

alphira® – Basic precision

The basic class among planetary gearheads



alphira®

Specifications \ Version	alphira®		
	+	++	+++
Positioning accuracy	[Progressive bar chart]		
Rigidity	[Progressive bar chart]		
Smooth-running	[Progressive bar chart]		
Speed capacity	[Progressive bar chart]		
Power density	[Progressive bar chart]		
Max. axial/radial forces	[Progressive bar chart]		



Shrink disc




Couplings



Rack / Pinion

Options

Food-grade grease 

Accessories

Rack / Pinion (see page 310)

Couplings (see page 342)

NEMA flange

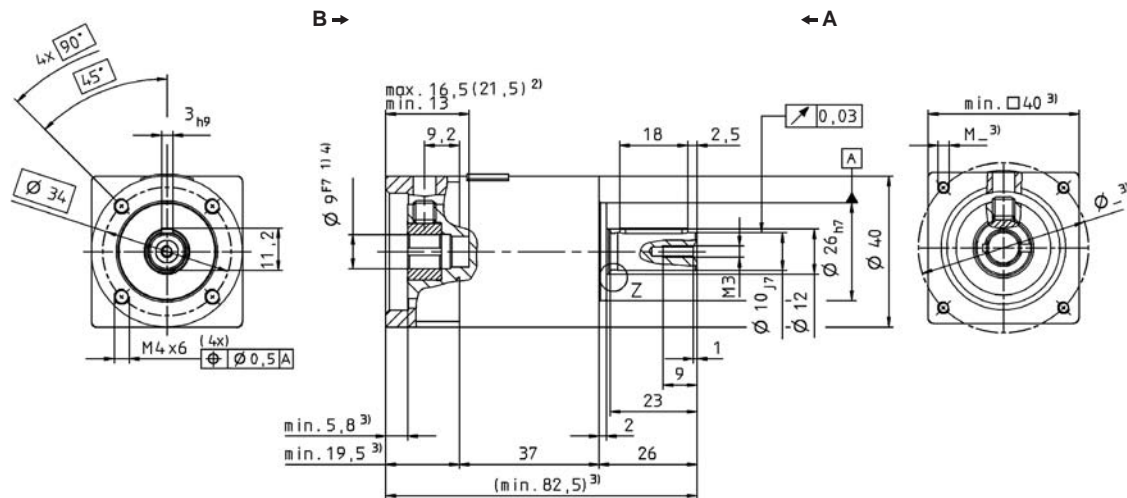
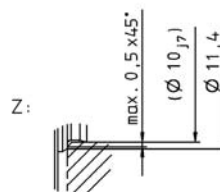
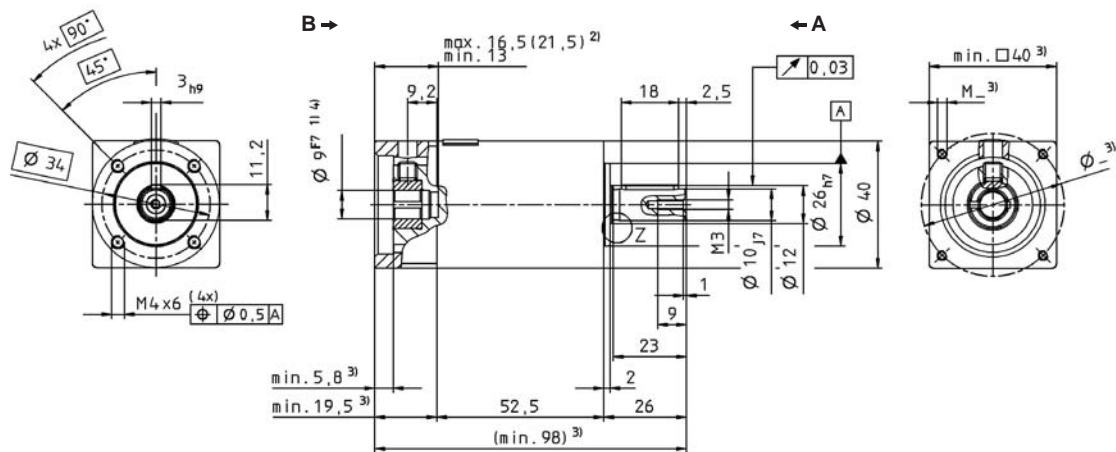
Shrink disc (see page 342)

