

SP⁺ 140 MF 1-stage

				1-stage					
Ratio ^{a)}		<i>i</i>		3	4	5	7	10	
cymex®-optimized acceleration torque (please contact us regarding the design)		<i>T</i> _{2Bcym}	Nm	–	710	755	680	560	
			in.lb	–	6284	6682	6018	4956	
Max. acceleration torque (max. 1000 cycles per hour)		<i>T</i> _{2B}	Nm	390	660	660	660	530	
			in.lb	3451.5	5841	5841	5841	4691	
Nominal output torque (with <i>n</i> _{1N})		<i>T</i> _{2N}	Nm	200	360	360	360	220	
			in.lb	1770	3186	3186	3186	1947	
Emergency stop torque (permitted 1000 times during the service life of the gearhead)		<i>T</i> _{2Not}	Nm	1000	1250	1250	1250	1000	
			in.lb	8850	11063	11063	11063	8850	
Nominal input speed (with <i>T</i> _{2N} and 20°C ambient temperature) ^{b)}		<i>n</i> _{1N}	rpm	2100	2100	2100	2600	2600	
Max. input speed		<i>n</i> _{1Max}	rpm	4000	4000	4000	4000	4000	
Mean no load running torque (with <i>n</i> ₁ = 3000 rpm and 20°C gearhead temperature) ^{c)}		<i>T</i> ₀₁₂	Nm	7.6	5.8	4.7	3.4	2.5	
			in.lb	67	51	42	30	22	
Max. torsional backlash		<i>j</i> _t	arcmin	Standard ≤ 3 / Reduced ≤ 1					
Torsional rigidity		<i>C</i> _{t21}	Nm/ arcmin	53					
			in.lb/ arcmin	469					
Max. axial force ^{d)}		<i>F</i> _{2AMax}	N	9870					
			lb _f	2221					
Max. radial force ^{d)}		<i>F</i> _{2RMax}	N	9900					
			lb _f	2228					
Max. tilting moment		<i>M</i> _{2KMax}	Nm	952					
			in.lb	8425					
Efficiency at full load		η	%	97					
Service life (For calculation, see the Chapter “Information”)		<i>L</i> _h	h	> 20000					
Weight incl. standard adapter plate		<i>m</i>	kg	17.2					
			lb _m	38.0					
Operating noise (with <i>i</i> = 10 and <i>n</i> ₁ = 3000 rpm no load)		<i>L</i> _{PA}	dB(A)	≤ 65					
Max. permitted housing temperature		°C		+90					
		F		194					
Ambient temperature		°C		-15 to +40					
		F		5 to 104					
Lubrication				Lubricated for life					
Paint				Blue RAL 5002					
Direction of rotation				Motor and gearhead same direction					
Protection class				IP 65					
Moment of inertia (relates to the drive) Clamping hub diameter [mm]	G	24	<i>J</i> ₁	kgcm ²	10.7	7.82	6.79	5.84	5.28
				10 ⁻³ in.lb.s ²	9.45	6.92	6.01	5.17	4.67
	I	32	<i>J</i> ₁	kgcm ²	13.8	11.0	9.95	9.01	8.44
				10 ⁻³ in.lb.s ²	12.3	9.72	8.81	7.97	7.47
	K	38	<i>J</i> ₁	kgcm ²	14.9	12.1	11.0	10.1	9.51
				10 ⁻³ in.lb.s ²	13.2	10.7	9.76	8.92	8.42
	M	48	<i>J</i> ₁	kgcm ²	29.5	26.7	25.6	24.7	24.2
				10 ⁻³ in.lb.s ²	26.1	23.6	22.7	21.9	21.4

Reduced mass moments of inertia available on request.

^{a)} Other ratios available on request

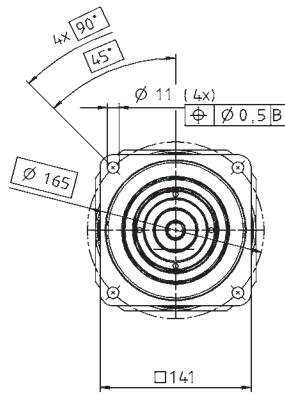
^{b)} For higher ambient temperatures, please reduce input speed

^{c)} Valid for clamping hub diameter of 38 mm

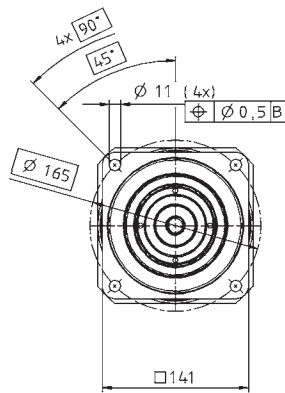
^{d)} Refers to center of the output shaft or flange

Motor shaft diameter [mm]

