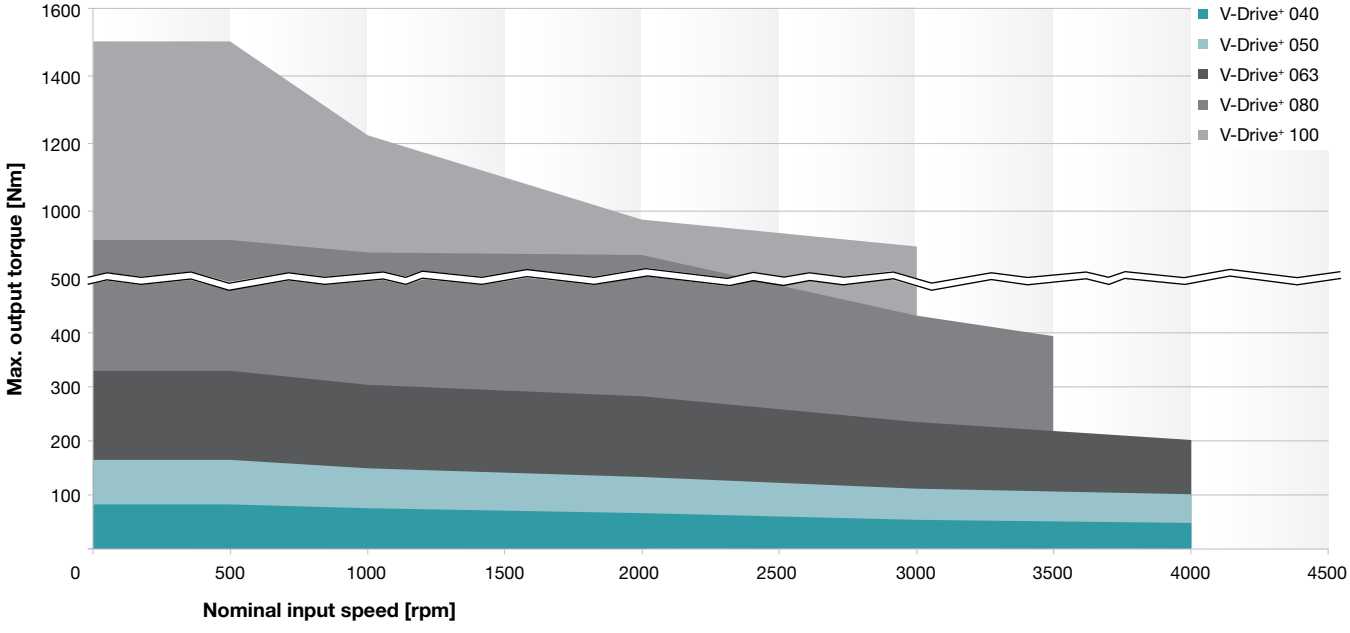
V-Drive⁺ – The plus stands for torque

The servo worm gearhead with solid shaft, hollow shaft and hollow shaft flange outputs.
With its consistently high positioning accuracy and low torsional backlash of < 3 arcmin, the V-Drive⁺ sets new standards for servo worm gearheads. With these exceptional quality features, an optimum power-to-precision ratio is achieved.

Quick size selection

V-Drive⁺ (example for i = 28)
For applications in cyclic operation (ED ≥ 60%)



Versions and Applications

VDT⁺
with flange shaft

- Applications in continuous operation (ED ≥ 60%)
- Maximum power density
- High positioning accuracy
- Very low noise level

VDH⁺
with hollow shaft smooth/keywayed

- Applications in continuous operation (ED ≥ 60%)
- Maximum power density
- High positioning accuracy
- Very low noise level

VDS⁺
with solid shaft, smooth/ keywayed or involute gearing

- Applications in continuous operation (ED ≥ 60%)
- Maximum power density
- High positioning accuracy
- Very low noise level

Comparison

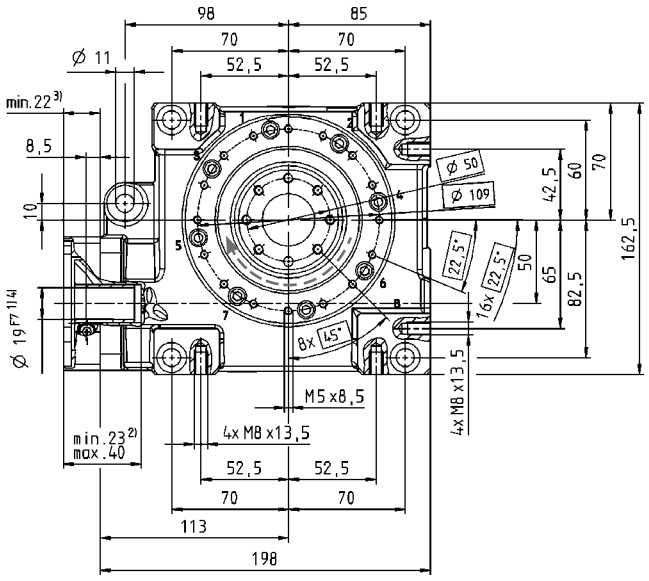
Features	**VDT⁺** from page 250	**VDH⁺** from page 258	**VDS⁺** from page 268
Ratios	4 – 40	4 – 40	4 – 40
Torsional backlash [arcmin]	≤ 3	≤ 3	≤ 3
Output type			
Smooth output shaft			•
Keywayed output shaft			•
Output shaft with involute gearing			•
Output flange	•		
Hollow shaft interface Connected via shrink disc		•	
Hollow shaft interface, rear side Connected via shrink disc		•	
Flanged hollow shaft	•		
Shaft on both sides			•
Input type			
Motor mounted version	•	•	•
Type			
Food-grade lubrication [a) b)]	•	•	•
Corrosion resistant [a) b)]	•	•	•
Accessories			
Coupling	•		•
Rack	•		•
Pinion	•		•
Shrink disc		•	
Flange shaft	•		

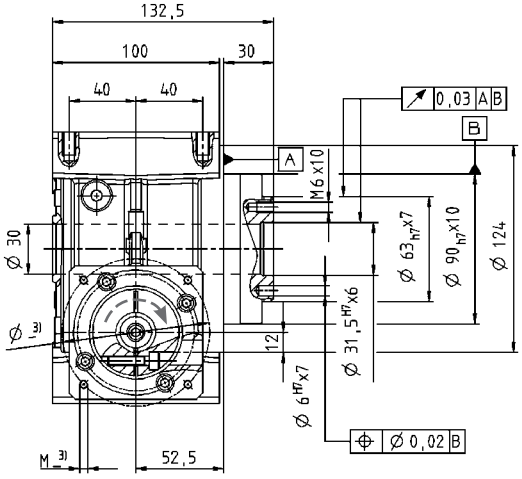
[a)] Power reduction: technical data available upon request [b)] Please contact WITTENSTEIN alpha

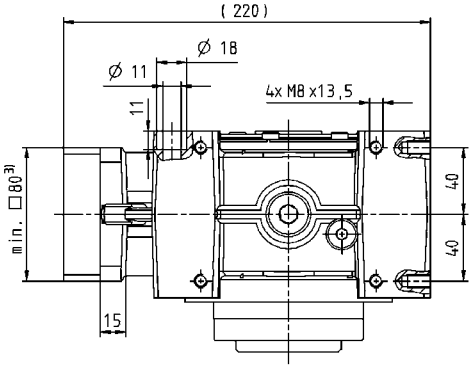
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	124	132	148	154	165	158
		in.lb	1097	1168	1310	1363	1460	1398
	T_{2Servo}	Nm	54	71	74	81	90	74
		in.lb	478	628	655	717	797	655
	η	%	92	89	86	82	72	64
n_{1N}=1000 rpm	T_{2Max}	Nm	124	130	136	140	151	142
		in.lb	1097	1151	1204	1239	1336	1257
	T_{2Servo}	Nm	58	76	80	88	97	81
		in.lb	513	673	708	779	858	717
	η	%	94	91	89	85	77	69
n_{1N}=2000 rpm	T_{2Max}	Nm	88	106	112	120	134	122
		in.lb	779	938	991	1062	1186	1080
	T_{2Servo}	Nm	60	78	82	89	99	83
		in.lb	531	690	726	788	876	735
	η	%	95	93	91	88	75	75
n_{1N}=3000 rpm	T_{2Max}	Nm	72	86	95	106	112	108
		in.lb	637	761	841	938	991	956
	T_{2Servo}	Nm	59	77	81	88	97	81
		in.lb	522	681	717	779	858	717
	η	%	96	94	93	90	83	78
n_{1N}=4000 rpm	T_{2Max}	Nm	62	77	83	92	102	95
		in.lb	549	681	735	814	903	841
	T_{2Servo}	Nm	58	76	79	87	96	80
		in.lb	513	673	699	770	850	708
	η	%	96	95	93	91	85	80
Emergency stop torque	T_{2Not}	Nm	230	242	242	250	262	236
		in.lb	2036	2142	2142	2213	2319	2089
Max. input speed	n_{1Max}	rpm	6000					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	1,3	1,2	1,2	1,1	1	0,9
		in.lb	11,5	10,6	10,6	9,7	8,9	8,0
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	17					
		in.lb/arcmin	150					
Max. axial force [b]	F_{2AMax}	N	5000					
		lb_f	1125					
Max. radial force [b]	F_{2RMax}	N	3800					
		lb_f	855					
Max. tilting moment	M_{2KMax}	Nm	409					
		in.lb	3620					
Tilting rigidity	C_{2K}	Nm/arcmin	504					
		in.lb/arcmin	4460					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	8,8					
		lb_m	19,4					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 62					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	2,59	2,12	1,98	1,86	1,82	1,86
		10^{-3} in.lb.s²	2,29	1,87	1,75	1,64	1,61	1,65

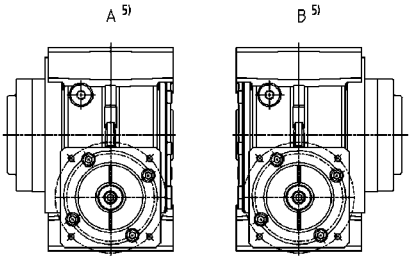
[a] Idling torques decrease during operation

