

Premium gear boxes 8GP70

Technical data

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Model no.: **TEC DAT GET 8GP70**

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Documentversions

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1.0	2015-02-26	first edition	BU DT Doku 1
1.1	2015-03-19	editorial amendments	BU DT Doku 1
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1 8GP70-070

Product ID	8GP70-070hh003klmm		8GP70-070hh004klmm		8GP70-070hh005klmm		8GP70-070hh007klmm	
Gearbox								
Number of gear stages	1							
Gear ratio i	3		4		5		7	
Nominal output torque T _{2N} [Nm]	29		39		40		37	
Max. output torque T _{2max} [Nm]	46		62		64		59	
E-stop torque T _{2stop} [Nm]	90		120		130		80	
Idle torque [Nm] at 20°C and 3000 rpm	0.65		0.45		0.35		0.25	
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	3000		3700		4400		4500	
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	2850		3400		4050		4500	
Max. drive speed n _{1max} [rpm]	14000							
Max. backlash J _t [arcmin]	3							
Reduced backlash J _t [arcmin] less than	2							
Torsional rigidity C _{t21} [Nm/arcmin]	5							
Tilting rigidity C _{2K} [Nm/arcmin]	0							
Max. breakdown torque M _{2Kmax} [Nm]	0							
Max. radial force Fr _{max} [N] for 30,000 h	3200							
Max. radial force Fr _{max} [N] for 20,000 h	3200							
Max. axial force Fa _{max} [N] for 30,000 h	3900							
Max. axial force Fa _{max} [N] for 20,000 h	4400							
Operating noise L _{PA} [dB(A)]	63		57					
Efficiency at full load η [%]	98							
Min. operating temperature B _{Tempmin} [°C]	-25							
Max. operating temperature B _{Tempmax} [°C]	90							
Mounting orientation	Any							
Protection	IP65							
Weight m [kg]	1.9							
Moment of inertia J ₁ [kgcm²]	0.273		0.191		0.163		0.137	

Product ID	8GP70-070hh010klmm		8GP70-070hh012klmm		8GP70-070hh015klmm		8GP70-070hh016klmm	
Gearbox								
Number of gear stages	1							
Gear ratio i	10		12		15		16	
Nominal output torque T _{2N} [Nm]	28		29				39	
Max. output torque T _{2max} [Nm]	45		46				62	
E-stop torque T _{2stop} [Nm]	90		135				150	
Idle torque [Nm] at 20°C and 3000 rpm	0.2		0.45		0.3		0.4	
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	4500							
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	4500							
Max. drive speed n _{1max} [rpm]	14000							
Max. backlash J _t [arcmin]	3		5					
Reduced backlash J _t [arcmin] less than	2							
Torsional rigidity C _{t21} [Nm/arcmin]	5							
Tilting rigidity C _{2K} [Nm/arcmin]	0							
Max. breakdown torque M _{2Kmax} [Nm]	0							
Max. radial force Fr _{max} [N] for 30,000 h	3200							
Max. radial force Fr _{max} [N] for 20,000 h	3200							
Max. axial force Fa _{max} [N] for 30,000 h	3900							
Max. axial force Fa _{max} [N] for 20,000 h	4400							
Operating noise L _{PA} [dB(A)]	57							
Efficiency at full load η [%]	98		95					
Min. operating temperature B _{Tempmin} [°C]	-25							
Max. operating temperature B _{Tempmax} [°C]	90							
Mounting orientation	Any							
Protection	IP65							
Weight m [kg]	1.9		2.7					
Moment of inertia J ₁ [kgcm²]	0.125		0.18		0.156		0.175	

