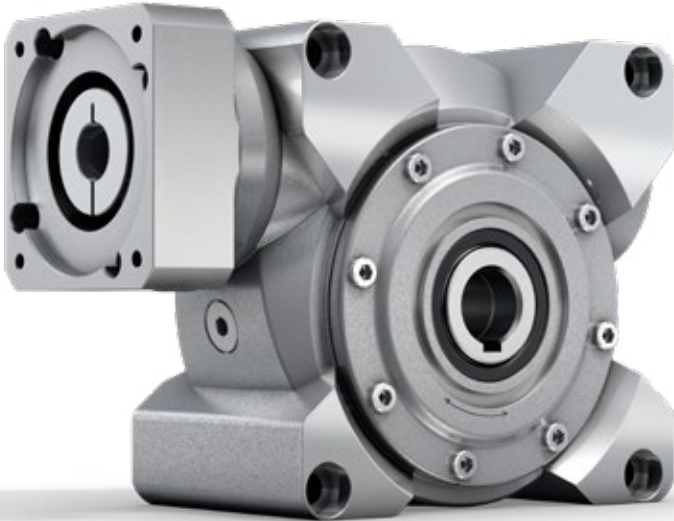


NVH / NVS – We drive the Performance

NVH



The servo worm gearboxes with hollow shaft and output shaft impress with high power density combined with medium backlash. The V-Drive Value are especially suitable for economical applications in continuous operation.

PRODUCT HIGHLIGHTS



Strong performance

The V-Drive Value convinces with a strong performance in economical standard applications in cyclic and continuous operation. High power density is achieved with medium backlash over the entire service life.



No stick-slip effect

The stick-slip effect is not an issue in applications with the V-Drive Value thanks to the perfected hollow-flank toothing.



High flexibility

In addition to the hollow shaft and shaft output shapes, the worm gearboxes are also available in a corrosion-resistant design.

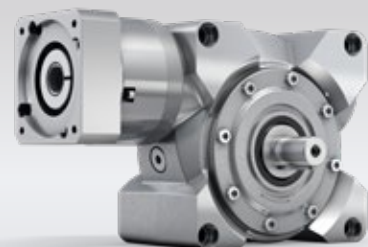


Constant low backlash

Constant low backlash over the entire service life affords consistent high quality with high positioning accuracy.

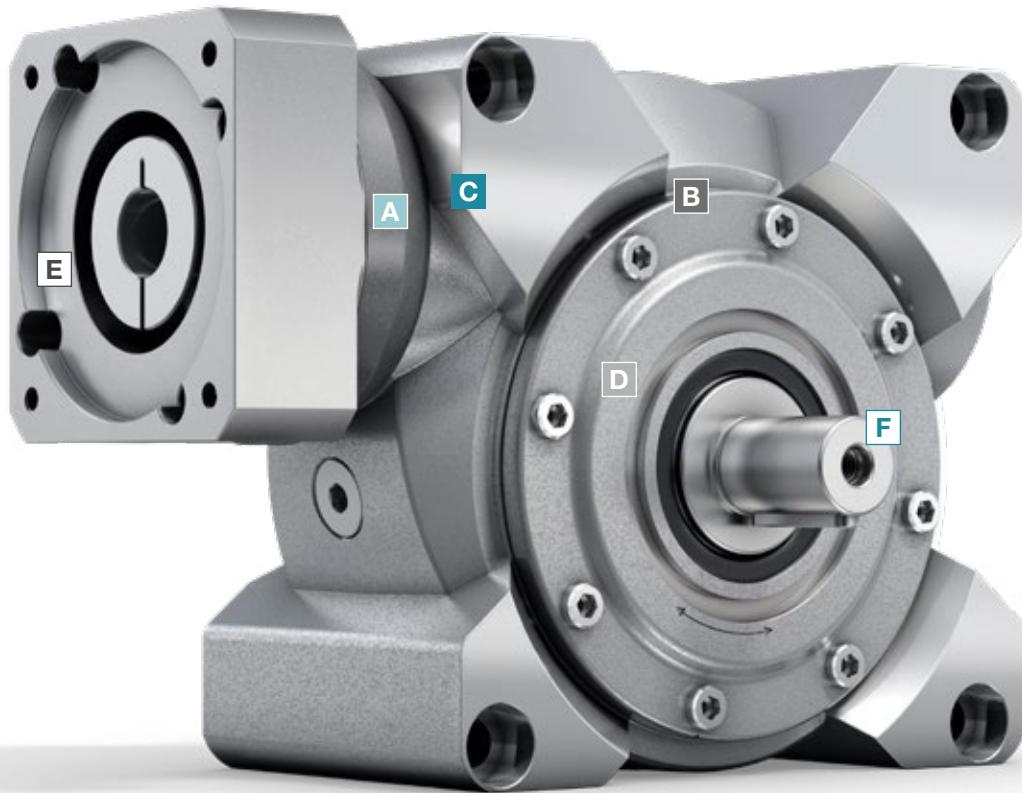


NVH – worm gearbox in corrosion-resistant design



NVS – worm gearbox with integrated planetary input stage

NVS



A

Radial shaft seal

- Very long service life
- Optimized for continuous operation

B

Hollow-flank toothing

- Medium torsional backlash accuracy over the entire service life
- High efficiency
- High power density

C

Input bearing

- Bearing package to absorb axial and radial forces
- Very well suited to high input speeds

D

Output bearing

- High overload capacity to absorb axial and radial forces

E

Metal bellows coupling

- Completely backlash free
- Lifetime durable and maintenance free
- Easy assembly
- Protects the motor through thermal linear expansion compensation

F

Multiple output configurations for greater flexibility

- Hollow shaft interface
- Keyed hollow shaft
- Output on both sides
- Smooth shaft
- Shaft with key