[b] Refers to center of the output shaft or flange









Non-tolerated dimensions ± 1 mm

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

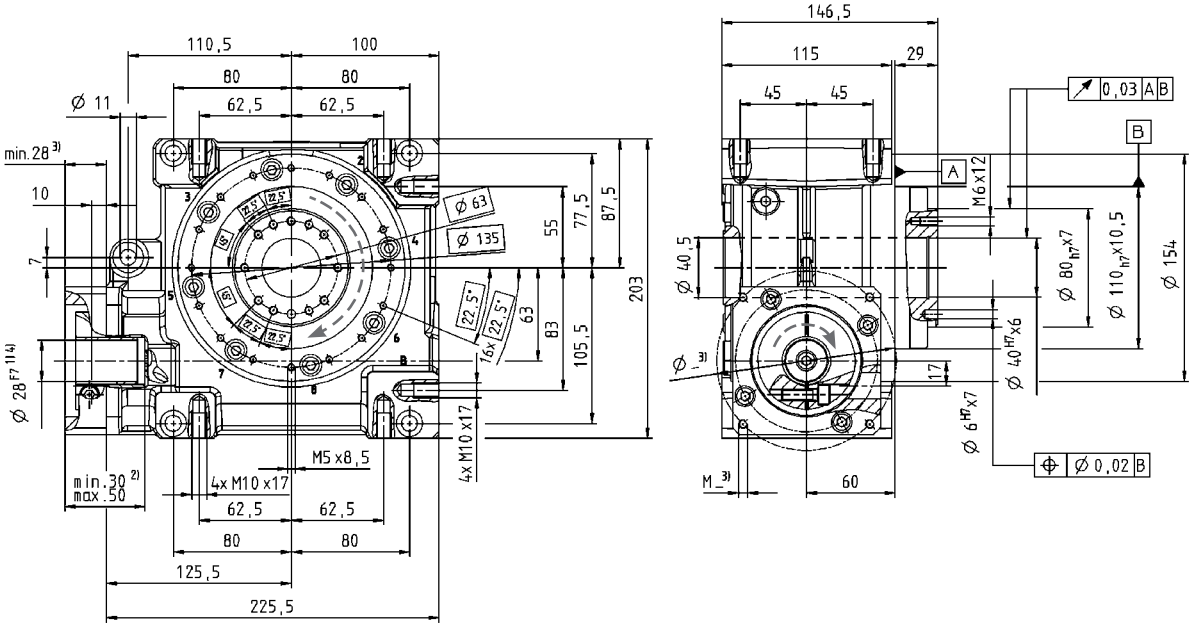
CAD data is available under www.wittenstein-alpha.com

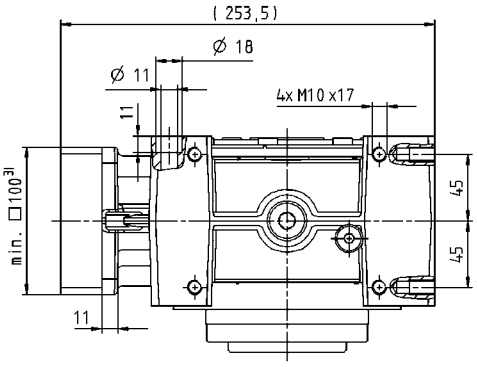
Motor mounting according to operating manual

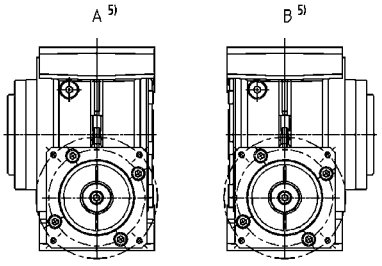
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	302	314	315	320	328	324
		in.lb	2673	2779	2788	2832	2903	2867
	T_{2Servo}	Nm	198	210	225	221	229	226
		in.lb	1752	1859	1991	1956	2027	2000
	η	%	93	91	88	83	74	68
n_{1N}=1000 rpm	T_{2Max}	Nm	264	284	290	298	304	301
		in.lb	2336	2513	2567	2637	2690	2664
	T_{2Servo}	Nm	192	228	240	238	245	241
		in.lb	1699	2018	2124	2106	2168	2133
	η	%	94	93	91	86	78	73
n_{1N}=2000 rpm	T_{2Max}	Nm	202	243	262	271	282	278
		in.lb	1788	2151	2319	2398	2496	2460
	T_{2Servo}	Nm	174	212	230	238	248	243
		in.lb	1540	1876	2036	2106	2195	2151
	η	%	96	94	93	89	83	78
n_{1N}=3000 rpm	T_{2Max}	Nm	164	190	202	209	235	231
		in.lb	1451	1682	1788	1850	2080	2044
	T_{2Servo}	Nm	128	166	184	209	198	194
		in.lb	1133	1469	1628	1850	1752	1717
	η	%	96	95	94	91	85	81
n_{1N}=4000 rpm	T_{2Max}	Nm	128	148	164	175	201	198
		in.lb	1133	1310	1451	1549	1779	1752
	T_{2Servo}	Nm	104	132	152	175	165	162
		in.lb	920	1168	1345	1549	1460	1434
	η	%	97	96	94	92	86	83
Emergency stop torque	T_{2Not}	Nm	460	484	491	494	518	447
		in.lb	4071	4283	4345	4372	4584	3956
Max. input speed	n_{1Max}	rpm	4500					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	2,1	1,9	1,8	1,7	1,6	1,4
		in.lb	18,6	16,8	15,9	15,0	14,2	12,4
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	50					
		in.lb/arcmin	443					
Max. axial force [b]	F_{2AMax}	N	8250					
		lb_f	1856					
Max. radial force [b]	F_{2RMax}	N	6000					
		lb_f	1350					
Max. tilting moment	M_{2KMax}	Nm	843					
		in.lb	7461					
Tilting rigidity	C_{2K}	Nm/arcmin	603					
		in.lb/arcmin	5337					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	14,5					
		lb_m	32					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 64					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	7,45	6,02	5,65	5,49	5,42	5,36
		10^{-3} in.lb.s²	6,60	5,33	5,00	4,86	4,80	4,75

[a] Idling torques decrease during operation

[b] Refers to center of the output shaft or flange







Non-tolerated dimensions ± 1 mm

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

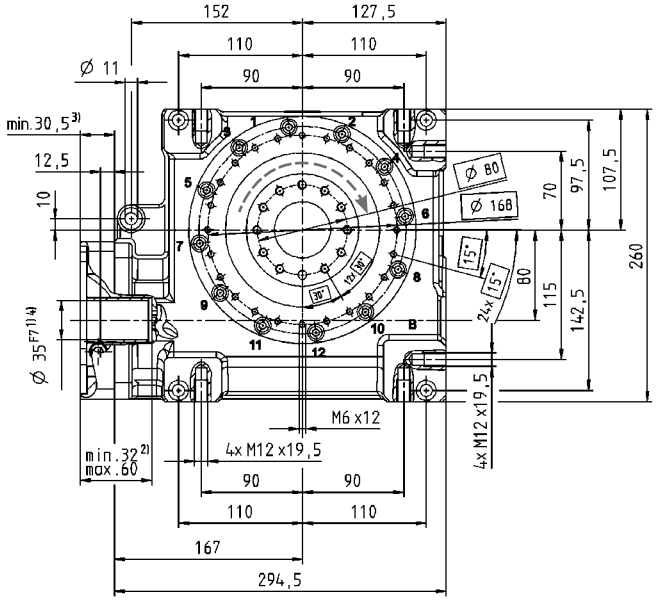
CAD data is available under www.wittenstein-alpha.com

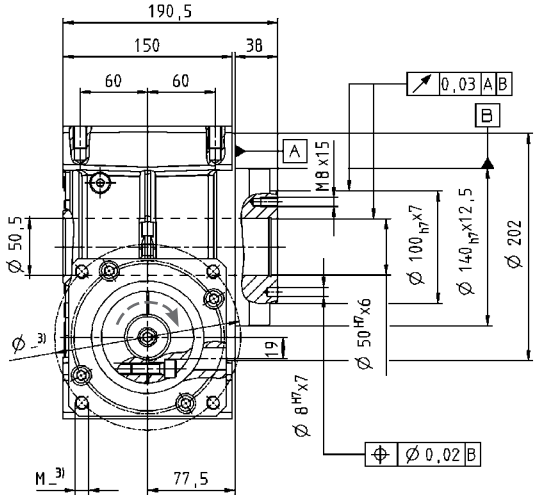
Motor mounting according to operating manual

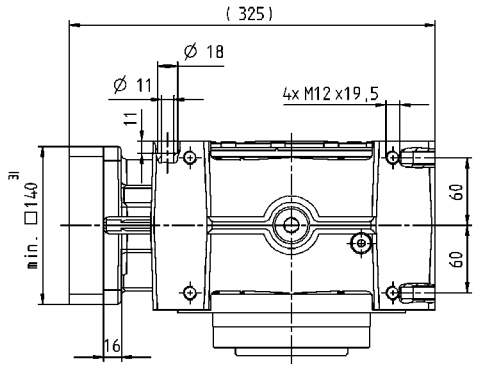
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	578	646	672	702	785	676
		in.lb	5115	5717	5947	6213	6947	5983
	T_{2Servo}	Nm	469	601	613	677	764	631
		in.lb	4151	5319	5425	5991	6761	5584
	η	%	94	92	89	86	77	70
n_{1N}=1000 rpm	T_{2Max}	Nm	514	602	588	656	698	613
		in.lb	4549	5328	5204	5806	6177	5425
	T_{2Servo}	Nm	491	574	561	625	665	584
		in.lb	4345	5080	4965	5531	5885	5168
	η	%	95	93	91	88	81	74
n_{1N}=2000 rpm	T_{2Max}	Nm	350	435	431	500	536	470
		in.lb	3098	3850	3814	4425	4744	4160
	T_{2Servo}	Nm	335	415	411	476	511	448
		in.lb	2965	3673	3637	4213	4522	3965
	η	%	96	95	93	89	84	79
n_{1N}=3000 rpm	T_{2Max}	Nm	259	336	334	400	433	380
		in.lb	2292	2974	2956	3540	3832	3363
	T_{2Servo}	Nm	247	320	319	381	413	362
		in.lb	2186	2832	2823	3372	3655	3204
	η	%	97	96	94	92	86	81
n_{1N}=3500 rpm	T_{2Max}	Nm	227	299	300	362	394	346
		in.lb	2009	2646	2655	3204	3487	3062
	T_{2Servo}	Nm	217	285	286	345	376	330
		in.lb	1920	2522	2531	3053	3328	2921
	η	%	97	96	94	92	87	82
Emergency stop torque	T_{2Not}	Nm	938	993	963	1005	1064	941
		in.lb	8301	8788	8523	8894	9416	8328
Max. input speed	n_{1Max}	rpm	4000					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	3,6	3,5	3,4	3,2	3	2,8
		in.lb	31,9	31,0	30,1	28,3	26,6	24,8
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	113					
		in.lb/arcmin	1000					
Max. axial force [b]	F_{2AMax}	N	13900					
		lb_f	3128					
Max. radial force [b]	F_{2RMax}	N	9000					
		lb_f	2025					
Max. tilting moment	M_{2KMax}	Nm	1544					
		in.lb	13664					
Tilting rigidity	C_{2K}	Nm/arcmin	1178					
		in.lb/arcmin	10425					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	*m*	kg	31					
		lb_m	68,5					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 66					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	23,99	18,64	18,23	16,54	16,32	16,94
		10^{-3} in.lb.s²	21,23	16,49	16,13	14,64	14,44	14,99

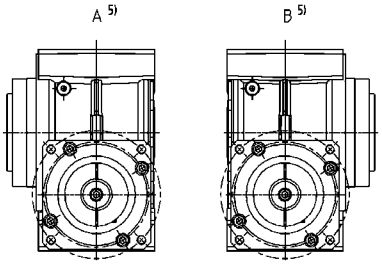
[a] Idling torques decrease during operation

