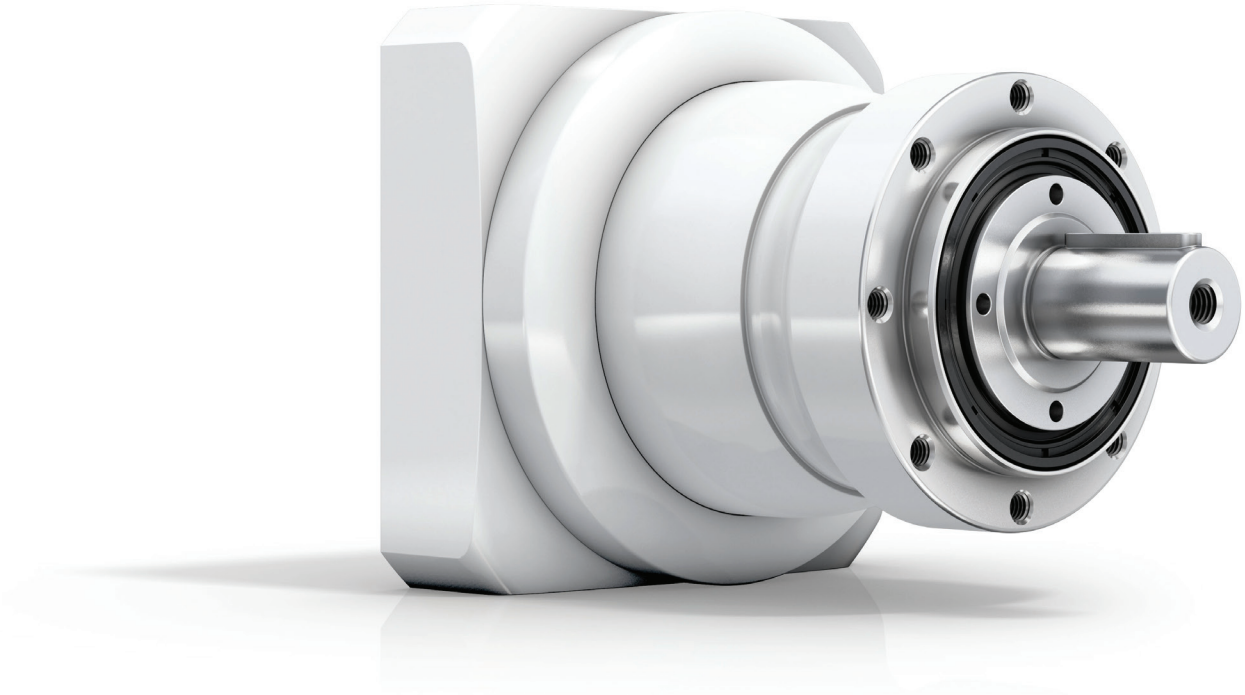
WITTENSTEIN | alpha

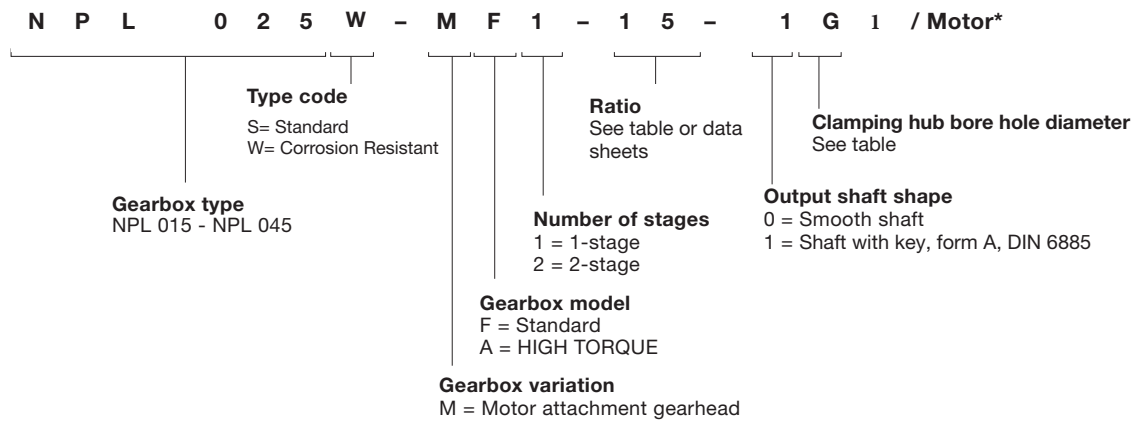
alpha Value Line – NPL Corrosion Resistant Gearbox

Sizing and Technical Data

Efficient
Economical
Locally Produced



Order codes for the alpha Value Line – NPL Corrosion Resistant Gearbox

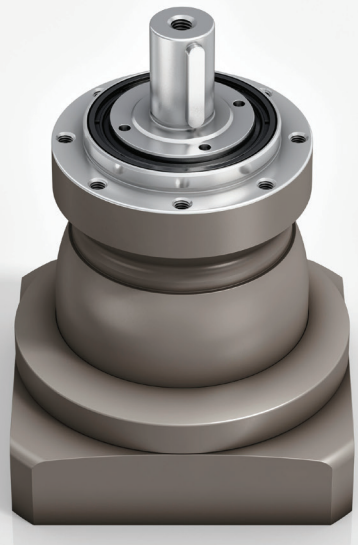


*Full motor designation only required for determining attached gearbox components!

