HJ SERIES

ISSUE 7

Brushless AC Servomotors

SEM
controlled motor technology

MOTOR TYPE DEFINITION (for HJ types)

For example:

HJ116C6-64S

- **HJ** Higher Inertia brushless servomotor.
- **116** 116mm square frame servomotor.
- **C** Motor length with A as shortest.
- **6** Number of motor poles.
- **-64** Voltage gradient (peak voltage per 1000 rpm between two phases).
- **S** Sinusoidal waveform.

PERFORMANCE DATA

- Inertia values include the feedback device.
- Temperature rise ΔT on the windings is 110K and applies to all continuous torque values.
- TENV (IC400) = Totally Enclosed Non Ventilated.
- Tolerance : ±10%
  Except for voltage gradient (V/1000rpm) and torque constant (Nm/A) values which are to +15%/-5% tolerance.
- Heatsink torque ratings apply to motors fitted with an aluminium plate as follows:

FRAME	PLATE SIZE (mm)
96/116	300 x 300 x 10
130	400 x 400 x 6
155/190	500 x 500 x 20

- Performance curves showing continuous/ intermittent duties are available for selected drive rail voltages

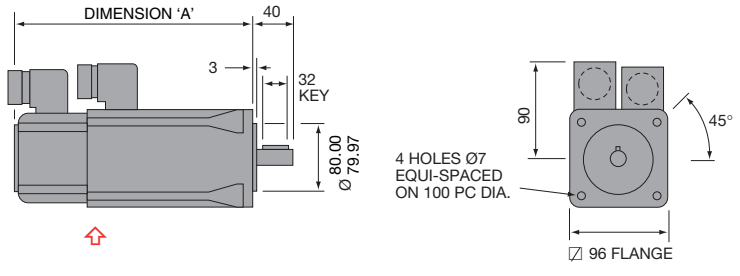
STANDARD FEATURES

- Sinusoidal three phase back EMF waveform.
- Neodymium Iron Boron magnets
- Integral Resolver feedback.
- Industry standard shaft and flange sizes.
- IP65 enclosure protection. IP64 at shaft with seal fitted.
- Shaft with enclosed keyway.
- Temperature sensor mounted in motor winding.
- Class F insulation.
- Matt black paint finish.
- Motor and feedback connector. Counterpart plugs optional.

Dimensions shown on the drawings are in millimetres.

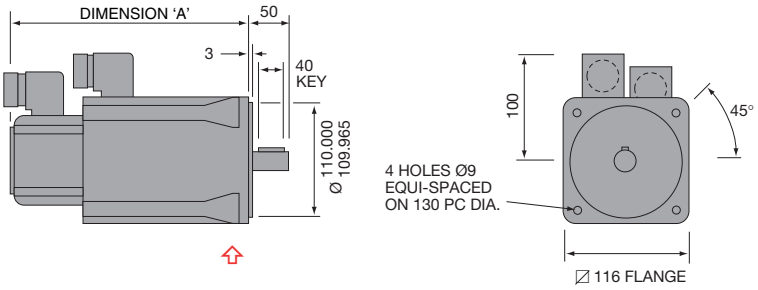
The **Higher Inertia – HJ** series of servomotors combine Neodymium Iron Boron magnets with higher inertia rotors, giving high stability at low speeds for critical applications.

HJ96



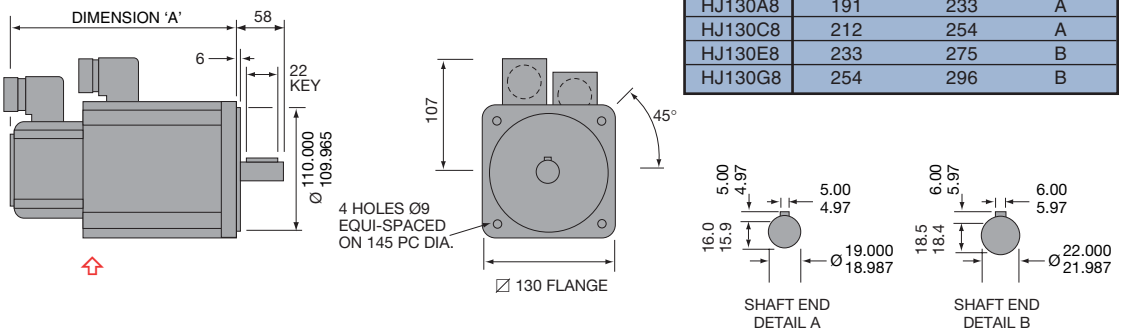
Frame	Dimension 'A'	
	Without brake	With brake
HJ96C6	218	258
HJ96G6	268	308

