

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



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 and innovative online sizing within seconds in cymex® select based on technical and economic suitability.

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.



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 replaceable B5 output flange



CPS – planetary gearbox with long centering



CPS – planetary gearbox with elastomer coupling



Efficient gearbox sizing within seconds – online without login
cymex-select.wittenstein-group.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 ^{a)} (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_{2a} 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_{121}	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 ^{d)}	F_{2AMax}	N	240					
		lb _f	54					
Max. lateral force ^{e) 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	J_1	kgcm ²	0.04	0.04	0.04	0.03	0.03
			10 ⁻³ in.lb.s ²	0.04	0.04	0.04	0.03	0.03
Clamping hub diameter [mm]								

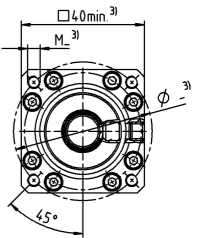
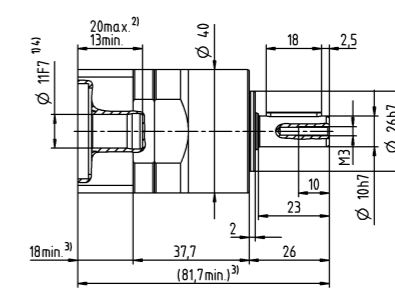
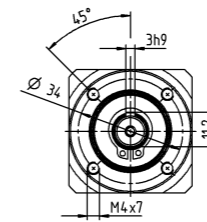
Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com

- ^{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]

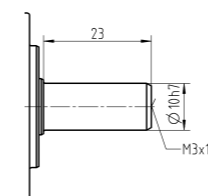
1-stage

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

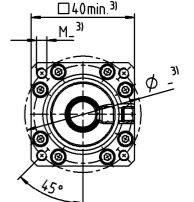
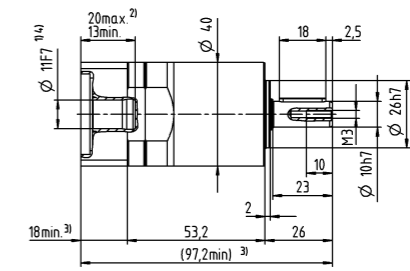
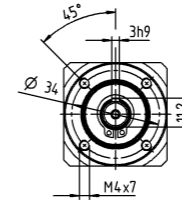
		2-stage									
Ratio	i		16	20	25	28	35	40	50	70	100
Max. torque ^{a) b) e)}	T_{2a}	Nm	17	17	21	17	21	17	21	21	20
		in.lb	150	150	186	150	186	150	186	186	186
Max. acceleration torque ^{a)} (max. 1000 cycles per hour)	T_{2B}	Nm	11	11	14	11	14	11	14	14	13
		in.lb	97	97	124	97	124	97	124	124	124
Emergency 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_{2a} 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_{221}	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) 1)}	F_{2QMMax}	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) Clamping hub diameter [mm]	B 11 J_1	kgcm ²	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03
		10 ⁻³ in.lb.s ²	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

- ^{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⁾ At increased lateral forces – see glossary

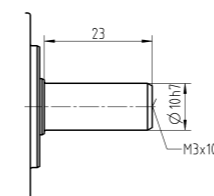
Motor shaft diameter [mm]

2-stage
up to 11 ^{4) (B) 5)}
clamping hub diameter



Other output variants

Smooth shaft



- 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 ^{a)} (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_1	arcmin	≤ 12							
Torsional rigidity ^{b)}	C_{121}	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) 1)}	F_{2OMax}	N	500							
		lb _f	113							
Max. tilting moment	M_{2KMMax}	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

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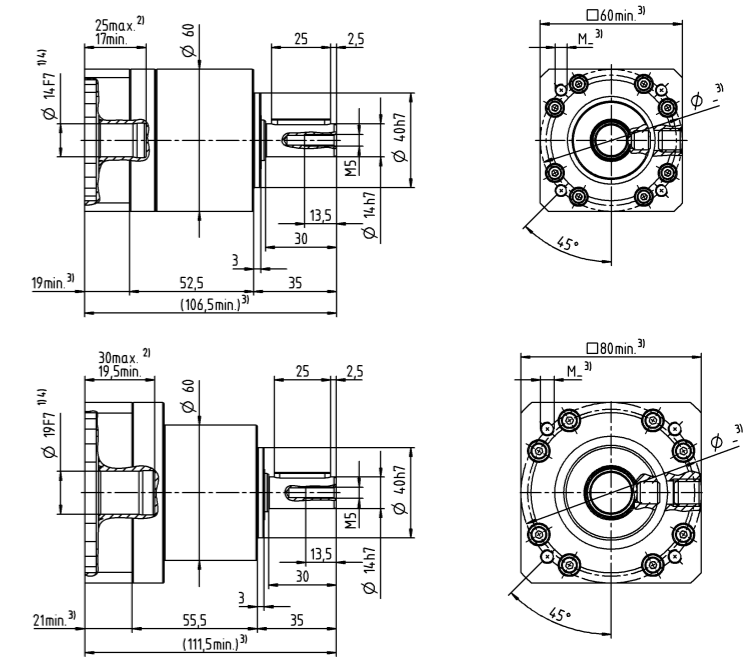
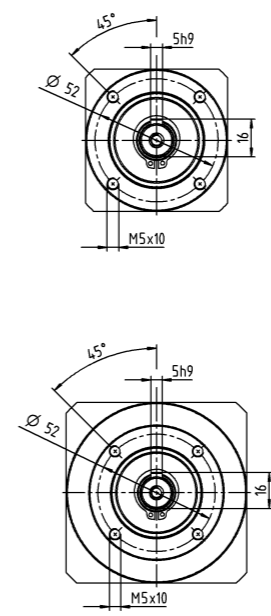
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft
- ¹⁾ At increased lateral forces – see glossary

1-stage

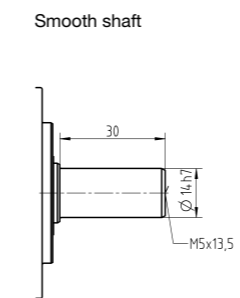
up to 14 ⁴⁾ (C) ⁵⁾ clamping hub diameter

