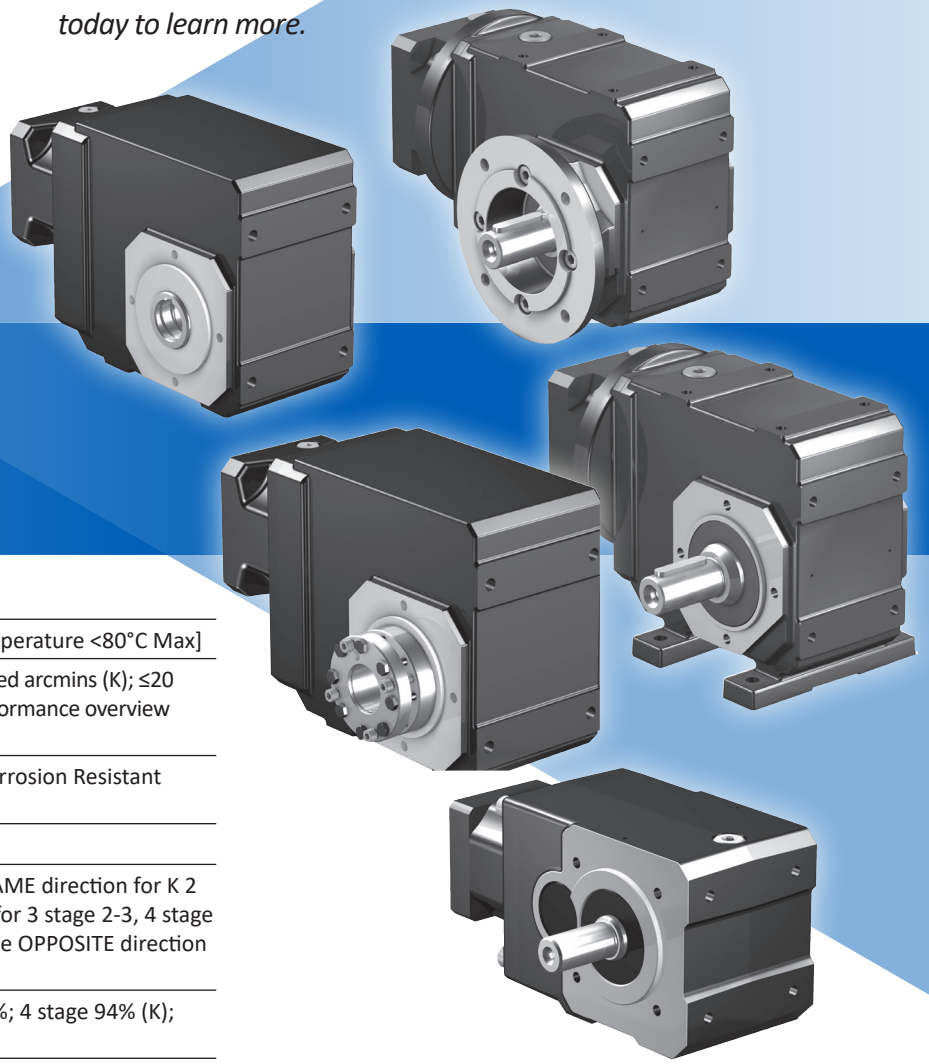
K/KL Series: RIGHT ANGLE — Versatile Outputs

K Features

- 4:1 to 381:1 ratios (K) or 4:1 to 32:1 ratios (KL) (higher ratios available. Contact STOBER.)
- Quiet running (<51dB(A))
- Reduced backlash option for increased precision (K)
- Symmetrical design for universal mounting (KL)
- Mounting flexibility to fit the application
- Adaptability: shafts available in metric or imperial, carbon or stainless steel to meet your requirements
- Optional food and corrosion resistant package
- Dual seals for extreme duty applications
- Error free motor mounting and quick changeover with toleranced pilot on motor plate
- Magnetic oil filtration to remove contaminants to prevent breakdowns
- Build and ship in one day
- Assembled in the USA

*STOBER K Series helical/bevel gear drives are the most versatile Servo right angle gearheads. With mounting flexibility and a variety of output options, they are **the** optimal drive when you need configuration choices. The K hollow bore can easily replace a belt and pulley, eliminating additional components and accessories. Every gearbox is made to order. STOBER will custom whatever you need to fit your application. Contact us today to learn more.*



SHIPS in 1 DAY!
NO EXPEDITE FEE FOR 24 HOUR SERVICE

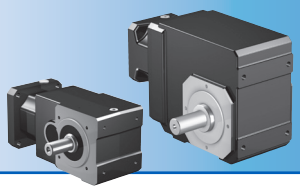
General Specifications

Ambient Temperature	0°C to +40°C (104°F) [Unit temperature <80°C Max]
Backlash	≤10 standard arcmins, ≤4 reduced arcmins (K); ≤20 standard arcmins (KL); (see performance overview chart, (see page 123)
Coating	Standard Black (RAL-9005), Corrosion Resistant option, Food option
Degree of Protection	IP65
Direction of Rotation	Input and output rotate the SAME direction for K 2 stage, 3 stage, 5-10, opposite for 3 stage 2-3, 4 stage (K); Input and output rotate the OPPOSITE direction (KL); (see page 122)
Efficiency	1 and 2 stage 97%; 3 stage 96%; 4 stage 94% (K); 97% (KL)
Input RPM	Up to 6,000 RPM
Installation	Requires 10.9 fasteners for tapped holes housing. See page 288 for more information
Lubrication	Lubricated for life* - standard Mobil 600XP200, option food grade Mobil SHC CIBUS 220
Mounting Position	Must be specified, (see page 123) (K); unrestricted (KL)
Warranty	5 Year Limited (2 Years on normal wear items: bearings, seals, etc.)

** Scheduled lubrication is required for some larger frame K Series units (excluding F Food Duty and B Corrosion Resistant option). See page 124 for lubrication details.*

Benefits of NEW ME Motor Adapters

- Higher torques
- Higher input speeds
- More compact with square coupling housing
- More clamp ring options, so less need for adapter bushings
- Clamp ring with roll pin



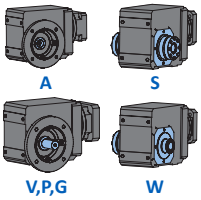
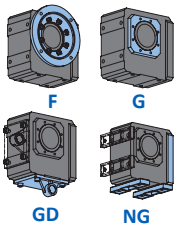
Overview

Selection Options *At-a-Glance*

Using the **Selection Data** table later in this section, select the K/KL Series Gearhead with the appropriate performance and design options tailored to your motor choice and exact application requirements. Use the part number guide below as a reference to build a part number for the complete gearhead assembly.

Part Number Examples:

1	2	3	4	5	6	7	8	9	
K	1	0	2	V	NG	0040	ME10	B	EL1 *
KL	1	0	2	P	N	0040	MQ	F	

	Design Option		Part Number Code	Description
1	**Series**		K	Right angle helical/bevel
			KL	Compact right angle helical/bevel (size 1 and 2 only)
2	**Size**		1 2 3 4 5 6 7 8 9 10	10 sizes of gearhead (KL sizes 1 and 2 only)
3	**Generation**		0 1	Version of gearhead
4	**# of Stages**		2	Two stage (determined by ratio)
			3	Three stage (determined by ratio)
			4	Four stage (determined by ratio
5	**Output**	 A S V,P,G W	A	Hollow bore*
			S	Shrink ring* — (specify side 3 or 4)
			V	Shaft output* — K Series only (specify side 3 and/or 4)
			P	Shaft with key* — KL Series only (specify side 3 or 4)
			G	Shaft without key* — KL Series only (specify side 3 or 4) — metric only
			W	Single or double wobble-free bushing* — KL2 & K1-8 only (If single bushing, specify side 3 or 4)
6	**Housing**	 F G GD NG	F	Output Flange (Round for K series, Square for KL) (side 3 or 4 only, please specify)
			G	Pitch Circle Diameter (PCD) tapped holes
			GD	Torque arm bracket mounting — KL2 or K Series (side 1 [shown] or 5 only, also side 2 on size K1 only, please specify)
			NG	Foot mounting — (side 1 or 5 only; or side 2 on size K1, please specify)
7	**Ratio**		0040	Ratios range from 4:1 to 32:1 for KL Series and 4:1 to 381:1 for K Series (0040=4:1; 0063=6.3:1; 2700=270:1)
8	**Motor Adapter**		MQ	MQ input for KL Series
			ME10 – ME50	ME 5 input sizes for K Series (see also motor mounting plate option, page 168)
9	**Special Options**		B	Add when ordering Corrosion Resistant Duty
			F	Add when ordering Food Duty (size KL1 and 2; K1 thru K9 only)
*	**Mounting Position**		EL1 EL2 EL3 EL4 EL5 EL6	Required special instruction for all K Series units only, see page 123

Options

ME Adapter Option — K Series only

- MSS1 Seal – special input seal for longer life. Contact factory for this option.
- Peak Torque Booster – pinion securing element for shock loads, increasing peak torque up to 80%.

Lubrication Options

- Food grade or synthetic optionally available. Contact factory for this option.

Integrated Safety Brake

- ServoStop – provides dynamic braking during power failures or emergency stops in hazardous situations. Contact factory for this option.