Product ID	8GP70-070hh020klmm	8GP70-070hh025klmm	8GP70-070hh035klmm	8GP70-070hh040klmm
Gearbox				
Number of gear stages	2			
Gear ratio i	20	25	35	40
Nominal output torque T_{2N} [Nm]	39	40		39
Max. output torque T_{2max} [Nm]	62	64		62
E-stop torque T_{2stop} [Nm]	150			
Idle torque [Nm] at 20°C and 3000 rpm	0.3		0.2	0.15
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	4500			
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	4500			
Max. drive speed n_{1max} [rpm]	14000			
Max. backlash J_i [arcmin]	5			
Reduced backlash J_i [arcmin] less than	2			
Torsional rigidity C_{t21} [Nm/arcmin]	5			
Tilting rigidity C_{2K} [Nm/arcmin]	0			
Max. breakdown torque M_{2Kmax} [Nm]	0			
Max. radial force F_{rmax} [N] for 30,000 h	3200			
Max. radial force F_{rmax} [N] for 20,000 h	3200			
Max. axial force F_{amax} [N] for 30,000 h	3900			
Max. axial force F_{amax} [N] for 20,000 h	4400			
Operating noise L_{PA} [dB(A)]	57			
Efficiency at full load η [%]	95			
Min. operating temperature $B_{Tempmin}$ [°C]	-25			
Max. operating temperature $B_{Tempmax}$ [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	2.7			
Moment of inertia J_1 [kgcm ²]	0.152	0.151	0.131	0.123

Product ID	8GP70-070hh050klmm	8GP70-070hh070klmm	8GP70-070hh100klmm
Gearbox			
Number of gear stages	2		
Gear ratio i	50	70	100
Nominal output torque T_{2N} [Nm]	40	37	28
Max. output torque T_{2max} [Nm]	64	59	45
E-stop torque T_{2stop} [Nm]	150	80	
Idle torque [Nm] at 20°C and 3000 rpm	0.15		
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	4500		
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	4500		
Max. drive speed n_{1max} [rpm]	14000		
Max. backlash J_i [arcmin]	5		
Reduced backlash J_i [arcmin] less than	2		
Torsional rigidity C_{t21} [Nm/arcmin]	5		
Tilting rigidity C_{2K} [Nm/arcmin]	0		
Max. breakdown torque M_{2Kmax} [Nm]	0		
Max. radial force F_{rmax} [N] for 30,000 h	3200		
Max. radial force F_{rmax} [N] for 20,000 h	3200		
Max. axial force F_{amax} [N] for 30,000 h	3900		
Max. axial force F_{amax} [N] for 20,000 h	4400		
Operating noise L_{PA} [dB(A)]	57		
Efficiency at full load η [%]	95		
Min. operating temperature $B_{Tempmin}$ [°C]	-25		
Max. operating temperature $B_{Tempmax}$ [°C]	90		
Mounting orientation	Any		
Protection	IP65		
Weight m [kg]	2.7		
Moment of inertia J_1 [kgcm ²]	0.122		

2 8GP70-090

Product ID	8GP70-090hh003klmm	8GP70-090hh004klmm	8GP70-090hh005klmm	8GP70-090hh007klmm
Gearbox				
Number of gear stages	1			
Gear ratio i	3	4	5	7
Nominal output torque T _{2N} [Nm]	54	80		78
Max. output torque T _{2max} [Nm]	86	128		125
E-stop torque T _{2stop} [Nm]	210	280		175
Idle torque [Nm] at 20°C and 3000 rpm	1.25	1.1	0.8	0.55
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	2700	3050	3700	4000
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	2550	2850	3400	4000
Max. drive speed n _{1max} [rpm]	10000			
Max. backlash J _t [arcmin]	3			
Reduced backlash J _t [arcmin] less than	1			
Torsional rigidity C _{t21} [Nm/arcmin]	11			
Tilting rigidity C _{2K} [Nm/arcmin]	0			
Max. breakdown torque M _{2Kmax} [Nm]	0			
Max. radial force Fr _{max} [N] for 30,000 h	4800			
Max. radial force Fr _{max} [N] for 20,000 h	5500			
Max. axial force Fa _{max} [N] for 30,000 h	5700			
Max. axial force Fa _{max} [N] for 20,000 h	6400			
Operating noise L _{PA} [dB(A)]	64	58		
Efficiency at full load η [%]	98			
Min. operating temperature B _{Tempmin} [°C]	-25			
Max. operating temperature B _{Tempmax} [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	3.3			
Moment of inertia J ₁ [kgcm²]	0.805	0.556	0.436	0.351

