

HPK-Series Asynchronous Servo Motors



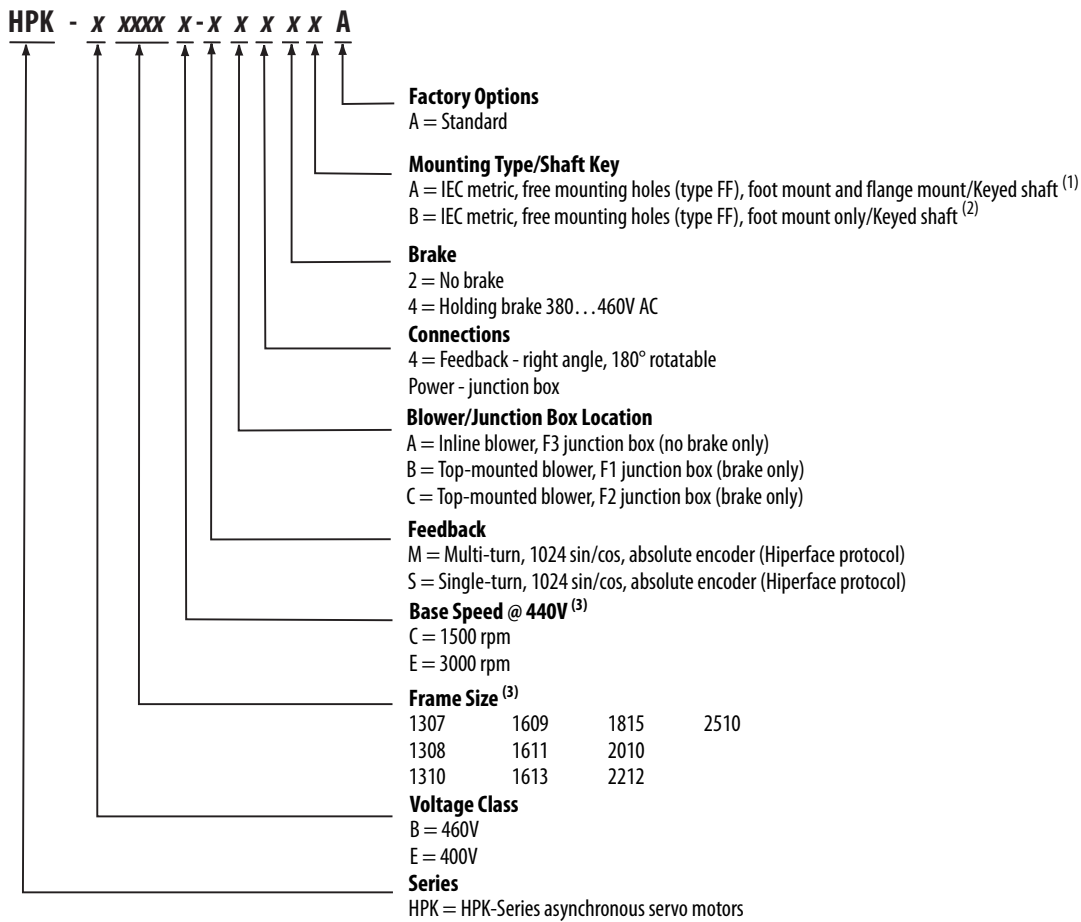
HPK-Series™ Asynchronous Servo Motors employ proven induction motor technology optimized for servo system performance. These high horsepower motors offer exceptional performance for rapid acceleration and deceleration. Team these AC motors with the Kinetix 7000 high power servo drives to extend the range of Kinetix Integrated Motion solutions up to 150 kW.

HPK-Series Asynchronous Motor Features

Attribute	Value
Main characteristics	<ul style="list-style-type: none"> • High-power • Large load inertia
Features	<ul style="list-style-type: none"> • 400V and 460V windings • DIN connectors, rotates 180° • Blower cooled • IEC flange or foot mount
Motor type	Asynchronous Induction Motors
Environmental rating	IP54
Certifications	HPK-Series rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	96...482 N·m (849...4266 lb·in)
Peak stall torque	192...964 N·m (1699...8531 lb·in)
Speed	Base speeds of 1500 and 3000 rpm
Motor rated output	17.1...150 kW
Compatible servo drives	Kinetix 7000
Typical applications	<ul style="list-style-type: none"> • High power packaging • Converting • Wind/unwind/rewind • Sheeters • Flying knife • Material handling

Catalog Numbers - HPK-Series Asynchronous Servo Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.



(1) Applies to only HPK-B/E13xx and HPK-B/E16xx motors.

(2) Applies to only HPK-B/E18xx, HPK-B/E20xx, HPK-B22xx, and HPK-B25xx motors.

(3) Not all combinations are available. Only the configurations for base speed and frame size, as listed in HPK-Series Asynchronous Servo Motor (460V) Performance Specifications on [page 115](#) and HPK-Series Asynchronous Servo Motor (400V) Performance Specifications on [page 115](#), are available. Use Motion Analyzer software to size and select motors for your application.

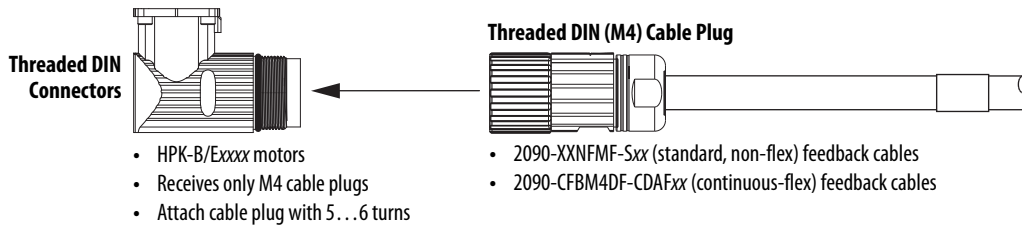
HPK-Series Asynchronous Servo Motor Encoders

HPK-Series motors are available with high performance encoders with a choice of single-turn (-S) or multi-turn (-M) high-resolution feedback:

- Up to 2 million counts per revolution for smooth performance.
- Single-turn encoder provides high-resolution absolute position feedback within one turn.
- Multi-turn encoder provides high-resolution absolute position feedback within 4096 turns.