Coating Option

- Corrosion Resistant Duty (**B** special option)
- Food Duty (**F** special option)

Food and Corrosion Resistant units are lubricated for life with double output seals (where possible), stainless output shaft, bore, or bushing, and heat cured paint.

ATEX — K Series only

- ATmosphere EXplosible – rated for explosive environments. Contact factory for this option and allow additional time for delivery.

K/KL Series Performance Overview

K/KL Series performance is dependent on several factors including duty cycle, bearing design, gearhead size and stage configuration, among others. Use the chart below for preliminary evaluation, then use the following performance chart and selection information on the following pages for specific performance sizing and selection.

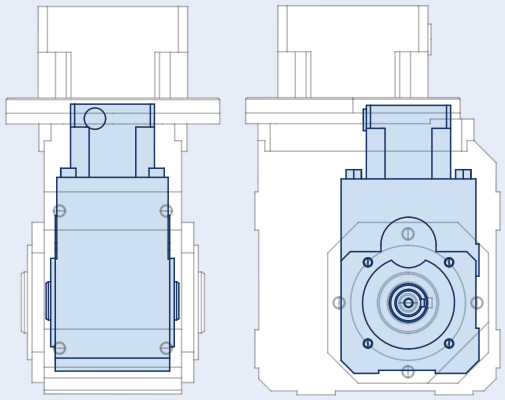
			Size/Generation	KL10	KL20	K10	K20		K30		K40	
			# of Stages	2	2	2	2	3	2	3	2	3
Permissible Acceleration Torque M_{2BMAX}			Nm	32	65	135	220		385		600	
Output Torque Nom. M_{2N}			Nm	25	50	120	200		350		550	
Torsional Stiffness C_2			Nm/arcmin	≤1.8	≤3.9	≤6.8	≤11.0		≤16.0		≤31.0	
Torsional Backlash [1] $\Delta\phi$	arcmin	Standard		≤25	≤20	≤10	≤10	≤10	≤10	≤10	≤10	≤10
		Reduced		—	—	≤5	≤5	≤6	≤4	≤5	≤4	≤5
Input Speed Max. n_{1MAX}	Continuous	EL3, 4, 5, 6		4000	4000	4000	4000		3800		3600	
		EL1,2		4000	4000	4000	3900		3500		3300	
	Cyclic			6000	6000	7000	6500		6000		5500	
Efficiency (@nom torque)			%	97	97	97	97	96	97	96	97	96
Weight			kg	6.3	9.5	14.0	18.1	24.0	30.4	33.1	42.1	45.3
			lbs	14	21	31	40	53	67	73	93	100
Noise [2]			dB(A)	≤59	≤65	≤65	≤53		≤53		≤51	
Axial Load Max. F_{2AMAX}	Solid Shaft		N	280	560	1900	2100		2400		3500	
	Hollow Bore		N	250	560	1900	2100		2400		3500	
Radial Load Max. [3] F_{2RMAX}			N	1900	2800	5000	6000		7000		11,200	
Tilting Moment Max. [3] M_{2KMAX}	Solid Shaft		Nm	43	118	360	430		525		1050	
	Hollow Bore		Nm	43	118	240	310		380		740	

[1] *Tested at 1.5% of nominal torque and recorded on the output side of the gearhead. For lower backlash, contact STOBER technical support.*

[2] *Measurement at one (1) meter distance with input speed (n_1) of 1500 RPM. To calculate torque at higher input speeds, contact the factory.*

[3] *Rating based on output speed (n_2) of 20 RPM for K Series, 100 RPM for KL Series. For values at other speeds see page 126.*

KL Series for a Compact Fit



Size comparison of KL102 with K102

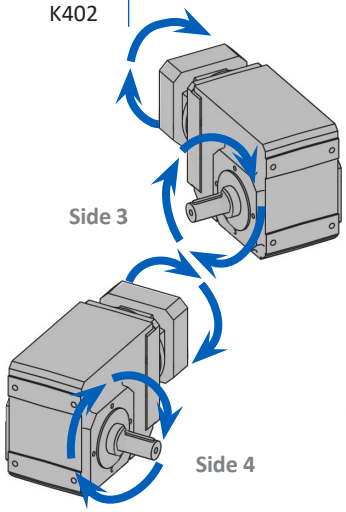
The STOBER KL Series is a much more compact version of the K Series. Available in 4:1 to 32:1 ratios with backlash of <16 arcmins, the KL Series offers an alternative right angle helical/bevel gearhead for smaller gearhead size applications. Like the K Series, the KL is available in hollow, solid shaft, and wobble free bushing output options.

All units are lubricated for life with synthetic oil. Food grade oil available.

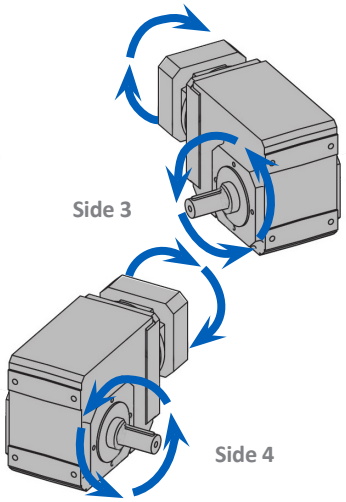
K/KL Series Direction of Rotation

Output available on side 3, 4 or both. Note: With a double output, the shaft rotation of Side 3 will be the OPPOSITE direction of Side 4 when viewed from Side 5.

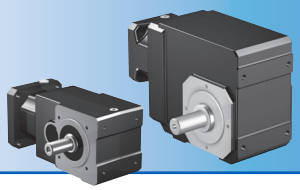
2 Stage	3 Stage	
K102	K513	K813
K202	K613	K913
K302	K713	K1013
K402		



2 Stage	3 Stage	4 Stage	
KL102	K203	K514	K814
KL202	K303	K614	K914
	K403	K714	K1014

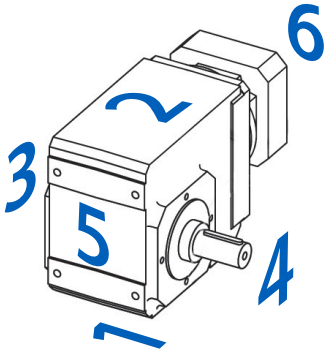


Overview



	K51		K61		K71		K81		K91		K101	
	3	4	3	4	3	4	3	4	3	4	3	4
	1000		1600		2600		4650		7700		13,200	
	900		1450		2400		4200		7000		11,893	12,000
	≤50.0		≤82.0		≤126.0		≤196.0		≤379.0		≤724.0	≤725.0
	≤10 ≤5	≤10 ≤6	≤10 ≤5	≤10 ≤6	≤10 ≤5	≤10 ≤6	≤10 ≤5	≤10 ≤6	≤10 ≤5		≤10 ≤5	
	3400		3100		2900		2800		2600		2500	
	3000		2800		2600		2500		2500		2300	
	5000		4500		4200		4000		3800		3500	
	96	94	96	94	96	94	96	94	96	94	96	94
	48.0 106	49.4 109	77.0 170	80.2 177	100.1 221	106.0 234	140.0 309	149.9 331	230.1 508	240.1 530	477.9 1055	488.8 1079
	≤61		≤61		≤59		≤65		≤65		≤65	
	3500		4000		5500		7250		16,500		25,000	
	2500		3000		4100		5300		7000		9000	
	13,450		16,000		22,000		29,000		65,000		80,000	
	1580		1960		3200		3800		11,200		15,200	
	1000		1300		2100		2600		3600		5000	

K units have the shaft on Side 3 and/or Side 4 (shown). IMPORTANT: Shaft side must be specified when ordering.

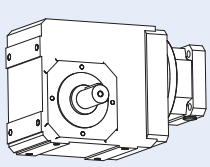


K Series Mounting Position Options

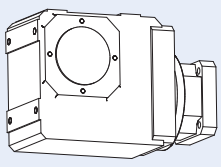
(KL units have unrestricted positioning)

When ordering, the Mounting Position MUST BE SPECIFIED using one of the Mounting Position order codes below.

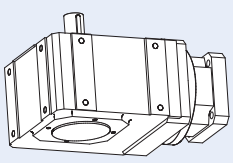
Note: the code relates to the orientation side that faces down. For example, EL1 has side 1 facing down, EL2 has side 2 facing down, etc.



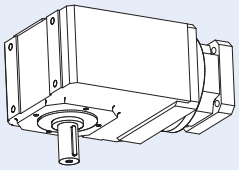
EL1



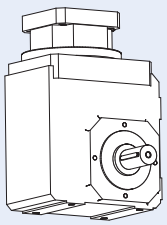
EL2



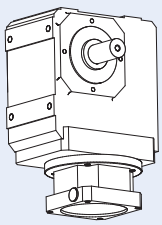
EL3



EL4



EL5



EL6

K/KL Series Motor Mounting Plate Option (Motor information required with Motor Adapter option)

STOBER Servo Gearheads fit the motor of your choice with the appropriate motor mounting plate assembled between the motor and the gearhead.