alphira® 040 1/2-stage

Ratio		<i>i</i>	1-stage				2-stage						
			4	5	7	10	16	20	25	35	50	70	100
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	10.5	11.5	11.5	10.5	10.5	10.5	11.5	11.5	11.5	11.5	10.5
		in.lb	93	102	102	93	93	93	102	102	102	102	93
Nominal output torque (with n_n)	T_{2N}	Nm	5.2	5.7	5.7	5.2	5.2	5.2	5.7	5.7	5.7	5.7	5.2
		in.lb	46	50	50	46	46	46	50	50	50	50	46
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	26	26	26	26	26	26	26	26	26	26	26
		in.lb	230	230	230	230	230	230	230	230	230	230	230
Nominal input speed (with T_{2N} and 20°C ambient temperature ^{a)})	n_{1N}	rpm	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	
Max. input speed	n_{1Max}	rpm	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	
Mean no load running torque (with $n_n=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
		in.lb	0.05	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Max. torsional backlash	j_t	arcmin	≤ 20				≤ 25						
Torsional rigidity	C_{t21}	Nm/ arcmin	0.58	0.58	0.58	0.52	0.58	0.58	0.58	0.58	0.58	0.58	0.52
		in lb/ arcmin	5.1	5.1	5.1	4.6	5.1	5.1	5.1	5.1	5.1	5.1	4.6
Max. axial force ^{b)}	F_{2AMax}	N	230				230						
		lb _f	51				51						
Max. radial force ^{b)}	F_{2RMax}	N	200				200						
		lb _f	45				45						
Efficiency at full load	η	%	97				95						
Service life (For calculation, see the Chapter "Information")	L_n	h	> 20000				> 20000						
Weight incl. standard adapter plate	<i>m</i>	kg	0.31				0.52						
		lb _m	0.69				1.15						
Operating noise (with $n_n=3000$ rpm no load)	L_{PA}	dB(A)	≤ 66										
Max. permitted housing temperature	°C		+90										
	F		194										
Ambient temperature	°C		-15 to +40										
	F		5 to 104										
Lubrication	Lubricated for life												
Paint	Alu, polished												
Direction of rotation	Motor and gearhead same direction												
Protection class	IP 64												
Moment of inertia (relates to the drive)	J_f	kgcm ²	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
		10 ⁻³ in lb ft ²	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036

^{a)} For higher ambient temperatures, please contact us

^{b)} Relates to center of the output shaft or flange, at 100 rpm

1-stage:

2-stage:

 Non-tolerated dimensions $\pm 1\text{mm}$

- 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.