NVS – worm gearbox with elastomer coupling ELC



NVS – worm gearbox with rack and pinion

NVH 040 MF 1- / 2-stage

			1-stage							2-stage						
Ratio	<i>i</i>		4	7	10	16	28	40	50	70	100	140	200	280	400	
Max. torque ^{a) b)} (at n ₁ = 500 rpm)	<i>T</i> _{2a}	Nm	74	82	91	94	98	91	91	82	91	98	91	98	91	
		in.lb	655	726	805	832	867	805	805	726	805	867	805	867	805	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	<i>T</i> _{2Not}	Nm	118	126	125	129	134	122	125	126	125	134	122	134	122	
		in.lb	1044	1115	1106	1142	1186	1080	1106	1115	1106	1186	1080	1186	1080	
Permitted average input speed ^{d)} (at 20 °C ambient temperature)	<i>n</i> _{1N}	rpm	4000							4400						
Max. input speed	<i>n</i> _{1Max}	rpm	6000													
Mean no load running torque ^{b)} (at n _i = 3000 rpm and 20 °C gearbox temperature)	<i>T</i> ₀₁₂	Nm	0.8	0.7	0.6	0.5	0.4	0.4	0.4	0.2	0.2	0.4	0.4	0.3	0.2	
		in.lb	7.1	6.2	5.3	4.4	3.5	3.5	3.5	1.8	1.8	3.5	3.5	2.7	1.8	
Max. backlash	<i>j</i> _t	arcmin	≤ 6							≤ 7						
Torsional rigidity ^{b)}	<i>C</i> _{t21}	Nm/arcmin	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
		in.lb/arcmin	40	40	40	40	40	40	40	40	40	40	40	40	40	
Max. axial force ^{c)}	<i>F</i> _{2AMax}	N	3000													
		lb _f	675													
Max. lateral force ^{b)}	<i>F</i> _{2QMax}	N	2400													
		lb _f	540													
Max. tilting moment	<i>M</i> _{2KMax}	Nm	205													
		in.lb	1814													
Efficiency at full load (at n _i = 500 rpm)	<i>η</i>	%	93	90	88	82	73	67	86	88	86	71	65	71	65	
Service life	<i>L</i> _h	h	> 20000													
Weight (incl. standard adapter plate)	<i>m</i>	kg	5							5.6						
		lb _m	11.1							12						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	<i>L</i> _{PA}	dB(A)	< 54							< 58						
Max. permitted housing temperature		°C	+90													
		°F	+194													
Ambient temperature		°C	–15 to +40													
		°F	+5 to +104													
Lubrication			Lubricated for life													
Direction of rotation			See drawing													
Protection class			IP 65													
Shrink disc (Standard Version)			SD 024x050 S2													
Max. torque (without axial force)	<i>T</i> _{max}	Nm	250													
		in.lb	2213													
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	<i>J</i> _I	kgcm ²	0.56	0.42	0.39	0.37	0.36	0.35	0.16	0.15	0.15	0.16	0.16	0.15
				10 ⁻³ in.lb.s ²	0.5	0.37	0.35	0.33	0.32	0.31	0.14	0.13	0.13	0.14	0.14	0.13
	E	19	<i>J</i> _I	kgcm ²	0.88	0.74	0.7	0.68	0.68	0.67	0.53	0.52	0.52	0.53	0.53	0.52
				10 ⁻³ in.lb.s ²	0.78	0.65	0.62	0.6	0.6	0.59	0.47	0.46	0.46	0.47	0.47	0.46

Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com

^{a)} At max. 10 % F_{2QMax}

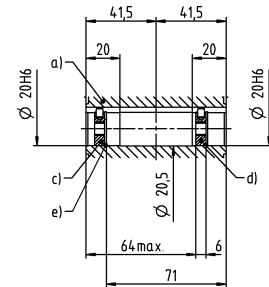
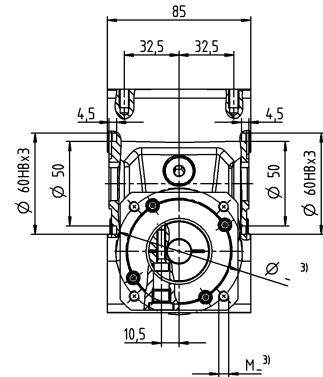
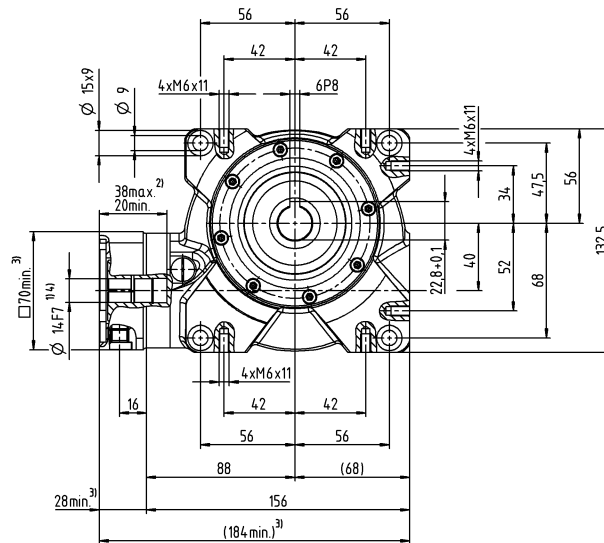
^{b)} Valid for standard clamping hub diameter

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

^{d)} Please reduce input speed at higher ambient temperatures

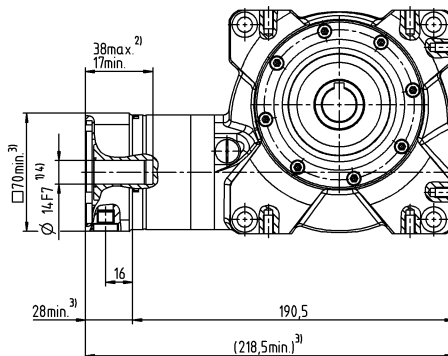
1-stage

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



2-stage

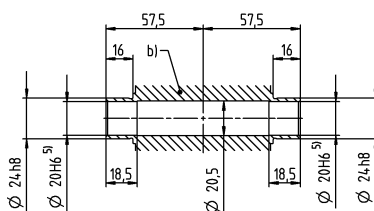
up to 14/19 ⁴⁾ (C ⁶⁾/E)
clamping hub
diameter



Motor shaft diameter [mm]

Other output variants

Hollow shaft interfaces on both sides



- a) Hollow shaft, keyed on both sides
- b) Hollow shaft interfaces on both sides
- c) End disc for screw M6 (on request)
- d) End disc as forcing washer for screw M8 (on request)
- e) Locking ring – DIN 472 (on request)

