alpha Basic Line

PLANETARY GEARBOXES
CP / CPS

The planetary gearboxes of the alpha Basic Line are the ideal choice for cost-oriented solutions. These gearboxes further increase design freedom in machines due to new additional output variants as well as five different sizes.

* CPS with replaceable B5 output flange

CP / CPS – Geared up to Fit

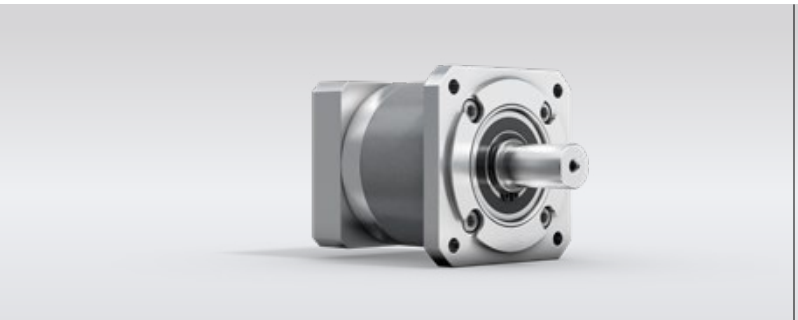
Tailored to applications in the mid-range and economy segment with low to medium requirements for positioning accuracy, the CP and CPS planetary gearboxes do not fail to impress. The key benefits offered by the gearboxes are high flexibility combined with maximum efficiency.

PRODUCT HIGHLIGHTS

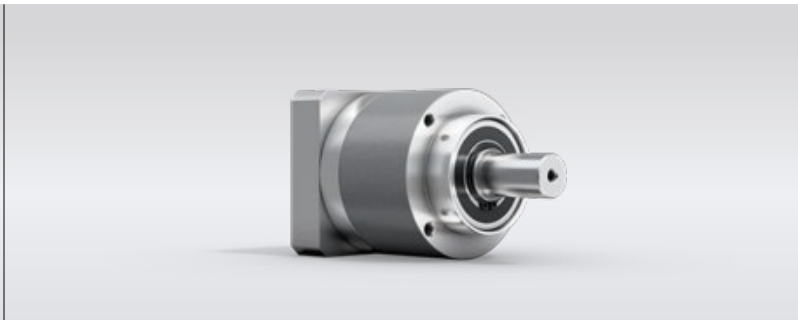
High flexibility
Different output variants offer design freedom tailored to individual requirements. The flexibility on the input side also enables the realization of different motor mounting versions.

Maximum economy
The gearboxes of the alpha Basic Line are extremely economical to purchase and highly efficient in operation.

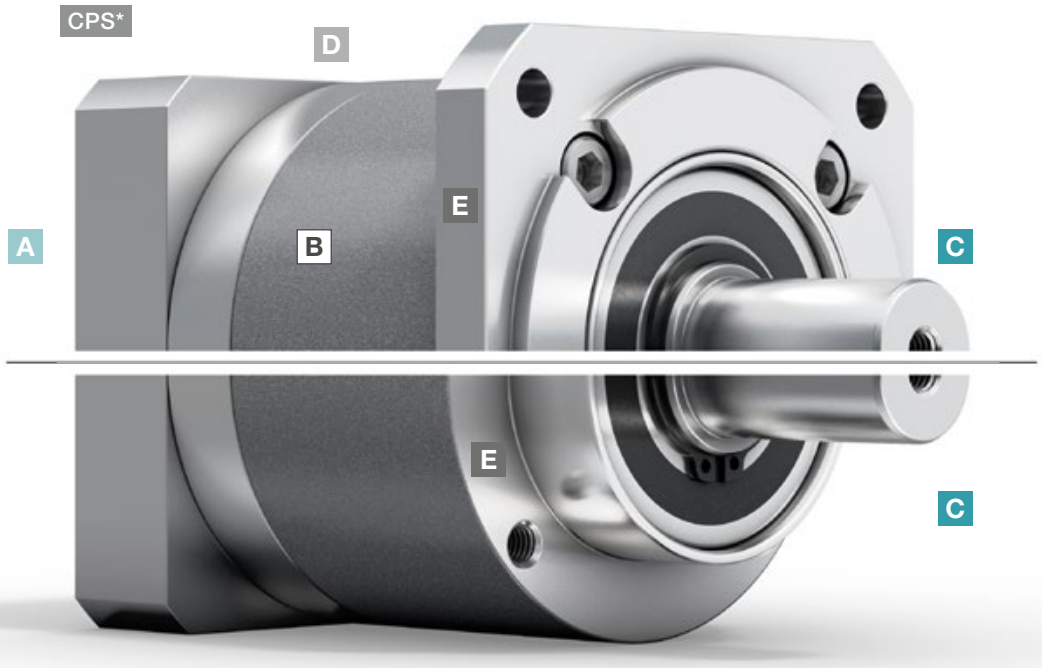
Fast sizing
Efficient online sizing within seconds in the SIZING ASSISTANT on the basis of the application data or the motor.



CPS – planetary gearbox with replaceable B5 output flange



CPS – planetary gearbox with long centering



CPS

* CPS with replaceable B5 output flange

A **Flexible motor connection**
- Mounting of all common servo motors by means of a flexible and screw-fastened adapter plate
- Large number of motor shaft diameters connectable

B **High ratio variation**
- Large number of ratios (i=3 to i=100)
- Available in the common binary ratios

C **Various output shapes**
- With smooth shaft as well as shaft with key

D **Variety of sizes**
- CP available in five different sizes (005 – 045)
- CPS available in three different sizes (015 – 035)

E **Variable application connection**
- Reduced installation space and maximum compactness thanks to a long centering
- Flange attachment for B5 mounting

CPS – planetary gearbox with elastomer coupling

SIZING ASSISTANT
YOUR GEARBOX WITHIN SECONDS

Efficient gearbox sizing within seconds – online without login
www.sizing-assistant.com

			1-stage				
Ratio	**i**		**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	17	21	21	20	20
		in.lb	150	186	186	177	177
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	11	14	14	13	13
		in.lb	97	124	124	115	115
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	26	26	26	26	26
		in.lb	230	230	230	230	230
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3800	3800	4300	4300	4300
Max. input speed	n_{1Max}	*rpm*	9000	9000	9000	9000	9000
Mean no load running torque [b)] (at n_1=3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.07	0.06	0.06	0.06	0.05
		in.lb	0.62	0.53	0.53	0.53	0.44
Max. backlash	j_t	*arcmin*	≤ 12				
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	0.58	0.58	0.58	0.52	0.52
		in.lb/arcmin	5.1	5.1	5.1	4.6	4.6
Max. axial force [c)]	F_{2AMax}	*N*	240				
		lb_f	54				
Max. lateral force [c) f)]	F_{2QMax}	*N*	170				
		lb_f	38				
Max. tilting moment	M_{2KMax}	*Nm*	4				
		in.lb	35				
Efficiency at full load	η	*%*	97				
Service life	L_h	*h*	> 20000				
Weight (incl. standard adapter plate)	*m*	*kg*	0.5				
		lb_m	1.1				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 59				
Max. permitted housing temperature		*°C*	+90				
		°F	+194				
Ambient temperature		*°C*	–15 to +40				
		°F	+5 to +104				
Lubrication			Lubricated for life				
Direction of rotation			In- and output same direction				
Protection class			IP 64				
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0005BA010.000-X				
Bore diameter of coupling on the application side		*mm*	X = 004.000 - 012.700				
Mass moment of inertia (relates to the drive) **B** **11** Clamping hub diameter [mm]	J_1	*kgcm²*	0.04	0.04	0.04	0.03	0.03
		10⁻³ in.lb.s²	0.04	0.04	0.04	0.03	0.03

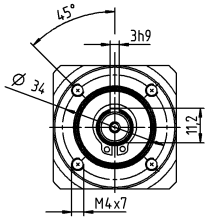
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

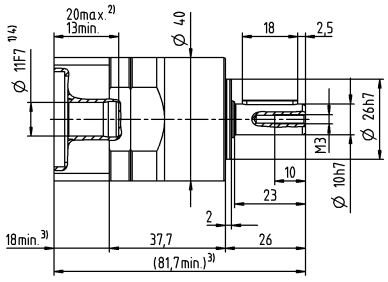
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft
[f)] At increased lateral forces – see glossary

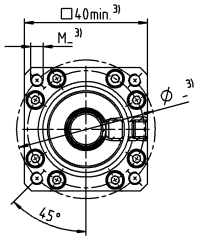
Motor shaft diameter [mm]

