

HG⁺ – Precise hollow shaft solution



HG⁺

Product highlights

Max. torsional backlash [arcmin] ≤ 4

Hollow shaft version

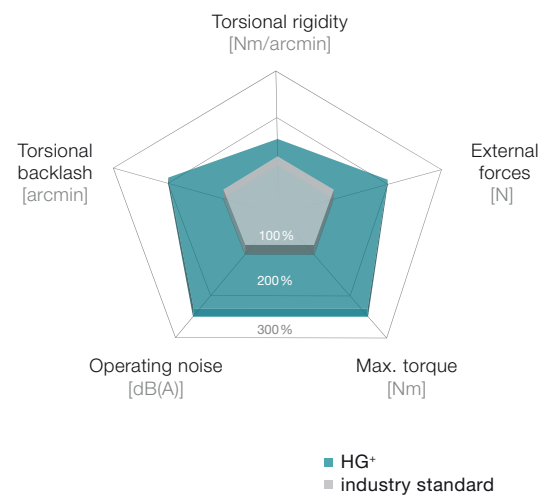
Multiple output configurations
for greater flexibility

Extremely smooth-running

Other gearbox models
Corrosion resistant design, ATEX

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.

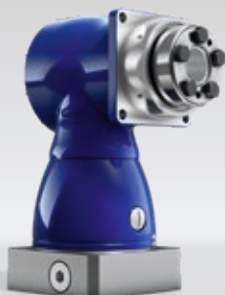
The HG⁺ compared to the industry standard



HG⁺ in corrosion-resistant design



HG⁺ with hollow shaft on both sides



HG+ with shrink disk

HG⁺ 060 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)}	<i>T</i> _{2a}	<i>Nm</i>	36	36	36	25	20	12	16	20	25	28	35	40	50	70	100		
		<i>in.lb</i>	319	319	319	221	177	36	36	36	36	36	36	36	36	25	20		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	<i>T</i> _{2B}	<i>Nm</i>	30	30	30	25	20	30	30	30	30	30	30	30	30	25	20		
		<i>in.lb</i>	266	266	266	221	177	266	266	266	266	266	266	266	266	221	177		
Nominal torque (at <i>n</i> _n)	<i>T</i> _{2N}	<i>Nm</i>	22	22	22	20	15	319	319	319	319	319	319	319	319	221	177		
		<i>in.lb</i>	195	195	195	177	133	22	22	22	22	22	22	22	22	20	15		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	<i>T</i> _{2Not}	<i>Nm</i>	40	50	50	45	40	195	195	195	195	195	195	195	195	177	133		
		<i>in.lb</i>	354	443	443	398	354	50	50	50	50	50	50	50	50	45	40		
Permitted average input speed (at <i>T</i> _{2N} and 20 °C ambient temperature) ^{d)}	<i>n</i> _{1N}	<i>n</i> _{1T}	2500	2700	3000	3000	3000	4400	4400	4400	4400	4400	4400	4400	4800	5500	5500		
Max. input speed	<i>n</i> _{1Max}	<i>rpm</i>	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Mean no load running torque ^{b)} (at <i>n</i> _i = 3000 rpm and 20 °C gearbox temperature)	<i>T</i> ₀₁₂	<i>Nm</i>	1.3	1.2	1.1	1.3	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1		
		<i>in.lb</i>	12	11	10	12	11	2	2	2	2	2	2	1	1	1	1		
Max. backlash	<i>j</i> _t	<i>arcmin</i>	Standard ≤ 5																
Torsional rigidity ^{b)}	<i>C</i> ₁₂₁	<i>Nm/arcmin</i>	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		
		<i>in.lb/arcmin</i>	19	20	21	19	17	20	20	20	20	20	20	20	21	19	17		
Max. axial force ^{c)}	<i>F</i> _{2AMax}	<i>N</i>	2400																
		<i>lb_f</i>	540																
Max. lateral force ^{c)}	<i>F</i> _{2QMax}	<i>N</i>	2700																
		<i>lb_f</i>	608																
Max. tilting moment	<i>M</i> _{2KMax}	<i>Nm</i>	251																
		<i>in.lb</i>	2222																
Efficiency at full load	<i>η</i>	%	96					94											
Service life	<i>L</i> _h	<i>h</i>	> 20000																
Weight (incl. standard adapter plate)	<i>m</i>	<i>kg</i>	2.9					3.2											
		<i>lb_m</i>	6					7											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	<i>L</i> _{PA}	<i>dB(A)</i>	≤ 64																
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																
Shrink disc (Standard version)			SD 018x044 S2																
Max. torque (without axial force)	<i>T</i> _{max}	<i>Nm</i>	100																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	B	11	<i>J_i</i>	<i>kgcm²</i>	-	-	-	-	-	0.09	0.09	0.07	0.07	0.06	0.06	0.06	0.06	0.06	
				<i>10⁻³ in.lb.s²</i>	-	-	-	-	-	0.08	0.08	0.06	0.06	0.05	0.05	0.05	0.05	0.05	
	C	14	<i>J_i</i>	<i>kgcm²</i>	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	
				<i>10⁻³ in.lb.s²</i>	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	0.15
	E	19	<i>J_i</i>	<i>kgcm²</i>	0.87	0.79	0.75	0.71	0.7	-	-	-	-	-	-	-	-	-	-
				<i>10⁻³ in.lb.s²</i>	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

