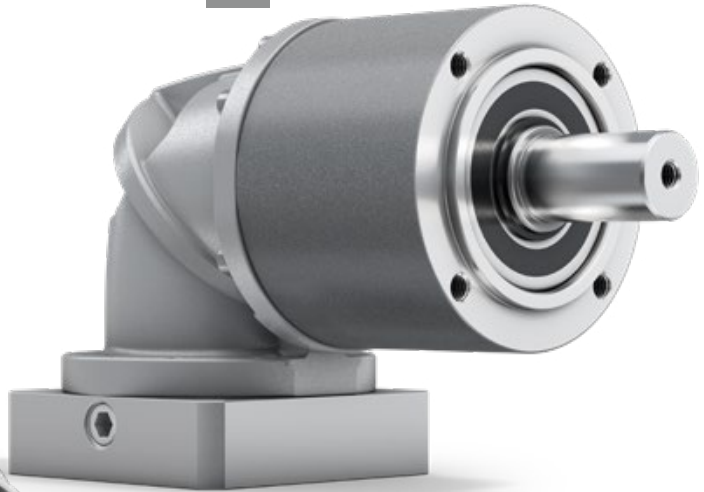


alpha Basic Line

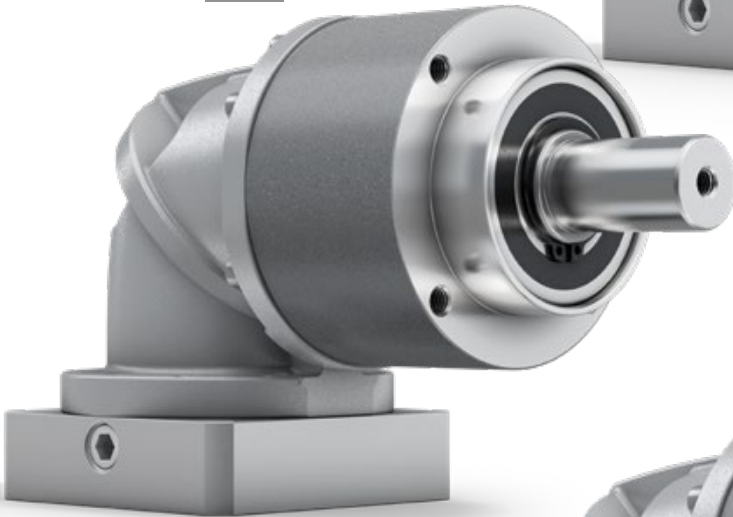
BEVEL GEARBOXES CPK / CPSK

The bevel gearboxes of the alpha Basic Line achieve a high power density thanks to the specially designed toothing. Thus they can optimally combine the benefits of a planetary gearbox and an angle section. The extremely compact design also enables use in confined installation situations.

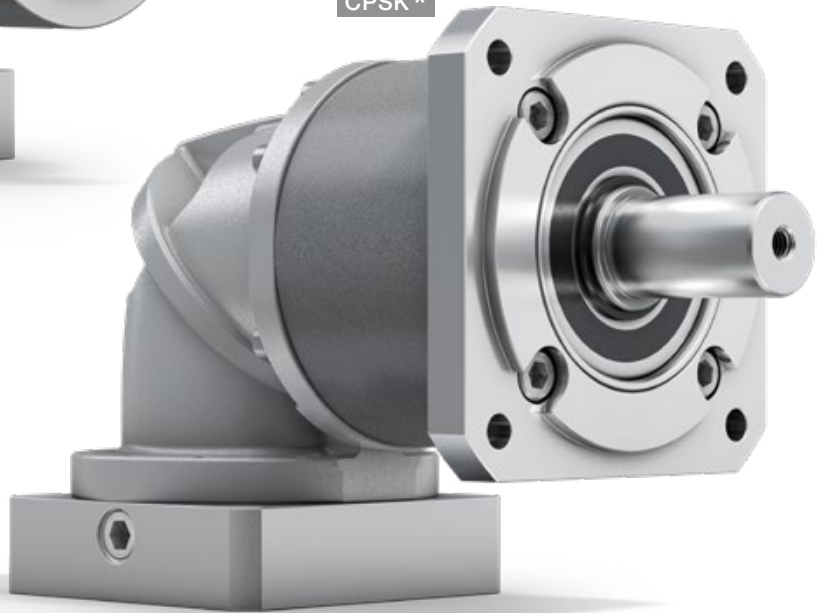
CPK



CPSK



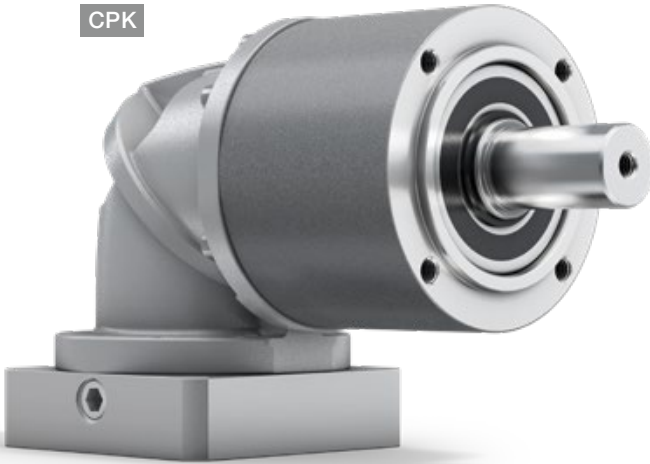
CPSK*



* CPSK with replaceable B5 output flange

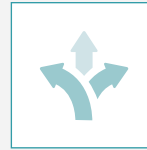
CPK / CPSK – Geared up to Fit

CPK



Economically around the corner. The right-angle gearboxes of the alpha Basic Line are specially designed for applications with medium requirements for positioning accuracy. The extremely compact bevel gear stage enables use in applications with space constraints.

PRODUCT HIGHLIGHTS



High flexibility

Various output variants offer design freedom tailored to individual requirements.



Maximum economy

The alpha Basic Line is extremely economical to purchase and highly efficient in operation.



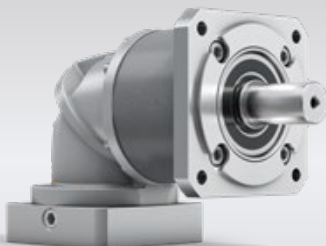
High power density

The gearboxes offer high power density in the smallest installation space.

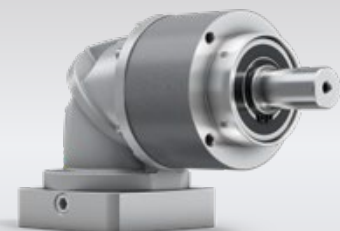


Quick sizing

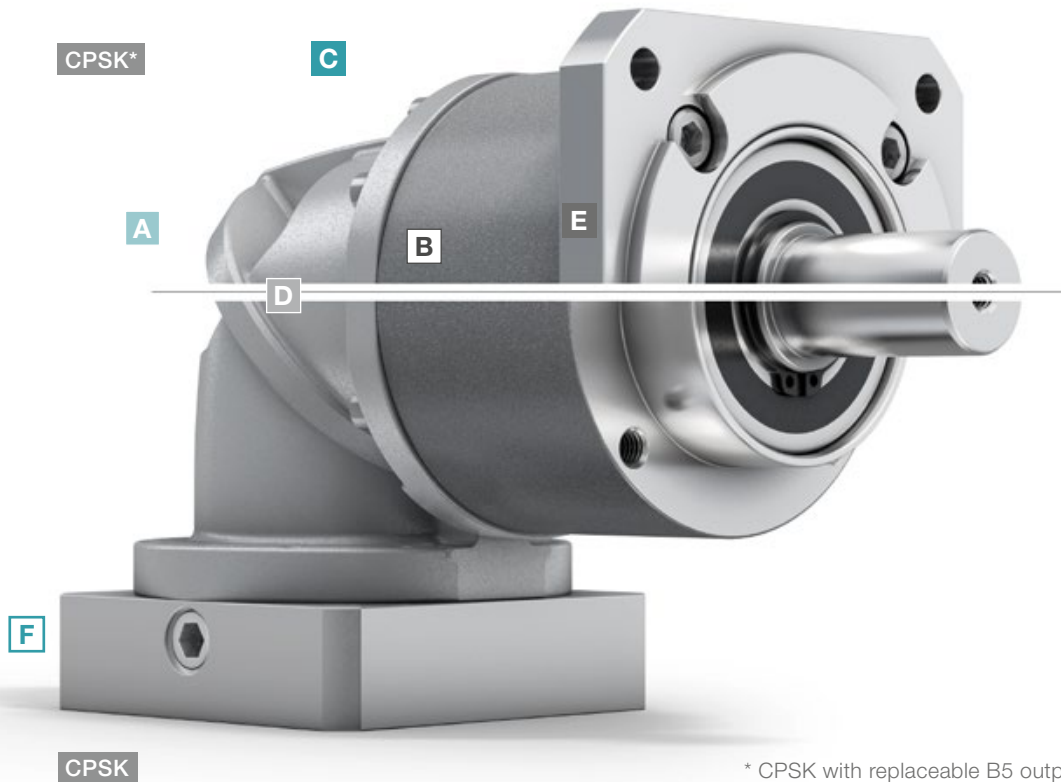
Efficient online sizing within seconds in the SIZING ASSISTANT on the basis of the application data or the motor.



CPSK – bevel gearbox with replaceable B5 output flange



CPSK – bevel gearbox with long centering



* CPSK with replaceable B5 output flange

A Variety of sizes

- CPK available in five different sizes (005 – 045)
- CPSK available in three different sizes (015 – 035)

B High ratio variation

- Large number of ratios ($i=3$ to $i=100$)
- Available in the common binary ratios

C Design

- The elegant design underlines the dynamics of the gearbox and sets new standards on the market

D Compactness

- The extremely compact design of the angle section enables use in very confined installation spaces

E Variable application connection

- Shortened installation space and maximum compactness thanks to a long centering
- Flange attachment for B5 mounting

F Flexible motor connection

- As with the planetary gearboxes of the alpha Basic Line, mounting of all common servo motors takes place by means of a flexible and screw-fastened adapter plate
- Large number of motor shaft diameters connectable



CPK – bevel gearbox with elastomer coupling



SIZING ASSISTANT
YOUR GEARBOX WITHIN SECONDS

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

			2-stage					
Ratio	i		4	5	7	8	10	
Max. torque ^{a) b) e)}	T_{2a}	Nm	14	17	21	20	20	
		in.lb	124	150	186	177	177	
Max. acceleration torque ^{e)} (max. 1000 cycles per hour)	T_{2B}	Nm	6.8	8.5	12	13	13	
		in.lb	60	75	106	115	115	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	17	21	26	26	26	
		in.lb	150	186	230	230	230	
Permitted average input speed ^{d)} (at T_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	3800	3800	3800	3800	3800	
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.25	0.25	0.25	0.25	0.25	
		in.lb	2.2	2.2	2.2	2.2	2.2	
Max. backlash	j_t	arcmin	≤ 17					
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	0.5	0.5	0.5	0.5	0.5	
		in.lb/arcmin	4.4	4.4	4.4	4.4	4.4	
Max. axial force ^{c)}	F_{2AMax}	N	240					
		lb _f	54					
Max. lateral force ^{c) d)}	F_{2OMax}	N	170					
		lb _f	38					
Max. tilting moment	M_{2KMMax}	Nm	4					
		in.lb	35					
Efficiency at full load	η	%	95					
Service life	L_h	h	> 20000					
Weight (incl. standard adapter plate)	m	kg	0.86					
		lb _m	1.9					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 68					
Max. permitted housing temperature		°C	+90					
		°F	+194					
Ambient temperature		°C	0 to +40					
		°F	+32 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	0.13	0.13	0.13	0.13	0.13
			10 ⁻³ in.lb.s ²	0.12	0.12	0.12	0.12	0.12

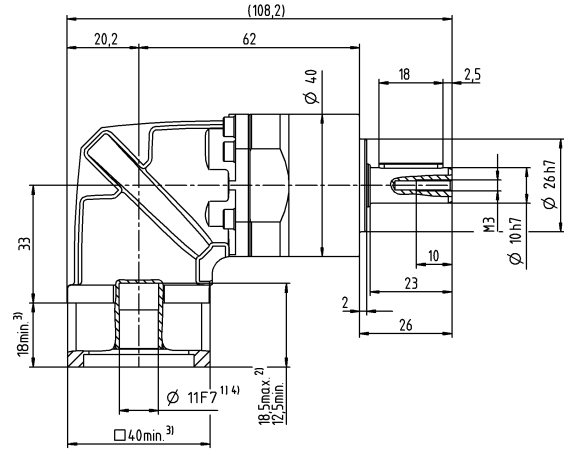
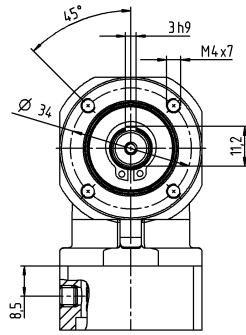
Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{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]

2-stage

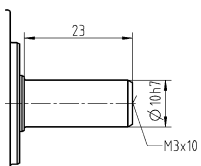
up to 11⁴⁾ (B)⁵⁾
clamping hub
diameter



Bevel Gearboxes
Basic Line

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

			3-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 ^{b)} (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_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	3800	3800	3800	3800	3800	3800	3800	3800	3800
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
		in.lb	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Max. backlash	j_t	arcmin	≤ 20								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
		in.lb/arcmin	5	5	5	5	5	5	5	5	5
Max. axial force ^{c)}	F_{2AMax}	N	240								
		lb _f	54								
Max. lateral force ^{c) d)}	F_{2OMax}	N	170								
		lb _f	38								
Max. tilting moment	M_{2KMMax}	Nm	4								
		in.lb	35								
Efficiency at full load	η	%	94								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	0.92								
		lb _m	2.0								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		°F	+194								
Ambient temperature		°C	0 to +40								
		°F	+32 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	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
			10 ⁻³ in.lb.s ²	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12

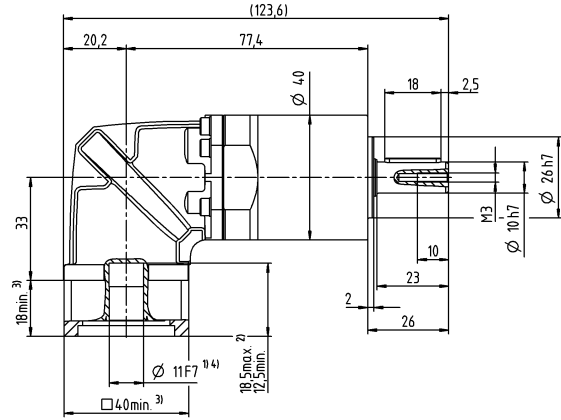
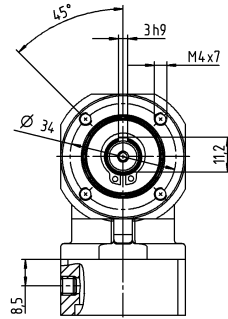
Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{a)} Valid for torque transmission only
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- ^{c)} Refers to center of the output shaft or flange
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- ^{e)} Valid for: Smooth shaft
- ^{f)} At increased lateral forces – see glossary

Motor shaft diameter [mm]

3-stage

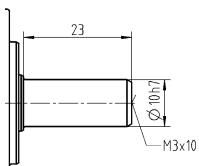
up to 11⁴⁾ (B)⁵⁾
clamping hub diameter



Bevel Gearboxes
Basic Line

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		3	4	5	7	8	10	
Max. torque ^{a) b) e)}	T_{2a}	Nm	33	44	55	58	56	56	
		in.lb	292	389	487	513	496	496	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	16	21	27	37	35	35	
		in.lb	142	186	239	327	310	310	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	41	55	69	75	75	75	
		in.lb	363	487	611	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	
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.55	0.55	0.55	0.55	0.55	0.55	
		in.lb	4.9	4.9	4.9	4.9	4.9	4.9	
Max. backlash	j_t	arcmin	≤ 17						
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	1.7	1.7	1.7	1.7	1.7	1.7	
		in.lb/arcmin	15	15	15	15	15	15	
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	%	95						
Service life	L_n	h	> 20000						
Weight (incl. standard adapter plate)	m	kg	1.6						
		lb _m	3.5						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 70						
Max. permitted housing temperature		°C	+90						
		°F	+194						
Ambient temperature		°C	0 to +40						
		°F	+32 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	0.3	0.3	0.3	0.3	0.3	0.3
			10 ⁻³ in.lb.s ²	0.27	0.27	0.27	0.27	0.27	0.27

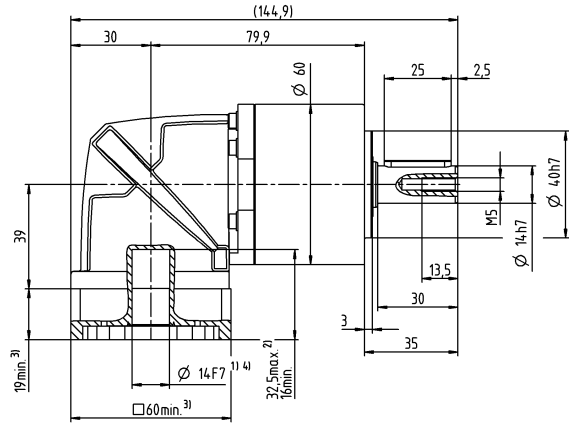
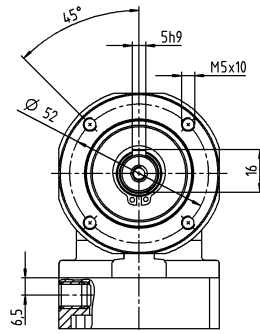
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- ¹⁾ At increased lateral forces – see glossary

Motor shaft diameter [mm]

2-stage

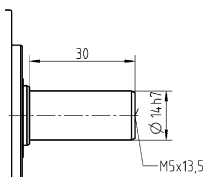
up to 14⁴⁾ (C)⁵⁾
clamping hub
diameter



Bevel Gearboxes
Basic Line

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

			3-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	3300	3300
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
		in.lb	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Max. backlash	j_t	arcmin	≤ 17												
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	2.1
		in.lb/arcmin	19	19	19	19	19	19	19	19	19	19	19	19	19
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	%	94												
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)	≤ 70												
Max. permitted housing temperature		°C	+90												
		°F	+194												
Ambient temperature		°C	0 to +40												
		°F	+32 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	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
				10 ⁻³ in.lb.s ²	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27

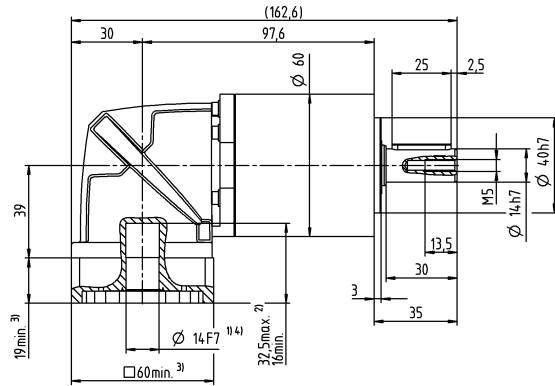
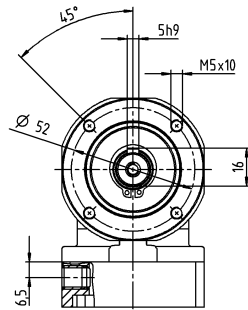
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- ^{e)} Valid for: Smooth shaft
- ¹⁾ At increased lateral forces – see glossary

Motor shaft diameter [mm]

3-stage

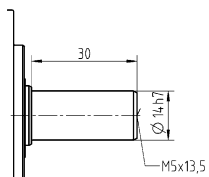
up to 14⁴⁾ (C)⁵⁾
clamping hub
diameter



Bevel Gearboxes
Basic Line

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		3	4	5	7	8	10	
Max. torque ^{a) b) e)}	T_{2a}	Nm	60	80	100	140	144	144	
		in.lb	531	708	885	1239	1275	1275	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	35	47	58	82	90	90	
		in.lb	310	416	513	726	797	797	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	90	120	150	187	187	187	
		in.lb	797	1062	1328	1655	1655	1655	
Permitted average input speed ^{d)} (at T_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	3000	3000	3000	3000	3000	3000	
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.98	0.98	0.98	0.98	0.98	0.98	
		in.lb	8.7	8.7	8.7	8.7	8.7	8.7	
Max. backlash	j_t	arcmin	≤ 17						
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	4.5	4.5	4.5	4.5	4.5	4.5	
		in.lb/arcmin	40	40	40	40	40	40	
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	%	95						
Service life	L_n	h	> 20000						
Weight (incl. standard adapter plate)	m	kg	4.2						
		lb _m	9.3						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 73						
Max. permitted housing temperature		°C	+90						
		°F	+194						
Ambient temperature		°C	0 to +40						
		°F	+32 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	0.86	0.86	0.86	0.86	0.86	0.86
			10 ⁻³ in.lb.s ²	0.76	0.76	0.76	0.76	0.76	0.76

Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

^{a)} Valid for torque transmission only

^{b)} Valid for standard clamping hub diameter

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

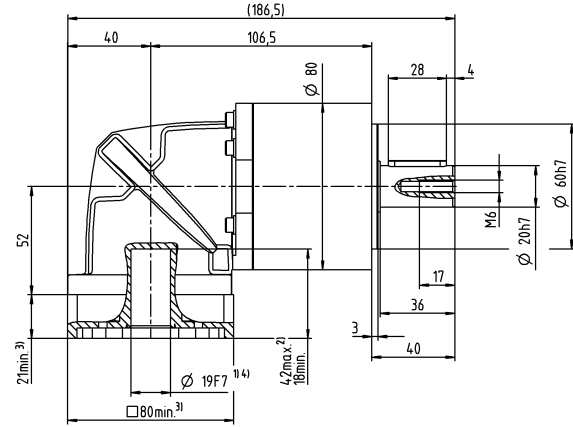
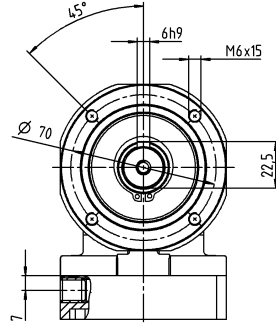
^{d)} Please reduce input speed at higher ambient temperatures

^{e)} Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

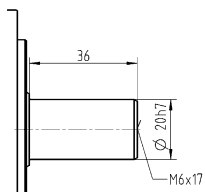
up to 19⁴⁾ (E)⁵⁾
clamping hub
diameter



Bevel Gearboxes
Basic Line

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

			3-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
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_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
		in.lb	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
Max. backlash	j_t	arcmin	≤ 18												
Torsional rigidity ^{b)}	C_{121}	Nm/arcmin	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
		in.lb/arcmin	52	52	52	52	52	52	52	52	52	52	52	52	52
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	%	94												
Service life	L_n	h	> 20000												
Weight (incl. standard adapter plate)	m	kg	4.5												
		lb _m	9.9												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 73												
Max. permitted housing temperature		°C	+90												
		°F	+194												
Ambient temperature		°C	0 to +40												
		°F	+32 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	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
				10 ⁻³ in.lb.s ²	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81

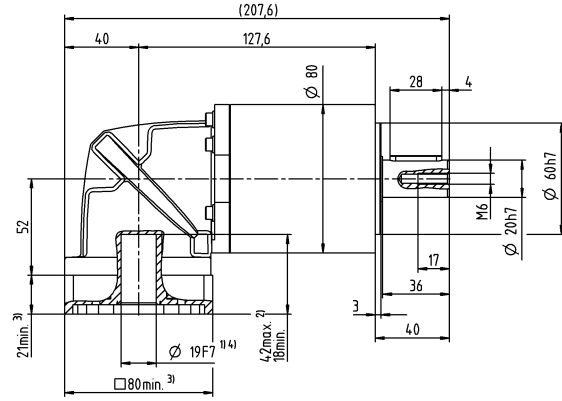
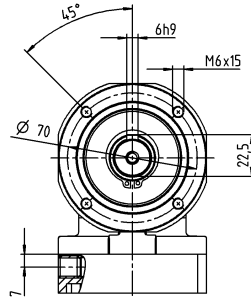
Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{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]

3-stage

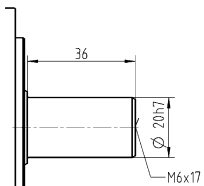
up to 19⁴⁾ (E)⁵⁾
clamping hub
diameter



Bevel Gearboxes
Basic Line

Other output variants

Smooth shaft



Non-tolerated dimensions are nominal dimensions

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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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			2-stage						
Ratio	i		3	4	5	7	8	10	
Max. torque ^{a) b) e)}	T_{2a}	Nm	150	200	250	272	272	272	
		in.lb	1328	1770	2213	2407	2407	2407	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	93	124	155	217	220	220	
		in.lb	823	1097	1372	1921	1947	1947	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	238	318	397	480	477	480	
		in.lb	2106	2815	3514	4248	4222	4248	
Permitted average input speed ^{d)} (at T_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	2000	2000	2000	2000	2000	2000	
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3.5	3.5	3.5	3.5	3.5	3.5	
		in.lb	31	31	31	31	31	31	
Max. backlash	j_t	arcmin	≤ 15						
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	13	13	13	13	13	13	
		in.lb/arcmin	115	115	115	115	115	115	
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	%	95						
Service life	L_n	h	> 20000						
Weight (incl. standard adapter plate)	m	kg	8.8						
		lb _m	19						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 74						
Max. permitted housing temperature		°C	+90						
		°F	+194						
Ambient temperature		°C	0 to +40						
		°F	+32 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]	H 28	J_1	kgcm ²	6.1	6.1	6.1	6.1	6.1	6.1
			10 ⁻³ in.lb.s ²	5.4	5.4	5.4	5.4	5.4	5.4

Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

^{a)} Valid for torque transmission only

^{b)} Valid for standard clamping hub diameter

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

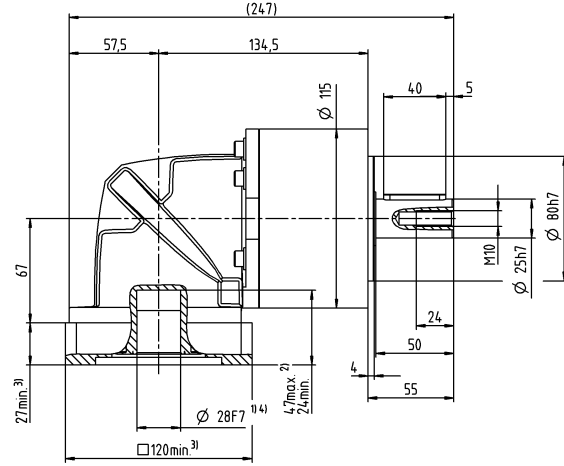
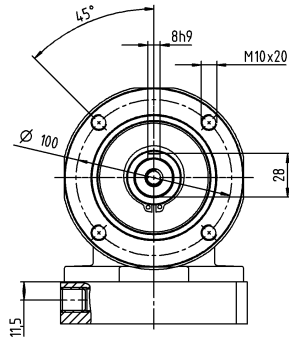
^{d)} Please reduce input speed at higher ambient temperatures

^{e)} Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

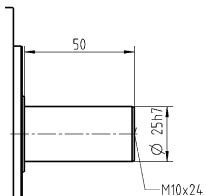
up to 28⁴⁾ (H)⁵⁾
clamping hub
diameter



Bevel Gearboxes
Basic Line

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

			3-stage														
Ratio	i		9	12	15	16	20	25	28	30	32	35	40	50	64	70	100
Max. torque ^{a) b) e)}	T_{2a}	Nm	272	272	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	2407
Max. acceleration torque ^{a)} (max. 1000 cycles per hour)	T_{2B}	Nm	175	175	175	255	255	250	255	175	255	250	255	250	220	250	220
		in.lb	1549	1549	1549	2257	2257	2213	2257	1549	2257	2213	2257	2213	1947	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	477	480	480
		in.lb	4248	4248	4248	4248	4248	4248	4248	2788	4248	4248	4248	4248	4222	4248	4248
Permitted average input speed ^{d)} (at T_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
		in.lb	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Max. backlash	j_t	arcmin	≤ 17														
Torsional rigidity ^{b)}	C_{121}	Nm/arcmin	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
		in.lb/arcmin	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142
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	%	94														
Service life	L_n	h	> 20000														
Weight (incl. standard adapter plate)	m	kg	10														
		lb _m	22														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 74														
Max. permitted housing temperature		°C	+90														
		°F	+194														
Ambient temperature		°C	0 to +40														
		°F	+32 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]	H	28	J_1	kgcm ²	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
				10 ⁻³ in.lb.s ²	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6

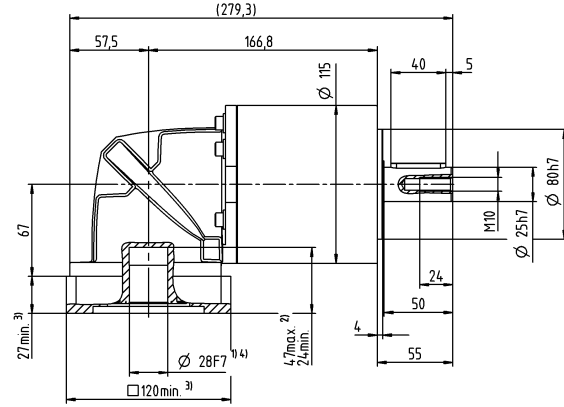
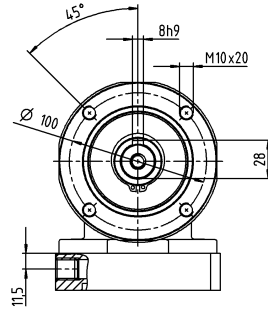
Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{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]

3-stage

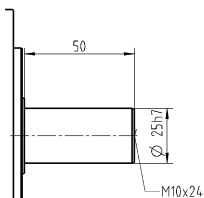
up to 28⁴⁾ (H)⁵⁾
clamping hub
diameter



Bevel Gearboxes
Basic Line

Other output variants

Smooth shaft



Non-tolerated dimensions are nominal dimensions

¹⁾ Check motor shaft fit

²⁾ Min. / Max. permissible motor shaft length

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⁴⁾ Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm

⁵⁾ Standard clamping hub diameter

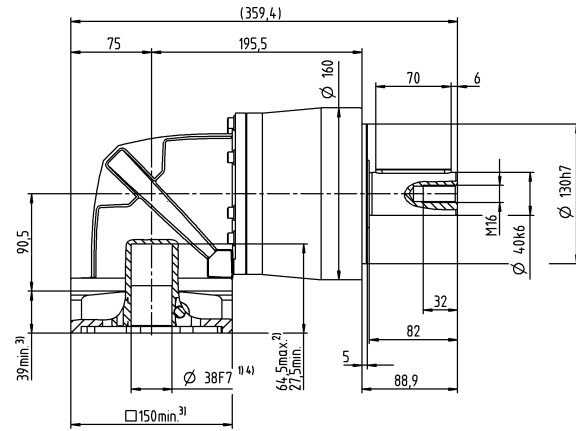
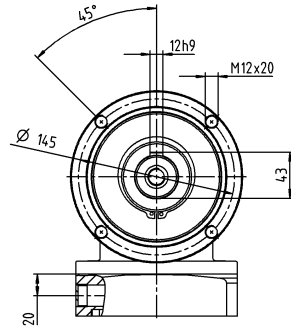
			2-stage			3-stage				
Ratio	i		5	8	10	25	50	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	500	640	640	700	700	640		
		in.lb	4425	5665	5665	6196	6196	5665		
Max. acceleration torque ^{e)} (max. 1000 cycles per hour)	T_{2B}	Nm	399	400	400	500	500	400		
		in.lb	3531	3540	3540	4425	4425	3540		
Emergency stop torque ^{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_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	1600	1600	1600	2000	2000	2000		
Max. input speed	n_{1Max}	rpm	4000	4000	4000	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	6.9	6.9	6.9	3.6	3.6	3.6		
		in.lb	61	61	61	32	32	32		
Max. backlash	j_t	arcmin	≤ 13			≤ 16				
Torsional rigidity ^{b)}	C_{121}	Nm/arcmin	48	48	48	54	54	54		
		in.lb/arcmin	425	425	425	478	478	478		
Max. axial force ^{c)}	F_{2AMax}	N	6000			6000				
		lb _f	1350			1350				
Max. lateral force ^{c)}	F_{2QMMax}	N	8000			8000				
		lb _f	1800			1800				
Max. tilting moment	M_{2KMMax}	Nm	704			704				
		in.lb	6231			6231				
Efficiency at full load	η	%	95			94				
Service life	L_h	h	> 20000			> 20000				
Weight (incl. standard adapter plate)	m	kg	24			21				
		lb _m	53			46				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 74			≤ 78				
Max. permitted housing temperature		°C	+90			+90				
		°F	+194			+194				
Ambient temperature		°C	0 to +40			0 to +40				
		°F	+32 to +104			+32 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-0300BA040.000-X							
		mm	X = 020.000 - 045.000							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	H	28	J_1	kgcm ²	–	–	–	6.8	6.8	6.8
				10 ⁻³ in.lb.s ²	–	–	–	6	6	6
	K	38	J_1	kgcm ²	17	17	17	–	–	–
				10 ⁻³ in.lb.s ²	15	15	15	–	–	–

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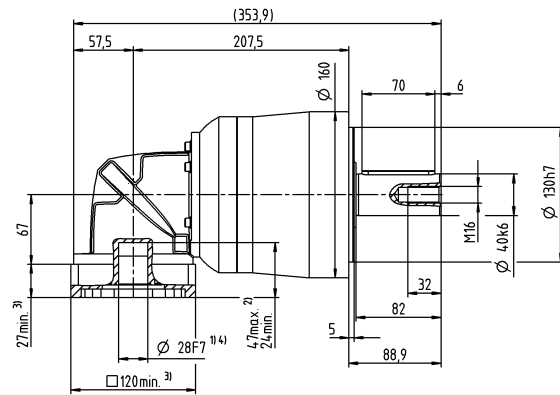
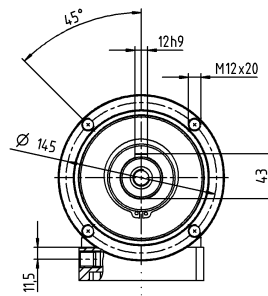
2-stage

up to 38⁴⁾ (K)⁵⁾
clamping hub
diameter



3-stage

up to 28⁴⁾ (H)⁵⁾
clamping hub
diameter

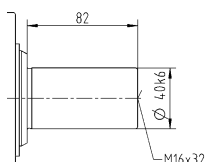


Motor shaft diameter [mm]

Bevel Gearboxes
Basic Line

Other output variants

Smooth shaft



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⁵⁾ Standard clamping hub diameter

			2-stage						
Ratio	i		3	4	5	7	8	10	
Max. torque ^{a) b) e)}	T_{2a}	Nm	33	44	55	58	56	56	
		in.lb	292	389	487	513	496	496	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	16	21	27	37	35	35	
		in.lb	142	186	239	327	310	310	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	41	55	69	75	75	75	
		in.lb	363	487	611	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	
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.55	0.55	0.55	0.55	0.55	0.55	
		in.lb	4.9	4.9	4.9	4.9	4.9	4.9	
Max. backlash	j_t	arcmin	≤ 17						
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	1.7	1.7	1.7	1.7	1.7	1.7	
		in.lb/arcmin	15	15	15	15	15	15	
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	%	95						
Service life	L_n	h	> 20000						
Weight (incl. standard adapter plate)	m	kg	1.6						
		lb _m	3.5						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 70						
Max. permitted housing temperature		°C	+90						
		°F	+194						
Ambient temperature		°C	0 to +40						
		°F	+32 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	0.3	0.3	0.3	0.3	0.3	0.3
			10 ⁻³ in.lb.s ²	0.27	0.27	0.27	0.27	0.27	0.27

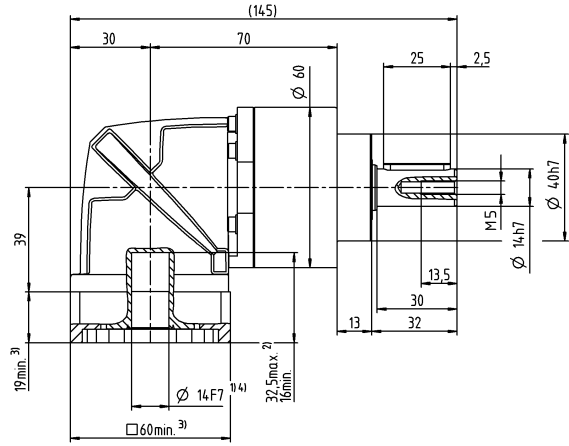
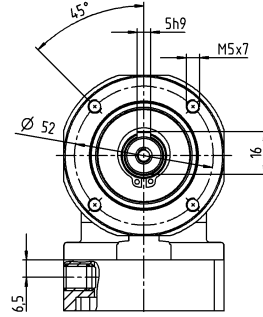
Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{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]

2-stage

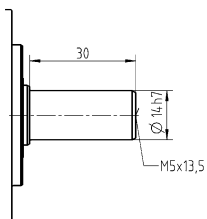
up to 14⁴⁾ (C)⁵⁾
clamping hub
diameter



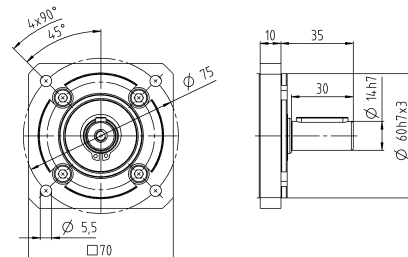
Bevel Gearboxes
Basic Line

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

			3-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_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
		in.lb	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Max. backlash	j_i	arcmin	≤ 17												
Torsional rigidity ^{b)}	C_{221}	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	2.1
		in.lb/arcmin	19	19	19	19	19	19	19	19	19	19	19	19	19
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	%	94												
Service life	L_n	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)	≤ 70												
Max. permitted housing temperature		°C	+90												
		°F	+194												
Ambient temperature		°C	0 to +40												
		°F	+32 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	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
				10 ⁻³ in.lb.s ²	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27

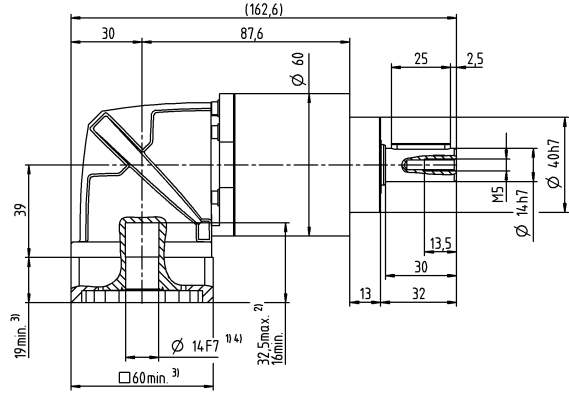
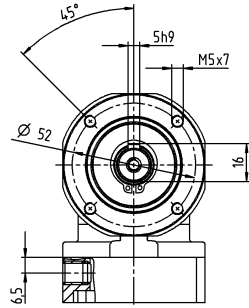
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Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{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]

3-stage

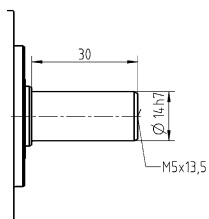
up to 14⁴⁾ (C)⁵⁾
clamping hub
diameter



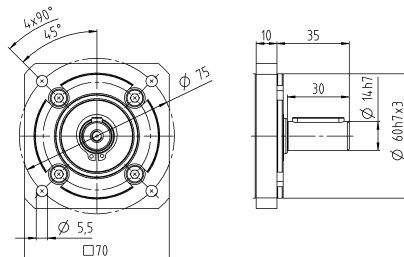
Bevel Gearboxes
Basic Line

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		3	4	5	7	8	10	
Max. torque ^{a) b) e)}	T_{2a}	Nm	60	80	100	140	144	144	
		in.lb	531	708	885	1239	1275	1275	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	35	47	58	82	90	90	
		in.lb	310	416	513	726	797	797	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	90	120	150	187	187	187	
		in.lb	797	1062	1328	1655	1655	1655	
Permitted average input speed ^{d)} (at T_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	3000	3000	3000	3000	3000	3000	
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.98	0.98	0.98	0.98	0.98	0.98	
		in.lb	8.7	8.7	8.7	8.7	8.7	8.7	
Max. backlash	j_t	arcmin	≤ 17						
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	4.5	4.5	4.5	4.5	4.5	4.5	
		in.lb/arcmin	40	40	40	40	40	40	
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	%	95						
Service life	L_n	h	> 20000						
Weight (incl. standard adapter plate)	m	kg	4.2						
		lb _m	9.3						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 73						
Max. permitted housing temperature		°C	+90						
		°F	+194						
Ambient temperature		°C	0 to +40						
		°F	+32 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	0.86	0.86	0.86	0.86	0.86	0.86
			10 ⁻³ in.lb.s ²	0.76	0.76	0.76	0.76	0.76	0.76

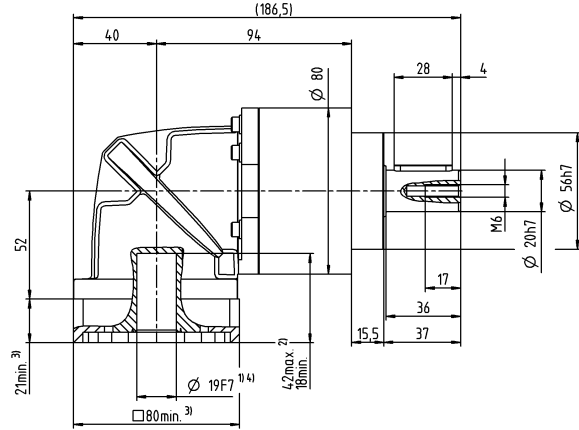
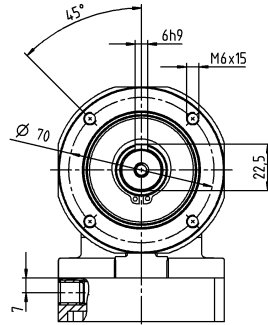
Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{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]

2-stage

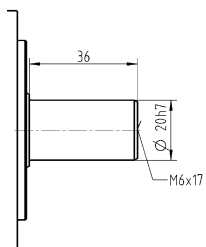
up to 19⁴⁾ (E)⁵⁾
clamping hub
diameter



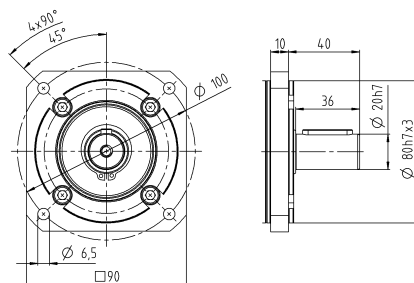
Bevel Gearboxes
Basic Line

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

			3-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
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_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
		in.lb	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
Max. backlash	j_t	arcmin	≤ 18												
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
		in.lb/arcmin	52	52	52	52	52	52	52	52	52	52	52	52	52
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	%	94												
Service life	L_n	h	> 20000												
Weight (incl. standard adapter plate)	m	kg	4.5												
		lb _m	9.9												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 73												
Max. permitted housing temperature		°C	+90												
		°F	+194												
Ambient temperature		°C	0 to +40												
		°F	+32 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	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
				10 ⁻³ in.lb.s ²	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81

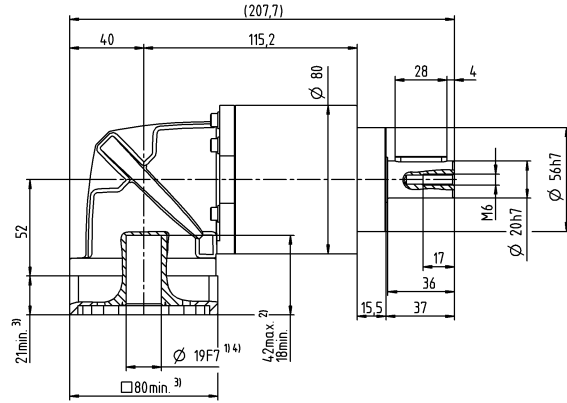
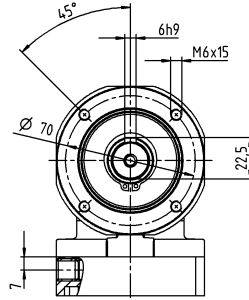
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Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{a)} Valid for torque transmission only
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- ^{c)} Refers to center of the output shaft or flange
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- ^{e)} Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

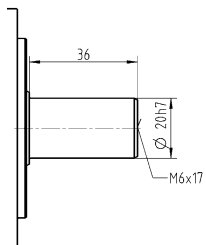
up to 19⁴⁾ (E)⁵⁾
clamping hub diameter



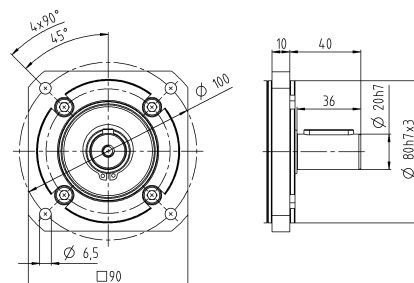
Bevel Gearboxes
Basic Line

Other output variants

Smooth shaft



Replaceable B5 output flange



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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		3	4	5	7	8	10	
Max. torque ^{a) b) e)}	T_{2a}	Nm	150	200	250	272	272	272	
		in.lb	1328	1770	2213	2407	2407	2407	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	93	124	155	217	220	220	
		in.lb	823	1097	1372	1921	1947	1947	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	238	318	397	480	477	480	
		in.lb	2106	2815	3514	4248	4222	4248	
Permitted average input speed ^{d)} (at T_{2a} and 20 °C ambient temperature)	n_{1N}	rpm	2000	2000	2000	2000	2000	2000	
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3.5	3.5	3.5	3.5	3.5	3.5	
		in.lb	31	31	31	31	31	31	
Max. backlash	j_t	arcmin	≤ 15						
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	13	13	13	13	13	13	
		in.lb/arcmin	115	115	115	115	115	115	
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	%	95						
Service life	L_n	h	> 20000						
Weight (incl. standard adapter plate)	m	kg	8.8						
		lb _m	19						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 74						
Max. permitted housing temperature		°C	+90						
		°F	+194						
Ambient temperature		°C	0 to +40						
		°F	+32 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]	H 28	J_1	kgcm ²	6.1	6.1	6.1	6.1	6.1	6.1
			10 ⁻³ in.lb.s ²	5.4	5.4	5.4	5.4	5.4	5.4

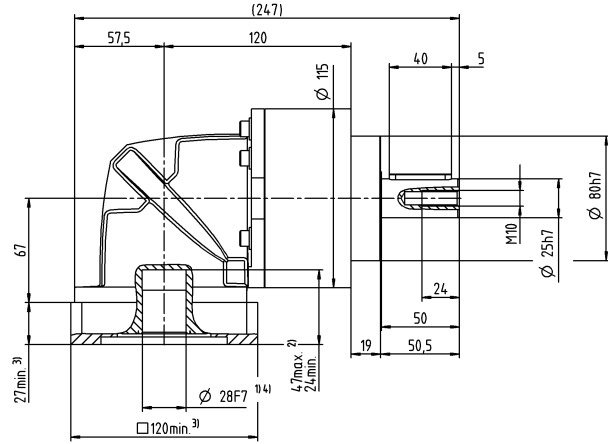
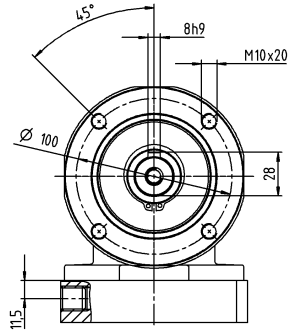
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- ^{e)} Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

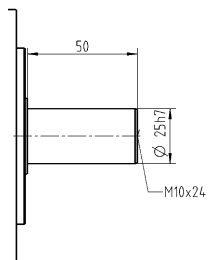
up to 28⁴⁾ (H)⁵⁾
clamping hub
diameter



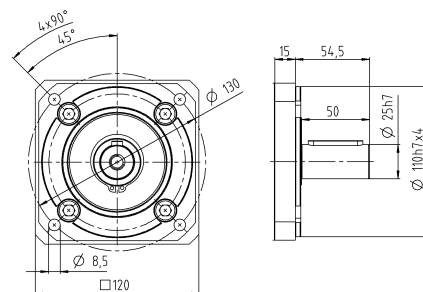
Bevel Gearboxes
Basic Line

Other output variants

Smooth shaft



Replaceable B5 output flange



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²⁾ Min. / Max. permissible motor shaft length

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⁴⁾ Smaller motor shaft diameter is compensated

by a bushing with a minimum thickness of 1 mm

⁵⁾ Standard clamping hub diameter

			3-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 ^{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	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
Mean no load running torque ^{b)} (at $n_1=3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
		in.lb	34	34	34	34	34	34	34	34	34	34	34	34	34
Max. backlash	j_t	arcmin	≤ 17												
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	16	16	16	16	16	16	16	16	16	16	16	16	16
		in.lb/arcmin	142	142	142	142	142	142	142	142	142	142	142	142	142
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	%	94												
Service life	L_n	h	> 20000												
Weight (incl. standard adapter plate)	m	kg	10												
		lb _m	22												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	dB(A)	≤ 74												
Max. permitted housing temperature		°C	+90												
		°F	+194												
Ambient temperature		°C	0 to +40												
		°F	+32 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]	H	28	J_1	kgcm ²	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
				10 ⁻³ in.lb.s ²	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6

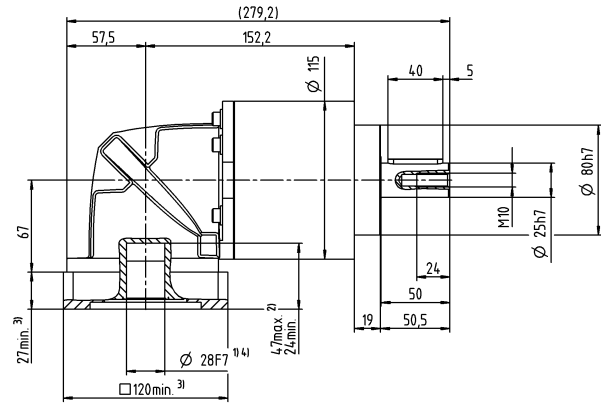
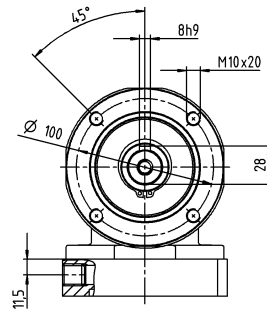
Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com
Please consider the maximum permissible tilting moment caused by the motor M_{1KMot} – see sizing

- ^{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]

3-stage

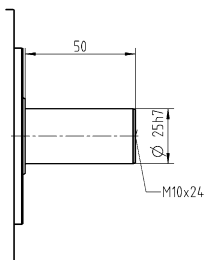
up to 28⁴⁾ (H)⁵⁾
clamping hub
diameter



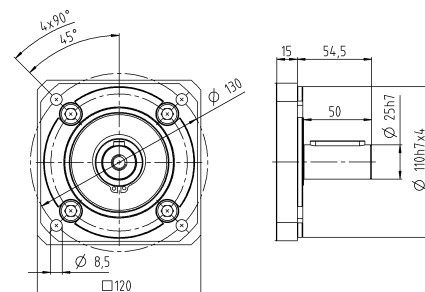
Bevel Gearboxes
Basic Line

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

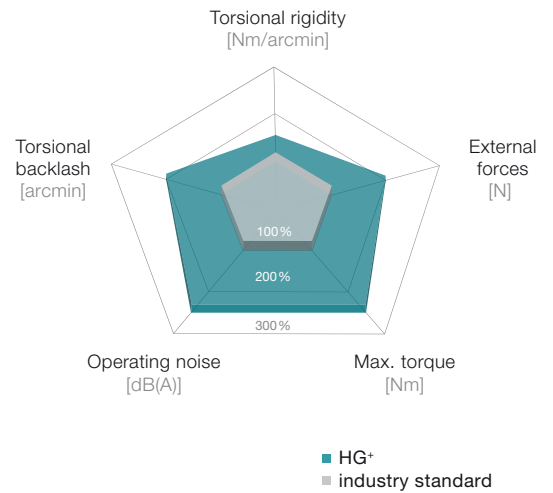
HG+ – Precise hollow shaft solution



HG+

The versatile hypoid gearboxes of the alpha Advanced Line are available with a hollow shaft on one or both sides. With the HG+, the low torsional backlash and high torsional rigidity assure maximum positioning accuracy of the drives and the high precision of machines – even during highly dynamic operation.