[b] Refers to center of the output shaft or flange









Non-tolerated dimensions ± 1 mm

1) Check motor shaft fit.
2) Min./Max. permissible motor shaft length.
   Longer motor shafts are adaptable, please contact us.
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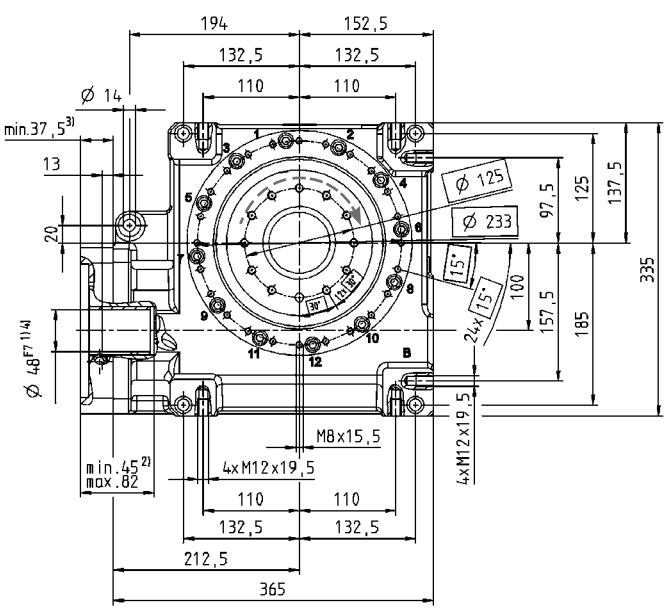
4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.
5) Output side

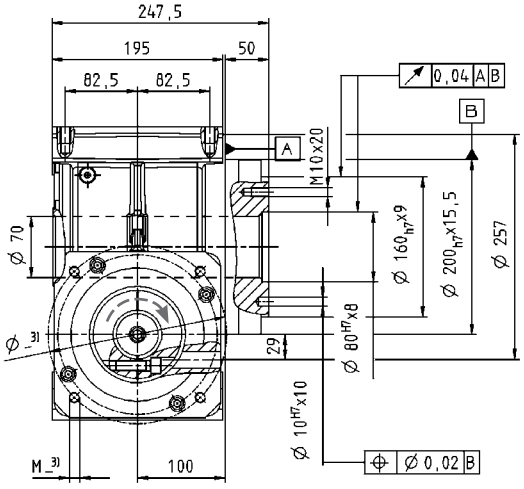
CAD data is available under www.wittenstein-alpha.com

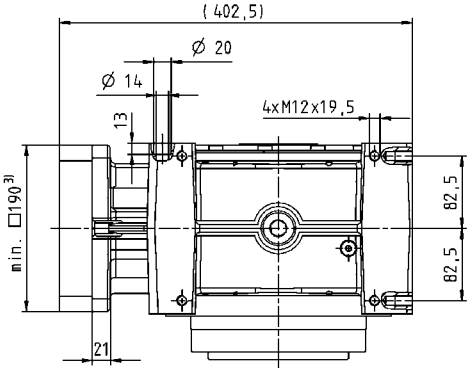
Motor mounting according to operating manual

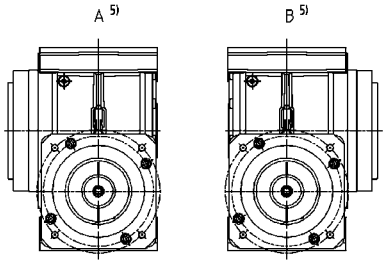
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	1184	1336	1377	1392	1505	1376
		in.lb	10478	11824	12186	12319	13319	12178
	T_{2Servo}	Nm	1155	1304	1343	1359	1469	1343
		in.lb	10222	11540	11886	12027	13001	11886
	η	%	95	93	91	87	80	76
n_{1N}=1000 rpm	T_{2Max}	Nm	905	1070	1122	1140	1251	1162
		in.lb	8009	9470	9930	10089	11071	10284
	T_{2Servo}	Nm	883	1044	1095	1113	1221	1134
		in.lb	7815	9239	9691	9850	10806	10036
	η	%	95	94	92	88	82	79
n_{1N}=2000 rpm	T_{2Max}	Nm	595	748	807	830	930	883
		in.lb	5266	6620	7142	7346	8231	7815
	T_{2Servo}	Nm	581	730	788	810	908	862
		in.lb	5142	6461	6974	7169	8036	7629
	η	%	96	95	94	91	86	82
n_{1N}=3000 rpm [c]	T_{2Max}	Nm	430	564	621	644	735	709
		in.lb	3806	4991	5496	5699	6505	6275
	T_{2Servo}	Nm	420	551	606	629	718	692
		in.lb	3717	4876	5363	5567	6354	6124
	η	%	97	96	95	92	87	84
n_{1N}=3500 rpm	T_{2Max}	Nm	–	–	–	–	–	–
		in.lb						
	T_{2Servo}	Nm	–	–	–	–	–	–
		in.lb						
	η	%	–	–	–	–	–	–
Emergency stop torque	T_{2Not}	Nm	1819	1932	1940	1955	2073	1856
		in.lb	16098	17098	17169	17302	18346	16426
Max. input speed	n_{1Max}	rpm	3500					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	9,8	8,1	7,4	6,7	5,8	5
		in.lb	86,7	71,7	65,5	59,3	51,3	44,3
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	213					
		in.lb/arcmin	1885					
Max. axial force [b]	F_{2AMax}	N	19500					
		lb_f	4388					
Max. radial force [b]	F_{2RMax}	N	14000					
		lb_f	3150					
Max. tilting moment	M_{2KMax}	Nm	3059					
		in.lb	27072					
Tilting rigidity	C_{2K}	Nm/arcmin	2309					
		in.lb/arcmin	20435					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	*m*	kg	62					
		lb_m	137					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 70					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	83,51	64,27	59,95	59,40	56,32	56,49
		10^{-3} in.lb.s²	73,90	56,88	53,06	52,56	49,85	50,00

[a] Idling torques decrease during operation
[b] Refers to center of the output shaft or flange
[c] Reduced by 20% in S1 operation









Non-tolerated dimensions ± 1 mm

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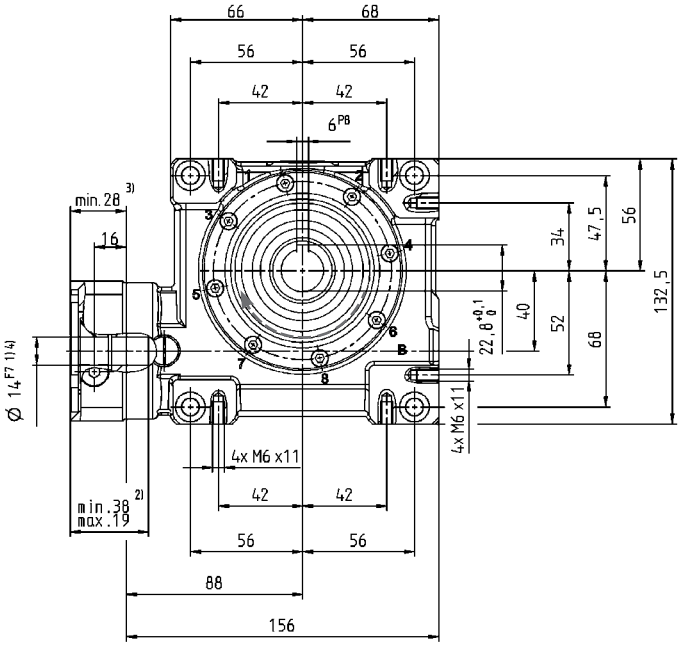
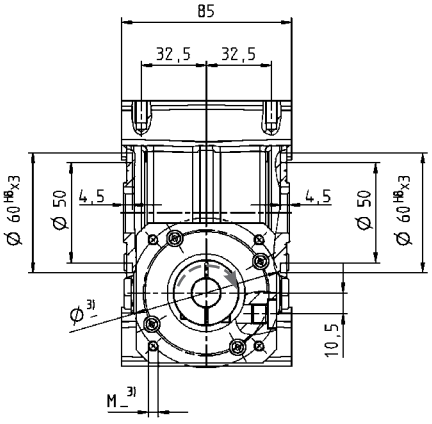
Motor mounting according to operating manual

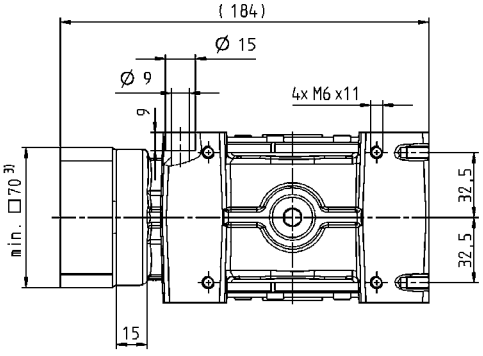
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	60	75	83	86	91	83
		in.lb	531	664	735	761	805	735
	T_{2Servo}	Nm	17	24	25	26	29	25
		in.lb	150	212	221	230	257	221
	η	%	93	90	88	82	73	67
n_{1N}=1000 rpm	T_{2Max}	Nm	45	60	68	75	75	76
		in.lb	398	531	602	664	664	673
	T_{2Servo}	Nm	19	26	28	29	32	28
		in.lb	168	230	248	257	283	248
	η	%	94	92	90	86	77	73
n_{1N}=2000 rpm	T_{2Max}	Nm	35	50	54	59	63	65
		in.lb	310	443	478	522	558	575
	T_{2Servo}	Nm	19	26	28	29	33	29
		in.lb	168	230	248	257	292	257
	η	%	96	94	92	88	81	77
n_{1N}=3000 rpm	T_{2Max}	Nm	30	42	46	51	53	56
		in.lb	266	372	407	451	469	496
	T_{2Servo}	Nm	19	26	28	29	32	28
		in.lb	168	230	248	257	283	248
	η	%	96	95	93	90	83	79
n_{1N}=4000 rpm	T_{2Max}	Nm	28	38	43	44	47	50
		in.lb	248	336	381	389	416	443
	T_{2Servo}	Nm	19	25	27	28	31	27
		in.lb	168	221	239	248	274	239
	η	%	96	95	94	91	84	81
Emergency stop torque	T_{2Not}	Nm	118	126	125	129	134	122
		in.lb	1044	1115	1106	1142	1186	1080
Max. input speed	n_{1Max}	rpm	6000					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	0,8	0,7	0,5	0,5	0,4	0,4
		in.lb	7,1	6,2	4,4	4,4	3,5	3,5
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	4,5					
		in.lb/arcmin	40					
Max. axial force [b]	F_{2AMax}	N	3000					
		lb_f	675					
Max. radial force [b]	F_{2RMax}	N	2400					
		lb_f	540					
Max. tilting moment	M_{2KMax}	Nm	205					
		in.lb	1814					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	4,0					
		lb_m	8,8					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 54					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	0,52	0,38	0,34	0,32	0,32	0,31
		10^{-3} in.lb.s²	0,46	0,34	0,30	0,28	0,28	0,27

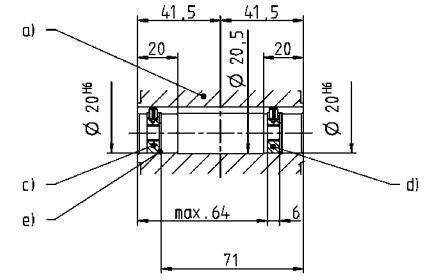
[a] Idling torques decrease during operation

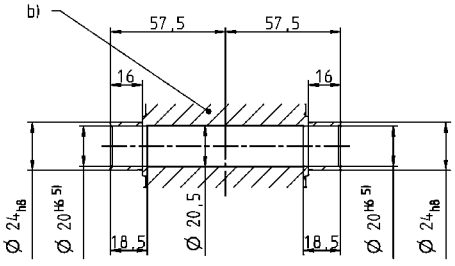
[b] Refers to center of the output shaft or flange











a) Hollow shaft, keywayed
b) Hollow shaft, smooth
c) End disc for screw M6
d) End disc as forcing washer for screw M8
e) Locking ring – DIN 472

Non-tolerated dimensions ± 1 mm
1) Check motor shaft fit.
2) Min./Max. permissible motor shaft length.
   Longer motor shafts are adaptable, please contact us.
3) The dimensions depend on the motor.
4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm. Motor shaft diameters up to 19 mm available – please contact WITTENSTEIN alpha.
5) Tolerance h6 for mounted shaft.

