WITTENSTEIN | alpha

SC+/SPC+/TPC+ bevel gearheads

Strong performance at low ratios

Quiet
Precise
Powerful

efficiency engineering

Strong performance at low ratios

Your high-end solution for low ratios

Does your application demand above-average performance particularly at low ratios? The innovative design of the WITTENSTEIN alpha SC+/SPC+/TPC+ bevel gearhead types is not simply space saving, elegant and energy efficient; this trio also impresses with optimal performance and quiet running.

The gearhead is positioned in an application segment in which maximum dynamics and precision at very high output speeds are a must. These gearheads, with lifelong lubrication, can be installed in any position and therefore offer great mounting flexibility.

Preferred uses:

- Packaging
- Automation technology
- Machine tools
- Printing presses
- Laser machines

What‘s so special about the design?

External bolts and functionally integrated beading on the housing underline the perfect design. This makes the gearheads ideal for open system concepts with visible machine elements.

SC+

Is the amount of space you have available limited and yet you still require high speeds and torques? Then our SC+ with 1:1 and 1:2 ratios is the perfect solution.

SPC+

Even better performance is provided by our SPC+ with integrated planetary stage and classic output shaft.

TPC+

Our TPC+ gearhead, with its planetary stage and output flange, is perfect for any highly dynamic and compact applications you may have.

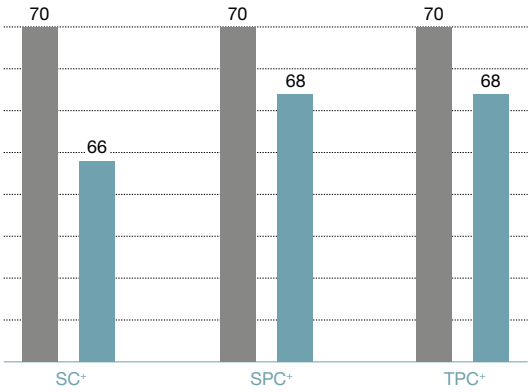
SC+/SPC+/TPC+ bevel gearheads

Your benefits:

- Strong performance at low ratios
- High gear tooth quality delivers:
  - improved load capacity and more torque
  - precision thanks to minimal torsional backlash
  - Smooth running and steady running performance
- Higher input and output speeds
- High positioning accuracy
- Very high power density
- Reduced weight for greater dynamics
- Allows highly dynamic cyclic and reliable continuous operation
- 1:1 compatibility with the SK/SPK/TPK gearhead series

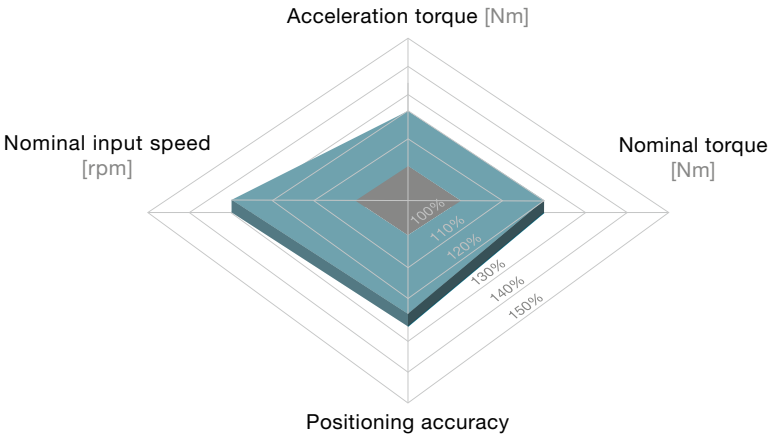
Our bevel gearheads exceed the industry standard providing outstanding performance with low ratios.

Comparison of the operating noise* of industry standard and SC+/SPC+/TPC+ gearheads in dB(A)



* dependent on size

Comparison of industry standard and SC+ gearheads in percent



Technical support
For more information, please get in touch with our expert sales engineers or write an e-mail to info-alpha@wittenstein.de
Tel. +49 7931 493-0

24 h service hotline
You can reach our Customer Service team 24 hours a day: Dimension drawings can be supplied on request.

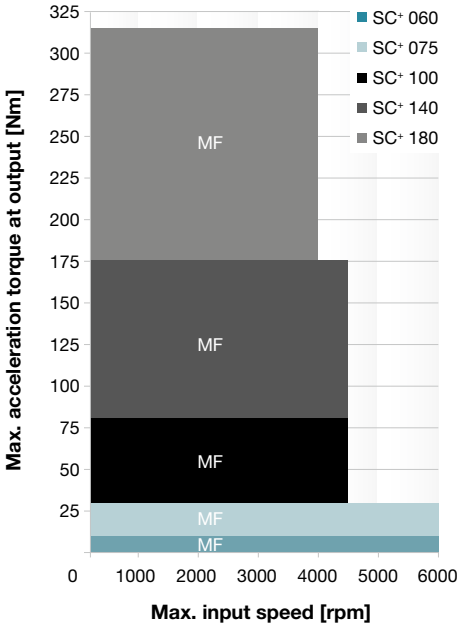
Tel. +49 7931 493-12900

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

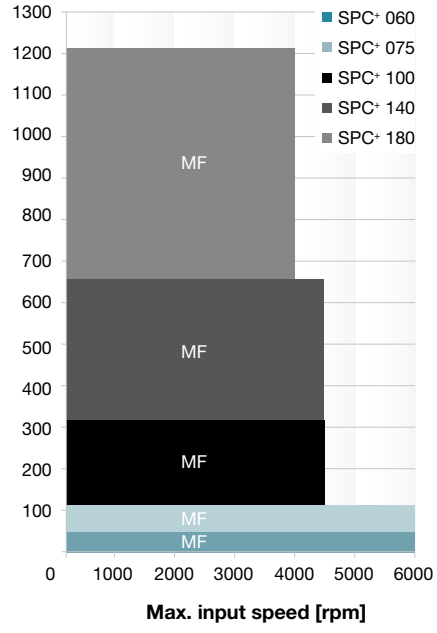
Low backlash right-angle gearheads with output shaft or output flange. This gearhead series is used in dynamic applications with low transmission ratios and demanding requirements with regard to precision, torque, and efficiency.

Quick size selection

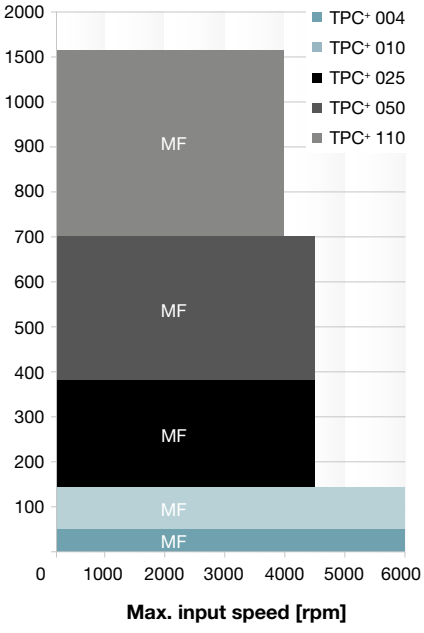
SC+ MF (example for i = 1)
For applications in cyclic operation
(duty cycle ≤ 60 %) or continuous operation
(duty cycle ≥ 60%)



SPC+ MF (example for i = 5)
For applications in cyclic operation
(duty cycle ≤ 60 %) or continuous operation
(duty cycle ≥ 60%)



TPC+ MF (example for i = 5)
For applications in cyclic operation
(duty cycle ≤ 60%) or continuous operation
(duty cycle ≥ 60%)



Versions and their uses

Features	**SC+** MF version	**SPC+** MF version	**TPC+** MF version
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