Motor mounting according to operating manual



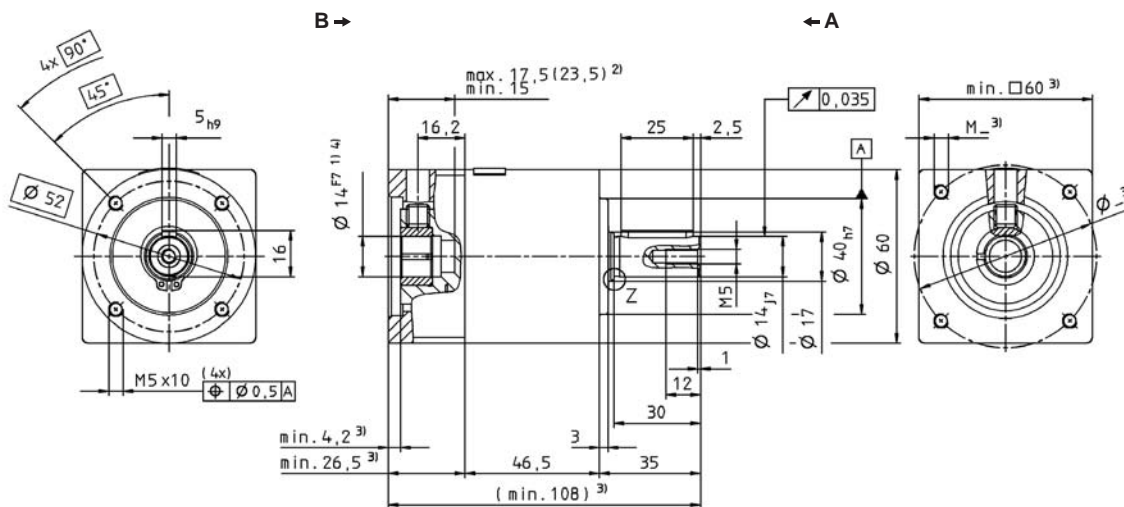
alphira® 060 1/2-stage

		1-stage				2-stage								
Ratio	<i>i</i>	4	5	7	10	16	20	25	35	50	70	100		
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	32	32	32	29	32	32	32	32	32	32	29	
		in.lb	283	283	283	257	283	283	283	283	283	283	257	
Nominal output torque (with n_n)	T_{2N}	Nm	16	16	16	15	16	16	16	16	16	16	15	
		in.lb	142	142	142	133	142	142	142	142	142	142	133	
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	75	75	75	75	75	75	75	75	75	75	75	
		in.lb	664	664	664	664	664	664	664	664	664	664	664	
Nominal input speed (with T_{2N} and 20°C ambient temperature ^{a)})	n_{1N}	rpm	3700	3700	3700	3700	3700	3700	3700	3700	3700	3700		
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque (with $n_n=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
		in.lb	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Max. torsional backlash	j_t	arcmin	≤ 20				≤ 25							
Torsional rigidity	C_{d21}	Nm/ arcmin	2.1	2.1	2.1	1.9	2.1	2.1	2.1	2.1	2.1	2.1	1.9	
		in lb/ arcmin	19	19	19	17	19	19	19	19	19	19	17	
Max. axial force ^{b)}	F_{2AMax}	N	750				750							
		lb _f	169				169							
Max. radial force ^{b)}	F_{2RMax}	N	650				650							
		lb _f	146				146							
Efficiency at full load	η	%	97				95							
Service life (For calculation, see the Chapter "Information")	L_n	h	> 20000				> 20000							
Weight incl. standard adapter plate	<i>m</i>	kg	0.88				1.1							
		lb _m	1.9				2.4							
Operating noise (with $n_n=3000$ rpm no load)	L_{PA}	dB(A)	≤ 68											
Max. permitted housing temperature		°C	+90											
		F	194											
Ambient temperature		°C	-15 to +40											
		F	5 to 104											
Lubrication			Lubricated for life											
Paint			Alu, polished											
Direction of rotation			Motor and gearhead same direction											
Protection class			IP 64											
Moment of inertia (relates to the drive)	J_f	kgcm ²	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
		10 ³ in lb s ²	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	

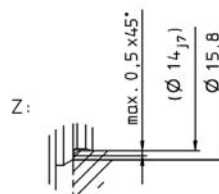
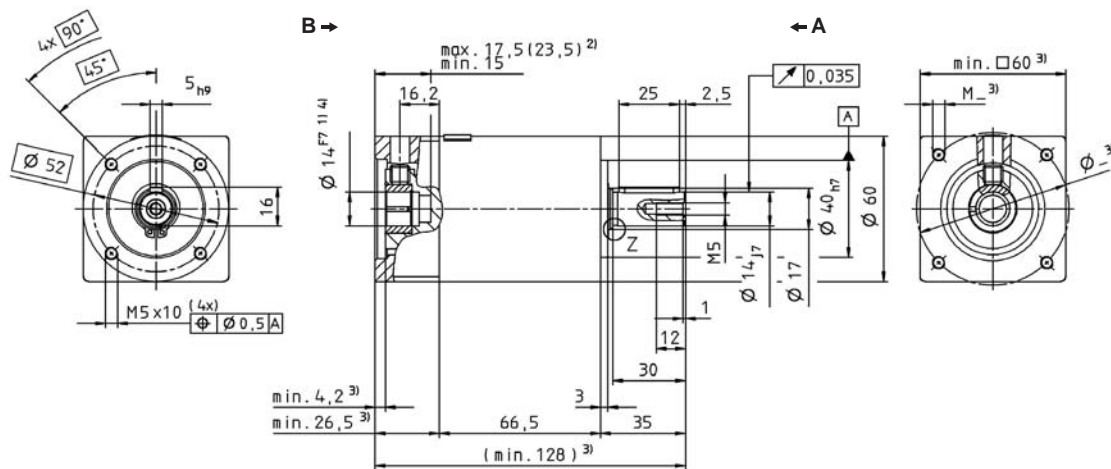
^{a)} For higher ambient temperatures, please contact us

