear ratio.

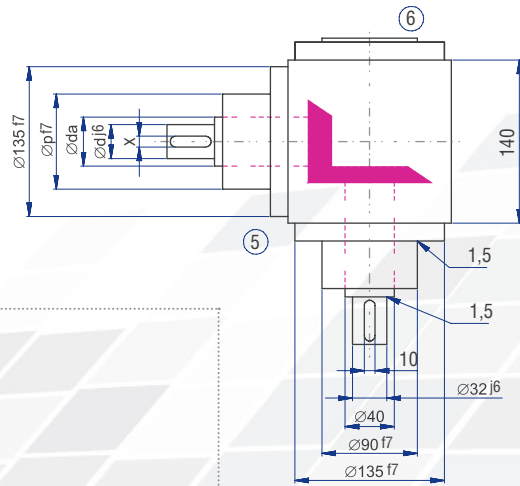
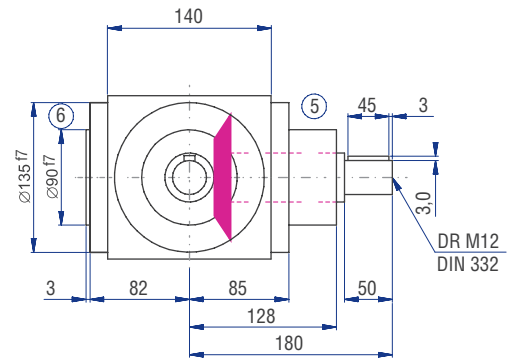
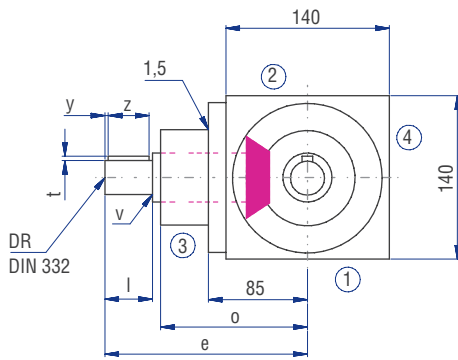
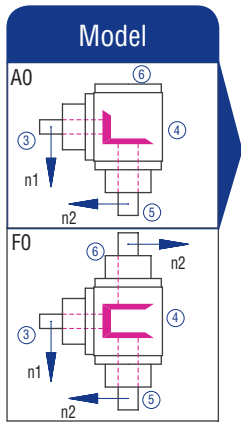
Model	Inertia moment [kgcm <sup>2</sup> ]						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
AO	26.2670	11.8569	8.6762	6.4356	1.8432	1.5320	1.3708
BO	36.0994	18.7513	12.2785	7.9547	2.6978	2.2113	1.8426
CO	36.0994	18.7513	12.2785	7.9547	2.6978	2.2113	1.8426
DO	37.0815	19.1878	12.5241	8.0639	2.7592	2.2506	1.8698
EON	32.6630	17.2240	11.4194	7.5729	2.4830	2.0739	1.7471
EOS	39.0643	20.0691	13.0198	8.2842	2.8831	2.3299	1.9249
FO	39.4005	17.6940	11.9596	7.8949	2.6641	2.0574	1.7356
GO	49.2329	24.7711	17.6713	12.9310	3.7202	3.2180	2.8486
HO	49.2329	24.7711	17.6713	12.9310	3.7202	3.2180	2.8486
JO	50.2150	25.2076	17.9169	13.0402	3.7816	3.2573	2.8758
KON	45.7965	23.2438	16.8122	12.5492	3.5054	3.0806	2.7531
KOS	52.1978	26.0889	18.4126	13.2605	3.9055	3.3366	2.9309

Mass [kg]