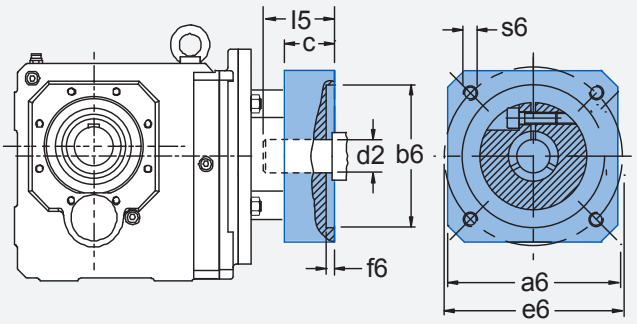
NOTE: When ordering a gearhead:

- Specify the motor manufacturer and part number
- Provide the motor drawing with dimensions, or specify the motor mounting dimensions (per the list shown at right)

For a precise dimension on a specific motor, or for general assistance, we recommend you contact STOBER Technical Support.

Customer Required Dimensions for Properly Sized Motor Mounting Plate

d2	Motor Shaft Diameter (If an adapter bushing is required it will be supplied with the motor plate.)
b6	Pilot Diameter
e6	Bolt Circle Diameter
s6	Bolt Diameter
l5	Motor Shaft Length
f6	Pilot Length
a6	Square Flange (Optional – motor plate will typically be made to match this dimension.)

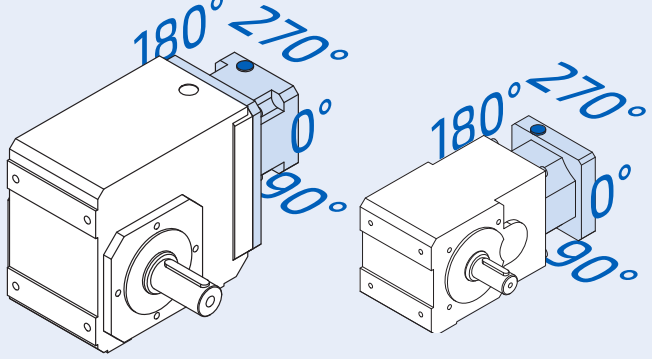


Motor Mounting Plate Dimensions — mm(Gearhead Part Number Specific)	KL1_MQ	KL2_MQ ME10	ME20	ME30	ME40	ME50
Maximum Allowed Motor Shaft Dia. d2	16	19	32	38	48	60
Minimum Allowed Motor Plate Thickness c*	15	21	24	25	33	43

** Note that the c motor plate thickness is determined by the motor shaft length. The minimum motor plate thickness is the value listed.*

K/KL Series Motor Mounting Plate Access Hole

Access to the clamping screw for the motor coupling is located on the 270° side of the motor mounting plate at the location shown. If necessary, the motor mounting plate can be rotated in the field, if a 0°, 90° or 180° orientation for the access hole is desirable.

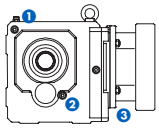


K Series KL Series

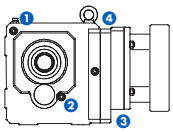
K Series Lubrication Maintenance

With STOBER reducers very little maintenance is required under normal operating conditions. Units K102 thru K403 are supplied without breathers and are lubricated for life and maintenance free. Breathers are provided on standard units K513 thru K1014, located as shown to the right*. STOBER recommends changing the lubrication in breather supplied units after 10,000 hours for normal operating conditions or every 5000 hours for wet operating conditions.

**K513/K514 and larger units with the Food & Corrosion Resistant option exclude a breather. Contact STOBER for details.*



3 Stage Units
(K513 thru K1013)

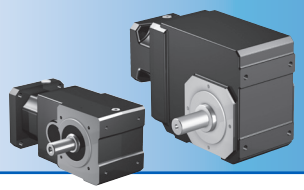


4 Stage Units
(K514 thru K1014)

Drain Plug and Vent Location

Mounting Position		1	2 *	2a *	3	4
EL1		Vent			Drain	
EL2		Drain			Vent	
EL3			Vent	Drain		
EL4			Drain	Vent		
EL5	K513-K1013	Drain			Vent	
	K514-K1014	Drain				Vent
EL6	K513-K1013	Vent			Drain	
	K514-K1014	Vent				Drain

** Position 2a is on the opposite side of 2.*



Overview

K/KL Series Output Options

Diameters in **BOLD BLUE** are configurations readily available from inventory. Contact STOBER for delivery on other output sizes.

			KL1	KL2	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10
Solid Shaft	Carbon Steel	Inches	**5/8**	**3/4***	**1**	**1-1/4**	**1-1/4**	**1-3/8**	**1-3/4**	**1-3/4**	**2-3/8**	**2-7/8**	**3-5/8**	**4-3/8**
		Metric	16	20	25	30	30	40	45	50	60	70	90	—
	Stainless Steel	Inches	**5/8**	**3/4**	**1**	**1-1/4**	**1-1/4**	**1-3/8**	**1-3/4**	**1-3/4**	**2-3/8**	**2-7/8**	**3-5/8**	—
		Metric	16	20	25	—	—	—	45	—	—	—	—	—
Hollow Bore	Carbon Steel	Inches	5/8	**3/4**	**1**	**1-3/16**	**1-3/8**	**1-1/2**	**2**	**2**	**2-3/8**	**2-3/4**	**3-1/4**	**4**
		Metric	**16**	20	25	30	35	40	50	50	60	70	90	—
	Stainless Steel	Inches	5/8	**3/4**	**1**	**1-1/4**	**1-3/8**	**1-1/2**	**2**	**2**	**2-3/8**	—	2-15/16 3 3-7/16	—
		Metric	**16**	20	25	30	35	40	50	—	60	—	—	—
Wobble Free Bushing (Single and Double Bushings**)	Stainless Steel*	Inches	—	**3/4**	**1**	1 **1-3/16** **1-1/4**	1 1-3/16 **1-1/4** 1-3/8 **1-7/16** **1-1/2**	1-1/4 **1-7/16** **1-1/2**	**1-7/16** **1-1/2** **1-15/16** **2**	1-7/16 1-1/2 1-15/16 **2** 2-3/16	1-15/16 **2** **2-3/8**	2-3/16 2-3/8 **2-7/16** **2-3/4**	—	—
		Metric	—	—	—	—	—	40	40	—	—	—	—	—
Shrink Ring	Carbon Steel	Metric	**16**	**20**	**25**	**30**	**35**	**40**	**50**	**50**	**60**	**70**	**90**	**100**

** Shaft with key only (part number code P)*
***Also available in carbon steel*

K Series Standard & Optional Output Flange Sizes

Base Module	Flange Size
K1	140, 160*
K2	160, 200*
K3	160, 200*, 250
K4	250*
K5	250*
K6	300*
K7	300, 350*
K8	350 400* 450
K9	450*
K10	550*

** This is the standard flange size shipped with the unit unless otherwise specified. Optional flanges are not available for all sizes.*

Overhung Load Calculations

Pulling forces or overhung load of pulleys, sheaves, sprockets, etc. on the reducer output shaft must not exceed the allowable limits shown in the load/life/speed calculations below.

Note: Overhung load is measured at the center of the shaft extension. No overhung load is encountered when a reducer is flange mounted and/or coupling connected to another unit. However, the shafts of all components must be accurately aligned and secured to prevent pre-loading of the bearings and premature bearing failure.

Use the following formula to determine actual overhung load for a given drive:

Imperial OHL (lbs) = $\frac{126{,}000 \times HP \times K}{D \times n}$

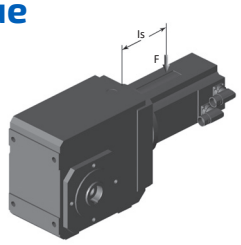
Metric OHL (N) = $\frac{19{,}100 \times kW \times K}{D \times n}$

Where:

OHL	Overhung load (N or lbs)
HP	Horsepower
kW	Transmitted Kilowatt
D	Pitch Diameter (inches or meters) of Sprocket, Gear, Sheave, Pulley, etc.
n	Maximum Shaft RPM
K	1.00 Single Chain Drive; 1.25 Timing Belt Drive; 1.25 Spur or Helical Gear Drive; 1.50 V-Belt Drive; 2.50 Flat Belt Drive

Permissible Motor Tilting Torque

The permissible tilting torque of the motor attached to the gear unit is a result of the static and dynamic load "F" from the motor weight, mass acceleration, and vibration multiplied by the distance from the center of gravity "l_S" of the motor.



$$M_{1k} = F \times l_S \leq M_{1K}$$

M_{1K}	ME10	ME20	ME30	ME40	ME50
Nm	25	60	125	250	600

Permissible Output Shaft Load and Tilting Moments*

	P, G, V Solid Shaft Output [1]				A, S, W Hollow Output [2]		
	Z_2	F_{2A}	F_{2R}	M_{2K}	Z_2	F_{2A}	M_{2K}
Unit	mm	N	N	Nm	mm	N	Nm
KL1	20	380	1900	68	18.5	250	43
KL2	22	560	2800	118	22	560	118
K1	40	1900	5000	360	40	1900	240
K2	42	2100	6000	430	42	2100	310
K3	45	2400	7000	525	45	2400	380
K4	52	3500	11,200	1050	52	3500	740
K5	72	3500	13,450	1580	39	2500	1000
K6	72	4000	16,000	1960	42	3000	1300
K7	85	5500	22,000	3200	45	4100	2100
K8	60	7250	29,000	3800	50	5300	2600
K9	87	16,500	65,000	11,200	56	7000	3600
K10	84[3]	25,000	80,000[3]	15,200	56	9000	5000

** Refer to illustration and definitions below.*

[1] For DOUBLE output shaft: F_{2R} x 0.7

[2] Values shown for "W" Style are for double bushings. For single bushings use value M_{2K} x 0.5 and F_{2A} x 0.5

[3] Solid Shaft unit with a Flange – Z_2 value is 132mm/5.20"; F_{2R} value is 64,000N/14,400 lbs.