The HG+ compared to the industry standard



Product highlights

- Max. torsional backlash [arcmin] ≤ 4
- Hollow shaft version
- Multiple output configurations for greater flexibility
- Extremely smooth-running
- Other gearbox models
- Corrosion resistant design, ATEX



HG+ in corrosion-resistant design



HG+ with hollow shaft on both sides

Hollow shaft for feeding through media or establishing a connection to the application

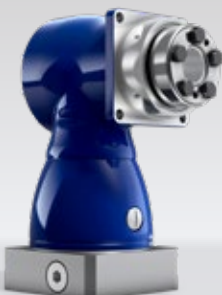
Variable output connection, also rearward

Taper roller bearings for absorbing axial and radial forces



Metal bellows coupling at the input: length compensation to protect the motor bearing

High-quality hypoid gearing for a higher torque and smoother operation



HG+ with shrink disk

			1-stage					2-stage										
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100	
Max. torque ^{a) b)}	T_{2a}	Nm	36	36	36	25	20	36	36	36	36	36	36	36	36	25	20	
		in.lb	319	319	319	221	177	319	319	319	319	319	319	319	319	319	221	177
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	30	30	30	25	20	30	30	30	30	30	30	30	30	25	20	
		in.lb	266	266	266	221	177	266	266	266	266	266	266	266	266	221	177	
Nominal torque (at n_n)	T_{2N}	Nm	22	22	22	20	15	22	22	22	22	22	22	22	22	20	15	
		in.lb	195	195	195	177	133	195	195	195	195	195	195	195	195	177	133	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	40	50	50	45	40	50	50	50	50	50	50	50	50	45	40	
		in.lb	354	443	443	398	354	443	443	443	443	443	443	443	443	398	354	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2500	2700	3000	3000	3000	4400	4400	4400	4400	4400	4400	4400	4800	5500	5500	
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.6	1.5	1.2	1.7	1.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
		in.lb	14	13	11	15	13	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	
Max. backlash	j_t	arcmin	Standard ≤ 5															
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	2.2	2.3	2.4	2.2	1.9	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.2	1.9	
		in.lb/arcmin	19	20	21	19	17	20	20	20	20	20	20	20	21	19	17	
Max. axial force ^{c)}	F_{2AMax}	N	2400															
		lb _f	540															
Max. lateral force ^{c)}	F_{2QMax}	N	2700															
		lb _f	608															
Max. tilting moment	M_{2KMax}	Nm	251															
		in.lb	2222															
Efficiency at full load	η	%	96					94										
Service life	L_h	h	> 20000															
Weight (incl. standard adapter plate)	m	kg	2.9					3.2										
		lb _m	6					7										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 64															
		°C	+90															
Max. permitted housing temperature		F	194															
		°C	0 to +40															
Ambient temperature		F	32 to 104															
		°C	32 to 104															
Lubrication			Lubricated for life															
Direction of rotation			In- and output opposite direction															
Protection class			IP 65															
Shrink disc (Standard version)			SD 018x044 S2															
Max. torque (without axial force)	T_{max}	Nm	100															
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	B	11	J_1	kgcm ²	-	-	-	-	-	0.09	0.09	0.07	0.07	0.06	0.06	0.06	0.06	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.08	0.08	0.06	0.06	0.05	0.05	0.05	0.05	0.05
	C	14	J_1	kgcm ²	0.52	0.44	0.4	0.36	0.34	0.2	0.2	0.19	0.19	0.18	0.18	0.17	0.17	0.17
				10 ⁻³ in.lb.s ²	0.46	0.39	0.35	0.32	0.3	0.18	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15
	E	19	J_1	kgcm ²	0.87	0.79	0.75	0.71	0.7	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	0.77	0.7	0.66	0.63	0.62	-	-	-	-	-	-	-	-	-

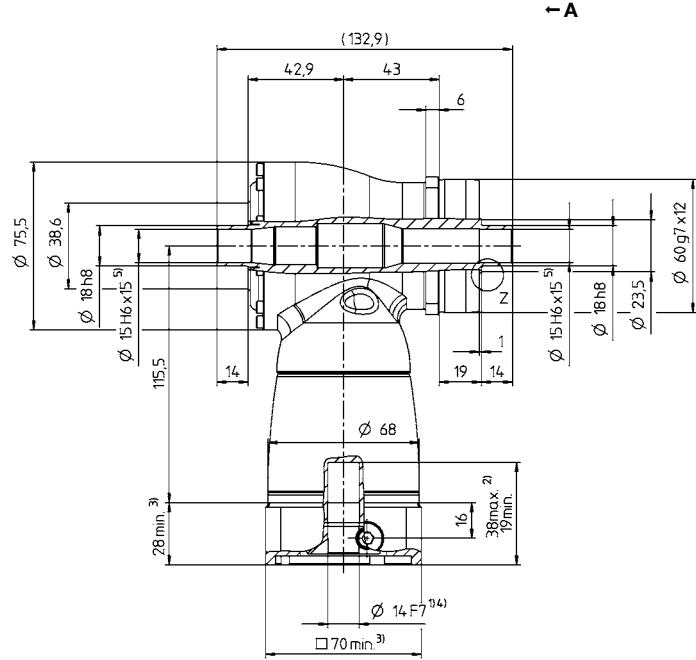
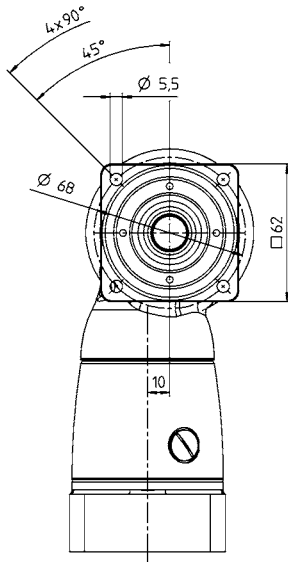
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}
^{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

View A

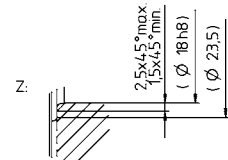
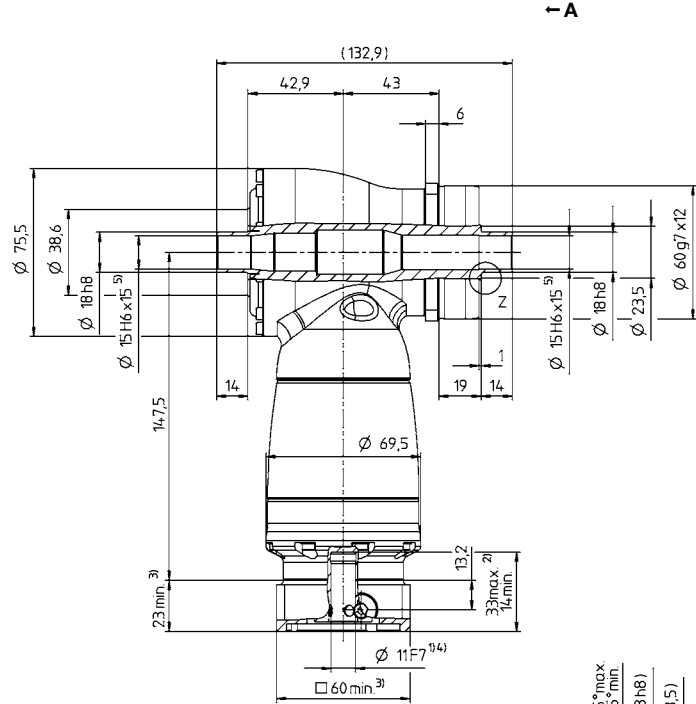
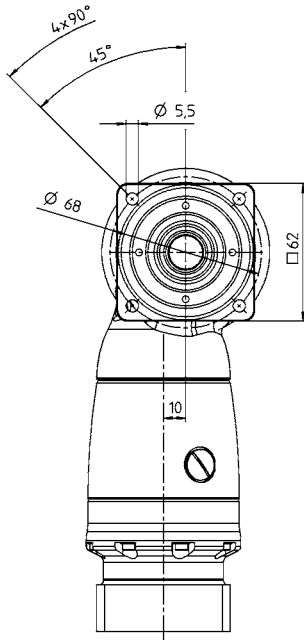
1-stage

up to 14/19⁴⁾
(C⁶⁾/E) clamping
hub diameter



2-stage

up to 11/14⁴⁾
(B⁶⁾/C) clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

HG+

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Tolerance h6 for mounted shaft.

HG⁺ 075 MF 1- /2-stage

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	84	84	84	60	50	84	84	84	84	84	84	84	84	60	50		
		in.lb	743	743	743	531	443	743	743	743	743	743	743	743	743	743	531	443	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	70	70	70	60	50	70	70	70	70	70	70	70	70	60	50		
		in.lb	620	620	620	531	443	620	620	620	620	620	620	620	620	531	443		
Nominal torque (at n_n)	T_{2N}	Nm	50	50	50	45	40	50	50	50	50	50	50	50	50	45	40		
		in.lb	443	443	443	398	354	443	443	443	443	443	443	443	443	398	354		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	95	115	115	110	100	115	115	115	115	115	115	115	115	110	100		
		in.lb	841	1018	1018	974	885	1018	1018	1018	1018	1018	1018	1018	1018	974	885		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2300	2500	2800	2800	2800	3500	3500	3500	3500	3500	3500	3500	3800	4500	4500		
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.6	1.5	1.2	1.7	1.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
		in.lb	14	13	11	15	13	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	5.3	5.9	6.7	6.6	6.5	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.7	6.6	6.5		
		in.lb/arcmin	47	52	59	58	58	52	52	52	52	52	52	52	59	58	58		
Max. axial force ^{c)}	F_{2AMax}	N	3400																
		lb _f	765																
Max. lateral force ^{c)}	F_{2QMax}	N	4000																
		lb _f	900																
Max. tilting moment	M_{2KMax}	Nm	437																
		in.lb	3868																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	4.8					5.1											
		lb _m	11					11											
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	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Shrink disc (Standard version)			SD 024x050 S2																
Max. torque (without axial force)	T_{max}	Nm	250																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	J_1	kgcm ²	-	-	-	-	-	0.28	0.27	0.23	0.23	0.2	0.2	0.18	0.18	0.18	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.25	0.24	0.2	0.2	0.18	0.18	0.16	0.16	0.16	0.16
	E	19	J_1	kgcm ²	1.46	1.19	1.06	0.95	0.9	0.73	0.71	0.68	0.67	0.63	0.62	0.63	0.63	0.63	0.63
				10 ⁻³ in.lb.s ²	1.29	1.05	0.94	0.84	0.8	0.65	0.63	0.6	0.59	0.56	0.55	0.56	0.56	0.56	0.56
	H	28	J_1	kgcm ²	2.88	2.61	2.47	2.37	2.31	-	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	2.55	2.31	2.19	2.1	2.04	-	-	-	-	-	-	-	-	-	-

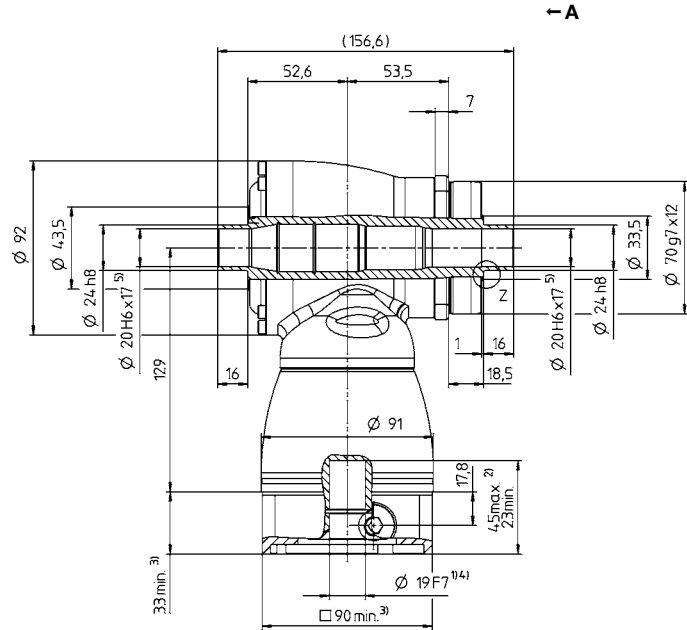
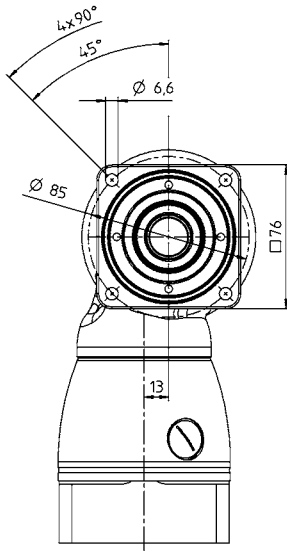
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}
^{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

View A

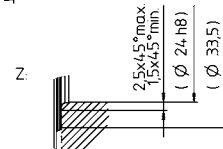
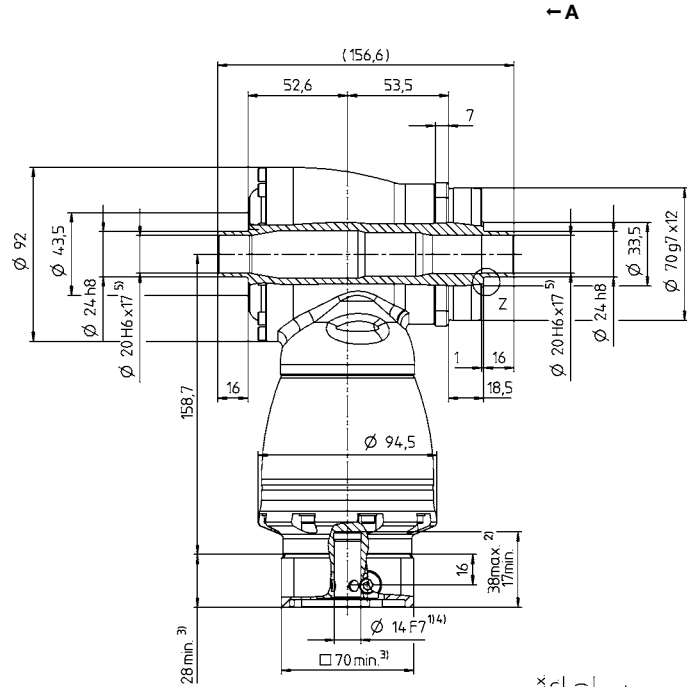
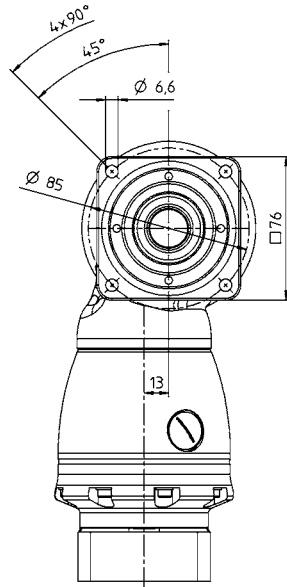
1-stage

up to 19/28⁴⁾
(E⁶⁾/H) clamping
hub diameter



2-stage

up to 14/19⁴⁾
(C⁶⁾/E) clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

HG⁺

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Tolerance h6 for mounted shaft.

HG⁺ 100 MF 1-/2-stage

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	204	204	204	145	125	204	204	204	204	204	204	204	204	145	125		
		in.lb	1806	1806	1806	1283	1106	1806	1806	1806	1806	1806	1806	1806	1806	1806	1283	1106	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	170	170	170	145	125	170	170	170	170	170	170	170	170	145	125		
		in.lb	1505	1505	1505	1283	1106	1505	1505	1505	1505	1505	1505	1505	1505	1505	1283	1106	
Nominal torque (at n_n)	T_{2N}	Nm	100	100	100	90	80	100	100	100	100	100	100	100	100	90	80		
		in.lb	885	885	885	797	708	885	885	885	885	885	885	885	885	885	797	708	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	220	260	260	255	250	260	260	260	260	260	260	260	260	260	255	250	
		in.lb	1947	2301	2301	2257	2213	2301	2301	2301	2301	2301	2301	2301	2301	2301	2257	2213	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2200	2400	2700	2500	2500	3100	3100	3100	3100	3100	3100	3100	3100	3500	4200	4200	
Max. input speed	n_{1Max}	rpm	5500	5500	5500	5500	5500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	4.3	3.4	3.2	4.6	3.7	0.7	0.7	0.6	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	
		in.lb	38	30	28	41	33	6.2	6.2	5.3	3.5	3.5	2.7	1.8	1.8	1.8	1.8	1.8	
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	10.7	12.1	14	14.2	14.4	12.1	12.1	12.1	12.1	12.1	12.1	12.1	14	14.2	14.4		
		in.lb/arcmin	95	107	124	126	127	107	107	107	107	107	107	107	124	126	127		
Max. axial force ^{c)}	F_{2AMax}	N	5700																
		lb _f	1283																
Max. lateral force ^{c)}	F_{2QMax}	N	6300																
		lb _f	1418																
Max. tilting moment	M_{2KMax}	Nm	833																
		in.lb	7373																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	9.3					9.5											
		lb _m	21					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	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Shrink disc (Standard version)			SD 036x072 S2																
Max. torque (without axial force)	T_{max}	Nm	650																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	kgcm ²	-	-	-	-	-	1.02	0.97	0.86	0.84	0.75	0.74	0.69	0.68	0.68	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.9	0.86	0.76	0.74	0.66	0.65	0.61	0.61	0.6	0.6
	G	24	J_1	kgcm ²	-	-	-	-	-	2.59	2.54	2.42	2.4	2.31	2.3	2.26	2.25	2.25	2.25
				10 ⁻³ in.lb.s ²	-	-	-	-	-	2.29	2.25	2.14	2.12	2.04	2.04	2	1.99	1.99	1.99
	H	28	J_1	kgcm ²	4.64	3.8	3.34	2.98	2.79	-	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	4.11	3.36	2.96	2.64	2.47	-	-	-	-	-	-	-	-	-	-
	K	38	J_1	kgcm ²	11.9	11	10.6	10.2	10	-	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	10.53	9.74	9.38	9.03	8.85	-	-	-	-	-	-	-	-	-	-

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}

^{b)} Valid for standard clamping hub diameter

www.famcocorp.com

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Tel: +91-48000049

Fax: +91-44994642

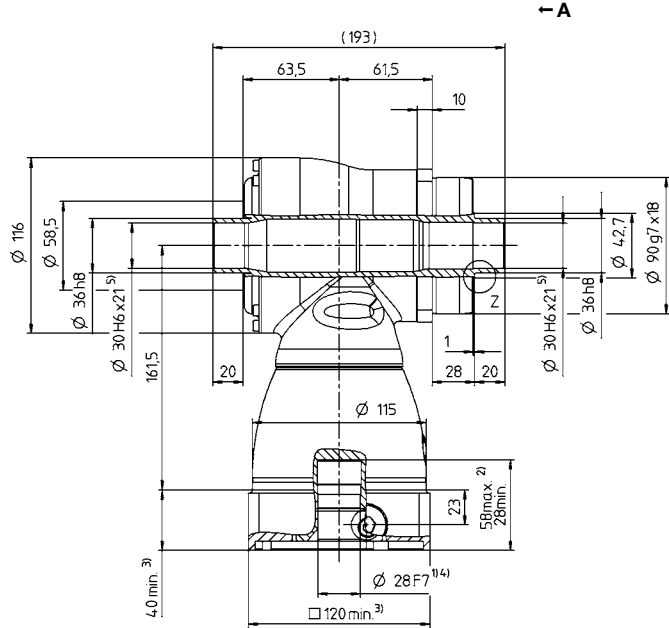
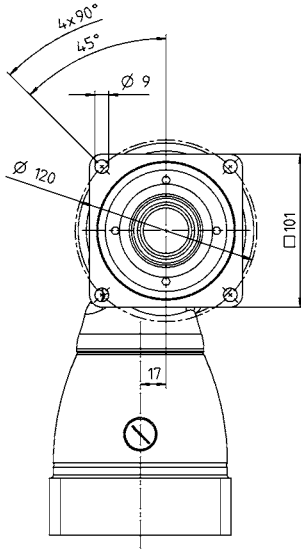
تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

View A

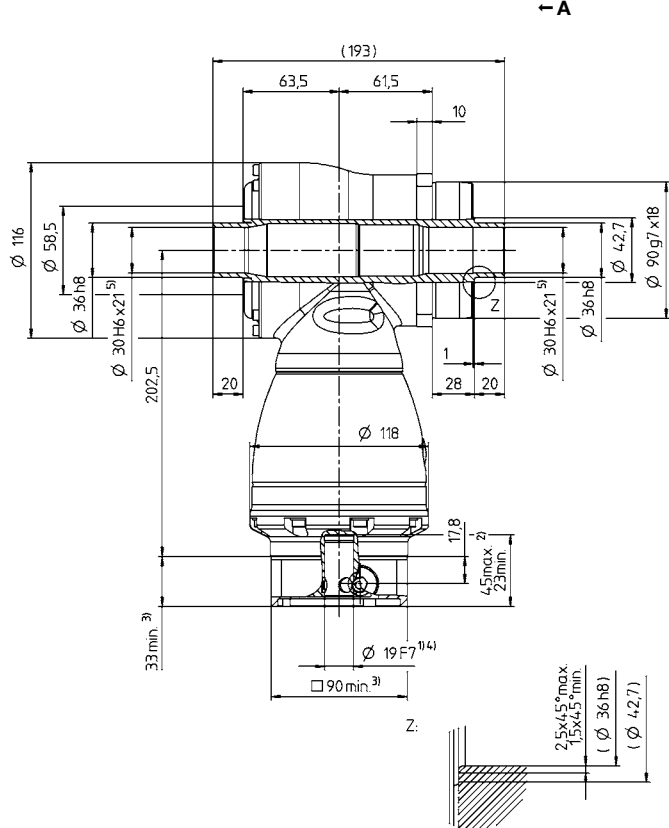
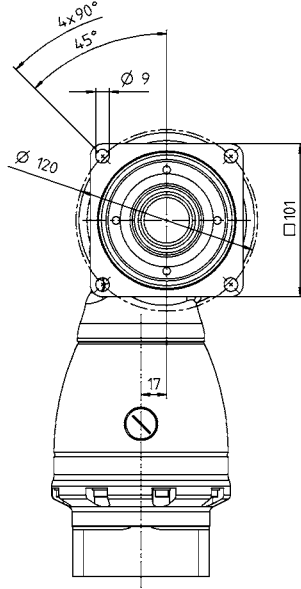
1-stage

up to 28/38⁴⁾
(H⁶⁾/K) clamping
hub diameter



2-stage

up to 19/24⁴⁾
(E⁶⁾/G) clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

HG⁺

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Tolerance h6 for mounted shaft.

HG⁺ 140 MF 1-/2-stage

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	360	360	360	250	210	360	360	360	360	360	360	360	360	250	210		
		in.lb	3186	3186	3186	2213	1859	3186	3186	3186	3186	3186	3186	3186	3186	3186	2213	1859	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	300	300	300	250	210	300	300	300	300	300	300	300	300	250	210		
		in.lb	2655	2655	2655	2213	1859	2655	2655	2655	2655	2655	2655	2655	2655	2213	1859		
Nominal torque (at n_n)	T_{2N}	Nm	190	190	190	175	160	190	190	190	190	190	190	190	190	175	160		
		in.lb	1682	1682	1682	1549	1416	1682	1682	1682	1682	1682	1682	1682	1682	1549	1416		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	400	500	500	450	400	500	500	500	500	500	500	500	500	450	400		
		in.lb	3540	4425	4425	3983	3540	4425	4425	4425	4425	4425	4425	4425	4425	3983	3540		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1900	2000	2200	2000	2000	2900	2900	2900	2900	2900	2900	2900	3200	3200	3900		
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	10	7.6	7.9	11	7.9	1.5	1	0.8	0.6	0.6	0.4	0.4	0.3	0.3	0.3		
		in.lb	89	67	70	97	70	13	8.9	7.1	5.3	5.3	3.5	3.5	2.7	2.7	2.7		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	32	36	41	39	38	36	36	36	36	36	36	36	41	39	38		
		in.lb/arcmin	283	319	363	345	336	319	319	319	319	319	319	319	363	345	336		
Max. axial force ^{c)}	F_{2AMax}	N	9900																
		lb _f	2228																
Max. lateral force ^{c)}	F_{2QMax}	N	9500																
		lb _f	2138																
Max. tilting moment	M_{2KMax}	Nm	1692																
		in.lb	14976																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	22.6					24											
		lb _m	50					53											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68																
Max. permitted housing temperature		°C	+90																
		F	194																
Ambient temperature		°C	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Shrink disc (Standard version)			SD 050x090 S2																
Max. torque (without axial force)	T_{max}	Nm	1320																
Mass moment of inertia (relates to the drive)	G	24	J_1	kgcm ²	-	-	-	-	-	4.2	3.84	3.27	3.16	2.78	2.73	2.48	2.46	2.43	2.42
				10 ⁻³ in.lb.s ²	-	-	-	-	-	3.72	3.4	2.89	2.8	2.46	2.42	2.19	2.18	2.15	2.14
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	25	19.1	16.3	14.1	12.8	11.1	10.7	10.2	10.1	9.69	9.64	9.39	9.37	9.34	9.33
				10 ⁻³ in.lb.s ²	22.13	16.9	14.43	12.48	11.33	9.82	9.47	9.03	8.94	8.58	8.53	8.31	8.29	8.27	8.26

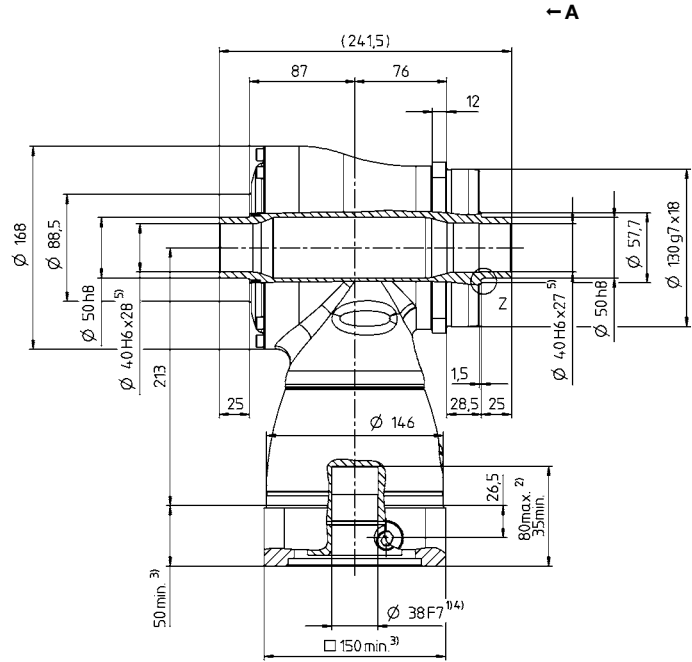
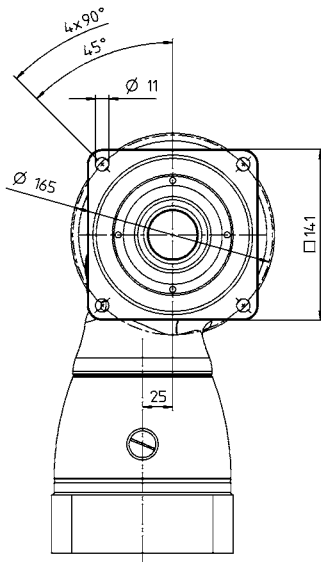
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}
^{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

View A

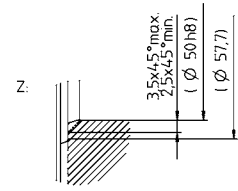
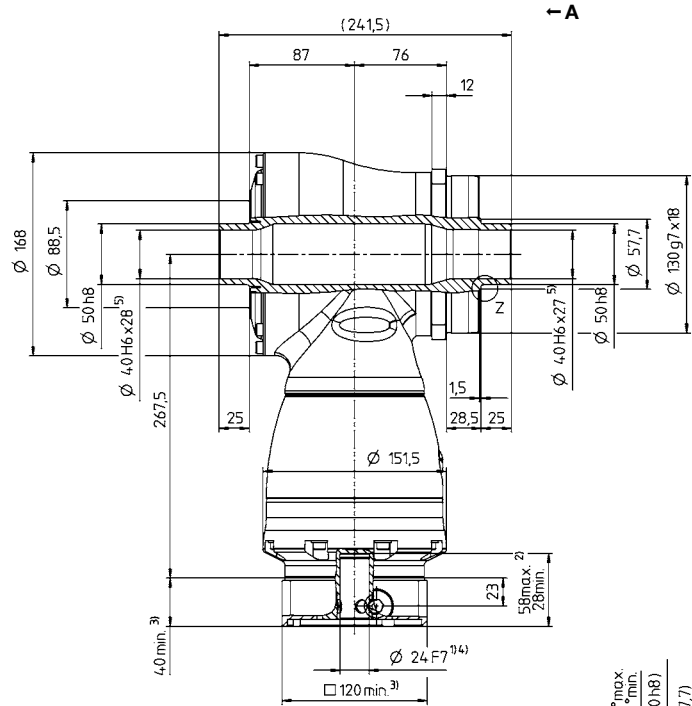
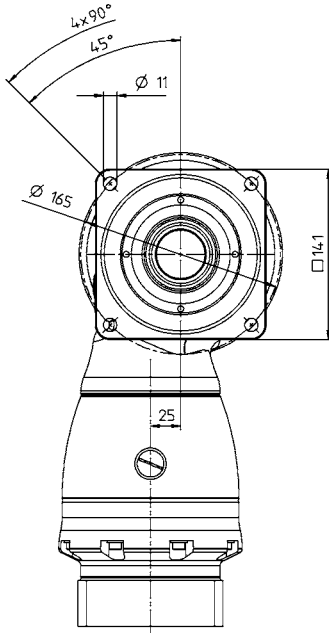
1-stage

up to 38⁴⁾ (K)⁶⁾
clamping hub diameter



2-stage

up to 24/38⁴⁾
(G/K)⁶⁾ clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

HG+

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Tolerance h6 for mounted shaft.

HG⁺ 180 MF 1-/2-stage

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	768	768	768	550	470	768	768	768	768	768	768	768	768	550	470		
		in.lb	6797	6797	6797	4868	4160	6797	6797	6797	6797	6797	6797	6797	6797	6797	4868	4160	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	640	640	640	550	470	640	640	640	640	640	640	640	640	550	470		
		in.lb	5665	5665	5665	4868	4160	5665	5665	5665	5665	5665	5665	5665	5665	5665	4868	4160	
Nominal torque (at n_n)	T_{2N}	Nm	400	400	400	380	360	400	400	400	400	400	400	400	400	380	360		
		in.lb	3540	3540	3540	3363	3186	3540	3540	3540	3540	3540	3540	3540	3540	3540	3363	3186	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	900	1050	1050	970	900	1050	1050	1050	1050	1050	1050	1050	1050	970	900		
		in.lb	7966	9293	9293	8585	7966	9293	9293	9293	9293	9293	9293	9293	9293	9293	8585	7966	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1600	1800	2000	1800	1800	2700	2700	2700	2700	2700	2700	2700	2900	3200	3400		
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	21	17	16	19	16	3.3	2.5	2	1.8	1.4	1.3	1	1	1	1		
		in.lb	186	150	142	168	142	29	22	18	16	12	12	8.9	8.9	8.9	8.9		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	71	80	91	89	88	80	80	80	80	80	80	80	80	91	89	88	
		in.lb/arcmin	628	708	805	788	779	708	708	708	708	708	708	708	708	805	788	779	
Max. axial force ^{c)}	F_{2AMax}	N	14200																
		lb _f	3195																
Max. lateral force ^{c)}	F_{2QMax}	N	14700																
		lb _f	3308																
Max. tilting moment	M_{2KMax}	Nm	3213																
		in.lb	28438																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	45.4					47											
		lb _m	100					104											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68																
		°C	+90																
Max. permitted housing temperature		F	194																
		°C	0 to +40																
Ambient temperature		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Shrink disc (Standard version)			SD 068x115 S2																
Max. torque (without axial force)	T_{max}	Nm	2450																
Mass moment of inertia (relates to the drive)	K	38	J_1	kgcm ²	-	-	-	-	-	15.3	14	12.3	12	10.9	10.7	10.1	10	9.95	9.91
				10 ⁻³ in.lb.s ²	-	-	-	-	-	13.54	12.39	10.89	10.62	9.65	9.47	8.94	8.85	8.81	8.77
Clamping hub diameter [mm]	M	48	J_1	kgcm ²	73.3	51.6	42.1	34	29.7	30	28.7	27.1	26.7	25.6	25.4	24.8	24.7	24.7	24.6
				10 ⁻³ in.lb.s ²	64.87	45.67	37.26	30.09	26.28	26.55	25.4	23.98	23.63	22.66	22.48	21.95	21.86	21.86	21.77

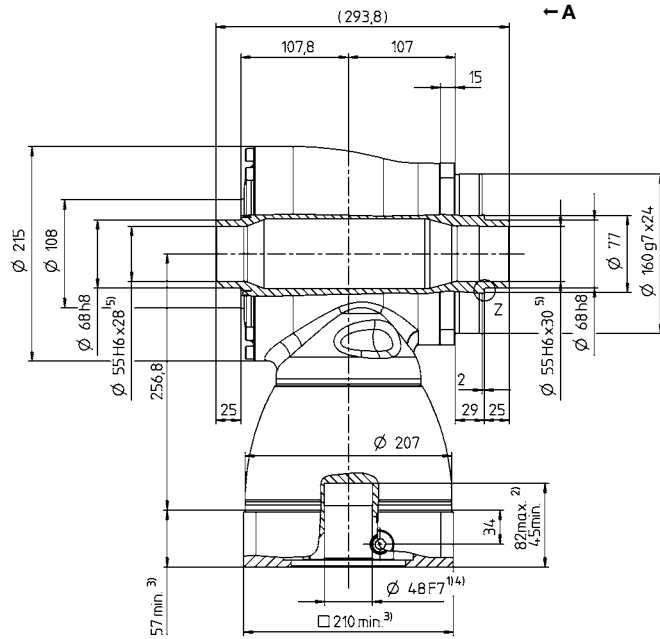
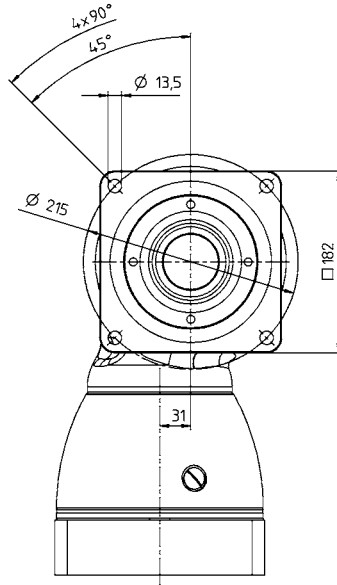
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}
^{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

View A

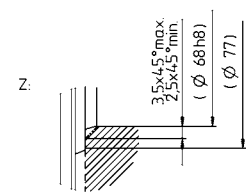
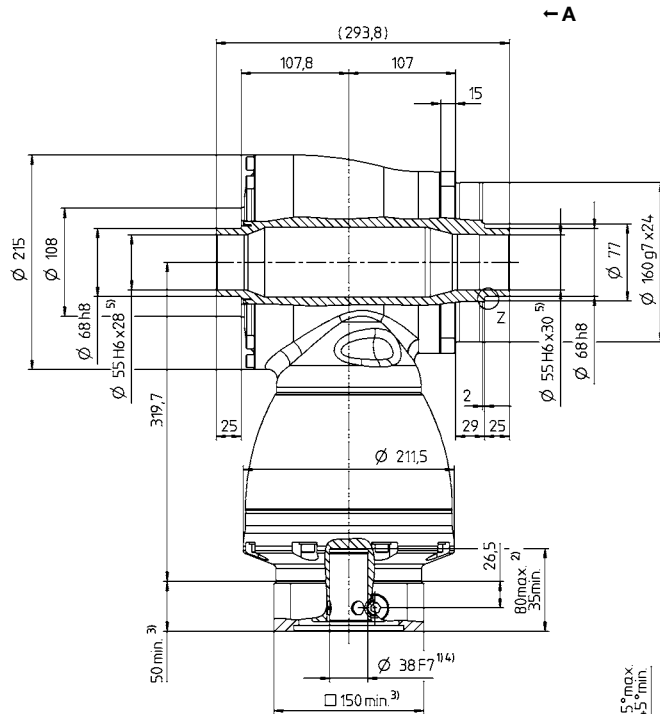
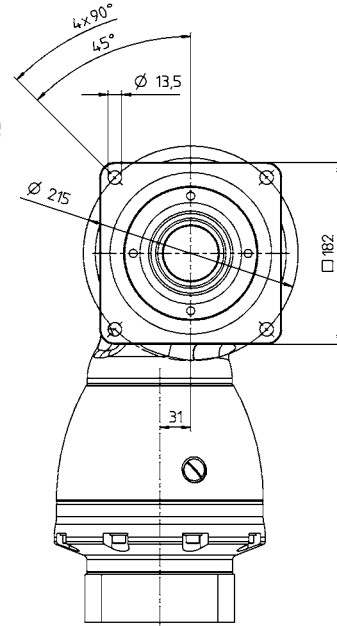
1-stage

up to 48⁴⁾ (M)⁶⁾
clamping hub diameter



2-stage

up to 38/48⁴⁾
(K⁶⁾/M) clamping hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

HG+

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

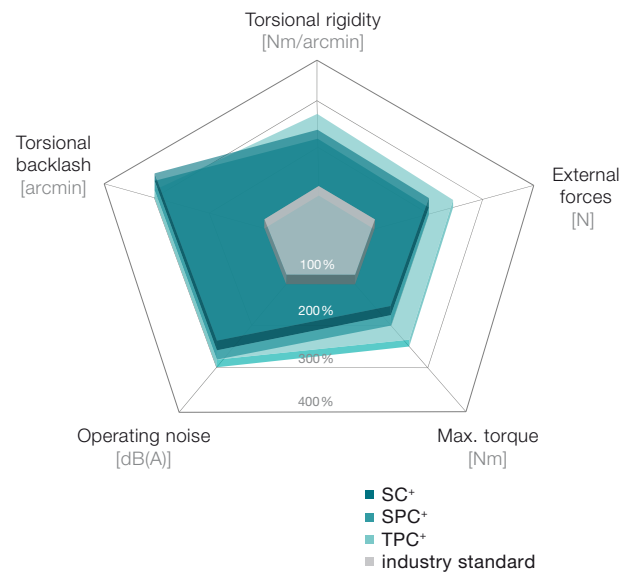
⁵⁾ Tolerance h6 for mounted shaft.

SC+ / SPC+ / TPC+ – High performance at low ratios



If the application requires above-average performance at lower ratios: The innovative design of the alpha Advanced Line bevel gearbox SC+ / SPC+ / TPC+ is not only space-saving, elegant and energy-efficient, it also delivers an impressive performance and guarantees smooth operation.

SC+ / SPC+ / TPC+ compared to the industry standard



Product highlights

Max. torsional backlash

- SC+ ≤ 4 arcmin (Standard)
- SPC+ / TPC+ ≤ 4 arcmin (Standard)
- ≤ 2 arcmin (Reduced)

High power density and dynamics

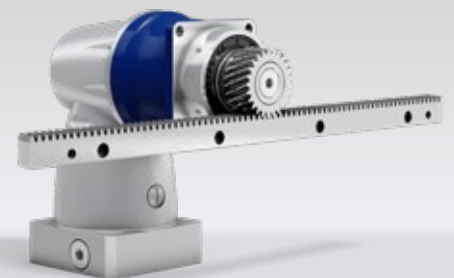
High output speeds

- due to gear ratios
- 1:1 and 2:1 (single-stage)

Efficiency of 97%



TPC+ with pinions



SPC+ with rack and pinion

Intelligent design which reduces friction losses to a minimum

Output compatible with TP+ series

High toothing quality ensures:

- Improved load bearing capacity and therefore higher torque
- Precision thanks to minimum torsional backlash
- Extremely smooth operation and stable running characteristics

Low temperature development, also at high speeds

Bevel gearboxes

Metal bellows coupling at the input: length compensation to protect the motor bearing

Ideal for open system concepts: no external screws and functional beading integrated in the housing

TPC+



SPC+ with metal bellows coupling

				1-stage		
Ratio	<i>i</i>		1	2		
Max. torque ^{a) b) e)}	T_{2a}	Nm	12	12		
		in.lb	106	106		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	10	10		
		in.lb	89	89		
Nominal torque (at n_n)	T_{2N}	Nm	7	7		
		in.lb	62	62		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	25	25		
		in.lb	221	221		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	5000	5500		
Max. input speed	n_{1Max}	rpm	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.7	0.5		
		in.lb	6.2	4.4		
Max. backlash	j_t	arcmin	Standard ≤ 5			
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	0.4	0.6		
		in.lb/arcmin	4	5		
Max. axial force ^{c)}	F_{2AMax}	N	500			
		lb _f	113			
Max. lateral force ^{c)}	F_{2OMax}	N	950			
		lb _f	214			
Max. tilting moment	M_{2KMax}	Nm	71			
		in.lb	628			
Efficiency at full load	η	%	97			
Service life	L_h	h	> 20000			
Weight (incl. standard adapter plate)	m	kg	1.9			
		lb _m	4			
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	0 to +40			
		F	32 to 104			
Lubrication			Lubricated for life			
Direction of rotation			In- and output same direction			
Protection class			IP 65			
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00015AA - 012.000 - X			
Bore diameter of coupling on the application side		mm	X = 008.000 - 028.000			
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	J_1	kgcm ²	0.66	0.42
				10 ⁻³ in.lb.s ²	0.58	0.37
	E	19	J_1	kgcm ²	0.99	0.75
				10 ⁻³ in.lb.s ²	0.88	0.66

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

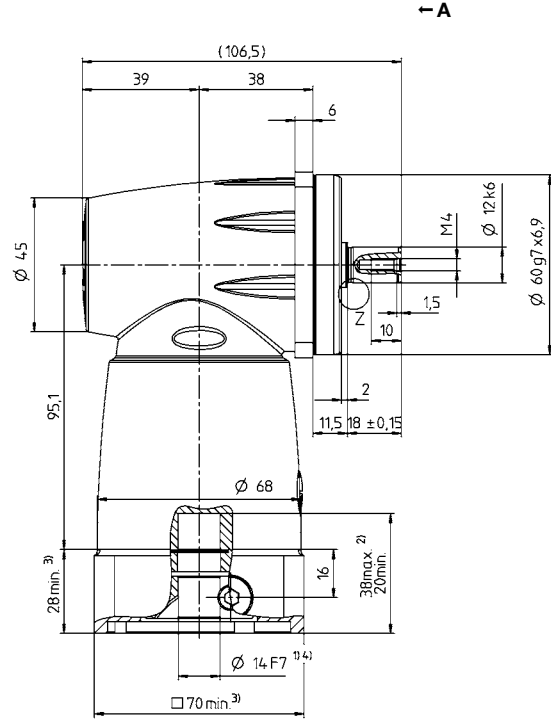
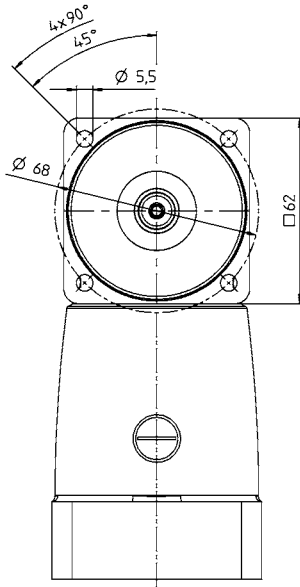
- ^{a)} At max. 10 % F_{2OMax}
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

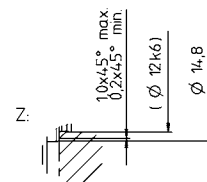
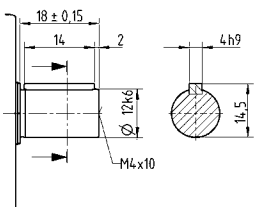
1-stage

up to 14 / 19⁴⁾
(C⁵⁾ / E) clamping
hub diameter



Other output variants

Shaft with key



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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Fax: +91-44994642

تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

				1-stage		
Ratio	<i>i</i>		1	2		
Max. torque ^{a) b) e)}	T_{2a}	Nm	36	36		
		in.lb	319	319		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	30	30		
		in.lb	266	266		
Nominal torque (at n_n)	T_{2N}	Nm	20	20		
		in.lb	177	177		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	48	62		
		in.lb	425	549		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2600	4000		
Max. input speed	n_{1Max}	rpm	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.5	0.8		
		in.lb	13	7.1		
Max. backlash	j_t	arcmin	Standard ≤ 4			
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	1	1.5		
		in.lb/arcmin	9	13		
Max. axial force ^{c)}	F_{2AMax}	N	700			
		lb _f	158			
Max. lateral force ^{c)}	F_{2OMax}	N	1300			
		lb _f	293			
Max. tilting moment	M_{2KMax}	Nm	131			
		in.lb	1159			
Efficiency at full load	η	%	97			
Service life	L_h	h	> 20000			
Weight (incl. standard adapter plate)	m	kg	3.6			
		lb _m	8			
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68			
Max. permitted housing temperature		°C	+90			
		F	194			
Ambient temperature		°C	0 to +40			
		F	32 to 104			
Lubrication			Lubricated for life			
Direction of rotation			In- and output same direction			
Protection class			IP 65			
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00030AA - 016.000 - X			
Bore diameter of coupling on the application side		mm	X = 010.000 - 030.000			
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	kgcm ²	1.99	1.19
				10 ⁻³ in.lb.s ²	1.76	1.05
	H	28	J_1	kgcm ²	3.43	2.63
				10 ⁻³ in.lb.s ²	3.04	2.33

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

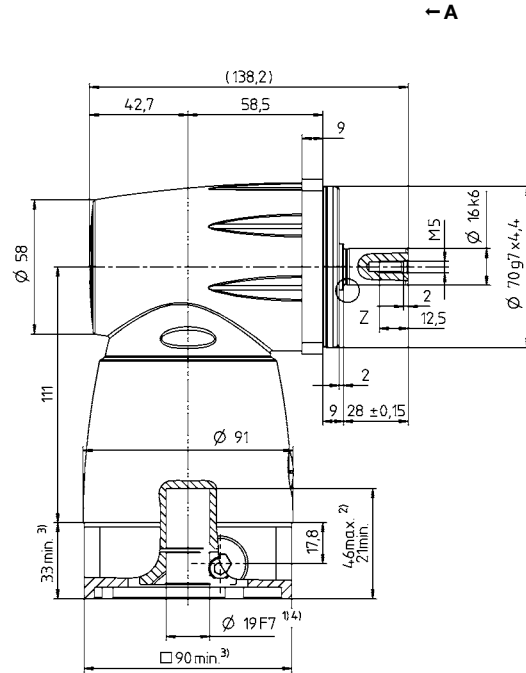
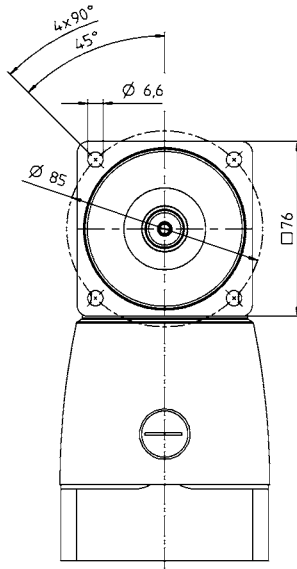
- ^{a)} At max. 10 % F_{2OMax}
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

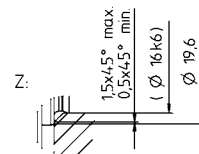
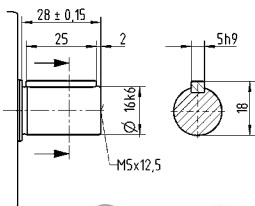
1-stage

up to 19/28⁴⁾
(E⁵⁾/H) clamping
hub diameter



Other output variants

Shaft with key



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		1	2	
Max. torque ^{a) b) e)}	T_{2a}	Nm	97	97	
		in.lb	859	859	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	81	81	
		in.lb	717	717	
Nominal torque (at n_n)	T_{2N}	Nm	50	50	
		in.lb	443	443	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	135	160	
		in.lb	1195	1416	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2500	2800	
Max. input speed	n_{1Max}	rpm	4500	4500	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3.4	2.2	
		in.lb	30	19	
Max. backlash	j_t	arcmin	Standard ≤ 4		
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	2.9	4.6	
		in.lb/arcmin	26	41	
Max. axial force ^{c)}	F_{2AMax}	N	1900		
		lb _f	428		
Max. lateral force ^{c)}	F_{2OMax}	N	3800		
		lb _f	855		
Max. tilting moment	M_{2KMax}	Nm	439		
		in.lb	3886		
Efficiency at full load	η	%	97		
Service life	L_h	h	> 20000		
Weight (incl. standard adapter plate)	m	kg	7		
		lb _m	15		
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68		
Max. permitted housing temperature		°C	+90		
		F	194		
Ambient temperature		°C	0 to +40		
		F	32 to 104		
Lubrication			Lubricated for life		
Direction of rotation			In- and output same direction		
Protection class			IP 65		
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00080AA - 022.000 - X		
Bore diameter of coupling on the application side		mm	X = 014.000 - 042.000		
Mass moment of inertia (relates to the drive)	H 28	J_1	kgcm ²	7.1	4.8
			10 ⁻³ in.lb.s ²	6.28	4.25
Clamping hub diameter [mm]	K 38	J_1	kgcm ²	14.2	11.9
			10 ⁻³ in.lb.s ²	12.57	10.53

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

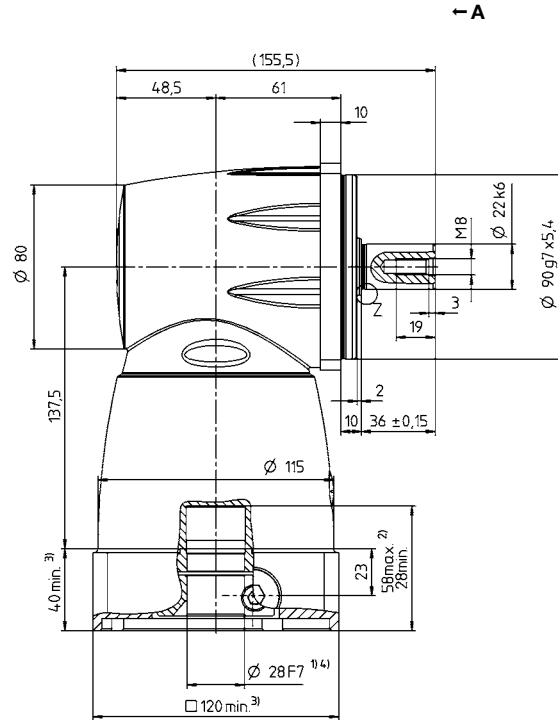
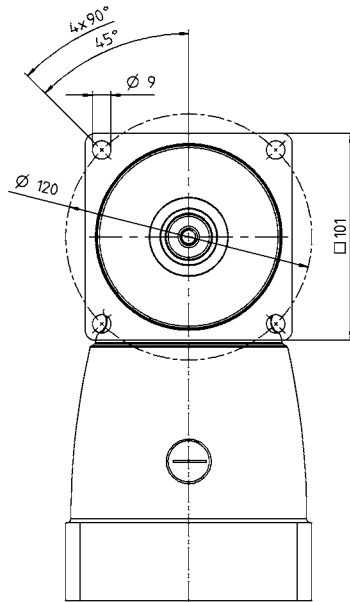
- ^{a)} At max. 10 % F_{2OMax}
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

1-stage

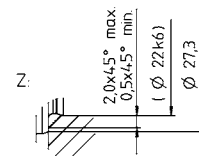
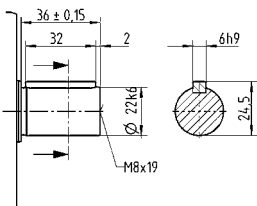
up to 28/38⁴⁾
(H⁵⁾/K) clamping
hub diameter



← A

Other output variants

Shaft with key



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			1-stage		
Ratio	<i>i</i>		1	2	
Max. torque ^{a) b) e)}	T_{2a}	Nm	210	210	
		in.lb	1859	1859	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	175	175	
		in.lb	1549	1549	
Nominal torque (at n_n)	T_{2N}	Nm	110	110	
		in.lb	974	974	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	240	310	
		in.lb	2124	2744	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1600	2100	
Max. input speed	n_{1Max}	rpm	4500	4500	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	6.2	3.9	
		in.lb	55	35	
Max. backlash	j_t	arcmin	Standard ≤ 4		
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	6.4	9.1	
		in.lb/arcmin	57	81	
Max. axial force ^{c)}	F_{2AMax}	N	3000		
		lb _f	675		
Max. lateral force ^{c)}	F_{2QMMax}	N	6000		
		lb _f	1350		
Max. tilting moment	M_{2KMMax}	Nm	957		
		in.lb	8470		
Efficiency at full load	η	%	97		
Service life	L_h	h	> 20000		
Weight (incl. standard adapter plate)	m	kg	14.7		
		lb _m	32		
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70		
Max. permitted housing temperature		°C	+90		
		F	194		
Ambient temperature		°C	0 to +40		
		F	32 to 104		
Lubrication			Lubricated for life		
Direction of rotation			In- and output same direction		
Protection class			IP 65		
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00200AA - 032.000 - X		
Bore diameter of coupling on the application side		mm	X = 022.000 - 045.000		
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	K 38	J_1	kgcm ²	41.3	21.3
			10 ⁻³ in.lb.s ²	36.55	18.85

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
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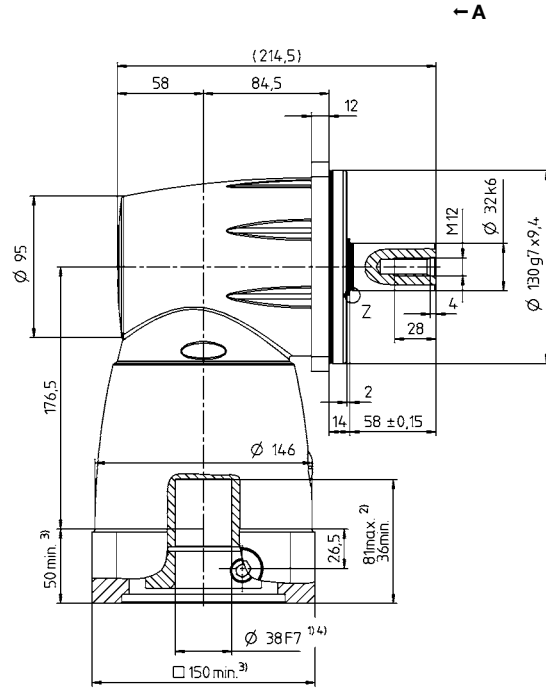
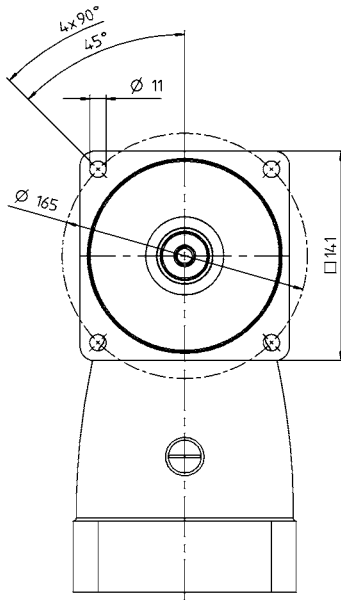
- ^{a)} At max. 10 % F_{2QMax}
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

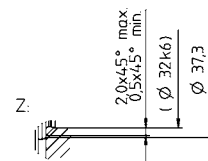
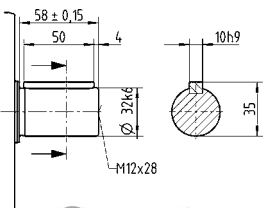
1-stage

up to 38⁴⁾ (K)⁵⁾
clamping hub diameter



Other output variants

Shaft with key



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			1-stage			
Ratio	<i>i</i>		1	2		
Max. torque ^{a) b) e)}	T_{2a}	Nm	378	378		
		in.lb	3346	3346		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	315	315		
		in.lb	2788	2788		
Nominal torque (at n_n)	T_{2N}	Nm	200	200		
		in.lb	1770	1770		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	390	685		
		in.lb	3452	6063		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1200	1500		
Max. input speed	n_{1Max}	rpm	4000	4000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	14	8		
		in.lb	124	71		
Max. backlash	j_t	arcmin	Standard ≤ 3			
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	13	22		
		in.lb/arcmin	115	195		
Max. axial force ^{c)}	F_{2AMax}	N	4500			
		lb _f	1013			
Max. lateral force ^{c)}	F_{2QMMax}	N	9000			
		lb _f	2025			
Max. tilting moment	M_{2KMMax}	Nm	1910			
		in.lb	16905			
Efficiency at full load	η	%	97			
Service life	L_h	h	> 20000			
Weight (incl. standard adapter plate)	m	kg	31.4			
		lb _m	69			
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70			
Max. permitted housing temperature		°C	+90			
		F	194			
Ambient temperature		°C	0 to +40			
		F	32 to 104			
Lubrication			Lubricated for life			
Direction of rotation			In- and output same direction			
Protection class			IP 65			
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00300AA - 040.000 - X			
Bore diameter of coupling on the application side		mm	X = 024.000 - 060.000			
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	M	48	J_1	kgcm ²	99.5	46.7
				10 ⁻³ in.lb.s ²	88.06	41.33

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
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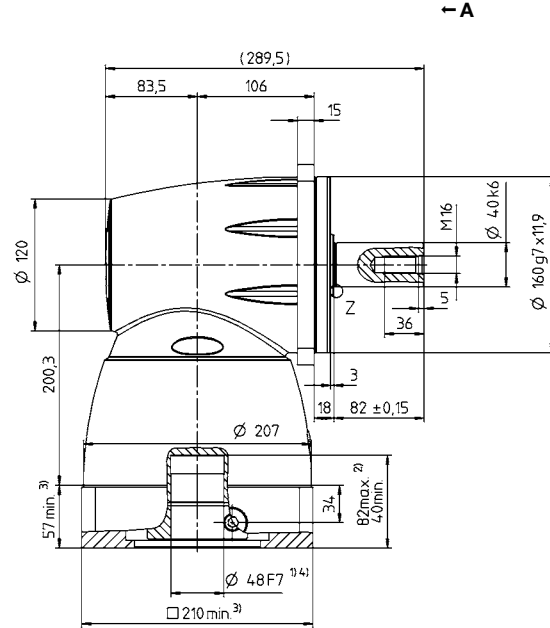
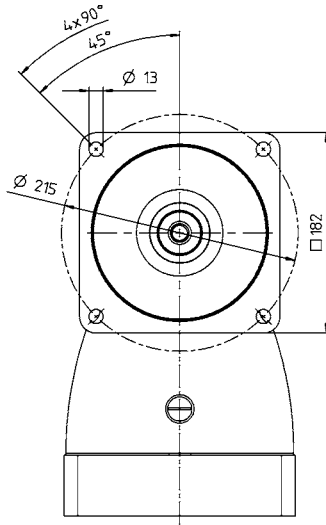
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