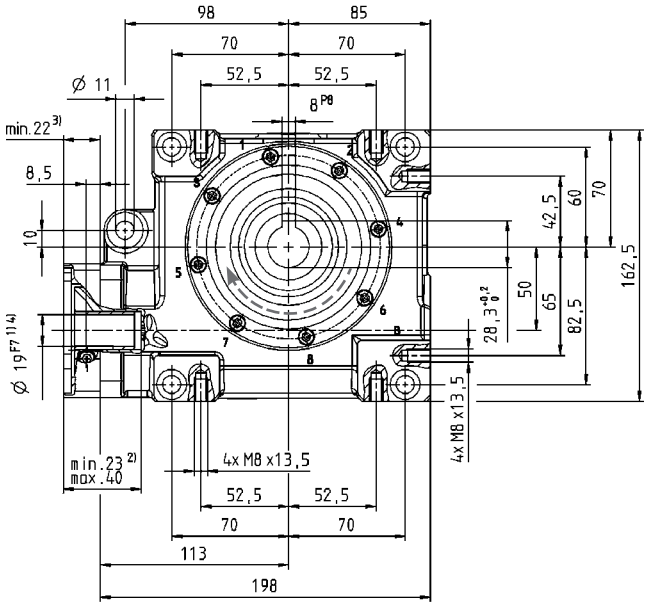
CAD data is available under www.wittenstein-alpha.com

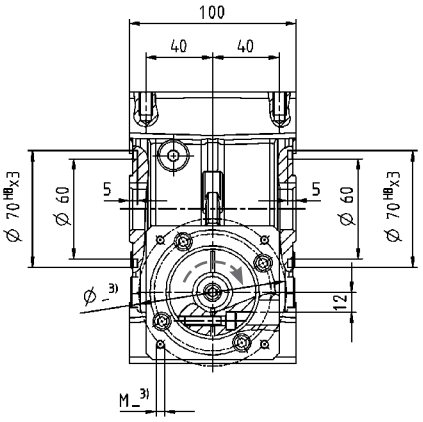
Motor mounting according to operating manual

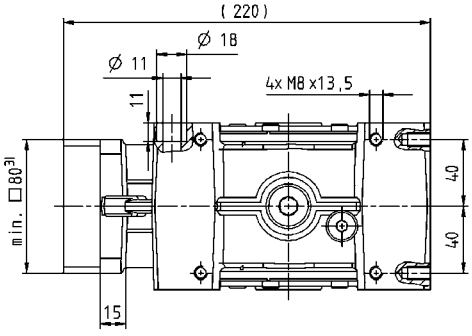
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	124	132	148	154	165	158
		in.lb	1097	1168	1310	1363	1460	1398
	T_{2Servo}	Nm	54	71	74	81	90	74
		in.lb	478	628	655	717	797	655
	η	%	92	89	86	82	72	64
n_{1N}=1000 rpm	T_{2Max}	Nm	124	130	136	140	151	142
		in.lb	1097	1151	1204	1239	1336	1257
	T_{2Servo}	Nm	58	76	80	88	97	81
		in.lb	513	673	708	779	858	717
	η	%	94	91	89	85	77	69
n_{1N}=2000 rpm	T_{2Max}	Nm	88	106	112	120	134	122
		in.lb	779	938	991	1062	1186	1080
	T_{2Servo}	Nm	60	78	82	89	99	83
		in.lb	531	690	726	788	876	735
	η	%	95	93	91	88	75	75
n_{1N}=3000 rpm	T_{2Max}	Nm	72	86	95	106	112	108
		in.lb	637	761	841	938	991	956
	T_{2Servo}	Nm	59	77	81	88	97	81
		in.lb	522	681	717	779	858	717
	η	%	96	94	93	90	83	78
n_{1N}=4000 rpm	T_{2Max}	Nm	62	77	83	92	102	95
		in.lb	549	681	735	814	903	841
	T_{2Servo}	Nm	58	76	79	87	96	80
		in.lb	513	673	699	770	850	708
	η	%	96	95	93	91	85	80
Emergency stop torque	T_{2Not}	Nm	230	242	242	250	262	236
		in.lb	2036	2142	2142	2213	2319	2089
Max. input speed	n_{1Max}	rpm	6000					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	1,3	1,2	1,2	1,1	1	0,9
		in.lb	11,5	10,6	10,6	9,7	8,9	8,0
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	8					
		in.lb/arcmin	71					
Max. axial force [b]	F_{2AMax}	N	5000					
		lb_f	1125					
Max. radial force [b]	F_{2RMax}	N	3800					
		lb_f	855					
Max. tilting moment	M_{2KMax}	Nm	409					
		in.lb	3620					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	7,4					
		lb_m	16,4					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 62					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	2,31	2,02	1,93	1,84	1,81	1,86
		10^{-3} in.lb.s²	2,04	1,79	1,71	1,63	1,60	1,64

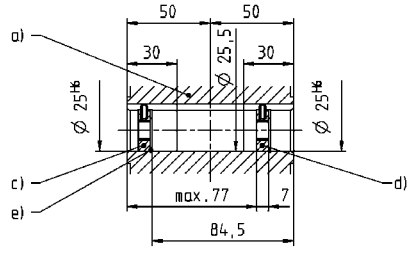
[a] Idling torques decrease during operation

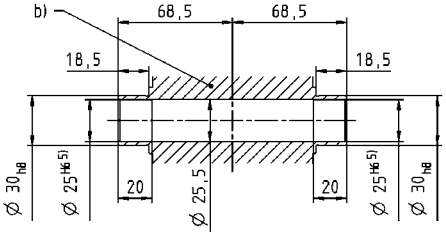
[b] Refers to center of the output shaft or flange











a) Hollow shaft, keywayed
b) Hollow shaft, smooth
c) End disc for screw M10
d) End disc as forcing washer for screw M12
e) Locking ring – DIN 472

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

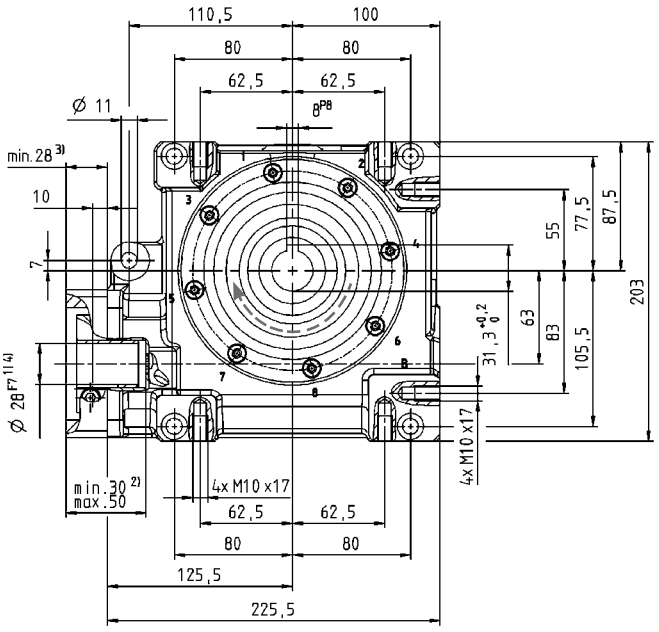
CAD data is available under www.wittenstein-alpha.com

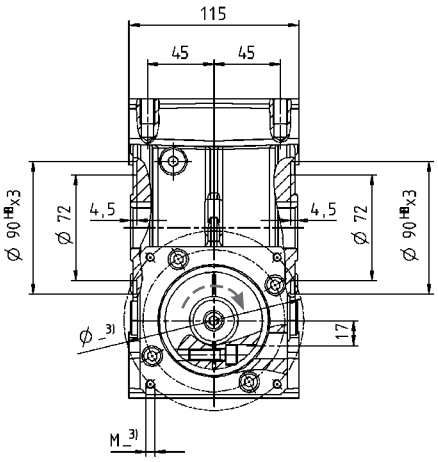
Motor mounting according to operating manual

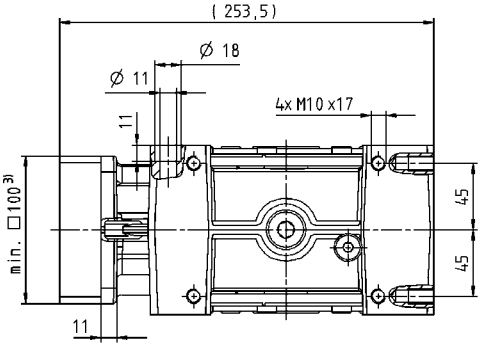
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	302	314	315	320	328	324
		in.lb	2673	2779	2788	2832	2903	2867
	T_{2Servo}	Nm	198	210	225	221	229	226
		in.lb	1752	1859	1991	1956	2027	2000
	η	%	93	91	88	83	74	68
n_{1N}=1000 rpm	T_{2Max}	Nm	264	284	290	298	304	301
		in.lb	2336	2513	2567	2637	2690	2664
	T_{2Servo}	Nm	192	228	240	238	245	241
		in.lb	1699	2018	2124	2106	2168	2133
	η	%	94	93	91	86	78	73
n_{1N}=2000 rpm	T_{2Max}	Nm	202	243	262	271	282	278
		in.lb	1788	2151	2319	2398	2496	2460
	T_{2Servo}	Nm	174	212	230	238	248	243
		in.lb	1540	1876	2036	2106	2195	2151
	η	%	96	94	93	89	83	78
n_{1N}=3000 rpm	T_{2Max}	Nm	164	190	202	209	235	231
		in.lb	1451	1682	1788	1850	2080	2044
	T_{2Servo}	Nm	128	166	184	209	198	194
		in.lb	1133	1469	1628	1850	1752	1717
	η	%	96	95	94	91	85	81
n_{1N}=4000 rpm	T_{2Max}	Nm	128	148	164	175	201	198
		in.lb	1133	1310	1451	1549	1779	1752
	T_{2Servo}	Nm	104	132	152	175	165	162
		in.lb	920	1168	1345	1549	1460	1434
	η	%	97	96	94	92	86	83
Emergency stop torque	T_{2Not}	Nm	460	484	491	494	518	447
		in.lb	4071	4283	4345	4372	4584	3956
Max. input speed	n_{1Max}	rpm	4500					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	2,1	1,9	1,8	1,7	1,6	1,4
		in.lb	18,6	16,8	15,9	15,0	14,2	12,4
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	28					
		in.lb/arcmin	248					
Max. axial force [b]	F_{2AMax}	N	8250					
		lb_f	1856					
Max. radial force [b]	F_{2RMax}	N	6000					
		lb_f	1350					
Max. tilting moment	M_{2KMax}	Nm	843					
		in.lb	7461					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	12					
		lb_m	26,5					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 64					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	6,68	5,77	5,53	5,44	5,40	5,35
		10^{-3} in.lb.s²	5,91	5,11	4,89	4,81	4,78	4,74

