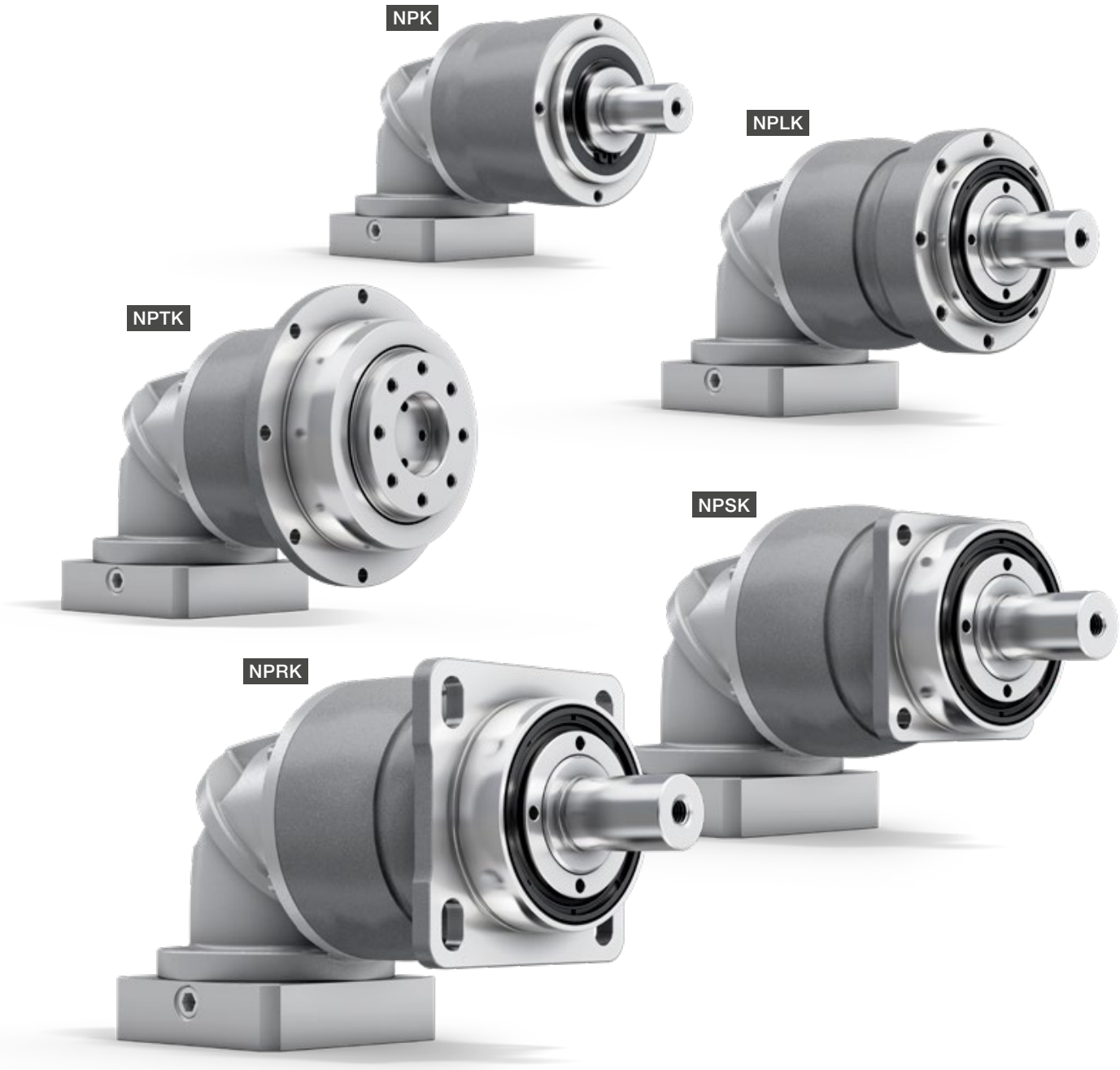
alpha Value Line

BEVEL GEARBOXES
NPK / NPLK / NPSK / NPTK / NPRK

The bevel gears of the alpha Value Line are the fitting solution for situations with limited mounting space. The flexible output shapes and gear ratios in combination with the extremely compact angle section offer comprehensive design freedom.


NPK
NPLK
NPTK
NPSK
NPRK

NPK / NPLK / NPSK / NPTK / NPRK – Individual Talents

PRODUCT HIGHLIGHTS

High flexibility
Various output versions offer design freedom tailored to individual requirements.

High economy
The gearboxes of the alpha Value Line are very economical to purchase, unbeatably efficient in operation, and maintenance free over their entire service life.

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

Total flexibility, even in limited space. The bevel gearboxes of the alpha Value Line combine the variety of the NP series with a compact and powerful bevel gear stage. This permits maximum flexibility through the configuration of five different output versions.

NPSK – bevel gearbox with SP+ output geometry

NPLK – bevel gearbox with reinforced bearings and B14 output geometry

More information about the alpha Value Line: simply scan the QR code using your smartphone.

https://alpha.wittenstein.de/en-en/alpha-value-line/

A **Design**

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

B **Compactness**

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

C **Various output shapes**

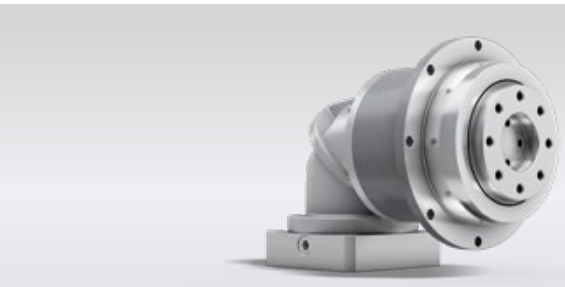
- Five output variants of the NPK series available: including B5 flange mounting, output flange, etc.
- Higher external forces possible with NPLK, NPSK, and NPRK

D **High ratio variation**

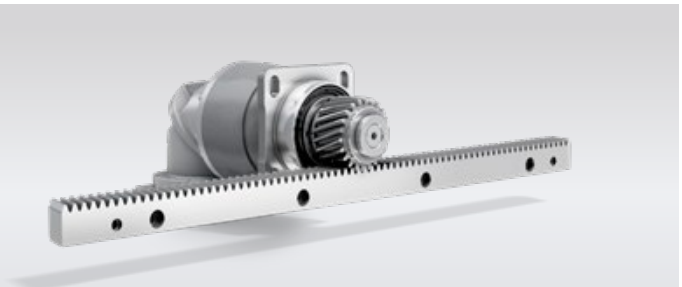
- Large number of ratios (i=3 to i=100)
- Available in the common binary ratios

E **Flexible motor connection**

- Mounting of all common servo motors by means of a flexible and screw-fastened adapter plate
- Large number of motor shaft diameters connectable



NPTK – bevel gearbox with TP+ output geometry



NPRK – bevel gearbox with slot holes for optimal rack and pinion mounting

NPK 005 MF 2-/3-stage

				2-stage					3-stage									
Ratio	**i**			**4**	**5**	**7**	**8**	**10**	**16**	**20**	**25**	**28**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	$T_{2\alpha}$	*Nm*		14	17	22	21	21	18	18	22	18	22	18	22	21	22	21
		in.lb		124	150	195	186	186	159	159	195	159	195	159	195	186	195	186
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		6.8	8.5	12	13	13	11	11	13	11	13	11	13	13	13	13
		in.lb		60	75	106	115	115	97	97	115	97	115	97	115	115	115	115
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		17	21	26	26	26	26	26	26	26	26	26	26	26	26	26
		in.lb		150	186	230	230	230	230	230	230	230	230	230	230	230	230	230
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.28	0.28	0.28	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
		in.lb		2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Max. backlash	j_t	*arcmin*		≤ 15					≤ 15									
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		0.9	0.9	0.9	0.9	0.9	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
		in.lb/arcmin		8	8	8	8	8	11	11	11	11	11	11	11	11	11	11
Max. axial force [c)]	F_{2AMax}	*N*		700					700									
		lb_f		158					158									
Max. lateral force [c)]	F_{2QMax}	*N*		800					800									
		lb_f		180					180									
Max. tilting moment	M_{2KMax}	*Nm*		23					23									
		in.lb		204					204									
Efficiency at full load	η	*%*		95					94									
Service life	L_h	*h*		> 20000					> 20000									
Weight (incl. standard adapter plate)	*m*	*kg*		1.1					1.3									
		lb_m		2.4					2.9									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 68					≤ 68									
Max. permitted housing temperature		*°C*		+90					+90									
		°F		+194					+194									
Ambient temperature		*°C*		0 to +40					0 to +40									
		°F		+32 to +104					+32 to +104									
Lubrication				Lubricated for life														
Direction of rotation				In- and output same direction														
Protection class				IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0005BA012.000-X														
Bore diameter of coupling on the application side			*mm*	X = 004.000 - 012.700														
Mass moment of inertia (relates to the drive) **B** **11** Clamping hub diameter [mm]	J_1	*kgcm²*		0.1	0.1	0.1	0.1	0.1	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
		10^{-3} *in.lb.s²*		0.09	0.09	0.09	0.09	0.09	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

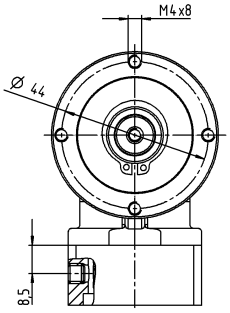
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

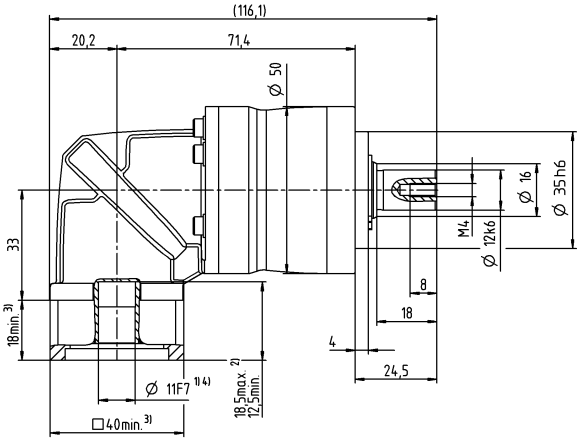
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

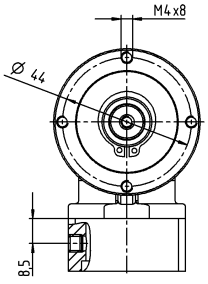
up to 11 [4] (B) [5]
clamping hub
diameter

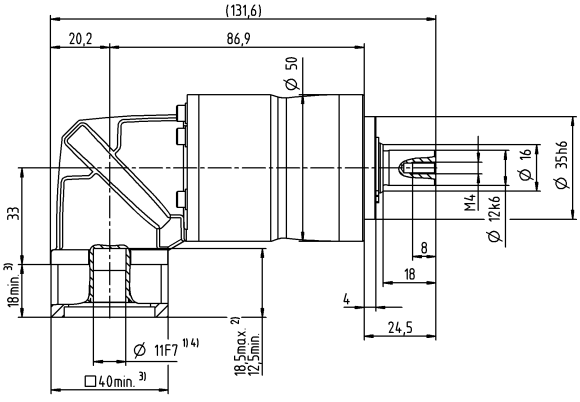




3-stage

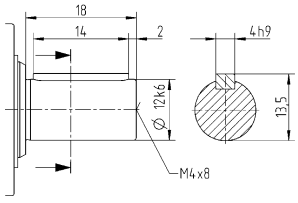
up to 11 [4] (B) [5]
clamping hub
diameter





Other output variants

Shaft with key



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	33	44	55	64	56	56
		in.lb	292	389	487	566	496	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	16	21	27	37	35	35
		in.lb	142	186	239	327	310	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	41	55	69	80	80	80
		in.lb	363	487	611	708	708	708
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3300	3300	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.54	0.54	0.54	0.54	0.54	0.54
		in.lb	4.8	4.8	4.8	4.8	4.8	4.8
Max. backlash	j_t	*arcmin*	≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	2.4	2.4	2.4	2.4	2.4	2.4
		in.lb/arcmin	21	21	21	21	21	21
Max. axial force [c)]	F_{2AMax}	*N*	1550					
		lb_f	349					
Max. lateral force [c)]	F_{2QMax}	*N*	1700					
		lb_f	383					
Max. tilting moment	M_{2KMax}	*Nm*	72					
		in.lb	637					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	2.3					
		lb_m	5.1					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 70					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA016.000-X					
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	$kgcm^2$	0.31	0.31	0.31	0.31	0.31	0.31
		10^{-3} $in.lb.s^2$	0.27	0.27	0.27	0.27	0.27	0.27

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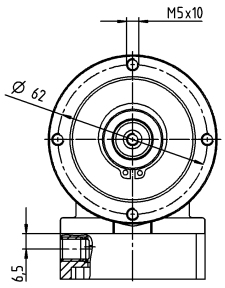
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

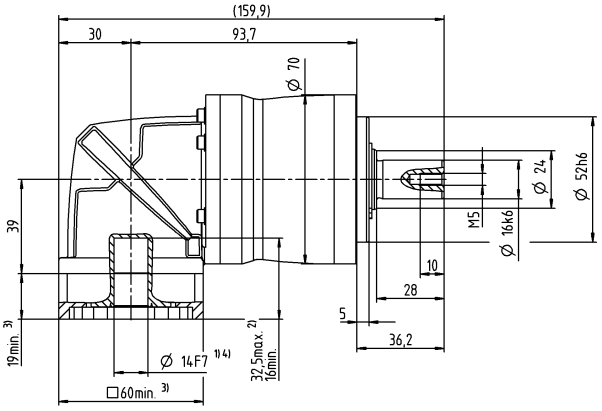
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

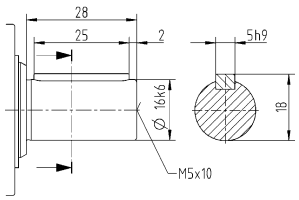
up to 14 [4] (C) [5]
clamping hub
diameter





Other output variants

Shaft with key



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[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			3-stage													
Ratio	**i**		**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	42	51	56	56	64	56	51	56	64	56	64	56	64	56
		in.lb	372	451	496	496	566	496	451	496	566	496	566	496	566	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	20	25	27	34	40	35	31	35	40	35	40	35	40	35
		in.lb	177	221	239	301	354	310	274	310	354	310	354	310	354	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	52	65	70	80	80	80	80	80	80	80	80	80	80	80
		in.lb	460	575	620	708	708	708	708	708	708	708	708	708	708	708
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
		in.lb	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Max. backlash	j_t	*arcmin*	≤ 12													
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		in.lb/arcmin	27	27	27	27	27	27	27	27	27	27	27	27	27	27
Max. axial force [c)]	F_{2AMax}	*N*	1550													
		lb_f	349													
Max. lateral force [c)]	F_{2QMax}	*N*	1700													
		lb_f	383													
Max. tilting moment	M_{2KMax}	*Nm*	72													
		in.lb	637													
Efficiency at full load	η	*%*	94													
Service life	L_h	*h*	> 20000													
Weight (incl. standard adapter plate)	*m*	*kg*	2.3													
		lb_m	5.1													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 68													
Max. permitted housing temperature		*°C*	+90													
		°F	+194													
Ambient temperature		*°C*	0 to +40													
		°F	+32 to +104													
Lubrication			Lubricated for life													
Direction of rotation			In- and output same direction													
Protection class			IP 64													
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA016.000-X													
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000													
Mass moment of inertia (relates to the drive) **B** **11** Clamping hub diameter [mm]	J_1	*kgcm²*	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
		10^{-3} *in.lb.s²*	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12

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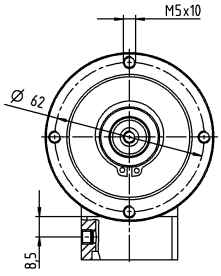
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

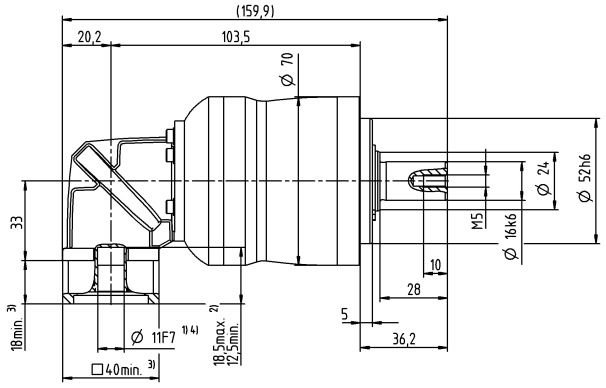
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

