

## 6.4.8 Type VS 140 – Type V with step-up ratio

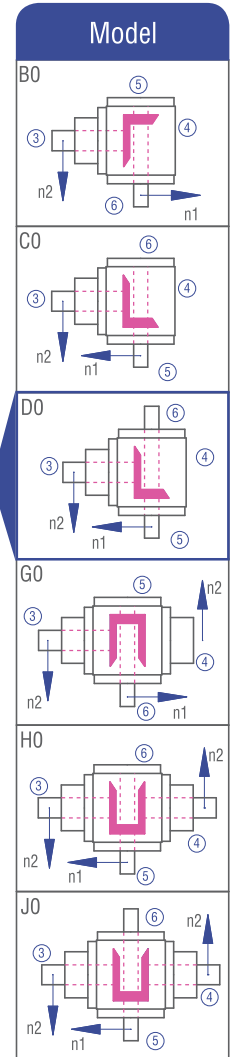
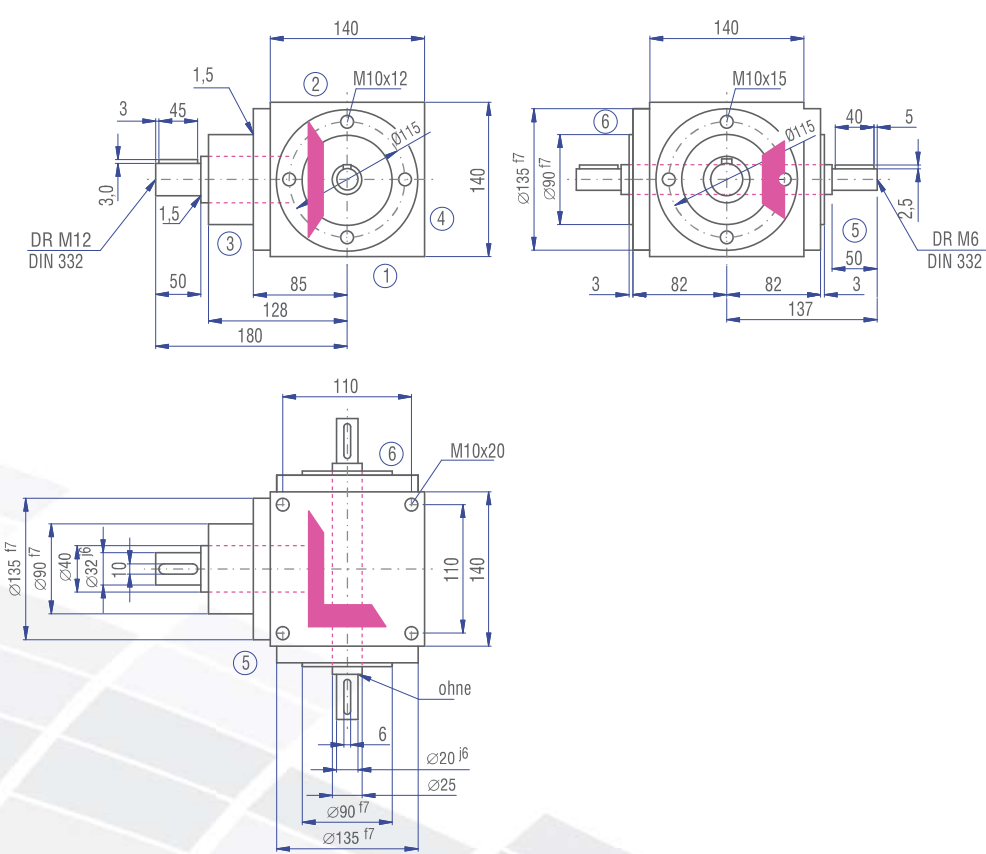


### Characteristics

Characteristic	Standard	Option
Toothing	Bevel gear set, spiral-toothed	See chapter 6.2.1
Gear ratio	1.5:1 to 2:1	
Housing / Flanges	Grey cast iron; steel	
Threaded mounting holes	On all housing surfaces without flange and on all flanges.	See chapter 6.2.3
Shaft	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
Hollow shaft	Not deliverable	
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 6.2.10
Protection class	IP 54	See chapter 4.5
Corrosion protection	Prime coat; layer thickness > 40 µm	See chapter 4.4.1
Bearing life L10h	more than 15,000h	See chapter 4.9.1
Oil change intervals	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
Lubricant	Synthetic lubricants	See chapter 6.2.8

### Performance data

n <sub>1</sub> [rpm]	1.5:1			2:1		
	n <sub>2</sub> [rpm]	P <sub>1N</sub> [kW]	T <sub>2N</sub> [Nm]	n <sub>2</sub> [rpm]	P <sub>1N</sub> [kW]	T <sub>2N</sub> [Nm]
3000	2000	24.91	113	1500	16.53	100
2400	1600	22.22	126	1200	14.68	111
1500	1000	17.08	155	750	11.41	138
1000	667	12.87	175	500	8.38	152
750	500	10.47	190	375	6.86	166
500	333	7.34	200	250	4.96	180
250	167	3.76	204	125	2.48	180
50	33	0.76	210	25	0.50	180
P <sub>1Nt</sub> [kW]	10.0			10.0		
T <sub>2max</sub> [Nm]	210			180		



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

$n_2$ [rpm]	1500		1000		500		250		100		50	
$T_{2N}$ [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  $F_{r1}$  and axial force  $F_{a1}$  on shaft  $N_1$**

$n_1$ [rpm]	3000		1000		500		250		100		50	
$T_{1N}$ [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]
< 90	1210	605	1750	875	2020	1010	2230	1115	3010	1505	3540	1770
> 90	1010	505	1460	730	1680	840	1860	930	2500	1250	2950	1475

**Inertia moments/mass**

Inertia moment  $J_2$  related to the slowly rotating shaft ( $N_2$ )

Model	Inertia moment [kgcm <sup>2</sup> ]	
	1.5:1	2:1
B0	29.8000	24.2000
C0	29.8000	24.2000
D0	30.0000	24.2000
G0	49.1000	41.4000
H0	49.1000	41.4000
J0	49.4000	41.4000

Mass ca. [kg]
18.5
18.5
18.8
22.7
22.7
23.0