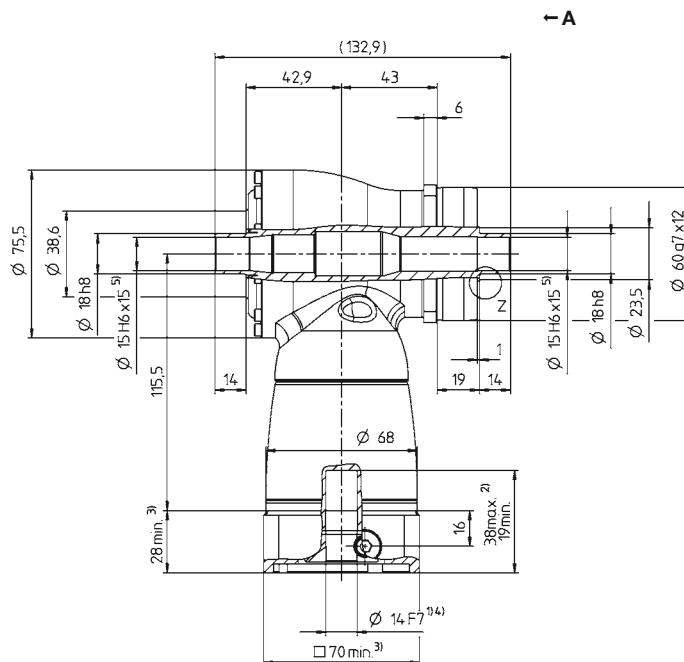
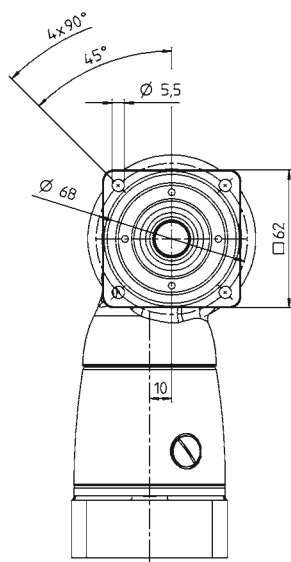
^{c)} Refers to center of the output shaft or flange

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

View A

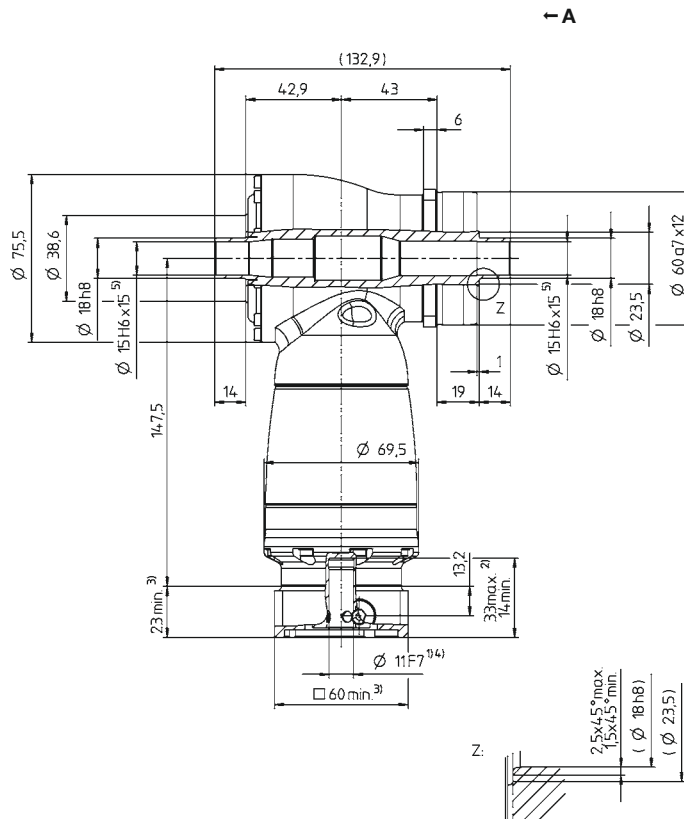
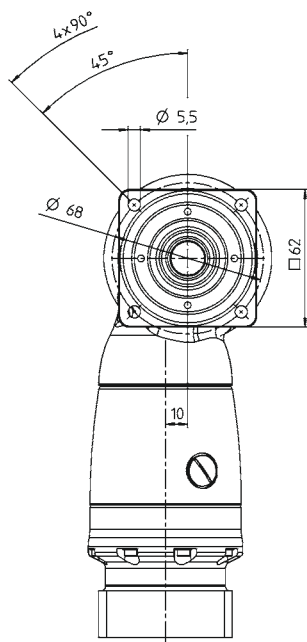
1-stage

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



2-stage

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



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.