HJ116



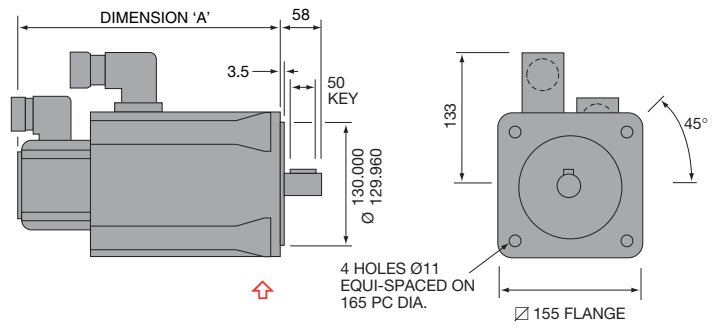
Frame	Dimension 'A'	
	Without brake	With brake
HJ116C6	221	257
HJ116E6	246	282
HJ116J6	296	332

HJ130



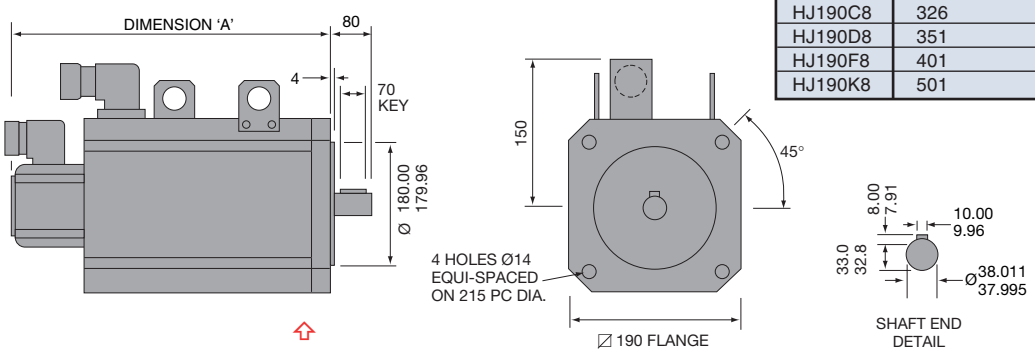
Frame	Dimension 'A'		
	Without brake	With brake	Shaft End Detail
HJ130A8	191	233	A
HJ130C8	212	254	A
HJ130E8	233	275	B
HJ130G8	254	296	B

HJT155



Frame	Dimension 'A'	
	Without brake	With brake
HJT155B8	259	303
HJT155D8	303	347
HJT155E8	325	369
HJT155G8	369	408

HJ190



Frame	Dimension 'A'	
	Without brake	With brake
HJ190C8	326	376
HJ190D8	351	401
HJ190F8	401	451
HJ190K8	501	551