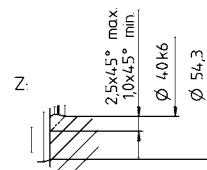
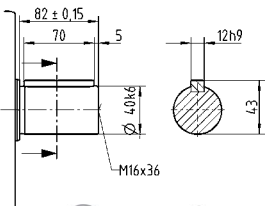
1-stage

up to 48⁴⁾ (M)⁵⁾
clamping hub diameter



Other output variants

Shaft with key



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b) e)}	T_{2a}	Nm	48	60	67	48	60	67	51		
		in.lb	425	531	593	425	531	593	451		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	40	50	50	40	50	50	38		
		in.lb	354	443	443	354	443	443	336		
Nominal torque (at n_n)	T_{2N}	Nm	26	26	26	26	26	26	17		
		in.lb	230	230	230	230	230	230	150		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	100	109	109	100	109	109	100		
		in.lb	885	965	965	885	965	965	885		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	3000	3000	3200	3400	3400	3600	3600		
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.7	1.5	1.3	1	1	0.84	0.67		
		in.lb	15	13	12	8.9	8.9	7.4	5.9		
Max. backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	2.4	2.7	3.1	2.7	3	3.2	3.3		
		in.lb/arcmin	21	24	27	24	27	28	29		
Max. axial force ^{c)}	F_{2AMax}	N	2400								
		lb _f	540								
Max. lateral force ^{c)}	F_{2OMax}	N	2800								
		lb _f	630								
Max. tilting moment	M_{2KMax}	Nm	152								
		in.lb	1345								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	3.1								
		lb _m	7								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00060AA - 016.000 - X								
Bore diameter of coupling on the application side		mm	X = 012.000 - 035.000								
Mass moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.72	0.7	0.66	0.44	0.43	0.43	0.43
				10 ⁻³ in.lb.s ²	0.64	0.62	0.58	0.39	0.38	0.38	0.38
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	1.05	1.03	0.99	0.77	0.76	0.76	0.75
				10 ⁻³ in.lb.s ²	1	1	1	1	1	1	1

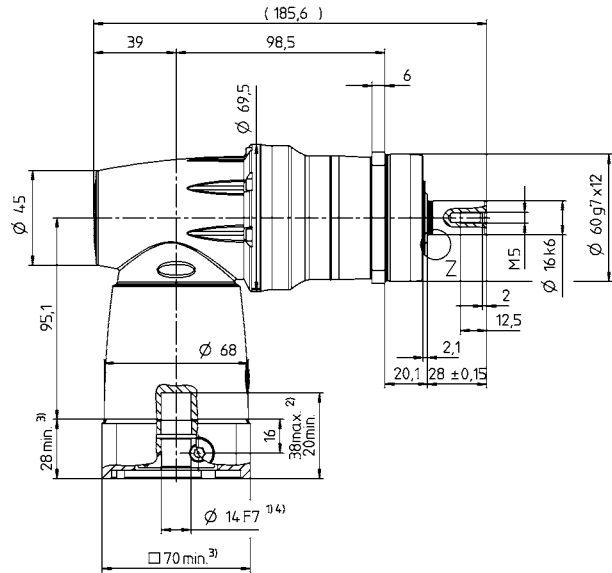
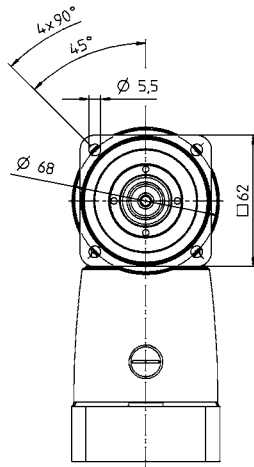
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2OMax}
^{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)} Smooth shaft

Motor shaft diameter [mm]

2-stage

up to 14/19⁴⁾
(C⁵⁾/E) clamping
hub diameter



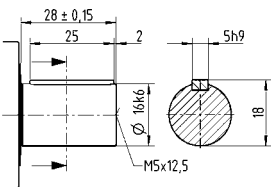
← A

Bevel gearboxes

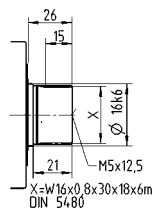
SPC

Other output variants

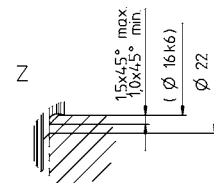
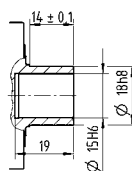
Shaft with key



Spined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b) e)}	T_{2a}	Nm	144	176	176	144	176	176	152		
		in.lb	1275	1558	1558	1275	1558	1558	1345		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	120	132	132	120	132	132	114		
		in.lb	1062	1168	1168	1062	1168	1168	1009		
Nominal torque (at n_n)	T_{2N}	Nm	75	75	75	75	75	75	52		
		in.lb	664	664	664	664	664	664	460		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	192	240	250	248	250	250	250		
		in.lb	1699	2124	2213	2195	2213	2213	2213		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2200	2200	2400	2650	2650	2800	2800		
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3.8	3.3	2.8	2.7	2.4	1.9	1.6		
		in.lb	34	29	25	24	21	17	14		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	6.6	7.5	8.6	7.6	8.3	9.1	9.5		
		in.lb/arcmin	58	66	76	67	73	81	84		
Max. axial force ^{c)}	F_{2AMax}	N	3350								
		lb _f	754								
Max. lateral force ^{c)}	F_{2OMax}	N	4200								
		lb _f	945								
Max. tilting moment	M_{2KMax}	Nm	236								
		in.lb	2089								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	5.9								
		lb _m	13								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00150AA - 022.000 - X								
Bore diameter of coupling on the application side		mm	X = 019.000 - 042.000								
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	kgcm ²	2.33	2.15	1.99	1.25	1.23	1.21	1.2
				10 ⁻³ in.lb.s ²	2.06	1.9	1.76	1.11	1.09	1.07	1.06
	H	28	J_1	kgcm ²	3.66	3.59	3.43	2.68	2.67	2.65	2.64
				10 ⁻³ in.lb.s ²	3.24	3.18	3.04	2.37	2.36	2.35	2.34

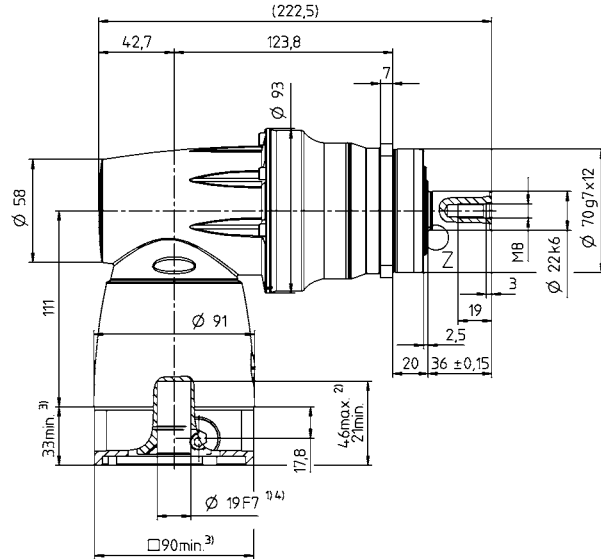
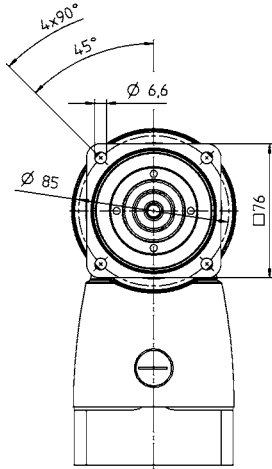
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2OMax}
^{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)} Smooth shaft

Motor shaft diameter [mm]

2-stage

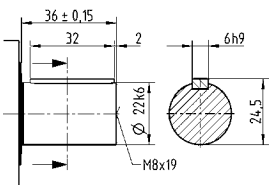
up to 19/28⁴⁾
(E⁵⁾/H) clamping
hub diameter



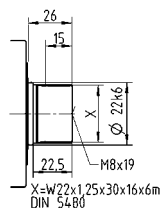
← A

Other output variants

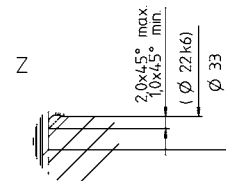
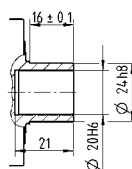
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>			4	5	7	8	10	14	20	
Max. torque ^{a) b) e)}	T_{2a}	<i>Nm</i>		389	486	428	389	486	428	376	
		<i>in.lb</i>		3443	4301	3788	3443	4301	3788	3328	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	<i>Nm</i>		324	378	378	324	378	378	282	
		<i>in.lb</i>		2868	3346	3346	2868	3346	3346	2496	
Nominal torque (at n_n)	T_{2N}	<i>Nm</i>		180	175	170	180	175	170	120	
		<i>in.lb</i>		1593	1549	1505	1593	1549	1505	1062	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	<i>Nm</i>		540	625	625	625	625	625	625	
		<i>in.lb</i>		4779	5532	5532	5532	5532	5532	5532	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}		2000	2000	2200	2300	2300	2400	2400	
Max. input speed	n_{1Max}	<i>rpm</i>		4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	<i>Nm</i>		7.1	6.7	5.6	4.3	4	3.4	3.2	
		<i>in.lb</i>		63	59	50	38	35	30	28	
Max. backlash	j_t	<i>arcmin</i>		Standard ≤ 4 / Reduced ≤ 2							
Torsional rigidity ^{b)}	C_{t21}	<i>Nm/arcmin</i>		20	23	26	24	26	28	30	
		<i>in.lb/arcmin</i>		177	204	230	212	230	248	266	
Max. axial force ^{c)}	F_{2AMax}	<i>N</i>		5650							
		<i>lb_f</i>		1271							
Max. lateral force ^{c)}	F_{2OMax}	<i>N</i>		6600							
		<i>lb_f</i>		1485							
Max. tilting moment	M_{2KMax}	<i>Nm</i>		487							
		<i>in.lb</i>		4310							
Efficiency at full load	η	%		95							
Service life	L_h	<i>h</i>		> 20000							
Weight (incl. standard adapter plate)	<i>m</i>	<i>kg</i>		11.7							
		<i>lb_m</i>		26							
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	<i>dB(A)</i>		≤ 68							
Max. permitted housing temperature		°C		+90							
		<i>F</i>		194							
Ambient temperature		°C		0 to +40							
		<i>F</i>		32 to 104							
Lubrication				Lubricated for life							
Direction of rotation				In- and output same direction							
Protection class				IP 65							
Metal bellows coupling (recommended product type – validate sizing with cymex [®])				BC2 - 00300AA - 032.000 - X							
Bore diameter of coupling on the application side		<i>mm</i>		X = 024.000 - 060.000							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	H	28	J_1	<i>kgcm²</i>	8	7.6	7	5	4.9	4.9	4.8
				<i>10⁻³ in.lb.s²</i>	7	7	6	4	4	4	4
	K	38	J_1	<i>kgcm²</i>	15	14.7	14.1	12.1	12	11.9	11.9
				<i>10⁻³ in.lb.s²</i>	13	13	12	11	11	11	11

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

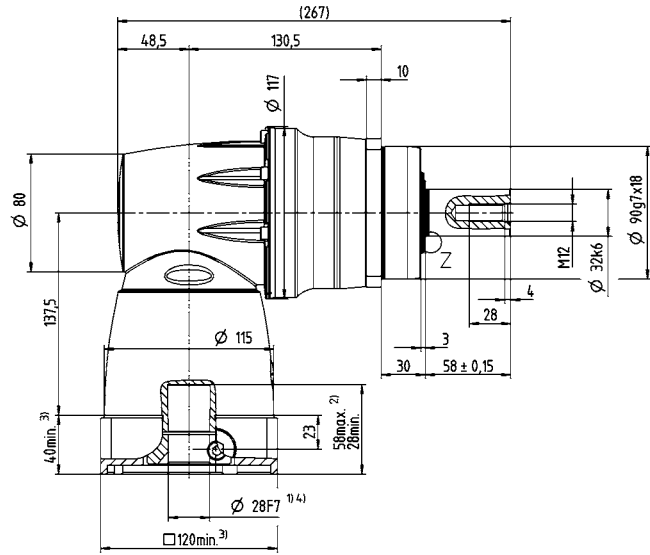
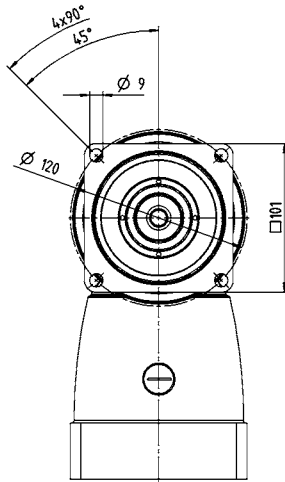
^{a)} At max. 10 % F_{2OMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

2-stage

up to 28 / 38⁴⁾
(H⁵⁾ / K) clamping
hub diameter



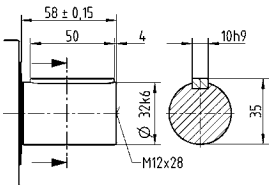
← A

Bevel gearboxes

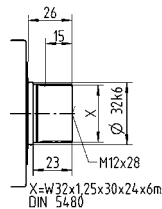
SPC

Other output variants

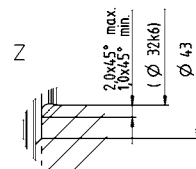
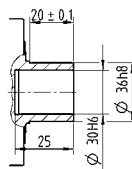
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b) e)}	T_{2a}	Nm	840	1050	825	840	1050	825	720		
		in.lb	7435	9293	7302	7435	9293	7302	6373		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	700	792	792	700	792	792	636		
		in.lb	6196	7010	7010	6196	7010	7010	5629		
Nominal torque (at n_n)	T_{2N}	Nm	360	360	360	360	360	360	220		
		in.lb	3186	3186	3186	3186	3186	3186	1947		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	960	1200	1350	1240	1350	1350	1250		
		in.lb	8497	10621	11949	10975	11949	11949	11064		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1300	1300	1400	1500	1500	1600	1600		
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	15	13	11	11	9.2	7.8	6.6		
		in.lb	133	115	97	97	81	69	58		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	37	41	46	41	45	48	51		
		in.lb/arcmin	327	363	407	363	398	425	451		
Max. axial force ^{c)}	F_{2AMax}	N	9870								
		lb _f	2221								
Max. lateral force ^{c)}	F_{2OMax}	N	9900								
		lb _f	2228								
Max. tilting moment	M_{2KMax}	Nm	952								
		in.lb	8426								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	24.7								
		lb _m	55								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00800AA - 040.000 - X								
Bore diameter of coupling on the application side		mm	X = 040.000 - 075.000								
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	K	38	J_1	kgcm ²	30.6	29.7	27.9	18.9	18.7	18.5	18.4
				10 ⁻³ in.lb.s ²	27	26	25	17	17	16	16

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

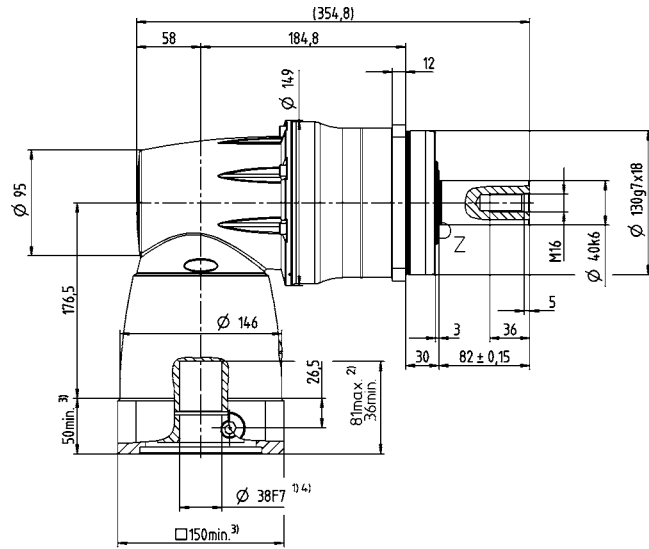
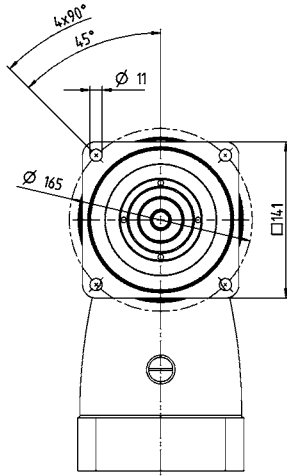
^{a)} At max. 10 % F_{2OMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

2-stage

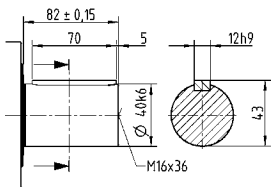
up to 38⁴⁾ (K)⁵⁾
clamping hub diameter



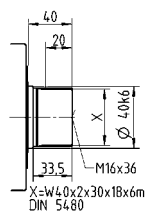
← A

Other output variants

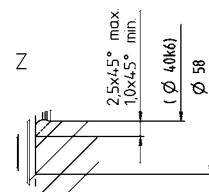
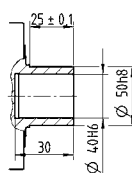
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



www.famcocorp.com

E-mail: info@famcocorp.com

@famco_group

Tel: ۰۲۱-۴۸۰۰۰۰۴۹

Fax: ۰۲۱-۴۴۹۹۴۶۴۲

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			2-stage								
Ratio	<i>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b) e)}	T_{2a}	Nm	1512	1890	1936	1512	1890	1936	1552		
		in.lb	13382	16728	17135	13382	16728	17135	13736		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	1260	1452	1452	1260	1452	1452	1164		
		in.lb	11152	12851	12851	11152	12851	12851	10302		
Nominal torque (at n_n)	T_{2N}	Nm	750	750	750	750	750	750	750		
		in.lb	6638	6638	6638	6638	6638	6638	6638		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	1560	1950	2730	2740	2750	2750	2750		
		in.lb	13807	17259	24163	24251	24340	24340	24340		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1000	1000	1100	1200	1200	1300	1300		
Max. input speed	n_{1Max}	rpm	4000	4000	4000	4000	4000	4000	4000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	30	27	24	16	15	13	12		
		in.lb	266	239	212	142	133	115	106		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	104	122	143	130	144	157	166		
		in.lb/arcmin	920	1080	1266	1151	1275	1390	1469		
Max. axial force ^{c)}	F_{2AMax}	N	15570								
		lb _f	3503								
Max. lateral force ^{c)}	F_{2OMax}	N	15400								
		lb _f	3465								
Max. tilting moment	M_{2KMax}	Nm	1600								
		in.lb	14161								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	54.7								
		lb _m	121								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 01500AA - 055.000 - X								
Bore diameter of coupling on the application side		mm	X = 050.000 - 080.000								
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	M	48	J_1	kgcm ²	109.5	105	94.7	49.2	48.1	46.9	46.2
				10 ⁻³ in.lb.s ²	97	93	84	44	43	42	41

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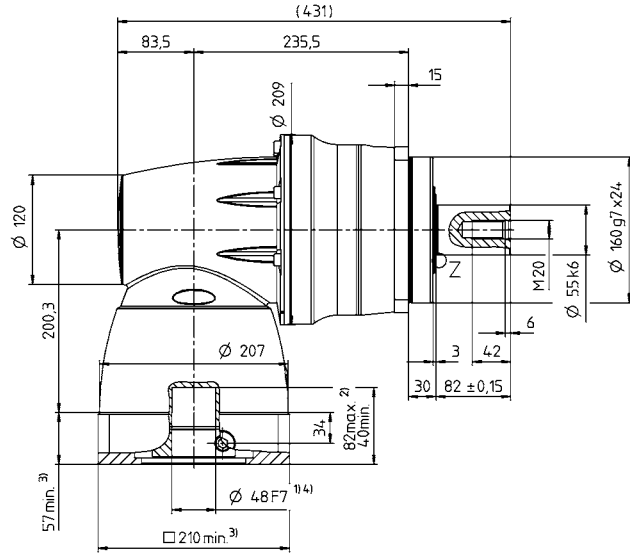
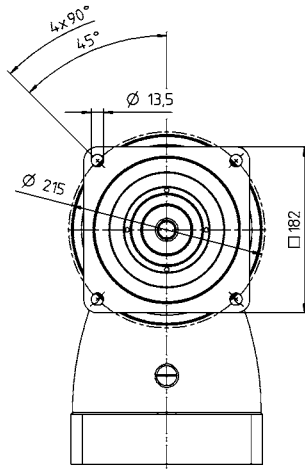
^{a)} At max. 10 % F_{2OMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

2-stage

up to 48⁴⁾ (M)⁵⁾
clamping hub diameter



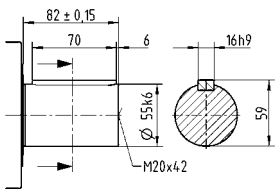
← A

Bevel gearboxes

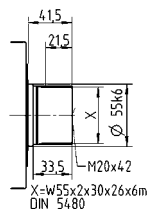
SPC

Other output variants

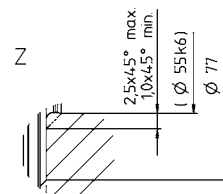
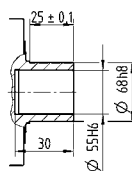
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b)}	T_{2a}	Nm	48	60	83	48	60	83	56		
		in.lb	425	531	735	425	531	735	496		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	40	50	66	40	50	66	42		
		in.lb	354	443	584	354	443	584	372		
Nominal torque (at n_n)	T_{2N}	Nm	28	28	28	28	28	28	18		
		in.lb	248	248	248	248	248	248	159		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	100	100	100	100	100	100	100		
		in.lb	885	885	885	885	885	885	885		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2900	2900	3100	3400	3400	3600	3600		
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	2.1	1.8	1.5	1.3	1.2	1	0.84		
		in.lb	19	16	13	12	11	8.9	7.4		
Max. backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	4.8	6.2	7.6	6.1	7.4	8.5	7.3		
		in.lb/arcmin	42	55	67	54	65	75	65		
Tilting rigidity	C_{2K}	Nm/arcmin	85								
		in.lb/arcmin	752								
Max. axial force ^{c)}	F_{2AMax}	N	2119								
		lb _f	477								
Max. tilting moment	M_{2KMax}	Nm	110								
		in.lb	974								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	2.6								
		lb _m	6								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00015AAX - 031.500								
Bore diameter of coupling on the application side		mm	X = 012.000 - 028.000								
Mass moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.72	0.7	0.66	0.44	0.43	0.43	0.43
				10 ⁻³ in.lb.s ²	0.64	0.62	0.58	0.39	0.38	0.38	0.38
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	1.05	1.03	0.99	0.77	0.76	0.76	0.75
				10 ⁻³ in.lb.s ²	1	1	1	1	1	1	1

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

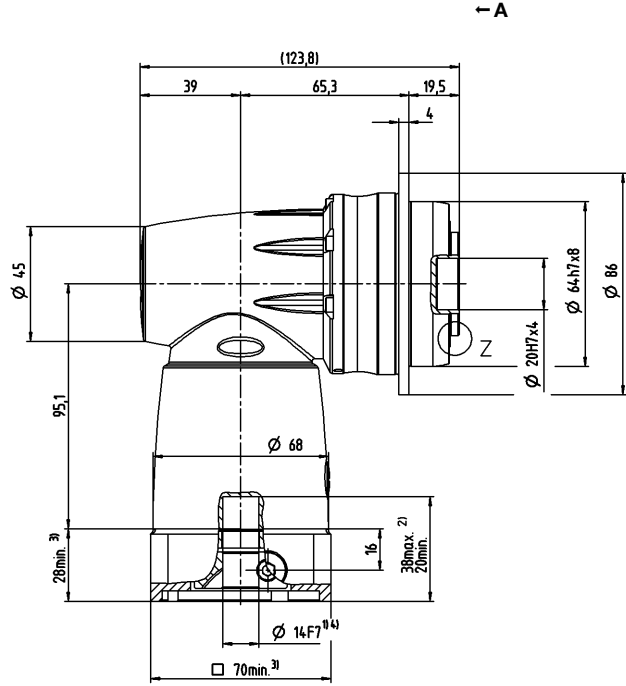
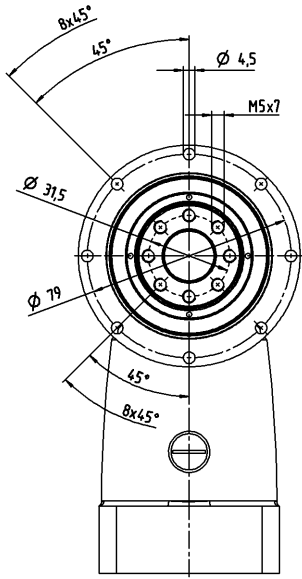
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

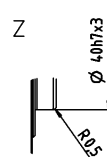
2-stage

up to 14 / 19⁴⁾
(C⁵⁾ / E) clamping
hub diameter



Bevel gearboxes

TPC



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b)}	T_{2a}	Nm	144	180	210	144	180	210	168		
		in.lb	1275	1593	1859	1275	1593	1859	1487		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	120	150	172	120	150	172	126		
		in.lb	1062	1328	1522	1062	1328	1522	1115		
Nominal torque (at n_n)	T_{2N}	Nm	75	75	75	75	75	75	60		
		in.lb	664	664	664	664	664	664	531		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	192	240	251	248	251	251	251		
		in.lb	1699	2124	2222	2195	2222	2222	2222		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2100	2100	2300	2650	2650	2800	2800		
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	4.2	3.7	3.2	2.9	2.7	2.1	1.9		
		in.lb	37	33	28	26	24	19	17		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	12	16	20	16	20	23	21		
		in.lb/arcmin	106	142	177	142	177	204	186		
Tilting rigidity	C_{2K}	Nm/arcmin	225								
		in.lb/arcmin	1991								
Max. axial force ^{c)}	F_{2AMax}	N	2795								
		lb _f	629								
Max. tilting moment	M_{2KMax}	Nm	270								
		in.lb	2390								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	5.8								
		lb _m	13								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00060AAX - 050.000								
Bore diameter of coupling on the application side		mm	X = 014.000 - 035.000								
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	kgcm ²	2.41	2.27	1.99	1.29	1.26	1.22	1.21
				10 ⁻³ in.lb.s ²	2.13	2.01	1.76	1.14	1.12	1.08	1.07
	H	28	J_1	kgcm ²	3.85	3.71	3.43	2.73	2.7	2.66	2.64
				10 ⁻³ in.lb.s ²	3.41	3.28	3.04	2.42	2.39	2.35	2.34

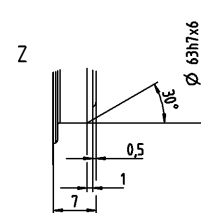
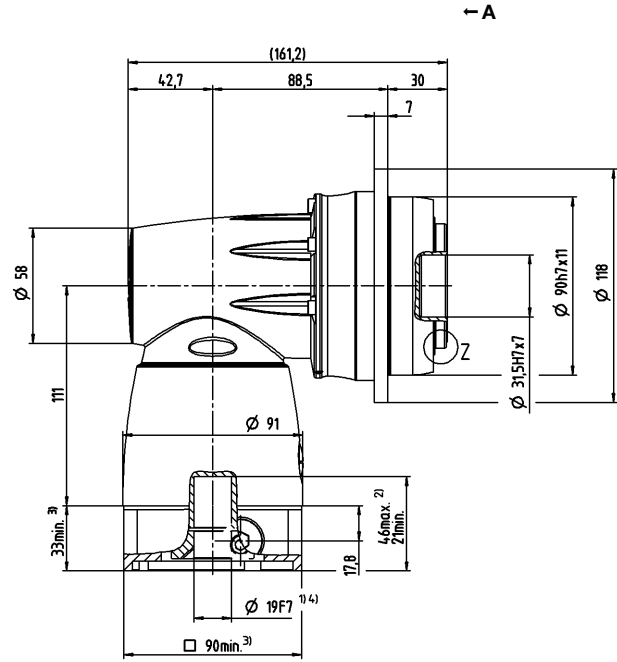
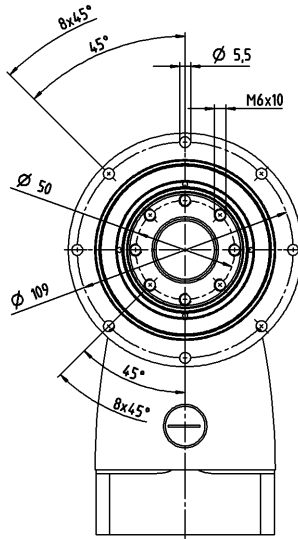
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

Motor shaft diameter [mm]

2-stage

up to 19/28⁴⁾
(E⁵⁾/H) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b)}	T_{2a}	Nm	352	380	352	352	380	352	352		
		in.lb	3115	3363	3115	3115	3363	3115	3115		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	324	380	352	324	380	352	318		
		in.lb	2868	3363	3115	2868	3363	3115	2815		
Nominal torque (at n_n)	T_{2N}	Nm	170	170	170	180	175	170	120		
		in.lb	1505	1505	1505	1593	1549	1505	1062		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	540	625	625	625	625	625	625		
		in.lb	4779	5532	5532	5532	5532	5532	5532		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1900	1900	2100	2300	2300	2400	2400		
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	7.9	7.1	6.1	4.7	4.3	3.7	3.2		
		in.lb	70	63	54	42	38	33	28		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	33	43	53	45	56	61	57		
		in.lb/arcmin	292	381	469	398	496	540	504		
Tilting rigidity	C_{2K}	Nm/arcmin	550								
		in.lb/arcmin	4868								
Max. axial force ^{c)}	F_{2AMax}	N	4800								
		lb _f	1080								
Max. tilting moment	M_{2KMax}	Nm	440								
		in.lb	3894								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	10.5								
		lb _m	23								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00150AAX - 063.000								
Bore diameter of coupling on the application side		mm	X = 019.000 - 042.000								
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	H	28	J_1	kgcm ²	8.3	7.9	7	5.1	5	4.9	4.8
				10 ⁻³ in.lb.s ²	7	7	6	5	4	4	4
	K	38	J_1	kgcm ²	15.4	14.9	14.1	12.2	12.1	12	11.9
				10 ⁻³ in.lb.s ²	14	13	12	11	11	11	11

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

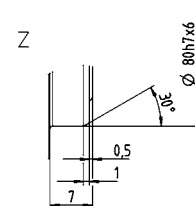
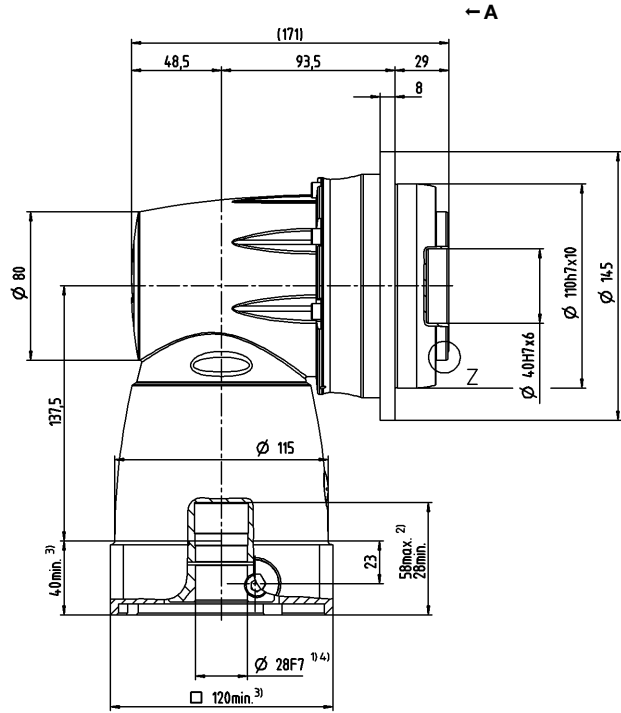
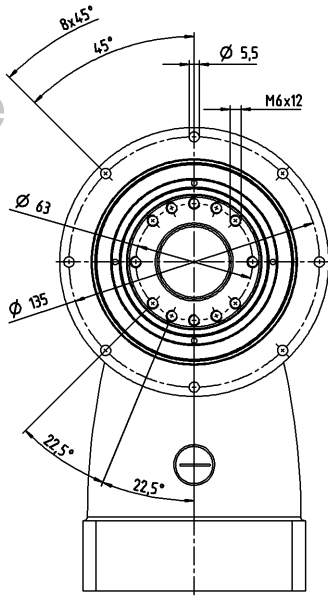
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

2-stage

up to 28/38⁴⁾
(H⁵⁾/K) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b)}	T_{2a}	Nm	840	992	868	840	992	868	720		
		in.lb	7435	8780	7682	7435	8780	7682	6373		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	700	840	840	700	840	840	648		
		in.lb	6196	7435	7435	6196	7435	7435	5735		
Nominal torque (at n_n)	T_{2N}	Nm	370	370	370	370	370	370	240		
		in.lb	3275	3275	3275	3275	3275	3275	2124		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	960	1200	1250	1240	1250	1250	1250		
		in.lb	8497	10621	11064	10975	11064	11064	11064		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1200	1200	1300	1500	1500	1600	1600		
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	19	16	14	13	11	9.4	7.8		
		in.lb	168	142	124	115	97	83	69		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	73	93	111	93	113	124	111		
		in.lb/arcmin	646	823	982	823	1000	1097	982		
Tilting rigidity	C_{2K}	Nm/arcmin	560								
		in.lb/arcmin	4956								
Max. axial force ^{c)}	F_{2AMax}	N	6130								
		lb _f	1379								
Max. tilting moment	M_{2KMax}	Nm	1379								
		in.lb	12205								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	21.5								
		lb _m	48								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00300AAX - 080.000								
Bore diameter of coupling on the application side		mm	X = 024.000 - 060.000								
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	K	38	J_1	kgcm ²	32.3	30.8	27.9	19.4	19	18.7	18.5
				10 ⁻³ in.lb.s ²	29	27	25	17	17	17	16

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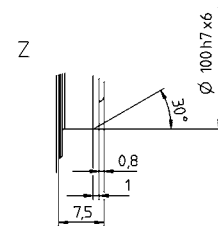
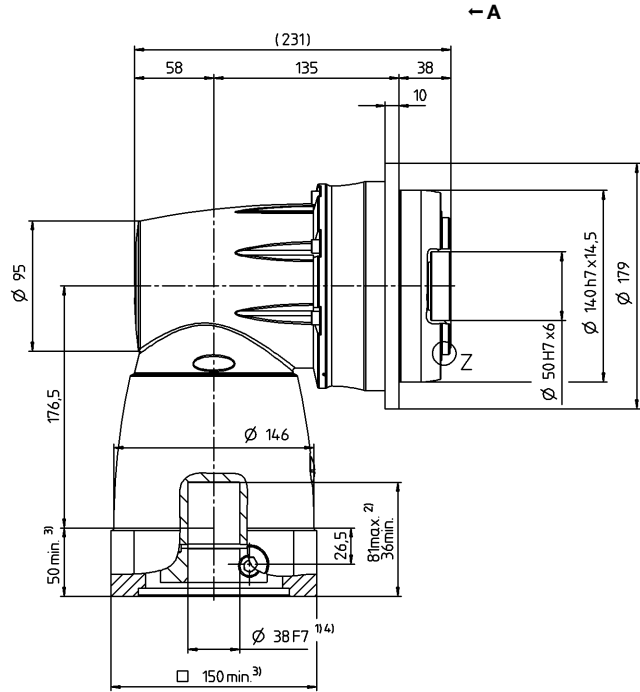
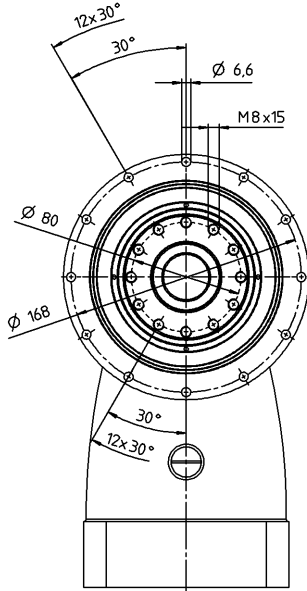
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

2-stage

up to 38⁴⁾ (K)⁵⁾
clamping hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		4	5	7	8	10	14	20		
Max. torque ^{a) b)}	T_{2a}	Nm	1512	1890	2560	1512	1890	2560	2240		
		in.lb	13382	16728	22658	13382	16728	22658	19826		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	1260	1575	1920	1260	1575	1920	1680		
		in.lb	11152	13940	16994	11152	13940	16994	14869		
Nominal torque (at n_n)	T_{2N}	Nm	700	750	750	700	750	750	750		
		in.lb	6196	6638	6638	6196	6638	6638	6638		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	1560	1950	2730	2740	3075	3075	3075		
		in.lb	13807	17259	24163	24251	27216	27216	27216		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	900	900	1000	1200	1200	1300	1300		
Max. input speed	n_{1Max}	rpm	4000	4000	4000	4000	4000	4000	4000		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	37	32	28	20	17	15	13		
		in.lb	327	283	248	177	150	133	115		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	181	242	324	278	345	407	390		
		in.lb/arcmin	1602	2142	2868	2461	3054	3602	3452		
Tilting rigidity	C_{2K}	Nm/arcmin	1452								
		in.lb/arcmin	12851								
Max. axial force ^{c)}	F_{2AMax}	N	10050								
		lb _f	2261								
Max. tilting moment	M_{2KMax}	Nm	3280								
		in.lb	29031								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	50.7								
		lb _m	112								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output same direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 01500AAX - 125.000								
Bore diameter of coupling on the application side		mm	X = 050.000 - 080.000								
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	M	48	J_1	kgcm ²	121.2	112.6	94.7	52.1	50	47.9	46.7
				10 ⁻³ in.lb.s ²	107	100	84	46	44	42	41

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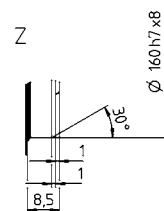
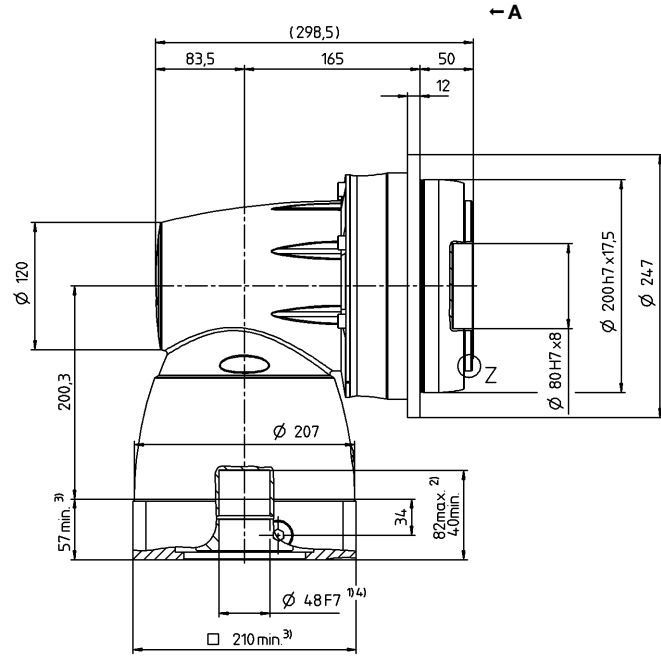
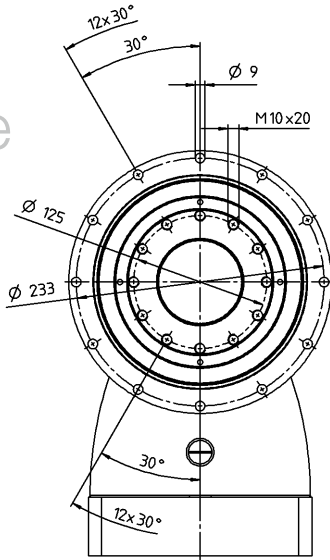
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

2-stage

up to 48⁴⁾ (M)⁵⁾
clamping hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

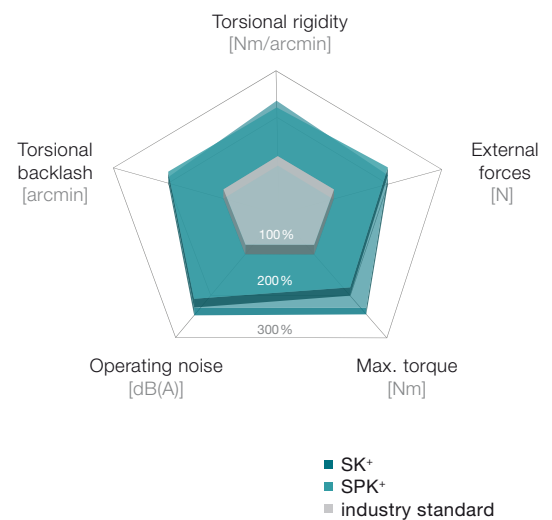
SK⁺ / SPK⁺ – Space-saving right-angle precision with output shaft



SK⁺

The versatile hypoid gearbox with SP⁺ compatible output shaft. SPK⁺ gearboxes with planetary stage are especially suitable for high-precision applications requiring higher power and outstanding torsional rigidity.

The SK⁺ / SPK⁺ compared to the industry standard



Product highlights

Max. torsional backlash

SK⁺ ≤ 4 arcmin (Standard)

SPK⁺ ≤ 4 arcmin (Standard)

≤ 2 arcmin (Reduced)

Diverse range of ratios $i = 3 - 10,000$

Flexibility thanks to various output types

Other gearbox models

Corrosional resistant design, ATEX (SK⁺)



SPK⁺ in corrosion-resistant design



SK⁺ with rearward shaft

Taper roller bearings for absorbing axial and radial forces

Output compatible with SP+ series

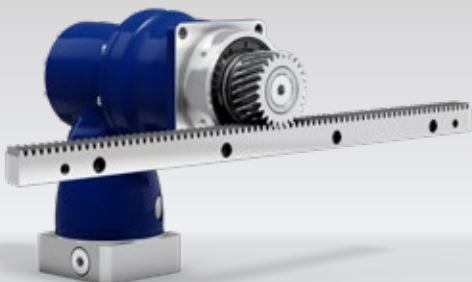
Variable output connection, also rearward

High-quality hypoid gearing for a higher torque and smoother operation

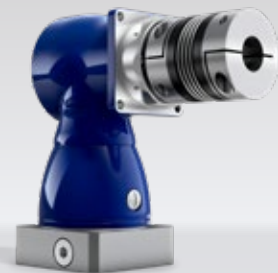
Metal bellows coupling at the input: length compensation to protect the motor bearing

SPK+

Hypoid gearboxes



SPK+ with rack and pinion



SK+ with metal bellows coupling

			1-stage					2-stage										
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100	
Max. torque ^{a) b) e)}	T_{2a}	Nm	36	36	36	25	20	36	36	36	36	36	36	36	36	25	20	
		in.lb	319	319	319	221	177	319	319	319	319	319	319	319	319	319	221	177
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	30	30	30	25	20	30	30	30	30	30	30	30	30	25	20	
		in.lb	266	266	266	221	177	266	266	266	266	266	266	266	266	266	221	177
Nominal torque (at n_n)	T_{2N}	Nm	22	22	22	20	15	22	22	22	22	22	22	22	22	20	15	
		in.lb	195	195	195	177	133	195	195	195	195	195	195	195	195	195	177	133
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	40	50	50	45	40	50	50	50	50	50	50	50	50	45	40	
		in.lb	354	443	443	398	354	443	443	443	443	443	443	443	443	443	398	354
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2500	2700	3000	3000	3000	4400	4400	4400	4400	4400	4400	4400	4800	5500	5500	
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.5	1.4	1.1	1.5	1.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
		in.lb	13	12	9.7	13	12	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Max. backlash	j_t	arcmin	Standard ≤ 5															
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	2	2.1	2.2	2	1.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2	1.8	
		in.lb/arcmin	18	19	19	18	16	19	19	19	19	19	19	19	19	18	16	
Max. axial force ^{c)}	F_{2AMax}	N	2400															
		lb _f	540															
Max. lateral force ^{c)}	F_{2QMax}	N	2700															
		lb _f	608															
Max. tilting moment	M_{2KMax}	Nm	251															
		in.lb	2222															
Efficiency at full load	η	%	96					94										
Service life	L_h	h	> 20000															
Weight (incl. standard adapter plate)	m	kg	2.9					3.2										
		lb _m	6					7										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 64															
Max. permitted housing temperature		°C	+90															
		F	194															
Ambient temperature		°C	0 to +40															
		F	32 to 104															
Lubrication			Lubricated for life															
Direction of rotation			In- and output opposite direction															
Protection class			IP 65															
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00030AA - 016.000 - X															
Bore diameter of coupling on the application side		mm	X = 010.000 - 030.000															
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	B	11	J_1	kgcm ²	-	-	-	-	-	0.09	0.09	0.07	0.07	0.06	0.06	0.06	0.06	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.08	0.08	0.06	0.06	0.05	0.05	0.05	0.05	0.05
	C	14	J_1	kgcm ²	0.52	0.44	0.4	0.36	0.34	0.2	0.2	0.19	0.19	0.18	0.18	0.17	0.17	0.17
				10 ⁻³ in.lb.s ²	0.46	0.39	0.35	0.32	0.3	0.18	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15
	E	19	J_1	kgcm ²	0.87	0.79	0.75	0.71	0.7	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	0.77	0.7	0.66	0.63	0.62	-	-	-	-	-	-	-	-	-

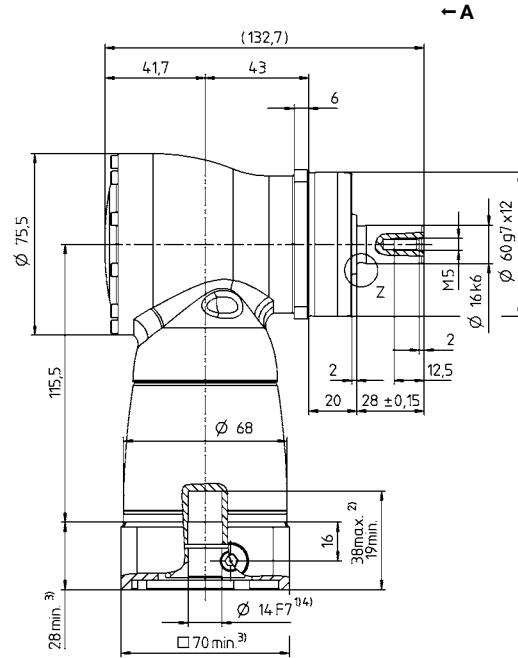
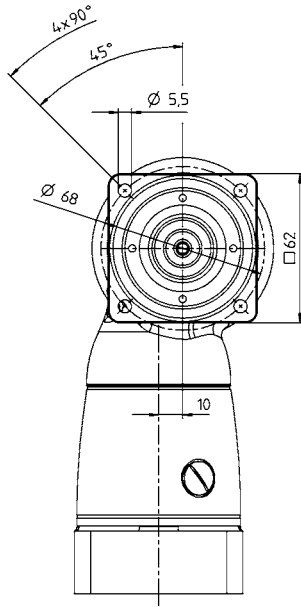
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}
^{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)} Smooth shaft

View A

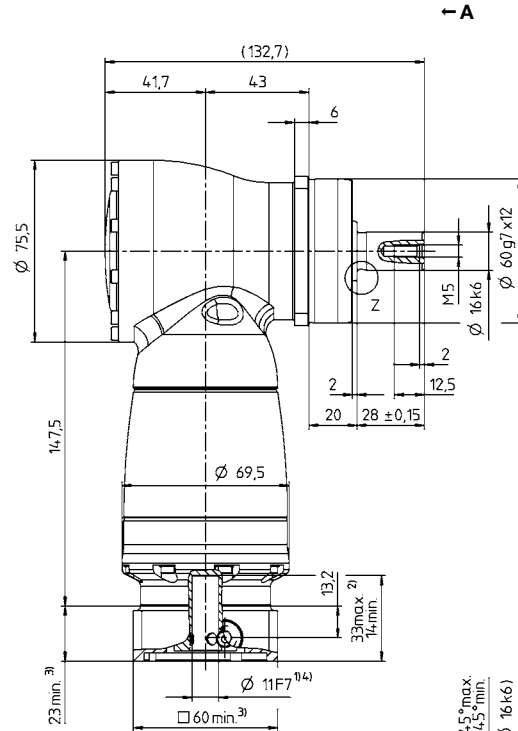
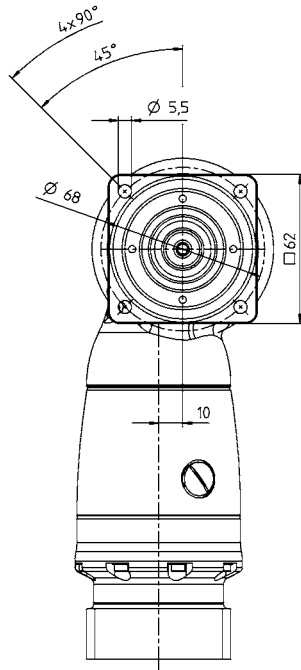
1-stage

up to 14/19⁴⁾
(C⁵⁾/E) clamping
hub diameter



2-stage

up to 11/14⁴⁾
(B⁵⁾/C) clamping
hub diameter



Motor shaft diameter [mm]

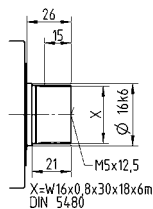
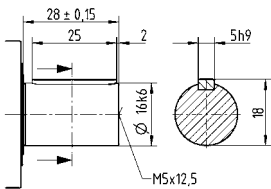
Hypoid gearboxes

SK

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	84	84	84	60	50	84	84	84	84	84	84	84	84	60	50		
		in.lb	743	743	743	531	443	743	743	743	743	743	743	743	743	743	531	443	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	70	70	70	60	50	70	70	70	70	70	70	70	70	60	50		
		in.lb	620	620	620	531	443	620	620	620	620	620	620	620	620	620	531	443	
Nominal torque (at n_n)	T_{2N}	Nm	50	50	50	45	40	50	50	50	50	50	50	50	50	45	40		
		in.lb	443	443	443	398	354	443	443	443	443	443	443	443	443	443	398	354	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	95	115	115	110	100	115	115	115	115	115	115	115	115	110	100		
		in.lb	841	1018	1018	974	885	1018	1018	1018	1018	1018	1018	1018	1018	974	885		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2300	2500	2800	2800	2800	3500	3500	3500	3500	3500	3500	3500	3800	4500	4500		
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	2.4	2	1.8	2.2	2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
		in.lb	21	18	16	19	18	2.7	2.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	5	5.5	6	6	6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6	6	6		
		in.lb/arcmin	44	49	53	53	53	49	49	49	49	49	49	49	53	53	53		
Max. axial force ^{c)}	F_{2AMax}	N	3400																
		lb _f	765																
Max. lateral force ^{c)}	F_{2QMax}	N	4000																
		lb _f	900																
Max. tilting moment	M_{2KMax}	Nm	437																
		in.lb	3868																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	4.8					5.4											
		lb _m	11					12											
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	°C	194																
		°C	0 to +40																
Ambient temperature	F	°C	32 to 104																
		°C	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00080AA - 022.000 - X																
Bore diameter of coupling on the application side		mm	X = 014.000 - 042.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	J_i	kgcm ²	-	-	-	-	-	0.28	0.27	0.23	0.23	0.2	0.2	0.18	0.18	0.18	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.25	0.24	0.2	0.2	0.18	0.18	0.16	0.16	0.16	0.16
	E	19	J_i	kgcm ²	1.46	1.19	1.06	0.95	0.9	0.73	0.71	0.68	0.67	0.63	0.62	0.63	0.63	0.63	0.63
				10 ⁻³ in.lb.s ²	1.29	1.05	0.94	0.84	0.8	0.65	0.63	0.6	0.59	0.56	0.55	0.56	0.56	0.56	0.56
	H	28	J_i	kgcm ²	2.88	2.61	2.47	2.37	2.31	-	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	2.55	2.31	2.19	2.1	2.04	-	-	-	-	-	-	-	-	-	-

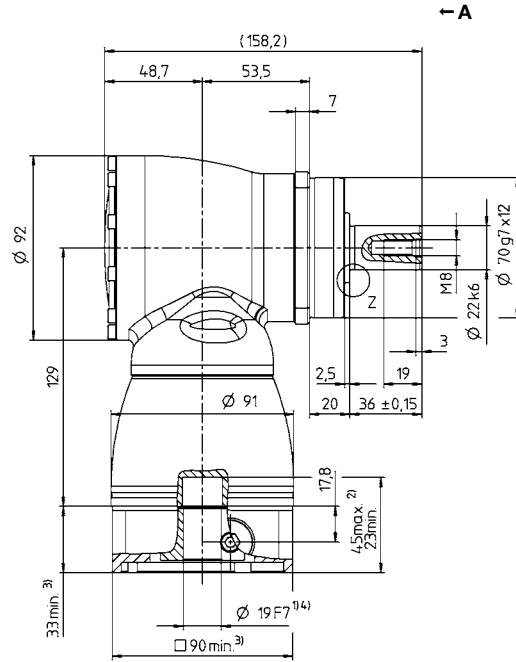
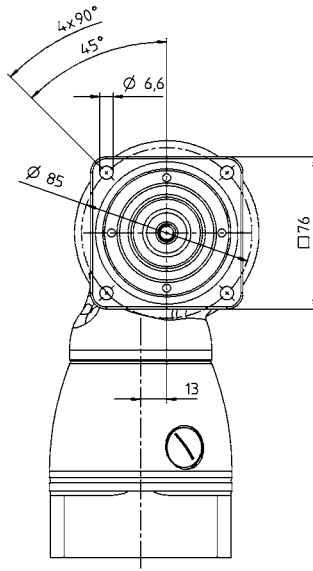
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- ^{a)} At max. 10 % F_{2QMax}
- ^{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)} Smooth shaft

View A

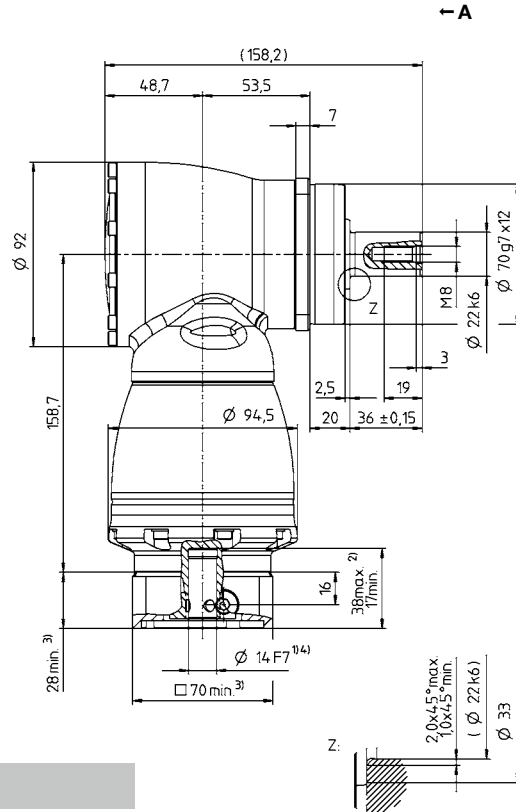
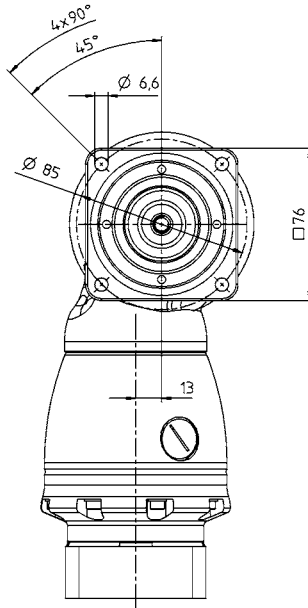
1-stage

up to 19/28⁴⁾
(E⁵⁾/H) clamping
hub diameter



2-stage

up to 14/19⁴⁾
(C⁵⁾/E) clamping
hub diameter

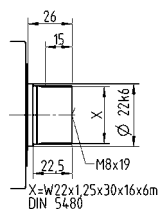
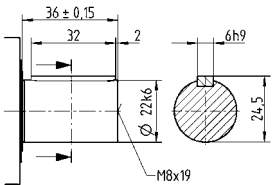


Motor shaft diameter [mm]