^{b)} Relates to center of the output shaft or flange, at 100 rpm

1-stage:



2-stage:



Non-tolerated dimensions $\pm 1\text{mm}$

- 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.

Motor mounting according to operating manual



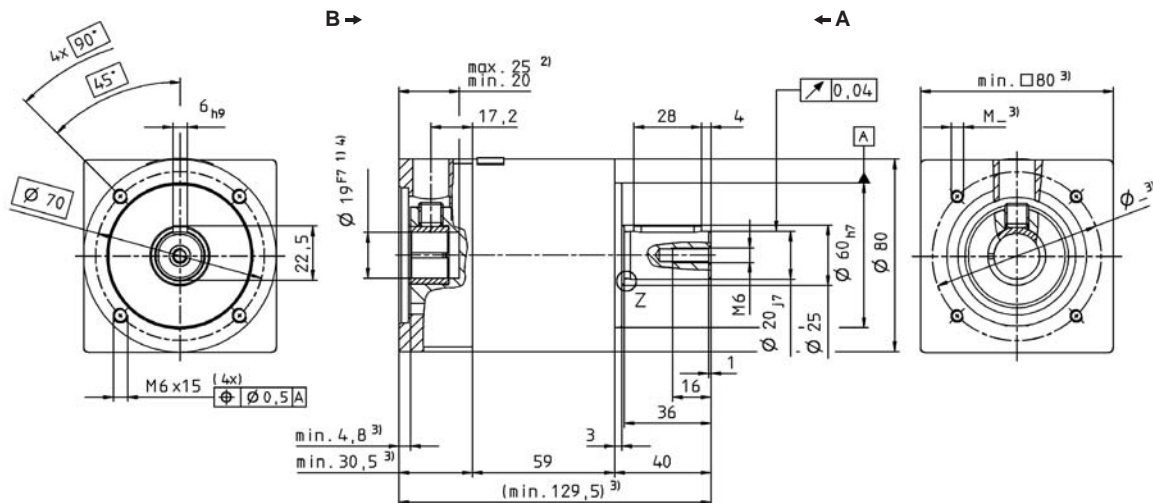
alphira® 080 1/2-stage

		1-stage				2-stage								
Ratio	<i>i</i>	4	5	7	10	16	20	25	35	50	70	100		
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	80	80	80	72	80	80	80	80	80	80	72	
		in.lb	708	708	708	637	708	708	708	708	708	708	637	
Nominal output torque (with n_n)	T_{2N}	Nm	40	40	40	35	40	40	40	40	40	40	35	
		in.lb	354	354	354	310	354	354	354	354	354	354	310	
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	190	190	190	190	190	190	190	190	190	190	190	
		in.lb	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	
Nominal input speed (with T_{2N} and 20°C ambient temperature ^{a)})	n_{1N}	rpm	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400		
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque (with $n_n=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	
		in.lb	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Max. torsional backlash	j_t	arcmin	≤ 20				≤ 25							
Torsional rigidity	C_{d21}	Nm/ arcmin	6.1	6.1	6.1	5.5	6.1	6.1	6.1	6.1	6.1	6.1	5.5	
		in lb/ arcmin	54	54	54	49	54	54	54	54	54	54	49	
Max. axial force ^{b)}	F_{2AMax}	N	1600				1600							
		lb _f	360				360							
Max. radial force ^{b)}	F_{2RMax}	N	1200				1200							
		lb _f	270				270							
Efficiency at full load	η	%	97				95							
Service life (For calculation, see the Chapter "Information")	L_n	h	> 20000				> 20000							
Weight incl. standard adapter plate	m	kg	2.1				2.8							
		lb _m	4.6				6.2							
Operating noise (with $n_n=3000$ rpm no load)	L_{PA}	dB(A)	≤ 70											
Max. permitted housing temperature	°C		+90											
	F		194											
Ambient temperature	°C		-15 to +40											
	F		5 to 104											
Lubrication	Lubricated for life													
Paint	Alu, polished													
Direction of rotation	Motor and gearhead same direction													
Protection class	IP 64													
Moment of inertia (relates to the drive)	J_f	kgcm ²	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	
		10 ³ in lb s ²	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	