⁶⁾ Standard clamping hub diameter

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)}			<i>T</i> _{2a}	<i>Nm</i>	84	84	84	60	50	84	84	84	84	84	84	84	84	60	50
				<i>in.lb</i>	743	743	743	531	443	743	743	743	743	743	743	743	743	743	531
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)			<i>T</i> _{2B}	<i>Nm</i>	70	70	70	60	50	70	70	70	70	70	70	70	70	60	50
				<i>in.lb</i>	620	620	620	531	443	620	620	620	620	620	620	620	620	620	531
Nominal torque (at <i>n</i> _n)			<i>T</i> _{2N}	<i>Nm</i>	50	50	50	45	40	50	50	50	50	50	50	50	50	45	40
				<i>in.lb</i>	443	443	443	398	354	443	443	443	443	443	443	443	443	443	398
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)			<i>T</i> _{2Not}	<i>Nm</i>	95	115	115	110	100	115	115	115	115	115	115	115	115	110	100
				<i>in.lb</i>	841	1018	1018	974	885	1018	1018	1018	1018	1018	1018	1018	1018	1018	974
Permitted average input speed (at <i>T</i> _{2N} and 20 °C ambient temperature) ^{d)}			<i>n</i> _{1N}	<i>n</i> _{1T}	2300	2500	2800	2800	2800	3500	3500	3500	3500	3500	3500	3500	3800	4500	4500
Max. input speed			<i>n</i> _{1Max}	<i>rpm</i>	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Mean no load running torque ^{b)} (at <i>n</i> _i = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> ₀₁₂	<i>Nm</i>	2.2	1.9	1.7	2.2	2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
				<i>in.lb</i>	19	17	15	19	18	3	3	2	2	2	2	2	1	1	1
Max. backlash			<i>j</i> _t	<i>arcmin</i>	Standard ≤ 4														
Torsional rigidity ^{b)}			<i>C</i> ₁₂₁	<i>Nm/arcmin</i>	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
				<i>in.lb/arcmin</i>	47	52	59	58	58	52	52	52	52	52	52	52	52	59	58
Max. axial force ^{c)}			<i>F</i> _{2AMax}	<i>N</i>	3400														
				<i>lb_f</i>	765														
Max. lateral force ^{c)}			<i>F</i> _{2QMax}	<i>N</i>	4000														
				<i>lb_f</i>	900														
Max. tilting moment			<i>M</i> _{2KMax}	<i>Nm</i>	437														
				<i>in.lb</i>	3868														
Efficiency at full load			<i>η</i>	%	96					94									
Service life			<i>L</i> _h	<i>h</i>	> 20000														
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	4.8					5.1									
				<i>lb_m</i>	11					11									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])			<i>L</i> _{PA}	<i>dB(A)</i>	≤ 66														
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														
Shrink disc (Standard version)					SD 024x050 S2														
Max. torque (without axial force)			<i>T</i> _{max}	<i>Nm</i>	250														
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	<i>J</i> _i	<i>kgcm</i> ²	-	-	-	-	-	0.28	0.27	0.23	0.23	0.2	0.2	0.18	0.18	0.18	0.18
				<i>10⁻³ in.lb.s</i> ²	-	-	-	-	-	0.25	0.24	0.2	0.2	0.18	0.18	0.16	0.16	0.16	0.16
	E	19	<i>J</i> _i	<i>kgcm</i> 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
				<i>10⁻³ in.lb.s</i> 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	<i>J</i> _i	<i>kgcm</i> ²	2.88	2.61	2.47	2.37	2.31	-	-	-	-	-	-	-	-	-	-
				<i>10⁻³ in.lb.s</i> ²	2.55	2.31	2.19	2.1	2.04	-	-	-	-	-	-	-	-	-	-

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Please contact us for optimum sizing at S1 conditions (Continuous operation).

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

^{b)} Valid for standard clamping hub diameter

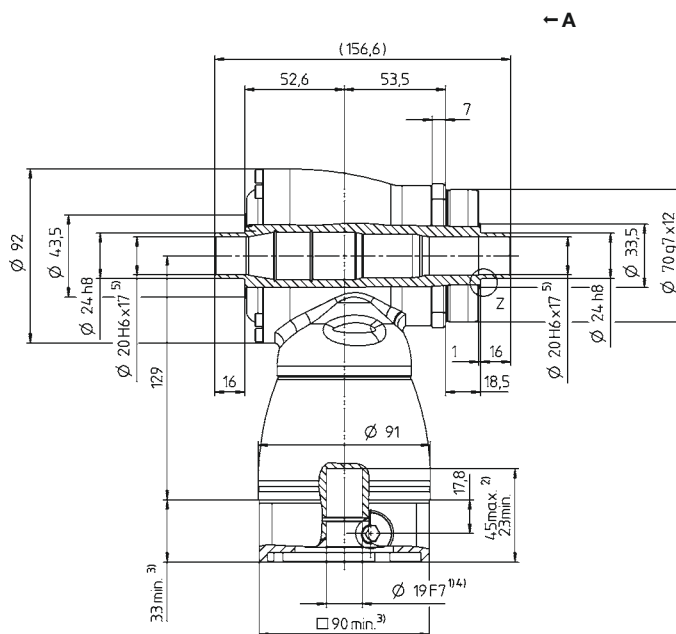
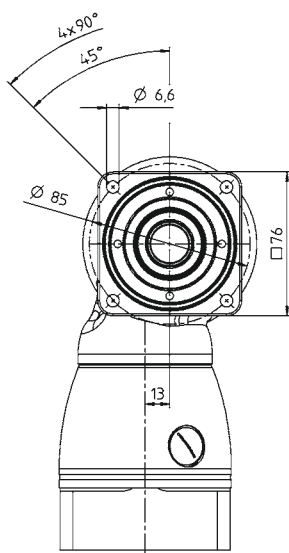
^{c)} Refers to center of the output shaft or flange