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	204	204	204	145	125	204	204	204	204	204	204	204	204	145	125		
		in.lb	1806	1806	1806	1283	1106	1806	1806	1806	1806	1806	1806	1806	1806	1806	1283	1106	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	170	170	170	145	125	170	170	170	170	170	170	170	170	145	125		
		in.lb	1505	1505	1505	1283	1106	1505	1505	1505	1505	1505	1505	1505	1505	1505	1283	1106	
Nominal torque (at n_n)	T_{2N}	Nm	100	100	100	90	80	100	100	100	100	100	100	100	100	90	80		
		in.lb	885	885	885	797	708	885	885	885	885	885	885	885	885	885	797	708	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	220	260	260	255	250	260	260	260	260	260	260	260	260	255	250		
		in.lb	1947	2301	2301	2257	2213	2301	2301	2301	2301	2301	2301	2301	2301	2301	2257	2213	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2200	2400	2700	2500	2500	3100	3100	3100	3100	3100	3100	3100	3500	4200	4200		
Max. input speed	n_{1Max}	rpm	5500	5500	5500	5500	5500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3.9	3.1	2.9	4.1	3.3	0.6	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.2		
		in.lb	35	27	26	36	29	5.3	5.3	4.4	3.5	3.5	2.7	1.8	1.8	1.8	1.8		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	10	11	13	13	13	11	11	11	11	11	11	11	13	13	13		
		in.lb/arcmin	89	97	115	115	115	97	97	97	97	97	97	97	97	115	115	115	
Max. axial force ^{c)}	F_{2AMax}	N	5700																
		lb _f	1283																
Max. lateral force ^{c)}	F_{2QMax}	N	6300																
		lb _f	1418																
Max. tilting moment	M_{2KMax}	Nm	833																
		in.lb	7373																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	9.3					10											
		lb _m	21					22											
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	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00200AA - 032.000 - X																
Bore diameter of coupling on the application side		mm	X = 022.000 - 045.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_i	kgcm ²	-	-	-	-	-	1.02	0.97	0.86	0.84	0.75	0.74	0.69	0.68	0.68	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.9	0.86	0.76	0.74	0.66	0.65	0.61	0.61	0.6	0.6
	G	24	J_i	kgcm ²	-	-	-	-	-	2.59	2.54	2.42	2.4	2.31	2.3	2.26	2.25	2.25	2.25
				10 ⁻³ in.lb.s ²	-	-	-	-	-	2.29	2.25	2.14	2.12	2.04	2.04	2	1.99	1.99	1.99
	H	28	J_i	kgcm ²	4.64	3.8	3.34	2.98	2.79	-	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	4.11	3.36	2.96	2.64	2.47	-	-	-	-	-	-	-	-	-	-
	K	38	J_i	kgcm ²	11.9	11	10.6	10.2	10	-	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	10.53	9.74	9.38	9.03	8.85	-	-	-	-	-	-	-	-	-	-

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}

^{b)} Valid for standard clamping hub diameter

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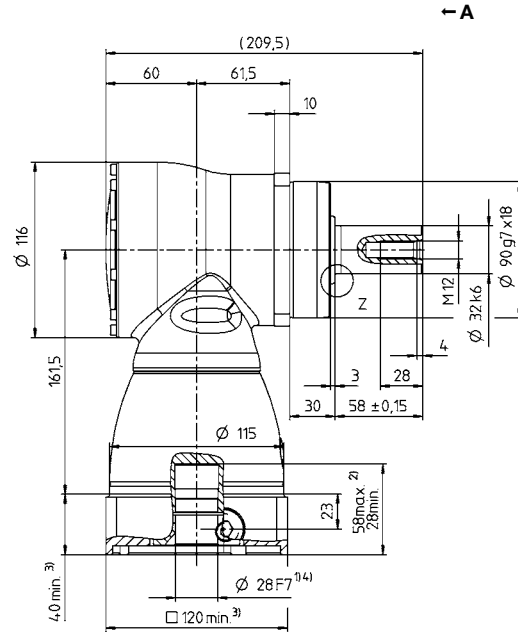
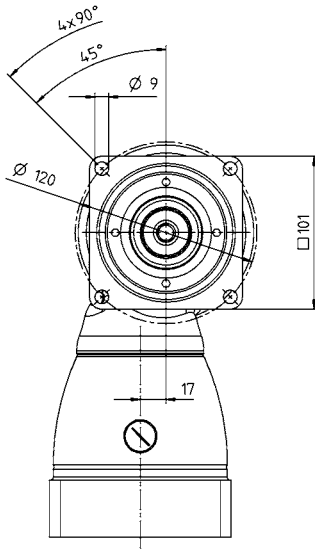
تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

View A

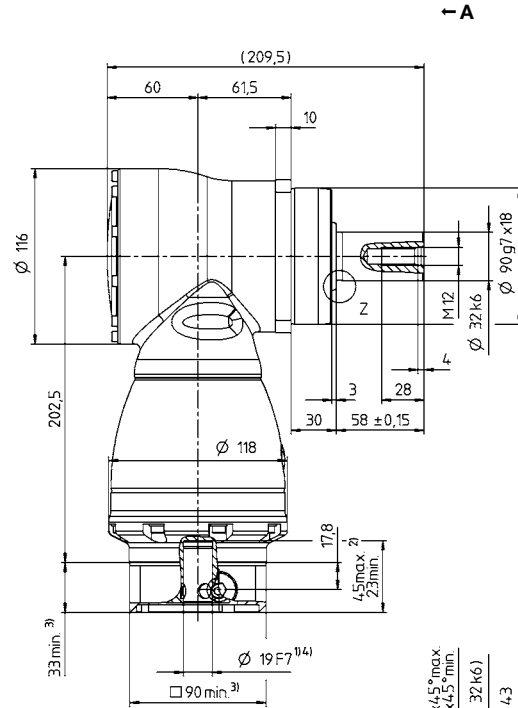
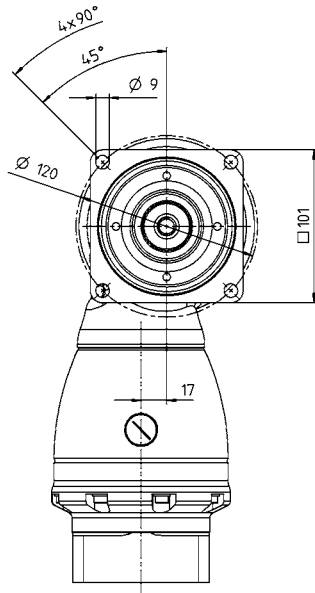
1-stage

up to 28/38⁴⁾
(H⁵⁾/K) clamping
hub diameter



2-stage

up to 19/24⁴⁾
(E⁵⁾/G) clamping
hub diameter



Motor shaft diameter [mm]

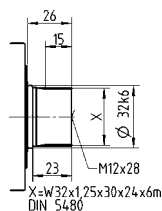
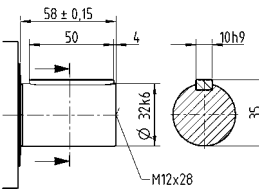
Hypoid gearboxes

SK

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	360	360	360	250	210	360	360	360	360	360	360	360	360	250	210		
		in.lb	3186	3186	3186	2213	1859	3186	3186	3186	3186	3186	3186	3186	3186	2213	1859		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	300	300	300	250	210	300	300	300	300	300	300	300	300	250	210		
		in.lb	2655	2655	2655	2213	1859	2655	2655	2655	2655	2655	2655	2655	2655	2213	1859		
Nominal torque (at n_n)	T_{2N}	Nm	190	190	190	175	160	190	190	190	190	190	190	190	190	175	160		
		in.lb	1682	1682	1682	1549	1416	1682	1682	1682	1682	1682	1682	1682	1682	1549	1416		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	400	500	500	450	400	500	500	500	500	500	500	500	500	450	400		
		in.lb	3540	4425	4425	3983	3540	4425	4425	4425	4425	4425	4425	4425	4425	3983	3540		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1900	2000	2200	2000	2000	2900	2900	2900	2900	2900	2900	2900	3200	3200	3900		
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	9.3	6.9	7.1	9.7	7.1	1.4	0.9	0.7	0.5	0.5	0.4	0.4	0.3	0.3	0.3		
		in.lb	82	61	63	86	63	12	8.0	6.2	4.4	4.4	3.5	3.5	2.7	2.7	2.7		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	27	30	32	32	32	29	29	29	29	29	29	29	31	31	31		
		in.lb/arcmin	239	266	283	283	283	257	257	257	257	257	257	257	274	274	274		
Max. axial force ^{c)}	F_{2AMax}	N	9900																
		lb _f	2228																
Max. lateral force ^{c)}	F_{2QMax}	N	9500																
		lb _f	2138																
Max. tilting moment	M_{2KMax}	Nm	1692																
		in.lb	14976																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	22.6					25											
		lb _m	50					55											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68																
Max. permitted housing temperature		°C	+90																
		F	194																
Ambient temperature		°C	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00300AA - 040.000 - X																
Bore diameter of coupling on the application side		mm	X = 024.000 - 060.000																
Mass moment of inertia (relates to the drive)	G	24	J_1	kgcm ²	-	-	-	-	-	4.21	3.85	3.28	3.17	2.78	2.73	2.48	2.46	2.43	2.42
				10 ⁻³ in.lb.s ²	-	-	-	-	-	3.73	3.41	2.9	2.81	2.46	2.42	2.19	2.18	2.15	2.14
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	25	19.1	16.3	14.1	12.8	11.1	10.7	10.2	10.1	9.69	9.64	9.39	9.37	9.34	9.33
				10 ⁻³ in.lb.s ²	22.13	16.9	14.43	12.48	11.33	9.82	9.47	9.03	8.94	8.58	8.53	8.31	8.29	8.27	8.26

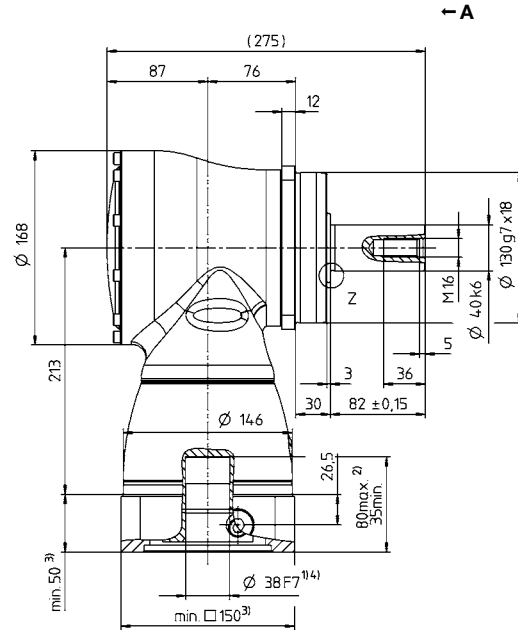
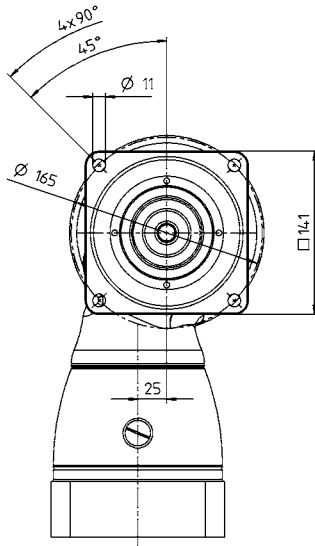
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}
^{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)} Smooth shaft

View A

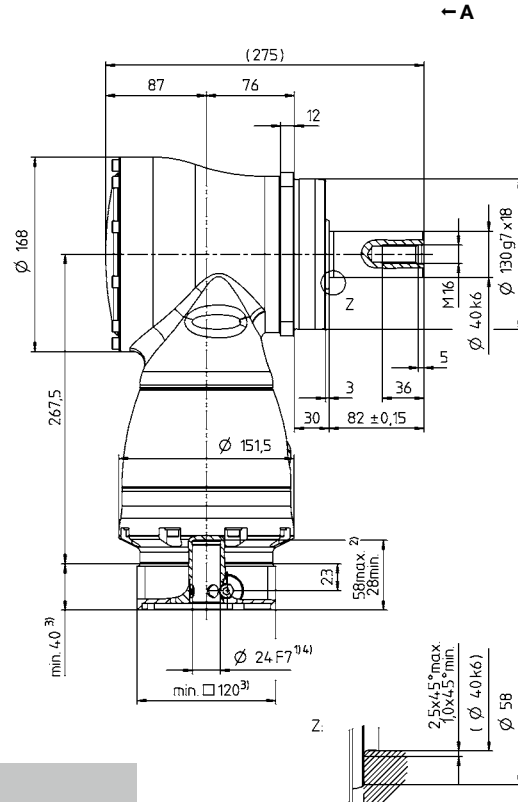
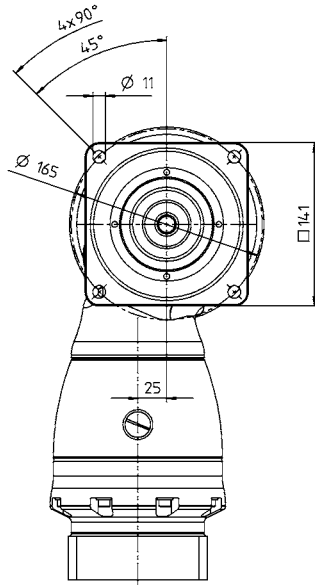
1-stage

up to 38⁴⁾ (K⁵⁾
clamping hub diameter



2-stage

up to 24/38⁴⁾
(G⁵⁾/K clamping
hub diameter



Motor shaft diameter [mm]

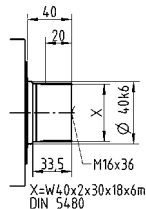
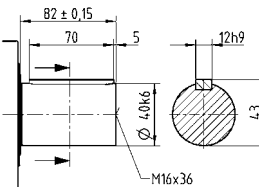
Hypoid gearboxes

SK*

Other output variants

Shaft with key

Spined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	768	768	768	550	470	768	768	768	768	768	768	768	768	550	470		
		in.lb	6797	6797	6797	4868	4160	6797	6797	6797	6797	6797	6797	6797	6797	6797	4868	4160	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	640	640	640	550	470	640	640	640	640	640	640	640	640	550	470		
		in.lb	5665	5665	5665	4868	4160	5665	5665	5665	5665	5665	5665	5665	5665	5665	4868	4160	
Nominal torque (at n_n)	T_{2N}	Nm	400	400	400	380	360	400	400	400	400	400	400	400	400	380	360		
		in.lb	3540	3540	3540	3363	3186	3540	3540	3540	3540	3540	3540	3540	3540	3540	3363	3186	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	900	1050	1050	970	900	1050	1050	1050	1050	1050	1050	1050	1050	970	900		
		in.lb	7966	9293	9293	8585	7966	9293	9293	9293	9293	9293	9293	9293	9293	9293	8585	7966	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1600	1800	2000	1800	1800	2700	2700	2700	2700	2700	2700	2700	2900	3200	3400		
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	19	16	14	17	14	3	2.3	1.8	1.6	1.3	1.2	0.9	0.9	0.9	0.9		
		in.lb	168	142	124	150	124	27	20	16	14	12	11	8.0	8.0	8.0	8.0		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	64	71	79	78	77	71	71	71	71	71	71	71	78	78	78		
		in.lb/arcmin	566	628	699	690	682	628	628	628	628	628	628	628	690	690	690		
Max. axial force ^{c)}	F_{2AMax}	N	14200																
		lb _f	3195																
Max. lateral force ^{c)}	F_{2QMax}	N	14700																
		lb _f	3308																
Max. tilting moment	M_{2KMax}	Nm	3213																
		in.lb	28438																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	45.4					48											
		lb _m	100					106											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68																
		°C	+90																
Max. permitted housing temperature	F	°C	194																
		°C	0 to +40																
Ambient temperature	F	°C	32 to 104																
		°C	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00800AA - 055.000 - X																
Bore diameter of coupling on the application side		mm	X = 040.000 - 075.000																
Mass moment of inertia (relates to the drive)	K	38	J_1	kgcm ²	-	-	-	-	-	15.3	14	12.3	12	10.9	10.7	10.1	10	9.95	9.91
				10 ⁻³ in.lb.s ²	-	-	-	-	-	13.54	12.39	10.89	10.62	9.65	9.47	8.94	8.85	8.81	8.77
Clamping hub diameter [mm]	M	48	J_1	kgcm ²	73.3	51.6	42.1	34	29.7	30	28.7	27.1	26.7	25.6	25.4	24.8	24.7	24.7	24.6
				10 ⁻³ in.lb.s ²	64.87	45.67	37.26	30.09	26.28	26.55	25.4	23.98	23.63	22.66	22.48	21.95	21.86	21.86	21.77

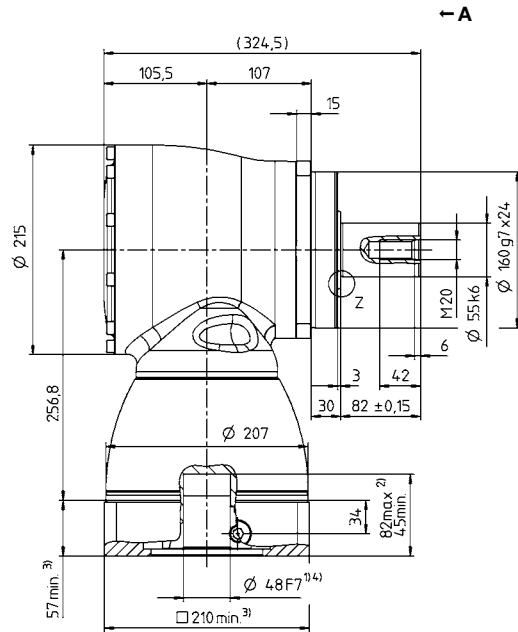
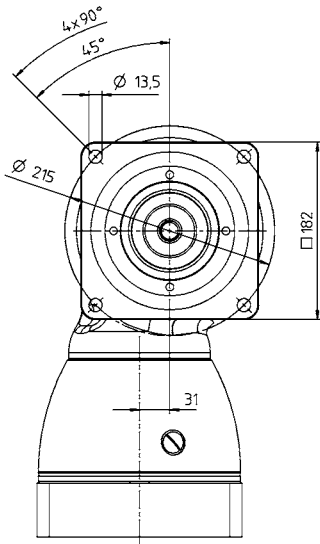
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % F_{2QMax}
^{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)} Smooth shaft

View A

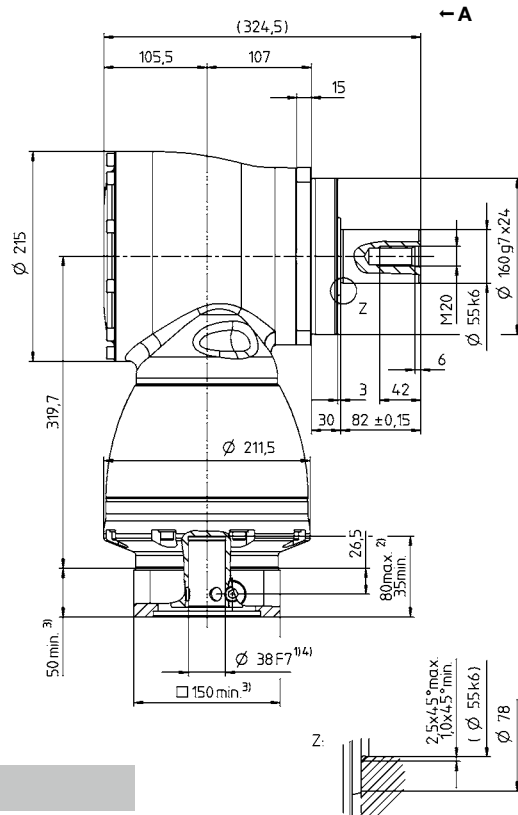
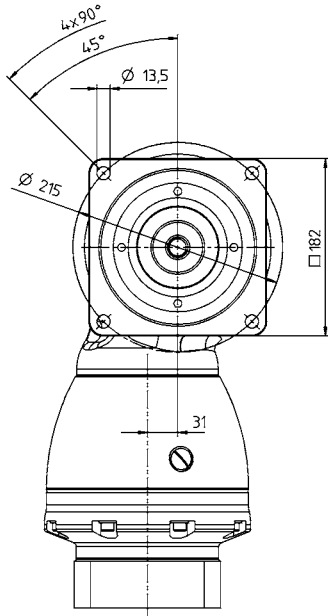
1-stage

up to 48⁴⁾ (M)⁵⁾
clamping hub diameter



2-stage

up to 38/48⁴⁾
(K⁵⁾/M) clamping
hub diameter



Motor shaft diameter [mm]

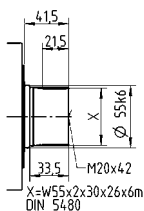
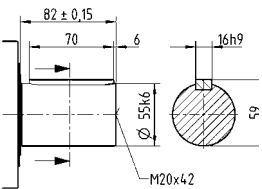
Hypoid gearboxes

SK*

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			2-stage											
Ratio	<i>i</i>		12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	144	144	176	176	176	176	80	100	140	152		
		in.lb	1275	1275	1558	1558	1558	1558	708	885	1239	1345		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	120	120	132	132	132	132	80	100	132	114		
		in.lb	1062	1062	1168	1168	1168	1168	708	885	1168	1009		
Nominal torque (at n_n)	T_{2N}	Nm	75	75	75	75	75	75	60	75	75	52		
		in.lb	664	664	664	664	664	664	531	664	664	460		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	160	200	250	250	250	250	160	200	250	250		
		in.lb	1416	1770	2213	2213	2213	2213	1416	1770	2213	2213		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2000	2400	2400	2700	2400	2500	2500	2500	2500	2500		
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.5	1.4	1.3	1.2	1.3	1.3	1.3	1.3	1.4	1.4		
		in.lb	13	12	12	11	12	12	12	12	12	12		
Max. backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3											
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	10	10	10	10	10	10	10	10	10	10		
		in.lb/arcmin	89	89	89	89	89	89	89	89	89	89		
Max. axial force ^{c)}	F_{2AMax}	N	3350											
		lb _f	754											
Max. lateral force ^{c)}	F_{2QMax}	N	4000											
		lb _f	900											
Max. tilting moment	M_{2KMax}	Nm	236											
		in.lb	2089											
Efficiency at full load	η	%	94											
Service life	L_h	h	> 20000											
Weight (incl. standard adapter plate)	m	kg	5.2											
		lb _m	11											
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	°C	194											
		°C	0 to +40											
Ambient temperature	F	°C	32 to 104											
		°C	32 to 104											
Lubrication			Lubricated for life											
Direction of rotation			In- and output opposite direction											
Protection class			IP 65											
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00150AA - 022.000 - X											
Bore diameter of coupling on the application side		mm	X = 019.000 - 042.000											
Mass moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.54	0.45	0.44	0.4	0.44	0.36	0.35	0.34	0.34	0.34
				10 ⁻³ in.lb.s ²	0.48	0.4	0.39	0.35	0.39	0.32	0.31	0.3	0.3	0.3
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	0.89	0.8	0.79	0.75	0.79	0.71	0.7	0.7	0.7	0.69
				10 ⁻³ in.lb.s ²	0.79	0.71	0.7	0.66	0.7	0.63	0.62	0.62	0.62	0.61

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

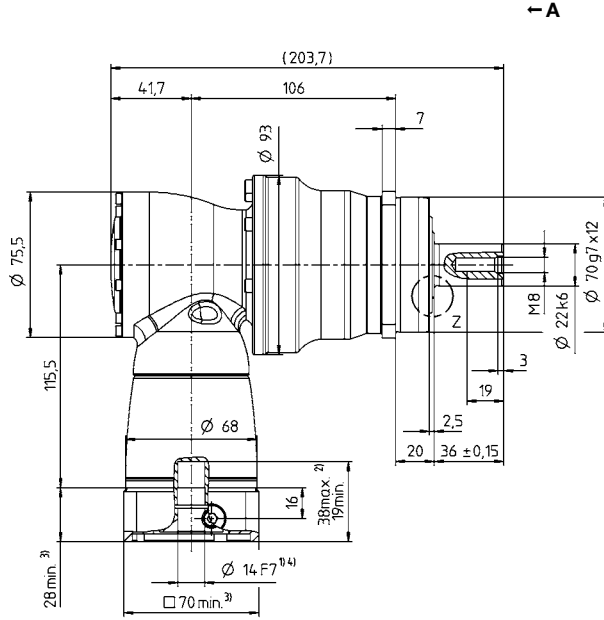
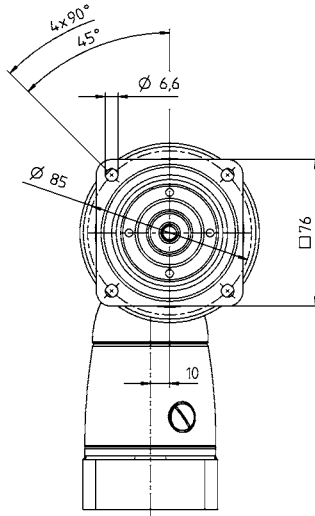
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

2-stage

up to 14/19⁴⁾
(C⁵⁾/E) clamping
hub diameter

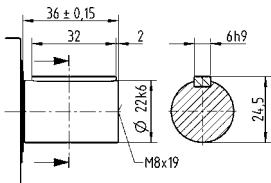


Hypoid gearboxes

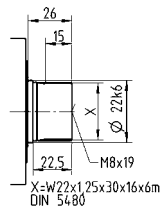
SPK

Other output variants

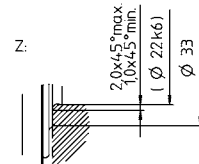
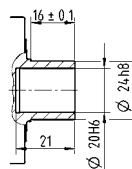
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



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Tel: ۰۲۱ - ۴۸۰۰۰۰۴۹

Fax: ۰۲۱ - ۴۴۹۹۴۶۴۲

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			3-stage													
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000
Max. torque ^{a) b) e)}	T_{2a}	Nm	144	144	176	176	176	176	176	176	176	176	80	100	140	152
		in.lb	1275	1275	1558	1558	1558	1558	1558	1558	1558	1558	1558	708	885	1239
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	120	120	132	132	132	132	132	132	132	132	80	100	132	114
		in.lb	1062	1062	1168	1168	1168	1168	1168	1168	1168	1168	1168	708	885	1168
Nominal torque (at n_n)	T_{2N}	Nm	75	75	75	75	75	75	75	75	75	75	60	75	75	52
		in.lb	664	664	664	664	664	664	664	664	664	664	664	531	664	664
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	200	160	250	250	250	250	250	250	250	250	160	200	250	250
		in.lb	1770	1416	2213	2213	2213	2213	2213	2213	2213	2213	2213	1416	1770	2213
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	4400	4400	4400	4400	4400	4400	4400	4800	4400	4800	5500	5500	5500	5500
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.45	0.45	0.45	0.45	0.45	0.45	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		in.lb	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Max. backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3													
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		in.lb/arcmin	89	89	89	89	89	89	89	89	89	89	89	89	89	89
Max. axial force ^{c)}	F_{2AMax}	N	3350													
		lb _f	754													
Max. lateral force ^{c)}	F_{2QMax}	N	4000													
		lb _f	900													
Max. tilting moment	M_{2KMax}	Nm	236													
		in.lb	2089													
Efficiency at full load	η	%	92													
Service life	L_h	h	> 20000													
Weight (incl. standard adapter plate)	m	kg	5.5													
		lb _m	12													
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	°C	194													
		°C	0 to +40													
Ambient temperature	F	°C	32 to 104													
		°C	32 to 104													
Lubrication			Lubricated for life													
Direction of rotation			In- and output opposite direction													
Protection class			IP 65													
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00150AA - 022.000 - X													
		mm	X = 019.000 - 042.000													
Bore diameter of coupling on the application side	B	11	J_1	kgcm ²	0.09	0.07	0.08	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
				10 ⁻³ in.lb.s ²	0.08	0.06	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Mass moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.2	0.18	0.19	0.19	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17
				10 ⁻³ in.lb.s ²	0.18	0.16	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15
Clamping hub diameter [mm]																

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
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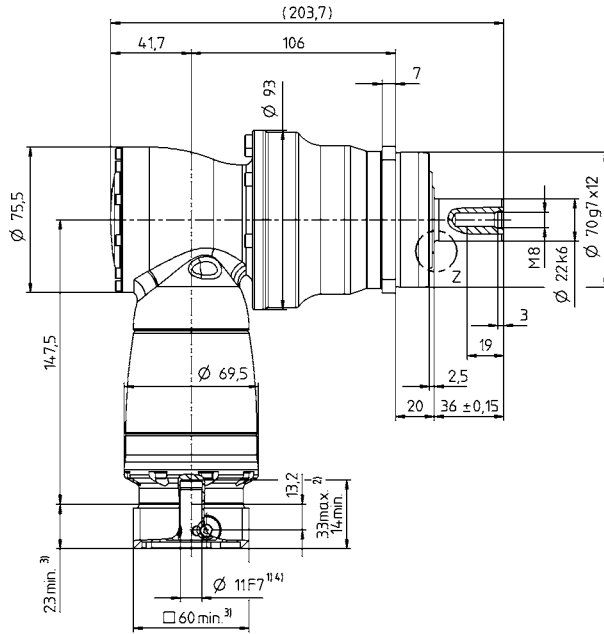
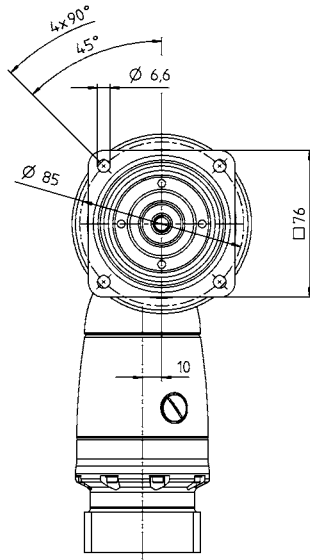
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

3-stage

up to 11/14⁴⁾
(B⁵⁾/C) clamping
hub diameter



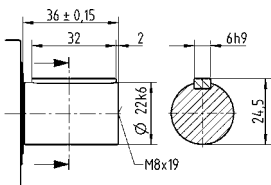
← A

Hypoid gearboxes

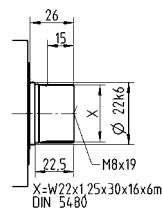
SPK

Other output variants

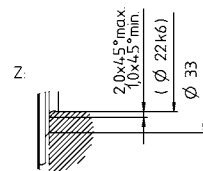
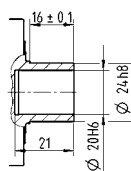
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



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See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			2-stage										
Ratio	<i>i</i>		12	16	20	25	28	35	40	50	70	100	
Max. torque ^{a) b) e)}	T_{2a}	Nm	336	336	420	420	428	428	200	250	350	376	
		in.lb	2974	2974	3717	3717	3788	3788	1770	2213	3098	3328	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	280	280	350	350	378	378	200	250	350	282	
		in.lb	2478	2478	3098	3098	3346	3346	1770	2213	3098	2496	
Nominal torque (at n_n)	T_{2N}	Nm	180	180	175	175	170	170	160	175	170	120	
		in.lb	1593	1593	1549	1549	1505	1505	1416	1549	1505	1062	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	380	460	575	575	625	625	400	500	625	625	
		in.lb	3363	4071	5089	5089	5532	5532	3540	4425	5532	5532	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2000	2400	2400	2700	2400	2500	2500	2500	2500	2500	
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	2	2.2	2.1	2.1	2.1	2.1	2	2	2	2	
		in.lb	18	19	19	19	19	19	18	18	18	18	
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2										
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	31	31	31	31	31	31	31	31	31	31	
		in.lb/arcmin	274	274	274	274	274	274	274	274	274	274	
Max. axial force ^{c)}	F_{2AMax}	N	5650										
		lb _f	1271										
Max. lateral force ^{c)}	F_{2QMax}	N	6300										
		lb _f	1418										
Max. tilting moment	M_{2KMax}	Nm	487										
		in.lb	4310										
Efficiency at full load	η	%	94										
Service life	L_h	h	> 20000										
Weight (incl. standard adapter plate)	m	kg	9.7										
		lb _m	21										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68										
Max. permitted housing temperature		°C	+90										
		F	194										
Ambient temperature		°C	0 to +40										
		F	32 to 104										
Lubrication			Lubricated for life										
Direction of rotation			In- and output opposite direction										
Protection class			IP 65										
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00300AA - 032.000 - X										
Bore diameter of coupling on the application side		mm	X = 024.000 - 060.000										
Mass moment of inertia (relates to the drive)	E 19	J_1	kgcm ²	1.48	1.2	1.17	1.05	1.15	0.95	0.9	0.89	0.89	0.89
			10 ⁻³ in.lb.s ²	1.31	1.06	1.04	0.93	1.02	0.84	0.8	0.79	0.79	0.79
Clamping hub diameter [mm]	H 28	J_1	kgcm ²	2.89	2.62	2.59	2.46	2.56	2.36	2.31	2.31	2.3	2.3
			10 ⁻³ in.lb.s ²	2.56	2.32	2.29	2.18	2.27	2.09	2.04	2.04	2.04	2.04

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

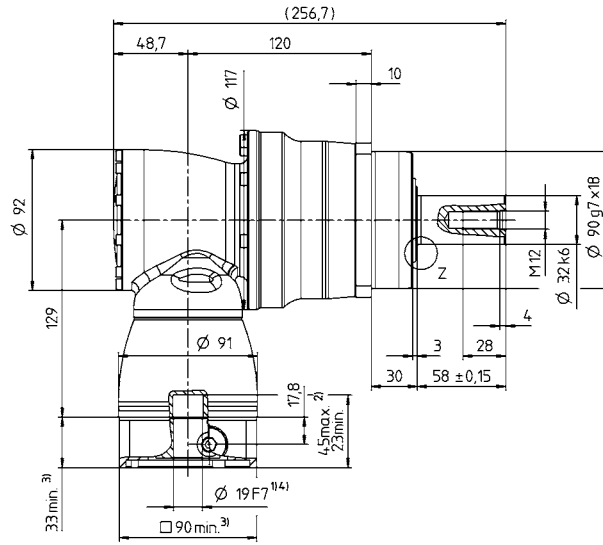
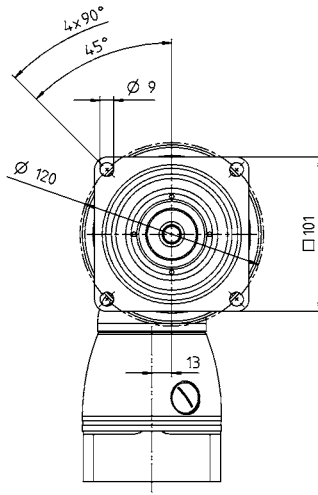
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

2-stage

up to 19/28⁴⁾
(E⁵⁾/H) clamping
hub diameter



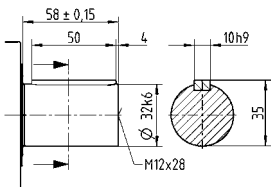
← A

Hypoid gearboxes

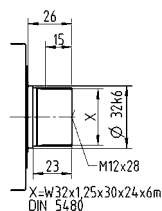
SPK

Other output variants

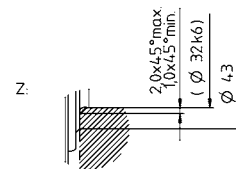
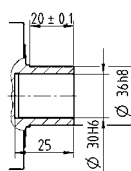
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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SPK+ 100 MF 3-stage

			3-stage														
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000	
Max. torque ^{a) b) e)}	T_{2a}	Nm	336	336	420	420	420	420	420	420	428	428	200	250	350	376	
		in.lb	2974	2974	3717	3717	3717	3717	3717	3717	3788	3788	1770	2213	3098	3328	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	280	280	350	350	350	350	350	350	378	378	200	250	350	282	
		in.lb	2478	2478	3098	3098	3098	3098	3098	3098	3346	3346	1770	2213	3098	2496	
Nominal torque (at n_n)	T_{2N}	Nm	180	180	175	175	175	175	175	175	170	170	160	175	170	120	
		in.lb	1593	1593	1549	1549	1549	1549	1549	1549	1505	1505	1416	1549	1505	1062	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	460	380	575	575	575	575	575	575	625	625	400	500	625	625	
		in.lb	4071	3363	5089	5089	5089	5089	5089	5089	5532	5532	3540	4425	5532	5532	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	3500	3500	3500	3500	3500	3500	3500	3800	3500	3800	4500	4500	4500	4500	
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.6	0.45	0.45	0.45	0.45	0.45	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
		in.lb	5.3	4.0	4.0	4.0	4.0	4.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2														
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
		in.lb/arcmin	274	274	274	274	274	274	274	274	274	274	274	274	274	274	
Max. axial force ^{c)}	F_{2AMax}	N	5650														
		lb _f	1271														
Max. lateral force ^{c)}	F_{2QMax}	N	6300														
		lb _f	1418														
Max. tilting moment	M_{2KMax}	Nm	487														
		in.lb	4310														
Efficiency at full load	η	%	92														
Service life	L_h	h	> 20000														
Weight (incl. standard adapter plate)	<i>m</i>	kg	10.3														
		lb _m	23														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68														
		°C	+90														
Max. permitted housing temperature	<i>F</i>	°C	194														
		°C	0 to +40														
Ambient temperature	<i>F</i>	°C	32 to 104														
		°C	32 to 104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output opposite direction														
Protection class			IP 65														
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00300AA - 032.000 - X														
		Bore diameter of coupling on the application side	mm	X = 024.000 - 060.000													
Mass moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.28	0.23	0.24	0.23	0.21	0.2	0.19	0.18	0.19	0.18	0.18	0.18	0.18
				10 ⁻³ in.lb.s ²	0.25	0.2	0.21	0.2	0.19	0.18	0.17	0.16	0.17	0.16	0.16	0.16	0.16
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	0.72	0.63	0.68	0.68	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	
				10 ⁻³ in.lb.s ²	0.64	0.56	0.6	0.6	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56

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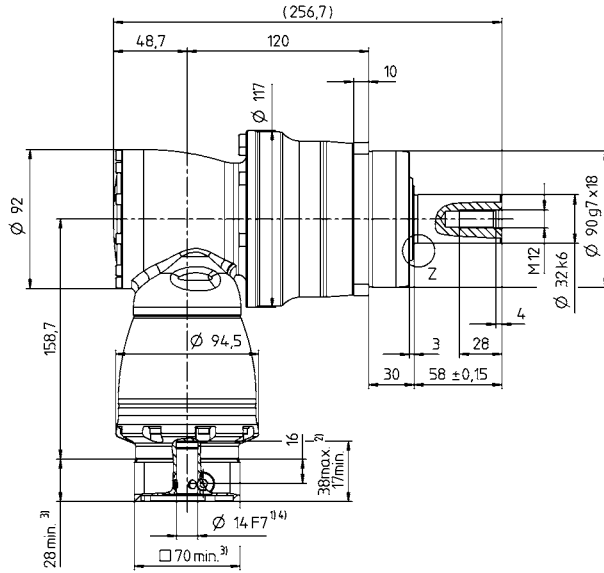
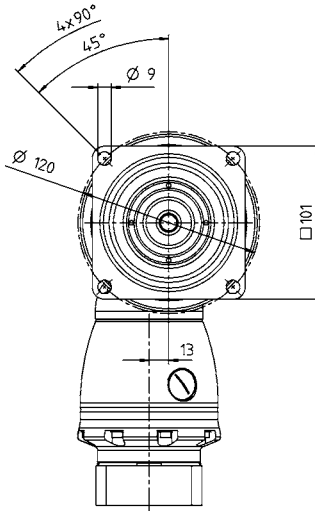
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

3-stage

up to 14 / 19⁴⁾
(C⁵⁾ / E) clamping
hub diameter

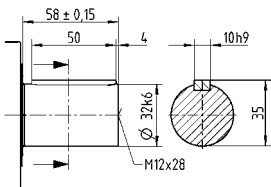


Hypoid gearboxes

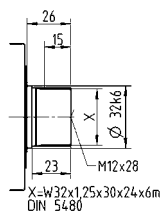
SPK

Other output variants

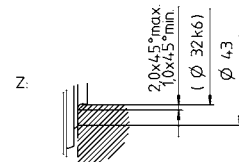
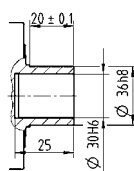
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



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See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

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			2-stage											
Ratio	<i>i</i>		12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	816	816	1020	1020	825	825	500	625	625	720		
		in.lb	7222	7222	9028	9028	7302	7302	4425	5532	5532	6373		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	680	680	792	792	792	792	500	625	792	636		
		in.lb	6019	6019	7010	7010	7010	7010	4425	5532	7010	5629		
Nominal torque (at n_n)	T_{2N}	Nm	360	360	360	360	360	360	320	360	360	220		
		in.lb	3186	3186	3186	3186	3186	3186	2832	3186	3186	1947		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	880	1040	1300	1300	1350	1350	1000	1250	1350	1250		
		in.lb	7789	9205	11506	11506	11949	11949	8851	11064	11949	11064		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1900	2300	2300	2600	2300	2300	2300	2300	2300	2300		
Max. input speed	n_{1Max}	rpm	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	3.5	4.7	3.3	3.3	3.6	3.6	3.1	3.1	3.1	3.1		
		in.lb	31	42	29	29	32	32	27	27	27	27		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2											
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	53	53	53	53	53	53	53	53	53	53		
		in.lb/arcmin	469	469	469	469	469	469	469	469	469	469		
Max. axial force ^{c)}	F_{2AMax}	N	9870											
		lb _f	2221											
Max. lateral force ^{c)}	F_{2QMax}	N	9450											
		lb _f	2126											
Max. tilting moment	M_{2KMax}	Nm	952											
		in.lb	8426											
Efficiency at full load	η	%	94											
Service life	L_h	h	> 20000											
Weight (incl. standard adapter plate)	m	kg	20											
		lb _m	44											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68											
Max. permitted housing temperature		°C	+90											
		F	194											
Ambient temperature		°C	0 to +40											
		F	32 to 104											
Lubrication			Lubricated for life											
Direction of rotation			In- and output opposite direction											
Protection class			IP 65											
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00800AA - 040.000 - X											
Bore diameter of coupling on the application side		mm	X = 040.000 - 075.000											
Mass moment of inertia (relates to the drive)	H	28	J_1	kgcm ²	4.68	3.82	3.75	3.31	3.68	2.97	2.8	2.79	2.78	2.77
				10 ⁻³ in.lb.s ²	4.14	3.38	3.32	2.93	3.26	2.63	2.48	2.47	2.46	2.45
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	11.8	11	10.9	10.5	10.9	10.1	9.96	9.95	9.94	9.94
				10 ⁻³ in.lb.s ²	10.44	9.74	9.65	9.29	9.65	8.94	8.81	8.81	8.8	8.8

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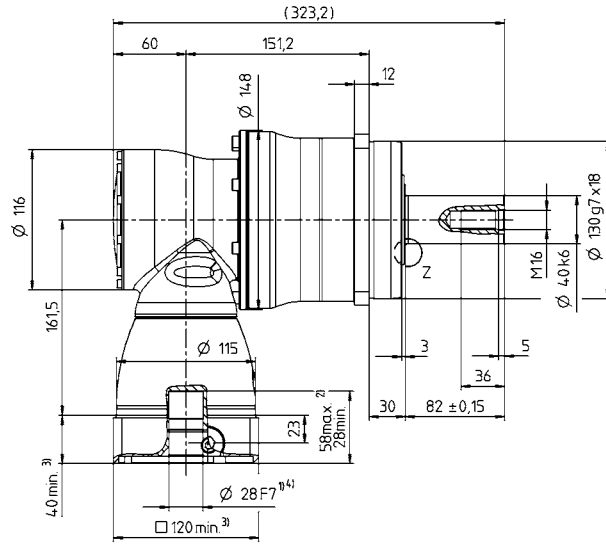
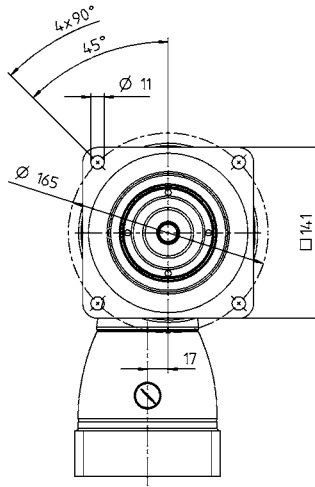
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

2-stage

up to 28/38⁴⁾
(H⁵⁾/K) clamping
hub diameter



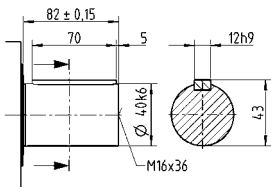
← A

Hypoid gearboxes

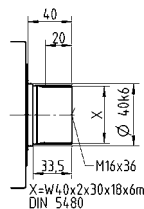
SPK

Other output variants

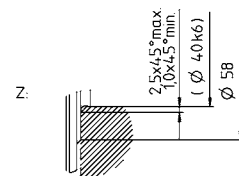
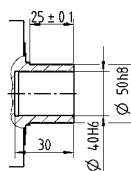
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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			3-stage														
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000	
Max. torque ^{a) b) e)}	T_{2a}	Nm	816	816	1020	1020	1020	1020	1020	1020	825	825	500	625	825	720	
		in.lb	7222	7222	9028	9028	9028	9028	9028	9028	9028	7302	7302	4425	5532	7302	6373
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	680	680	792	792	792	792	792	792	792	792	500	625	792	636	
		in.lb	6019	6019	7010	7010	7010	7010	7010	7010	7010	7010	7010	4425	5532	7010	5629
Nominal torque (at n_n)	T_{2N}	Nm	360	360	360	360	360	360	360	360	360	360	320	360	360	220	
		in.lb	3186	3186	3186	3186	3186	3186	3186	3186	3186	3186	3186	2832	3186	3186	1947
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	1040	880	1300	1300	1300	1300	1300	1300	1300	1350	1350	1000	1250	1350	1250
		in.lb	9205	7789	11506	11506	11506	11506	11506	11506	11506	11949	11949	8851	11064	11949	11064
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	3100	3100	3100	3100	3100	3100	3100	3500	3100	3500	4200	4200	4200	4200	
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.1	0.9	0.9	0.75	0.75	0.6	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	
		in.lb	9.7	8.0	8.0	6.6	6.6	5.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2														
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	53	53	53	53	53	53	53	53	53	53	53	53	53	53	
		in.lb/arcmin	469	469	469	469	469	469	469	469	469	469	469	469	469	469	
Max. axial force ^{c)}	F_{2AMax}	N	9870														
		lb _f	2221														
Max. lateral force ^{c)}	F_{2QMax}	N	9450														
		lb _f	2126														
Max. tilting moment	M_{2KMax}	Nm	952														
		in.lb	8426														
Efficiency at full load	η	%	92														
Service life	L_h	h	> 20000														
Weight (incl. standard adapter plate)	m	kg	20.7														
		lb _m	46														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68														
		°C	+90														
Max. permitted housing temperature	F	°C	194														
		°C	0 to +40														
Ambient temperature	F	°C	32 to 104														
		°C	32 to 104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output opposite direction														
Protection class			IP 65														
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 00800AA - 040.000 - X														
		mm	X = 040.000 - 075.000														
Mass moment of inertia (relates to the drive)	E 19	J_1	kgcm ²	1.01	0.76	0.88	0.85	0.76	0.75	0.7	0.69	0.7	0.69	0.69	0.69	0.69	
			10 ⁻³ in.lb.s ²	0.89	0.67	0.78	0.75	0.67	0.66	0.62	0.61	0.62	0.61	0.61	0.61	0.61	
Clamping hub diameter [mm]	G 24	J_1	kgcm ²	2.57	2.32	2.44	2.42	2.32	2.31	2.26	2.25	2.26	2.25	2.25	2.25	2.25	
			10 ⁻³ in.lb.s ²	2.27	2.05	2.16	2.14	2.05	2.04	2	1.99	2	1.99	1.99	1.99	1.99	

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

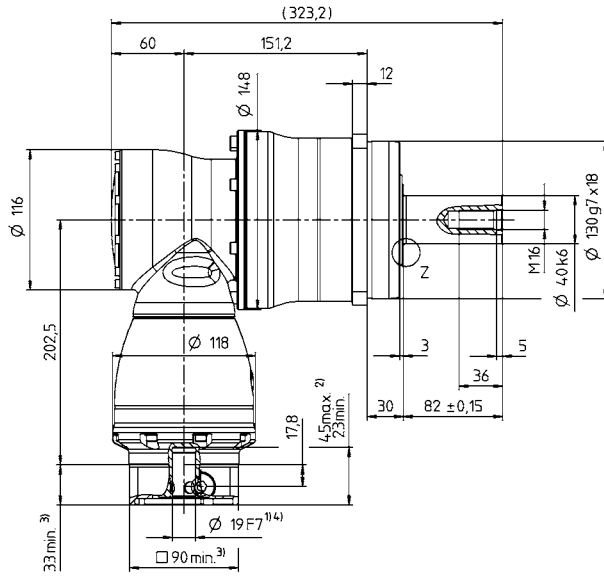
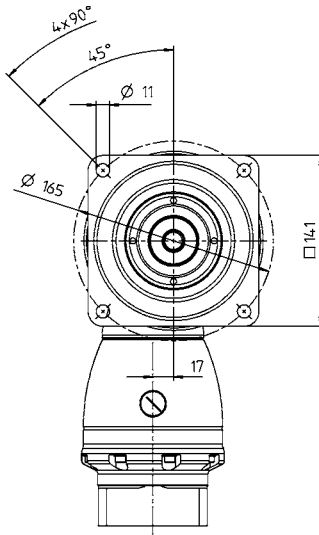
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

3-stage

up to 19/24⁴⁾
(E⁵⁾/G) clamping
hub diameter



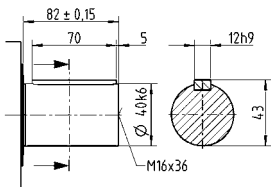
← A

Hypoid gearboxes

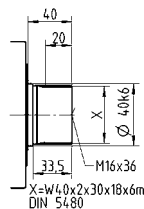
SPK

Other output variants

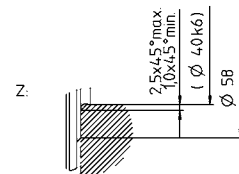
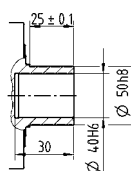
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			2-stage											
Ratio	<i>i</i>		12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	1440	1440	1800	1800	1936	1936	840	1050	1470	1552		
		in.lb	12745	12745	15931	15931	17135	17135	7435	9293	13011	13736		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	1200	1200	1452	1452	1452	1452	840	1050	1452	1164		
		in.lb	10621	10621	12851	12851	12851	12851	7435	9293	12851	10302		
Nominal torque (at n_n)	T_{2N}	Nm	750	750	750	750	750	750	640	750	750	750		
		in.lb	6638	6638	6638	6638	6638	6638	5665	6638	6638	6638		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	1600	2000	2500	2500	2750	2750	1600	2000	2750	2750		
		in.lb	14161	17702	22127	22127	24340	24340	14161	17702	24340	24340		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1600	1900	1900	2100	1900	2100	2100	2100	2100	2100		
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	11	9.2	9.2	7	8.5	10	7.5	7.5	7	7		
		in.lb	97	81	81	62	75	89	66	66	62	62		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2											
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	175	175	175	175	175	175	175	175	175	175		
		in.lb/arcmin	1549	1549	1549	1549	1549	1549	1549	1549	1549	1549		
Max. axial force ^{c)}	F_{2AMax}	N	15570											
		lb _f	3503											
Max. lateral force ^{c)}	F_{2QMax}	N	15400											
		lb _f	3465											
Max. tilting moment	M_{2KMax}	Nm	1600											
		in.lb	14161											
Efficiency at full load	η	%	94											
Service life	L_h	h	> 20000											
Weight (incl. standard adapter plate)	m	kg	45											
		lb _m	99											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70											
		°C	+90											
Max. permitted housing temperature		F	194											
		°C	0 to +40											
Ambient temperature		F	32 to 104											
Lubrication			Lubricated for life											
Direction of rotation			In- and output opposite direction											
Protection class			IP 65											
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 01500AA - 055.000 - X											
Bore diameter of coupling on the application side		mm	X = 050.000 - 080.000											
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	K	38	J_1	kgcm ²	24.7	19.5	19	16.3	18.6	14	12.9	12.8	12.7	12.7
				10 ⁻³ in.lb.s ²	21.86	17.26	16.82	14.43	16.46	12.39	11.42	11.33	11.24	11.24

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

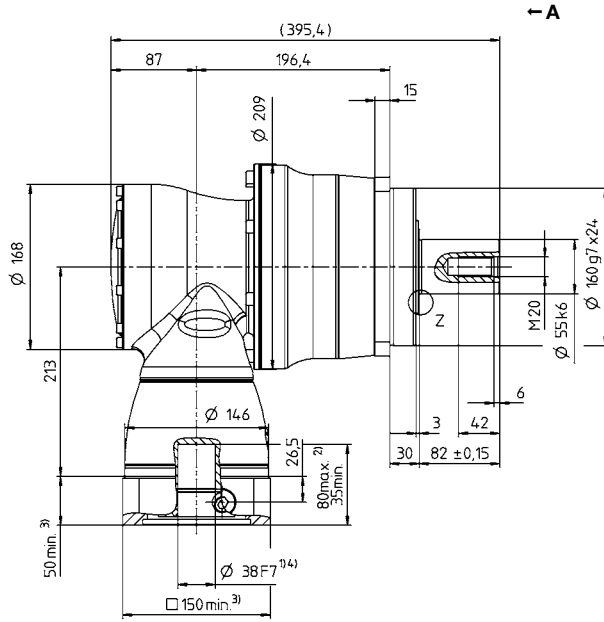
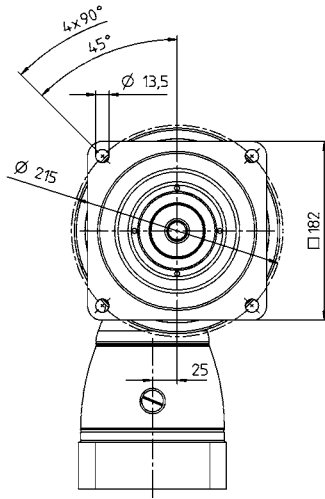
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

2-stage

up to 38⁴⁾ (K)⁵⁾
clamping hub diameter

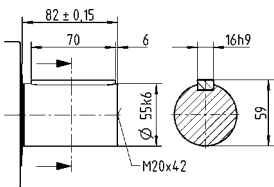


Hypoid gearboxes

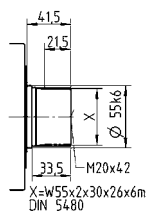
SPK

Other output variants

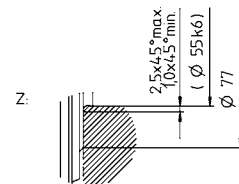
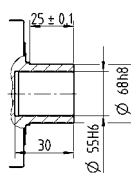
Shaft with key