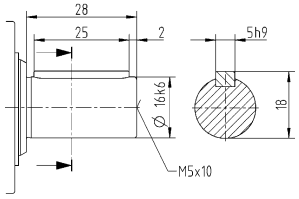
up to 11 [4] (B) [5]
clamping hub
diameter





Other output variants

Shaft with key



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[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	60	80	100	140	144	144
		in.lb	531	708	885	1239	1275	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	35	47	58	82	90	90
		in.lb	310	416	513	726	797	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	90	120	150	190	190	190
		in.lb	797	1062	1328	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.98	0.98	0.98	0.98	0.98	0.98
		in.lb	8.7	8.7	8.7	8.7	8.7	8.7
Max. backlash	j_t	*arcmin*	≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	6.2	6.2	6.2	6.2	6.2	6.2
		in.lb/arcmin	55	55	55	55	55	55
Max. axial force [c)]	F_{2AMax}	*N*	1900					
		lb_f	428					
Max. lateral force [c)]	F_{2QMax}	*N*	2800					
		lb_f	630					
Max. tilting moment	M_{2KMax}	*Nm*	137					
		in.lb	1213					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	4.9					
		lb_m	11					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 73					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA022.000-X					
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) **E** **19** Clamping hub diameter [mm]	J_1	$kgcm^2$	1.2	1.2	1.2	1.2	1.2	1.2
		10^{-3} $in.lb.s^2$	1.1	1.1	1.1	1.1	1.1	1.1

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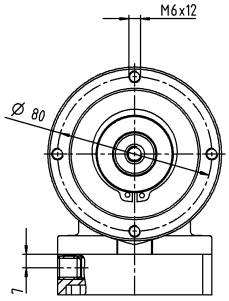
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

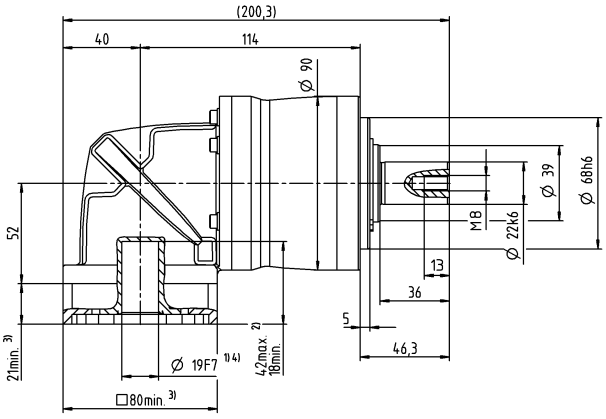
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

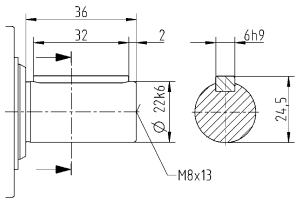
up to 19 [4] (E) [5]
clamping hub
diameter





Other output variants

Shaft with key



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[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			3-stage														
Ratio	**i**		**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	99	128	128	152	152	160	152	128	152	160	152	160	144	160	144
		in.lb	876	1133	1133	1345	1345	1416	1345	1133	1345	1416	1345	1416	1275	1416	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	48	65	80	86	95	100	95	80	95	100	95	100	90	100	90
		in.lb	425	575	708	761	841	885	841	708	841	885	841	885	797	885	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	124	166	190	190	190	190	190	190	190	190	190	190	190	190	190
		in.lb	1097	1469	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
		in.lb	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max. backlash	j_t	*arcmin*	≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
		in.lb/arcmin	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
Max. axial force [c)]	F_{2AMax}	*N*	1900														
		lb_f	428														
Max. lateral force [c)]	F_{2QMax}	*N*	2800														
		lb_f	630														
Max. tilting moment	M_{2KMax}	*Nm*	137														
		in.lb	1213														
Efficiency at full load	η	*%*	94														
Service life	L_h	*h*	> 20000														
Weight (incl. standard adapter plate)	*m*	*kg*	4.5														
		lb_m	9.9														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 70														
Max. permitted housing temperature		*°C*	+90														
		°F	+194														
Ambient temperature		*°C*	0 to +40														
		°F	+32 to +104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output same direction														
Protection class			IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA022.000-X														
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000														
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	$kgcm^2$	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		10^{-3} *in.lb.s²*	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

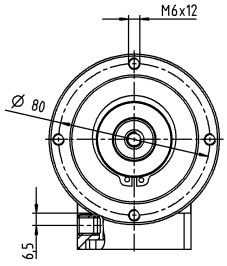
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

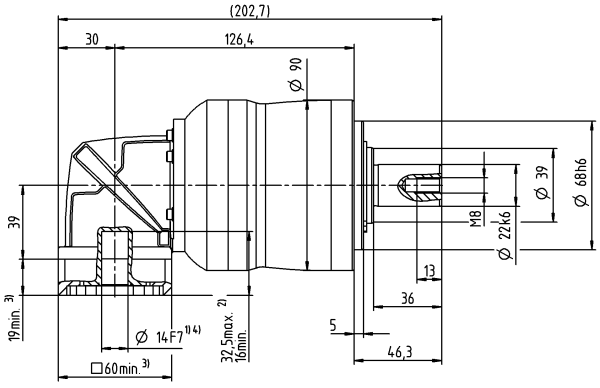
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

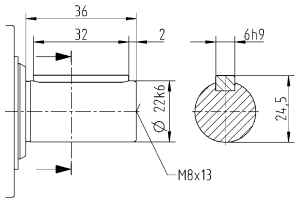
up to 14 [4] (C) [5]
clamping hub
diameter





Other output variants

Shaft with key



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[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	150	200	250	350	352	352
		in.lb	1328	1770	2213	3098	3115	3115
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	93	124	155	217	220	220
		in.lb	823	1097	1372	1921	1947	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	238	318	397	500	500	500
		in.lb	2106	2815	3514	4425	4425	4425
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2000	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	*rpm*	4500	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	3.5	3.5	3.5	3.5	3.5	3.5
		in.lb	31	31	31	31	31	31
Max. backlash	j_t	*arcmin*	≤ 13					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	16	16	16	16	16	16
		in.lb/arcmin	142	142	142	142	142	142
Max. axial force [c)]	F_{2AMax}	*N*	4000					
		lb_f	900					
Max. lateral force [c)]	F_{2QMax}	*N*	5000					
		lb_f	1125					
Max. tilting moment	M_{2KMax}	*Nm*	345					
		in.lb	3054					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	11					
		lb_m	24					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 74					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0150BA032.000-X					
Bore diameter of coupling on the application side		*mm*	X = 019.000 - 036.000					
Mass moment of inertia (relates to the drive) H 28 Clamping hub diameter [mm]	J_1	*kgcm²*	5.3	5.3	5.3	5.3	5.3	5.3
		10^{-3} in.lb.s²	4.7	4.7	4.7	4.7	4.7	4.7

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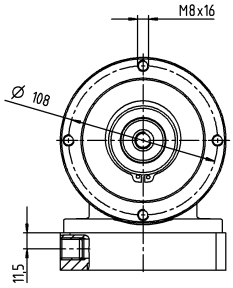
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

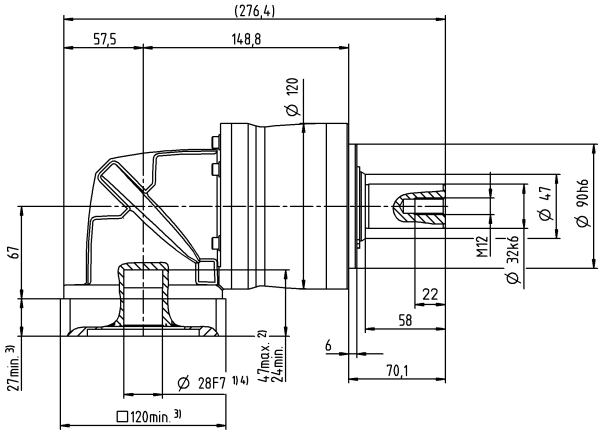
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

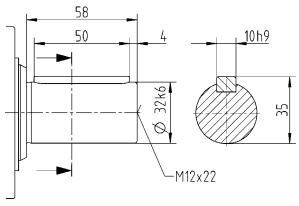
up to 28 [4] (H) [5]
clamping hub
diameter





Other output variants

Shaft with key



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[5] Standard clamping hub diameter

			3-stage														
Ratio	**i**		**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	180	240	300	320	400	400	408	320	408	400	408	400	352	400	352
		in.lb	1593	2124	2655	2832	3540	3540	3611	2832	3611	3540	3611	3540	3115	3540	3115
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	105	141	176	188	235	250	255	200	255	250	255	250	220	250	220
		in.lb	929	1248	1558	1664	2080	2213	2257	1770	2257	2213	2257	2213	1947	2213	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	270	361	451	481	500	500	500	500	500	500	500	500	500	500	500
		in.lb	2390	3195	3992	4257	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		in.lb	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
Max. backlash	j_t	*arcmin*	≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
		in.lb/arcmin	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
Max. axial force [c)]	F_{2AMax}	*N*	4000														
		lb_f	900														
Max. lateral force [c)]	F_{2QMax}	*N*	5000														
		lb_f	1125														
Max. tilting moment	M_{2KMax}	*Nm*	345														
		in.lb	3054														
Efficiency at full load	η	*%*	94														
Service life	L_h	*h*	> 20000														
Weight (incl. standard adapter plate)	*m*	*kg*	11														
		lb_m	24														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 73														
Max. permitted housing temperature		*°C*	+90														
		°F	+194														
Ambient temperature		*°C*	0 to +40														
		°F	+32 to +104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output same direction														
Protection class			IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0150BA032.000-X														
Bore diameter of coupling on the application side		*mm*	X = 019.000 - 036.000														
Mass moment of inertia (relates to the drive) **E** **19** Clamping hub diameter [mm]	J_1	*kgcm²*	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
		10^{-3} *in.lb.s²*	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

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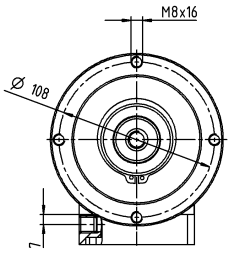
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

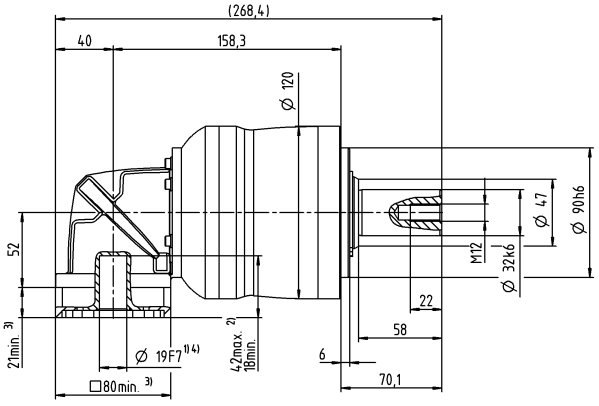
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

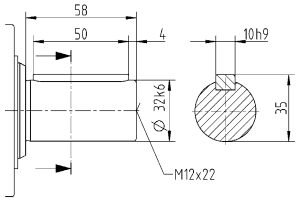
up to 19 [4] (E) [5]
clamping hub
diameter





Other output variants

Shaft with key



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[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPK 045 MF 2-/3-stage

					2-stage			3-stage				
Ratio	**i**			**5**	**8**	**10**	**25**	**32**	**50**	**64**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		500	640	640	700	640	700	640	640
		in.lb		4425	5665	5665	6196	5665	6196	5665	5665
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		399	400	400	500	400	500	400	400
		in.lb		3531	3540	3540	4425	3540	4425	3540	3540
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		1000	1000	1000	1000	1000	1000	1000	1000
		in.lb		8851	8851	8851	8851	8851	8851	8851	8851
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		1600	1600	1600	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	*rpm*		4000	4000	4000	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		6.9	6.9	6.9	3.6	3.6	3.6	3.6	3.6
		in.lb		61	61	61	32	32	32	32	32
Max. backlash	j_t	*arcmin*		≤ 11			≤ 11				
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		48	48	48	54	54	54	54	54
		in.lb/arcmin		425	425	425	478	478	478	478	478
Max. axial force [c)]	F_{2AMax}	*N*		6000			6000				
		lb_f		1350			1350				
Max. lateral force [c)]	F_{2QMax}	*N*		8000			8000				
		lb_f		1800			1800				
Max. tilting moment	M_{2KMax}	*Nm*		704			704				
		in.lb		6231			6231				
Efficiency at full load	η	*%*		95			94				
Service life	L_h	*h*		> 20000			> 20000				
Weight (incl. standard adapter plate)	*m*	*kg*		24			21				
		lb_m		53			46				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 78			≤ 74				
Max. permitted housing temperature		*°C*		+90			+90				
		°F		+194			+194				
Ambient temperature		*°C*		0 to +40			0 to +40				
		°F		+32 to +104			+32 to +104				
Lubrication				Lubricated for life							
Direction of rotation				In- and output same direction							
Protection class				IP 64							
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0300BA040.000-X							
Bore diameter of coupling on the application side			*mm*	X = 020.000 - 045.000							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	H	28	J_1	*kgcm²*	–	–	–	6.8	6.8	6.8	6.8	6.8
				10^{-3} *in.lb.s²*	–	–	–	6	6	6	6	6
	K	38	J_1	*kgcm²*	18	18	18	–	–	–	–	–
				10^{-3} *in.lb.s²*	16	16	16	–	–	–		–

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

[a)] Valid for torque transmission only
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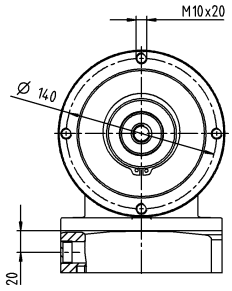
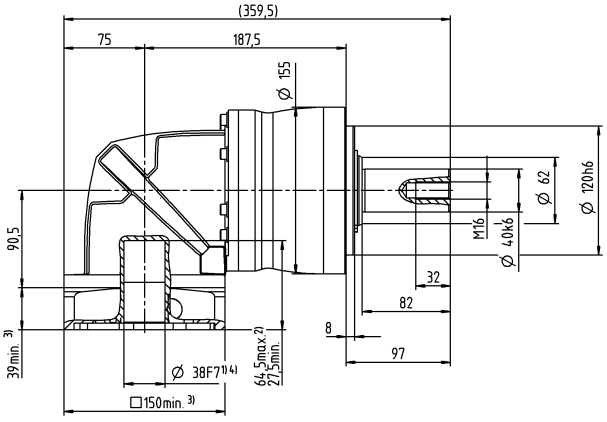
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

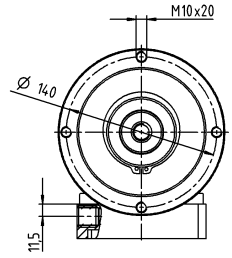
up to 38 [4] (K) [5] clamping hub diameter

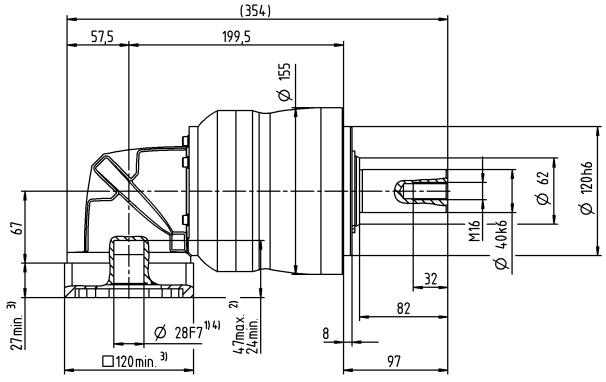




3-stage

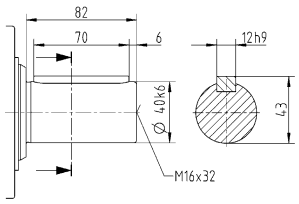
up to 28 [4] (H) [5] clamping hub diameter