Product ID	8GP70-090hh010klmm	8GP70-090hh012klmm	8GP70-090hh015klmm	8GP70-090hh016klmm
Gearbox				
Number of gear stages	1	2		
Gear ratio i	10	12	15	16
Nominal output torque T _{2N} [Nm]	59	54		80
Max. output torque T _{2max} [Nm]	94	86		128
E-stop torque T _{2stop} [Nm]	200	220		300
Idle torque [Nm] at 20°C and 3000 rpm	0.4	0.55	0.45	0.55
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	4000	4500		
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	4000	4500		
Max. drive speed n _{1max} [rpm]	10000			
Max. backlash J _t [arcmin]	3	5		
Reduced backlash J _t [arcmin] less than	1			
Torsional rigidity C _{t21} [Nm/arcmin]	11			
Tilting rigidity C _{2K} [Nm/arcmin]	0			
Max. breakdown torque M _{2Kmax} [Nm]	0			
Max. radial force Fr _{max} [N] for 30,000 h	4800			
Max. radial force Fr _{max} [N] for 20,000 h	5500			
Max. axial force Fa _{max} [N] for 30,000 h	5700			
Max. axial force Fa _{max} [N] for 20,000 h	6400			
Operating noise L _{PA} [dB(A)]	58			
Efficiency at full load η [%]	98	95		
Min. operating temperature B _{Tempmin} [°C]	-25			
Max. operating temperature B _{Tempmax} [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	3.3	4.3		
Moment of inertia J ₁ [kgcm²]	0.307	0.206	0.172	0.19

Product ID	8GP70-090hh020klmm	8GP70-090hh025klmm	8GP70-090hh035klmm	8GP70-090hh040klmm
Gearbox				
Number of gear stages	2			
Gear ratio i	20	25	35	40
Nominal output torque T_{2N} [Nm]	80			
Max. output torque T_{2max} [Nm]	128			
E-stop torque T_{2stop} [Nm]	300			
Idle torque [Nm] at 20°C and 3000 rpm	0.45	0.4	0.3	0.25
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	4500			
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	4500			
Max. drive speed n_{1max} [rpm]	10000			
Max. backlash J_t [arcmin]	5			
Reduced backlash J_t [arcmin] less than	1			
Torsional rigidity C_{t21} [Nm/arcmin]	11			
Tilting rigidity C_{2K} [Nm/arcmin]	0			
Max. breakdown torque M_{2Kmax} [Nm]	0			
Max. radial force F_{rmax} [N] for 30,000 h	4800			
Max. radial force F_{rmax} [N] for 20,000 h	5500			
Max. axial force F_{amax} [N] for 30,000 h	5700			
Max. axial force F_{amax} [N] for 20,000 h	6400			
Operating noise L_{PA} [dB(A)]	58			
Efficiency at full load η [%]	95			
Min. operating temperature $B_{Tempmin}$ [°C]	-25			
Max. operating temperature $B_{Tempmax}$ [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	4.3			
Moment of inertia J_1 [kgcm ²]	0.162	0.157	0.135	0.125