Splined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

				3-stage													
Ratio	<i>i</i>			64	84	100	125	140	175	200	250	280	350	400	500	700	1000
Max. torque ^{a) b) e)}	T_{2a}	<i>Nm</i>		1440	1440	1800	1800	1800	1800	1800	1800	1936	1936	840	1050	1470	1552
		<i>in.lb</i>		12745	12745	15931	15931	15931	15931	15931	15931	15931	17135	17135	7435	9293	13011
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	<i>Nm</i>		1200	1200	1452	1452	1452	1452	1452	1452	1452	1452	840	1050	1452	1164
		<i>in.lb</i>		10621	10621	12851	12851	12851	12851	12851	12851	12851	12851	7435	9293	12851	10302
Nominal torque (at n_n)	T_{2N}	<i>Nm</i>		750	750	750	750	750	750	750	750	750	750	640	750	750	750
		<i>in.lb</i>		6638	6638	6638	6638	6638	6638	6638	6638	6638	6638	6638	5665	6638	6638
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	<i>Nm</i>		2000	1600	2500	2500	2500	2500	2500	2500	2750	2750	1600	2000	2750	2750
		<i>in.lb</i>		17702	14161	22127	22127	22127	22127	22127	22127	22127	24340	24340	14161	17702	24340
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}		2900	2900	2900	2900	2900	2900	2900	3200	2900	3200	3900	3900	3900	3900
Max. input speed	n_{1Max}	<i>rpm</i>		4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	<i>Nm</i>		2	1	1.6	1.2	1.2	1	1	0.8	1	0.8	0.8	0.8	0.8	0.8
		<i>in.lb</i>		18	8.9	14	11	11	8.9	8.9	7.1	8.9	7.1	7.1	7.1	7.1	7.1
Max. backlash	j_t	<i>arcmin</i>		Standard ≤ 4 / Reduced ≤ 2													
Torsional rigidity ^{b)}	C_{t21}	<i>Nm/arcmin</i>		175	175	175	175	175	175	175	175	175	175	175	175	175	175
		<i>in.lb/arcmin</i>		1549	1549	1549	1549	1549	1549	1549	1549	1549	1549	1549	1549	1549	1549
Max. axial force ^{c)}	F_{2AMax}	<i>N</i>		15570													
		<i>lb_f</i>		3503													
Max. lateral force ^{c)}	F_{2QMax}	<i>N</i>		15400													
		<i>lb_f</i>		3465													
Max. tilting moment	M_{2KMax}	<i>Nm</i>		1600													
		<i>in.lb</i>		14161													
Efficiency at full load	η	%		92													
Service life	L_h	<i>h</i>		> 20000													
Weight (incl. standard adapter plate)	<i>m</i>	<i>kg</i>		47.4													
		<i>lb_m</i>		105													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{pA}	<i>dB(A)</i>		≤ 70													
				+90													
Max. permitted housing temperature		°C		+90													
		<i>F</i>		194													
Ambient temperature		°C		0 to +40													
		<i>F</i>		32 to 104													
Lubrication				Lubricated for life													
Direction of rotation				In- and output opposite direction													
Protection class				IP 65													
Metal bellows coupling (recommended product type – validate sizing with cymex [®])				BC2 - 01500AA - 055.000 - X													
		Bore diameter of coupling on the application side	<i>mm</i>		X = 050.000 - 080.000												
Mass moment of inertia (relates to the drive)	G 24	J_1	<i>kgcm²</i>	3.97	2.82	3.36	3.22	2.82	2.75	2.5	2.47	2.5	2.44	2.42	2.42	2.42	2.42
			<i>10⁻³ in.lb.s²</i>	3.51	2.5	2.97	2.85	2.5	2.43	2.21	2.19	2.21	2.16	2.14	2.14	2.14	2.14
Clamping hub diameter [mm]	K 38	J_1	<i>kgcm²</i>	10.9	9.74	10.3	10.1	9.74	9.66	9.41	9.38	9.41	9.38	9.33	9.33	9.33	9.33
			<i>10⁻³ in.lb.s²</i>	9.65	8.62	9.12	8.94	8.62	8.55	8.33	8.3	8.33	8.3	8.26	8.26	8.26	8.26

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
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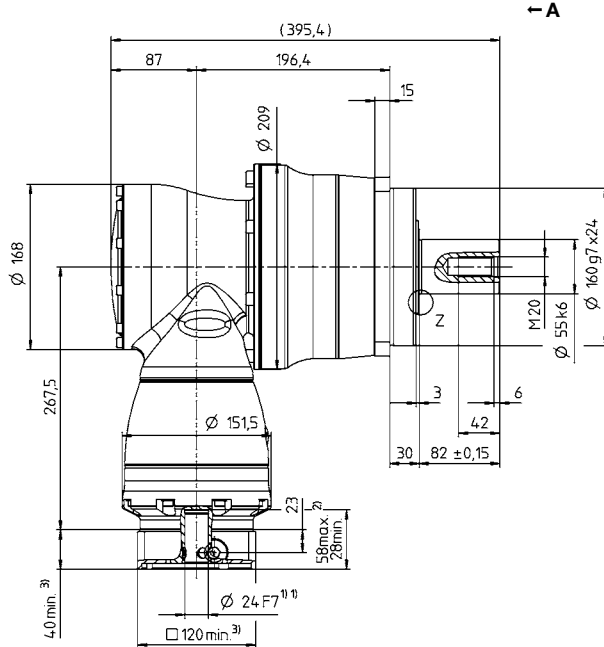
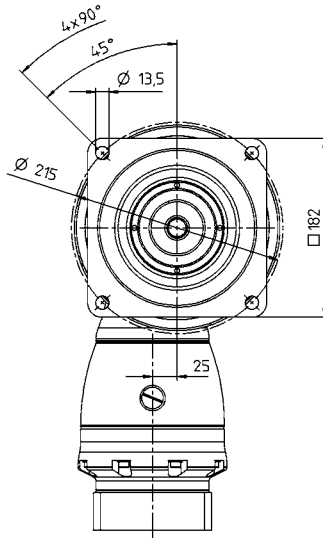
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

3-stage

up to 24 / 38⁴⁾
(G⁵⁾ / K) clamping
hub diameter

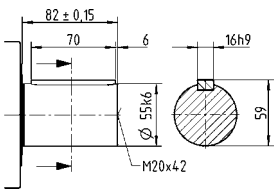


Hypoid gearboxes

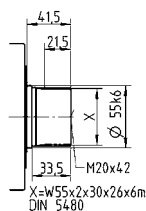
SPK

Other output variants

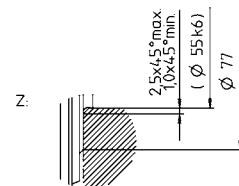
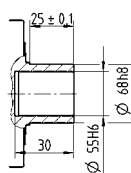
Shaft with key



Spined shaft (DIN 5480)



Shaft mounted



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			2-stage											
Ratio	<i>i</i>		12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b) e)}	T_{2a}	Nm	3072	3072	3840	3840	3840	3840	1880	2350	3290	2800		
		in.lb	27190	27190	33987	33987	33987	33987	16640	20799	29119	24782		
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	2560	2560	3000	3000	2880	2880	1880	2350	2880	2280		
		in.lb	22658	22658	26552	26552	25490	25490	16640	20799	25490	20180		
Nominal torque (at n_n)	T_{2N}	Nm	1500	1500	1500	1500	1400	1500	1400	1500	1400	1000		
		in.lb	13276	13276	13276	13276	12391	13276	12391	13276	12391	8851		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	3600	4200	5250	5250	5900	5900	3600	4500	5900	5900		
		in.lb	31863	37173	46467	46467	52220	52220	31863	39829	52220	52220		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1500	1700	1700	1900	1700	1900	1700	1700	1700	1700		
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	21	19	17	16	15	15	16	16	15	14		
		in.lb	186	168	150	142	133	133	142	142	133	124		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2											
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	300	300	300	300	300	300	300	300	300	300		
		in.lb/arcmin	2655	2655	2655	2655	2655	2655	2655	2655	2655	2655		
Max. axial force ^{c)}	F_{2AMax}	N	30000											
		lb _f	6750											
Max. lateral force ^{c)}	F_{2QMax}	N	21000											
		lb _f	4725											
Max. tilting moment	M_{2KMax}	Nm	3100											
		in.lb	27437											
Efficiency at full load	η	%	94											
Service life	L_h	h	> 20000											
Weight (incl. standard adapter plate)	m	kg	82											
		lb _m	181											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71											
		°C	+90											
Max. permitted housing temperature		F	194											
		°C	0 to +40											
Ambient temperature		F	32 to 104											
Lubrication			Lubricated for life											
Direction of rotation			In- and output opposite direction											
Protection class			IP 65											
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 04000AA - 075.000 - X											
Bore diameter of coupling on the application side		mm	X = 050.000 - 090.000											
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	M	48	J_1	kgcm ²	78.8	54.6	53	43.4	51.5	42.2	30.2	30	29.8	29.8
				10 ⁻³ in.lb.s ²	69.74	48.32	46.91	38.41	45.58	37.35	26.73	26.55	26.37	26.37

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

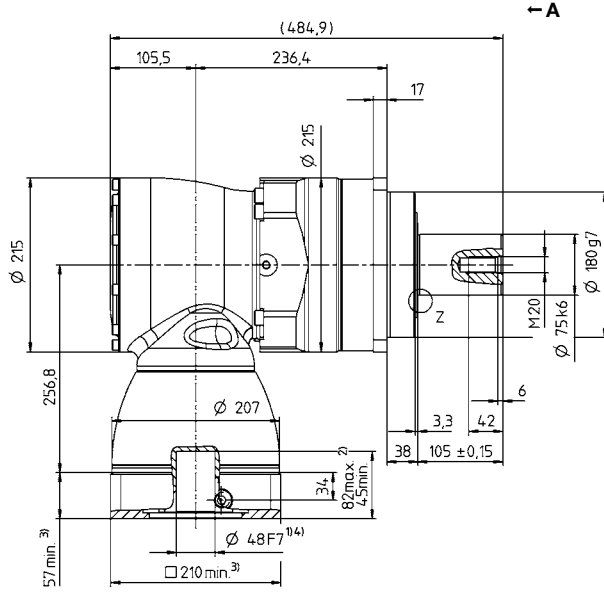
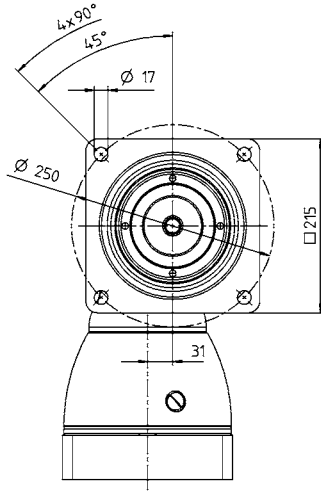
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

2-stage

up to 48⁴⁾ (M)⁵⁾
clamping hub diameter



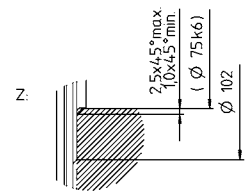
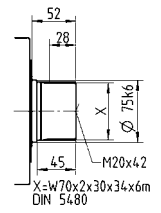
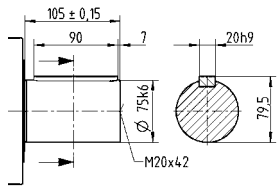
Hypoid gearboxes

SPK

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

- 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

			3-stage														
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000	
Max. torque ^{a) b) e)}	T_{2a}	Nm	3072	3072	3840	3840	3840	3840	3840	3840	3840	3840	1880	2350	3290	2800	
		in.lb	27190	27190	33987	33987	33987	33987	33987	33987	33987	33987	33987	16640	20799	29119	24782
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	2560	2560	3000	3000	3000	3000	3000	3000	2880	2880	1880	2350	2880	2280	
		in.lb	22658	22658	26552	26552	26552	26552	26552	26552	25490	25490	16640	20799	25490	20180	
Nominal torque (at n_n)	T_{2N}	Nm	1500	1500	1500	1500	1500	1500	1500	1500	1400	1400	1500	1500	1400	1000	
		in.lb	13276	13276	13276	13276	13276	13276	13276	13276	12391	12391	13276	13276	12391	8851	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	4200	3600	5250	5250	5250	5250	5250	5250	5900	5900	3600	4500	5900	5900	
		in.lb	37173	31863	46467	46467	46467	46467	46467	46467	52220	52220	31863	39829	52220	52220	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2700	2700	2700	2700	2700	2700	2700	2900	2700	2900	3400	3400	3400	3400	
Max. input speed	n_{1Max}	rpm	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	4.8	2.4	3.8	3.4	2.6	2.6	2	2	2	2	2	2	2	2	
		in.lb	42	21	34	30	23	23	18	18	18	18	18	18	18	18	
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2														
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	300	300	300	300	300	300	300	300	300	300	300	300	300	300	
		in.lb/arcmin	2655	2655	2655	2655	2655	2655	2655	2655	2655	2655	2655	2655	2655	2655	
Max. axial force ^{c)}	F_{2AMax}	N	30000														
		lb _f	6750														
Max. lateral force ^{c)}	F_{2QMax}	N	21000														
		lb _f	4725														
Max. tilting moment	M_{2KMax}	Nm	3100														
		in.lb	27437														
Efficiency at full load	η	%	92														
Service life	L_h	h	> 20000														
Weight (incl. standard adapter plate)	m	kg	86														
		lb _m	190														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71														
		°C	+90														
Max. permitted housing temperature	F	°C	194														
		°C	0 to +40														
Ambient temperature	F	°C	32 to 104														
		°C	32 to 104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output opposite direction														
Protection class			IP 65														
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 04000AA - 075.000 - X														
		Bore diameter of coupling on the application side	mm	X = 050.000 - 090.000													
Mass moment of inertia (relates to the drive)	K	38	J_1	kgcm ²	14	10.9	12.3	12	10.9	10.7	10.1	10	10.1	10	9.9	9.9	9.9
				10 ⁻³ in.lb.s ²	12.39	9.65	10.89	10.62	9.65	9.47	8.94	8.85	8.94	8.85	8.76	8.76	8.76
Clamping hub diameter [mm]	M	48	J_1	kgcm ²	28.7	25.6	27.1	26.7	26.7	25.6	24.8	24.7	24.8	24.7	24.6	24.6	24.6
				10 ⁻³ in.lb.s ²	25.4	22.66	23.98	23.63	23.63	22.66	21.95	21.86	21.95	21.86	21.77	21.77	21.77

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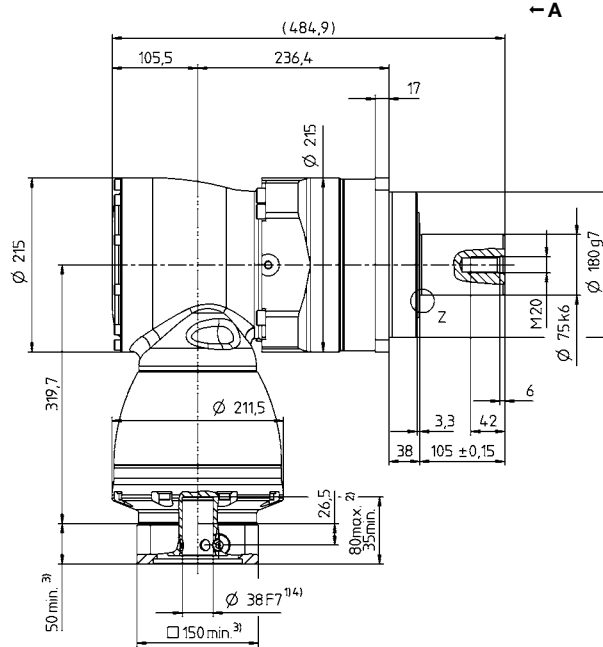
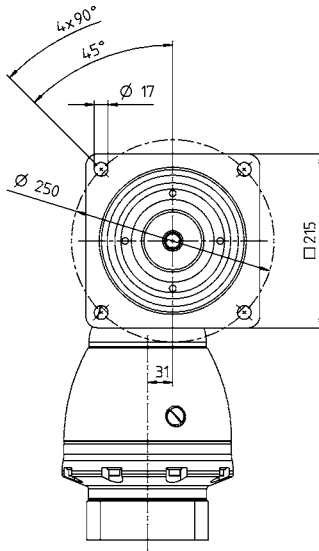
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

3-stage

up to 38 / 48⁴⁾
(K⁵⁾ / M) clamping
hub diameter



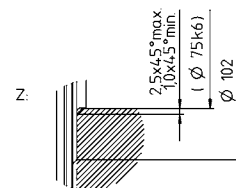
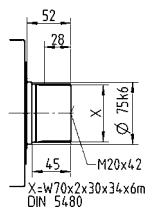
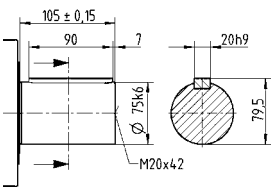
Hypoid gearboxes

SPK

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			3-stage													
Ratio	<i>i</i>		48	64	100	125	140	175	200	250	280	350	400	500	700	1000
Max. torque ^{a) b) e)}	T_{2a}	Nm	5446	5446	5446	5700	5000	5700	4200	5250	5446	5700	5446	5700	5700	3642
		in.lb	48201	48201	48201	50450	44254	50450	37173	46467	48201	50450	48201	50450	50450	32235
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	4800	4800	5400	5400	5000	5400	4200	5250	5400	5400	4400	5160	4730	3642
		in.lb	42484	42484	47794	47794	44254	47794	37173	46467	47794	47794	38944	45670	41864	32235
Nominal torque (at n_n)	T_{2N}	Nm	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2300	1700
		in.lb	22127	22127	22127	22127	22127	22127	22127	22127	22127	22127	22127	22127	20357	15046
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	6400	8000	8500	8500	8500	8500	8000	8500	8500	8500	8500	8500	8500	6850
		in.lb	56645	70806	75232	75232	75232	75232	70806	75232	75232	75232	75232	75232	75232	60628
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1800	1900	1900	2100	1900	2100	2100	2100	2100	2100	2100	2100	2100	2100
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	13	9.6	8.4	8.4	9.6	9.6	8.4	7.2	7.2	7.2	6.9	6.9	6.9	6.9
		in.lb	115	85	74	74	85	85	74	64	64	64	61	61	61	61
Max. backlash	j_t	arcmin	Standard ≤ 5.5 / Reduced ≤ 3.5													
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	510	510	510	510	510	510	510	510	510	510	510	510	510	510
		in.lb/arcmin	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514
Max. axial force ^{c)}	F_{2AMax}	N	33000													
		lb _f	7425													
Max. lateral force ^{c)}	F_{2QMax}	N	30000													
		lb _f	6750													
Max. tilting moment	M_{2KMax}	Nm	5000													
		in.lb	44254													
Efficiency at full load	η	%	92													
Service life	L_h	h	> 20000													
Weight (incl. standard adapter plate)	<i>m</i>	kg	93													
		lb _m	206													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{pA}	dB(A)	≤ 71													
		°C	+90													
Max. permitted housing temperature		F	194													
		°C	0 to +40													
Ambient temperature		F	32 to 104													
Lubrication			Lubricated for life													
Direction of rotation			In- and output opposite direction													
Protection class			IP 65													
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 06000AA - 085.000 - X													
Bore diameter of coupling on the application side		mm	X = 060.000 - 140.000													
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	K	38	J_1	kgcm ²	26.5	20	17	17	15	15	13	13	13	13	13	13
				10 ⁻³ in.lb.s ²	23.45	17.7	15.05	15.05	13.28	13.28	11.51	11.51	11.51	11.51	11.51	11.51

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
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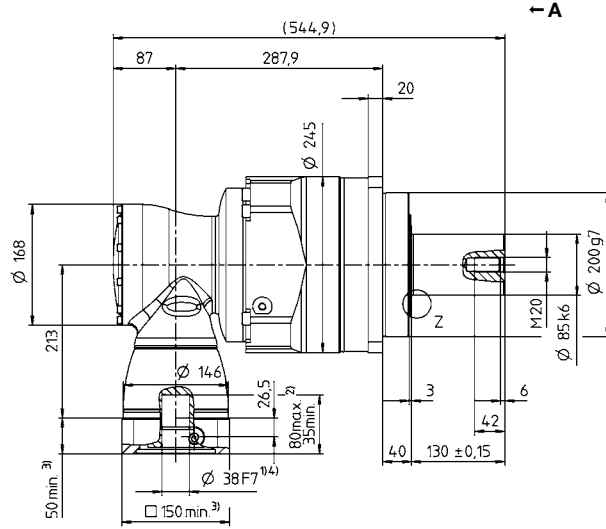
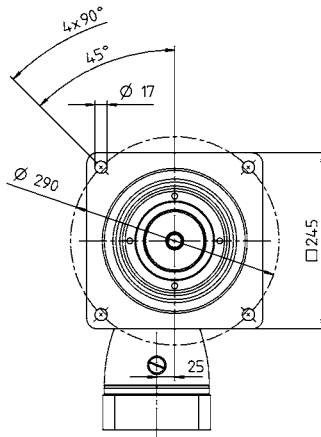
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

3-stage

up to 38⁴⁾ (K)⁵⁾
clamping hub diameter



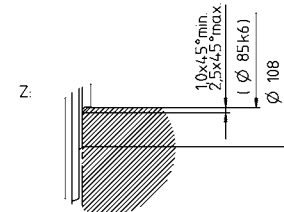
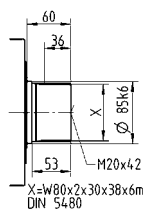
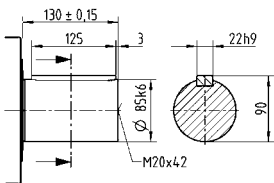
Hyppoid gearboxes

SPK

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

			4-stage														
Ratio	<i>i</i>		144	192	256	300	375	420	500	560	600	700	800	875	1000		
Max. torque ^{a) b) e)}	T_{2a}	Nm	5446	5446	5446	5446	5700	5446	5446	5446	5446	5446	5446	5700	5446		
		in.lb	48201	48201	48201	48201	50450	48201	48201	48201	48201	48201	48201	48201	50450	48201	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	4800	4800	4800	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400		
		in.lb	42484	42484	42484	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794		
Nominal torque (at n_n)	T_{2N}	Nm	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500		
		in.lb	22127	22127	22127	22127	22127	22127	22127	22127	22127	22127	22127	22127	22127		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	6400	6400	8000	8000	8500	8000	8500	8500	8000	8500	8500	8500	8500		
		in.lb	56645	56645	70806	70806	75232	70806	75232	75232	70806	75232	75232	75232	75232		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2700	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	3200		
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	4.8	3.5	2.4	2	1.1	1.4	1.4	1.2	1.1	1.1	0.9	0.9	0.75		
		in.lb	42	31	21	18	9.7	12	12	11	9.7	9.7	8.0	8.0	6.6		
Max. backlash	j_t	arcmin	Standard ≤ 5.5 / Reduced ≤ 3.5														
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	510	510	510	510	510	510	510	510	510	510	510	510	510		
		in.lb/arcmin	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514	4514		
Max. axial force ^{c)}	F_{2AMax}	N	33000														
		lb _f	7425														
Max. lateral force ^{c)}	F_{2QMax}	N	30000														
		lb _f	6750														
Max. tilting moment	M_{2KMax}	Nm	5000														
		in.lb	44254														
Efficiency at full load	η	%	90														
Service life	L_h	h	> 20000														
Weight (incl. standard adapter plate)	m	kg	96														
		lb _m	212														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71														
		°C	+90														
Max. permitted housing temperature	F	°C	194														
		°C	0 to +40														
Ambient temperature	F	°C	32 to 104														
		°C	32 to 104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output opposite direction														
Protection class			IP 65														
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 06000AA - 085.000 - X														
Bore diameter of coupling on the application side		mm	X = 060.000 - 140.000														
Mass moment of inertia (relates to the drive)	G	24	J_1	kgcm ²	5.96	4.3	3.9	3.32	3.31	2.8	3.18	2.8	2.49	2.73	2.49	2.73	2.46
				10 ⁻³ in.lb.s ²	5.27	3.81	3.45	2.94	2.93	2.48	2.81	2.48	2.2	2.42	2.2	2.42	2.18
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	12.87	11.19	10.81	10.23	10.22	9.72	10.09	9.71	9.4	9.65	9.4	9.65	9.37
				10 ⁻³ in.lb.s ²	11.39	9.9	9.57	9.05	9.04	8.6	8.93	8.59	8.32	8.54	8.32	8.54	8.29

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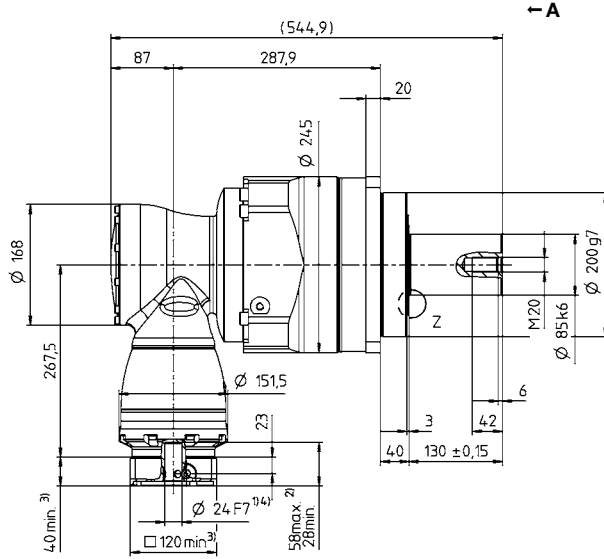
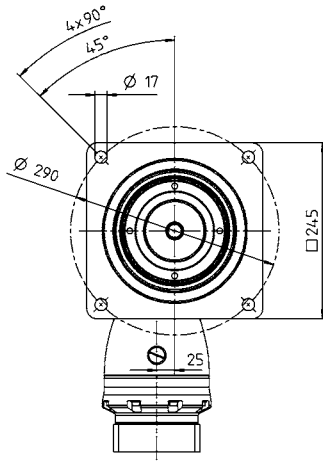
^{a)} At max. 10 % F_{2QMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures
^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

4-stage

up to 24 / 38⁴⁾
(G⁵⁾ / K) clamping
hub diameter



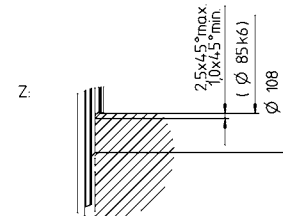
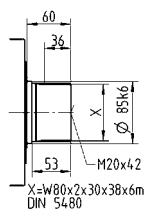
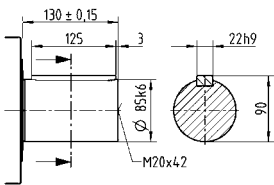
Hypoid gearboxes

SPK

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

SPK+ 240 MF 4-stage i=1225-10000

			4-stage									
Ratio	<i>i</i>		1225	1400	1750	2000	2800	3500	5000	7000	10000	
Max. torque ^{a) b) e)}	T_{2a}	Nm	5700	5700	5700	4200	5446	5700	5700	5700	3642	
		in.lb	50450	50450	50450	37173	48201	50450	50450	50450	32235	
Max. acceleration torque ^{b) e)} (max. 1000 cycles per hour)	T_{2B}	Nm	5400	5400	5400	4200	5400	5400	5160	4730	3642	
		in.lb	47794	47794	47794	37173	47794	47794	45670	41864	32235	
Nominal torque (at n_n)	T_{2N}	Nm	2500	2500	2500	2500	2500	2500	2500	2300	1700	
		in.lb	22127	22127	22127	22127	22127	22127	22127	20357	15046	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	8500	8500	8500	8000	8500	8500	8500	8500	6850	
		in.lb	75232	75232	75232	70806	75232	75232	75232	75232	60628	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2900	2900	3200	3900	3900	3900	3900	3900	3900	
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.9	0.9	0.6	0.6	0.6	0.6	0.6	0.45	0.45	
		in.lb	8.0	8.0	5.3	5.3	5.3	5.3	5.3	4.0	4.0	
Max. backlash	j_t	arcmin	Standard ≤ 5.5 / Reduced ≤ 3.5									
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	510	510	510	510	510	510	510	510	510	
		in.lb/arcmin	4514	4514	4514	4514	4514	4514	4514	4514	4514	
Max. axial force ^{c)}	F_{2AMax}	N	33000									
		lb _f	7425									
Max. lateral force ^{c)}	F_{2QMax}	N	30000									
		lb _f	6750									
Max. tilting moment	M_{2KMax}	Nm	5000									
		in.lb	44254									
Efficiency at full load	η	%	90									
Service life	L_h	h	> 20000									
Weight (incl. standard adapter plate)	m	kg	96									
		lb _m	212									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71									
		°C	+90									
Max. permitted housing temperature	F	°C	194									
		°C	0 to +40									
Ambient temperature	F	°C	32 to 104									
		°C	32 to 104									
Lubrication			Lubricated for life									
Direction of rotation			In- and output opposite direction									
Protection class			IP 65									
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BC2 - 06000AA - 085.000 - X									
Bore diameter of coupling on the application side		mm	X = 060.000 - 140.000									
Mass moment of inertia (relates to the drive)	G 24	J_1	kgcm ²	2.73	2.49	2.46	2.42	2.42	2.42	2.42	2.42	2.42
			10 ⁻³ in.lb.s ²	2.42	2.2	2.18	2.14	2.14	2.14	2.14	2.14	2.14
Clamping hub diameter [mm]	K 38	J_1	kgcm ²	9.64	9.4	9.37	9.33	9.33	9.33	9.33	9.33	9.33
			10 ⁻³ in.lb.s ²	8.53	8.32	8.29	8.26	8.26	8.26	8.26	8.26	8.26

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

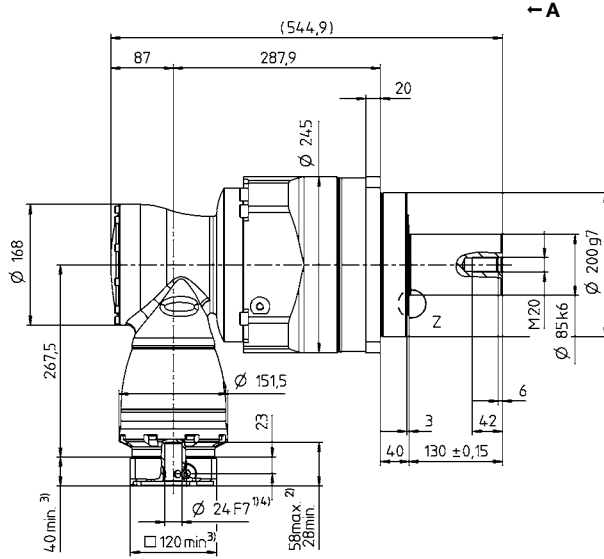
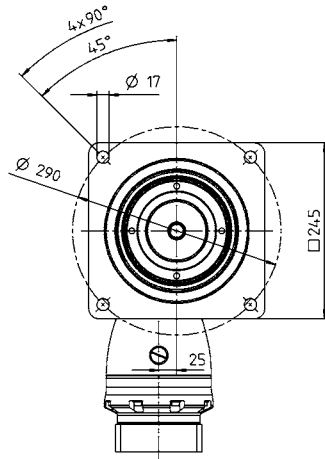
- ^{a)} At max. 10 % F_{2QMax}
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{e)} Smooth shaft

View A

Motor shaft diameter [mm]

4-stage

up to 24 / 38⁴⁾
(G⁵⁾ / K) clamping
hub diameter



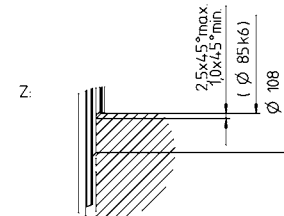
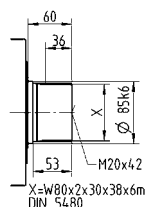
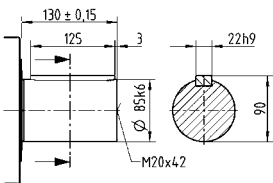
Hypoid gearboxes

SPK

Other output variants

Shaft with key

Splined shaft (DIN 5480)



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

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Fax: ۰۲۱-۴۴۹۹۴۶۴۲

تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

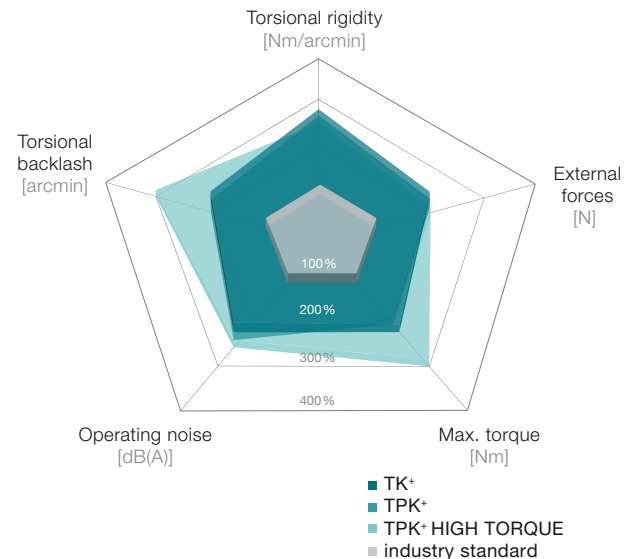
روبروی پالایشگاه نفت پارس، پلاک ۱۲

TK+ / TPK+ / TPK+ HIGH TORQUE – Space-saving right-angle precision with output flange



The versatile hypoid gearbox with TP+ compatible output flange and hollow shaft. TPK+ / TPK+ HIGH TORQUE gearboxes with planetary stage are especially suitable for high-precision applications requiring higher power and torsional rigidity.

The TK+ / TPK+ / TK+ HIGH TORQUE compared to the industry standard



Product highlights

Max. torsional backlash

TK+ ≤ 4 arcmin (Standard)

TPK+ ≤ 3.3 arcmin (Standard)

≤ 2 arcmin (Reduced)

TPK+ HIGH TORQUE ≤ 1.3 arcmin (Standard)

Diverse range of ratios $i = 3 - 10,000$

High torque capacity (MA)

Flexibility thanks to various types of output shapes

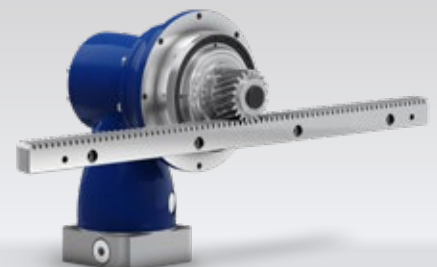
Also available in hollow shaft version

Other gearbox models

Corrosion resistant design, ATEX (TK+)



TK+ in corrosion-resistant design



TPK+ with rack and pinion

Taper roller bearings for absorbing axial and radial forces

Output compatible with TP+ series

Variable output connection, also rearward

High-quality hypoid gearing for a higher torque and smoother operation

Metal bellows coupling at the input: length compensation to protect the motor bearing

TPK+ HIGH TORQUE



TK+ with metal bellows coupling



TPK+ 2000 / 4000 available on request

			1-stage					2-stage										
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100	
Max. torque ^{a) b)}	T_{2a}	Nm	36	36	36	25	20	36	36	36	36	36	36	36	36	25	20	
		in.lb	319	319	319	221	177	319	319	319	319	319	319	319	319	319	221	177
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	30	30	30	25	20	30	30	30	30	30	30	30	30	25	20	
		in.lb	266	266	266	221	177	266	266	266	266	266	266	266	266	221	177	
Nominal torque (at n_n)	T_{2N}	Nm	22	22	22	20	15	22	22	22	22	22	22	22	22	20	15	
		in.lb	195	195	195	177	133	195	195	195	195	195	195	195	195	177	133	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	40	50	50	45	40	50	50	50	50	50	50	50	50	45	40	
		in.lb	354	443	443	398	354	443	443	443	443	443	443	443	443	443	398	354
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2200	2400	2700	2700	2700	4400	4400	4400	4400	4400	4400	4400	4800	5500	5500	
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.9	1.8	1.4	1.5	1.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
		in.lb	17	16	12	13	12	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	
Max. backlash	j_t	arcmin	Standard ≤ 5															
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	2.6	2.8	3	2.6	2.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3	2.6	2.3	
		in.lb/arcmin	23	25	27	23	20	25	25	25	25	25	25	25	27	23	20	
Max. axial force ^{c)}	F_{2AMax}	N	2400															
		lb _f	540															
Max. tilting moment	M_{2KMax}	Nm	251															
		in.lb	2222															
Efficiency at full load	η	%	96					94										
Service life	L_h	h	> 20000															
Weight (incl. standard adapter plate)	m	kg	2.9					3.2										
		lb _m	6					7										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 64															
Max. permitted housing temperature	F	°C	+90															
		F	194															
Ambient temperature	F	°C	0 to +40															
		F	32 to 104															
Lubrication			Lubricated for life															
Direction of rotation			In- and output opposite direction															
Protection class			IP 65															
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00015AAX - 031.500															
Bore diameter of coupling on the application side		mm	X = 012.000 - 028.000															
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	B	11	J_1	kgcm ²	-	-	-	-	-	0.09	0.09	0.07	0.07	0.06	0.06	0.06	0.06	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.08	0.08	0.06	0.06	0.05	0.05	0.05	0.05	0.05
	C	14	J_1	kgcm ²	0.57	0.46	0.41	0.37	0.35	0.21	0.2	0.19	0.19	0.18	0.18	0.17	0.17	0.17
				10 ⁻³ in.lb.s ²	0.5	0.41	0.36	0.33	0.31	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15
	E	19	J_1	kgcm ²	0.92	0.82	0.76	0.72	0.7	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	0.81	0.73	0.67	0.64	0.62	-	-	-	-	-	-	-	-	-

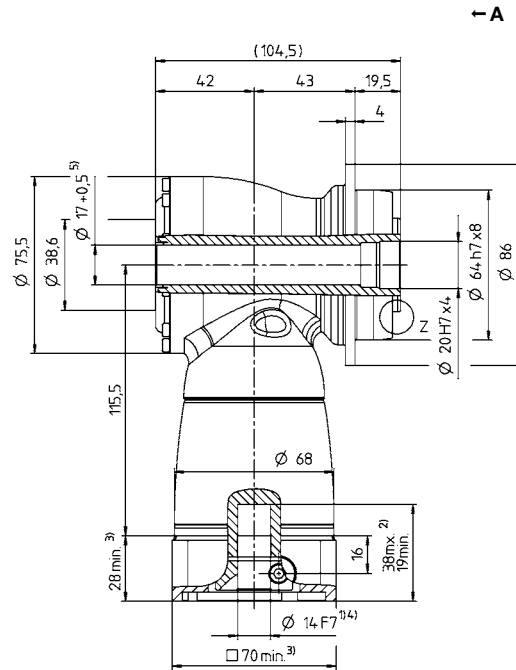
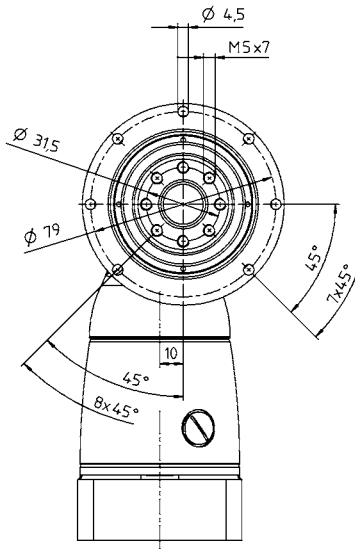
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

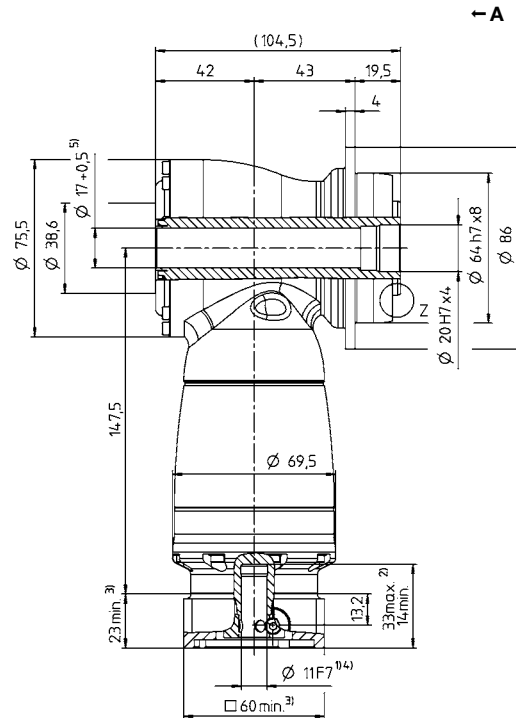
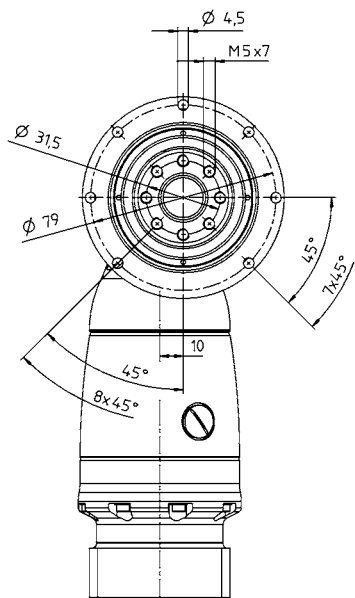
1-stage

up to 14/19⁴⁾
(C⁶⁾/E) clamping
hub diameter



2-stage

up to 11/14⁴⁾
(B⁶⁾/C) clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

TK

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Led through element max. Ø 16.8 mm

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	84	84	84	60	50	84	84	84	84	84	84	84	84	60	50		
		in.lb	743	743	743	531	443	743	743	743	743	743	743	743	743	743	531	443	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	70	70	70	60	50	70	70	70	70	70	70	70	70	60	50		
		in.lb	620	620	620	531	443	620	620	620	620	620	620	620	620	620	531	443	
Nominal torque (at n_n)	T_{2N}	Nm	50	50	50	45	40	50	50	50	50	50	50	50	50	45	40		
		in.lb	443	443	443	398	354	443	443	443	443	443	443	443	443	443	398	354	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	95	115	115	110	100	115	115	115	115	115	115	115	115	110	100		
		in.lb	841	1018	1018	974	885	1018	1018	1018	1018	1018	1018	1018	1018	974	885		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature ^{d)})	n_{1N}	n_{1T}	2100	2200	2500	2500	2500	3500	3500	3500	3500	3500	3500	3500	3800	4500	4500		
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3.3	2.8	2.1	2.4	2.2	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2		
		in.lb	29	25	19	21	19	3.5	3.5	2.7	2.7	2.7	2.7	1.8	1.8	1.8	1.8		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	6	7	8	8	8	7	7	7	7	7	7	7	8	8	8		
		in.lb/arcmin	53	62	71	71	71	62	62	62	62	62	62	62	71	71	71		
Max. axial force ^{c)}	F_{2AMax}	N	3400																
		lb _f	765																
Max. tilting moment	M_{2KMax}	Nm	437																
		in.lb	3868																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	5.3					6.1											
		lb _m	12					13											
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	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00060AAX - 050.000																
Bore diameter of coupling on the application side		mm	X = 014.000 - 035.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	J_1	kgcm ²	-	-	-	-	-	0.31	0.28	0.24	0.23	0.21	0.2	0.19	0.18	0.18	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.27	0.25	0.21	0.2	0.19	0.18	0.17	0.16	0.16	0.16
	E	19	J_1	kgcm ²	1.81	1.39	1.18	1.02	0.93	0.75	0.72	0.68	0.68	0.63	0.63	0.63	0.63	0.63	0.63
				10 ⁻³ in.lb.s ²	1.6	1.23	1.04	0.9	0.82	0.66	0.64	0.6	0.6	0.56	0.56	0.56	0.56	0.56	0.56
H	28	J_1	kgcm ²	3.22	2.8	2.6	2.43	2.34	-	-	-	-	-	-	-	-	-	-	
			10 ⁻³ in.lb.s ²	2.85	2.48	2.3	2.15	2.07	-	-	-	-	-	-	-	-	-	-	

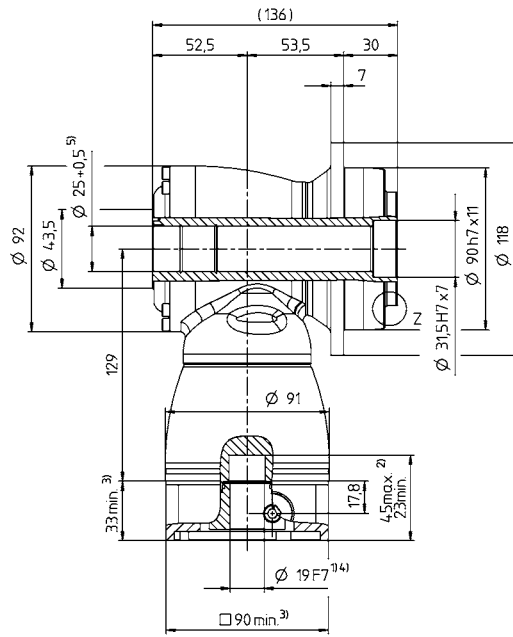
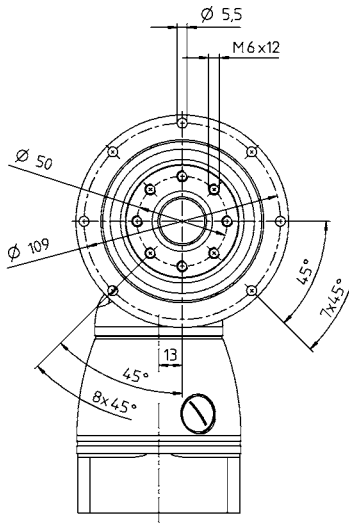
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

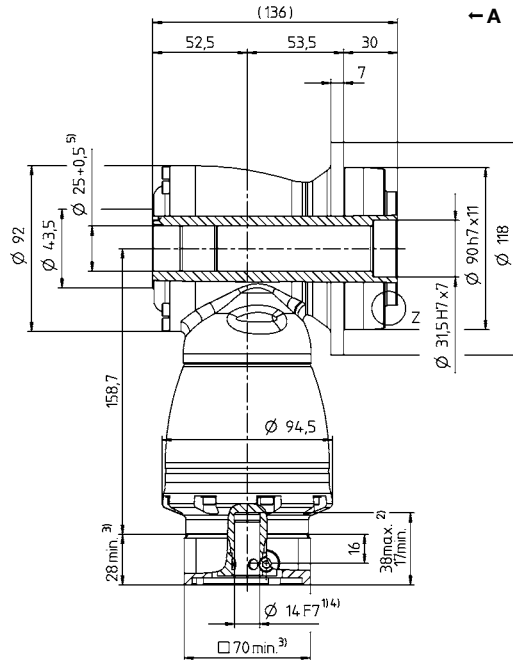
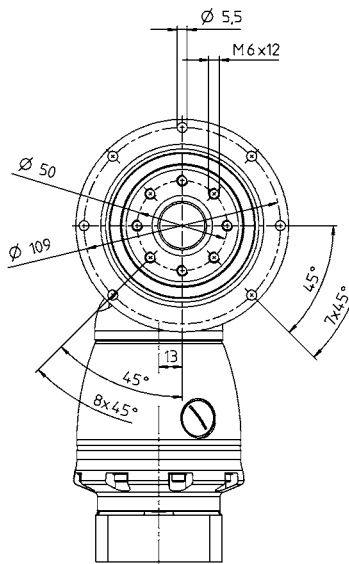
1-stage

up to 19/28⁴⁾
(E⁶⁾/H) clamping
hub diameter



2-stage

up to 14/19⁴⁾
(C⁶⁾/E) clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

TK

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Led through element max. Ø 24.8 mm

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	204	204	204	145	125	204	204	204	204	204	204	204	204	145	125		
		in.lb	1806	1806	1806	1283	1106	1806	1806	1806	1806	1806	1806	1806	1806	1806	1283	1106	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	170	170	170	145	125	170	170	170	170	170	170	170	170	145	125		
		in.lb	1505	1505	1505	1283	1106	1505	1505	1505	1505	1505	1505	1505	1505	1505	1283	1106	
Nominal torque (at n_n)	T_{2N}	Nm	100	100	100	90	80	100	100	100	100	100	100	100	100	90	80		
		in.lb	885	885	885	797	708	885	885	885	885	885	885	885	885	885	797	708	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	220	260	260	255	250	260	260	260	260	260	260	260	260	260	255	250	
		in.lb	1947	2301	2301	2257	2213	2301	2301	2301	2301	2301	2301	2301	2301	2301	2257	2213	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature ^{d)})	n_{1N}	n_{1T}	2000	2100	2400	2200	2200	3100	3100	3100	3100	3100	3100	3100	3100	3500	4200	4200	
Max. input speed	n_{1Max}	rpm	5500	5500	5500	5500	5500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	4.9	3.9	4	4.5	3.6	0.7	0.7	0.6	0.5	0.5	0.4	0.2	0.2	0.2	0.2		
		in.lb	43	35	35	40	32	6.2	6.2	5.3	4.4	4.4	3.5	1.8	1.8	1.8	1.8		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	12	13	16	16	16	13	13	13	13	13	13	13	16	16	16		
		in.lb/arcmin	106	115	142	142	142	115	115	115	115	115	115	115	142	142	142		
Max. axial force ^{c)}	F_{2AMax}	N	5700																
		lb _f	1283																
Max. tilting moment	M_{2KMax}	Nm	833																
		in.lb	7373																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	8.9					10.6											
		lb _m	20					23											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 66																
Max. permitted housing temperature	F	°C	+90																
		F	194																
Ambient temperature	F	°C	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00150AAX - 063.000																
Bore diameter of coupling on the application side		mm	X = 019.000 - 042.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	J_1	kgcm ²	-	-	-	-	-	1.08	1.01	0.88	0.85	0.76	0.75	0.7	0.69	0.68	0.68
				10 ⁻³ in.lb.s ²	-	-	-	-	-	0.96	0.89	0.78	0.75	0.67	0.66	0.62	0.61	0.6	0.6
	G	24	J_1	kgcm ²	-	-	-	-	-	2.65	2.57	2.44	2.42	2.32	2.31	2.26	2.25	2.25	2.25
				10 ⁻³ in.lb.s ²	-	-	-	-	-	2.35	2.27	2.16	2.14	2.05	2.04	2	1.99	1.99	1.99
	H	28	J_1	kgcm ²	5.5	4.3	3.6	3.1	2.9	-	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	4.87	3.81	3.19	2.74	2.57	-	-	-	-	-	-	-	-	-	-
	K	38	J_1	kgcm ²	12.7	11.5	10.9	10.4	10.1	-	-	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	11.24	10.18	9.65	9.2	8.94	-	-	-	-	-	-	-	-	-	-

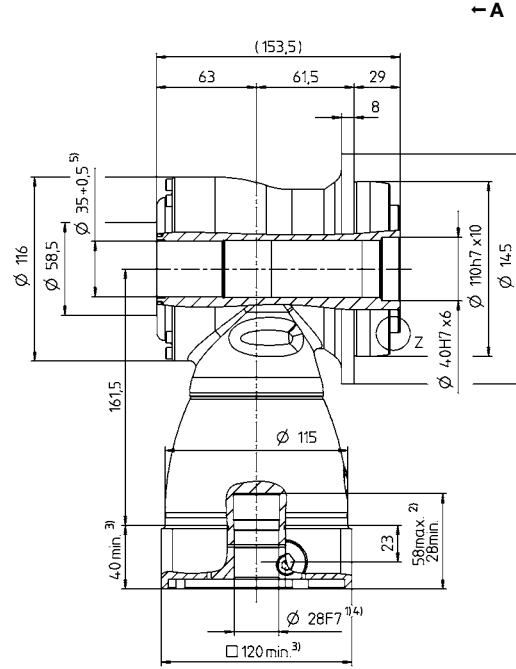
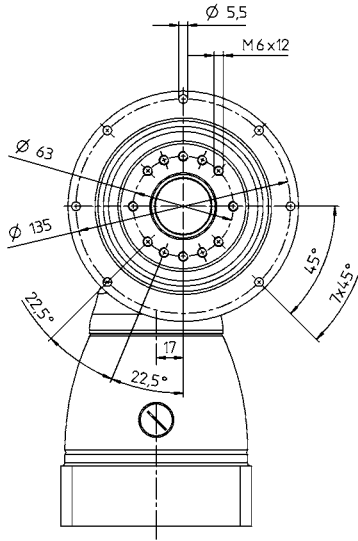
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

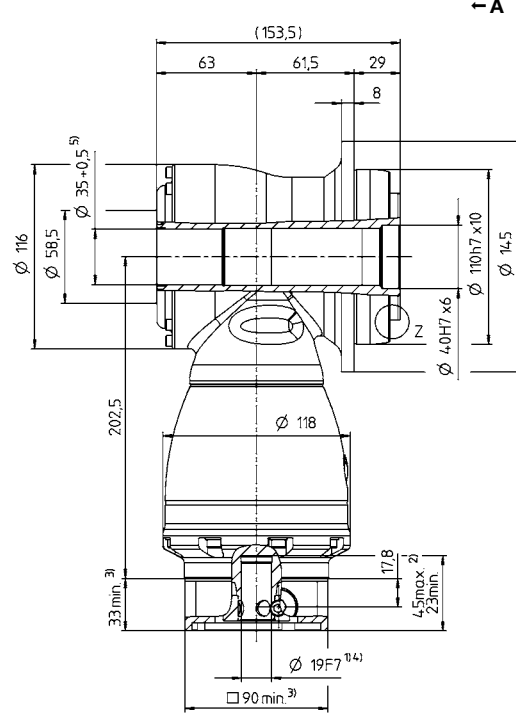
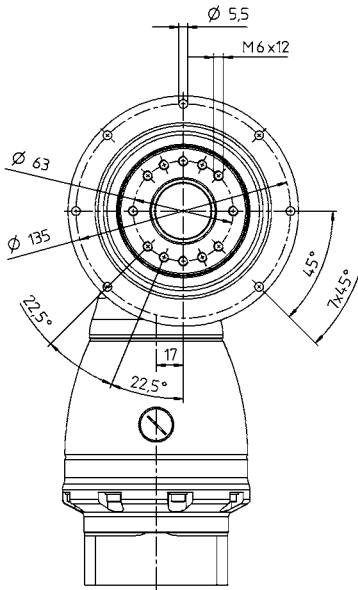
1-stage

up to 28/38⁴⁾
(H⁶⁾/K) clamping
hub diameter



2-stage

up to 19/24⁴⁾
(E⁶⁾/G) clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

TK

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Led through element max. Ø 34.8 mm

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	360	360	360	250	210	360	360	360	360	360	360	360	360	250	210		
		in.lb	3186	3186	3186	2213	1859	3186	3186	3186	3186	3186	3186	3186	3186	3186	2213	1859	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	300	300	300	250	210	300	300	300	300	300	300	300	300	250	210		
		in.lb	2655	2655	2655	2213	1859	2655	2655	2655	2655	2655	2655	2655	2655	2213	1859		
Nominal torque (at n_n)	T_{2N}	Nm	190	190	190	175	160	190	190	190	190	190	190	190	190	175	160		
		in.lb	1682	1682	1682	1549	1416	1682	1682	1682	1682	1682	1682	1682	1682	1549	1416		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	400	500	500	450	400	500	500	500	500	500	500	500	500	450	400		
		in.lb	3540	4425	4425	3983	3540	4425	4425	4425	4425	4425	4425	4425	4425	3983	3540		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature ^{d)})	n_{1N}	n_{1T}	1700	1800	2000	1800	1800	2900	2900	2900	2900	2900	2900	2900	3200	3200	3900		
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	9.6	7.1	8.4	9	6.6	1.7	1.1	0.8	0.6	0.6	0.5	0.5	0.4	0.4	0.4		
		in.lb	85	63	74	80	58	15	9.7	7.1	5.3	5.3	4.4	4.4	3.5	3.5	3.5		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	36	40	46	44	42	40	40	40	40	40	40	40	46	44	42		
		in.lb/arcmin	319	354	407	389	372	354	354	354	354	354	354	354	407	389	372		
Max. axial force ^{c)}	F_{2AMax}	N	9900																
		lb _f	2228																
Max. tilting moment	M_{2KMax}	Nm	1692																
		in.lb	14976																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	22					26											
		lb _m	49					57											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68																
Max. permitted housing temperature		°C	+90																
		F	194																
Ambient temperature		°C	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00300AAX - 080.000																
Bore diameter of coupling on the application side		mm	X = 024.000 - 060.000																
Mass moment of inertia (relates to the drive)	G	24	J_1	kgcm ²	-	-	-	-	-	4.43	3.97	3.36	3.22	2.82	2.75	2.5	2.47	2.44	2.42
				10 ⁻³ in.lb.s ²	-	-	-	-	-	3.92	3.51	2.97	2.85	2.5	2.43	2.21	2.19	2.16	2.14
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	28.4	21	17.6	14.7	13.1	11.3	10.9	10.3	10.1	9.74	9.66	9.41	9.38	9.35	9.33
				10 ⁻³ in.lb.s ²	25.13	18.59	15.58	13.01	11.59	10	9.65	9.12	8.94	8.62	8.55	8.33	8.3	8.27	8.26