Other output variants

Shaft with key



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[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	33	44	55	64	56	56
		in.lb	292	389	487	566	496	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	16	21	27	37	35	35
		in.lb	142	186	239	327	310	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	41	55	69	80	80	80
		in.lb	363	487	611	708	708	708
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2900	3100	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	1.2	1.2	1.2	1.2	1.2	1.2
		in.lb	11	11	11	11	11	11
Max. backlash	j_t	*arcmin*	≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	2.4	2.4	2.4	2.4	2.4	2.4
		in.lb/arcmin	21	21	21	21	21	21
Max. axial force [c)]	F_{2AMax}	*N*	2400					
		lb_f	540					
Max. lateral force [c)]	F_{2QMax}	*N*	2800					
		lb_f	630					
Max. tilting moment	M_{2KMax}	*Nm*	152					
		in.lb	1345					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	2.3					
		lb_m	5.1					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 70					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA016.000-X					
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	$kgcm^2$	0.32	0.32	0.32	0.32	0.32	0.32
		10^{-3} $in.lb.s^2$	0.28	0.28	0.28	0.28	0.28	0.28

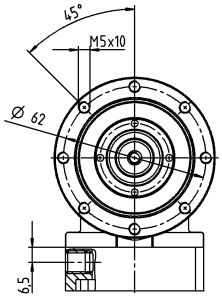
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

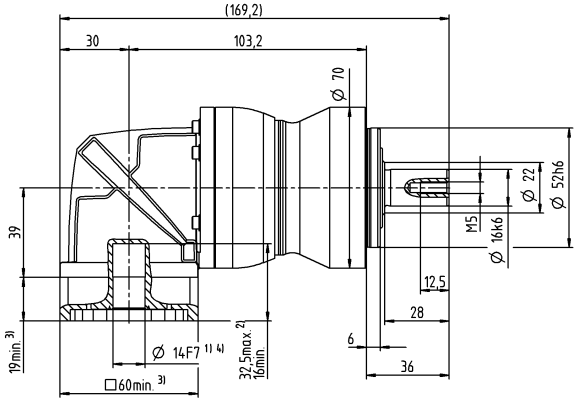
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

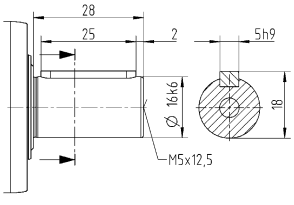
up to 14 [4] (C) [5]
clamping hub
diameter



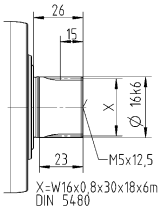


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPLK 015 MF 3-stage

				3-stage													
Ratio	**i**			**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		42	51	56	56	64	56	51	56	64	56	64	56	64	56
		in.lb		372	451	496	496	566	496	451	496	566	496	566	496	566	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		20	25	27	34	40	35	31	35	40	35	40	35	40	35
		in.lb		177	221	239	301	354	310	274	310	354	310	354	310	354	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		52	65	70	80	80	80	80	80	80	80	80	80	80	80
		in.lb		460	575	620	708	708	708	708	708	708	708	708	708	708	708
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
		in.lb		4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max. backlash	j_t	*arcmin*		≤ 12													
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		3	3	3	3	3	3	3	3	3	3	3	3	3	3
		in.lb/arcmin		27	27	27	27	27	27	27	27	27	27	27	27	27	27
Max. axial force [c)]	F_{2AMax}	*N*		2400													
		lb_f		540													
Max. lateral force [c)]	F_{2QMax}	*N*		2800													
		lb_f		630													
Max. tilting moment	M_{2KMax}	*Nm*		152													
		in.lb		1345													
Efficiency at full load	η	*%*		94													
Service life	L_h	*h*		> 20000													
Weight (incl. standard adapter plate)	m	*kg*		2.4													
		lb_m		5.3													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 68													
Max. permitted housing temperature		*°C*		+90													
		°F		+194													
Ambient temperature		*°C*		0 to +40													
		°F		+32 to +104													
Lubrication				Lubricated for life													
Direction of rotation				In- and output same direction													
Protection class				IP 64													
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0060BA016.000-X													
Bore diameter of coupling on the application side			*mm*	X = 012.000 - 032.000													
Mass moment of inertia (relates to the drive) **B** **11** Clamping hub diameter [mm]	J_1	*$kgcm^2$*		0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
		10^{-3} in.lb.s^2		0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12

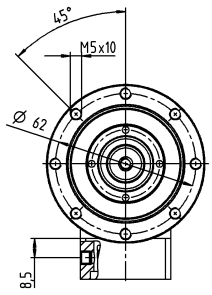
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

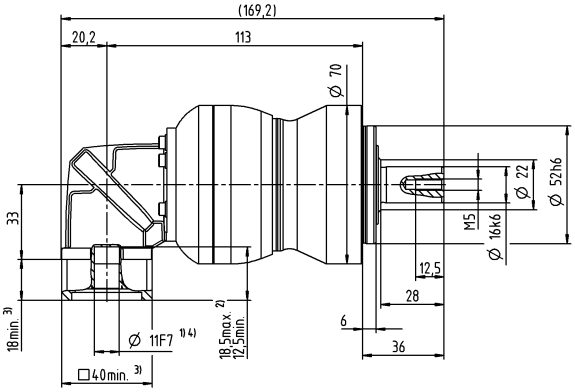
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

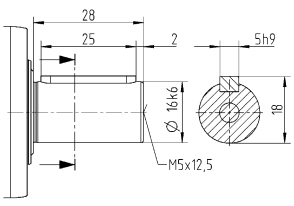
up to 11 [4] (B) [5]
clamping hub
diameter



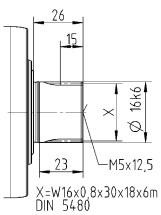


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	60	80	100	140	144	144
		in.lb	531	708	885	1239	1275	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	35	47	58	82	90	90
		in.lb	310	416	513	726	797	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	90	120	150	190	190	190
		in.lb	797	1062	1328	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2700	2900	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	2.4	2.4	2.4	2.4	2.4	2.4
		in.lb	21	21	21	21	21	21
Max. backlash	j_t	*arcmin*	≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	6.2	6.2	6.2	6.2	6.2	6.2
		in.lb/arcmin	55	55	55	55	55	55
Max. axial force [c)]	F_{2AMax}	*N*	3350					
		lb_f	754					
Max. lateral force [c)]	F_{2QMax}	*N*	4200					
		lb_f	945					
Max. tilting moment	M_{2KMax}	*Nm*	236					
		in.lb	2089					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	5					
		lb_m	11					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 73					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA022.000-X					
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) **E** **19** Clamping hub diameter [mm]	J_1	$kgcm^2$	1.2	1.2	1.2	1.2	1.2	1.2
		10^{-3} $in.lb.s^2$	1.1	1.1	1.1	1.1	1.1	1.1

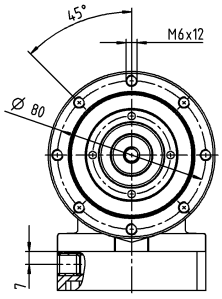
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

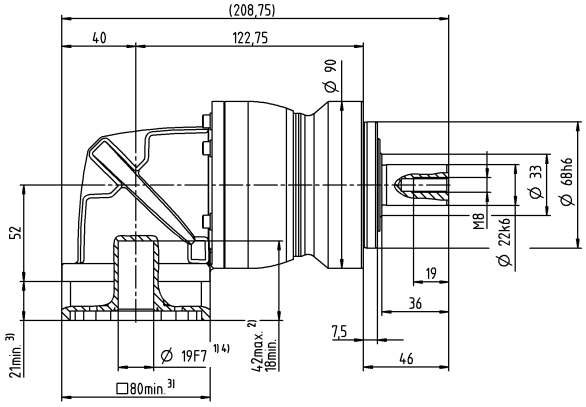
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

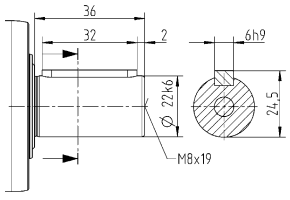
up to 19 [4] (E) [5]
clamping hub
diameter



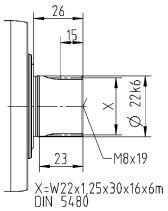


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			3-stage														
Ratio	**i**		**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	99	128	128	152	152	160	152	128	152	160	152	160	144	160	144
		in.lb	876	1133	1133	1345	1345	1416	1345	1133	1345	1416	1345	1416	1275	1416	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	48	65	80	86	95	100	95	80	95	100	95	100	90	100	90
		in.lb	425	575	708	761	841	885	841	708	841	885	841	885	797	885	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	124	166	190	190	190	190	190	190	190	190	190	190	190	190	190
		in.lb	1097	1469	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2900	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
		in.lb	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
Max. backlash	j_t	*arcmin*	≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
		in.lb/arcmin	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
Max. axial force [c)]	F_{2AMax}	*N*	3350														
		lb_f	754														
Max. lateral force [c)]	F_{2QMax}	*N*	4200														
		lb_f	945														
Max. tilting moment	M_{2KMax}	*Nm*	236														
		in.lb	2089														
Efficiency at full load	η	*%*	94														
Service life	L_h	*h*	> 20000														
Weight (incl. standard adapter plate)	m	*kg*	4.6														
		lb_m	10														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 73														
Max. permitted housing temperature		*°C*	+90														
		°F	+194														
Ambient temperature		*°C*	0 to +40														
		°F	+32 to +104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output same direction														
Protection class			IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA022.000-X														
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000														
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	$kgcm^2$	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		10^{-3} *in.lb.s²*	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

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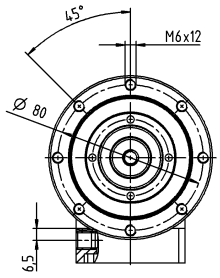
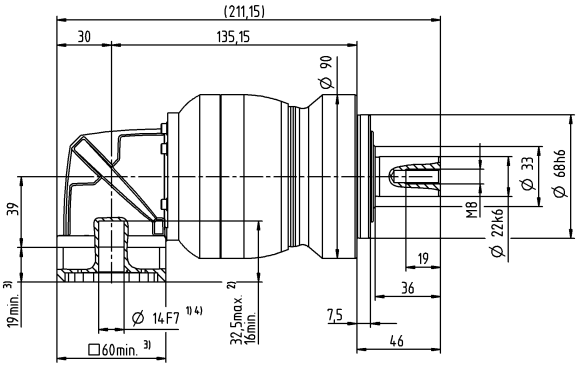
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

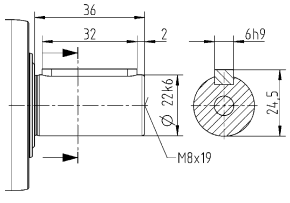
up to 14 [4] (C) [5]
clamping hub
diameter



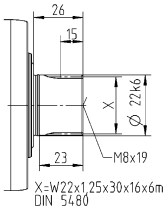


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	150	200	250	350	352	352
		in.lb	1328	1770	2213	3098	3115	3115
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	93	124	155	217	220	220
		in.lb	823	1097	1372	1921	1947	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	238	318	397	500	500	500
		in.lb	2106	2815	3514	4425	4425	4425
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2000	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	*rpm*	4500	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	5.8	5.8	5.8	5.8	5.8	5.8
		in.lb	51	51	51	51	51	51
Max. backlash	j_t	*arcmin*	≤ 13					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	16	16	16	16	16	16
		in.lb/arcmin	142	142	142	142	142	142
Max. axial force [c)]	F_{2AMax}	*N*	5650					
		lb_f	1271					
Max. lateral force [c)]	F_{2QMax}	*N*	6600					
		lb_f	1485					
Max. tilting moment	M_{2KMax}	*Nm*	487					
		in.lb	4310					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	11					
		lb_m	24					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 74					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0150BA032.000-X					
Bore diameter of coupling on the application side		*mm*	X = 019.000 - 036.000					
Mass moment of inertia (relates to the drive) H 28 Clamping hub diameter [mm]	J_1	*kgcm²*	5.2	5.2	5.2	5.2	5.2	5.2
		10^{-3} in.lb.s²	4.6	4.6	4.6	4.6	4.6	4.6

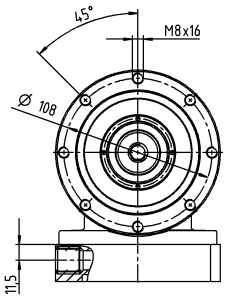
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

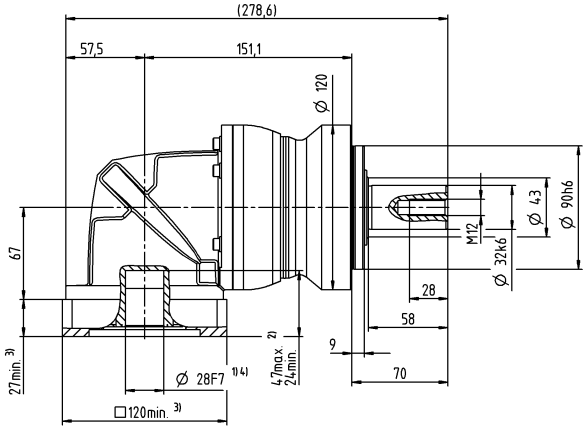
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

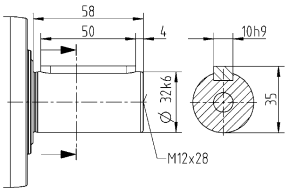
up to 28 [4] (H) [5]
clamping hub
diameter



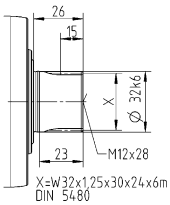


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPLK 035 MF 3-stage

			3-stage														
Ratio	**i**		**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	180	240	300	320	400	400	408	320	408	400	408	400	352	400	352
		in.lb	1593	2124	2655	2832	3540	3540	3611	2832	3611	3540	3611	3540	3115	3540	3115
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	105	141	176	188	235	250	255	200	255	250	255	250	220	250	220
		in.lb	929	1248	1558	1664	2080	2213	2257	1770	2257	2213	2257	2213	1947	2213	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	270	361	451	481	500	500	500	500	500	500	500	500	500	500	500
		in.lb	2390	3195	3992	4257	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2700	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
		in.lb	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Max. backlash	j_t	*arcmin*	≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
		in.lb/arcmin	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
Max. axial force [c)]	F_{2AMax}	*N*	5650														
		lb_f	1271														
Max. lateral force [c)]	F_{2QMax}	*N*	6600														
		lb_f	1485														
Max. tilting moment	M_{2KMax}	*Nm*	487														
		in.lb	4310														
Efficiency at full load	η	*%*	94														
Service life	L_h	*h*	> 20000														
Weight (incl. standard adapter plate)	m	*kg*	11														
		lb_m	24														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 73														
Max. permitted housing temperature		*°C*	+90														
		°F	+194														
Ambient temperature		*°C*	0 to +40														
		°F	+32 to +104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output same direction														
Protection class			IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0150BA032.000-X														
Bore diameter of coupling on the application side		*mm*	X = 019.000 - 036.000														
Mass moment of inertia (relates to the drive) E 19 Clamping hub diameter [mm]	J_1	$kgcm^2$	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
		10^{-3} $in.lb.s^2$	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

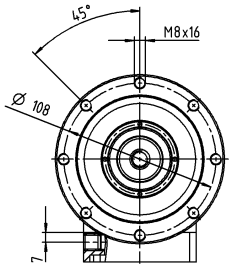
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