Product ID	8GP70-090hh050klmm	8GP70-090hh070klmm	8GP70-090hh100klmm
Gearbox			
Number of gear stages	2		
Gear ratio i	50	70	100
Nominal output torque T_{2N} [Nm]	80	78	59
Max. output torque T_{2max} [Nm]	128	125	94
E-stop torque T_{2stop} [Nm]	300	175	200
Idle torque [Nm] at 20°C and 3000 rpm	0.25		
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	4500		
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	4500		
Max. drive speed n_{1max} [rpm]	10000		
Max. backlash J_t [arcmin]	5		
Reduced backlash J_t [arcmin] less than	1		
Torsional rigidity C_{t21} [Nm/arcmin]	11		
Tilting rigidity C_{2K} [Nm/arcmin]	0		
Max. breakdown torque M_{2Kmax} [Nm]	0		
Max. radial force F_{rmax} [N] for 30,000 h	4800		
Max. radial force F_{rmax} [N] for 20,000 h	5500		
Max. axial force F_{amax} [N] for 30,000 h	5700		
Max. axial force F_{amax} [N] for 20,000 h	6400		
Operating noise L_{PA} [dB(A)]	58		
Efficiency at full load η [%]	95		
Min. operating temperature $B_{Tempmin}$ [°C]	-25		
Max. operating temperature $B_{Tempmax}$ [°C]	90		
Mounting orientation	Any		
Protection	IP65		
Weight m [kg]	4.3		
Moment of inertia J_1 [kgcm ²]	0.124	0.123	

3 8GP70-115

Product ID	8GP70-115hh003klmm	8GP70-115hh004klmm	8GP70-115hh005klmm	8GP70-115hh007klmm
Gearbox				
Number of gear stages	1			
Gear ratio i	3	4	5	7
Nominal output torque T _{2N} [Nm]	135	180	175	
Max. output torque T _{2max} [Nm]	216	288	280	
E-stop torque T _{2stop} [Nm]	490	650		340
Idle torque [Nm] at 20°C and 3000 rpm	2.65	2.5	1.7	1.1
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	2000	2250	2750	3500
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	1900	2050	2500	3250
Max. drive speed n _{1max} [rpm]	8500			
Max. backlash J _t [arcmin]	3			
Reduced backlash J _t [arcmin] less than	1			
Torsional rigidity C _{t21} [Nm/arcmin]	28			
Tilting rigidity C _{2K} [Nm/arcmin]	0			
Max. breakdown torque M _{2Kmax} [Nm]	0			
Max. radial force Fr _{max} [N] for 30,000 h	5400			
Max. radial force Fr _{max} [N] for 20,000 h	6000			
Max. axial force Fa _{max} [N] for 30,000 h	7000			
Max. axial force Fa _{max} [N] for 20,000 h	8000			
Operating noise L _{PA} [dB(A)]	69	63		
Efficiency at full load η [%]	98			
Min. operating temperature B _{Tempmin} [°C]	-25			
Max. operating temperature B _{Tempmax} [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	6.9			
Moment of inertia J ₁ [kgcm²]	2.479	1.547	1.175	0.956

Product ID	8GP70-115hh010klmm	8GP70-115hh012klmm	8GP70-115hh015klmm	8GP70-115hh016klmm
Gearbox				
Number of gear stages	1	2		
Gear ratio i	10	12	15	16
Nominal output torque T _{2N} [Nm]	140	135		180
Max. output torque T _{2max} [Nm]	224	216		288
E-stop torque T _{2stop} [Nm]	480	500		650
Idle torque [Nm] at 20°C and 3000 rpm	0.75	1.35	0.95	1.3
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	3500	4000		
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	3500	3800	4000	3950
Max. drive speed n _{1max} [rpm]	8500			
Max. backlash J _t [arcmin]	3	5		
Reduced backlash J _t [arcmin] less than	1			
Torsional rigidity C _{t21} [Nm/arcmin]	28			
Tilting rigidity C _{2K} [Nm/arcmin]	0			
Max. breakdown torque M _{2Kmax} [Nm]	0			
Max. radial force Fr _{max} [N] for 30,000 h	5400			
Max. radial force Fr _{max} [N] for 20,000 h	6000			
Max. axial force Fa _{max} [N] for 30,000 h	7000			
Max. axial force Fa _{max} [N] for 20,000 h	8000			
Operating noise L _{PA} [dB(A)]	63			
Efficiency at full load η [%]	98	95		
Min. operating temperature B _{Tempmin} [°C]	-25			
Max. operating temperature B _{Tempmax} [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	6.9	8.4		
Moment of inertia J ₁ [kgcm²]	0.82	0.622	0.479	0.564