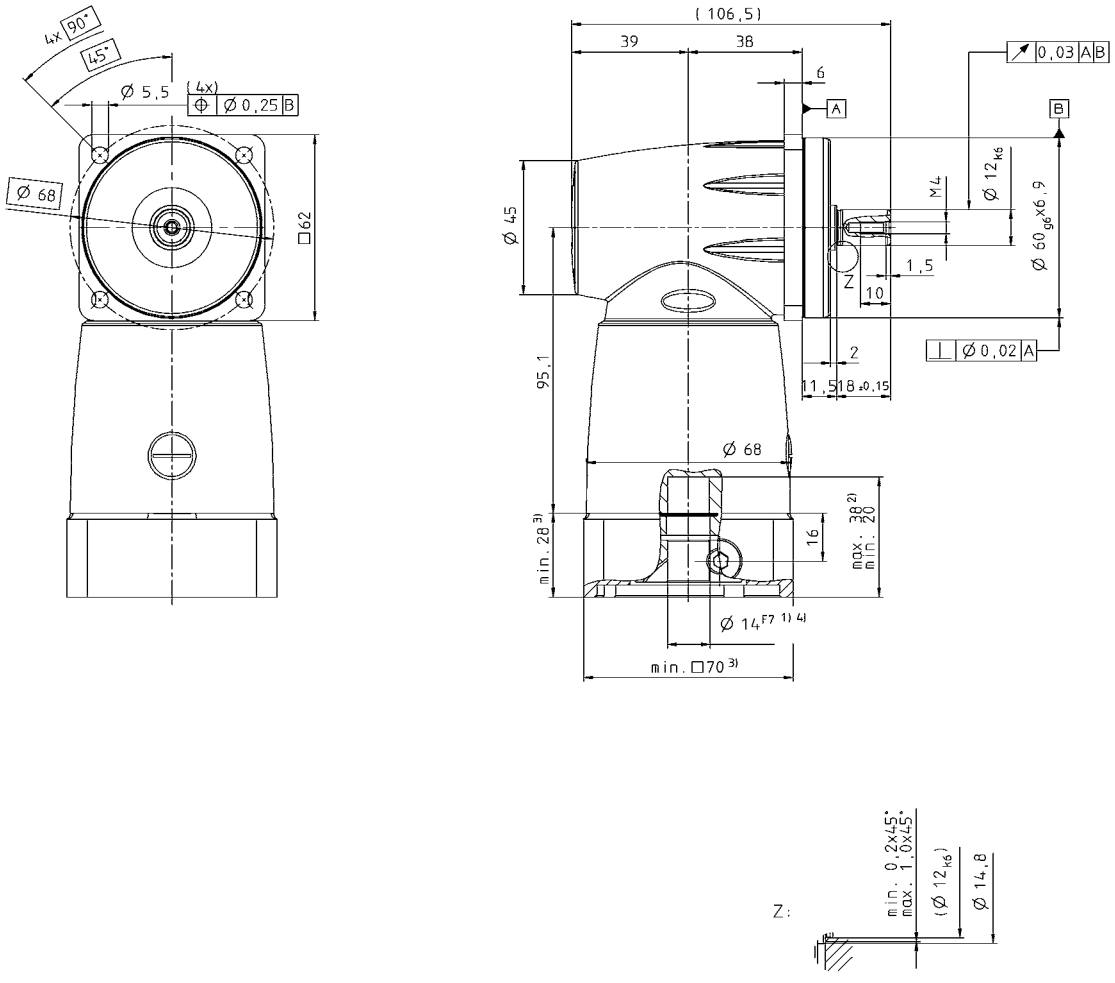
					1-stage	
Ratio			i		**1**	**2**
Max. acceleration torque (max. 1000 cycles per hour)			T_{2B}	Nm	10	10
				in.lb	89	89
Nominal output torque (with n_{1N})			T_{2N}	Nm	7	7
				in.lb	62	62
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not}	Nm	25	30
				in.lb	221	266
Nominal input speed (with T_{2N} and 20°C ambient temperature)			n_{1N}	rpm	5000	5500
Max. input speed			n_{1max}	rpm	6000	6000
Mean no-load running torque (with n_1=3000 rpm and 20°C gearhead temperature)			T_{012}	Nm	0.5	0.3
				in.lb	4.4	2.7
Max. torsional backlash			j_t	arcmin	≤ 5	
Torsional rigidity			C_{t21}	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_{2RMax}	N	950	
				lb_f	214	
Max. tilting moment			M_{2KMax}	Nm	71	
				in.lb	628	
Efficiency at full load			η	%	97	
Service life			L_h	h	> 20000	
Weight (incl. ADP)			m	kg	1.9	
				lb_m	4.2	
Operating noise (with n1=3000 rpm no load)			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 (relates to the drive)	C	14	J_1	kgcm²	0.66	0.42
				10^{-3} in.lb.s²	0.58	0.37
Clamping hub diameter [mm]	E	19	J_1	kgcm²	0.99	0.75
				10^{-3} in.lb.s²	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

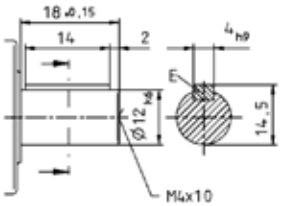
1-stage:



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.

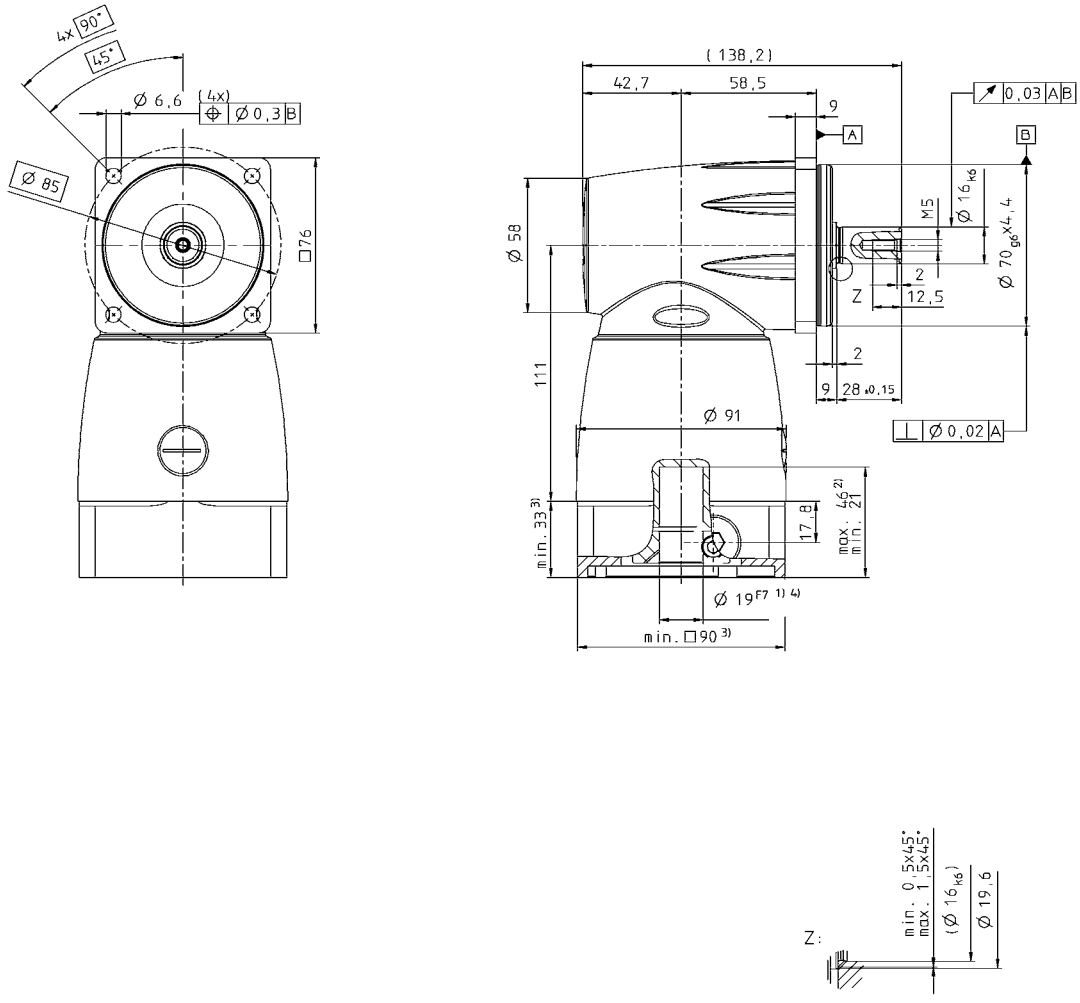
CAD data is available under
http://www.wittenstein-alpha.de/en/info-and-cad-finder.html

Motor mounting according to operating manual

					1-stage	
Ratio			i		**1**	**2**
Max. acceleration torque (max. 1000 cycles per hour)			T_{2B}	Nm	30	30
				in.lb	266	266
Nominal output torque (with n_{1N})			T_{2N}	Nm	20	20
				in.lb	177	177
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not}	Nm	48	75
				in.lb	425	664
Nominal input speed (with T_{2N} and 20°C ambient temperature)			n_{1N}	rpm	2600	4000
Max. input speed			n_{1max}	rpm	6000	6000
Mean no-load running torque (with n_1=3000 rpm and 20°C gearhead temperature)			T_{012}	Nm	0.9	0.3
				in.lb	8.0	2.7
Max. torsional backlash			j_t	arcmin	≤ 4	
Torsional rigidity			C_{t21}	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_{2RMax}	N	1300	
				lb_f	293	
Max. tilting moment			M_{2KMax}	Nm	131	
				in.lb	1159	
Efficiency at full load			η	%	97	
Service life			L_h	h	> 20000	
Weight (incl. ADP)			m	kg	3.6	
				lb_m	8.0	
Operating noise (with n1=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					no paint	
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	kgcm²	1.99	1.19
				10^{-3} in.lb.s²	1.76	1.05
Clamping hub diameter [mm]	H	28	J_1	kgcm²	3.43	2.63
				10^{-3} in.lb.s²	3.04	2.33

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

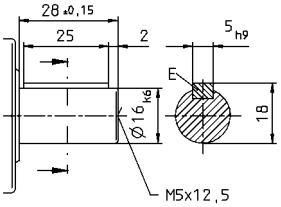
[a] Other ratios available on request
[b] Higher speeds are possible if the nominal torque is reduced
[c] For higher ambient temperatures, please reduce input speed
[d] Idling torques decrease during operation
[e] Refers to center of the output shaft or flange



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

					1-stage	
Ratio			***i***		**1**	**2**
Max. acceleration torque (max. 1000 cycles per hour)			T_{2B}	Nm	81	81
				in.lb	717	717
Nominal output torque (with n_{1N})			T_{2N}	Nm	50	50
				in.lb	443	443
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not}	Nm	135	200
				in.lb	1195	1770
Nominal input speed (with T_{2N} and 20°C ambient temperature)			n_{1N}	rpm	2500	2800
Max. input speed			n_{1max}	rpm	4500	4500
Mean no-load running torque (with n_1=3000 rpm and 20°C gearhead temperature)			T_{012}	Nm	2.5	1.5
				in.lb	22.1	13.3
Max. torsional backlash			j_t	arcmin	≤ 4	
Torsional rigidity			C_{t21}	Nm/ arcmin	2.9	4.6
				in.lb/ arcmin	25.7	40.7
Max. axial force			F_{2AMax}	N	1900	
				lb_f	428	
Max. radial force			F_{2RMax}	N	3800	
				lb_f	855	
Max. tilting moment			M_{2KMax}	Nm	439	
				in.lb	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 (with n1=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					no paint	
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	kgcm²	7.1	4.8
				10^{-3} in.lb.s²	6.28	4.25
Clamping hub diameter [mm]	K	38	J_1	kgcm²	14.2	11.9
				10^{-3} in.lb.s²	12.57	10.53