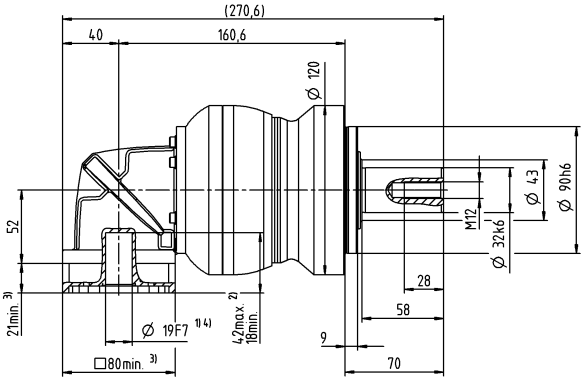
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

up to 19 [4] (E) [5]
clamping hub
diameter

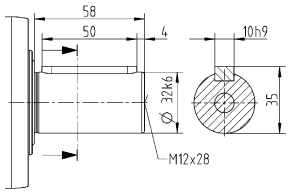




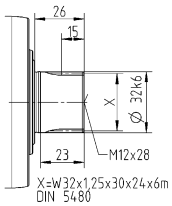
Bevel Gearboxes
Value Line

Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

					2-stage			3-stage				
Ratio		**i**			**5**	**8**	**10**	**25**	**32**	**50**	**64**	**100**
Max. torque [a) b) e)]		$T_{2\alpha}$	*Nm*		500	640	640	700	640	700	640	640
			in.lb		4425	5665	5665	6196	5665	6196	5665	5665
Max. acceleration torque [e)] (max. 1000 cycles per hour)		T_{2B}	*Nm*		399	400	400	500	400	500	400	400
			in.lb		3531	3540	3540	4425	3540	4425	3540	3540
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)		T_{2Not}	*Nm*		1000	1000	1000	1000	1000	1000	1000	1000
			in.lb		8851	8851	8851	8851	8851	8851	8851	8851
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)		n_{1N}	*rpm*		1600	1600	1600	2000	2000	2000	2000	2000
Max. input speed		n_{1Max}	*rpm*		4000	4000	4000	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)		T_{012}	*Nm*		8.7	8.7	8.7	4.7	4.7	4.7	4.7	4.7
			in.lb		77	77	77	42	42	42	42	42
Max. backlash		j_t	*arcmin*		≤ 11			≤ 11				
Torsional rigidity [b)]		C_{t21}	*Nm/arcmin*		48	48	48	54	54	54	54	54
			in.lb/arcmin		425	425	425	478	478	478	478	478
Max. axial force [c)]		F_{2AMax}	*N*		9870			9870				
			lb_f		2221			2221				
Max. lateral force [c)]		F_{2QMax}	*N*		9900			9900				
			lb_f		2228			2228				
Max. tilting moment		M_{2KMax}	*Nm*		952			952				
			in.lb		8426			8426				
Efficiency at full load		η	*%*		95			94				
Service life		L_h	*h*		> 20000			> 20000				
Weight (incl. standard adapter plate)		m	*kg*		24			22				
			lb_m		53			49				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)		L_{PA}	*dB(A)*		≤ 78			≤ 74				
Max. permitted housing temperature			*°C*		+90			+90				
			°F		+194			+194				
Ambient temperature			*°C*		0 to +40			0 to +40				
			°F		+32 to +104			+32 to +104				
Lubrication					Lubricated for life							
Direction of rotation					In- and output same direction							
Protection class					IP 64							
Elastomer coupling (recommended product type – validate sizing with cymex®)					ELC-0300BA040.000-X							
Bore diameter of coupling on the application side			*mm*		X = 020.000 - 045.000							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	H	28	J_1	*kgcm²*	–	–	–	6.7	6.7	6.7	6.7	6.7
				10^{-3} *in.lb.s²*	–	–	–	5.9	5.9	5.9	5.9	5.9
	K	38	J_1	*kgcm²*	18	18	18	–	–	–	–	–
				10^{-3} *in.lb.s²*	16	16	16	–	–	–	–	–

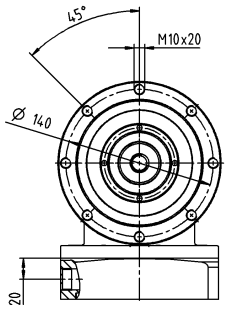
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

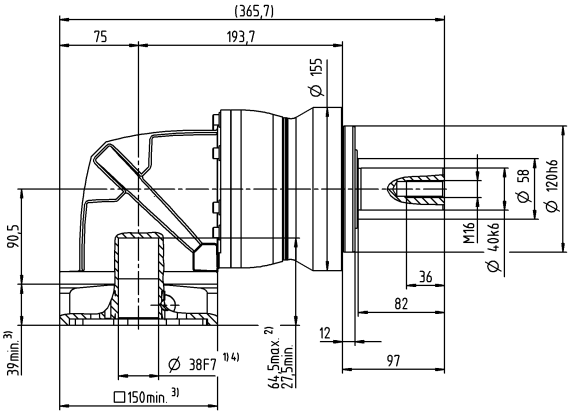
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

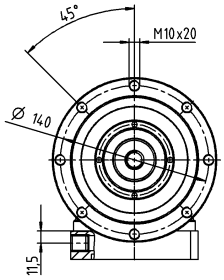
up to 38 [4] (K) [5] clamping hub diameter

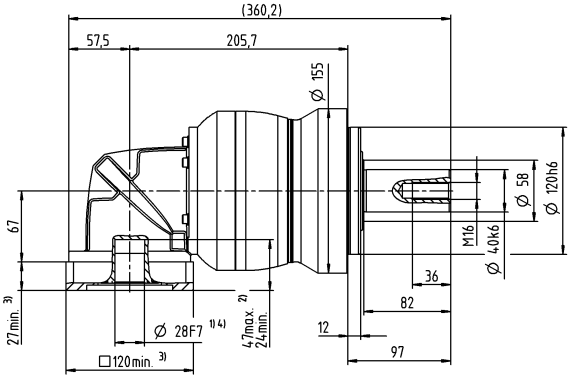




3-stage

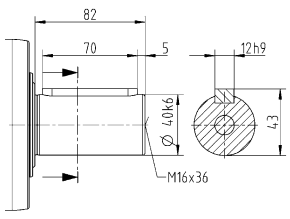
up to 28 [4] (H) [5] clamping hub diameter



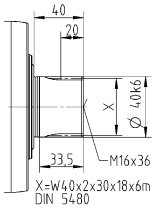


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	33	44	55	64	56	56
		in.lb	292	389	487	566	496	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	16	21	27	37	35	35
		in.lb	142	186	239	327	310	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	41	55	69	80	80	80
		in.lb	363	487	611	708	708	708
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2900	3100	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	1.2	1.2	1.2	1.2	1.2	1.2
		in.lb	11	11	11	11	11	11
Max. backlash	j_t	*arcmin*	≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	2.4	2.4	2.4	2.4	2.4	2.4
		in.lb/arcmin	21	21	21	21	21	21
Max. axial force [c)]	F_{2AMax}	*N*	2400					
		lb_f	540					
Max. lateral force [c)]	F_{2QMax}	*N*	2800					
		lb_f	630					
Max. tilting moment	M_{2KMax}	*Nm*	152					
		in.lb	1345					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	2.2					
		lb_m	4.9					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 70					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA016.000-X					
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	$kgcm^2$	0.32	0.32	0.32	0.32	0.32	0.32
		10^{-3} $in.lb.s^2$	0.28	0.28	0.28	0.28	0.28	0.28

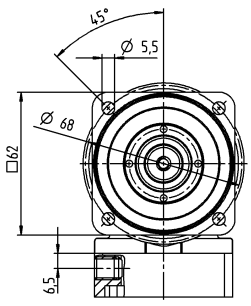
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

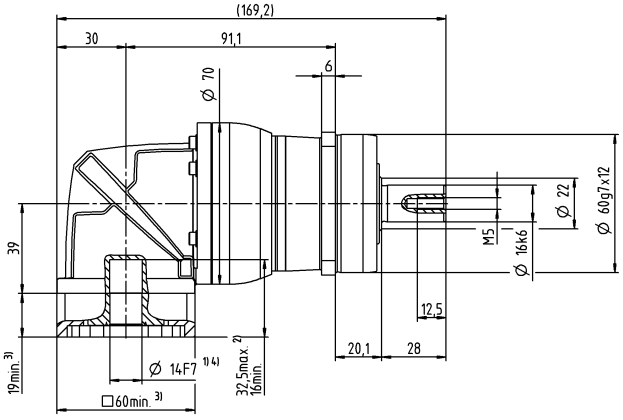
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

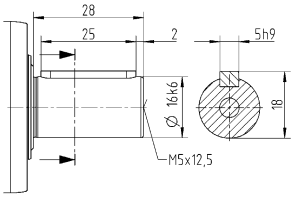
up to 14 [4] (C) [5]
clamping hub
diameter



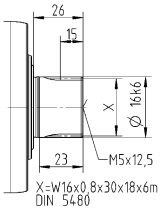


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPSK 015 MF 3-stage

				3-stage													
Ratio	**i**			**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		42	51	56	56	64	56	51	56	64	56	64	56	64	56
		in.lb		372	451	496	496	566	496	451	496	566	496	566	496	566	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		20	25	27	34	40	35	31	35	40	35	40	35	40	35
		in.lb		177	221	239	301	354	310	274	310	354	310	354	310	354	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		52	65	70	80	80	80	80	80	80	80	80	80	80	80
		in.lb		460	575	620	708	708	708	708	708	708	708	708	708	708	708
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
		in.lb		4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max. backlash	j_t	*arcmin*		≤ 12													
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		3	3	3	3	3	3	3	3	3	3	3	3	3	3
		in.lb/arcmin		27	27	27	27	27	27	27	27	27	27	27	27	27	27
Max. axial force [c)]	F_{2AMax}	*N*		2400													
		lb_f		540													
Max. lateral force [c)]	F_{2QMax}	*N*		2800													
		lb_f		630													
Max. tilting moment	M_{2KMax}	*Nm*		152													
		in.lb		1345													
Efficiency at full load	η	*%*		94													
Service life	L_h	*h*		> 20000													
Weight (incl. standard adapter plate)	*m*	*kg*		2.3													
		lb_m		5.1													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 68													
Max. permitted housing temperature		*°C*		+90													
		°F		+194													
Ambient temperature		*°C*		0 to +40													
		°F		+32 to +104													
Lubrication				Lubricated for life													
Direction of rotation				In- and output same direction													
Protection class				IP 64													
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0060BA016.000-X													
Bore diameter of coupling on the application side			*mm*	X = 012.000 - 032.000													
Mass moment of inertia (relates to the drive) **B** **11** Clamping hub diameter [mm]	J_1	*$kgcm^2$*		0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
		10^{-3} in.lb.s^2		0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12

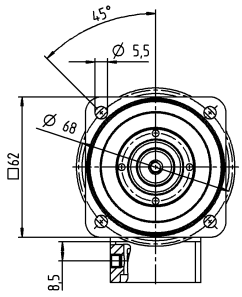
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

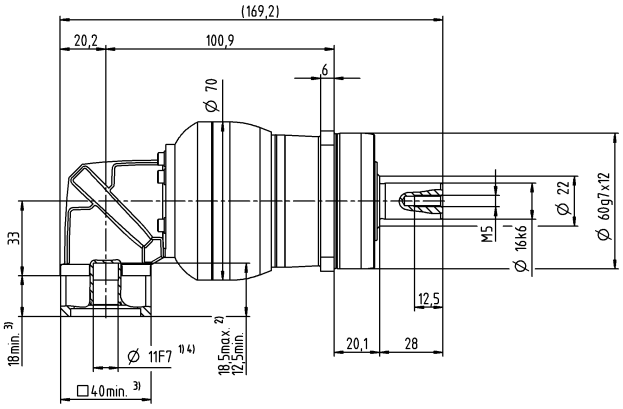
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

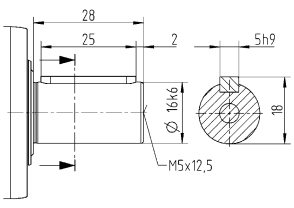
up to 11 [4] (B) [5]
clamping hub
diameter



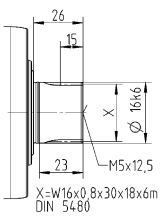


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	60	80	100	140	144	144
		in.lb	531	708	885	1239	1275	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	35	47	58	82	90	90
		in.lb	310	416	513	726	797	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	90	120	150	190	190	190
		in.lb	797	1062	1328	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2700	2900	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	2.4	2.4	2.4	2.4	2.4	2.4
		in.lb	21	21	21	21	21	21
Max. backlash	j_t	*arcmin*	≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	6.2	6.2	6.2	6.2	6.2	6.2
		in.lb/arcmin	55	55	55	55	55	55
Max. axial force [c)]	F_{2AMax}	*N*	3350					
		lb_f	754					
Max. lateral force [c)]	F_{2QMax}	*N*	4200					
		lb_f	945					
Max. tilting moment	M_{2KMax}	*Nm*	236					
		in.lb	2089					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	4.7					
		lb_m	10					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 73					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA022.000-X					
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) **E** **19** Clamping hub diameter [mm]	J_1	$kgcm^2$	1.2	1.2	1.2	1.2	1.2	1.2
		10^{-3} $in.lb.s^2$	1.1	1.1	1.1	1.1	1.1	1.1

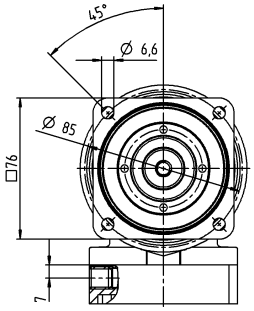
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

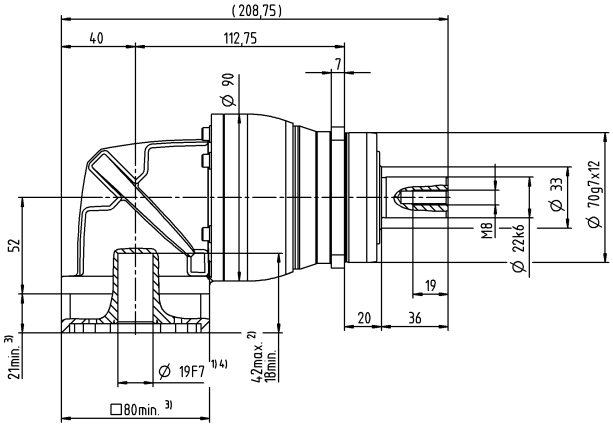
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

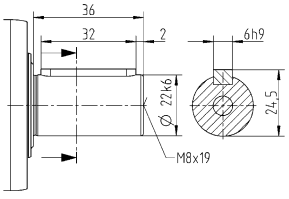
up to 19 [4] (E) [5]
clamping hub
diameter



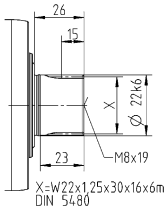


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			3-stage														
Ratio	**i**		**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	99	128	128	152	152	160	152	128	152	160	152	160	144	160	144
		in.lb	876	1133	1133	1345	1345	1416	1345	1133	1345	1416	1345	1416	1275	1416	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	48	65	80	86	95	100	95	80	95	100	95	100	90	100	90
		in.lb	425	575	708	761	841	885	841	708	841	885	841	885	797	885	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	124	166	190	190	190	190	190	190	190	190	190	190	190	190	190
		in.lb	1097	1469	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2900	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
		in.lb	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
Max. backlash	j_t	*arcmin*	≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
		in.lb/arcmin	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
Max. axial force [c)]	F_{2AMax}	*N*	3350														
		lb_f	754														
Max. lateral force [c)]	F_{2QMax}	*N*	4200														
		lb_f	945														
Max. tilting moment	M_{2KMax}	*Nm*	236														
		in.lb	2089														
Efficiency at full load	η	%	94														
Service life	L_h	*h*	> 20000														
Weight (incl. standard adapter plate)	*m*	*kg*	4.3														
		lb_m	9.5														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 70														
Max. permitted housing temperature		*°C*	+90														
		°F	+194														
Ambient temperature		*°C*	0 to +40														
		°F	+32 to +104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output same direction														
Protection class			IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA022.000-X														
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000														
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	$kgcm^2$	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		10^{-3} *in.lb.s²*	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

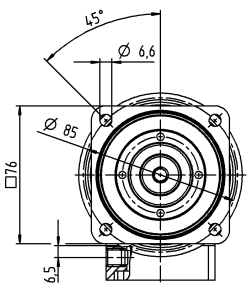
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

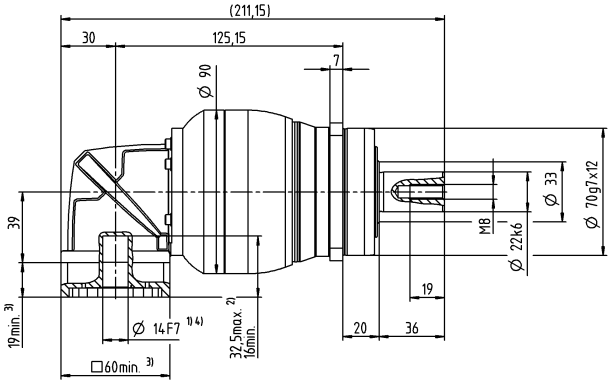
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

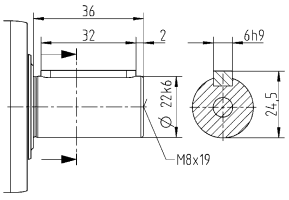
up to 14 [4] (C) [5]
clamping hub
diameter