K/KL Series Load/Life/Speed Calculations

The permissible load and tilting moment values are based on an output speed of 20 RPM (K Series) or 100 RPM (KL Series). For higher speeds the following applies, where n_2 is the desired speed:

All formulas shown are based on METRIC values

Upper case letters are permissible values. Lower case letters are for existing values.

K Series

$$F_{2axN} = \frac{F_{2ax20}}{\sqrt[3]{\frac{n_{2m*}}{20\ rpm}}} \qquad F_{2radN} = \frac{F_{2rad20}}{\sqrt[3]{\frac{n_{2m*}}{20\ rpm}}} \qquad M_{2kN} = \frac{M_{2k20}}{\sqrt[3]{\frac{n_{2m*}}{20\ rpm}}}$$

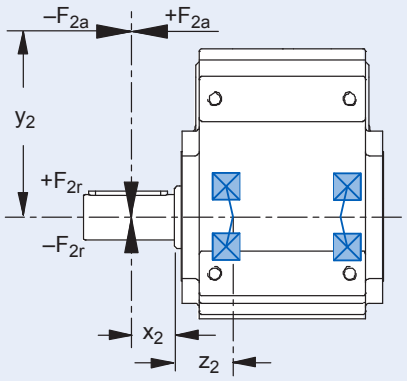
KL Series

$$F_{2axN} = \frac{F_{2ax20}}{\sqrt[3]{\frac{n_{2m*}}{100\ rpm}}} \qquad F_{2radN} = \frac{F_{2rad20}}{\sqrt[3]{\frac{n_{2m*}}{100\ rpm}}} \qquad M_{2kN} = \frac{M_{2k20}}{\sqrt[3]{\frac{n_{2m*}}{100\ rpm}}}$$

The application output tilting moment should be determined by the following formula:

$$M_{2k*} = \frac{2 \bullet F_{2ax*} \bullet Y_2 + F_{2rad*} \bullet (x_2 + z_2)}{1000} \leq M_{2kN}$$

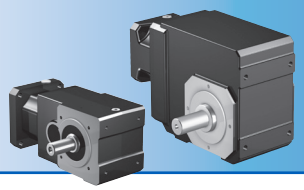
$$F_{2rad*} \leq F_{2radN} \qquad F_{2ax*} \leq F_{2axN}$$



Where:

Z_2	Distance of Shaft Shoulder to Center of Output Bearing
n_2	Actual Average Output Speed
X_2	Distance of the Shaft Shoulder to the Force Application Point
Y_2	Distance of the Shaft Axis to the Axial Force Application Point
F_{2ax*}	Actual Axial Force at Gear Unit Output
F_{2ax100}	Permitted Axial Force
$F_{2rad100}$	Permitted Radial Force ≤100RPM
$F_{2rad,acc}$	Radial Acceleration Force
$F_{2rad,acc*}$	Radial Acceleration Force at Gear Unit Output
M_{2K100}	Permitted Tilting Torque ≤100RPM
$M_{2K,acc}$	Permitted Acceleration Tilting Torque
$M_{2k,acc*}$	Permitted Acceleration Tilting Torque at Gear Unit Output
C_{2K}	Tilting Stiffness

Selection Data



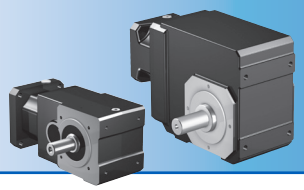
Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Maximum Input Speed RPM			Input Inertia J_1	Torsional Stiffness C2 (per arcmin)
		Nominal [1] M_{2N} ≤ 2000 RPM	Acceleration M_{2B}	Peak [2] M_{2PEAK}			Continuous		Cyclic		
Nom.	Exact	Nm	Nm	Nm	arcmin		EL 1,2,3,4	EL 5,6	All	kgcm²	Nm
KL1											
4.000	4/1	15	22	30	25	KL102_0040 MQ	3500	3500	6000	0.40	1.0
8.000	8/1	23	30	59	20	KL102_0080 MQ	3500	3500	6000	0.37	1.6
16.00	16/1	25	30	60	20	KL102_0160 MQ	4000	4000	6000	0.31	1.8
32.00	32/1	25	32	64	20	KL102_0320 MQ	4000	4000	6000	0.30	1.7
KL2											
4.000	4/1	35	50	83	20	KL202_0040 MQ	3500	3500	6000	1.00	1.8
8.000	8/1	50	60	120	16	KL202_0080 MQ	3500	3500	6000	0.89	3.5
16.00	16/1	50	60	120	16	KL202_0160 MQ	4000	4000	6000	0.66	3.9
32.00	32/1	50	65	130	16	KL202_0320 MQ	4000	4000	6000	0.64	3.2

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *Square motor adapter code (shaft diameter max - mm): For KL102 MQ (16), For KL202 MQ (19)*

Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
		M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
Nom.	Exact	Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K1												
4.000	4/1	65	93	116	12/6	K102_0040 ME10	3300	2800	5000	≤19	1.5	6.3
						K102_0040 ME20				≤24	3.4	6.6
5.568	1520/273	73	109	162	12/6	K102_0056 ME10	3300	2800	5000	≤19	1.3	6.6
						K102_0056 ME20				≤24	3.2	6.7
6.644	299/45	77	116	193	12/6	K102_0066 ME10	3600	3300	5500	≤19	1.0	6.6
						K102_0066 ME20				≤24	2.9	6.7
9.249	1748/189	86	129	240	12/6	K102_0092 ME10	3600	3300	5500	≤19	1.0	6.7
						K102_0092 ME20				≤24	2.9	
10.14	507/50	89	125	220	12/6	K102_0100 ME10	4000	3800	6000	≤19	0.8	6.7
						K102_0100 ME20	3700	3700		≤24	2.7	6.8
14.11	494/35	99	135	240	12/6	K102_0140 ME10	4000	3800	6000	≤19	0.8	6.8
						K102_0140 ME20	3700	3700		≤24	2.7	
16.71	117/7	105	125	220	12/6	K102_0165 ME10	4000	4000	7000	≤19	0.7	6.8
						K102_0165 ME20	3700	3700	6000	≤24	2.6	
20.15	403/20	110	125	220	12/6	K102_0200 ME10	4000	4000	7000	≤19	0.7	6.8
						K102_0200 ME20	3700	3700	6000	≤24	2.6	
23.27	1140/49	117	135	240	12/6	K102_0230 ME10	4000	4000	7000	≤19	0.7	6.8
						K102_0230 ME20	3700	3700	6000	≤24	2.6	
25.22	1261/50	96	115	192	12/6	K102_0250 ME10	4000	4000	7000	≤19	0.7	6.8
						K102_0250 ME20	3700	3700	6000	≤24	2.6	
28.05	589/21	120	135	240	12/6	K102_0280 ME10	4000	4000	7000	≤19	0.7	6.8
						K102_0280 ME20	3700	3700	6000	≤24	2.6	
33.71	4719/140	73	88	146	12/6	K102_0340 ME10	4000	4000	7000	≤19	0.6	6.8
35.11	3686/105	120	135	240	12/6	K102_0350 ME10	4000	4000	7000	≤19	0.7	6.8
						K102_0350 ME20	3700	3700	6000	≤24	2.6	
40.30	403/10	61	74	123	12/6	K102_0400 ME10	4000	4000	7000	≤19	0.6	6.8
46.92	2299/49	102	122	203	12/6	K102_0470 ME10	4000	4000	7000	≤19	0.6	6.8
56.10	1178/21	86	103	171	12/6	K102_0560 ME10	4000	4000	7000	≤19	0.6	6.8

