

8GP45-089 standard

Technical data



8GP45-089hh003klmm
 8GP45-089hh004klmm
 8GP45-089hh005klmm
 8GP45-089hh008klmm
 8GP45-089hh010klmm
 8GP45-089hh009klmm
 8GP45-089hh012klmm
 8GP45-089hh015klmm
 8GP45-089hh016klmm
 8GP45-089hh020klmm
 8GP45-089hh025klmm
 8GP45-089hh032klmm
 8GP45-089hh040klmm
 8GP45-089hh064klmm
 8GP45-089hh100klmm

Gearbox

Number of gear stages	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Gear ratio i	3	4	5	8	10	9	12	15	16	20	25	32	40	64	100
Nominal output torque T_{2N} [Nm]	85	115	110	50	38	130	120	110	120	120	110	120	110	50	38
Max. output torque T_{2max} [Nm]	136	184	176	80	61	208	192	176	192	192	176	192	176	80	61
E-stop torque T_{2stop} [Nm]	180	240	220	190	200	260	240	220	240	240	220	240	220	190	200
Idle torque [Nm] at 20°C and 3000 rpm	0.55	0.5	0.4	0.25	0.25	0.3	0.25	0.25	0.3	0.25	0.25	0.2	0.2	0.2	0.15
Max. average drive speed $n_{1N50\%}$ [rpm] at 50% T_{2N} and S1	3400	3450	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max. average drive speed $n_{1N100\%}$ [rpm] at 100% T_{2N} and S1	2400	2350	2800	4000	4000	2950	3650	4000	4000	4000	4000	4000	4000	4000	4000
Max. drive speed n_{1max} [rpm]	7000														
Max. backlash J_1 [arcmin]	7	7	7	7	7	9	9	9	9	9	9	9	9	9	9
Reduced backlash J_1 [arcmin] less than	0														
Torsional rigidity C_{t21} [Nm/arcmin]	6	6	6	6	6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Tilting rigidity C_{2K} [Nm/arcmin]	0														
Max. breakdown torque M_{2Kmax} [Nm]	0														
Max. radial force Fr_{max} [N] for 30,000 h	1700														
Max. radial force Fr_{max} [N] for 20,000 h	2050														
Max. axial force Fa_{max} [N] for 30,000 h	2000														
Max. axial force Fa_{max} [N] for 20,000 h	2500														
Operating noise L_{pA} [dB(A)]	60														
Efficiency at full load η [%]	96	96	96	96	96	94	94	94	94	94	94	94	94	94	94
Min. operating temperature $B_{Tempmin}$ [°C]	-25														
Max. operating temperature $B_{Tempmax}$ [°C]	90														
Mounting orientation	Any														
Protection	IP54														
Weight m [kg]	3.2	3.2	3.2	3.2	3.2	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Moment of inertia J_1 [kgcm ²]	0.77	0.52	0.45	0.39	0.39	0.74	0.72	0.71	0.5	0.44	0.44	0.39	0.39	0.39	0.39

NOTE – Output torque / Max. output torque: This refers to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$, depending on the diameter of the motor shaft. The maximum output torque is only permissible for 30,000 revolutions!

NOTE – E-stop torque: Approved for 1000x

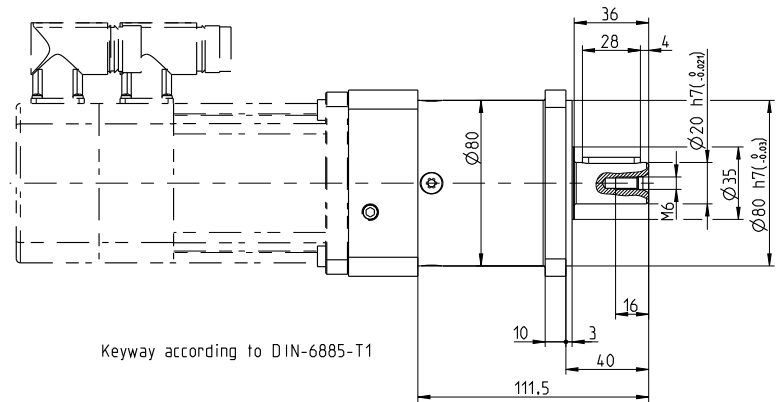
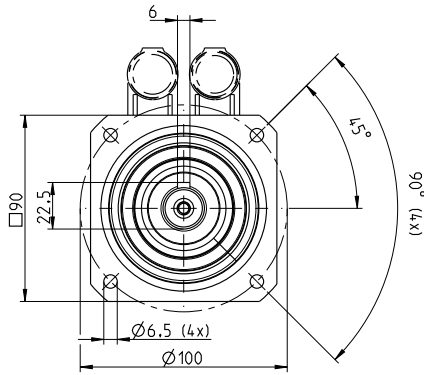
NOTE – Axial / radial force: With reference to the middle of the output shaft; the entries refer to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$