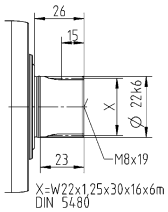


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	150	200	250	350	352	352
		in.lb	1328	1770	2213	3098	3115	3115
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	93	124	155	217	220	220
		in.lb	823	1097	1372	1921	1947	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	238	318	397	500	500	500
		in.lb	2106	2815	3514	4425	4425	4425
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2000	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	*rpm*	4500	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	5.8	5.8	5.8	5.8	5.8	5.8
		in.lb	51	51	51	51	51	51
Max. backlash	j_t	*arcmin*	≤ 13					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	16	16	16	16	16	16
		in.lb/arcmin	142	142	142	142	142	142
Max. axial force [c)]	F_{2AMax}	*N*	5650					
		lb_f	1271					
Max. lateral force [c)]	F_{2QMax}	*N*	6600					
		lb_f	1485					
Max. tilting moment	M_{2KMax}	*Nm*	487					
		in.lb	4310					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	10					
		lb_m	22					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 74					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0150BA032.000-X					
Bore diameter of coupling on the application side		*mm*	X = 019.000 - 036.000					
Mass moment of inertia (relates to the drive) H 28 Clamping hub diameter [mm]	J_1	*kgcm²*	5.2	5.2	5.2	5.2	5.2	5.2
		10^{-3} in.lb.s²	4.6	4.6	4.6	4.6	4.6	4.6

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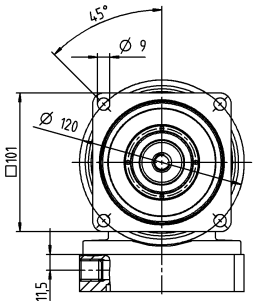
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

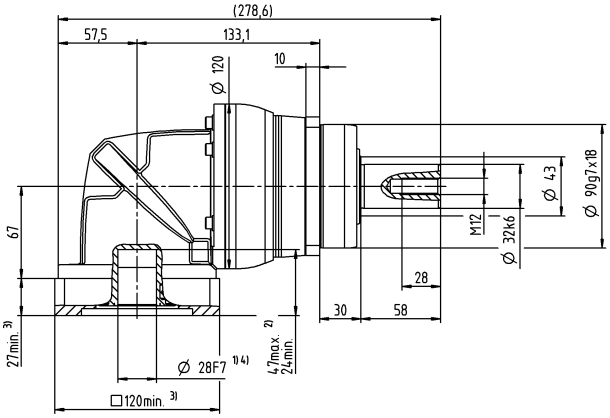
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

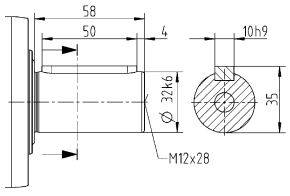
up to 28 [4] (H) [5]
clamping hub
diameter



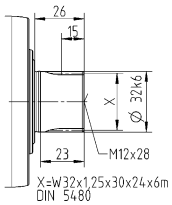


Other output variants

Shaft with key



Splined shaft (DIN 5480)



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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPSK 035 MF 3-stage

				3-stage														
Ratio	**i**			**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		180	240	300	320	400	400	408	320	408	400	408	400	352	400	352
		in.lb		1593	2124	2655	2832	3540	3540	3611	2832	3611	3540	3611	3540	3115	3540	3115
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		105	141	176	188	235	250	255	200	255	250	255	250	220	250	220
		in.lb		929	1248	1558	1664	2080	2213	2257	1770	2257	2213	2257	2213	1947	2213	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		270	361	451	481	500	500	500	500	500	500	500	500	500	500	500
		in.lb		2390	3195	3992	4257	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		2700	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
		in.lb		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Max. backlash	j_t	*arcmin*		≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
		in.lb/arcmin		168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
Max. axial force [c)]	F_{2AMax}	*N*		5650														
		lb_f		1271														
Max. lateral force [c)]	F_{2QMax}	*N*		6600														
		lb_f		1485														
Max. tilting moment	M_{2KMax}	*Nm*		487														
		in.lb		4310														
Efficiency at full load	η	*%*		94														
Service life	L_h	*h*		> 20000														
Weight (incl. standard adapter plate)	*m*	*kg*		10														
		lb_m		22														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 73														
Max. permitted housing temperature		*°C*		+90														
		°F		+194														
Ambient temperature		*°C*		0 to +40														
		°F		+32 to +104														
Lubrication				Lubricated for life														
Direction of rotation				In- and output same direction														
Protection class				IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0150BA032.000-X														
Bore diameter of coupling on the application side			*mm*	X = 019.000 - 036.000														
Mass moment of inertia (relates to the drive) **E** **19** Clamping hub diameter [mm]	J_1	*kgcm²*		1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
		10^{-3} *in.lb.s²*		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

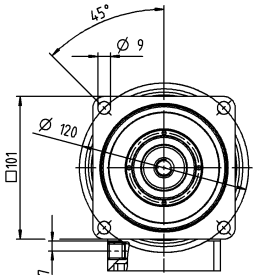
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

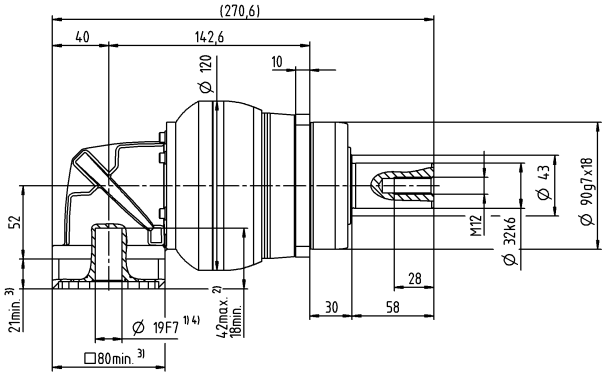
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

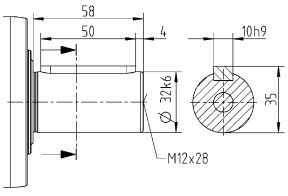
up to 19 [4] (E) [5]
clamping hub
diameter



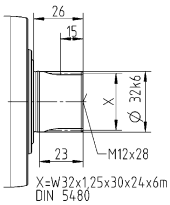


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPSK 045 MF 2-/3-stage

					2-stage			3-stage				
Ratio	**i**			**5**	**8**	**10**	**25**	**32**	**50**	**64**	**100**
Max. torque [a) b) e)]	$T_{2α}$	*Nm*		500	640	640	700	640	700	640	640
		in.lb		4425	5665	5665	6196	5665	6196	5665	5665
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		399	400	400	500	400	500	400	400
		in.lb		3531	3540	3540	4425	3540	4425	3540	3540
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		1000	1000	1000	1000	1000	1000	1000	1000
		in.lb		8851	8851	8851	8851	8851	8851	8851	8851
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		1600	1600	1600	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	*rpm*		4000	4000	4000	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		8.7	8.7	8.7	4.7	4.7	4.7	4.7	4.7
		in.lb		77	77	77	42	42	42	42	42
Max. backlash	j_t	*arcmin*		≤ 11			≤ 11				
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		48	48	48	54	54	54	54	54
		in.lb/arcmin		425	425	425	478	478	478	478	478
Max. axial force [c)]	F_{2AMax}	*N*		9870			9870				
		lb_f		2221			2221				
Max. lateral force [c)]	F_{2QMax}	*N*		9900			9900				
		lb_f		2228			2228				
Max. tilting moment	M_{2KMax}	*Nm*		952			952				
		in.lb		8426			8426				
Efficiency at full load	η	%		95			94				
Service life	L_h	*h*		> 20000			> 20000				
Weight (incl. standard adapter plate)	*m*	*kg*		23			21				
		lb_m		51			46				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 78			≤ 74				
Max. permitted housing temperature		°C		+90			+90				
		°F		+194			+194				
Ambient temperature		°C		0 to +40			0 to +40				
		°F		+32 to +104			+32 to +104				
Lubrication				Lubricated for life							
Direction of rotation				In- and output same direction							
Protection class				IP 64							
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0300BA040.000-X							
Bore diameter of coupling on the application side			*mm*	X = 020.000 - 045.000							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	H	28	J_1	*kgcm²*	–	–	–	6.7	6.7	6.7	6.7	6.7
				10^{-3} *in.lb.s²*	–	–	–	5.9	5.9	5.9	5.9	5.9
	K	38	J_1	*kgcm²*	18	18	18	–	–	–	–	–
				10^{-3} *in.lb.s²*	16	16	16	–	–	–	–	–

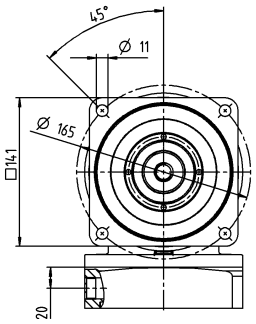
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

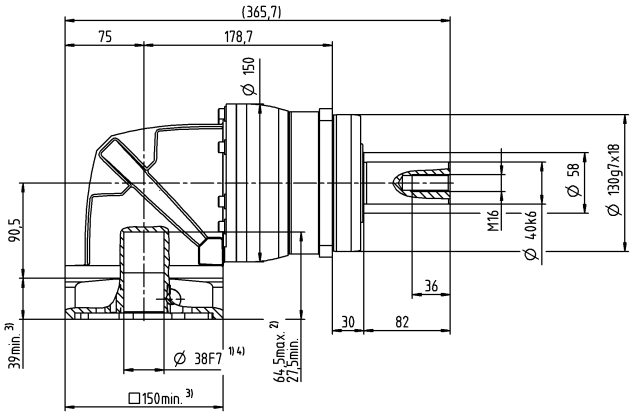
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

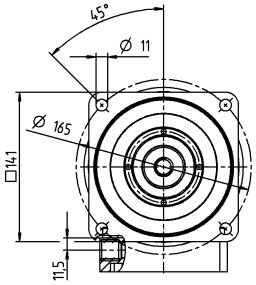
up to 38 [4] (K) [5] clamping hub diameter

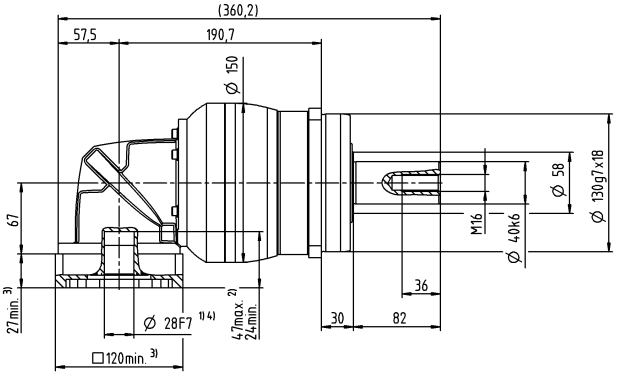




3-stage

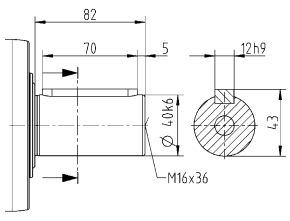
up to 28 [4] (H) [5] clamping hub diameter



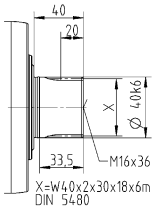


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPTK 005 MF 2-/3-stage

				2-stage					3-stage									
Ratio	**i**			**4**	**5**	**7**	**8**	**10**	**16**	**20**	**25**	**28**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b)]	$T_{2\alpha}$	*Nm*		14	17	22	21	21	18	18	22	18	22	18	22	21	22	21
		in.lb		124	150	195	186	186	159	159	195	159	195	159	195	186	195	186
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	*Nm*		6.8	8.5	12	13	13	11	11	13	11	13	11	13	13	13	13
		in.lb		60	75	106	115	115	97	97	115	97	115	97	115	115	115	115
Emergency stop torque [a) b)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		17	21	26	26	26	26	26	26	26	26	26	26	26	26	26
		in.lb		150	186	230	230	230	230	230	230	230	230	230	230	230	230	230
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.26	0.26	0.26	0.26	0.26	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
		in.lb		2.3	2.3	2.3	2.3	2.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Max. backlash	j_t	*arcmin*		≤ 15					≤ 15									
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		0.9	0.9	0.9	0.9	0.9	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
		in.lb/arcmin		8	8	8	8	8	11	11	11	11	11	11	11	11	11	11
Max. axial force [c)]	F_{2AMax}	*N*		600					600									
		lb_f		135					135									
Max. tilting moment	M_{2KMax}	*Nm*		17					17									
		in.lb		150					150									
Efficiency at full load	η	*%*		95					94									
Service life	L_h	*h*		> 20000					> 20000									
Weight (incl. standard adapter plate)	m	*kg*		1.3					1.7									
		lb_m		2.9					3.8									
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 68					≤ 68									
Max. permitted housing temperature		*°C*		+90					+90									
		°F		+194					+194									
Ambient temperature		*°C*		0 to +40					0 to +40									
		°F		+32 to +104					+32 to +104									
Lubrication				Lubricated for life														
Direction of rotation				In- and output same direction														
Protection class				IP 64														
Mass moment of inertia (relates to the drive)	B	11	J_1	*kgcm²*	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Clamping hub diameter [mm]				*10^{-3} in.lb.s²*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

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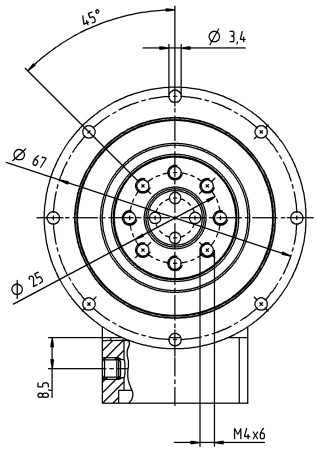
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

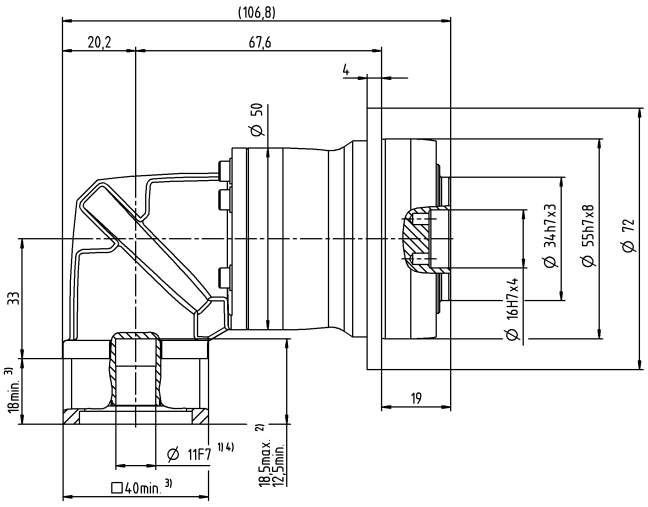
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures

Motor shaft diameter [mm]

2-stage

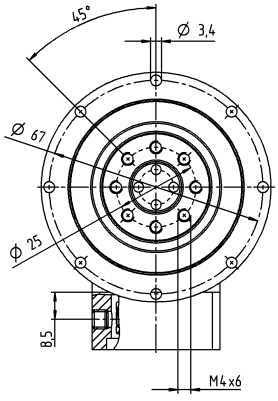
up to 11 [4] (B) [5]
clamping hub
diameter

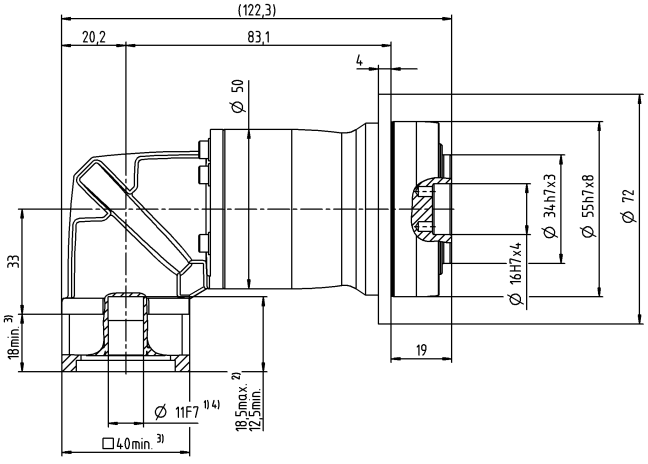




3-stage

up to 11 [4] (B) [5]
clamping hub
diameter





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[5] Standard clamping hub diameter

