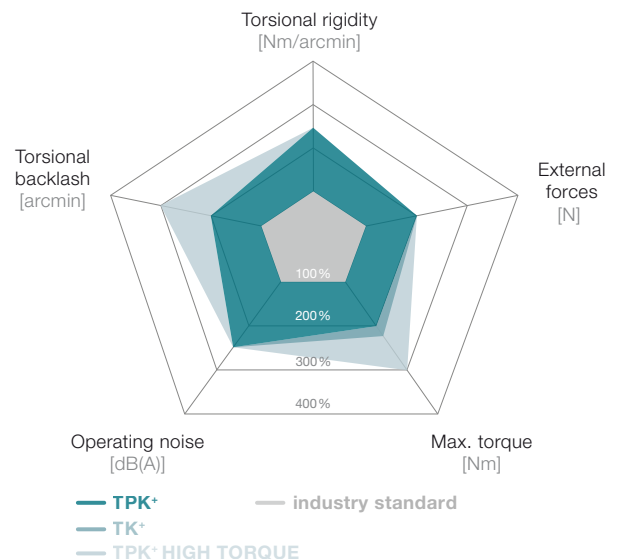


## TK<sup>+</sup> / TPK<sup>+</sup> / TPK<sup>+</sup> HIGH TORQUE – Space-saving right-angle precision with output flange



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

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



### Product highlights

#### Max. torsional backlash

- TK<sup>+</sup> ≤ 4 arcmin (Standard)
- TPK<sup>+</sup> ≤ 3.3 arcmin (Standard)
- ≤ 2 arcmin (Reduced)
- TPK<sup>+</sup> HIGH TORQUE ≤ 1.3 arcmin (Standard)

#### Diverse range of ratios $i = 3 - 5,500$

#### High torque capacity (MA)

#### Multiple output configurations for greater flexibility

Flanged hollow shaft, Flange, System output, Output on both sides

#### Other gearbox models

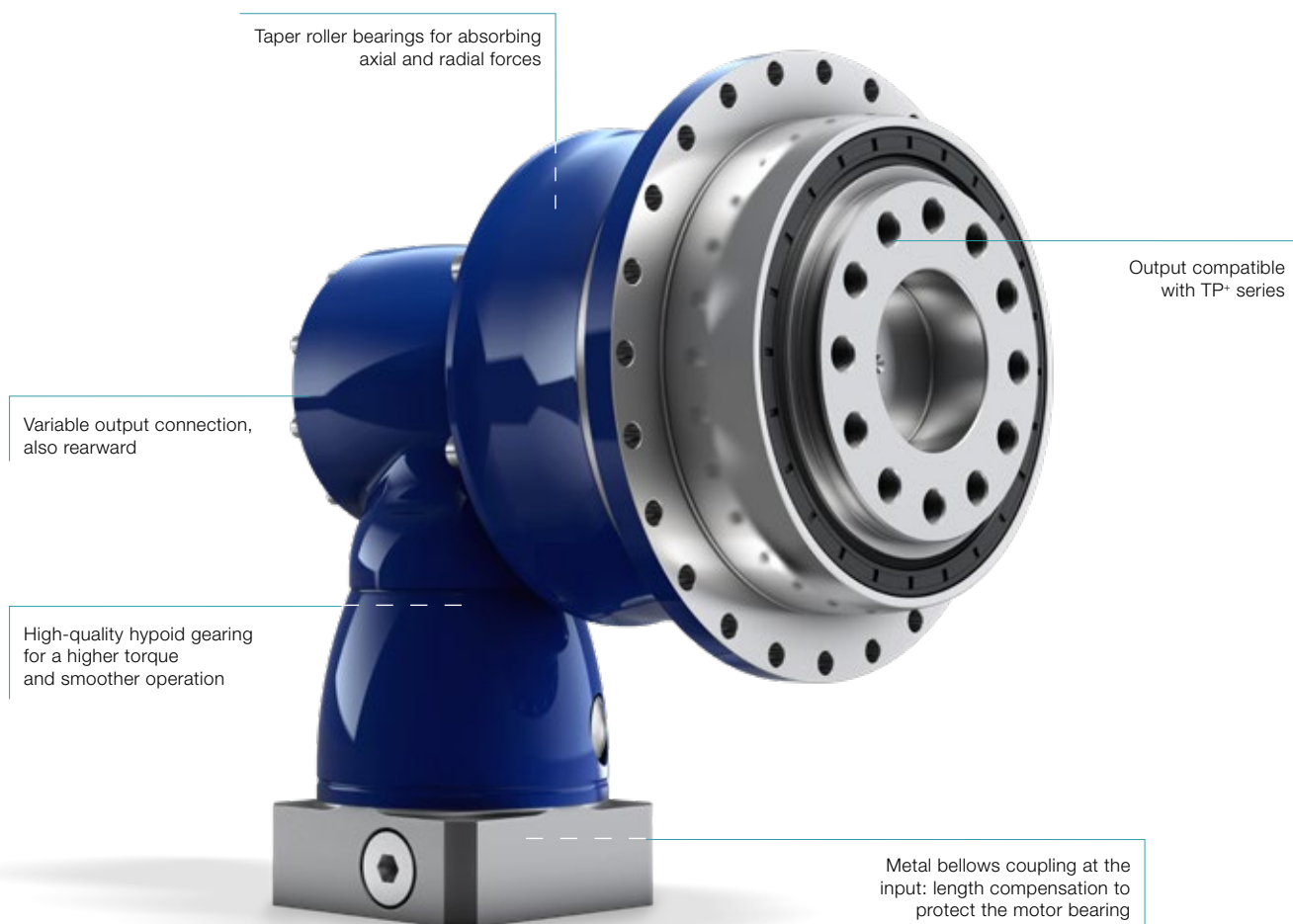
Corrosion resistant design, ATEX (TK<sup>+</sup>)



TK<sup>+</sup> in corrosion-resistant design



TPK<sup>+</sup> with rack and pinion



TPK+ HIGH TORQUE



TK+ with metal bellows coupling



TPK+ 2000 available on request

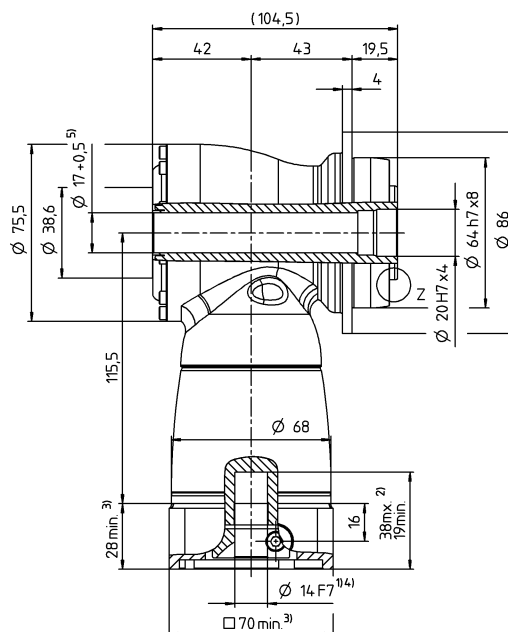
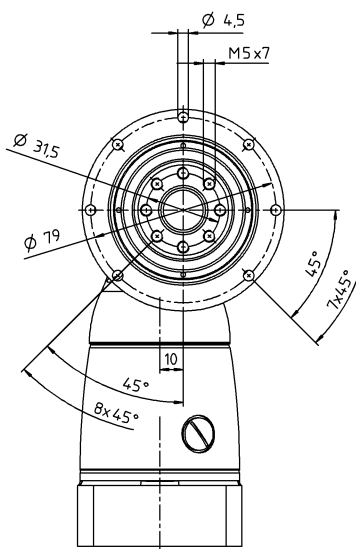
# TK<sup>+</sup> 004 MF 1-/2-stage

				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 <sup>a) b)</sup>			<i>T</i> <sub>2a</sub>	<i>Nm</i>	36	36	36	25	20	36	36	36	36	36	36	36	36	25	20	
				<i>in.lb</i>	319	319	319	221	177	319	319	319	319	319	319	319	319	319	221	177
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)			<i>T</i> <sub>2B</sub>	<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	266	221	177
Nominal torque (at <i>n</i> <sub>n</sub> )			<i>T</i> <sub>2N</sub>	<i>Nm</i>	22	22	22	20	15	22	22	22	22	22	22	22	22	20	15	
				<i>in.lb</i>	195	195	195	177	133	195	195	195	195	195	195	195	195	195	177	133
Emergency stop torque <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			<i>T</i> <sub>2Not</sub>	<i>Nm</i>	40	50	50	45	40	50	50	50	50	50	50	50	50	45	40	
				<i>in.lb</i>	354	443	443	398	354	443	443	443	443	443	443	443	443	443	398	354
Permitted average input speed (at <i>T</i> <sub>2N</sub> and 20 °C ambient temperature) <sup>d)</sup>			<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	2200	2400	2700	2700	2700	4400	4400	4400	4400	4400	4400	4400	4800	5500	5500	
Max. input speed			<i>n</i> <sub>1Max</sub>	<i>rpm</i>	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> <sub>012</sub>	<i>Nm</i>	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	
				<i>in.lb</i>	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	1.8
Max. backlash			<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 5															
Torsional rigidity <sup>b)</sup>			<i>C</i> <sub>t21</sub>	<i>Nm/arcmin</i>	2.6	2.8	3	2.6	2.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3	2.6	2.3
				<i>in.lb/arcmin</i>	23	25	27	23	20	25	25	25	25	25	25	25	25	25	27	23
Max. axial force <sup>c)</sup>			<i>F</i> <sub>2AMax</sub>	<i>N</i>	2400															
				<i>lb<sub>f</sub></i>	540															
Max. tilting moment			<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	251															
				<i>in.lb</i>	2222															
Efficiency at full load			<i>η</i>	%	96					94										
Service life <sup>f)</sup>			<i>L</i> <sub>h</sub>	<i>h</i>	> 20000															
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	2.9					3.2										
				<i>lb<sub>m</sub></i>	6					7										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)			<i>L</i> <sub>PA</sub>	<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															
Metal bellows coupling (recommended product type – validate sizing with cymex®)					BCT - 00015AAX - 031.500															
Bore diameter of coupling on the application side				<i>mm</i>	X = 012.000 - 028.000															
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	B	11	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	-	-	-	-	-	0.09	0.09	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	-	-	-	-	-	0.08	0.08	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	
	C	14	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	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	0.17	
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	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	0.15	
	E	19	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	0.92	0.82	0.76	0.72	0.7	-	-	-	-	-	-	-	-	-	-	
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	0.81	0.73	0.67	0.64	0.62	-	-	-	-	-	-	-	-	-	-	

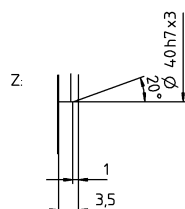
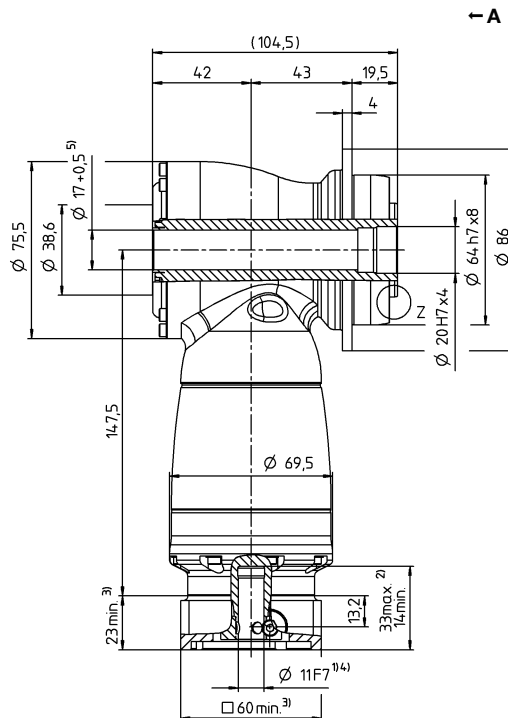
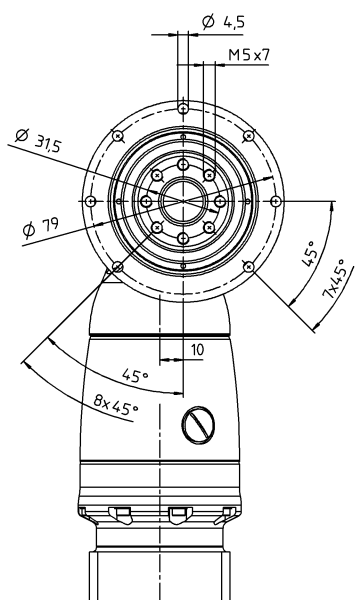
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

up to 14/19 <sup>4)</sup>  
(C<sup>6</sup>)/E) clamping  
hub diameter



up to 11/14 <sup>4)</sup>  
(B<sup>6</sup>/C) clamping  
hub diameter



6) Standard clamping hub diameter

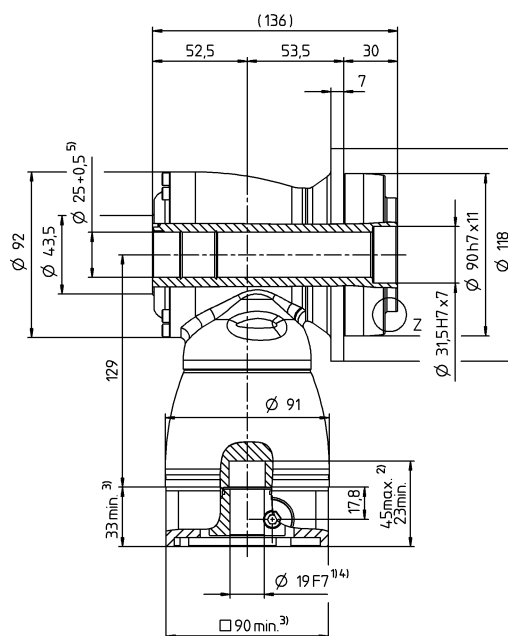
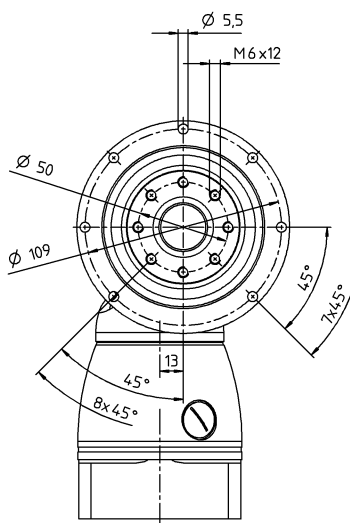
# TK<sup>+</sup> 010 MF 1- / 2-stage