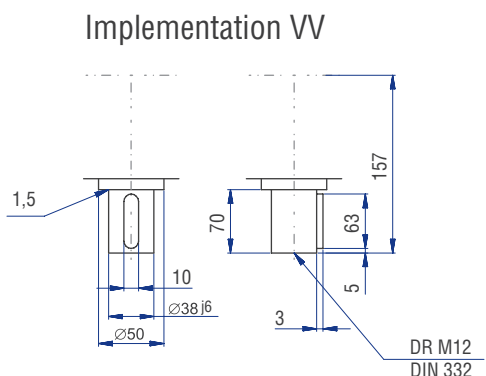
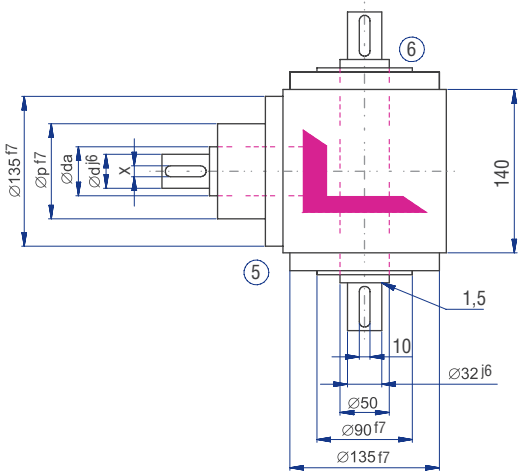
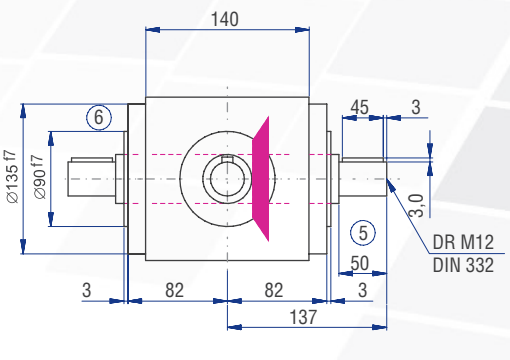
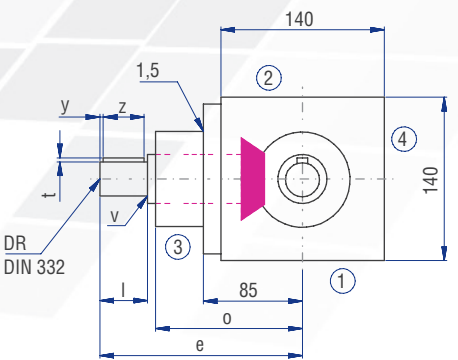
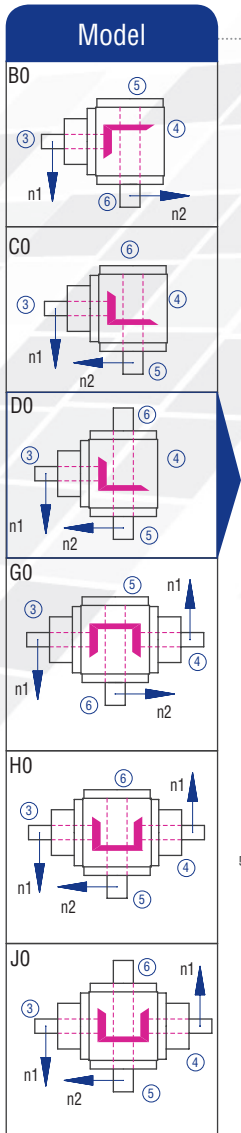
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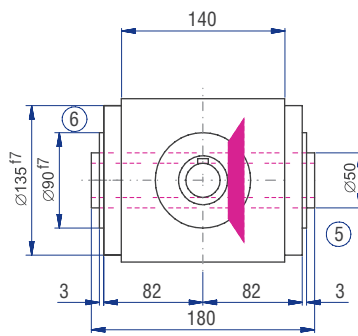
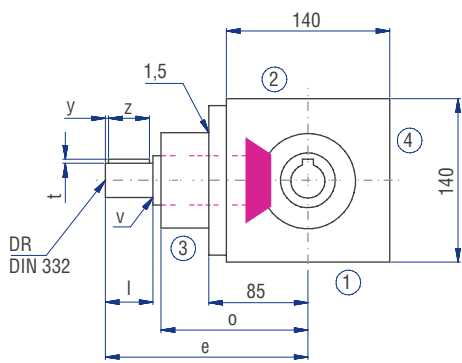


# 7.2.21 Type HDV 140 – Hygiene-design bevel gearboxes



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





Implementation

