

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

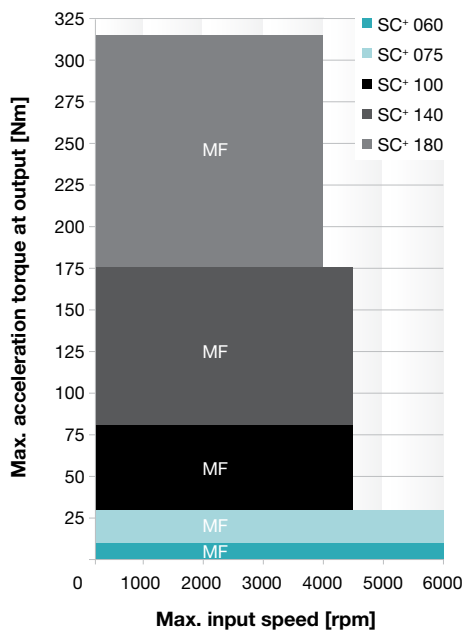


Low backlash right-angle gear-heads with output shaft or output flange. This gearhead series is used in dynamic applications with low transmission ratios and demanding requirements with regard to precision, torque, and efficiency.

Quick size selection

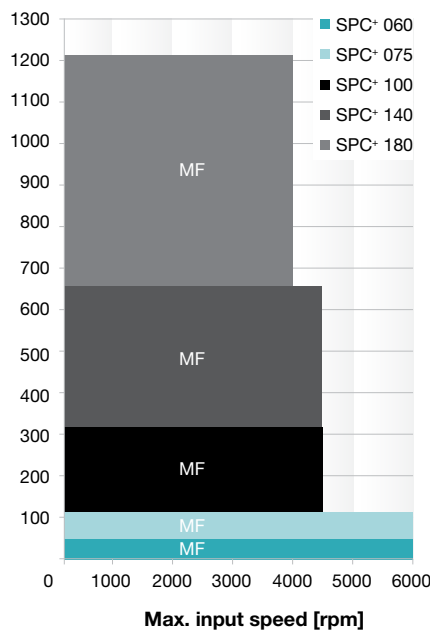
SC+ MF (example for $i = 1$)

For applications in cyclic operation (duty cycle $\leq 60\%$) or continuous operation (duty cycle $\geq 60\%$)



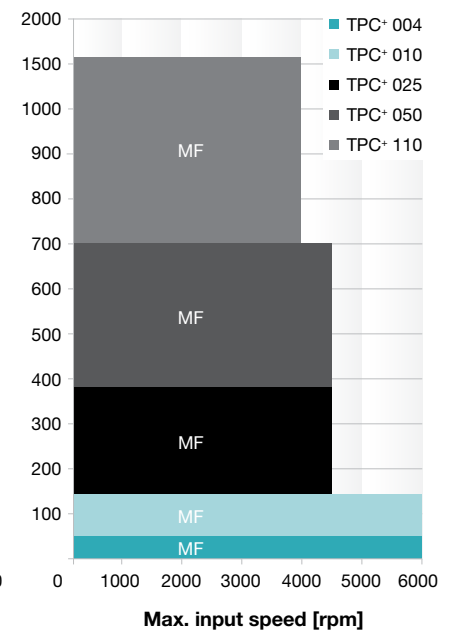
SPC+ MF (example for $i = 5$)

For applications in cyclic operation (duty cycle $\leq 60\%$) or continuous operation (duty cycle $\geq 60\%$)



TPC+ MF (example for $i = 5$)

For applications in cyclic operation (duty cycle $\leq 60\%$) or continuous operation (duty cycle $\geq 60\%$)



Versions and their uses

Features	SC+ MF version Catalog page 254	SPC+ MF version Catalog page 264	TPC+ MF version Catalog page 274
Power density	•••	•••	•••
Positioning accuracy (e.g clamped drives)	••	•••	•••
Highly dynamic applications	••	••	••
High output speeds	•••	••	••

Product features

Ratios ^{c)}		1 - 2	4 - 20	4 - 20
Backlash [arcmin] ^{c)}	Standard	≤ 4	≤ 4	≤ 4
	Reduced	-	≤ 2	≤ 2
Output type				
Smooth output shaft		•	•	
Keywayed output shaft		•	•	
Output shaft with involute toothing			•	
Mounted shaft			•	
Output flange				•
System output with pinion				•
Input type				
Motor attachment version		•	•	•
Model				
Food-grade lubrication ^{a) b)}		•	•	•
Accessories				
Coupling		•	•	•
Rack		•	•	•
Pinion		•	•	•
Shrink disk			•	

^{a)} Power reduction: Technical data available upon request ^{b)} Please contact WITTENSTEIN alpha ^{c)} Based on reference sizes

Right-angle gearheads
High End



SC+ 060 MF 1-stage

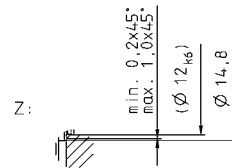
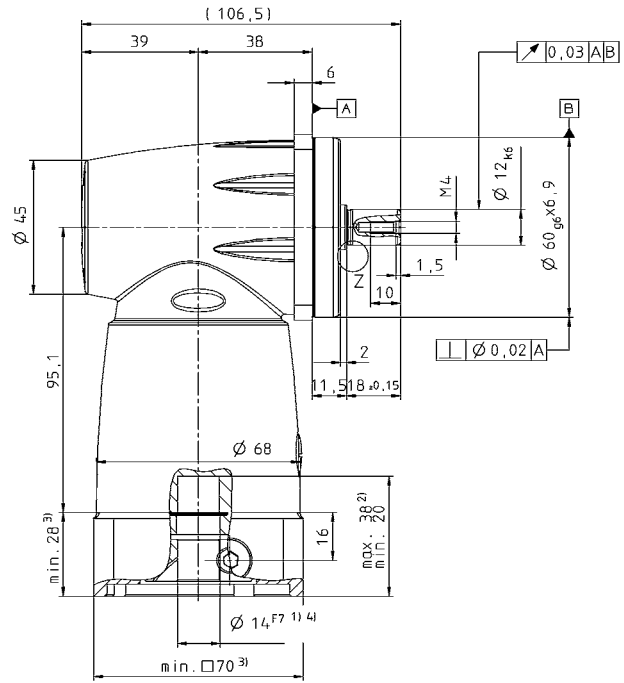
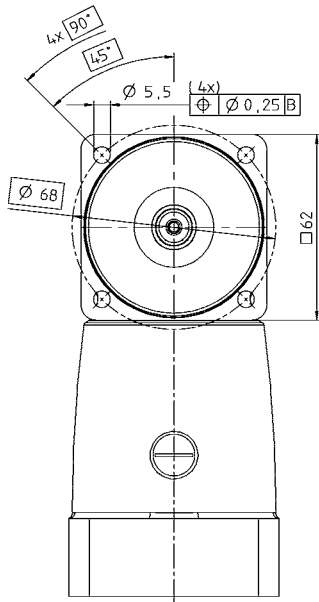
				1-stage		
Ratio	<i>i</i>		1		2	
Max. acceleration torque <small>(max. 1000 cycles per hour)</small>	T_{2B}	Nm	10	10		
		in.lb	89	89		
Nominal output torque <small>(with n_{1N})</small>	T_{2N}	Nm	7	7		
		in.lb	62	62		
Emergency stop torque <small>(permitted 1000 times during the service life of the gearhead)</small>	T_{2Not}	Nm	25	25		
		in.lb	221	221		
Nominal input speed <small>(with T_{2N} and 20°C ambient temperature)</small>	n_{1N}	rpm	5000	5500		
Max. input speed	n_{1max}	rpm	6000	6000		
Mean no-load running torque <small>(with $n_1=3000$ rpm and 20°C gearhead temperature)</small>	T_{012}	Nm	0.5	0.3		
		in.lb	4.4	2.7		
Max. torsional backlash	j_t	arcmin	≤ 5			
Torsional rigidity	C_{121}	Nm/ arcmin	0.4	0.6		
		in.lb/ arcmin	3.5	5.3		
Max. axial force	F_{2AMax}	N	500			
		lb _f	113			
Max. radial force	F_{2RMMax}	N	950			
		lb _f	214			
Max. tilting moment	M_{2KMMax}	Nm	71			
		in.lb	628			
Efficiency at full load	η	%	97			
Service life	L_h	h	> 20000			
Weight (incl. ADP)	m	kg	1.9			
		lb _m	4.2			
Operating noise <small>(with $n_1=3000$ rpm no load)</small>	L_{PA}	db(A)	≤ 66			
Max. permitted housing temperature		°C	+90			
		F	194			
Ambient temperature		°C	0 to +40			
		F	32 to 104			
Lubrication			Lubricated for life			
Paint			no paint			
Mounting position			any			
Direction of rotation			Motor and gearhead same direction			
Protection class			IP 65			
Moment of inertia <small>(relates to the drive)</small>	C	14	J_1	kgcm ²	0.66	0.42
				10 ⁻² in.lb.s ²	0.58	0.37
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	0.99	0.75
				10 ⁻² in.lb.s ²	0.88	0.66

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

View A

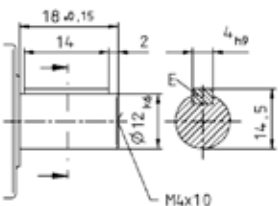
1-stage:



Right-angle gearheads
High End

Alternatives: Output shaft variants

Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



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

Non-tolerated dimensions ±1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.