⇧ = Fixed Bearing

Motor type-Voltage gradient V/1000rpm +15% -5%	Nett weight (no brake fitted) kg	Cont. stall torque TENV (IC400) Nm	Cont. stall torque with Heatsink Nm	Max. Cogging torque Nm	Max. peak current Amps	Resist-ance Ohms	Induct-ance mH	Max. mechanical speed limit R.P.M.	Max. EMF speed V	Rotor inertia (no brake fitted) kg.cm²	Cont. stall current (rms) A	Torque constant (3 x Ktrms) Nm/A	Peak torque Nm	Nominal Torque (Nm) 2000rpm	Nominal Power (kW) 2000rpm	Nominal Torque (Nm) 3000rpm	Nominal Power (kW) 3000rpm
HJ96C6-44S	5	**3**	3.3	0.088	36	1.6	3.5	6000	260	3.3	5.8	**0.51**	11	2.9	0.6	2.8	0.9
HJ96C6-64S	5	**3**	3.3	0.088	25	3.2	7.2	6000	380	3.3	4	**0.75**	11	2.9	0.6	2.8	0.9
HJ96C6-88S	5	**3**	3.3	0.088	18	6.8	14	6000	530	3.3	2.9	**1.02**	11	2.9	0.6	2.8	0.9
HJ96G6-44S	7.2	**5.5**	5.8	0.16	71	0.58	1.6	6000	260	6.3	10.7	**0.51**	22	5.2	1.1	5.1	1.6
HJ96G6-64S	7.2	**5.5**	5.8	0.16	50	1.16	3.3	6000	380	6.3	7.3	**0.75**	22	5.2	1.1	5.1	1.6
HJ96G6-88S	7.2	**5.5**	5.8	0.16	36	2.4	6.4	6000	530	6.3	5.3	**1.02**	22	5.2	1.1	5.1	1.6
HJ116C6-64S	6.9	**5**	5.4	0.145	36	1.8	6.8	6000	380	7.5	6.7	**0.75**	16	4.8	1.0	4.6	1.4
HJ116C6-88S	6.9	**5**	5.4	0.145	27	3.4	12.1	6000	530	7.5	4.9	**1.02**	16	4.8	1.0	4.6	1.4
HJ116C6-130S	6.9	**5**	5.4	0.145	18	7.6	27	5400	700	7.5	3.3	**1.53**	16	4.8	1.0	4.6	1.4
HJ116E6-64S	8.6	**7.2**	7.9	0.213	54	0.95	4.3	6000	380	9.9	9.6	**0.75**	25	6.5	1.4	6.2	1.9
HJ116E6-88S	8.6	**7.2**	7.9	0.213	41	1.7	7.7	6000	530	9.9	7.0	**1.02**	25	6.5	1.4	6.2	1.9
HJ116E6-130S	8.6	**7.2**	7.9	0.213	27	4.1	17	5400	700	9.9	4.7	**1.53**	25	6.5	1.4	6.2	1.9
HJ116J6-88S	12	**11.8**	12.8	0.36	65	0.85	4.8	6000	530	15	11.5	**1.02**	41	10.1	2.1	9.5	3.0
HJ116J6-130S	12	**11.8**	12.8	0.36	46	1.7	9.5	5400	700	15	7.8	**1.53**	41	10.1	2.1	9.5	3.0
HJ116J6-180S	12	**11.8**	12.8	0.36	32	3.6	19	3900	700	15	5.6	**2.1**	41	10.1	2.1	9.5	3.0
HJ130A8-64S	6.1	**2.8**	3.1	0.28	17	3.7	8.2	4000	260	10.2	3.7	**0.75**	8.6	2.8	0.6	2.6	0.8
HJ130A8-88S	6.1	**2.8**	3.1	0.28	12.5	6.3	16	4000	350	10.2	2.7	**1.02**	8.6	2.8	0.6	2.6	0.8
HJ130A8-130S	6.1	**2.8**	3.1	0.28	8.4	12.9	34	4000	520	10.2	1.8	**1.53**	8.6	2.8	0.6	2.6	0.8
HJ130C8-64S	7.9	**5.7**	6.3	0.3	34	0.91	3.4	4000	260	16	7.6	**0.75**	17	5.1	1.1	4.7	1.5
HJ130C8-88S	7.9	**5.7**	6.3	0.3	25	1.9	6.6	4000	350	16	5.5	**1.02**	17	5.1	1.1	4.7	1.5
HJ130C8-130S	7.9	**5.7**	6.3	0.3	17	3.8	13.9	4000	520	16	3.7	**1.53**	17	5.1	1.1	4.7	1.5
HJ130E8-64S	9.7	**8.4**	9.2	0.34	52	0.54	2.1	4000	260	21	11.2	**0.75**	26	6.3	1.3	5.6	1.8
HJ130E8-88S	9.7	**8.4**	9.2	0.34	38	0.98	3.9	4000	350	21	8.2	**1.02**	26	6.3	1.3	5.6	1.8
