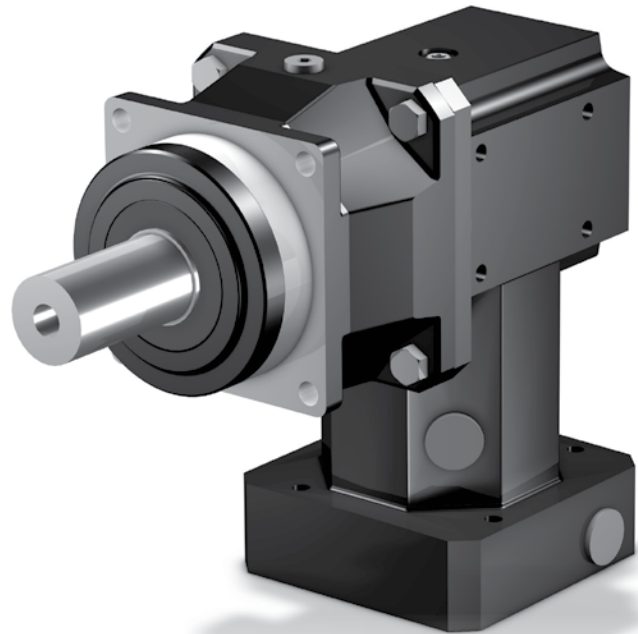


STOBER PKX Series Right Angle ServoFit® Precision Planetary Gearheads combines the P Series gearhead and a low ratio right angle which uses the FlexiAdapt® motor coupling. HeliCamber® gear technology provides minimum wear, low backlash, and low noise. They have all the great features of the P Series unit with the configuration of a right angle.



PKX Series Advantages

- 3:1 to 300:1 ratios
- Backlash as low as 4 arcmins
- Readily attaches to any servo motor (IEC, NEMA, or customized motor plates*)
- 93 to 95% efficiency
- 5 year limited warranty (2 years on bearings, seals, etc.)
- Input RPM up to 6,000
- High torsional stiffness
- Compact
- Advanced gear technology
- Quiet running
- Assembled in the U.S.A.

* Maximum 10 working days for custom motor mounting plates

PKX Direction of Rotation

(Viewed looking into output shaft)

CW	CCW
P721_KX701 P821_KX801 P822_KX701 P922_KX801	P221_KX301 P222_KX301 P321_KX301 P322_KX301 P421_KX401 P422_KX301 P521_KX501 P522_KX401 P722_KX501

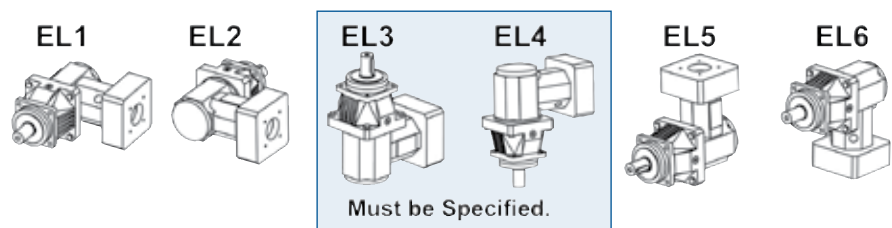
PKX Series Features

- Ring gear machined integral to the housing – not welded or pressed in – provides greater concentricity and eliminates speed fluctuation
- Highest running smoothness achieved by proven helical gearing and gear tooth microgeometry; gear quality provided by case-hardened and finish-ground sun and planet gears
- Magnetic oil filtration
- Bearing options for application specific radial load, axial load, and tilting moments
- Motor plate can be easily changed to fit your choice of motors; pilot toleranced to fit your motor for precise concentricity
- Highest running accuracy and precision ensured by single piece housing
- Additional benefits of the one-piece housing are dissipating heat, noise dampening, and greater lubrication retention on the ring gear
- The FlexiAdapt® motor coupling is designed for accurate and precise motor installation. The integrated thermal expansion feature in the shape of a bellows compensates for linear expansion of the motor shaft. The FlexiAdapt motor shaft adapter system allows installation of motor in minutes without special tools

PKX Mounting Position Options

Mount PKX in Any Horizontal Position (EL1, EL2, EL5, and EL6)

Mounting PKX in Vertical Position (EL3 and EL4) MUST BE SPECIFIED





Overview

Selection Options *At-a-Glance*

PKX Series Gearheads are available in a wide range of user-selected design options that tailor the gearhead to your motor choice and exact application requirements. Use the appropriate order codes on the following pages to build a part number for the complete gearhead assembly.

Part Number Example: **P 2 2 1 S P D 0040 KX301VF 0010 MF F**

Design Option	Part Number Code	Description
Series	P	Planetary
Gearhead Size	2 3 4 5 7 8 9	7 sizes of gearhead
Generation	2	Version of gearhead
# of Stages	1 2	One stage for ratios of ≤ 30:1 Two stage for ratios >30:1
Housing	S	Standard mounting style
Output Shaft	P G	Shaft with key Plain shaft (no key)
Bearing Options	R D Z	Ball bearing Double row angular contact bearing Cylindrical roller bearing
Ratio	0040	Ratios range from 4:1 to 100:1 (0040=4:1; 0160=16:1; 1000=100:1, etc.)
Secondary Unit	KX301VF	KX Series right angle unit: 5 sizes, 1 stage, with output shaft (V) & flange (F)
Secondary Unit Ratio	0010	Ratios range from 1:1 to 3:1 (0010=1:1; 0020=2:1; 0030=3:1)
Motor Adapter	MF	FlexiAdapt® motor adapter (see also motor mounting plate option)
Special Options	F	Food Duty (size P3 thru P5 only)

General Specifications

Efficiency	≥93 – 95%
Lubrication	Synthetic oil – lubricated for life
Degree of Protection	IP65 - FKM shaft seals
Mounting Position	See page 242
Installation	Requires grade 10.9 fasteners. See Gearhead Installation Notes, page 352, for more information
Direction of Rotation	See page 242
Ambient Temperature	0° C to +40°C (104° F) [Unit temperature ≤ 90° C Max.]
Coating	Black (RAL 9005)
Lifetime* Ln (hrs)	Ln > 10,000 hours if M2K/M2A < 1.25 and > 1.00 Ln > 20,000 hours if M2K/M2A > 1.25 and < 1.50 Ln > 30,000 hours if M2K/M2A > 1.5
Warranty	5 Year Limited (2 years on normal wear items: bearings, seals, etc.)

* M2A equals actual tilting moment of the application. See page 247 for calculation details.

PKX 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	P221	P222	P321	P322	P421	P422	P521	P522	P721	P722	P821	P822	P922
Secondary Unit	KX3	KX3	KX3	KX3	KX4	KX3	KX5	KX4	KX7	KX5	KX8	KX7	KX8
Acceleration	Nm	22		65		120		300		700		1600	3000
Torque M_{2BMAX}	in.lbs	195		576		1063		2657		6201		14,173	26,574
Output Torque Nom. ¹⁾ M_{2N}	Nm	16		45		85		210		440		1000	2000
	in.lbs	142		399		753		1860		3898		8858	17,716
Torsional Stiffness	Nm/arcmin	1.9		5		11		33		55		176	340
	in.lbs/arcmin	17		44		100		266		486		1557	3016
Torsional Backlash ²⁾ $\Delta\phi$	arcmin	$\leq 7 - 8.5$		$\leq 5 - 7.5$		$\leq 5 - 7.5$		$\leq 4 - 6.5$		$\leq 4 - 6.5$		$\leq 4 - 6.5$	
Input Speed Max.	Continuous	3500	3500	3500	3500	3000	3500	3000	3000	2100	3000	1300	2100
n_{1MAX}	Cyclic	6000	6000	6000	6000	4500	6000	4000	4500	3500	4000	3000	3500
Efficiency (@nom torque)	%	96	94	96	94	96	94	96	94	96	94	96	94
Weight	kg	3.3	3.9	4.0	4.6	6.8	7.0	12.8	11.3	23.2	21.3	47.4	43.2
	lbs	7.3	8.6	8.8	101	15	16	28.5	25	51	47	105	95
Noise ³⁾	dB(A)	≤ 70	≤ 70	≤ 70	≤ 70	≤ 70	≤ 70	≤ 70	≤ 72	≤ 72	≤ 72	≤ 74	≤ 72