CAD data is available under <http://www.wittenstein-alpha.de/en/info-and-cad-finder.html>

Motor mounting according to operating manual

SC+

SC+ 075 MF 1-stage

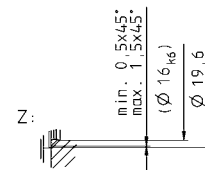
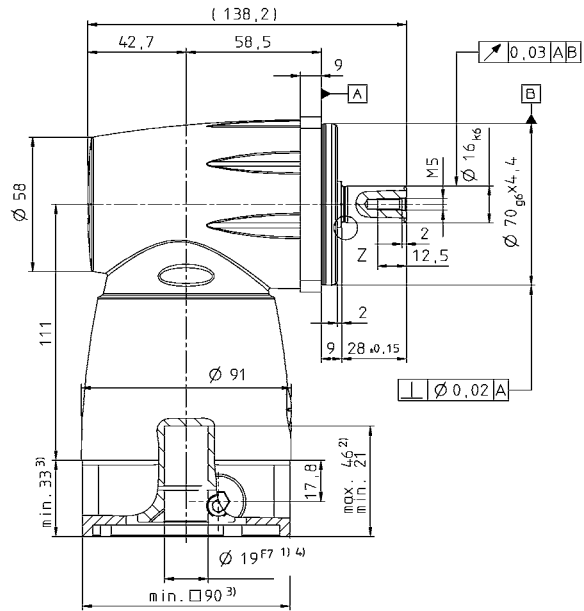
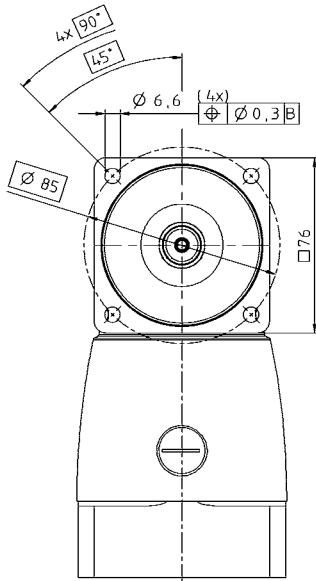
				1-stage		
Ratio	<i>i</i>		1		2	
Max. acceleration torque <small>(max. 1000 cycles per hour)</small>	T_{2B}		Nm	30	30	
			in.lb	266	266	
Nominal output torque <small>(with n_{1N})</small>	T_{2N}		Nm	20	20	
			in.lb	177	177	
Emergency stop torque <small>(permitted 1000 times during the service life of the gearhead)</small>	T_{2Not}		Nm	48	62	
			in.lb	425	549	
Nominal input speed <small>(with T_{2N} and 20°C ambient temperature)</small>	n_{1N}	rpm	2600	4000		
Max. input speed	n_{1max}	rpm	6000	6000		
Mean no-load running torque <small>(with $n_1=3000$ rpm and 20°C gearhead temperature)</small>	T_{012}		Nm	0.9	0.3	
			in.lb	8.0	2.7	
Max. torsional backlash	j_t	arcmin	≤ 4			
Torsional rigidity	C_{121}		Nm/ arcmin	1.0	1.5	
			in.lb/ arcmin	8.9	13.3	
Max. axial force	F_{2AMax}		N	700		
			lb _f	158		
Max. radial force	F_{2RMMax}		N	1300		
			lb _f	293		
Max. tilting moment	M_{2KMMax}		Nm	131		
			in.lb	1159		
Efficiency at full load	η	%	97			
Service life	L_h	h	> 20000			
Weight (incl. ADP)	m		kg	3.6		
			lb _m	8.0		
Operating noise <small>(with $n_1=3000$ rpm no load)</small>	L_{PA}	db(A)	≤ 68			
Max. permitted housing temperature			°C	+90		
			F	194		
Ambient temperature			°C	0 to +40		
			F	32 to 104		
Lubrication	Lubricated for life					
Paint	no paint					
Mounting position	any					
Direction of rotation	Motor and gearhead same direction					
Protection class	IP 65					
Moment of inertia <small>(relates to the drive)</small>	E	19	J_1	kgcm ²	1.99	1.19
				10 ⁻² in.lb.s ²	1.76	1.05
Clamping hub diameter [mm]	H	28	J_1	kgcm ²	3.43	2.63
				10 ⁻² in.lb.s ²	3.04	2.33

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

View A

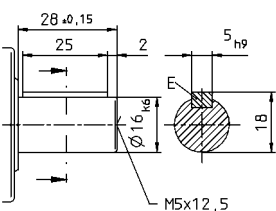
1-stage:



Right-angle gearheads
High End

Alternatives: Output shaft variants

Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



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

Non-tolerated dimensions ±1 mm

- 1) Check motor shaft fit.
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Motor mounting according to operating manual

SC+

SC+ 100 MF 1-stage

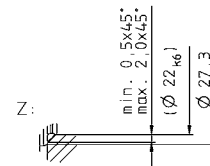
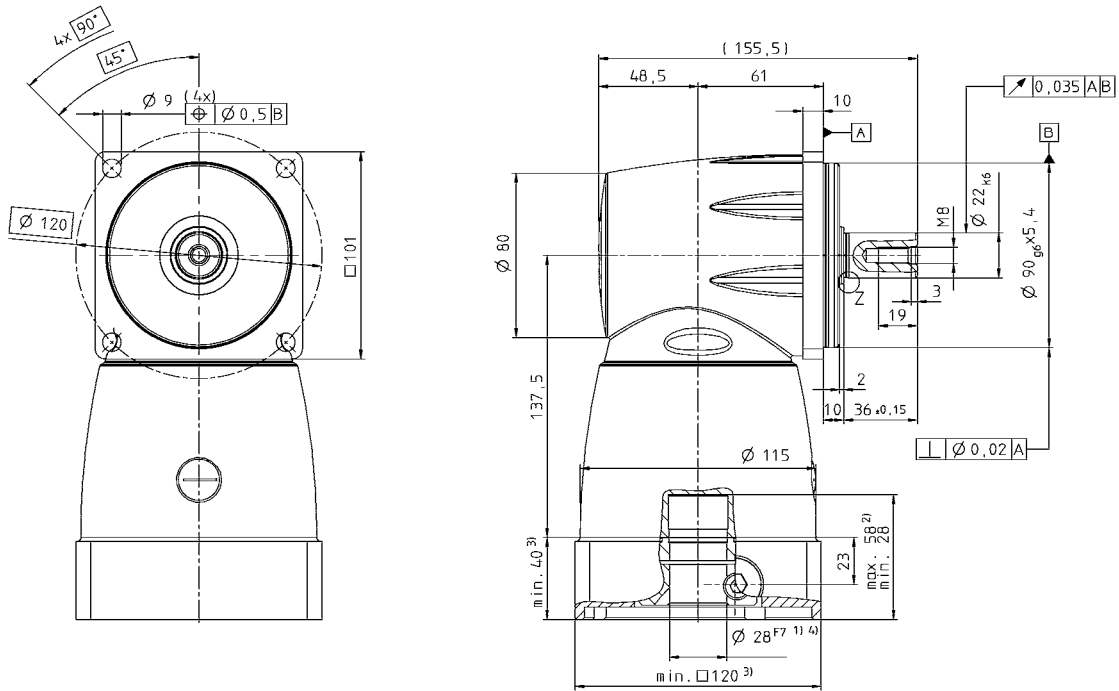
				1-stage				
Ratio	<i>i</i>			1		2		
				Max. acceleration torque <small>(max. 1000 cycles per hour)</small>	T_{2B}	Nm	81	
	in.lb	717		717				
Nominal output torque <small>(with n_{1N})</small>	T_{2N}	Nm	50		50			
		in.lb	443		443			
Emergency stop torque <small>(permitted 1000 times during the service life of the gearhead)</small>	T_{2Not}	Nm	135		200			
		in.lb	1195		1770			
Nominal input speed <small>(with T_{2N} and 20°C ambient temperature)</small>	n_{1N}	rpm	2500		2800			
Max. input speed	n_{1max}	rpm	4500		4500			
Mean no-load running torque <small>(with $n_1=3000$ rpm and 20°C gearhead temperature)</small>	T_{012}	Nm	2.5		1.5			
		in.lb	22.1		13.3			
Max. torsional backlash	j_t	arcmin	≤ 4					
Torsional rigidity	C_{121}	Nm/arcmin	2.9		4.6			
		in.lb/arcmin	25.7		40.7			
Max. axial force	F_{2AMax}	N	1900		1900			
		lb _f	428		428			
Max. radial force	F_{2RMMax}	N	3800		3800			
		lb _f	855		855			
Max. tilting moment	M_{2KMMax}	Nm	439		439			
		in.lb	3885		3885			
Efficiency at full load	η	%	97					
Service life	L_h	h	> 20000					
Weight (incl. ADP)	m	kg	7.0					
		lb _m	15.5					
Operating noise <small>(with $n_1=3000$ rpm no load)</small>	L_{PA}	db(A)	≤ 68					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	0 to +40					
		F	32 to 104					
Lubrication	Lubricated for life							
Paint	no paint							
Mounting position	any							
Direction of rotation	Motor and gearhead same direction							
Protection class	IP 65							
Moment of inertia <small>(relates to the drive)</small>	H	28	J_1	kgcm ²	7.1		4.8	
				10 ³ in.lb.s ²	6.28		4.25	
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	14.2		11.9	
				10 ³ in.lb.s ²	12.57		10.53	

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View A

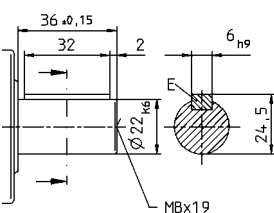
1-stage:



Right-angle gearheads
High End

Alternatives: Output shaft variants

Keywayed output shaft in mm
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Motor mounting according to operating manual