				2-stage					
Ratio	**i**			**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b)]	T_{2a}	*Nm*		33	44	55	60	56	56
		in.lb		292	389	487	531	496	496
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	*Nm*		16	21	27	37	35	35
		in.lb		142	186	239	327	310	310
Emergency stop torque [a) b)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		41	55	69	75	75	75
		in.lb		363	487	611	664	664	664
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3300	3300	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1=3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.55	0.55	0.55	0.55	0.55	0.55
		in.lb		4.9	4.9	4.9	4.9	4.9	4.9
Max. backlash	j_t	*arcmin*		≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		2.4	2.4	2.4	2.4	2.4	2.4
		in.lb/arcmin		21	21	21	21	21	21
Max. axial force [c)]	F_{2AMax}	*N*		1380					
		lb_f		311					
Max. tilting moment	M_{2KMax}	*Nm*		42					
		in.lb		372					
Efficiency at full load	η	*%*		95					
Service life	L_h	*h*		> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*		2.4					
		lb_m		5.3					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 70					
Max. permitted housing temperature		*°C*		+90					
		°F		+194					
Ambient temperature		*°C*		0 to +40					
		°F		+32 to +104					
Lubrication				Lubricated for life					
Direction of rotation				In- and output same direction					
Protection class				IP 64					
Mass moment of inertia (relates to the drive)	C 14	J_1	*kgcm²*	0.34	0.34	0.34	0.34	0.34	0.34
Clamping hub diameter [mm]			10^{-3} *in.lb.s²*	0.3	0.3	0.3	0.3	0.3	0.3

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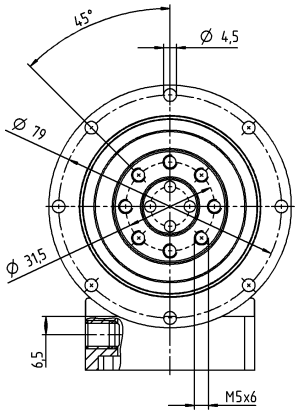
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

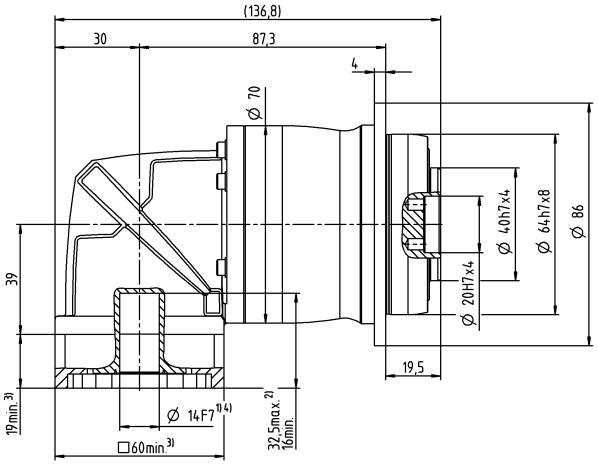
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures

Motor shaft diameter [mm]

2-stage

up to 14 [4] (C) [5]
clamping hub
diameter





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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
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[5] Standard clamping hub diameter

				3-stage													
Ratio	**i**			**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b)]	T_{2a}	*Nm*		42	51	56	56	60	56	51	56	60	56	60	56	60	56
		in.lb		372	451	496	496	531	496	451	496	531	496	531	496	531	496
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	*Nm*		20	25	27	34	40	35	31	35	40	35	40	35	40	35
		in.lb		177	221	239	301	354	310	274	310	354	310	354	310	354	310
Emergency stop torque [a) b)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		52	65	70	75	75	75	75	75	75	75	75	75	75	75
		in.lb		460	575	620	664	664	664	664	664	664	664	664	664	664	664
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
		in.lb		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Max. backlash	j_t	*arcmin*		≤ 12													
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		3	3	3	3	3	3	3	3	3	3	3	3	3	3
		in.lb/arcmin		27	27	27	27	27	27	27	27	27	27	27	27	27	27
Max. axial force [c)]	F_{2AMax}	*N*		1380													
		lb_f		311													
Max. tilting moment	M_{2KMax}	*Nm*		42													
		in.lb		372													
Efficiency at full load	η	*%*		94													
Service life	L_h	*h*		> 20000													
Weight (incl. standard adapter plate)	m	*kg*		2.5													
		lb_m		5.5													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 68													
Max. permitted housing temperature		*°C*		+90													
		°F		+194													
Ambient temperature		*°C*		0 to +40													
		°F		+32 to +104													
Lubrication				Lubricated for life													
Direction of rotation				In- and output same direction													
Protection class				IP 64													
Mass moment of inertia (relates to the drive)	B	11	J_1	*kgcm²*	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Clamping hub diameter [mm]				*10^{-3} in.lb.s²*	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14

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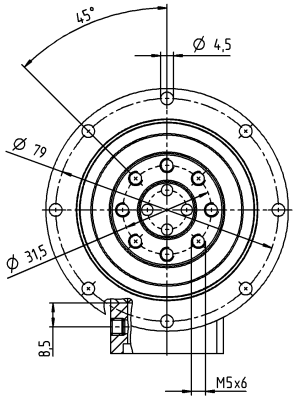
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

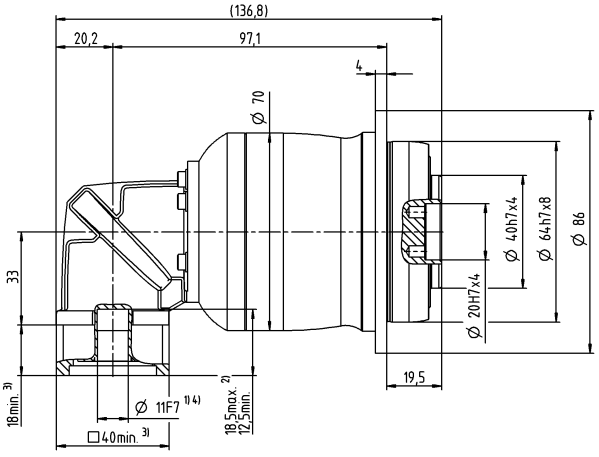
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures

Motor shaft diameter [mm]

3-stage

up to 11 [4] (B) [5]
clamping hub
diameter





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[5] Standard clamping hub diameter

				2-stage					
Ratio	**i**			**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b)]	T_{2a}	*Nm*		60	80	100	140	144	144
		in.lb		531	708	885	1239	1275	1275
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	*Nm*		35	47	58	82	90	90
		in.lb		310	416	513	726	797	797
Emergency stop torque [a) b)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		90	120	150	190	190	190
		in.lb		797	1062	1328	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1=3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		1	1	1	1	1	1
		in.lb		8.9	8.9	8.9	8.9	8.9	8.9
Max. backlash	j_t	*arcmin*		≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		6.2	6.2	6.2	6.2	6.2	6.2
		in.lb/arcmin		55	55	55	55	55	55
Max. axial force [c)]	F_{2AMax}	*N*		1900					
		lb_f		428					
Max. tilting moment	M_{2KMax}	*Nm*		79					
		in.lb		699					
Efficiency at full load	η	*%*		95					
Service life	L_h	*h*		> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*		5.5					
		lb_m		12					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 73					
Max. permitted housing temperature		*°C*		+90					
		°F		+194					
Ambient temperature		*°C*		0 to +40					
		°F		+32 to +104					
Lubrication				Lubricated for life					
Direction of rotation				In- and output same direction					
Protection class				IP 64					
Mass moment of inertia (relates to the drive) **E** **19** Clamping hub diameter [mm]	J_1	$kgcm^2$		1.3	1.3	1.3	1.3	1.3	1.3
		10^{-3} $in.lb.s^2$		1.2	1.2	1.2	1.2	1.2	1.2

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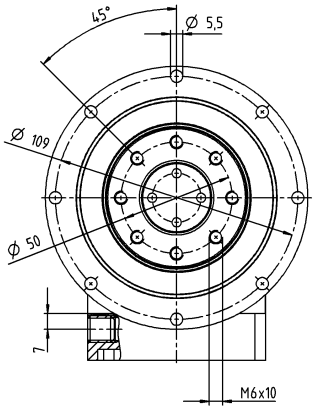
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

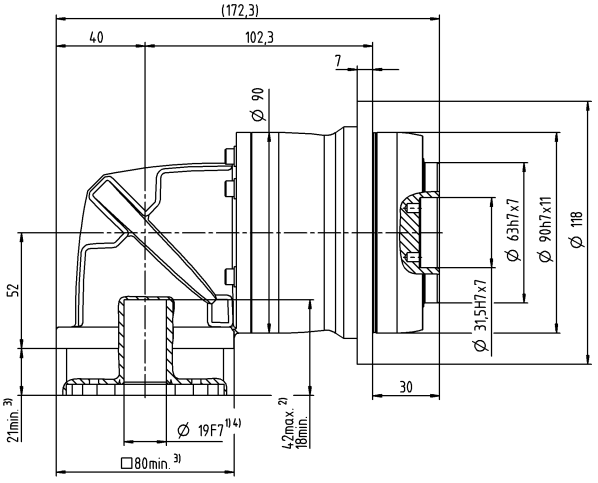
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures

Motor shaft diameter [mm]

2-stage

up to 19 [4] (E) [5]
clamping hub
diameter





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[5] Standard clamping hub diameter

			3-stage														
Ratio	**i**		**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b)]	T_{2a}	*Nm*	99	128	128	152	152	160	152	128	152	160	152	160	144	160	144
		in.lb	876	1133	1133	1345	1345	1416	1345	1133	1345	1416	1345	1416	1275	1416	1275
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	*Nm*	48	65	80	86	95	100	95	80	95	100	95	100	90	100	90
		in.lb	425	575	708	761	841	885	841	708	841	885	841	885	797	885	797
Emergency stop torque [a) b)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	124	166	190	190	190	190	190	190	190	190	190	190	190	190	190
		in.lb	1097	1469	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
		in.lb	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Max. backlash	j_t	*arcmin*	≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
		in.lb/arcmin	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
Max. axial force [c)]	F_{2AMax}	*N*	1900														
		lb_f	428														
Max. tilting moment	M_{2KMax}	*Nm*	79														
		in.lb	699														
Efficiency at full load	η	*%*	94														
Service life	L_h	*h*	> 20000														
Weight (incl. standard adapter plate)	m	*kg*	5.1														
		lb_m	11														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 70														
Max. permitted housing temperature		*°C*	+90														
		°F	+194														
Ambient temperature		*°C*	0 to +40														
		°F	+32 to +104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output same direction														
Protection class			IP 64														
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	*kgcm²*	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
		10^{-3} *in.lb.s²*	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46

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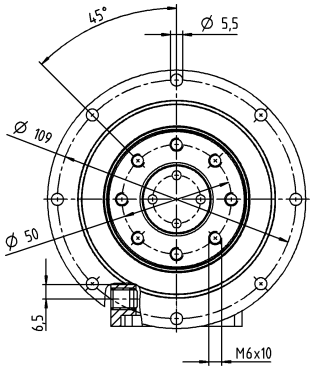
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

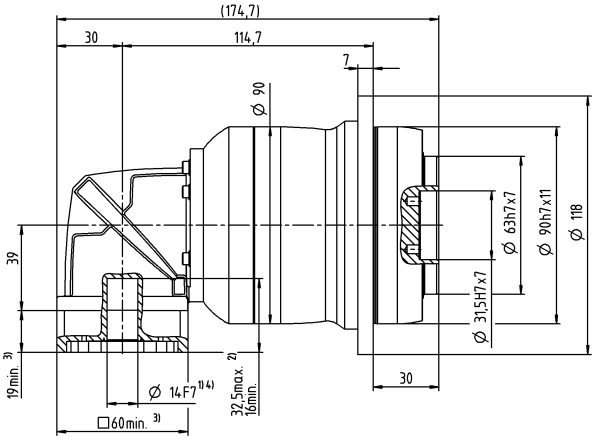
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures

Motor shaft diameter [mm]

3-stage

up to 14 [4] (C) [5]
clamping hub
diameter





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[5] Standard clamping hub diameter

				2-stage					
Ratio	**i**			**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b)]	T_{2a}	*Nm*		150	200	250	350	352	352
		in.lb		1328	1770	2213	3098	3115	3115
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	*Nm*		93	124	155	217	220	220
		in.lb		823	1097	1372	1921	1947	1947
Emergency stop torque [a) b)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		238	318	397	480	480	480
		in.lb		2106	2815	3514	4248	4248	4248
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		2000	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	*rpm*		4500	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1=3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		4.2	4.2	4.2	4.2	4.2	4.2
		in.lb		37	37	37	37	37	37
Max. backlash	j_t	*arcmin*		≤ 13					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		16	16	16	16	16	16
		in.lb/arcmin		142	142	142	142	142	142
Max. axial force [c)]	F_{2AMax}	*N*		3500					
		lb_f		788					
Max. tilting moment	M_{2KMax}	*Nm*		134					
		in.lb		1186					
Efficiency at full load	η	*%*		95					
Service life	L_h	*h*		> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*		11					
		lb_m		24					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 74					
Max. permitted housing temperature		*°C*		+90					
		°F		+194					
Ambient temperature		*°C*		0 to +40					
		°F		+32 to +104					
Lubrication				Lubricated for life					
Direction of rotation				In- and output same direction					
Protection class				IP 64					
Mass moment of inertia (relates to the drive)	H	28	J_1	*kgcm²*	5.5	5.5	5.5	5.5	5.5	5.5
Clamping hub diameter [mm]				*10^{-3} in.lb.s²*	4.9	4.9	4.9	4.9	4.9	4.9

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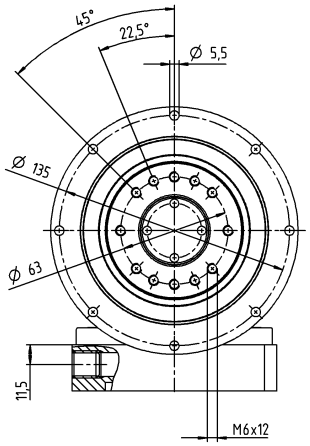
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

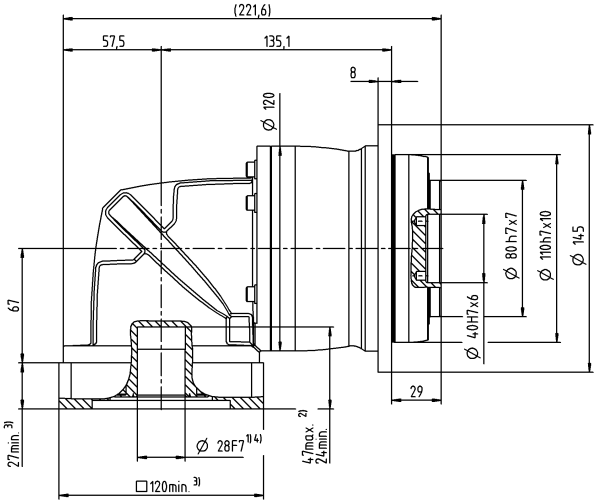
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures

Motor shaft diameter [mm]

2-stage

up to 28 [4] (H) [5]
clamping hub
diameter





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				3-stage														
Ratio	**i**			**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b)]	T_{2a}	*Nm*		180	240	300	320	365	365	365	320	365	365	365	365	352	365	352
		in.lb		1593	2124	2655	2832	3231	3231	3231	2832	3231	3231	3231	3231	3115	3231	3115
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	*Nm*		105	141	176	188	235	250	255	200	255	250	255	250	220	250	220
		in.lb		929	1248	1558	1664	2080	2213	2257	1770	2257	2213	2257	2213	1947	2213	1947
Emergency stop torque [a) b)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		270	361	451	480	480	480	480	480	480	480	480	480	480	480	480
		in.lb		2390	3195	3992	4248	4248	4248	4248	4248	4248	4248	4248	4248	4248	4248	4248
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
		in.lb		11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Max. backlash	j_t	*arcmin*		≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
		in.lb/arcmin		168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
Max. axial force [c)]	F_{2AMax}	*N*		3500														
		lb_f		788														
Max. tilting moment	M_{2KMax}	*Nm*		134														
		in.lb		1186														
Efficiency at full load	η	*%*		94														
Service life	L_h	*h*		> 20000														
Weight (incl. standard adapter plate)	m	*kg*		11														
		lb_m		24														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 73														
Max. permitted housing temperature		*°C*		+90														
		°F		+194														
Ambient temperature		*°C*		0 to +40														
		°F		+32 to +104														
Lubrication				Lubricated for life														
Direction of rotation				In- and output same direction														
Protection class				IP 64														
Mass moment of inertia (relates to the drive) **E** 19 Clamping hub diameter [mm]	J_1	$kgcm^2$		1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
		10^{-3} *in.lb.s²*		1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7