Ratio and clamping hub diameter table

Size	Stages	Ratios	Clamping hub diameters* [mm]
015	1 stage	3, 4, 5, 7, 8, 10	14 (C), 19 (E)
	2 stage	12, 15, 16, 20, 25, 28, 30, 32, 35, 40, 50, 64, 70, 100	14 (C)
025	1 stage	3, 4, 5, 7, 8, 10	19 (E), 28 (H)
	2 stage	9, 12, 15, 16, 20, 25, 28, 30, 32, 35, 40, 50, 64, 70, 100	19 (E)
035	1 stage	3, 4, 5, 7, 8, 10	28 (H), 38 (K)
	2 stage	9, 12, 15, 16, 20, 25, 28, 30, 32, 35, 40, 50, 64, 70, 100	28 (H)
045	1 stage	5, 8, 10	38 (K)
	2 stage	25, 32, 50, 64, 100	38 (K)

*Intermediate diameters are possible in combination with a bushing with a minimum thickness of 1 mm.



NPL-W in standard finish

Contents

The latest addition to the popular Value Line series gearboxes, the NPL-W offers the performance, value and delivery of the value line with added corrosion-resistant protection.

With IP65 rated protection this gearbox is ideal for applications calling for a wet environment, such as:

- Food & Beverage
- Clean Room
- Washdown Environments
- Medical & Pharmaceutical
- And many other Clean in Place applications

Trust WITTENSTEIN for the Highest Quality Protection

We designed the world's first Hygienic Design Gearbox to meet FDA, 3-A and EHEDG standards, and today offer the most comprehensive portfolio of hygienic design and corrosion resistant gearboxes in the full range of protection classes:

- Basic protection: Epoxy coated
- Medium protection: Stainless steel and nickel-plated options
- Maximum protection: Stainless steel, IP69 rating

WITTENSTEIN offers the most complete line of washdown solutions for planetary servo gearboxes.

Food & Beverage
Clean Room
Washdown Environments
Medical
Pharmaceutical

To see our entire line of Hygienic and Corrosion Resistant products visit www.wittenstein-us.com or scan the QR code above.

NPL 015 W

			1-stage						2-stage													
Ratio [a]	**i**		**3**	**4**	**5**	**7**	**8**	**10**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Maximum torque **MF**	$T_{2\alpha}$	Nm	40.8	44.8	51.2	51.2	44.8	44.8	40.8	40.8	44.8	44.8	51.2	44.8	40.8	44.8	44.8	44.8	51.2	44.8	51.2	44.8
		in.lb	360	400	456	570	400	400	360	360	400	400	456	400	360	400	400	40.0	456	400	456	400
Maximum torque **HIGH TORQUE – MA**	$T_{2\alpha}$	Nm	70.4	53.6	-	-	-	-	49.6	53.6	53.6	53.6	-	53.6	49.6	-	-	53.6	-	-	-	-
		in.lb	624	472	-	-	-	-	440	472	472	472	-	472	440	-	-	472	-	-	-	-
Emergency stop torque [b]	T_{2Not}	Nm	75																			
		in.lb	660																			
Nominal input speed [c]	n_{1N}	min^{-1}	2900			3600			3800					4300								
Max. input speed	n_{1Max}	min^{-1}	8000						10000													
Max. torsional backlash	j_t	arcmin	Standard ≤ 8						Standard ≤ 10													
Max. axial force [d]	F_{2AMax}	N	2400																			
		lb_f	540																			
Max. radial force [d]	F_{2RMax}	N	2800																			
		lb_f	630																			
Weight incl. standard adapter plate [e]	m	kg	3						2.9													
		lb_m	6.6						6.4													
Operating noise [f]	L_{PA}	dB(A)	≤ 59						≤ 58													
Max. permitted housing temperature		°C	+90																			
		F	+194																			
Ambient temperature		°C	-15 to +40																			
		F	5 to 104																			
Lubrication			Lubricated for life																			
Paint			2K Epoxy																			
Direction of rotation			Motor and gearbox same direction																			
Type of protection			IP 65																			
Moment of interia (related to the drive)		$kgcm^2$	0.13 to 0.55						0.55													
		10^{-3} in.lb.s^2	0.12 to 0.49						0.49													
Clamping hub diameter	Standard	mm	14(C) 19(E)						19(E)													

a) Other ratios available on request.
b) Permitted 1000 times during the service life of the gearbox. If $T_{2\alpha} > T_{2Not}$, then T_{2Not} is the maximum permitted value.
c) At T_{1N} and 20°C ambient temperature. Higher speeds possible if calculated using cymex®.
d) Refers to the center of the output shaft at $n_2 = 150$ rpm.
e) Depending on the clamping hub diameter and the selected adapter plate.
f) At i=10 and n_1=3000 rpm at no load.

