

Technical specifications VDH+ 050

Ratio	i	1-stage						
		4	7	10	16	28	40	
$n_1=500$ 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	
$n_1=1000$ 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	
$n_1=2000$ 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	
$n_1=3000$ 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	
$n_1=4000$ 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
Nominal input speed	n_{1N}	rpm	4000	4000	4000	4000	4000	4000
Maximum input speed	n_{1Max}	rpm	6000					
Average no-load running torque (at $n_1=3000$ rpm and 20°C gearhead temperature) ^a	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
Torsional backlash	j_t	arcmin	≤3					
Torsional rigidity	C_{t12}	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 "Technical Basics"	L_h	h	> 20000					
Weight (without motor attachment parts)	m	kg	7,4					
		lb _m	16,4					
Noise level (At $n_1=3000$ rpm without load)	L_{PA}	dB(A)	≤ 62					
Max. permissible housing temperature		°C	+90					
		°F	194					
Ambient temperature		°C	-10 bis +40					
		°F	14 to 194					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawings					
Type of protection			IP 65					
Mass moment of inertia referring to the drive	J_1	kgcm ²	2,31	2,02	1,93	1,84	1,81	1,86
		10 ³ in.lb.s ²	2,04	1,79	1,71	1,63	1,60	1,64

^a Decrease in operation

^b In reference to the center of output flange / shaft

Technical specifications VDH+ 063

Ratio	i	1-stage						
		4	7	10	16	28	40	
n ₁ =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 ₁ =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 ₁ =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 ₁ =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 ₁ =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	
Nominal input speed	n _{1N}	rpm	4000	4000	4000	4000	4000	4000
Maximum input speed	n _{1Max}	rpm	4500					
Average no-load running torque (at n ₁ =3000 rpm and 20°C gearhead temperature.) ^a	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
Torsional backlash	j _t	arcmin	≤3					
Torsional rigidity	C ₁₁₂	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 "Technical Basics"	L _h	h	> 20000					
Weight (without motor attachment parts)	m	kg	12					
		lb _m	26,5					
Noise level (At n ₁ =3000 rpm without load)	L _{PA}	dB(A)	≤ 64					
Max. permissible housing temperature		°C	+90					
		°F	194					
Ambient temperature		°C	-10 bis +40					
		°F	14 to 194					
Lubrication			Synthetic transmission oil					
Paint			None					
Direction of rotation			See drawings					
Type of protection			IP 65					
Mass moment of inertia referring to the drive	J ₁	kgcm ²	6,68	5,77	5,53	5,44	5,40	5,35
		10 ³ in.lb.s ²	5,91	5,11	4,89	4,81	4,78	4,74

^a Decrease in operation

^b In reference to the center of output flange / shaft

Technical specifications VDH+ 080

Ratio	i	1-stage						
		4	7	10	16	28	40	
n ₁ =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	93	91	87	80	76	
n ₁ =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 ₁ =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 ₁ =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 ₁ =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	
Nominal input speed	n _{1N}	rpm	3500	3500	3500	3500	3500	3500
Maximum input speed	n _{1Max}	rpm	4000					
Average no-load running torque (at n ₁ =3000 rpm and 20°C gearhead temperature.) ^a	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
Torsional backlash	j _t	arcmin	≤3					
Torsional rigidity	C _{t12}	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 "Technical Basics"	L _h	h	> 20000					
Weight (without motor attachment parts)	m	kg	26					
		lb _m	57,5					
Noise level (At n ₁ =3000 rpm without load)	L _{PA}	dB(A)	≤ 66					
Max. permissible housing temperature		°C	+90					
		°F	194					
Ambient temperature		°C	-10 bis +40					
		°F	14 to 194					
Lubrication	Synthetic transmission oil							
Paint	None							
Direction of rotation	See drawings							
Type of protection	IP 65							
Mass moment of inertia referring to the drive	J ₁	kgcm ²	21,31	17,76	17,80	16,38	16,27	16,91
		10 ³ in.lb.s ²	18,86	15,72	15,75	14,49	14,40	14,97

^a Decrease in operation

^b In reference to the center of output flange / shaft

Technical specifications VDH+ 100

Ratio	i	1-stage						
		4	7	10	16	28	40	
n ₁ =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 ₁ =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 ₁ =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 ₁ =3000 rpm	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 ₁ =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	
Nominal input speed	n _{1N}	rpm	3000	3000	3000	3000	3000	3000
Maximum input speed	n _{1Max}	rpm	3500					
Average no-load running torque (at n ₁ =3000 rpm and 20°C gearhead temperature.) ^a	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
Torsional backlash	j _t	arcmin	≤3					
Torsional rigidity	C ₁₁₂	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 "Technical Basics"	L _h	h	> 20000					
Weight (without motor attachment parts)	m	kg	50					
		lb _m	110,5					
Noise level (At n ₁ =3000 rpm without load)	L _{PA}	dB(A)	≤ 70					
Max. permissible housing temperature		°C	+90					
		°F	194					
Ambient temperature		°C	-10 bis +40					
		°F	14 to 194					
Lubrication	Synthetic transmission oil							
Paint	None							
Direction of rotation	See drawings							
Type of protection	IP 65							
Mass moment of inertia referring to the drive	J ₁	kgcm ²	65,82	56,27	54,34	55,19	52,72	53,04
		10 ³ in.lb.s ²	58,25	49,80	48,09	48,84	46,66	46,94

^a Decrease in operation

^b In reference to the center of output flange / shaft