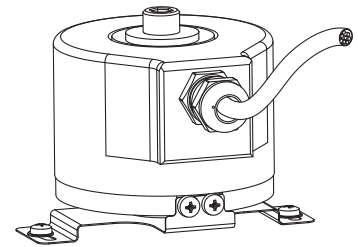
Motor Connector/Cable Compatibility

HPK-Series motors are equipped with threaded DIN connectors.



HPK-Series Asynchronous Servo Motor Options

- Multiple junction box mounting locations (F1, F2, and F3).
- Holding brake, 380V...460V AC.
- 460V and 400V windings.
- Encoder kit (catalog number HPK-xxxxxx-ENC-xx) available for field replacement. Kits are pre-programmed for a specific motor catalog number. Kit includes cable and DIN connector.



Technical Specifications - HPK-Series Asynchronous Servo Motors

HPK-Series Asynchronous Servo Motor (460V) Performance Specifications

Motor Cat. No.	Base Speed rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output at Base Speed kW (Hp)	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx kg (lb)
HPK-B1307C	1500	112 (991)	260 (2301)	17.1 (22.9)	0.081 (0.7168)	135 (297)
HPK-B1308C		141 (1247)	262 (2319)	21.6 (28.9)	0.098 (0.8673)	152 (335)
HPK-B1310C		155 (1372)	325 (2876)	23.8 (31.9)	0.111 (0.9823)	166 (366)
HPK-B1613C		271 (2398)	541.9 (4796)	41.7 (55.9)	0.206 (1.8231)	275 (606)
HPK-B1815C		360 (3186)	850 (7523)	55.9 (74.9)	0.468 (4.1418)	474 (1045)
HPK-B2010C		482 (4266)	970 (8585)	75.0 (100.5)	0.885 (7.8322)	531 (1170)
HPK-B2212C		607 (5371)	1105 (9780)	112 (150)	1.900 (16.829)	1095 (2414)
HPK-B2510C		955 (8452)	1927 (17,054)	150 (200)	3.070 (27.192)	1005 (2216)
HPK-B1307E	3000	96 (849)	165 (1460)	29.8 (39.9)	0.081 (0.7168)	135 (297)
HPK-B1308E		115 (1018)	230 (2035)	35.7 (47.8)	0.098 (0.8673)	152 (335)
HPK-B1609E		156 (1381)	270 (2390)	48.4 (64.8)	0.147 (1.3009)	231 (469)
HPK-B1611E		183 (1619)	400 (3540)	57.0 (76.4)	0.177 (1.5664)	244 (538)
HPK-B1613E		237 (2097)	459 (4062)	73.7 (98.8)	0.206 (1.8231)	275 (606)
HPK-B2010E		295 (2610)	500 (4425)	92.0 (125)	0.885 (7.8322)	351 (1170)

(1) Rotor inertia can vary slightly depending on feedback.

HPK-Series Asynchronous Servo Motor (400V) Performance Specifications

Motor Cat. No.	Base Speed rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output at Base Speed kW (Hp)	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx kg (lb)
HPK-E1307C	1500	112 (991)	263 (2327)	17.1 (22.9)	0.081 (0.7168)	135 (297)
HPK-E1310C		155 (1372)	380 (3363)	23.8 (32.4)	0.111 (0.9823)	166 (366)
HPK-E1613C		271 (2398)	625 (5531)	41.7 (55.9)	0.206 (1.8231)	275 (606)
HPK-E1815C		360 (3186)	840 (7434)	55.9 (74.9)	0.468 (4.1418)	474 (1045)
HPK-E2010C		482 (4266)	870 (7700)	75.0 (100.5)	0.885 (7.8322)	531 (1170)
HPK-E1307E	3000	96.0 (849)	202 (1788)	29.8 (39.9)	0.081 (0.7168)	135 (297)
HPK-E1308E		107 (947)	200 (1770)	33.2 (45.0)	0.098 (0.8673)	152 (335)
HPK-E1609E		156 (1381)	359 (3176)	48.4 (64.9)	0.147 (1.3009)	213 (469)
HPK-E1611E		183 (1619)	430 (3805)	57.0 (76.4)	0.177 (1.5664)	244 (538)
HPK-E1613E		237 (2097)	430 (3805)	73.7 (98.8)	0.206 (1.8231)	275 (606)

(1) Rotor inertia can vary slightly depending on feedback.

HPK-Series Asynchronous Servo Motor Brake Specifications

Motor Cat. No.	Holding Torque N·m (lb·in)
HPK-B/E1307C	20 (177)
HPK-B/E1308C	
HPK-B/E1310C	
HPK-B/E1613C	
HPK-B/E1815C	48 (425)
HPK-B/E2010C	
HPK-B2212C	102 (903)

Motor Cat. No.	Holding Torque N·m (lb·in)
HPK-B/E1307E	20 (177)
HPK-B/E1308E	
HPK-B/E1609E	
HPK-B/E1611E	
HPK-B/E1613E	
HPK-B/E2010E	48 (425)

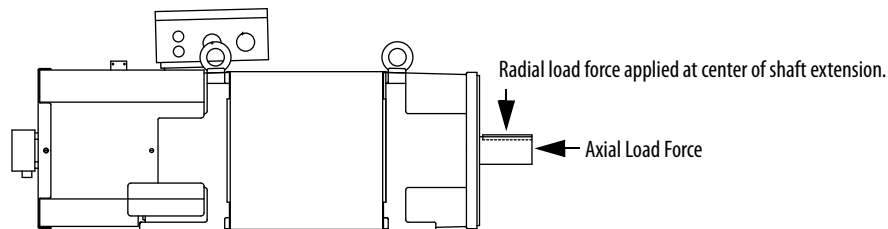
HPK-Series Asynchronous Servo Motor Load Force Ratings

HPK-Series motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables starting below represent an L_{10} bearing fatigue life of 10,000 hours. This 10,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

Radial Load Force Ratings (zero axial load)