You can select a suitable adapter plate using the online configurator on www.wittenstein-alpha.com

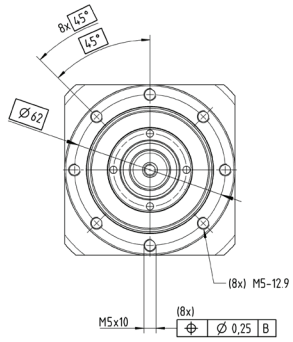
Quick gearbox selection based on the motor characteristic*:
Max. torque $T_{2\alpha} \geq T_{max\ motor} * i$
***Please refer to catalog pages 4 and 5 for detailed information on manual selection based on the application.**

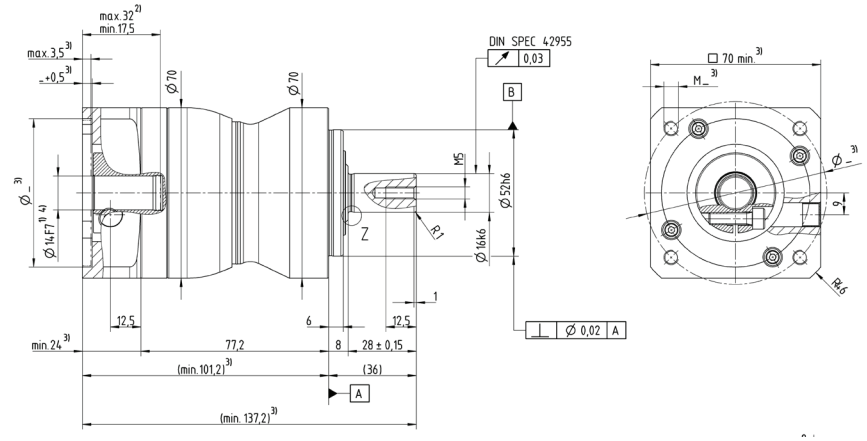
For application-specific sizing with cymex®, see www.cymex.com

Motor shaft diameter [mm]

1-stage

Up to 14 [4] **(C) clamping hub diameter**

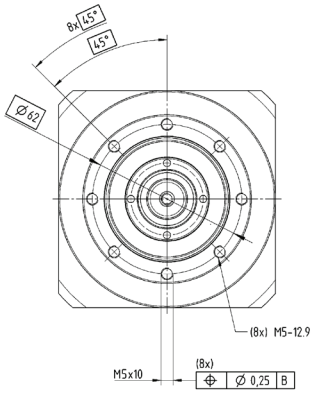


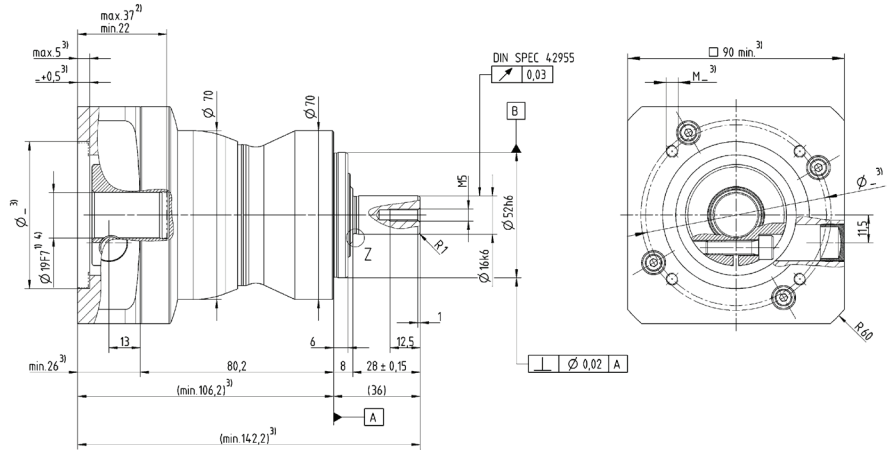


B → ← A

1-stage

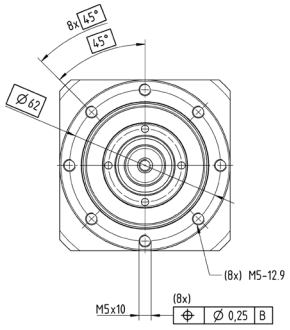
Up to 19 [4] **(E) clamping hub diameter**