NOTE – Running noise: Noise level at a distance of 1 m; at an output speed of $n_1 = 3000$ rpm without a load; $i = 5$

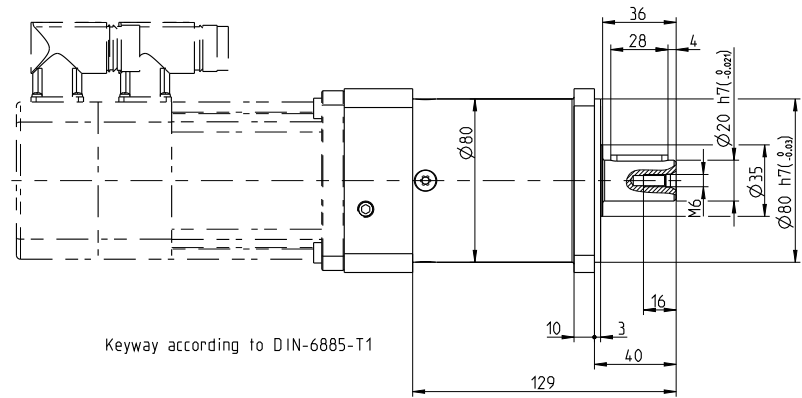
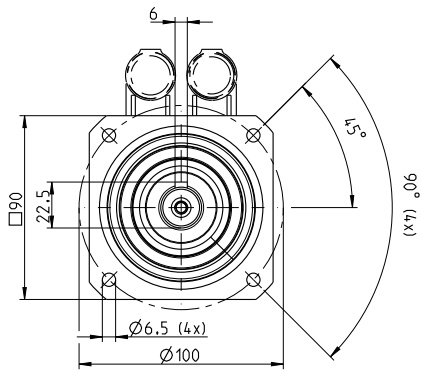
NOTE – Operating temperature: With reference to the middle of the housing surface

NOTE – Weight: Planetary gearbox including universal flange (specific weight upon request)

1-stage gear



2-stage gear



Adapter flange - Overview of dimensions

The flange length L completes the diagram for determining the gearbox length.

	8GP45-089	8LSA3	8LSA/C4	8LVA2	8LVA3	8JSA3	8JSA4	8JSA5	8LSN4	80MPH
Flange length L [mm]		33.5	43.5	33.5	43.5	33.5	43.5	53.5	43.5	35.5
Flange diameter Q [mm]		90	100	80	80	80	90	115	115	90