Product ID	8GP70-115hh020klmm	8GP70-115hh025klmm	8GP70-115hh035klmm	8GP70-115hh040klmm
Gearbox				
Number of gear stages	2			
Gear ratio i	20	25	35	40
Nominal output torque T_{2N} [Nm]	180	175		180
Max. output torque T_{2max} [Nm]	288	280		288
E-stop torque T_{2stop} [Nm]	650			
Idle torque [Nm] at 20°C and 3000 rpm	0.95	0.9	0.6	0.5
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	4000			
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	4000			
Max. drive speed n_{1max} [rpm]	8500			
Max. backlash J_i [arcmin]	5			
Reduced backlash J_i [arcmin] less than	1			
Torsional rigidity C_{t21} [Nm/arcmin]	28			
Tilting rigidity C_{2K} [Nm/arcmin]	0			
Max. breakdown torque M_{2Kmax} [Nm]	0			
Max. radial force F_{rmax} [N] for 30,000 h	5400			
Max. radial force F_{rmax} [N] for 20,000 h	6000			
Max. axial force F_{amax} [N] for 30,000 h	7000			
Max. axial force F_{amax} [N] for 20,000 h	8000			
Operating noise L_{PA} [dB(A)]	63			
Efficiency at full load η [%]	95			
Min. operating temperature $B_{Tempmin}$ [°C]	-25			
Max. operating temperature $B_{Tempmax}$ [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	8.4			
Moment of inertia J_1 [kgcm ²]	0.442	0.427	0.347	0.309

Product ID	8GP70-115hh050klmm	8GP70-115hh070klmm	8GP70-115hh100klmm
Gearbox			
Number of gear stages	2		
Gear ratio i	50	70	100
Nominal output torque T_{2N} [Nm]	175		140
Max. output torque T_{2max} [Nm]	280		224
E-stop torque T_{2stop} [Nm]	650	340	480
Idle torque [Nm] at 20°C and 3000 rpm	0.45		0.4
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	4000		
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	4000		
Max. drive speed n_{1max} [rpm]	8500		
Max. backlash J_i [arcmin]	5		
Reduced backlash J_i [arcmin] less than	1		
Torsional rigidity C_{t21} [Nm/arcmin]	28		
Tilting rigidity C_{2K} [Nm/arcmin]	0		
Max. breakdown torque M_{2Kmax} [Nm]	0		
Max. radial force F_{rmax} [N] for 30,000 h	5400		
Max. radial force F_{rmax} [N] for 20,000 h	6000		
Max. axial force F_{amax} [N] for 30,000 h	7000		
Max. axial force F_{amax} [N] for 20,000 h	8000		
Operating noise L_{PA} [dB(A)]	63		
Efficiency at full load η [%]	95		
Min. operating temperature $B_{Tempmin}$ [°C]	-25		
Max. operating temperature $B_{Tempmax}$ [°C]	90		
Mounting orientation	Any		
Protection	IP65		
Weight m [kg]	8.4		
Moment of inertia J_1 [kgcm ²]	0.305	0.303	0.302

4 8GP70-142

Product ID	8GP70-142hh003klmm	8GP70-142hh004klmm	8GP70-142hh005klmm	8GP70-142hh007klmm
Gearbox				
Number of gear stages	1			
Gear ratio i	3	4	5	7
Nominal output torque T_{2N} [Nm]	380	470	405	355
Max. output torque T_{2max} [Nm]	608	752	648	568
E-stop torque T_{2stop} [Nm]	1250	1650		1300
Idle torque [Nm] at 20°C and 3000 rpm	9.55	6.5	4.5	2.9
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	1000	1250	1550	2000
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	950	1100	1400	1800
Max. drive speed n_{1max} [rpm]	6500			
Max. backlash J_i [arcmin]	3			
Reduced backlash J_i [arcmin] less than	1			
Torsional rigidity C_{t21} [Nm/arcmin]	50			
Tilting rigidity C_{2K} [Nm/arcmin]	0			
Max. breakdown torque M_{2Kmax} [Nm]	0			
Max. radial force F_{rmax} [N] for 30,000 h	11500			
Max. radial force F_{rmax} [N] for 20,000 h	13000			
Max. axial force F_{amax} [N] for 30,000 h	13500			
Max. axial force F_{amax} [N] for 20,000 h	15000			
Operating noise L_{PA} [dB(A)]	71	66		
Efficiency at full load η [%]	98			
Min. operating temperature $B_{Tempmin}$ [°C]	-25			
Max. operating temperature $B_{Tempmax}$ [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	15.7			
Moment of inertia J_1 [kgcm ²]	13.949	10.006	8.644	7.517