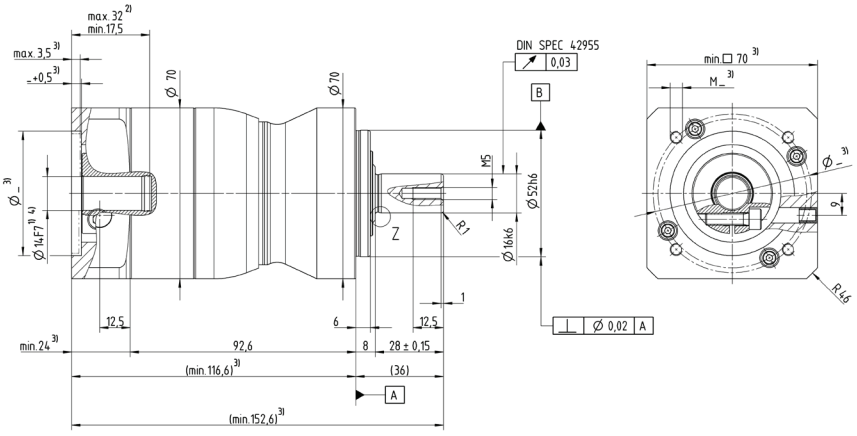




2-stage

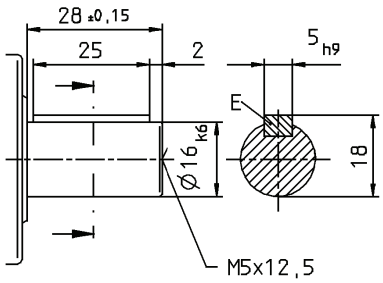
Up to 14 [4] **(C) clamping hub diameter**





Alternatives: Output shaft variants

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



Non-tolerated dimensions ±1 mm

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

⚠ Motor mounting according to operating manual

NPL 025 W

			1-stage						2-stage															
Ratio [a]	**i**		**3**	**4**	**5**	**7**	**8**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Maximum torque **MF**	$T_{2\alpha}$	Nm	102.4	121.6	128	128	115.2	115.2	102.4	102.4	102.4	121.6	121.6	128	121.6	102.4	121.6	128	121.6	128	115.2	128	115.2
		in.lb	904	1080	1136	1136	1016	1016	904	904	904	1080	1080	1136	1080	904	1080	1136	1080	1136	1016	1136	1016
Maximum torque **HIGH TORQUE – MA**	$T_{2\alpha}$	Nm	160	147.2	-	-	-	-	160	160	153.6	147.2	147.2	-	147.2	134.4	-	-	147.2	-	-	-	-
		in.lb	1416	1304	-	-	-	-	1416	1416	1360	1304	1304	-	1304	1192	-	-	1304	-	-	-	-
Emergency stop torque [b]	T_{2Not}	Nm	190																				
		in.lb	1700																				
Nominal input speed [c]	n_{1N}	min^{-1}	2700			2900			3300						4000								
Max. input speed	n_{1Max}	min^{-1}	7000						8000														
Max. torsional backlash	j_t	arcmin	Standard ≤ 8						Standard ≤ 10														
Max. axial force [d]	F_{2AMax}	N	3350																				
		lb_f	750																				
Max. radial force [d]	F_{2RMax}	N	4200																				
		lb_f	950																				
Weight incl. standard adapter plate [e]	m	kg	5.9						5.9														
		lb_m	13.1						13.1														
Operating noise [f]	L_{PA}	dB(A)	≤ 61						≤ 59														
Max. permitted housing temperature		°C	+90																				
		F	+194																				
Ambient temperature		°C	-15 to +40																				
		F	5 to 104																				
Lubrication			Lubricated for life																				
Paint			2K Epoxy																				
Direction of rotation			Motor and gearbox same direction																				
Type of protection			IP 65																				
Moment of interia (related to the drive)		kgcm^2	0.55 to 1.8						1.8														
		10^{-3} in.lb.s^2	0.49 to 1.6						1.6														
Clamping hub diameter	Standard	mm	19(E) 28(H)						28(H)														

[a] Other ratios available on request.
[b] Permitted 1000 times during the service life of the gearbox. If $T_{2\alpha} > T_{2Not}$, then T_{2Not} is the maximum permitted value.
[c] At T_{1N} and 20°C ambient temperature. Higher speeds possible if calculated using cymex®.
[d] Refers to the center of the output shaft at $n_2 = 150$ rpm.
[e] Depending on the clamping hub diameter and the selected adapter plate.
[f] At i = 10 and $n_1 = 3000$ rpm at no load.

You can select a suitable adapter plate using the online configurator on www.wittenstein-alpha.com

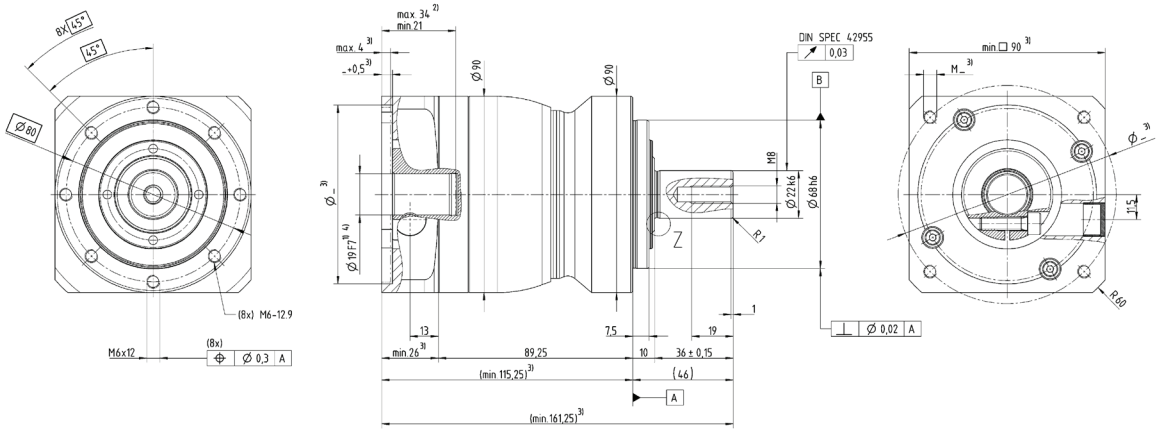
Quick gearbox selection based on the motor characteristic*:
Max. torque $T_{2\alpha} \geq T_{max\ motor} * i$
***Please refer to catalog pages 4 and 5 for detailed information on manual selection based on the application.**