Motor Cat. No.	850 rpm kg (lb)	1150 rpm kg (lb)	1750 rpm kg (lb)	2500 rpm kg (lb)
HPK-B/E1307	320 (704)	290 (638)	250 (550)	220 (485)
HPK-B/E1308	320 (704)	290 (638)	250 (550)	220 (485)
HPK-B/E1310	320 (704)	290 (638)	250 (550)	220 (485)
HPK-B/E1609	500 (1100)	450 (990)	390 (858)	350 (770)
HPK-B/E1611	500 (1100)	450 (990)	390 (858)	350 (770)
HPK-B/E1613	500 (1100)	450 (990)	390 (858)	350 (770)
HPK-B/E1815	530 (1166)	530 (1166)	530 (1166)	450 (990)
HPK-B/E2010	660 (1452)	660 (1452)	660 (1452)	580 (1276)
HPK-B2212	730 (1609)	690 (1521)	600 (1323)	530 (1168)
HPK-B2510				

HPK-xxxxx-xxxxAA Motor Load Forces

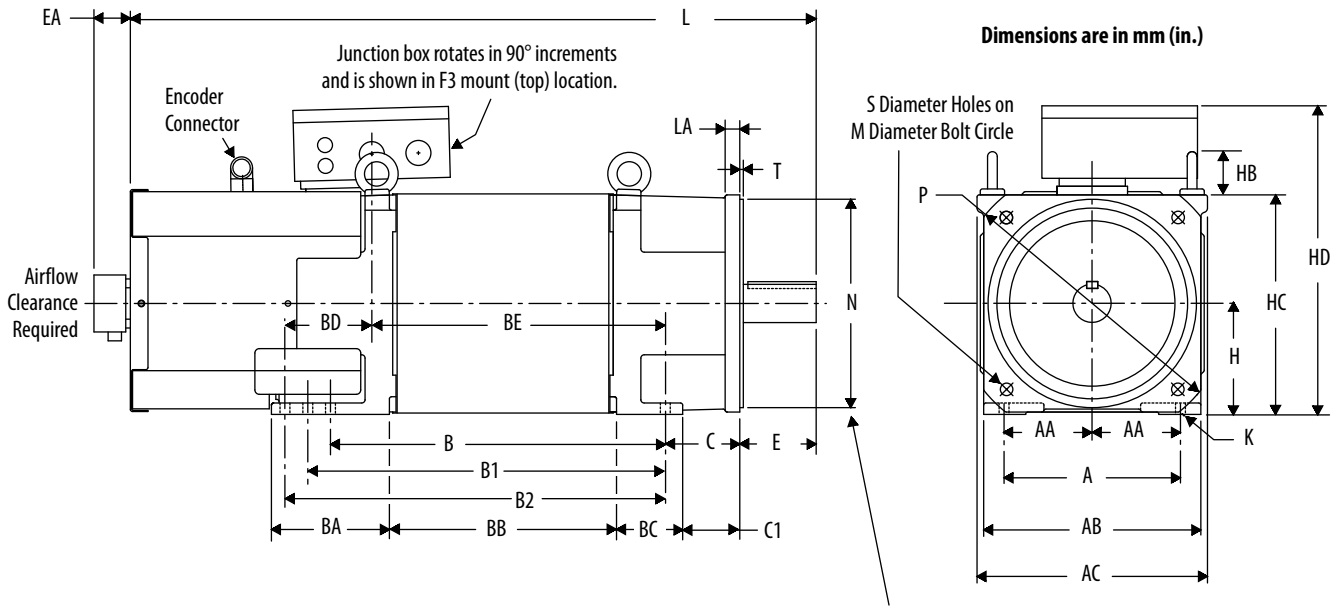


Axial Load Force Ratings (zero radial load)

Motor Cat. No.	850 rpm kg (lb)	1150 rpm kg (lb)	1750 rpm kg (lb)	2500 rpm kg (lb)
HPK-B/E1307	260 (572)	240 (528)	210 (462)	180 (396)
HPK-B/E1308	260 (572)	240 (528)	210 (462)	180 (396)
HPK-B/E1310	260 (572)	240 (528)	210 (462)	180 (396)
HPK-B/E1609	360 (796)	330 (726)	290 (638)	250 (550)
HPK-B/E1611	360 (796)	330 (726)	290 (638)	250 (550)
HPK-B/E1613	360 (796)	330 (726)	290 (638)	250 (550)
HPK-B/E1815	440 (970)	380 (838)	310 (682)	260 (572)
HPK-B/E2010	530 (1166)	460 (1012)	370 (814)	310 (682)
HPK-B2212	800 (1764)	730 (1609)	630 (1389)	560 (1235)
HPK-B2510				

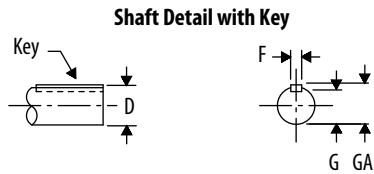
Dimensions - HPK-Series Asynchronous Servo Motors

HPK-B/E13xx and HPK-B/E16xx Motor (non-brake) Dimensions



Shaft Diameter Tolerances
 HPK-B/E1307, 1308, 1310
 Ø 48.003...48.016 (1.8899...1.8904)
 HPK-B/E1609, 1611, 1613
 Ø 55.011...55.030 (2.1658...2.1665)

Pilot Diameter Tolerances
 HPK-B/E1307, 1308, 1310
 Ø 249.99...250.02 (9.842...9.844)
 HPK-B/E1609, 1611, 1613
 Ø 299.99...300.02 (11.809...11.811)



HPK-B/E1307, 1308, 1310 = 14 x 9 x 80 Key
 HPK-B/E1609, 1611, 1613 = 16 x 10 x 90 Key

Shaft, Pilot, and Keyway Tolerances	HPK-B/E13xx	HPK-B/E16xx
Shaft Runout (T.I.R.)	0.06 (0.002)	0.06 (0.002)
Max Face Runout (T.I.R.)	0.13 (0.005)	0.13 (0.005)
Keyway Depth (GA)	51.30...51.9 (2.02...2.04)	58.67...58.92 (2.31...2.32)
Keyway Depth (G)	42.42...42.92 (1.67...1.69)	48.50...49.00 (1.91...1.93)
Keyway Width (F)	13.94...13.99 (0.549...0.551)	15.95...16.00 (0.628...0.630)