Product ID	8GP70-142hh010klmm	8GP70-142hh012klmm	8GP70-142hh015klmm	8GP70-142hh016klmm
Gearbox				
Number of gear stages	1	2		
Gear ratio i	10	12	15	16
Nominal output torque T _{2N} [Nm]	305	380		450
Max. output torque T _{2max} [Nm]	488	608		720
E-stop torque T _{2stop} [Nm]	600	1250		1650
Idle torque [Nm] at 20°C and 3000 rpm	2.05	3.4	2.3	3.05
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	2500	2400	3000	2600
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	2350	2200	2700	2400
Max. drive speed n _{1max} [rpm]	6500	8500		
Max. backlash J _i [arcmin]	3	5		
Reduced backlash J _i [arcmin] less than	1			
Torsional rigidity C _{t21} [Nm/arcmin]		50		
Tilting rigidity C _{2K} [Nm/arcmin]		0		
Max. breakdown torque M _{2Kmax} [Nm]		0		
Max. radial force F _{rmax} [N] for 30,000 h		11500		
Max. radial force F _{rmax} [N] for 20,000 h		13000		
Max. axial force F _{amax} [N] for 30,000 h		13500		
Max. axial force F _{amax} [N] for 20,000 h		15000		
Operating noise L _{PA} [dB(A)]		66		
Efficiency at full load η [%]	98	95		
Min. operating temperature B _{Tempmin} [°C]		-25		
Max. operating temperature B _{Tempmax} [°C]		90		
Mounting orientation		Any		
Protection		IP65		
Weight m [kg]	15.7	17		
Moment of inertia J _i [kgcm ²]	6.942	2.084	1.541	1.836

Product ID	8GP70-142hh020klmm	8GP70-142hh025klmm	8GP70-142hh035klmm	8GP70-142hh040klmm
Gearbox				
Number of gear stages	2			
Gear ratio i	20	25	35	40
Nominal output torque T _{2N} [Nm]	450	405		470
Max. output torque T _{2max} [Nm]	720	648		752
E-stop torque T _{2stop} [Nm]	1650			
Idle torque [Nm] at 20°C and 3000 rpm	2.05	1.9	1.2	0.85
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	3250	3500		
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	2950	3250	3500	
Max. drive speed n _{1max} [rpm]	8500			
Max. backlash J _i [arcmin]	5			
Reduced backlash J _i [arcmin] less than	1			
Torsional rigidity C _{i21} [Nm/arcmin]	50			
Tilting rigidity C _{2K} [Nm/arcmin]	0			
Max. breakdown torque M _{2Kmax} [Nm]	0			
Max. radial force Fr _{max} [N] for 30,000 h	11500			
Max. radial force Fr _{max} [N] for 20,000 h	13000			
Max. axial force Fa _{max} [N] for 30,000 h	13500			
Max. axial force Fa _{max} [N] for 20,000 h	15000			
Operating noise L _{PA} [dB(A)]	66			
Efficiency at full load η [%]	95			
Min. operating temperature B _{Tempmin} [°C]	-25			
Max. operating temperature B _{Tempmax} [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	17			
Moment of inertia J _i [kgcm²]	1.387	1.321	1.044	0.898