1-stage

up to 11 [4] (B) [5]
clamping hub
diameter

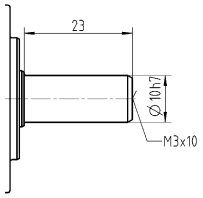






Other output variants

Smooth shaft



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

			2-stage								
Ratio	**i**		**16**	**20**	**25**	**28**	**35**	**40**	**50**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	17	17	21	17	21	17	21	21	20
		in.lb	150	150	186	150	186	150	186	186	177
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	11	11	14	11	14	11	14	14	13
		in.lb	97	97	124	97	124	97	124	124	115
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	26	26	26	26	26	26	26	26	26
		in.lb	230	230	230	230	230	230	230	230	230
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3800	3800	3800	3800	4300	4300	4300	4300	4300
Max. input speed	n_{1Max}	*rpm*	9000	9000	9000	9000	9000	9000	9000	9000	9000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.06	0.06
		in.lb	0.8	0.71	0.71	0.71	0.62	0.62	0.62	0.53	0.53
Max. backlash	j_t	*arcmin*	≤ 18								
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.52
		in.lb/arcmin	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	4.6
Max. axial force [c)]	F_{2AMax}	*N*	240								
		lb_f	54								
Max. lateral force [c) f)]	F_{2QMax}	*N*	170								
		lb_f	38								
Max. tilting moment	M_{2KMax}	*Nm*	4								
		in.lb	35								
Efficiency at full load	η	*%*	95								
Service life	L_h	*h*	> 20000								
Weight (incl. standard adapter plate)	*m*	*kg*	0.7								
		lb_m	1.5								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 59								
Max. permitted housing temperature		*°C*	+90								
		°F	+194								
Ambient temperature		*°C*	–15 to +40								
		°F	+5 to +104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 64								
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0005BA010.000-X								
Bore diameter of coupling on the application side		*mm*	X = 004.000 - 012.700								
Mass moment of inertia (relates to the drive) **B** **11** Clamping hub diameter [mm]	J_1	*kgcm²*	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03
		10^{-3} *in.lb.s²*	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03

Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

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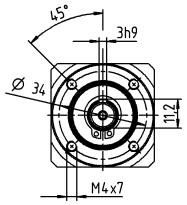
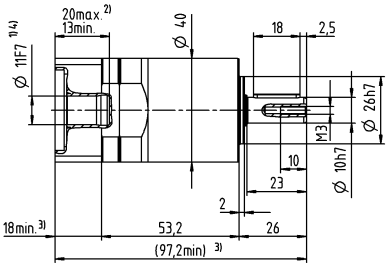
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft
[f)] At increased lateral forces – see glossary

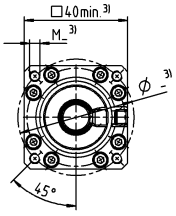
Motor shaft diameter [mm]

2-stage

up to 11 [4] (B) [5]
clamping hub
diameter

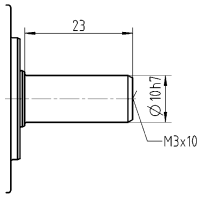






Other output variants

Smooth shaft



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Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

				1-stage					
Ratio	**i**			**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*		48	56	58	58	56	56
		in.lb		425	496	513	513	496	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		30	35	40	40	35	35
		in.lb		266	310	354	354	310	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		75	75	75	75	75	75
		in.lb		664	664	664	664	664	664
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3300	3300	3300	4000	4000	4000
Max. input speed	n_{1Max}	*rpm*		7000	7000	7000	7000	7000	7000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.25	0.2	0.17	0.15	0.14	0.13
		in.lb		2.2	1.8	1.5	1.3	1.2	1.2
Max. backlash	j_t	*arcmin*		≤ 12					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		2.1	2.1	2.1	2.1	1.9	1.9
		in.lb/arcmin		19	19	19	19	17	17
Max. axial force [c)]	F_{2AMax}	*N*		750					
		lb_f		169					
Max. lateral force [c) f)]	F_{2QMax}	*N*		500					
		lb_f		113					
Max. tilting moment	M_{2KMax}	*Nm*		17					
		in.lb		150					
Efficiency at full load	η	*%*		97					
Service life	L_h	*h*		> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*		1.4					
		lb_m		3.1					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 60					
Max. permitted housing temperature		*°C*		+90					
		°F		+194					
Ambient temperature		*°C*		–15 to +40					
		°F		+5 to +104					
Lubrication				Lubricated for life					
Direction of rotation				In- and output same direction					
Protection class				IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0020BA014.000-X					
Bore diameter of coupling on the application side			*mm*	X = 008.000 - 025.000					
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C 14	J_1	*kgcm²*	0.23	0.2	0.18	0.15	0.15	0.15
			10^{-3} *in.lb.s²*	0.2	0.18	0.16	0.13	0.13	0.13
	E 19	J_1	*kgcm²*	0.43	0.4	0.39	0.38	0.38	0.37
			10^{-3} *in.lb.s²*	0.38	0.35	0.35	0.34	0.34	0.33

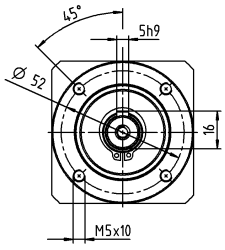
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

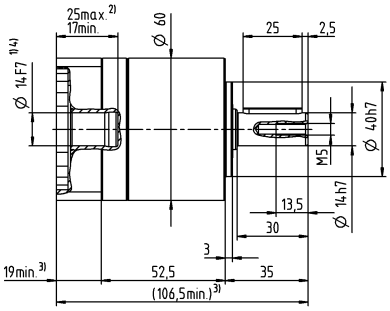
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft
[f)] At increased lateral forces – see glossary

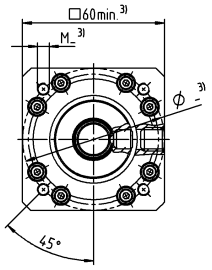
1-stage

Motor shaft diameter [mm]

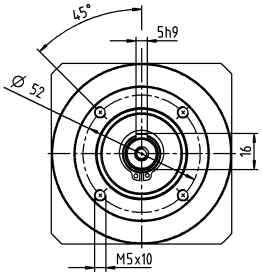
up to 14 [4] (C) [5]
clamping hub
diameter

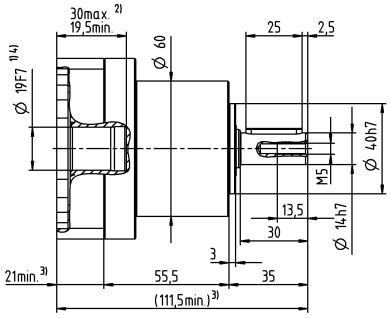


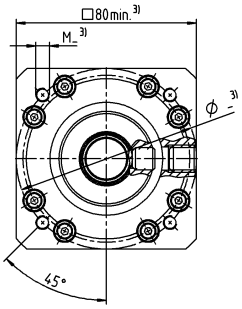




up to 19 [4] (E)
clamping hub
diameter

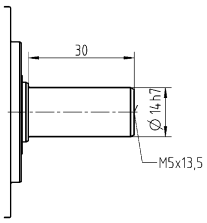






Other output variants

Smooth shaft



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[1] Check motor shaft fit
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Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

CP 015 MF 2-stage

				2-stage												
Ratio	**i**			**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		48	48	48	56	56	58	56	48	58	56	58	58	56
		in.lb		425	425	425	496	496	513	496	425	513	496	513	513	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		30	30	30	35	35	40	35	30	40	35	40	40	35
		in.lb		266	266	266	310	310	354	310	266	354	310	354	354	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		75	75	75	75	75	75	75	75	75	75	75	75	75
		in.lb		664	664	664	664	664	664	664	664	664	664	664	664	664
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	4000	4000
Max. input speed	n_{1Max}	*rpm*		7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.33	0.28	0.26	0.25	0.22	0.21	0.2	0.21	0.18	0.17	0.16	0.15	0.14
		in.lb		2.9	2.5	2.3	2.2	1.9	1.9	1.8	1.9	1.6	1.5	1.4	1.3	1.2
Max. backlash	j_t	*arcmin*		≤ 15												
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.9
		in.lb/arcmin		19	19	19	19	19	19	19	19	19	19	19	19	17
Max. axial force [c)]	F_{2AMax}	*N*		750												
		lb_f		169												
Max. lateral force [c) f)]	F_{2QMax}	*N*		500												
		lb_f		113												
Max. tilting moment	M_{2KMax}	*Nm*		17												
		in.lb		150												
Efficiency at full load	η	*%*		95												
Service life	L_h	*h*		> 20000												
Weight (incl. standard adapter plate)	*m*	*kg*		1.8												
		lb_m		4												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 60												
Max. permitted housing temperature		*°C*		+90												
		°F		+194												
Ambient temperature		*°C*		–15 to +40												
		°F		+5 to +104												
Lubrication				Lubricated for life												
Direction of rotation				In- and output same direction												
Protection class				IP 64												
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0020BA014.000-X												
Bore diameter of coupling on the application side			*mm*	X = 008.000 - 025.000												
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	J_1	*kgcm²*	0.22	0.22	0.21	0.2	0.19	0.18	0.17	0.19	0.16	0.17	0.16	0.15	0.15
				10^{-3} in.lb.s²	0.19	0.19	0.19	0.18	0.17	0.16	0.15	0.17	0.14	0.15	0.14	0.13	0.13
	E	19	J_1	*kgcm²*	0.43	0.42	0.42	0.4	0.4	0.39	0.39	0.41	0.39	0.39	0.38	0.38	0.37
				10^{-3} in.lb.s²	0.38	0.37	0.37	0.35	0.35	0.35	0.35	0.36	0.35	0.35	0.34	0.34	0.33