HPK-B/E13xx and HPK-B/E16xx Motor (non-brake) Dimensions

Motor Cat. No.	H mm (in.)	HC mm (in.)	HD mm (in.)	HB mm (in.)	L mm (in.)	EA mm (in.)	LA mm (in.)	T mm (in.)	P mm (in.)	M mm (in.)	S ⁽¹⁾ mm (in.)	N ⁽²⁾ mm (in.)	D ⁽²⁾ mm (in.)	G ⁽²⁾ mm (in.)	GA ⁽²⁾ mm (in.)	F ⁽²⁾ mm (in.)
HPK-B/E1307					806 (31.7)											
HPK-B/E1308	132 (5.20)	262 (10.3)	366 (14.4)	53.0 (2.09)	845 (33.2)	52.0 (2.05)	17.0 (0.67)	5.0 (0.20)	350 (13.7)	300 (11.8)	18.5 (0.73)	250 (9.84)	48.0 (1.89)	42.4 (1.67)	51.3 (2.02)	13.9 (0.55)
HPK-B/E1310					876 (34.4)											
HPK-B/E1609			444 (17.4)		886 (34.8)											
HPK-B/E1611	160 (6.30)	316 (12.4)	450 (17.7)	62.0 (2.44)	937 (36.8)	52.0 (2.05)	21.0 (0.83)	5.0 (0.20)	400 (15.7)	350 (13.7)	18.5 (0.73)	300 (11.8)	55.0 (2.16)	48.5 (1.91)	58.7 (2.31)	16.0 (0.63)
HPK-B/E1613					987 (38.8)											

(1) Tolerance for this dimension is +0.52, -0.0 mm (+0.02, -0.0 in.).

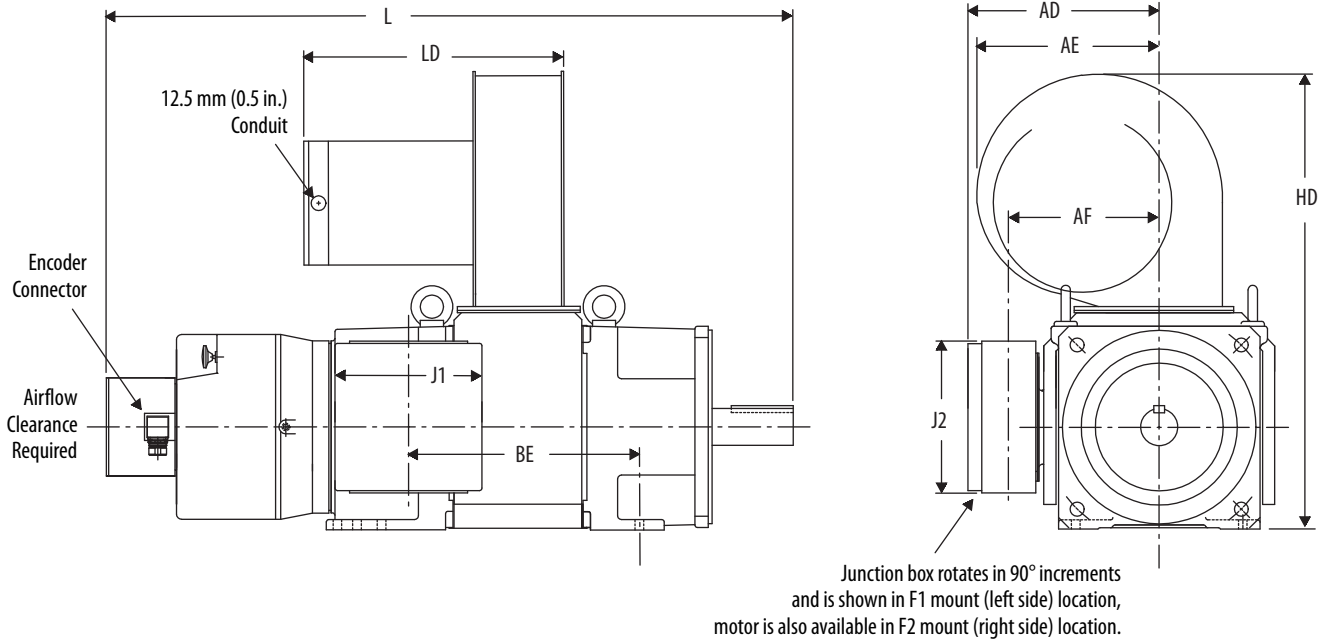
(2) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 118](#).

Motor Cat. No.	K mm (in.)	A mm (in.)	AA mm (in.)	AB mm (in.)	AC mm (in.)	B mm (in.)	B1 mm (in.)	B2 mm (in.)	BA mm (in.)	BB mm (in.)	BC mm (in.)	C mm (in.)	C1 mm (in.)	E mm (in.)	BD mm (in.)	BE mm (in.)
HPK-B/E1307						333 (13.1)	365 (14.3)	390 (15.3)		187 (7.36)						300 (11.8)
HPK-B/E1308	12.0 (0.47)	216 (8.50)	108 (4.25)	260 (10.2)	279 (10.9)	371 (14.6)	403 (15.8)	428 (16.8)	154 (6.06)	226 (8.90)	95.0 (3.74)	89.0 (3.50)	57.0 (2.24)	110 (4.33)	91.0 (3.58)	338 (13.3)
HPK-B/E1310						403 (15.8)	435 (17.1)	462 (18.1)		257 (10.1)						369 (14.5)
HPK-B/E1609						N/A	414 (16.3)	452 (17.8)		225 (8.86)						321 (12.6)
HPK-B/E1611	14.0 (0.55)	254 (10.0)	127 (5.0)	313 (12.3)	332 (13.0)	N/A	464 (18.2)	502 (19.7)	170 (6.69)	276 (10.8)	95.0 (3.74)	108 (4.25)	82.0 (3.23)	110 (4.33)	130 (5.12)	372 (14.6)
HPK-B/E1613						N/A	515 (20.2)	548 (21.5)		327 (12.8)					125 (4.92)	423 (16.6)

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

HPK-B/E13xx and HPK-B/E16xx Motor (brake) Dimensions

Dimensions are in mm (in.)