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

[a] Other ratios available on request
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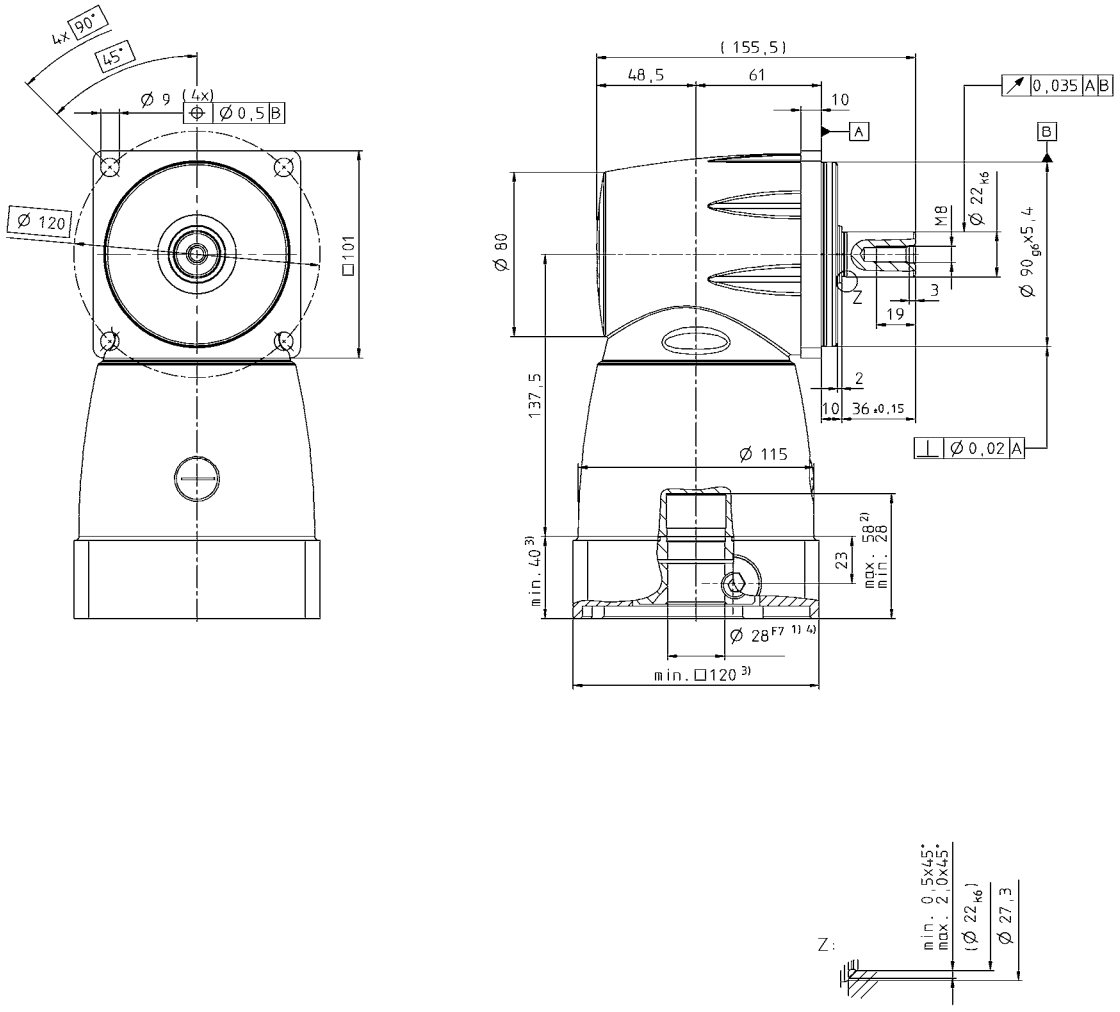
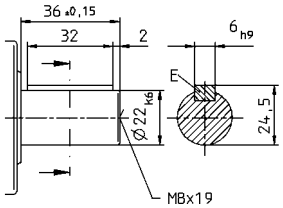
[c] For higher ambient temperatures, please reduce input speed
[d] Idling torques decrease during operation
[e] Refers to center of the output shaft or flange



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.

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http://www.wittenstein-alpha.de/en/info-and-cad-finder.html

Motor mounting according to operating manual

				1-stage	
Ratio			***i***	**1**	**2**
Max. acceleration torque (max. 1000 cycles per hour)			T_{2B} Nm	315	315
			T_{2B} in.lb	2788	2788
Nominal output torque (with n_{1N})			T_{2N} Nm	200	200
			T_{2N} in.lb	1770	1770
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	390	780
			T_{2Not} in.lb	3452	6903
Nominal input speed (with T_{2N} and 20°C ambient temperature)			n_{1N} rpm	1200	1500
Max. input speed			n_{1max} rpm	4000	4000
Mean no-load running torque (with n_1=3000 rpm and 20°C gearhead temperature)			T_{012} Nm	9.5	5.5
			T_{012} in.lb	84.1	48.7
Max. torsional backlash			j_t arcmin	≤ 3	
Torsional rigidity			C_{t21} Nm/ arcmin	13	22
			C_{t21} in.lb/ arcmin	115.1	194.7
Max. axial force			F_{2AMax} N	4500	
			F_{2AMax} lb_f	1013	
Max. radial force			F_{2RMax} N	9000	
			F_{2RMax} lb_f	2025	
Max. tilting moment			M_{2KMax} Nm	1910	
			M_{2KMax} in.lb	16904	
Efficiency at full load			η %	97	
Service life			L_h h	> 20000	
Weight (incl. ADP)			m kg	31.4	
			m lb_m	69.4	
Operating noise (with n1=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				no paint	
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 kgcm²	99.5	46.7
			J_1	88.06	41.33
Clamping hub diameter [mm]			J_1 10^{-3} in.lb.s²	99.5	46.7
			J_1	88.06	41.33

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

[a] Other ratios available on request
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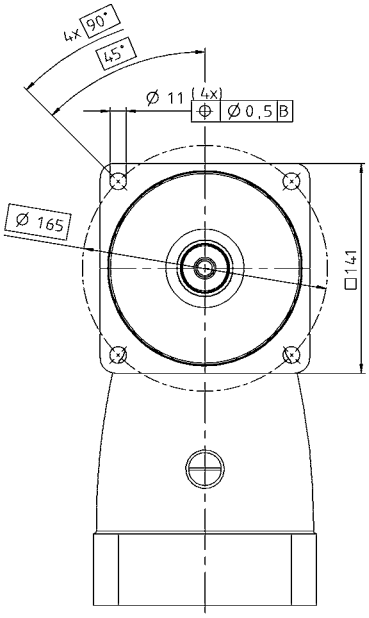
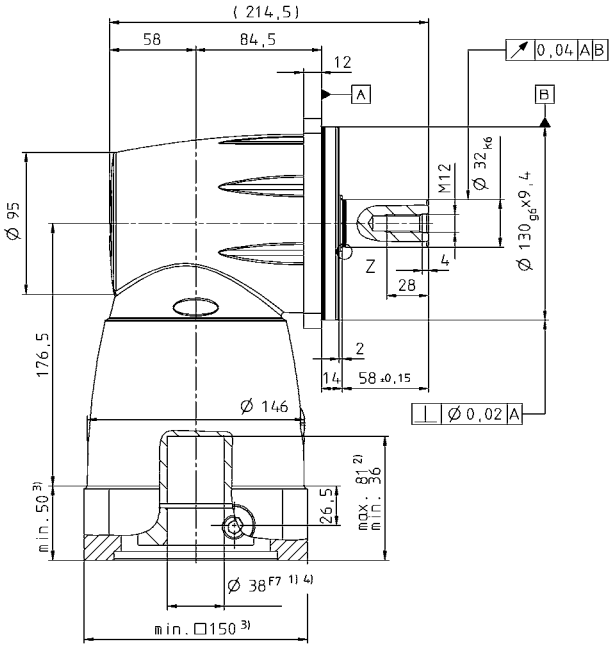
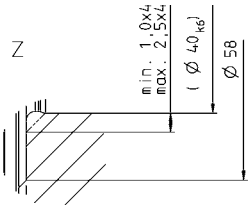


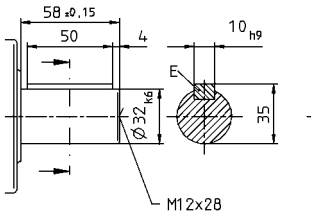




Alternatives: Output shaft variants

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

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2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
3) The dimensions depend on the motor.
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CAD data is available under
http://www.wittenstein-alpha.de/en/info-and-cad-finder.html

Motor mounting according to operating manual

				1-stage	
Ratio			***i***	**1**	**2**
Max. accelaration torque (max. 1000 cycles per hour)			T_{2B} Nm	315	315
			T_{2B} in.lb	2788	2788
Nominal output torque (with n_{1N})			T_{2N} Nm	200	200
			T_{2N} in.lb	1770	1770
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	390	685
			T_{2Not} in.lb	3452	6062
Nominal input speed (with T_{2N} and 20°C ambient temperature)			n_{1N} rpm	1200	1500
Max. input speed			n_{1max} rpm	4000	4000
Mean no load running torque (with n_1=3000 rpm and 20°C gearhead temperature)			T_{012} Nm	9.5	5.5
			T_{012} in.lb	84.1	48.7
Max. torsional backlash			j_t arcmin	≤ 3	
Torsional rigidity			C_{t21} Nm/ arcmin	13	22
			C_{t21} in.lb/ arcmin	115.1	194.7
Max. axial force			F_{2AMax} N	4500	
			F_{2AMax} lb_f	1013	
Max. radial force			F_{2RMax} N	9000	
			F_{2RMax} lb_f	2025	
Max. tilting moment			M_{2KMax} Nm	1910	
			M_{2KMax} in.lb	16904	
Efficiency at full load			η %	97	
Service life			L_h h	> 20000	
Weight (incl. ADP)			m kg	31.4	
			m lb_m	69.4	
Operating noise (with n1=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				no paint	
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 kgcm²	99.5	46.7
Clamping hub diameter [mm]			J_1 10^{-3} in.lb.s²	88.06	41.33