SC+

SC+ 140 MF 1-stage

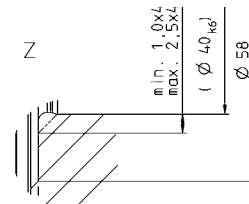
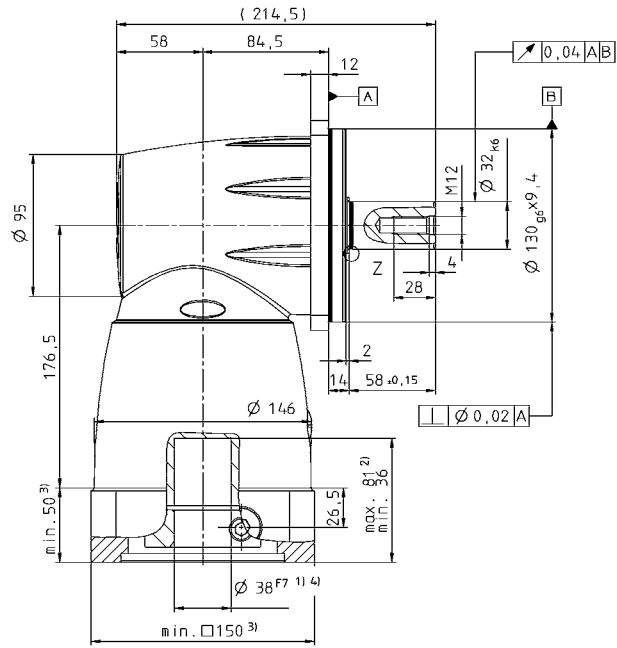
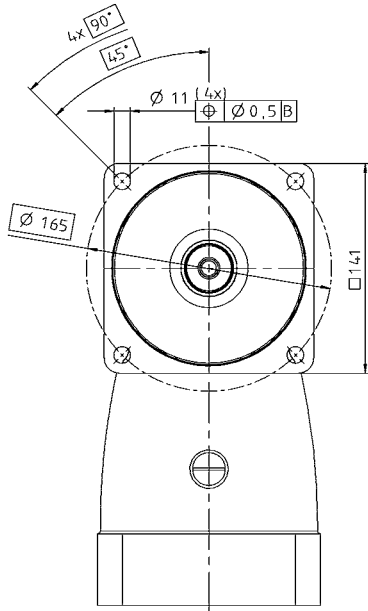
				1-stage		
Ratio	<i>i</i>		1		2	
Max. acceleration torque <small>(max. 1000 cycles per hour)</small>	T_{2B}	Nm	175		175	
		in.lb	1549		1549	
Nominal output torque <small>(with n_{1N})</small>	T_{2N}	Nm	110		110	
		in.lb	974		974	
Emergency stop torque <small>(permitted 1000 times during the service life of the gearhead)</small>	T_{2Not}	Nm	240		310	
		in.lb	2124		2744	
Nominal input speed <small>(with T_{2N} and 20°C ambient temperature)</small>	n_{1N}	rpm	1600		2100	
Max. input speed	n_{1max}	rpm	4500		4500	
Mean no-load running torque <small>(with $n_1=3000$ rpm and 20°C gearhead temperature)</small>	T_{012}	Nm	4.0		1.7	
		in.lb	35.4		15.0	
Max. torsional backlash	j_t	arcmin	≤ 4			
Torsional rigidity	C_{I21}	Nm/arcmin	6.4		9.1	
		in.lb/arcmin	56.6		80.5	
Max. axial force	F_{2AMax}	N	3000			
		lb _f	675			
Max. radial force	F_{2RMMax}	N	6000			
		lb _f	1350			
Max. tilting moment	M_{2KMMax}	Nm	957			
		in.lb	8469			
Efficiency at full load	η	%	97			
Service life	L_h	h	> 20000			
Weight (incl. ADP)	m	kg	14.7			
		lb _m	32.5			
Operating noise <small>(with $n_1=3000$ rpm no load)</small>	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					
Paint	no paint					
Mounting position	any					
Direction of rotation	Motor and gearhead same direction					
Protection class	IP 65					
Moment of inertia <small>(relates to the drive)</small>	K	38	J_1	kgcm ²	41.3	21.3
				10 ⁻³ in.lb.s ²	36.55	18.85
Clamping hub diameter [mm]						

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

View A

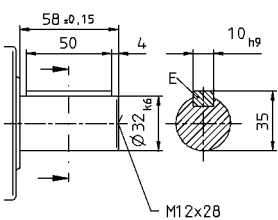
1-stage:



Right-angle gearheads
High End

Alternatives: Output shaft variants

Keywayed output shaft in mm
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Motor mounting according to operating manual

SC+

SC+ 180 MF 1-stage

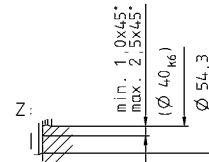
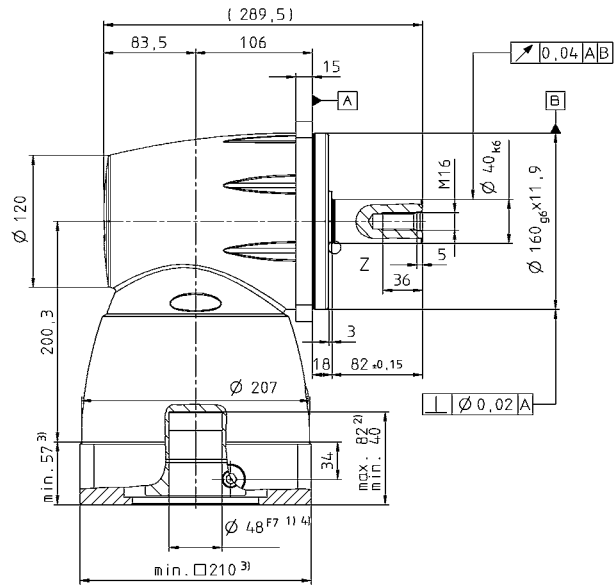
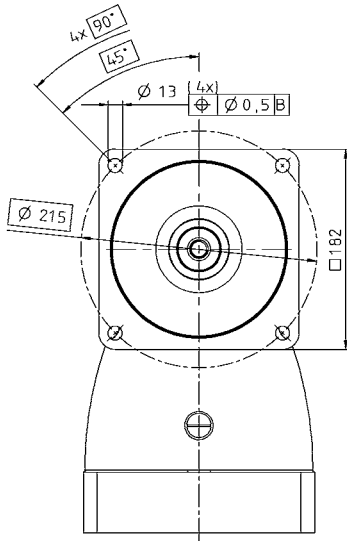
				1-stage		
Ratio	<i>i</i>		1		2	
Max. acceleration torque <small>(max. 1000 cycles per hour)</small>	T_{2B}	Nm	315	315		
		in.lb	2788	2788		
Nominal output torque <small>(with n_{1N})</small>	T_{2N}	Nm	200	200		
		in.lb	1770	1770		
Emergency stop torque <small>(permitted 1000 times during the service life of the gearhead)</small>	T_{2Not}	Nm	390	685		
		in.lb	3452	6062		
Nominal input speed <small>(with T_{2N} and 20°C ambient temperature)</small>	n_{1N}	rpm	1200	1500		
Max. input speed	n_{1max}	rpm	4000	4000		
Mean no load running torque <small>(with $n_1=3000$ rpm and 20°C gearhead temperature)</small>	T_{012}	Nm	9.5	5.5		
		in.lb	84.1	48.7		
Max. torsional backlash	j_t	arcmin	≤ 3			
Torsional rigidity	C_{121}	Nm/arcmin	13	22		
		in.lb/arcmin	115.1	194.7		
Max. axial force	F_{2AMax}	N	4500			
		lb _f	1013			
Max. radial force	F_{2RMMax}	N	9000			
		lb _f	2025			
Max. tilting moment	M_{2KMMax}	Nm	1910			
		in.lb	16904			
Efficiency at full load	η	%	97			
Service life	L_h	h	> 20000			
Weight (incl. ADP)	m	kg	31.4			
		lb _m	69.4			
Operating noise <small>(with $n_1=3000$ rpm no load)</small>	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					
Paint	no paint					
Mounting position	any					
Direction of rotation	Motor and gearhead same direction					
Protection class	IP 65					
Moment of inertia <small>(relates to the drive)</small>	M	48	J_1	kgcm ²	99.5	46.7
				10 ⁻³ in.lb.s ²	88.06	41.33
<small>Clamping hub diameter [mm]</small>						

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View A

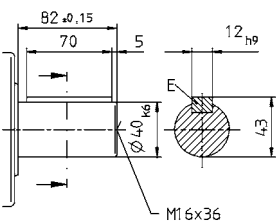
1-stage:



Right-angle gearheads
High End

Alternatives: Output shaft variants

Keywayed output shaft in mm
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Motor mounting according to operating manual