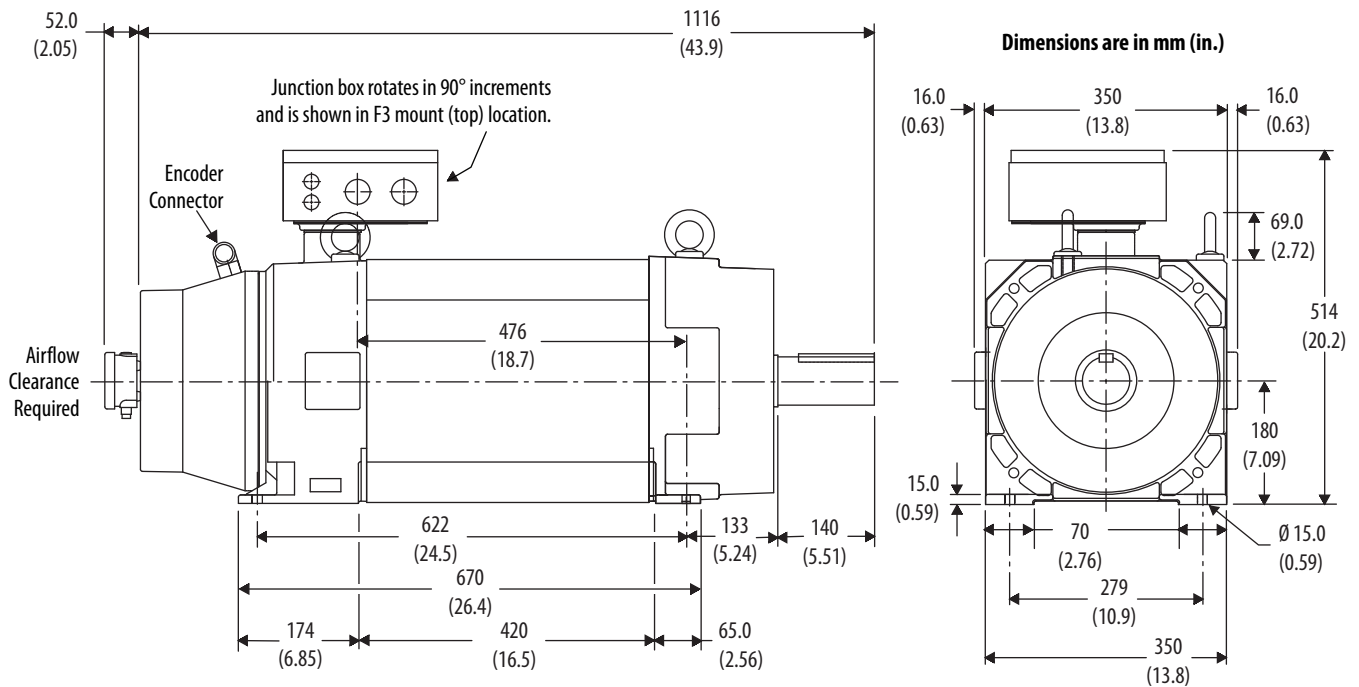


HPK-B/E13xx and HPK-B/E16xx Motor (brake) Dimensions

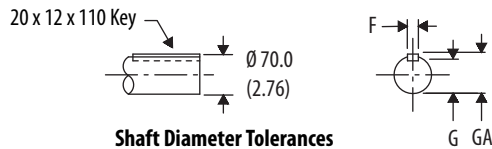
Motor Cat. No.	L mm (in.)	LD mm (in.)	BE mm (in.)	AD mm (in.)	AE mm (in.)	AF mm (in.)	HD mm (in.)	J1 mm (in.)	J2 mm (in.)
HPK-B/E1307	888 (34.9)	336 (13.2)	298 (11.7)	247 (9.72)	236 (9.29)	195 (7.68)	588 (23.1)	190 (7.48)	196 (7.72)
HPK-B/E1308	926 (36.4)		336 (13.2)						
HPK-B/E1310	957 (37.7)		368 (14.5)						
HPK-B/E1609	967 (38.0)	332 (13.0)	328 (12.9)	285 (11.2)	236 (9.29)	225 (8.86)	670 (26.3)	224 (8.82)	228 (8.98)
HPK-B/E1611	1018 (40.1)		379 (14.9)						
HPK-B/E1613	1069 (42.1)		430 (16.9)						