Performance by Bearing Design Option ⁴⁾ (R = Ball bearing D = Double row angular contact bearing Z = Cylindrical roller bearing)

Size/Generation		P22KX	P32KX	P42KX	P52KX	P72KX	P82KX	P92KX
Axial Load Max.	R	N lbs	500 112	1000 225	1500 337	2300 518	2900 653	4700 1058
	D	N lbs	—	1400 315	2250 506	3500 788	4500 1013	7500 1688
	Z	N lbs	—	600 135	1000 225	1600 360	2000 450	3600 810
Radial Load Max.	R	N lbs	1200 270	2500 563	4000 900	6500 1463	8000 1800	13,000 2925
	D	N lbs	—	2750 619	4500 1013	7000 1575	9000 2025	15,000 3375
	Z	N lbs	—	3000 675	5000 1125	8000 1800	10,000 2250	18,000 4050
Tilting Moment Max.	R	Nm in.lbs	34 300	88 779	160 1416	338 2991	536 4774	897 5938
	D	Nm in.lbs	—	105 929	194 1717	406 3593	648 5735	1140 10,089
	Z	Nm in.lbs	—	105 929	200 1770	416 3682	670 5929	1242 10,992

¹⁾ Ratings based on input speed (n_1) of 2000 RPM.

For torque at higher input speeds (M_{2NX}) solve the formula:
where n_1 = Actual Input Speed.

$$M_{2NX} = \frac{M_{2N}}{\sqrt[3]{\frac{n_1}{2000}}}$$

²⁾ Tested at 1.5% of nominal torque and recorded on the output side of the gearhead. For lower backlash, contact STOBER technical support.

³⁾ Measurement at one (1) meter distance with input speed (n_1) of 2000 RPM.

⁴⁾ See page 246 for output bearing options. Rating based on output speed (n_2) of 100 RPM. For values at other speeds see page 247.



Overview

PKX Series Motor Mounting Plate Option (Motor information required with Motor Adapter MF option)

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

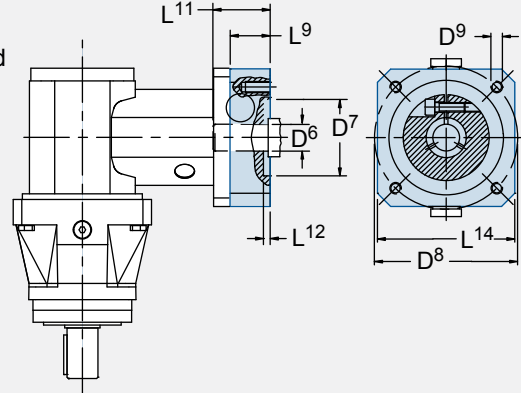
NOTE: When ordering a gearhead:

- 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

- D⁶ Motor Shaft Diameter
(If an adapter bushing is required it will be supplied with the motor plate.)
- D⁷ Pilot Diameter
- D⁸ Bolt Circle Diameter
- D⁹ Bolt Diameter
- L¹¹ Motor Shaft Length
- L¹² Pilot Length
- L¹⁴ Square Flange
(Optional – motor plate will typically be made to match this dimension.)



Motor Mounting Plate Dimensions — mm (Gearhead Part Number Specific)

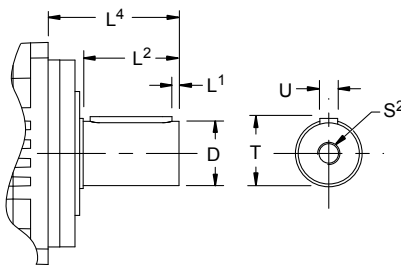
	P221KX3 P222KX3	P321KX3 P322KX3 P422KX3	P421KX4 P522KX4	P521KX5 P722KX5	P721KX7 P822KX7	P821KX8 P922KX8
Maximum Allowed Motor Shaft Dia. D ⁶	14	19	24	32	38	48
Minimum Allowed Motor Plate Thickness L ^{9*}	15	18	21	24	25	33

* Note that the L⁹ motor plate thickness is determined by the motor shaft length. The minimum motor plate thickness is the value listed.

PKX RIGHT ANGLE – Solid Shaft Output

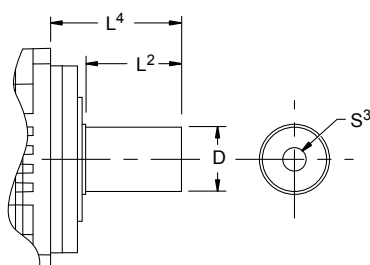
PKX Series Output Shaft Options (“P” or “G” designated in part number, for example: P421S P...)

P Shaft with Key



Unit	D k6		L ¹		L ²		L ⁴		S ² (1)	T		U (2)
	mm	mm	mm	in	mm	in	mm	in		mm	in	
P3KX	16	+0.012/+0.001	2	0.08	28	1.10	48	1.89	M5	18.0	0.71	A5x5x22
P4KX	22	+0.015/+0.002	3	0.11	36	1.42	56	2.20	M8	24.5	0.96	A6x6x28
P5KX	32	+0.018/+0.002	3	0.11	58	2.28	88	3.46	M12	35.0	1.38	A10x8x50
P7KX	40	+0.018/+0.002	4	0.16	82	3.23	112	4.41	M16	43.0	1.69	A12x8x70
P8KX	55	+0.021/+0.002	6	0.24	82	3.23	112	4.41	M20	59.0	2.32	A16x10x70
P9KX	75	+0.021/+0.002	7	0.28	105	4.13	143	5.63	M20	79.5	3.13	A20x12x90

G Shaft without Key



Unit	D k6		L ²		L ⁴		S ³ (1)
	mm	mm	mm	in	mm	in	
P3KX	16	+0.012/+0.001	28	1.10	48	1.89	M5
P4KX	22	+0.015/+0.002	36	1.42	56	2.20	M8
P5KX	32	+0.018/+0.002	58	2.28	88	3.46	M12
P7KX	40	+0.018/+0.002	82	3.23	112	4.41	M16
P8KX	55	+0.021/+0.002	82	3.23	112	4.41	M20
P9KX	75	+0.021/+0.002	105	4.13	143	5.63	M20

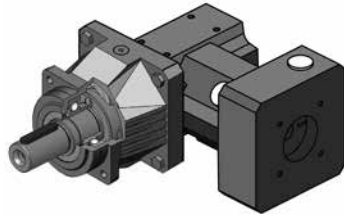
(1) The center hole in shafts with keys (Option “P”) are machined to DIN 332 T2 shape DR.

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

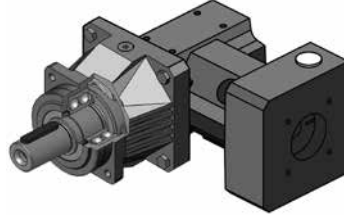
PKX Series: RIGHT ANGLE – Solid Shaft Output

PKX Output Bearing Options

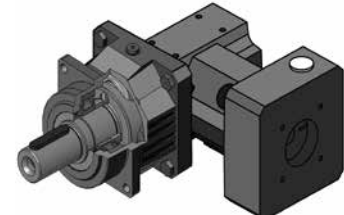
R Ball Bearing



D Double Row Angular Contact Bearing



Z Cylindrical Roller Bearing



Characteristics:	R Ball Bearing	D Double Row Angular Contact Bearing	Z Cylindrical Roller Bearing
	<ul style="list-style-type: none"> Minimal frictional torque Good radial load capacity Axial load approx. 35% of radial load 	<ul style="list-style-type: none"> Low frictional torque Good radial bearing capacity Axial load approx. 50% of radial load 	<ul style="list-style-type: none"> Very good radial load capacity Axial load approx. 20% of radial load
Applications:	<ul style="list-style-type: none"> Spur geared rack/pinion Couplings Belt with or without light tension 	<ul style="list-style-type: none"> Helical geared rack/pinion Couplings with high axial load Belt with or without light tension 	<ul style="list-style-type: none"> Prestressed belt drive Prestressed spur rack drive Applications with high radial loads and/or high service requirements