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

Non-tolerated dimensions are nominal dimensions

- ¹⁾ Check motor shaft fit
- ²⁾ Min./Max. permissible motor shaft length
Longer motor shafts are adaptable, please contact us
- ³⁾ The dimensions depend on the motor
- ⁴⁾ Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm
- ⁵⁾ Tolerance h6 for mounted shaft
- ⁶⁾ Standard clamping hub diameter

NVH 050 MF 1- /2-stage

			1-stage							2-stage						
Ratio	<i>i</i>		4	7	10	16	28	40	50	70	100	140	200	280	400	
Max. torque ^{a) b)} (at n ₁ = 500 rpm)	<i>T</i> _{2a}	Nm	130	150	153	157	167	141	153	150	153	167	141	167	141	
		in.lb	1151	1328	1354	1389	1478	1248	1354	1328	1354	1478	1248	1478	1248	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	<i>T</i> _{2Not}	Nm	230	242	242	250	262	236	242	242	242	262	236	262	236	
		in.lb	2036	2142	2142	2213	2319	2089	2142	2142	2142	2319	2089	2319	2089	
Permitted average input speed ^{d)} (at 20 °C ambient temperature)	<i>n</i> _{1N}	rpm	4000							3500						
Max. input speed	<i>n</i> _{1Max}	rpm	6000													
Mean no load running torque ^{b)} (at n ₁ = 3000 rpm and 20 °C gearbox temperature)	<i>T</i> ₀₁₂	Nm	2.3	2.2	1.6	1.5	1.2	1.1	0.7	0.5	0.4	0.6	0.6	0.4	0.4	
		in.lb	20.4	19.5	14.2	13.3	10.6	9.7	6.2	4.4	3.5	5.3	5.3	3.5	3.5	
Max. backlash	<i>j</i> _t	arcmin	≤ 6							≤ 7						
Torsional rigidity ^{b)}	<i>C</i> _{t21}	Nm/arcmin	8	8	8	8	8	8	8	8	8	8	8	8	8	
		in.lb/arcmin	71	71	71	71	71	71	71	71	71	71	71	71	71	
Max. axial force ^{c)}	<i>F</i> _{2AMax}	N	5000													
		lb _f	1125													
Max. lateral force ^{b)}	<i>F</i> _{2QMax}	N	3800													
		lb _f	855													
Max. tilting moment	<i>M</i> _{2KMax}	Nm	409													
		in.lb	3620													
Efficiency at full load (at n ₁ = 500 rpm)	<i>η</i>	%	92	89	86	82	72	64	84	87	84	70	62	70	62	
Service life	<i>L</i> _h	h	> 20000													
Weight (incl. standard adapter plate)	<i>m</i>	kg	8							8.7						
		lb _m	17.7							19						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	<i>L</i> _{PA}	dB(A)	≤ 62													
Max. permitted housing temperature		°C	+90													
		°F	+194													
Ambient temperature		°C	−15 to +40													
		°F	+5 to +104													
Lubrication			Lubricated for life													
Direction of rotation			See drawing													
Protection class			IP 65													
Shrink disc (Standard Version)			SD 030x060 S2V													
Max. torque (without axial force)	<i>T</i> _{max}	Nm	550													
		in.lb	4868													
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C 14	<i>J</i> ₁	kgcm ²	-	-	-	-	-	-	0.21	0.16	0.16	0.2	0.21	0.16	0.16
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	0.19	0.14	0.14	0.18	0.19	0.14	0.14
	E 19	<i>J</i> ₁	kgcm ²	1.5	1.2	1.1	1.0	0.97	1.0	0.57	0.53	0.53	0.57	0.57	0.53	0.53
			10 ⁻³ in.lb.s ²	1.3	1.1	0.97	0.89	0.86	0.89	0.5	0.47	0.47	0.5	0.5	0.47	0.47
	G 24	<i>J</i> ₁	kgcm ²	1.6	1.3	1.2	1.1	1.1	1.2	-	-	-	-	-	-	-
			10 ⁻³ in.lb.s ²	1.4	1.2	1.1	0.97	0.97	1.1	-	-	-	-	-	-	-

Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com

^{a)} At max. 10 % F_{2QMax}

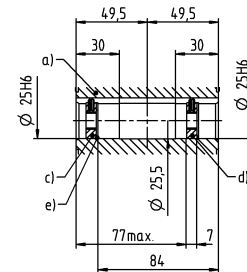
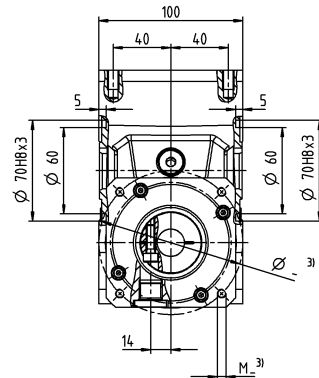
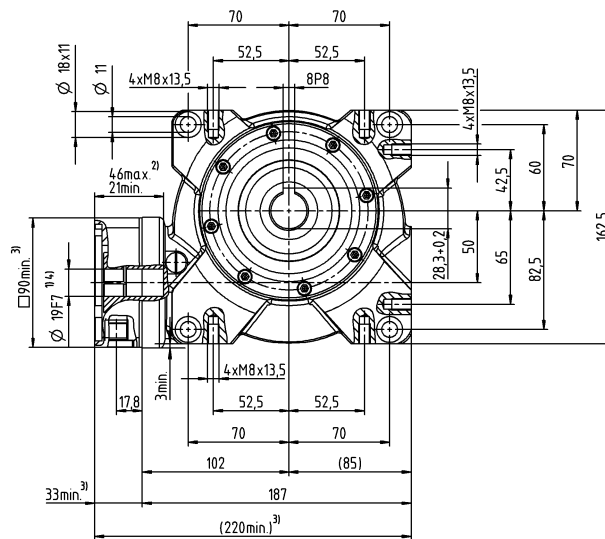
^{b)} Valid for standard clamping hub diameter