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
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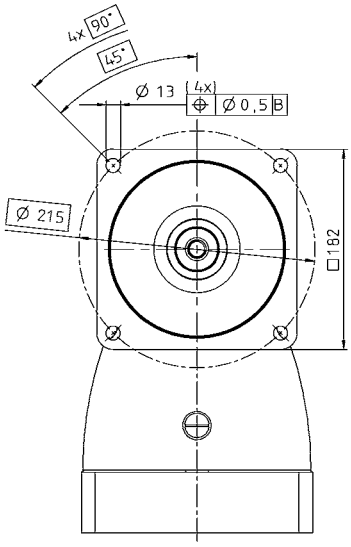
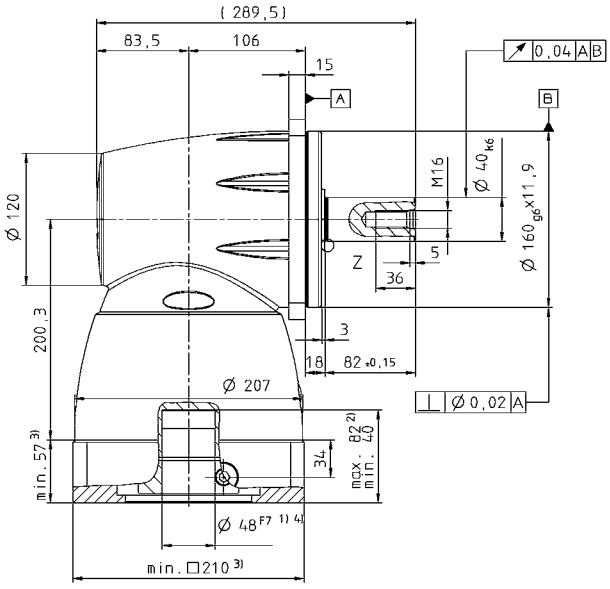
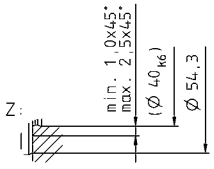


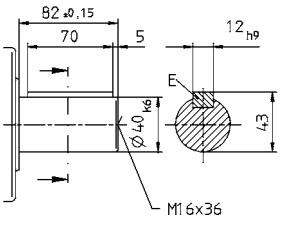




Alternatives: Output shaft variants

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.

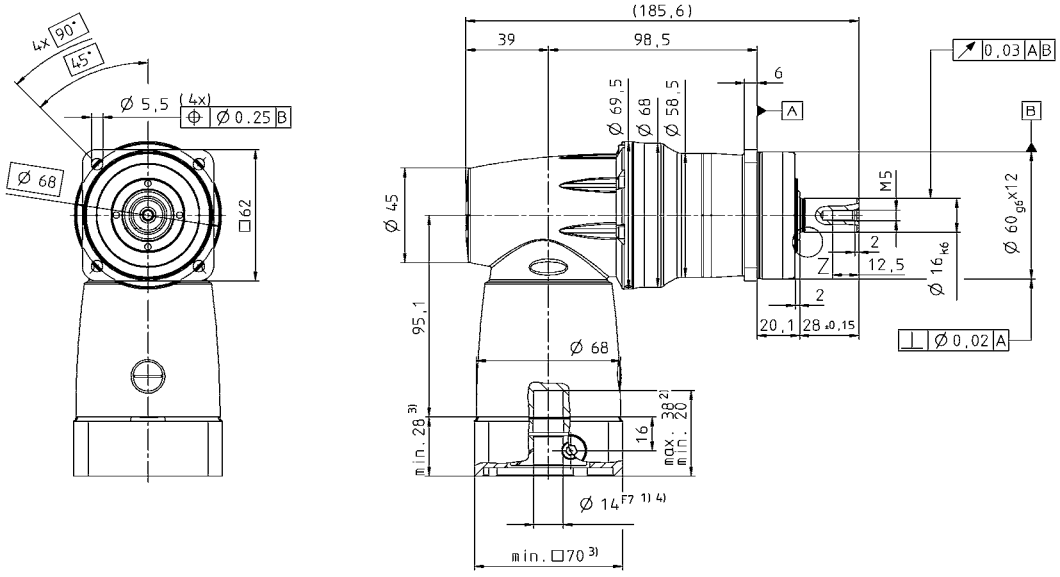
CAD data is available under
http://www.wittenstein-alpha.de/en/info-and-cad-finder.html

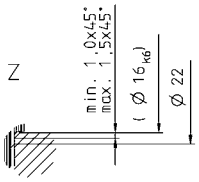
Motor mounting according to operating manual

				2-stage						
Ratio			***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
			T_{2B} 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
			T_{2N} in.lb	230	230	230	230	230	230	150
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	100	100	100	100	100	100	80
			T_{2Not} 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
			T_{012} in.lb	11	10	8	5	5	4	4
Max. torsional backlash			j_t arcmin	Standard ≤ 5 / Reduced ≤ 3						
Torsional rigidity			C_{t21} Nm/ arcmin	2.4	2.7	3.1	2.7	3.0	3.2	3.3
			C_{t21} in.lb/ arcmin	21	24	27	24	27	28	29
Max. axial force			F_{2AMax} N	2400						
			F_{2AMax} lb_f	540						
Max. radial force			F_{2RMax} N	2800						
			F_{2RMax} lb_f	630						
Max. tilting moment			M_{2KMax} Nm	152						
			M_{2KMax} in.lb	1345.2						
Efficiency at full load			η %	95						
Service life			L_h h	> 20000						
Weight (incl. ADP)			*m* kg	3.1						
			m lb_m	6.851						
Operating noise (with n1=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 kgcm²	0.72	0.7	0.66	0.44	0.43	0.43	0.43
			J_1 10^{-3} in.lb.s²	0.64	0.62	0.58	0.39	0.38	0.38	0.38
Clamping hub diameter [mm]	E	19	J_1 kgcm²	1.05	1.03	0.99	0.77	0.76	0.76	0.75
			J_1 10^{-3} in.lb.s²	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).

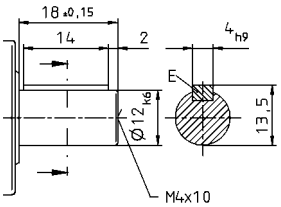
[a] Other ratios available on request
[b] Higher speeds are possible if the nominal torque is reduced
[c] For higher ambient temperatures, please reduce input speed
[d] Idling torques decrease during operation
[e] Refers to center of the output shaft or flange



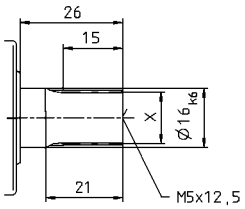


Alternatives: Output shaft variants

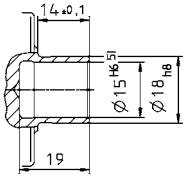
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



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.

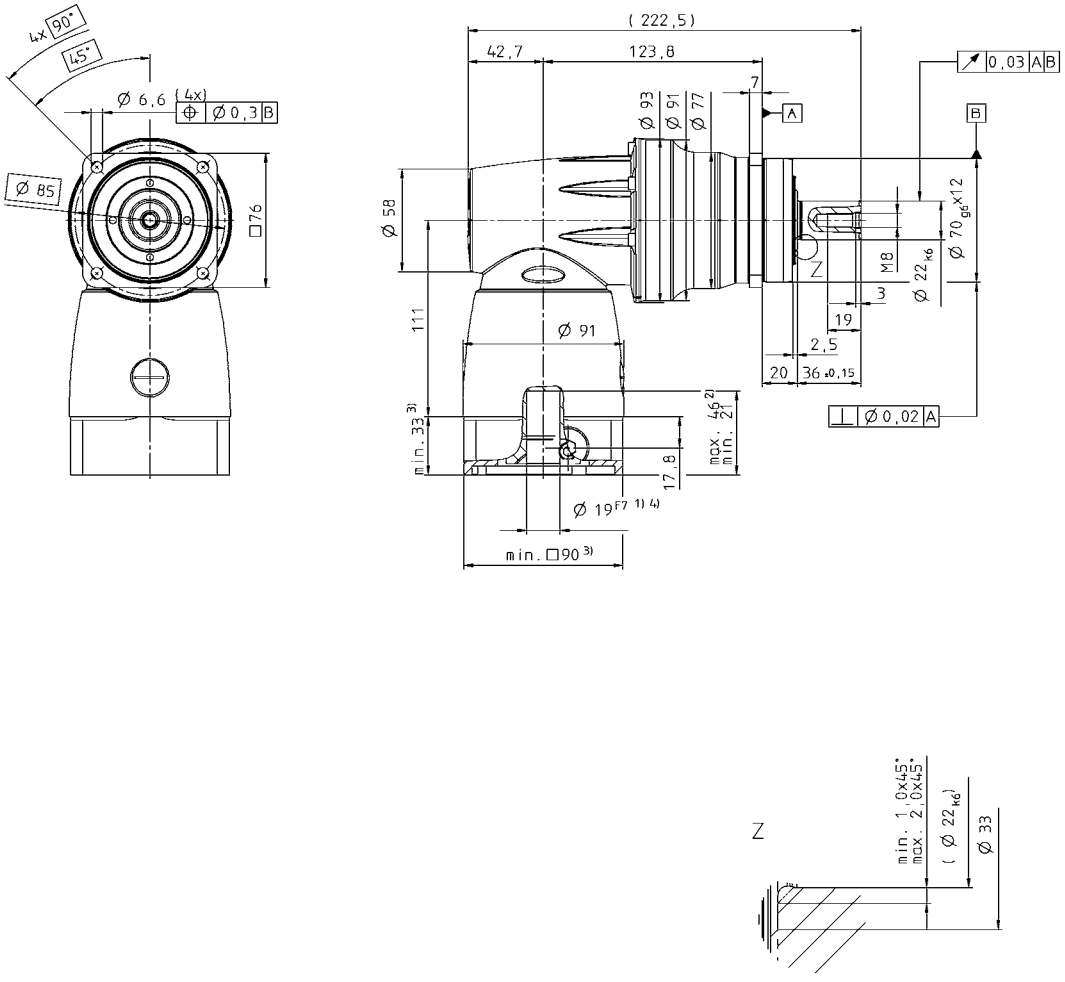
CAD data is available under
http://www.wittenstein-alpha.de/en/info-and-cad-finder.html