Permissible Output Shaft Load and Tilting Moments*

Unit	Z ₂		F _{2A}		F _{2R}		F _{2RB}		M _{2K}		M _{2KB}	
	mm	in	N	lbs.	N	lbs.	N	lbs.	Nm	in.lbs	Nm	in.lbs
R Ball Bearing												
P2KX	17	0.669	500	112	1200	270	1300	293	34	300	36	319
P3KX	21	0.827	1000	225	2500	563	2500	563	88	779	88	779
P4KX	22	0.866	1500	337	4000	900	4500	1013	160	1416	180	1593
P5KX	23	0.906	2300	518	6500	1463	7000	1575	338	2708	364	3221
P7KX	26	1.023	2900	653	8000	1800	9000	2025	536	4744	603	5337
P8KX	28	1.102	4700	1058	13,000	2925	18,000	4050	897	7938	1242	10,992
P9KX	40	1.575	6000	1350	18,000	4050	27,000	6075	1665	14,735	2498	22,107
D Double Row Angular Contact Bearing												
P3KX	24	0.945	1400	315	2750	619	2750	619	105	929	105	929
P4KX	25	0.984	2250	506	4500	1013	5000	1125	194	1717	215	1903
P5KX	29	1.142	3500	788	7000	1575	8000	1800	406	3593	464	4106
P7KX	31	1.220	4500	1013	9000	2025	10000	2250	648	5735	720	6372
P8KX	35	1.378	7500	1688	15,000	3375	18,000	4050	1140	10,089	1368	12,107
P9KX	51	2.008	10,000	2250	20,000	4500	30,000	6750	2070	18,320	3105	27,479
Z Cylindrical Roller Bearing												
P3KX	21	0.83	600	135	3000	675	3000	675	105	929	105	929
P4KX	22	0.87	1000	225	5000	1125	5000	1125	200	1770	200	1770
P5KX	23	0.91	1600	360	8000	1800	8000	1800	416	3682	416	3682
P7KX	26	1.02	2000	450	10,000	2250	10,000	2250	670	5929	670	5929
P8KX	28	1.10	3600	810	18,000	4050	18,000	4050	1242	10,992	1242	10,992
P9KX	40	1.58	5000	1125	27,000	6075	35,000	7875	2500	22,125	3238	28,656

* Refer to illustration and definitions on page 247.

During EMERGENCY OFF operation (maximum stops per gearhead = 1000) the permissible values in the table for F_{2A} , F_{2R} 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_0).



Overview

PKX

RIGHT ANGLE – Solid Shaft Output

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:

$$F_{2AX} = \frac{F_{2A}}{\sqrt[3]{\frac{n_2}{100}}} \quad F_{2RX} = \frac{F_{2R}}{\sqrt[3]{\frac{n_2}{100}}} \quad M_{2KX} = \frac{M_{2K}}{\sqrt[3]{\frac{n_2}{100}}}$$

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

$$M_{2A} = \frac{2 \cdot F_{2a} \cdot y_2 + F_{2rb} \cdot (x_2 + z_2)}{1000} \leq M_{2KB}$$

$$M_{2ka} = \sqrt[3]{\frac{n_{2b1} \cdot t_{b1} \cdot M_{2kb1}^3 + \dots + n_{2bn} \cdot t_{bn} \cdot M_{2kbn}^3}{n_{2b1} \cdot t_{b1} + \dots + n_{2bn} \cdot t_{bn}}} \leq M_{2K}$$

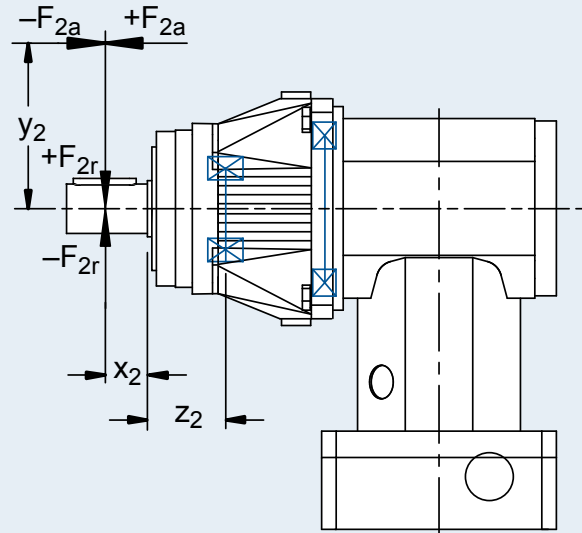
$$F_{2r} = \sqrt[3]{\frac{n_{2b1} \cdot t_{b1} \cdot F_{2rb1}^3 + \dots + n_{2bn} \cdot t_{bn} \cdot F_{2rbn}^3}{n_{2b1} \cdot t_{b1} + \dots + n_{2bn} \cdot t_{bn}}} \leq F_{2R}$$

Where:

- F_{2a}** Axial Load at Output Shaft
- F_{2A}** Permissible Axial Load
- F_{2r}** Radial Load at Output Shaft
- F_{2R}** Permissible Radial Load
- F_{2RB}** Acceleration Permissible Radial Load
- M_{2K}** Rated Tilting Torque
- M_{2k}** Equivalent Tilting Load
- M_{2KB}** Acceleration Tilting Torque
- z₂** Distance Factor

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 $\leq 40\%$

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

bearing life for duty cycle $\geq 40\%$

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



PKX Series: RIGHT ANGLE – Solid Shaft Output

Exact Ratio (i)	Output Torque						Part Number* (Gearhead + Right Angle Unit + Input)	Maximum Input Speed RPM (n1)			Motor Shaft Max Ø D ⁶ mm	Input Inertia J ₁ kgcm ²	Torsional Stiffness C ₂ (per arcmin)		
	Nominal ¹⁾ M _{2N}		Acceleration M _{2B}		Peak ²⁾ M _{2PEAK}			Continuous		Cyclic			Nm		in.lbs.
	Nm	in.lbs.	Nm	in.lbs.	Nm	in.lbs.		EL 1,2,5,6	EL 3,4	All					

P221_KX301 One Stage

4.000	16	142	22	195	44	390	P221S_0040 KX301VF0010 MF	3000	2500	4000	19	1.05	1.5	13.6
5.000	16	142	22	195	44	390	P221S_0050 KX301VF0010 MF	3000	2500	4000	19	1.03	1.6	14.6
7.000	16	142	22	195	44	390	P221S_0070 KX301VF0010 MF	3000	2500	4000	19	1.02	1.7	14.9
8.000	16	142	22	195	44	390	P221S_0040 KX301VF0020 MF	3500	3000	5000	19	0.81	1.5	13.6
10.00	16	142	22	195	44	390	P221S_0050 KX301VF0020 MF	3500	3000	5000	19	0.81	1.6	14.6
15.00	16	142	22	195	44	390	P221S_0050 KX301VF0030 MF	3500	3500	6000	19	0.75	1.6	14.6
20.00	12	106	18	159	36	319	P221S_0100 KX301VF0020 MF	3500	3000	5000	19	0.80	1.6	13.7
21.00	16	142	22	195	44	390	P221S_0070 KX301VF0030 MF	3500	3500	6000	19	0.75	1.7	14.9
24.00	14	124	18	159	36	319	P221S_0080 KX301VF0030 MF	3500	3500	6000	19	0.75	1.6	14.3
30.00	12	106	18	159	36	319	P221S_0100 KX301VF0030 MF	3500	3500	6000	19	0.75	1.6	13.7

¹⁾ Based on input speed of 2000 RPM. See page 244 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

PXX

RIGHT ANGLE – Solid Shaft Output

Exact Ratio (i)	Output Torque						Part Number* (Gearhead + Right Angle Unit + Input)	Maximum Input Speed RPM (n1)			Motor Shaft Max Ø D ⁶ mm	Input Inertia J1 kgcm ²	Torsional Stiffness C2 (per arcmin)		
	Nominal ¹⁾ M2N		Acceleration M2B		Peak ²⁾ M2PEAK			Continuous	Cyclic	By Mounting Position			Nm	in.lbs.	
	Nm	in.lbs.	Nm	in.lbs.	Nm	in.lbs.		EL 1,2,5,6	EL 3,4						All