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

^{d)} Please reduce input speed at higher ambient temperatures

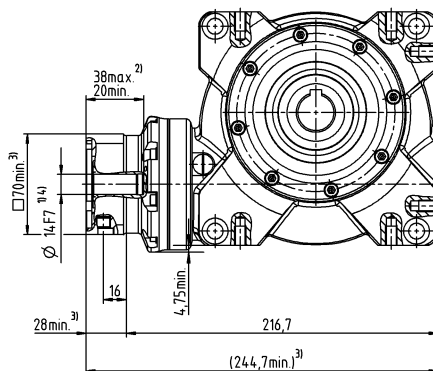
1-stage

up to 19⁴⁾/24 (E⁶⁾/G)
clamping hub
diameter



2-stage

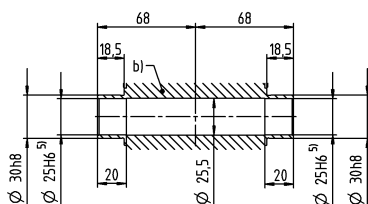
up to 14/19⁴⁾ (C⁶⁾/E)
clamping hub
diameter



Motor shaft diameter [mm]

Other output variants

Hollow shaft interfaces on both sides



- a) Hollow shaft, keyed on both sides
- b) Hollow shaft interfaces on both sides
- c) End disc for screw M10 (on request)
- d) End disc as forcing washer for screw M12 (on request)
- e) Locking ring – DIN 472 (on request)

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

Non-tolerated dimensions are nominal dimensions

- ¹⁾ Check motor shaft fit
- ²⁾ Min./Max. permissible motor shaft length
Longer motor shafts are adaptable, please contact us
- ³⁾ The dimensions depend on the motor
- ⁴⁾ Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm
- ⁵⁾ Tolerance h6 for mounted shaft
- ⁶⁾ Standard clamping hub diameter

NVH 063 MF 1- /2-stage

			1-stage							2-stage						
Ratio	<i>i</i>		4	7	10	16	28	40	50	70	100	140	200	280	400	
Max. torque ^{a) b)} (at n ₁ = 500 rpm)	<i>T</i> _{2a}	Nm	250	303	319	331	365	321	319	303	319	365	321	365	321	
		in.lb	2213	2682	2823	2929	3230	2841	2823	2682	2823	3230	2841	3230	2841	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	<i>T</i> _{2Not}	Nm	460	484	491	494	518	447	491	484	494	518	447	518	447	
		in.lb	4071	4283	4345	4372	4584	3956	4345	4283	4372	4584	3956	4584	3956	
Permitted average input speed ^{d)} (at 20 °C ambient temperature)	<i>n</i> _{1N}	rpm	4000							3100						
Max. input speed	<i>n</i> _{1Max}	rpm	4500													
Mean no load running torque ^{b)} (at n ₁ = 3000 rpm and 20 °C gearbox temperature)	<i>T</i> ₀₁₂	Nm	4.2	3.1	3	2.4	2.3	2.2	1.2	0.7	0.7	1.1	1.1	0.8	0.6	
		in.lb	37.2	27.4	26.6	21.2	20.4	19.5	10.6	6.2	6.2	9.7	9.7	7.1	5.3	
Max. backlash	<i>j</i> _t	arcmin	≤ 6							≤ 7						
Torsional rigidity ^{b)}	<i>C</i> _{t21}	Nm/arcmin	28	28	28	28	28	28	28	28	28	28	28	28	28	
		in.lb/arcmin	248	248	248	248	248	248	248	248	248	248	248	248	248	
Max. axial force ^{c)}	<i>F</i> _{2AMax}	N	8250													
		lb _f	1856													
Max. lateral force ^{b)}	<i>F</i> _{2QMax}	N	6000													
		lb _f	1350													
Max. tilting moment	<i>M</i> _{2KMax}	Nm	843													
		in.lb	7461													
Efficiency at full load (at n ₁ = 500 rpm)	<i>η</i>	%	93	91	88	83	74	68	86	89	86	72	66	72	66	
Service life	<i>L</i> _h	h	> 20000													
Weight (incl. standard adapter plate)	<i>m</i>	kg	13							13.7						
		lb _m	28.7							30						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	<i>L</i> _{PA}	dB(A)	≤ 64													
Max. permitted housing temperature		°C	+90													
		°F	+194													
Ambient temperature		°C	–15 to +40													
		°F	+5 to +104													
Lubrication			Lubricated for life													
Direction of rotation			See drawing													
Protection class			IP 65													
Shrink disc (Standard Version)			SD 036x072 S2V													
Max. torque (without axial force)	<i>T</i> _{max}	Nm	640													
		in.lb	5664													
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E 19	<i>J</i> ₁	kgcm ²	-	-	-	-	-	-	0.75	0.59	0.58	0.75	0.75	0.58	0.58
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	0.66	0.52	0.51	0.66	0.66	0.51	0.51
	G 24	<i>J</i> ₁	kgcm ²	-	-	-	-	-	-	2.3	2.2	2.2	2.3	2.3	2.2	2.2
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	2.0	1.9	1.9	2.0	2.0	1.9	1.9
	H 28	<i>J</i> ₁	kgcm ²	4.9	4.0	3.8	3.7	3.6	3.6	-	-	-	-	-	-	-
			10 ⁻³ in.lb.s ²	4.3	3.5	3.4	3.3	3.2	3.2	-	-	-	-	-	-	-

Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com

^{a)} At max. 10 % F_{2QMax}

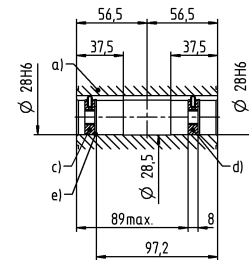
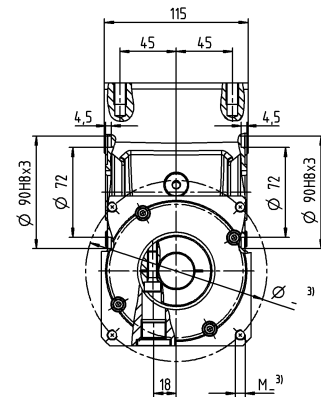
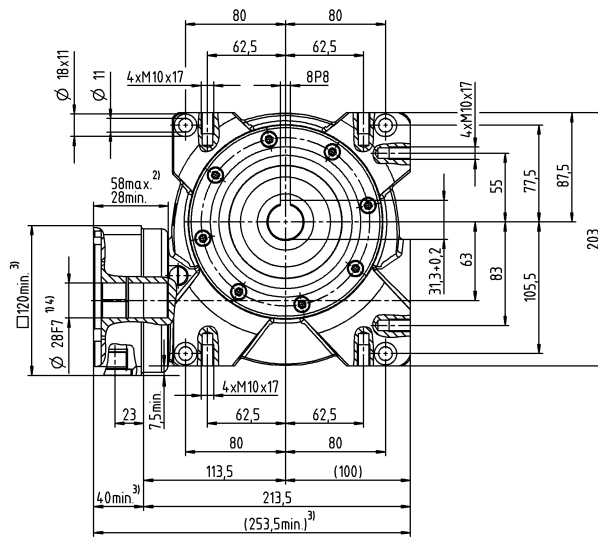
^{b)} Valid for standard clamping hub diameter