⚠ Motor mounting according to operating manual

				2-stage						
Ratio			***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
			T_{2B} 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
			T_{2N} in.lb	664	664	664	664	664	664	460
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	195	245	250	250	250	250	200
			T_{2Not} 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
			T_{012} in.lb	20	18	15	9	8	6	5
Max. torsional backlash			j_t arcmin	Standard ≤ 4 / Reduced ≤ 2						
Torsional rigidity			C_{t21} Nm/ arcmin	6.6	7.5	8.6	7.6	8.3	9.1	9.5
			C_{t21} in.lb/ arcmin	58	66	76	67	73	81	84
Max. axial force			F_{2AMax} N	3350						
			F_{2AMax} lb_f	753.75						
Max. radial force			F_{2RMax} N	4200						
			F_{2RMax} lb_f	945						
Max. tilting moment			M_{2KMax} Nm	236						
			M_{2KMax} in.lb	2088.6						
Efficiency at full load			η %	95						
Service life			L_h h	> 20000						
Weight (incl. ADP)			*m* kg	5.9						
			m lb_m	13.039						
Operating noise (with n1=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 kgcm²	2.23	2.15	1.99	1.25	1.23	1.21	1.2
			J_1 10^{-3} in.lb.s²	1.97	1.90	1.76	1.11	1.09	1.07	1.06
Clamping hub diameter [mm]	H	28	J_1 kgcm²	3.66	3.59	3.43	2.68	2.67	2.65	2.64
			J_1 10^{-3} in.lb.s²	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).

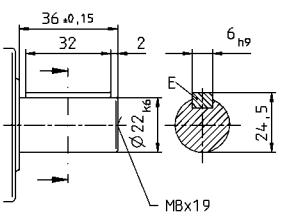
[a] Other ratios available on request
[b] Higher speeds are possible if the nominal torque is reduced
[c] For higher ambient temperatures, please reduce input speed
[d] Idling torques decrease during operation
[e] Refers to center of the output shaft or flange



Alternatives: Output shaft variants

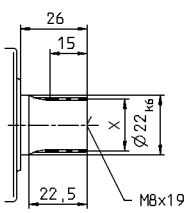
Keywayed output shaft in mm

E = key as per DIN 6885, sheet 1, form A



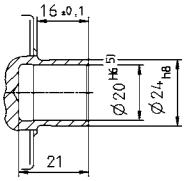
Involute gearing DIN 5480 in mm

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.

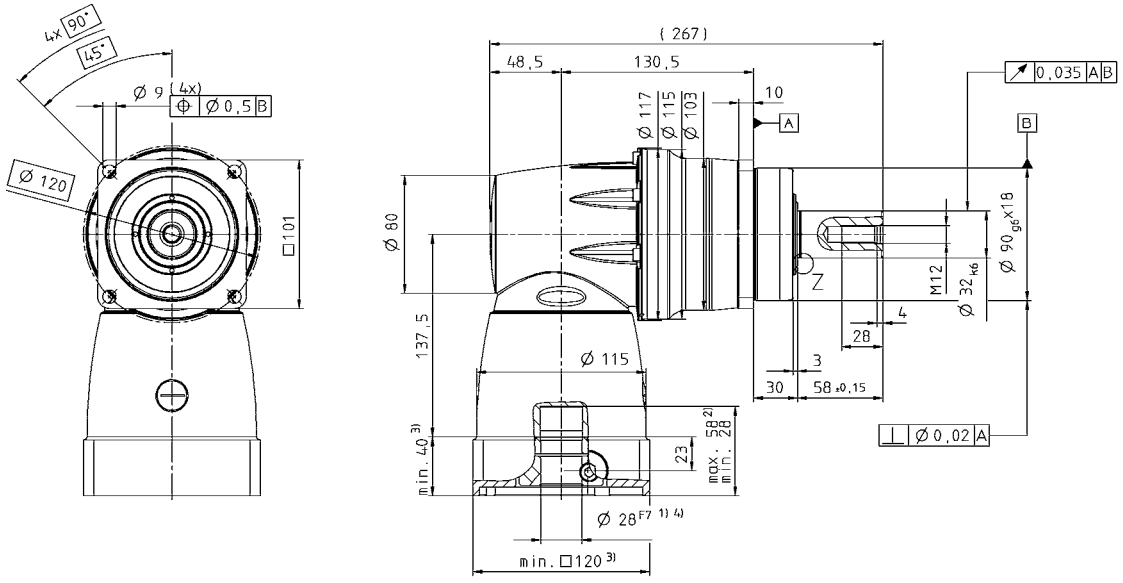
CAD data is available under
http://www.wittenstein-alpha.de/en/info-and-cad-finder.html

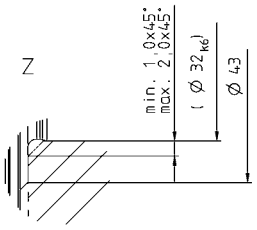
Motor mounting according to operating manual

					2-stage						
Ratio			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 tourque (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_{t21}	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_{2RMax}	N	6600						
				lb_f	1485						
Max. tilting moment			M_{2KMax}	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 n1=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	kgcm²	8	7.6	7	5	4.9	4.9	4.8
				10^{-3} in.lb.s²	7.08	6.73	6.20	4.43	4.34	4.34	4.25
Clamping hub diameter [mm]	K	38	J_1	kgcm²	15	14.7	14.1	12.1	12	11.9	11.9
				10^{-3} in.lb.s²	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).

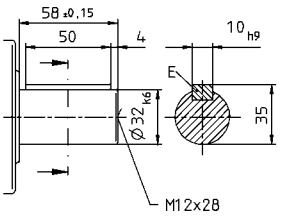
[a] Other ratios available on request
[b] Higher speeds are possible if the nominal torque is reduced
[c] For higher ambient temperatures, please reduce input speed
[d] Idling torques decrease during operation
[e] Refers to center of the output shaft or flange



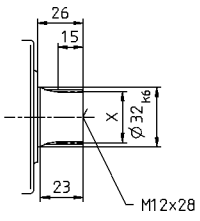


Alternatives: Output shaft variants

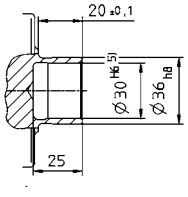
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



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.

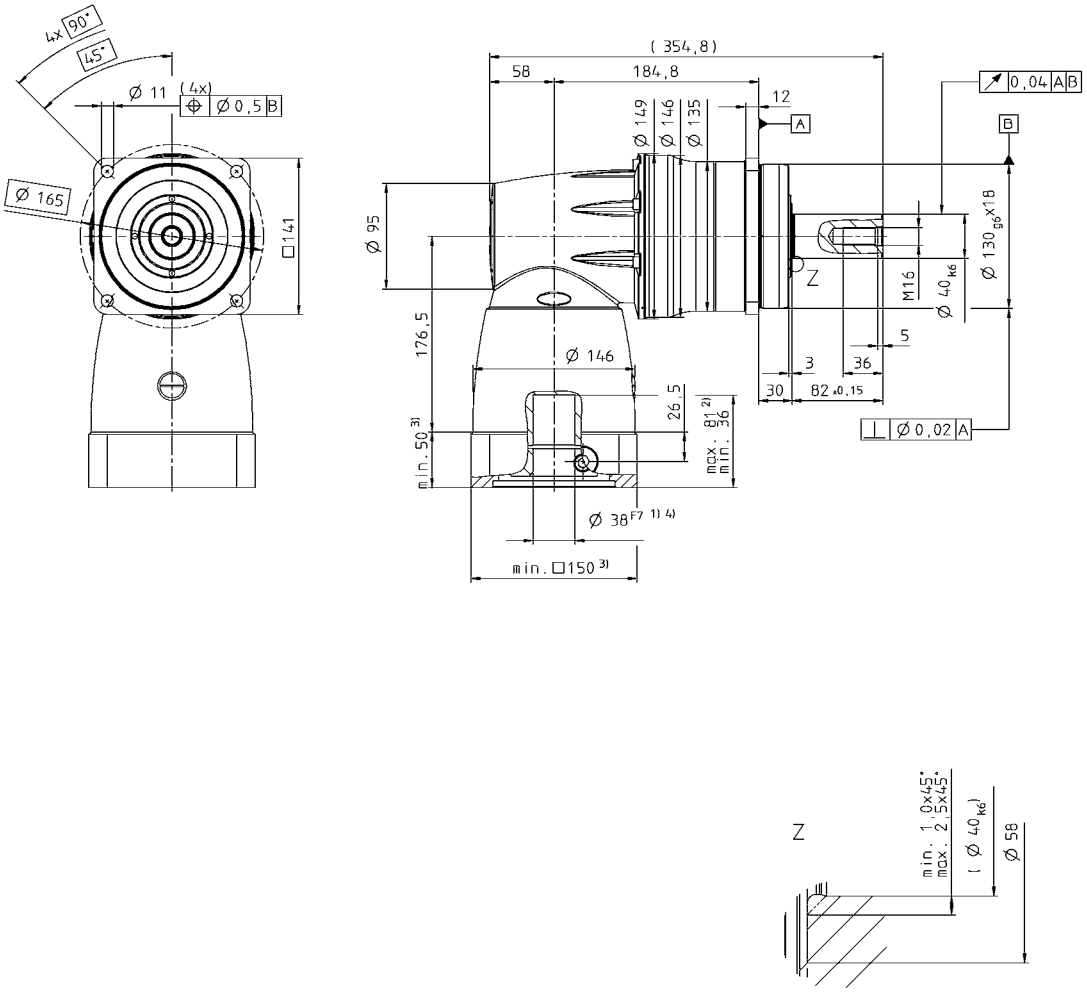
CAD data is available under
http://www.wittenstein-alpha.de/en/info-and-cad-finder.html