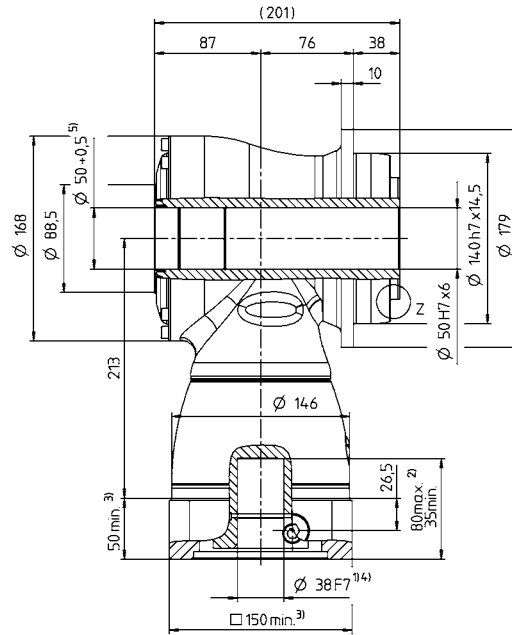
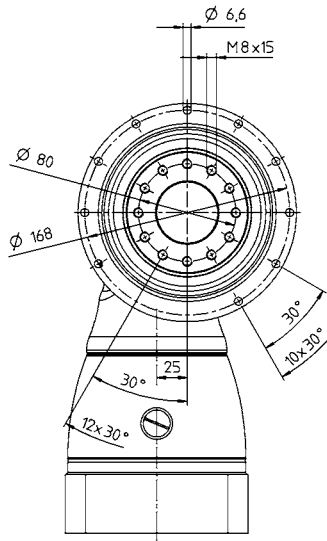
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

1-stage

up to 38⁴⁾ (K)⁶⁾
clamping hub diameter

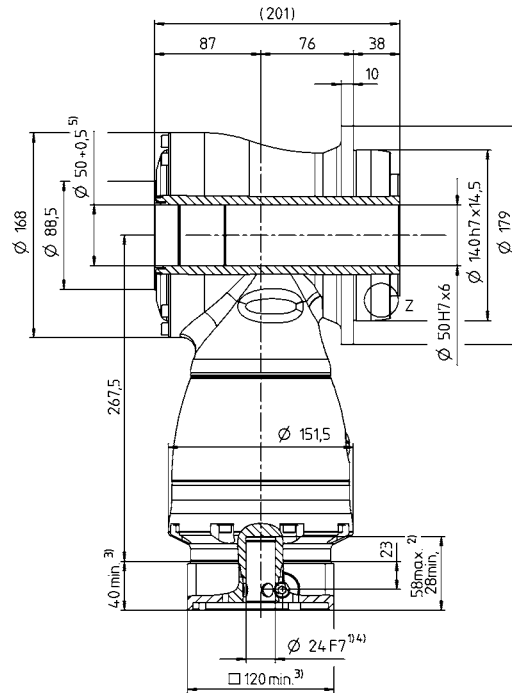
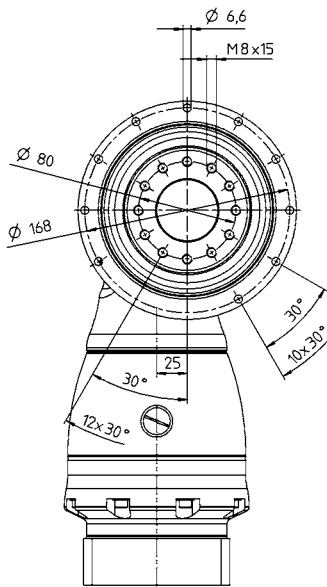


← A

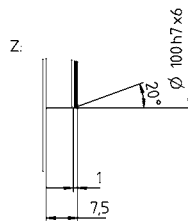
Motor shaft diameter [mm]

2-stage

up to 24/38⁴⁾
(G⁶⁾/K) clamping
hub diameter



← A



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Led through element max. Ø 49.8 mm

			1-stage					2-stage											
Ratio	<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	768	768	768	550	470	768	768	768	768	768	768	768	768	550	470		
		in.lb	6797	6797	6797	4868	4160	6797	6797	6797	6797	6797	6797	6797	6797	6797	4868	4160	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	640	640	640	550	470	640	640	640	640	640	640	640	640	550	470		
		in.lb	5665	5665	5665	4868	4160	5665	5665	5665	5665	5665	5665	5665	5665	5665	4868	4160	
Nominal torque (at n_n)	T_{2N}	Nm	400	400	400	380	360	400	400	400	400	400	400	400	400	380	360		
		in.lb	3540	3540	3540	3363	3186	3540	3540	3540	3540	3540	3540	3540	3540	3540	3363	3186	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	900	1050	1050	970	900	1050	1050	1050	1050	1050	1050	1050	1050	970	900		
		in.lb	7966	9293	9293	8585	7966	9293	9293	9293	9293	9293	9293	9293	9293	9293	8585	7966	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature ^{d)})	n_{1N}	n_{1T}	1400	1600	1800	1600	1600	2700	2700	2700	2700	2700	2700	2700	2900	3200	3400		
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000		
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	20	17	18	19	16	3.6	2.8	2.2	1.9	1.6	1.4	1.1	1.1	1.1	1.1		
		in.lb	177	150	159	168	142	32	25	19	17	14	12	9.7	9.7	9.7	9.7		
Max. backlash	j_t	arcmin	Standard ≤ 4																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	76	87	99	97	96	87	87	87	87	87	87	87	99	97	96		
		in.lb/arcmin	673	770	876	859	850	770	770	770	770	770	770	770	876	859	850		
Max. axial force ^{c)}	F_{2AMax}	N	14200																
		lb _f	3195																
Max. tilting moment	M_{2KMax}	Nm	3213																
		in.lb	28438																
Efficiency at full load	η	%	96					94											
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	48					54											
		lb _m	106					119											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68																
Max. permitted housing temperature		°C	+90																
		F	194																
Ambient temperature		°C	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 01500AAX - 125.000																
Bore diameter of coupling on the application side		mm	X = 050.000 - 080.000																
Mass moment of inertia (relates to the drive)	K	38	J_1	kgcm ²	-	-	-	-	-	16.8	14.8	12.9	12.3	11.2	10.9	10.3	10.1	10	9.93
				10 ⁻³ in.lb.s ²	-	-	-	-	-	14.87	13.1	11.42	10.89	9.91	9.65	9.12	8.94	8.85	8.79
Clamping hub diameter [mm]	M	48	J_1	kgcm ²	96.5	64.6	50.5	38.2	31.8	31.5	29.5	27.6	27	25.9	25.6	25	24.8	24.7	24.6
				10 ⁻³ in.lb.s ²	85.4	57.17	44.69	33.81	28.14	27.88	26.11	24.43	23.9	22.92	22.66	22.13	21.95	21.86	21.77

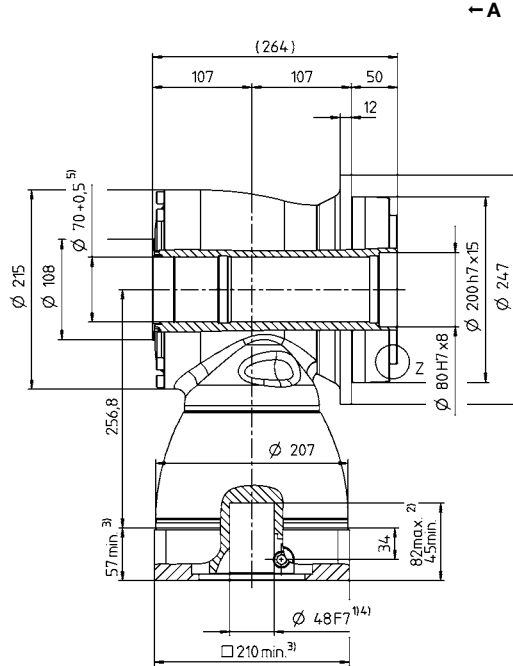
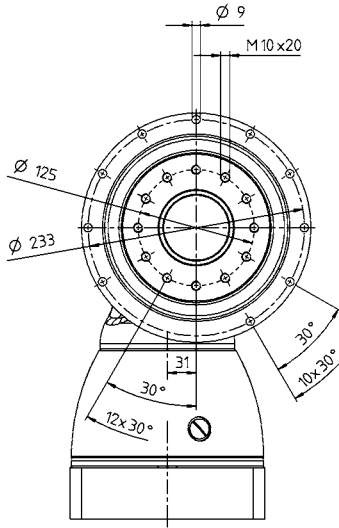
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

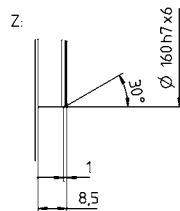
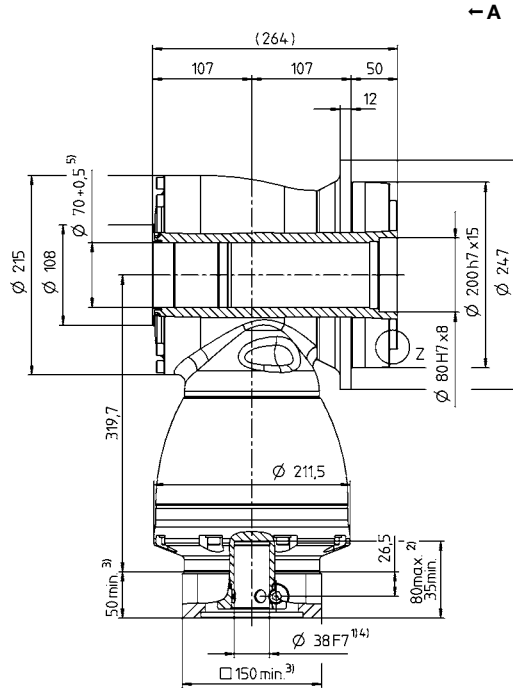
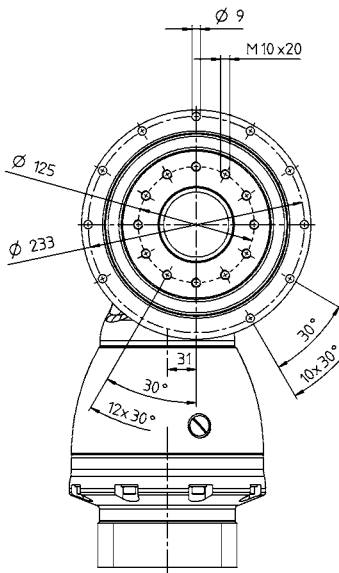
1-stage

up to 48⁴⁾ (M)⁶⁾
clamping hub diameter



2-stage

up to 38/48⁴⁾
(K⁶⁾/M) clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

TK

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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⁾ Led through element max. Ø 69.8 mm

			2-stage												
Ratio	<i>i</i>		12	16	20	25	28	35	40	49	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	144	144	180	180	210	210	80	175	100	140	168		
		in.lb	1275	1275	1593	1593	1859	1859	708	1549	885	1239	1487		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	120	120	150	150	172	172	80	172	100	140	126		
		in.lb	1062	1062	1328	1328	1522	1522	708	1522	885	1239	1115		
Nominal torque (at n_n)	T_{2N}	Nm	75	75	75	75	75	75	60	75	75	75	60		
		in.lb	664	664	664	664	664	664	531	664	664	664	531		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	160	200	250	250	251	251	160	251	200	251	251		
		in.lb	1416	1770	2213	2213	2222	2222	1416	2222	1770	2222	2222		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2000	2400	2400	2700	2400	2500	2500	2500	2500	2500	2500		
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.7	1.4	1.3	1.2	1.3	1.3	1.4	1.4	1.4	1.3	1.3		
		in.lb	15	12	12	11	12	12	12	12	12	12	12		
Max. backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3												
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	16	16	20	21	23	24	15	23	19	22	27		
		in.lb/arcmin	142	142	177	186	204	212	133	204	168	195	239		
Tilting rigidity	C_{2K}	Nm/arcmin	225												
		in.lb/arcmin	1991												
Max. axial force ^{c)}	F_{2AMax}	N	2795												
		lb _f	629												
Max. tilting moment	M_{2KMax}	Nm	270												
		in.lb	2390												
Efficiency at full load	η	%	94												
Service life	L_h	h	> 20000												
Weight (incl. standard adapter plate)	m	kg	5.2												
		lb _m	11												
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	°C	194												
		°C	0 to +40												
Ambient temperature	F	°C	32 to 104												
		°C	32 to 104												
Lubrication			Lubricated for life												
Direction of rotation			In- and output opposite direction												
Protection class			IP 65												
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00060AAX - 050.000												
Bore diameter of coupling on the application side		mm	X = 014.000 - 035.000												
Mass moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.55	0.46	0.44	0.39	0.43	0.36	0.34	0.37	0.34	0.34	0.34
				10 ⁻³ in.lb.s ²	0.49	0.41	0.39	0.35	0.38	0.32	0.3	0.33	0.3	0.3	0.3
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	0.9	0.81	0.79	0.75	0.78	0.71	0.7	0.72	0.7	0.69	0.69
				10 ⁻³ in.lb.s ²	0.8	0.72	0.7	0.66	0.69	0.63	0.62	0.64	0.62	0.61	0.61

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

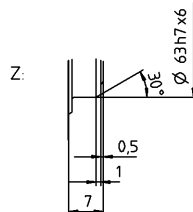
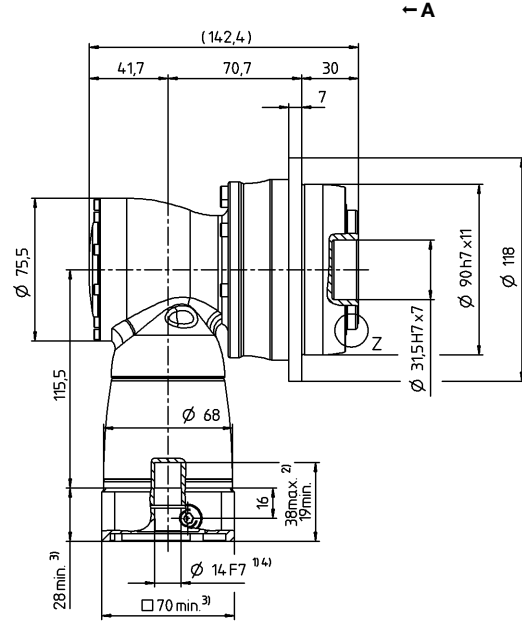
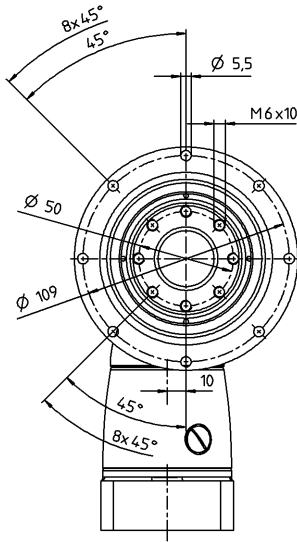
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

2-stage

up to 14/19⁴⁾
(C⁵⁾ / E) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

			3-stage													
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000
Max. torque ^{a) b)}	T_{2a}	Nm	144	144	180	180	180	180	180	180	210	210	96	120	168	168
		in.lb	1275	1275	1593	1593	1593	1593	1593	1593	1859	1859	850	1062	1487	1487
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	120	120	150	150	150	150	150	150	172	172	80	100	140	126
		in.lb	1062	1062	1328	1328	1328	1328	1328	1328	1522	1522	708	885	1239	1115
Nominal torque (at n_n)	T_{2N}	Nm	85	85	90	90	90	90	90	90	75	90	60	75	90	60
		in.lb	752	752	797	797	797	797	797	797	664	797	531	664	797	531
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	200	160	250	250	250	250	250	250	251	251	160	200	251	251
		in.lb	1770	1416	2213	2213	2213	2213	2213	2213	2222	2222	1416	1770	2222	2222
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	4400	4400	4400	4400	4400	4400	4400	4800	4400	4800	5500	5500	5500	5500
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		in.lb	2.7	2.7	2.7	2.7	2.7	2.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Max. backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3													
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	16	16	20	21	20	21	20	21	23	24	15	19	22	27
		in.lb/arcmin	142	142	177	186	177	186	177	186	204	212	133	168	195	239
Tilting rigidity	C_{2K}	Nm/arcmin	225													
		in.lb/arcmin	1991													
Max. axial force ^{c)}	F_{2AMax}	N	2795													
		lb _f	629													
Max. tilting moment	M_{2KMax}	Nm	270													
		in.lb	2390													
Efficiency at full load	η	%	92													
Service life	L_h	h	> 20000													
Weight (incl. standard adapter plate)	<i>m</i>	kg	5.5													
		lb _m	12													
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	0 to +40													
Ambient temperature		F	32 to 104													
Lubrication			Lubricated for life													
Direction of rotation			In- and output opposite direction													
Protection class			IP 65													
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00060AAX - 050.000													
		mm	X = 014.000 - 035.000													
Mass moment of inertia (relates to the drive)	B	11	J_1	kgcm ²	0.09	0.07	0.08	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
				10 ⁻³ in.lb.s ²	0.08	0.06	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Clamping hub diameter [mm]	C	14	J_1	kgcm ²	0.2	0.18	0.19	0.19	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17
				10 ⁻³ in.lb.s ²	0.18	0.16	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
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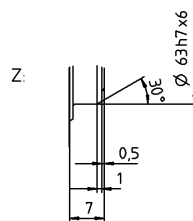
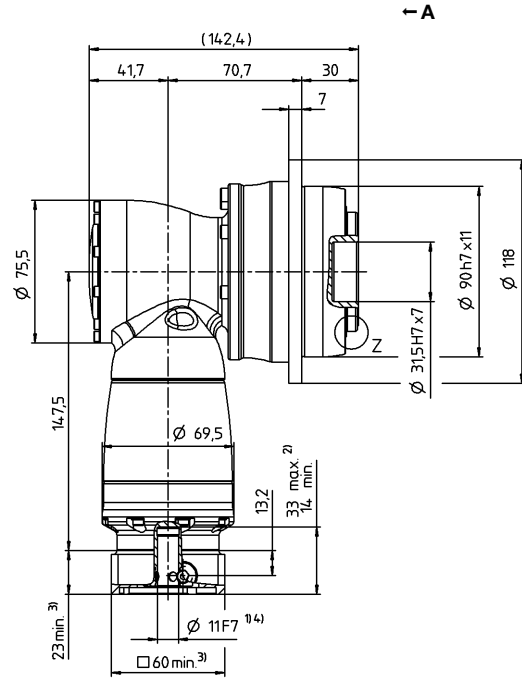
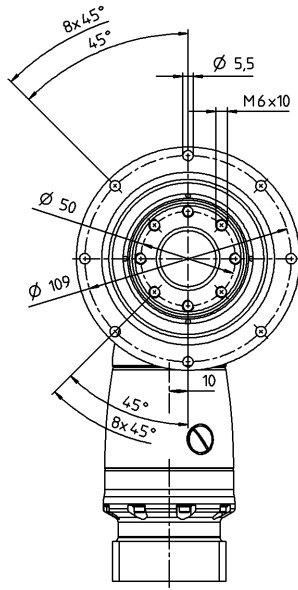
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

3-stage

up to 11/14⁴⁾
(B⁵⁾/C) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		12	16	20	25	28	35	40	49	50	70	100	
Max. torque ^{a) b)}	T_{2a}	Nm	336	336	380	380	352	352	200	352	250	350	352	
		in.lb	2974	2974	3363	3363	3115	3115	1770	3115	2213	3098	3115	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	280	280	350	350	352	352	200	352	250	350	318	
		in.lb	2478	2478	3098	3098	3115	3115	1770	3115	2213	3098	2815	
Nominal torque (at n_n)	T_{2N}	Nm	170	170	170	170	170	170	160	170	170	170	120	
		in.lb	1505	1505	1505	1505	1505	1505	1416	1505	1505	1505	1062	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	380	460	575	575	625	625	400	625	500	625	625	
		in.lb	3363	4071	5089	5089	5532	5532	3540	5532	4425	5532	5532	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2000	2400	2400	2700	2400	2500	2500	2500	2500	2500	2500	
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	2.5	2.1	2	1.8	2	2.2	2	2.2	2	2	2	
		in.lb	22	19	18	16	18	19	18	19	18	18	18	
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2											
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	40	42	53	55	59	60	44	60	55	60	56	
		in.lb/arcmin	354	372	469	487	522	531	389	531	487	531	496	
Tilting rigidity	C_{2K}	Nm/arcmin	550											
		in.lb/arcmin	4868											
Max. axial force ^{c)}	F_{2AMax}	N	4800											
		lb _f	1080											
Max. tilting moment	M_{2KMax}	Nm	440											
		in.lb	3894											
Efficiency at full load	η	%	94											
Service life	L_h	h	> 20000											
Weight (incl. standard adapter plate)	m	kg	9											
		lb _m	20											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68											
		°C	+90											
Max. permitted housing temperature	F	°C	194											
		°C	0 to +40											
Ambient temperature	F	°C	32 to 104											
		°C	32 to 104											
Lubrication			Lubricated for life											
Direction of rotation			In- and output opposite direction											
Protection class			IP 65											
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00150AAX - 063.000											
Bore diameter of coupling on the application side		mm	X = 019.000 - 042.000											
Mass moment of inertia (relates to the drive)	E 19	J_1	kgcm ²	1.43	1.18	1.16	1.04	1.14	0.94	0.89	0.95	0.89	0.89	0.89
			10 ⁻³ in.lb.s ²	1.27	1.04	1.03	0.92	1.01	0.83	0.79	0.84	0.79	0.79	0.79
Clamping hub diameter [mm]	H 28	J_1	kgcm ²	2.85	2.59	2.57	2.45	2.56	2.4	2.31	2.37	2.3	2.3	2.3
			10 ⁻³ in.lb.s ²	2.52	2.29	2.27	2.17	2.27	2.12	2.04	2.1	2.04	2.04	2.04

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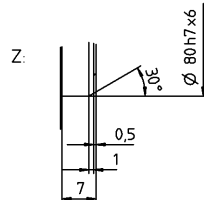
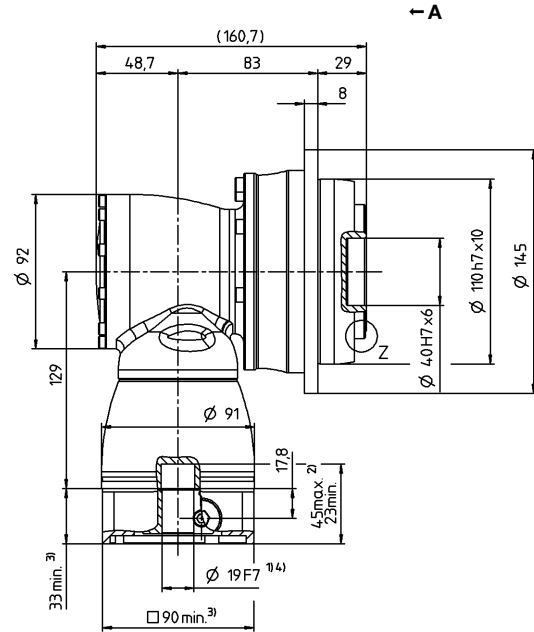
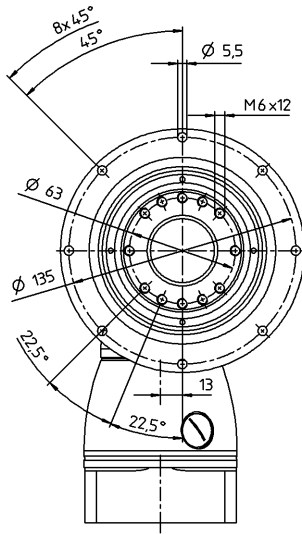
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

2-stage

up to 19/28⁴⁾
(E⁵⁾/H) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

			3-stage														
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000	
Max. torque ^{a) b)}	T_{2a}	Nm	336	336	380	380	380	380	380	380	352	352	240	300	352	352	
		in.lb	2974	2974	3363	3363	3363	3363	3363	3363	3115	3115	2124	2655	3115	3115	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	280	280	350	350	350	350	350	350	352	352	200	250	350	318	
		in.lb	2478	2478	3098	3098	3098	3098	3098	3098	3115	3115	1770	2213	3098	2815	
Nominal torque (at n_n)	T_{2N}	Nm	200	170	200	200	200	200	200	200	210	200	160	200	200	120	
		in.lb	1770	1505	1770	1770	1770	1770	1770	1770	1859	1770	1416	1770	1770	1062	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	460	380	575	575	575	575	575	575	625	625	400	500	625	625	
		in.lb	4071	3363	5089	5089	5089	5089	5089	5089	5532	5532	3540	4425	5532	5532	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	3500	3500	3500	3500	3500	3500	3500	3800	3500	3800	4500	4500	4500	4500	
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.6	0.45	0.45	0.45	0.45	0.45	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
		in.lb	5.3	4.0	4.0	4.0	4.0	4.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2														
Torsional rigidity ^{b)}	C_{121}	Nm/arcmin	42	40	53	55	53	55	53	55	59	60	44	55	60	56	
		in.lb/arcmin	372	354	469	487	469	487	469	487	522	531	389	487	531	496	
Tilting rigidity	C_{2K}	Nm/arcmin	550														
		in.lb/arcmin	4868														
Max. axial force ^{c)}	F_{2AMax}	N	4800														
		lb _f	1080														
Max. tilting moment	M_{2KMax}	Nm	440														
		in.lb	3894														
Efficiency at full load	η	%	92														
Service life	L_h	h	> 20000														
Weight (incl. standard adapter plate)	m	kg	9.8														
		lb _m	22														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68														
		°C	+90														
Max. permitted housing temperature	F	°C	194														
		°C	0 to +40														
Ambient temperature	F	°C	32 to 104														
		°C	32 to 104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output opposite direction														
Protection class			IP 65														
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00150AAX - 063.000														
Bore diameter of coupling on the application side		mm	X = 019.000 - 042.000														
Mass moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.28	0.23	0.24	0.23	0.21	0.2	0.19	0.18	0.19	0.18	0.18	0.18	0.18
				10 ⁻³ in.lb.s ²	0.25	0.2	0.21	0.2	0.19	0.18	0.17	0.16	0.17	0.16	0.16	0.16	0.16
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	0.72	0.63	0.68	0.68	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	
				10 ⁻³ in.lb.s ²	0.64	0.56	0.6	0.6	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

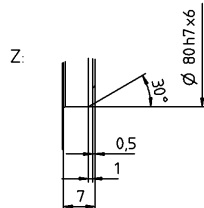
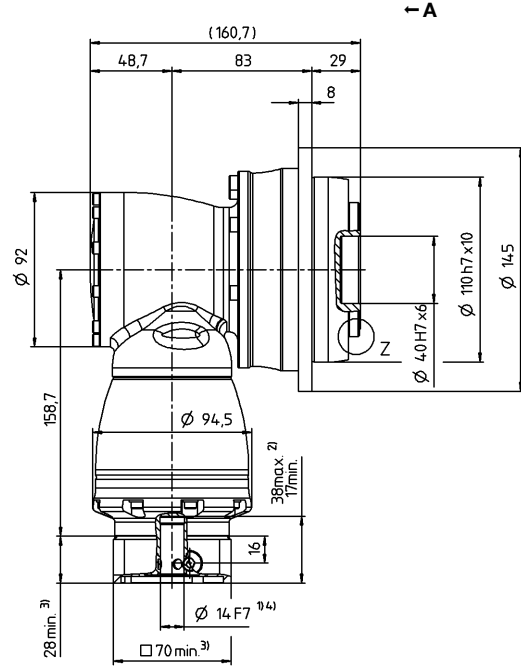
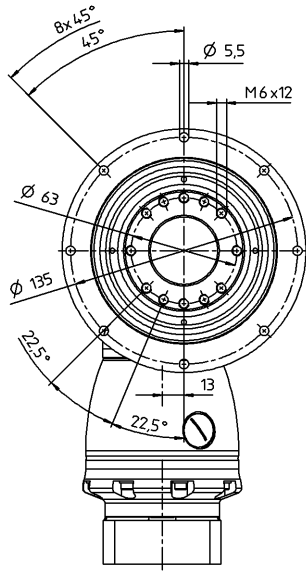
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

3-stage

up to 14/19⁴⁾
(C⁵⁾/E) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		12	16	20	25	28	35	40	49	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	816	816	992	992	868	868	500	868	625	868	720		
		in.lb	7222	7222	8780	8780	7682	7682	4425	7682	5532	7682	6373		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	680	680	840	840	840	840	500	840	625	840	648		
		in.lb	6019	6019	7435	7435	7435	7435	4425	7435	5532	7435	5735		
Nominal torque (at n_n)	T_{2N}	Nm	370	370	370	370	370	370	320	370	370	370	240		
		in.lb	3275	3275	3275	3275	3275	3275	2832	3275	3275	3275	2124		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	880	1040	1250	1250	1250	1250	1000	1250	1250	1250	1250		
		in.lb	7789	9205	11064	11064	11064	11064	8851	11064	11064	11064	11064		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1900	2300	2300	2600	2300	2300	2300	2300	2300	2300	2300		
Max. input speed	n_{1Max}	rpm	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	5.6	4.3	4.2	3.4	4.1	4.7	3.3	4.1	3.3	3.3	3.3		
		in.lb	50	38	37	30	36	42	29	36	29	29	29		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2												
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	87	91	111	119	123	127	96	127	115	125	112		
		in.lb/arcmin	770	805	982	1053	1089	1124	850	1124	1018	1106	991		
Tilting rigidity	C_{2K}	Nm/arcmin	560												
		in.lb/arcmin	4956												
Max. axial force ^{c)}	F_{2AMax}	N	6130												
		lb _f	1379												
Max. tilting moment	M_{2KMax}	Nm	1335												
		in.lb	11816												
Efficiency at full load	η	%	94												
Service life	L_h	h	> 20000												
Weight (incl. standard adapter plate)	m	kg	17												
		lb _m	38												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68												
		°C	+90												
Max. permitted housing temperature		F	194												
		°C	0 to +40												
Ambient temperature		F	32 to 104												
Lubrication			Lubricated for life												
Direction of rotation			In- and output opposite direction												
Protection class			IP 65												
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00300AAX - 080.000												
		Bore diameter of coupling on the application side	mm	X = 024.000 - 060.000											
Mass moment of inertia (relates to the drive)	H	28	J_1	kgcm ²	4.56	3.76	3.71	3.28	3.66	3	2.79	3.1	2.78	2.77	2.77
				10 ⁻³ in.lb.s ²	4.04	3.33	3.28	2.9	3.24	2.66	2.47	2.74	2.46	2.45	2.45
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	11.7	10.9	10.9	10.4	10.8	10.3	9.95	10.4	9.94	9.94	9.94
				10 ⁻³ in.lb.s ²	10.35	9.65	9.65	9.2	9.56	9.12	8.81	9.2	8.8	8.8	8.8

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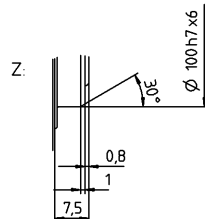
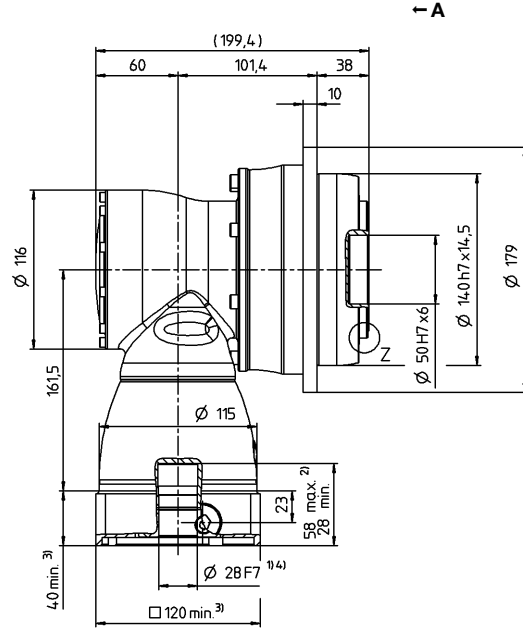
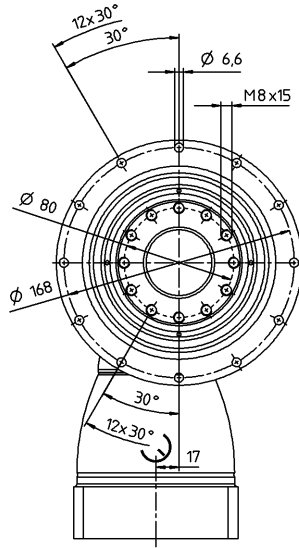
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

2-stage

up to 28 / 38⁴⁾
(H⁵⁾ / K) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

			3-stage													
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000
Max. torque ^{a) b)}	T_{2a}	Nm	816	816	992	992	992	992	992	992	868	868	600	750	868	720
		in.lb	7222	7222	8780	8780	8780	8780	8780	8780	8780	7682	7682	5310	6638	7682
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	680	680	840	840	840	840	840	840	840	840	500	625	840	648
		in.lb	6019	6019	7435	7435	7435	7435	7435	7435	7435	7435	4425	5532	7435	5735
Nominal torque (at n_n)	T_{2N}	Nm	400	400	400	400	400	400	400	400	400	400	320	370	400	240
		in.lb	3540	3540	3540	3540	3540	3540	3540	3540	3540	3540	2832	3275	3540	2124
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	1040	880	1250	1250	1250	1250	1250	1250	1250	1250	1000	1250	1250	1250
		in.lb	9205	7789	11064	11064	11064	11064	11064	11064	11064	11064	8851	11064	11064	11064
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	3100	3100	3100	3100	3100	3100	3100	3500	3100	3500	4200	4200	4200	4200
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.1	0.9	0.9	0.75	0.75	0.6	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		in.lb	9.7	8.0	8.0	6.6	6.6	5.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2													
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	91	87	111	119	111	119	111	119	123	127	95	115	125	112
		in.lb/arcmin	805	770	982	1053	982	1053	982	1053	1089	1124	841	1018	1106	991
Tilting rigidity	C_{2K}	Nm/arcmin	560													
		in.lb/arcmin	4956													
Max. axial force ^{c)}	F_{2AMax}	N	6130													
		lb _f	1379													
Max. tilting moment	M_{2KMax}	Nm	1335													
		in.lb	11816													
Efficiency at full load	η	%	92													
Service life	L_h	h	> 20000													
Weight (incl. standard adapter plate)	m	kg	18.7													
		lb _m	41													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68													
		°C	+90													
Max. permitted housing temperature	F	°C	194													
		°C	0 to +40													
Ambient temperature	F	°C	32 to 104													
		°C	32 to 104													
Lubrication			Lubricated for life													
Direction of rotation			In- and output opposite direction													
Protection class			IP 65													
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00300AAX - 080.000													
Bore diameter of coupling on the application side		mm	X = 024.000 - 060.000													
Mass moment of inertia (relates to the drive)	E 19	J_1	kgcm ²	1.01	0.76	0.88	0.85	0.76	0.75	0.7	0.69	0.7	0.69	0.69	0.69	0.69
			10 ⁻³ in.lb.s ²	0.89	0.67	0.78	0.75	0.67	0.66	0.62	0.61	0.62	0.61	0.61	0.61	0.61
Clamping hub diameter [mm]	G 24	J_1	kgcm ²	2.57	2.32	2.44	2.42	2.32	2.31	2.26	2.25	2.26	2.25	2.25	2.25	2.25
			10 ⁻³ in.lb.s ²	2.27	2.05	2.16	2.14	2.05	2.04	2	1.99	2	1.99	1.99	1.99	1.99

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

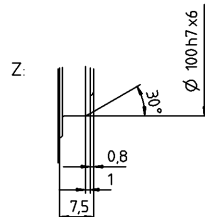
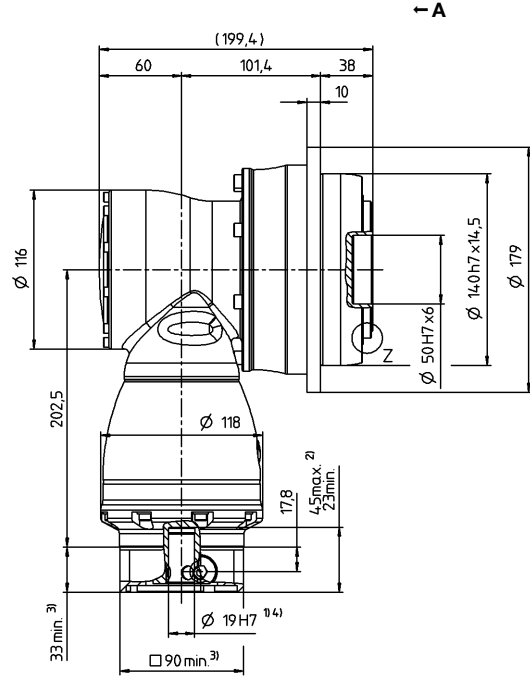
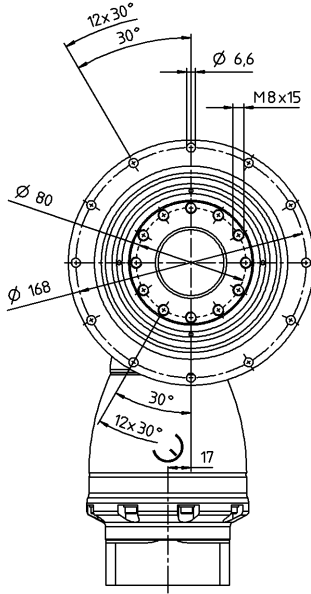
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

3-stage

up to 19/24⁴⁾
(E⁵⁾/G) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		12	16	20	25	28	35	40	49	50	70	100		
Max. torque ^{a) b)}	T_{2a}	Nm	1440	1440	1800	1800	2520	2520	840	1750	1050	1470	2100		
		in.lb	12745	12745	15931	15931	22304	22304	7435	15489	9293	13011	18587		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	1200	1200	1500	1500	1920	1920	840	1750	1050	1470	1680		
		in.lb	10621	10621	13276	13276	16994	16994	7435	15489	9293	13011	14869		
Nominal torque (at n_n)	T_{2N}	Nm	700	700	750	750	750	750	640	750	750	750	750		
		in.lb	6196	6196	6638	6638	6638	6638	5665	6638	6638	6638	6638		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	1600	2000	2500	2500	3075	3075	1600	3075	2000	2800	3075		
		in.lb	14161	17702	22127	22127	27216	27216	14161	27216	17702	24782	27216		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1600	1900	1900	2100	1900	2100	2100	2100	2100	2100	2100		
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	12	8.9	8.9	5.5	8.2	8	7.5	10	7.5	7.4	7.4		
		in.lb	106	79	79	49	73	71	66	89	66	65	65		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2												
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	253	269	336	346	400	407	274	410	341	404	389		
		in.lb/arcmin	2239	2381	2974	3062	3540	3602	2425	3629	3018	3576	3443		
Tilting rigidity	C_{2K}	Nm/arcmin	1452												
		in.lb/arcmin	12851												
Max. axial force ^{c)}	F_{2AMax}	N	10050												
		lb _f	2261												
Max. tilting moment	M_{2KMax}	Nm	3280												
		in.lb	29030												
Efficiency at full load	η	%	94												
Service life	L_h	h	> 20000												
Weight (incl. standard adapter plate)	m	kg	41												
		lb _m	91												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70												
		°C	+90												
Max. permitted housing temperature		F	194												
		°C	0 to +40												
Ambient temperature		F	32 to 104												
Lubrication			Lubricated for life												
Direction of rotation			In- and output opposite direction												
Protection class			IP 65												
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 01500AAX - 125.000												
Bore diameter of coupling on the application side		mm	X = 050.000 - 080.000												
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	K	38	J_1	kgcm ²	24.3	19	18.7	16.1	18.5	15.7	12.8	17.5	12.7	12.7	12.7
				10 ⁻³ in.lb.s ²	21.51	16.82	16.55	14.25	16.37	13.89	11.33	15.49	11.24	11.24	11.24

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

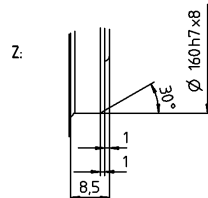
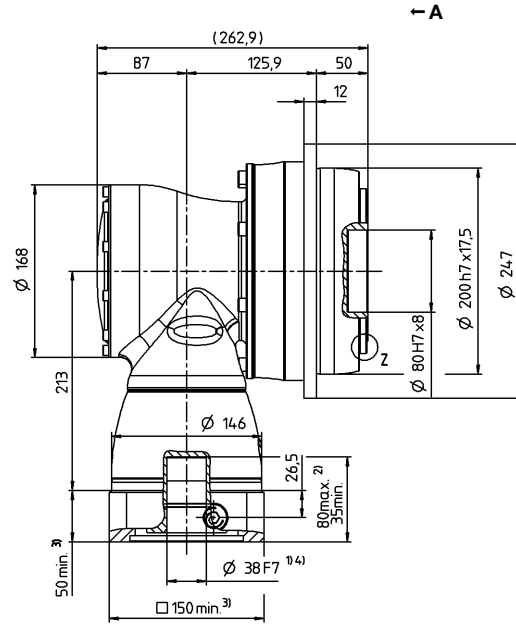
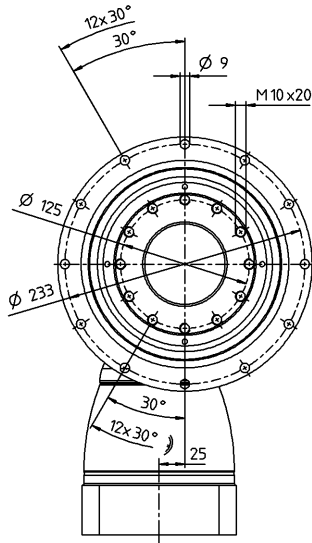
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

2-stage

up to 38⁴⁾ (K)⁵⁾
clamping hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

			3-stage														
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000	
Max. torque ^{a) b)}	T_{2a}	Nm	1440	1440	1800	1800	1800	1800	1800	1800	2520	2520	1008	1260	1764	2240	
		in.lb	12745	12745	15931	15931	15931	15931	15931	15931	22304	22304	8922	11152	15613	19826	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	1200	1200	1500	1500	1500	1500	1500	1500	1920	1920	840	1050	1470	1680	
		in.lb	10621	10621	13276	13276	13276	13276	13276	13276	16994	16994	7435	9293	13011	14869	
Nominal torque (at n_n)	T_{2N}	Nm	700	700	950	950	950	950	950	950	1120	1250	640	750	1120	800	
		in.lb	6196	6196	8408	8408	8408	8408	8408	8408	9913	11064	5665	6638	9913	7081	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	2000	1600	2500	2500	2500	2500	2500	2500	3075	3075	1600	2000	2800	3075	
		in.lb	17702	14161	22127	22127	22127	22127	22127	22127	27216	27216	14161	17702	24782	27216	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2900	2900	2900	2900	2900	2900	2900	3200	2900	3200	3900	3900	3900	3900	
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	3	1.5	2.4	1.8	1.8	1.5	1.5	1.2	1.5	1.2	1.2	1.2	1.2	1.2	
		in.lb	27	13	21	16	16	13	13	11	13	11	11	11	11	11	
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2														
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	269	252	336	346	336	346	336	346	400	407	274	341	404	389	
		in.lb/arcmin	2381	2230	2974	3062	2974	3062	2974	3062	3540	3602	2425	3018	3576	3443	
Tilting rigidity	C_{2K}	Nm/arcmin	1452														
		in.lb/arcmin	12851														
Max. axial force ^{c)}	F_{2AMax}	N	10050														
		lb _f	2261														
Max. tilting moment	M_{2KMax}	Nm	3280														
		in.lb	29030														
Efficiency at full load	η	%	92														
Service life	L_h	h	> 20000														
Weight (incl. standard adapter plate)	m	kg	45.4														
		lb _m	100														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70														
		°C	+90														
Max. permitted housing temperature	F	°C	194														
		°C	0 to +40														
Ambient temperature	F	°C	32 to 104														
		°C	32 to 104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output opposite direction														
Protection class			IP 65														
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 01500AAX - 125.000														
		mm	X = 050.000 - 080.000														
Mass moment of inertia (relates to the drive)	G	24	J_1	kgcm ²	3.97	2.82	3.36	3.22	2.82	2.75	2.5	2.47	2.5	2.44	2.42	2.42	2.42
				10 ⁻³ in.lb.s ²	3.51	2.5	2.97	2.85	2.5	2.43	2.21	2.19	2.21	2.16	2.14	2.14	2.14
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	10.9	9.74	10.3	10.1	9.74	9.66	9.41	9.38	9.41	9.38	9.33	9.33	9.33
				10 ⁻³ in.lb.s ²	9.65	8.62	9.12	8.94	8.62	8.55	8.33	8.3	8.33	8.3	8.26	8.26	8.26

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

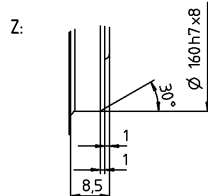
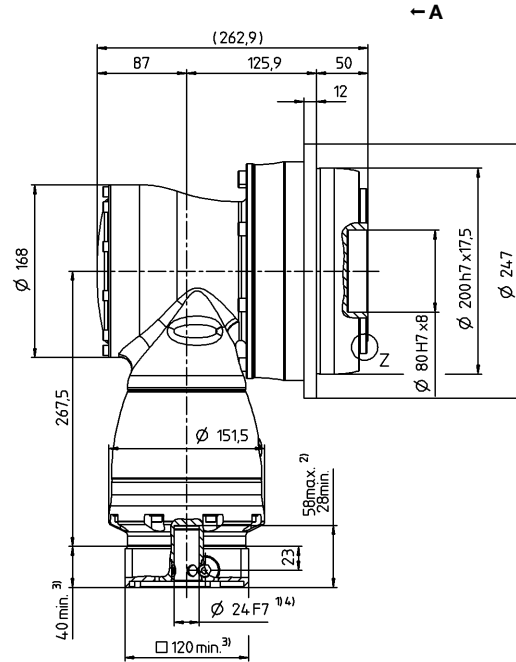
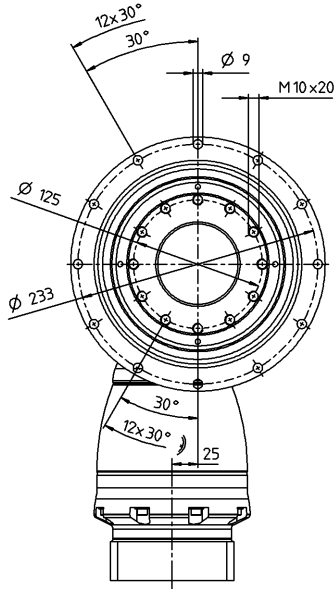
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

3-stage

up to 24 / 38⁴⁾
(G⁵⁾ / K) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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>i</i>		15	20	25	35	49	50	70	100	
Max. torque ^{a) b)}	T_{2a}	Nm	3840	3840	3840	5250	3840	2350	3290	2800	
		in.lb	33987	33987	33987	46467	33987	20799	29119	24782	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	3200	3200	3200	3960	3850	2350	3290	2280	
		in.lb	28323	28323	28323	35049	34076	20799	29119	20180	
Nominal torque (at n_n)	T_{2N}	Nm	2000	2000	2000	1800	1800	1800	1800	1600	
		in.lb	17702	17702	17702	15931	15931	15931	15931	14161	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	4500	5250	5250	7350	6790	4500	6300	8750	
		in.lb	39829	46467	46467	65053	60097	39829	55760	77445	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1500	1700	1900	1900	1700	1700	1700	1700	
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	24	19	15	14	17	21	17	16	
		in.lb	212	168	133	124	150	186	150	142	
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	615	640	664	730	728	658	727	642	
		in.lb/arcmin	5443	5665	5877	6461	6443	5824	6435	5682	
Tilting rigidity	C_{2K}	Nm/arcmin	5560								
		in.lb/arcmin	49210								
Max. axial force ^{c)}	F_{2AMax}	N	33000								
		lb _f	7425								
Max. tilting moment	M_{2KMax}	Nm	5900								
		in.lb	52220								
Efficiency at full load	η	%	94								
Service life	L_h	h	> 20000								
Weight (incl. standard adapter plate)	m	kg	83								
		lb _m	183								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Direction of rotation			In- and output opposite direction								
Protection class			IP 65								
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			-								
Bore diameter of coupling on the application side		mm	-								
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	M 48	J_1	kgcm ²	74	52	43	43	35	30	30	30
			10 ⁻³ in.lb.s ²	65.49	46.02	38.06	38.06	30.98	26.55	26.55	26.55

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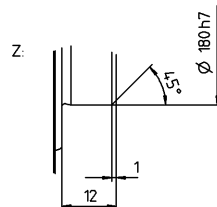
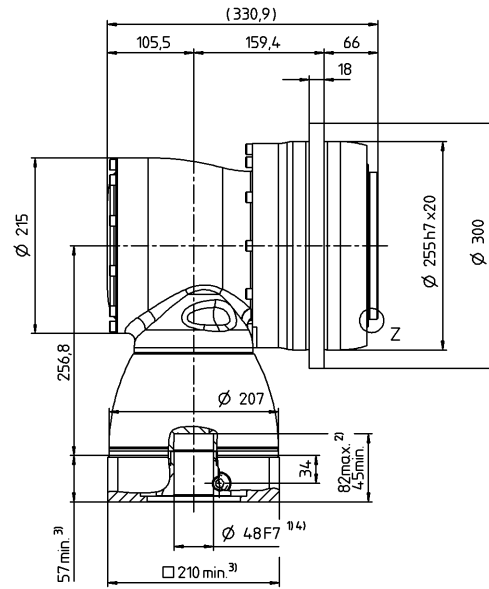
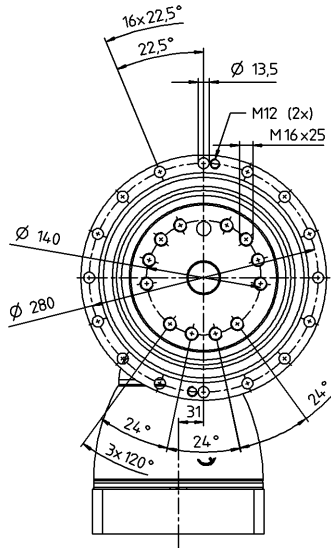
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

2-stage

up to 48⁴⁾ (M)⁵⁾
clamping hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

			3-stage													
Ratio	<i>i</i>		63	100	125	140	175	200	250	280	350	500	700	1000		
Max. torque ^{a) b)}	T_{2a}	Nm	5250	3840	3840	3840	3840	3840	3840	5250	5250	2820	3948	2800		
		in.lb	46467	33987	33987	33987	33987	33987	33987	33987	46467	46467	24959	34943	24782	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	3960	3200	3200	3200	3200	3200	3200	3960	3960	2350	3290	2280		
		in.lb	35049	28323	28323	28323	28323	28323	28323	28323	35049	35049	20799	29119	20180	
Nominal torque (at n_n)	T_{2N}	Nm	1800	2000	2000	2000	2000	2000	2000	1800	1800	1800	1800	1600		
		in.lb	15931	17702	17702	17702	17702	17702	17702	17702	15931	15931	15931	15931	14161	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	6300	5250	5250	5250	5250	5250	5250	7350	7350	4500	6300	8750		
		in.lb	55760	46467	46467	46467	46467	46467	46467	46467	65053	65053	39829	55760	77445	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2700	2700	2700	2700	2700	2700	2900	2700	2900	3400	3400	3400		
Max. input speed	n_{1Max}	rpm	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	11	6	5	4.2	3.8	3	2.8	2.6	2.4	2.2	2.2	2		
		in.lb	97	53	44	37	34	27	25	23	21	19	19	18		
Max. backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2													
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	699	640	664	640	664	640	664	715	730	658	727	642		
		in.lb/arcmin	6187	5665	5877	5665	5877	5665	5877	6328	6461	5824	6435	5682		
Tilting rigidity	C_{2K}	Nm/arcmin	5560													
		in.lb/arcmin	49210													
Max. axial force ^{c)}	F_{2AMax}	N	33000													
		lb _f	7425													
Max. tilting moment	M_{2KMax}	Nm	5900													
		in.lb	52220													
Efficiency at full load	η	%	92													
Service life	L_h	h	> 20000													
Weight (incl. standard adapter plate)	<i>m</i>	kg	87													
		lb _m	192													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71													
Max. permitted housing temperature		°C	+90													
		F	194													
Ambient temperature		°C	0 to +40													
		F	32 to 104													
Lubrication			Lubricated for life													
Direction of rotation			In- and output opposite direction													
Protection class			IP 65													
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			-													
Bore diameter of coupling on the application side		mm	-													
Mass moment of inertia (relates to the drive)	K	38	J_1	kgcm ²	17.8	14.1	12.1	11	10.8	10.2	10.1	10.1	10	9.9	9.9	9.9
				10 ⁻³ in.lb.s ²	15.75	12.48	10.71	9.74	9.56	9.03	8.94	8.94	8.85	8.76	8.76	8.76
Clamping hub diameter [mm]	M	48	J_1	kgcm ²	32.5	28.8	26.8	25.7	25.5	24.9	24.8	24.9	24.8	24.6	24.6	24.6
				10 ⁻³ in.lb.s ²	28.76	25.49	23.72	22.74	22.57	22.04	21.95	22.04	21.95	21.77	21.77	21.77

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

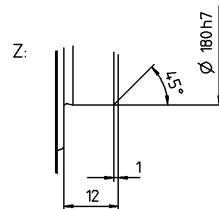
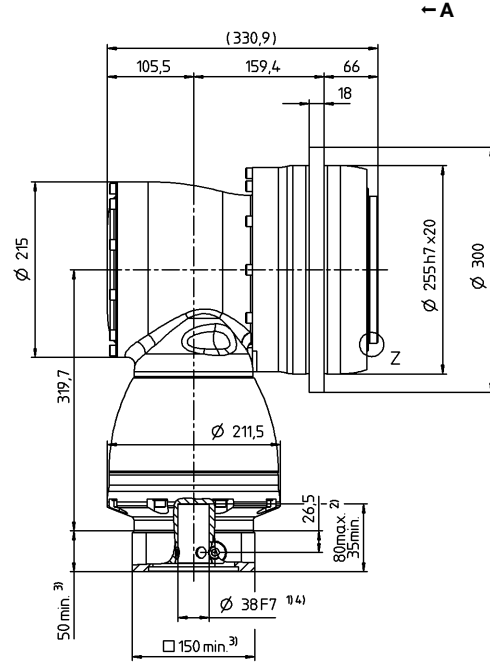
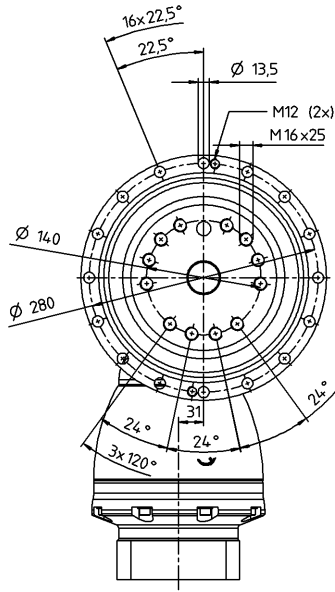
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