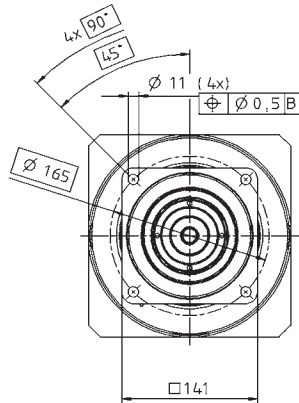
up to 24⁴⁾ (G)
clamping hub
diameter



up to 32/38 ⁴⁾
(I/K) clamping
hub diameter

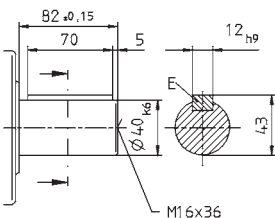


up to 48 ⁴⁾ (M)
clamping hub
diameter

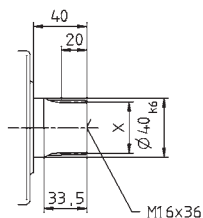


Alternatives: Output shaft variants

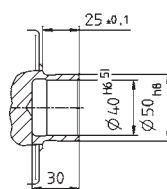
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



Involute gearing DIN 5480 in mm
X = W 40 x 2 x 30 x 18 x 6m, DIN 5480



Shaft mounted
Mounted via shrink disc



Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length.
Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.
- 5) Tolerance h6 for mounted shaft.

 CAD data is available under www.wittenstein-alpha.com



Motor mounting according to operating manual

Planetary gearheads High End

 $\frac{d}{ds}+$

MF

SP⁺ 140 MF 2-stage

					2-stage								
Ratio ^{a)}			<i>i</i>		16	20	25	28	35	40	50	70	100
cymex®-optimized acceleration torque (please contact us regarding the design)			T_{2Bcym}	Nm	710	710	755	710	755	710	755	680	560
				in.lb	6284	6284	6682	6284	6682	6284	6682	6018	4956
Max. acceleration torque (max. 1000 cycles per hour)			T_{2B}	Nm	660	660	660	660	660	660	660	660	530
				in.lb	5841	5841	5841	5841	5841	5841	5841	5841	4691
Nominal output torque (with n_{2N})			T_{2N}	Nm	360	360	360	360	360	360	360	360	220
				in.lb	3186	3186	3186	3186	3186	3186	3186	3186	1947
Emergency stop torque (permitted 1000 times during the service life of the gearhead)			T_{2Not}	Nm	1250	1250	1250	1250	1250	1250	1250	1250	1000
				in.lb	11063	11063	11063	11063	11063	11063	11063	11063	8850
Nominal input speed (with T_{2N} and 20°C ambient temperature) ^{b)}			n_{1N}	rpm	2900	2900	2900	2900	2900	2900	3200	3200	3900
Max. input speed ^{c)}			n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature) ^{c)}			T_{012}	Nm	3.3	2.7	2.4	1.9	1.8	1.4	1.3	1.2	1.1
				in.lb	29.2	23.9	21.2	16.9	15.9	12.4	11.5	10.6	9.7
Max. torsional backlash			j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3								
Torsional rigidity			C_{t21}	Nm/ arcmin	53								
				in.lb/ arcmin	469								
Max. axial force ^{d)}			F_{2AMax}	N	9870								
				lb _f	2221								
Max. radial force ^{d)}			F_{2RMax}	N	9900								
				lb _f	2228								
Max. tilting moment			M_{2KMax}	Nm	952								
				in.lb	8425								
Efficiency at full load			η	%	94								
Service life (For calculation, see the Chapter "Information")			L_h	h	> 20000								
Weight incl. standard adapter plate			m	kg	17								
				lb _m	37.6								
Operating noise (with $i=100$ and $n_1=3000$ rpm no load)			L_{PA}	dB(A)	≤ 63								
Max. permitted housing temperature				°C	+90								
				F	194								
Ambient temperature				°C	-15 to +40								
				F	5 to 104								
Lubrication					Lubricated for life								
Paint					Blue RAL 5002								
Direction of rotation					Motor and gearhead same direction								
Protection class					IP 65								
Moment of inertia (relates to the drive)	E	19	J_1	kgcm ²	2.50	2.01	1.97	1.65	1.63	1.40	1.39	1.38	1.38
				10 ⁻³ in.lb.s ²	2.21	1.78	1.75	1.46	1.44	1.24	1.23	1.22	1.22
Clamping hub diameter [mm]	G	24	J_1	kgcm ²	3.19	2.71	2.67	2.34	2.32	2.10	2.08	2.08	2.07
				10 ⁻³ in.lb.s ²	2.82	2.40	2.36	2.07	2.05	1.85	1.85	1.84	1.83
	K	38	J_1	kgcm ²	10.3	9.77	9.73	9.41	9.39	9.16	9.15	9.14	9.14
				10 ⁻³ in.lb.s ²	9.07	8.65	8.61	8.33	8.31	8.11	8.10	8.09	8.09

Reduced mass moments of inertia available on request.