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Selection Data



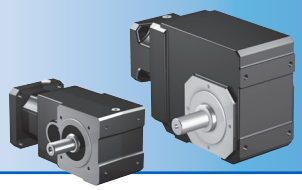
Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
Nom.	Exact	M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
		Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K2	**(continued next page)**											
4.000	4/1	116	174	291	10/5	K202_0040 ME20	3000	2600	4500	≤32	6.4	10.0
						K202_0040 ME30				≤38	12.0	
5.177	2107/407	127	190	377	10/5	K202_0052 ME20	3000	2600	4500	≤32	5.7	10.0
						K202_0052 ME30				≤38	11.0	11.0
7.118	2107/296	141	211	400	10/5	K202_0071 ME20	3000	2600	4500	≤32	5.4	11.0
						K202_0071 ME30				≤38	11.0	
8.397	2494/297	149	196	244	10/5	K202_0084 ME10	3500	3100	5000	≤19	1.4	10.0
			220	400		K202_0084 ME20				≤32	4.8	11.0
						K202_0084 ME30				≤38	10.0	
10.07	2881/286	155	220	293	10/5	K202_0100 ME10	3900	3500	5500	≤19	1.2	10.0
		158		400		K202_0100 ME20	3700			≤32	4.6	11.0
						K202_0100 ME30	3500		5000	≤38	9.9	
11.55	1247/108	166	220	336	10/5	K202_0115 ME10	3500	3100	5000	≤19	1.3	11.0
				400		K202_0115 ME20				≤32	4.7	
						K202_0115 ME30				≤38	10.0	
12.71	559/44	168	220	370	10/5	K202_0125 ME10	3900	3500	5500	≤19	1.0	11.0
		171		400		K202_0125 ME20	3700			≤32	4.4	
						K202_0125 ME30	3500		5000	≤38	9.8	
13.85	2881/208	176	220	400	10/5	K202_0140 ME10	3900	3500	5500	≤19	1.1	11.0
						K202_0140 ME20	3700			≤32	4.5	
						K202_0140 ME30	3500		5000	≤38	9.9	
17.47	559/32	190	220	400	10/5	K202_0175 ME10	3900	3500	5500	≤19	1.0	11.0
						K202_0175 ME20	3700			≤32	4.4	
						K202_0175 ME30	3500		5000	≤38	9.7	
20.33	1118/55	182	220	400	10/5	K202_0200 ME10	4000	3900	6500	≤19	0.8	11.0
		200				K202_0200 ME20	3700	3700	6000	≤24	2.7	
						K202_0200 ME30	3500	3500	5000	≤32	7.8	
25.13	1935/77	187	220	400	10/5	K202_0250 ME10	4000	3900	6500	≤19	0.8	11.0
		200				K202_0250 ME20	3700	3700	6000	≤24	2.7	
27.95	559/20	200	220	400	10/5	K202_0280 ME10	4000	3900	6500	≤19	0.8	11.0
						K202_0280 ME20	3700	3700	6000	≤24	2.7	
33.62	1849/55	154	185	308	10/5	K202_0340 ME10	4000	3900	6500	≤19	0.7	11.0
						K202_0340 ME20	3700	3700	6000	≤24	2.6	
34.55	1935/56	200	220	400	10/5	K202_0350 ME10	4000	3900	6500	≤19	0.8	11.0
						K202_0350 ME20	3700	3700	6000	≤24	2.7	
39.45	135,407/3432	200	202	253	10/6	K203_0390 ME10	4000	3900	6500	≤19	0.7	11.0

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
		M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL	EL		d_{MW}	J_1	C_2
Nom.	Exact	Nm	Nm	Nm	arcmin		1,2	3,4,5,6	All	mm	kgcm²	Nm/ arcmin
K2	**(continued from previous page)**											
46.23	1849/40	200	220	400	10/5	K202_0460 ME10	4000	3900	6500	≤19	0.7	11.0
						K202_0460 ME20	3700	3700	6000	≤24	2.6	
49.76	26,273/528	200	220	319	10/6	K203_0500 ME10	4000	3900	6500	≤19	0.7	11.0
50.49	6665/132	96	116	184	10/5	K202_0500 ME10	4000	3900	6500	≤19	0.6	11.0
54.25	135,407/2496	200	220	348	10/6	K203_0540 ME10	4000	3900	6500	≤19	0.7	11.0
68.42	26,273/384	200	220	400	10/6	K203_0680 ME10	4000	3900	6500	≤19	0.7	11.0
79.62	26,273/330	200	220	394	10/6	K203_0800 ME10	4000	3900	6500	≤19	0.7	11.0
109.5	26,273/240	200	220	394	10/6	K203_1090 ME10	4000	3900	6500	≤19	0.7	11.0
135.3	30,315/224	200	220	394	10/6	K203_1350 ME10	4000	3900	6500	≤19	0.7	11.0
181.0	86,903/480	200	220	394	10/6	K203_1810 ME10	4000	3900	6500	≤19	0.7	11.0
K3	**(continued next page)**											
4.000	4/1	204	233	291	10/4	K302_0040 ME20	2700	2300	4000	≤32	9.0	16.0
			306	700		K302_0040 ME30				≤38	14.0	
5.375	43/8	225	313	391	10/4	K302_0054 ME20	2700	2300	4000	≤32	7.2	16.0
						K302_0054 ME30				≤38	13.0	
7.391	473/64	250	375	538	10/4	K302_0074 ME20	2700	2300	4000	≤32	6.7	16.0
						K302_0074 ME30				≤38	12.0	
8.444	2322/275	169	197	246	10/4	K302_0084 ME10	3200	2800	4500	≤19	2.2	16.0
		261	385	614		K302_0084 ME20				≤32	5.6	
						K302_0084 ME30				≤38	11.0	
10.14	3010/297	176	236	295	10/4	K302_0100 ME10	3500	3100	5000	≤19	1.8	16.0
		278	385	700		K302_0100 ME20				≤32	5.2	
						K302_0100 ME30				≤38	11.0	
11.61	1161/100	232	270	338	10/4	K302_0115 ME10	3200	2800	4500	≤19	2.0	16.0
		291	385	700		K302_0115 ME20				≤32	5.4	
						K302_0115 ME30				≤38	11.0	
12.58	3182/253	187	293	366	10/4	K302_0125 ME10	3500	3100	5000	≤19	1.5	16.0
		298	385	700		K302_0125 ME20				≤32	4.9	
						K302_0125 ME30				≤38	10.0	
13.94	1505/108	242	325	406	10/4	K302_0140 ME10	3500	3100	5000	≤19	1.7	16.0
		309	385	700		K302_0140 ME20				≤32	5.1	
						K302_0140 ME30				≤38	10.0	

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Selection Data



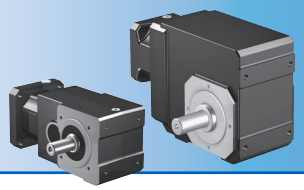
Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
Nom.	Exact	M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
		Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K3	**(continued next page)**											
16.94	559/33	198	375	469	10/4	K302_0170 ME10	3800	3500	6000	≤19	1.2	16.0
		330	385	700		K302_0170 ME20	3700			≤32	4.6	
						K302_0170 ME30	3500		5000	≤38	9.9	
17.29	1591/92	257	385	503	10/4	K302_0175 ME10	3500	3100	5000	≤19	1.4	16.0
		332		700		K302_0175 ME20				≤32	4.8	
						K302_0175 ME30				≤38	10.0	
20.28	3569/176	208	385	513	10/4	K302_0200 ME10	3800	3500	6000	≤19	1.0	16.0
		350		700		K302_0200 ME20	3700			≤32	4.4	
						K302_0200 ME30	3500		5000	≤38	9.8	
23.29	559/24	272	385	645	10/4	K302_0230 ME10	3800	3500	6000	≤19	1.1	16.0
		350		700		K302_0230 ME20	3700			≤32	4.5	
						K302_0230 ME30	3500		5000	≤38	9.8	
25.26	3612/143	211	385	602	10/4	K302_0250 ME10	3800	3500	6000	≤19	0.9	16.0
		347				K302_0250 ME20	3700			≤24	2.8	
27.88	3569/128	287	385	700	10/4	K302_0280 ME10	3800	3500	6000	≤19	1.0	16.0
		350				K302_0280 ME20	3700			≤32	4.4	
						K302_0280 ME30	3500		5000	≤38	9.7	
32.65	44,892/1375	350	379	577	10/5	K303_0330 ME20	3700	3500	6000	≤24	2.8	16.0
33.62	1849/55	219	300	501	10/4	K302_0340 ME10	3800	3500	6000	≤19	0.8	16.0
		250				K302_0340 ME20	3700			≤24	2.7	
34.73	903/26	291	385	700	10/4	K302_0350 ME10	3800	3500	6000	≤19	0.9	16.0
		350				K302_0350 ME20	3700			≤24	2.8	
39.19	34,916/891	350	385	692	10/5	K303_0390 ME20	3700	3500	6000	≤24	2.7	16.0
40.51	4902/121	193	231	385	10/4	K302_0410 ME10	3800	3500	6000	≤19	0.8	16.0
						K302_0410 ME20	3700			≤24	2.7	
44.89	11,223/250	350	385	700	10/5	K303_0450 ME20	3700	3500	6000	≤24	2.8	16.0
46.23	1849/40	301	385	688	10/4	K302_0460 ME10	3800	3500	6000	≤19	0.8	16.0
		344				K302_0460 ME20	3700			≤24	2.7	
48.63	184,556/3795	350	385	700	10/5	K303_0490 ME20	3700	3500	6000	≤24	2.7	16.0
49.26	74,777/1518	253	253	316	10/5	K303_0490 ME10	3800	3500	6000	≤19	0.7	16.0
53.88	8729/162	350	385	700	10/5	K303_0540 ME20	3700	3500	6000	≤24	2.7	16.0
55.71	2451/44	265	318	529	10/4	K302_0560 ME10	3800	3500	6000	≤19	0.8	16.0
						K302_0560 ME20	3700			≤24	2.6	