For application-specific sizing with cymex®, see www.cymex.com

Motor shaft diameter [mm]

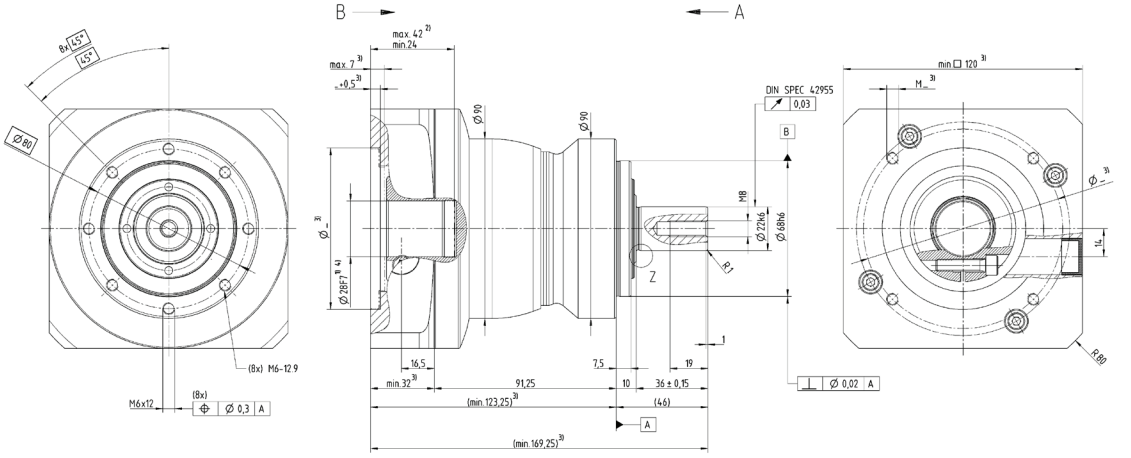
1-stage

Up to 19 [4] (E) clamping hub diameter



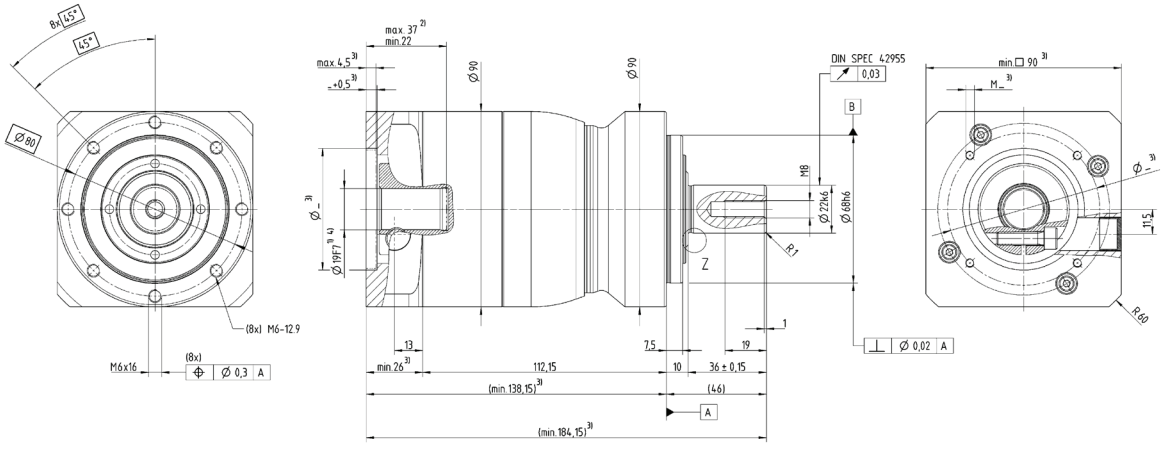
1-stage

Up to 28 [4] (H) clamping hub diameter



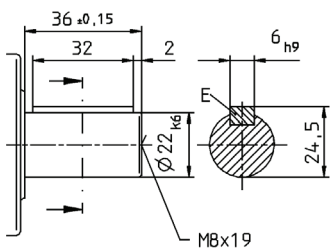
2-stage

Up to 19 [4] (E) clamping hub diameter



Alternatives: Output shaft variants

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



Non-tolerated dimensions ±1 mm

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

⚠ Motor mounting according to operating manual

NPL 035 W

				1-stage						2-stage														
Ratio [a]		**i**		**3**	**4**	**5**	**7**	**8**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**32**	**35**	**40**	**50**	**64**	**70**	**100**
Maximum torque **MF**		$T_{2\alpha}$	Nm	256	326.4	320	320	281.6	281.6	256	256	256	326.4	326.4	320	326.4	256	326.4	320	326.4	320	281.6	320	281.6
			in.lb	2264	2888	2832	2832	2496	2496	2264	2265	2264	3888	2888	2832	2888	2264	2888	2832	2888	2832	2496	2832	2496
Maximum torque **HIGH TORQUE – MA**		$T_{2\alpha}$	Nm	390.4	390.4	-	-	-	-	390.4	390.4	384	390.4	390.4	-	390.4	345.6	-	-	390.4	-	-	-	-
			in.lb	3456	3456	-	-	-	-	3456	3456	3400	3456	3456	-	3456	3056	-	-	3456	-	-	-	-
Emergency stop torque [b]		T_{2Not}	Nm	480																				
			in.lb	4200																				
Nominal input speed [c]		n_{1N}	min^{-1}	2000			2500			2700						3600								
Max. input speed		n_{1Max}	min^{-1}	6000						7000														
Max. torsional backlash		j_t	arcmin	Standard ≤ 8						Standard ≤ 10														
Max. axial force [d]		F_{2AMax}	N	5650																				
			lb_f	1270																				
Max. radial force [d]		F_{2RMax}	N	6600																				
