

Ultra low inertia *Mitsubishi* servo motors

HC –KFS series

The HC-KFS series of Brushless servo motors have been developed specifically for use with the compact Mitsubishi *MEL MR-J2S* packaged brushless drive and offer the following key features:

- 42-60 mm square frame size options
- Low inertia provides fast response with rapid acceleration and mechanical time constants down to 3 msec.
- Maintenance-free 3 phase brushless construction
- Peak torque ratings up to 3.8 Nm
- Optional low backlash planetary geared versions with peak torque ratings up to 80 Nm
- Encoder commutation facilitates Sinewave drive technology to provide smooth operation and high resolution up to 131,072 counts/rev.
- Optional Integral Parking brake



Mitsi HC-KFS series servo motor dimensions:

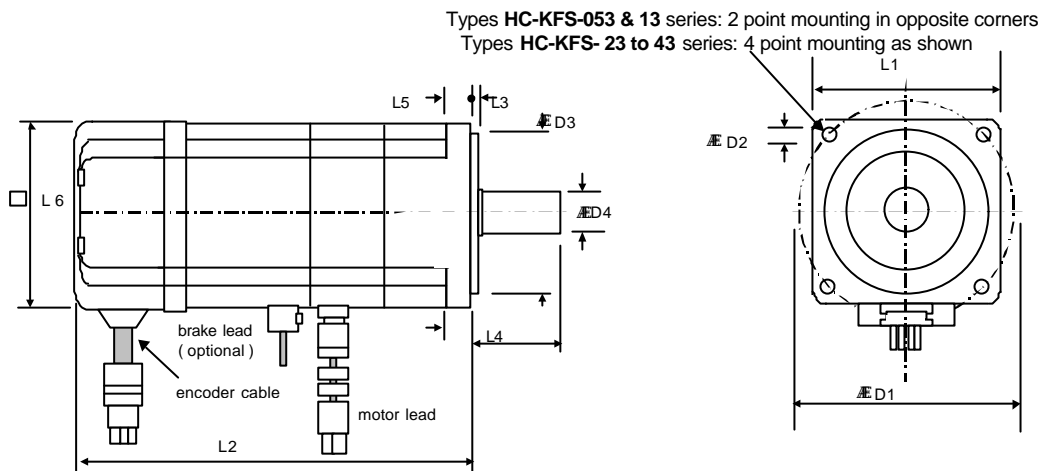


Table of Dimensions: mm.

Motor Options:	HC-	KFS053	KFS13	KFS23	KFS43
Code for brake option		Add 'B'	Add 'B'	Add 'B'	Add 'B'
Flange Size (square)	L1	40			60
Body Length	L2	81.5	96.5	99.5	124.5
Body length with brake		109.5	124.5	131.5	156.5
Centring Spigot Length	L3		2.5		3
Shaft length	L4		25		30
Typical Flange thickness	L5		5		7
Max body size (square)	L6		42		62
Diametric measurements					
Mounting hole PCD	D1		46		70
Mounting hole diameter	D2		2 x 4.5		4 x 5.8
Spigot Diameter	D3		30 h7		50 h7
Shaft Diameter	D4		8 h6		14 h6

Specification & performance using *MEL-Servo MR-J2S* brushless drivers

Motor Options:	HC-	KFS053	KFS13	KFS23	KFS43
Matched <i>MEL</i> Drive	MR	-J2S-10A	-J2S-10A	-J2S-20A	-J2S-40A
Rated Torque	Nm	0.16	0.32	0.64	1.3
Peak Torque	Nm	0.48	0.95	1.9	3.8
Output Power	kW	0.05	0.1	0.2	0.4
Rotor Inertia	Kgcm ²	0.053	0.084	0.42	0.67
Mass	kg	0.4	0.53	0.99	1.45
Maximum Continuous Speed		4,500 rpm			
Rated Speed		3,000 rpm			
Maximum load / motor inertia ratio		15:1 (using MR-J2 Super drive with adaptive tuning)			
Integral encoder		dual track, resolution: 131,072 counts per rev.			
Enclosure		totally enclosed, self cooling			
Ambient temperature range		0 to + 40 deg. C (Operating)			