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
		M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL	EL		d_{MW}	J_1	C_2
Nom.	Exact	Nm	Nm	Nm	arcmin		1,2	3,4,5,6	All	mm	kgcm²	Nm/ arcmin
K3	**(continued from previous page)**											
65.50	32,422/495	350	385	700	10/5	K303_0650 ME20	3700	3500	6000	≤24	2.7	16.0
66.87	46,139/690	350	385	700	10/5	K303_0670 ME20	3700	3500	6000	≤24	2.7	16.0
78.41	103,501/1320	350	385	700	10/5	K303_0780 ME20	3700	3500	6000	≤24	2.7	16.0
90.06	16,211/180	385	379	700	10/5	K303_0900 ME20	3700	3500	6000	≤24	2.7	16.0
107.8	103,501/960	350	385	700	10/5	K303_1080 ME20	3700	3500	6000	≤24	2.7	16.0
134.3	8729/65	350	385	700	10/5	K303_1340 ME20	3700	3500	6000	≤24	2.7	16.0
136.0	14,147/104	350	385	700	10/5	K303_1360 ME10	3800	3500	6000	≤19	0.7	16.0
178.7	53,621/300	344	385	688	10/5	K303_1790 ME20	3700	3500	6000	≤24	2.7	16.0
181.0	86,903/480	344	385	688	10/5	K303_1810 ME10	3800	3500	6000	≤19	0.7	16.0
218.2	38,399/176	265	318	529	10/5	K303_2180 ME10	3800	3500	6000	≤19	0.7	16.0
K4	**(continued next page)**											
4.000	4/1	306	459	776	10/4	K402_0040 ME30	2600	2200	3800	≤38	19.0	30.0
						K402_0040 ME40				≤48	41.0	
5.422	1849/341	338	508	1052	10/4	K402_0054 ME30	2600	2200	3800	≤38	16.0	30.0
						K402_0054 ME40				≤48	37.0	
7.456	1849/248	376	564	1100	10/4	K402_0075 ME30	2600	2200	3800	≤38	15.0	31.0
						K402_0075 ME40				≤48	36.0	
8.377	645/77	391	488	610	10/4	K402_0084 ME20	3000	2600	4500	≤32	7.0	30.0
			587	1100		K402_0084 ME30				≤38	13.0	31.0
						K402_0084 ME40				≤48	34.0	
10.10	1333/132	416	588	735	10/4	K402_0100 ME20	3400	3000	5000	≤32	6.3	30.0
			600	1100		K402_0100 ME30				≤38	12.0	31.0
						K402_0100 ME40	3000		4500	≤48	34.0	
11.52	645/56	435	600	838	10/4	K402_0115 ME20	3000	2600	4500	≤32	6.6	31.0
				1100	10/4	K402_0115 ME30				≤38	12.0	
						K402_0115 ME40				≤48	34.0	
12.66	2924/231	449	600	869	10/4	K402_0125 ME20	3400	3000	5000	≤32	5.6	31.0
				1100		K402_0125 ME30				≤38	11.0	
						K402_0125 ME40	3000		4500	≤48	33.0	
13.89	1333/96	463	600	1010	10/4	K402_0140 ME20	3400	3000	5000	≤32	6.0	31.0
				1100		K402_0140 ME30				≤38	11.0	
						K402_0140 ME40	3000		4500	≤48	33.0	

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Selection Data



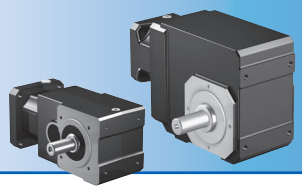
Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
Nom.	Exact	M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
		Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K4	**(continued next page)**											
17.41	731/42	499	600	1100	10/4	K402_0175 ME20	3400	3000	5000	≤32	5.4	31.0
						K402_0175 ME30				≤38	11.0	
						K402_0175 ME40	3000		4500	≤48	33.0	
20.20	1333/66	524	600	1100	10/4	K402_0200 ME20	3600	3300	5500	≤32	4.8	31.0
						K402_0200 ME30	3500		5000	≤38	10.0	
25.28	4171/165	501	600	1001	10/4	K402_0250 ME20	3600	3300	5500	≤32	4.5	31.0
						K402_0250 ME30	3500		5000	≤38	9.9	
27.77	1333/48	550	600	1100	10/4	K402_0280 ME20	3600	3300	5500	≤32	4.7	31.0
						K402_0280 ME30	3500		5000	≤38	10.0	
32.39	2494/77	458	458	572	10/5	K403_0320 ME20	3600	3300	5500	≤24	2.9	31.0
33.68	4816/143	389	467	716	10/4	K402_0340 ME20	3600	3300	5500	≤24	2.8	31.0
34.76	4171/120	550	600	1100	10/4	K402_0350 ME20	3600	3300	5500	≤32	4.5	31.0
						K402_0350 ME30	3500		5000	≤38	9.8	
39.05	38,657/990	550	552	690	10/5	K403_0390 ME20	3600	3300	5500	≤24	2.8	31.0
40.51	4902/121	308	370	616	10/4	K402_0410 ME20	3600	3300	5500	≤24	2.7	31.0
44.54	1247/28	550	600	787	10/5	K403_0450 ME20	3600	3300	5500	≤24	2.8	31.0
46.31	602/13	535	600	985	10/4	K402_0460 ME20	3600	3300	5500	≤24	2.8	31.0
53.69	38,657/720	550	600	949	10/5	K403_0540 ME20	3600	3300	5500	≤24	2.8	31.0
55.71	2451/44	424	508	847	10/4	K402_0560 ME20	3600	3300	5500	≤24	2.7	31.0
78.10	38,657/495	550	600	1100	10/5	K403_0780 ME20	3600	3300	5500	≤24	2.7	31.0
107.4	38,657/360	550	600	1100	10/5	K403_1070 ME20	3600	3300	5500	≤24	2.7	31.0
134.4	120,959/900	550	600	1100	10/5	K403_1340 ME20	3600	3300	5500	≤24	2.7	31.0
136.1	196,037/1440	550	600	807	10/5	K403_1360 ME10	3600	3300	5500	≤19	0.7	31.0
179.1	34,916/195	535	600	985	10/5	K403_1790 ME20	3600	3300	5500	≤24	2.7	31.0
181.4	14,147/78	535	600	985	10/5	K403_1810 ME10	3600	3300	5500	≤19	0.7	31.0
215.4	23,693/110	424	508	847	10/5	K403_2150 ME20	3600	3300	5500	≤24	2.7	31.0
218.2	38,399/176	424	508	847	10/5	K403_2180 ME10	3600	3300	5500	≤19	0.7	31.0

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
		M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$					d_{MW}	J_1	C_2
Nom.	Exact	Nm	Nm	Nm	arcmin		EL 1,2	EL 3,4,5,6	All	mm	kgcm²	Nm/ arcmin
K5	**(continued next page)**											
7.347	551/75	694	1000	1405	10/5	K513_0073 ME30	1900	1800	3200	≤38	25.0	49.0
						K513_0073 ME40				≤48	47.0	
8.134	17,081/2100	718	1000	1555	10/5	K513_0081 ME30	1900	1800	3200	≤38	24.0	49.0
						K513_0081 ME40				≤48	46.0	
11.57	10,759/930	808	1000	1800	10/5	K513_0115 ME30	2300	2200	3600	≤38	17.0	49.0
						K513_0115 ME40				≤48	39.0	
12.81	1537/120	836	1000	1800	10/5	K513_0130 ME30	2300	2200	3600	≤38	17.0	49.0
						K513_0130 ME40				≤48	39.0	
17.48	6293/360	899	1000	1253	10/5	K513_0175 ME20	2800	2500	4200	≤32	8.4	49.0
		900		1800		K513_0175 ME30				≤38	14.0	
						K513_0175 ME40				≤48	36.0	
19.35	27,869/1440	900	1000	1387	10/5	K513_0195 ME20	2800	2500	4200	≤32	8.1	49.0
				1800		K513_0195 ME30				≤38	14.0	
						K513_0195 ME40				≤48	35.0	
29.18	4669/160	900	1000	1656	10/5	K513_0290 ME20	3400	3000	5000	≤32	6.0	49.0
				1800		K513_0290 ME30				≤38	12.0	
						K513_0290 ME40	3000		4500	≤48	33.0	
32.31	20,677/640	900	1000	1800	10/5	K513_0320 ME20	3400	3000	5000	≤32	5.9	49.0
						K513_0320 ME30				≤38	11.0	
						K513_0320 ME40	3000		4500	≤48	33.0	
34.80	174/5	900	1000	1781	10/5	K513_0350 ME20	3400	3000	5000	≤32	5.6	49.0
						K513_0350 ME30				≤38	11.0	
38.53	2697/70	900	1000	1800	10/5	K513_0390 ME20	3400	3000	5000	≤32	5.5	49.0
						K513_0390 ME30				≤38	11.0	
58.30	11,368/195	900	1000	1800	10/5	K513_0580 ME20	3400	3000	5000	≤32	4.7	49.0
						K513_0580 ME30				≤38	10.0	50.0
64.54	12,586/195	900	1000	1800	10/5	K513_0650 ME20	3400	3000	5000	≤32	4.6	49.0
						K513_0650 ME30				≤38	10.0	50.0
70.08	841/12	821	985	1261	10/5	K513_0700 ME20	3400	3000	5000	≤24	3.0	49.0
77.59	26,071/336	900	1000	1396	10/5	K513_0780 ME20	3400	3000	5000	≤24	3.0	49.0
112.8	135,401/1200	900	1000	1656	10/6	K514_1130 ME20	3400	3000	5000	≤24	2.8	50.0
124.9	599,633/4800	900	1000	1800	10/6	K514_1250 ME20	3400	3000	5000	≤24	2.8	50.0
134.6	3364/25	900	1000	1781	10/6	K514_1350 ME20	3400	3000	5000	≤24	2.8	50.0

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Selection Data



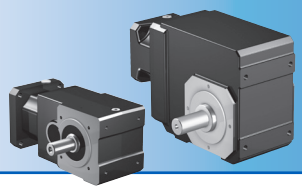
Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
Nom.	Exact	M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
		Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K5	**(continued from previous page)**											
149.0	26,071/175	900	1000	1800	10/6	K514_1490 ME20	3400	3000	5000	≤24	2.8	50.0
225.4	659,344/2925	900	1000	1800	10/6	K514_2250 ME20	3400	3000	5000	≤24	2.7	50.0
249.6	729,988/2925	900	1000	1800	10/6	K514_2500 ME20	3400	3000	5000	≤24	2.7	50.0
271.0	24,389/90	821	985	1261	10/6	K514_2710 ME20	3400	3000	5000	≤24	2.7	50.0
300.0	756,059/2520	900	1000	1396	10/6	K514_3000 ME20	3400	3000	5000	≤24	2.7	50.0
K6	**(continued next page)**											
7.323	19,215/2624	916	1120	1400	10/5	K613_0073 ME30	1800	1700	3000	≤38	39.0	81.0
			1375	2625		K613_0073 ME40				≤48	61.0	
						K613_0073 ME50				≤60	89.0	
8.107	85,095/10,496	948	1240	1550	10/5	K613_0081 ME30	1800	1700	3000	≤38	36.0	81.0
			1422	2900		K613_0081 ME40				≤48	59.0	
						K613_0081 ME50				≤60	87.0	82.0
11.41	22,631/1984	1062	1594	2181	10/5	K613_0115 ME30	2200	2000	3500	≤38	25.0	82.0
						K613_0115 ME40				≤48	46.0	
						K613_0115 ME50				≤60	75.0	
12.63	3233/256	1099	1600	2414	10/5	K613_0125 ME30	2200	2000	3500	≤38	24.0	82.0
						K613_0125 ME40				≤48	45.0	
						K613_0125 ME50				≤60	75.0	
17.16	549/32	984	984	1229	10/5	K613_0170 ME20	2600	2300	4000	≤32	12.0	82.0
		1217	1600	2900		K613_0170 ME30				≤38	18.0	
						K613_0170 ME40				≤48	39.0	
						K613_0170 ME50	2500			≤60	69.0	
18.99	17,019/896	1089	1089	1361	10/5	K613_0190 ME20	2600	2300	4000	≤32	12.0	82.0
		1259	1600	2900		K613_0190 ME30				≤38	17.0	
						K613_0190 ME40				≤48	39.0	
						K613_0190 ME50	2500			≤60	68.0	
28.77	29,463/1024	1169	1448	1809	10/5	K613_0290 ME20	3100	2800	4500	≤32	7.8	82.0
		1446	1600	2900		K613_0290 ME30				≤38	13.0	
						K613_0290 ME40	3000			≤48	35.0	
						K613_0290 ME50	2500	2500	4000	≤60	64.0	

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
		M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
Nom.	Exact	Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K6	**(continued from previous page)**											
31.86	130,479/4096	1294	1600	2003	10/5	K613_0320 ME20	3100	2800	4500	≤32	7.6	82.0
		1450		2900		K613_0320 ME30				≤38	13.0	
						K613_0320 ME40	3000			≤48	35.0	
						K613_0320 ME50	2500	2500	4000	≤60	64.0	
43.11	8967/208	1227	1600	2072	10/5	K613_0430 ME20	3100	2800	4500	≤32	6.0	82.0
		1450				K613_0430 ME30				≤38	11.0	
47.73	39,711/832	1359	1600	2294	10/5	K613_0480 ME20	3100	2800	4500	≤32	5.9	82.0
		1450				K613_0480 ME30				≤38	11.0	
68.77	28,609/416	1311	1577	2628	10/5	K613_0690 ME20	3100	2800	4500	≤32	4.9	82.0
		1314				K613_0690 ME30				≤38	10.0	
76.14	126,697/1664	1450	1600	2900	10/5	K613_0760 ME20	3100	2800	4500	≤32	4.9	82.0
						K613_0760 ME30				≤38	10.0	
111.3	284,809/2560	1448	1448	1809	10/6	K614_1110 ME20	3100	2800	4500	≤24	2.9	82.0
123.2	1,261,297/10,240	1450	1600	2003	10/6	K614_1230 ME20	3100	2800	4500	≤24	2.9	82.0
166.7	86,681/520	1450	1600	2072	10/6	K614_1670 ME20	3100	2800	4500	≤24	2.8	83.0
184.6	383,873/2080	1450	1600	2294	10/6	K614_1850 ME20	3100	2800	4500	≤24	2.8	83.0
265.9	829,661/3120	1314	1577	2628	10/6	K614_2660 ME20	3100	2800	4500	≤24	2.8	83.0
294.4	3,674,213/12,480	1450	1600	2900	10/6	K614_2940 ME20	3100	2800	4500	≤24	2.7	83.0
K7	**(continued next page)**											
7.563	19,845/2624	1516	2169	2712	10/5	K713_0076 ME40	1700	1600	2700	≤48	91.0	122.0
						K713_0076 ME50				≤60	119.0	123.0
8.373	87,885/10,496	1568	2353	3002	10/5	K713_0084 ME40	1700	1600	2700	≤48	87.0	123.0
						K713_0084 ME50				≤60	115.0	124.0
11.78	23,373/1984	1477	1802	2252	10/5	K713_0120 ME30	2000	1900	3200	≤38	40.0	124.0
		1758	2600	4223		K713_0120 ME40				≤48	63.0	
						K713_0120 ME50				≤60	91.0	125.0
13.04	3339/256	1636	1995	2493	10/5	K713_0130 ME30	2000	1900	3200	≤38	39.0	124.0
		1818	2600	4675		K713_0130 ME40				≤48	61.0	
						K713_0130 ME50				≤60	89.0	125.0
18.28	26,901/1472	1719	2562	3202	10/5	K713_0185 ME30	2400	2200	3600	≤38	26.0	125.0
		2034	2600	4800		K713_0185 ME40				≤48	49.0	
						K713_0185 ME50				≤60	77.0	

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Selection Data



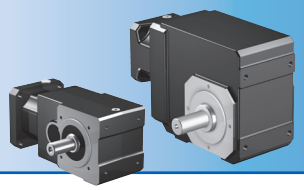
Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
Nom.	Exact	M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
		Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K7	**(continued from previous page)**											
20.23	119,133/5888	1903	2600	3545	10/5	K713_0200 ME30	2400	2200	3600	≤38	26.0	125.0
		2105		4800		K713_0200 ME40				≤48	48.0	
						K713_0200 ME50				≤60	76.0	
29.29	7497/256	1934	2600	4087	10/5	K713_0290 ME30	2900	2600	4200	≤38	18.0	125.0
		2381		4800		K713_0290 ME40				≤48	40.0	
						K713_0290 ME50	2500	2500	4000	≤60	68.0	
32.42	33,201/1024	2141	2600	4524	10/5	K713_0320 ME30	2900	2600	4200	≤38	17.0	125.0
		2400		4800		K713_0320 ME40				≤48	40.0	
						K713_0320 ME50	2500	2500	4000	≤60	68.0	
45.05	37,485/832	2082	2600	4800	10/5	K713_0450 ME30	2900	2600	4200	≤38	14.0	126.0
		2400				K713_0450 ME40				≤48	35.0	125.0
						K713_0450 ME50	2500	2500	4000	≤60	64.0	126.0
49.88	166,005/3328	2306	2600	4800	10/5	K713_0500 ME30	2900	2600	4200	≤38	13.0	126.0
		2400				K713_0500 ME40				≤48	35.0	
						K713_0500 ME50	2500	2500	4000	≤60	64.0	
71.20	4557/64	2173	2283	2884	10/5	K713_0710 ME30	2900	2600	4200	≤38	11.0	126.0
78.83	20,181/256	2400	2528	3160	10/5	K713_0790 ME30	2900	2600	4200	≤38	11.0	126.0
114.7	117,453/1024	2400	2600	4087	10/6	K714_1150 ME30	2900	2600	4200	≤38	10.0	126.0
127.0	520,149/4096	2400	2600	4524	10/6	K714_1270 ME30	2900	2600	4200	≤38	10.0	126.0
174.2	72,471/416	1751	1751	2189	10/6	K714_1740 ME20	2900	2600	4200	≤24	3.0	126.0
176.5	587,265/3328	2400	2600	4800	10/6	K714_1760 ME30	2900	2600	4200	≤38	10.0	126.0
192.9	320,943/1664	1938	1938	2423	10/6	K714_1930 ME20	2900	2600	4200	≤24	3.0	126.0
195.4	2,600,745/13,312	2400	2600	4800	10/6	K714_1950 ME30	2900	2600	4200	≤38	10.0	126.0
275.3	44,051/160	2173	2283	2854	10/6	K714_2750 ME20	2900	2600	4200	≤24	2.8	126.0
304.8	195,083/640	2400	2528	3160	10/6	K714_3050 ME20	2900	2600	4200	≤24	2.8	126.0

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
		M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$					d_{MW}	J_1	C_2
Nom.	Exact	Nm	Nm	Nm	arcmin		EL 1,2	EL 3,4,5,6	All	mm	kgcm²	Nm/ arcmin
K8	**(continued next page)**											
7.445	3127/420	2135	2135	2669	10/5	K813_0074 ME40	1600	1500	2600	≤48	174.0	187.0
						K813_0074 ME50				≤60	202.0	191.0
8.243	96,937/11,760	2364	2364	2955	10/5	K813_0082 ME40	1600	1500	2600	≤48	161.0	189.0
						K813_0082 ME50				≤60	189.0	192.0
14.84	9499/640	3286	4255	5318	10/5	K813_0150 ME40	1900	1800	3000	≤48	82.0	194.0
						K813_0150 ME50				≤60	110.0	195.0
16.43	42,067/2560	3399	4650	5888	10/5	K813_0165 ME40	1900	1800	3000	≤48	79.0	194.0
						K813_0165 ME50				≤60	106.0	195.0
23.04	31,801/1380	2153	3133	3917	10/5	K813_0230 ME30	2300	2100	3500	≤38	36.0	195.0
		3805	4650	8259		K813_0230 ME40				≤48	58.0	
						K813_0230 ME50				≤60	86.0	196.0
25.51	140,833/5520	2383	3469	4337	10/5	K813_0260 ME30	2300	2100	3500	≤38	35.0	195.0
		3936	4650	8400		K813_0260 ME40				≤48	57.0	196.0
						K813_0260 ME50				≤60	85.0	
36.14	2891/80	2370	3885	4856	10/5	K813_0360 ME30	2800	2500	4000	≤38	22.0	196.0
		4200	4650	8400		K813_0360 ME40				≤48	45.0	
						K813_0360 ME50	2500			≤60	73.0	
40.01	12,803/320	2624	4302	5377	10/5	K813_0400 ME30	2800	2500	4000	≤38	22.0	196.0
		4200	4650	8400		K813_0400 ME40				≤48	44.0	
						K813_0400 ME50	2500			≤60	72.0	
59.08	42,539/720	2560	4650	6388	10/5	K813_0590 ME30	2800	2500	4000	≤38	15.0	196.0
		4200				K813_0590 ME40				≤48	37.0	
						K813_0590 ME50	2500			≤60	66.0	
65.41	188,387/2880	2835	4650	7073	10/5	K813_0650 ME30	2800	2500	4000	≤38	15.0	196.0
		4200				K813_0650 ME40				≤48	37.0	
						K813_0650 ME50	2500			≤60	66.0	
71.70	10,325/144	2638	4327	7026	10/5	K813_0720 ME30	2800	2500	4000	≤38	13.0	196.0
		3606				K813_0720 ME40				≤48	35.0	
						K813_0720 ME50	2500			≤60	64.0	
79.38	45,725/576	2920	4650	7779	10/5	K813_0790 ME30	2800	2500	4000	≤38	13.0	196.0
		3993				K813_0790 ME40				≤48	35.0	
						K813_0790 ME50	2500			≤60	64.0	
88.89	40,887/460	4200	4650	8259	10/6	K814_0890 ME40	2800	2500	4000	≤48	35.0	196.0

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Selection Data



Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
Nom.	Exact	M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
		Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K8	**(continued from previous page)**											
98.41	181,071/1840	4200	4650	8400	10/6	K814_0980 ME40	2800	2500	4000	≤48	35.0	196.0
139.4	11,151/80	4200	4650	8400	10/6	K814_1390 ME40	2800	2500	4000	≤48	34.0	196.0
141.5	135,877/960	3832	3885	4856	10/6	K814_1420 ME30	2800	2500	4000	≤38	11.0	196.0
154.3	49,383/320	4200	4650	8400	10/6	K814_1540 ME40	2800	2500	4000	≤48	34.0	196.0
156.7	601,741/3840	4200	4302	5377	10/6	K814_1570 ME30	2800	2500	4000	≤38	11.0	196.0
227.9	18,231/80	4200	4650	6388	10/6	K814_2280 ME40	2800	2500	4000	≤48	33.0	196.0
252.3	565,161/2240	4200	4650	7073	10/6	K814_2520 ME40	2800	2500	4000	≤48	33.0	196.0
256.2	8,854,189/34,560	4200	4650	7073	10/6	K814_2560 ME30	2800	2500	4000	≤38	10.0	196.0
276.6	4425/16	3606	4327	7026	10/6	K814_2770 ME40	2800	2500	4000	≤48	33.0	196.0
280.8	485,275/1728	3606	4327	7026	10/6	K814_2810 ME30	2800	2500	4000	≤38	10.0	196.0
306.2	137,175/448	3993	4650	7779	10/6	K814_3060 ME40	2800	2500	4000	≤48	33.0	196.0
310.9	2,149,075/6912	3993	4650	7779	10/6	K814_3110 ME30	2800	2500	4000	≤38	10.0	196.0
K9	**(continued next page)**											
12.53	73,749/5888	3592	3592	4490	10/5	K913_0125 ME40	1800	1800	2800	≤48	190.0	367.0
						K913_0125 ME50				≤60	218.0	372.0
19.06	305/16	4955	5466	6833	10/5	K913_0190 ME40	2200	2100	3300	≤48	117.0	374.0
		5466				K913_0190 ME50				≤60	145.0	376.0
23.94	88,877/3712	5252	6864	8580	10/5	K913_0240 ME40	2200	2100	3300	≤48	93.0	376.0
		6867				K913_0240 ME50				≤60	121.0	377.0
32.12	47,275/1472	5621	7700	11511	10/5	K913_0320 ME40	2600	2500	3800	≤48	71.0	377.0
		7000				K913_0320 ME50	2500			≤60	99.0	378.0
38.04	194,773/5120	5807	7700	12504	10/5	K913_0380 ME40	2600	2500	3800	≤48	62.0	378.0
		7000				K913_0380 ME50	2500			≤60	90.0	
48.94	100,223/2048	5999	7700	13787	10/5	K913_0490 ME40	2600	2500	3800	≤48	52.0	378.0
		7000				K913_0490 ME50	2500			≤60	80.0	379.0
63.07	209,901/3328	6229	7700	14000	10/5	K913_0630 ME40	2600	2500	3800	≤48	45.0	379.0
		7000				K913_0630 ME50	2500			≤60	73.0	
75.00	62,403/832	6422	6820	8525	10/5	K913_0750 ME40	2600	2500	3800	≤48	41.0	379.0
		6822				K913_0750 ME50	2500			≤60	70.0	
92.35	2,399,679/25,984	6864	6864	8580	10/5	K914_0920 ME40	2600	2500	3800	≤48	37.0	379.0
123.9	1,276,425/10,304	7000	7700	11511	10/5	K914_1240 ME40	2600	2500	3800	≤48	36.0	379.0
125.8	2,221,925/17,664	3837	3883	4854	10/5	K914_1260 ME30	2600	2500	3800	≤38	12.0	379.0

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*

Reducer Ratio (i)		Output Torque			Backlash [3]	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1)			Motor Shaft Max Ø	Input Inertia	Tors. Stiffness
		Nom. [1]	Accel.	Peak [2]			Continuous		Cyclic			
Nom.	Exact	M_{2N}	M_{2acc}	M_{2NOT}	$\Delta\phi_2$		EL 1,2	EL 3,4,5,6	All	d_{MW}	J_1	C_2
		Nm	Nm	Nm	arcmin					mm	kgcm²	Nm/ arcmin
K9	**(continued from previous page)**											
146.7	5,258,871/35,840	7000	7700	12504	10/5	K914_1470 ME40	2600	2500	3800	≤48	35.0	379.0
149.0	9,154,331/61,440	4545	4600	5750	10/5	K914_1490 ME30	2600	2500	3800	≤38	12.0	379.0
188.8	2,706,021/14,336	7000	7700	13787	10/5	K914_1890 ME40	2600	2500	3800	≤48	34.0	379.0
191.7	4,710,481/24,576	5073	5073	6341	10/5	K914_1920 ME30	2600	2500	3800	≤38	11.0	379.0
243.3	5,667,327/23,296	7000	7700	14000	10/5	K914_2430 ME40	2600	2500	3800	≤48	34.0	379.0
247.0	3,288,449/13,312	5474	5731	7164	10/5	K914_2470 ME30	2600	2500	3800	≤38	11.0	379.0
293.8	977,647/3328	5704	6820	8525	10/5	K914_2940 ME30	2600	2500	3800	≤38	10.0	379.0
K10												
38.60	8029/208	9066	10621	13276	10/5	K1013_0390 ME50	2500	2300	3500	≤60	126.0	722.0
61.55	12,803/208	9696	12750	15937	10/5	K1013_0620 ME50	2500	2300	3500	≤60	91.0	724.0
75.28	101,773/1352	9807	13200	19578	10/5	K1013_0750 ME50	2500	2300	3500	≤60	82.0	724.0
123.7	7,359,555/59,488	12000	13200	24000	10/5	K1014_1240 ME50	2500	2300	3500	≤60	69.0	724.0
148.9	30,969/208	9417	10621	13276	10/5	K1014_1490 ME40	2500	2300	3500	≤48	38.0	724.0
151.4	409,479/2704	12000	13200	24000	10/5	K1014_1510 ME50	2500	2300	3500	≤60	67.0	724.0
237.4	49,383/208	10425	12750	15937	10/5	K1014_2370 ME40	2500	2300	3500	≤48	35.0	725.0
290.4	392,553/1352	10727	13200	19578	10/5	K1014_2900 ME40	2500	2300	3500	≤48	35.0	725.0

[1] *Maximum torque for continuous input 1500 RPM - horizontal output position.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
[3] *Backlash shown standard/reduced*
* *Motor adapter order code (shaft diameter max - mm): ME10 (19), ME20 (32), ME30 (38), ME40 (48), ME50 (60)*