Motor shaft diameter [mm]

up to 19 ⁴⁾ (E) clamping hub diameter



Other output variants



- 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 ^{a)} (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_{2a} 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	i_t	arcmin	≤ 15														
Torsional rigidity ^{b)}	C_{21}	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) 1)}	F_{2QMMax}	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	kgcm ²	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.s ²	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	kgcm ²	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.s ²	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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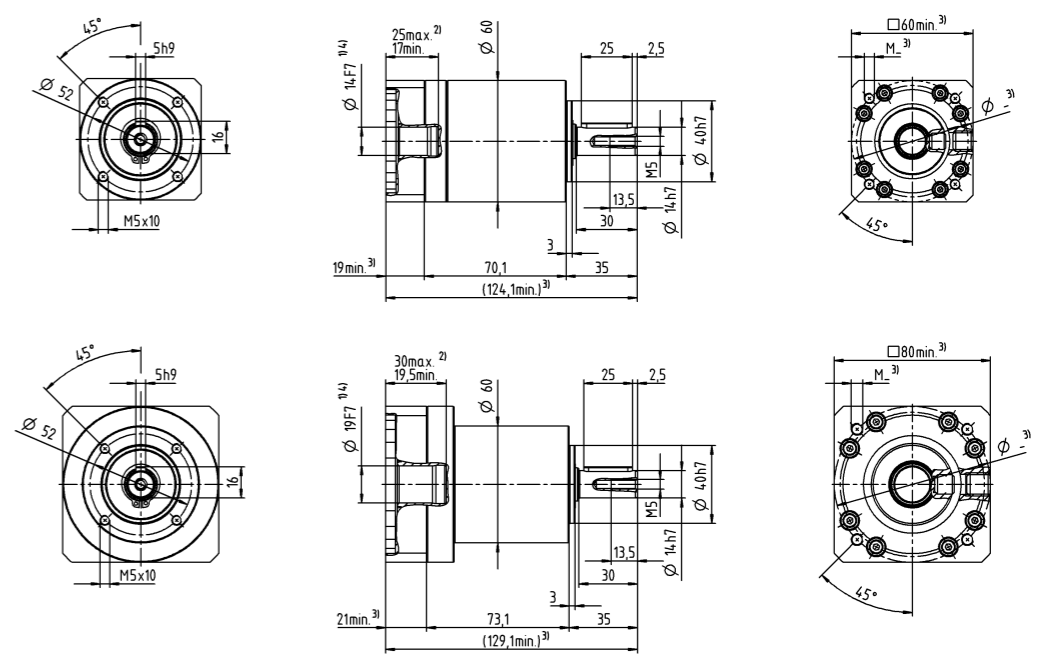
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft
- ¹⁾ At increased lateral forces – see glossary

2-stage

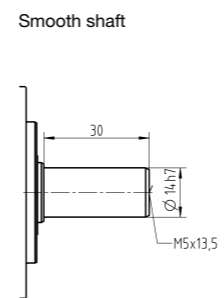
up to 14 ⁴⁾ (C) ⁵⁾ clamping hub diameter

Motor shaft diameter [mm]

up to 19 ⁴⁾ (E) clamping hub diameter



Other output variants



- 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 ^{a)} (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_1	arcmin	≤ 12							
Torsional rigidity ^{b)}	C_{121}	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_{2OMax}	N	1200							
		lb _f	270							
Max. tilting moment	M_{2KMMax}	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							
		°C	+90							
Max. permitted housing temperature		°F	+194							
		°C	-15 to +40							
Ambient temperature		°F	+5 to +104							
			Lubricated for life							
Direction of rotation			In- and output same direction							
Protection class			IP 64							
Elastomer coupling (recommended product type – validate sizing with cymex®) Bore diameter of coupling on the application side			ELC-0060BA020.000-X							
		mm	X = 012.000 - 032.000							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	kgcm ²	0.66	0.53	0.48	0.43	0.41	0.4
				10 ⁻³ in.lb.s ²	0.58	0.47	0.42	0.38	0.36	0.35
	G	24	J_1	kgcm ²	1.5	1.4	1.3	1.3	1.3	1.3
				10 ⁻³ in.lb.s ²	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

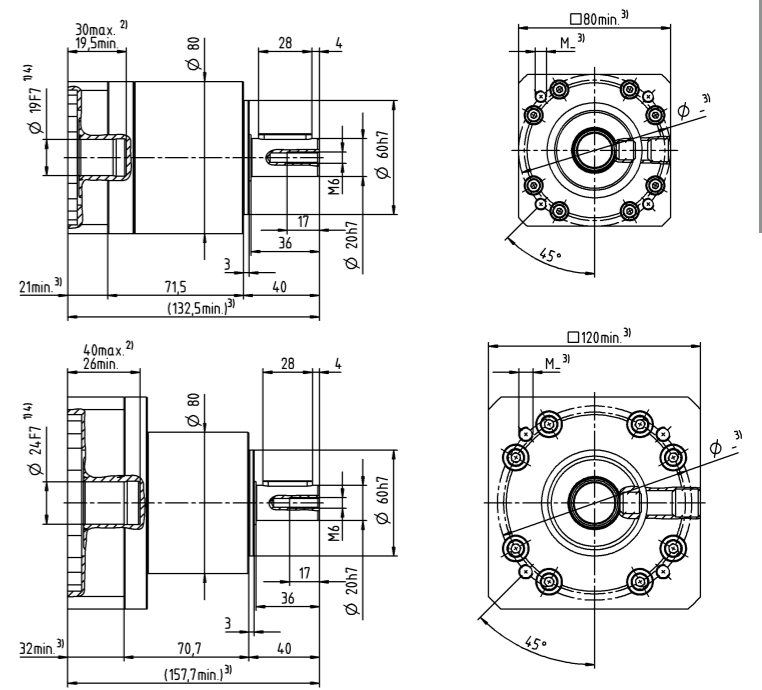
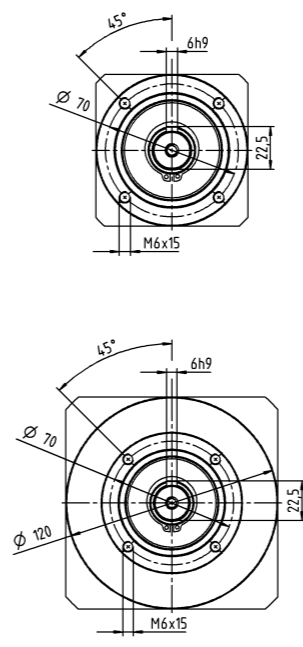
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