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

View A

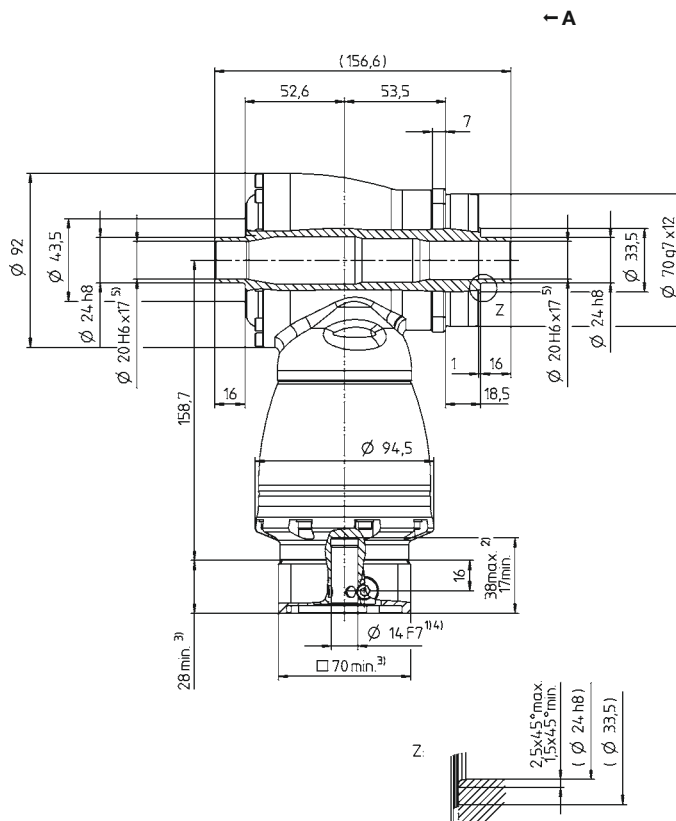
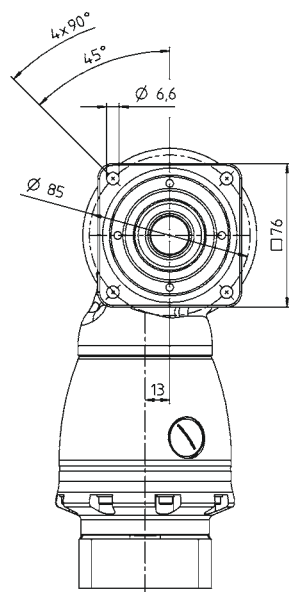
1-stage

up to 19/28 ⁴⁾
(E ⁶⁾/H) clamping
hub diameter



2-stage

up to 14/19 ⁴⁾
(C ⁶⁾/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.

⁶⁾ Standard clamping hub diameter

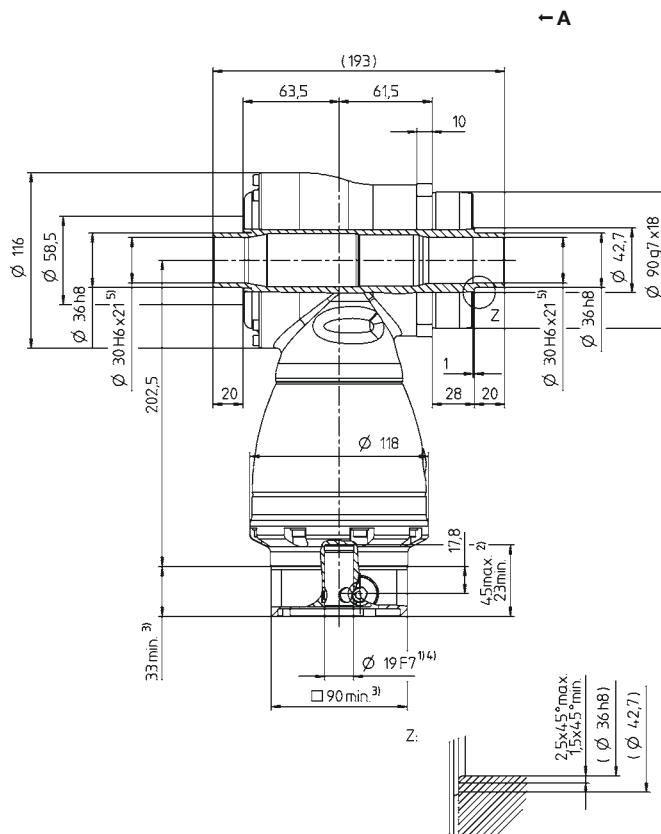
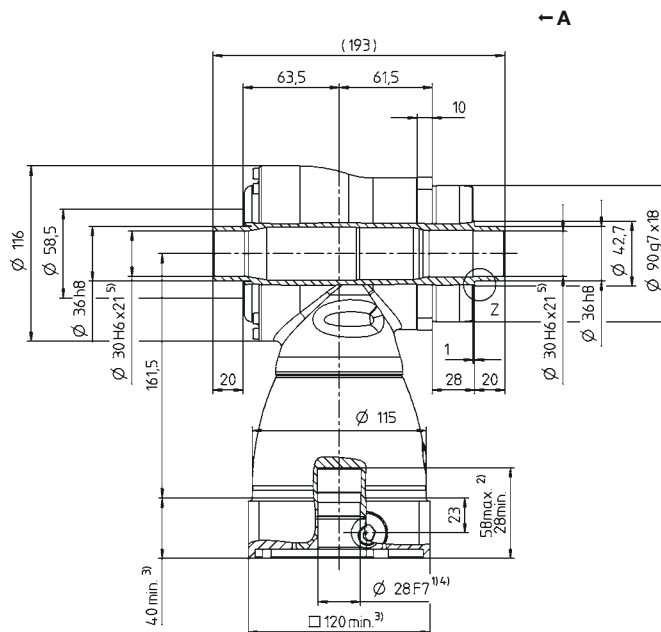
HG⁺ 100 MF 1-/2-stage