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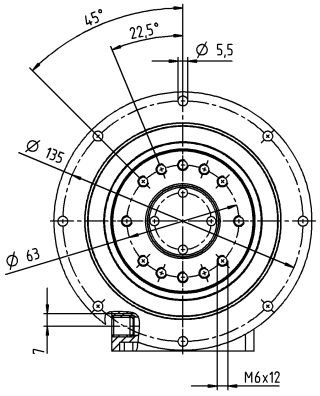
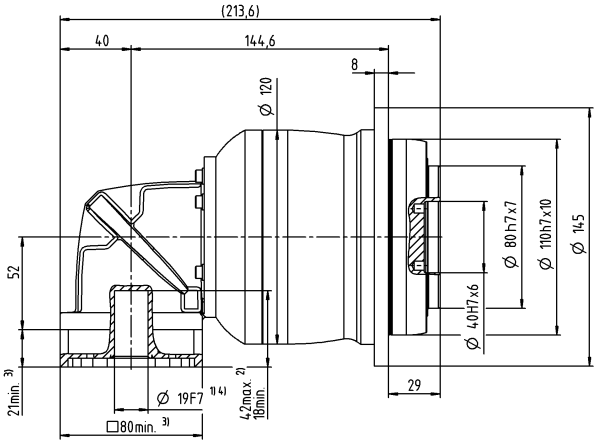
Motor shaft diameter [mm]

3-stage

up to 19 [4] (E) [5]
clamping hub
diameter





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NPTK 045 MF 2-/3-stage

					2-stage			3-stage				
Ratio		**i**			**5**	**8**	**10**	**25**	**32**	**50**	**64**	**100**
Max. torque [a) b)]		$T_{2\alpha}$	*Nm*		500	640	640	700	640	700	640	640
			in.lb		4425	5665	5665	6196	5665	6196	5665	5665
Max. acceleration torque (max. 1000 cycles per hour)		T_{2B}	*Nm*		399	400	400	500	400	500	400	400
			in.lb		3531	3540	3540	4425	3540	4425	3540	3540
Emergency stop torque [a) b)] (permitted 1000 times during the service life of the gearbox)		T_{2Not}	*Nm*		1000	1000	1000	1000	1000	1000	1000	1000
			in.lb		8851	8851	8851	8851	8851	8851	8851	8851
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)		n_{1N}	*rpm*		1600	1600	1600	2000	2000	2000	2000	2000
Max. input speed		n_{1Max}	*rpm*		4000	4000	4000	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)		T_{012}	*Nm*		6	6	6	3.1	3.1	3.1	3.1	3.1
			in.lb		53	53	53	27	27	27	27	27
Max. backlash		j_t	*arcmin*		≤ 11			≤ 11				
Torsional rigidity [b)]		C_{t21}	*Nm/arcmin*		48	48	48	54	54	54	54	54
			in.lb/arcmin		425	425	425	478	478	478	478	478
Max. axial force [c)]		F_{2AMax}	*N*		3800			3800				
			lb_f		855			855				
Max. tilting moment		M_{2KMax}	*Nm*		256			256				
			in.lb		2266			2266				
Efficiency at full load		η	*%*		95			94				
Service life		L_h	*h*		> 20000			> 20000				
Weight (incl. standard adapter plate)		m	*kg*		24			21				
			lb_m		53			46				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)		L_{PA}	*dB(A)*		≤ 78			≤ 74				
Max. permitted housing temperature			*°C*		+90			+90				
			°F		+194			+194				
Ambient temperature			*°C*		0 to +40			0 to +40				
			°F		+32 to +104			+32 to +104				
Lubrication					Lubricated for life							
Direction of rotation					In- and output same direction							
Protection class					IP 64							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	H	28	J_1	*kgcm²*	–	–	–	7.8	7.8	7.8	7.8	7.8
				10^{-3} *in.lb.s²*	–	–	–	6.9	6.9	6.9	6.9	6.9
	K	38	J_1	*kgcm²*	19	19	19	–	–	–	–	–
				10^{-3} *in.lb.s²*	17	17	17	–	–	–	–	–

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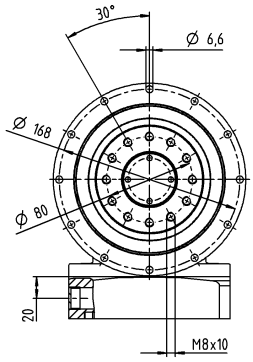
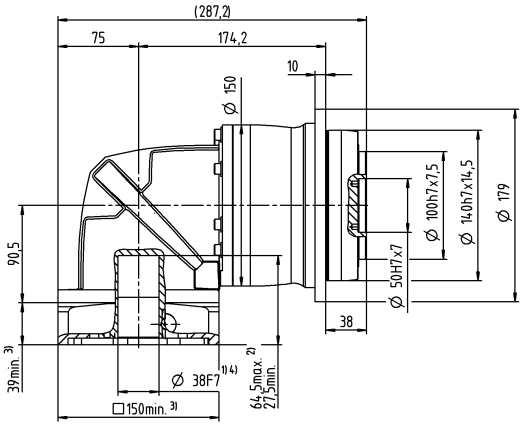
Motor shaft diameter [mm]

2-stage

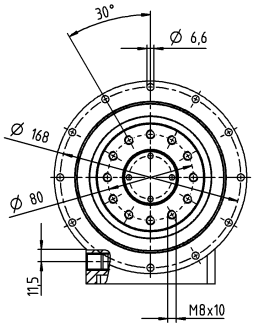
up to 38 [4] (K) [5]
clamping hub
diameter

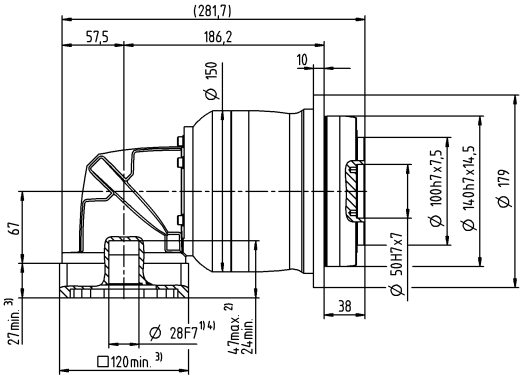




3-stage

up to 28 [4] (H) [5]
clamping hub
diameter





Non-tolerated dimensions are nominal dimensions
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[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPRK 015 MF 2-stage

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	33	44	55	64	56	56
		in.lb	292	389	487	566	496	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	16	21	27	37	35	35
		in.lb	142	186	239	327	310	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	41	55	69	80	80	80
		in.lb	363	487	611	708	708	708
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2600	2800	2900	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	1.2	1.2	1.2	1.2	1.2	1.2
		in.lb	11	11	11	11	11	11
Max. backlash	j_t	*arcmin*	≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	2.4	2.4	2.4	2.4	2.4	2.4
		in.lb/arcmin	21	21	21	21	21	21
Max. axial force [c)]	F_{2AMax}	*N*	2400					
		lb_f	540					
Max. lateral force [c)]	F_{2QMax}	*N*	2800					
		lb_f	630					
Max. tilting moment	M_{2KMax}	*Nm*	152					
		in.lb	1345					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	2.3					
		lb_m	5.1					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 70					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA016.000-X					
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	$kgcm^2$	0.32	0.32	0.32	0.32	0.32	0.32
		10^{-3} $in.lb.s^2$	0.28	0.28	0.28	0.28	0.28	0.28

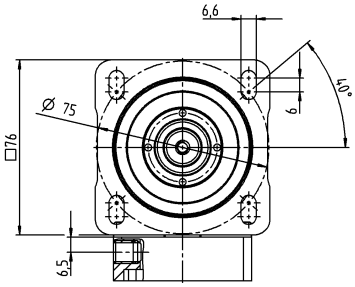
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

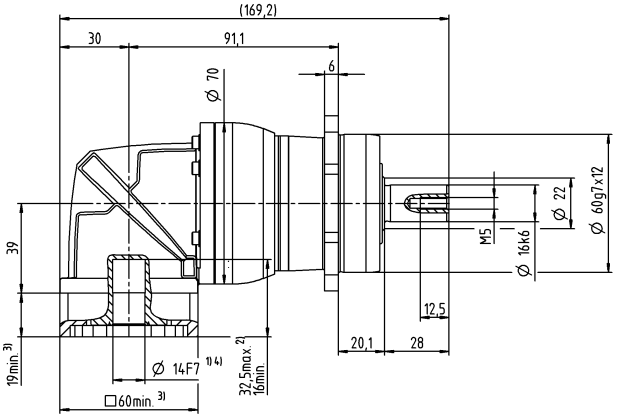
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

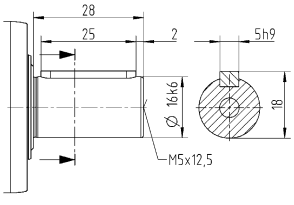
up to 14 [4] (C) [5]
clamping hub
diameter



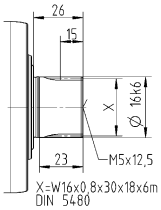


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPRK 015 MF 3-stage

				3-stage													
Ratio	**i**			**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*		42	51	56	56	64	56	51	56	64	56	64	56	64	56
		in.lb		372	451	496	496	566	496	451	496	566	496	566	496	566	496
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		20	25	27	34	40	35	31	35	40	35	40	35	40	35
		in.lb		177	221	239	301	354	310	274	310	354	310	354	310	354	310
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		52	65	70	80	80	80	80	80	80	80	80	80	80	80
		in.lb		460	575	620	708	708	708	708	708	708	708	708	708	708	708
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
Max. input speed	n_{1Max}	*rpm*		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
		in.lb		4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max. backlash	j_t	*arcmin*		≤ 12													
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		3	3	3	3	3	3	3	3	3	3	3	3	3	3
		in.lb/arcmin		27	27	27	27	27	27	27	27	27	27	27	27	27	27
Max. axial force [c)]	F_{2AMax}	*N*		2400													
		lb_f		540													
Max. lateral force [c)]	F_{2QMax}	*N*		2800													
		lb_f		630													
Max. tilting moment	M_{2KMax}	*Nm*		152													
		in.lb		1345													
Efficiency at full load	η	*%*		94													
Service life	L_h	*h*		> 20000													
Weight (incl. standard adapter plate)	*m*	*kg*		2.4													
		lb_m		5.3													
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 68													
Max. permitted housing temperature		*°C*		+90													
		°F		+194													
Ambient temperature		*°C*		0 to +40													
		°F		+32 to +104													
Lubrication				Lubricated for life													
Direction of rotation				In- and output same direction													
Protection class				IP 64													
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0060BA016.000-X													
Bore diameter of coupling on the application side			*mm*	X = 012.000 - 032.000													
Mass moment of inertia (relates to the drive) **B** **11** Clamping hub diameter [mm]	J_1	*$kgcm^2$*		0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
		10^{-3} in.lb.s^2		0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12

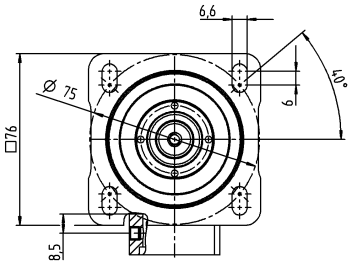
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

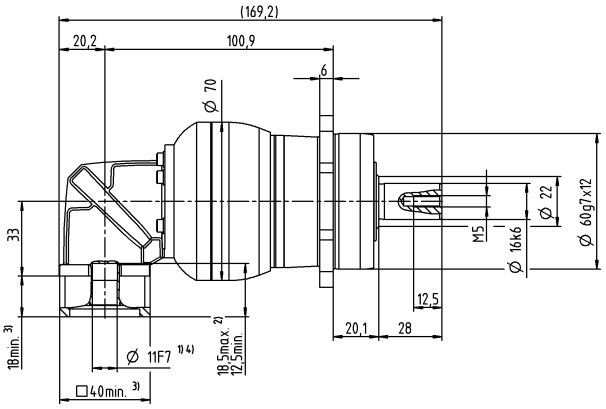
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

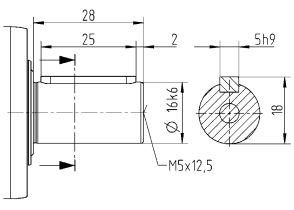
up to 11 [4] (B) [5]
clamping hub
diameter



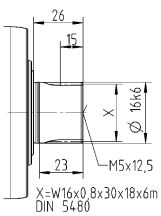


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	60	80	100	140	144	144
		in.lb	531	708	885	1239	1275	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	35	47	58	82	90	90
		in.lb	310	416	513	726	797	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	90	120	150	190	190	190
		in.lb	797	1062	1328	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2400	2600	2700	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	2.4	2.4	2.4	2.4	2.4	2.4
		in.lb	21	21	21	21	21	21
Max. backlash	j_t	*arcmin*	≤ 15					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	6.2	6.2	6.2	6.2	6.2	6.2
		in.lb/arcmin	55	55	55	55	55	55
Max. axial force [c)]	F_{2AMax}	*N*	3350					
		lb_f	754					
Max. lateral force [c)]	F_{2QMax}	*N*	4200					
		lb_f	945					
Max. tilting moment	M_{2KMax}	*Nm*	236					
		in.lb	2089					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	4.8					
		lb_m	11					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 73					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA022.000-X					
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000					
Mass moment of inertia (relates to the drive) **E** **19** Clamping hub diameter [mm]	J_1	$kgcm^2$	1.2	1.2	1.2	1.2	1.2	1.2
		10^{-3} $in.lb.s^2$	1.1	1.1	1.1	1.1	1.1	1.1

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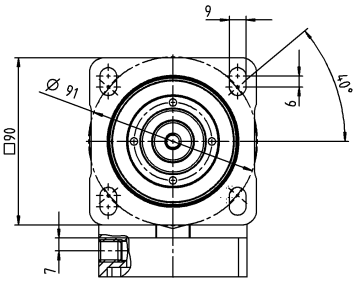
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

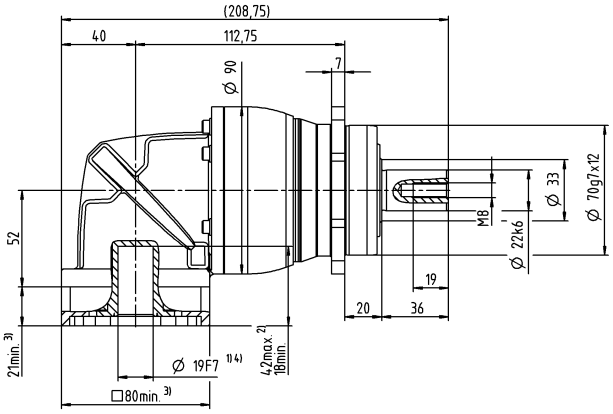
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

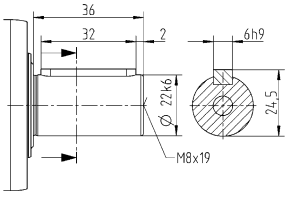
up to 19 [4] (E) [5]
clamping hub
diameter



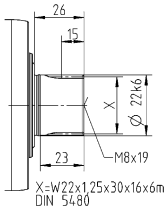


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			3-stage														
Ratio	**i**		**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	99	128	128	152	152	160	152	128	152	160	152	160	144	160	144
		in.lb	876	1133	1133	1345	1345	1416	1345	1133	1345	1416	1345	1416	1275	1416	1275
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	48	65	80	86	95	100	95	80	95	100	95	100	90	100	90
		in.lb	425	575	708	761	841	885	841	708	841	885	841	885	797	885	797
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	124	166	190	190	190	190	190	190	190	190	190	190	190	190	190
		in.lb	1097	1469	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2800	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
		in.lb	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
Max. backlash	j_t	*arcmin*	≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
		in.lb/arcmin	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
Max. axial force [c)]	F_{2AMax}	*N*	3350														
		lb_f	754														
Max. lateral force [c)]	F_{2QMax}	*N*	4200														
		lb_f	945														
Max. tilting moment	M_{2KMax}	*Nm*	236														
		in.lb	2089														
Efficiency at full load	η	%	94														
Service life	L_h	*h*	> 20000														
Weight (incl. standard adapter plate)	*m*	*kg*	4.4														
		lb_m	9.7														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 70														
Max. permitted housing temperature		*°C*	+90														
		°F	+194														
Ambient temperature		*°C*	0 to +40														
		°F	+32 to +104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output same direction														
Protection class			IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0060BA022.000-X														
Bore diameter of coupling on the application side		*mm*	X = 012.000 - 032.000														
Mass moment of inertia (relates to the drive) C 14 Clamping hub diameter [mm]	J_1	$kgcm^2$	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		10^{-3} *in.lb.s²*	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