Motor mounting according to operating manual

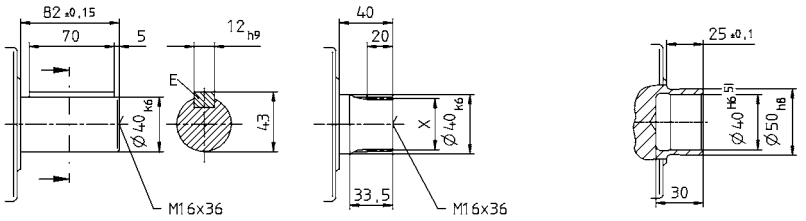
				2-stage						
Ratio			***i***	**4**	**5**	**7**	**8**	**10**	**14**	**20**
Max. acceleration torque (max. 1000 cycles per hour)			T_{2B} Nm	660	660	660	660	660	660	530
			T_{2B} in.lb	5841	5841	5841	5841	5841	5841	4691
Nominal output torque (with n_{1N})			T_{2N} Nm	360	360	360	360	360	360	220
			T_{2N} in.lb	3186	3186	3186	3186	3186	3186	1947
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	960	1200	1250	1250	1250	1250	1000
			T_{2Not} in.lb	8496	10620	11063	11063	11063	11063	8850
Nominal input speed (with T_{2N} 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
			T_{012} in.lb	87	77	65	41	35	30	26
Max. torsional backlash			j_t arcmin	Standard ≤ 4 / Reduced ≤ 2						
Torsional rigidity			C_{t21} Nm/ arcmin	37.0	41.0	46.0	41.0	45.0	48.0	51.0
			C_{t21} in.lb/ arcmin	327	363	407	363	398	425	451
Max. axial force			F_{2AMax} N	9870						
			F_{2AMax} lb_f	2220.75						
Max. radial force			F_{2RMax} N	9900						
			F_{2RMax} lb_f	2227.5						
Max. tilting moment			M_{2KMax} Nm	952						
			M_{2KMax} in.lb	8425.2						
Efficiency at full load			η %	95						
Service life			L_h h	> 20000						
Weight (incl. ADP)			*m* kg	24.7						
			m lb_m	54.587						
Operating noise (with n1=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 kgcm²	30.6	29.7	27.9	18.9	18.7	18.5	18.4
Clamping hub diameter [mm]			J_1 10^{-3} in.lb.s²	27.08	26.28	24.69	16.73	16.55	16.37	16.28

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



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

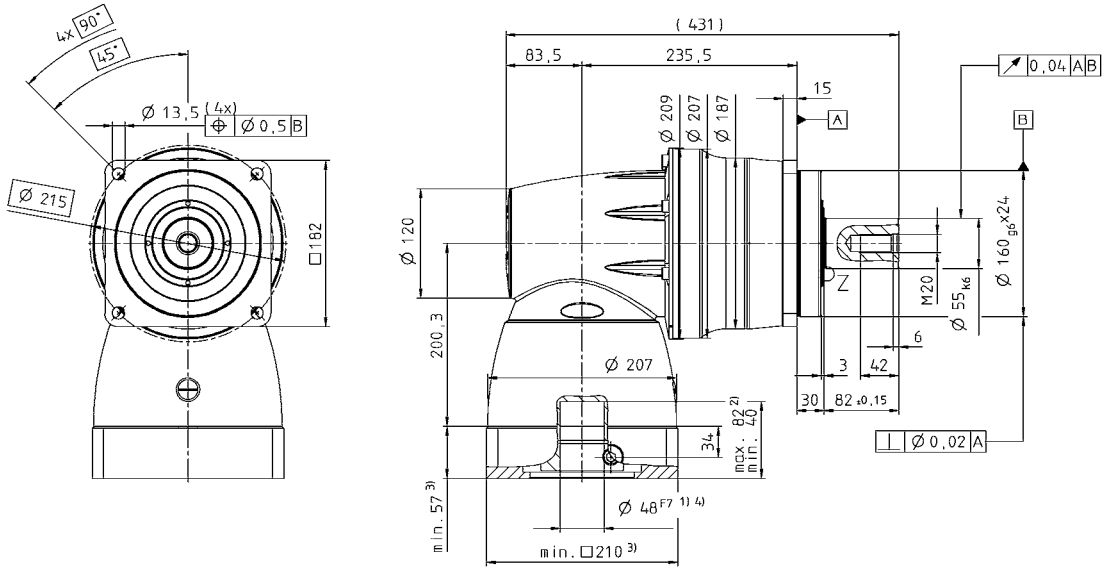


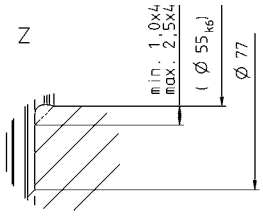
a) Other ratios available on request
b) Higher speeds are possible if the nominal torque is reduced
c) For higher ambient temperatures, please reduce input speed
d) Idling torques decrease during operation
e) Refers to center of the output shaft or flange

				2-stage						
Ratio			***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
			T_{2B} 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
			T_{2N} in.lb	6638	6638	6638	6638	6638	6638	6638
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	1560	1955	2735	2750	2750	2750	2200
			T_{2Not} 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
			T_{012} in.lb	181	164	146	97	89	80	71
Max. torsional backlash			j_t arcmin	Standard ≤ 4 / Reduced ≤ 2						
Torsional rigidity			C_{t21} Nm/ arcmin	104.0	122.0	143.0	130.0	144.0	157.0	166.0
			C_{t21} in.lb/ arcmin	920	1080	1266	1151	1274	1389	1469
Max. axial force			F_{2AMax} N	14150						
			F_{2AMax} lb_f	3183.75						
Max. radial force			F_{2RMax} N	15400						
			F_{2RMax} lb_f	3465						
Max. tilting moment			M_{2KMax} Nm	1600						
			M_{2KMax} in.lb	14160						
Efficiency at full load			η %	95						
Service life			L_h h	> 20000						
Weight (incl. ADP)			*m* kg	54.7						
			m lb_m	120.887						
Operating noise (with n1=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 kgcm²	109.5	105	94.7	49.2	48.1	46.9	46.2
Clamping hub diameter [mm]			J_1 10^{-3} in.lb.s²	96.91	92.93	83.81	43.54	42.57	41.51	40.89

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

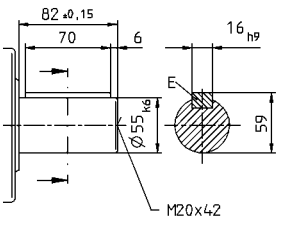
[a] Other ratios available on request
[b] Higher speeds are possible if the nominal torque is reduced
[c] For higher ambient temperatures, please reduce input speed
[d] Idling torques decrease during operation
[e] Refers to center of the output shaft or flange



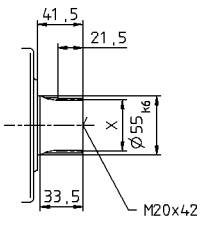


Alternatives: Output shaft variants

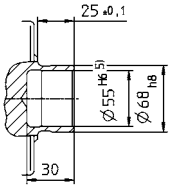
Keywayed output shaft in mm
E = key as per DIN 6885, sheet 1, form A



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.

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Motor mounting according to operating manual

				2-stage						
Ratio			***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
			T_{2B} 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
			T_{2N} in.lb	248	248	248	248	248	248	159
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	100	100	100	100	100	100	100
			T_{2Not} 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
			T_{012} in.lb	13	12	10	7	6	5	4
Max. torsional backlash			j_t arcmin	Standard ≤ 5 / Reduced ≤ 3						
Torsional rigidity			C_{t21} Nm/ arcmin	4.8	6.2	7.6	6.1	7.4	8.5	7.3
			C_{t21} in.lb/ arcmin	42	55	67	54	65	75	65
Tilting rigidity			C_{2K} Nm/ arcmin	-						
			C_{2K} in.lb/ arcmin	-						
Max. axial force			F_{2AMax} N	1630.0						
			F_{2AMax} lb_t	366.8						
Max. tilting moment			M_{2KMax} Nm	110.0						
			M_{2KMax} in.lb	973.5						
Efficiency at full load			η %	95.0						
Service life			L_h h	> 20000						
Weight (incl. ADP)			*m* kg	2.6						
			m lb_m	5.7						
Operating noise (with n1=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 kgcm²	0.72	0.7	0.66	0.44	0.43	0.43	0.43
			J_1 10^{-3} in.lb.s²	0.64	0.62	0.58	0.39	0.38	0.38	0.38
Clamping hub diameter [mm]	E	19	J_1 kgcm²	1.05	1.03	0.99	0.77	0.76	0.76	0.75
			J_1 10^{-3} in.lb.s²	0.93	0.91	0.88	0.68	0.67	0.67	0.66

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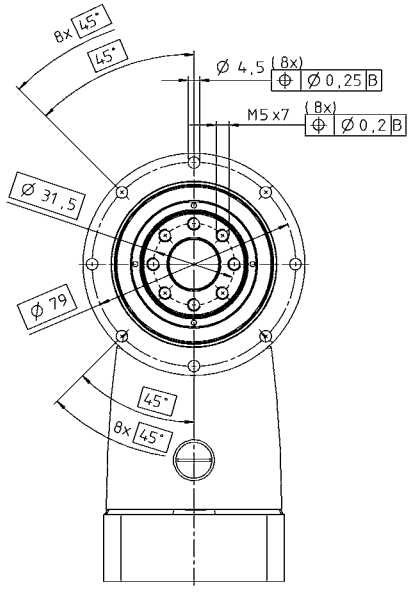