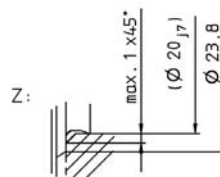
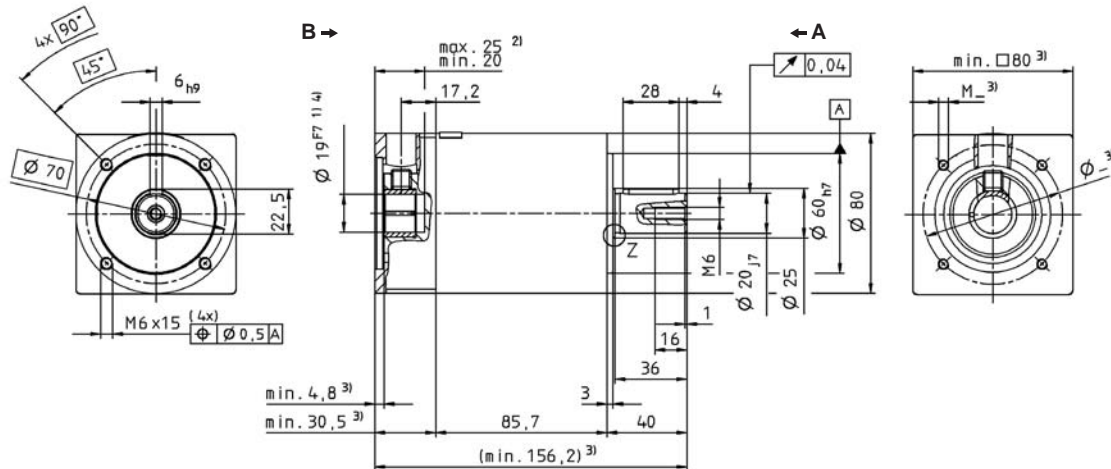
^{a)} For higher ambient temperatures, please contact us

^{b)} Relates to center of the output shaft or flange, at 100 rpm

1-stage:



2-stage:



Non-tolerated dimensions $\pm 1\text{mm}$

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
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Motor mounting according to operating manual