P222_KX301 Two Stage

35.00	16	142	22	195	44	390	P222S_0350 KX301VF0010 MF	3000	2500	4000	19	1.02	1.8	16.1
40.00	16	142	22	195	44	390	P222S_0200 KX301VF0020 MF	3500	3000	5000	19	0.81	1.8	16.0
50.00	16	142	22	195	44	390	P222S_0250 KX301VF0020 MF	3500	3000	5000	19	0.81	1.8	16.1
56.00	16	142	22	195	44	390	P222S_0280 KX301VF0020 MF	3500	3000	5000	19	0.81	1.8	15.7
60.00	16	142	22	195	44	390	P222S_0200 KX301VF0030 MF	3500	3500	6000	19	0.75	1.8	16.0
70.00	16	142	22	195	44	390	P222S_0350 KX301VF0020 MF	3500	3000	5000	19	0.81	1.8	16.1
75.00	16	142	22	195	44	390	P222S_0250 KX301VF0030 MF	3500	3500	6000	19	0.75	1.8	16.1
80.00	16	142	22	195	44	390	P222S_0400 KX301VF0020 MF	3500	3000	5000	19	0.80	1.8	15.6
84.00	16	142	22	195	44	390	P222S_0280 KX301VF0030 MF	3500	3500	6000	19	0.75	1.8	15.7
100.0	16	142	22	195	44	390	P222S_0500 KX301VF0020 MF	3500	3000	5000	19	0.80	1.8	16.0
105.0	16	142	22	195	44	390	P222S_0350 KX301VF0030 MF	3500	3500	6000	19	0.75	1.8	16.1
120.0	16	142	22	195	44	390	P222S_0400 KX301VF0030 MF	3500	3500	6000	19	0.75	1.8	15.6
140.0	16	142	22	195	44	390	P222S_0700 KX301VF0020 MF	3500	3000	5000	19	0.80	1.8	15.6
150.0	16	142	22	195	44	390	P222S_0500 KX301VF0030 MF	3500	3500	6000	19	0.75	1.8	16.0
200.0	12	106	18	159	36	319	P222S_1000 KX301VF0020 MF	3500	3000	5000	19	0.80	1.6	14.0
210.0	16	142	22	195	44	390	P222S_0700 KX301VF0030 MF	3500	3500	6000	19	0.75	1.8	15.6
300.0	12	106	18	159	36	319	P222S_1000 KX301VF0030 MF	3500	3500	6000	19	0.75	1.6	14.0

¹⁾ Based on input speed of 2000 RPM. See page 244 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

PKX Series: RIGHT ANGLE – Solid Shaft Output

Exact Ratio (i)	Output Torque						Part Number* (Gearhead + Right Angle Unit + Input)	Maximum Input Speed RPM (n1)			Motor Shaft Max Ø D ⁶ mm	Input Inertia J ₁ kgcm ²	Torsional Stiffness C ₂ (per arcmin)	
	Nominal ¹⁾ M _{2N}		Acceleration M _{2B}		Peak ²⁾ M _{2PEAK}			Continuous		Cyclic			Nm	in.lbs.
	Nm	in.lbs.	Nm	in.lbs.	Nm	in.lbs.		EL 1,2,5,6	EL 3,4	All				

P321_KX301 One Stage

3.000	29	258	38	335	64	567	P321S_0030 KX301VF0010 MF	3000	2500	4000	19	1.21	2.5	22.3
4.000	39	344	50	447	85	756	P321S_0040 KX301VF0010 MF	3000	2500	4000	19	1.13	3.2	28.2
5.000	45	399	63	558	107	945	P321S_0050 KX301VF0010 MF	3000	2500	4000	19	1.08	3.6	32.1
6.000	29	258	38	335	73	644	P321S_0030 KX301VF0020 MF	3500	3000	5000	19	0.85	2.5	22.3
7.000	45	399	60	531	130	1152	P321S_0070 KX301VF0010 MF	3000	2500	4000	19	1.04	3.7	33.0
8.000	39	344	50	447	97	859	P321S_0040 KX301VF0020 MF	3500	3000	5000	19	0.83	3.2	28.2
10.00	45	399	63	558	121	1074	P321S_0050 KX301VF0020 MF	3500	3000	5000	19	0.82	3.6	32.1
15.00	45	399	63	558	121	1074	P321S_0050 KX301VF0030 MF	3500	3500	6000	19	0.75	3.6	32.1
20.00	30	266	50	443	100	886	P321S_0100 KX301VF0020 MF	3500	3000	5000	19	0.81	3.7	32.8
21.00	45	399	60	531	130	1152	P321S_0070 KX301VF0030 MF	3500	3500	6000	19	0.75	3.7	33.0
24.00	40	354	50	443	100	886	P321S_0080 KX301VF0030 MF	3500	3500	6000	19	0.75	3.7	32.9
30.00	30	266	50	443	100	886	P321S_0100 KX301VF0030 MF	3500	3500	6000	19	0.75	3.7	32.8

P322_KX301 Two Stage

35.00	45	399	65	576	130	1152	P322S_0350 KX301VF0010 MF	3000	2500	4000	19	1.02	4.5	40.3
40.00	45	399	65	576	130	1152	P322S_0200 KX301VF0020 MF	3500	3000	5000	19	0.81	4.5	39.9
50.00	45	399	65	576	130	1152	P322S_0250 KX301VF0020 MF	3500	3000	5000	19	0.81	4.5	40.2
56.00	45	399	65	576	130	1152	P322S_0280 KX301VF0020 MF	3500	3000	5000	19	0.81	4.4	39.2
60.00	45	399	65	576	130	1152	P322S_0200 KX301VF0030 MF	3500	3500	6000	19	0.75	4.5	39.9
70.00	45	399	65	576	130	1152	P322S_0350 KX301VF0020 MF	3500	3000	5000	19	0.81	4.5	40.3
75.00	45	399	65	576	130	1152	P322S_0250 KX301VF0030 MF	3500	3500	6000	19	0.75	4.5	40.2
80.00	45	399	65	576	130	1152	P322S_0400 KX301VF0020 MF	3500	3000	5000	19	0.80	4.4	38.7
84.00	45	399	65	576	130	1152	P322S_0280 KX301VF0030 MF	3500	3500	6000	19	0.75	4.4	39.2
100.0	45	399	65	576	130	1152	P322S_0500 KX301VF0020 MF	3500	3000	5000	19	0.80	4.5	39.9
105.0	45	399	65	576	130	1152	P322S_0350 KX301VF0030 MF	3500	3500	6000	19	0.75	4.5	40.3
120.0	45	399	65	576	130	1152	P322S_0400 KX301VF0030 MF	3500	3500	6000	19	0.75	4.4	38.7
140.0	45	399	60	531	130	1152	P322S_0700 KX301VF0020 MF	3500	3000	5000	19	0.80	4.2	36.8
150.0	45	399	65	576	130	1152	P322S_0500 KX301VF0030 MF	3500	3500	6000	19	0.75	4.5	39.9
200.0	30	266	50	443	100	886	P322S_1000 KX301VF0020 MF	3500	3000	5000	19	0.80	3.9	34.5
210.0	45	399	60	531	130	1152	P322S_0700 KX301VF0030 MF	3500	3500	6000	19	0.75	4.2	36.8
300.0	30	266	50	443	100	886	P322S_1000 KX301VF0030 MF	3500	3500	6000	19	0.75	3.9	34.5

¹⁾ Based on input speed of 2000 RPM. See page 244 for torque calculations at higher speed.