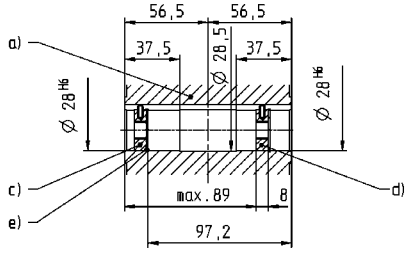
[a] Idling torques decrease during operation

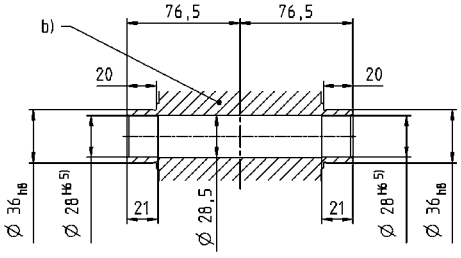
[b] Refers to center of the output shaft or flange











a) Hollow shaft, keywayed
b) Hollow shaft, smooth
c) End disc for screw M10
d) End disc as forcing washer for screw M12
e) Locking ring – DIN 472

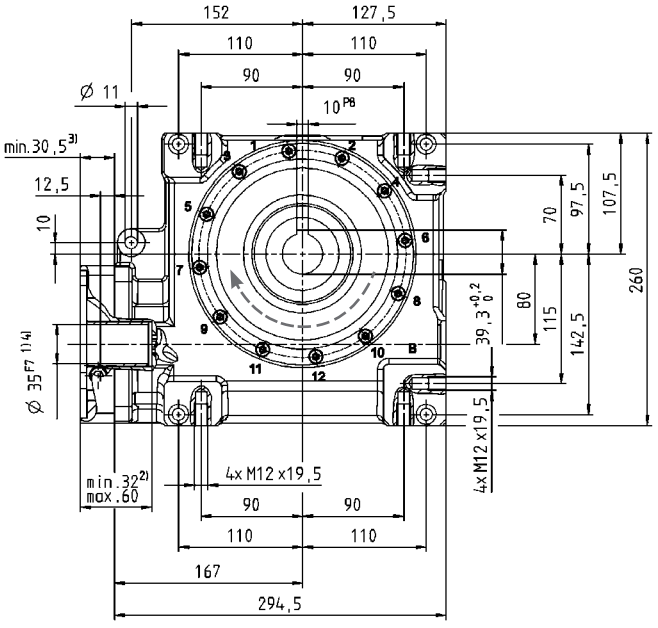
Non-tolerated dimensions ± 1 mm
1) Check motor shaft fit.
2) Min./Max. permissible motor shaft length.
Longer motor shafts are adaptable, please contact us.
3) The dimensions depend on the motor.
4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.
5) Tolerance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

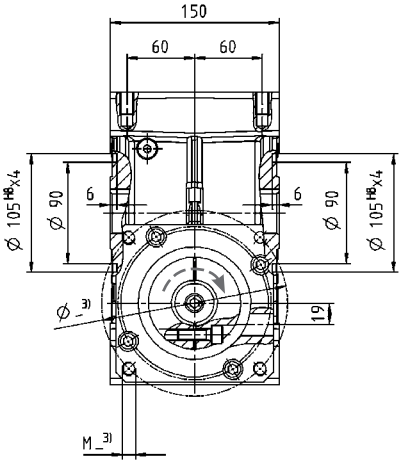
CAD data is available under www.wittenstein-alpha.com

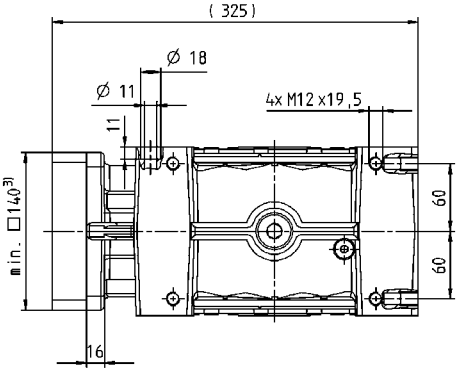
Motor mounting according to operating manual

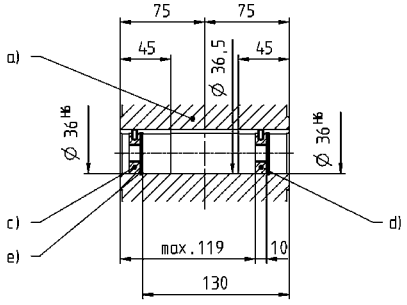
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	578	646	672	702	785	676
		in.lb	5115	5717	5947	6213	6947	5983
	T_{2Servo}	Nm	469	601	613	677	764	631
		in.lb	4151	5319	5425	5991	6761	5584
	η	%	94	92	89	86	77	70
n_{1N}=1000 rpm	T_{2Max}	Nm	514	602	588	656	698	613
		in.lb	4549	5328	5204	5806	6177	5425
	T_{2Servo}	Nm	491	574	561	625	665	584
		in.lb	4345	5080	4965	5531	5885	5168
	η	%	95	93	91	88	81	74
n_{1N}=2000 rpm	T_{2Max}	Nm	350	435	431	500	536	470
		in.lb	3098	3850	3814	4425	4744	4160
	T_{2Servo}	Nm	335	415	411	476	511	448
		in.lb	2965	3673	3637	4213	4522	3965
	η	%	96	95	93	89	84	79
n_{1N}=3000 rpm	T_{2Max}	Nm	259	336	334	400	433	380
		in.lb	2292	2974	2956	3540	3832	3363
	T_{2Servo}	Nm	247	320	319	381	413	362
		in.lb	2186	2832	2823	3372	3655	3204
	η	%	97	96	94	92	86	81
n_{1N}=3500 rpm	T_{2Max}	Nm	227	299	300	362	394	346
		in.lb	2009	2646	2655	3204	3487	3062
	T_{2Servo}	Nm	217	285	286	345	376	330
		in.lb	1920	2522	2531	3053	3328	2921
	η	%	97	96	94	92	87	82
Emergency stop torque	T_{2Not}	Nm	938	993	963	1005	1064	941
		in.lb	8301	8788	8523	8894	9416	8328
Max. input speed	n_{1Max}	rpm	4000					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	3,6	3,5	3,4	3,2	3	2,8
		in.lb	31,9	31,0	30,1	28,3	26,6	24,8
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	78					
		in.lb/arcmin	690					
Max. axial force [b]	F_{2AMax}	N	13900					
		lb_f	3128					
Max. radial force [b]	F_{2RMax}	N	9000					
		lb_f	2025					
Max. tilting moment	M_{2KMax}	Nm	1544					
		in.lb	13664					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	26					
		lb_m	57,5					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 66					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	21,31	17,76	17,80	16,38	16,27	16,91
		10^{-3} in.lb.s²	18,86	15,72	15,75	14,49	14,40	14,97

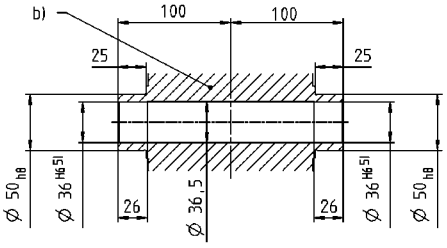
[a] Idling torques decrease during operation
[b] Refers to center of the output shaft or flange











a) Hollow shaft, keywayed
b) Hollow shaft, smooth
c) End disc for screw M12
d) End disc as forcing washer for screw M16
e) Locking ring – DIN 472

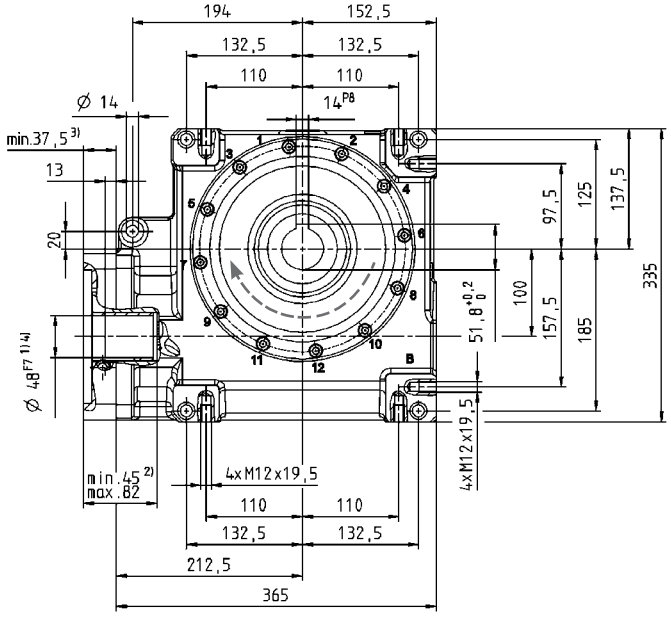
Non-tolerated dimensions ± 1 mm
1) Check motor shaft fit.
2) Min./Max. permissible motor shaft length.
Longer motor shafts are adaptable, please contact us.
3) The dimensions depend on the motor.
4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.
5) Tolerance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

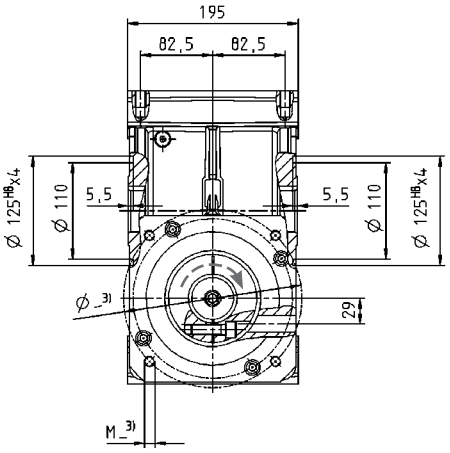
CAD data is available under www.wittenstein-alpha.com