				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 <sup>a) b)</sup>			<i>T</i> <sub>2a</sub>	<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 <sup>b)</sup> (max. 1000 cycles per hour)			<i>T</i> <sub>2B</sub>	<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> <sub>n</sub> )			<i>T</i> <sub>2N</sub>	<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 <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			<i>T</i> <sub>2Not</sub>	<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> <sub>2n</sub> and 20 °C ambient temperature) <sup>d)</sup>			<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	2100	2200	2500	2500	2500	3500	3500	3500	3500	3500	3500	3500	3800	4500	4500
Max. input speed			<i>n</i> <sub>1Max</sub>	<i>rpm</i>	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> <sub>012</sub>	<i>Nm</i>	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
				<i>in.lb</i>	29	25	19	21	19	3.5	3.5	2.7	2.7	2.7	2.7	2.7	1.8	1.8	1.8
Max. backlash			<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 4														
Torsional rigidity <sup>b)</sup>			<i>C</i> <sub>t21</sub>	<i>Nm/arcmin</i>	6	7	8	8	8	7	7	7	7	7	7	7	8	8	8
				<i>in.lb/arcmin</i>	53	62	71	71	71	62	62	62	62	62	62	62	62	71	71
Max. axial force <sup>c)</sup>			<i>F</i> <sub>2AMax</sub>	<i>N</i>	3400														
				<i>lb<sub>f</sub></i>	765														
Max. tilting moment			<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	437														
				<i>in.lb</i>	3868														
Efficiency at full load			<i>η</i>	%	96					94									
Service life <sup>f)</sup>			<i>L</i> <sub>h</sub>	<i>h</i>	> 20000														
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	5.3					6.1									
				<i>lb<sub>m</sub></i>	12					13									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)			<i>L</i> <sub>PA</sub>	<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														
Metal bellows coupling (recommended product type – validate sizing with cymex®)					BCT - 00060AAX - 050.000														
Bore diameter of coupling on the application side				<i>mm</i>	X = 014.000 - 035.000														
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	<i>J</i> <sub>i</sub>	<i>kgcm²</i>	-	-	-	-	-	0.31	0.28	0.24	0.23	0.21	0.2	0.19	0.18	0.18	0.18
				<i>10<sup>-3</sup> in.lb.s²</i>	-	-	-	-	-	0.27	0.25	0.21	0.2	0.19	0.18	0.17	0.16	0.16	0.16
	E	19	<i>J</i> <sub>i</sub>	<i>kgcm²</i>	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
				<i>10<sup>-3</sup> in.lb.s²</i>	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	<i>J</i> <sub>i</sub>	<i>kgcm²</i>	3.22	2.8	2.6	2.43	2.34	-	-	-	-	-	-	-	-	-	-
<i>10<sup>-3</sup> in.lb.s²</i>				2.85	2.48	2.3	2.15	2.07	-	-	-	-	-	-	-	-	-	-	-

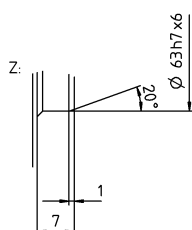
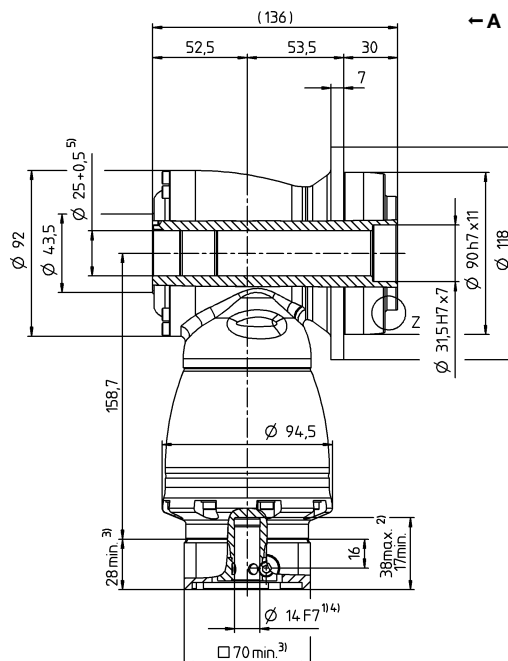
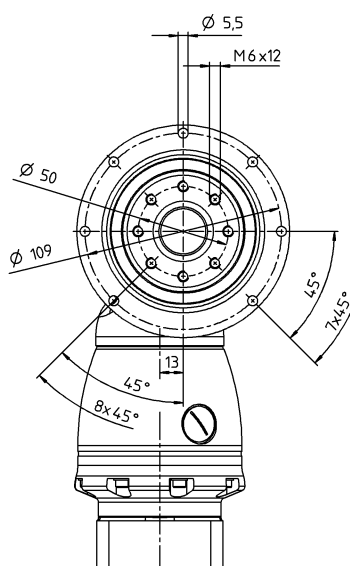
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

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



up to 14/19 <sup>4)</sup>  
(C<sup>6</sup>)/E) clamping  
hub diameter



6) Standard clamping hub diameter

# TK<sup>+</sup> 025 MF 1-/2-stage

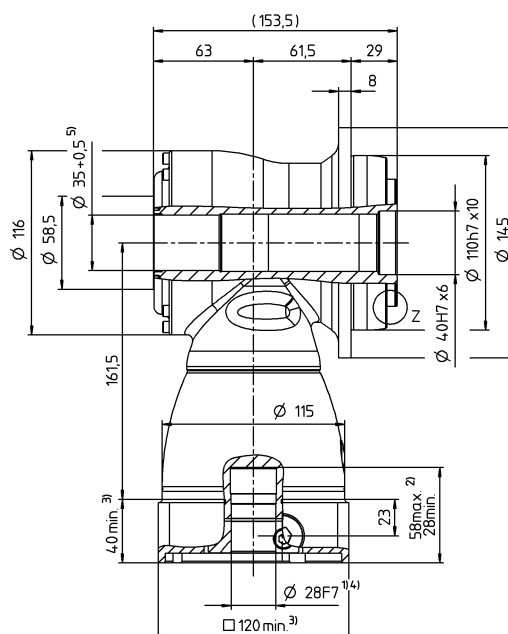
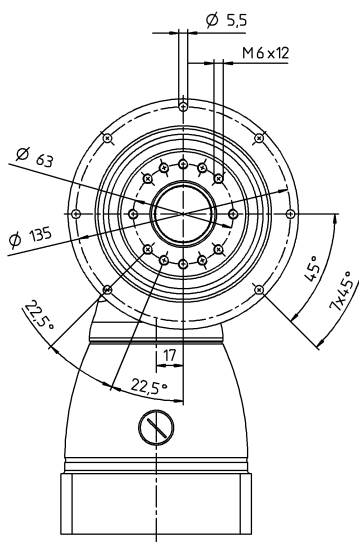
					1-stage					2-stage										
Ratio				<i>i</i>		3	4	5	7	10	12	16	20	25	28	35	40	50	70	100
Max. torque <sup>a) b)</sup>				<i>T</i> <sub>2a</sub>	<i>Nm</i>	204	204	204	145	125	204	204	204	204	204	204	204	204	145	125
					<i>in.lb</i>	1806	1806	1806	1283	1106	1806	1806	1806	1806	1806	1806	1806	1806	1806	1283
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)				<i>T</i> <sub>2B</sub>	<i>Nm</i>	170	170	170	145	125	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	1283	1106
Nominal torque (at <i>n</i> <sub>n</sub> )				<i>T</i> <sub>2N</sub>	<i>Nm</i>	100	100	100	90	80	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	797	708
Emergency stop torque <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)				<i>T</i> <sub>2Not</sub>	<i>Nm</i>	220	260	260	255	250	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	2257	2213
Permitted average input speed (at <i>T</i> <sub>2N</sub> and 20 °C ambient temperature) <sup>d)</sup>				<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	2000	2100	2400	2200	2200	3100	3100	3100	3100	3100	3100	3500	4200	4200	
Max. input speed				<i>n</i> <sub>1Max</sub>	<i>rpm</i>	5500	5500	5500	5500	5500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)				<i>T</i> <sub>012</sub>	<i>Nm</i>	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	
					<i>in.lb</i>	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				<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 4														
Torsional rigidity <sup>b)</sup>				<i>C</i> <sub>121</sub>	<i>Nm/arcmin</i>	12	13	16	16	16	13	13	13	13	13	13	13	16	16	16
					<i>in.lb/arcmin</i>	106	115	142	142	142	115	115	115	115	115	115	115	115	142	142
Max. axial force <sup>c)</sup>				<i>F</i> <sub>2AMax</sub>	<i>N</i>	5700														
					<i>lb<sub>f</sub></i>	1283														
Max. tilting moment				<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	833														
					<i>in.lb</i>	7373														
Efficiency at full load				<i>η</i>	%	96					94									
Service life <sup>f)</sup>				<i>L</i> <sub>h</sub>	<i>h</i>	> 20000														
Weight (incl. standard adapter plate)				<i>m</i>	<i>kg</i>	8.9					10.6									
					<i>lb<sub>m</sub></i>	20					23									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)				<i>L</i> <sub>PA</sub>	<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														
Metal bellows coupling (recommended product type – validate sizing with cymex®)						BCT - 00150AAX - 063.000														
Bore diameter of coupling on the application side					<i>mm</i>	X = 019.000 - 042.000														
Mass moment of inertia (relates to the drive)  Clamping hub diameter [mm]	E	19	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	-	-	-	-	-	1.08	1.01	0.88	0.85	0.76	0.75	0.7	0.69	0.68	0.68	
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	-	-	-	-	-	0.96	0.89	0.78	0.75	0.67	0.66	0.62	0.61	0.6	0.6	
	G	24	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	-	-	-	-	-	2.65	2.57	2.44	2.42	2.32	2.31	2.26	2.25	2.25		
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	-	-	-	-	-	2.35	2.27	2.16	2.14	2.05	2.04	2	1.99	1.99		
	H	28	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	5.5	4.3	3.6	3.1	2.9	-	-	-	-	-	-	-	-	-		
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	4.87	3.81	3.19	2.74	2.57	-	-	-	-	-	-	-	-	-		
	K	38	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	12.7	11.5	10.9	10.4	10.1	-	-	-	-	-	-	-	-	-		
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	11.24	10.18	9.65	9.2	8.94	-	-	-	-	-	-	-	-	-		

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

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$   
<sup>b)</sup> Valid for standard clamping hub diameter  
<sup>c)</sup> Refers to center of the output shaft or flange  
<sup>d)</sup> Please reduce input speed at higher ambient temperatures  
<sup>f)</sup> Please contact us to discuss application-specific service lifetimes

# 1-stage

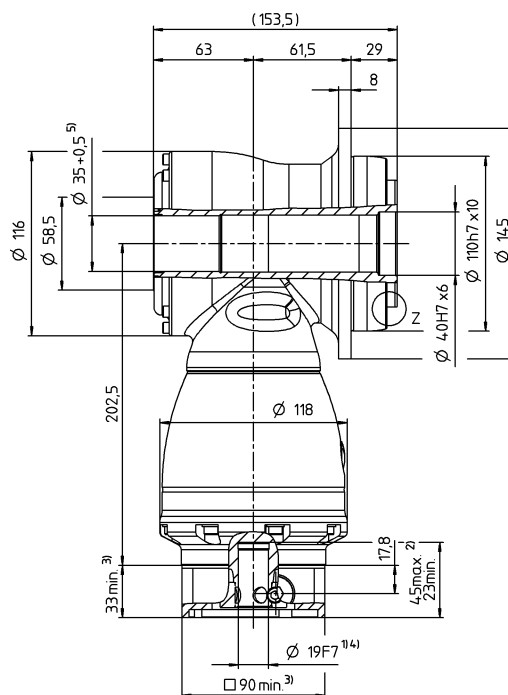
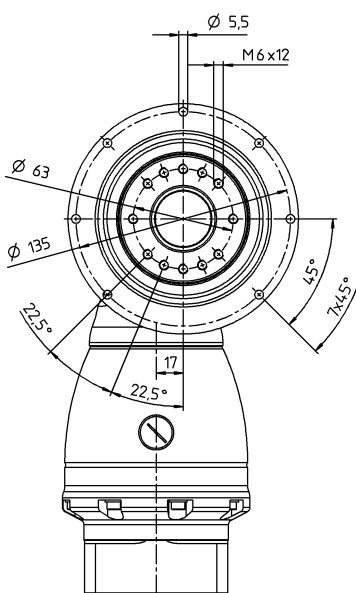
up to 28/38 <sup>4)</sup>  
(H <sup>6)</sup>/K) clamping  
hub diameter



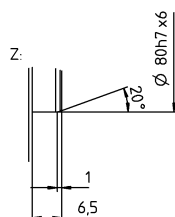
← A

# 2-stage

up to 19/24 <sup>4)</sup>  
(E <sup>6)</sup>/G) 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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Led through element max. Ø 34.8 mm

<sup>6)</sup> Standard clamping hub diameter



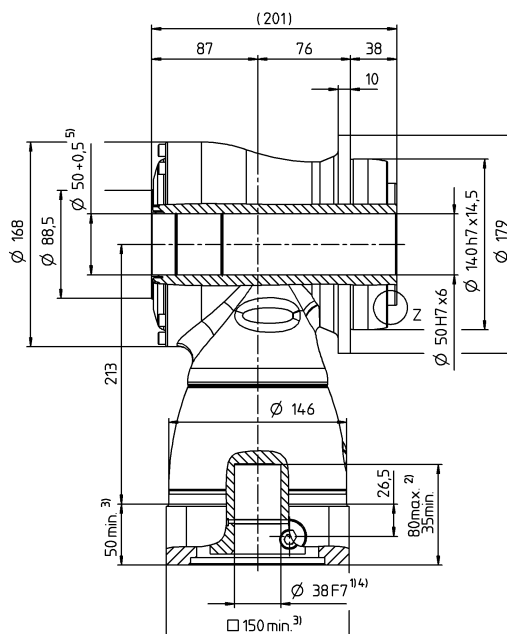
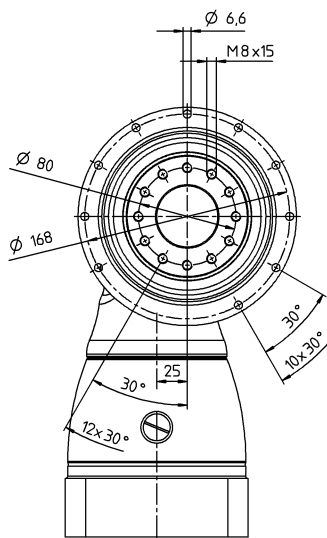
# TK<sup>+</sup> 050 MF 1-/2-stage

