

KF-S1 series

Overview

- Black coated steel housing, aluminum output and motor adapter flange
- Steel output shaft, smooth
- Hypoid gear design
- Nominal torques:
 - T_{2N} : 18 Nm – 1.600 Nm
- Ratios
 - 1-stage : 3 / 4 / 5 / 7 / 10
- Low backlash
 - 1-stage : ≤ 3 arcmin
- High efficiency
 - 1-stage : $\geq 96\%$
- Easy mount
- High accuracy
- The output shaft rotates in the same direction as the servomotor
- Available sizes: KH 064 / KH 090 / KH 110 / KH 140 / KH 200 / KH 255 / KH 285

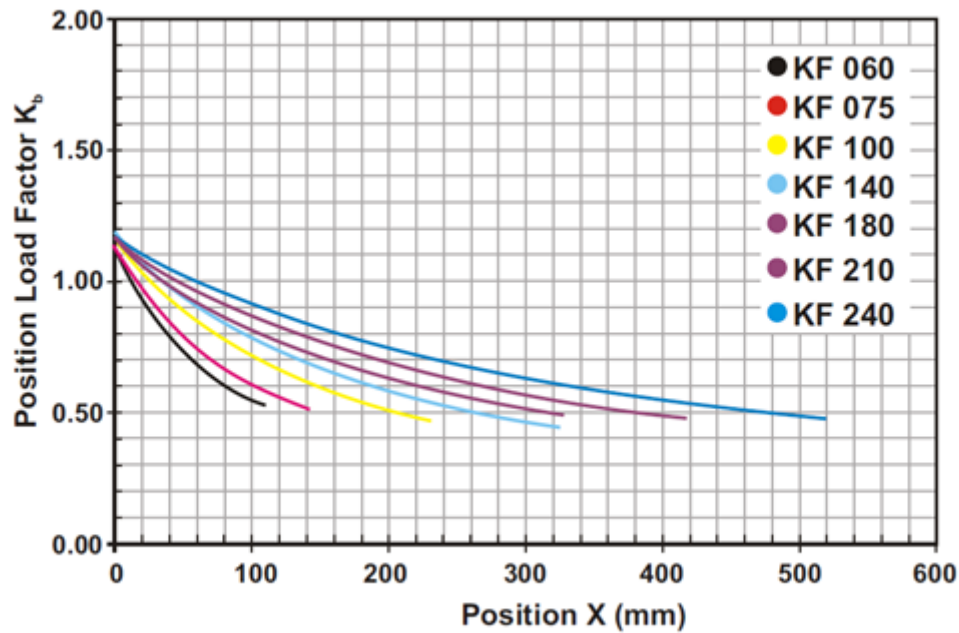


Specifications

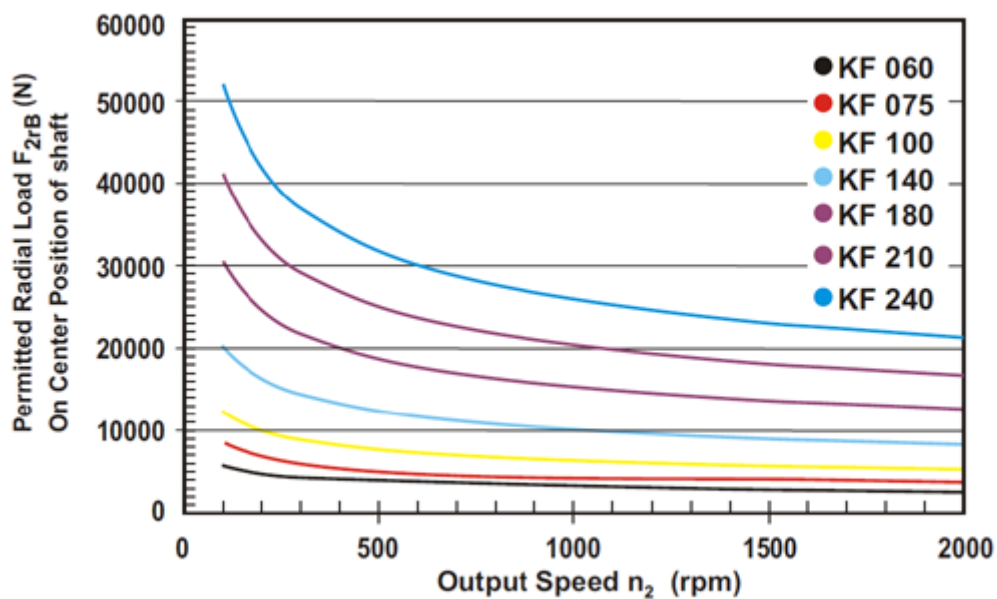
KF		Stage	Ratio ⁽¹⁾	KF 064	KF 090	KF 110	KF 140	KF 200	KF 255	KF 285
Nominal output torque T _{2N}	Nm	1	3	25	50	110	210	420	820	1.600
			4	25	60	110	210	420	820	1.600
			5	25	60	110	210	420	820	1.600
			7	23	50	100	200	390	750	1.400
			10	18	40	85	170	360	600	1.100
Emergency stop torque T _{2NOT}	Nm	1	3~10	2 times of nominal torque T _{2N}						
Max. Acceleration torque T _{2B}	Nm	1	3~10	1,5 times of nominal torque T _{2N}						
No load running torque ⁽⁴⁾	Nm	1	3~10	0,9	1,6	3,2	4,2	9,6	16,5	26,4
Backlash ⁽²⁾	arcminutes	1	3~10	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3
Torsional rigidity	Nm/arcmin	1	3~10	1,1	4,5	10	23	54	90	170
Nominal input speed n _{1N}	rpm	1	3~10	3.000	2.800	2.700	2.000	2.000	2.000	1.500
Max. input speed n _{1B}	rpm	1	3~10	6.000	6.000	4.500	4.500	4.000	3.000	2.500