SC+

SPC+ 060 MF 2-stage

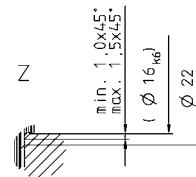
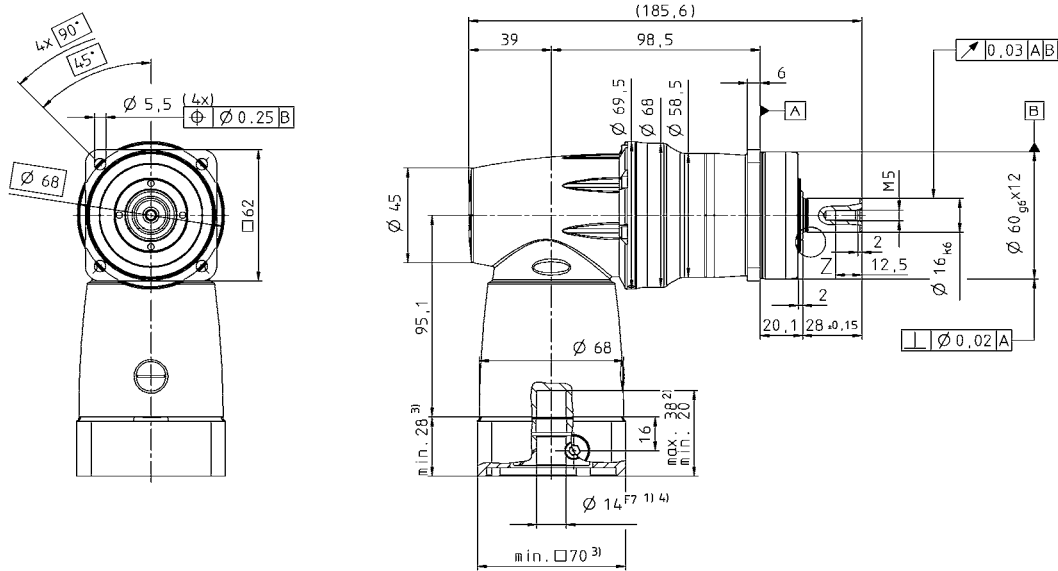
				2-stage							
Ratio		<i>i</i>		4	5	7	8	10	14	20	
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm		40	42	42	40	42	42	32	
			in.lb	354	372	372	354	372	372	283	
Nominal output torque (with n_{1N})	T_{2N}	Nm		26	26	26	26	26	26	17	
			in.lb	230	230	230	230	230	230	150	
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm		100	100	100	100	100	100	80	
			in.lb	885	885	885	885	885	885	708	
Nominal input speed (with T_{2N} and 20°C ambient temperature)	n_{1N}	rpm		3000	3000	3200	3400	3400	3600	3600	
Max. input speed	n_{1max}	rpm		6000	6000	6000	6000	6000	6000	6000	
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm		1.2	1.1	0.9	0.6	0.6	0.5	0.4	
			in.lb	11	10	8	5	5	4	4	
Max. torsional backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3								
Torsional rigidity	C_{I21}	Nm/ arcmin		2.4	2.7	3.1	2.7	3.0	3.2	3.3	
		in.lb/ arcmin		21	24	27	24	27	28	29	
Max. axial force	F_{2AMax}	N	2400								
		lb _f	540								
Max. radial force	F_{2RMMax}	N	2800								
		lb _f	630								
Max. tilting moment	M_{2KMMax}	Nm	152								
		in.lb	1345.2								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. ADP)	m	kg	3.1								
		lb _m	6.851								
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	db(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication	Lubricated for life										
Paint	Blue RAL 5002										
Mounting position	any										
Direction of rotation	Motor and gearhead same direction										
Protection class	IP 65										
Moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.72	0.7	0.66	0.44	0.43	0.43	0.43
				10 ⁻² in.lb.s ²	0.64	0.62	0.58	0.39	0.38	0.38	0.38
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	1.05	1.03	0.99	0.77	0.76	0.76	0.75
				10 ⁻² in.lb.s ²	0.93	0.91	0.88	0.68	0.67	0.67	0.66

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

View A

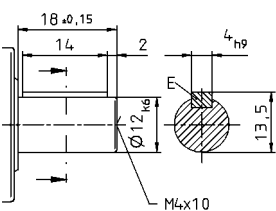
2-stage:



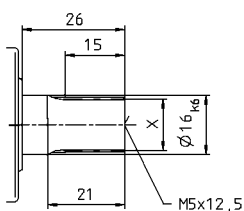
Right-angle gearheads
High End

Alternatives: Output shaft variants

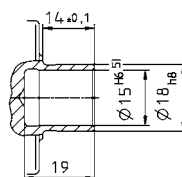
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



Involute gearing DIN 5480 in mm
X = W 16 x 0,8 x 30 x 18 x 6m, DIN 5480



Shaft mounted
Mounted via shrink disc



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

Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.

CAD data is available under
<http://www.wittenstein-alpha.de/en/info-and-cad-finder.html>



Motor mounting according to operating manual

SPC+ 075 MF 2-stage

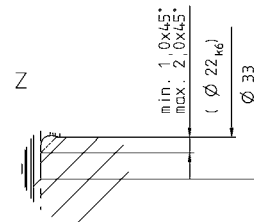
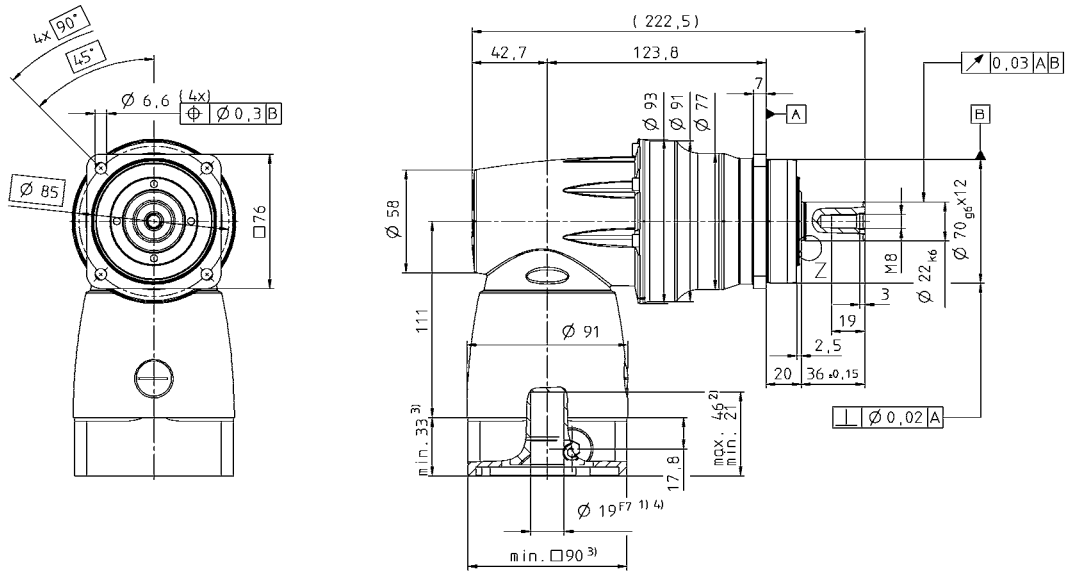
				2-stage							
Ratio	<i>i</i>		4	5	7	8	10	14	20		
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	110	110	110	110	110	110	95		
		in.lb	974	974	974	974	974	974	841		
Nominal output torque (with n_{1N})	T_{2N}	Nm	75	75	75	75	75	75	52		
		in.lb	664	664	664	664	664	664	460		
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	195	245	250	250	250	250	200		
		in.lb	1726	2168	2213	2213	2213	2213	1770		
Nominal input speed (with T_{2N} and 20°C ambient temperature)	n_{1N}	rpm	2200	2200	2400	2650	2650	2800	2800		
Max. input speed	n_{1max}	rpm	6000	6000	6000	6000	6000	6000	6000		
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	2.3	2.0	1.7	1.0	0.9	0.7	0.6		
		in.lb	20	18	15	9	8	6	5		
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity	C_{I21}	Nm/ arcmin	6.6	7.5	8.6	7.6	8.3	9.1	9.5		
		in.lb/ arcmin	58	66	76	67	73	81	84		
Max. axial force	F_{2AMax}	N	3350								
		lb _f	753.75								
Max. radial force	F_{2RMMax}	N	4200								
		lb _f	945								
Max. tilting moment	M_{2KMMax}	Nm	236								
		in.lb	2088.6								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. ADP)	m	kg	5.9								
		lb _m	13.039								
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	db(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Paint			Blue RAL 5002								
Mounting position			any								
Direction of rotation			Motor and gearhead same direction								
Protection class			IP 65								
Moment of inertia (relates to the drive)	E	19	J_1	kgcm ²	2.23	2.15	1.99	1.25	1.23	1.21	1.2
				10 ⁻² in.lb.s ²	1.97	1.90	1.76	1.11	1.09	1.07	1.06
Clamping hub diameter [mm]	H	28	J_1	kgcm ²	3.66	3.59	3.43	2.68	2.67	2.65	2.64
				10 ⁻² in.lb.s ²	3.24	3.18	3.04	2.37	2.36	2.35	2.34

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

View A

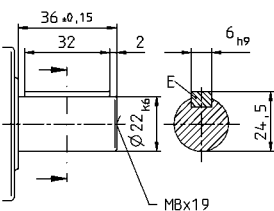
2-stage:



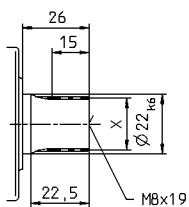
Right-angle gearheads
High End

Alternatives: Output shaft variants

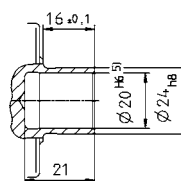
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



Involute gearing DIN 5480 in mm
X = W 16 x 0,8 x 30 x 18 x 6m, DIN 5480



Shaft mounted
Mounted via shrink disc



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

Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.