				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 <sup>a) b)</sup>			<i>T</i> <sub>2a</sub>	<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 <sup>b)</sup> (max. 1000 cycles per hour)			<i>T</i> <sub>2B</sub>	<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> <sub>n</sub> )			<i>T</i> <sub>2N</sub>	<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 <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			<i>T</i> <sub>2Not</sub>	<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> <sub>2a</sub> and 20 °C ambient temperature) <sup>d)</sup>			<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	1700	1800	2000	1800	1800	2900	2900	2900	2900	2900	2900	2900	3200	3200	3900	
Max. input speed			<i>n</i> <sub>1Max</sub>	<i>rpm</i>	5000	5000	5000	5000	5000	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> <sub>012</sub>	<i>Nm</i>	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	
				<i>in.lb</i>	85	63	74	80	58	15	9.7	7.1	5.3	5.3	4.4	4.4	3.5	3.5	3.5	3.5
Max. backlash			<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 4															
Torsional rigidity <sup>b)</sup>			<i>C</i> <sub>t21</sub>	<i>Nm/arcmin</i>	36	40	46	44	42	40	40	40	40	40	40	40	40	46	44	42
				<i>in.lb/arcmin</i>	319	354	407	389	372	354	354	354	354	354	354	354	354	354	407	389
Max. axial force <sup>c)</sup>			<i>F</i> <sub>2AMax</sub>	<i>N</i>	9900															
				<i>lb<sub>f</sub></i>	2228															
Max. tilting moment			<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	1692															
				<i>in.lb</i>	14976															
Efficiency at full load			<i>η</i>	%	96					94										
Service life <sup>f)</sup>			<i>L</i> <sub>h</sub>	<i>h</i>	> 20000															
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	22					26										
				<i>lb<sub>m</sub></i>	49					57										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)			<i>L</i> <sub>PA</sub>	<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															
Metal bellows coupling (recommended product type – validate sizing with cymex®)					BCT - 00300AAX - 080.000															
				<i>mm</i>	X = 024.000 - 060.000															
Mass moment of inertia (relates to the drive)		G	24	<i>J</i> <sub>i</sub>	<i>kgcm²</i>	-	-	-	-	-	4.43	3.97	3.36	3.22	2.82	2.75	2.5	2.47	2.44	2.42
					<i>10<sup>-3</sup> in.lb.s²</i>	-	-	-	-	-	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	<i>J</i> <sub>i</sub>	<i>kgcm²</i>	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
<i>10<sup>-3</sup> in.lb.s²</i>	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	

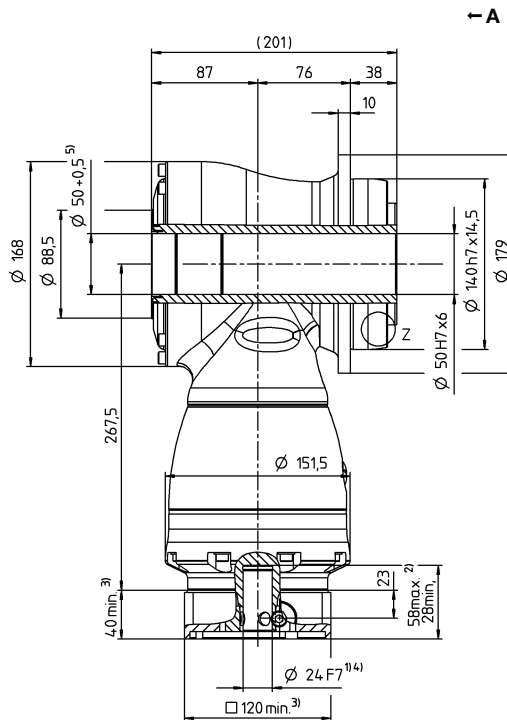
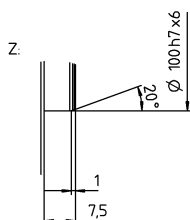
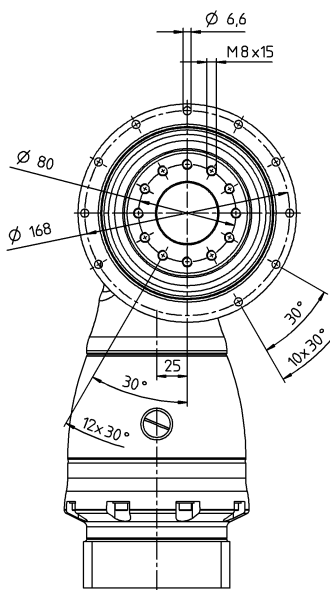
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

up to 38<sup>4)</sup> (K)<sup>6)</sup>  
clamping hub  
diameter



up to 24/38 <sup>4)</sup>  
(G<sup>6</sup>/K) clamping  
hub diameter



6) Standard clamping hub diameter

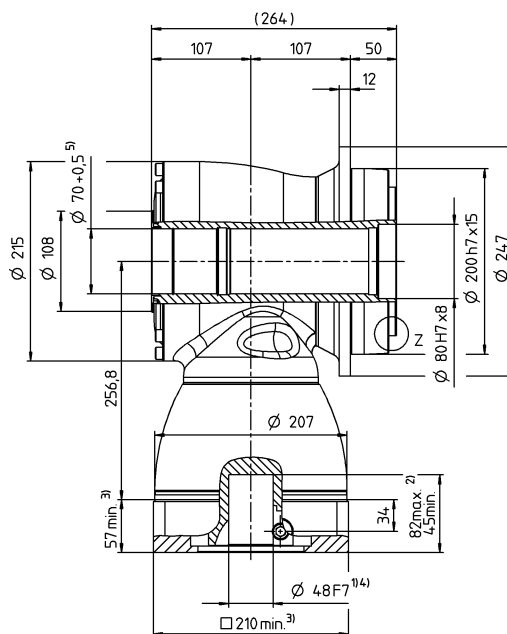
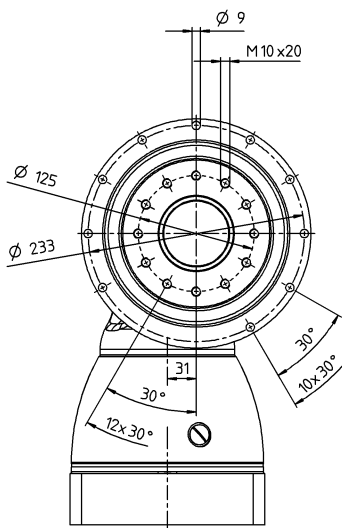
# TK<sup>+</sup> 110 MF 1- / 2-stage

				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 <sup>a) b)</sup>			<i>T</i> <sub>2a</sub>	<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 <sup>b)</sup> (max. 1000 cycles per hour)			<i>T</i> <sub>2B</sub>	<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> <sub>n</sub> )			<i>T</i> <sub>2N</sub>	<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 <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			<i>T</i> <sub>2Not</sub>	<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> <sub>2v</sub> and 20 °C ambient temperature) <sup>d)</sup>			<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	1400	1600	1800	1600	1600	2700	2700	2700	2700	2700	2700	2700	2900	3200	3400
Max. input speed			<i>n</i> <sub>1Max</sub>	<i>rpm</i>	4500	4500	4500	4500	4500	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> <sub>012</sub>	<i>Nm</i>	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
				<i>in.lb</i>	177	150	159	168	142	32	25	19	17	14	12	9.7	9.7	9.7	9.7
Max. backlash			<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 4														
Torsional rigidity <sup>b)</sup>			<i>C</i> <sub>t21</sub>	<i>Nm/arcmin</i>	76	87	99	97	96	87	87	87	87	87	87	87	99	97	96
				<i>in.lb/arcmin</i>	673	770	876	859	850	770	770	770	770	770	770	770	770	876	859
Max. axial force <sup>c)</sup>			<i>F</i> <sub>2AMax</sub>	<i>N</i>	14200														
				<i>lb<sub>f</sub></i>	3195														
Max. tilting moment			<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	3213														
				<i>in.lb</i>	28438														
Efficiency at full load			<i>η</i>	%	96					94									
Service life <sup>f)</sup>			<i>L</i> <sub>h</sub>	<i>h</i>	> 20000														
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	48					54									
				<i>lb<sub>m</sub></i>	106					119									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )			<i>L</i> <sub>PA</sub>	<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														
Metal bellows coupling (recommended product type – validate sizing with cymex <sup>®</sup> )					BCT - 01500AAX - 125.000														
Bore diameter of coupling on the application side				<i>mm</i>	X = 050.000 - 080.000														
Mass moment of inertia (relates to the drive)  Clamping hub diameter [mm]	K	38	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	-	-	-	-	-	16.8	14.8	12.9	12.3	11.2	10.9	10.3	10.1	10	9.93
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	-	-	-	-	-	14.87	13.1	11.42	10.89	9.91	9.65	9.12	8.94	8.85	8.79
	M	48	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	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
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	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

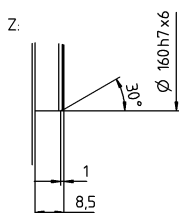
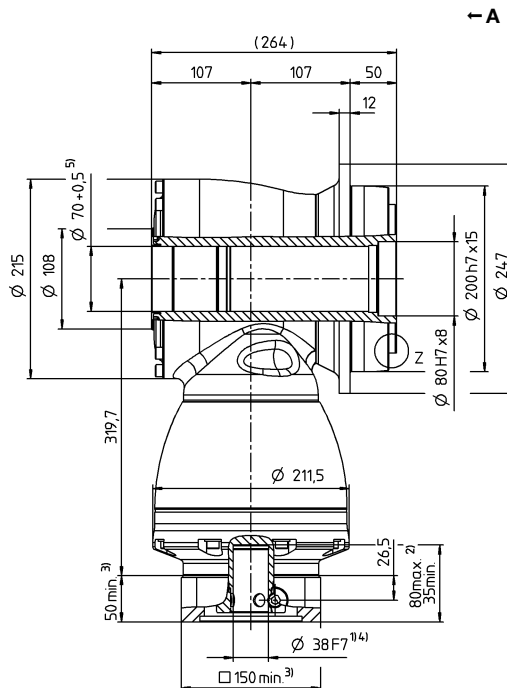
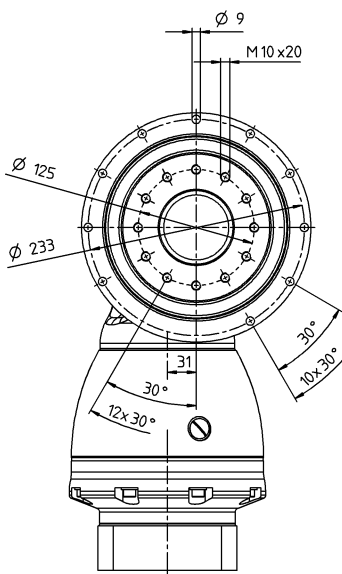
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

up to 48 <sup>4)</sup> (M) <sup>6)</sup>  
clamping hub  
diameter



up to 38/48 <sup>4)</sup>  
(K<sup>6)</sup>/M) clamping  
hub diameter



6) Standard clamping hub diameter

# TPK+ 010 MF 2-stage

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

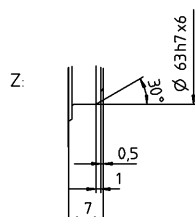
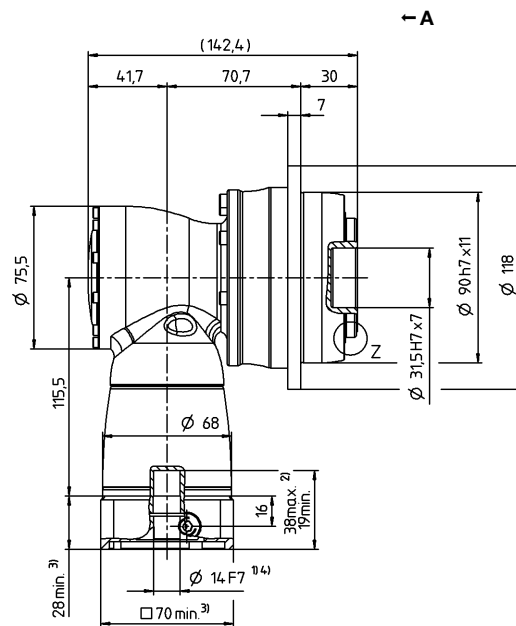
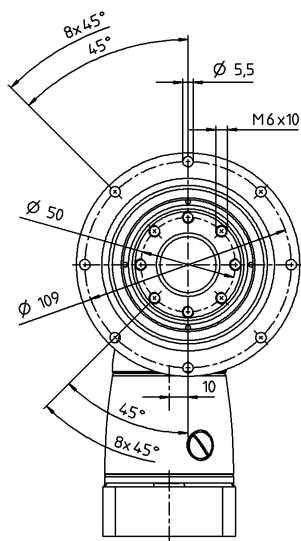
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

View A

Motor shaft diameter [mm]

2-stage

up to 14/19<sup>4)</sup>  
(C<sup>5)</sup> / 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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

Hypoid gearboxes

TPK<sup>+</sup>

MF

# TPK+ 010 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 <sup>a) b)</sup>	$T_{2a}$	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 <sup>b)</sup> (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 <sup>a) b)</sup> (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 $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$	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 <sup>b)</sup> (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 $\leq 5$ / Reduced $\leq 3$													
Torsional rigidity <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	2795													
		lb <sub>f</sub>	629													
Max. tilting moment	$M_{2KMax}$	Nm	270													
		in.lb	2390													
Efficiency at full load	$\eta$	%	92													
Service life <sup>f)</sup>	$L_h$	h	> 20000													
Weight (incl. standard adapter plate)	$m$	kg	5.5													
		lb <sub>m</sub>	12													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	dB(A)	$\leq 66$													
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 <sup>®</sup> )			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]	B	11	$J_1$	kgcm <sup>2</sup>	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 <sup>-3</sup> in.lb.s <sup>2</sup>	0.08	0.06	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	C	14	$J_1$	kgcm <sup>2</sup>	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 <sup>-3</sup> in.lb.s <sup>2</sup>	0.18	0.16	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15

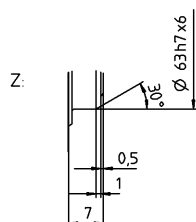
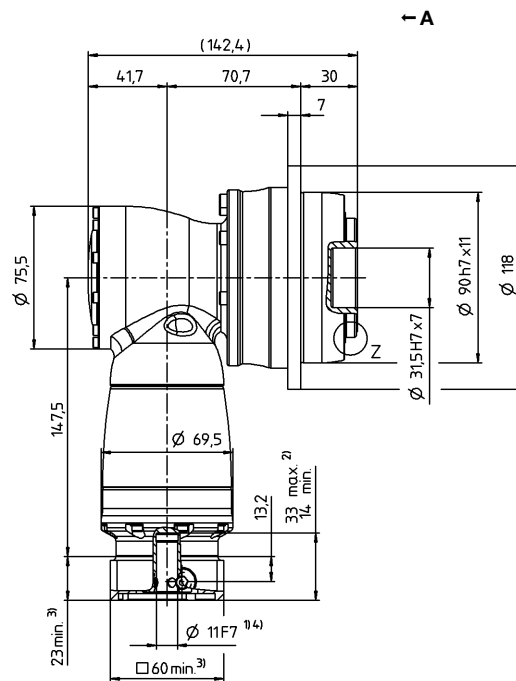
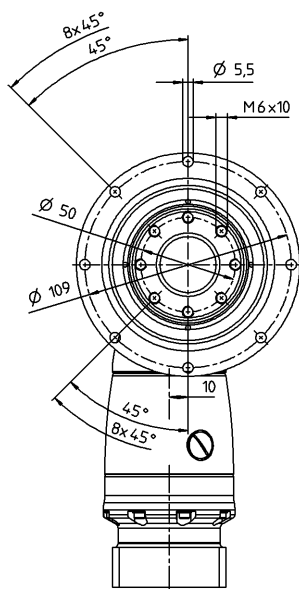
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