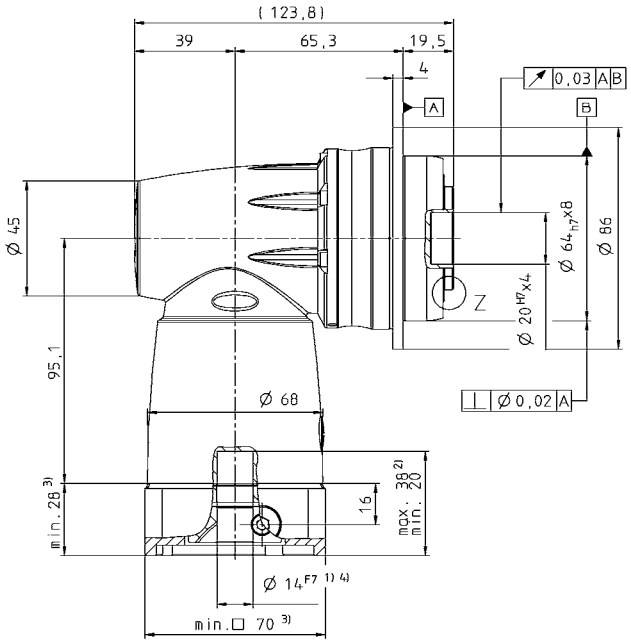

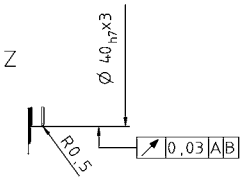

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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.

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Motor mounting according to operating manual

				2-stage						
Ratio			***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
			T_{2B} 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
			T_{2N} in.lb	664	664	664	664	664	664	531
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	195	245	250	250	250	250	250
			T_{2Not} 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
			T_{012} in.lb	22	19	17	10	9	7	6
Max. torsional backlash			j_t arcmin	Standard ≤ 4 / Reduced ≤ 2						
Torsional rigidity			C_{t21} Nm/ arcmin	12.0	16.0	20.0	16.0	20.0	23.0	21.0
			C_{t21} in.lb/ arcmin	106	142	177	142	177	204	186
Tilting rigidity			C_{2K} Nm/ arcmin	225						
			C_{2K} in.lb/ arcmin	1991						
Max. axial force			F_{2AMax} N	2150						
			F_{2AMax} lb_t	484						
Max. tilting moment			M_{2KMax} Nm	270						
			M_{2KMax} in.lb	2390						
Efficiency at full load			η %	95						
Service life			L_h h	> 20000						
Weight (incl. ADP)			*m* kg	6						
			m lb_m	13						
Operating noise (with n1=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 kgcm²	2.41	2.27	1.99	1.29	1.26	122	1.21
			J_1 10^{-3} in.lb.s²	2.13	2.01	1.76	1.14	1.12	107.97	1.07
Clamping hub diameter [mm]	H	28	J_1 kgcm²	3.85	3.71	3.43	2.73	2.7	2.66	2.64
			J_1 10^{-3} in.lb.s²	3.41	3.28	3.04	2.42	2.39	2.35	2.34

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[a] Other ratios available on request
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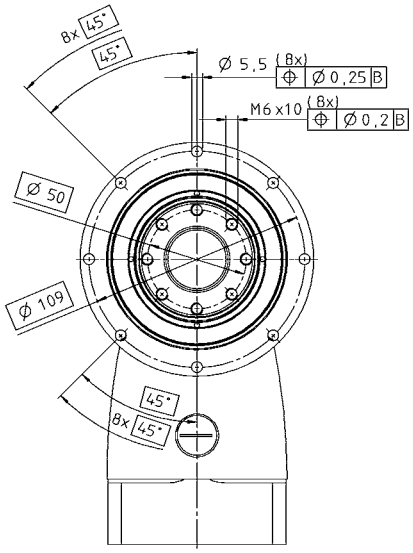

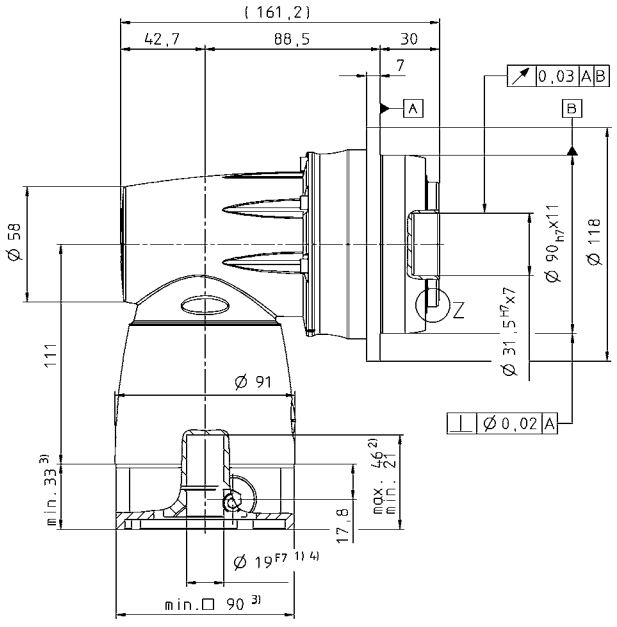

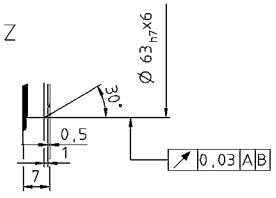

See technical data sheet for available clamping hub diameters (mass moment of inertia). Dimensions available on request.

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.

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Motor mounting according to operating manual

				2-stage						
Ratio			***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
			T_{2B} 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
			T_{2N} in.lb	1505	1505	1505	1505	1505	1505	1062
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	540	625	625	625	625	625	625
			T_{2Not} 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
			T_{012} in.lb	51	46	40	28	26	22	19
Max. torsional backlash			j_t arcmin	Standard ≤ 4 / Reduced ≤ 2						
Torsional rigidity			C_{t21} Nm/ arcmin	33.0	43.0	53.0	45.0	56.0	61.0	57.0
			C_{t21} in.lb/ arcmin	292	381	469	398	496	540	504
Tilting rigidity			C_{2K} Nm/ arcmin	550						
			C_{2K} in.lb/ arcmin	4868						
Max. axial force			F_{2AMax} N	4150						
			F_{2AMax} lb_t	934						
Max. tilting moment			M_{2KMax} Nm	440						
			M_{2KMax} in.lb	3894						
Efficiency at full load			η %	95						
Service life			L_h h	> 20000						
Weight (incl. ADP)			*m* kg	11						
			m lb_m	23						
Operating noise (with n1=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 kgcm²	8.3	7.9	7	5.1	5	4.9	4.8
			J_1 10^{-3} in.lb.s²	7.35	6.99	6.20	4.51	4.43	4.34	4.25
Clamping hub diameter [mm]	K	38	J_1 kgcm²	15.4	14.9	14.1	12.2	12.1	12	11.9
			J_1 10^{-3} in.lb.s²	13.63	13.19	12.48	10.80	10.71	10.62	10.53

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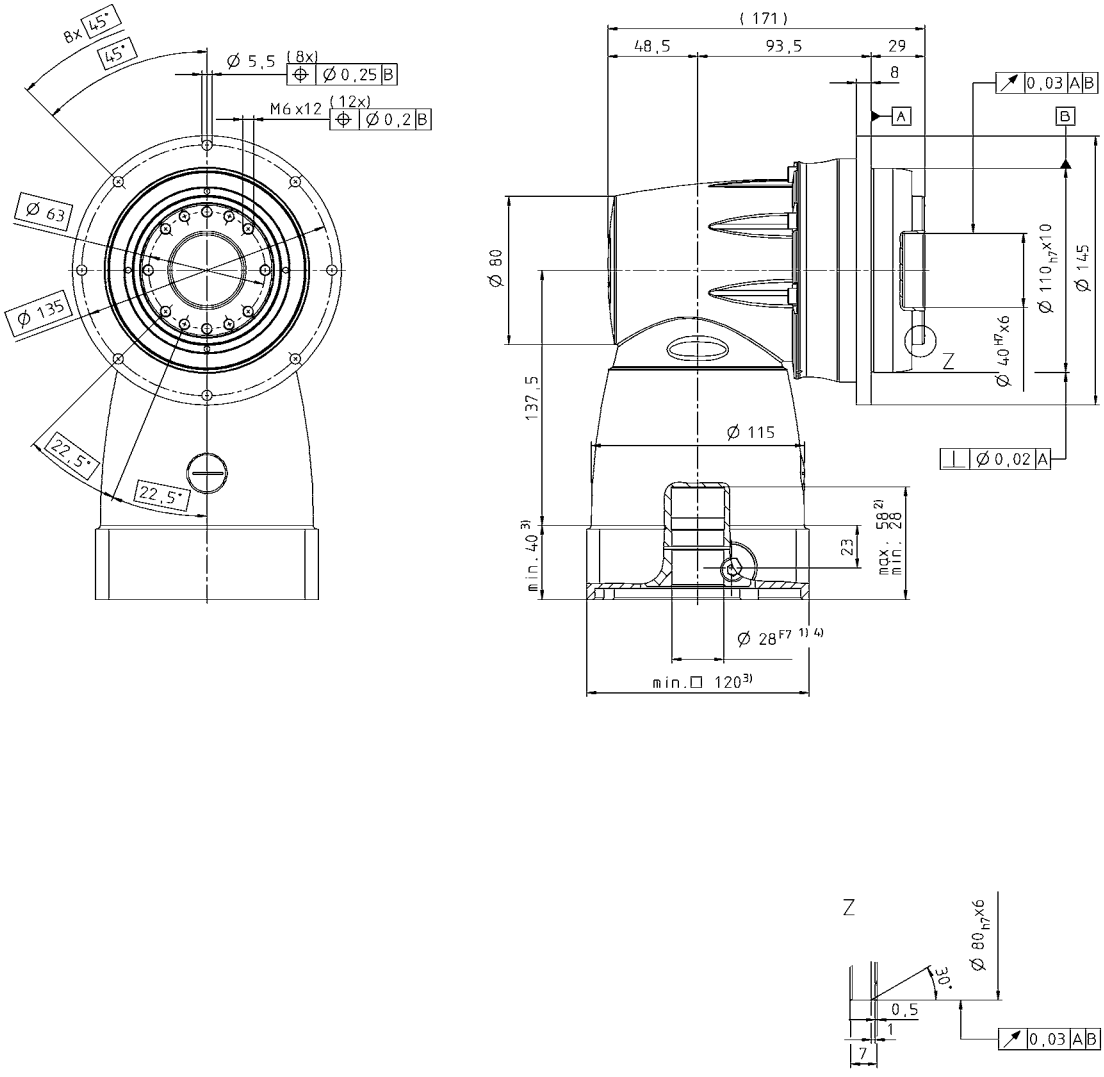