Max. radial load F _{2rB} ⁽³⁾	N	1	3~10	2.400	4.500	5.100	13.000	28.700	36.200	58.300
Max. axial load F _{2aB} ⁽³⁾	N	1	3~10	1.200	2.250	2.550	6.500	14.350	18.100	29.150
Service Life ⁽⁵⁾	hr	1	3~100	20.000						
Operating temperature	°C	1	3~100	0° C ~ +90°C						
Degree of Protection		1	3~100	IP65						
Lubrication		1	3~100	Synthetisch lubrication grease						
Mounting position		1	3~100	All directions						
Running noise ⁽⁴⁾	dB (A)	1	3~100	≤ 64	≤ 66	≤ 66	≤ 68	≤ 68	≤ 70	≤ 72
Efficiency η	%	1	3~10	≥ 96%						

- (1) Ratio (i = N in / N out)
- (2) Backlash is measured at 2% of Nominal output torque T2N.
- (3) Applied to the output shaft center @ 100 rpm .
- (4) These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at 3.000 rpm without load.
- (5) For continuous operation, the service life is less than 10.000 hrs.

Permitted Radial And Axial Loads



If radial force F_{2r} is not exerted on the center of the output shaft $X < \frac{1}{2} \times L$ or $X > \frac{1}{2} \times L$, the permitted radial and axial loads can be calculated by the position load factor K_b on the above diagram.



Permitted radial load F_{2r} on center of output shaft $X = \frac{1}{2} \times L$ for various output speeds. Values provided are for 20,000 hours life.

- (A) $\varnothing$ Input shaft diameter
- (B) Permitted loading values on the output shaft. Please contact Apex Dynamics for more details.
- (C) For continue mode (S1), the service life is reduced to 50%.