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

^{d)} Please reduce input speed at higher ambient temperatures

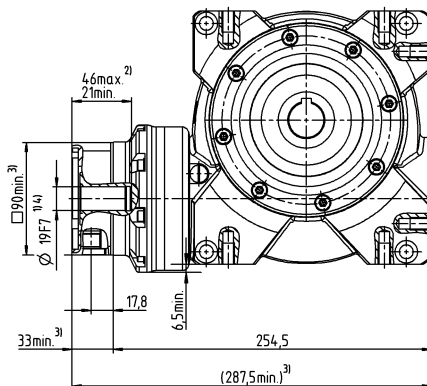
1-stage

up to 28⁴⁾ (H)⁶⁾
clamping hub
diameter



2-stage

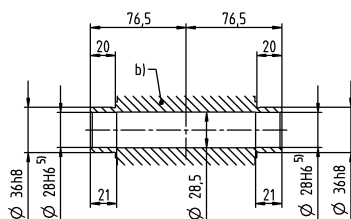
up to 19/24⁴⁾ (E⁶⁾/G)
clamping hub
diameter



Motor shaft diameter [mm]

Other output variants

Hollow shaft interfaces on both sides



- a) Hollow shaft, keyed on both sides
- b) Hollow shaft interfaces on both sides
- c) End disc for screw M10 (on request)
- d) End disc as forcing washer for screw M12 (on request)
- e) Locking ring – DIN 472 (on request)

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

Non-tolerated dimensions are nominal dimensions

- ¹⁾ Check motor shaft fit
- ²⁾ Min./Max. permissible motor shaft length
Longer motor shafts are adaptable, please contact us
- ³⁾ The dimensions depend on the motor
- ⁴⁾ Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm
- ⁵⁾ Tolerance h6 for mounted shaft
- ⁶⁾ Standard clamping hub diameter

NVS 040 MF 1-/2-stage

				1-stage							2-stage							
Ratio	<i>i</i>			4	7	10	16	28	40	50	70	100	140	200	280	400		
Max. torque ^{a) b) e)} (at <i>n</i> ₁ = 500 rpm)	<i>T</i> _{2a}			Nm	63	73	87	89	96	84	91	82	91	98	91	98	91	
				in.lb	558	646	770	788	850	743	805	726	805	867	805	867	805	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	<i>T</i> _{2Not}			Nm	118	126	125	129	134	122	125	126	125	134	122	134	122	
				in.lb	1044	1115	1106	1142	1186	1080	1106	1115	1106	1186	1080	1186	1080	
Permitted average input speed ^{d)} (at 20 °C ambient temperature)	<i>n</i> _{1N}			rpm	4000							4400						
Max. input speed	<i>n</i> _{1Max}			rpm	6000													
Mean no load running torque ^{b)} (at <i>n</i> ₁ = 3000 rpm and 20 °C gearbox temperature)	<i>T</i> ₀₁₂			Nm	0.8	0.7	0.6	0.5	0.4	0.4	0.4	0.2	0.2	0.4	0.4	0.3	0.2	
				in.lb	7.1	6.2	5.3	4.4	3.5	3.5	3.5	1.8	1.8	3.5	3.5	2.7	1.8	
Max. backlash	<i>j</i> _t			arcmin	≤ 6							≤ 7						
Torsional rigidity ^{b)}	<i>C</i> _{t21}			Nm/arcmin	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
				in.lb/arcmin	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max. axial force ^{c)}	<i>F</i> _{2AMax}			N	3000													
				lb _f	675													
Max. lateral force ^{b)}	<i>F</i> _{2QMax}			N	2400													
				lb _f	540													
Max. tilting moment	<i>M</i> _{2KMax}			Nm	205													
				in.lb	1814													
Efficiency at full load (at <i>n</i> ₁ = 500 rpm)	<i>η</i>			%	93	90	88	82	73	67	86	88	86	71	65	71	65	
Service life	<i>L</i> _h			h	> 20000													
Weight (incl. standard adapter plate)	<i>m</i>			kg	5							5.6						
				lb _m	11.1							12						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	<i>L</i> _{PA}			dB(A)	≤ 54							≤ 58						
Max. permitted housing temperature				°C	+90													
				°F	+194													
Ambient temperature				°C	–15 to +40													
				°F	+5 to +104													
Lubrication					Lubricated for life													
Direction of rotation					See drawing													
Protection class					IP 65													
Elastomer coupling (recommended product type – validate sizing with cymex®)					ELC-00060B-016.000-X													
Bore diameter of coupling on the application side				mm	X = 016.000 - 032.000													
Mass moment of inertia (relates to the drive)	C	14	<i>J</i> _I	kgcm ²	0.56	0.42	0.39	0.37	0.36	0.35	0.16	0.15	0.15	0.16	0.16	0.15	0.15	
				10 ⁻³ in.lb.s ²	0.5	0.37	0.35	0.33	0.32	0.31	0.14	0.13	0.13	0.14	0.14	0.13	0.13	
Clamping hub diameter [mm]	E	19	<i>J</i> _I	kgcm ²	0.88	0.74	0.7	0.68	0.68	0.67	0.53	0.52	0.52	0.53	0.53	0.52	0.52	
				10 ⁻³ in.lb.s ²	0.78	0.65	0.62	0.6	0.6	0.59	0.47	0.46	0.46	0.47	0.47	0.46	0.46	

Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com

^{a)} At max. 10 % F_{2QMax}

^{b)} Valid for standard clamping hub diameter

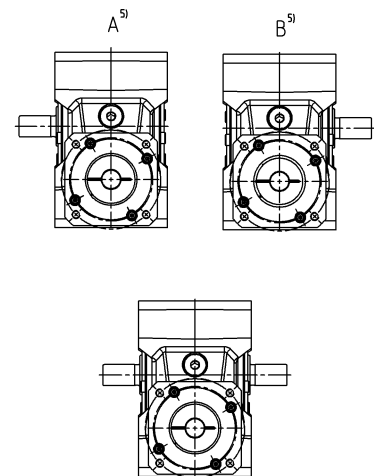
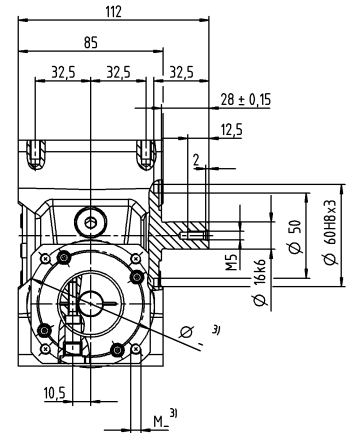
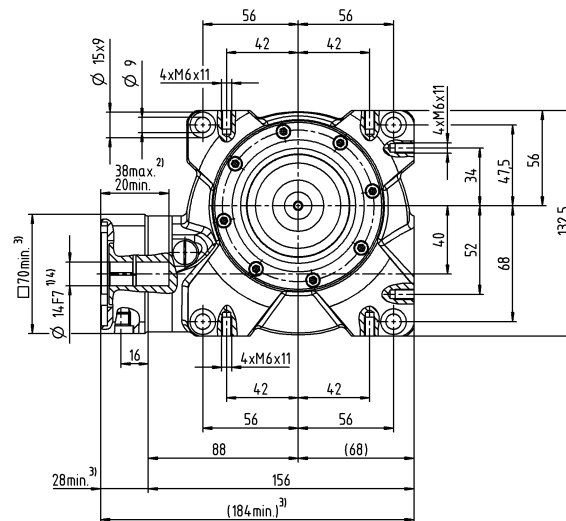
^{c)} Refers to center of the output shaft or flange

^{d)} Please reduce input speed at higher ambient temperatures

^{e)} Valid for: Smooth shaft

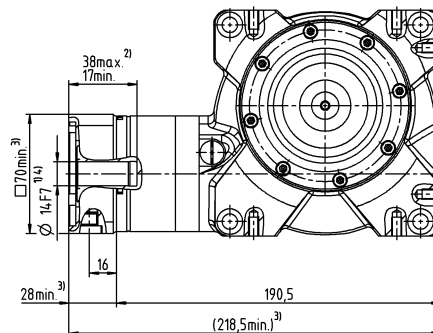
1-stage

up to 14/19⁴⁾ (C⁶⁾/E)
clamping hub
diameter



2-stage

up to 14/19⁴⁾ (C⁶⁾/E)
clamping hub
diameter

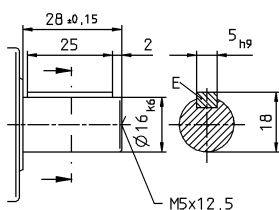


Motor shaft diameter [mm]

Optional dual-shaft output. Drawings available on request.
Involute gearing is not possible.

Other output variants

Shaft with key



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

Non-tolerated dimensions are nominal dimensions

¹⁾ Check motor shaft fit

²⁾ Min./Max. permissible motor shaft length

Longer motor shafts are adaptable, please contact us

³⁾ The dimensions depend on the motor

⁴⁾ Smaller motor shaft diameter is compensated by a

bushing with a minimum wall thickness of 1 mm

⁵⁾ Output side

⁶⁾ Standard clamping hub diameter

NVS 050 MF 1-/2-stage

			1-stage							2-stage							
Ratio	<i>i</i>		4	7	10	16	28	40	50	70	100	140	200	280	400		
Max. torque ^{a) b) e)} (at n ₁ = 500 rpm)	<i>T</i> _{2a}	Nm	130	150	153	157	167	141	153	150	153	167	141	167	141		
		in.lb	1151	1328	1354	1389	1478	1248	1354	1328	1354	1478	1248	1478	1248		
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	<i>T</i> _{2Not}	Nm	230	242	242	250	262	236	242	242	242	262	236	262	236		
		in.lb	2036	2142	2142	2213	2319	2089	2142	2142	2142	2319	2089	2319	2089		
Permitted average input speed ^{d)} (at 20 °C ambient temperature)	<i>n</i> _{1N}	rpm	4000							3500							
Max. input speed	<i>n</i> _{1Max}	rpm	6000														
Mean no load running torque ^{b)} (at n _i = 3000 rpm and 20 °C gearbox temperature)	<i>T</i> ₀₁₂	Nm	2.3	2.2	1.6	1.5	1.2	1.1	0.7	0.5	0.4	0.6	0.6	0.4	0.4		
		in.lb	20.4	19.5	14.2	13.3	10.6	9.7	6.2	4.4	3.5	5.3	5.3	3.5	3.5		
Max. backlash	<i>j</i> _t	arcmin	≤ 6							≤ 7							
Torsional rigidity ^{b)}	<i>C</i> _{t21}	Nm/arcmin	8	8	8	8	8	8	8	8	8	8	8	8	8		
		in.lb/arcmin	71	71	71	71	71	71	71	71	71	71	71	71	71		
Max. axial force ^{c)}	<i>F</i> _{2AMax}	N	5000														
		lb _f	1125														
Max. lateral force ^{b)}	<i>F</i> _{2QMax}	N	3800														
		lb _f	855														
Max. tilting moment	<i>M</i> _{2KMax}	Nm	409														
		in.lb	3620														
Efficiency at full load (at n _i = 500 rpm)	<i>η</i>	%	92	89	86	82	72	64	84	87	84	70	62	70	62		
Service life	<i>L</i> _h	h	> 20000														
Weight (incl. standard adapter plate)	<i>m</i>	kg	8							8.7							
		lb _m	17.7							19							
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	<i>L</i> _{PA}	dB(A)	≤ 62														
Max. permitted housing temperature		°C	+90														
		°F	+194														
Ambient temperature		°C	−15 to +40														
		°F	+5 to +104														
Lubrication			Lubricated for life														
Direction of rotation			See drawing														
Protection class			IP 65														
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-00150B-022.000-X														
Bore diameter of coupling on the application side		mm	X = 022.000 - 036.000														
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	C	14	<i>J</i> ₁	kgcm ²	-	-	-	-	-	-	0.21	0.16	0.16	0.2	0.21	0.16	0.16
				10 ⁻³ in.lb.s ²	-	-	-	-	-	-	0.19	0.14	0.14	0.18	0.19	0.14	0.14
	E	19	<i>J</i> ₁	kgcm ²	1.5	1.2	1.1	1.0	0.97	1.0	0.57	0.53	0.53	0.57	0.57	0.53	0.53
				10 ⁻³ in.lb.s ²	1.3	1.1	0.97	0.89	0.86	0.89	0.5	0.47	0.47	0.5	0.5	0.47	0.47
	G	24	<i>J</i> ₁	kgcm ²	1.6	1.3	1.2	1.1	1.1	1.2	-	-	-	-	-	-	-
				10 ⁻³ in.lb.s ²	1.4	1.2	1.1	0.97	0.97	1.1	-	-	-	-	-	-	-

Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com

^{a)} At max. 10 % F_{2QMax}

^{b)} Valid for standard clamping hub diameter

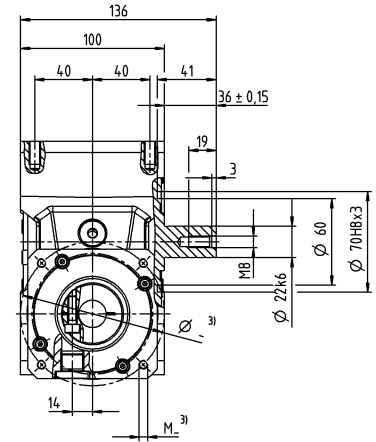
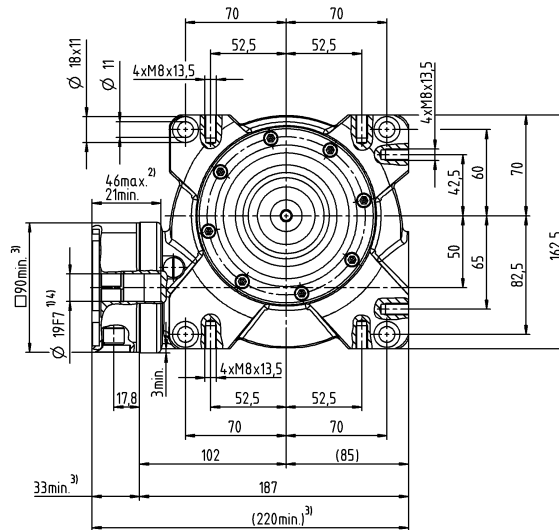
^{c)} Refers to center of the output shaft or flange

^{d)} Please reduce input speed at higher ambient temperatures

^{e)} Valid for: Smooth shaft

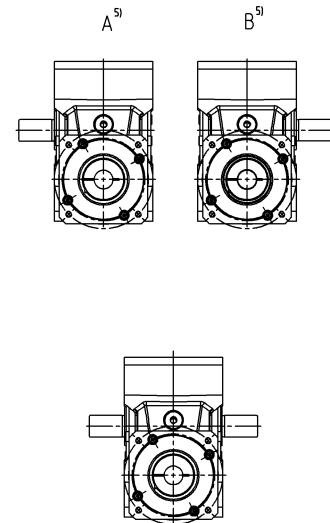
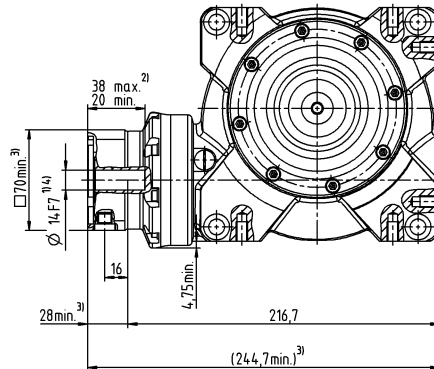
1-stage

up to 19⁴⁾/24 (E⁶⁾/G)
clamping hub
diameter



2-stage

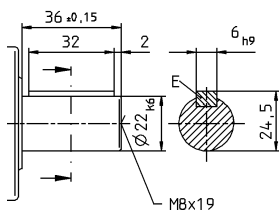
up to 14/19⁴⁾ (C⁶⁾/E)
clamping hub
diameter



Optional dual-shaft output. Drawings available on request.
Involute gearing is not possible.