			lb_f	1490																				
Weight incl. standard adapter plate [e]		m	kg	14.3						13.9														
			lb_m	31.6						30.7														
Operating noise [f]		L_{PA}	dB(A)	≤ 65						≤ 61														
Max. permitted housing temperature			°C	+90																				
			F	+194																				
Ambient temperature			°C	-15 to +40																				
			F	5 to +104																				
Lubrication				Lubricated for life																				
Paint				2K Epoxy																				
Direction of rotation				Motor and gearbox same direction																				
Type of protection				IP 65																				
Moment of interia (related to the drive)			$kgcm^2$	1.8 to 8.3						8.3														
			10^{-3} in.lb.s^2	1.6 to 7.4						7.4														
Clamping hub diameter	Standard		mm	28(H) to 38(K)						38(K)														

a) Other ratios available on request.
b) Permitted 1000 times during the service life of the gearbox. If $T_{2\alpha} > T_{2Not}$, then T_{2Not} is the maximum permitted value.
c) At T_{1N} and 20°C ambient temperature. Higher speeds possible if calculated using cymex®.
d) Refers to the center of the output shaft at $n_2 = 150$ rpm.
e) Depending on the clamping hub diameter and the selected adapter plate.
f) At i=10 and n_1=3000 rpm at no load.

You can select a suitable adapter plate using the online configurator on www.wittenstein-alpha.com

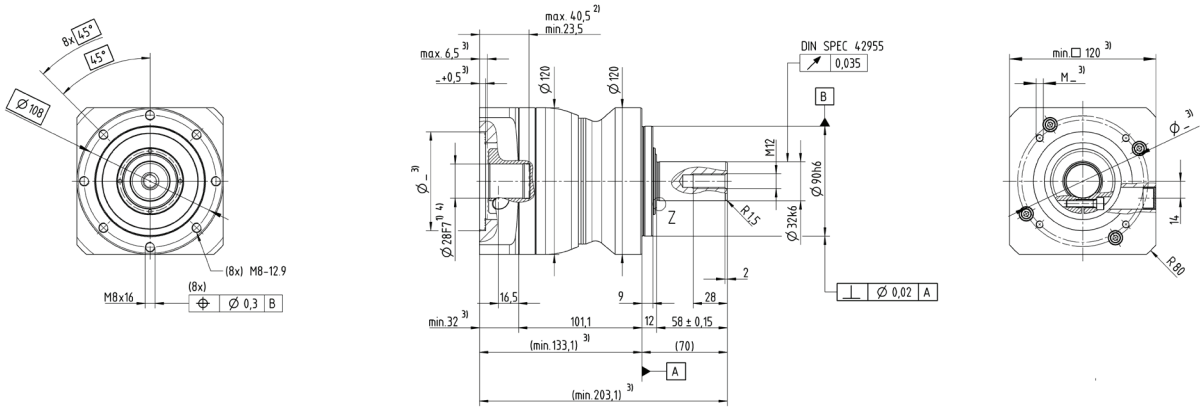
Quick gearbox selection based on the motor characteristic*:
Max. torque $T_{2\alpha} \geq T_{max\ motor} * i$
***Please refer to catalog pages 4 and 5 for detailed information on manual selection based on the application.**

For application-specific sizing with cymex®, see www.cymex.com

Motor shaft diameter [mm]