3-stage

up to 38 / 48⁴⁾
(K⁵⁾ / M) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

			3-stage										
Ratio	<i>i</i>		100	125	140	175	200	250	350	500	700	1000	
Max. torque ^{a) b)}	T_{2a}	Nm	5446	6808	5200	6250	4200	5250	6808	4975	5500	4800	
		in.lb	48201	60256	46024	55318	37173	46467	60256	44033	48679	42484	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	5446	6808	5000	6250	4200	5250	6808	4975	5500	4800	
		in.lb	48201	60256	44254	55318	37173	46467	60256	44033	48679	42484	
Nominal torque (at n_n)	T_{2N}	Nm	3350	3800	3350	3800	3350	3800	3800	2900	2800	2900	
		in.lb	29650	33633	29650	33633	29650	33633	33633	25667	24782	25667	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	10000	12500	9000	11250	8000	10000	14000	15000	15000	15000	
		in.lb	88508	110635	79657	99572	70806	88508	123911	132762	132762	132762	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature ^{d)})	n_{1N}	n_{1T}	2100	2100	1900	1900	1900	1900	1900	1900	1900	1900	
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	7.2	7.2	11	11	7.8	7.8	7.8	7.8	7.8	7.8	
		in.lb	64	64	97	97	69	69	69	69	69	69	
Max. backlash	j_t	arcmin	Standard ≤ 3.3 / Reduced ≤ 2.3										
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	1250	1350	1250	1350	1250	1350	1350	1280	1240	1050	
		in.lb/arcmin	11064	11949	11064	11949	11064	11949	11949	11329	10975	9293	
Tilting rigidity	C_{2K}	Nm/arcmin	9480										
		in.lb/arcmin	83906										
Max. axial force ^{c)}	F_{2AMax}	N	50000										
		lb _f	11250										
Max. tilting moment	M_{2KMax}	Nm	8800										
		in.lb	77887										
Efficiency at full load	η	%	92										
Service life	L_h	h	> 20000										
Weight (incl. standard adapter plate)	m	kg	96										
		lb _m	212										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71										
		°C	+90										
Max. permitted housing temperature		F	194										
		°C	0 to +40										
Ambient temperature		F	32 to 104										
Lubrication			Lubricated for life										
Direction of rotation			In- and output opposite direction										
Protection class			IP 65										
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			-										
Bore diameter of coupling on the application side		mm	-										
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	K	38	J_1	kgcm ²	16.7	16.7	15.5	16.5	16.4	16.4	16.4	16.4	16.4
				10 ⁻³ in.lb.s ²	14.78	14.78	13.72	14.6	14.51	14.51	14.51	14.51	14.51

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

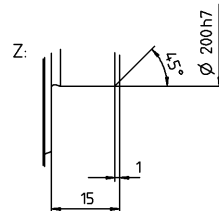
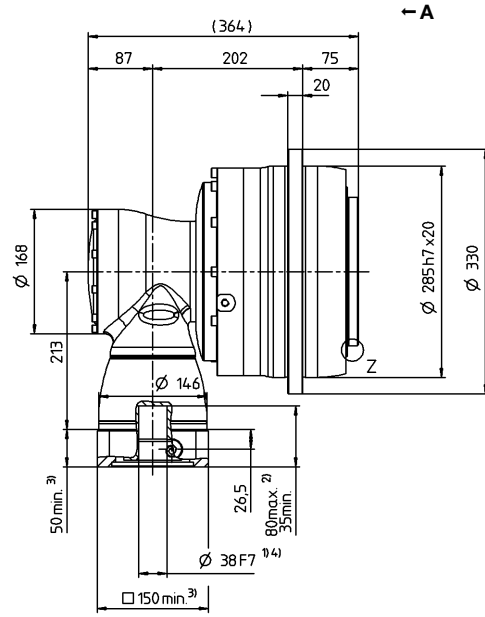
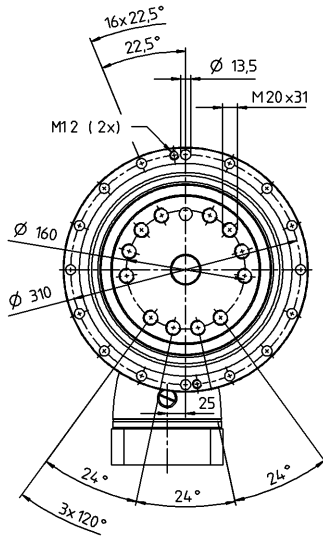
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

3-stage

up to 38⁴⁾ (K)⁵⁾
clamping hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

TPK+ 500 MF 4-stage i=180-1000

			4-stage												
Ratio	<i>i</i>		180	240	300	375	420	500	560	600	700	800	875	1000	
Max. torque ^{a) b)}	T_{2a}	Nm	5446	5446	5446	6808	5446	5446	5446	5446	5446	5446	5446	5446	
		in.lb	48201	48201	48201	60256	48201	48201	48201	48201	48201	48201	48201	48201	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	5446	5446	5446	6808	5446	5446	5446	5446	5446	5446	6808	5446	
		in.lb	48201	48201	48201	60256	48201	48201	48201	48201	48201	48201	60256	48201	
Nominal torque (at n_n)	T_{2N}	Nm	3350	3350	3350	3800	3350	3350	3350	3350	3350	3350	3800	3350	
		in.lb	29650	29650	29650	33633	29650	29650	29650	29650	29650	29650	33633	29650	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	8000	8000	8000	10000	8000	10000	10000	8000	10000	10000	12500	10000	
		in.lb	70806	70806	70806	88508	70806	88508	88508	70806	88508	88508	110635	88508	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2700	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	3200	
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	5.1	3.8	2.4	2.1	1.7	1.5	1.5	1.2	1.2	1.1	1.1	0.9	
		in.lb	45	34	21	19	15	13	13	11	11	9.7	9.7	8.0	
Max. backlash	j_t	arcmin	Standard ≤ 3.3 / Reduced ≤ 2.3												
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	1250	1250	1250	1300	1250	1350	1250	1250	1262	1250	1350	1250	
		in.lb/arcmin	11064	11064	11064	11506	11064	11949	11064	11064	11170	11064	11949	11064	
Tilting rigidity	C_{2K}	Nm/arcmin	9480												
		in.lb/arcmin	83906												
Max. axial force ^{c)}	F_{2AMax}	N	50000												
		lb _f	11250												
Max. tilting moment	M_{2KMax}	Nm	8800												
		in.lb	77887												
Efficiency at full load	η	%	90												
Service life	L_h	h	> 20000												
Weight (incl. standard adapter plate)	<i>m</i>	kg	99												
		lb _m	219												
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71												
		°C	+90												
Max. permitted housing temperature	<i>F</i>	°C	194												
		°C	0 to +40												
Ambient temperature	<i>F</i>	°C	32 to 104												
		°C	32 to 104												
Lubrication			Lubricated for life												
Direction of rotation			In- and output opposite direction												
Protection class			IP 65												
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			-												
Bore diameter of coupling on the application side		mm	-												
Mass moment of inertia (relates to the drive)	G 24	J_1	kgcm ²	5.93	4.29	3.33	3.32	2.81	3.19	2.8	2.5	2.74	2.49	2.74	2.46
			10 ⁻³ in.lb.s ²	5.25	3.8	2.95	2.94	2.49	2.82	2.48	2.21	2.42	2.2	2.42	2.18
Clamping hub diameter [mm]	K 38	J_1	kgcm ²	12.84	11.18	10.24	10.23	9.72	10.1	9.71	9.41	9.65	9.4	9.65	9.37
			10 ⁻³ in.lb.s ²	11.36	9.89	9.06	9.05	8.6	8.94	8.59	8.33	8.54	8.32	8.54	8.29

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

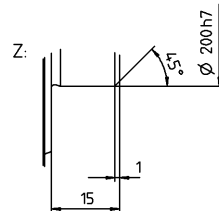
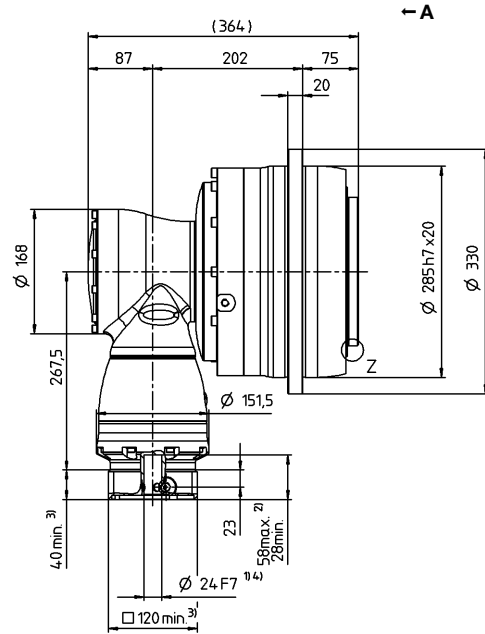
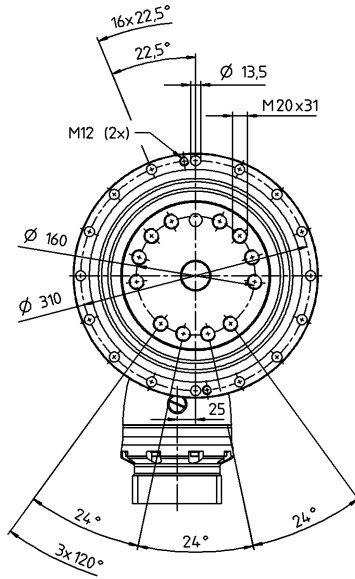
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

4-stage

up to 24 / 38⁴⁾
(G⁵⁾ / K) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

TPK+ 500 MF 4-stage i=1125-10000

			4-stage									
Ratio	<i>i</i>		1225	1400	1750	2000	2800	3500	5000	7000	10000	
Max. torque ^{a) b)}	T_{2a}	Nm	6808	6808	6808	5040	7056	6808	4975	5500	4800	
		in.lb	60256	60256	60256	44608	62451	60256	44033	48679	42484	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	6808	6808	6808	4200	5500	6808	4975	5500	4800	
		in.lb	60256	60256	60256	37173	48679	60256	44033	48679	42484	
Nominal torque (at n_n)	T_{2N}	Nm	3800	3800	3800	3200	2800	3800	2900	2800	2900	
		in.lb	33633	33633	33633	28323	24782	33633	25667	24782	25667	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	15000	15000	15000	8000	11200	14000	15000	15000	15000	
		in.lb	132762	132762	132762	70806	99129	123911	132762	132762	132762	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2900	2900	3200	3900	3900	3900	3900	3900	3900	
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.9	0.9	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
		in.lb	8.0	8.0	5.3	5.3	5.3	5.3	5.3	5.3	5.3	
Max. backlash	j_t	arcmin	Standard ≤ 3.3 / Reduced ≤ 2.3									
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	1350	1350	1350	1250	1250	1350	1250	1250	1050	
		in.lb/arcmin	11949	11949	11949	11064	11064	11949	11064	11064	9293	
Tilting rigidity	C_{2K}	Nm/arcmin	9480									
		in.lb/arcmin	83906									
Max. axial force ^{c)}	F_{2AMax}	N	50000									
		lb _f	11250									
Max. tilting moment	M_{2KMax}	Nm	8800									
		in.lb	77887									
Efficiency at full load	η	%	90									
Service life	L_h	h	> 20000									
Weight (incl. standard adapter plate)	m	kg	99									
		lb _m	219									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71									
		°C	+90									
Max. permitted housing temperature	F	°C	194									
		°C	0 to +40									
Ambient temperature	F	°C	32 to 104									
		°C	32 to 104									
Lubrication			Lubricated for life									
Direction of rotation			In- and output opposite direction									
Protection class			IP 65									
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			-									
Bore diameter of coupling on the application side		mm	-									
Mass moment of inertia (relates to the drive)	G 24	J_1	kgcm ²	2.73	2.49	2.46	2.42	2.42	2.42	2.42	2.42	2.42
			10 ⁻³ in.lb.s ²	2.42	2.2	2.18	2.14	2.14	2.14	2.14	2.14	2.14
Clamping hub diameter [mm]	K 38	J_1	kgcm ²	9.64	9.4	9.37	9.33	9.33	9.33	9.33	9.33	9.33
			10 ⁻³ in.lb.s ²	8.53	8.32	8.29	8.26	8.26	8.26	8.26	8.26	8.26

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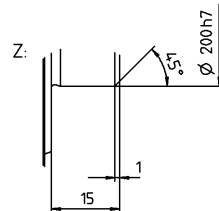
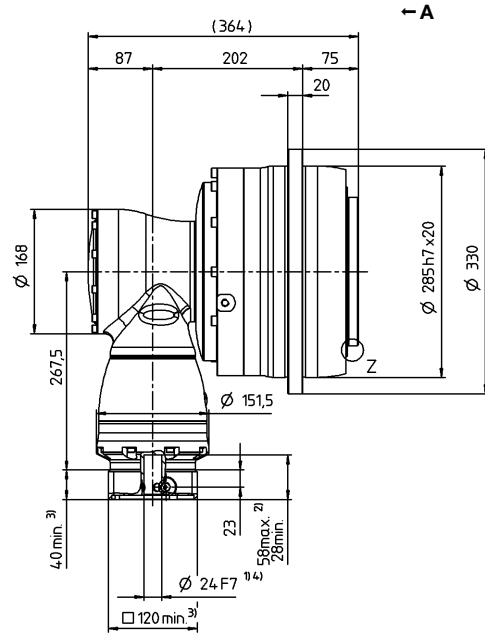
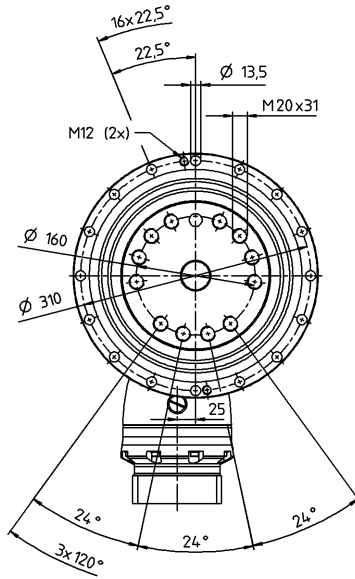
^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Refers to center of the output shaft or flange
^{d)} Please reduce input speed at higher ambient temperatures

View A

Motor shaft diameter [mm]

4-stage

up to 24 / 38⁴⁾
(G⁵⁾ / K) clamping
hub diameter



Hypoid gearboxes

TPK+

MF

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

			3-stage							4-stage								
Ratio	<i>i</i>		66	88	110	137.5	154	220	385	330	462	577.5	770	1078	1540	2695	3850	5500
Max. torque ^{a) b)}	T_{2a}	Nm	583	583	583	583	550	440	583	583	583	583	583	583	583	583	583	583
		in.lb	5160	5160	5160	5160	4868	3894	5160	5160	5160	5160	5160	5160	5160	5160	5160	5160
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	530	530	530	530	530	440	530	530	530	530	530	530	530	530	530	530
		in.lb	4691	4691	4691	4691	4691	3894	4691	4691	4691	4691	4691	4691	4691	4691	4691	4691
Nominal torque (at n_n)	T_{2N}	Nm	375	375	375	375	375	330	375	375	375	375	375	375	375	375	375	375
		in.lb	3319	3319	3319	3319	3319	2921	3319	3319	3319	3319	3319	3319	3319	3319	3319	3319
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	880	1100	1100	1200	990	880	1200	880	1200	1200	1200	1200	1200	1200	1200	1200
		in.lb	7789	9736	9736	10621	8762	7789	10621	7789	10621	10621	10621	10621	10621	10621	10621	10621
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2400	2600	2900	2900	2900	2900	2900	4300	4300	4300	4300	4300	4300	5400	5400	5400
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	1.4	1.2	1.2	1.4	1.6	1.6	1.2	0.45	0.45	0.3	0.3	0.3	0.2	0.2	0.2	0.2
		in.lb	12	11	11	12	14	14	11	4.0	4.0	2.7	2.7	2.7	1.8	1.8	1.8	1.8

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تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

Tilting rigidity	C_{2K}	Nm/arcmin	550																
		in.lb/arcmin	4868																
Max. axial force ^{c)}	F_{2AMax}	N	4800																
		lb _f	1080																
Max. tilting moment	M_{2KMax}	Nm	550																
		in.lb	4868																
Efficiency at full load	η	%	92							90									
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	8.4							8.7									
		lb _m	19							19									
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	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00300AAX - 063.000																
Bore diameter of coupling on the application side		mm	X = 030.000 - 056.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	B	11	J_1	kgcm ²	-	-	-	-	-	-	-	0.08	0.09	0.06	0.06	0.06	0.06	0.06	0.06
				10 ⁻³ in.lb.s ²	-	-	-	-	-	-	-	0.07	0.08	0.05	0.05	0.05	0.05	0.05	0.05
	C	14	J_1	kgcm ²	0.56	0.46	0.41	0.4	0.37	0.35	0.34	0.19	0.2	0.18	0.18	0.17	0.17	0.17	0.17
				10 ⁻³ in.lb.s ²	0.5	0.41	0.36	0.35	0.33	0.31	0.3	0.17	0.18	0.16	0.16	0.16	0.15	0.15	0.15
	E	19	J_1	kgcm ²	0.91	0.81	0.76	0.76	0.72	0.7	0.7	-	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	0.81	0.72	0.67	0.67	0.64	0.62	0.62	-	-	-	-	-	-	-	-

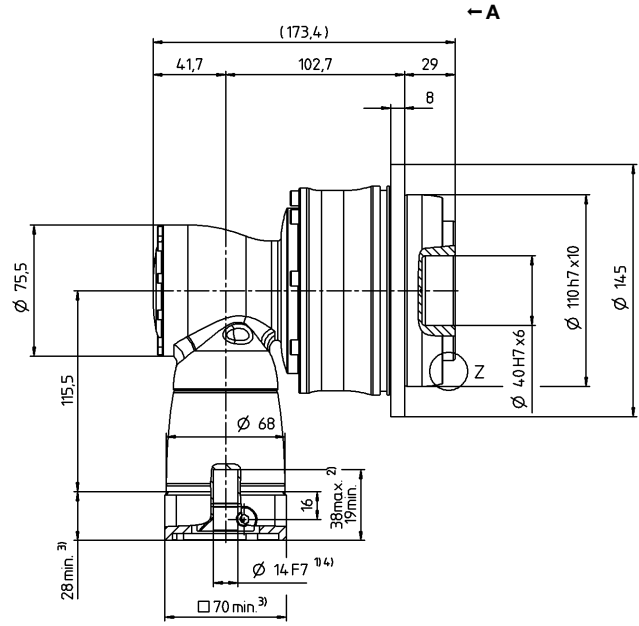
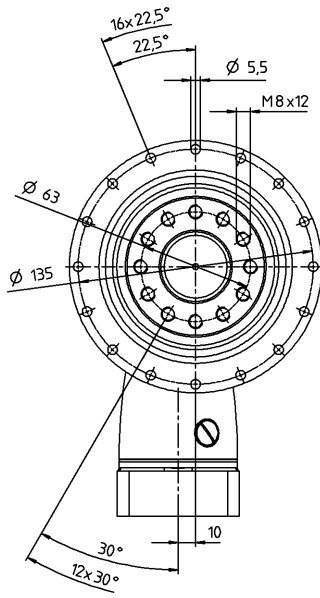
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

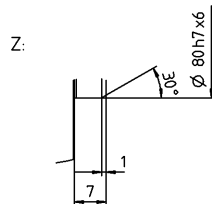
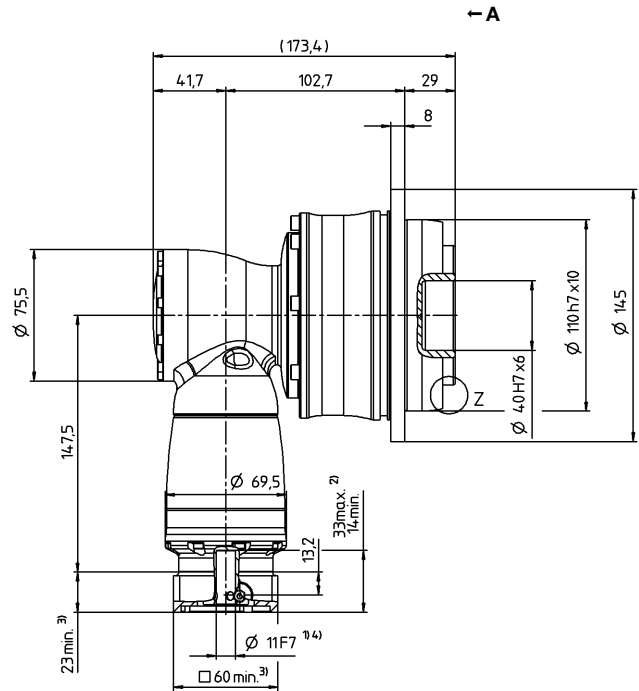
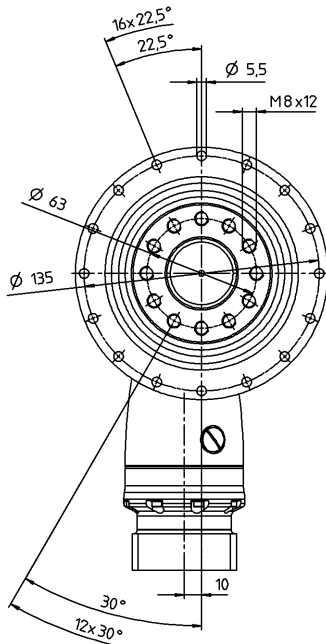
3-stage

up to 14/19⁴⁾
(C⁵⁾/E) clamping
hub diameter



4-stage

up to 11/14⁴⁾
(B⁵⁾/C) clamping
hub diameter



Motor shaft diameter [mm]

Hypoid gearboxes

TPK+

MA

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

			3-stage							4-stage									
Ratio	<i>i</i>		66	88	110	137.5	154	220	385	330	462	577.5	770	1078	1540	2695	3850	5500	
Max. torque ^{a) b)}	T_{2a}	Nm	1402	1402	1402	1402	1320	1100	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	
		in.lb	12409	12409	12409	12409	11683	9736	12409	12409	12409	12409	12409	12409	12409	12409	12409	12409	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	
		in.lb	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	
Nominal torque (at n_n)	T_{2N}	Nm	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	
		in.lb	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	2090	2375	2375	2375	2375	2375	2375	2090	2375	2375	2375	2375	2375	2375	2375	2375	
		in.lb	18498	21021	21021	21021	21021	21021	21021	18498	21021	21021	21021	21021	21021	21021	21021	21021	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2200	2400	2700	2700	2700	2700	2700	3400	3400	3400	3400	3400	3400	4400	4400	4400	
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	2.9	2.4	2	2.1	2.4	2.1	2	0.6	0.75	0.45	0.45	0.45	0.3	0.15	0.15	0.15	
		in.lb	26	21	18	19	21	19	18	5.3	6.6	4.0	4.0	4.0	2.7	1.3	1.3	1.3	
Max. backlash	j_t	arcmin	Standard ≤ 1.3																
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	202	203	205	210	205	205	215	202	214	208	209	214	214	215	215	217	
		in.lb/arcmin	1788	1797	1814	1859	1814	1814	1903	1788	1894	1841	1850	1894	1894	1903	1903	1921	
Tilting rigidity	C_{2K}	Nm/arcmin	560																
		in.lb/arcmin	4956																
Max. axial force ^{c)}	F_{2AMax}	N	6130																
		lb _f	1379																
Max. tilting moment	M_{2KMax}	Nm	1335																
		in.lb	11816																
Efficiency at full load	η	%	92							90									
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	16.9							17.5									
		lb _m	37							39									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 68																
Max. permitted housing temperature		°C	+90																
		F	194																
Ambient temperature		°C	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 00300AAX - 080.000																
Bore diameter of coupling on the application side		mm	X = 045.000 - 056.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	J_1	kgcm ²	-	-	-	-	-	-	0.24	0.29	0.2	0.2	0.2	0.19	0.18	0.18	
				10 ⁻³ in.lb.s ²	-	-	-	-	-	-	0.21	0.26	0.18	0.18	0.18	0.17	0.16	0.16	0.16
	E	19	J_1	kgcm ²	1.65	1.3	1.13	1.11	0.99	0.91	0.9	0.68	0.73	0.63	0.63	0.63	0.63	0.63	0.63
				10 ⁻³ in.lb.s ²	1.46	1.15	1	0.98	0.88	0.81	0.8	0.6	0.65	0.56	0.56	0.56	0.56	0.56	0.56
H	28	J_1	kgcm ²	3.07	2.71	2.54	2.53	2.4	2.53	2.32	-	-	-	-	-	-	-	-	
			10 ⁻³ in.lb.s ²	2.72	2.4	2.25	2.24	2.12	2.24	2.05	-	-	-	-	-	-	-	-	-

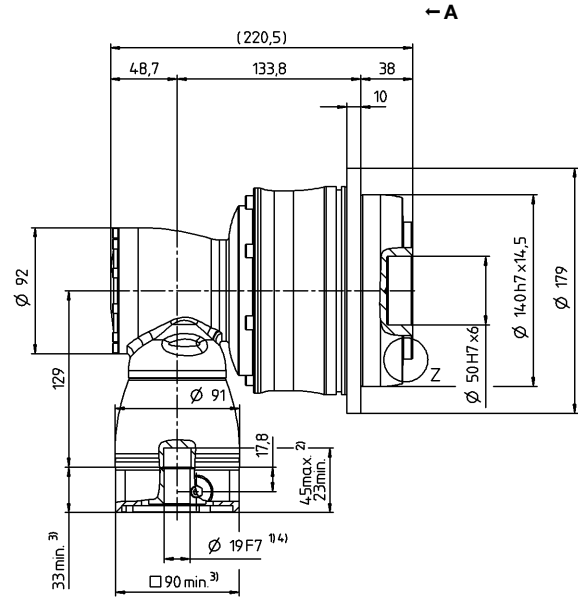
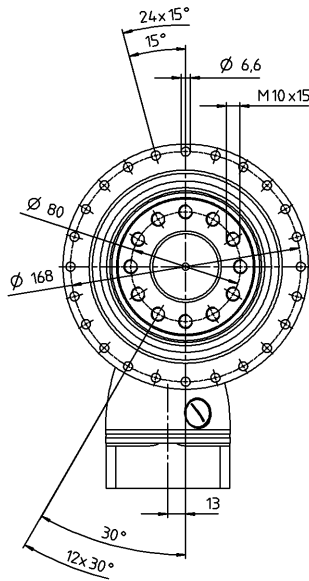
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

3-stage

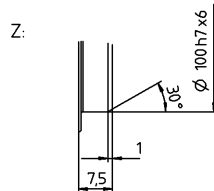
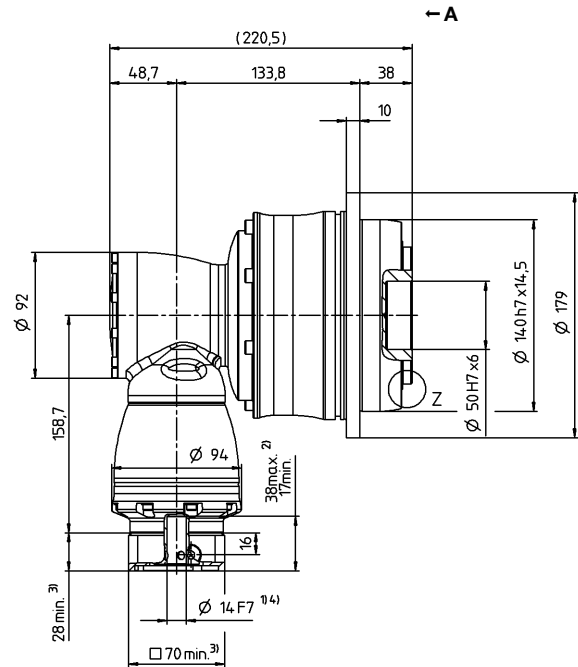
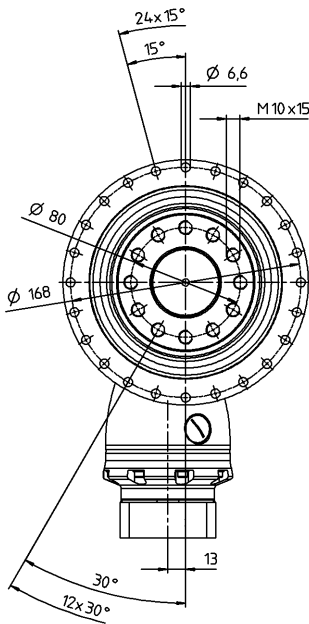
up to 19/28⁴⁾
(E⁵⁾/H) clamping
hub diameter



Motor shaft diameter [mm]

4-stage

up to 14/19⁴⁾
(C⁵⁾/E) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

TPK+ 110 MA 3-/4-stage

			3-stage							4-stage									
Ratio	<i>i</i>		66	88	110	137.5	154	220	385	330	462	577.5	770	1078	1540	2695	3850	5500	
Max. torque ^{a) b)}	T_{2a}	Nm	3822	3822	3822	3822	3190	2750	3822	3822	3822	3822	3822	3822	3822	3822	3822	3200	
		in.lb	33828	33828	33828	33828	28234	24340	33828	33828	33828	33828	33828	33828	33828	33828	33828	33828	28323
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	3100	3100	3100	3100	3100	2750	3100	3100	3100	3100	3100	3100	3100	3100	3100	2400	
		in.lb	27437	27437	27437	27437	27437	24340	27437	27437	27437	27437	27437	27437	27437	27437	27437	21242	
Nominal torque (at n_n)	T_{2N}	Nm	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1400	
		in.lb	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	12391	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	4840	5720	5720	6500	5610	5500	6500	4840	6500	6050	6500	6500	6500	6500	6500	6500	
		in.lb	42838	50627	50627	57530	49653	48679	57530	42838	57530	53547	57530	57530	57530	57530	57530	57530	
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	2100	2300	2600	2600	2400	2400	2400	3000	3000	3000	3000	3000	3000	4100	4100	4100	
Max. input speed	n_{1Max}	rpm	5500	5500	5500	5500	5500	5500	5500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	6	4.6	3.6	3.4	4.4	3.5	3.3	1.4	1.5	1.1	0.9	0.9	0.45	0.45	0.3	0.3	
		in.lb	53	41	32	30	39	31	29	12	13	9.7	8.0	8.0	4.0	4.0	2.7	2.7	
Max. backlash	j_t	arcmin	Standard ≤ 1.3																
Torsional rigidity ^{b)}	C_{121}	Nm/arcmin	634	642	654	675	654	648	687	634	682	662	667	685	685	689	687	658	
		in.lb/arcmin	5611	5682	5788	5974	5788	5735	6080	5611	6036	5859	5903	6063	6063	6098	6080	5824	
Tilting rigidity	C_{2K}	Nm/arcmin	1452																
		in.lb/arcmin	12851																
Max. axial force ^{c)}	F_{2AMax}	N	10050																
		lb _f	2261																
Max. tilting moment	M_{2KMax}	Nm	3280																
		in.lb	29031																
Efficiency at full load	η	%	92							90									
Service life	L_h	h	> 20000																
Weight (incl. standard adapter plate)	m	kg	39.9							40.6									
		lb _m	88							90									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 70																
Max. permitted housing temperature		°C	+90																
		F	194																
Ambient temperature		°C	0 to +40																
		F	32 to 104																
Lubrication			Lubricated for life																
Direction of rotation			In- and output opposite direction																
Protection class			IP 65																
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 01500AAX - 125.000																
Bore diameter of coupling on the application side		mm	X = 055.000 - 070.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E 19	J_1	kgcm ²	-	-	-	-	-	-	0.89	1.06	0.76	0.76	0.76	0.69	0.68	0.68	0.68	
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	-	0.79	0.94	0.67	0.67	0.67	0.61	0.6	0.6	0.6
	G 24	J_1	kgcm ²	-	-	-	-	-	-	2.46	2.63	2.33	2.32	2.32	2.26	2.25	2.25	2.25	
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	-	2.18	2.33	2.06	2.05	2.05	2	1.99	1.99	1.99
	H 28	J_1	kgcm ²	5.48	4.27	3.64	3.58	3.14	2.87	2.84	-	-	-	-	-	-	-	-	
			10 ⁻³ in.lb.s ²	4.85	3.78	3.22	3.17	2.78	2.54	2.51	-	-	-	-	-	-	-	-	-
	K 38	J_1	kgcm ²	12.72	11.52	10.89	10.83	10.39	10.12	10.09	-	-	-	-	-	-	-	-	-
			10 ⁻³ in.lb.s ²	11.26	10.2	9.64	9.58	9.2	8.96	8.93	-	-	-	-	-	-	-	-	-

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{b)} Valid for standard clamping hub diameter
^{c)} Before to center of the output shaft or flange

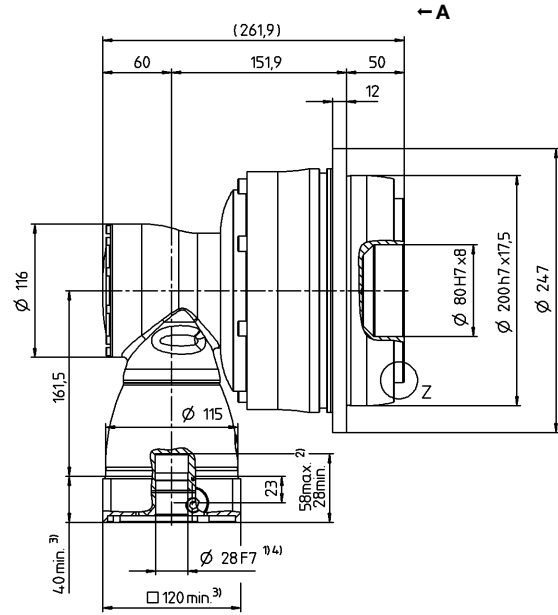
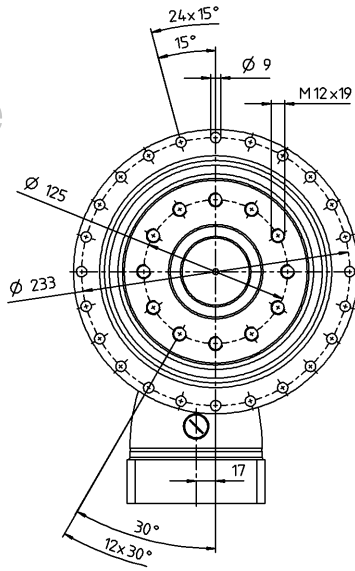
تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج) temperatures

روبروی پالایشگاه نفت پارس، پلاک ۱۲

View A

3-stage

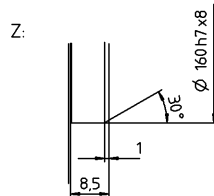
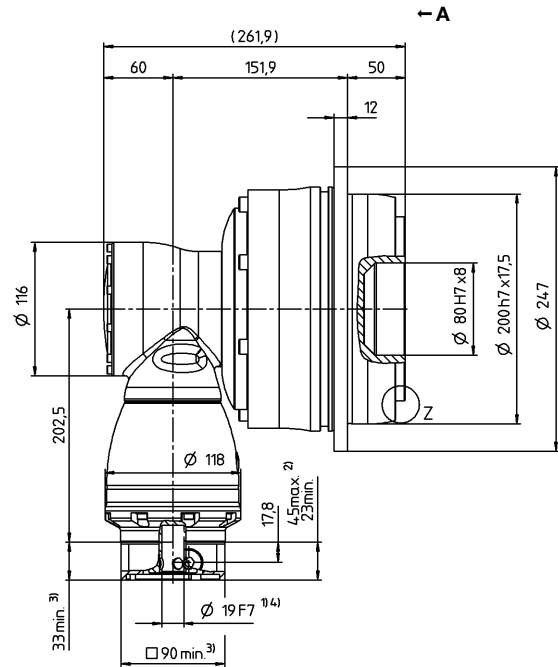
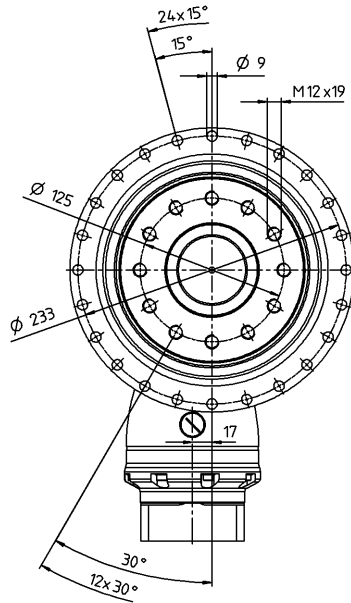
up to 28/38⁴⁾
(H⁵⁾/K) clamping
hub diameter



Motor shaft diameter [mm]

4-stage

up to 19/24⁴⁾
(E⁵⁾/G) clamping
hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

TPK+ 300 MA 3-/4-stage

			3-stage							4-stage								
Ratio	<i>i</i>		66	88	110	137.5	154	220	385	330	462	577.5	770	1078	1540	2695	3850	5500
Max. torque ^{a) b)}	T_{2a}	Nm	7535	7535	7535	7535	5500	4620	7535	7535	7535	7535	7535	7535	7535	7535	7535	5473
		in.lb	66691	66691	66691	66691	48679	40891	66691	66691	66691	66691	66691	66691	66691	66691	66691	66691
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	6600	6600	6600	6600	5500	4620	6600	6600	6600	6600	6600	6600	6600	6600	6600	4680
		in.lb	58415	58415	58415	58415	48679	40891	58415	58415	58415	58415	58415	58415	58415	58415	58415	58415
Nominal torque (at n_n)	T_{2N}	Nm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
		in.lb	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	8800	11000	11000	13750	9900	8800	15296	8800	15296	11000	13750	15296	15296	15296	15296	15296
		in.lb	77887	97359	97359	121699	87623	77887	135382	77887	135382	97359	121699	135382	135382	135382	135382	135382
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1800	1900	2100	2100	1900	1900	1900	2800	2800	2800	2800	2800	2800	3100	3800	3800
Max. input speed	n_{1Max}	rpm	5000	5000	5000	5000	5000	5000	5000	4500	4500	4500	4500	4500	4500	4500	4500	4500
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	11	8.2	6.9	6.5	9.2	7.8	7.5	2.3	3.3	1.5	1.4	1.2	0.9	0.6	0.6	0.6
		in.lb	97	73	61	58	81	69	66	20	29	13	12	11	8.0	5.3	5.3	5.3
Max. backlash	j_t	arcmin	Standard ≤ 3.3 / Reduced ≤ 1.8															
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	1099	1108	1114	960	1114	1111	979	1099	976	953	958	978	978	979	979	989
		in.lb/arcmin	9727	9807	9860	8497	9860	9833	8665	9727	8638	8435	8479	8656	8656	8665	8665	8753
Tilting rigidity	C_{2K}	Nm/arcmin	5560															
		in.lb/arcmin	49210															
Max. axial force ^{c)}	F_{2AMax}	N	33000															
		lb _f	7425															
Max. tilting moment	M_{2KMax}	Nm	6500															
		in.lb	57530															
Efficiency at full load	η	%	92							90								
Service life	L_h	h	> 20000															
Weight (incl. standard adapter plate)	m	kg	83							87								
		lb _m	183							192								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71															
		°C	+90															
Max. permitted housing temperature	F	°C	194															
		°C	0 to +40															
Ambient temperature	F	°C	32 to 104															
		°C	32 to 104															
Lubrication			Lubricated for life															
Direction of rotation			In- and output opposite direction															
Protection class			IP 65															
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 04000AAX - 145.000															
Bore diameter of coupling on the application side		mm	X = 070.000 - 100.000															
Mass moment of inertia (relates to the drive)	G 24	J_1	kgcm ²	-	-	-	-	-	-	-	3.32	4.24	2.8	2.79	2.79	2.49	2.43	2.42
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	-	-	2.94	3.75	2.48	2.47	2.47	2.2	2.15
Clamping hub diameter [mm]	K 38	J_1	kgcm ²	26.04	19.71	16.71	16.58	14.26	12.89	12.83	10.23	11.15	9.71	9.7	9.7	9.4	9.34	9.33
			10 ⁻³ in.lb.s ²	23.05	17.44	14.79	14.67	12.62	11.41	11.35	9.05	9.87	8.59	8.58	8.58	8.32	8.27	8.26

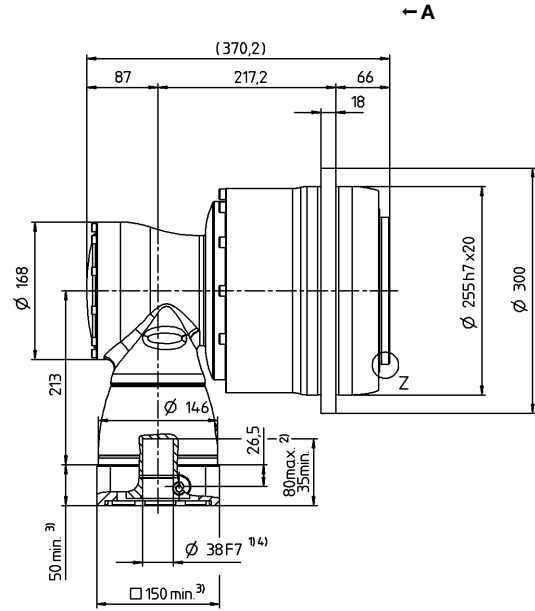
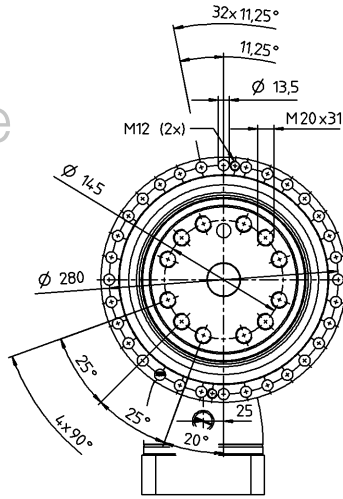
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

3-stage

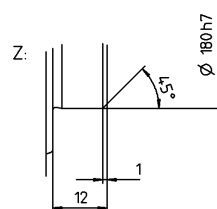
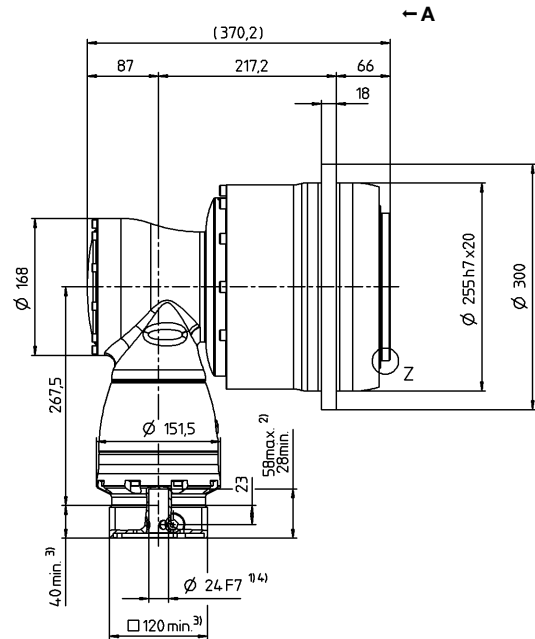
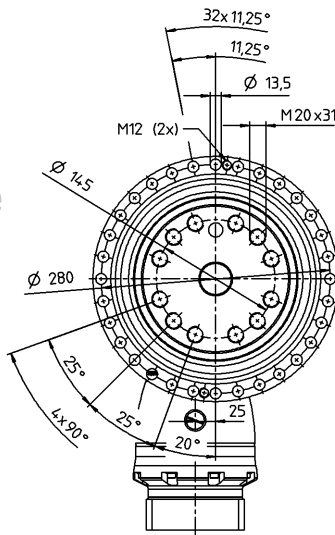
up to 38⁴⁾ (K)⁵⁾
clamping hub diameter



Motor shaft diameter [mm]

4-stage

up to 24/38⁴⁾
(G⁵⁾/K) clamping hub diameter



See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

TPK+ 500 MA 3-/4-stage

			3-stage							4-stage								
Ratio	<i>i</i>		66	88	110	137.5	154	220	385	330	462	577.5	770	1078	1540	2695	3850	5500
Max. torque ^{a) b)}	T_{2a}	Nm	10450	10450	10450	10450	10450	10340	10450	10450	10450	10450	10450	10450	10450	10450	10450	10450
		in.lb	92491	92491	92491	92491	92491	91517	92491	92491	92491	92491	92491	92491	92491	92491	92491	92491
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	10450	10450	10450	10450	10450	10340	10450	10450	10450	10450	10450	10450	10450	10450	10450	8640
		in.lb	92491	92491	92491	92491	92491	91517	92491	92491	92491	92491	92491	92491	92491	92491	92491	92491
Nominal torque (at n_n)	T_{2N}	Nm	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400
		in.lb	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	19800	23100	23100	25000	21340	19800	25000	19800	25000	24750	25000	25000	25000	25000	25000	25000
		in.lb	175246	204453	204453	221270	188876	175246	221270	175246	221270	219057	221270	221270	221270	221270	221270	221270
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	n_{1T}	1500	1700	1900	1900	1700	1700	1700	2600	2600	2600	2600	2600	2600	3100	3300	3300
Max. input speed	n_{1Max}	rpm	4500	4500	4500	4500	4500	4500	4500	4000	4000	4000	4000	4000	4000	4000	4000	4000
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	19	15	13	13	17	15	15	4.1	6	3	2.7	2.6	1.8	1.7	1.5	1.5
		in.lb	168	133	115	115	150	133	133	36	53	27	24	23	16	15	13	13
Max. backlash	j_t	arcmin	Standard ≤ 3.3 / Reduced ≤ 1.8															
Torsional rigidity ^{b)}	C_{121}	Nm/arcmin	1879	1890	1901	1747	1899	1898	1772	1879	1766	1735	1742	1770	1770	1772	1772	1786
		in.lb/arcmin	16631	16728	16825	15462	16808	16799	15684	16631	15631	15356	15418	15666	15666	15684	15684	15808
Tilting rigidity	C_{2K}	Nm/arcmin	9480															
		in.lb/arcmin	83906															
Max. axial force ^{c)}	F_{2AMax}	N	50000															
		lb _f	11250															
Max. tilting moment	M_{2KMax}	Nm	9500															
		in.lb	84083															
Efficiency at full load	η	%	92							90								
Service life	L_h	h	> 20000															
Weight (incl. standard adapter plate)	<i>m</i>	kg	120							124								
		lb _m	265							274								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 71															
Max. permitted housing temperature		°C	+90															
		F	194															
Ambient temperature		°C	0 to +40															
		F	32 to 104															
Lubrication			Lubricated for life															
Direction of rotation			In- and output opposite direction															
Protection class			IP 65															
Metal bellows coupling (recommended product type – validate sizing with cymex [®])			BCT - 10000AAX - 166.000															
Bore diameter of coupling on the application side		mm	X = 080.000 - 180.000															
Mass moment of inertia (relates to the drive)	K 38	J_1	kgcm ²	-	-	-	-	-	-	-	12.43	15.36	10.93	10.92	10.91	10.13	9.95	9.91
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	-	11	13.59	9.67	9.66	9.66	8.97	8.81	8.77
Clamping hub diameter [mm]	M 48	J_1	kgcm ²	75.54	52.83	42.94	42.67	34.37	29.87	29.73	27.14	30.07	25.64	25.63	25.62	24.84	24.66	24.62
			10 ⁻³ in.lb.s ²	66.85	46.75	38	37.76	30.42	26.43	26.31	24.02	26.61	22.69	22.68	22.67	21.98	21.82	21.79

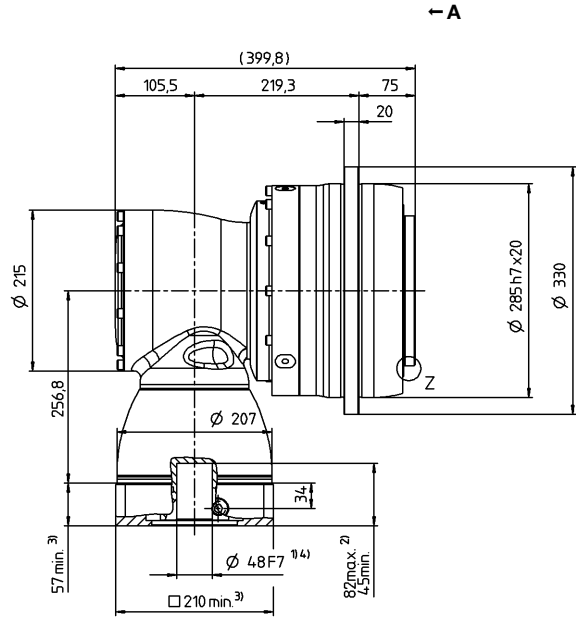
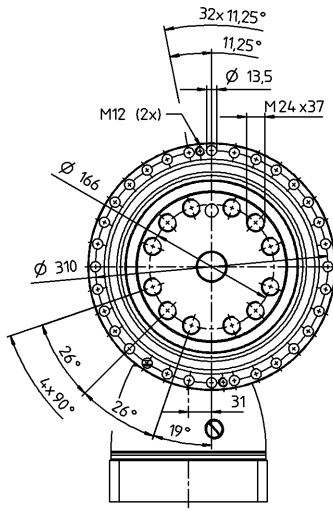
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

^{a)} At max. 10 % M_{2KMax}
^{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

View A

3-stage

up to 48⁴⁾ (M)⁵⁾
clamping hub diameter

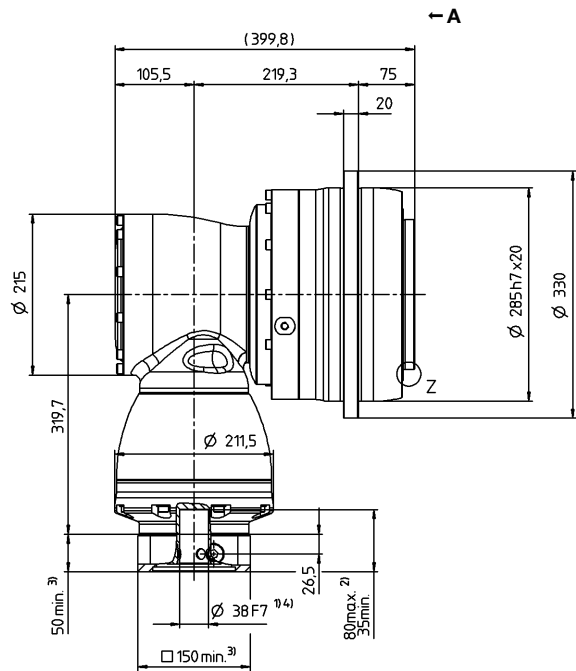
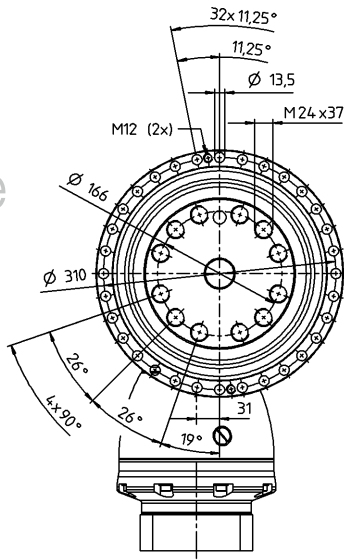


← A

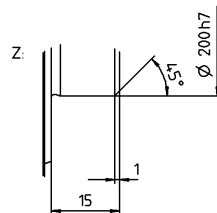
Motor shaft diameter [mm]

4-stage

up to 38 / 48⁴⁾
(K⁵⁾ / M) clamping hub diameter



← A



Hypoid gearboxes

TPK⁺

MA

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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

XPC+ / RPC+ – High precision and low ratios around the corner



New performance standard, also available in the bevel version

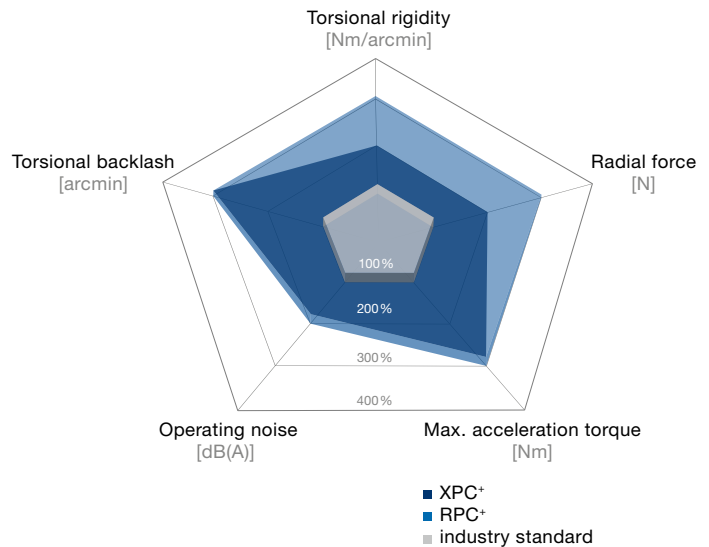
Both the XP+ and RP+ Premium planetary gearboxes are now available in a right-angle version with bevel toothing. Bevel gearboxes are primarily characterized by low gear ratios (ratio 1 and 2) in the angle section. Consequently, right-angle and planetary gearbox combinations can achieve the same low ratios as planetary gearboxes. The product design has a positive influence on temperature development in the gearbox and reduces overall heat development in the system as a result. The overall system achieves a higher degree of positioning accuracy as a consequence.