HJ130E8-130S	9.7	**8.4**	9.2	0.34	25	2.2	8.7	4000	520	21	5.5	**1.53**	26	6.3	1.3	5.6	1.8
HJ130G8-88S	11.5	**11.5**	12.5	0.38	49	0.64	2.9	4000	350	26	11.2	**1.02**	34	9.6	2.0	8.2	2.6
HJ130G8-130S	11.5	**11.5**	12.5	0.38	33	1.5	6.3	4000	520	26	7.6	**1.53**	34	9.6	2.0	8.2	2.6
HJ130G8-180S	11.5	**11.5**	12.5	0.38	25	2.5	11.6	3900	700	26	5.5	**2.1**	34	9.6	2.0	8.2	2.6
HJT155B8-88S	15	**13.5**	14.5	0.34	63	0.55	4.8	5000	440	33	13.1	**1.02**	39	11	2.3	9.7	3.0
HJT155B8-130S	15	**13.5**	14.5	0.34	42	1.2	10.7	5000	650	33	8.9	**1.53**	39	11	2.3	9.7	3.0
HJT155B8-180S	15	**13.5**	14.5	0.34	30	2.5	21	3900	700	33	6.4	**2.1**	39	11	2.3	9.7	3.0
HJT155D8-130S	20	**22**	23	0.46	70	0.58	6.2	5000	650	54	14	**1.53**	66	19	4.0	17	5.3
HJT155D8-180S	20	**22**	23	0.46	50	1.13	11.9	3900	700	54	10.4	**2.1**	66	19	4.0	17	5.3
HJT155D8-260S	20	**22**	23	0.46	34	2.5	26	2700	700	54	7.2	**3.03**	66	19	4.0	-	-
HJT155E8-130S	23	**25**	26	0.52	79	0.52	5.9	5000	650	65	16	**1.53**	74	21	4.4	18	5.7
HJT155E8-180S	23	**25**	26	0.52	60	0.86	10.2	3900	700	65	11.9	**2.1**	74	21	4.4	18	5.7
HJT155E8-260S	23	**25**	26	0.52	42	1.8	21	2700	700	65	8.2	**3.03**	74	21	4.4	-	-
HJT155G8-135S	28	**32**	33	0.64	105	0.35	4.3	5000	680	86	20	**1.59**	103	25	5.2	21	6.6
HJT155G8-180S	28	**32**	33	0.64	79	0.63	7.6	3900	700	86	15	**2.1**	103	25	5.2	21	6.6
HJT155G8-260S	28	**32**	33	0.64	55	1.27	16	2700	700	86	10.5	**3.03**	103	25	5.2	-	-
HJ190C8-88S	29	**27**	29	0.56	150	0.2	3	5000	440	106	26	**1.02**	85	21	4.4	16	5.0
HJ190C8-130S	29	**27**	29	0.56	100	0.4	6.3	5000	650	106	18	**1.53**	85	22	4.6	19	6.0
HJ190C8-180S	29	**27**	29	0.56	71	0.85	12.4	3900	700	106	12.8	**2.1**	85	22	4.6	19	6.0
HJ190C8-260S	29	**27**	29	0.56	49	1.8	26	2700	700	106	8.9	**3.03**	85	22	4.6	-	-
HJ190D8-130S	33.5	**33**	35	0.65	125	0.3	5	4000	520	133	22	**1.53**	107	26	5.4	22	6.9
HJ190D8-180S	33.5	**33**	35	0.65	89	0.61	9.7	3900	700	133	16	**2.1**	107	26	5.4	22	6.9
HJ190D8-260S	33.5	**33**	35	0.65	62	1.31	20	2700	700	133	10.9	**3.03**	107	26	5.4	-	-
HJ190F8-130S	42.5	**45**	48	0.84	170	0.19	3.5	4000	520	190	30	**1.53**	150	37	7.7	32	10.0
HJ190F8-180S	42.5	**45**	48	0.84	125	0.37	6.8	3900	700	190	21	**2.1**	150	37	7.7	32	10.0
HJ190F8-260S	42.5	**45**	48	0.84	87	0.77	13.9	2700	700	190	15	**3.03**	150	37	7.7	-	-
HJ190K8-180S	61	**67**	71	1.2	190	0.22	4.3	3900	700	290	32	**2.1**	240	47	9.8	33	10.4
HJ190K8-260S	61	**67**	71	1.2	140	0.39	8.4	2700	700	290	22	**3.03**	240	47	9.8	-	-
HJ190K8-360S	61	**67**	71	1.2	100	0.77	16	1900	700	290	16	**4.2**	240	-	-	-	-