View A

Motor shaft diameter [mm]

3-stage

up to 11/14<sup>4)</sup>  
(B<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

TPK<sup>+</sup>

MF

Hypoid gearboxes



# TPK+ 025 MF 2-stage

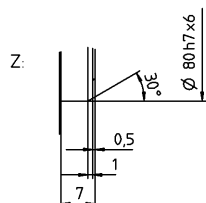
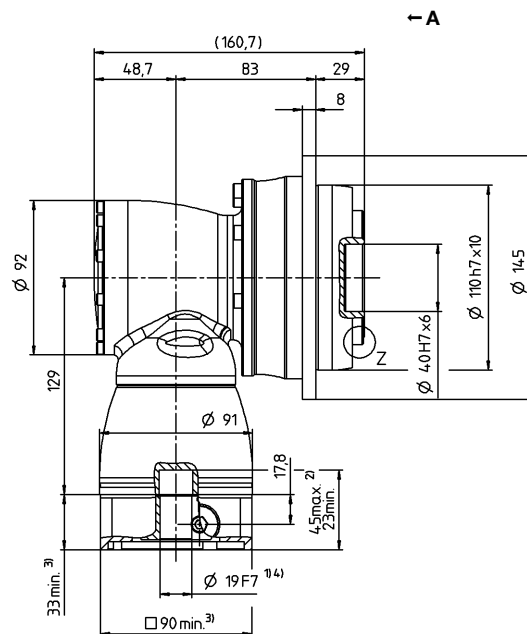
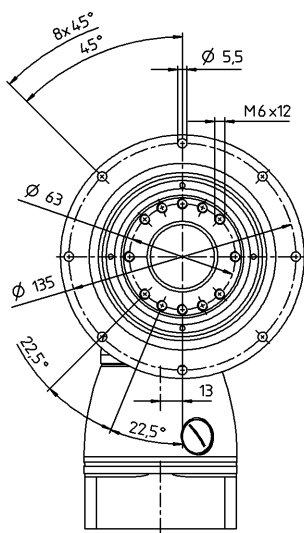
			2-stage										
Ratio	<i>i</i>		12	16	20	25	28	35	40	49	50	70	100
Max. torque <sup>a) b)</sup>	$T_{2a}$	Nm	336	336	380	380	352	352	200	352	250	350	352
		in.lb	2974	2974	3363	3363	3115	3115	1770	3115	2213	3098	3115
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)	$T_{2B}$	Nm	280	280	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 <sup>a) b)</sup> (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 $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$	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 <sup>b)</sup> (at $n_i = 3000$ 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 $\leq 4$ / Reduced $\leq 2$										
Torsional rigidity <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	4800										
		lb <sub>f</sub>	1080										
Max. tilting moment	$M_{2KMax}$	Nm	440										
		in.lb	3894										
Efficiency at full load	$\eta$	%	94										
Service life <sup>f)</sup>	$L_h$	h	> 20000										
Weight (incl. standard adapter plate)	$m$	kg	9										
		lb <sub>m</sub>	20										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	dB(A)	$\leq 68$										
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 <sup>®</sup> )			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 <sup>2</sup>	1.43	1.18	1.16	1.04	1.14	0.94	0.89	0.95	0.89	0.89
			10 <sup>-3</sup> in.lb.s <sup>2</sup>	1.27	1.04	1.03	0.92	1.01	0.83	0.79	0.84	0.79	0.79
	H 28	$J_1$	kgcm <sup>2</sup>	2.85	2.59	2.57	2.45	2.56	2.4	2.31	2.37	2.3	2.3
			10 <sup>-3</sup> in.lb.s <sup>2</sup>	2.52	2.29	2.27	2.17	2.27	2.12	2.04	2.1	2.04	2.04

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

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

Motor shaft diameter [mm]

2-stage

up to 19/28<sup>4)</sup>  
(E<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

# TPK+ 025 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 <sup>a) b)</sup>	$T_{2a}$	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 <sup>b)</sup> (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 <sup>a) b)</sup> (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 $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$	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 <sup>b)</sup> (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 $\leq 4$ / Reduced $\leq 2$													
Torsional rigidity <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	4800													
		lb <sub>f</sub>	1080													
Max. tilting moment	$M_{2KMax}$	Nm	440													
		in.lb	3894													
Efficiency at full load	$\eta$	%	92													
Service life <sup>f)</sup>	$L_h$	h	> 20000													
Weight (incl. standard adapter plate)	$m$	kg	9.8													
		lb <sub>m</sub>	22													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	dB(A)	$\leq 68$													
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 <sup>®</sup> )			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]	C	14	$J_1$	kgcm <sup>2</sup>	0.28	0.23	0.24	0.23	0.21	0.2	0.19	0.18	0.19	0.18	0.18	0.18
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	0.25	0.2	0.21	0.2	0.19	0.18	0.17	0.16	0.17	0.16	0.16	0.16
	E	19	$J_1$	kgcm <sup>2</sup>	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 <sup>-3</sup> in.lb.s <sup>2</sup>	0.64	0.56	0.6	0.6	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56

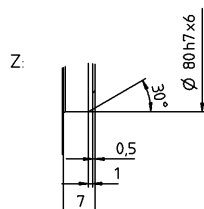
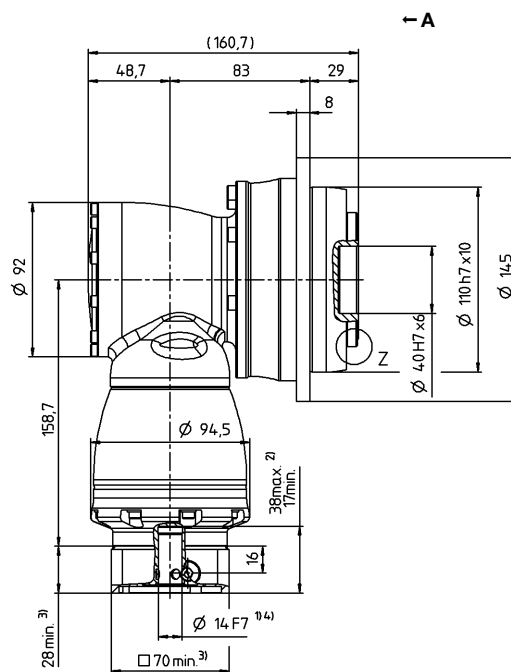
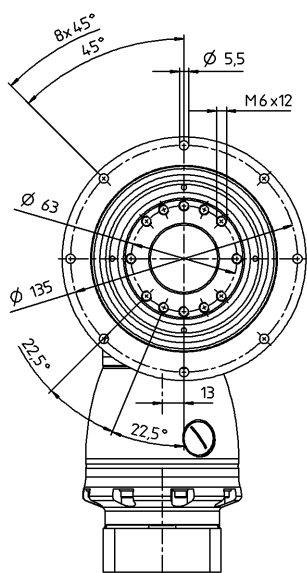
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Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

View A

Motor shaft diameter [mm]

3-stage

up to 14/19<sup>4)</sup>  
(C<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

Hypoid gearboxes

TPK+

MF

# TPK+ 050 MF 2-stage

				2-stage											
Ratio			<i>i</i>		12	16	20	25	28	35	40	49	50	70	100
Max. torque <sup>a) b)</sup>			<i>T</i> <sub>2a</sub>	<i>Nm</i>	816	816	992	992	868	868	500	868	625	868	720
				<i>in.lb</i>	7222	7222	8780	8780	7682	7682	4425	7682	5532	7682	6373
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)			<i>T</i> <sub>2B</sub>	<i>Nm</i>	680	680	840	840	840	840	500	840	625	840	648
				<i>in.lb</i>	6019	6019	7435	7435	7435	7435	4425	7435	5532	7435	5735
Nominal torque (at <i>n</i> <sub>n</sub> )			<i>T</i> <sub>2N</sub>	<i>Nm</i>	370	370	370	370	370	370	320	370	370	370	240
				<i>in.lb</i>	3275	3275	3275	3275	3275	3275	2832	3275	3275	3275	2124
Emergency stop torque <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			<i>T</i> <sub>2Not</sub>	<i>Nm</i>	880	1040	1250	1250	1250	1250	1000	1250	1250	1250	1250
				<i>in.lb</i>	7789	9205	11064	11064	11064	11064	8851	11064	11064	11064	11064
Permitted average input speed (at <i>T</i> <sub>2n</sub> and 20 °C ambient temperature) <sup>d)</sup>			<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	1900	2300	2300	2600	2300	2300	2300	2300	2300	2300	2300
Max. input speed			<i>n</i> <sub>1Max</sub>	<i>rpm</i>	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> <sub>012</sub>	<i>Nm</i>	5.6	4.3	4.2	3.4	4.1	4.7	3.3	4.1	3.3	3.3	3.3
				<i>in.lb</i>	50	38	37	30	36	42	29	36	29	29	29
Max. backlash			<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 4 / Reduced ≤ 2										
Torsional rigidity <sup>b)</sup>			<i>C</i> <sub>t21</sub>	<i>Nm/arcmin</i>	87	91	111	119	123	127	96	127	115	125	112
				<i>in.lb/arcmin</i>	770	805	982	1053	1089	1124	850	1124	1018	1106	991
Tilting rigidity			<i>C</i> <sub>2K</sub>	<i>Nm/arcmin</i>	560										
				<i>in.lb/arcmin</i>	4956										
Max. axial force <sup>c)</sup>			<i>F</i> <sub>2AMax</sub>	<i>N</i>	6130										
				<i>lb<sub>f</sub></i>	1379										
Max. tilting moment			<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	1335										
				<i>in.lb</i>	11816										
Efficiency at full load			<i>η</i>	%	94										
Service life <sup>f)</sup>			<i>L</i> <sub>h</sub>	<i>h</i>	> 20000										
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	17										
				<i>lb<sub>m</sub></i>	38										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )			<i>L</i> <sub>PA</sub>	<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										
Metal bellows coupling (recommended product type – validate sizing with cymex <sup>®</sup> )					BCT - 00300AAX - 080.000										
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	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	4.56	3.76	3.71	3.28	3.66	3	2.79	3.1	2.78	2.77	2.77
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	4.04	3.33	3.28	2.9	3.24	2.66	2.47	2.74	2.46	2.45	2.45
	K	38	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	11.7	10.9	10.9	10.4	10.8	10.3	9.95	10.4	9.94	9.94	9.94
<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>				10.35	9.65	9.65	9.2	9.56	9.12	8.81	9.2	8.8	8.8	8.8	

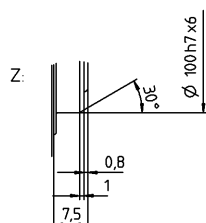
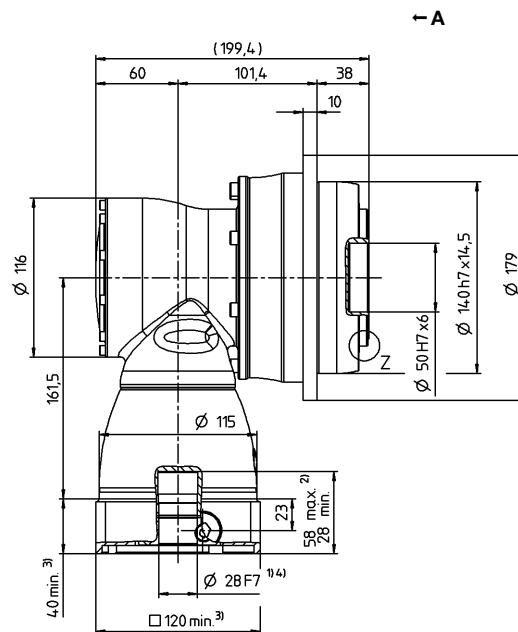
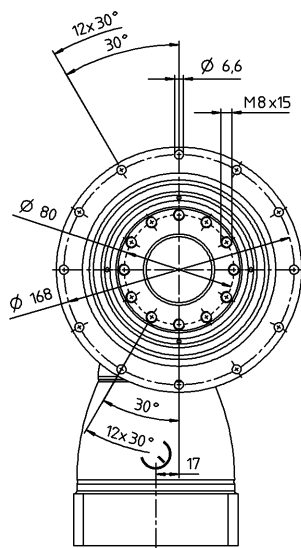
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

View A

Motor shaft diameter [mm]

2-stage

up to 28/38<sup>4)</sup>  
(H<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

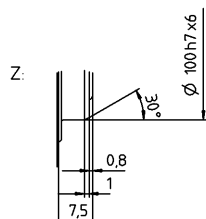
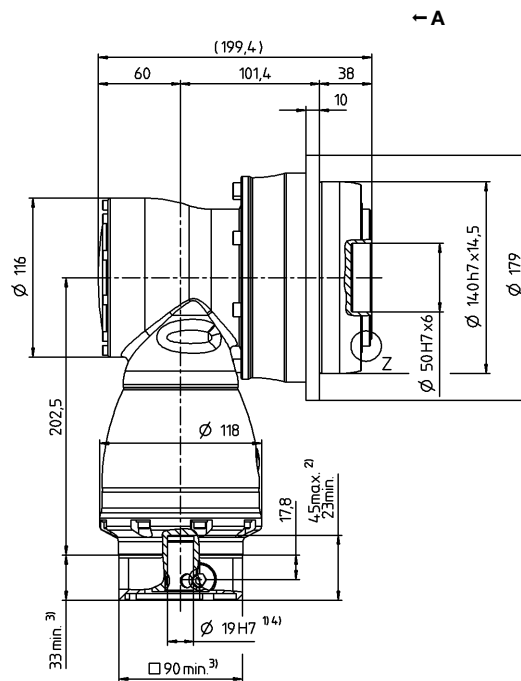
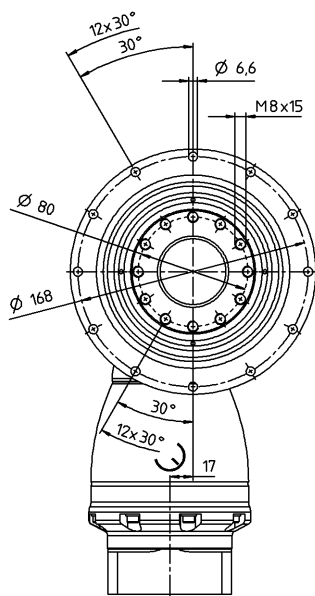
# TPK+ 050 MF 3-stage