Product ID	8GP70-142hh050klmm	8GP70-142hh070klmm	8GP70-142hh100klmm
Gearbox			
Number of gear stages	2		
Gear ratio i	50	70	100
Nominal output torque T_{2N} [Nm]	405	355	305
Max. output torque T_{2max} [Nm]	648	568	488
E-stop torque T_{2stop} [Nm]	1650	1300	600
Idle torque [Nm] at 20°C and 3000 rpm	0.8	0.75	0.7
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	3500		
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	3500		
Max. drive speed n_{1max} [rpm]	8500		
Max. backlash J_t [arcmin]	5		
Reduced backlash J_t [arcmin] less than	1		
Torsional rigidity C_{t21} [Nm/arcmin]	50		
Tilting rigidity C_{2K} [Nm/arcmin]	0		
Max. breakdown torque M_{2Kmax} [Nm]	0		
Max. radial force F_{rmax} [N] for 30,000 h	11500		
Max. radial force F_{rmax} [N] for 20,000 h	13000		
Max. axial force F_{amax} [N] for 30,000 h	13500		
Max. axial force F_{amax} [N] for 20,000 h	15000		
Operating noise L_{PA} [dB(A)]	66		
Efficiency at full load η [%]	95		
Min. operating temperature $B_{Tempmin}$ [°C]	-25		
Max. operating temperature $B_{Tempmax}$ [°C]	90		
Mounting orientation	Any		
Protection	IP65		
Weight m [kg]	17		
Moment of inertia J_1 [kgcm ²]	0.885	0.888	0.882

5 8GP70-190

Product ID	8GP70-190hh003klmm	8GP70-190hh004klmm	8GP70-190hh005klmm	8GP70-190hh007klmm
Gearbox				
Number of gear stages	1			
Gear ratio i	3	4	5	7
Nominal output torque T _{2N} [Nm]	845	950		900
Max. output torque T _{2max} [Nm]	1352	1520		1440
E-stop torque T _{2stop} [Nm]	2400	3200		
Idle torque [Nm] at 20°C and 3000 rpm	20.3	16	10.6	6.5
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	750	900	1100	1450
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	700	800	950	1300
Max. drive speed n _{1max} [rpm]	6000			
Max. backlash J _t [arcmin]	3			
Reduced backlash J _t [arcmin] less than	1			
Torsional rigidity C _{t21} [Nm/arcmin]	160			
Tilting rigidity C _{2K} [Nm/arcmin]	0			
Max. breakdown torque M _{2Kmax} [Nm]	0			
Max. radial force Fr _{max} [N] for 30,000 h	17500			
Max. radial force Fr _{max} [N] for 20,000 h	20000			
Max. axial force Fa _{max} [N] for 30,000 h	18500			
Max. axial force Fa _{max} [N] for 20,000 h	19000			
Operating noise L _{PA} [dB(A)]	73	68		
Efficiency at full load η [%]	98			
Min. operating temperature B _{Tempmin} [°C]	-25			
Max. operating temperature B _{Tempmax} [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	36			
Moment of inertia J ₁ [kgcm²]	55.597	37.914	31.551	26.275

Product ID	8GP70-190hh010klmm	8GP70-190hh012klmm	8GP70-190hh015klmm	8GP70-190hh016klmm
Gearbox				
Number of gear stages	1	2		
Gear ratio i	10	12	15	16
Nominal output torque T _{2N} [Nm]	750	845		950
Max. output torque T _{2max} [Nm]	1200	1352		1520
E-stop torque T _{2stop} [Nm]	1700	2400		3200
Idle torque [Nm] at 20°C and 3000 rpm	4.3	7.3	5.05	6.85
Max. average drive speed n _{1N50%} [rpm] at 50% T _{2N} and S1	1900	1550	1900	1650
Max. average drive speed n _{1N100%} [rpm] at 100% T _{2N} and S1	1700	1350	1650	1500
Max. drive speed n _{1max} [rpm]	6000	6500		
Max. backlash J _t [arcmin]	3	5		
Reduced backlash J _t [arcmin] less than	1			
Torsional rigidity C _{t21} [Nm/arcmin]	160			
Tilting rigidity C _{2K} [Nm/arcmin]	0			
Max. breakdown torque M _{2Kmax} [Nm]	0			
Max. radial force Fr _{max} [N] for 30,000 h	17500			
Max. radial force Fr _{max} [N] for 20,000 h	20000			
Max. axial force Fa _{max} [N] for 30,000 h	18500			
Max. axial force Fa _{max} [N] for 20,000 h	19000			
Operating noise L _{PA} [dB(A)]	68			
Efficiency at full load η [%]	98	95		
Min. operating temperature B _{Tempmin} [°C]	-25			
Max. operating temperature B _{Tempmax} [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	36	39.7		
Moment of inertia J ₁ [kgcm²]	23.525	11.594	9.668	10.422