CAD data is available under
<http://www.wittenstein-alpha.de/en/info-and-cad-finder.html>

Motor mounting according to operating manual 267

SPC+ 100 MF 2-stage

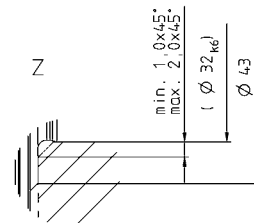
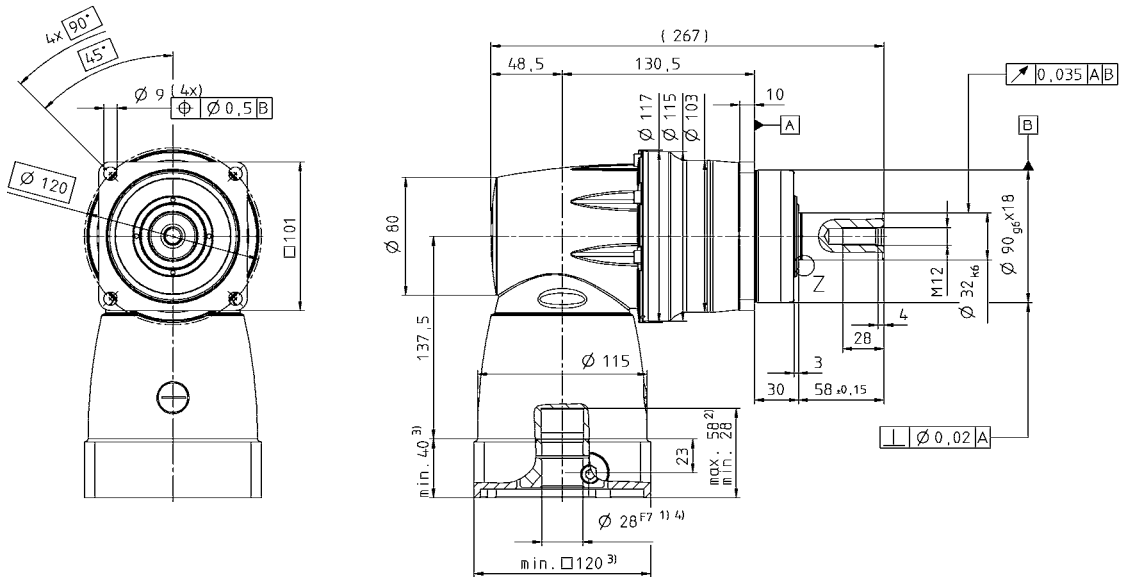
				2-stage							
Ratio		<i>i</i>		4	5	7	8	10	14	20	
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm		315	315	315	315	315	315	235	
			in.lb	2788	2788	2788	2788	2788	2788	2080	
Nominal output torque (with n_{1N})	T_{2N}	Nm		180	175	170	180	175	170	120	
			in.lb	1593	1549	1505	1593	1549	1505	1062	
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm		540	625	625	625	625	625	500	
			in.lb	4779	5531	5531	5531	5531	5531	4425	
Nominal input speed (with T_{2N} and 20°C ambient temperature)	n_{1N}	rpm		2000	2000	2200	2300	2300	2400	2400	
Max. input speed	n_{1max}	rpm		4500	4500	4500	4500	4500	4500	4500	
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm		5.2	4.9	4.1	2.9	2.7	2.3	2.2	
			in.lb	46	43	36	26	24	20	19	
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity	C_{I21}	Nm/ arcmin		20.0	23.0	26.0	24.0	26.0	28.0	30.0	
		in.lb/ arcmin		177	204	230	212	230	248	266	
Max. axial force	F_{2AMax}	N	5650								
		lb _f	1271.25								
Max. radial force	F_{2RMMax}	N	6600								
		lb _f	1485								
Max. tilting moment	M_{2KMMax}	Nm	487								
		in.lb	4309.95								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. ADP)	m	kg	11.7								
		lb _m	25.857								
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	db(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication	Lubricated for life										
Paint	Blue RAL 5002										
Mounting position	any										
Direction of rotation	Motor and gearhead same direction										
Protection class	IP 65										
Moment of inertia (relates to the drive)	H	28	J_1	kgcm ²	8	7.6	7	5	4.9	4.9	4.8
				10 ² in.lb.s ²	7.08	6.73	6.20	4.43	4.34	4.34	4.25
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	15	14.7	14.1	12.1	12	11.9	11.9
				10 ² in.lb.s ²	13.28	13.01	12.48	10.71	10.62	10.53	10.53

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

View A

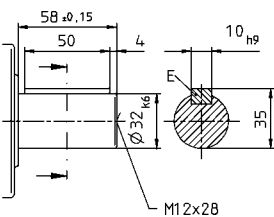
2-stage:



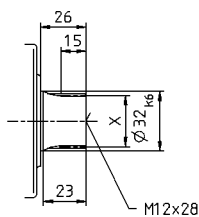
Right-angle gearheads
High End

Alternatives: Output shaft variants

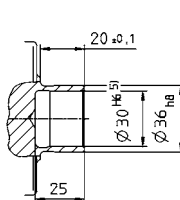
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



Involute gearing DIN 5480 in mm
X = W 16 x 0,8 x 30 x 18 x 6 m, DIN 5480



Shaft mounted
Mounted via shrink disc



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

Non-tolerated dimensions ±1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.



CAD data is available under
<http://www.wittenstein-alpha.de/en/info-and-cad-finder.html>



Motor mounting according to operating manual

SPC+ 140 MF 2-stage

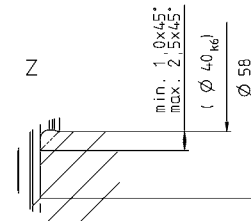
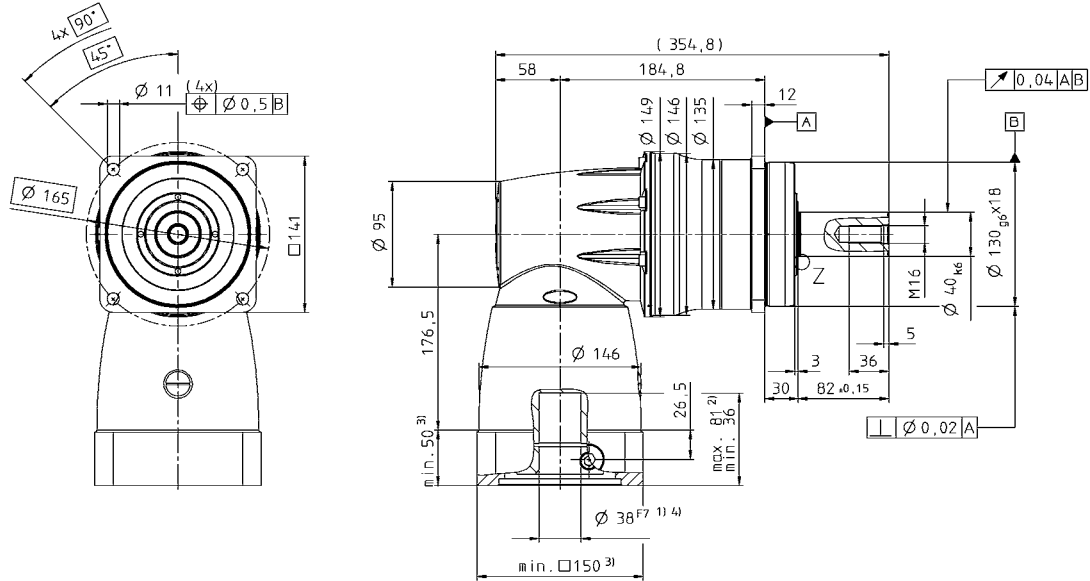
				2-stage							
Ratio	<i>i</i>		4	5	7	8	10	14	20		
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	660	660	660	660	660	660	530		
		in.lb	5841	5841	5841	5841	5841	5841	4691		
Nominal output torque (with n_{1N})	T_{2N}	Nm	360	360	360	360	360	360	220		
		in.lb	3186	3186	3186	3186	3186	3186	1947		
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	960	1200	1250	1250	1250	1250	1000		
		in.lb	8496	10620	11063	11063	11063	11063	8850		
Nominal input speed (with n_{1N} and 20°C ambient temperature)	n_{1N}	rpm	1300	1300	1400	1500	1500	1600	1600		
Max. input speed	n_{1max}	rpm	4500	4500	4500	4500	4500	4500	4500		
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	9.8	8.7	7.4	4.6	4.0	3.4	2.9		
		in.lb	87	77	65	41	35	30	26		
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity	C_{I21}	Nm/ arcmin	37.0	41.0	46.0	41.0	45.0	48.0	51.0		
		in.lb/ arcmin	327	363	407	363	398	425	451		
Max. axial force	F_{2AMax}	N	9870								
		lb _f	2220.75								
Max. radial force	F_{2RMMax}	N	9900								
		lb _f	2227.5								
Max. tilting moment	M_{2KMMax}	Nm	952								
		in.lb	8425.2								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. ADP)	m	kg	24.7								
		lb _m	54.587								
Operating noise (with $n_1=3000$ rpm no load)	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										
Paint	Blue RAL 5002										
Mounting position	any										
Direction of rotation	Motor and gearhead same direction										
Protection class	IP 65										
Moment of inertia (relates to the drive)	K	38	J_1	kgcm ²	30.6	29.7	27.9	18.9	18.7	18.5	18.4
				10 ⁻³ in.lb.s ²	27.08	26.28	24.69	16.73	16.55	16.37	16.28
Clamping hub diameter [mm]											

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

View A

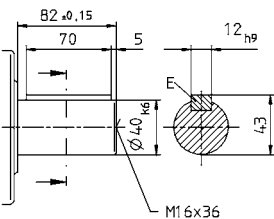
2-stage:



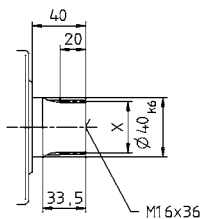
Right-angle gearheads
High End

Alternatives: Output shaft variants

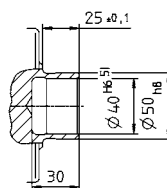
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



Involute gearing DIN 5480 in mm
X = W 16 x 0,8 x 30 x 18 x 6m, DIN 5480



Shaft mounted
Mounted via shrink disc



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

Non-tolerated dimensions ±1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.