1-stage

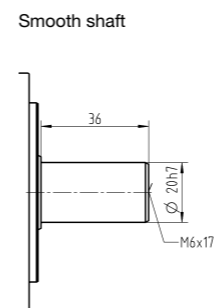
up to 19 ⁴⁾ (E) ⁵⁾ clamping hub diameter

Motor shaft diameter [mm]

up to 24 ⁴⁾ (G) clamping hub diameter



Other output variants



- 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

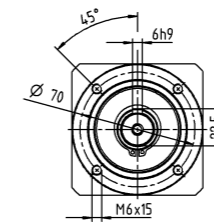
		2-stage															
Ratio	i		9	12	15	16	20	25	28	30	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	112	112	112	150	150	150	150	112	150	150	150	150	144		
		in.lb	991	991	991	1328	1328	1328	1328	991	1328	1328	1328	1328	1328	1275	
Max. acceleration torque ^{a)} (max. 1000 cycles per hour)	T_{2B}	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	i_t	arcmin	≤ 15														
Torsional rigidity ^{b)}	C_{21}	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_{2OMax}	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	kgcm ²	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.s ²	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	kgcm ²	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.s ²	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

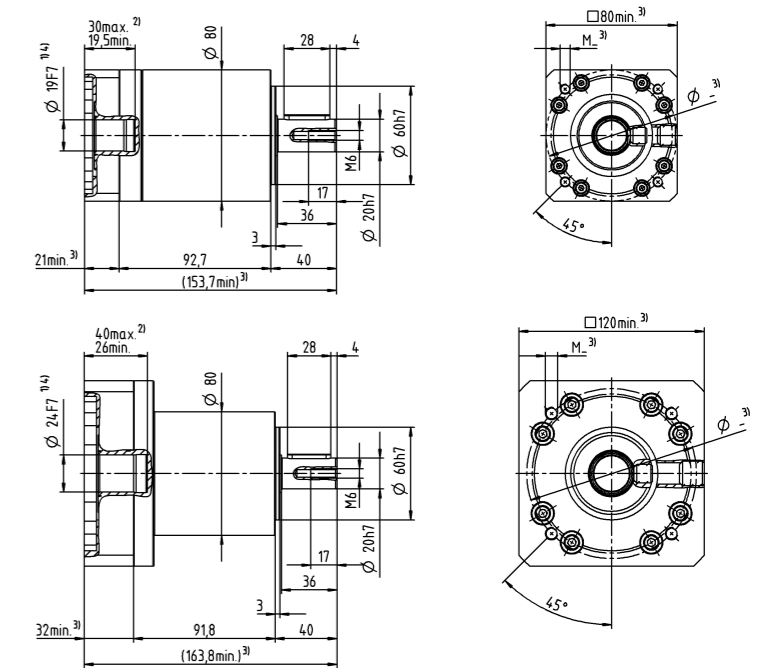
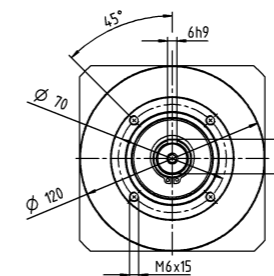
2-stage

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



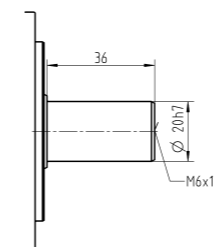
Motor shaft diameter [mm]

up to 24 ⁴⁾ (G)
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	272	272	272	272	272	272		
		in.lb	2407	2407	2407	2407	2407	2407		
Max. acceleration torque ^{a)} (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_{2a} 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_1	arcmin	≤ 12							
Torsional rigidity ^{b)}	C_{121}	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_{2OMax}	N	1750							
		lb _f	394							
Max. tilting moment	M_{2KMMax}	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	kgcm ²	2.6	1.9	1.7	1.5	1.4	1.4
				10 ⁻³ in.lb.s ²	2.3	1.7	1.5	1.3	1.2	1.2
	K	38	J_1	kgcm ²	7.8	7.1	6.9	6.7	6.6	6.5
				10 ⁻³ in.lb.s ²	6.9	6.3	6.1	5.9	5.8	5.8

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

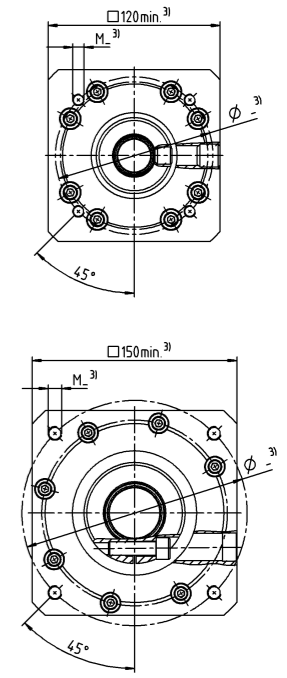
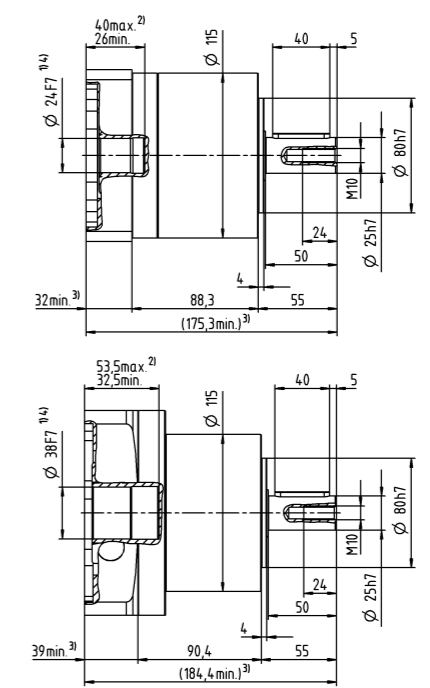
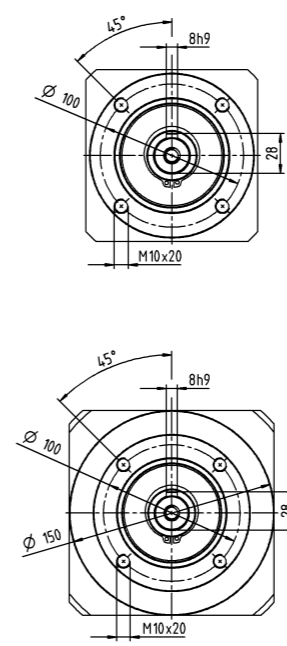
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