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

PKX

RIGHT ANGLE – Solid Shaft Output

Exact Ratio (i)	Output Torque						Part Number* (Gearhead + Right Angle Unit + Input)	Maximum Input Speed RPM (n1)			Motor Shaft Max Ø D ⁶ mm	Input Inertia J ₁ kgcm ²	Torsional Stiffness C ₂ (per arcmin)	
	Nominal ¹⁾ M _{2N}		Acceleration M _{2B}		Peak ²⁾ M _{2PEAK}			Continuous		Cyclic			Nm	in.lbs.
	Nm	in.lbs.	Nm	in.lbs.	Nm	in.lbs.		EL 1,2,5,6	EL 3,4	All				

P421_KX401 One Stage

3.000	50	443	73	644	146	1289	P421S_0030 KX401VF0010 MF	2500	2000	3500	24	3.05	5.2	46.4
4.000	78	687	97	859	194	1718	P421S_0040 KX401VF0010 MF	2500	2000	3500	24	2.65	6.9	60.7
5.000	85	753	120	1063	240	2126	P421S_0050 KX401VF0010 MF	2500	2000	3500	24	2.55	8.0	70.6
6.000	50	443	73	644	146	1289	P421S_0030 KX401VF0020 MF	2500	2500	4000	24	1.79	5.2	46.4
7.000	85	753	110	974	240	2126	P421S_0070 KX401VF0010 MF	2500	2000	3500	24	2.44	8.4	74.2
8.000	78	687	97	859	194	1718	P421S_0040 KX401VF0020 MF	2500	2500	4000	24	1.70	6.9	60.7
10.00	85	753	120	1063	240	2126	P421S_0050 KX401VF0020 MF	2500	2500	4000	24	1.67	8.0	70.6
15.00	85	753	120	1063	240	2126	P421S_0050 KX401VF0030 MF	3000	3000	4500	24	1.45	8.0	70.6
20.00	60	531	100	886	200	1772	P421S_0100 KX401VF0020 MF	2500	2500	4000	24	1.63	8.3	73.1
21.00	85	753	110	974	240	2126	P421S_0070 KX401VF0030 MF	3000	3000	4500	24	1.44	8.4	74.2
24.00	80	709	100	886	200	1772	P421S_0080 KX401VF0030 MF	3000	3000	4500	24	1.44	8.3	73.3
30.00	60	531	100	886	200	1772	P421S_0100 KX401VF0030 MF	3000	3000	4500	24	1.44	8.3	73.1

P422_KX301 Two Stage

32.00	85	753	120	1063	240	2126	P422S_0160 KX301VF0020 MF	3500	3000	5000	19	0.84	9.7	86.0
35.00	85	753	120	1063	240	2126	P422S_0350 KX301VF0010 MF	3000	2500	4000	19	1.05	10.4	92.1
40.00	85	753	120	1063	240	2126	P422S_0200 KX301VF0020 MF	3500	3000	5000	19	0.84	10.2	90.4
50.00	85	753	120	1063	240	2126	P422S_0250 KX301VF0020 MF	3500	3000	5000	19	0.82	10.4	91.8
60.00	85	753	120	1063	240	2126	P422S_0200 KX301VF0030 MF	3500	3500	6000	19	0.76	10.2	90.4
70.00	85	753	120	1063	240	2126	P422S_0350 KX301VF0020 MF	3500	3000	5000	19	0.81	10.4	92.1
75.00	85	753	120	1063	240	2126	P422S_0250 KX301VF0030 MF	3500	3500	6000	19	0.75	10.4	91.8
80.00	85	753	120	1063	240	2126	P422S_0400 KX301VF0020 MF	3500	3000	5000	19	0.81	10.0	88.4
100.0	85	753	120	1063	240	2126	P422S_0500 KX301VF0020 MF	3500	3000	5000	19	0.81	10.4	92.0
120.0	85	753	120	1063	240	2126	P422S_0400 KX301VF0030 MF	3500	3500	6000	19	0.75	10.0	88.4
140.0	85	753	110	974	240	2126	P422S_0700 KX301VF0020 MF	3500	3000	5000	19	0.81	9.6	84.7
150.0	85	753	120	1063	240	2126	P422S_0500 KX301VF0030 MF	3500	3500	6000	19	0.75	10.4	92.0
200.0	60	531	100	886	200	1772	P422S_1000 KX301VF0020 MF	3500	3000	5000	19	0.81	8.8	77.8
210.0	85	753	110	974	240	2126	P422S_0700 KX301VF0030 MF	3500	3500	6000	19	0.75	9.6	84.7
300.0	60	531	100	886	200	1772	P422S_1000 KX301VF0030 MF	3500	3500	6000	19	0.75	8.8	77.8

¹⁾ Based on input speed of 2000 RPM. See page 244 for torque calculations at higher speed.

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

PKX Series: RIGHT ANGLE – Solid Shaft Output

Exact Ratio (i)	Output Torque						Part Number* (Gearhead + Right Angle Unit + Input)	Maximum Input Speed RPM (n1)			Motor Shaft Max Ø D ⁶ mm	Input Inertia J ₁ kgcm ²	Torsional Stiffness C ₂ (per arcmin)	
	Nominal ¹⁾ M _{2N}		Acceleration M _{2B}		Peak ²⁾ M _{2PEAK}			Continuous		Cyclic			Nm	in.lbs.
	Nm	in.lbs.	Nm	in.lbs.	Nm	in.lbs.		EL 1,2,5,6	EL 3,4	All				

P521_KX501 One Stage

3.000	120	1063	183	1624	364	3222	P521S_0030 KX501VF0010 MF	2500	2000	3000	32	8.73	13.5	120.0
4.000	194	1718	244	2165	485	4296	P521S_0040 KX501VF0010 MF	2500	2000	3000	32	8.52	17.5	154.9
5.000	210	1860	300	2657	600	5315	P521S_0050 KX501VF0010 MF	2500	2000	3000	32	8.11	20.5	181.4
6.000	120	1063	183	1624	364	3222	P521S_0030 KX501VF0020 MF	2500	2500	3500	32	5.59	13.5	120.0
7.000	210	1860	270	2392	600	5315	P521S_0070 KX501VF0010 MF	2500	2000	3000	32	7.74	22.6	200.3
8.000	194	1718	244	2165	485	4296	P521S_0040 KX501VF0020 MF	2500	2500	3500	32	5.54	17.5	154.9
10.00	210	1860	300	2657	600	5315	P521S_0050 KX501VF0020 MF	2500	2500	3500	32	5.43	20.5	181.4
15.00	210	1860	300	2657	600	5315	P521S_0050 KX501VF0030 MF	3000	3000	4000	32	4.85	20.5	181.4
20.00	140	1240	250	2215	500	4429	P521S_0100 KX501VF0020 MF	2500	2500	3500	32	5.31	22.6	200.6
21.00	210	1860	270	2392	600	5315	P521S_0070 KX501VF0030 MF	3000	3000	4000	32	4.81	22.6	200.3
24.00	200	1772	250	2215	500	4429	P521S_0080 KX501VF0030 MF	3000	3000	4000	32	4.80	22.2	197.0
30.00	140	1240	250	2215	500	4429	P521S_0100 KX501VF0030 MF	3000	3000	4000	32	4.79	22.6	200.6

P522_KX401 Two Stage

32.00	210	1860	300	2657	555	4915	P522S_0160 KX401VF0020 MF	2500	2500	4000	24	1.71	24.8	220.0
35.00	210	1860	300	2657	600	5315	P522S_0350 KX401VF0010 MF	2500	2000	3500	24	2.46	27.1	239.9
40.00	210	1860	300	2657	600	5315	P522S_0200 KX401VF0020 MF	2500	2500	4000	24	1.70	26.3	233.2
50.00	210	1860	300	2657	600	5315	P522S_0250 KX401VF0020 MF	2500	2500	4000	24	1.67	26.9	238.3
60.00	210	1860	300	2657	600	5315	P522S_0200 KX401VF0030 MF	3000	3000	4500	24	1.47	26.3	233.2
70.00	210	1860	300	2657	600	5315	P522S_0350 KX401VF0020 MF	2500	2500	4000	24	1.65	27.1	239.9
75.00	210	1860	300	2657	600	5315	P522S_0250 KX401VF0030 MF	3000	3000	4500	24	1.46	26.9	238.3
80.00	210	1860	300	2657	555	4915	P522S_0400 KX401VF0020 MF	2500	2500	4000	24	1.64	25.8	228.8
100.0	210	1860	300	2657	600	5315	P522S_0500 KX401VF0020 MF	2500	2500	4000	24	1.64	27.0	239.4
120.0	210	1860	300	2657	555	4915	P522S_0400 KX401VF0030 MF	3000	3000	4500	24	1.44	25.8	228.8
140.0	210	1860	270	2392	600	5315	P522S_0700 KX401VF0020 MF	2500	2500	4000	24	1.63	26.2	232.0
150.0	210	1860	300	2657	600	5315	P522S_0500 KX401VF0030 MF	3000	3000	4500	24	1.44	27.0	239.4
200.0	140	1240	250	2215	500	4429	P522S_1000 KX401VF0020 MF	2500	2500	4000	24	1.63	24.3	214.9
210.0	210	1860	270	2392	600	5315	P522S_0700 KX401VF0030 MF	3000	3000	4500	24	1.44	26.2	232.0
300.0	140	1240	250	2215	500	4429	P522S_1000 KX401VF0030 MF	3000	3000	4500	24	1.44	24.3	214.9

¹⁾ Based on input speed of 2000 RPM. See page 244 for torque calculations at higher speed.