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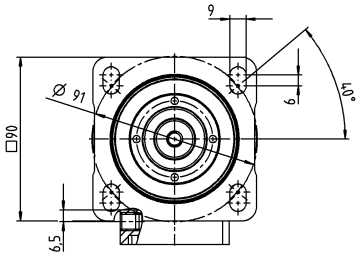
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

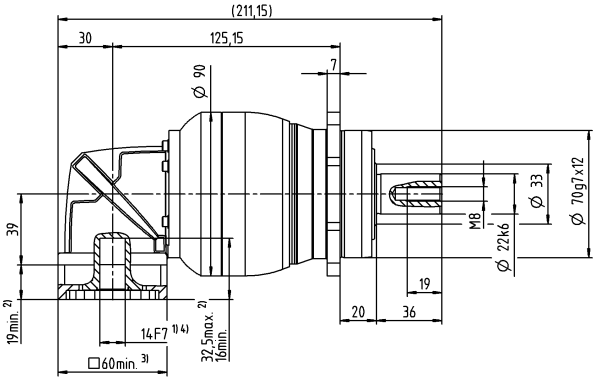
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

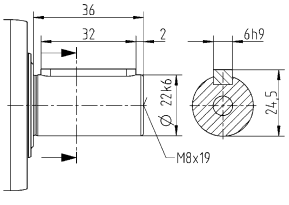
up to 14 [4] (C) [5]
clamping hub
diameter



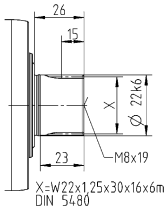


Other output variants

Shaft with key



Splined shaft (DIN 5480)



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Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

			2-stage					
Ratio	**i**		**3**	**4**	**5**	**7**	**8**	**10**
Max. torque [a) b) e)]	T_{2a}	*Nm*	150	200	250	350	352	352
		in.lb	1328	1770	2213	3098	3115	3115
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	93	124	155	217	220	220
		in.lb	823	1097	1372	1921	1947	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	238	318	397	500	500	500
		in.lb	2106	2815	3514	4425	4425	4425
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	1800	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	*rpm*	4500	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	5.8	5.8	5.8	5.8	5.8	5.8
		in.lb	51	51	51	51	51	51
Max. backlash	j_t	*arcmin*	≤ 13					
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	16	16	16	16	16	16
		in.lb/arcmin	142	142	142	142	142	142
Max. axial force [c)]	F_{2AMax}	*N*	5650					
		lb_f	1271					
Max. lateral force [c)]	F_{2QMax}	*N*	6600					
		lb_f	1485					
Max. tilting moment	M_{2KMax}	*Nm*	487					
		in.lb	4310					
Efficiency at full load	η	*%*	95					
Service life	L_h	*h*	> 20000					
Weight (incl. standard adapter plate)	*m*	*kg*	10					
		lb_m	22					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 74					
Max. permitted housing temperature		*°C*	+90					
		°F	+194					
Ambient temperature		*°C*	0 to +40					
		°F	+32 to +104					
Lubrication			Lubricated for life					
Direction of rotation			In- and output same direction					
Protection class			IP 64					
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0150BA032.000-X					
Bore diameter of coupling on the application side		*mm*	X = 019.000 - 036.000					
Mass moment of inertia (relates to the drive) **H 28** Clamping hub diameter [mm]	J_1	*kgcm²*	5.2	5.2	5.2	5.2	5.2	5.2
		10^{-3} *in.lb.s²*	4.6	4.6	4.6	4.6	4.6	4.6

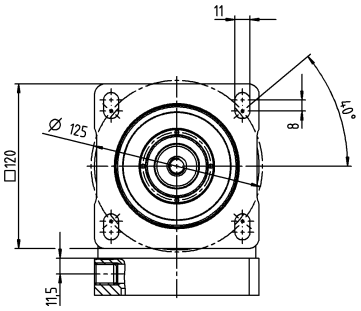
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

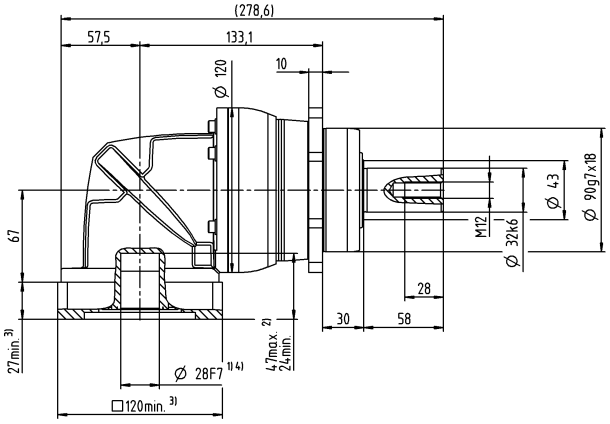
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

2-stage

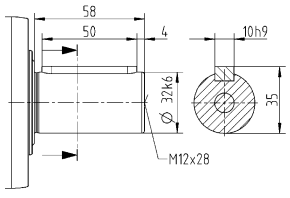
up to 28 [4] (H) [5]
clamping hub
diameter



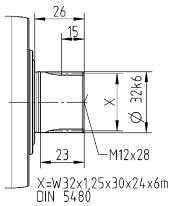


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
[1] Check motor shaft fit
[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPRK 035 MF 3-stage

			3-stage														
Ratio	**i**		**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Max. torque [a) b) e)]	T_{2a}	*Nm*	180	240	300	320	400	400	408	320	408	400	408	400	352	400	352
		in.lb	1593	2124	2655	2832	3540	3540	3611	2832	3611	3540	3611	3540	3115	3540	3115
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*	105	141	176	188	235	250	255	200	255	250	255	250	220	250	220
		in.lb	929	1248	1558	1664	2080	2213	2257	1770	2257	2213	2257	2213	1947	2213	1947
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*	270	361	451	481	500	500	500	500	500	500	500	500	500	500	500
		in.lb	2390	3195	3992	4257	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*	2600	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Max. input speed	n_{1Max}	*rpm*	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
		in.lb	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Max. backlash	j_t	*arcmin*	≤ 13														
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
		in.lb/arcmin	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
Max. axial force [c)]	F_{2AMax}	*N*	5650														
		lb_f	1271														
Max. lateral force [c)]	F_{2QMax}	*N*	6600														
		lb_f	1485														
Max. tilting moment	M_{2KMax}	*Nm*	487														
		in.lb	4310														
Efficiency at full load	η	*%*	94														
Service life	L_h	*h*	> 20000														
Weight (incl. standard adapter plate)	*m*	*kg*	10														
		lb_m	22														
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*	≤ 73														
Max. permitted housing temperature		*°C*	+90														
		°F	+194														
Ambient temperature		*°C*	0 to +40														
		°F	+32 to +104														
Lubrication			Lubricated for life														
Direction of rotation			In- and output same direction														
Protection class			IP 64														
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-0150BA032.000-X														
Bore diameter of coupling on the application side		*mm*	X = 019.000 - 036.000														
Mass moment of inertia (relates to the drive) E 19 Clamping hub diameter [mm]	J_1	$kgcm^2$	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
		10^{-3} $in.lb.s^2$	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

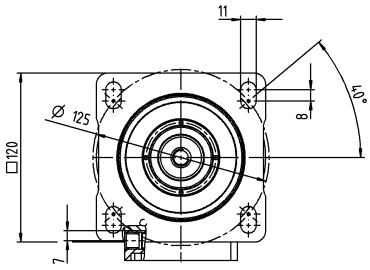
Please use our sizing software cymex® for a detailed sizing – **www.wittenstein-cymex.com**
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

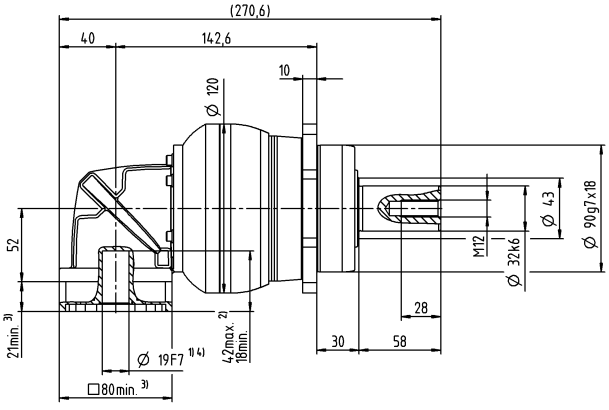
[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

3-stage

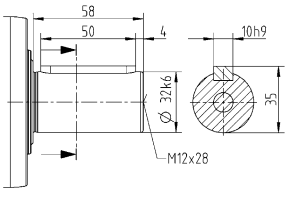
up to 19 [4] (E) [5]
clamping hub
diameter



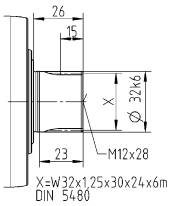


Other output variants

Shaft with key



Splined shaft (DIN 5480)



Non-tolerated dimensions are nominal dimensions
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[2] Min. / Max. permissible motor shaft length
Longer motor shafts are possible, please contact alpha
[3] The dimensions depend on the motor
[4] Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm
[5] Standard clamping hub diameter

NPRK 045 MF 2- / 3-stage

					2-stage			3-stage				
Ratio	**i**			**5**	**8**	**10**	**25**	**32**	**50**	**64**	**100**
Max. torque [a) b) e)]	$T_{2α}$	*Nm*		500	640	640	700	640	700	640	640
		in.lb		4425	5665	5665	6196	5665	6196	5665	5665
Max. acceleration torque [e)] (max. 1000 cycles per hour)	T_{2B}	*Nm*		399	400	400	500	400	500	400	400
		in.lb		3531	3540	3540	4425	3540	4425	3540	3540
Emergency stop torque [a) b) e)] (permitted 1000 times during the service life of the gearbox)	T_{2Not}	*Nm*		1000	1000	1000	1000	1000	1000	1000	1000
		in.lb		8851	8851	8851	8851	8851	8851	8851	8851
Permitted average input speed [d)] (at T_{2N} and 20 °C ambient temperature)	n_{1N}	*rpm*		1600	1600	1600	2000	2000	2000	2000	2000
Max. input speed	n_{1Max}	*rpm*		4000	4000	4000	4500	4500	4500	4500	4500
Mean no load running torque [b)] (at n_1 = 3000 rpm and 20 °C gearbox temperature)	T_{012}	*Nm*		8.7	8.7	8.7	4.7	4.7	4.7	4.7	4.7
		in.lb		77	77	77	42	42	42	42	42
Max. backlash	j_t	*arcmin*		≤ 11			≤ 11				
Torsional rigidity [b)]	C_{t21}	*Nm/arcmin*		48	48	48	54	54	54	54	54
		in.lb/arcmin		425	425	425	478	478	478	478	478
Max. axial force [c)]	F_{2AMax}	*N*		9870			9870				
		lb_f		2221			2221				
Max. lateral force [c)]	F_{2QMax}	*N*		9900			9900				
		lb_f		2228			2228				
Max. tilting moment	M_{2KMax}	*Nm*		952			952				
		in.lb		8426			8426				
Efficiency at full load	η	%		95			94				
Service life	L_h	*h*		> 20000			> 20000				
Weight (incl. standard adapter plate)	*m*	*kg*		24			21				
		lb_m		53			46				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	L_{PA}	*dB(A)*		≤ 78			≤ 74				
Max. permitted housing temperature		°C		+90			+90				
		°F		+194			+194				
Ambient temperature		°C		0 to +40			0 to +40				
		°F		+32 to +104			+32 to +104				
Lubrication				Lubricated for life							
Direction of rotation				In- and output same direction							
Protection class				IP 64							
Elastomer coupling (recommended product type – validate sizing with cymex®)				ELC-0300BA040.000-X							
Bore diameter of coupling on the application side			*mm*	X = 020.000 - 045.000							
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	H	28	J_1	*kgcm²*	–	–	–	6.7	6.7	6.7	6.7	6.7
				10^{-3} *in.lb.s²*	–	–	–	5.9	5.9	5.9	5.9	5.9
	K	38	J_1	*kgcm²*	18	18	18	–	–	–	–	–
				10^{-3} *in.lb.s²*	16	16	16	–	–	–	–	–

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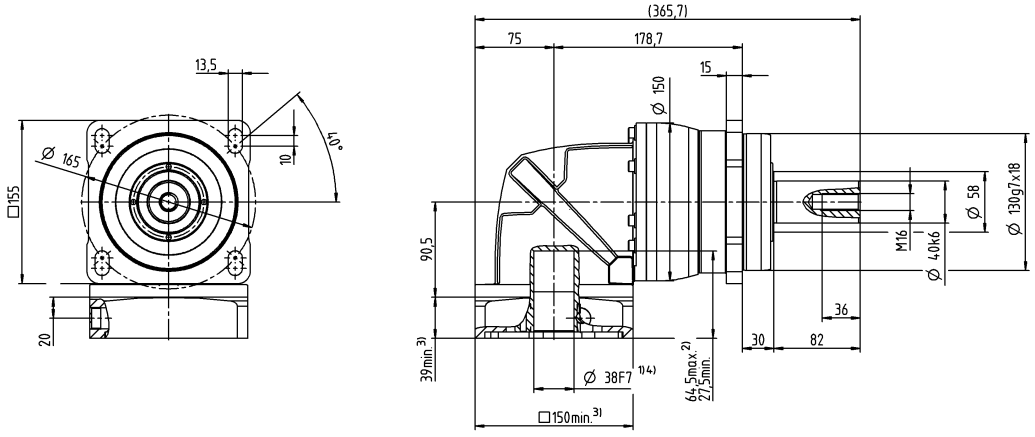
Please consider the maximal tilting moment caused by the motor M_{1KMot} – see sizing

[a)] Valid for torque transmission only
[b)] Valid for standard clamping hub diameter
[c)] Refers to center of the output shaft or flange
[d)] Please reduce input speed at higher ambient temperatures
[e)] Valid for: Smooth shaft

Motor shaft diameter [mm]

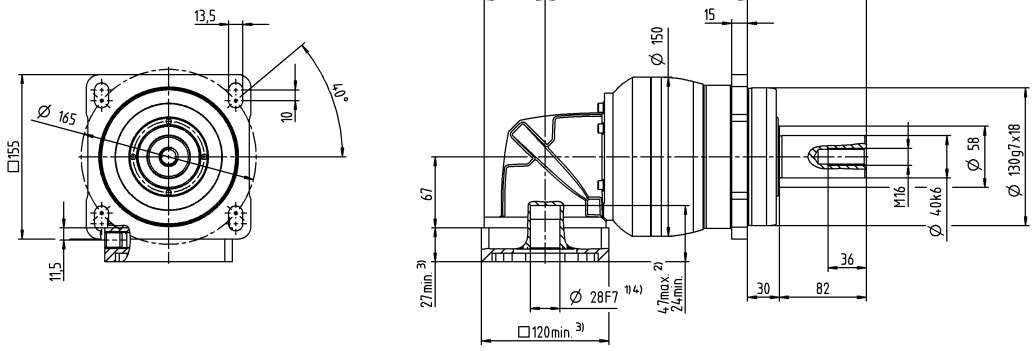
2-stage

up to 38 [4] (K) [5] clamping hub diameter



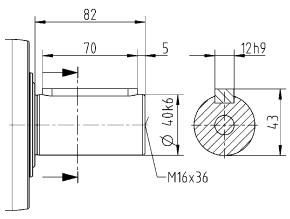
3-stage

up to 28 [4] (H) [5] clamping hub diameter

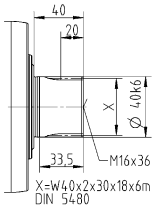


Other output variants

Shaft with key



Splined shaft (DIN 5480)



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[5] Standard clamping hub diameter