XPC+ and RPC+ compared to industry standard

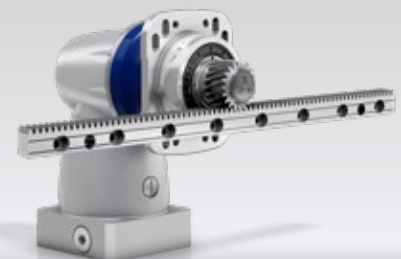
Product highlights

Max. torsional backlash
 XPC+ ≤ 4 arcmin (Standard)
 ≤ 2 arcmin (Reduced)
 RPC+ ≤ 1.3 arcmin

XPC+ and RPC+:
 Low ratios of $i = 4 - 88$ possible
 Optimized temperature distribution, even at high speeds
 High tilting moments and torsional rigidity
 Optimized for rack and pinion applications



XPC+ with pinion and slots



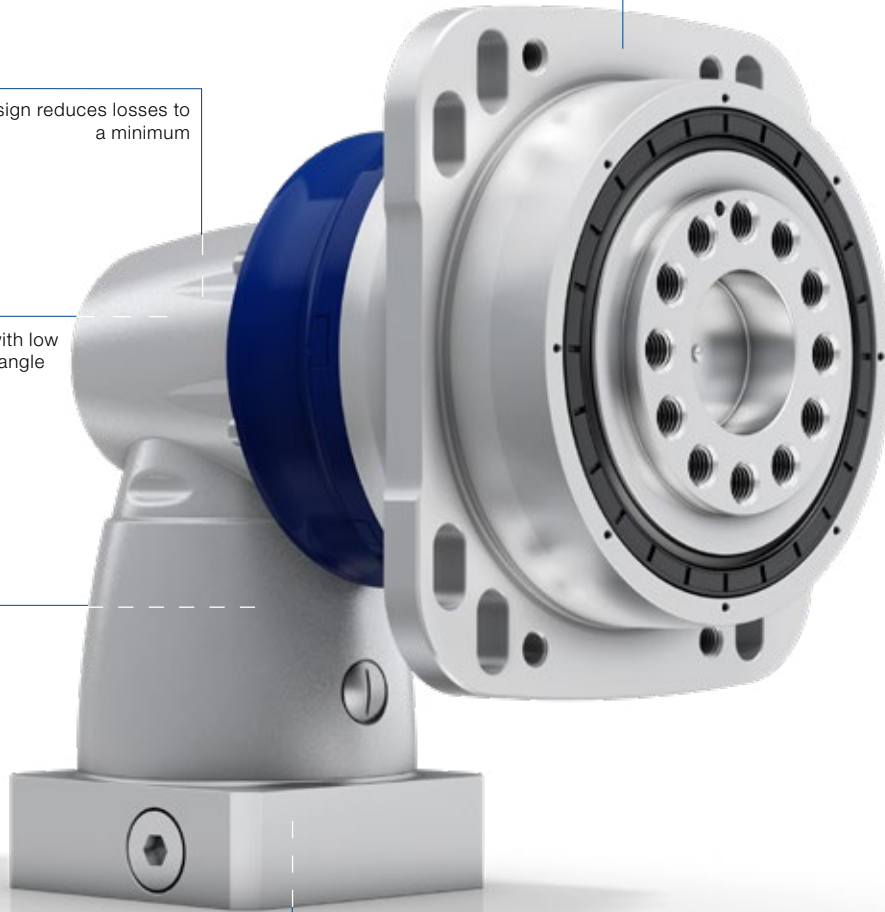
XPC+ with pinion, slots and rack

Specially designed output for transmitting extremely high torques

Intelligent design reduces losses to a minimum

High-quality bevel toothing with low gear ratios of $i = 1 - 2$ in the angle section

Low temperature development, even at high speeds



RPC+

Metal bellows coupling incorporated for thermal length compensation and protection of the motor bearing



RPC+ with pinion and slots



RPC+ with pinion, slots and rack

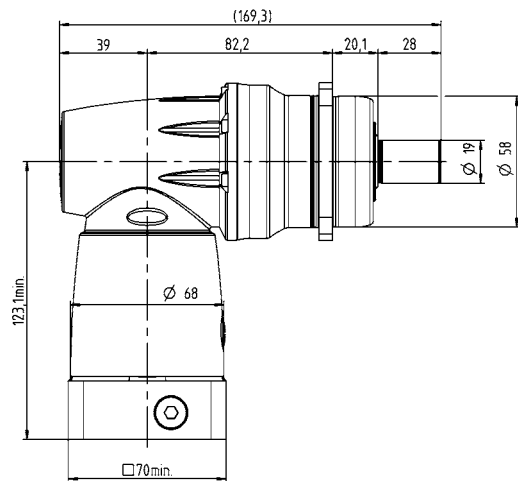
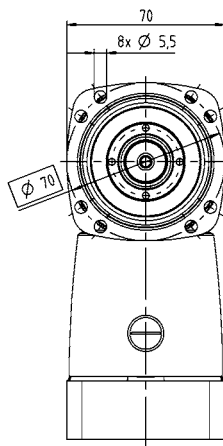
			2-stage
Ratio	i		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque ^{a)}	T_{2a}	Nm	48 – 84
		in.lb	425 – 743
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	40 – 70
		in.lb	354 – 620
Nominal torque (at n_n)	T_{2N}	Nm	27 – 28
		in.lb	239 – 248
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	100 – 165
		in.lb	885 – 1460
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{IT}	rpm	3300 – 3750
Max. input speed	n_{1Max}	rpm	6000
Max. torsional backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3
Torsional rigidity	C_{t21}	Nm/arcmin	3.1 – 5,5
		in.lb/arcmin	27 – 49
Max. tilting moment	M_{2KMax}	Nm	339
		in.lb	3000
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 68
Lubrication			Lubricated for life
Clamping hub diameter		mm	14 – 19

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

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

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



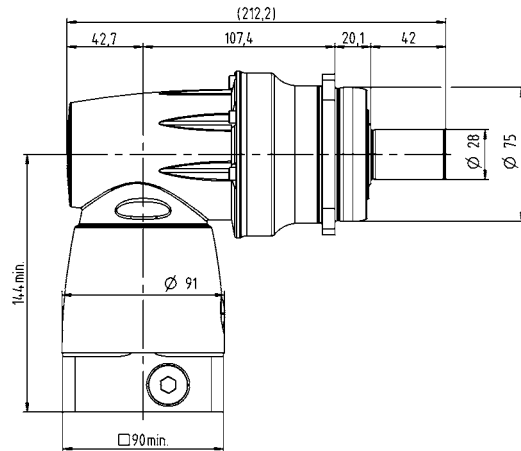
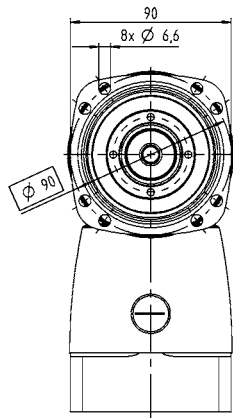
			2-stage
Ratio	i		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque ^{a)}	T_{2a}	Nm	144 – 240
		in.lb	1275 – 2124
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	120 – 180
		in.lb	1062 – 1593
Nominal torque (at n_n)	T_{2N}	Nm	60 – 75
		in.lb	531 – 664
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	192 – 418
		in.lb	1699 – 3700
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{TT}	rpm	2600 – 3050
Max. input speed	n_{1Max}	rpm	6000
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	C_{t21}	Nm/arcmin	9.1 – 14
		in.lb/arcmin	81 – 124
Max. tilting moment	M_{2KMax}	Nm	675
		in.lb	5974
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 68
Lubrication			Lubricated for life
Clamping hub diameter		mm	19 – 28

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

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

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



Bevel gearboxes

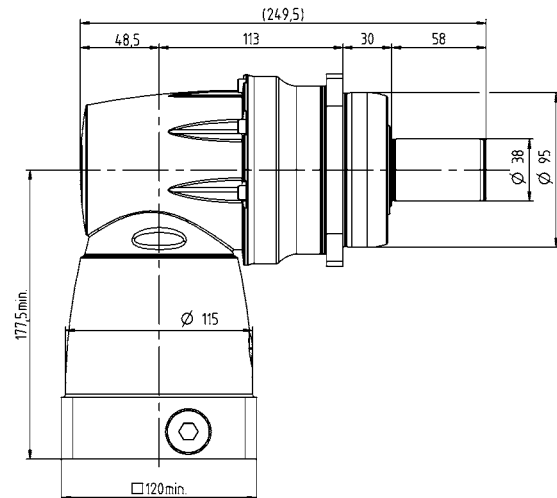
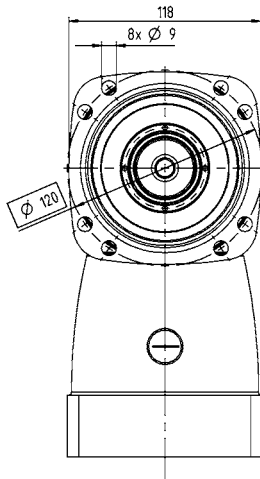
			2-stage
Ratio	i		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque ^{a)}	T_{2a}	Nm	389 – 486
		in.lb	3443 – 4301
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	320 – 420
		in.lb	2832 – 3717
Nominal torque (at n_n)	T_{2N}	Nm	120 – 180
		in.lb	1062 – 1593
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	540 – 800
		in.lb	4779 – 7081
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{1T}	rpm	2100 – 2750
Max. input speed	n_{1Max}	rpm	4500
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	C_{t21}	Nm/arcmin	23 – 36
		in.lb/arcmin	204 – 319
Max. tilting moment	M_{2KMax}	Nm	1296
		in.lb	11471
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 68
Lubrication			Lubricated for life
Clamping hub diameter		mm	28 – 38

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

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

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



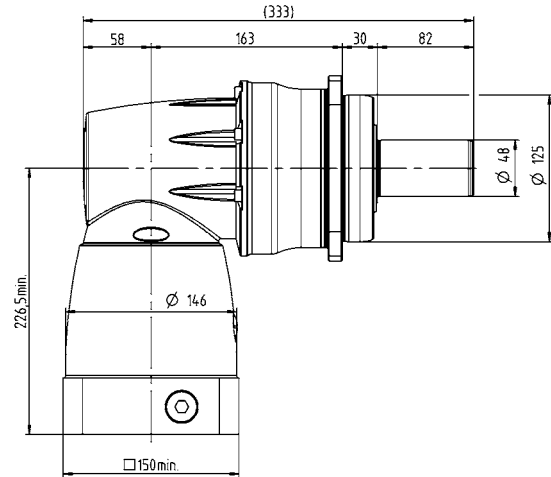
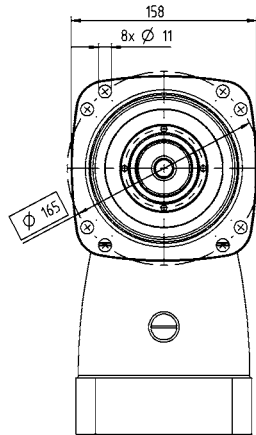
			2-stage
Ratio	<i>i</i>		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque ^{a)}	T_{2a}	<i>Nm</i>	792 – 1050
		<i>in.lb</i>	7010 – 9293
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	<i>Nm</i>	700 – 875
		<i>in.lb</i>	6196 – 7744
Nominal torque (at n_{2N})	T_{2N}	<i>Nm</i>	240 – 370
		<i>in.lb</i>	2124 – 3275
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	<i>Nm</i>	960 – 2170
		<i>in.lb</i>	8497 – 19206
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{1T}	<i>rpm</i>	1550 – 1900
Max. input speed	n_{1Max}	<i>rpm</i>	4500
Max. torsional backlash	j_t	<i>arcmin</i>	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	C_{t21}	<i>Nm/arcmin</i>	50 – 74
		<i>in.lb/arcmin</i>	443 – 655
Max. tilting moment	M_{2KMax}	<i>Nm</i>	1635
		<i>in.lb</i>	14471
Operating noise ^{c)}	L_{PA}	<i>dB(A)</i>	≤ 70
Lubrication			Lubricated for life
Clamping hub diameter		<i>mm</i>	38

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

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

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



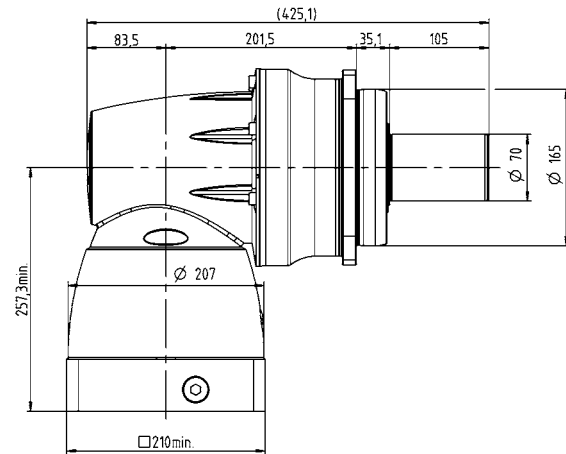
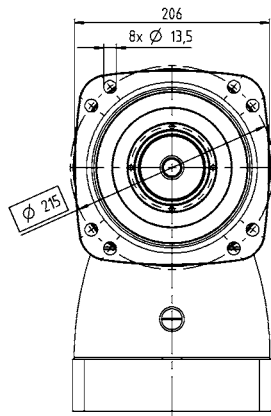
			2-stage
Ratio	<i>i</i>		4 / 5 / 7 / 8 / 10 / 14 / 20
Max. torque ^{a)}	T_{2a}	<i>Nm</i>	1512 – 2646
		<i>in.lb</i>	13382 – 23419
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	<i>Nm</i>	1260 – 2205
		<i>in.lb</i>	11152 – 19516
Nominal torque (at n_n)	T_{2N}	<i>Nm</i>	700 – 750
		<i>in.lb</i>	6196 – 6638
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	<i>Nm</i>	1560 – 4795
		<i>in.lb</i>	13807 – 42440
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{IT}	<i>rpm</i>	1050 – 1550
Max. input speed	n_{1Max}	<i>rpm</i>	4000
Max. torsional backlash	j_t	<i>arcmin</i>	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	C_{t21}	<i>Nm/arcmin</i>	127 – 215
		<i>in.lb/arcmin</i>	1124 – 1903
Max. tilting moment	M_{2KMax}	<i>Nm</i>	3256
		<i>in.lb</i>	28818
Operating noise ^{c)}	L_{PA}	<i>dB(A)</i>	≤ 70
Lubrication			Lubricated for life
Clamping hub diameter		<i>mm</i>	48

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

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

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



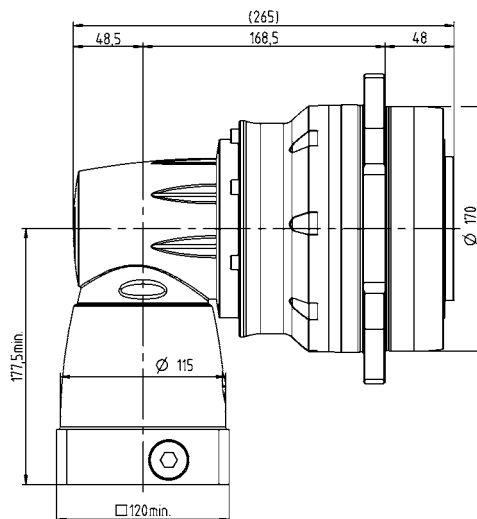
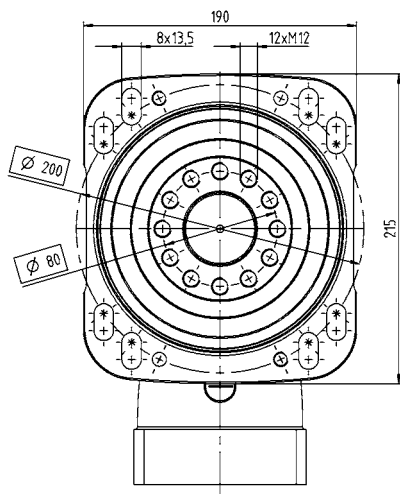
			3-stage
Ratio	<i>i</i>		22 / 27.5 / 38.5 / 44 / 55
Max. torque ^{a)}	T_{2a}	Nm	1402
		in.lb	12409
Max. acceleration torque (max. 1000 cycles per hour)	T_{2Not}	Nm	2613
		in.lb	23127
Nominal torque (at n_{n1})	T_{2B}	Nm	950
		in.lb	8408
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2N}	Nm	675
		in.lb	5974
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{1T}	rpm	1800 – 2500
Max. input speed	n_{1Max}	rpm	4500
Max. torsional backlash	j_t	arcmin	Standard ≤ 1,3
Torsional rigidity	C_{t21}	Nm/arcmin	194 – 215
		in.lb/arcmin	1717 – 1903
Max. tilting moment	M_{2KMax}	Nm	3600
		in.lb	31863
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 70
Lubrication			Lubricated for life
Clamping hub diameter		mm	28 – 38

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

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

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

3-stage

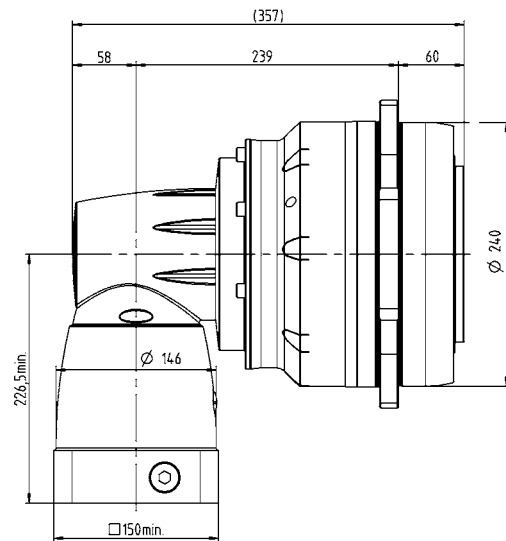
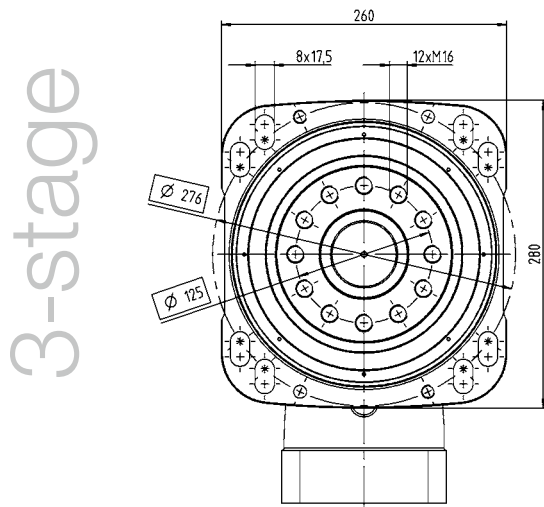


			3-stage
Ratio	<i>i</i>		22 / 27.5 / 38.5 / 44 / 55
Max. torque ^{a)}	T_{2a}	Nm	3822
		in.lb	33828
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	3100
		in.lb	27437
Nominal torque (at n_n)	T_{2N}	Nm	1650
		in.lb	14604
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	5280 – 7150
		in.lb	46732 – 63283
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{IT}	rpm	1300 – 1700
Max. input speed	n_{IMax}	rpm	4500
Max. torsional backlash	j_t	arcmin	Standard ≤ 1,3
Torsional rigidity	C_{t21}	Nm/arcmin	607 – 671
		in.lb/arcmin	5372 – 5939
Max. tilting moment	M_{2KMax}	Nm	11000
		in.lb	97359
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 71
Lubrication			Lubricated for life
Clamping hub diameter		mm	38

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

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

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.



3-stage

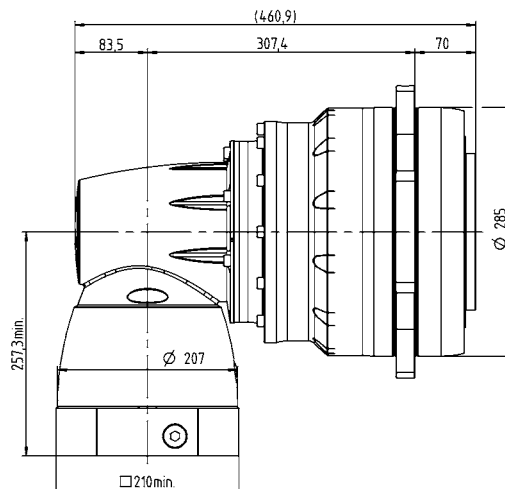
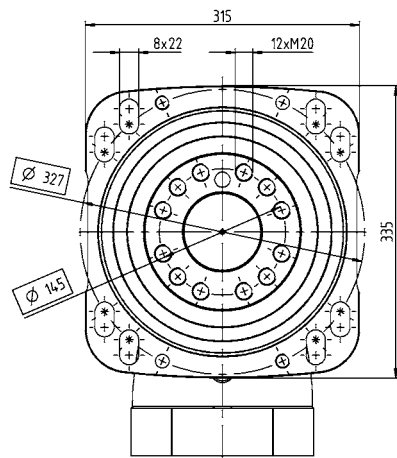
			3-stage
Ratio	i		22 / 27.5 / 38.5 / 44 / 55
Max. torque ^{a)}	T_{2a}	Nm	7535
		in.lb	66691
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	5500
		in.lb	48679
Nominal torque (at n_n)	T_{2N}	Nm	3500
		in.lb	30978
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	8580 – 14575
		in.lb	75940 – 129000
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{TT}	rpm	850 – 1350
Max. input speed	n_{1Max}	rpm	4000
Max. torsional backlash	j_t	arcmin	Standard $\leq 1,8$
Torsional rigidity	C_{t21}	Nm/arcmin	1039 – 1171
		in.lb/arcmin	9196 – 10364
Max. tilting moment	M_{2KMax}	Nm	21000
		in.lb	185867
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 71
Lubrication			Lubricated for life
Clamping hub diameter		mm	48

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

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

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

3-stage



Bevel gearboxes

XPK⁺ / RPK⁺ – Power and precision in a compact design



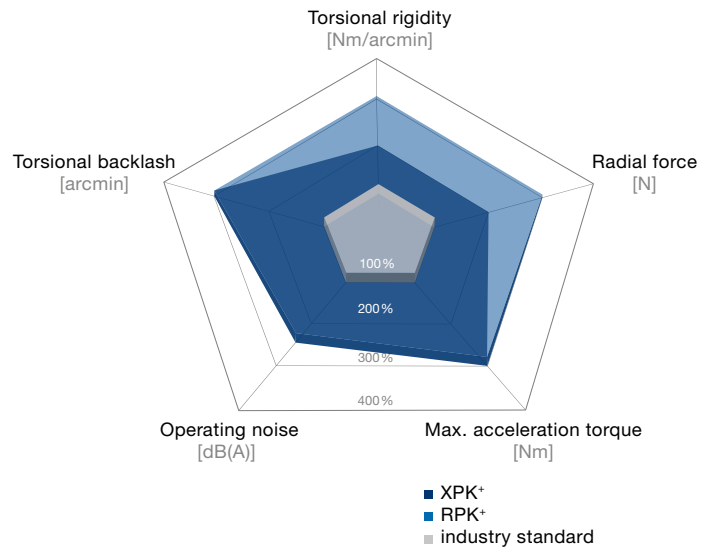
New standard now also available as a hypoid version

Both the XP⁺ and RP⁺ Premium planetary gearboxes are now available in a right-angle version with hypoid gearing. The axis offset of hypoid gearboxes allows both higher ratios in one section (ratio $i = 3 - 10$) as well as higher torques compared to bevel gearboxes. The high torque density allows for an extremely compact, space-saving design. The mesh frequency and high torsional rigidity of the gearbox are also extremely impressive since they ensure a higher degree of positioning accuracy and extremely smooth operation.

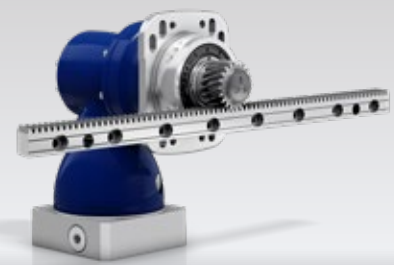
XPK⁺ and RPK⁺ compared to industry standard

Product highlights

- Max. torsional backlash**
- XPK⁺ ≤ 4 arcmin (Standard)
- ≤ 2 arcmin (Reduced)
- RPK⁺ ≤ 1.3 arcmin
- XPK⁺ and RPK⁺:**
- Range of transmission ratios:** $i = 12 - 5,500$
- High axial and radial forces**
- High torsional rigidity**
- Maximum performance in small installation space**
- Optimized for rack and pinion applications**



XPK⁺ with pinion and slots



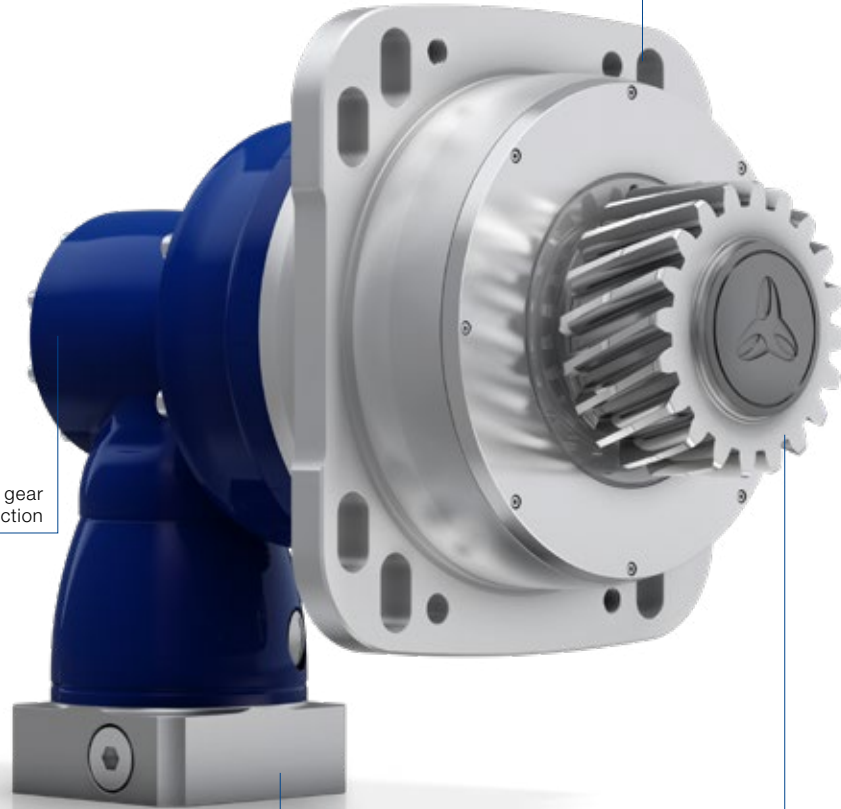
XPK⁺ with pinion, slots and rack

The ideal partnership

Premium Linear Systems with the XPK⁺ or RPK⁺ are used in all applications where the individual requirements far exceed what has previously been possible. Compared to the industry standard, the values of the RPK⁺ have been improved by 150 % on average.

Integrated slots reduce the design and installation requirements to a minimum

High-quality hypoid section with gear ratios of $i = 3 - 10$ in the angle section



RPK⁺ with pinion

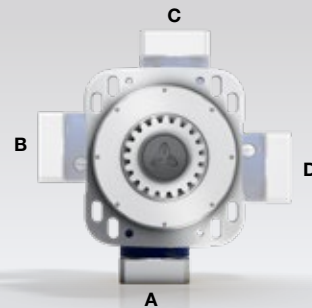
Metal bellows coupling incorporated for thermal length compensation and protection of the motor bearing

The pinions are specially adapted to the gearbox and allow the transmission of extremely high feed forces

Hypoid gearboxes



RPK⁺ with rack and pinion

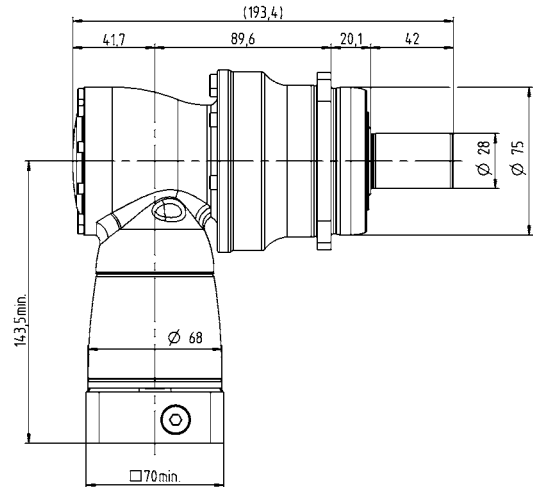
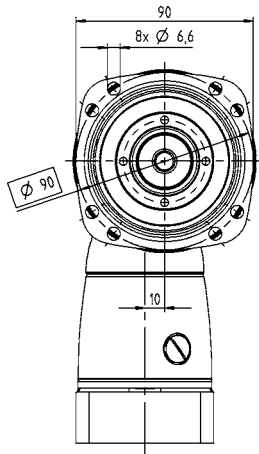


Flexibility during installation

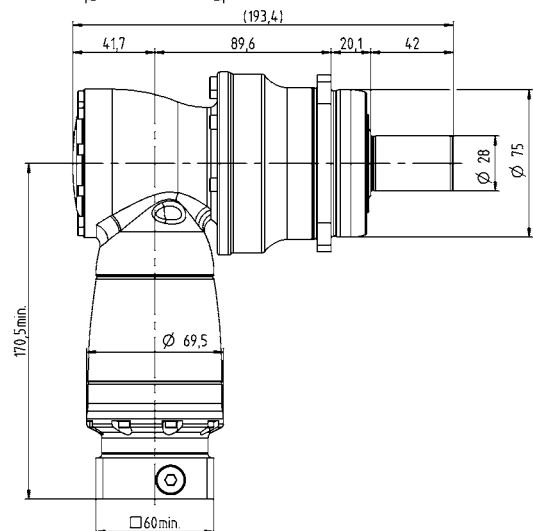
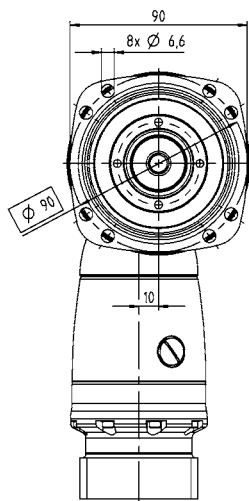
			2-stage	3-stage
Ratio	i		12 / 16 / 20 / 25 / 28 / 35 / 40 / 50 / 70 / 100	64 / 84 / 100 / 125 / 140 / 175 / 200 / 250 / 280 / 350 / 400 / 500 / 700 / 1000
Max. torque ^{a)}	T_{2a}	<i>Nm</i>	80 – 240	80 – 240
		<i>in.lb</i>	708 – 2124	708 – 2124
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	<i>Nm</i>	80 – 180	80 – 180
		<i>in.lb</i>	708 – 1593	708 – 1593
Nominal torque (at n_n)	T_{2N}	<i>Nm</i>	60 – 75	60 – 90
		<i>in.lb</i>	531 – 664	531 – 797
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	<i>Nm</i>	160 – 350	160 – 350
		<i>in.lb</i>	1416 – 3098	1416 – 3098
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{IT}	<i>rpm</i>	3000 – 3800	5000 – 5500
Max. input speed	n_{1Max}	<i>rpm</i>	7500	6000
Max. torsional backlash	j_t	<i>arcmin</i>	Standard ≤ 5 / Reduced ≤ 3	Standard ≤ 5 / Reduced ≤ 3
Torsional rigidity	C_{t21}	<i>Nm/arcmin</i>	12 – 14	11 – 15
		<i>in.lb/arcmin</i>	106 – 124	97 – 133
Max. tilting moment	M_{2KMax}	<i>Nm</i>	675	675
		<i>in.lb</i>	5974	5974
Operating noise ^{c)}	L_{PA}	<i>dB(A)</i>	≤ 66	≤ 66
Lubrication			Lubricated for life	Lubricated for life
Clamping hub diameter		<i>mm</i>	14 – 19	11 – 14

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com
^{b)} For higher ambient temperatures, please reduce input speed
^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



3-stage



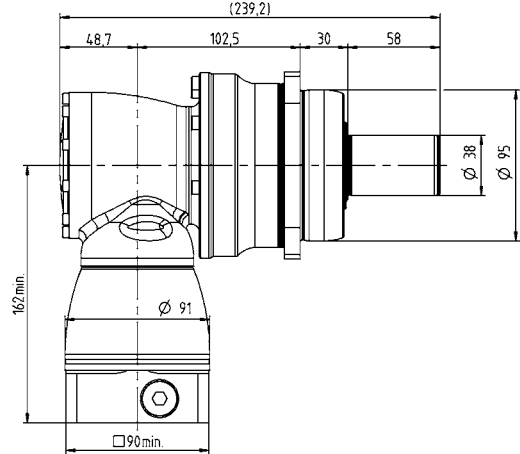
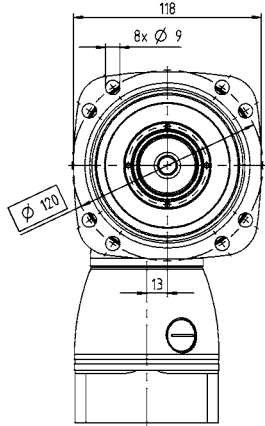
			2-stage	3-stage
Ratio	i		12 / 16 / 20 / 25 / 28 / 35 / 40 / 50 / 70 / 100	64 / 84 / 100 / 125 / 140 / 175 / 200 / 250 / 280 / 350 / 400 / 500 / 700 / 1000
Max. torque ^{a)}	T_{2a}	<i>Nm</i>	200 – 470	200 – 470
		<i>in.lb</i>	1770 – 4160	1770 – 4160
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	<i>Nm</i>	200 – 420	200 – 420
		<i>in.lb</i>	1770 – 3717	1770 – 3717
Nominal torque (at n_n)	T_{2N}	<i>Nm</i>	120 – 170	120 – 210
		<i>in.lb</i>	1062 – 1505	1062 – 1859
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	<i>Nm</i>	380 – 781	380 – 781
		<i>in.lb</i>	3363 – 6912	3363 – 6912
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{TT}	<i>rpm</i>	3000 – 3800	4500
Max. input speed	n_{1Max}	<i>rpm</i>	7500	6000
Max. torsional backlash	j_t	<i>arcmin</i>	Standard ≤ 4 / Reduced ≤ 2	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	C_{t21}	<i>Nm/arcmin</i>	29 – 36	29 – 36
		<i>in.lb/arcmin</i>	257 – 319	257 – 319
Max. tilting moment	M_{2KMax}	<i>Nm</i>	1296	1296
		<i>in.lb</i>	11471	11471
Operating noise ^{c)}	L_{PA}	<i>dB(A)</i>	≤ 68	≤ 68
Lubrication			Lubricated for life	Lubricated for life
Clamping hub diameter		<i>mm</i>	19 – 28	14 – 19

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

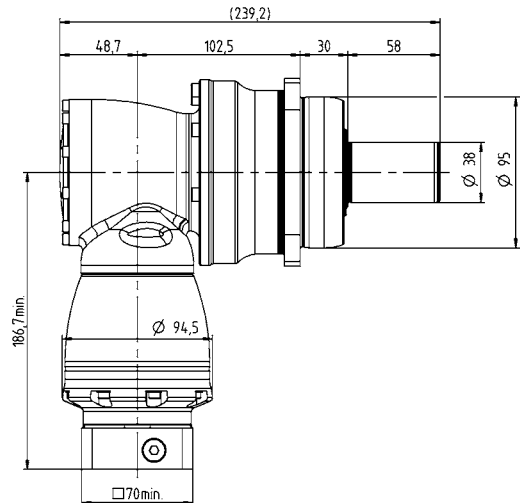
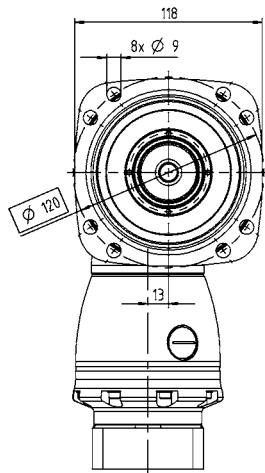
^{b)} For higher ambient temperatures, please reduce input speed

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



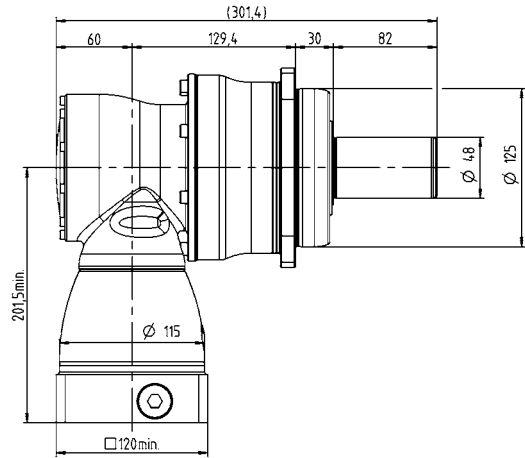
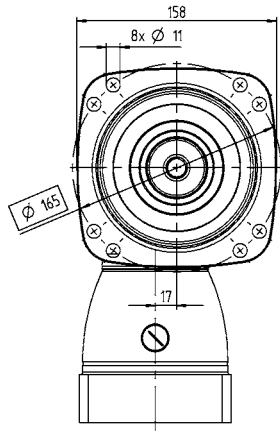
3-stage



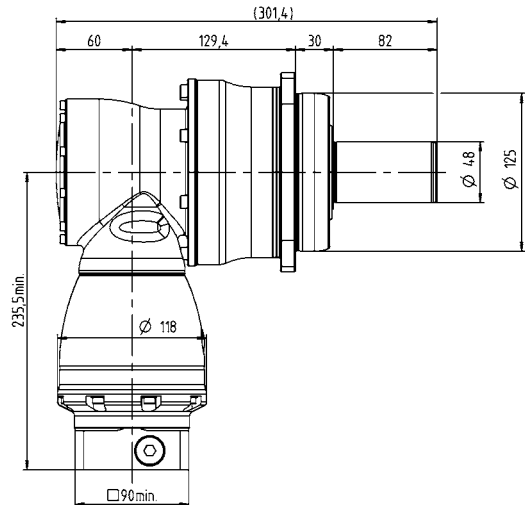
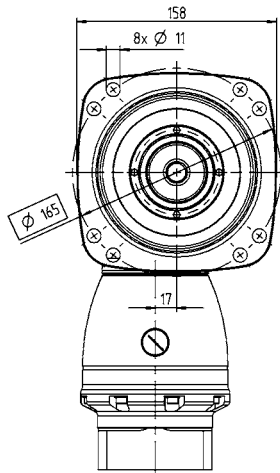
			2-stage	3-stage
Ratio	i		12 / 16 / 20 / 25 / 28 / 35 / 40 / 50 / 70 / 100	64 / 84 / 100 / 125 / 140 / 175 / 200 / 250 / 280 / 350 / 400 / 500 / 700 / 1000
Max. torque ^{a)}	T_{2a}	Nm	500 – 1020	500 – 1020
		$in.lb$	4425 – 9028	4425 – 9028
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	500 – 850	500 – 850
		$in.lb$	4425 – 7523	4425 – 7523
Nominal torque (at n_n)	T_{2N}	Nm	240 – 370	240 – 400
		$in.lb$	2124 – 3275	2124 – 3540
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	880 – 1820	880 – 1820
		$in.lb$	7789 – 16108	7789 – 16108
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{1T}	rpm	2700 – 3500	4000 – 4200
Max. input speed	n_{1Max}	rpm	5500	4500
Max. torsional backlash	j_t	$arcmin$	Standard ≤ 4 / Reduced ≤ 2	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	C_{t21}	$Nm/arcmin$	60 – 77	60 – 77
		$in.lb/arcmin$	531 – 682	531 – 682
Max. tilting moment	M_{2KMax}	Nm	1635	1635
		$in.lb$	14471	14471
Operating noise ^{c)}	L_{PA}	$dB(A)$	≤ 70	≤ 70
Lubrication			Lubricated for life	Lubricated for life
Clamping hub diameter		mm	28 – 38	19 – 24

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com
^{b)} For higher ambient temperatures, please reduce input speed
^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



3-stage



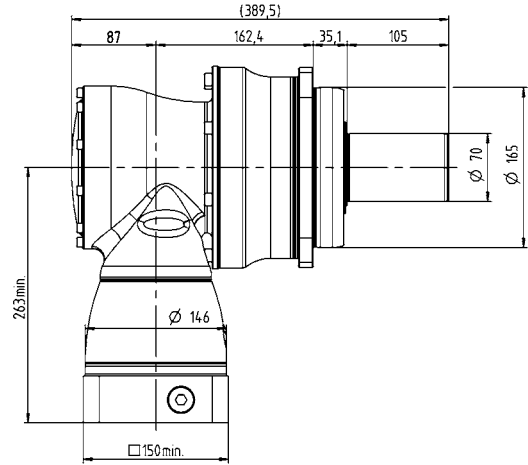
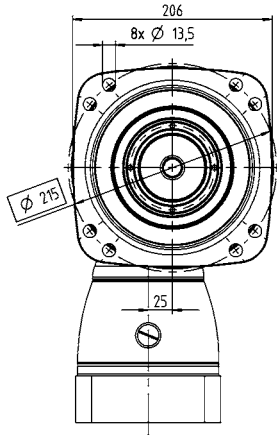
			2-stage	3-stage
Ratio	i		12 / 16 / 20 / 25 / 28 / 35 / 40 / 50 / 70 / 100	64 / 84 / 100 / 125 / 140 / 175 / 200 / 250 / 280 / 350 / 400 / 500 / 700 / 1000
Max. torque ^{a)}	T_{2a}	<i>Nm</i>	840 – 2520	840 – 2520
		<i>in.lb</i>	7435 – 22304	7435 – 22304
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	<i>Nm</i>	840 – 2100	840 – 2100
		<i>in.lb</i>	7435 – 18587	7435 – 18587
Nominal torque (at n_n)	T_{2N}	<i>Nm</i>	640 – 750	640 – 1250
		<i>in.lb</i>	5665 – 6638	5665 – 11064
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	<i>Nm</i>	1600 – 3505	1600 – 3505
		<i>in.lb</i>	14161 – 31022	14161 – 31022
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization ^{b)})	n_{TT}	<i>rpm</i>	2300 – 3000	4000 – 4200
Max. input speed	n_{1Max}	<i>rpm</i>	5000	4500
Max. torsional backlash	j_t	<i>arcmin</i>	Standard ≤ 4 / Reduced ≤ 2	Standard ≤ 4 / Reduced ≤ 2
Torsional rigidity	C_{t21}	<i>Nm/arcmin</i>	176 – 224	176 – 226
		<i>in.lb/arcmin</i>	1558 – 1983	1558 – 2000
Max. tilting moment	M_{2KMax}	<i>Nm</i>	3256	3256
		<i>in.lb</i>	28818	28818
Operating noise ^{c)}	L_{PA}	<i>dB(A)</i>	≤ 71	≤ 70
Lubrication			Lubricated for life	Lubricated for life
Clamping hub diameter		<i>mm</i>	38	24 – 38

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

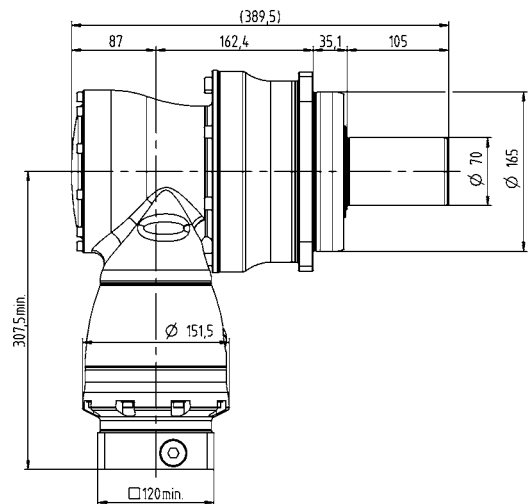
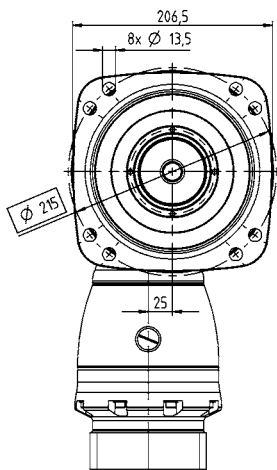
^{b)} For higher ambient temperatures, please reduce input speed

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

2-stage



3-stage



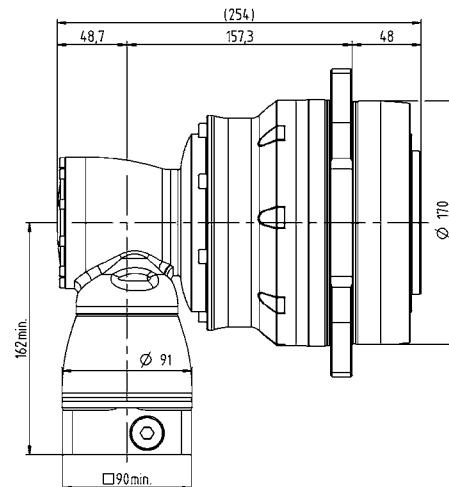
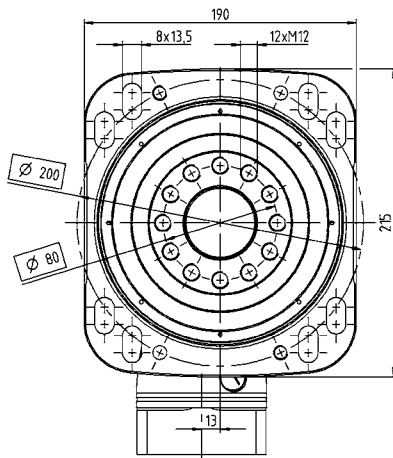
			3-stage	4-stage
Ratio	i		48 / 66 / 88 / 110 / 137.5 / 154 / 220 / 385	330 / 462 / 577.5 / 770 / 1078 / 1540 / 2695 / 3850 / 5500
Max. torque ^{a)}	T_{2a}	Nm	1100 – 1402	1402
		$in.lb$	9736 – 12409	12409
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	950	950
		$in.lb$	8408	8408
Nominal torque (at n_n)	T_{2N}	Nm	675	675
		$in.lb$	5974	5974
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	1520 – 2613	2090 – 2613
		$in.lb$	13453 – 23127	18498 – 23127
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{IT}	rpm	2800 – 3800	4300 – 4400
Max. input speed	n_{1Max}	rpm	7500	6000
Max. torsional backlash	j_t	$arcmin$	Standard $\leq 1,3$	Standard $\leq 1,3$
Torsional rigidity	C_{t21}	$Nm/arcmin$	202 – 215	202 – 217
		$in.lb/arcmin$	1788 – 1903	1788 – 1921
Max. tilting moment	M_{2KMax}	Nm	3600	3600
		$in.lb$	31863	31863
Operating noise ^{c)}	L_{PA}	$dB(A)$	≤ 68	≤ 68
Lubrication			Lubricated for life	Lubricated for life
Clamping hub diameter		mm	19 – 28	14 – 19

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

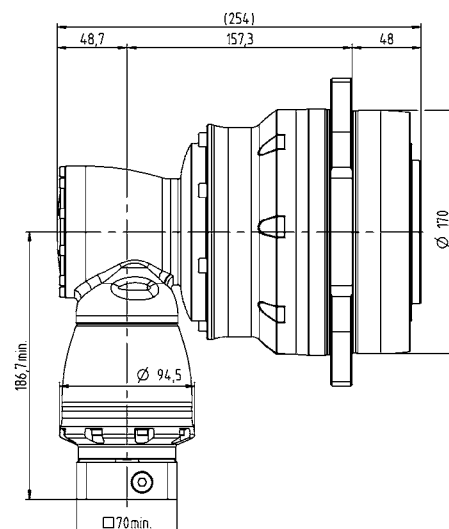
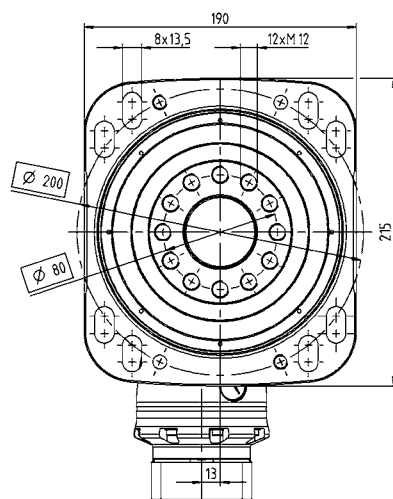
^{b)} For higher ambient temperatures, please reduce input speed

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

3-stage



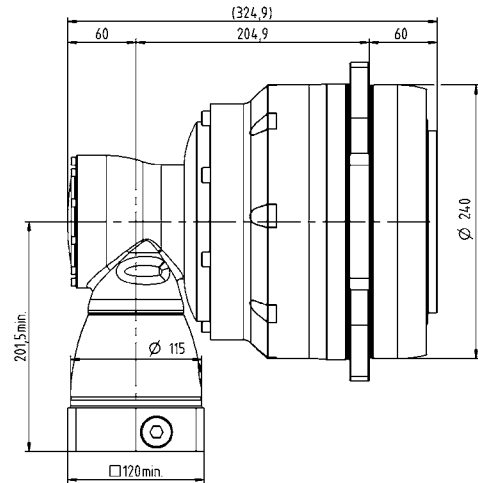
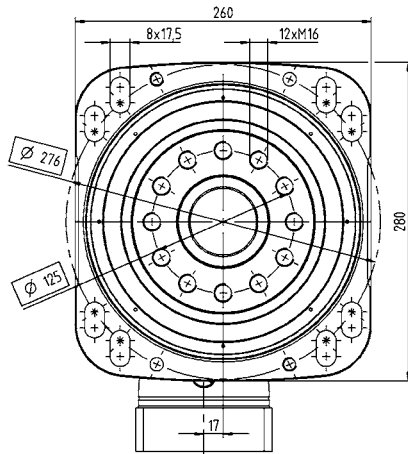
4-stage



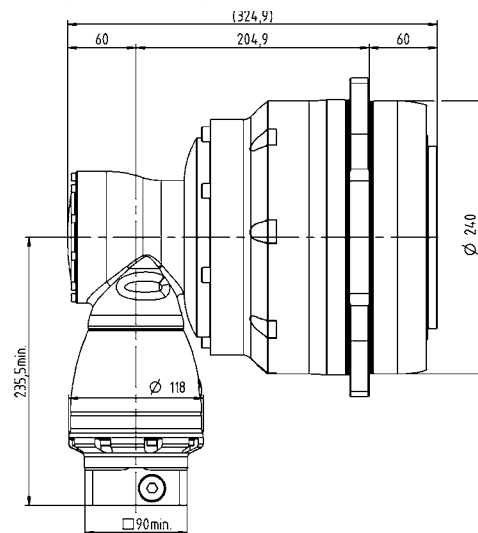
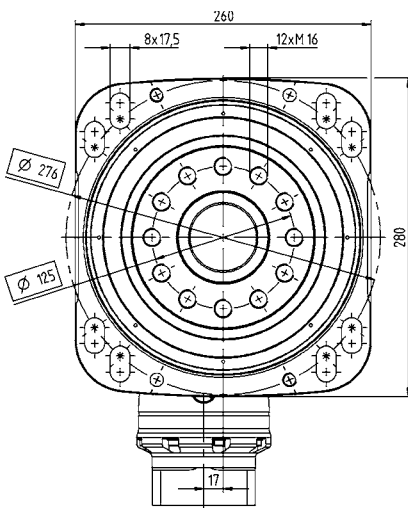
			3-stage	4-stage
Ratio	i		48 / 66 / 88 / 110 / 137.5 / 154 / 220 / 385	330 / 462 / 577.5 / 770 / 1078 / 1540 / 2695 / 3850 / 5500
Max. torque ^{a)}	T_{2a}	Nm	2750 – 3822	3200 – 3822
		in.lb	24340 – 33828	28323 – 33828
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	2720 – 3100	2000 – 3100
		in.lb	24074 – 27437	17702 – 27437
Nominal torque (at n_{2N})	T_{2N}	Nm	1600 – 1650	1400 – 1650
		in.lb	14161 – 14604	12391 – 14604
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	3520 – 7150	4840 – 7150
		in.lb	31155 – 63283	42838 – 63283
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{1T}	rpm	2800 – 3600	3800 – 4100
Max. input speed	n_{1Max}	rpm	5500	4500
Max. torsional backlash	j_t	arcmin	Standard $\leq 1,3$	Standard $\leq 1,3$
Torsional rigidity	C_{21}	Nm/arcmin	634 – 687	634 – 689
		in.lb/arcmin	5611 – 6080	5611 – 6098
Max. tilting moment	M_{2KMax}	Nm	11000	11000
		in.lb	97359	97359
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 70	≤ 70
Lubrication			Lubricated for life	Lubricated for life
Clamping hub diameter		mm	28 – 38	19 – 24

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com
^{b)} For higher ambient temperatures, please reduce input speed
^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

3-stage



4-stage



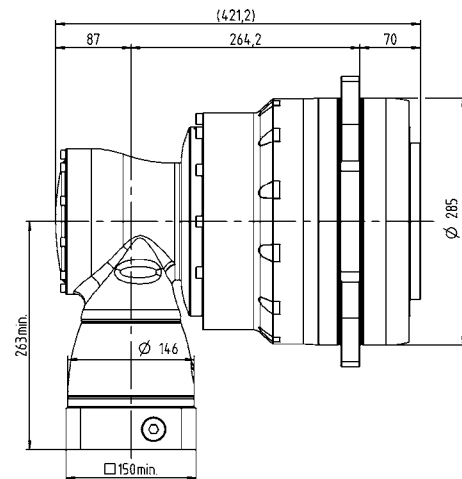
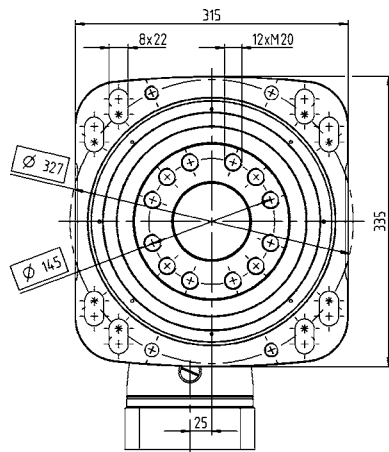
			3-stage	4-stage
Ratio	i		66 / 88 / 110 / 137.5 / 154 / 220 / 385	330 / 462 / 577.5 / 770 / 1078 / 1540 / 2695 / 3850 / 5500
Max. torque ^{a)}	T_{2a}	Nm	4620 – 7535	6240 – 7535
		in.lb	40891 – 66691	55229 – 66691
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	4620 – 5500	3900 – 5500
		in.lb	30978 – 48679	34518 – 48679
Nominal torque (at n_n)	T_{2N}	Nm	3500	3500
		in.lb	30978	30978
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	8800 – 14575	8800 – 14575
		in.lb	77887 – 129000	77887 – 129000
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{IT}	rpm	2300 – 2900	3800 – 4000
Max. input speed	n_{1Max}	rpm	5000	4500
Max. torsional backlash	j_t	arcmin	Standard $\leq 1,8$	Standard $\leq 1,8$
Torsional rigidity	C_{t21}	Nm/arcmin	960 – 1114	953 – 1099
		in.lb/arcmin	8497 – 9860	8435 – 9727
Max. tilting moment	M_{2KMax}	Nm	21000	21000
		in.lb	185867	185867
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 71	≤ 71
Lubrication			Lubricated for life	Lubricated for life
Clamping hub diameter		mm	38	24 – 38

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com

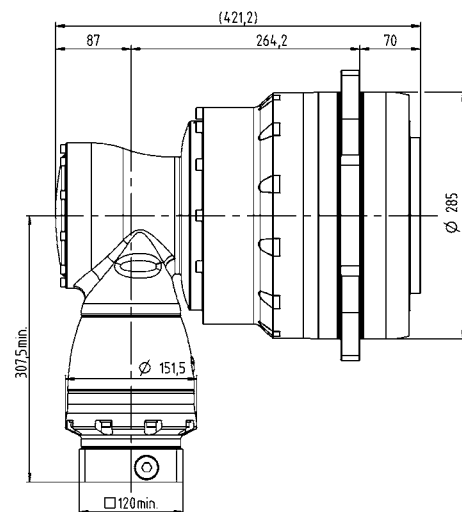
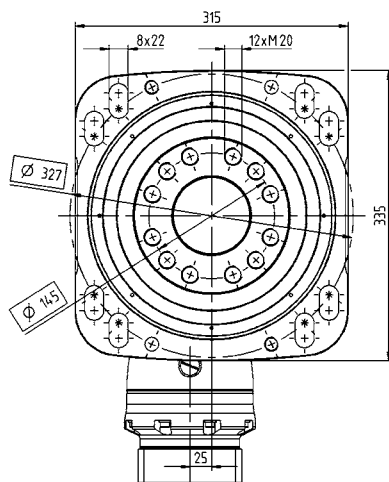
^{b)} For higher ambient temperatures, please reduce input speed

^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

3-stage



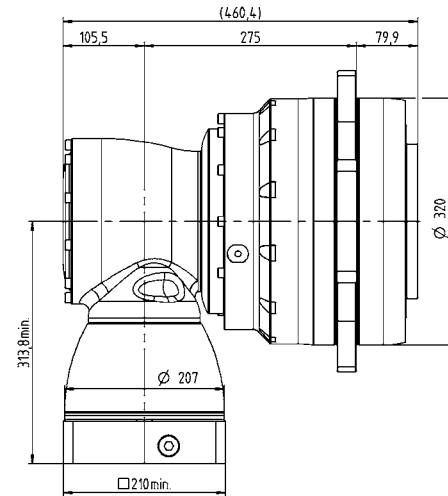
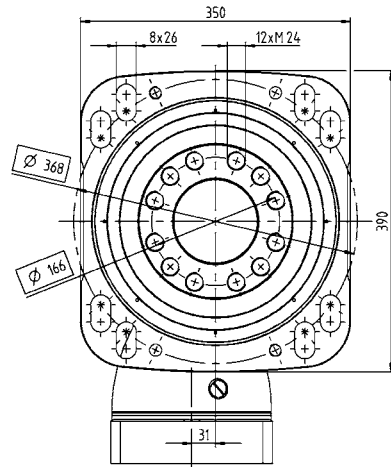
4-stage



		3-stage	4-stage
Ratio	i	66 / 88 / 110 / 137.5 / 154 / 220 / 385	330 / 462 / 577.5 / 770 / 1078 / 1540 / 2695 / 3850 / 5500
Max. torque ^{a)}	T_{2a}	Nm	10340 – 10450
		in.lb	91517 – 92491
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	10000
		in.lb	88508
Nominal torque (at n_{2N})	T_{2N}	Nm	5400
		in.lb	47794
Emergency stop torque (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	19800 – 25000
		in.lb	175246 – 221270
Thermal speed limit (with 20°C ambient temperature and 10% torque utilization) ^{b)}	n_{1T}	rpm	1800 – 3100
Max. input speed	n_{1Max}	rpm	4500
Max. torsional backlash	j_t	arcmin	Standard $\leq 1,8$
Torsional rigidity	C_{21}	Nm/arcmin	1747 – 1901
		in.lb/arcmin	15462 – 16825
Max. tilting moment	M_{2KMax}	Nm	34000
		in.lb	300927
Operating noise ^{c)}	L_{PA}	dB(A)	≤ 71
Lubrication			Lubricated for life
Clamping hub diameter		mm	48

^{a)} Application-specific design with cymex® – www.wittenstein-cymex.com
^{b)} For higher ambient temperatures, please reduce input speed
^{c)} At reference ratio and reference speed. Ratio-specific values available in cymex®.

3-stage



4-stage