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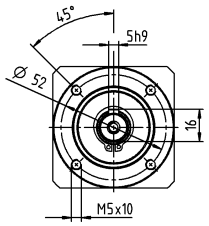
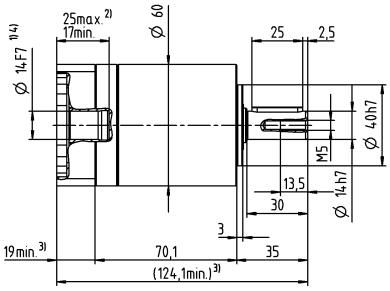
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft
[f)] At increased lateral forces – see glossary

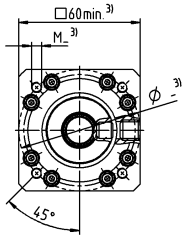
2-stage

Motor shaft diameter [mm]

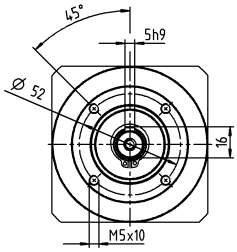
up to 14 [4] (C) [5] clamping hub diameter

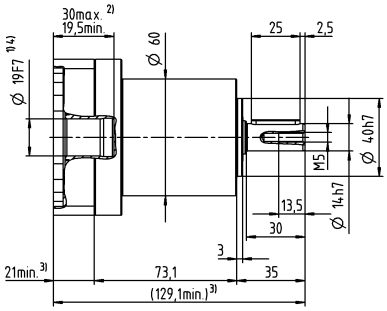


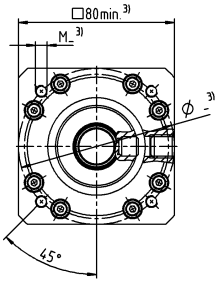




up to 19 [4] (E) clamping hub diameter

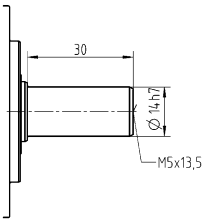






Other output variants

Smooth shaft



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

				1-stage					
Ratio	**i**			**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*		112	150	150	150	144	144
		in.lb		991	1328	1328	1328	1275	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		70	95	100	100	90	90
		in.lb		620	841	885	885	797	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		114	152	187	187	187	187
		in.lb		1009	1345	1655	1655	1655	1655
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3100	3100	3100	3600	3600	3600
Max. input speed	n_{1Max}	*rpm*		7000	7000	7000	7000	7000	7000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.38	0.3	0.26	0.23	0.21	0.19
		in.lb		3.4	2.7	2.3	2	1.9	1.7
Max. backlash	j_t	*arcmin*		≤ 12					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		6.1	6.1	6.1	6.1	5.5	5.5
		in.lb/arcmin		54	54	54	54	49	49
Max. axial force [c)]	F_{2AMax}	*N*		1600					
		lb_f		360					
Max. lateral force [c)]	F_{2QMax}	*N*		1200					
		lb_f		270					
Max. tilting moment	M_{2KMax}	*Nm*		54					
		in.lb		478					
Efficiency at full load	η	*%*		97					
Service life	L_h	*h*		> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*		2.9					
		lb_m		6.4					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 62					
Max. permitted housing temperature		*°C*		+90					
		°F		+194					
Ambient temperature		*°C*		–15 to +40					
		°F		+5 to +104					
Lubrication				Lubricated for life					
Direction of rotation				In- and output same direction					
Protection class				IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0060BA020.000-X					
Bore diameter of coupling on the application side			*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	*kgcm²*	0.66	0.53	0.48	0.43	0.41	0.4
				10^{-3} *in.lb.s²*	0.58	0.47	0.42	0.38	0.36	0.35
	G	24	J_1	*kgcm²*	1.5	1.4	1.3	1.3	1.3	1.3
				10^{-3} *in.lb.s²*	1.3	1.2	1.2	1.2	1.2	1.2

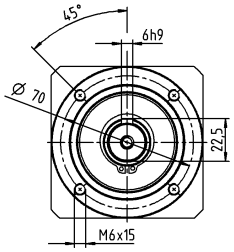
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

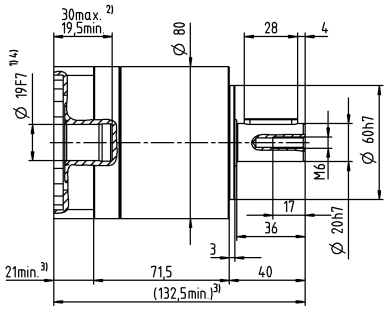
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

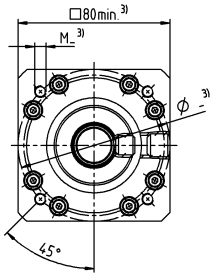
1-stage

Motor shaft diameter [mm]

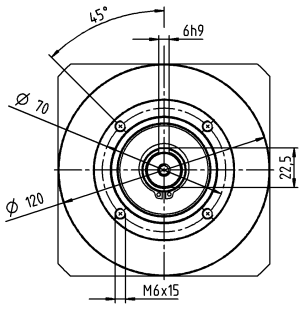
up to 19 [4] (E) [5]
clamping hub
diameter

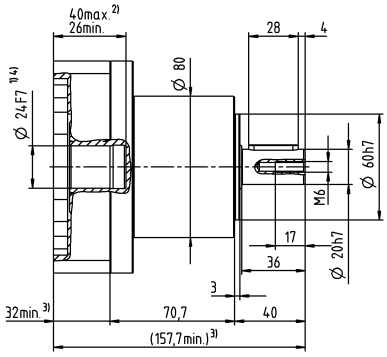


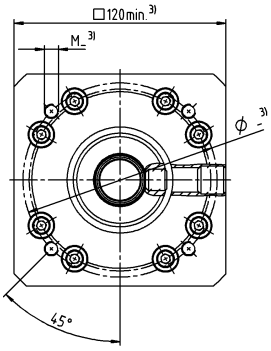




up to 24 [4] (G)
clamping hub
diameter

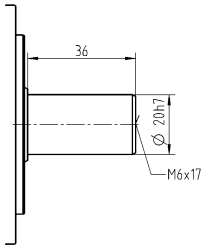






Other output variants

Smooth shaft



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Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

CP 025 MF 2-stage

				2-stage												
Ratio	**i**			**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		112	112	112	150	150	150	150	112	150	150	150	150	144
		in.lb		991	991	991	1328	1328	1328	1328	991	1328	1328	1328	1328	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		70	70	70	95	95	95	95	70	100	95	100	100	90
		in.lb		620	620	620	841	841	841	841	620	885	841	885	885	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		187	187	187	187	187	187	187	187	187	187	187	187	187
		in.lb		1655	1655	1655	1655	1655	1655	1655	1655	1655	1655	1655	1655	1655
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3600	3600
Max. input speed	n_{1Max}	*rpm*		7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.5	0.43	0.39	0.38	0.34	0.32	0.3	0.31	0.28	0.26	0.24	0.22	0.21
		in.lb		4.4	3.8	3.5	3.4	3	2.8	2.7	2.7	2.5	2.3	2.1	1.9	1.9
Max. backlash	j_t	*arcmin*		≤ 15												
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	5.5
		in.lb/arcmin		54	54	54	54	54	54	54	54	54	54	54	54	49
Max. axial force [c)]	F_{2AMax}	*N*		1600												
		lb_f		360												
Max. lateral force [c)]	F_{2QMax}	*N*		1200												
		lb_f		270												
Max. tilting moment	M_{2KMax}	*Nm*		54												
		in.lb		478												
Efficiency at full load	η	*%*		95												
Service life	L_h	*h*		> 20000												
Weight (incl. standard adapter plate)	*m*	*kg*		3.7												
		lb_m		8.2												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 62												
Max. permitted housing temperature		*°C*		+90												
		°F		+194												
Ambient temperature		*°C*		–15 to +40												
		°F		+5 to +104												
Lubrication				Lubricated for life												
Direction of rotation				In- and output same direction												
Protection class				IP 64												
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0060BA020.000-X												
Bore diameter of coupling on the application side			*mm*	X = 012.000 - 032.000												
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	*kgcm²*	0.66	1.4	1.6	0.98	1.1	0.82	1.2	2.1	0.88	1.4	1	0.71	0.54
				10^{-3} in.lb.s²	0.58	1.2	1.4	0.87	0.97	0.73	1.1	1.9	0.78	1.2	0.89	0.63	0.48
	G	24	J_1	*kgcm²*	1.5	2.3	2.4	1.8	1.9	1.7	2	3	1.7	2.2	1.9	1.6	1.4
				10^{-3} in.lb.s²	1.3	2	2.1	1.6	1.7	1.5	1.8	2.7	1.5	1.9	1.7	1.4	1.2