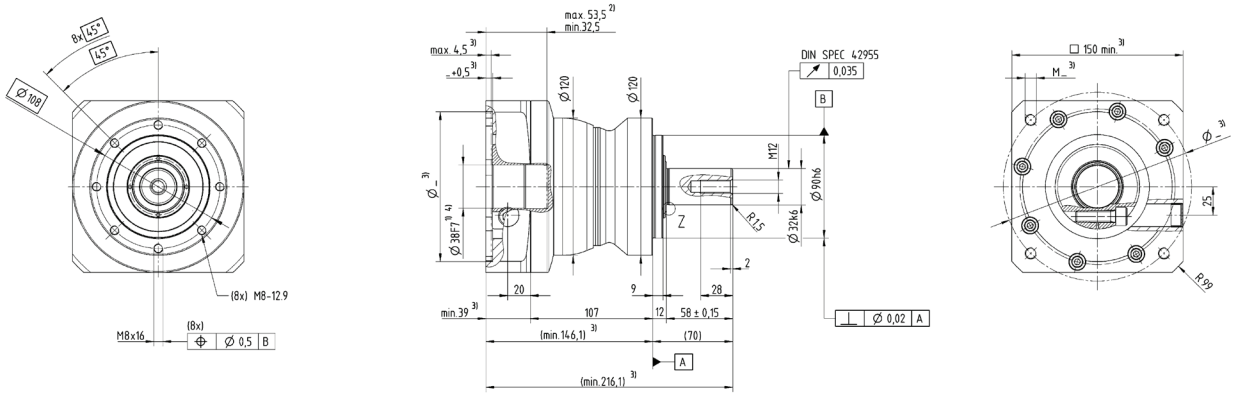
1-stage

Up to 28 [4] (H) clamping hub diameter



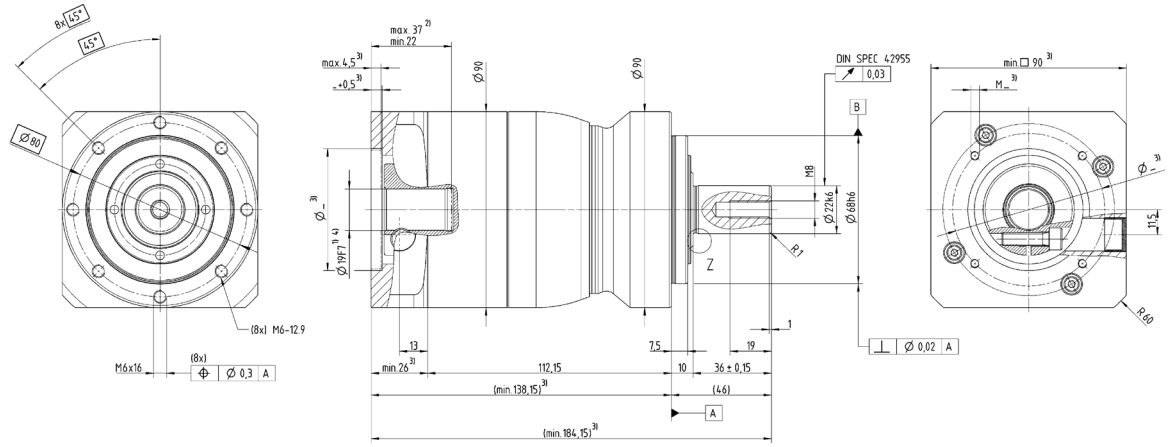
1-stage

Up to 38 [4] (K) clamping hub diameter



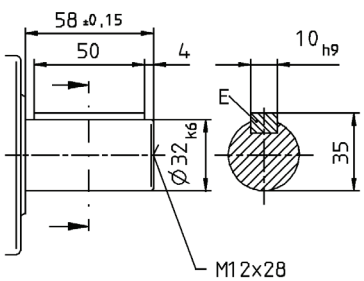
2-stage

Up to 28 [4] (H) clamping hub diameter



Alternatives: Output shaft variants

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



Non-tolerated dimensions ±1 mm

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

⚠ Motor mounting according to operating manual

NPL 045 W

				1-stage			2-stage				
Ratio [a]		**i**		**5**	**8**	**10**	**25**	**32**	**50**	**64**	**100**
Maximum torque	**MF**	$T_{2\alpha}$	Nm	640	512	512	640	512	640	512	640
			in.lb	5664	4528	4528	5664	4528	5664	4528	4528
Emergency stop torque [b]		T_{2Not}	Nm	1000							
			in.lb	8900							
Nominal input speed [c]		n_{1N}	min^{-1}	1800	2000		2600				
Max. input speed		n_{1Max}	min^{-1}	4000			6000				
Max. torsional backlash		j_t	arcmin	Standard ≤ 8			Standard ≤ 10				
Max. axial force [d]		F_{2AMax}	N	9870							
			lb_f	2200							
Max. radial force [d]		F_{2RMax}	N	9900							
			lb_f	2200							
Weight incl. standard adapter plate [e]		m	kg	25			29				
			lb_m	55			64				
Operating noise [f]		L_{PA}	dB(A)	≤ 68			≤ 65				
Max. permitted housing temperature			°C	+90							
			F	+194							
Ambient temperature			°C	-15 to +40							
			F	5 to +104							
Lubrication				Lubricated for life							
Paint				2K Epoxy							
Direction of rotation				Motor and gearbox same direction							
Type of protection				IP 65							
Moment of interia (related to the drive)			$kgcm^2$	8.7			7.5				
			10^{-3} in.lb.s^2	7.7			6.6				
Clamping hub diameter	Standard		mm	38(K)			38(K)				

a) Other ratios available on request.
b) Permitted 1000 times during the service life of the gearbox. If $T_{2\alpha} > T_{2Not}$, then T_{2Not} is the maximum permitted value.
c) At T_{1N} and 20°C ambient temperature. Higher speeds possible if calculated using cymex®.
d) Refers to the center of the output shaft at $n_2 = 150$ rpm.
e) Depending on the clamping hub diameter and the selected adapter plate.
f) At i = 10 and $n_1 = 3000$ rpm at no load.