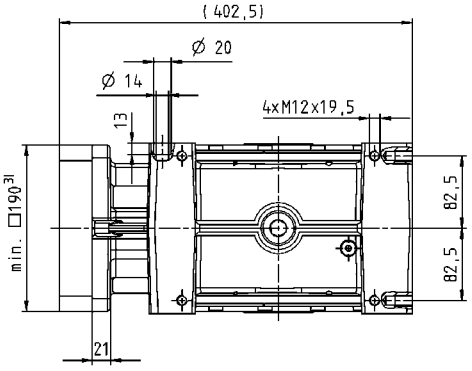
Motor mounting according to operating manual

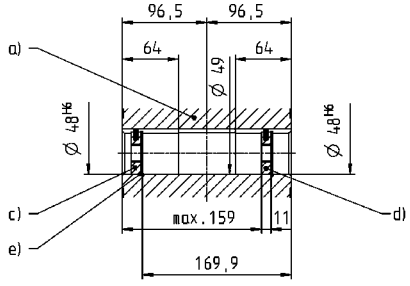
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	1184	1336	1377	1392	1505	1376
		in.lb	10478	11824	12186	12319	13319	12178
	T_{2Servo}	Nm	1155	1304	1343	1359	1469	1343
		in.lb	10222	11540	11886	12027	13001	11886
	η	%	95	93	91	87	80	76
n_{1N}=1000 rpm	T_{2Max}	Nm	905	1070	1122	1140	1251	1162
		in.lb	8009	9470	9930	10089	11071	10284
	T_{2Servo}	Nm	883	1044	1095	1113	1221	1134
		in.lb	7815	9239	9691	9850	10806	10036
	η	%	95	94	92	88	82	79
n_{1N}=2000 rpm	T_{2Max}	Nm	595	748	807	830	930	883
		in.lb	5266	6620	7142	7346	8231	7815
	T_{2Servo}	Nm	581	730	788	810	908	862
		in.lb	5142	6461	6974	7169	8036	7629
	η	%	96	95	94	91	86	82
n_{1N}=3000 rpm [c]	T_{2Max}	Nm	430	564	621	644	735	709
		in.lb	3806	4991	5496	5699	6505	6275
	T_{2Servo}	Nm	420	551	606	629	718	692
		in.lb	3717	4876	5363	5567	6354	6124
	η	%	97	96	95	92	87	84
n_{1N}=3500 rpm	T_{2Max}	Nm in.lb	–	–	–	–	–	–
	T_{2Servo}	Nm in.lb	–	–	–	–	–	–
	η	%	–	–	–	–	–	–
Emergency stop torque	T_{2Not}	Nm	1819	1932	1940	1955	2073	1856
		in.lb	16098	17098	17169	17302	18346	16426
Max. input speed	n_{1Max}	rpm	3500					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	9,8	8,1	7,4	6,7	5,8	5
		in.lb	86,7	71,7	65,5	59,3	51,3	44,3
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	153					
		in.lb/arcmin	1354					
Max. axial force [b]	F_{2AMax}	N	19500					
		lb_f	4388					
Max. radial force [b]	F_{2RMax}	N	14000					
		lb_f	3150					
Max. tilting moment	M_{2KMax}	Nm	3059					
		in.lb	27072					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	*m*	kg	50					
		lb_m	110,5					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 70					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	65,82	56,27	54,34	55,19	52,72	53,04
		10^{-3} in.lb.s²	58,25	49,80	48,09	48,84	46,66	46,94

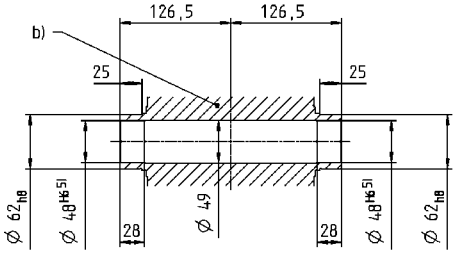
[a] Idling torques decrease during operation
[b] Refers to center of the output shaft or flange
[c] Reduced by 20% in S1 operation











a) Hollow shaft, keywayed
b) Hollow shaft, smooth
c) End disc for screw M16
d) End disc as forcing washer for screw M20
e) Locking ring – DIN 472

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

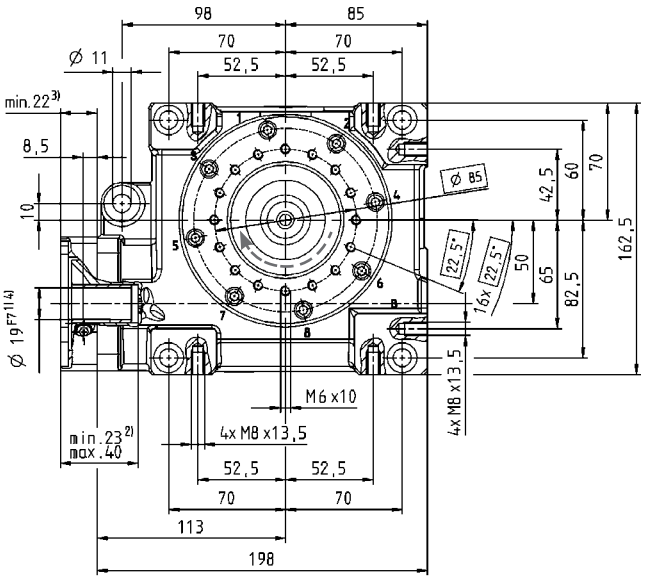
CAD data is available under www.wittenstein-alpha.com

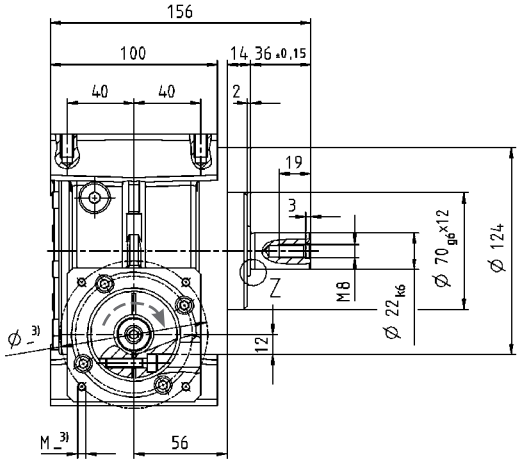
Motor mounting according to operating manual

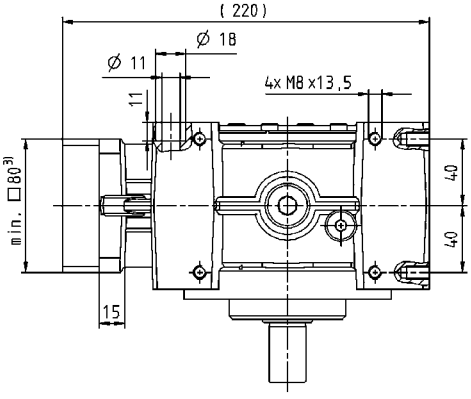
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	124	132	148	154	165	158
		in.lb	1097	1168	1310	1363	1460	1398
	T_{2Servo}	Nm	54	71	74	81	90	74
		in.lb	478	628	655	717	797	655
	η	%	92	89	86	82	72	64
n_{1N}=1000 rpm	T_{2Max}	Nm	124	130	136	140	151	142
		in.lb	1097	1151	1204	1239	1336	1257
	T_{2Servo}	Nm	58	76	80	88	97	81
		in.lb	513	673	708	779	858	717
	η	%	94	91	89	85	77	69
n_{1N}=2000 rpm	T_{2Max}	Nm	88	106	112	120	134	122
		in.lb	779	938	991	1062	1186	1080
	T_{2Servo}	Nm	60	78	82	89	99	83
		in.lb	531	690	726	788	876	735
	η	%	95	93	91	88	75	75
n_{1N}=3000 rpm	T_{2Max}	Nm	72	86	95	106	112	108
		in.lb	637	761	841	938	991	956
	T_{2Servo}	Nm	59	77	81	88	97	81
		in.lb	522	681	717	779	858	717
	η	%	96	94	93	90	83	78
n_{1N}=4000 rpm	T_{2Max}	Nm	62	77	83	92	102	95
		in.lb	549	681	735	814	903	841
	T_{2Servo}	Nm	58	76	79	87	96	80
		in.lb	513	673	699	770	850	708
	η	%	96	95	93	91	85	80
Emergency stop torque	T_{2Not}	Nm	230	242	242	250	262	236
		in.lb	2036	2142	2142	2213	2319	2089
Max. input speed	n_{1Max}	rpm	6000					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	1,3	1,2	1,2	1,1	1	0,9
		in.lb	11,5	10,6	10,6	9,7	8,9	8,0
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	8					
		in.lb/arcmin	71					
Max. axial force [b]	F_{2AMax}	N	5000					
		lb_f	1125					
Max. radial force [b]	F_{2RMax}	N	3800					
		lb_f	855					
Max. tilting moment	M_{2KMax}	Nm	409					
		in.lb	3620					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	8,5					
		lb_m	18,8					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 62					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	2,27	2,03	1,94	1,84	1,81	1,86
		10^{-3} in.lb.s²	2,01	1,80	1,72	1,63	1,60	1,64

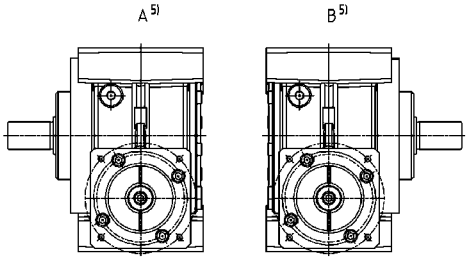
[a] Idling torques decrease during operation

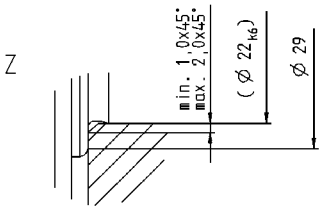
[b] Refers to center of the output shaft or flange

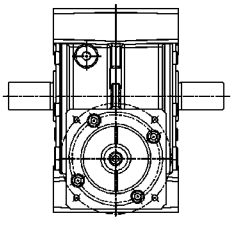








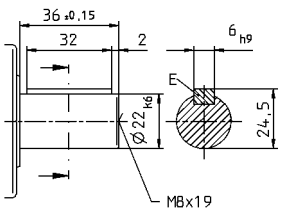




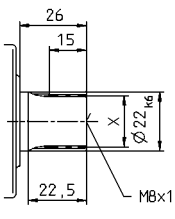
Optional dual-shaft output. Drawings available upon request.
Involute gearing is not possible.