CAD data is available under
<http://www.wittenstein-alpha.de/en/info-and-cad-finder.html>



Motor mounting according to operating manual

SPC+ 180 MF 2-stage

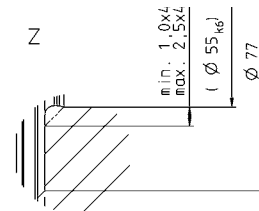
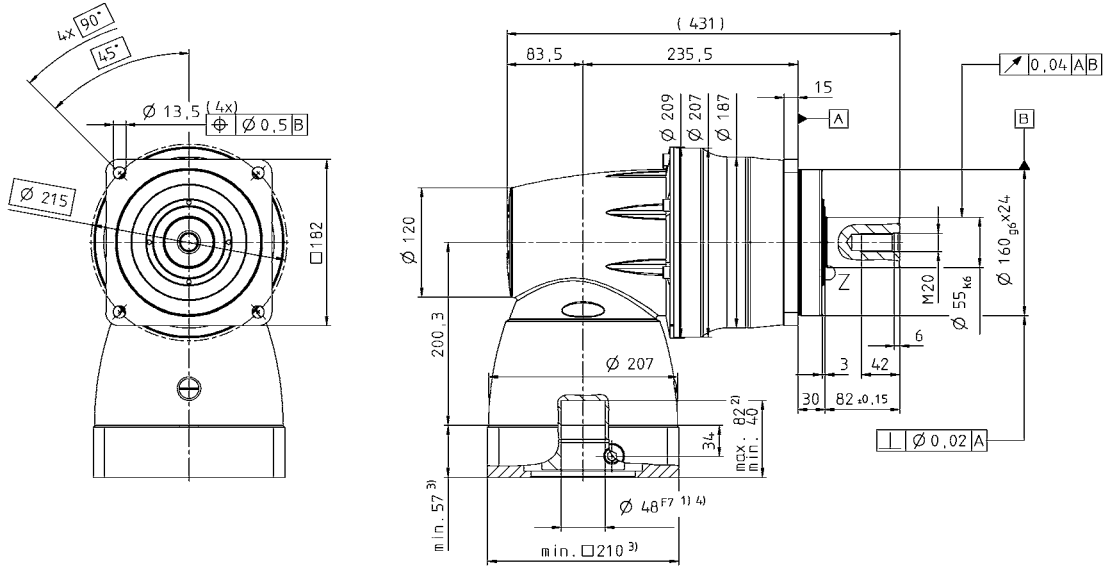
				2-stage							
Ratio	<i>i</i>		4	5	7	8	10	14	20		
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	1210	1210	1210	1210	1210	1210	970		
		in.lb	10709	10709	10709	10709	10709	10709	8585		
Nominal output torque (with n_{1N})	T_{2N}	Nm	750	750	750	750	750	750	750		
		in.lb	6638	6638	6638	6638	6638	6638	6638		
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	1560	1955	2735	2750	2750	2750	2200		
		in.lb	13806	17302	24205	24338	24338	24338	19470		
Nominal input speed (with T_{2N} and 20°C ambient temperature)	n_{1N}	rpm	1000	1000	1100	1200	1200	1300	1300		
Max. input speed	n_{1max}	rpm	4000	4000	4000	4000	4000	4000	4000		
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	20.5	18.5	16.5	11.0	10.0	9.0	8.0		
		in.lb	181	164	146	97	89	80	71		
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity	C_{I21}	Nm/ arcmin	104.0	122.0	143.0	130.0	144.0	157.0	166.0		
		in.lb/ arcmin	920	1080	1266	1151	1274	1389	1469		
Max. axial force	F_{2AMax}	N	14150								
		lb _f	3183.75								
Max. radial force	F_{2RMax}	N	15400								
		lb _f	3465								
Max. tilting moment	M_{2KMMax}	Nm	1600								
		in.lb	14160								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. ADP)	m	kg	54.7								
		lb _m	120.887								
Operating noise (with $n_1=3000$ rpm no load)	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								
Paint			Blue RAL 5002								
Mounting position			any								
Direction of rotation			Motor and gearhead same direction								
Protection class			IP 65								
Moment of inertia (relates to the drive)	M	48	J_1	kgcm ²	109.5	105	94.7	49.2	48.1	46.9	46.2
				10 ³ in.lb.s ²	96.91	92.93	83.81	43.54	42.57	41.51	40.89
Clamping hub diameter [mm]											

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

View A

2-stage:



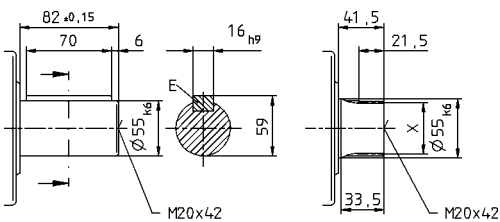
Right-angle gearheads
High End

Alternatives: Output shaft variants

Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A

Involute gearing DIN 5480 in mm
X = W 16 x 0,8 x 30 x 18 x 6m, DIN 5480

Shaft mounted
Mounted via shrink disc



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

Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.

CAD data is available under
<http://www.wittenstein-alpha.de/en/info-and-cad-finder.html>



Motor mounting according to operating manual

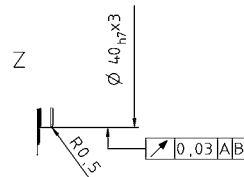
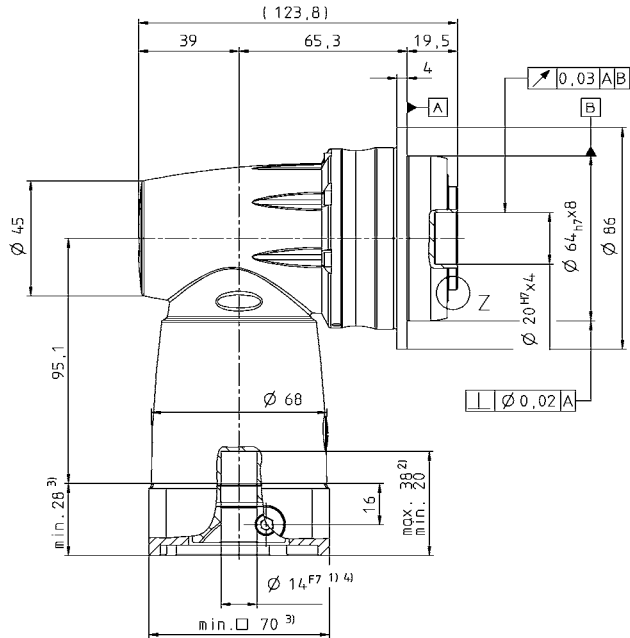
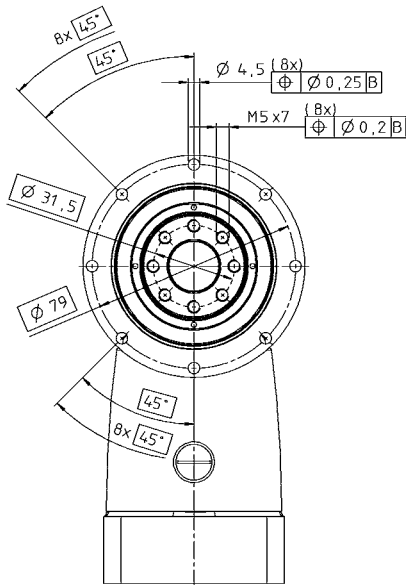
TPC+ 004 MF 2-stage

				2-stage							
Ratio	<i>i</i>			4	5	7	8	10	14	20	
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm		40	50	55	40	50	55	35	
			in.lb	354	443	487	354	443	487	310	
Nominal output torque (with n_{1N})	T_{2N}	Nm		28	28	28	28	28	28	18	
			in.lb	248	248	248	248	248	248	159	
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm		100	100	100	100	100	100	100	
			in.lb	885	885	885	885	885	885	885	
Nominal input speed (with T_{2N} and 20°C ambient temperature)	n_{1N}	rpm		2900	2900	3100	3400	3400	3600	3600	
Max. input speed	n_{1max}	rpm		6000	6000	6000	6000	6000	6000	6000	
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm		1.5	1.3	1.1	0.8	0.7	0.6	0.5	
			in.lb	13	12	10	7	6	5	4	
Max. torsional backlash	j_t	arcmin	Standard ≤ 5 / Reduced ≤ 3								
Torsional rigidity	C_{121}	Nm/ arcmin		4.8	6.2	7.6	6.1	7.4	8.5	7.3	
		in.lb/ arcmin		42	55	67	54	65	75	65	
Tilting rigidity	C_{2K}	Nm/ arcmin		-							
		in.lb/ arcmin		-							
Max. axial force	F_{2AMax}	N		1630.0							
		lb _f		366.8							
Max. tilting moment	M_{2KMax}	Nm		110.0							
		in.lb		973.5							
Efficiency at full load	η	%		95.0							
Service life	L_h	h		> 20000							
Weight (incl. ADP)	m	kg		2.6							
		lb _m		5.7							
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	db(A)		≤ 68							
Max. permitted housing temperature		°C		+90							
		F		194							
Ambient temperature		°C		0 to +40							
		F		32 to 104							
Lubrication			Lubricated for life								
Paint			Blue RAL 5002								
Mounting position			any								
Direction of rotation			Motor and gearhead same direction								
Protection class			IP 65								
Moment of inertia (relates to the drive)	C	14	J_1	kgcm ²	0.72	0.7	0.66	0.44	0.43	0.43	0.43
				10 ⁻² in.lb.s ²	0.64	0.62	0.58	0.39	0.38	0.38	0.38
Clamping hub diameter [mm]	E	19	J_1	kgcm ²	1.05	1.03	0.99	0.77	0.76	0.76	0.75
				10 ⁻² in.lb.s ²	0.93	0.91	0.88	0.68	0.67	0.67	0.66

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

2-stage:



Right-angle gearheads
High End

TPC+

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

Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.