1-stage

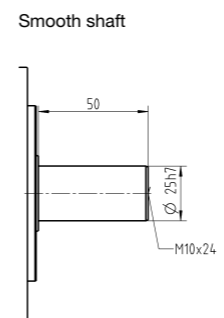
up to 24 ⁴⁾ (G) ⁵⁾ clamping hub diameter

Motor shaft diameter [mm]

up to 38 ⁴⁾ (K) clamping hub diameter



Other output variants



- 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	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	2407	
Max. acceleration torque ^{a)} (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_{2a} 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	i_t	arcmin	≤ 15														
Torsional rigidity ^{b)}	C_{21}	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_{2OMax}	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	kgcm ²	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.s ²	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	kgcm ²	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.s ²	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

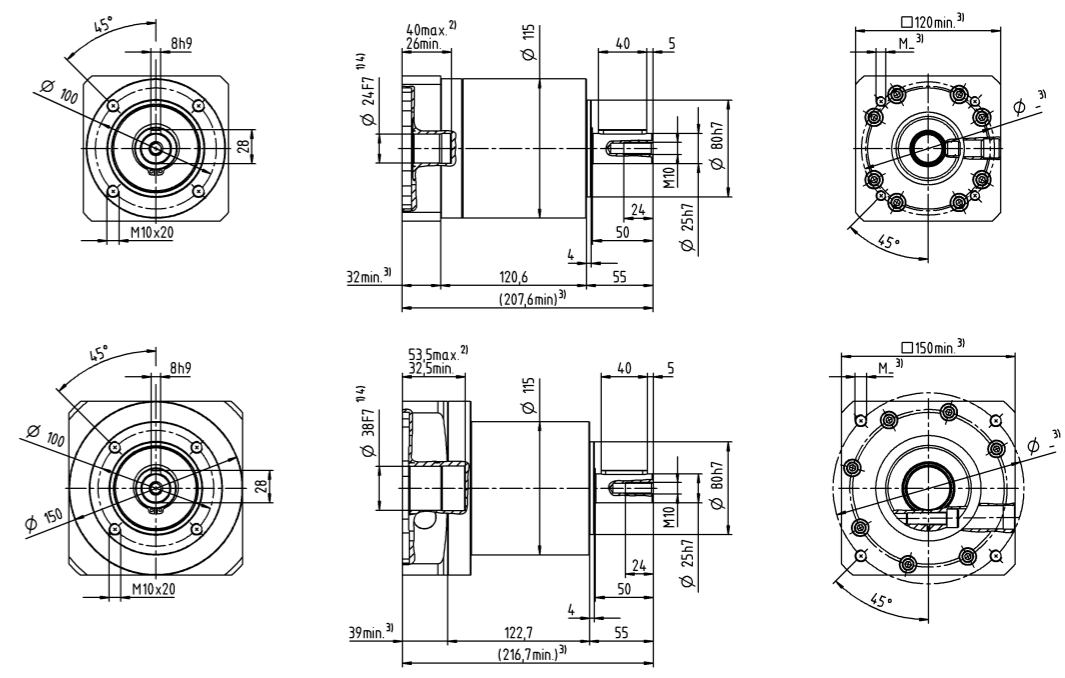
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

2-stage

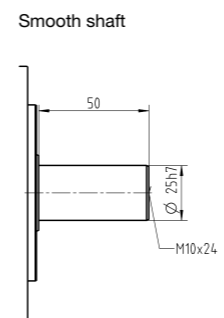
up to 24 ⁴⁾ (G) ⁵⁾ clamping hub diameter

Motor shaft diameter [mm]

up to 38 ⁴⁾ (K) clamping hub diameter



Other output variants



- 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

Ratio	i		1-stage			2-stage				
			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 ^{a)} (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_{2av} 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	6000			6000				
Max. lateral force ^{c)}	F_{2OMax}	N	8000			8000				
		lb _f	8000			8000				
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				
		kg	20			21				
Weight (incl. standard adapter plate)	m	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	kgcm ²	-	-	-	1.2	1.1	0.82
				10 ⁻³ in.lb.s ²	-	-	-	1,1	0,97	0,73
	G	24	J_1	kgcm ²	-	-	-	2	1,8	1,6
				10 ⁻³ in.lb.s ²	-	-	-	1,8	1,6	1,4
	H	28	J_1	kgcm ²	-	-	-	1,7	1,5	1,3
				10 ⁻³ in.lb.s ²	-	-	-	1,5	1,3	1,2
	I	32	J_1	kgcm ²	-	-	-	5,8	5,6	5,4
				10 ⁻³ in.lb.s ²	-	-	-	5,1	5	4,8
	K	38	J_1	kgcm ²	8.8	7.4	7.2	7	6,8	6,5
				10 ⁻³ in.lb.s ²	7.8	6.5	6.4	6,2	6	5,8