Alternatives: Output shaft variants

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



Involute gearing DIN 5480 in mm
X = W 22 x 1.25 x 30 x 16 x 6m



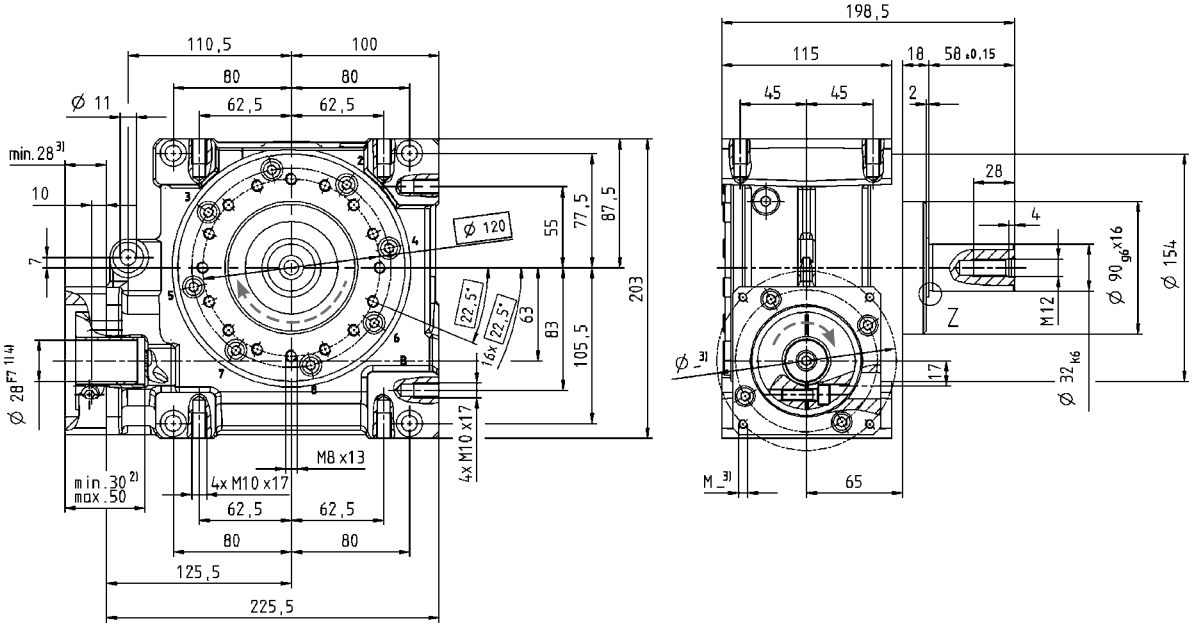
Non-tolerated dimensions ± 1 mm
1) Check motor shaft fit.
2) Min./Max. permissible motor shaft length.
Longer motor shafts are adaptable, please contact us.
3) The dimensions depend on the motor.
4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.
5) Output side

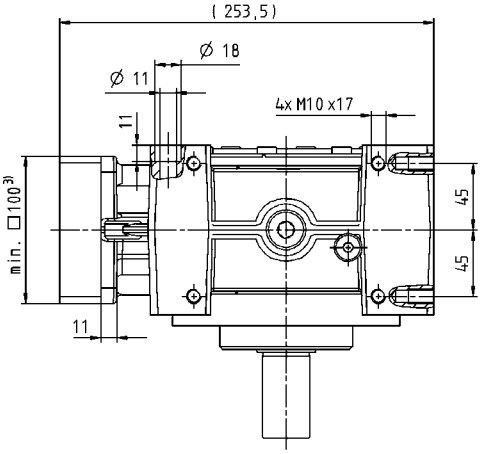
CAD data is available under www.wittenstein-alpha.com

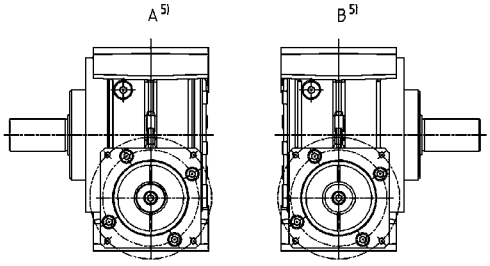
Motor mounting according to operating manual

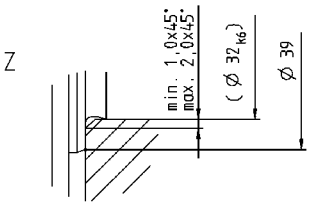
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	302	314	315	320	328	324
		in.lb	2673	2779	2788	2832	2903	2867
	T_{2Servo}	Nm	198	210	225	221	229	226
		in.lb	1752	1859	1991	1956	2027	2000
	η	%	93	91	88	83	74	68
n_{1N}=1000 rpm	T_{2Max}	Nm	264	284	290	298	304	301
		in.lb	2336	2513	2567	2637	2690	2664
	T_{2Servo}	Nm	192	228	240	238	245	241
		in.lb	1699	2018	2124	2106	2168	2133
	η	%	94	93	91	86	78	73
n_{1N}=2000 rpm	T_{2Max}	Nm	202	243	262	271	282	278
		in.lb	1788	2151	2319	2398	2496	2460
	T_{2Servo}	Nm	174	212	230	238	248	243
		in.lb	1540	1876	2036	2106	2195	2151
	η	%	96	94	93	89	83	78
n_{1N}=3000 rpm	T_{2Max}	Nm	164	190	202	209	235	231
		in.lb	1451	1682	1788	1850	2080	2044
	T_{2Servo}	Nm	128	166	184	209	198	194
		in.lb	1133	1469	1628	1850	1752	1717
	η	%	96	95	94	91	85	81
n_{1N}=4000 rpm	T_{2Max}	Nm	128	148	164	175	201	198
		in.lb	1133	1310	1451	1549	1779	1752
	T_{2Servo}	Nm	104	132	152	175	165	162
		in.lb	920	1168	1345	1549	1460	1434
	η	%	97	96	94	92	86	83
Emergency stop torque	T_{2Not}	Nm	460	484	491	494	518	447
		in.lb	4071	4283	4345	4372	4584	3956
Max. input speed	n_{1Max}	rpm	4500					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	2,1	1,9	1,8	1,7	1,6	1,4
		in.lb	18,6	16,8	15,9	15,0	14,2	12,4
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	28					
		in.lb/arcmin	248					
Max. axial force [b]	F_{2AMax}	N	8250					
		lb_f	1856					
Max. radial force [b]	F_{2RMax}	N	6000					
		lb_f	1350					
Max. tilting moment	M_{2KMax}	Nm	843					
		in.lb	7461					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	15					
		lb_m	33,2					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 64					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	6,72	5,79	5,54	5,44	5,41	5,35
		10^{-3} in.lb.s²	5,95	5,12	4,90	4,82	4,78	4,74

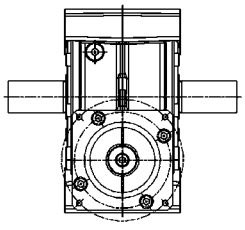
[a] Idling torques decrease during operation
[b] Refers to center of the output shaft or flange









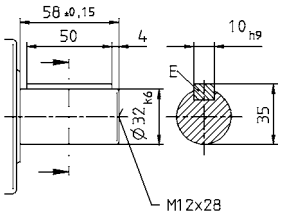


Optional dual-shaft output. Drawings available upon request.
Involute gearing is not possible.

Alternatives: Output shaft variants

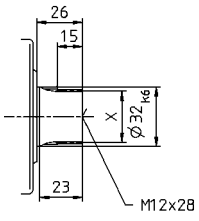
Keywayed output shaft in mm

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



Involute gearing DIN 5480

X = W 32 x 1.25 x 30 x 24 x 6m



Non-tolerated dimensions ± 1 mm

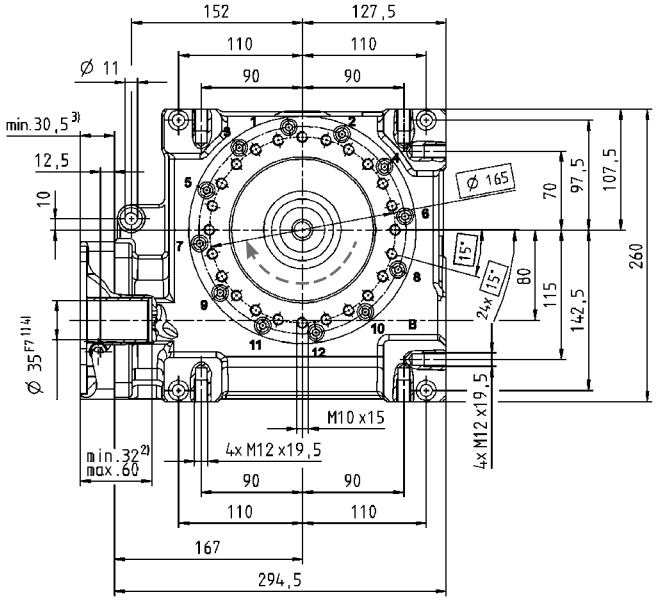
1) Check motor shaft fit.
2) Min./Max. permissible motor shaft length.
   Longer motor shafts are adaptable, please contact us.
3) The dimensions depend on the motor.
4) Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm.
5) Output side

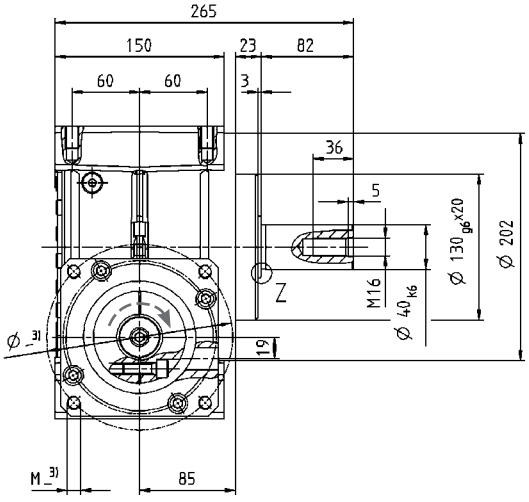
CAD data is available under www.wittenstein-alpha.com

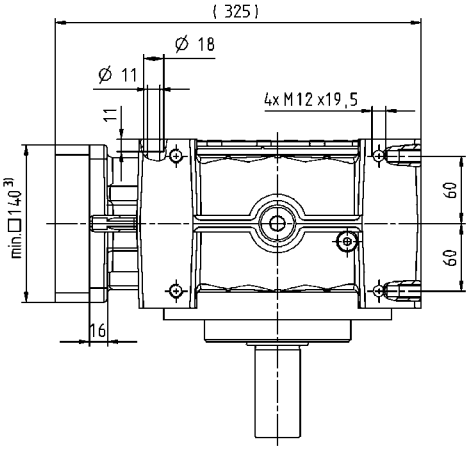
Motor mounting according to operating manual