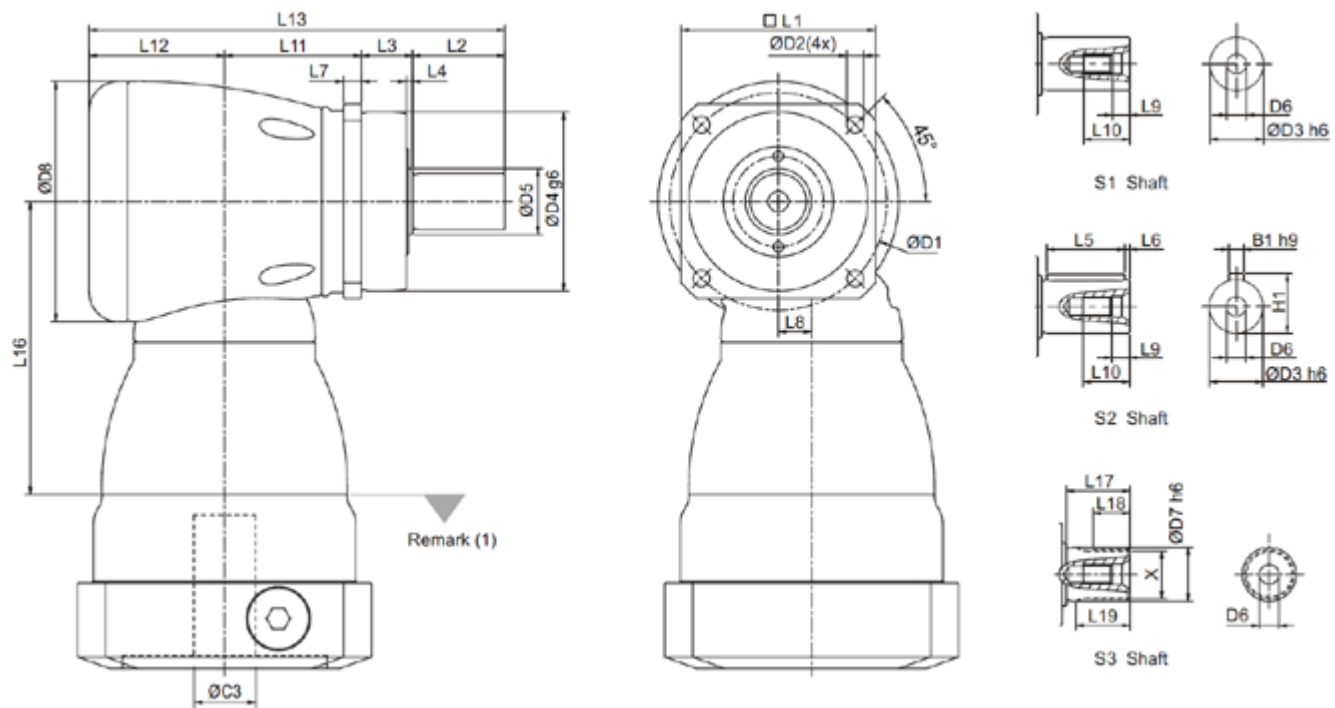
Inertia

Model No.	KF 064	KF 090	KF 110	KF 140	KF 200	KF 255	KF 285
Ø ^(A) (C3)	1-stage	1-stage	1-stage	1-stage	1-stage	1-stage	1-stage
8	0,10	-	-	-	-	-	-
11	0,17	0,18	-	-	-	-	-
14	0,20	0,50	-	-	-	-	-
19	-	0,63	1,66	-	-	-	-
24	-	4,42	4,82	4,96	-	-	-
28	-	-	6,05	6,00	-	-	-
32	-	-	8,38	8,70	9,93	-	-
35	-	-	13,86	14,23	15,15	15,62	23,34
38	-	-	18,87	19,88	20,69	21,61	23,34
42	-	-	-	21,75	22,26	23,36	24,97
48	-	-	-	53,91	55,55	58,28	60,43
55	-	-	-	-	-	86,65	88,67
60	-	-	-	-	-	-	111,89

(A) Ø Input shaft diameter

Sizes

KF-S1 / S2 / S3:



Dimension	KF 060	KF 075	KF 100	KF 140	KF 180	KF 210	KF 240
	1-stage	1-stage	1-stage	1-stage	1-stage	1-stage	1-stage
D1	68	85	120	165	215	250	290
D2	5,5	6,6	9	11	13,5	17	17
D3 h6	16	22	32	40	55	75	85
D4 g6	60	70	90	130	160	180	200
D5	18,5	25,8	36,8	55,2	69,2	82,2	92,2
D6	M5x0,8P	M8x1,25P	M12x1,75P	M16x2P	M20x2,5P	M20x2,5P	M20x2,5P
D7 h6	16	22	32	40	55	75	85
D8	73	94	116	163	210	255	300
L1	62	76	101	141	182	215	245
L2	28	36	58	82	82	105	130
L3	20	20	30	30	30	38	40
L4	2	2,5	3	3	3	3	3
L5	25	32	50	63	70	90	125
L6	2	2	4	5	6	7	3
L7	6	7	10	12	15	17	20
L8	10	13	17	25	31	36	43
L9	4,8	7,2	10	12	15	15	15
L10	12,5	19	28	36	42	42	42
L11	43	53,5	67	90	119	141	176
L12	44,5	53	68,3	89	115	131	165
L13	135,5	162,5	223,3	291	346	415	511
L16	94	114,5	129	173,5	228	265,5	294,5
L17	26	26	26	40	41,5	52	60
L18	15	15	15	20	21,5	28	36
L19	21	22,5	23	33,5	33,5	45	53
B1 h9	5	6	10	12	16	20	22
H1	18	24,5	35	43	59	79,5	90

(1) Dimensions are related to motor interface. Please contact Apex Dynamics for details.