^{a)} Other ratios available on request

^{b)} For higher ambient temperatures, please reduce input speed

^{c)} Valid for clamping hub diameter of 24 mm

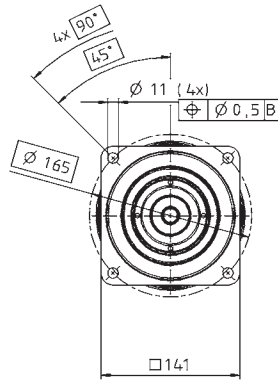
^{d)} Refers to center of the output shaft or flange

View A

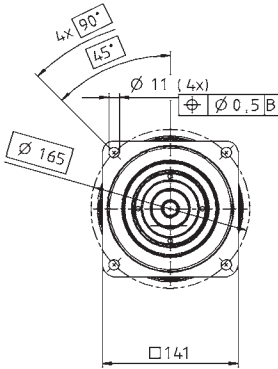
View B

Motor shaft diameter [mm]

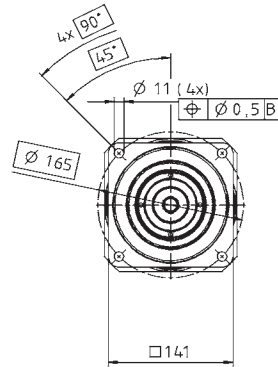
up to 19 ⁴⁾ (E)
clamping hub diameter



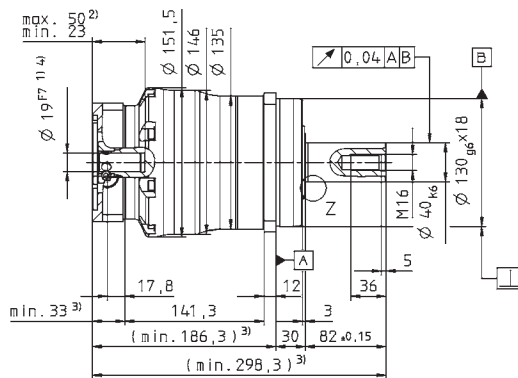
up to 24 ⁴⁾ (G)
clamping hub diameter



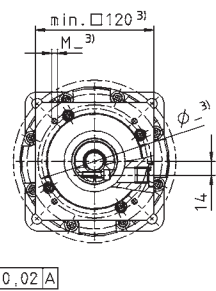
up to 38 ⁴⁾ (K)
clamping hub diameter



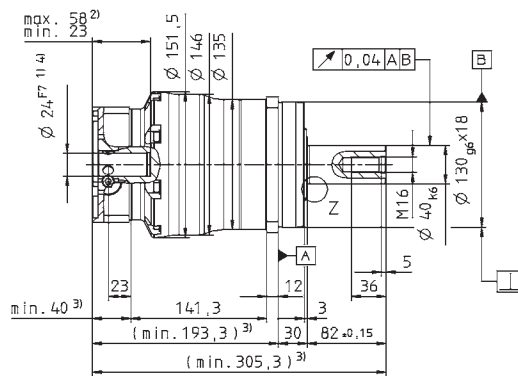
B →



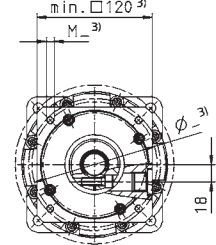
← A



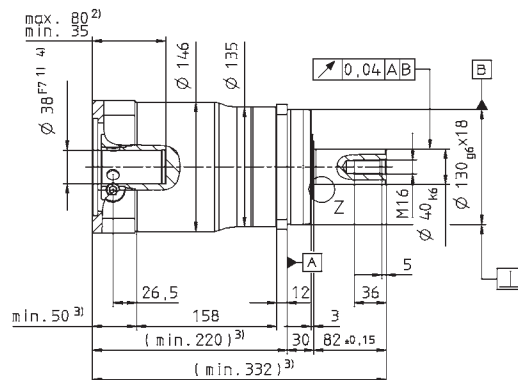
B →



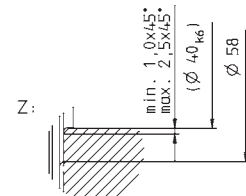
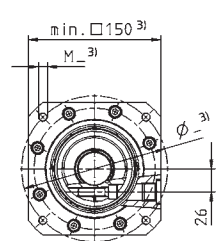
← A



B →

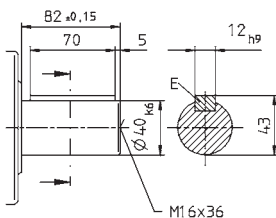


← A

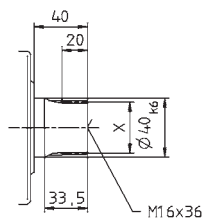


Alternatives: Output shaft variants

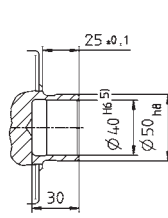
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



Involute gearing DIN 5480 in mm
X = W 40 x 2 x 30 x 18 x 6m, DIN 5480



Shaft mounted
Mounted via shrink disc



Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length.
Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.
- 5) Tolerance h6 for mounted shaft.

CAD data is available under www.wittenstein-alpha.com

Motor mounting according to operating manual

Planetary gearheads
High End

SP+

MF