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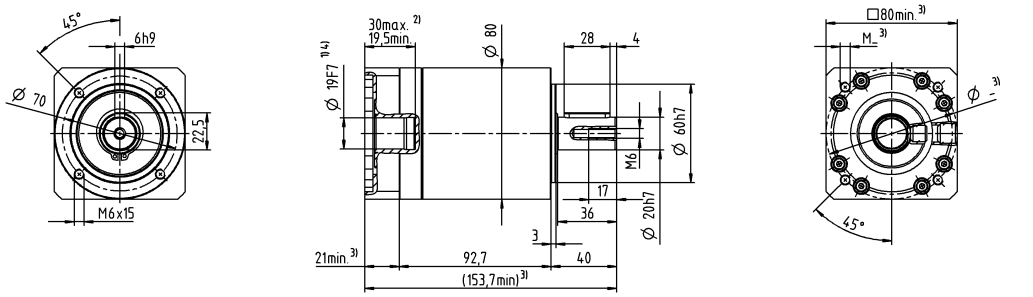
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

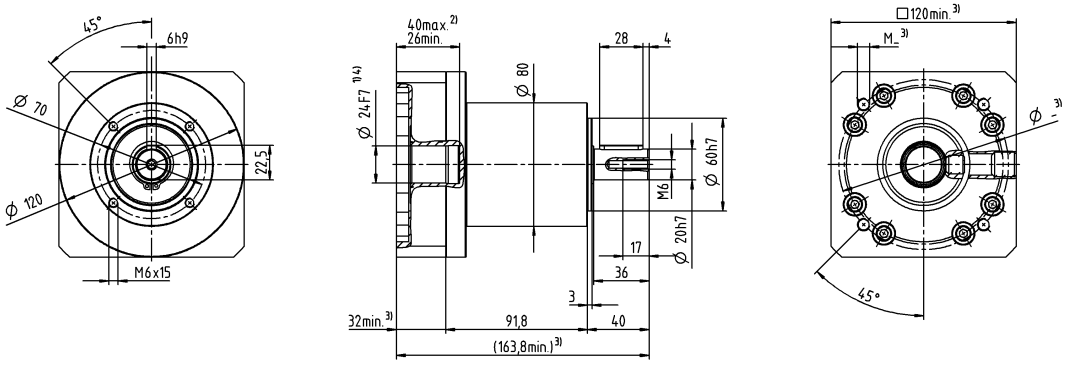
2-stage

Motor shaft diameter [mm]

up to 19 [4] (E) [5]
clamping hub
diameter

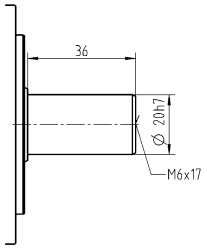


up to 24 [4] (G)
clamping hub
diameter



Other output variants

Smooth shaft



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[5] Standard clamping hub diameter

					1-stage				
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	272	272	272	272	272	272
		in.lb	2407	2407	2407	2407	2407	2407
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	175	255	250	250	220	220
		in.lb	1549	2257	2213	2213	1947	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	460	480	480	480	470	480
		in.lb	4071	4248	4248	4248	4160	4248
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2300	2300	2300	2800	2800	2800
Max. input speed	n_{1Max}	*rpm*	5500	5500	5500	5500	5500	5500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.95	0.76	0.66	0.57	0.52	0.48
		in.lb	8.4	6.7	5.8	5	4.6	4.2
Max. backlash	j_t	*arcmin*	≤ 12					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	16	16	16	16	14	14
		in.lb/arcmin	142	142	142	142	124	124
Max. axial force [c)]	F_{2AMax}	*N*	2500					
		lb_f	563					
Max. lateral force [c)]	F_{2QMax}	*N*	1750					
		lb_f	394					
Max. tilting moment	M_{2KMax}	*Nm*	98					
		in.lb	867					
Efficiency at full load	η	*%*	97					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	7.5					
		lb_m	17					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	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					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0150BA025.000-X					
Bore diameter of coupling on the application side		*mm*	X = 019.000 - 036.000					
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm] G 24	J_1	*kgcm²*	2.6	1.9	1.7	1.5	1.4	1.4
		10^{-3} in.lb.s²	2.3	1.7	1.5	1.3	1.2	1.2
K 38	J_1	*kgcm²*	7.8	7.1	6.9	6.7	6.6	6.5
		10^{-3} in.lb.s²	6.9	6.3	6.1	5.9	5.8	5.8

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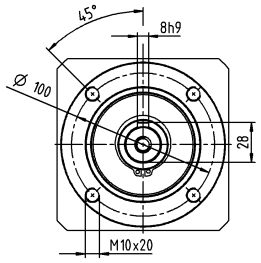
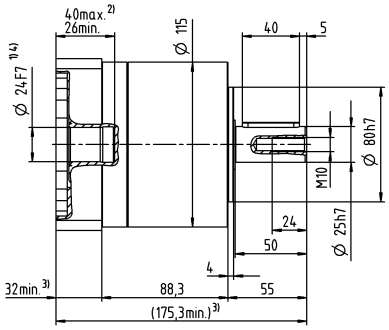
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

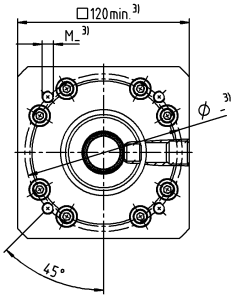
1-stage

Motor shaft diameter [mm]

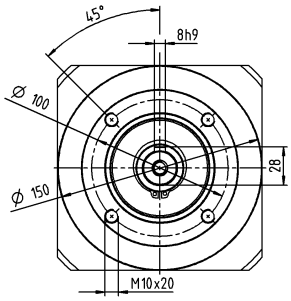
up to 24 [4] (G) [5]
clamping hub
diameter

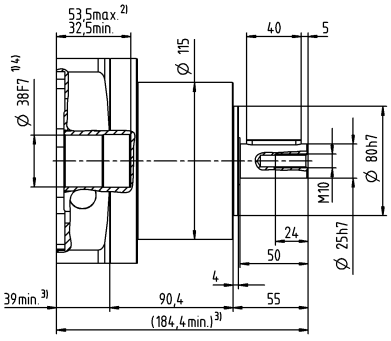


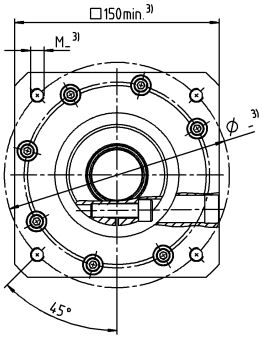




up to 38 [4] (K)
clamping hub
diameter

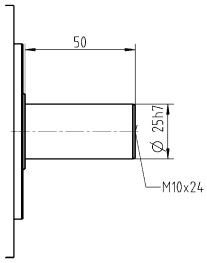






Other output variants

Smooth shaft



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[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] Standard clamping hub diameter

				2-stage													
Ratio	**i**			**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		272	272	272	272	272	272	272	272	272	272	272	272	272
		in.lb		2407	2407	2407	2407	2407	2407	2407	2407	2407	2407	2407	2407	2407
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		175	175	175	255	255	250	255	175	250	255	250	250	220
		in.lb		1549	1549	1549	2257	2257	2213	2257	1549	2213	2257	2213	2213	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		480	480	480	480	480	480	480	315	480	480	480	480	480
		in.lb		4248	4248	4248	4248	4248	4248	4248	2788	4248	4248	4248	4248	4248
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2800	2800
Max. input speed	n_{1Max}	*rpm*		5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		1.3	1.1	0.98	0.95	0.85	0.8	0.76	0.79	0.7	0.66	0.61	0.56	0.52
		in.lb		12	9.7	8.7	8.4	7.5	7.1	6.7	7	6.2	5.8	5.4	5	4.6
Max. backlash	j_t	*arcmin*		≤ 15												
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		16	16	16	16	16	16	16	16	16	16	16	16	14
		in.lb/arcmin		142	142	142	142	142	142	142	142	142	142	142	142	124
Max. axial force [c)]	F_{2AMax}	*N*		2500												
		lb_f		563												
Max. lateral force [c)]	F_{2QMax}	*N*		1750												
		lb_f		394												
Max. tilting moment	M_{2KMax}	*Nm*		98												
		in.lb		867												
Efficiency at full load	η	*%*		95												
Service life	L_h	*h*		> 20000												
Weight (incl. standard adapter plate)	*m*	*kg*		9.6												
		lb_m		21												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	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												
Direction of rotation				In- and output same direction												
Protection class				IP 64												
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0150BA025.000-X												
Bore diameter of coupling on the application side		*mm*		X = 019.000 - 036.000												
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	G 24	J_1	*kgcm²*	2.7	2.5	2.5	2.3	2.3	2.1	2.4	3.1	2.2	2.6	2.2	1.9	1.7
			10^{-3} *in.lb.s²*	2.4	2.2	2.2	2	2	1.9	2.1	2.7	1.9	2.3	1.9	1.7	1.5
	K 38	J_1	*kgcm²*	7.9	7.7	7.8	7.5	7.5	7.3	7.5	8.3	7.4	7.8	7.4	7.1	6.9
			10^{-3} *in.lb.s²*	7	6.8	6.9	6.6	6.6	6.5	6.6	7.3	6.5	6.9	6.5	6.3	6.1

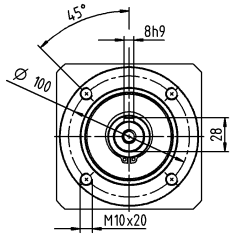
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