				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)}		<i>T</i> _{2a}	<i>Nm</i>	204	204	204	145	125	204	204	204	204	204	204	204	204	145	125	
			<i>in.lb</i>	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)		<i>T</i> _{2B}	<i>Nm</i>	170	170	170	145	125	170	170	170	170	170	170	170	170	145	125	
			<i>in.lb</i>	1505	1505	1505	1283	1106	1505	1505	1505	1505	1505	1505	1505	1505	1505	1283	1106
Nominal torque (at <i>n</i> _n)		<i>T</i> _{2N}	<i>Nm</i>	100	100	100	90	80	100	100	100	100	100	100	100	100	90	80	
			<i>in.lb</i>	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)		<i>T</i> _{2Not}	<i>Nm</i>	220	260	260	255	250	260	260	260	260	260	260	260	260	255	250	
			<i>in.lb</i>	1947	2301	2301	2257	2213	2301	2301	2301	2301	2301	2301	2301	2301	2301	2257	2213
Permitted average input speed (at <i>T</i> _{2N} and 20 °C ambient temperature) ^{d)}		<i>n</i> _{1N}	<i>n</i> _{1T}	2200	2400	2700	2500	2500	3100	3100	3100	3100	3100	3100	3100	3500	4200	4200	
Max. input speed		<i>n</i> _{1Max}	<i>rpm</i>	5500	5500	5500	5500	5500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at <i>n</i> _i = 3000 rpm and 20 °C gearbox temperature)		<i>T</i> ₀₁₂	<i>Nm</i>	4.2	3.3	2.5	3.9	3.1	0.7	0.7	0.6	0.4	0.4	0.3	0.2	0.2	0.2	0.2	
			<i>in.lb</i>	37	29	22	35	27	6	6	5	4	4	3	2	2	2	2	2
Max. backlash		<i>j</i> _t	<i>arcmin</i>	Standard ≤ 4															
Torsional rigidity ^{b)}		<i>C</i> _{t21}	<i>Nm/arcmin</i>	10.7	12.1	14	14.2	14.4	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	14	14.2	14.4
			<i>in.lb/arcmin</i>	95	107	124	126	127	107	107	107	107	107	107	107	107	107	124	126
Max. axial force ^{c)}		<i>F</i> _{2AMax}	<i>N</i>	5700															
			<i>lb_f</i>	1283															
Max. lateral force ^{c)}		<i>F</i> _{2QMax}	<i>N</i>	6300															
			<i>lb_f</i>	1418															
Max. tilting moment		<i>M</i> _{2KMax}	<i>Nm</i>	833															
			<i>in.lb</i>	7373															
Efficiency at full load		<i>η</i>	%	96					94										
Service life		<i>L</i> _h	<i>h</i>	> 20000															
Weight (incl. standard adapter plate)		<i>m</i>	<i>kg</i>	9.3					9.5										
			<i>lb_m</i>	21					21										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])		<i>L</i> _{PA}	<i>dB(A)</i>	≤ 66															
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															
Shrink disc (Standard version)				SD 036x072 S2															
Max. torque (without axial force)		<i>T</i> _{max}	<i>Nm</i>	650															
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E	19	<i>J</i> _i	<i>kgcm²</i>	-	-	-	-	-	1.02	0.97	0.86	0.84	0.75	0.74	0.69	0.69	0.68	0.68
				<i>10⁻³ in.lb.s²</i>	-	-	-	-	-	0.9	0.86	0.76	0.74	0.66	0.65	0.61	0.61	0.6	0.6
	G	24	<i>J</i> _i	<i>kgcm²</i>	-	-	-	-	-	2.59	2.54	2.42	2.4	2.31	2.3	2.26	2.25	2.25	2.25
				<i>10⁻³ in.lb.s²</i>	-	-	-	-	-	2.29	2.25	2.14	2.12	2.04	2.04	2	1.99	1.99	1.99
	H	28	<i>J</i> _i	<i>kgcm²</i>	4.64	3.8	3.34	2.98	2.79	-	-	-	-	-	-	-	-	-	-
				<i>10⁻³ in.lb.s²</i>	4.11	3.36	2.96	2.64	2.47	-	-	-	-	-	-	-	-	-	-
	K	38	<i>J</i> _i	<i>kgcm²</i>	11.9	11	10.6	10.2	10	-	-	-	-	-	-	-	-	-	-
				<i>10⁻³ in.lb.s²</i>	10.53	9.74	9.38	9.03	8.85	-	-	-	-	-	-	-	-	-	-

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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