Preferred motor type ● Standard motor type

SEM BRUSHLESS AC SERVOMOTORS

With a wealth of experience supplying world markets with quality servomotors, SEM designs, develops and manufactures all its products. A sophisticated batch manufacturing system allows for greater flexibility. Consequently a comprehensive range of options is available.

HJ Series The HJ range of servomotors combine Neodymium Iron Boron magnets with higher inertia rotors giving high stability at low speeds for critical applications.

HJ VOLTAGE GRADIENT AVAILABILITY

FRAME SIZE		5.5	8	11	16	22	32	44	64	88	130	180	260	360	520
HJ 96	C					■	■	■	■	■	■	■	■		
	G							■	■	■	■	■	■	■	■
HJ 116	C						■	■	■	■	■	■	■	■	
	E							■	■	■	■	■	■	■	■
	J									■	■	■	■	■	■
HJ 130	A						■	■	■	■	■	■			
	C								■	■	■	■	■	■	
	E								■	■	■	■	■	■	■
	G									■	■	■	■	■	■
HJT 155	B								■	■	■	■	■	■	■
	D									■	■	■	■	■	■
	E										■	■	■	■	■
	G										*				
HJ 190	C									■	■	■	■	■	■
	D										■	■	■	■	■
	F										■	■	■	■	■
	K											■	■	■	■

* A voltage gradient of 135V/1000 only is available for this motor

OPTIONS

STANDARD / OPTIONAL FEATURES

DESCRIPTION	OPTIONS	SERVOMOTOR TYPE 96	116	130	155	190
WAVEFORM	SINUSOIDAL	■	■	■	■	■
MECHANICAL	FLANGE MOUNTED	■	■	■	■	■
	ENCLOSED KEYWAY	■	■	■	■	■
	NO KEYWAY	●	●	●	●	●
	IP65 (IP64 AT SHAFT WITH SHAFT SEAL FITTED)	■	■	■	■	■
ELECTRICAL CONNECTION	INTERCONNECTRON MOTOR CONNECTOR SIZE 1 AND FEEDBACK CONNECTOR	■	■	■	●	○
	INTERCONNECTRON MOTOR CONNECTOR SIZE 1.5 AND FEEDBACK CONNECTOR	○	○	○	■	■
	MS CONNECTORS	●	●	●	●	●
	TERMINAL BOX WITH FEEDBACK CONNECTOR	○	○	○	●	●
HOLDING BRAKE	SPRING APPLIED	●	●	●	●	●
	PERMANENT MAGNET (ZERO BACKLASH)	●	●	●	●	●
FEEDBACK DEVICE	RESOLVER	■	■	■	■	■
	INCREMENTAL ENCODER WITH BLOCK COMMUTATION	●	●	●	●	●
	SINGLE OR MULTITURN ABSOLUTE ENCODER	●	●	●	●	●
UL APPROVAL	UL CERTIFICATION	●	●	●	●	●

■ STANDARD FEATURE
● OPTION
○ NOT AVAILABLE

HJT155D8 showing enclosed keyway and flange detail

HJ116E6 with integral encoder

HJT155D8 with HJ96C6

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