CAD data is available under <http://www.wittenstein-alpha.de/en/info-and-cad-finder.html>

Motor mounting according to operating manual

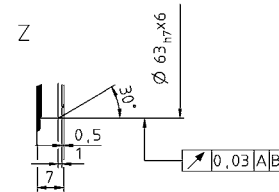
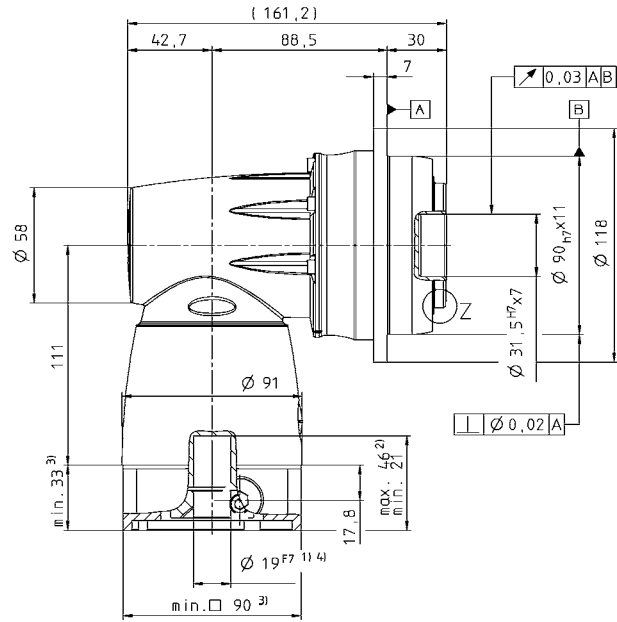
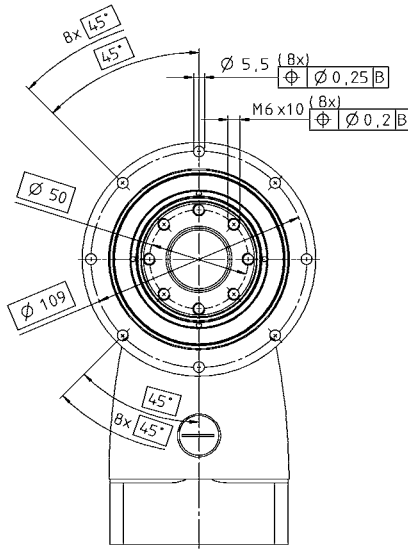
TPC+ 010 MF 2-stage

				2-stage							
Ratio	<i>i</i>		4	5	7	8	10	14	20		
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	120	143	143	120	143	143	105		
		in.lb	1062	1266	1266	1062	1266	1266	929		
Nominal output torque (with n_{1N})	T_{2N}	Nm	75	75	75	75	75	75	60		
		in.lb	664	664	664	664	664	664	531		
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	195	245	250	250	250	250	250		
		in.lb	1726	2168	2213	2213	2213	2213	2213		
Nominal input speed (with T_{2N} and 20°C ambient temperature)	n_{1N}	rpm	2100	2100	2300	2650	2650	2800	2800		
Max. input speed	n_{1max}	rpm	6000	6000	6000	6000	6000	6000	6000		
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	2.5	2.2	1.9	1.1	1.0	0.8	0.7		
		in.lb	22	19	17	10	9	7	6		
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity	C_{I21}	Nm/ arcmin	12.0	16.0	20.0	16.0	20.0	23.0	21.0		
		in.lb/ arcmin	106	142	177	142	177	204	186		
Tilting rigidity	C_{2K}	Nm/ arcmin	225								
		in.lb/ arcmin	1991								
Max. axial force	F_{2AMax}	N	2150								
		lb _f	484								
Max. tilting moment	M_{2KMMax}	Nm	270								
		in.lb	2390								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. ADP)	m	kg	6								
		lb _m	13								
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	db(A)	≤ 68								
Max. permitted housing temperature		°C	+90								
		F	194								
Ambient temperature		°C	0 to +40								
		F	32 to 104								
Lubrication			Lubricated for life								
Paint			Blue RAL 5002								
Mounting position			any								
Direction of rotation			Motor and gearhead same direction								
Protection class			IP 65								
Moment of inertia (relates to the drive)	E	19	J_1	kgcm ²	2.41	2.27	1.99	1.29	1.26	122	1.21
				10 ⁻² in.lb.s ²	2.13	2.01	1.76	1.14	1.12	107.97	1.07
Clamping hub diameter [mm]	H	28	J_1	kgcm ²	3.85	3.71	3.43	2.73	2.7	2.66	2.64
				10 ⁻² in.lb.s ²	3.41	3.28	3.04	2.42	2.39	2.35	2.34

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

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- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange

2-stage:



Right-angle gearheads
High End

TPC+

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

Non-tolerated dimensions ±1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.

CAD data is available under <http://www.wittenstein-alpha.de/en/info-and-cad-finder.html>

Motor mounting according to operating manual

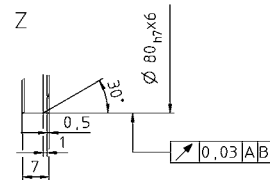
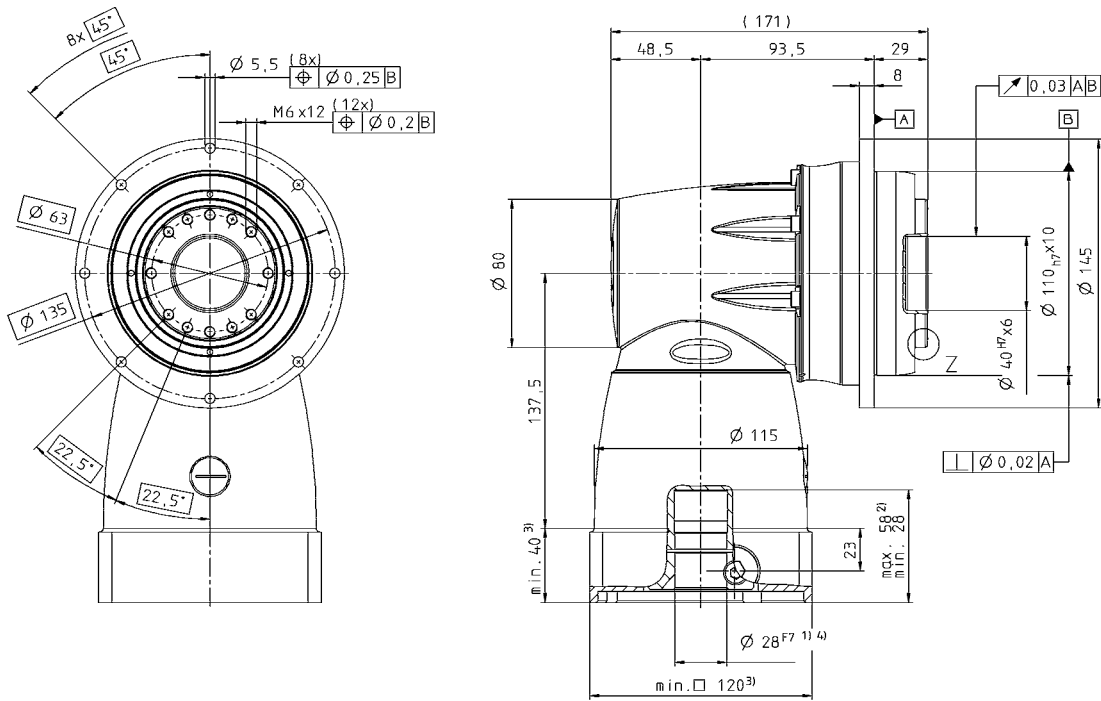
TPC+ 025 MF 2-stage

				2-stage							
Ratio		<i>i</i>		4	5	7	8	10	14	20	
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm		320	380	330	320	380	330	265	
			in.lb	2832	3363	2921	2832	3363	2921	2345	
Nominal output torque (with n_{1N})	T_{2N}	Nm		170	170	170	170	170	170	120	
			in.lb	1505	1505	1505	1505	1505	1505	1062	
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm		540	625	625	625	625	625	625	
			in.lb	4779	5531	5531	5531	5531	5531	5531	
Nominal input speed (with T_{2N} and 20°C ambient temperature)	n_{1N}	rpm		1900	1900	2100	2300	2300	2400	2400	
Max. input speed	n_{1max}	rpm		4500	4500	4500	4500	4500	4500	4500	
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm		5.8	5.2	4.5	3.2	2.9	2.5	2.2	
			in.lb	51	46	40	28	26	22	19	
Max. torsional backlash	j_t	arcmin		Standard ≤ 4 / Reduced ≤ 2							
Torsional rigidity	C_{I21}	Nm/ arcmin		33.0	43.0	53.0	45.0	56.0	61.0	57.0	
		in.lb/ arcmin		292	381	469	398	496	540	504	
Tilting rigidity	C_{2K}	Nm/ arcmin		550							
		in.lb/ arcmin		4868							
Max. axial force	F_{2AMax}	N		4150							
		lb _f		934							
Max. tilting moment	M_{2KMax}	Nm		440							
		in.lb		3894							
Efficiency at full load	η	%		95							
Service life	L_h	h		> 20000							
Weight (incl. ADP)	m	kg		11							
		lb _m		23							
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	db(A)		≤ 68							
Max. permitted housing temperature		°C		+90							
		F		194							
Ambient temperature		°C		0 to +40							
		F		32 to 104							
Lubrication				Lubricated for life							
Paint				Blue RAL 5002							
Mounting position				any							
Direction of rotation				Motor and gearhead same direction							
Protection class				IP 65							
Moment of inertia (relates to the drive)	H	28	J_1	kgcm ²	8.3	7.9	7	5.1	5	4.9	4.8
				10 ⁻² in.lb.s ²	7.35	6.99	6.20	4.51	4.43	4.34	4.25
Clamping hub diameter [mm]	K	38	J_1	kgcm ²	15.4	14.9	14.1	12.2	12.1	12	11.9
				10 ⁻² in.lb.s ²	13.63	13.19	12.48	10.80	10.71	10.62	10.53

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
- ^{c)} For higher ambient temperatures, please reduce input speed
- ^{d)} Idling torques decrease during operation
- ^{e)} Refers to center of the output shaft or flange


2-stage:




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

Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
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 Motor mounting according to operating manual