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

HPK-B/E1815 Motor (non-brake) Dimensions



Shaft Detail with Key

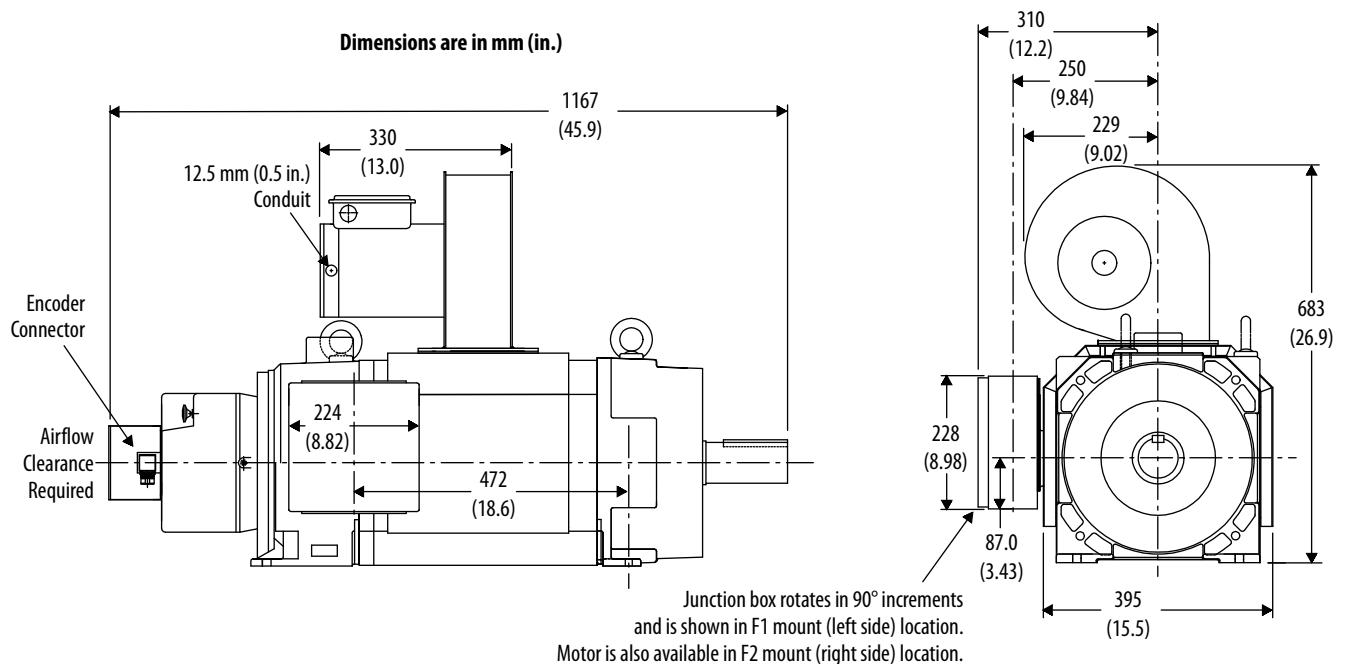


Shaft Diameter Tolerances

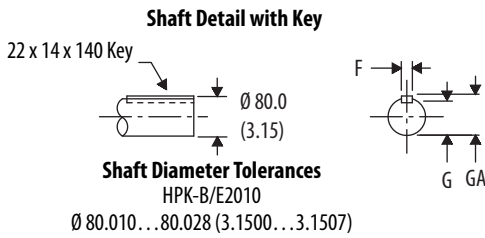
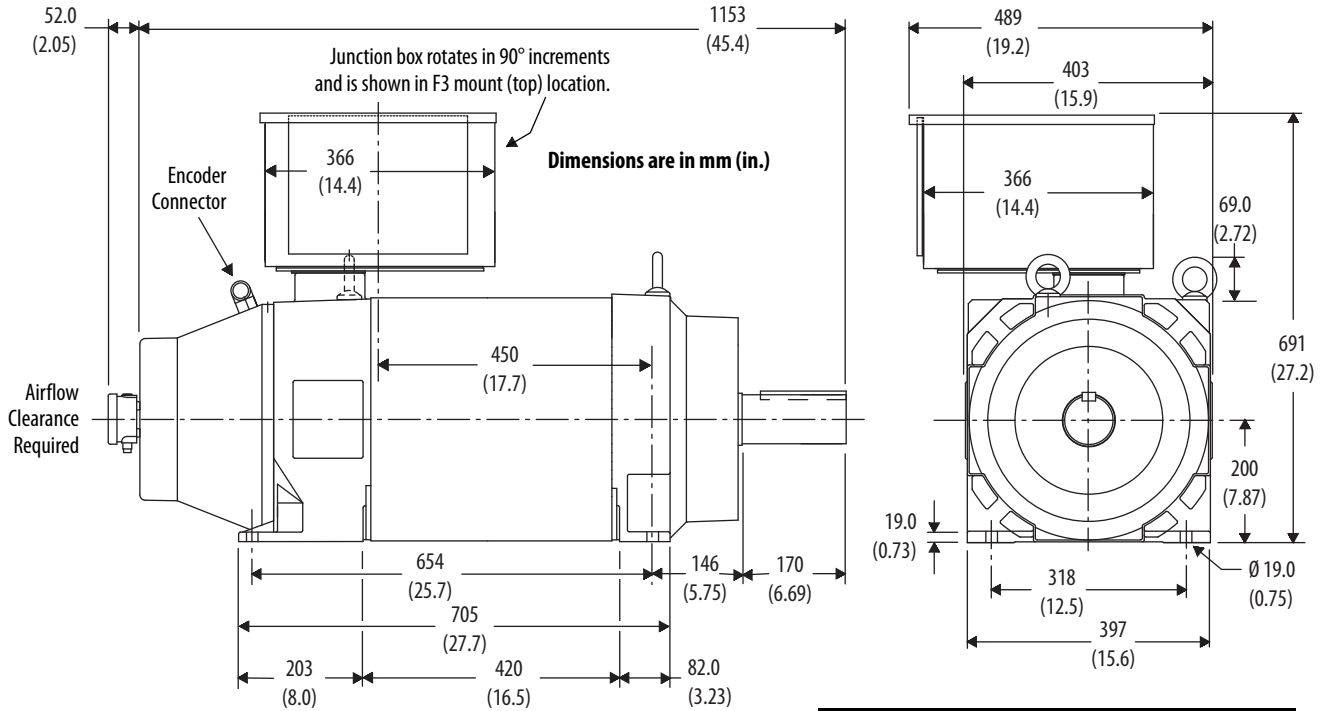
HPK-B/E1815
 Ø 70.007...70.033 (2.7562...2.7572)

Shaft, Pilot, and Keyway Tolerances	HPK-B/E1815
Shaft Runout (T.I.R.)	0.06 (0.002)
Max Face Runout (T.I.R.)	0.13 (0.005)
Keyway Depth (GA)	73.90...74.50 (2.91...2.93)
Keyway Depth (G)	62.00...62.50 (2.44...2.46)
Keyway Width (F)	19.94...19.99 (0.785...0.787)