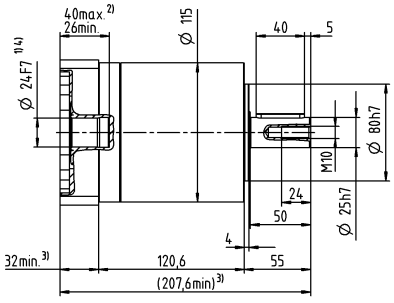
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

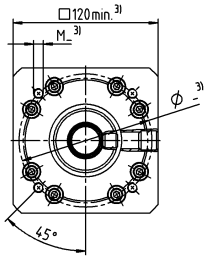
2-stage

Motor shaft diameter [mm]

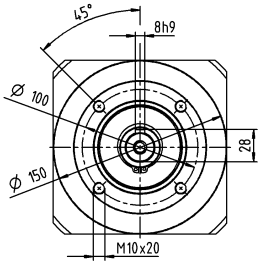
up to 24 [4] (G) [5] clamping hub diameter

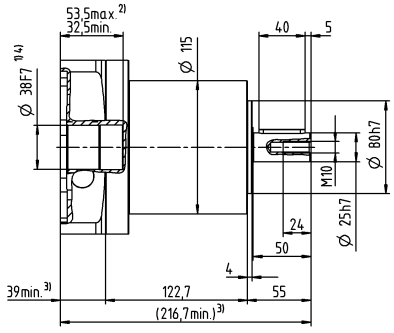


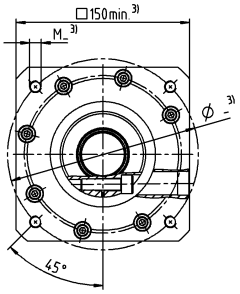




up to 38 [4] (K) clamping hub diameter

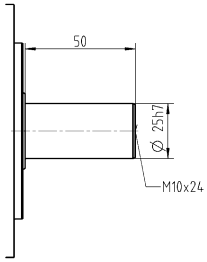






Other output variants

Smooth shaft



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

					1-stage			2-stage		
Ratio		**i**			**5**	**8**	**10**	**25**	**50**	**100**
Max. torque [a) b) e)]		T_{2a}	*Nm*		800	640	640	700	700	640
			in.lb		7081	5665	5665	6196	6196	5665
Max. acceleration torque [e)] (max. 1000 cycles per hour)		T_{2B}	*Nm*		500	400	400	500	500	400
			in.lb		4425	3540	3540	4425	4425	3540
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)		T_{2Not}	*Nm*		1000	1000	1000	1000	1000	1000
			in.lb		8851	8851	8851	8851	8851	8851
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)		n_{1N}	*rpm*		2000	2200	2300	2600	3000	3000
Max. input speed		n_{1Max}	*rpm*		4000	4000	4000	6000	6000	6000
Mean no load running torque [b)] (at n_1=3000 rpm and 20 °C gearbox temperature)		T_{012}	*Nm*		2.4	2	1.9	0.8	0.6	0.55
			in.lb		21	18	17	7.1	5.3	4.9
Max. backlash		j_t	*arcmin*		≤ 12			≤ 15		
Torsional rigidity [b)]		C_{t21}	*Nm/arcmin*		55	44	44	55	55	44
			in.lb/arcmin		487	389	389	487	487	389
Max. axial force [c)]		F_{2AMax}	*N*		6000			6000		
			lb_f							
Max. lateral force [c)]		F_{2QMax}	*N*		8000			8000		
			lb_f							
Max. tilting moment		M_{2KMax}	*Nm*		704			704		
			in.lb		6231			6231		
Efficiency at full load		η	*%*		97			95		
Service life		L_h	*h*		> 20000			> 20000		
Weight (incl. standard adapter plate)		*m*	*kg*		20			21		
			lb_m		44			46		
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)		L_{PA}	*dB(A)*		≤ 68			≤ 65		
Max. permitted housing temperature			*°C*		+90			+90		
			°F		+194			+194		
Ambient temperature			*°C*		–15 to +40			–15 to +40		
			°F		+5 to +104			+5 to +104		
Lubrication					Lubricated for life					
Direction of rotation					In- and output same direction					
Protection class					IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)					ELC-0300BA040.000-X					
Bore diameter of coupling on the application side			*mm*		X = 020.000 - 045.000					
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E 19	J_1	*kgcm²*		–	–	–	1.2	1.1	0.82
			10^{-3} *in.lb.s²*		–	–	–	1,1	0,97	0,73
	G 24	J_1	*kgcm²*		–	–	–	2	1,8	1,6
			10^{-3} *in.lb.s²*		–	–	–	1,8	1,6	1,4
	H 28	J_1	*kgcm²*		–	–	–	1,7	1,5	1,3
			10^{-3} *in.lb.s²*		–	–	–	1,5	1,3	1,2
	I 32	J_1	*kgcm²*		–	–	–	5,8	5,6	5,4
			10^{-3} *in.lb.s²*		–	–	–	5,1	5	4,8
	K 38	J_1	*kgcm²*		8.8	7.4	7.2	7	6,8	6,5
			10^{-3} *in.lb.s²*		7.8	6.5	6.4	6,2	6	5,8

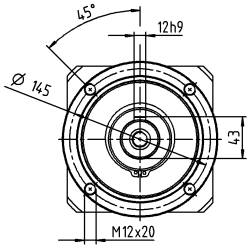
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

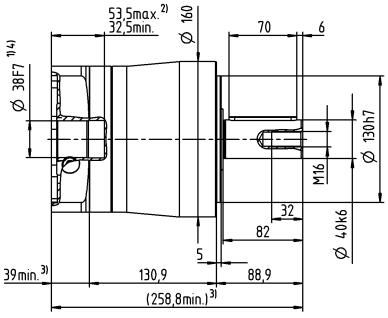
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

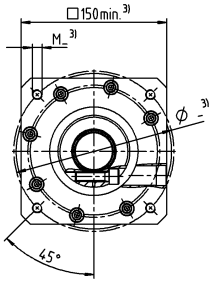
Motor shaft diameter [mm]

1-stage

up to 38 [4] (K) [5]
clamping hub
diameter

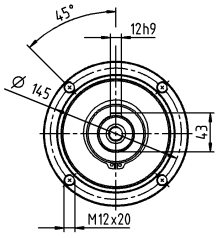


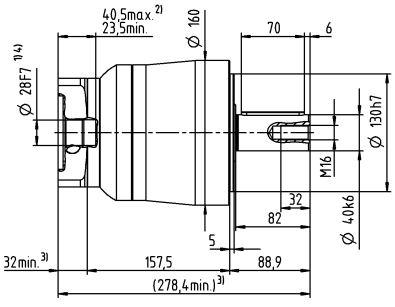


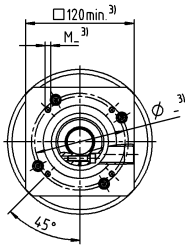


2-stage

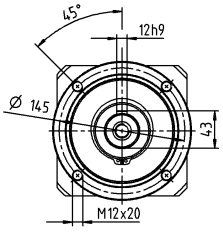
up to 19/24/28 [4]
(E/G [5]/H)
clamping hub
diameter

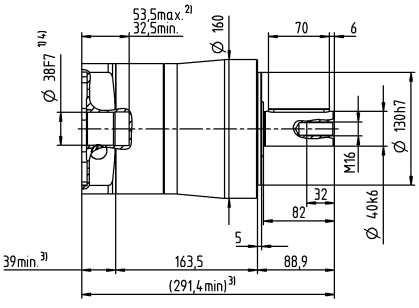


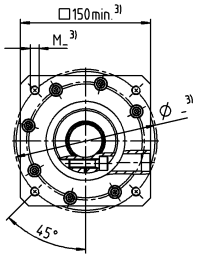




up to 32/38 [4]
(I/K)
clamping hub
diameter

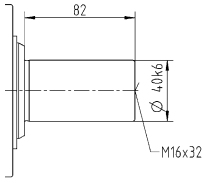






Other output variants

Smooth shaft



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

					1-stage				
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	48	56	58	58	56	56
		in.lb	425	496	513	513	496	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	30	35	40	40	35	35
		in.lb	266	310	354	354	310	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	75	75	75	75	75	75
		in.lb	664	664	664	664	664	664
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3300	3300	3300	4000	4000	4000
Max. input speed	n_{1Max}	*rpm*	7000	7000	7000	7000	7000	7000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.25	0.2	0.17	0.15	0.14	0.13
		in.lb	2.2	1.8	1.5	1.3	1.2	1.2
Max. backlash	j_t	*arcmin*	≤ 12					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	2.1	2.1	2.1	2.1	1.9	1.9
		in.lb/arcmin	19	19	19	19	17	17
Max. axial force [c)]	F_{2AMax}	*N*	750					
		lb_f	169					
Max. lateral force [c)]	F_{2QMax}	*N*	500					
		lb_f	113					
Max. tilting moment	M_{2KMax}	*Nm*	17					
		in.lb	150					
Efficiency at full load	η	*%*	97					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	1.4					
		lb_m	3.1					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 60					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	–15 to +40					
		°F	+5 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0020BA014.000-X					
Bore diameter of coupling on the application side		*mm*	X = 008.000 - 025.000					
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm] C 14	J_1	$kgcm^2$	0.23	0.2	0.18	0.15	0.15	0.15
		10^{-3} $in.lb.s^2$	0.2	0.18	0.16	0.13	0.13	0.13
E 19	J_1	$kgcm^2$	0.43	0.4	0.39	0.38	0.38	0.37
		10^{-3} $in.lb.s^2$	0.38	0.35	0.35	0.34	0.34	0.33