You can select a suitable adapter plate using the online configurator on www.wittenstein-alpha.com

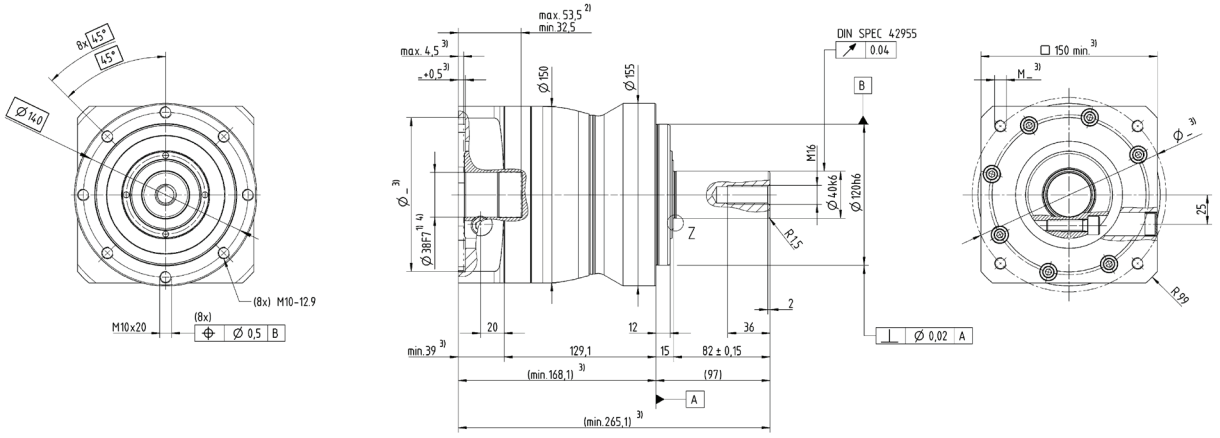
Quick gearbox selection based on the motor characteristic*:
Max. torque $T_{2\alpha} \geq T_{max\ motor} * i$
***Please refer to catalog pages 4 and 5 for detailed information on manual selection based on the application.**

For application-specific sizing with cymex®, see www.cymex.com

Motor shaft diameter [mm]

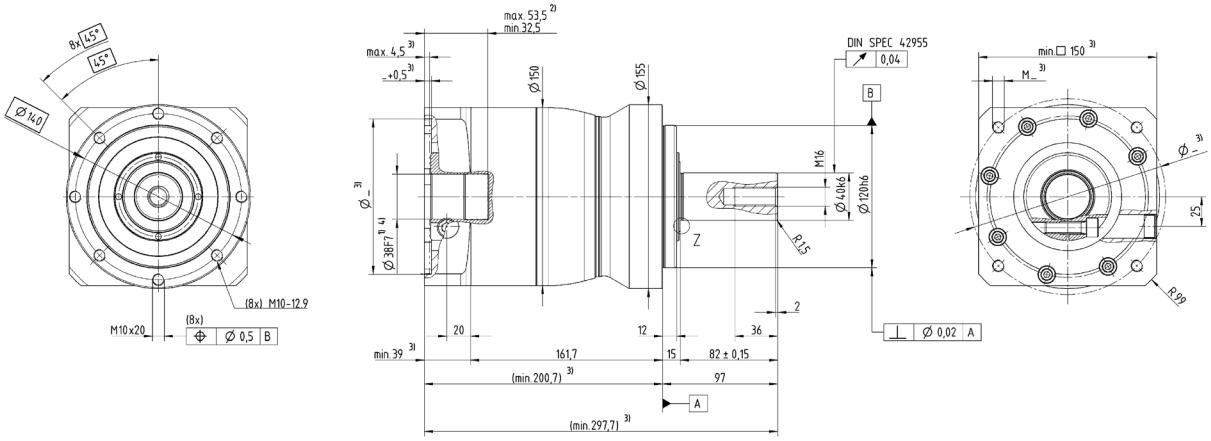
1-stage

Up to 38 [4] (K) clamping hub diameter



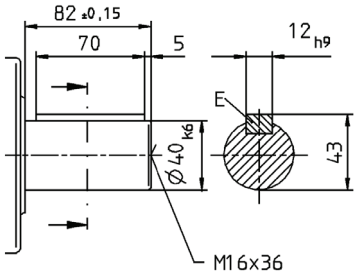
2-stage

Up to 38 [4] (K) clamping hub diameter



Alternatives: Output shaft variants

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



Non-tolerated dimensions ±1 mm

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

⚠ Motor mounting according to operating manual

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