2-stage



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)}			<i>T</i> _{2a}	<i>Nm</i>	360	360	360	250	210	360	360	360	360	360	360	360	360	250	210	
				<i>in.lb</i>	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)			<i>T</i> _{2B}	<i>Nm</i>	300	300	300	250	210	300	300	300	300	300	300	300	300	250	210	
				<i>in.lb</i>	2655	2655	2655	2213	1859	2655	2655	2655	2655	2655	2655	2655	2655	2655	2213	1859
Nominal torque (at <i>n</i> _n)			<i>T</i> _{2N}	<i>Nm</i>	190	190	190	175	160	190	190	190	190	190	190	190	190	175	160	
				<i>in.lb</i>	1682	1682	1682	1549	1416	1682	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)			<i>T</i> _{2Not}	<i>Nm</i>	400	500	500	450	400	500	500	500	500	500	500	500	500	450	400	
				<i>in.lb</i>	3540	4425	4425	3983	3540	4425	4425	4425	4425	4425	4425	4425	4425	4425	3983	3540
Permitted average input speed (at <i>T</i> _{2N} and 20 °C ambient temperature) ^{d)}			<i>n</i> _{1N}	<i>n</i> _{1T}	1900	2000	2200	2000	2000	2900	2900	2900	2900	2900	2900	2900	3200	3200	3900	
Max. input speed			<i>n</i> _{1Max}	<i>rpm</i>	5000	5000	5000	5000	5000	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque ^{b)} (at <i>n</i> _i = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> ₀₁₂	<i>Nm</i>	7.7	5.7	5	8.3	6.1	1.5	1	0.8	0.6	0.6	0.4	0.4	0.3	0.3	0.3	
				<i>in.lb</i>	68	50	44	73	54	13	9	7	5	5	4	4	3	3	3	3
Max. backlash			<i>j</i> _t	<i>arcmin</i>	Standard ≤ 4															
Torsional rigidity ^{b)}			<i>C</i> _{t21}	<i>Nm/arcmin</i>	32	36	41	39	38	36	36	36	36	36	36	36	36	41	39	38
				<i>in.lb/arcmin</i>	283	319	363	345	336	319	319	319	319	319	319	319	319	319	363	345
Max. axial force ^{c)}			<i>F</i> _{2AMax}	<i>N</i>	9900															
				<i>lb_f</i>	2228															
Max. lateral force ^{c)}			<i>F</i> _{2QMax}	<i>N</i>	9500															
				<i>lb_f</i>	2138															
Max. tilting moment			<i>M</i> _{2KMax}	<i>Nm</i>	1692															
				<i>in.lb</i>	14976															
Efficiency at full load			<i>η</i>	%	96					94										
Service life			<i>L</i> _h	<i>h</i>	> 20000															
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	22.6					24										
				<i>lb_m</i>	50					53										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)			<i>L</i> _{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 opposite direction															
Protection class					IP 65															
Shrink disc (Standard version)					SD 050x090 S2															
Max. torque (without axial force)			<i>T</i> _{max}	<i>Nm</i>	1320															
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]		G	24	<i>J</i> _i	<i>kgcm²</i>	-	-	-	-	-	4.2	3.84	3.27	3.16	2.78	2.73	2.48	2.46	2.43	2.42
					<i>10⁻³ in.lb.s²</i>	-	-	-	-	-	3.72	3.4	2.89	2.8	2.46	2.42	2.19	2.18	2.15	2.14
		K	38	<i>J</i> _i	<i>kgcm²</i>	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
<i>10⁻³ in.lb.s²</i>	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		

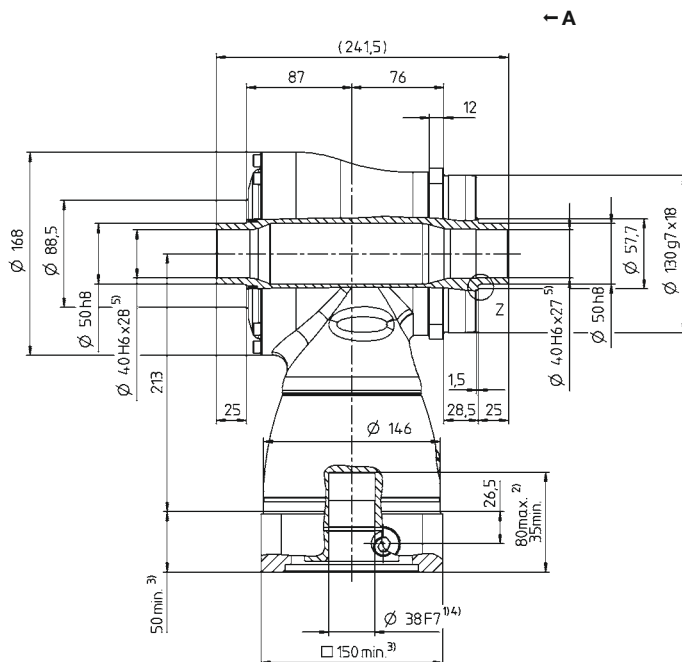
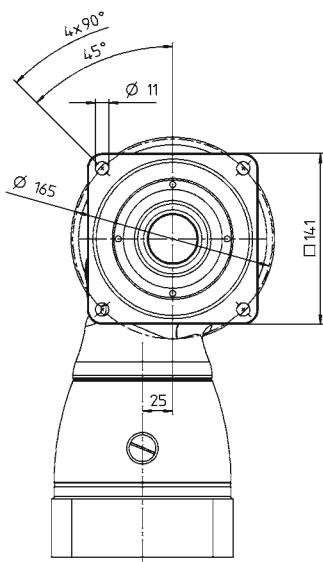
Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- ^{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

