

7.2.19 Type HDV 090 – Hygiene-design bevel gearboxes



Characteristics

Characteristic	Standard	Option
Toothing	Spiral toothed bevel gear set	See chapter 7.2.2
Gear ratios	1:1 to 6:1	
Housing / Flanges	1.4581 / 1.4305	See chapter 7.2.1
Threaded mounting holes	Customer-specific	See chapter 7.2.4
Shaft	1.4305, shaft ends greased Fit with ISO 6 tolerance with parallel keyway: according to DIN 6885 Sheet 1	See chapter 4.6.2
Hollow shaft	1.4305, 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 7.2.11
Protection class	IP 56	See chapter 4.5
Corrosion protection	-	See chapter 7.2.12
Bearing life L10h:	more than 15,000h	See chapter 4.9.1
Oil change intervals	Not required	See chapter 7.2.9
Lubricants	Synthetic lubricant, NSF-approved (NOTOX)	See chapter 7.2.9
Type plate	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 N₁

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 N₂

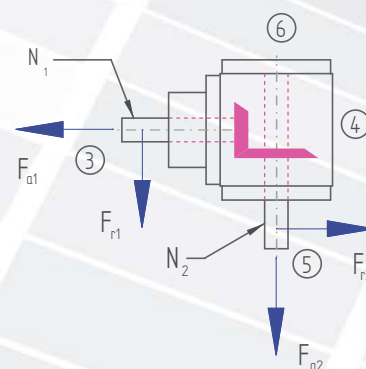
n ₂ [rpm]	3000		1000		500		250		100		50	
T ₂ [Nm]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]	F _r [N]	F _a [N]
< 30	500	250	660	330	800	400	950	475	1250	625	1500	750
> 30	420	210	550	275	670	335	790	395	1040	520	1250	625

Inertia moments/mass

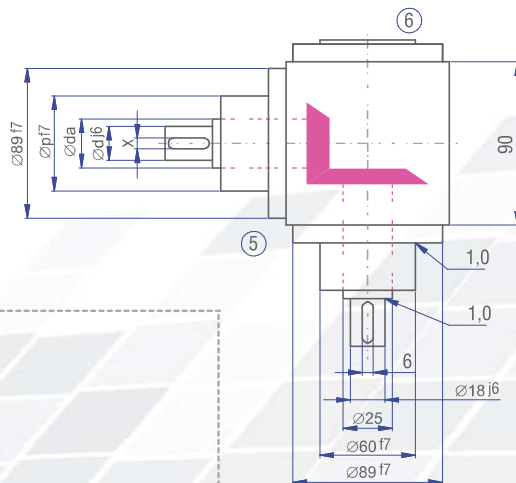
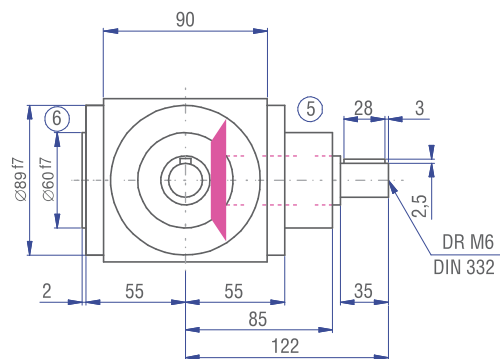
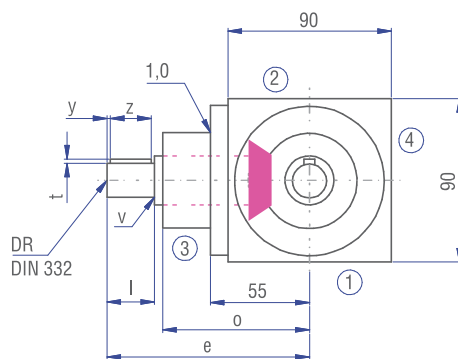
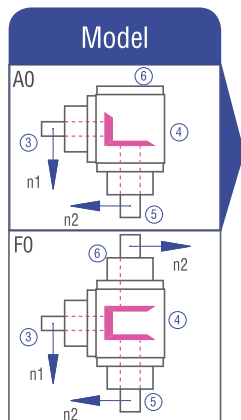
The mass of the gearbox may deviate depending on the gear ratio.