			3-stage													
Ratio	<i>i</i>		64	84	100	125	140	175	200	250	280	350	400	500	700	1000
Max. torque <sup>a) b)</sup>	$T_{2a}$	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	7682	7682	5310	6638	7682	6373
Max. acceleration torque <sup>b)</sup> (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 $n_{IN}$ )	$T_{2N}$	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 <sup>a) b)</sup> (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 $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$	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 <sup>b)</sup> (at $n_i = 3000$ 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 $\leq 4$ / Reduced $\leq 2$													
Torsional rigidity <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	6130													
		lb <sub>f</sub>	1379													
Max. tilting moment	$M_{2KMax}$	Nm	1335													
		in.lb	11816													
Efficiency at full load	$\eta$	%	92													
Service life <sup>f)</sup>	$L_h$	h	> 20000													
Weight (incl. standard adapter plate)	$m$	kg	18.7													
		lb <sub>m</sub>	41													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	dB(A)	$\leq 68$													
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 <sup>®</sup> )			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]	E 19	$J_1$	kgcm <sup>2</sup>	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 <sup>-3</sup> in.lb.s <sup>2</sup>	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
	G 24	$J_1$	kgcm <sup>2</sup>	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 <sup>-3</sup> in.lb.s <sup>2</sup>	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<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

up to 19/24 <sup>4)</sup>  
(E<sup>5</sup>)/G) clamping  
hub diameter



5) Standard clamping hub diameter



# TPK<sup>+</sup> 110 MF 2-stage

			2-stage										
Ratio	<i>i</i>		12	16	20	25	28	35	40	49	50	70	100
Max. torque <sup>a) b)</sup>	$T_{2a}$	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 <sup>b)</sup> (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 $n_{IN}$ )	$T_{2N}$	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 <sup>a) b)</sup> (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 $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$	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 <sup>b)</sup> (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 <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	10050										
		lb <sub>f</sub>	2261										
Max. tilting moment	$M_{2KMax}$	Nm	3280										
		in.lb	29030										
Efficiency at full load	$\eta$	%	94										
Service life <sup>f)</sup>	$L_h$	h	> 20000										
Weight (incl. standard adapter plate)	$m$	kg	41										
		lb <sub>m</sub>	91										
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	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 <sup>®</sup> )			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 <sup>2</sup>	24.3	19	18.7	16.1	18.5	15.7	12.8	17.5	12.7	12.7
			10 <sup>-3</sup> in.lb.s <sup>2</sup>	21.51	16.82	16.55	14.25	16.37	13.89	11.33	15.49	11.24	11.24

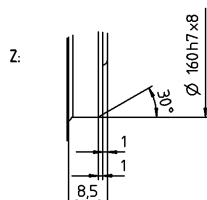
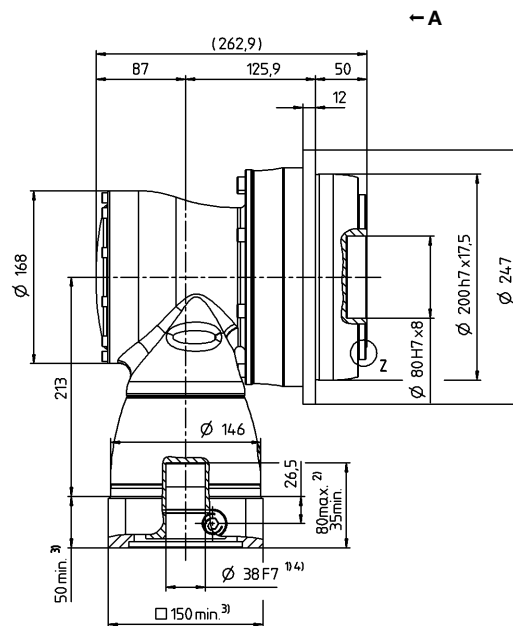
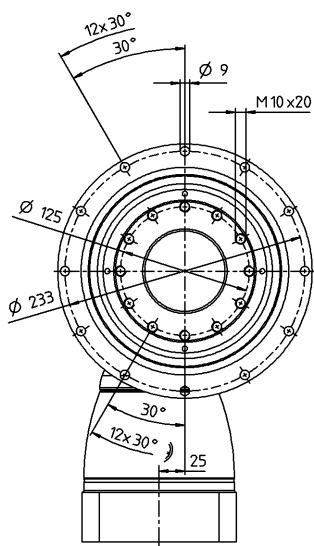
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$   
<sup>b)</sup> Valid for standard clamping hub diameter  
<sup>c)</sup> Refers to center of the output shaft or flange  
<sup>d)</sup> Please reduce input speed at higher ambient temperatures  
<sup>f)</sup> Please contact us to discuss application-specific service lifetimes

View A

Motor shaft diameter [mm]

2-stage

up to 38 <sup>4)</sup> (K) <sup>5)</sup>  
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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

Hypoid gearboxes

TPK+

MF

# TPK<sup>+</sup> 110 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 <sup>a) b)</sup>	$T_{2a}$	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 <sup>b)</sup> (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 <sup>a) b)</sup> (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 $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$	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 <sup>b)</sup> (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 <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	10050													
		lb <sub>f</sub>	2261													
Max. tilting moment	$M_{2KMax}$	Nm	3280													
		in.lb	29030													
Efficiency at full load	$\eta$	%	92													
Service life <sup>f)</sup>	$L_h$	h	> 20000													
Weight (incl. standard adapter plate)	$m$	kg	45.4													
		lb <sub>m</sub>	100													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	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 <sup>®</sup> )			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]	G	24	$J_1$	kgcm <sup>2</sup>	3.97	2.82	3.36	3.22	2.82	2.75	2.5	2.47	2.5	2.44	2.42	2.42
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	3.51	2.5	2.97	2.85	2.5	2.43	2.21	2.19	2.21	2.16	2.14	2.14
	K	38	$J_1$	kgcm <sup>2</sup>	10.9	9.74	10.3	10.1	9.74	9.66	9.41	9.38	9.41	9.38	9.33	9.33
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	9.65	8.62	9.12	8.94	8.62	8.55	8.33	8.3	8.33	8.3	8.26	8.26

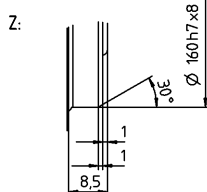
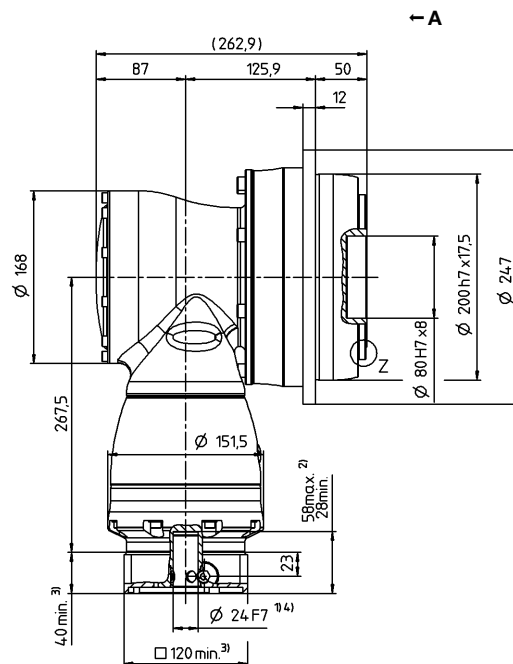
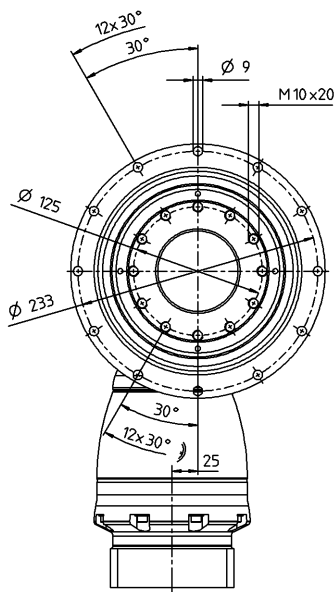
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Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

View A

Motor shaft diameter [mm]

3-stage

up to 24/38<sup>4)</sup>  
(G<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

# TPK+ 300 MF 2-stage

			2-stage							
Ratio	<i>i</i>		15	20	25	35	49	50	70	100
Max. torque <sup>a) b)</sup>	$T_{2a}$	Nm	3840	3840	3840	5250	3840	2350	3290	2800
		in.lb	33987	33987	33987	46467	33987	20799	29119	24782
Max. acceleration torque <sup>b)</sup> (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 <sup>a) b)</sup> (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 $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$	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 <sup>b)</sup> (at $n_i = 3000$ 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 <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	33000							
		lb <sub>f</sub>	7425							
Max. tilting moment	$M_{2KMax}$	Nm	5900							
		in.lb	52220							
Efficiency at full load	$\eta$	%	94							
Service life <sup>f)</sup>	$L_h$	h	> 20000							
Weight (incl. standard adapter plate)	$m$	kg	83							
		lb <sub>m</sub>	183							
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	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 <sup>®</sup> )			-							
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 <sup>2</sup>	74	52	43	43	35	30	30
			10 <sup>-3</sup> in.lb.s <sup>2</sup>	65.49	46.02	38.06	38.06	30.98	26.55	26.55

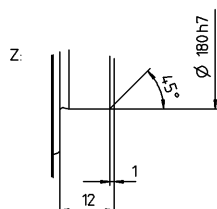
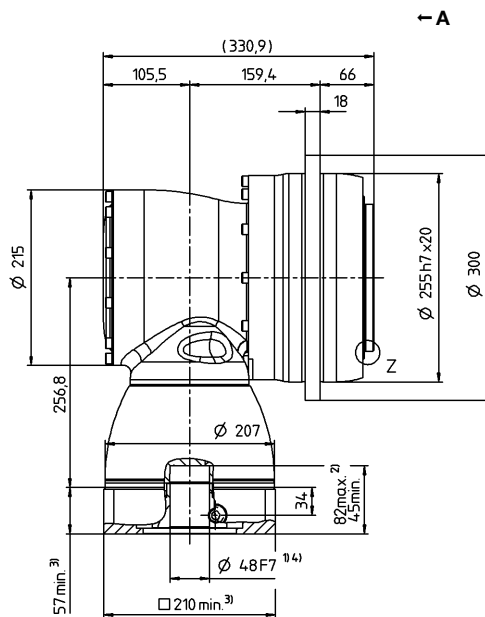
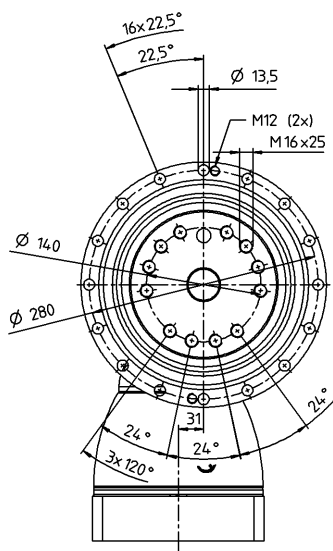
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

View A

Motor shaft diameter [mm]

2-stage

up to 48 <sup>4)</sup> (M) <sup>5)</sup>  
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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

# TPK+ 300 MF 3-stage

				3-stage											
Ratio	<i>i</i>			63	100	125	140	175	200	250	280	350	500	700	1000
Max. torque <sup>a) b)</sup>	$T_{2a}$	Nm		5250	3840	3840	3840	3840	3840	3840	5250	5250	2820	3948	2800
		in.lb		46467	33987	33987	33987	33987	33987	33987	46467	46467	24959	34943	24782
Max. acceleration torque <sup>b)</sup> (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	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	15931	15931	15931	15931	14161
Emergency stop torque <sup>a) b)</sup> (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	65053	65053	39829	55760	77445
Permitted average input speed (at $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$		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 <sup>b)</sup> (at $n_i$ = 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 <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N		33000											
		lb <sub>f</sub>		7425											
Max. tilting moment	$M_{2KMax}$	Nm		5900											
		in.lb		52220											
Efficiency at full load	$\eta$	%		92											
Service life <sup>f)</sup>	$L_h$	h		> 20000											
Weight (incl. standard adapter plate)	$m$	kg		87											
		lb <sub>m</sub>		192											
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	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 <sup>®</sup> )				-											
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 <sup>2</sup>	17.8	14.1	12.1	11	10.8	10.2	10.1	10.1	10	9.9	9.9
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	15.75	12.48	10.71	9.74	9.56	9.03	8.94	8.94	8.85	8.76	8.76
	M	48	$J_1$	kgcm <sup>2</sup>	32.5	28.8	26.8	25.7	25.5	24.9	24.8	24.9	24.8	24.6	24.6
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	28.76	25.49	23.72	22.74	22.57	22.04	21.95	22.04	21.95	21.77	21.77

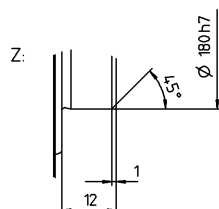
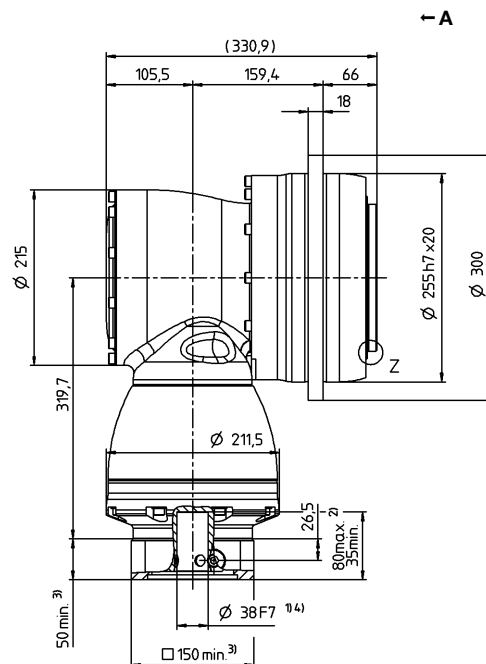
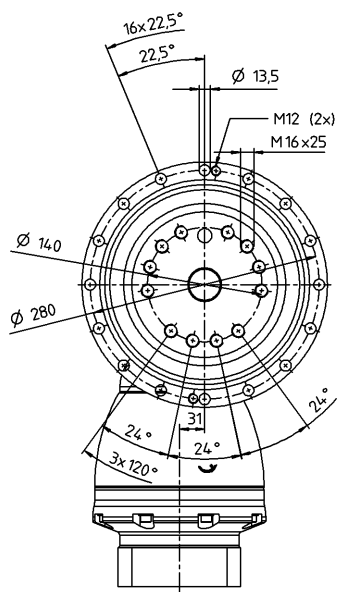
Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)  
Please contact us for optimum sizing at S1 conditions (Continuous operation).