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

PXX

RIGHT ANGLE – Solid Shaft Output

Exact Ratio (i)	Output Torque						Part Number* (Gearhead + Right Angle Unit + Input)	Maximum Input Speed RPM (n1)			Motor Shaft Max Ø D ⁶ mm	Input Inertia J ₁ kgcm ²	Torsional Stiffness C ₂ (per arcmin)	
	Nominal ¹⁾ M _{2N}		Acceleration M _{2B}		Peak ²⁾ M _{2PEAK}			Continuous		Cyclic			Nm	in.lbs.
	Nm	in.lbs.	Nm	in.lbs.	Nm	in.lbs.		EL 1,2,5,6	EL 3,4	All				

P721_KX701 One Stage

3.000	280	2480	360	3186	640	5671	P721S_0030 KX701VF0010 MF	1800	1600	2250	38	33.17	36.8	325.7
4.000	388	3437	485	4296	854	7561	P721S_0040 KX701VF0010 MF	1800	1600	2250	38	28.45	43.0	381.1
5.000	440	3898	606	5370	1067	9451	P721S_0050 KX701VF0010 MF	1800	1600	2250	38	26.92	46.3	410.1
6.000	280	2480	360	3186	728	6444	P721S_0030 KX701VF0020 MF	1800	1800	3000	38	16.79	36.8	325.7
7.000	440	3898	650	5758	1256	11,127	P721S_0070 KX701VF0010 MF	1800	1600	2250	38	25.92	49.2	435.7
8.000	388	3437	485	4296	970	8592	P721S_0040 KX701VF0020 MF	1800	1800	3000	38	15.61	43.0	381.1
10.00	440	3898	606	5370	1213	10,740	P721S_0050 KX701VF0020 MF	1800	1800	3000	38	15.23	46.3	410.1
15.00	440	3898	606	5370	1213	10,740	P721S_0050 KX701VF0030 MF	2100	2100	3500	38	12.65	46.3	410.1
20.00	300	2657	500	4429	1000	8858	P721S_0100 KX701VF0020 MF	1800	1800	3000	38	14.85	47.0	416.8
21.00	440	3898	650	5758	1256	11,127	P721S_0070 KX701VF0030 MF	2100	2100	3500	38	12.54	49.2	435.7
24.00	400	3543	500	4429	1000	8858	P721S_0080 KX701VF0030 MF	2100	2100	3500	38	12.51	48.8	431.8
30.00	300	2657	500	4429	1000	8858	P721S_0100 KX701VF0030 MF	2100	2100	3500	38	12.48	47.0	416.8

P722_KX501 Two Stage

32.00	440	3898	700	6201	1381	12,235	P722S_0160 KX501VF0020 MF	2500	2500	3500	32	5.56	49.4	437.6
35.00	440	3898	700	6201	1400	12,401	P722S_0350 KX501VF0010 MF	2500	2000	3000	32	7.80	52.2	462.3
40.00	440	3898	700	6201	1400	12,401	P722S_0200 KX501VF0020 MF	2500	2500	3500	32	5.53	50.8	450.1
50.00	440	3898	700	6201	1400	12,401	P722S_0250 KX501VF0020 MF	2500	2500	3500	32	5.43	51.7	457.9
60.00	440	3898	700	6201	1400	12,401	P722S_0200 KX501VF0030 MF	3000	3000	4000	32	4.89	50.8	450.1
70.00	440	3898	700	6201	1400	12,401	P722S_0350 KX501VF0020 MF	2500	2500	3500	32	5.35	52.2	462.3
75.00	440	3898	700	6201	1400	12,401	P722S_0250 KX501VF0030 MF	3000	3000	4000	32	4.85	51.7	457.9
80.00	440	3898	700	6201	1381	12,235	P722S_0400 KX501VF0020 MF	2500	2500	3500	32	5.32	51.5	456.0
100.0	440	3898	700	6201	1400	12,401	P722S_0500 KX501VF0020 MF	2500	2500	3500	32	5.31	52.2	462.4
120.0	440	3898	700	6201	1381	12,235	P722S_0400 KX501VF0030 MF	3000	3000	4000	32	4.80	51.5	456.0
140.0	440	3898	650	5758	1256	11,127	P722S_0700 KX501VF0020 MF	2500	2500	3500	32	5.31	52.4	464.2
150.0	440	3898	700	6201	1400	12,401	P722S_0500 KX501VF0030 MF	3000	3000	4000	32	4.79	52.2	462.4
200.0	300	2657	500	4429	1000	8858	P722S_1000 KX501VF0020 MF	2500	2500	3500	32	5.31	48.4	429.1
210.0	440	3898	650	5758	1256	11,127	P722S_0700 KX501VF0030 MF	3000	3000	4000	32	4.79	52.4	464.2
300.0	300	2657	500	4429	1000	8858	P722S_1000 KX501VF0030 MF	3000	3000	4000	32	4.79	48.4	429.1

¹⁾ Based on input speed of 2000 RPM. See page 244 for torque calculations at higher speed.

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

PKX Series: RIGHT ANGLE – Solid Shaft Output

Exact Ratio (i)	Output Torque						Part Number* (Gearhead + Right Angle Unit + Input)	Maximum Input Speed RPM (n1)			Motor Shaft Max Ø D ⁶ mm	Input Inertia J ₁ kgcm ²	Torsional Stiffness C ₂ (per arcmin)		
	Nominal ¹⁾ M _{2N}		Acceleration M _{2B}		Peak ²⁾ M _{2PEAK}			Continuous		Cyclic			Nm		in.lbs.
	Nm	in.lbs.	Nm	in.lbs.	Nm	in.lbs.		EL 1,2,5,6	EL 3,4	All					
													Nm	in.lbs.	

P821_KX801 One Stage

3.000	582	5155	800	7089	1222	10,826	P821S_0030 KX801VF0010 MF	1000	750	1750	48	117.58	83.7	741.1
4.000	776	6874	1067	9451	1630	14,435	P821S_0040 KX801VF0010 MF	1000	750	1750	48	93.73	110.6	979.4
5.000	970	8592	1334	11,814	2037	18,044	P821S_0050 KX801VF0010 MF	1000	750	1750	48	86.91	127.9	1132.5
6.000	582	5155	800	7089	1455	12,888	P821S_0030 KX801VF0020 MF	1100	1100	2500	48	58.98	83.7	741.1
7.000	1000	8858	1400	12,401	2811	24,900	P821S_0070 KX801VF0010 MF	1000	750	1750	48	82.23	142.3	1260.7
8.000	776	6874	1067	9,451	1940	17,185	P821S_0040 KX801VF0020 MF	1100	1100	2500	48	53.02	110.6	979.4
10.00	970	8592	1334	11,814	2425	21,481	P821S_0050 KX801VF0020 MF	1100	1100	2500	48	51.31	127.9	1132.5
15.00	970	8592	1334	11,814	2425	21,481	P821S_0050 KX801VF0030 MF	1300	1300	3000	48	44.31	127.9	1132.5
20.00	700	6201	1200	10,630	2400	21,259	P821S_0100 KX801VF0020 MF	1100	1100	2500	48	49.54	138.8	1229.8
21.00	1000	8858	1400	12,401	2811	24,900	P821S_0070 KX801VF0030 MF	1300	1300	3000	48	43.79	142.3	1260.7
24.00	800	7086	1200	10,630	2400	21,259	P821S_0080 KX801VF0030 MF	1300	1300	3000	48	43.65	141.7	1254.9
30.00	700	6201	1200	10,630	2400	21,259	P821S_0100 KX801VF0030 MF	1300	1300	3000	48	43.52	138.8	1229.8