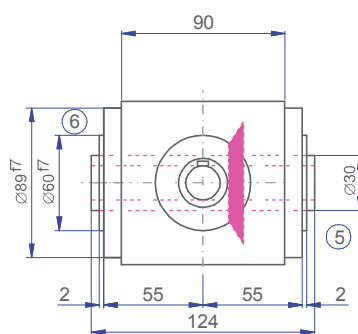
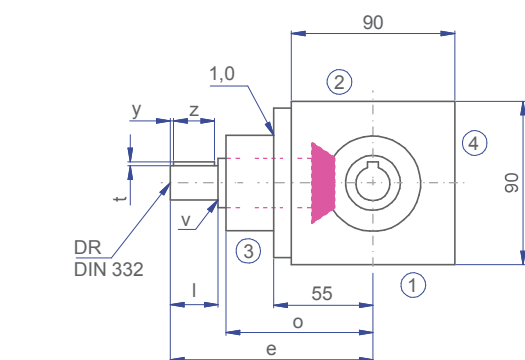
Model	Inertia moment [kgcm ²]						
	1:1	1.5:1	2:1	3:1	4:1	5:1	6:1
AO	2.5590	1.4822	1.1437	0.8884	0.3631	0.3248	0.3062
BO	3.3543	2.1833	1.3652	1.0465	0.4607	0.3933	0.3502
CO	3.3543	2.1833	1.3652	1.0465	0.4607	0.3933	0.3502
DO	3.3827	2.1959	1.3723	1.0496	0.4625	0.3945	0.3510
EON	3.2507	2.1372	1.3393	1.0350	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

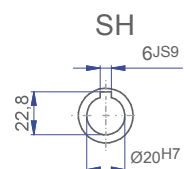
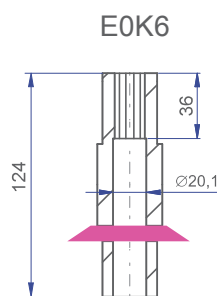
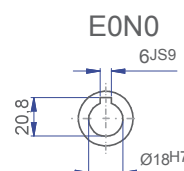
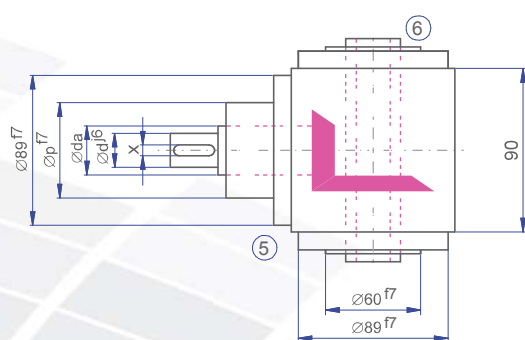


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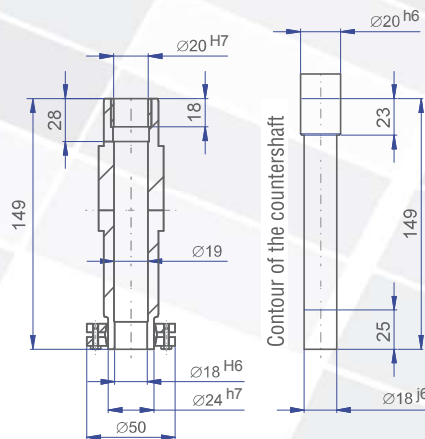
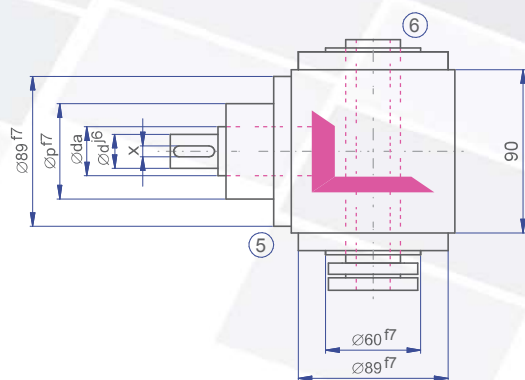
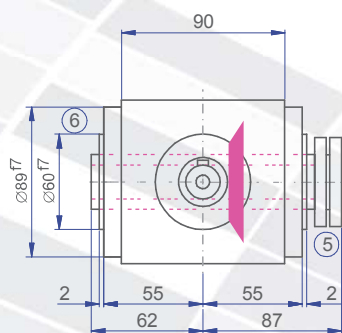
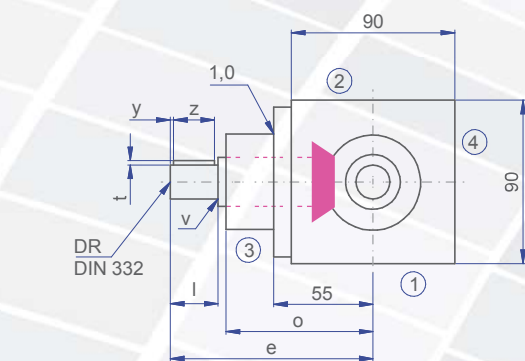
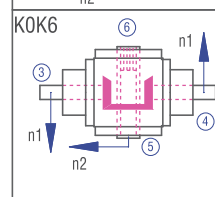
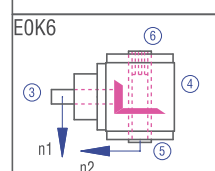
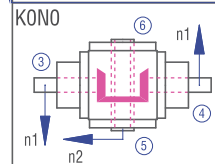
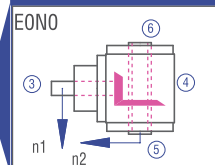


Implementation



A6x16x20
ISO 14

Model



Model