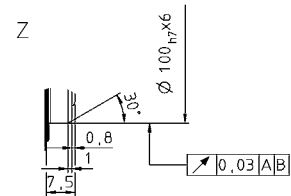
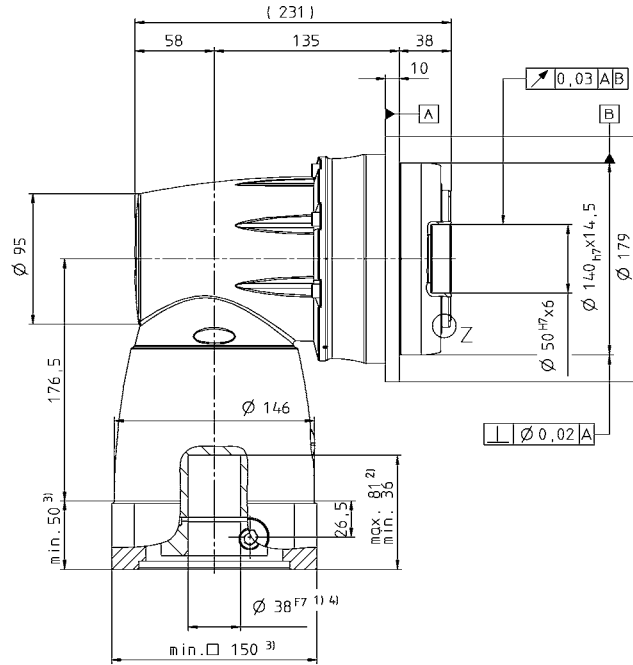
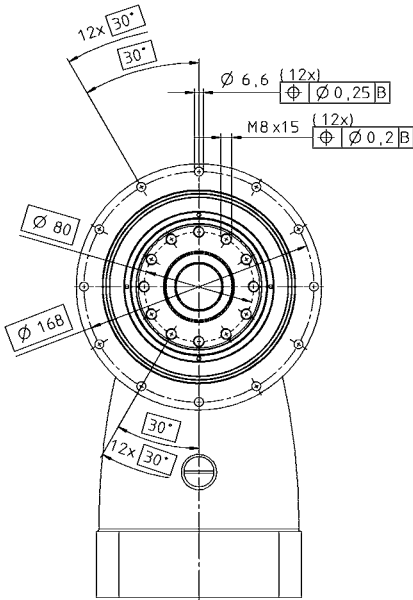
TPC+ 050 MF 2-stage

				2-stage							
Ratio	<i>i</i>		4	5	7	8	10	14	20		
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	700	700	700	700	700	700	540		
		in.lb	6195	6195	6195	6195	6195	6195	4779		
Nominal output torque (with n_{1N})	T_{2N}	Nm	370	370	370	370	370	370	240		
		in.lb	3275	3275	3275	3275	3275	3275	2124		
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	960	1200	1250	1250	1250	1250	1250		
		in.lb	8496	10620	11063	11063	11063	11063	11063		
Nominal input speed (with T_{2N} and 20°C ambient temperature)	n_{1N}	rpm	1200	1200	1300	1500	1500	1600	1600		
Max. input speed	n_{1max}	rpm	4500	4500	4500	4500	4500	4500	4500		
Mean no-load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	12.0	10.5	8.8	5.7	5.0	4.1	3.4		
		in.lb	106	93	78	50	44	36	30		
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity	C_{121}	Nm/ arcmin	73.0	93.0	111.0	93.0	113.0	124.0	111.0		
		in.lb/ arcmin	646	823	982	823	1000	1097	982		
Tilting rigidity	C_{2K}	Nm/ arcmin	560								
		in.lb/ arcmin	4956								
Max. axial force	F_{2AMax}	N	6130								
		lb _f	1379								
Max. tilting moment	M_{2KMax}	Nm	1335								
		in.lb	11815								
Efficiency at full load	η	%	95								
Service life	L_h	h	> 20000								
Weight (incl. ADP)	m	kg	22								
		lb _m	48								
Operating noise (with $n_1=3000$ rpm no load)	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								
Paint			Blue RAL 5002								
Mounting position			any								
Direction of rotation			Motor and gearhead same direction								
Protection class			IP 65								
Moment of inertia (relates to the drive)	K	38	J_1	kgcm ²	32.3	30.8	27.90	19.4	19.00	18.7	18.50
				10 ⁻² in.lb.s ²	28.59	27.26	24.69	17.17	16.82	16.55	16.37
Clamping hub diameter [mm]											

Please contact us for information on the best configuration for S1 conditions of use (continuous operation).

- ^{a)} Other ratios available on request
- ^{b)} Higher speeds are possible if the nominal torque is reduced
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- ^{e)} Refers to center of the output shaft or flange

2-stage:



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

Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
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CAD data is available under
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Motor mounting according to operating manual

TPC+ 110 MF 2-stage

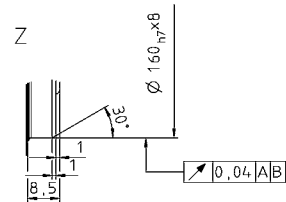
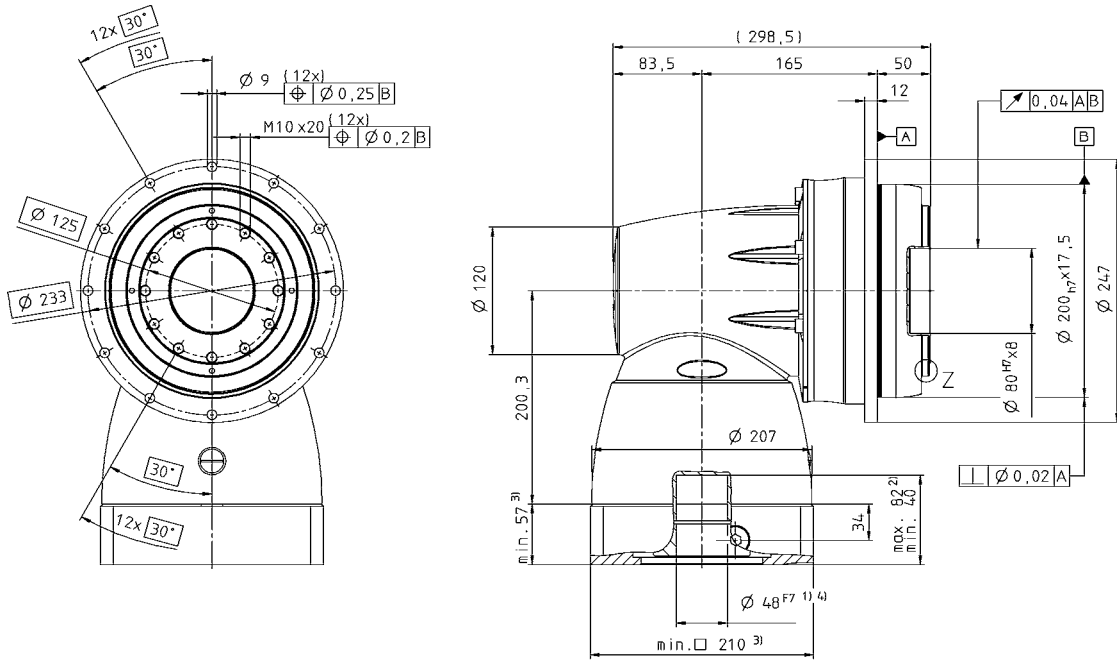
				2-stage							
Ratio	<i>i</i>			4	5	7	8	10	14	20	
Max. acceleration torque <small>(max. 1000 cycles per hour)</small>	T_{2B}	Nm		1260	1575	1600	1260	1575	1600	1400	
			in.lb	11151	13939	14160	11151	13939	14160	12390	
Nominal output torque <small>(with n_{1N})</small>	T_{2N}	Nm		700	750	750	700	750	750	750	
			in.lb	6195	6638	6638	6195	6638	6638	6638	
Emergency stop torque <small>(permitted 1000 times during the service life of the gearhead)</small>	T_{2Not}	Nm		1560	1955	2735	2750	2750	2750	2750	
			in.lb	13806	17302	24205	24338	24338	24338	24338	
Nominal input speed <small>(with T_{2N} and 20°C ambient temperature)</small>	n_{1N}	rpm		900	900	1000	1200	1200	1300	1300	
Max. input speed	n_{1max}	rpm		4000	4000	4000	4000	4000	4000	4000	
Mean no-load running torque <small>(with $n_1=3000$ rpm and 20°C gearhead temperature)</small>	T_{012}	Nm		25.0	22.0	19.0	13.5	12.0	10.0	9.0	
			in.lb	221	195	168	119	106	89	80	
Max. torsional backlash	j_t	arcmin	Standard ≤ 4 / Reduced ≤ 2								
Torsional rigidity	C_{121}	Nm/ arcmin		181.0	242.0	324.0	278.0	345.0	407.0	390.0	
		in.lb/ arcmin		1602	2142	2867	2460	3053	3602	3452	
Tilting rigidity	C_{2K}	Nm/ arcmin		1452							
		in.lb/ arcmin		12850							
Max. axial force	F_{2AMax}	N		10050							
		lb _f		2261							
Max. tilting moment	M_{2KMMax}	Nm		3280							
		in.lb		29028							
Efficiency at full load	η	%		95							
Service life	L_h	h		> 20000							
Weight (incl. ADP)	m	kg		51							
		lb _m		112							
Operating noise <small>(with $n_1=3000$ rpm no load)</small>	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								
Paint			Blue RAL 5002								
Mounting position			any								
Direction of rotation			Motor and gearhead same direction								
Protection class			IP 65								
Moment of inertia <small>(relates to the drive)</small>	M	48	J_1	kgcm ²	121.2	112.6	94.7	52.1	50	47.9	46.7
				10 ³ in.lb.s ²	107.26	99.65	83.81	46.11	44.25	42.39	41.33
Clamping hub diameter [mm]											

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

View A

2-stage:



Right-angle gearheads
High End

TPC+

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

Non-tolerated dimensions ± 1 mm

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Motor mounting according to operating manual