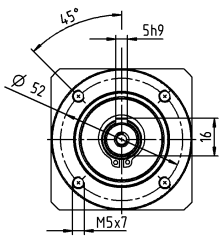
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

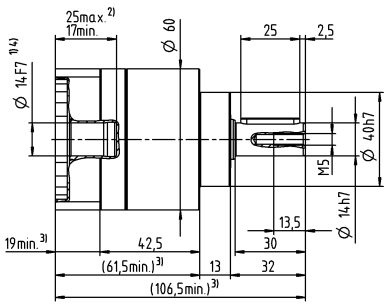
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

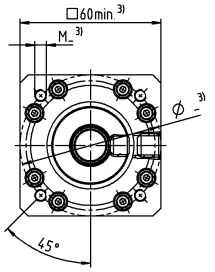
1-stage

Motor shaft diameter [mm]

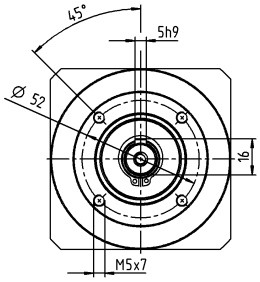
up to 14 [4] (C) [5] clamping hub diameter

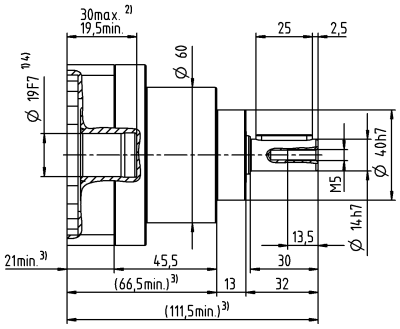


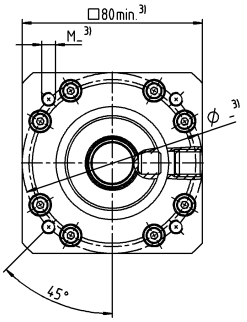




up to 19 [4] (E) clamping hub diameter

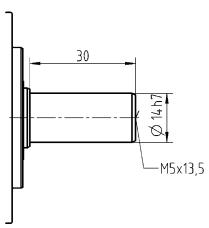




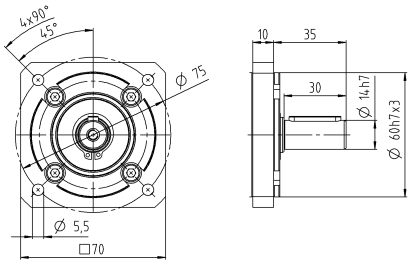


Other output variants

Smooth shaft



Replaceable B5 output flange



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

				2-stage												
Ratio	**i**			**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		48	48	48	56	56	58	56	48	58	56	58	58	56
		in.lb		425	425	425	496	496	513	496	425	513	496	513	513	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		30	30	30	35	35	40	35	30	40	35	40	40	35
		in.lb		266	266	266	310	310	354	310	266	354	310	354	354	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		75	75	75	75	75	75	75	75	75	75	75	75	75
		in.lb		664	664	664	664	664	664	664	664	664	664	664	664	664
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	4000	4000
Max. input speed	n_{1Max}	*rpm*		7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.33	0.28	0.26	0.25	0.22	0.21	0.2	0.21	0.18	0.17	0.16	0.15	0.14
		in.lb		2.9	2.5	2.3	2.2	1.9	1.9	1.8	1.9	1.6	1.5	1.4	1.3	1.2
Max. backlash	j_t	*arcmin*		≤ 15												
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.9
		in.lb/arcmin		19	19	19	19	19	19	19	19	19	19	19	19	17
Max. axial force [c)]	F_{2AMax}	*N*		750												
		lb_f		169												
Max. lateral force [c)]	F_{2QMax}	*N*		500												
		lb_f		113												
Max. tilting moment	M_{2KMax}	*Nm*		17												
		in.lb		150												
Efficiency at full load	η	*%*		95												
Service life	L_h	*h*		> 20000												
Weight (incl. standard adapter plate)	*m*	*kg*		1.8												
		lb_m		4												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 60												
Max. permitted housing temperature		*°C*		+90												
		°F		+194												
Ambient temperature		*°C*		–15 to +40												
		°F		+5 to +104												
Lubrication				Lubricated for life												
Direction of rotation				In- and output same direction												
Protection class				IP 64												
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0020BA014.000-X												
Bore diameter of coupling on the application side			*mm*	X = 008.000 - 025.000												
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	J_1	*kgcm²*	0.22	0.22	0.21	0.2	0.19	0.18	0.17	0.19	0.16	0.17	0.16	0.15	0.15
				10^{-3} in.lb.s²	0.19	0.19	0.19	0.18	0.17	0.16	0.15	0.17	0.14	0.15	0.14	0.13	0.13
	E	19	J_1	*kgcm²*	0.43	0.42	0.42	0.4	0.4	0.39	0.39	0.41	0.39	0.39	0.38	0.38	0.37
				10^{-3} in.lb.s²	0.38	0.37	0.37	0.35	0.35	0.35	0.35	0.36	0.35	0.35	0.34	0.34	0.33

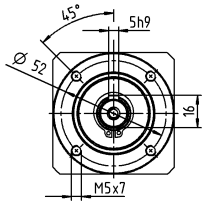
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

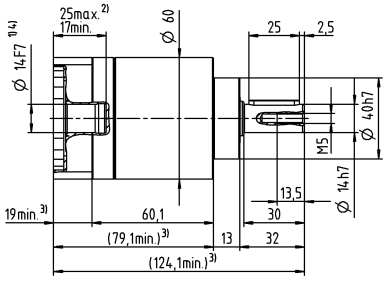
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

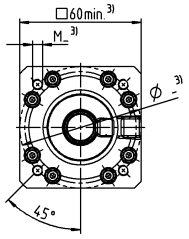
2-stage

Motor shaft diameter [mm]

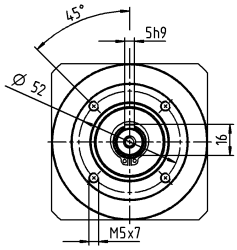
up to 14 [4] (C) [5] clamping hub diameter

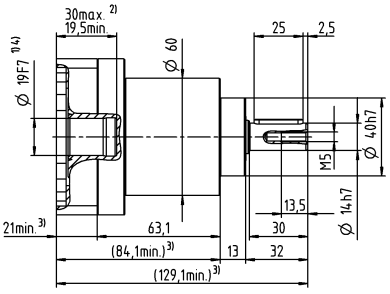


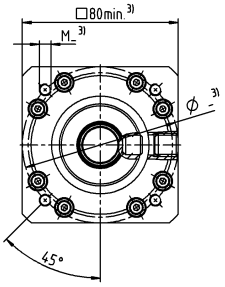




up to 19 [4] (E) clamping hub diameter

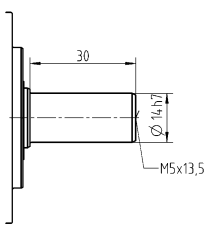




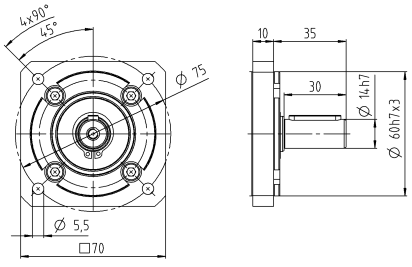


Other output variants

Smooth shaft



Replaceable B5 output flange



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

				1-stage					
Ratio	**i**			**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*		112	150	150	150	144	144
		in.lb		991	1328	1328	1328	1275	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		70	95	100	100	90	90
		in.lb		620	841	885	885	797	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		114	152	187	187	187	187
		in.lb		1009	1345	1655	1655	1655	1655
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3100	3100	3100	3600	3600	3600
Max. input speed	n_{1Max}	*rpm*		7000	7000	7000	7000	7000	7000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.38	0.3	0.26	0.23	0.21	0.19
		in.lb		3.4	2.7	2.3	2	1.9	1.7
Max. backlash	j_t	*arcmin*		≤ 12					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		6.1	6.1	6.1	6.1	5.5	5.5
		in.lb/arcmin		54	54	54	54	49	49
Max. axial force [c)]	F_{2AMax}	*N*		1600					
		lb_f		360					
Max. lateral force [c)]	F_{2QMax}	*N*		1200					
		lb_f		270					
Max. tilting moment	M_{2KMax}	*Nm*		54					
		in.lb		478					
Efficiency at full load	η	*%*		97					
Service life	L_h	*h*		> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*		2.9					
		lb_m		6.4					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 62					
Max. permitted housing temperature		*°C*		+90					
		°F		+194					
Ambient temperature		*°C*		–15 to +40					
		°F		+5 to +104					
Lubrication				Lubricated for life					
Direction of rotation				In- and output same direction					
Protection class				IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0060BA020.000-X					
Bore diameter of coupling on the application side			*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	*kgcm²*	0.66	0.53	0.48	0.43	0.41	0.4
				10^{-3} in.lb.s²	0.58	0.47	0.42	0.38	0.36	0.35
	G	24	J_1	*kgcm²*	1.5	1.4	1.3	1.3	1.3	1.3
				10^{-3} in.lb.s²	1.3	1.2	1.2	1.2	1.2	1.2