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

View A

Motor shaft diameter [mm]

3-stage

up to 38/48<sup>4)</sup>  
(K<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer  
motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a  
bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter



# TPK+ 500 MF 3-stage

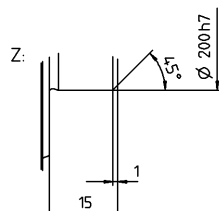
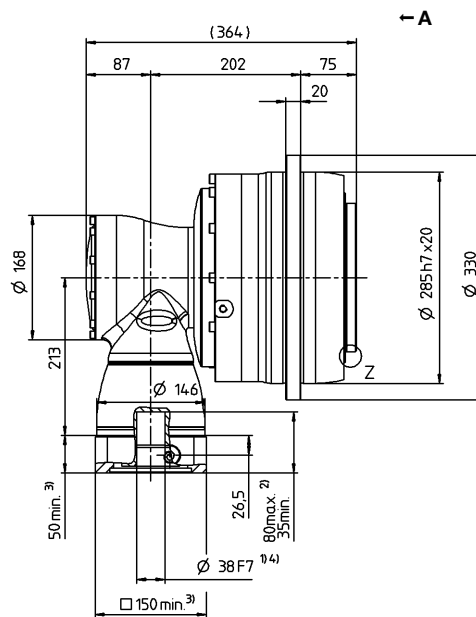
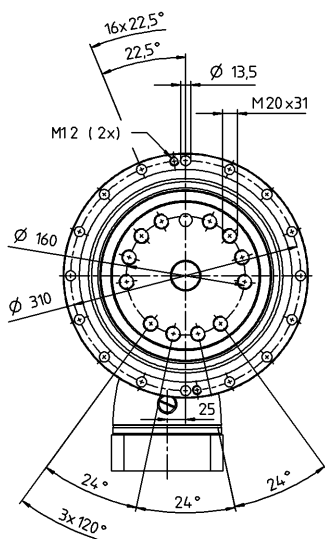
			3-stage				
Ratio	<i>i</i>		100	175	350	500	1000
Max. torque <sup>a) b)</sup>	$T_{2a}$	Nm	5446	6250	6808	4975	4800
		in.lb	48201	55318	60256	44033	42484
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)	$T_{2B}$	Nm	5446	6250	6808	4975	4800
		in.lb	48201	55318	60256	44033	42484
Nominal torque (at $n_n$ )	$T_{2N}$	Nm	3350	3800	3800	2900	2900
		in.lb	29650	33633	33633	25667	25667
Emergency stop torque <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)	$T_{2Not}$	Nm	10000	11250	14000	15000	15000
		in.lb	88508	99572	123911	132762	132762
Permitted average input speed (at $T_{2N}$ and 20 °C ambient temperature) <sup>d)</sup>	$n_{1N}$	$n_{1T}$	2100	1900	1900	1900	1900
Max. input speed	$n_{1Max}$	rpm	5000	5000	5000	5000	5000
Mean no load running torque <sup>b)</sup> (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	$T_{012}$	Nm	7.2	11	7.8	7.8	7.8
		in.lb	64	97	69	69	69
Max. backlash	$j_t$	arcmin	Standard $\leq 3.3$ / Reduced $\leq 2.3$				
Torsional rigidity <sup>b)</sup>	$C_{t21}$	Nm/arcmin	1250	1350	1350	1280	1050
		in.lb/arcmin	11064	11949	11949	11329	9293
Tilting rigidity	$C_{2K}$	Nm/arcmin	9480				
		in.lb/arcmin	83906				
Max. axial force <sup>c)</sup>	$F_{2AMax}$	N	50000				
		lb <sub>f</sub>	11250				
Max. tilting moment	$M_{2KMax}$	Nm	8800				
		in.lb	77887				
Efficiency at full load	$\eta$	%	92				
Service life <sup>f)</sup>	$L_h$	h	> 20000				
Weight (incl. standard adapter plate)	$m$	kg	96				
		lb <sub>m</sub>	212				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	dB(A)	$\leq 71$				
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 <sup>®</sup> )			-				
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 <sup>2</sup>	16.7	16.5	16.4	16.4
			10 <sup>-3</sup> in.lb.s <sup>2</sup>	14.78	14.6	14.51	14.51

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

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$   
<sup>b)</sup> Valid for standard clamping hub diameter  
<sup>c)</sup> Refers to center of the output shaft or flange  
<sup>d)</sup> Please reduce input speed at higher ambient temperatures  
<sup>f)</sup> Please contact us to discuss application-specific service lifetimes

## 3-stage

up to 38<sup>4)</sup> (K)<sup>5)</sup>  
clamping hub  
diameter



## Hypoid gearboxes

TPK<sup>+</sup>

MF

5) Standard clamping hub diameter

# TPK+ 025 MA 3-/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 <sup>a) b)</sup>			T <sub>2a</sub>	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 <sup>b)</sup> (max. 1000 cycles per hour)			T <sub>2B</sub>	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 <sub>n</sub> )			T <sub>2N</sub>	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 <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			T <sub>2Not</sub>	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 <sub>2N</sub> and 20 °C ambient temperature) <sup>d)</sup>			n <sub>1N</sub>	n <sub>1T</sub>	2400	2600	2900	2900	2900	2900	2900	4300	4300	4300	4300	4300	4300	5400	5400	5400
Max. input speed			n <sub>1Max</sub>	rpm	7500	7500	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000
Mean no load running torque <sup>b)</sup> (at n <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)			T <sub>012</sub>	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
Max. backlash			j <sub>t</sub>	arcmin	Standard ≤ 1.3															
Torsional rigidity <sup>b)</sup>			C <sub>121</sub>	Nm/arcmin	95	95	96	99	95	94	101	95	101	98	98	102	102	101	101	98
				in.lb/arcmin	841	841	850	876	841	832	894	841	894	867	867	903	903	894	894	867
Tilting rigidity			C <sub>2K</sub>	Nm/arcmin	550															
				in.lb/arcmin	4868															
Max. axial force <sup>c)</sup>			F <sub>2AMax</sub>	N	4800															
				lb <sub>f</sub>	1080															
Max. tilting moment			M <sub>2KMax</sub>	Nm	550															
				in.lb	4868															
Efficiency at full load			η	%	92								90							
Service life <sup>f)</sup>			L <sub>h</sub>	h	> 20000															
Weight (incl. standard adapter plate)			m	kg	8.4								8.7							
				lb <sub>m</sub>	19								19							
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )			L <sub>PA</sub>	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 <sup>®</sup> )					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 <sub>i</sub>	kgcm <sup>2</sup>	-	-	-	-	-	-	-	0.08	0.09	0.06	0.06	0.06	0.06	0.06	0.06	
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	-	-	-	-	-	-	-	0.07	0.08	0.05	0.05	0.05	0.05	0.05	0.05	
	C	14	J <sub>i</sub>	kgcm <sup>2</sup>	0.56	0.46	0.41	0.4	0.37	0.35	0.34	0.19	0.2	0.18	0.18	0.18	0.17	0.17	0.17	
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	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	0.15
	E	19	J <sub>i</sub>	kgcm <sup>2</sup>	0.91	0.81	0.76	0.76	0.72	0.7	0.7	-	-	-	-	-	-	-	-	
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	0.81	0.72	0.67	0.67	0.64	0.62	0.62	-	-	-	-	-	-	-	-	

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

<sup>a)</sup> At max. 10 %  $M_{2KMax}$

<sup>b)</sup> Valid for standard clamping hub diameter

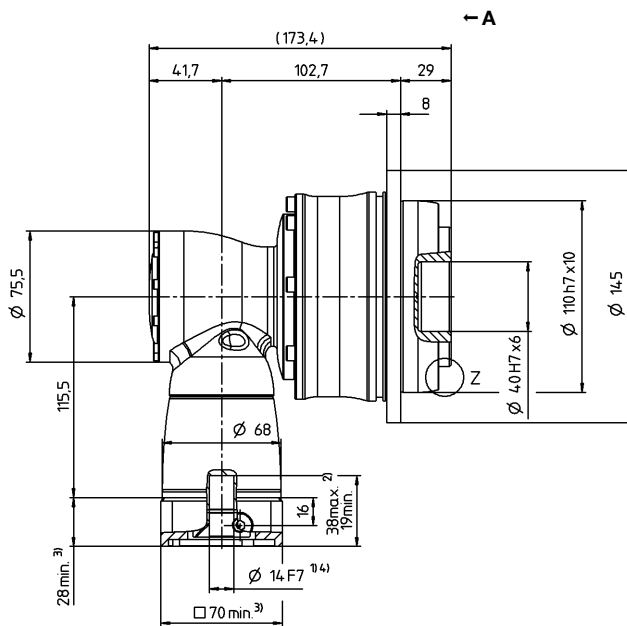
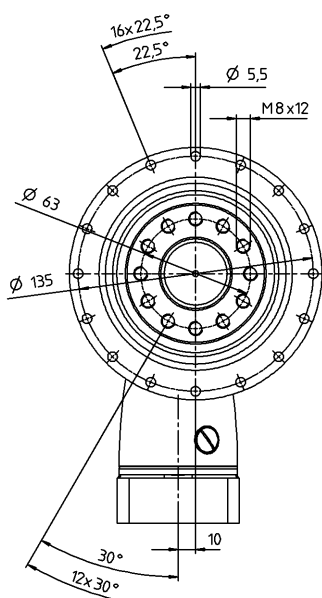
<sup>c)</sup> Refers to center of the output shaft or flange

<sup>d)</sup> Please reduce input speed at higher ambient temperatures

<sup>f)</sup> Please contact us to discuss  
application-specific service lifetimes

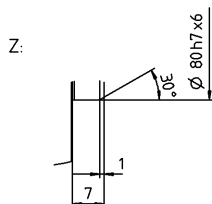
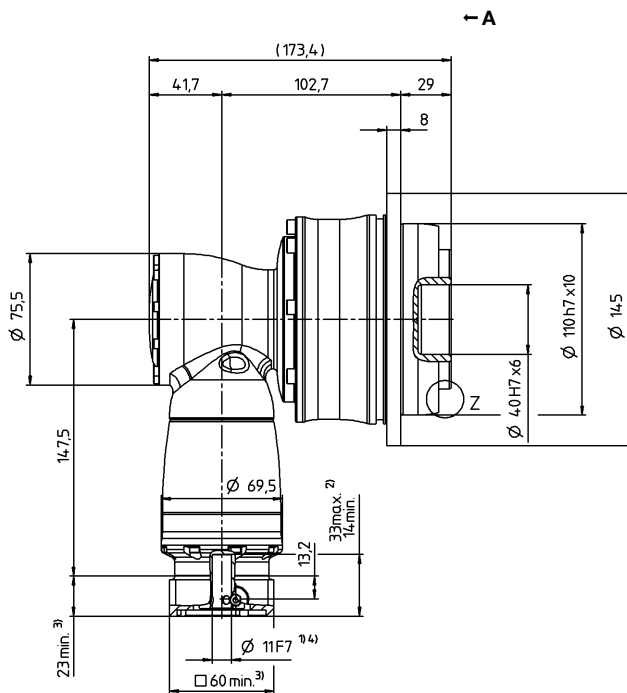
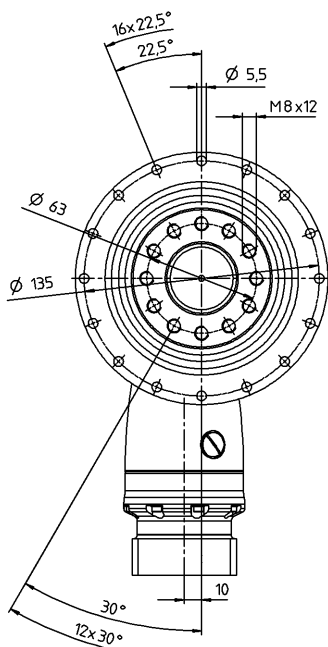
## 3-stage

up to 14/19 <sup>4)</sup>  
(C<sup>5</sup>)/E) clamping  
hub diameter



4-stage

up to 11/14 <sup>4)</sup>  
(B<sup>5</sup>)/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  
<sup>1)</sup> 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 wall thickness of 1 mm

5) Standard clamping hub diameter

# TPK+ 050 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 <sup>a) b)</sup>	<i>T</i> <sub>2a</sub>	<i>Nm</i>		1402	1402	1402	1402	1320	1100	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	
			<i>in.lb</i>	12409	12409	12409	12409	11683	9736	12409	12409	12409	12409	12409	12409	12409	12409	12409	12409	12409
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)	<i>T</i> <sub>2B</sub>	<i>Nm</i>		992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	
			<i>in.lb</i>	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780	8780
Nominal torque (at <i>n</i> <sub>in</sub> )	<i>T</i> <sub>2N</sub>	<i>Nm</i>		675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	
			<i>in.lb</i>	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974	5974
Emergency stop torque <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)	<i>T</i> <sub>2Not</sub>	<i>Nm</i>		2090	2375	2375	2375	2375	2375	2375	2090	2375	2375	2375	2375	2375	2375	2375	2375	
			<i>in.lb</i>	18498	21021	21021	21021	21021	21021	21021	18498	21021	21021	21021	21021	21021	21021	21021	21021	21021
Permitted average input speed (at <i>T</i> <sub>2N</sub> and 20 °C ambient temperature) <sup>d)</sup>	<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>		2200	2400	2700	2700	2700	2700	2700	3400	3400	3400	3400	3400	3400	4400	4400	4400	
Max. input speed	<i>n</i> <sub>1Max</sub>	<i>rpm</i>		7500	7500	7500	7500	7500	7500	7500	6000	6000	6000	6000	6000	6000	6000	6000	6000	
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)	<i>T</i> <sub>012</sub>	<i>Nm</i>		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	
			<i>in.lb</i>	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	<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 1.3																	
Torsional rigidity <sup>b)</sup>	<i>C</i> <sub>121</sub>	<i>Nm/arcmin</i>	202	203	205	210	205	205	215	202	214	208	209	214	214	215	215	217		
			<i>in.lb/arcmin</i>	1788	1797	1814	1859	1814	1814	1903	1788	1894	1841	1850	1894	1894	1903	1903	1921	
Tilting rigidity	<i>C</i> <sub>2K</sub>	<i>Nm/arcmin</i>	560																	
			<i>in.lb/arcmin</i>	4956																
Max. axial force <sup>c)</sup>	<i>F</i> <sub>2AMax</sub>	<i>N</i>	6130																	
			<i>lb<sub>f</sub></i>	1379																
Max. tilting moment	<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	1335																	
			<i>in.lb</i>	11816																
Efficiency at full load	<i>η</i>	%	92								90									
Service life <sup>f)</sup>	<i>L</i> <sub>h</sub>	<i>h</i>	> 20000																	
Weight (incl. standard adapter plate)	<i>m</i>	<i>kg</i>	16.9								17.5									
			<i>lb<sub>m</sub></i>	37								39								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	<i>L</i> <sub>PA</sub>	<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																	
Metal bellows coupling (recommended product type – validate sizing with cymex <sup>®</sup> )			BCT - 00300AAX - 080.000																	
Bore diameter of coupling on the application side		<i>mm</i>	X = 045.000 - 056.000																	
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	<i>J</i> <sub>1</sub>	<i>kgcm<sup>2</sup></i>	-	-	-	-	-	-	-	0.24	0.29	0.2	0.2	0.2	0.19	0.18	0.18	0.18
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	-	-	-	-	-	-	-	0.21	0.26	0.18	0.18	0.18	0.17	0.16	0.16	0.16
	E	19	<i>J</i> <sub>1</sub>	<i>kgcm<sup>2</sup></i>	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	0.63
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	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	0.56
	H	28	<i>J</i> <sub>1</sub>	<i>kgcm<sup>2</sup></i>	3.07	2.71	2.54	2.53	2.4	2.53	2.32	-	-	-	-	-	-	-	-	-
				<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	2.72	2.4	2.25	2.24	2.12	2.24	2.05	-	-	-	-	-	-	-	-	-