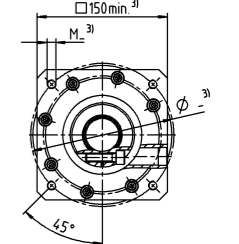
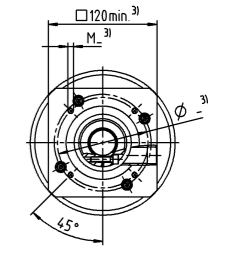
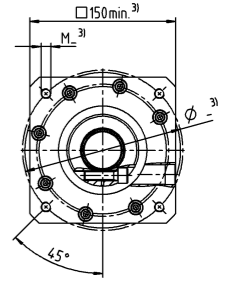
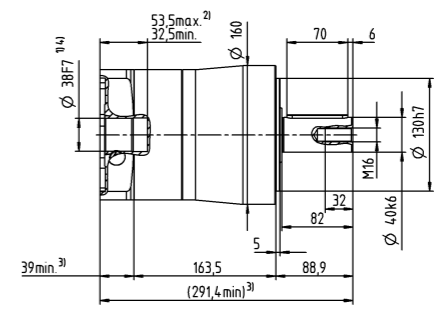
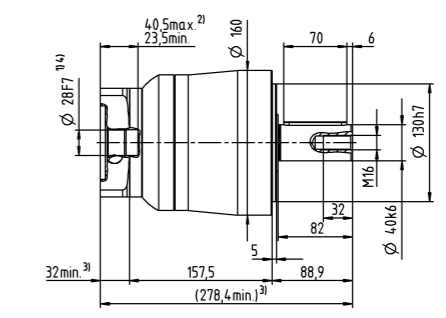
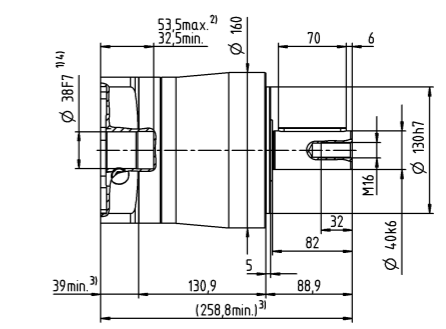
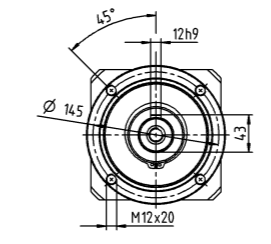
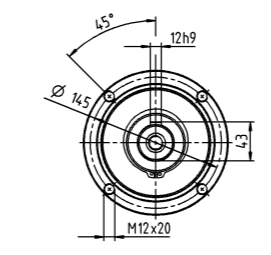
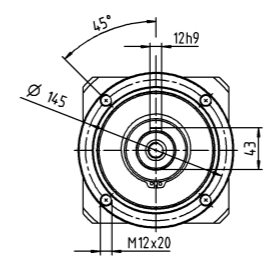
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com

- ^{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

1-stage
up to 38 ⁴⁾ (K) ⁵⁾
clamping hub diameter

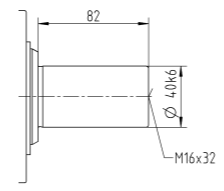
2-stage
up to 19/24/28 ⁴⁾
(E/G ⁵⁾/H)
clamping hub diameter

Motor shaft diameter [mm]
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 ^{a)} (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_{2a} 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_1	arcmin	≤ 12							
Torsional rigidity ^{b)}	C_{121}	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_{2OMax}	N	500							
		lb _f	113							
Max. tilting moment	M_{2KMMax}	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®) Bore diameter of coupling on the application side			ELC-0020BA014.000-X							
		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

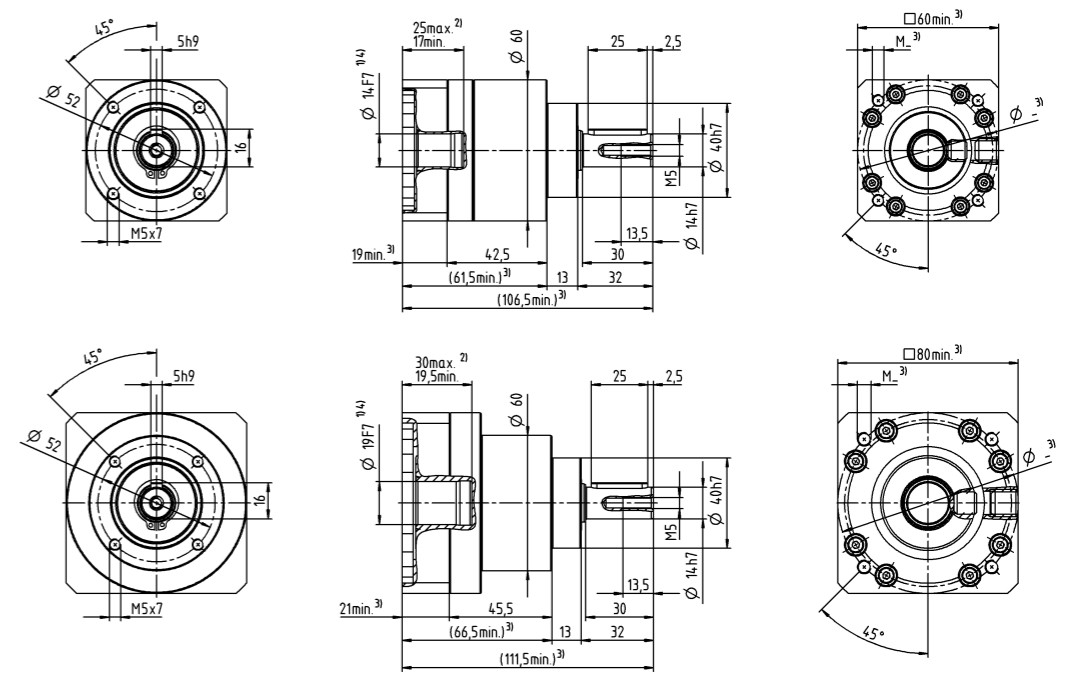
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

1-stage

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

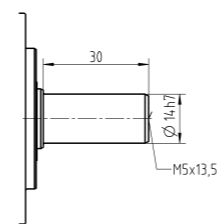
Motor shaft diameter [mm]

up to 19 ⁴⁾ (E) clamping hub diameter

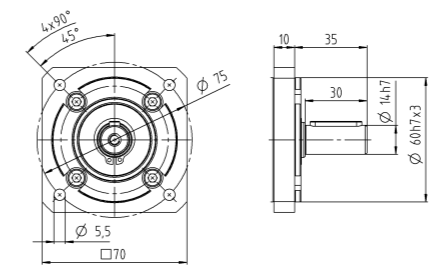


Other output variants

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 ^{a)} (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_{2a} 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	i_t	arcmin	≤ 15														
Torsional rigidity ^{b)}	C_{21}	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_{2QMMax}	N	500														
		lb _f	113														
Max. tilting moment	M_{2KMMax}	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	kgcm ²	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.s ²	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	kgcm ²	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.s ²	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