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Motor mounting according to operating manual

				2-stage						
Ratio			*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 tourque (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_{t21}	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 n1=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	kgcm²	32.3	30.8	27.90	19.4	19.00	18.7	18.50
Clamping hub diameter [mm]				10^{-3} in.lb.s²	28.59	27.26	24.69	17.17	16.82	16.55	16.37

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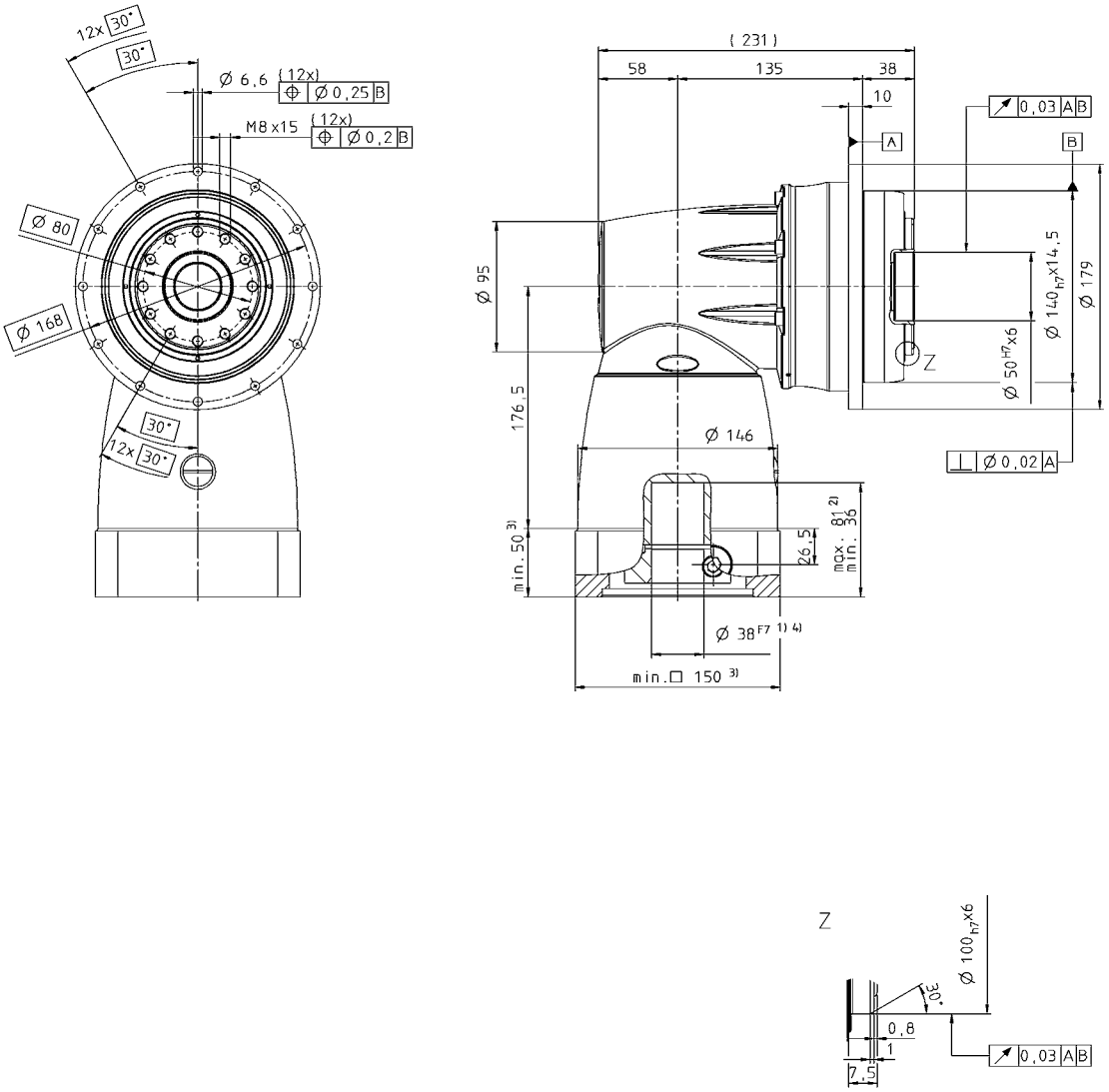

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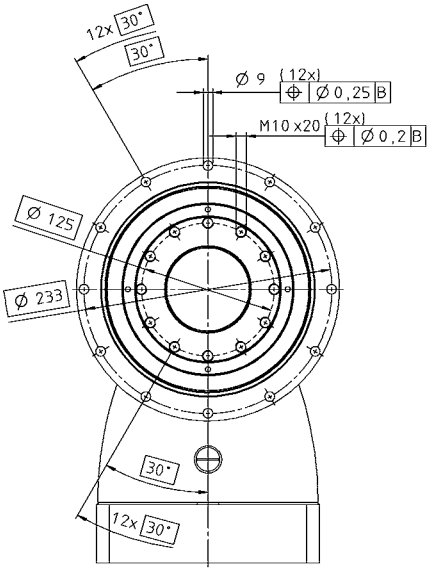
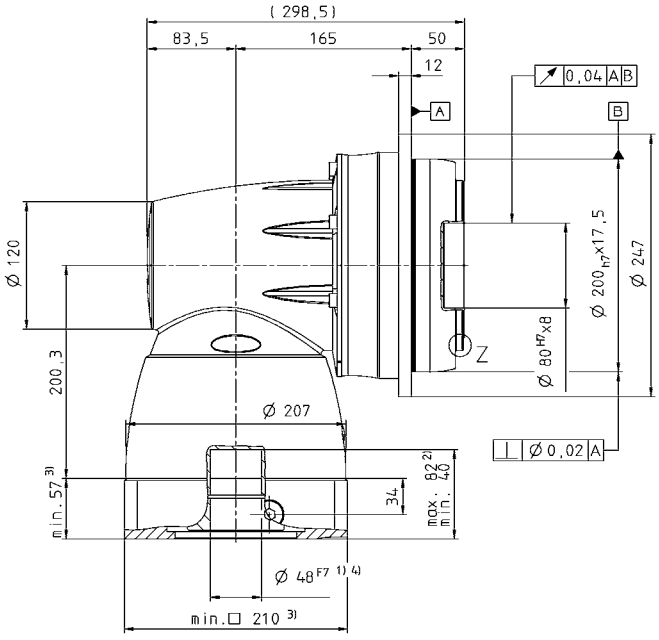
Motor mounting according to operating manual

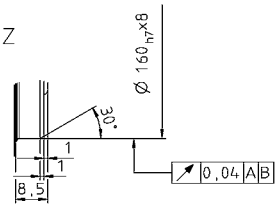
				2-stage						
Ratio			*i*	**4**	**5**	**7**	**8**	**10**	**14**	**20**
Max. acceleration torque (max. 1000 cycles per hour)			T_{2B} Nm	1260	1575	1600	1260	1575	1600	1400
			T_{2B} in.lb	11151	13939	14160	11151	13939	14160	12390
Nominal output torque (with n_{1N})			T_{2N} Nm	700	750	750	700	750	750	750
			T_{2N} in.lb	6195	6638	6638	6195	6638	6638	6638
Emergency stop tourque (permitted 1000 times during the service life of the gearhead)			T_{2Not} Nm	1560	1955	2735	2750	2750	2750	2750
			T_{2Not} in.lb	13806	17302	24205	24338	24338	24338	24338
Nominal input speed (with T_{2N} and 20°C ambient temperature)			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 (with n_1=3000 rpm and 20°C gearhead temperature)			T_{012} Nm	25.0	22.0	19.0	13.5	12.0	10.0	9.0
			T_{012} in.lb	221	195	168	119	106	89	80
Max. torsional backlash			j_t arcmin	Standard ≤ 4 / Reduced ≤ 2						
Torsional rigidity			C_{t21} Nm/ arcmin	181.0	242.0	324.0	278.0	345.0	407.0	390.0
			C_{t21} in.lb/ arcmin	1602	2142	2867	2460	3053	3602	3452
Tilting rigidity			C_{2K} Nm/ arcmin	1452						
			C_{2K} in.lb/ arcmin	12850						
Max. axial force			F_{2AMax} N	10050						
			F_{2AMax} lb_f	2261						
Max. tilting moment			M_{2KMax} Nm	3280						
			M_{2KMax} in.lb	29028						
Efficiency at full load			η %	95						
Service life			L_h h	> 20000						
Weight (incl. ADP)			*m* kg	51						
			m lb_m	112						
Operating noise (with n1=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 kgcm²	121.2	112.6	94.7	52.1	50	47.9	46.7
Clamping hub diameter [mm]			J_1 10^{-3} in.lb.s²	107.26	99.65	83.81	46.11	44.25	42.39	41.33

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







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

WITTENSTEIN | alpha

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WITTENSTEIN alpha – intelligent drive systems

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