Product ID	8GP70-190hh020klmm	8GP70-190hh025klmm	8GP70-190hh035klmm	8GP70-190hh040klmm
Gearbox				
Number of gear stages	2			
Gear ratio i	20	25	35	40
Nominal output torque T_{2N} [Nm]	950			
Max. output torque T_{2max} [Nm]	1520			
E-stop torque T_{2stop} [Nm]	3200			
Idle torque [Nm] at 20°C and 3000 rpm	4.7	4.3	2.75	2.05
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	2050	2200	2800	3000
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	1800	2000	2550	2950
Max. drive speed n_{1max} [rpm]	6500			
Max. backlash J_t [arcmin]	5			
Reduced backlash J_t [arcmin] less than	1			
Torsional rigidity C_{t21} [Nm/arcmin]	160			
Tilting rigidity C_{2K} [Nm/arcmin]	0			
Max. breakdown torque M_{2Kmax} [Nm]	0			
Max. radial force F_{rmax} [N] for 30,000 h	17500			
Max. radial force F_{rmax} [N] for 20,000 h	20000			
Max. axial force F_{amax} [N] for 30,000 h	18500			
Max. axial force F_{amax} [N] for 20,000 h	19000			
Operating noise L_{PA} [dB(A)]	68			
Efficiency at full load η [%]	95			
Min. operating temperature $B_{Tempmin}$ [°C]	-25			
Max. operating temperature $B_{Tempmax}$ [°C]	90			
Mounting orientation	Any			
Protection	IP65			
Weight m [kg]	39.7			
Moment of inertia J_1 [kgcm ²]	8.918	8.663	7.529	7.011

Product ID	8GP70-190hh050klmm	8GP70-190hh070klmm	8GP70-190hh100klmm
Gearbox			
Number of gear stages	2		
Gear ratio i	50	70	100
Nominal output torque T_{2N} [Nm]	950	900	750
Max. output torque T_{2max} [Nm]	1520	1440	1200
E-stop torque T_{2stop} [Nm]	3200		
Idle torque [Nm] at 20°C and 3000 rpm	1.9	1.8	1.75
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	3000		
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	3000		
Max. drive speed n_{1max} [rpm]	6500		
Max. backlash J_t [arcmin]	5		
Reduced backlash J_t [arcmin] less than	1		
Torsional rigidity C_{t21} [Nm/arcmin]	160		
Tilting rigidity C_{2K} [Nm/arcmin]	0		
Max. breakdown torque M_{2Kmax} [Nm]	0		
Max. radial force F_{rmax} [N] for 30,000 h	17500		
Max. radial force F_{rmax} [N] for 20,000 h	20000		
Max. axial force F_{amax} [N] for 30,000 h	18500		
Max. axial force F_{amax} [N] for 20,000 h	19000		
Operating noise L_{PA} [dB(A)]	68		
Efficiency at full load η [%]	95		
Min. operating temperature $B_{Tempmin}$ [°C]	-25		
Max. operating temperature $B_{Tempmax}$ [°C]	90		
Mounting orientation	Any		
Protection	IP65		
Weight m [kg]	39.7		
Moment of inertia J_1 [kgcm ²]	6.948	6.898	