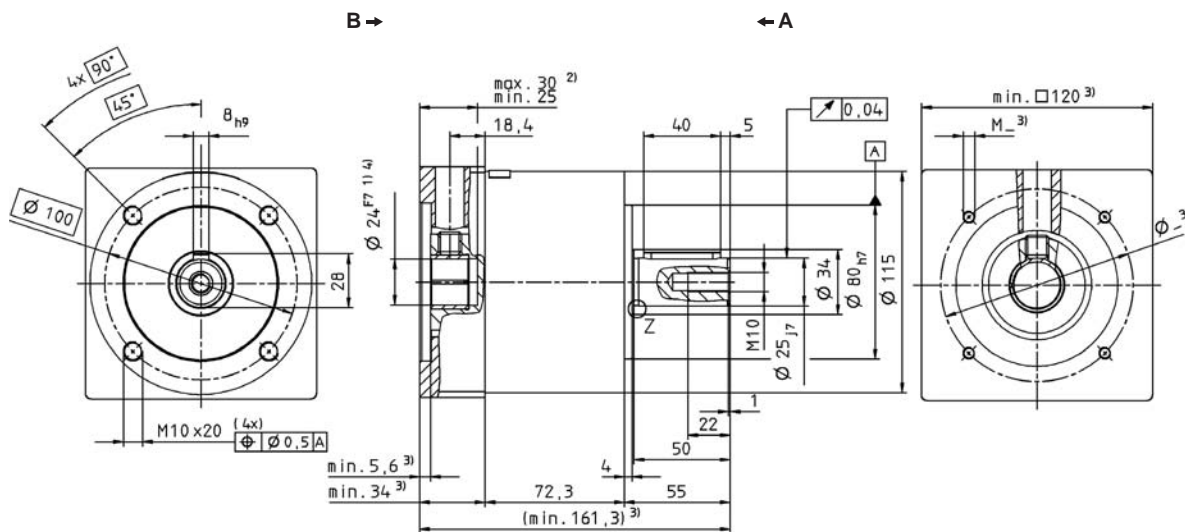
alphira® 115 1/2-stage

		1-stage				2-stage								
Ratio	<i>i</i>	4	5	7	10	16	20	25	35	50	70	100		
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	200	200	200	180	200	200	200	200	200	200	180	
		in.lb	1770	1770	1770	1593	1770	1770	1770	1770	1770	1770	1593	
Nominal output torque (with n_{2N})	T_{2N}	Nm	100	100	100	90	100	100	100	100	100	100	90	
		in.lb	885	885	885	797	885	885	885	885	885	885	797	
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	480	480	480	480	480	480	480	480	480	480	480	
		in.lb	4248	4248	4248	4248	4248	4248	4248	4248	4248	4248	4248	
Nominal input speed (with T_{2N} and 20°C ambient temperature ^{a)})	n_{1N}	rpm	2600	2600	2600	2600	2600	2600	2600	2600	2600	2600		
Max. input speed	n_{1Max}	rpm	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800		
Mean no load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
		in.lb	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	
Max. torsional backlash	j_t	arcmin	≤ 20				≤ 25							
Torsional rigidity	C_{d21}	Nm/arcmin	16.5	16.5	16.5	14.5	16.5	16.5	16.5	16.5	16.5	16.5	14.5	
		in.lbf/arcmin	146	146	146	128	146	146	146	146	146	146	128	
Max. axial force ^{b)}	F_{2AMax}	N	2100				2100							
		lb _f	472				472							
Max. radial force ^{b)}	F_{2RMax}	N	1550				1550							
		lb _f	349				349							
Efficiency at full load	η	%	97				95							
Service life (For calculation, see the Chapter "Information")	L_n	h	> 20000				> 20000							
Weight incl. standard adapter plate	<i>m</i>	kg	5.2				6.9							
		lb _m	11.5				15.2							
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	dB(A)	≤ 72											
Max. permitted housing temperature	°C		+90											
	F		194											
Ambient temperature	°C		-15 to +40											
	F		5 to 104											
Lubrication	Lubricated for life													
Paint	Alu, polished													
Direction of rotation	Motor and gearhead same direction													
Protection class	IP 64													
Moment of inertia (relates to the drive)	J_f	kgcm ²	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	
		10 ⁻³ in lb s ²	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	

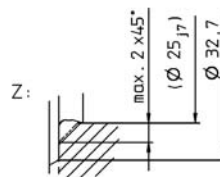
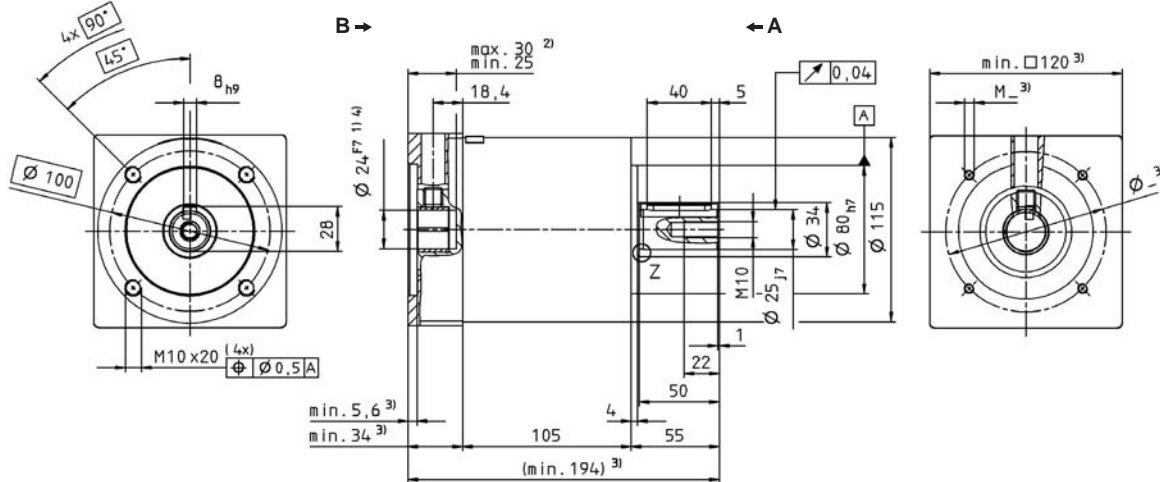
^{a)} For higher ambient temperatures, please contact us