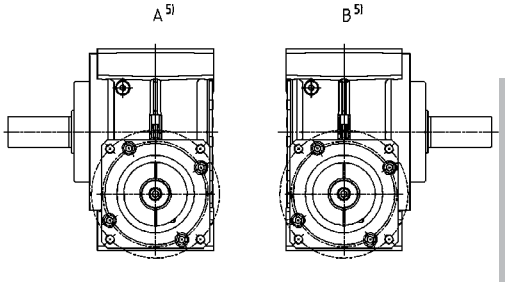
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	578	646	672	702	785	676
		in.lb	5115	5717	5947	6213	6947	5983
	T_{2Servo}	Nm	469	601	613	677	764	631
		in.lb	4151	5319	5425	5991	6761	5584
	η	%	94	92	89	86	77	70
n_{1N}=1000 rpm	T_{2Max}	Nm	514	602	588	656	698	613
		in.lb	4549	5328	5204	5806	6177	5425
	T_{2Servo}	Nm	491	574	561	625	665	584
		in.lb	4345	5080	4965	5531	5885	5168
	η	%	95	93	91	88	81	74
n_{1N}=2000 rpm	T_{2Max}	Nm	350	435	431	500	536	470
		in.lb	3098	3850	3814	4425	4744	4160
	T_{2Servo}	Nm	335	415	411	476	511	448
		in.lb	2965	3673	3637	4213	4522	3965
	η	%	96	95	93	89	84	79
n_{1N}=3000 rpm	T_{2Max}	Nm	259	336	334	400	433	380
		in.lb	2292	2974	2956	3540	3832	3363
	T_{2Servo}	Nm	247	320	319	381	413	362
		in.lb	2186	2832	2823	3372	3655	3204
	η	%	97	96	94	92	86	81
n_{1N}=3500 rpm	T_{2Max}	Nm	227	299	300	362	394	346
		in.lb	2009	2646	2655	3204	3487	3062
	T_{2Servo}	Nm	217	285	286	345	376	330
		in.lb	1920	2522	2531	3053	3328	2921
	η	%	97	96	94	92	87	82
Emergency stop torque	T_{2Not}	Nm	938	993	963	1005	1064	941
		in.lb						
Max. input speed	n_{1Max}	rpm	4000					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	3,6	3,5	3,4	3,2	3	2,8
		in.lb	31,9	31,0	30,1	28,3	26,6	24,8
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	78					
		in.lb/arcmin	690					
Max. axial force [b]	F_{2AMax}	N	13900					
		lb_f	3128					
Max. radial force [b]	F_{2RMax}	N	9000					
		lb_f	2025					
Max. tilting moment	M_{2KMax}	Nm	1544					
		in.lb	13664					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	m	kg	32					
		lb_m	70,7					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 66					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	20,74	17,57	17,70	16,34	16,25	16,91
		10^{-3} in.lb.s²	18,36	15,55	15,67	14,46	14,38	14,96

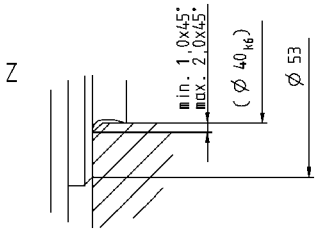
[a] Idling torques decrease during operation
[b] Refers to center of the output shaft or flange

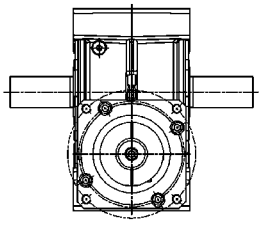








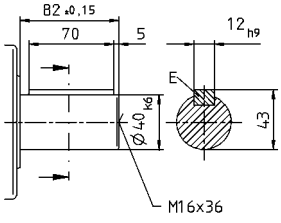




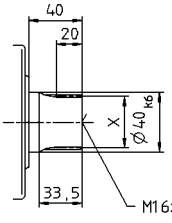
Optional dual-shaft output. Drawings available upon request.
Involute gearing is not possible.

Alternatives: Output shaft variants

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



Involute gearing DIN 5480
X = W 40 x 2 x 30 x 18 x 6m



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

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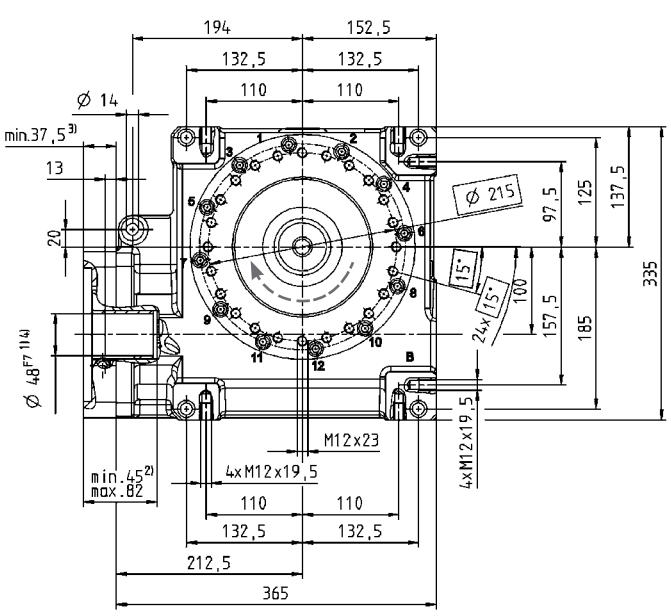
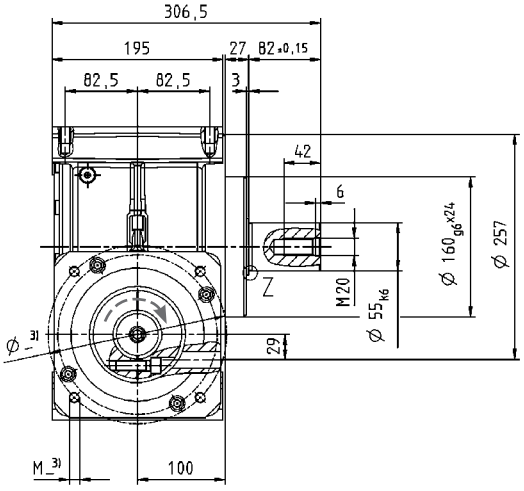
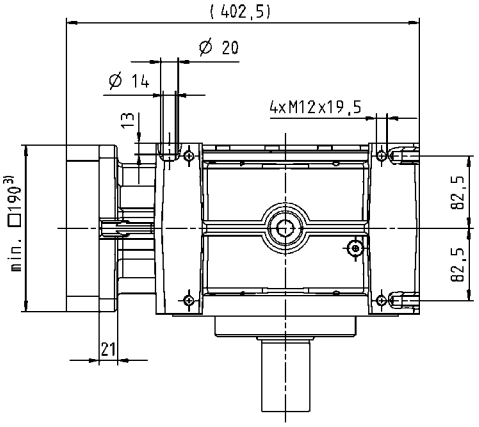
Motor mounting according to operating manual

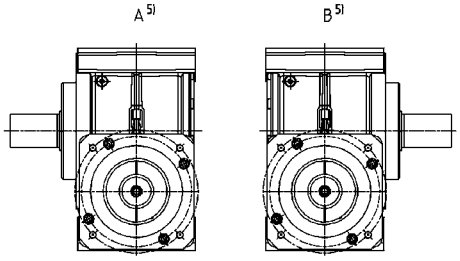
			1-stage					
Ratio	***i***		**4**	**7**	**10**	**16**	**28**	**40**
n_{1N}=500 rpm	T_{2Max}	Nm	1184	1336	1377	1392	1505	1376
		in.lb	10478	11824	12186	12319	13319	12178
	T_{2Servo}	Nm	1155	1304	1343	1359	1469	1343
		in.lb	10222	11540	11886	12027	13001	11886
	η	%	95	93	91	87	80	76
n_{1N}=1000 rpm	T_{2Max}	Nm	905	1070	1122	1140	1251	1162
		in.lb	8009	9470	9930	10089	11071	10284
	T_{2Servo}	Nm	883	1044	1095	1113	1221	1134
		in.lb	7815	9239	9691	9850	10806	10036
	η	%	95	94	92	88	82	79
n_{1N}=2000 rpm	T_{2Max}	Nm	595	748	807	830	930	883
		in.lb	5266	6620	7142	7346	8231	7815
	T_{2Servo}	Nm	581	730	788	810	908	862
		in.lb	5142	6461	6974	7169	8036	7629
	η	%	96	95	94	91	86	82
n_{1N}=3000 rpm [c]	T_{2Max}	Nm	430	564	621	644	735	709
		in.lb	3806	4991	5496	5699	6505	6275
	T_{2Servo}	Nm	420	551	606	629	718	692
		in.lb	3717	4876	5363	5567	6354	6124
	η	%	97	96	95	92	87	84
n_{1N}=3500 rpm	T_{2Max}	Nm in.lb	–	–	–	–	–	–
	T_{2Servo}	Nm in.lb	–	–	–	–	–	–
	η	%	–	–	–	–	–	–
Emergency stop torque	T_{2Not}	Nm	1819	1932	1940	1955	2073	1856
		in.lb	16098	17098	17169	17302	18346	16426
Max. input speed	n_{1Max}	rpm	3500					
Mean no load running torque [a] (With n_1=3000 min^{-1} and 20° C gear temperature)	T_{012}	Nm	9,8	8,1	7,4	6,7	5,8	5
		in.lb	86,7	71,7	65,5	59,3	51,3	44,3
Max. torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t21}	Nm/arcmin	153					
		in.lb/arcmin	1354					
Max. axial force [b]	F_{2AMax}	N	19500					
		lb_f	4388					
Max. radial force [b]	F_{2RMax}	N	14000					
		lb_f	3150					
Max. tilting moment	M_{2KMax}	Nm	3059					
		in.lb	27072					
Service life (For calculation see "Information")	L_h	h	> 20000					
Weight (without motor attechment parts)	*m*	kg	61					
		lb_m	134,8					
Operating noise (with n_1 = 3000 rpm no load)	L_{PA}	dB(A)	≤ 70					
Max. permitted housing temperature		°C	+90					
		F	194					
Ambient temperature		°C	-15 to +40					
		F	5 to 104					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawing					
Protection class			IP 65					
Moment of inertia (relates to the drive)	J_1	kgcm²	65,59	56,20	54,30	55,17	52,71	53,04
		10^{-3} in.lb.s²	58,05	49,73	48,06	48,83	46,65	46,94

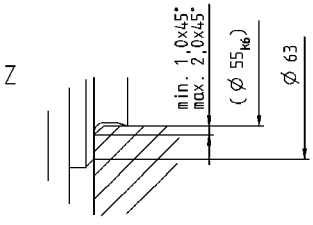
[a] Idling torques decrease during operation
[b] Refers to center of the output shaft or flange
[c] Reduced by 20% in S1 operation

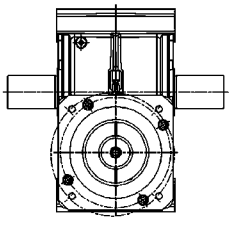












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Keywayed output shaft in mm
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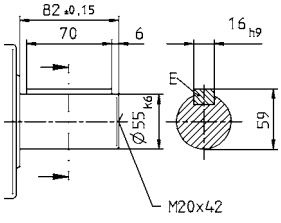
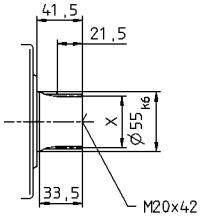


Involute gearing DIN 5480
X = W 55 x 2 x 30 x 26 x 6m



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Motor mounting according to operating manual