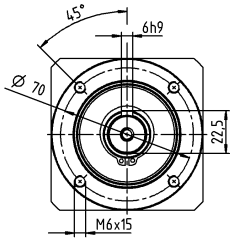
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

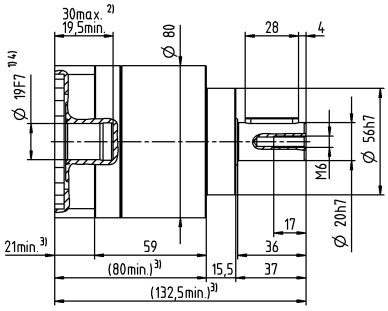
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

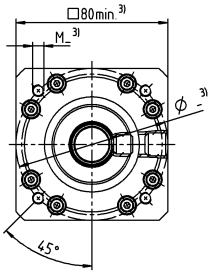
1-stage

Motor shaft diameter [mm]

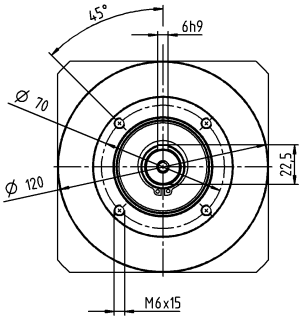
up to 19 [4] (E) [5]
clamping hub
diameter

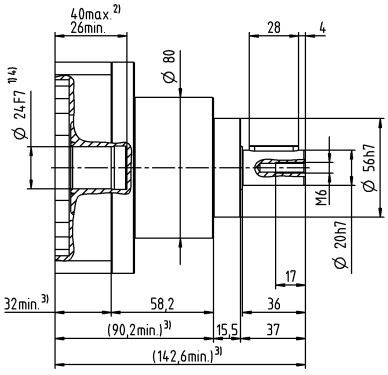


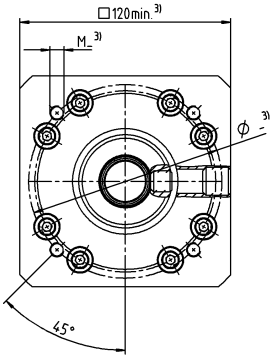




up to 24 [4] (G)
clamping hub
diameter

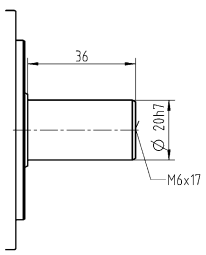




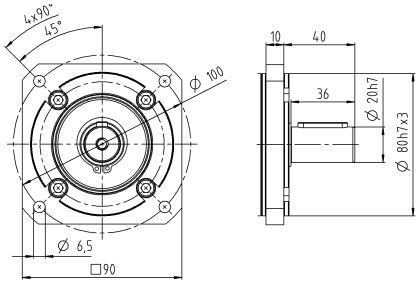


Other output variants

Smooth shaft



Replaceable B5 output flange



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[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] Standard clamping hub diameter

				2-stage												
Ratio	**i**			**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		112	112	112	150	150	150	150	112	150	150	150	150	144
		in.lb		991	991	991	1328	1328	1328	1328	991	1328	1328	1328	1328	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		70	70	70	95	95	95	95	70	100	95	100	100	90
		in.lb		620	620	620	841	841	841	841	620	885	841	885	885	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		187	187	187	187	187	187	187	187	187	187	187	187	187
		in.lb		1655	1655	1655	1655	1655	1655	1655	1655	1655	1655	1655	1655	1655
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	3600	3600
Max. input speed	n_{1Max}	*rpm*		7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000	7000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.5	0.43	0.39	0.38	0.34	0.32	0.3	0.31	0.28	0.26	0.24	0.22	0.21
		in.lb		4.4	3.8	3.5	3.4	3	2.8	2.7	2.7	2.5	2.3	2.1	1.9	1.9
Max. backlash	j_t	*arcmin*		≤ 15												
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	5.5
		in.lb/arcmin		54	54	54	54	54	54	54	54	54	54	54	54	49
Max. axial force [c)]	F_{2AMax}	*N*		1600												
		lb_f		360												
Max. lateral force [c)]	F_{2QMax}	*N*		1200												
		lb_f		270												
Max. tilting moment	M_{2KMax}	*Nm*		54												
		in.lb		478												
Efficiency at full load	η	*%*		95												
Service life	L_h	*h*		> 20000												
Weight (incl. standard adapter plate)	*m*	*kg*		3.7												
		lb_m		8.2												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 62												
Max. permitted housing temperature		*°C*		+90												
		°F		+194												
Ambient temperature		*°C*		–15 to +40												
		°F		+5 to +104												
Lubrication				Lubricated for life												
Direction of rotation				In- and output same direction												
Protection class				IP 64												
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0060BA020.000-X												
Bore diameter of coupling on the application side		*mm*		X = 012.000 - 032.000												
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E 19	J_1	*kgcm²*	0.66	1.4	1.6	0.98	1.1	0.82	1.2	2.1	0.88	1.4	1	0.71	0.54
			10^{-3} in.lb.s²	0.58	1.2	1.4	0.87	0.97	0.73	1.1	1.9	0.78	1.2	0.89	0.63	0.48
	G 24	J_1	*kgcm²*	1.5	2.3	2.4	1.8	1.9	1.7	2	3	1.7	2.2	1.9	1.6	1.4
			10^{-3} in.lb.s²	1.3	2	2.1	1.6	1.7	1.5	1.8	2.7	1.5	1.9	1.7	1.4	1.2

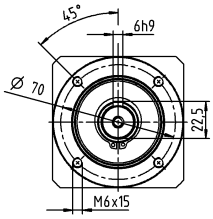
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

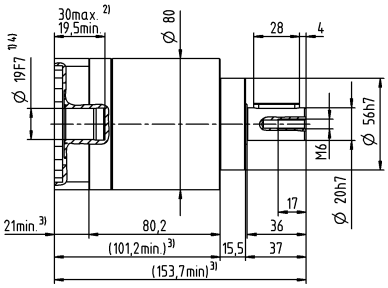
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

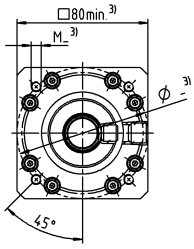
2-stage

Motor shaft diameter [mm]

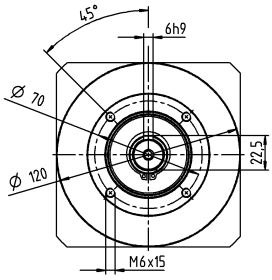
up to 19 [4] (E) [5] clamping hub diameter

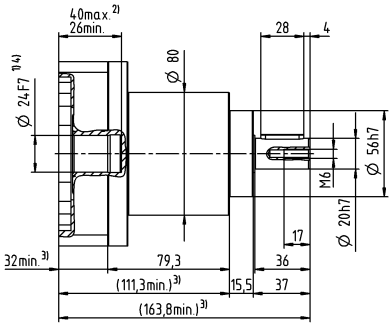


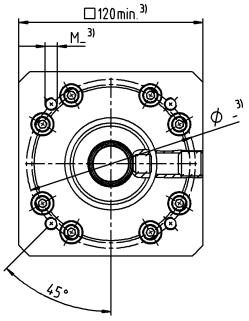




up to 24 [4] (G) clamping hub diameter

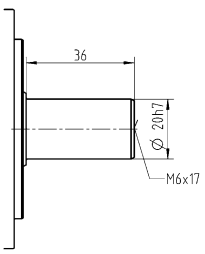




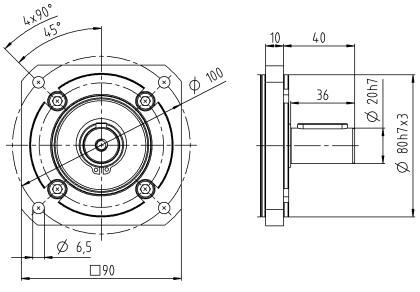


Other output variants

Smooth shaft



Replaceable B5 output flange



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[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] Standard clamping hub diameter