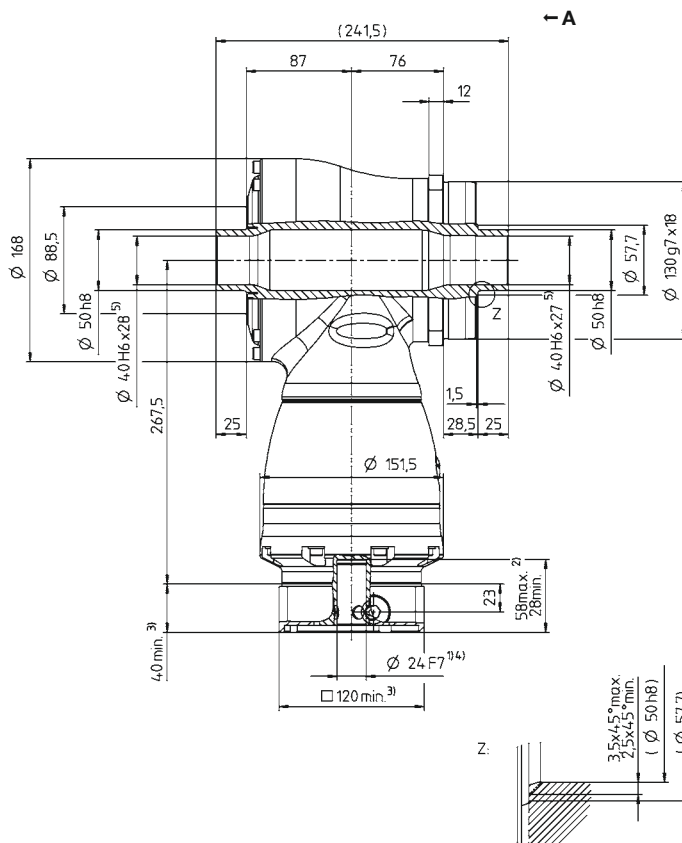
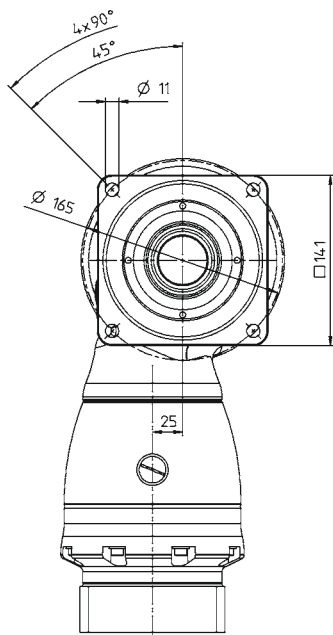
1-stage

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



2-stage

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



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.

⁶⁾ Standard clamping hub diameter

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)}			<i>T</i> _{2a}	<i>Nm</i>	768	768	768	550	470	768	768	768	768	768	768	768	768	550	470
				<i>in.lb</i>	6797	6797	6797	4868	4160	6797	6797	6797	6797	6797	6797	6797	6797	6797	4868
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)			<i>T</i> _{2B}	<i>Nm</i>	640	640	640	550	470	640	640	640	640	640	640	640	640	550	470
				<i>in.lb</i>	5665	5665	5665	4868	4160	5665	5665	5665	5665	5665	5665	5665	5665	5665	4868
Nominal torque (at <i>n</i> _n)			<i>T</i> _{2N}	<i>Nm</i>	400	400	400	380	360	400	400	400	400	400	400	400	400	380	360
				<i>in.lb</i>	3540	3540	3540	3363	3186	3540	3540	3540	3540	3540	3540	3540	3540	3540	3363
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)			<i>T</i> _{2Not}	<i>Nm</i>	900	1050	1050	970	900	1050	1050	1050	1050	1050	1050	1050	1050	970	900
				<i>in.lb</i>	7966	9293	9293	8585	7966	9293	9293	9293	9293	9293	9293	9293	9293	9293	8585
Permitted average input speed (at <i>T</i> _{2a} and 20 °C ambient temperature) ^{c)}			<i>n</i> _{1N}	<i>n</i> _{1T}	1600	1800	2000	1800	1800	2700	2700	2700	2700	2700	2700	2700	2900	3200	3400
Max. input speed			<i>n</i> _{1Max}	<i>rpm</i>	4500	4500	4500	4500	4500	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Mean no load running torque ^{b)} (at <i>n</i> _i = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> ₀₁₂	<i>Nm</i>	16	13	11	16.5	14	3.3	2.5	2	1.8	1.4	1.3	1	1	1	1
				<i>in.lb</i>	142	115	97	146	124	29	22	18	16	12	12	9	9	9	9
Max. backlash			<i>j</i> _t	<i>arcmin</i>	Standard ≤ 4														
Torsional rigidity ^{b)}			<i>C</i> _{t21}	<i>Nm/arcmin</i>	71	80	91	89	88	80	80	80	80	80	80	80	91	89	88
				<i>in.lb/arcmin</i>	628	708	805	788	779	708	708	708	708	708	708	708	708	805	788
Max. axial force ^{c)}			<i>F</i> _{2AMax}	<i>N</i>	14200														
				<i>lb_f</i>	3195														
Max. lateral force ^{c)}			<i>F</i> _{2QMax}	<i>N</i>	14700														
				<i>lb_f</i>	3308														
Max. tilting moment			<i>M</i> _{2KMax}	<i>Nm</i>	3213														
				<i>in.lb</i>	28438														
Efficiency at full load			<i>η</i>	%	96					94									
Service life			<i>L</i> _h	<i>h</i>	> 20000														
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	45.4					47									
				<i>lb_m</i>	100					104									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])			<i>L</i> _{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 opposite direction														
Protection class					IP 65														
Shrink disc (Standard version)					SD 068x115 S2														
				<i>T</i> _{max}	<i>Nm</i>	2450													
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]		K 38	<i>J</i> _i	<i>kgcm²</i>	-	-	-	-	-	15.3	14	12.3	12	10.9	10.7	10.1	10	9.95	9.91
				<i>10⁻³ in.lb.s²</i>	-	-	-	-	-	13.54	12.39	10.89	10.62	9.65	9.47	8.94	8.85	8.81	8.77
		M 48	<i>J</i> _i	<i>kgcm²</i>	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
<i>10⁻³ in.lb.s²</i>	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		

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Please contact us for optimum sizing at S1 conditions (Continuous operation).

