



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 | 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 |

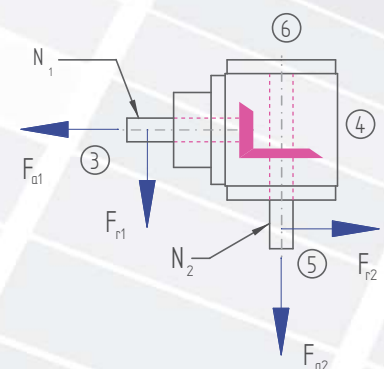
Inertia moments/mass

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

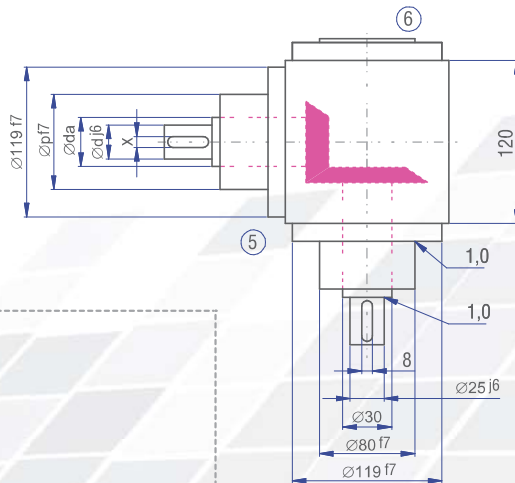
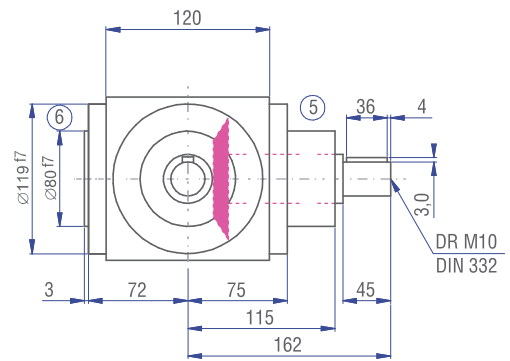
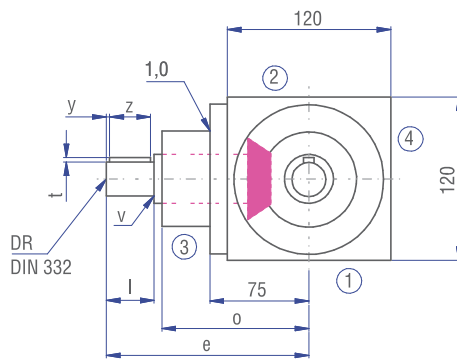
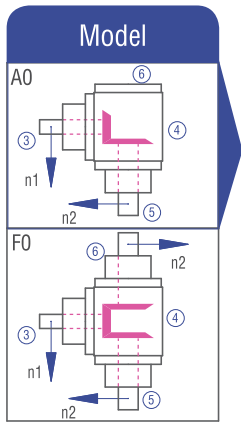
| Model | Inertia moment [kgcm ²] | | | | | | |
|-------|-------------------------------------|---------|--------|--------|--------|--------|--------|
| | 1:1 | 1.5:1 | 2:1 | 3:1 | 4:1 | 5:1 | 6:1 |
| AO | 10.4976 | 4.8409 | 3.6465 | 2.3159 | 1.2164 | 0.7516 | 0.6766 |
| BO | 15.3022 | 7.4441 | 4.9747 | 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]