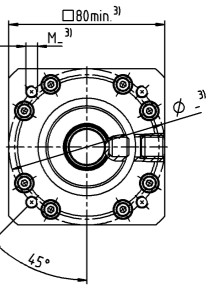
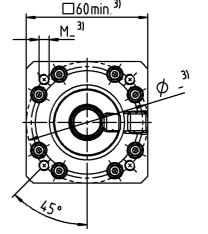
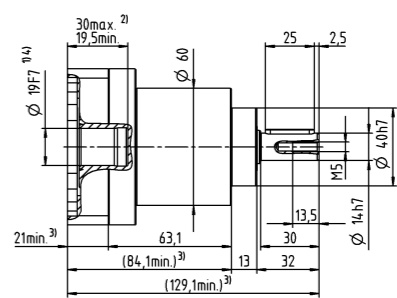
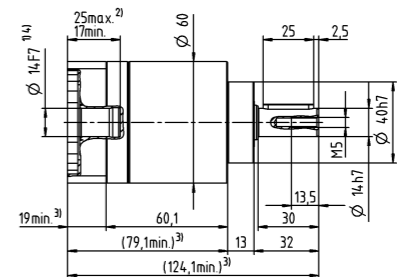
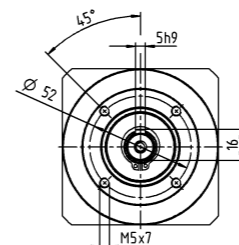
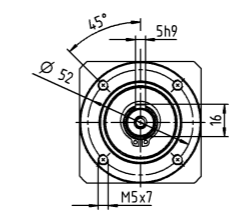
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

2-stage

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

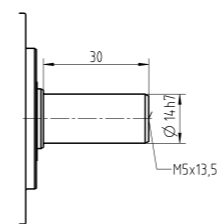
Motor shaft diameter [mm]

up to 19 ⁴⁾ (E) clamping hub diameter

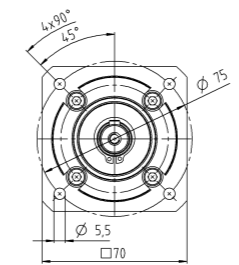


Other output variants

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 ^{a)} (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_{2a} 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_1	arcmin	≤ 12						
Torsional rigidity ^{b)}	C_{121}	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_{2OMax}	N	1200						
		lb _f	270						
Max. tilting moment	M_{2KMMax}	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	kgcm ²	0.66	0.53	0.48	0.43	0.41	0.4
			10 ⁻³ in.lb.s ²	0.58	0.47	0.42	0.38	0.36	0.35
	G 24	J_1	kgcm ²	1.5	1.4	1.3	1.3	1.3	1.3
			10 ⁻³ in.lb.s ²	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

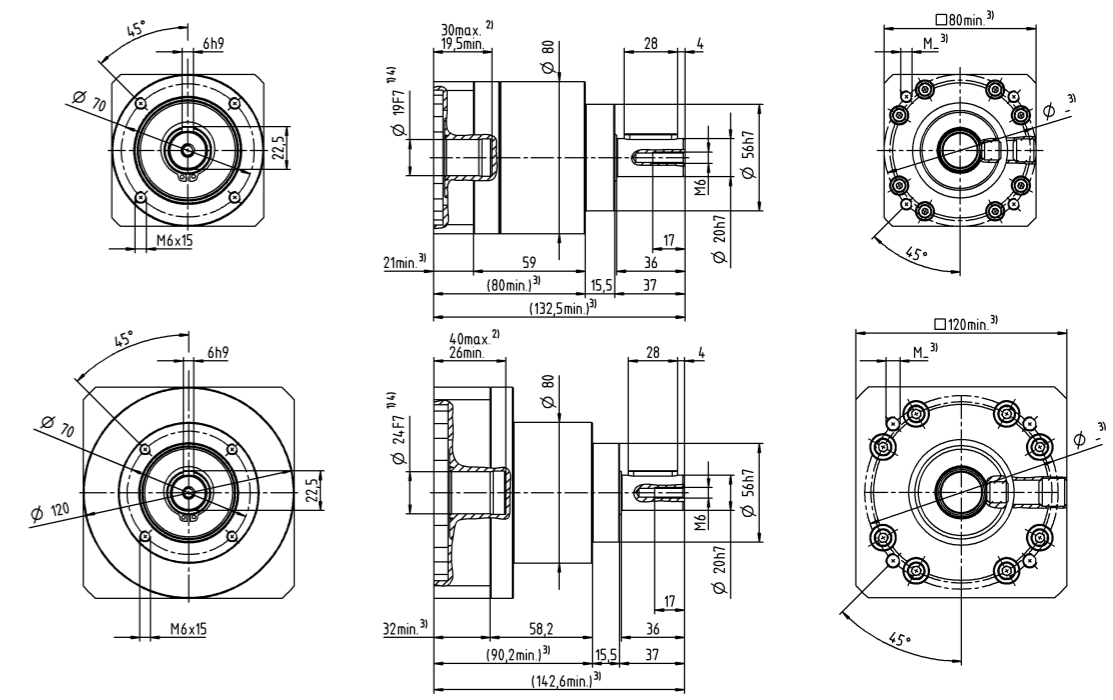
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

1-stage

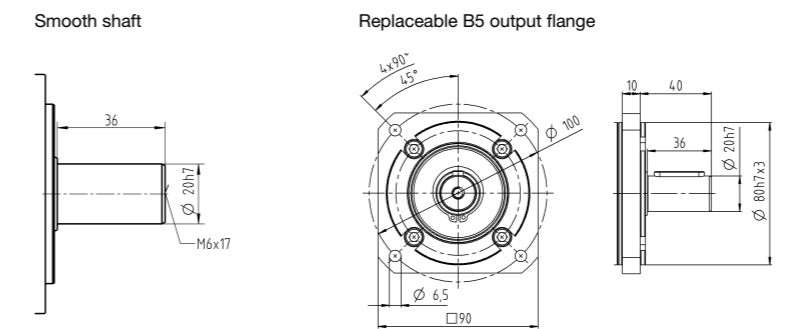
up to 19 ⁴⁾ (E) ⁵⁾ clamping hub diameter