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

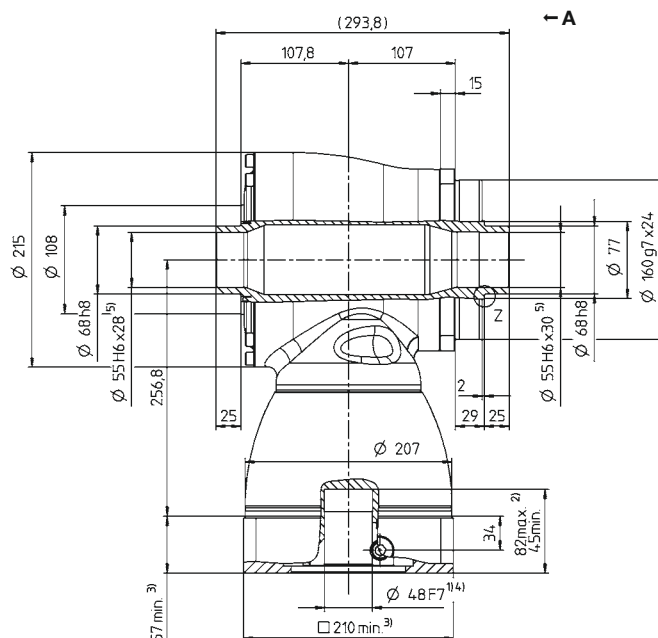
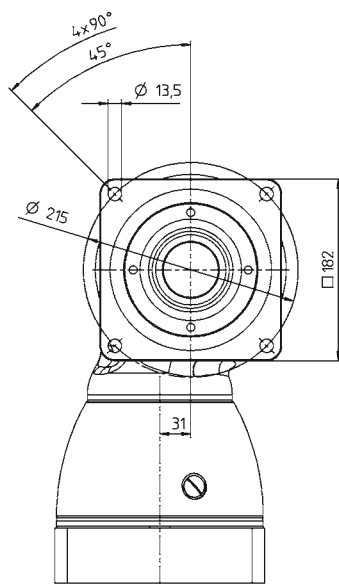
^{b)} Valid for standard clamping hub diameter

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

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

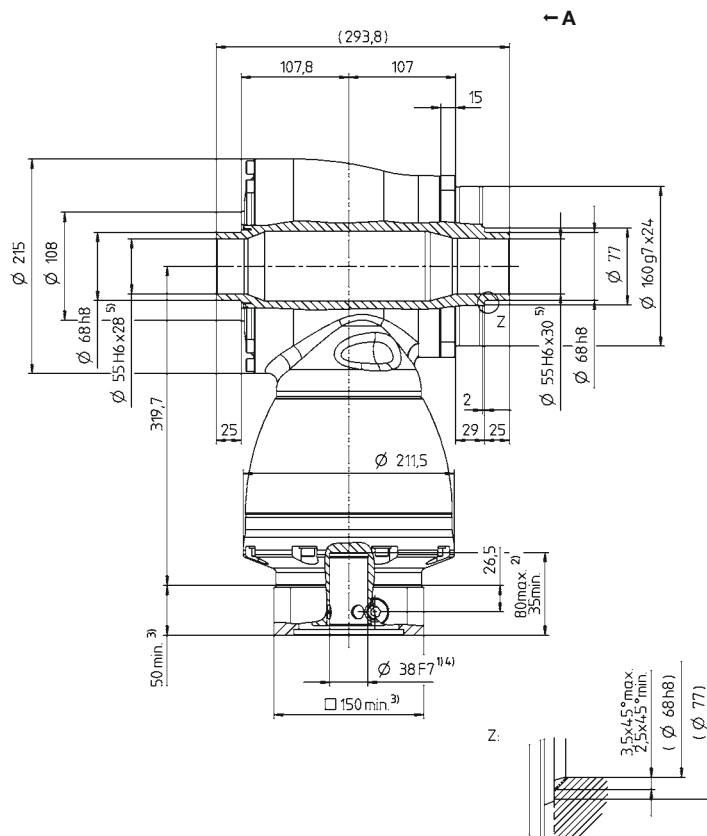
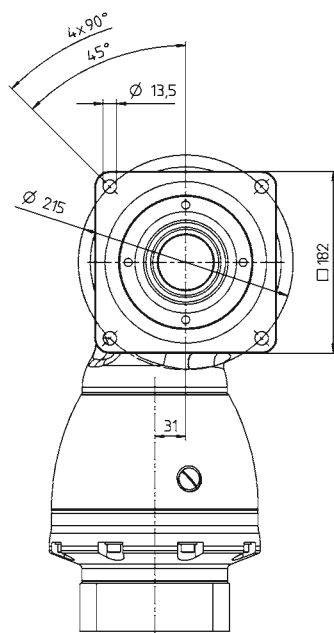
1-stage

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



2-stage

up to 38/48⁴⁾
(K⁶⁾/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⁾ Tolerance h6 for mounted shaft.

⁶⁾ Standard clamping hub diameter