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

<sup>a)</sup> At max. 10 %  $M_{2KMax}$

<sup>b)</sup> Valid for standard clamping hub diameter

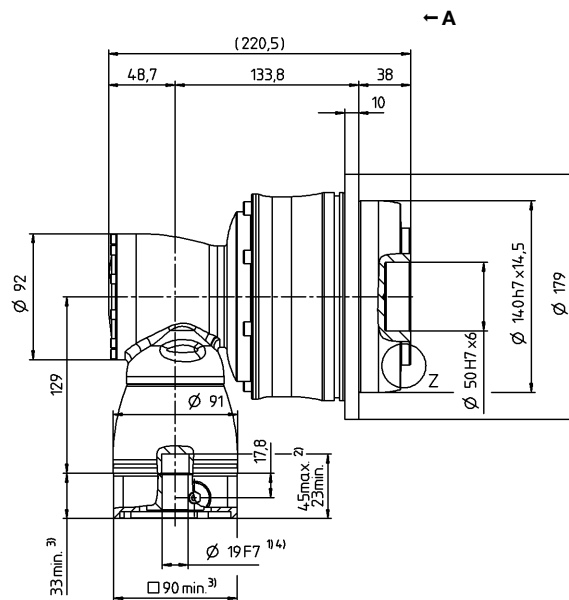
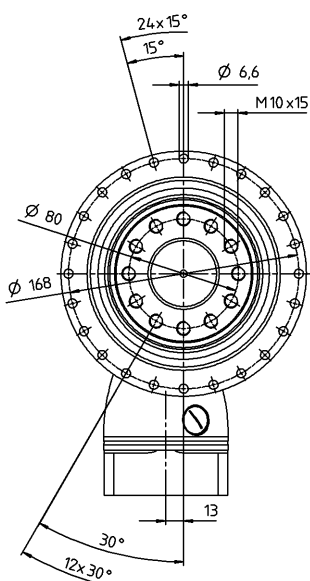
<sup>c)</sup> Refers to center of the output shaft or flange

<sup>d)</sup> Please reduce input speed at higher ambient temperatures

<sup>f)</sup> Please contact us to discuss  
application-specific service lifetimes

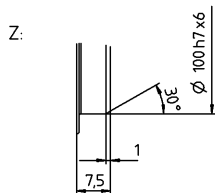
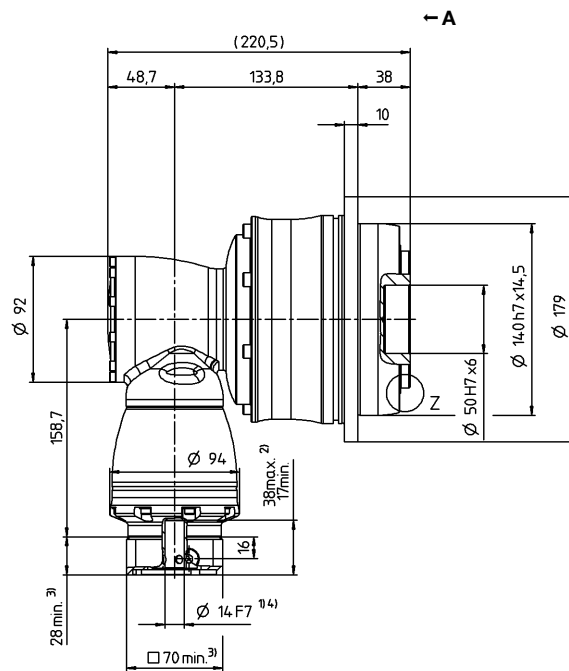
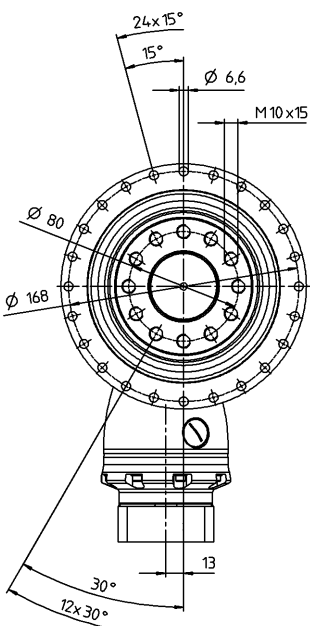
## 3-stage

up to 19/28<sup>4)</sup>  
(E<sup>5)</sup>/H) clamping  
hub diameter



## 4-stage

up to 14/19<sup>4)</sup>  
(C<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

# TPK<sup>+</sup> 110 MA 3-/4-stage

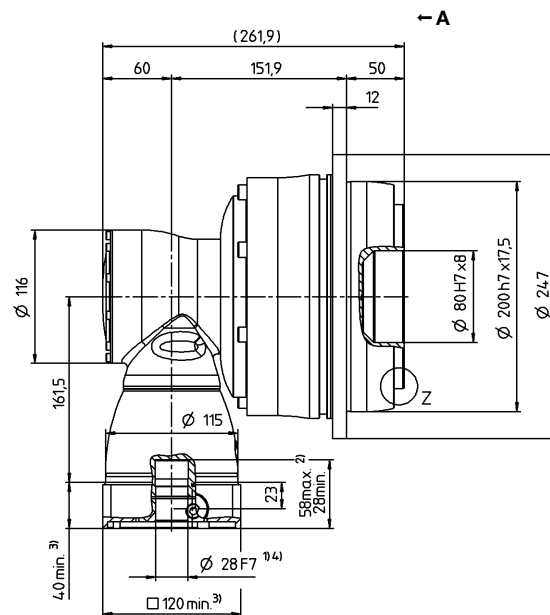
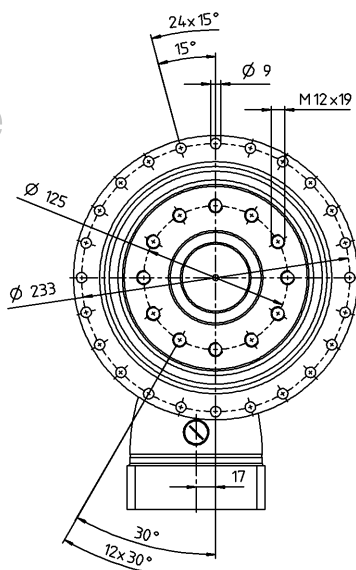
				3-stage								4-stage									
Ratio			<i>i</i>		66	88	110	137.5	154	220	385	330	462	577.5	770	1078	1540	2695	3850	5500	
Max. torque <sup>a) b)</sup>			<i>T</i> <sub>2a</sub>	<i>Nm</i>	3822	3822	3822	3822	3190	2750	3822	3822	3822	3822	3822	3822	3822	3822	3822	3822	3200
				<i>in.lb</i>	33828	33828	33828	33828	28234	24340	33828	33828	33828	33828	33828	33828	33828	33828	33828	33828	33828
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)			<i>T</i> <sub>2B</sub>	<i>Nm</i>	3100	3100	3100	3100	3100	2750	3100	3100	3100	3100	3100	3100	3100	3100	3100	3100	2400
				<i>in.lb</i>	27437	27437	27437	27437	27437	24340	27437	27437	27437	27437	27437	27437	27437	27437	27437	27437	27437
Nominal torque (at <i>n</i> <sub>IN</sub> )			<i>T</i> <sub>2N</sub>	<i>Nm</i>	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650	1400
				<i>in.lb</i>	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604	14604
Emergency stop torque <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			<i>T</i> <sub>2Not</sub>	<i>Nm</i>	4840	5720	5720	6500	5610	5500	6500	4840	6500	6050	6500	6500	6500	6500	6500	6500	6500
				<i>in.lb</i>	42838	50627	50627	57530	49653	48679	57530	42838	57530	53547	57530	57530	57530	57530	57530	57530	57530
Permitted average input speed (at <i>T</i> <sub>2N</sub> and 20 °C ambient temperature) <sup>d)</sup>			<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	2100	2300	2600	2600	2400	2400	2400	3000	3000	3000	3000	3000	3000	4100	4100	4100	
Max. input speed			<i>n</i> <sub>1Max</sub>	<i>rpm</i>	5500	5500	5500	5500	5500	5500	5500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>1</sub> = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> <sub>012</sub>	<i>Nm</i>	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	
				<i>in.lb</i>	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			<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 1.3																
Torsional rigidity <sup>b)</sup>			<i>C</i> <sub>121</sub>	<i>Nm/arcmin</i>	634	642	654	675	654	648	687	634	682	662	667	685	685	689	687	658	
				<i>in.lb/arcmin</i>	5611	5682	5788	5974	5788	5735	6080	5611	6036	5859	5903	6063	6063	6098	6080	5824	
Tilting rigidity			<i>C</i> <sub>2K</sub>	<i>Nm/arcmin</i>	1452																
				<i>in.lb/arcmin</i>	12851																
Max. axial force <sup>c)</sup>			<i>F</i> <sub>2AMax</sub>	<i>N</i>	10050																
				<i>lb<sub>f</sub></i>	2261																
Max. tilting moment			<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	3280																
				<i>in.lb</i>	29031																
Efficiency at full load			<i>η</i>	%	92								90								
Service life <sup>f)</sup>			<i>L</i> <sub>h</sub>	<i>h</i>	> 20000																
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	39.9								40.6								
				<i>lb<sub>m</sub></i>	88								90								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)			<i>L</i> <sub>PA</sub>	<i>dB(A)</i>	≤ 70																
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®)					BCT - 01500AAX - 125.000																
Bore diameter of coupling on the application side				<i>mm</i>	X = 055.000 - 070.000																
Mass moment of inertia (relates to the drive)  Clamping hub diameter [mm]	E	19	<i>J</i> <sub>1</sub>	<i>kgcm²</i>	-	-	-	-	-	-	-	0.89	1.06	0.76	0.76	0.76	0.69	0.68	0.68	0.68	
				<i>10<sup>-3</sup> in.lb.s²</i>	-	-	-	-	-	-	-	0.79	0.94	0.67	0.67	0.67	0.61	0.6	0.6	0.6	
	G	24	<i>J</i> <sub>1</sub>	<i>kgcm²</i>	-	-	-	-	-	-	-	2.46	2.63	2.33	2.32	2.32	2.26	2.25	2.25	2.25	
				<i>10<sup>-3</sup> in.lb.s²</i>	-	-	-	-	-	-	-	2.18	2.33	2.06	2.05	2.05	2	1.99	1.99	1.99	
	H	28	<i>J</i> <sub>1</sub>	<i>kgcm²</i>	5.48	4.27	3.64	3.58	3.14	2.87	2.84	-	-	-	-	-	-	-	-	-	
				<i>10<sup>-3</sup> in.lb.s²</i>	4.85	3.78	3.22	3.17	2.78	2.54	2.51	-	-	-	-	-	-	-	-	-	-
	K	38	<i>J</i> <sub>1</sub>	<i>kgcm²</i>	12.72	11.52	10.89	10.83	10.39	10.12	10.09	-	-	-	-	-	-	-	-	-	
				<i>10<sup>-3</sup> in.lb.s²</i>	11.26	10.2	9.64	9.58	9.2	8.96	8.93	-	-	-	-	-	-	-	-	-	

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

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$   
<sup>b)</sup> Valid for standard clamping hub diameter  
<sup>c)</sup> Refers to center of the output shaft or flange  
<sup>d)</sup> Please reduce input speed at higher ambient temperatures  
<sup>f)</sup> Please contact us to discuss application-specific service lifetimes

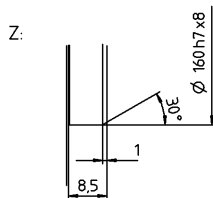
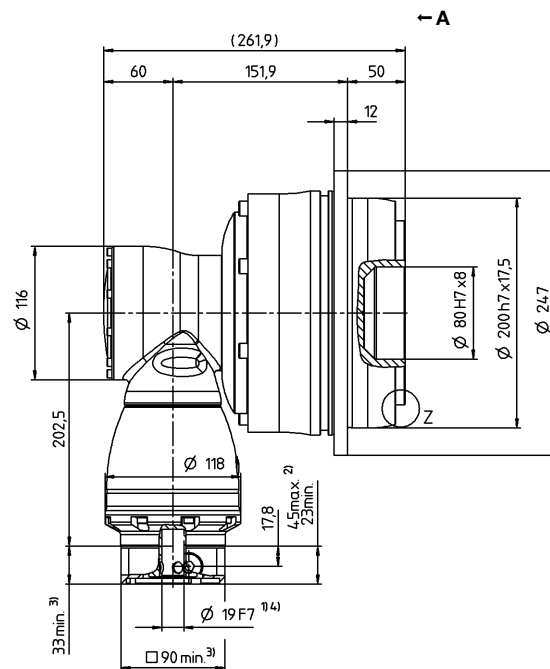
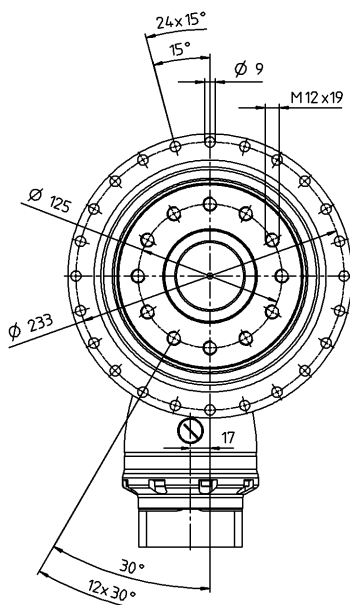
# 3-stage

up to 28/38<sup>4)</sup>  
(H<sup>5)</sup>/K) clamping  
hub diameter



# 4-stage

up to 19/24<sup>4)</sup>  
(E<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter



# TPK<sup>+</sup> 300 MA 3- / 4-stage

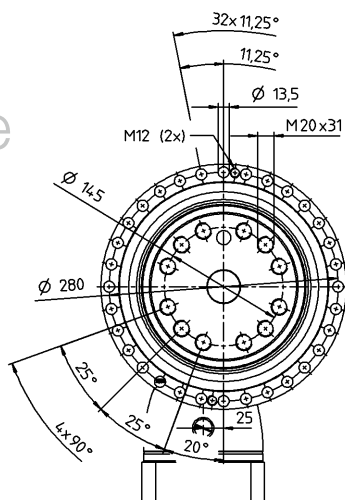
				3-stage								4-stage									
Ratio			<i>i</i>		66	88	110	137.5	154	220	385	330	462	577.5	770	1078	1540	2695	3850	5500	
Max. torque <sup>a) b)</sup>			<i>T</i> <sub>2a</sub>	<i>Nm</i>	7535	7535	7535	7535	5500	4620	7535	7535	7535	7535	7535	7535	7535	7535	7535	5473	
				<i>in.lb</i>	66691	66691	66691	66691	48679	40891	66691	66691	66691	66691	66691	66691	66691	66691	66691	66691	66691
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)			<i>T</i> <sub>2B</sub>	<i>Nm</i>	6600	6600	6600	6600	5500	4620	6600	6600	6600	6600	6600	6600	6600	6600	6600	4680	
				<i>in.lb</i>	58415	58415	58415	58415	48679	40891	58415	58415	58415	58415	58415	58415	58415	58415	58415	58415	58415
Nominal torque (at <i>n</i> <sub>n</sub> )			<i>T</i> <sub>2N</sub>	<i>Nm</i>	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	
				<i>in.lb</i>	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978	30978
Emergency stop torque <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			<i>T</i> <sub>2Not</sub>	<i>Nm</i>	8800	11000	11000	13750	9900	8800	15296	8800	15296	11000	13750	15296	15296	15296	15296	15333	
				<i>in.lb</i>	77887	97359	97359	121699	87623	77887	135382	77887	135382	97359	121699	135382	135382	135382	135382	135382	135709
Permitted average input speed (at <i>T</i> <sub>2n</sub> and 20 °C ambient temperature) <sup>d)</sup>			<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	1800	1900	2100	2100	1900	1900	1900	2800	2800	2800	2800	2800	2800	3100	3800	3800	
Max. input speed			<i>n</i> <sub>1Max</sub>	<i>rpm</i>	5000	5000	5000	5000	5000	5000	5000	4500	4500	4500	4500	4500	4500	4500	4500	4500	
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> <sub>012</sub>	<i>Nm</i>	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	
				<i>in.lb</i>	97	73	61	58	81	69	66	20	29	13	12	11	8.0	5.3	5.3	5.3	
Max. backlash			<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 3.3 / Reduced ≤ 1.8																
Torsional rigidity <sup>b)</sup>			<i>C</i> <sub>t21</sub>	<i>Nm/arcmin</i>	1099	1108	1114	960	1114	1111	979	1099	976	953	958	978	978	979	979	989	
				<i>in.lb/arcmin</i>	9727	9807	9860	8497	9860	9833	8665	9727	8638	8435	8479	8656	8656	8665	8665	8753	
Tilting rigidity			<i>C</i> <sub>2K</sub>	<i>Nm/arcmin</i>	5560																
				<i>in.lb/arcmin</i>	49210																
Max. axial force <sup>c)</sup>			<i>F</i> <sub>2AMax</sub>	<i>N</i>	33000																
				<i>lb<sub>f</sub></i>	7425																
Max. tilting moment			<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	6500																
				<i>in.lb</i>	57530																
Efficiency at full load			<i>η</i>	%	92								90								
Service life <sup>f)</sup>			<i>L</i> <sub>h</sub>	<i>h</i>	> 20000																
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	83								87								
				<i>lb<sub>m</sub></i>	183								192								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)			<i>L</i> <sub>PA</sub>	<i>dB(A)</i>	≤ 71																
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®)					BCT - 04000AAX - 145.000																
Bore diameter of coupling on the application side				<i>mm</i>	X = 070.000 - 100.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]			G	24	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	-	-	-	-	-	-	3.32	4.24	2.8	2.79	2.79	2.49	2.43	2.42	2.42
						<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	-	-	-	-	-	-	2.94	3.75	2.48	2.47	2.47	2.2	2.15	2.14	2.14
			K	38	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	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
<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	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	8.26		

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

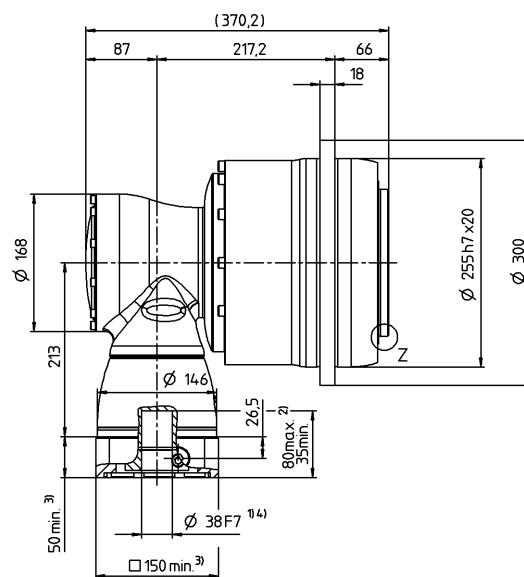
- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

# 3-stage

up to 38<sup>4)</sup> (K)<sup>5)</sup>  
clamping hub diameter

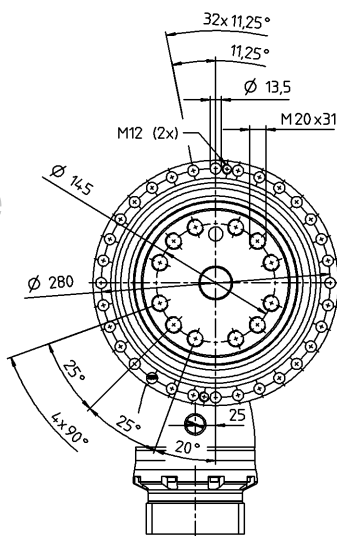


← A

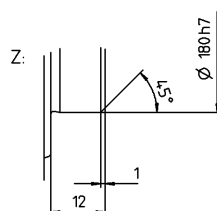
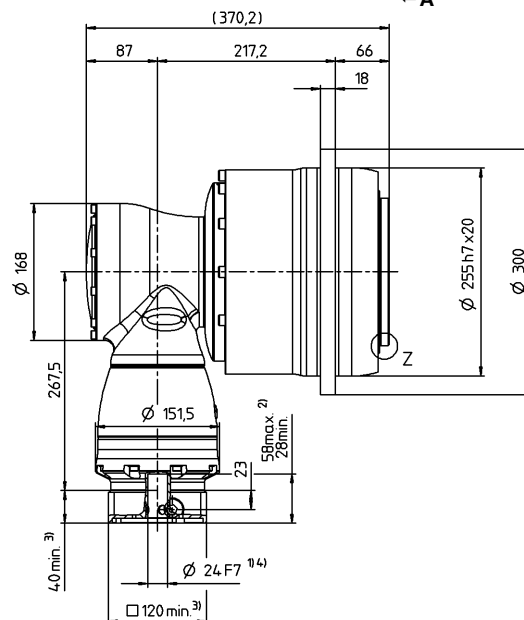


# 4-stage

up to 24/38<sup>4)</sup>  
(G<sup>5)</sup>/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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

# TPK<sup>+</sup> 500 MA 3- / 4-stage

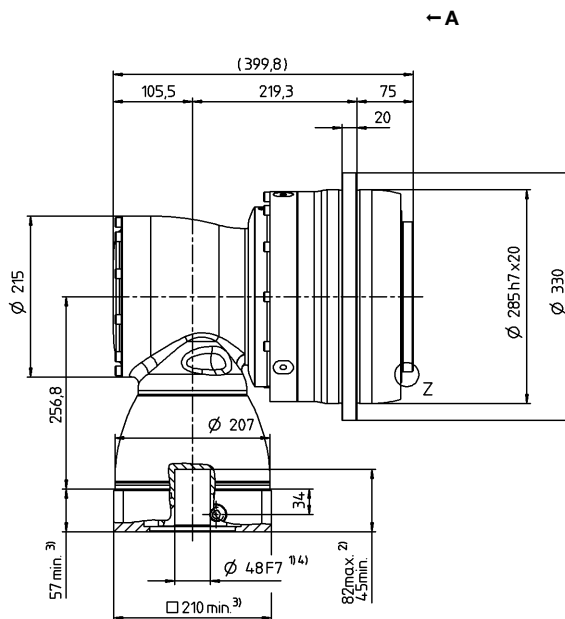
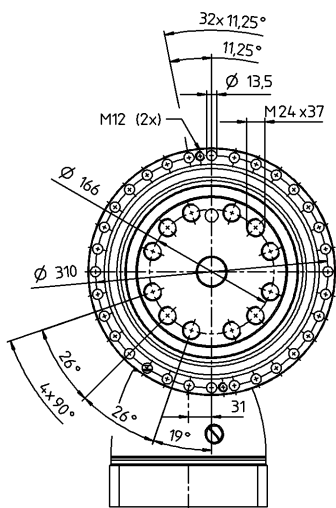
				3-stage								4-stage									
Ratio			<i>i</i>		66	88	110	137.5	154	220	385	330	462	577.5	770	1078	1540	2695	3850	5500	
Max. torque <sup>a) b)</sup>			<i>T</i> <sub>2a</sub>	<i>Nm</i>	10450	10450	10450	10450	10450	10340	10450	10450	10450	10450	10450	10450	10450	10450	10450	10450	10450
				<i>in.lb</i>	92491	92491	92491	92491	92491	91517	92491	92491	92491	92491	92491	92491	92491	92491	92491	92491	92491
Max. acceleration torque <sup>b)</sup> (max. 1000 cycles per hour)			<i>T</i> <sub>2B</sub>	<i>Nm</i>	10450	10450	10450	10450	10450	10340	10450	10450	10450	10450	10450	10450	10450	10450	10450	10450	8640
				<i>in.lb</i>	92491	92491	92491	92491	92491	91517	92491	92491	92491	92491	92491	92491	92491	92491	92491	92491	92491
Nominal torque (at <i>n</i> <sub>in</sub> )			<i>T</i> <sub>2N</sub>	<i>Nm</i>	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400
				<i>in.lb</i>	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794	47794
Emergency stop torque <sup>a) b)</sup> (permitted 1000 times during the service life of the gearbox)			<i>T</i> <sub>2Not</sub>	<i>Nm</i>	19800	23100	23100	25000	21340	19800	25000	19800	25000	24750	25000	25000	25000	25000	25000	25000	25000
				<i>in.lb</i>	175246	204453	204453	221270	188876	175246	221270	175246	221270	219057	221270	221270	221270	221270	221270	221270	221270
Permitted average input speed (at <i>T</i> <sub>2N</sub> and 20 °C ambient temperature) <sup>d)</sup>			<i>n</i> <sub>1N</sub>	<i>n</i> <sub>1T</sub>	1500	1700	1900	1900	1700	1700	1700	2600	2600	2600	2600	2600	2600	3100	3300	3300	
Max. input speed			<i>n</i> <sub>1Max</sub>	<i>rpm</i>	4500	4500	4500	4500	4500	4500	4500	4000	4000	4000	4000	4000	4000	4000	4000	4000	
Mean no load running torque <sup>b)</sup> (at <i>n</i> <sub>i</sub> = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> <sub>012</sub>	<i>Nm</i>	19	15	13	13	17	15	15	4.1	6	3	2.7	2.6	1.8	1.7	1.5	1.5	
				<i>in.lb</i>	168	133	115	115	150	133	133	36	53	27	24	23	16	15	13	13	
Max. backlash			<i>j</i> <sub>t</sub>	<i>arcmin</i>	Standard ≤ 3.3 / Reduced ≤ 1.8																
Torsional rigidity <sup>b)</sup>			<i>C</i> <sub>t21</sub>	<i>Nm/arcmin</i>	1879	1890	1901	1747	1899	1898	1772	1879	1766	1735	1742	1770	1770	1772	1772	1786	
				<i>in.lb/arcmin</i>	16631	16728	16825	15462	16808	16799	15684	16631	15631	15356	15418	15666	15666	15684	15684	15808	
Tilting rigidity			<i>C</i> <sub>2K</sub>	<i>Nm/arcmin</i>	9480																
				<i>in.lb/arcmin</i>	83906																
Max. axial force <sup>c)</sup>			<i>F</i> <sub>2AMax</sub>	<i>N</i>	50000																
				<i>lb<sub>f</sub></i>	11250																
Max. tilting moment			<i>M</i> <sub>2KMax</sub>	<i>Nm</i>	9500																
				<i>in.lb</i>	84083																
Efficiency at full load			<i>η</i>	%	92								90								
Service life <sup>f)</sup>			<i>L</i> <sub>h</sub>	<i>h</i>	> 20000																
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	120								124								
				<i>lb<sub>m</sub></i>	265								274								
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )			<i>L</i> <sub>PA</sub>	<i>dB(A)</i>	≤ 71																
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 <sup>®</sup> )					BCT - 10000AAX - 166.000																
Bore diameter of coupling on the application side				<i>mm</i>	X = 080.000 - 180.000																
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]			K 38	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	-	-	-	-	-	-	12.43	15.36	10.93	10.92	10.91	10.13	9.95	9.91	9.91	
					<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	-	-	-	-	-	-	11	13.59	9.67	9.66	9.66	8.97	8.81	8.77	8.77	
			M 48	<i>J</i> <sub>i</sub>	<i>kgcm<sup>2</sup></i>	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	24.62
<i>10<sup>-3</sup> in.lb.s<sup>2</sup></i>	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	21.79			

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

- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes

# 3-stage

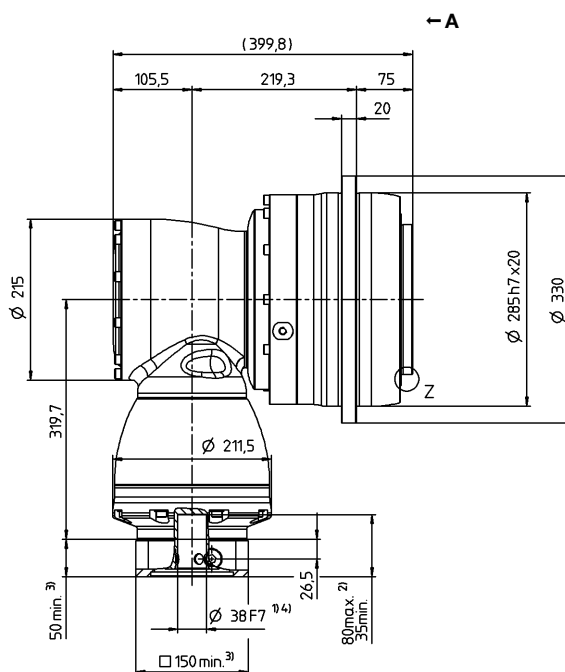
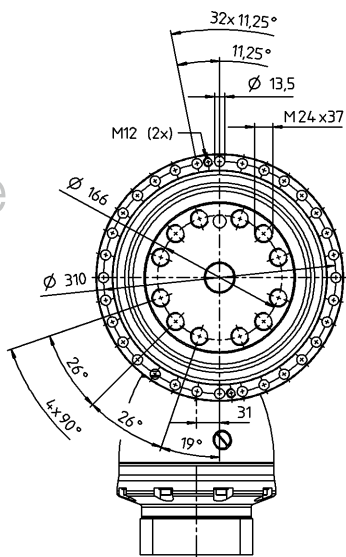
up to 48<sup>4)</sup> (M)<sup>5)</sup>  
clamping hub diameter



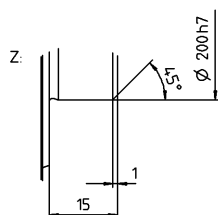
← A

# 4-stage

up to 38/48<sup>4)</sup>  
(K<sup>5)</sup> / M) 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

<sup>1)</sup> Check motor shaft fit

<sup>2)</sup> Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter