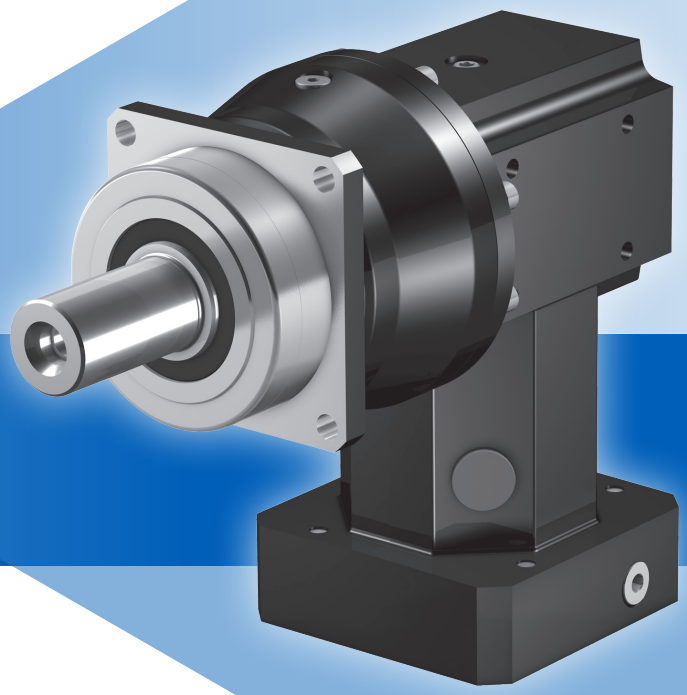
PKX Series: RIGHT ANGLE – Shaft Output

PKX Features

- 3:1 to 300:1 ratios (higher ratios available. Contact STOBER.)
- Quiet running (<64dB(A))
- Bearing options to suit your application needs, extending gearbox life and avoiding oversizing, (see page 189).
- Error free motor mounting and quick changeover with toleranced pilot on motor plate
- Low no load running torque, giving you more torque for your application
- Magnetic oil filtration to remove contaminants to prevent breakdowns
- Build and ship in one day
- Assembled in the USA

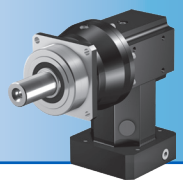
STOBER PKX provides a right angle option with planetary gearing. Every gearbox is made to order. STOBER will custom whatever you need to fit your application. Contact us today to learn more.



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

General Specifications

Ambient Temperature	0°C to +40°C (104°F) [Unit temperature <90°C Max]
Backlash	PKX ≤4 arcmins (see performance overview chart, page 166)
Coating	Standard Black (RAL-9005), Food option
Degree of Protection	IP65
Direction of Rotation	See page 168
Efficiency	PKX 1 stage 96%, 2 stage 94%; PK 94%
Input RPM	Up to 6,000 RPM
Installation	Requires 12.9 fasteners. See page 288, for more information
Lubrication	Lubricated for life – standard Mobil SHC629; option food grade Mobil SHC CIBUS 150
Mounting Position	Must be specified, see page 168
Warranty	5 Year Limited (2 Years on normal wear items: bearings, seals, etc.)



Overview

Selection Options *At-a-Glance*

Using the **Selection Data** table later in this section, select the PKX 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	0	!	@	#	
PKX	P	2	3	1	S	P	S	S	0040	KX301VF	0010	MF	F	EL1 *

	Design Option		Part Number Code	Description
1	**Series**		P	Planetary
2	**Size**		2 3 4 5 7 8 9	7 sizes of gearhead
3	**Generation**		3	Version of gearhead
4	**# of Stages**		1 2	One stage for ratios of ≤ 10:1 Two stage for ratios >10:1
5	**Housing**		S	Standard mounting style
6	**Output Shaft**		P G	Shaft with key Plain shaft (no key)
7	**Bearing Options**		S	Ball bearing
			D	Double row angular contact bearing (except size P2)
			Z	Cylindrical roller bearing (except size P2)("Z" cylindrical roller bearing not allowed with reduced backlash option.)
8	**Backlash**		S R	Standard Backlash Reduced Backlash
9	**Ratio**		0040	Ratios range from 4:1 to 100:1 f(0040=4:1; 0160=16:1; 1000=100:1, ect.)
0	**Secondary Unit**		KX301VF	KX Series right angle unit: 5 sizes, 1 stage, with output shaft (V) & flange (F)
!	**Secondary Unit Ratio**		0010	KX Series: Ratios from 1:1 to 3:1
@	**Motor Adapter**		MF	Motor Adapter with FlexiAdapt coupling
#	**Special Options**		F	Food Duty (Size P3 thru P5)
*	**Mounting Position**		EL1 EL2 EL3 EL4 EL5 EL6	Required special instruction for all units, see page 168

Options

ME Adapter Option

- MSS1 Seal – special input seal for longer life (For sizes P5-9). Contact factory for this option.

Coating Option

- **Standard:** For dry areas and normal conditions. All units standard coating, unless ordered with Food Duty.
- **Food Duty:** Able to withstand severe wet areas and washdown application (PKX size P3 thru P5).
- Available with multi-layer, industrial 316 stainless steel epoxy coating. Contact factory for this option.

ATEX

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

PKX Series Performance Overview

PKX 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/# of Stages		P231	P232	P331	P332	P431	P432	P531	P532	P731	P732	P831	P832	P932
Secondary Unit		KX3		KX3		KX4	KX3	KX5	KX4	KX7	KX5	KX7		KX7
Acceleration Torque M_{2BMAX}	N	25		75		135		355		805		1840		3300
Output Torque Nom. [1] M_{2N}	N	18		53		102		2270		584		1415		2387
Torsional Stiffness C_2	Nm/arcmin	1.8		5		12		32		62		173		393
Torsional Backlash [2]	Δϕ	7		5		5		4		4		4		4
	Δϕ Reduced	–		3		3		2		2		2		–
Input Speed Max. n_{1MAX}	Continuous	3500		3500		3000	3500	3000	3000	2100	3000	2100		2100
	Cyclic	6000		6000		5500	6000	5000	5500	4000	5000	4000		4000
Efficiency (@ nom torque)	%	96	94	96	94	96	94	96	94	96	94	96	94	94
Weight	kg	3.0	3.5	3.8	4.1	7.4	6.1	13.1	11.5	26.6	22.2	42.1	46.8	71.9
	lbs	6.6	7.7	8.4	9.0	16.3	13.4	28.8	25.3	58.5	48.8	92.6	103	158.2
Noise [3]	dB(A)	≤64		≤64		≤66	≤64	≤68	≤66	≤70	≤68	≤70		≤70

Performance by Bearing Design Option [4]

S = Ball bearing **D = Double row angular contact bearing** **Z = Cylindrical roller bearing** [5]

		P2	P3	P4	P5	P7	P8	P9
Axial Load F_{2ax100}	S	500	1000	1500	2300	2900	4700	6000
	D	—	2500	4000	6000	10,000	15,500	25,000
	Z	—	600	1000	1600	2000	3600	5000
Radial Load Max $F_{2rad100}$	S	1200	2500	4000	6500	8500	13,000	18,000
	D	—	2750	4500	7000	9500	15,000	20,000
	Z	—	3000	5000	8000	10,000	18,000	27,000
Tilting Moment Max M_{2K100}	S	34	79	146	315	544	852	1539
	D	—	94	182	382	665	1095	1930
	Z	—	95	183	388	640	1179	2309

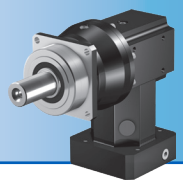
1) *Ratings based on input speed (n_1) of 1500 RPM.*
For torque at higher input speeds (M_{2NX}) solve the formula: $M_{2NX} = \frac{M_{2N}}{\sqrt[3]{\frac{n_1}{1500}}}$
where n_1 = Actual Input Speed.

2) *Tested at 1.5% of nominal torque and recorded on the output side of the gearhead.*

3) *Measurement at one (1) meter distance with input speed (n_1) of 1500 RPM.*

4) *Options S and Z are available with P Series only. See page 189 for output bearing options. Rating based on output speed (n_2) of 100 RPM. For values at other speeds see page 190.*

5) *"Z" cylindrical roller bearing not allowed with reduced backlash option.*



Overview

PKX Series Motor Mounting Plate Option (Motor information required with MF 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:

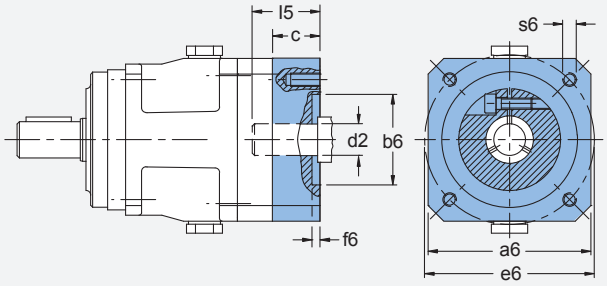
- Specify the motor manufacturer and part number
- Provide the motor drawing with dimensions, or specify the motor mounting dimensions (per the list shown at right)

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

Maximum 10 working days for custom motor mounting plates.

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.)

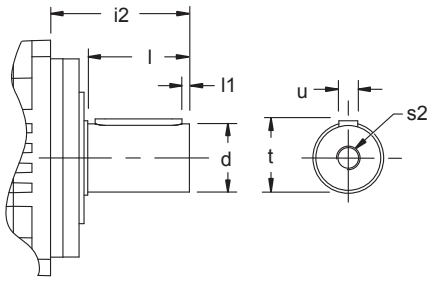


Motor Mounting Plate Dimensions — mm (Gearhead Part Number Specific)	P231KX3 P232KX3 P331KX3 P332KX3 P432KX3	P431KX4 P532KX4	P531KX5 P732KX5	P731KX7 P832KX7 P831KX7 P932KX7
Maximum Allowed Motor Shaft Dia. d2	19	24	32	38
Minimum Allowed Motor Plate Thickness c*	18	21	24	25

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

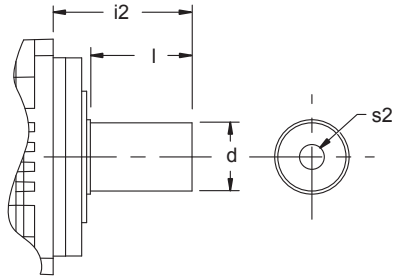
PKX Series Output Shaft Options ("P" or "G" designated in part number, for example: P431P_0160 MF)

P Shaft with Key



Unit	d k6	l1	l	i2	s2 (1)	t	u (2)
	mm	mm	mm	mm		mm	W x H x L
P2	12	2	22	36	M4	13.5	A4X4X18
P3	16	2	28	48	M5	18	A5X5X22
P4	22	3	36	56	M8	24.5	A6X6X28
P5	32	3	58	88	M12	35	A10X8X50
P7	40	4	82	112	M16	43	A12X8X70
P8	55	6	82	112	M20	59	A16X10X70
P9	75	7	105	143	M20	79.5	A20X12X90

G Shaft without Key



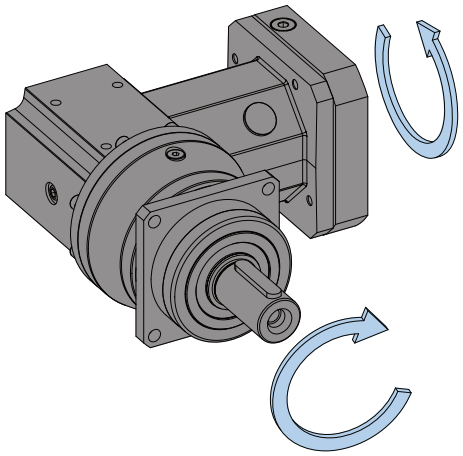
Unit	d k6	l	i2	s2 (1)
	mm	mm	mm	
P2	12	22	36	M4
P3	16	28	48	M5
P4	22	36	56	M8
P5	32	58	88	M12
P7	40	82	112	M16
P8	55	82	112	M20
P9	75	105	143	M20

(1) *The center hole in shafts with keys (Option "P") are machined to DIN 332 T2 shape DR.*

(2) *Feather keys are toleranced according to standard DIN 6885.*

PKX Series Direction of Rotation

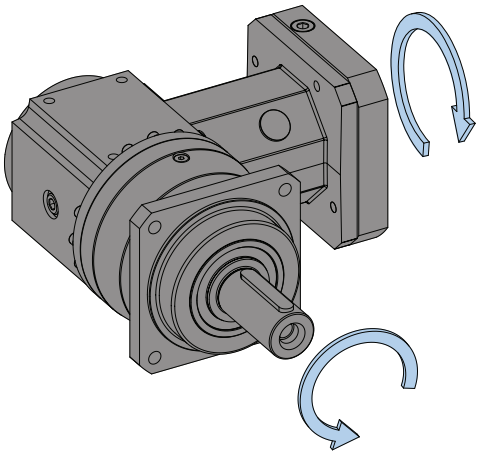
CW



1 Stage Units (P2 - P5)

2 Stage Units (P2 - P7)

CCW



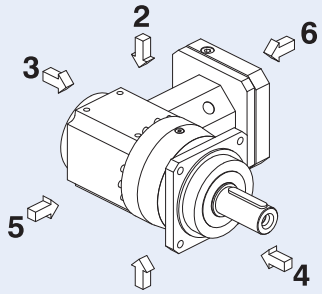
1 Stage Units (P7 & P8)

2 Stage Units (P8 & P9)

PKX Mounting Position Options

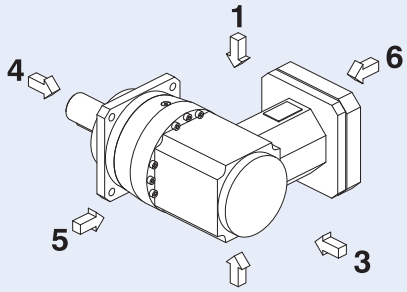
Horizontal Positions (EL1, EL2, EL5, EL6) are interchange;

Vertical Positions (EL3 and EL4) MUST BE SPECIFIED



1

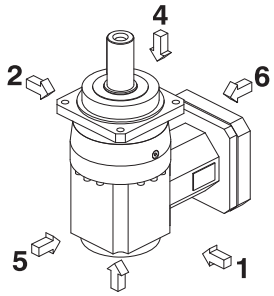
EL1



2

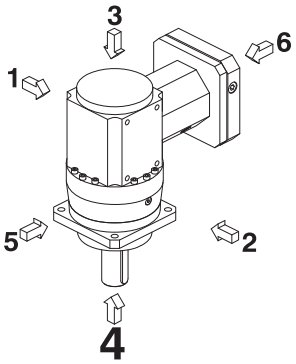
EL2

IMPORTANT: Mounting PKX is either vertical mounting position (EL3 or EL4) must be specified when ordering.



3

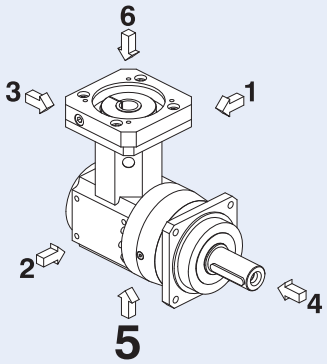
EL3



4

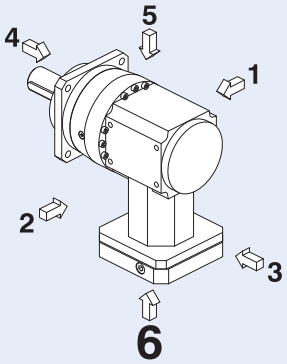
EL4

IMPORTANT: Mounting PKX is either vertical mounting position (EL3 or EL4) must be specified when ordering.



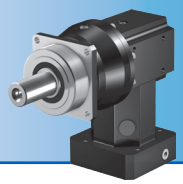
5

EL5



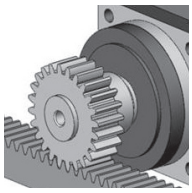
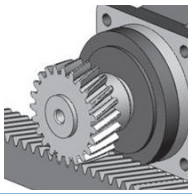
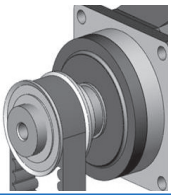
6

EL6



Overview

PKX Series Output Bearing Options

	S Ball Bearing	D Double Row Angular Contact Bearing	Z Cylindrical Roller Bearing ("Z" cylindrical roller bearing not allowed with reduced backlash option.)
			
Characteristics:	• Minimal frictional torque • Good radial load capacity • Axial load approx. 35% of radial load	• Low frictional torque • Good radial bearing capacity • Axial load approx. 50% of radial load	• Very good radial load capacity • Axial load approx. 20% of radial load
Applications:	• Spur geared rack/pinion • Couplings • Belt with or without light tension	• Helical geared rack/pinion • Couplings with high axial load • Belt with or without light tension	• Prestressed belt drive • Prestressed spur rack drive • Applications with high radial loads and/or high service requirements

Permissible Output Shaft Load and Tilting Moments*

	z_2 Distance of Shaft Shoulder to Center of Output Bearing	F_{2ax100} Permitted Axial Force	$F_{2rad100}$ Permitted Radial Force ≤100RPM	$F_{2rad,acc}$ Radial Acceleration Force	M_{2K100} Permitted Tilting Torque ≤100RPM	$M_{2k,acc}$ Permitted Acceleration Tilting Torque
Unit	mm	N	N	N	Nm	Nm
S Ball Bearing						
P2	17	500	1200	1300	34	36
P3	17.5	1000	2500	2500	79	79
P4	18.5	1500	4000	4500	146	164
P5	19.5	2300	6500	7000	315	340
P7	23	2900	8000	9000	544	576
P8	24.5	4700	13,000	18,000	852	1179
P9	33	6000	18,000	27,000	1539	2309
D Double Row Angular Contact Bearing						
P3	20	2500	2750	2750	94	94
P4	22.5	4000	4500	5000	182	203
P5	25.5	6000	7000	8000	382	436
P7	29	10,000	9000	10,000	665	700
P8	32	15,500	15,000	18,000	1095	1314
P9	44	25,000	20,000	30,000	1930	2895
Z Cylindrical Roller Bearing						
P3	17.5	600	3000	3000	95	95
P4	18.5	1000	5000	5000	183	183
P5	19.5	1600	8000	8000	388	388
P7	23	2000	10,000	10,000	640	640
P8	24.5	3600	18,000	18,000	1179	1179
P9	33	5000	27,000	35,000	2309	2993

** Refer to illustration and load/life/speed definitions on page 170*

During EMERGENCY OFF operation (maximum stops per gearhead = 1000) the permissible values in the table for F_{2A}, $F2_R$, and M_{2K} can be multiplied by a factor of 2. The permissible load values given are valid with the load applied to the center of the output shaft (x_2).

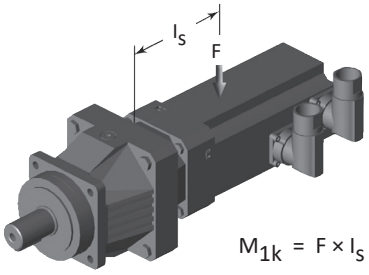
PKX No Load Running Torque*

		Input Ratio T_R																		
		One Stage							Two Stage											
Unit		3	4	5	7	8	10	12	16	20	25	28	32	35	40	50	56	70	80	100
P2	Nm	–	0.16	0.13	0.13	0.13	0.10	–	0.13	0.13	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
P3	Nm	0.26	0.21	.016	0.16	0.16	.016	0.13	0.13	0.13	0.08	0.08	0.13	0.08	0.08	0.08	0.08	0.08	0.08	0.08
P4	Nm	0.33	0.23	0.23	0.18	0.18	0.18	0.14	0.14	0.14	0.11	0.11	0.14	0.11	0.11	0.11	0.11	0.11	0.11	0.11
P5	Nm	0.60	0.45	0.40	0.30	0.20	0.20	0.23	0.23	0.23	0.18	0.18	0.23	0.18	0.18	0.18	0.18	0.18	0.18	0.18
P7	Nm	0.83	0.53	0.43	0.33	0.23	0.23	0.30	0.30	0.30	0.20	0.20	0.30	0.20	0.20	0.20	0.20	0.20	0.20	0.20
P8	Nm	1.05	0.75	0.65	0.45	0.35	0.35	0.48	0.43	0.43	0.33	0.33	0.43	0.23	0.23	0.23	0.23	0.23	0.23	0.23
P9	Nm	–	0.92	0.72	0.52	–	0.42	–	0.55	0.55	0.45	0.45	–	0.35	0.35	0.35	–	0.35	–	0.35

** Torque is measured with the input at 2000 RPM and an ambient temperature of 20° C.*

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.



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

M1K	KX301_MF	KX401_MF	KX501_MF	KX701_MF
Nm	12	24	50	100

PKX Series Load/Life/Speed Calculations

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

$$F_{2AX} = \frac{F_{2ax100}}{\sqrt[3]{\frac{n_2}{100}}} \qquad F_{2RX} = \frac{F_{2rad100}}{\sqrt[3]{\frac{n_2}{100}}} \qquad M_{2KX} = \frac{M_{2K100}}{\sqrt[3]{\frac{n_2}{100}}}$$

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

$$M_{2k,acc*} = \frac{2 \bullet F_{2ax100} \bullet y_2 + F_{2rad,acc} \bullet (x_2 + Z_2)}{1000} \leq M_{2k,acc}$$

$$M_{2k,eq*} = \sqrt[3]{\frac{n_{2b1} \bullet t_{b1} \bullet M_{2kb1}{}^3 + \ldots + n_{2bn} \bullet t_{bn} \bullet M_{2kbn}{}^3}{n_{2b1} \bullet t_{b1} + \ldots + n_{2bn} \bullet t_{bn}}} \leq M_{2kN}$$

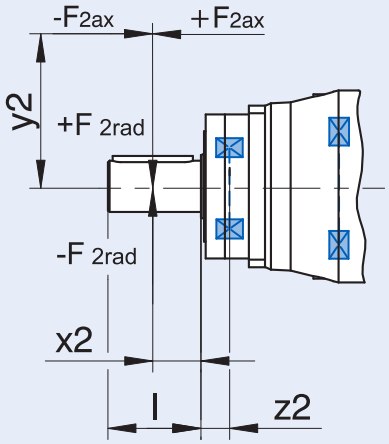
$$F_{2rad,eq*} = \sqrt[3]{\frac{n_{2b1} \bullet t_{b1} \bullet F_{2rb1}{}^3 + \ldots + n_{2bn} \bullet t_{bn} \bullet F_{2rbn}{}^3}{n_{2b1} \bullet t_{b1} + \ldots + n_{2bn} \bullet t_{bn}}} \leq F_{2radN}$$

Where:

z_2	Distance of Shaft Shoulder to Center of Output Bearing	$F_{2rad,acc}$	Radial Acceleration Force
n_2	Actual Average Output Speed	$F_{2rad,acc*}$	Radial Acceleration Force at Gear Unit Output
x_2	Distance of the Shaft Shoulder to the Force Application Point	M_{2K100}	Permitted Tilting Torque ≤100RPM
y_2	Distance of the Shaft Axis to the Axial Force Application Point	$M_{2K,acc}$	Permitted Acceleration Tilting Torque
F_{2ax*}	Actual Axial Force at Gear Unit Output	$M_{2k,acc*}$	Permitted Acceleration Tilting Torque at Gear Unit Output
F_{2ax100}	Permitted Axial Force	C_{2K}	Tilting Stiffness
$F_{2rad100}$	Permitted Radial Force ≤100RPM		

All formulas shown are based on METRIC values

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



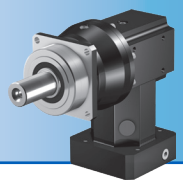
The hours of life (L_h) of the unit can be determined by the following formula:

bearing life for duty cycle ≤ 40%

L_h > 10,000 hours if M_{2K100}/M_{2A} < 1.25 and > 1
L_h > 20,000 hours if M_{2K100}/M_{2A} > 1.25 and > 1.5
L_h > 30,000 hours if M_{2K100}/M_{2A} < 1.5

bearing life for duty cycle ≥ 40%

$$L_{hA} = L_h \left(\frac{40\%}{\text{Duty Cycle}} \right)$$



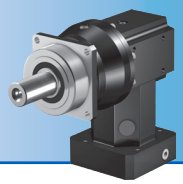
Selection Data

Exact Ratio (i)	Output Torque: Nom. M_{2N} [1] Nm	Output Torque: Accel. M_{2acc} Nm	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT} Nm	Output Torque: Peak M_{2NOT} [2] Nm	Back-lash $\Delta\varphi_2$ arcmin	Red. Back-lash $\Delta\varphi_{2red}$ arcmin	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic All	Motor Shaft [3] Max Ø d_{MW} mm	Input Inertia J_1 kgcm²	Tors. Stiffness C_2 Nm/arcmin	Oper. Noise L_{pA} dB(A)
P2KX														
4.000	15	25	–	51	8.5	–	P231_0040KX301_0010 MF	3000	2500	4500	≤19	1.1	1.5	70
5.000	15	25	–	51	8.0	–	P231_0050KX301_0010 MF	3000	2500	4500	≤19	1.0	1.6	70
7.000	15	23	–	46	7.5	–	P231_0070KX301_0010 MF	3000	2500	4500	≤19	1.0	1.7	70
8.000	16	25	–	51	8.5	–	P231_0040KX301_0020 MF	3500	3000	5500	≤19	0.81	1.5	66
10.00	16	25	–	51	8.0	–	P231_0050KX301_0020 MF	3500	3000	5500	≤19	0.81	1.6	66
12.00	16	25	–	51	8.5	–	P231_0040KX301_0030 MF	3500	3500	6000	≤19	0.75	1.5	64
15.00	16	25	–	51	8.0	–	P231_0050KX301_0030 MF	3500	3500	6000	≤19	0.75	1.6	64
20.00	12	21	–	41	7.0	–	P231_0100KX301_0020 MF	3500	3000	5500	≤19	0.80	1.6	66
21.00	16	23	–	46	7.5	–	P231_0070KX301_0030 MF	3500	3500	6000	≤19	0.75	1.7	64
24.00	14	21	–	41	7.5	–	P231_0080KX301_0030 MF	3500	3500	6000	≤19	0.75	1.6	64
30.00	12	21	–	41	7.0	–	P231_0100KX301_0030 MF	3500	3500	6000	≤19	0.75	1.6	64
35.00	18	25	–	51	8.5	–	P232_0350KX301_0010 MF	3000	2500	4500	≤19	1.0	1.8	70
40.00	16	25	–	51	8.5	–	P232_0200KX301_0020 MF	3500	3000	5500	≤19	0.81	1.8	66
50.00	16	25	–	51	8.5	–	P232_0250KX301_0020 MF	3500	3000	5500	≤19	0.81	1.8	66
56.00	16	24	–	48	8.5	–	P232_0280KX301_0020 MF	3500	3000	5500	≤19	0.81	1.8	66
60.00	16	25	–	51	8.5	–	P232_0200KX301_0030 MF	3500	3500	6000	≤19	0.75	1.8	64
70.00	18	25	–	51	8.5	–	P232_0350KX301_0020 MF	3500	3000	5500	≤19	0.81	1.8	66
75.00	16	25	–	51	8.5	–	P232_0250KX301_0030 MF	3500	3500	6000	≤19	0.75	1.8	64
80.00	16	24	–	48	8.5	–	P232_0400KX301_0020 MF	3500	3000	5500	≤19	0.80	1.8	66
84.00	16	24	–	48	8.5	–	P232_0280KX301_0030 MF	3500	3500	6000	≤19	0.75	1.8	64
100.0	19	25	–	51	8.0	–	P232_0500KX301_0020 MF	3500	3000	5500	≤19	0.80	1.8	66
105.0	18	25	–	51	8.5	–	P232_0350KX301_0030 MF	3500	3500	6000	≤19	0.75	1.8	64
120.0	16	24	–	48	8.5	–	P232_0400KX301_0030 MF	3500	3500	6000	≤19	0.75	1.8	64
140.0	18	23	–	46	8.0	–	P232_0700KX301_0020 MF	3500	3000	5500	≤19	0.80	1.8	66
150.0	19	25	–	51	8.0	–	P232_0500KX301_0030 MF	3500	3500	6000	≤19	0.75	1.8	64
200.0	16	21	–	41	8.0	–	P232_1000KX301_0020 MF	3500	3000	5500	≤19	0.80	1.6	66
210.0	18	23	–	46	8.0	–	P232_0700KX301_0030 MF	3500	3500	6000	≤19	0.75	1.8	64
300.0	16	21	–	41	8.0	–	P232_1000KX301_0030 MF	3500	3500	6000	≤19	0.75	1.6	64

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*

Exact Ratio (i)	Output Torque: Nom. [1] M_{2N} Nm	Output Torque: Accel. M_{2acc} Nm	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT} Nm	Output Torque: Peak [2] M_{2NOT} Nm	Back-lash $\Delta\phi_2$ arcmin	Red. Back-lash $\Delta\phi_{2red}$ arcmin	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic All	Motor Shaft [3] Max Ø d_{MW} mm	Input Inertia J_1 kgcm²	Tors. Stiffness C_2 Nm/arcmin	Oper. Noise L_{pA} dB(A)
P3KX														
3.000	29	38	38	68	7.5	5.5	P331_0030KX301_0010 MF	3000	2500	4500	≤19	1.3	2.4	70
4.000	39	50	50	91	6.5	4.5	P331_0040KX301_0010 MF	3000	2500	4500	≤19	1.1	3.3	70
5.000	45	63	63	113	6.0	4.0	P331_0050KX301_0010 MF	3000	2500	4500	≤19	1.1	3.8	70
6.000	29	38	38	77	7.5	5.5	P331_0030KX301_0020 MF	3500	3000	5500	≤19	0.87	2.4	66
7.000	45	69	75	138	5.5	3.5	P331_0070KX301_0010 MF	3000	2500	4500	≤19	1.0	4.2	70
8.000	39	50	50	103	6.5	4.5	P331_0040KX301_0020 MF	3500	3000	5500	≤19	0.83	3.3	66
10.00	45	63	63	129	6.0	4.0	P331_0050KX301_0020 MF	3500	3000	5500	≤19	0.82	3.8	66
12.00	39	50	50	103	6.5	4.5	P331_0040KX301_0030 MF	3500	3500	6000	≤19	0.76	3.3	64
14.00	45	69	75	138	5.5	3.5	P331_0070KX301_0020 MF	3500	3000	5500	≤19	0.81	4.2	66
15.00	45	63	63	129	6.0	4.0	P331_0050KX301_0030 MF	3500	3500	6000	≤19	0.75	3.8	64
16.00	40	63	65	126	5.5	3.5	P331_0080KX301_0020 MF	3500	3000	5500	≤19	0.81	4.1	66
20.00	36	60	60	120	5.0	3.0	P331_0100KX301_0020 MF	3500	3000	5500	≤19	0.81	4.0	66
21.00	45	69	75	138	5.5	3.5	P331_0070KX301_0030 MF	3500	3500	6000	≤19	0.75	4.2	64
24.00	40	63	65	126	5.5	3.5	P331_0080KX301_0030 MF	3500	3500	6000	≤19	0.75	4.1	64
30.00	36	60	60	120	5.0	3.0	P331_0100KX301_0030 MF	3500	3500	6000	≤19	0.75	4.0	64
32.00	45	65	65	130	5.5	3.5	P332_0160KX301_0020 MF	3500	3000	5500	≤19	0.81	5.0	66
35.00	50	75	75	150	5.5	3.5	P332_0350KX301_0010 MF	3000	2500	4500	≤19	1.0	5.2	70
40.00	50	75	75	150	5.5	3.5	P332_0200KX301_0020 MF	3500	3000	5500	≤19	0.81	5.1	66
50.00	50	75	75	150	5.5	3.5	P332_0250KX301_0020 MF	3500	3000	5500	≤19	0.81	5.1	66
56.00	45	65	70	130	5.5	3.5	P332_0280KX301_0020 MF	3500	3000	5500	≤19	0.81	5.1	66
60.00	50	75	75	150	5.5	3.5	P332_0200KX301_0030 MF	3500	3500	6000	≤19	0.75	5.1	64
64.00	48	63	65	126	5.5	3.5	P332_0320KX301_0020 MF	3500	3000	5500	≤19	0.81	4.5	66
70.00	50	75	75	150	5.5	3.5	P332_0350KX301_0020 MF	3500	3000	5500	≤19	0.81	5.2	66
75.00	50	75	75	150	5.5	3.5	P332_0250KX301_0030 MF	3500	3500	6000	≤19	0.75	5.1	64
80.00	45	65	65	130	5.5	3.5	P332_0400KX301_0020 MF	3500	3000	5500	≤19	0.80	4.8	66
84.00	45	65	70	130	5.5	3.5	P332_0280KX301_0030 MF	3500	3500	6000	≤19	0.75	5.1	64
100.0	50	75	75	150	5.0	3.0	P332_0500KX301_0020 MF	3500	3000	5500	≤19	0.80	5.0	66
105.0	50	75	75	150	5.5	3.5	P332_0350KX301_0030 MF	3500	3500	6000	≤19	0.75	5.2	64
120.0	45	65	65	130	5.5	3.5	P332_0400KX301_0030 MF	3500	3500	6000	≤19	0.75	4.8	64
140.0	53	69	69	138	5.0	3.0	P332_0700KX301_0020 MF	3500	3000	5500	≤19	0.80	4.9	66
150.0	50	75	75	150	5.0	3.0	P332_0500KX301_0030 MF	3500	3500	6000	≤19	0.75	5.0	64
200.0	46	60	60	120	5.0	3.0	P332_1000KX301_0020 MF	3500	3000	5500	≤19	0.80	4.3	66
210.0	53	69	69	138	5.0	3.0	P332_0700KX301_0030 MF	3500	3500	6000	≤19	0.75	4.9	64
300.0	46	60	60	120	5.0	3.0	P332_1000KX301_0030 MF	3500	3500	6000	≤19	0.75	4.3	64

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*



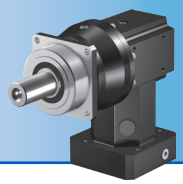
Selection Data

Exact Ratio (i)	Output Torque: Nom. M_{2N} [1]	Output Torque: Accel. M_{2acc}	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT}	Output Torque: Peak M_{2NOT} [2]	Back-lash $\Delta\phi_2$	Red. Back-lash $\Delta\phi_{2red}$	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic	Motor Shaft [3] Max Ø d_{MW}	Input Inertia J_1	Tors. Stiffness C_2	Oper. Noise L_{pA}
	Nm	Nm	Nm	Nm	arcmin	arcmin		EL 1,2,5,6	EL 3,4	All	mm	kgcm²	Nm/ arcmin	dB(A)
P4KX							**(continued next page)**							
3.000	50	73	73	155	7.5	5.5	P431_0030KX401_0010 MF	2500	2000	4000	≤24	3.1	5.3	72
4.000	78	97	97	206	6.5	4.5	P431_0040KX401_0010 MF	2500	2000	4000	≤24	2.7	7.3	72
5.000	85	121	121	258	6.0	4.0	P431_0050KX401_0010 MF	2500	2000	4000	≤24	2.6	8.6	72
6.000	50	73	73	155	7.5	5.5	P431_0030KX401_0020 MF	2500	2500	5000	≤24	1.8	5.3	68
7.000	85	135	143	271	5.5	3.5	P431_0070KX401_0010 MF	2500	2000	4000	≤24	2.4	9.2	72
8.000	78	97	97	206	6.5	4.5	P431_0040KX401_0020 MF	2500	2500	5000	≤24	1.7	7.3	68
10.00	90	121	121	258	6.0	4.0	P431_0050KX401_0020 MF	2500	2500	5000	≤24	1.7	8.6	68
12.00	78	97	97	206	6.5	4.5	P431_0040KX401_0030 MF	3000	3000	5500	≤24	1.5	7.3	66
14.00	90	135	143	271	5.5	3.5	P431_0070KX401_0020 MF	2500	2500	5000	≤24	1.6	9.2	68
15.00	90	121	121	258	6.0	4.0	P431_0050KX401_0030 MF	3000	3000	5500	≤24	1.5	8.6	66
16.00	80	120	125	239	5.5	3.5	P431_0080KX401_0020 MF	2500	2500	5000	≤24	1.6	8.5	68
20.00	75	115	115	230	5.0	3.0	P431_0100KX401_0020 MF	2500	2500	5000	≤24	1.6	8.4	68
21.00	90	135	143	271	5.5	3.5	P431_0070KX401_0030 MF	3000	3000	5500	≤24	1.4	9.2	66
24.00	80	120	125	239	5.5	3.5	P431_0080KX401_0030 MF	3000	3000	5500	≤24	1.4	8.5	66
30.00	75	115	115	230	5.0	3.0	P431_0100KX401_0030 MF	3000	3000	5500	≤24	1.4	8.4	66
32.00	89	130	130	260	5.5	3.5	P432_0160KX301_0020 MF	3500	3000	5500	≤19	0.83	11	66
35.00	102	133	138	266	5.5	3.5	P432_0350KX301_0010 MF	3000	2500	4500	≤19	1.0	12	70
40.00	95	134	139	268	5.5	3.5	P432_0200KX301_0020 MF	3500	3000	5500	≤19	0.82	12	66
50.00	100	134	139	268	5.5	3.5	P432_0250KX301_0020 MF	3500	3000	5500	≤19	0.82	12	66
56.00	95	130	130	260	5.5	3.5	P432_0280KX301_0020 MF	3500	3000	5500	≤19	0.81	12	66
60.00	95	134	139	268	5.5	3.5	P432_0200KX301_0030 MF	3500	3500	6000	≤19	0.76	12	64
64.00	90	126	131	253	5.5	3.5	P432_0320KX301_0020 MF	3500	3000	5500	≤19	0.83	9.4	66
70.00	102	133	138	266	5.5	3.5	P432_0350KX301_0020 MF	3500	3000	5500	≤19	0.81	12	66
75.00	100	134	139	268	5.5	3.5	P432_0250KX301_0030 MF	3500	3500	6000	≤19	0.75	12	64
80.00	87	130	130	260	5.5	3.5	P432_0400KX301_0020 MF	3500	3000	5500	≤19	0.81	12	66
84.00	95	130	130	260	5.5	3.5	P432_0280KX301_0030 MF	3500	3500	6000	≤19	0.75	12	64
100.0	102	132	138	264	5.0	3.0	P432_0500KX301_0020 MF	3500	3000	5500	≤19	0.81	12	66
105.0	102	133	138	266	5.5	3.5	P432_0350KX301_0030 MF	3500	3500	6000	≤19	0.75	12	64

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*

Exact Ratio (i)	Output Torque: Nom. [1] M_{2N}	Output Torque: Accel. M_{2acc}	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT}	Output Torque: Peak [2] M_{2NOT}	Back-lash $\Delta\phi_2$	Red. Back-lash $\Delta\phi_{2red}$	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic	Motor Shaft [3] Max Ø d_{MW}	Input Inertia J_1	Tors. Stiffness C_2	Oper. Noise L_{pA}
	Nm	Nm	Nm	Nm	arcmin	arcmin		EL 1,2,5,6	EL 3,4	All	mm	kgcm²	Nm/ arcmin	dB(A)
P4KX	**(continued from previous page)**													
120.0	87	130	130	260	5.5	3.5	**P432_0400KX301_0030 MF**	3500	3500	6000	≤19	0.75	12	64
140.0	97	127	127	253	5.0	3.0	**P432_0700KX301_0020 MF**	3500	3000	5500	≤19	0.81	11	66
150.0	102	132	138	264	5.0	3.0	**P432_0500KX301_0030 MF**	3500	3500	6000	≤19	0.75	12	64
200.0	85	110	110	220	5.0	3.0	**P432_1000KX301_0020 MF**	3500	3000	5500	≤19	0.81	9.0	66
210.0	97	127	127	253	5.0	3.0	**P432_0700KX301_0030 MF**	3500	3500	6000	≤19	0.75	11	64
300.0	85	110	110	220	5.0	3.0	**P432_1000KX301_0030 MF**	3500	3500	6000	≤19	0.75	9.0	64

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*

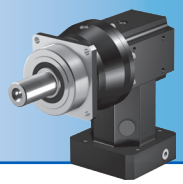


Exact Ratio (i)	Output Torque: Nom. M_{2N}	Output Torque: Accel. M_{2acc}	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT}	Output Torque: Peak M_{2NOT}	Back-lash $\Delta\phi_2$	Red. Back-lash $\Delta\phi_{2red}$	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic	Motor Shaft [3] Max Ø d_{MW}	Input Inertia J_1	Tors. Stiffness C_2	Oper. Noise L_{pA}
	Nm	Nm	Nm	Nm	arcmin	arcmin		EL 1,2,5,6	EL 3,4	All	mm	kgcm²	Nm/ arcmin	dB(A)
P5KX							**(continued next page)**							
3.000	120	183	183	387	6.5	4.5	P531_0030KX501_0010 MF	2500	2000	3500	≤32	10	13	74
4.000	194	244	244	515	5.5	3.5	P531_0040KX501_0010 MF	2500	2000	3500	≤32	8.6	18	74
5.000	210	306	306	644	5.0	3.0	P531_0050KX501_0010 MF	2500	2000	3500	≤32	8.2	22	74
6.000	120	183	183	387	6.5	4.5	P531_0030KX501_0020 MF	2500	2500	4500	≤32	6.0	13	70
7.000	210	333	380	667	4.5	2.5	P531_0070KX501_0010 MF	2500	2000	3500	≤32	7.8	25	74
8.000	194	244	244	515	5.5	3.5	P531_0040KX501_0020 MF	2500	2500	4500	≤32	5.6	18	70
10.00	220	306	306	644	5.0	3.0	P531_0050KX501_0020 MF	2500	2500	4500	≤32	5.5	22	70
12.00	194	244	244	515	5.5	3.5	P531_0040KX501_0030 MF	3000	3000	5000	≤32	4.9	18	68
14.00	210	333	380	667	4.5	2.5	P531_0070KX501_0020 MF	2500	2500	4500	≤32	5.4	25	70
15.00	220	306	306	644	5.0	3.0	P531_0050KX501_0030 MF	3000	3000	5000	≤32	4.9	22	68
16.00	200	296	300	592	4.5	2.5	P531_0080KX501_0020 MF	2500	2500	4500	≤32	5.3	21	70
20.00	180	288	288	575	4.0	2.0	P531_0100KX501_0020 MF	2500	2500	4500	≤32	5.3	24	70
21.00	210	333	380	667	4.5	2.5	P531_0070KX501_0030 MF	3000	3000	5000	≤32	4.8	25	68
24.00	200	296	300	592	4.5	2.5	P531_0080KX501_0030 MF	3000	3000	5000	≤32	4.8	21	68
30.00	180	288	288	575	4.0	2.0	P531_0100KX501_0030 MF	3000	3000	5000	≤32	4.8	24	68
32.00	220	300	300	600	4.5	2.5	P532_0160KX401_0020 MF	2500	2500	5000	≤24	1.7	29	68
35.00	270	352	352	704	4.5	2.5	P532_0350KX401_0010 MF	2500	2000	4000	≤24	2.4	32	72
40.00	250	355	364	710	4.5	2.5	P532_0200KX401_0020 MF	2500	2500	5000	≤24	1.7	31	68
50.00	260	355	357	710	4.5	2.5	P532_0250KX401_0020 MF	2500	2500	5000	≤24	1.7	31	68
56.00	231	300	300	600	4.5	2.5	P532_0280KX401_0020 MF	2500	2500	5000	≤24	1.6	31	68
60.00	250	355	364	710	4.5	2.5	P532_0200KX401_0030 MF	3000	3000	5500	≤24	1.5	31	66
64.00	240	312	363	624	4.5	2.5	P532_0320KX401_0020 MF	2500	2500	5000	≤24	1.7	25	68
70.00	270	352	352	704	4.5	2.5	P532_0350KX401_0020 MF	2500	2500	5000	≤24	1.6	32	68
75.00	260	355	357	710	4.5	2.5	P532_0250KX401_0030 MF	3000	3000	5500	≤24	1.5	31	66
80.00	214	300	300	600	4.5	2.5	P532_0400KX401_0020 MF	2500	2500	5000	≤24	1.6	31	68
84.00	231	300	300	600	4.5	2.5	P532_0280KX401_0030 MF	3000	3000	5500	≤24	1.4	31	66
100.0	269	352	352	704	4.0	2.0	P532_0500KX401_0020 MF	2500	2500	5000	≤24	1.6	32	68
105.0	270	352	352	704	4.5	2.5	P532_0350KX401_0030 MF	3000	3000	5500	≤24	1.4	32	66

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*

Exact Ratio (i)	Output Torque: Nom. [1] M_{2N}	Output Torque: Accel. M_{2acc}	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT}	Output Torque: Peak [2] M_{2NOT}	Back-lash $\Delta\phi_2$	Red. Back-lash $\Delta\phi_{2red}$	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic	Motor Shaft [3] Max Ø d_{MW}	Input Inertia J_1	Tors. Stiffness C_2	Oper. Noise L_{pA}
	Nm	Nm	Nm	Nm	arcmin	arcmin				All	mm	kgcm²	Nm/ arcmin	dB(A)
P5KX	**(continued from previous page)**													
120.0	214	300	300	600	4.5	2.5	**P532_0400KX401_0030 MF**	3000	3000	5500	≤24	1.4	31	66
140.0	263	345	357	690	4.0	2.0	**P532_0700KX401_0020 MF**	2500	2500	5000	≤24	1.6	30	68
150.0	269	352	352	704	4.0	2.0	**P532_0500KX401_0030 MF**	3000	3000	5500	≤24	1.4	32	66
200.0	221	288	288	575	4.0	2.0	**P532_1000KX401_0020 MF**	2500	2500	5000	≤24	1.6	26	68
210.0	263	345	357	690	4.0	2.0	**P532_0700KX401_0030 MF**	3000	3000	5500	≤24	1.4	30	66
300.0	221	288	288	575	4.0	2.0	**P532_1000KX401_0030 MF**	3000	3000	5500	≤24	1.4	26	66

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*

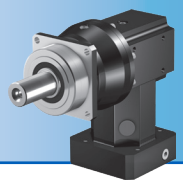


Exact Ratio (i)	Output Torque: Nom. M_{2N}	Output Torque: Accel. M_{2acc}	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT}	Output Torque: Peak M_{2NOT}	Back-lash $\Delta\phi_2$	Red. Back-lash $\Delta\phi_{2red}$	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic	Motor Shaft Max Ø d_{MW}	Input Inertia J_1	Tors. Stiffness C_2	Oper. Noise L_{pA}
	Nm	Nm	Nm	Nm	arcmin	arcmin					mm	kgcm²	Nm/ arcmin	dB(A)
P7KX	**(continued next page)**													
3.000	280	364	364	680	6.5	4.5	P731_0030KX701_0010 MF	1800	1600	3000	≤38	34	38	76
4.000	388	485	485	907	5.5	3.5	P731_0040KX701_0010 MF	1800	1600	3000	≤38	29	47	76
5.000	440	606	606	1134	5.0	3.0	P731_0050KX701_0010 MF	1800	1600	3000	≤38	27	52	76
6.000	291	364	364	773	6.5	4.5	P731_0030KX701_0020 MF	1800	1800	3500	≤38	17	38	72
7.000	440	805	840	1588	4.5	2.5	P731_0070KX701_0010 MF	1800	1600	3000	≤38	26	54	76
8.000	388	485	485	1031	5.5	3.5	P731_0040KX701_0020 MF	1800	1800	3500	≤38	16	47	72
10.00	440	606	606	1289	5.0	3.0	P731_0050KX701_0020 MF	1800	1800	3500	≤38	15	52	72
12.00	388	485	485	1031	5.5	3.5	P731_0040KX701_0030 MF	2100	2100	4000	≤38	13	47	70
14.00	440	805	840	1610	4.5	2.5	P731_0070KX701_0020 MF	1800	1800	3500	≤38	15	54	72
15.00	440	606	606	1289	5.0	3.0	P731_0050KX701_0030 MF	2100	2100	4000	≤38	13	52	70
16.00	400	668	700	1336	4.5	2.5	P731_0080KX701_0020 MF	1800	1800	3500	≤38	15	53	72
20.00	350	575	575	1150	4.0	2.0	P731_0100KX701_0020 MF	1800	1800	3500	≤38	15	52	72
21.00	440	805	840	1610	4.5	2.5	P731_0070KX701_0030 MF	2100	2100	4000	≤38	13	54	70
24.00	400	668	700	1336	4.5	2.5	P731_0080KX701_0030 MF	2100	2100	4000	≤38	13	53	70
30.00	350	575	575	1150	4.0	2.0	P731_0100KX701_0030 MF	2100	2100	4000	≤38	12	52	70
32.00	450	700	700	1400	4.5	2.5	P732_0160KX501_0020 MF	2500	2500	4500	≤32	5.5	59	70
35.00	540	770	805	1540	4.5	2.5	P732_0350KX501_0010 MF	2500	2000	3500	≤32	7.9	62	74
40.00	460	805	805	1610	4.5	2.5	P732_0200KX501_0020 MF	2500	2500	4500	≤32	5.5	60	70
50.00	500	805	805	1610	4.5	2.5	P732_0250KX501_0020 MF	2500	2500	4500	≤32	5.4	62	70
56.00	538	700	700	1400	4.5	2.5	P732_0280KX501_0020 MF	2500	2500	4500	≤32	5.4	62	70
60.00	460	805	805	1610	4.5	2.5	P732_0200KX501_0030 MF	3000	3000	5000	≤32	4.9	60	68
64.00	470	730	730	1460	4.5	2.5	P732_0320KX501_0020 MF	2500	2500	4500	≤32	5.5	56	70
70.00	540	770	805	1540	4.5	2.5	P732_0350KX501_0020 MF	2500	2500	4500	≤32	5.3	62	70
75.00	500	805	805	1610	4.5	2.5	P732_0250KX501_0030 MF	3000	3000	5000	≤32	4.8	62	68
80.00	454	700	700	1400	4.5	2.5	P732_0400KX501_0020 MF	2500	2500	4500	≤32	5.3	62	70
84.00	538	700	700	1400	4.5	2.5	P732_0280KX501_0030 MF	3000	3000	5000	≤32	4.8	62	68
100.0	565	770	805	1540	4.0	2.0	P732_0500KX501_0020 MF	2500	2500	4500	≤32	5.3	62	70
105.0	540	770	805	1540	4.5	2.5	P732_0350KX501_0030 MF	3000	3000	5000	≤32	4.8	62	68

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*

Exact Ratio (i)	Output Torque: Nom. [1] M_{2N}	Output Torque: Accel. M_{2acc}	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT}	Output Torque: Peak [2] M_{2NOT}	Back-lash $\Delta\phi_2$	Red. Back-lash $\Delta\phi_{2red}$	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic	Motor Shaft [3] Max Ø d_{MW}	Input Inertia J_1	Tors. Stiffness C_2	Oper. Noise L_{pA}
	Nm	Nm	Nm	Nm	arcmin	arcmin					mm	kgcm²	Nm/ arcmin	dB(A)
P7KX	**(continued from previous page)**													
120.0	454	700	700	1400	4.5	2.5	P732_0400KX501_0030 MF	3000	3000	5000	≤32	4.8	62	68
140.0	584	762	799	1525	4.0	2.0	P732_0700KX501_0020 MF	2500	2500	4500	≤32	5.3	59	70
150.0	565	770	805	1540	4.0	2.0	P732_0500KX501_0030 MF	3000	3000	5000	≤32	4.8	62	68
200.0	423	550	550	1100	4.0	2.0	P732_1000KX501_0020 MF	2500	2500	4500	≤32	5.3	54	70
210.0	584	762	799	1525	4.0	2.0	P732_0700KX501_0030 MF	3000	3000	5000	≤32	4.8	59	68
300.0	423	550	550	1100	4.0	2.0	P732_1000KX501_0030 MF	3000	3000	5000	≤32	4.8	54	68

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*

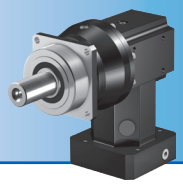


Exact Ratio (i)	Output Torque: Nom. [1] M_{2N}	Output Torque: Accel. M_{2acc}	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT}	Output Torque: Peak [2] M_{2NOT}	Back-lash $\Delta\phi_2$	Red. Back-lash $\Delta\phi_{2red}$	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic	Motor Shaft [3] Max Ø d_{MW}	Input Inertia J_1	Tors. Stiffness C_2	Oper. Noise L_{pA}
	Nm	Nm	Nm	Nm	arcmin	arcmin				All	mm	kgcm²	Nm/ arcmin	dB(A)
P8KX	**(continued next page)**													
3.000	291	364	364	680	6.5	4.5	P831_0030KX701_0010 MF	1800	1600	3000	≤38	67	59	76
4.000	388	485	485	907	5.5	3.5	P831_0040KX701_0010 MF	1800	1600	3000	≤38	43	84	76
5.000	485	606	606	1134	5.0	3.0	P831_0050KX701_0010 MF	1800	1600	3000	≤38	36	104	76
6.000	291	364	364	773	6.5	4.5	P831_0030KX701_0020 MF	1800	1800	3500	≤38	25	59	72
7.000	679	849	849	1588	4.5	2.5	P831_0070KX701_0010 MF	1800	1600	3000	≤38	31	125	76
8.000	388	485	485	1031	5.5	3.5	P831_0040KX701_0020 MF	1800	1800	3000	≤38	29	128	76
10.00	772	1213	1213	2268	4.0	2.0	P831_0050KX701_0020 MF	1800	1800	3000	≤38	28	130	76
12.00	776	970	970	1814	4.5	2.5	P831_0040KX701_0030 MF	2100	2100	4000	≤38	14	84	70
14.00	679	849	849	1804	4.5	2.5	P831_0070KX701_0020 MF	1800	1800	3500	≤38	16	125	72
15.00	485	606	606	1289	5.0	3.0	P831_0050KX701_0030 MF	2100	2100	4000	≤38	14	104	70
16.00	776	970	970	2062	4.5	2.5	P831_0080KX701_0020 MF	1800	1800	3500	≤38	16	128	72
20.00	850	1213	1213	2577	4.0	2.0	P831_0100KX701_0020 MF	1800	1800	3500	≤38	15	130	72
21.00	679	849	849	1804	4.5	2.5	P831_0070KX701_0030 MF	2100	2100	4000	≤38	13	125	70
24.00	776	970	970	2062	4.5	2.5	P831_0080KX701_0030 MF	2100	2100	4000	≤38	13	128	70
30.00	850	1213	1213	2577	4.0	2.0	P831_0100KX701_0030 MF	2100	2100	4000	≤38	13	130	70
32.00	1100	1600	1600	3200	4.5	2.5	P832_0160KX701_0020 MF	1800	1800	3500	≤38	16	163	72
35.00	1415	1840	2000	3230	4.5	2.5	P832_0350KX701_0010 MF	1800	1600	3000	≤38	26	173	76
40.00	1250	1840	2000	3230	4.5	2.5	P832_0200KX701_0020 MF	1800	1800	3500	≤38	16	169	72
50.00	1300	1840	2000	3230	4.5	2.5	P832_0250KX701_0020 MF	1800	1800	3500	≤38	15	172	72
56.00	1100	1600	1600	3200	4.5	2.5	P832_0280KX701_0020 MF	1800	1800	3500	≤38	15	168	72
60.00	1250	1840	2000	3230	4.5	2.5	P832_0200KX701_0030 MF	2100	2100	4000	≤38	13	169	70
64.00	1173	1525	1595	3049	4.5	2.5	P832_0320KX701_0020 MF	1800	1800	3500	≤38	16	157	72
70.00	1415	1840	2000	3230	4.5	2.5	P832_0350KX701_0020 MF	1800	1800	3500	≤38	15	173	72
75.00	1300	1840	2000	3230	4.5	2.5	P832_0250KX701_0030 MF	2100	2100	4000	≤38	13	172	70
80.00	1097	1600	1600	3200	4.5	2.5	P832_0400KX701_0020 MF	1800	1800	3500	≤38	15	166	72
84.00	1100	1600	1600	3200	4.5	2.5	P832_0280KX701_0030 MF	2100	2100	4000	≤38	13	168	70
100.0	1415	1840	2000	3230	4.0	2.0	P832_0500KX701_0020 MF	1800	1800	3500	≤38	15	172	72
105.0	1415	1840	2000	3230	4.5	2.5	P832_0350KX701_0030 MF	2100	2100	4000	≤38	13	173	70

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*

Exact Ratio (i)	Output Torque: Nom. [1] M_{2N}	Output Torque: Accel. M_{2acc}	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT}	Output Torque: Peak [2] M_{2NOT}	Back-lash $\Delta\phi_2$	Red. Back-lash $\Delta\phi_{2red}$	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Max. Input Speed RPM (n1): Continuous EL 3,4	Max. Input Speed RPM (n1): Cyclic	Motor Shaft [3] Max Ø d_{MW}	Input Inertia J_1	Tors. Stiffness C_2	Oper. Noise L_{pA}
	Nm	Nm	Nm	Nm	arcmin	arcmin		EL 1,2,5,6	EL 3,4	All	mm	kgcm²	Nm/ arcmin	dB(A)
P8KX	**(continued from previous page)**													
120.0	1097	1600	1600	3200	4.5	2.5	**P832_0400KX701_0030 MF**	2100	2100	4000	≤38	13	166	70
140.0	1238	1610	1610	3220	4.0	2.0	**P832_0700KX701_0020 MF**	1800	1800	3500	≤38	15	163	72
150.0	1415	1840	2000	3230	4.0	2.0	**P832_0500KX701_0030 MF**	2100	2100	4000	≤38	12	172	70
200.0	1015	1320	1320	2640	4.0	2.0	**P832_1000KX701_0020 MF**	1800	1800	3500	≤38	15	148	72
210.0	1238	1610	1610	3220	4.0	2.0	**P832_0700KX701_0030 MF**	2100	2100	4000	≤38	12	163	70
300.0	1015	1320	1320	2640	4.0	2.0	**P832_1000KX701_0030 MF**	2100	2100	4000	≤38	12	148	70

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*



Exact Ratio (i)	Output Torque: Nom. M_{2N} [1] Nm	Output Torque: Accel. M_{2acc} Nm	Output Torque: Accel. Torque for Reduced Backlash M_{2accHT} Nm	Output Torque: Peak M_{2NOT} [2] Nm	Back-lash $\Delta\phi_2$ arcmin	Red. Back-lash $\Delta\phi_{2red}$ arcmin	Part Number* (Gearhead + Input)	Max. Input Speed RPM (n1): Continuous EL 1,2,5,6	Continuous EL 3,4	Cyclic All	Motor Shaft [3] Max Ø d_{MW} mm	Input Inertia J_1 kgcm²	Tors. Stiffness C_2 Nm/arcmin	Oper. Noise L_{pA} dB(A)
P9KX														
16.00	1520	1900	–	3705	4.5	–	P932_0160KX701_0010 MF	1800	1600	3000	≤38	44	348	76
20.00	1900	2375	–	4632	4.5	–	P932_0200KX701_0010 MF	1800	1600	3000	≤38	43	368	76
25.00	2375	2969	–	5789	4.5	–	P932_0250KX701_0010 MF	1800	1600	3000	≤38	36	381	76
28.00	2280	3000	–	6000	4.5	–	P932_0280KX701_0010 MF	1800	1600	3000	≤38	31	381	76
32.00	1520	1900	–	4211	4.5	–	P932_0160KX701_0020 MF	1800	1800	3500	≤38	20	348	72
35.00	2376	3300	–	6600	4.5	–	P932_0350KX701_0010 MF	1800	1600	3000	≤38	30	391	76
40.00	1900	2375	–	5263	4.5	–	P932_0200KX701_0020 MF	1800	1800	3500	≤38	19	368	72
50.00	2375	2969	–	6579	4.5	–	P932_0250KX701_0020 MF	1800	1800	3500	≤38	17	381	72
56.00	2280	3000	–	6000	4.5	–	P932_0280KX701_0020 MF	1800	1800	3500	≤38	16	381	72
60.00	1900	2375	–	5263	4.5	–	P932_0200KX701_0030 MF	2100	2100	4000	≤38	14	368	70
70.00	2376	3300	–	6600	4.5	–	P932_0350KX701_0020 MF	1800	1800	3500	≤38	16	391	72
75.00	2375	2969	–	6579	4.5	–	P932_0250KX701_0030 MF	2100	2100	4000	≤38	14	381	70
80.00	2000	3000	–	6000	4.5	–	P932_0400KX701_0020 MF	1800	1800	3500	≤38	15	384	72
84.00	2280	3000	–	6000	4.5	–	P932_0280KX701_0030 MF	2100	2100	4000	≤38	13	381	70
100.0	2295	3200	–	6400	4.0	–	P932_0500KX701_0020 MF	1800	1800	3500	≤38	15	393	72
105.0	2376	3300	–	6600	4.5	–	P932_0350KX701_0030 MF	2100	2100	4000	≤38	13	391	70
120.0	2000	3000	–	6000	4.5	–	P932_0400KX701_0030 MF	2100	2100	4000	≤38	13	384	70
140.0	2387	3156	–	6312	4.0	–	P932_0700KX701_0020 MF	1800	1800	3500	≤38	15	369	72
150.0	2295	3200	–	6400	4.0	–	P932_0500KX701_0030 MF	2100	2100	4000	≤38	13	393	70
200.0	1692	2200	–	4400	4.0	–	P932_1000KX701_0020 MF	1800	1800	3500	≤38	15	320	72
210.0	2387	3156	–	6312	4.0	–	P932_0700KX701_0030 MF	2100	2100	4000	≤38	13	369	70
300.0	1692	2200	–	4400	4.0	–	P932_1000KX701_0030 MF	2100	2100	4000	≤38	13	320	70

[1] *Based on input speed of 1500 RPM. See page 166 for details on torque calculations.*
[2] *Maximum momentary torque for emergency stops or heavy shock load. (Admissible stops per life of gearhead = 1,000 stops maximum.)*
* *MF = Motor adapter with FlexiAdapt® coupling*