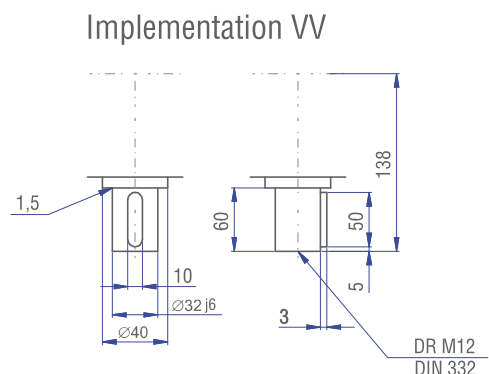
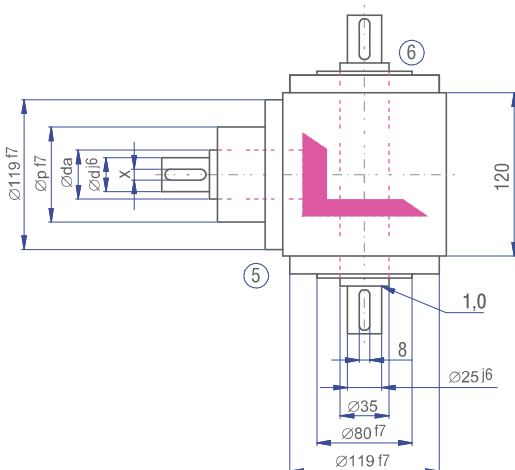
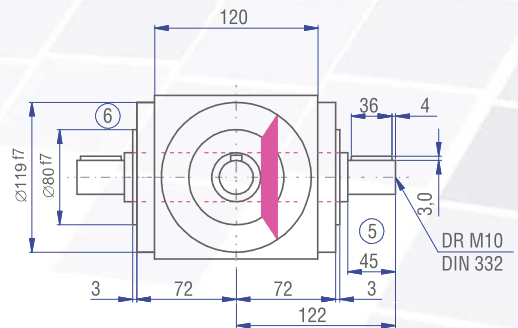
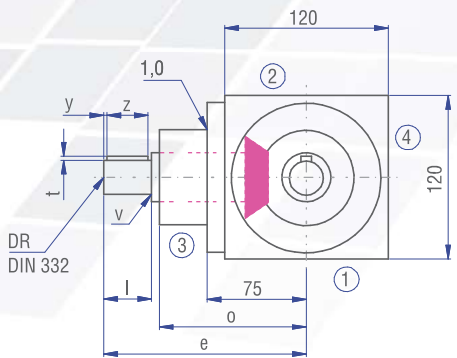
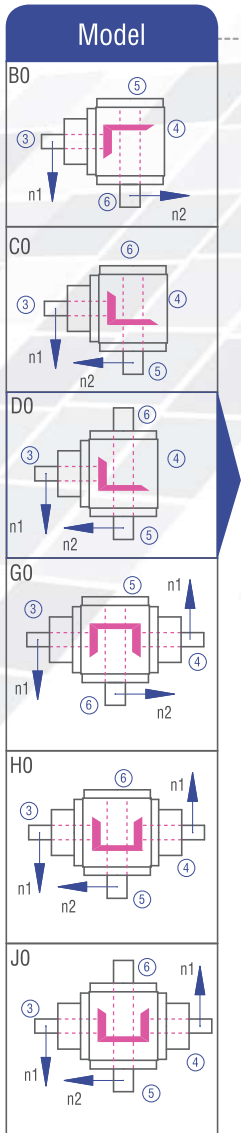
| |
|------|
| 12.6 |
| 12.3 |
| 12.3 |
| 12.5 |
| 12.0 |
| 12.3 |
| 15.0 |
| 14.7 |
| 14.7 |
| 14.9 |
| 14.4 |
| 14.7 |

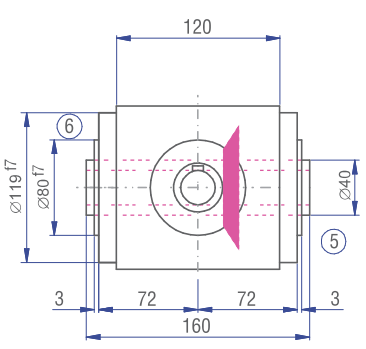
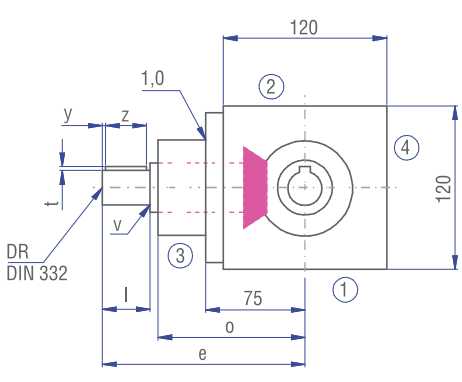


7.2.20 Type HDV 120 – Hygiene-design bevel gearboxes



| | 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