^{b)} Relates to center of the output shaft or flange, at 100 rpm

1-stage:



2-stage:

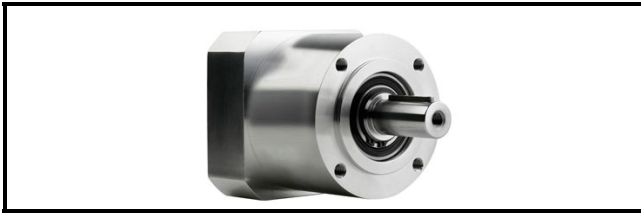


Non-tolerated dimensions $\pm 1\text{mm}$

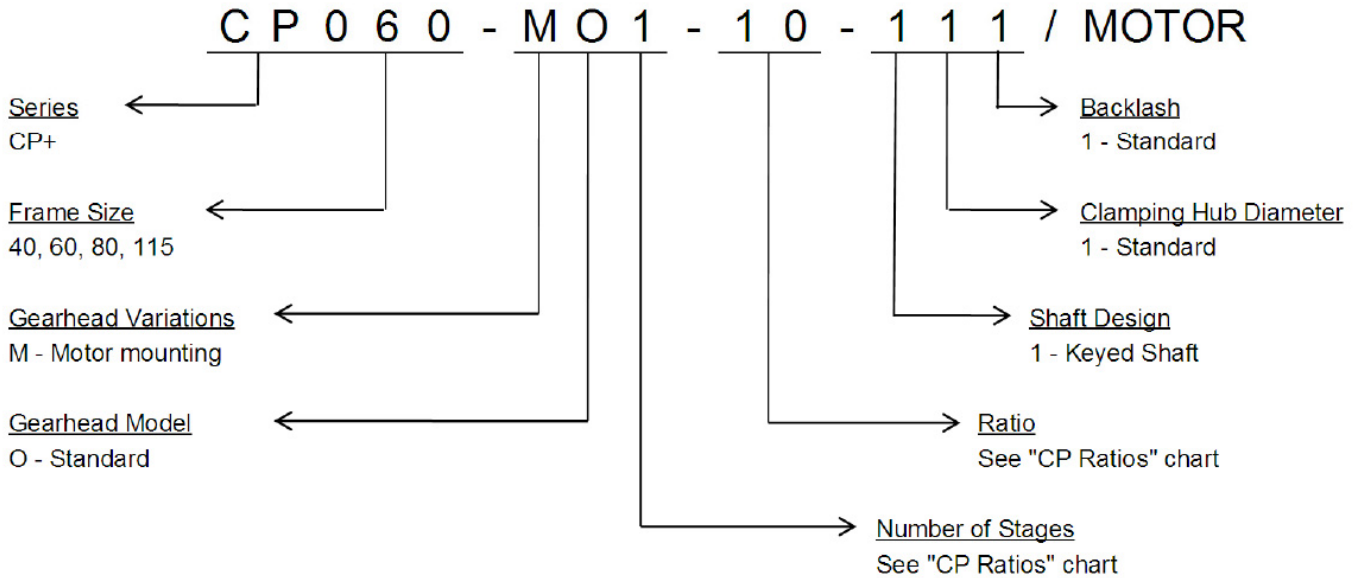
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Motor mounting according to operating manual





alpha CP (alphira®)



CP Ratios

Stages	1-Stage				2-Stage						
Ratios	4	5	7	10	16	20	25	35	50	70	100

Clamping Hub Diameters

Size	Standard
CP040	9
CP060	14
CP080	19
CP115	24