Planetary geared brushless servo motors HPE/HC-KFS series

- High peak torque provides high acceleration & deceleration capability
- Capable of withstanding factor 2 emergency shock loads without damage
- Low backlash construction provides accurate positioning and long life
- High torsional rigidity for stable operation in high speed positioning.
- Low torque ripple for smooth operation in velocity servo applications
- Planetary construction for high torque to volume ratio
- High reliability and serviceability

Planetary geared servo motor dimensions:

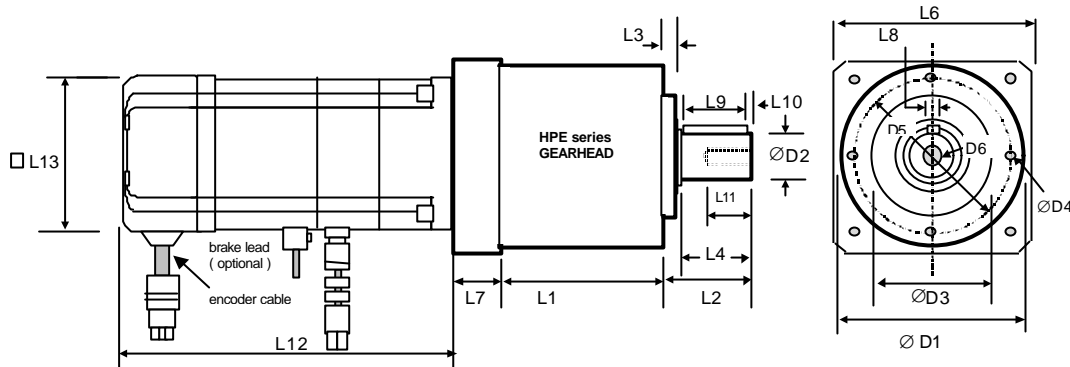


Table of Dimensions: mm

Gearhead		HPE50		HPE70		HPE90	
Motor Types	HC-	KFS13	KFS053 KFS13	KFS43	KFS23 KFS43	KFS43	
Gearbox Version		HPE50 S		HPE70 S		HPE90 D	
Gearbox Diameter	D1	50		70		90	
Output shaft diameter	D2	12 k6		16 k6		22 k6	
Gearbox mounting register	D3	35 h6		52 h6		68 h6	
Gearbox mounting holes	D4	4 x M4		4 x M5		4 x M8 12 deep	
mounting hole PCD	D5	44		62		80	
Shaft fixing bolt diameter	D6	tapped		tapped		M5	
Gearbox Length	L1	53		69		91.5	
Overall Output Shaft length	L2	24.5		36		46	
Gearbox register length	L3	4		5		5	
Free shaft length	L4	18		28		36	
Gearhead flange size	L6	50		70		90	
Adaptor length	L7	19		22		32	
Output shaft key width	L8	4 h9		5 h9		6 h9	
Output shaft Key length	L9	14		25		32	
Key distance to shaft end	L10	2		2		2	
Shaft fixing tapped length	L11	8		10		13	
Motor body length	L12	See motor data					
Motor body square	L13	42		62		60	

Performance of geared servo motors

Gearbox Model	Gear Ratio n:1	Motor Model	Rated Speed (rpm)	Rated Torque (Nm)	Peak Torque (Nm)	Maximum Emergency Torque (Nm)	Max. Backlash (arc. min.)	Assembly Mass (Kg)
HPE 50 S	5	KFS13	600	1.3	4.4	4.4	≤ 12	1.3
	10		300	2.6	8.7	8.7		
	25	KFS13	120	6.3	15	21		
HPE 50 D	50	KFS053	60	5.1	15	20	≤ 15	1.4
	100		30	5.5	12	28		
HPE 70 S	5	KFS43	600	5.6	17.5	18	≤ 12	3.4
	10		300	11	30	37		
HPE 70 D	25	KFS23	120	12	33	41	≤ 15	3.2
	50		60	18	33	75		
HPE 90 D	25	KFS43	120	22	80	80	≤ 15	6.6
	50		60	43	82	160		
	100		30	40	80	200		

For ultra low backlash specify Omagear HP series gearhead

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