Motor shaft diameter [mm]

up to 24 ⁴⁾ (G) clamping hub diameter



Other output variants



- 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	1328	1275	
Max. acceleration torque ^{a)} (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	1655	
Permitted average input speed ^{d)} (at T_{2a} 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	i_t	arcmin	≤ 15														
Torsional rigidity ^{b)}	C_{21}	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_{2QMMax}	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	kgcm ²	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.s ²	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	kgcm ²	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.s ²	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

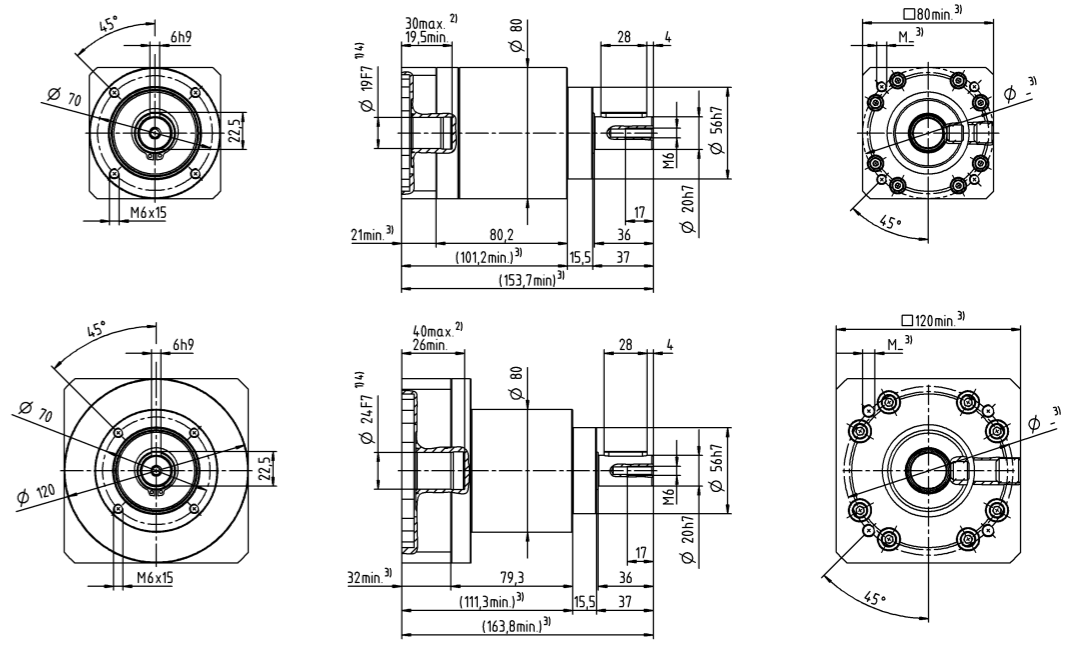
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

2-stage

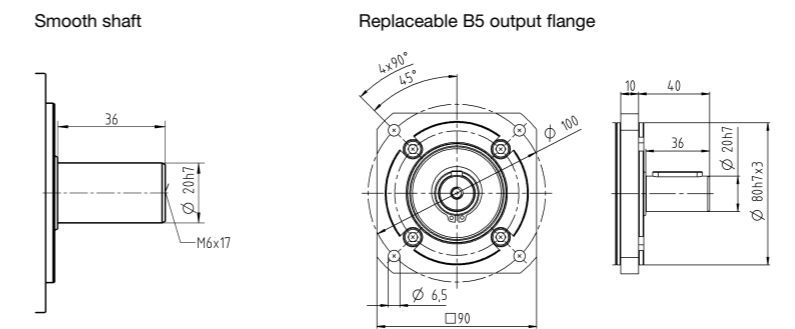
up to 19 ⁴⁾ (E) ⁵⁾ clamping hub diameter

Motor shaft diameter [mm]

up to 24 ⁴⁾ (G) clamping hub diameter



Other output variants



- 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	272	272	272	272	272	272		
		in.lb	2407	2407	2407	2407	2407	2407		
Max. acceleration torque ^{a)} (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_{2a} 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_1	arcmin	≤ 12							
Torsional rigidity ^{b)}	C_{121}	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_{2OMax}	N	1750							
		lb _f	394							
Max. tilting moment	M_{2KMMax}	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							
		°C	+90							
Max. permitted housing temperature		°F	+194							
		°C	-15 to +40							
Ambient temperature		°F	+5 to +104							
			Lubricated for life							
Direction of rotation			In- and output same direction							
Protection class			IP 64							
Elastomer coupling (recommended product type – validate sizing with cymex®) Bore diameter of coupling on the application side			ELC-0150BA025.000-X							
			X = 019.000 - 036.000							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	G	24	J_1	kgcm ²	2.6	1.9	1.7	1.5	1.4	1.4
				10 ⁻³ in.lb.s ²	2.3	1.7	1.5	1.3	1.2	1.2
	K	38	J_1	kgcm ²	7.8	7.1	6.9	6.7	6.6	6.5
				10 ⁻³ in.lb.s ²	6.9	6.3	6.1	5.9	5.8	5.8