Other output variants

Shaft with key



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

Non-tolerated dimensions are nominal dimensions

¹⁾ Check motor shaft fit

²⁾ Min./Max. permissible motor shaft length

Longer motor shafts are adaptable, please contact us

³⁾ The dimensions depend on the motor

⁴⁾ Smaller motor shaft diameter is compensated by a

bushing with a minimum wall thickness of 1 mm

⁵⁾ Output side

⁶⁾ Standard clamping hub diameter

NVS 063 MF 1- / 2-stage

			1-stage							2-stage						
Ratio	<i>i</i>		4	7	10	16	28	40	50	70	100	140	200	280	400	
Max. torque ^{a) b) e)} (at n ₁ = 500 rpm)	<i>T</i> _{2a}	Nm	250	303	319	331	365	321	319	303	319	365	321	365	321	
		in.lb	2213	2682	2823	2929	3230	2841	2823	2682	2823	3230	2841	3230	2841	
Emergency stop torque ^{a) b) e)} (permitted 1000 times during the service life of the gearbox)	<i>T</i> _{2Not}	Nm	460	484	491	494	518	447	491	484	494	518	447	518	447	
		in.lb	4071	4283	4345	4372	4584	3956	4345	4283	4372	4584	3956	4584	3956	
Permitted average input speed ^{d)} (at 20 °C ambient temperature)	<i>n</i> _{1N}	rpm	4000							3100						
Max. input speed	<i>n</i> _{1Max}	rpm	4500													
Mean no load running torque ^{b)} (at n _r = 3000 rpm and 20 °C gearbox temperature)	<i>T</i> ₀₁₂	Nm	4.2	3.1	3	2.4	2.3	2.2	1.2	0.7	0.7	1.1	1.1	0.8	0.6	
		in.lb	37.2	27.4	26.6	21.2	20.4	19.5	10.6	6.2	6.2	9.7	9.7	7.1	5.3	
Max. backlash	<i>j</i> _t	arcmin	≤ 6							≤ 7						
Torsional rigidity ^{b)}	<i>C</i> _{t21}	Nm/arcmin	28	28	28	28	28	28	28	28	28	28	28	28	28	
		in.lb/arcmin	248	248	248	248	248	248	248	248	248	248	248	248	248	
Max. axial force ^{c)}	<i>F</i> _{2AMax}	N	8250													
		lb _f	1856													
Max. lateral force ^{b)}	<i>F</i> _{2QMax}	N	6000													
		lb _f	1350													
Max. tilting moment	<i>M</i> _{2KMax}	Nm	843													
		in.lb	7461													
Efficiency at full load (at n ₁ = 500 rpm)	<i>η</i>	%	93	91	88	83	74	68	86	89	86	72	66	72	66	
Service life	<i>L</i> _h	h	> 20000													
Weight (incl. standard adapter plate)	<i>m</i>	kg	13							13.7						
		lb _m	28.7							30						
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)	<i>L</i> _{PA}	dB(A)	≤ 64													
Max. permitted housing temperature		°C	+90													
		°F	+194													
Ambient temperature		°C	−15 to +40													
		°F	+5 to +104													
Lubrication			Lubricated for life													
Direction of rotation			See drawing													
Protection class			IP 65													
Elastomer coupling (recommended product type – validate sizing with cymex®)			ELC-00300B-032.000-X													
Bore diameter of coupling on the application side		mm	X = 032.000 - 045.000													
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm]	E 19	<i>J</i> ₁	kgcm ²	-	-	-	-	-	-	0.75	0.59	0.58	0.75	0.75	0.58	0.58
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	0.66	0.52	0.51	0.66	0.66	0.51	0.51
	G 24	<i>J</i> ₁	kgcm ²	-	-	-	-	-	-	2.3	2.2	2.2	2.3	2.3	2.2	2.2
			10 ⁻³ in.lb.s ²	-	-	-	-	-	-	2.0	1.9	1.9	2.0	2.0	1.9	1.9
	H 28	<i>J</i> ₁	kgcm ²	4.9	4.0	3.8	3.7	3.6	3.6	-	-	-	-	-	-	-
			10 ⁻³ in.lb.s ²	4.3	3.5	3.4	3.3	3.2	3.2	-	-	-	-	-	-	-

Please use our sizing software cymex® for a detailed sizing – www.wittenstein-cymex.com

^{a)} At max. 10 % F_{2QMax}

^{b)} Valid for standard clamping hub diameter

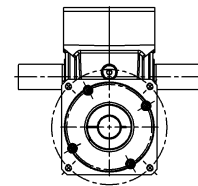
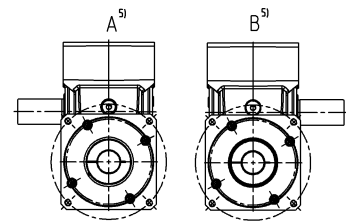
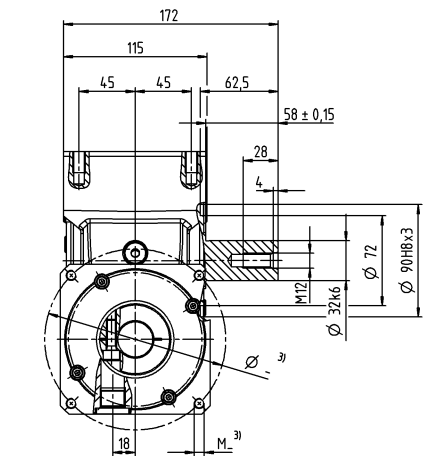
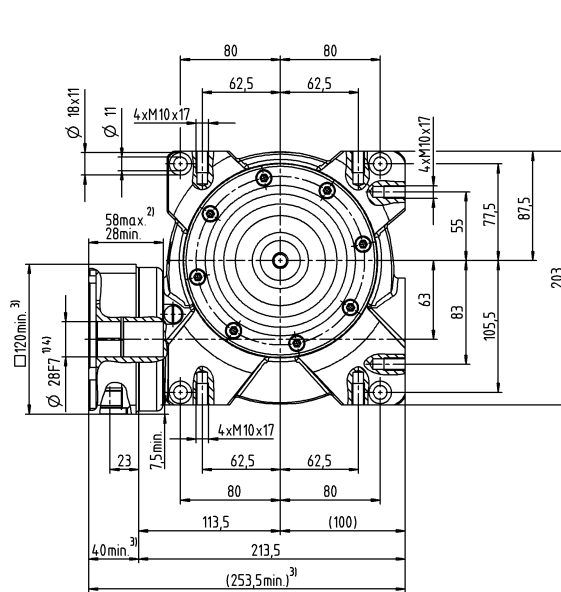
^{c)} Refers to center of the output shaft or flange

^{d)} Please reduce input speed at higher ambient temperatures

^{e)} Valid for: Smooth shaft

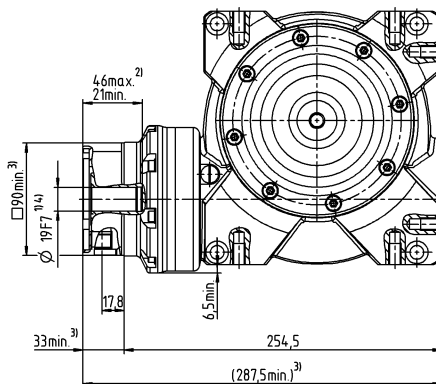
1-stage

up to 28⁴⁾ (H)⁶⁾
clamping hub
diameter



2-stage

up to 19/24⁴⁾ (E⁶⁾/G)
clamping hub
diameter

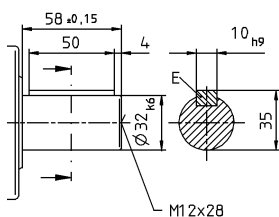


Motor shaft diameter [mm]

Optional dual-shaft output. Drawings available on request.
Involute gearing is not possible.

Other output variants

Shaft with key



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

Non-tolerated dimensions are nominal dimensions

¹⁾ Check motor shaft fit

²⁾ Min./Max. permissible motor shaft length

Longer motor shafts are adaptable, please contact us

³⁾ The dimensions depend on the motor

⁴⁾ Smaller motor shaft diameter is compensated by a

bushing with a minimum wall thickness of 1 mm

⁵⁾ Output side

⁶⁾ Standard clamping hub diameter