P822_KX701 Two Stage

32.00	800	7086	1600	14,173	3200	28,346	P822S_0160 KX701VF0020 MF	1800	1800	3000	38	15.75	158.0	1399.2
35.00	1000	8858	1600	14,173	3200	28,346	P822S_0350 KX701VF0010 MF	1800	1600	2250	38	26.03	167.6	1484.3
40.00	1000	8858	1600	14,173	3200	28,346	P822S_0200 KX701VF0020 MF	1800	1800	3000	38	15.64	164.4	1455.8
50.00	1000	8858	1600	14,173	3200	28,346	P822S_0250 KX701VF0020 MF	1800	1800	3000	38	15.30	166.1	1471.7
60.00	1000	8858	1600	14,173	3200	28,346	P822S_0200 KX701VF0030 MF	2100	2100	3500	38	12.83	164.4	1455.8
70.00	1000	8858	1600	14,173	3200	28,346	P822S_0350 KX701VF0020 MF	1800	1800	3000	38	15.01	167.6	1484.3
75.00	1000	8858	1600	14,173	3200	28,346	P822S_0250 KX701VF0030 MF	2100	2100	3500	38	12.68	166.1	1471.7
80.00	800	7086	1600	14,173	3200	28,346	P822S_0400 KX701VF0020 MF	1800	1800	3000	38	14.88	161.1	1427.2
100.0	1000	8858	1600	14,173	3200	28,346	P822S_0500 KX701VF0020 MF	1800	1800	3000	38	14.86	166.5	1475.1
120.0	800	7086	1600	14,173	3200	28,346	P822S_0400 KX701VF0030 MF	2100	2100	3500	38	12.49	161.1	1427.2
140.0	1000	8858	1400	12,401	2811	24,900	P822S_0700 KX701VF0020 MF	1800	1800	3000	38	14.85	163.9	1452.3
150.0	1000	8858	1600	14,173	3200	28,346	P822S_0500 KX701VF0030 MF	2100	2100	3500	38	12.49	166.5	1475.1
200.0	700	6201	1200	10,630	2400	21,259	P822S_1000 KX701VF0020 MF	1800	1800	3000	38	14.85	148.2	1312.6
210.0	1000	8858	1400	12,401	2811	24,900	P822S_0700 KX701VF0030 MF	2100	2100	3500	38	12.48	163.9	1452.3
300.0	700	6201	1200	10,630	2400	21,259	P822S_1000 KX701VF0030 MF	2100	2100	3500	38	12.48	148.2	1312.6

¹⁾ Based on input speed of 2000 RPM. See page 244 for torque calculations at higher speed.

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

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RIGHT ANGLE – Solid Shaft Output

Exact Ratio (i)	Output Torque						Part Number* (Gearhead + Right Angle Unit + Input)	Maximum Input Speed RPM (n1)			Motor Shaft Max Ø D ⁶ mm	Input Inertia J ₁ kgcm ²	Torsional Stiffness C ₂ (per arcmin)	
	Nominal ¹⁾ M _{2N}		Acceleration M _{2B}		Peak ²⁾ M _{2PEAK}			Continuous		Cyclic			Nm	in.lbs.
	Nm	in.lbs.	Nm	in.lbs.	Nm	in.lbs.		EL 1,2,5,6	EL 3,4	All				

P922_KX801 Two Stage

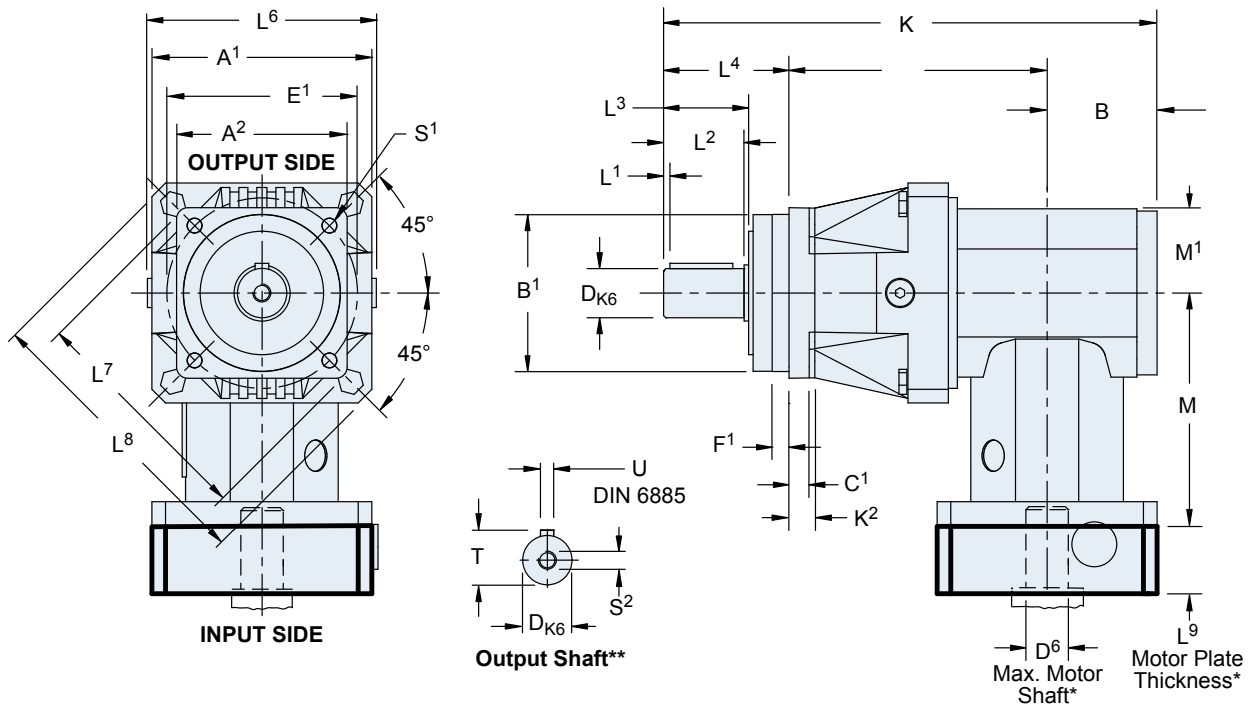
32.00	2000	17,716	3000	26,574	6000	53,148	P922S_0160 KX801VF0020 MF	1100	1100	2500	48	53.26	312.8	2770.8
35.00	2000	17,716	3000	26,574	6000	53,148	P922S_0350 KX801VF0010 MF	1000	750	1750	48	82.45	326.9	2895.9
40.00	2000	17,716	3000	26,574	6000	53,148	P922S_0200 KX801VF0020 MF	1100	1100	2500	48	52.98	318.5	2821.4
50.00	2000	17,716	3000	26,574	6000	53,148	P922S_0250 KX801VF0020 MF	1100	1100	2500	48	51.41	323.6	2866.1
60.00	2000	17,716	3000	26,574	6000	53,148	P922S_0200 KX801VF0030 MF	1300	1300	3000	48	45.05	318.5	2821.4
70.00	2000	17,716	3000	26,574	6000	53,148	P922S_0350 KX801VF0020 MF	1100	1100	2500	48	50.19	326.9	2895.9
75.00	2000	17,716	3000	26,574	6000	53,148	P922S_0250 KX801VF0030 MF	1300	1300	3000	48	44.35	323.6	2866.1
80.00	2000	17,716	3000	26,574	6000	53,148	P922S_0400 KX801VF0020 MF	1100	1100	2500	48	49.53	324.5	2874.4
100.0	2000	17,716	3000	26,574	6000	53,148	P922S_0500 KX801VF0020 MF	1100	1100	2500	48	49.48	326.2	2889.2
120.0	2000	17,716	3000	26,574	6000	53,148	P922S_0400 KX801VF0030 MF	1300	1300	3000	48	43.51	324.5	2874.4
140.0	2000	17,716	2700	23,917	5400	47,833	P922S_0700 KX801VF0020 MF	1100	1100	2500	48	49.45	314.7	2787.9
150.0	2000	17,716	3000	26,574	6000	53,148	P922S_0500 KX801VF0030 MF	1300	1300	3000	48	43.49	326.2	2889.2
200.0	1400	12,401	2000	17,716	4000	35,432	P922S_1000 KX801VF0020 MF	1100	1100	2500	48	49.43	255.2	2260.7
210.0	2000	17,716	2700	23,917	5400	47,833	P922S_0700 KX801VF0030 MF	1300	1300	3000	48	43.48	314.7	2787.9
300.0	1400	12,401	2000	17,716	4000	35,432	P922S_1000 KX801VF0030 MF	1300	1300	3000	48	43.47	255.2	2260.7

¹⁾ Based on input speed of 2000 RPM. See page 244 for torque calculations at higher speed.