HPK-B/E1815 Motor (brake) Dimensions

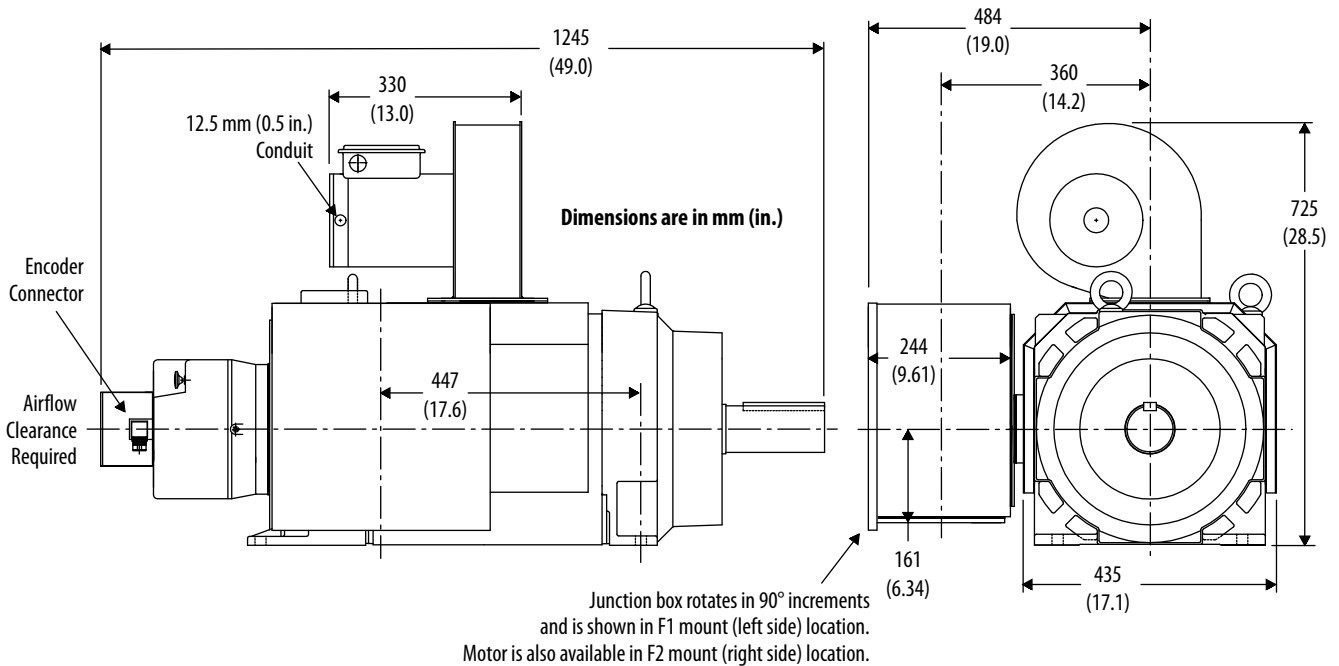


HPK-B/E2010 Motor (non-brake) Dimensions

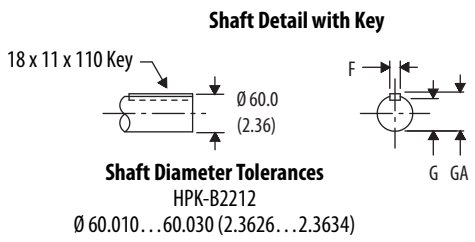
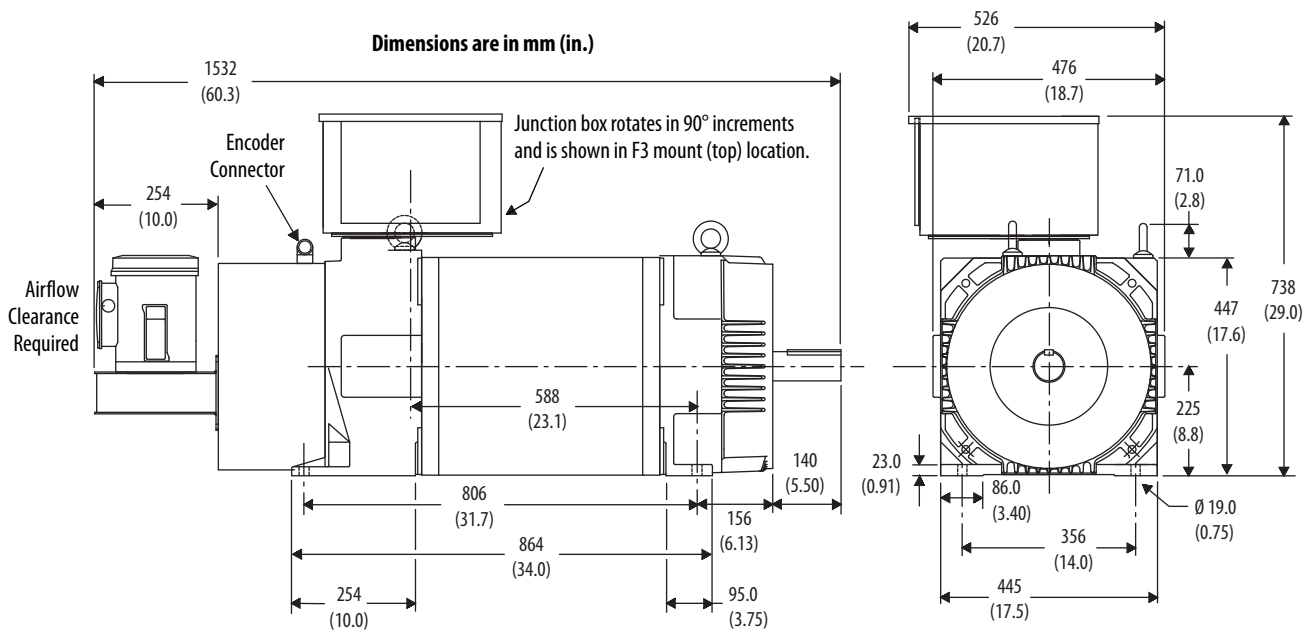


Shaft, Pilot, and Keyway Tolerances	HPK-B/E2010
Shaft Runout (T.I.R.)	0.06 (0.002)
Max Face Runout (T.I.R.)	0.13 (0.005)
Keyway Depth (GA)	84.50...85.10 (3.33...3.35)
Keyway Depth (G)	70.60...71.10 (2.78...2.80)
Keyway Width (F)	21.95...22.00 (0.864...0.866)

HPK-B/E2010 Motor (brake) Dimensions

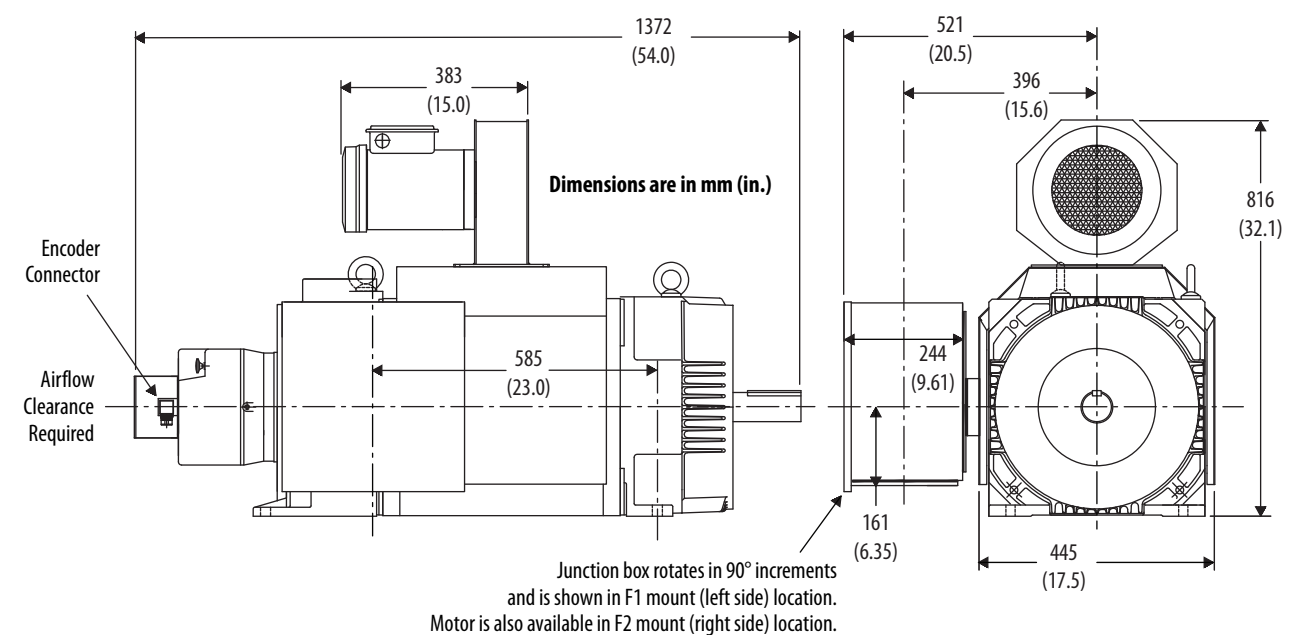


HPK-B2212 Motor (non-brake) Dimensions



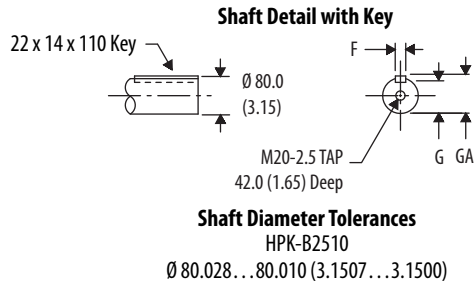
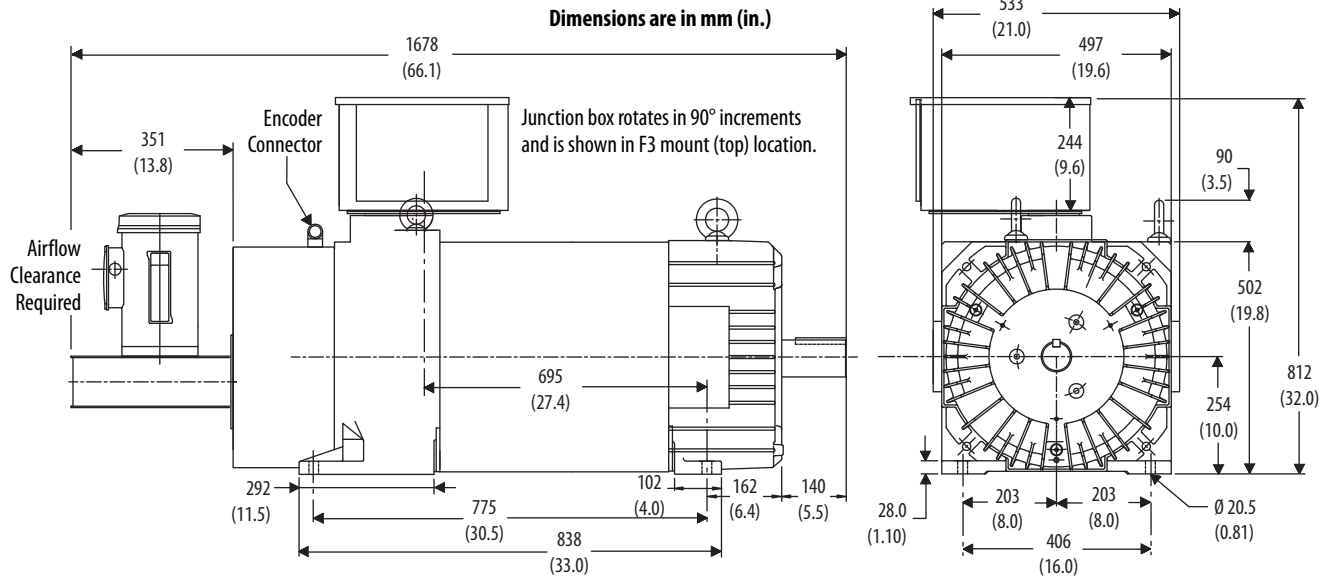
Shaft, Pilot, and Keyway Tolerances	HPK-B2212
Shaft Runout (T.I.R.)	0.06 (0.002)
Max Face Runout (T.I.R.)	0.13 (0.005)
Keyway Depth (GA)	63.08...64.08 (2.48...2.59)
Keyway Depth (G)	52.57...53.08 (2.07...2.09)
Keyway Width (F)	21.95...22.00 (0.864...0.866)

HPK-B2212 Motor (brake) Dimensions



Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

HPK-B2510 Motor (non-brake) Dimensions



Shaft, Pilot, and Keyway Tolerances	HPK-B2510
Shaft Runout (T.I.R.)	0.06 (0.002)
Max Face Runout (T.I.R.)	0.13 (0.005)
Keyway Depth (GA)	85.1...84.5 (3.35...3.33)
Keyway Depth (G)	71.1...70.6 (2.80...2.78)
Keyway Width (F)	22.0...21.95 (0.866...0.864)

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.