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

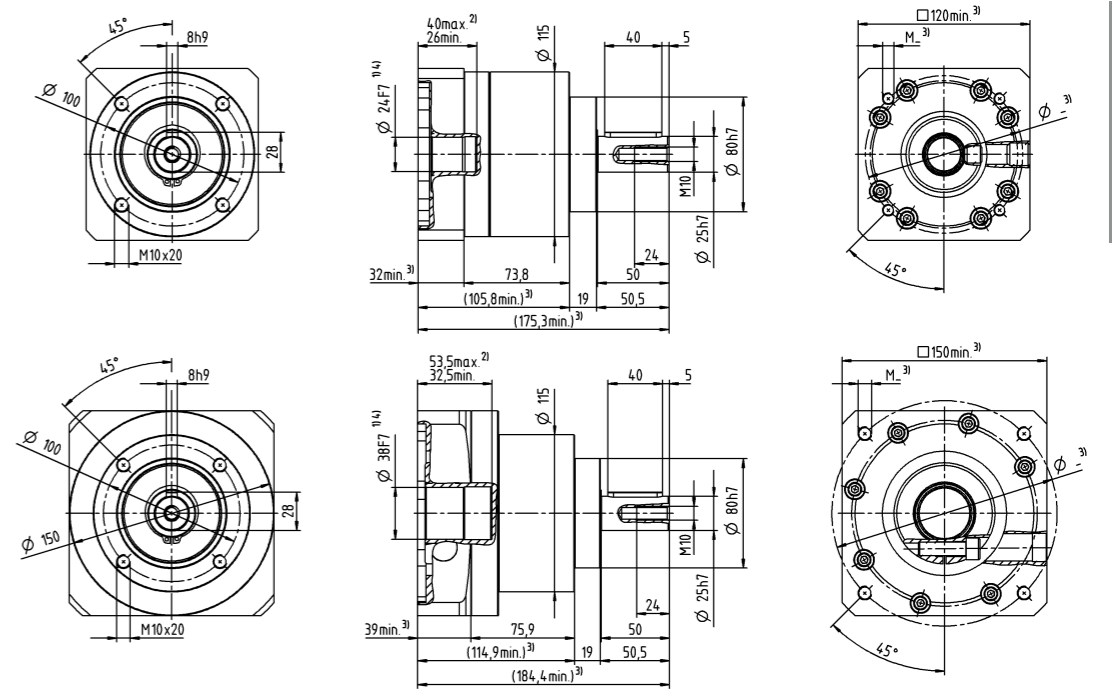
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

1-stage

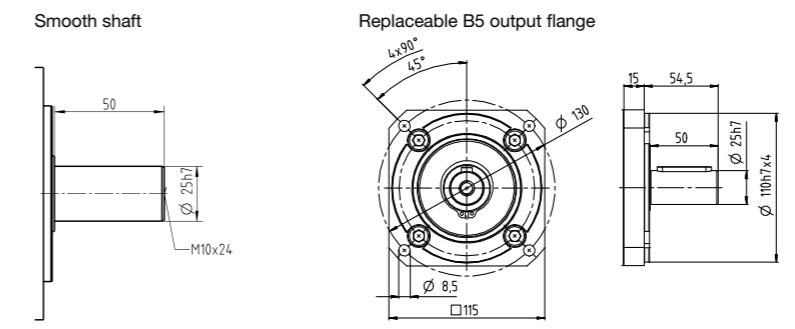
up to 24 ⁴⁾ (G) ⁵⁾
clamping hub diameter

Motor shaft diameter [mm]

up to 38 ⁴⁾ (K)
clamping hub diameter



Other output variants



- 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	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	2407	
Max. acceleration torque ^{a)} (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_{2a} 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	i_t	arcmin	≤ 15														
Torsional rigidity ^{b)}	C_{21}	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_{2OMax}	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	kgcm ²	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.s ²	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	kgcm ²	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.s ²	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

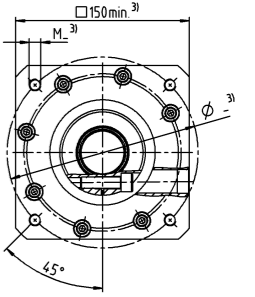
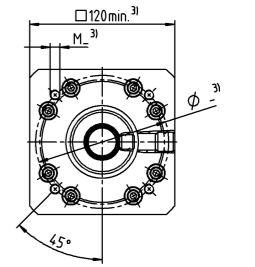
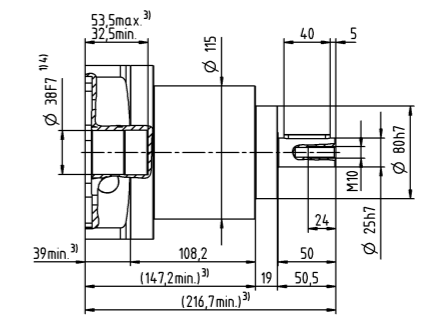
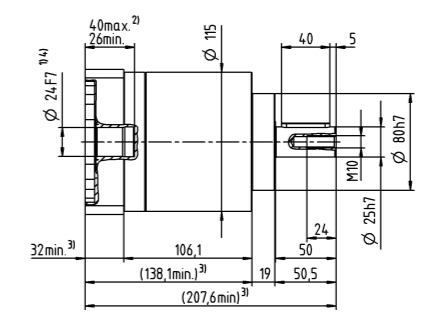
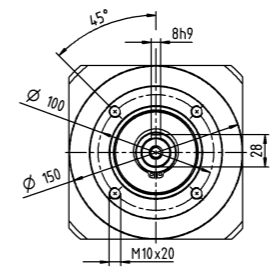
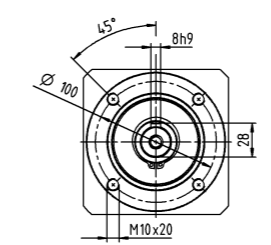
- ^{a)} Valid for torque transmission only
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Valid for: Smooth shaft

2-stage

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

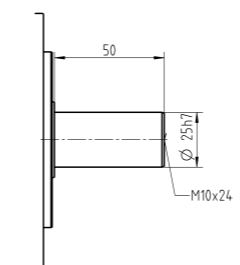
Motor shaft diameter [mm]

up to 38 ⁴⁾ (K)
clamping hub diameter

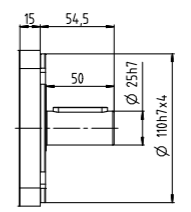
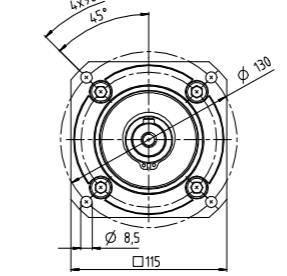


Other output variants

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