				1-stage					
Ratio	**i**			**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*		272	272	272	272	272	272
		in.lb		2407	2407	2407	2407	2407	2407
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		175	255	250	250	220	220
		in.lb		1549	2257	2213	2213	1947	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		460	480	480	480	470	480
		in.lb		4071	4248	4248	4248	4160	4248
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		2300	2300	2300	2800	2800	2800
Max. input speed	n_{1Max}	*rpm*		5500	5500	5500	5500	5500	5500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.95	0.76	0.66	0.57	0.52	0.48
		in.lb		8.4	6.7	5.8	5	4.6	4.2
Max. backlash	j_t	*arcmin*		≤ 12					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		16	16	16	16	14	14
		in.lb/arcmin		142	142	142	142	124	124
Max. axial force [c)]	F_{2AMax}	*N*		2500					
		lb_f		563					
Max. lateral force [c)]	F_{2QMax}	*N*		1750					
		lb_f		394					
Max. tilting moment	M_{2KMax}	*Nm*		98					
		in.lb		867					
Efficiency at full load	η	*%*		97					
Service life	L_h	*h*		> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*		7.5					
		lb_m		17					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	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					
Direction of rotation				In- and output same direction					
Protection class				IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0150BA025.000-X					
Bore diameter of coupling on the application side			*mm*	X = 019.000 - 036.000					
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	G	24	J_1	*kgcm²*	2.6	1.9	1.7	1.5	1.4	1.4
				10^{-3} *in.lb.s²*	2.3	1.7	1.5	1.3	1.2	1.2
	K	38	J_1	*kgcm²*	7.8	7.1	6.9	6.7	6.6	6.5
				10^{-3} *in.lb.s²*	6.9	6.3	6.1	5.9	5.8	5.8

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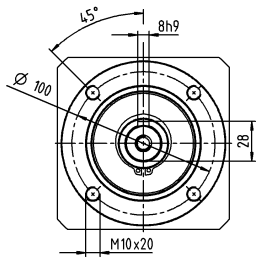
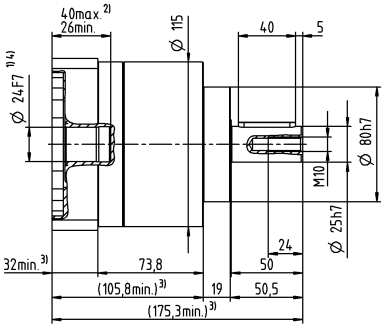
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

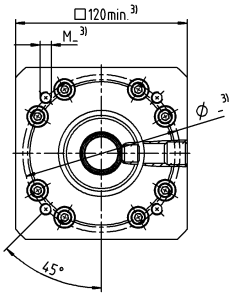
1-stage

Motor shaft diameter [mm]

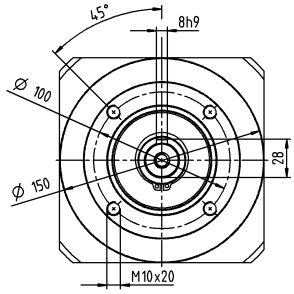
up to 24 [4] (G) [5] clamping hub diameter

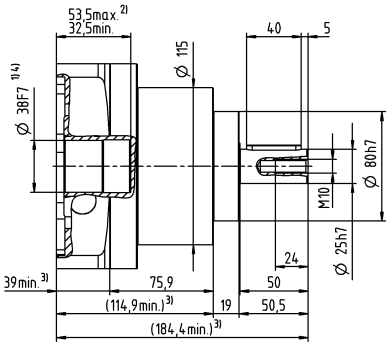


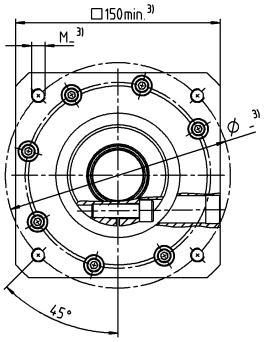




up to 38 [4] (K) clamping hub diameter

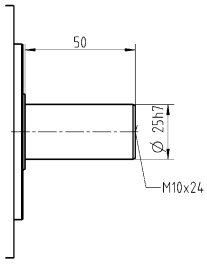




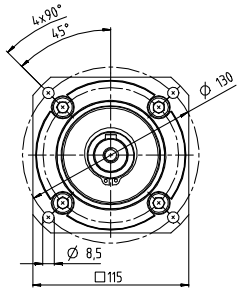


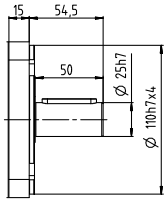
Other output variants

Smooth shaft



Replaceable B5 output flange





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[5] Standard clamping hub diameter

				2-stage													
Ratio	**i**			**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		272	272	272	272	272	272	272	272	272	272	272	272	272
		in.lb		2407	2407	2407	2407	2407	2407	2407	2407	2407	2407	2407	2407	2407
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		175	175	175	255	255	250	255	175	250	255	250	250	220
		in.lb		1549	1549	1549	2257	2257	2213	2257	1549	2213	2257	2213	2213	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		480	480	480	480	480	480	480	315	480	480	480	480	480
		in.lb		4248	4248	4248	4248	4248	4248	4248	2788	4248	4248	4248	4248	4248
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2800	2800
Max. input speed	n_{1Max}	*rpm*		5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		1.3	1.1	0.98	0.95	0.85	0.8	0.76	0.79	0.7	0.66	0.61	0.56	0.52
		in.lb		12	9.7	8.7	8.4	7.5	7.1	6.7	7	6.2	5.8	5.4	5	4.6
Max. backlash	j_t	*arcmin*		≤ 15												
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		16	16	16	16	16	16	16	16	16	16	16	16	14
		in.lb/arcmin		142	142	142	142	142	142	142	142	142	142	142	142	124
Max. axial force [c)]	F_{2AMax}	*N*		2500												
		lb_f		563												
Max. lateral force [c)]	F_{2QMax}	*N*		1750												
		lb_f		394												
Max. tilting moment	M_{2KMax}	*Nm*		98												
		in.lb		867												
Efficiency at full load	η	*%*		95												
Service life	L_h	*h*		> 20000												
Weight (incl. standard adapter plate)	*m*	*kg*		9.6												
		lb_m		21												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	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												
Direction of rotation				In- and output same direction												
Protection class				IP 64												
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0150BA025.000-X												
Bore diameter of coupling on the application side		*mm*		X = 019.000 - 036.000												
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	G 24	J_1	*kgcm²*	2.7	2.5	2.5	2.3	2.3	2.1	2.4	3.1	2.2	2.6	2.2	1.9	1.7
			10^{-3} *in.lb.s²*	2.4	2.2	2.2	2	2	1.9	2.1	2.7	1.9	2.3	1.9	1.7	1.5
	K 38	J_1	*kgcm²*	7.9	7.7	7.8	7.5	7.5	7.3	7.5	8.3	7.4	7.8	7.4	7.1	6.9
			10^{-3} *in.lb.s²*	7	6.8	6.9	6.6	6.6	6.5	6.6	7.3	6.5	6.9	6.5	6.3	6.1

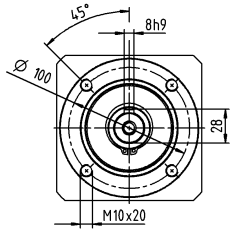
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**

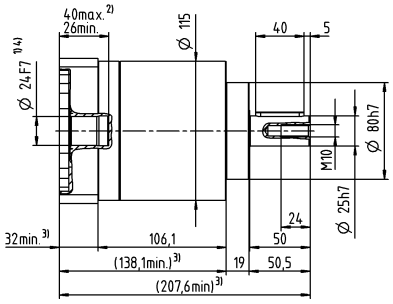
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

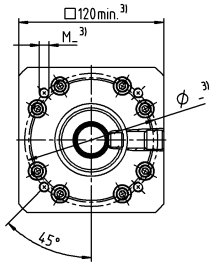
2-stage

Motor shaft diameter [mm]

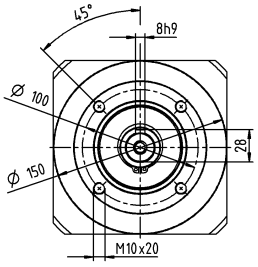
up to 24 [4] (G) [5] clamping hub diameter

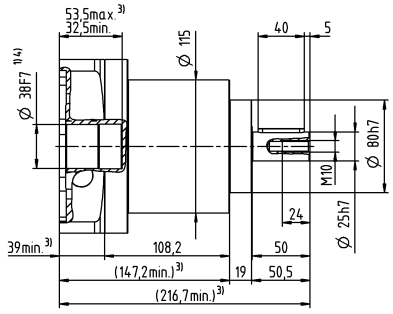


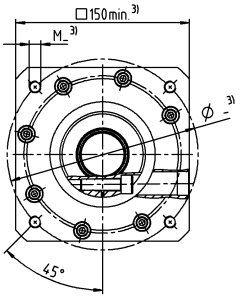




up to 38 [4] (K) clamping hub diameter

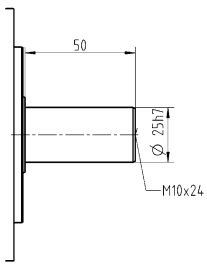




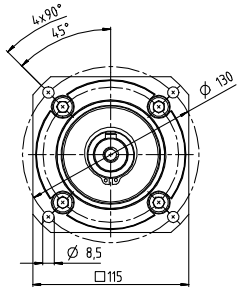


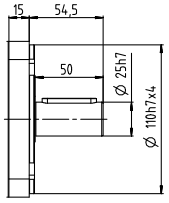
Other output variants

Smooth shaft



Replaceable B5 output flange





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