8GP45-089 standard

Technical data



8GP45-089hh060klmm

8GP45-089hh080klmm

8GP45-089hh120klmm

8GP45-089hh160klmm

8GP45-089hh200klmm

8GP45-089hh256klmm

8GP45-089hh320klmm

8GP45-089hh512klmm

Gearbox

Number of gear stages	3								
Gear ratio i	60	80	120	160	200	256	320	512	
Nominal output torque T_{2N} [Nm]	110	120	110	120	110	120	110	50	
Max. output torque T_{2max} [Nm]	176	192	176	192	176	192	176	80	
E-stop torque T_{2stop} [Nm]	220	240	220	240	220	240	220	190	
Idle torque [Nm] at 20°C and 3000 rpm	0.2	0.2	0.2	0.15	0.15	0.15	0.15	0.15	
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]	7000								
Max. backlash J_i [arcmin]	11								
Reduced backlash J_i [arcmin] less than	0								
Torsional rigidity C_{t21} [Nm/arcmin]	6.3								
Tilting rigidity C_{2K} [Nm/arcmin]	0								
Max. breakdown torque M_{2Kmax} [Nm]	0								
Max. radial force F_{rmax} [N] for 30,000 h	1700								
Max. radial force F_{rmax} [N] for 20,000 h	2050								
Max. axial force F_{amax} [N] for 30,000 h	2000								
Max. axial force F_{amax} [N] for 20,000 h	2500								
Operating noise L_{pA} [dB(A)]	60								
Efficiency at full load η [%]	90								
Min. operating temperature $B_{Tempmin}$ [°C]	-25								
Max. operating temperature $B_{Tempmax}$ [°C]	90								
Mounting orientation	Any								
Protection	IP54								
Weight m [kg]	4.2								
Moment of inertia J_1 [kgcm ²]	0.51	0.5	0.7	0.39	0.39	0.39	0.39	0.39	

NOTE – Output torque / Max. output torque: This refers to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$, depending on the diameter of the motor shaft. The maximum output torque is only permissible for 30,000 revolutions!

NOTE – E-stop torque: Approved for 1000x

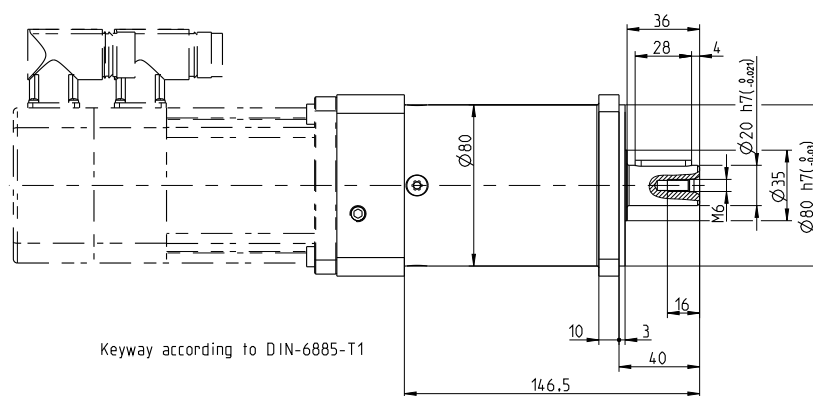
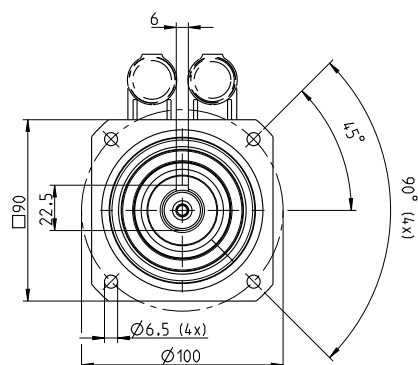
NOTE – Axial / radial force: With reference to the middle of the output shaft; the entries refer to an output shaft speed of $n_2 = 100$ rpm and application factor $K_A = 1$ as well as S1 operating mode for electrical machines and $T = 30^\circ\text{C}$

NOTE – Running noise: Noise level at a distance of 1 m; at an output speed of $n_1 = 3000$ rpm without a load; $i = 5$

NOTE – Operating temperature: With reference to the middle of the housing surface

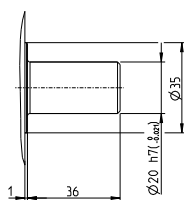
NOTE – Weight: Planetary gearbox including universal flange (specific weight upon request)

3-stage gear



Alternative drive shaft options

Smooth shaft



Adapter flange - Overview of dimensions

The flange length L completes the diagram for determining the gearbox length.

8GP45-089	8LSA3	8LSA/C4	8LVA2	8LVA3	8JSA3	8JSA4	8JSA5	8LSN4	80MPH
Flange length L [mm]	33.5	43.5	33.5	43.5	33.5	43.5	53.5	43.5	35.5
Flange diameter Q [mm]	90	100	80	80	80	90	115	115	90