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

One Stage Units



* See Motor Mounting Plate Option, page 245 for details.
** See Output Shaft Options, page 245 for details.

Table 1 Dimensions (mm)

Unit	A ¹	A ²	B ¹	h ₆	C ¹	D	k ₆	E ¹	F ¹	K ²
P221S_KX3	55	55	50	+0.000/-0.016	6	12	+0.012/+0.001	63	7.0	–
P321S_KX3	72	72	60	+0.000/-0.019	7	16	+0.012/+0.001	75	7.5	–
P421S_KX4	98	76	70	+0.000/-0.019	9	22	+0.015/+0.002	85	7.5	12
P521S_KX5	115	101	90	+0.000/-0.022	10	32	+0.018/+0.002	120	15	14
P721S_KX7	145	145	130	+0.000/-0.025	15	40	+0.018/+0.002	165	3.5	–
P821S_KX8	190	190	160	+0.000/-0.025	15	55	+0.021/+0.002	215	10	–

Table 3 Dimensions (mm)

Unit	B	K	M	M ¹	O
P221S_KX3	40	160	95.5	31	84
P321S_KX3	40	184	95.5	31	96
P421S_KX4	49	220	104	37.5	115
P521S_KX5	60	277	132	45	129
P721S_KX7	74	343	172.5	60	157
P821S_KX8	92	417	210	75	213

Table 2 Dimensions (mm)

Unit	L ¹	L ²	L ³	L ⁴	L ⁶	L ⁷	L ⁸	S ¹	S ²	T	U
P221S_KX3	2	22	24	36	62	74	80	5.5	M4x13.5	13.5	A4x4x18
P321S_KX3	2	28	30	48	79	–	92	5.5	M5x12.5	18	A5x5x22
P421S_KX4	3	36	38	56	98	103.3	130	6.6	M8x19	24.5	A6x6x28
P521S_KX5	3	58	60	88	121	139	149	9	M12x28	35	A10x8x50
P721S_KX7	4	82	85	112	145	–	190	11	M16x36	43	A12x8x70
P821S_KX8	6	82	85	112	190	–	250	13.5	M20x42	59	A12x8x70

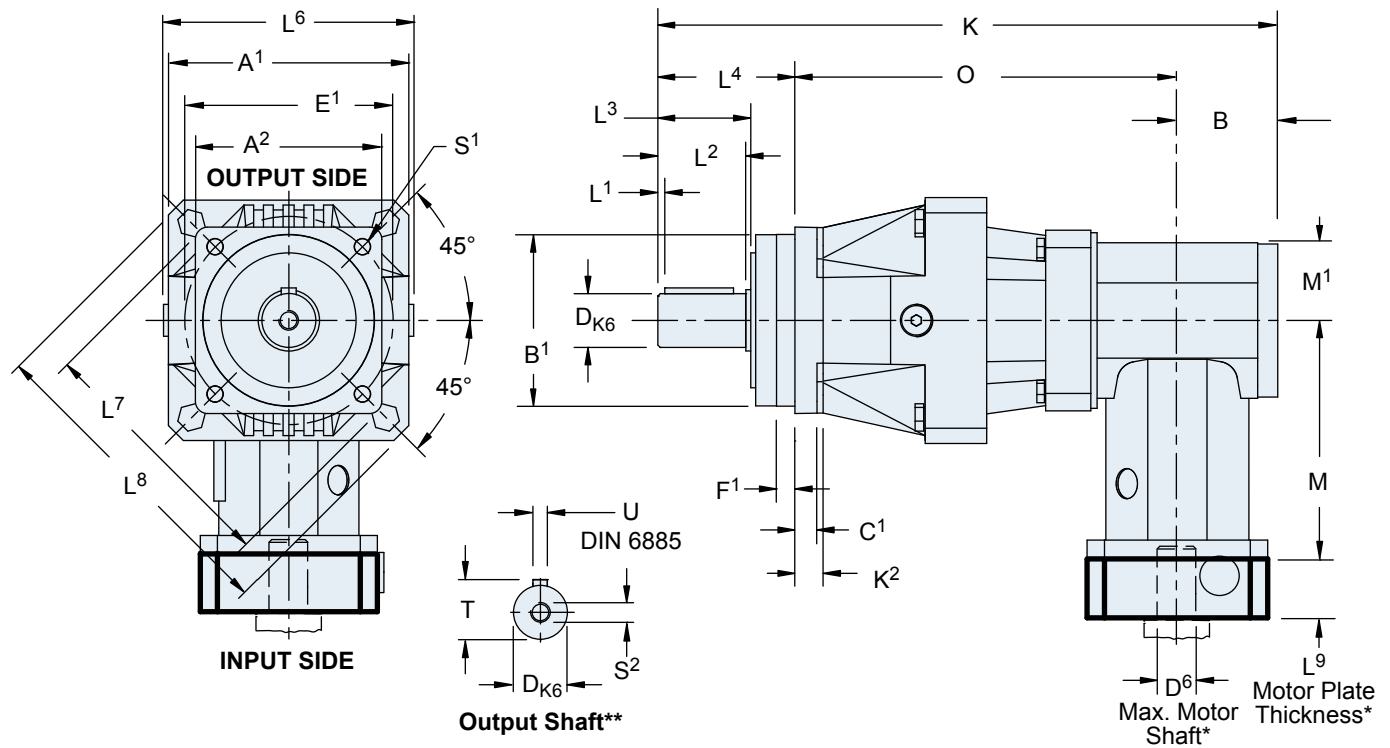


Dimensional Data

Two Stage Units

PXX

RIGHT ANGLE – Solid Shaft Output



* See Motor Mounting Plate Option, page 245 for details.
 ** See Output Shaft Options, page 245 for details.

Table 1 Dimensions (mm)

Unit	A ¹	A ²	B ¹	h ₆	C ¹	D	k ₆	E ¹	F ¹	K ²
P222S_KX3	55	55	50	+0.000/-0.016	6	12	+0.012/+0.001	63	7.0	-
P322S_KX3	72	72	60	+0.000/-0.019	7	16	+0.012/+0.001	75	7.5	-
P422S_KX3	98	76	70	+0.000/-0.019	9	22	+0.015/+0.002	85	7.5	12
P522S_KX4	115	101	90	+0.000/-0.022	10	32	+0.018/+0.002	120	15	14
P722S_KX5	145	145	130	+0.000/-0.025	15	40	+0.018/+0.002	165	3.5	-
P822S_KX7	190	190	160	+0.000/-0.025	15	55	+0.021/+0.002	215	10	-
P922S_KX8	225	212	180	+0.000/-0.025	17	75	+0.021/+0.002	250	10	22

Table 3 Dimensions (mm)

Unit	B	K	M	M ¹	O
P222S_KX3	40	192	95.5	31	116
P322S_KX3	40	224	95.5	31	136
P422S_KX3	40	249.5	95.5	31	153.5
P522S_KX4	49	309.5	104	37.5	172.5
P722S_KX5	60	378	132	45	206
P822S_KX7	74	451.5	172.5	60	265.5
P922S_KX8	92	575	210	75	340

Table 2 Dimensions (mm)

Unit	L ¹	L ²	L ³	L ⁴	L ⁶	L ⁷	L ⁸	S ¹	S ²	T	U
P222S_KX3	2	22	24	36	62	74	80	5.5	M4x13.5	13.5	A4x4x18
P322S_KX3	2	28	30	48	79	92	92	5.5	M5x18	18	A5x5x22
P422S_KX3	3	36	38	56	98	103.3	130	6.6	M8x19	24.5	A6x6x28
P522S_KX4	3	58	60	88	121	139	149	9	M12x28	35	A10x8x50
P722S_KX5	4	82	85	112	145	-	190	11	M16x36	43	A12x8x70
P822S_KX7	6	82	85	112	190	-	250	13.5	M20x42	59	A16x10x70
P922S_KX8	7	105	109	143	225	285	300	17.5	M20x42	79.5	A20x12x90