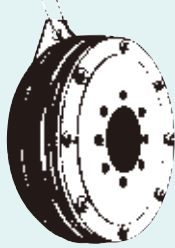
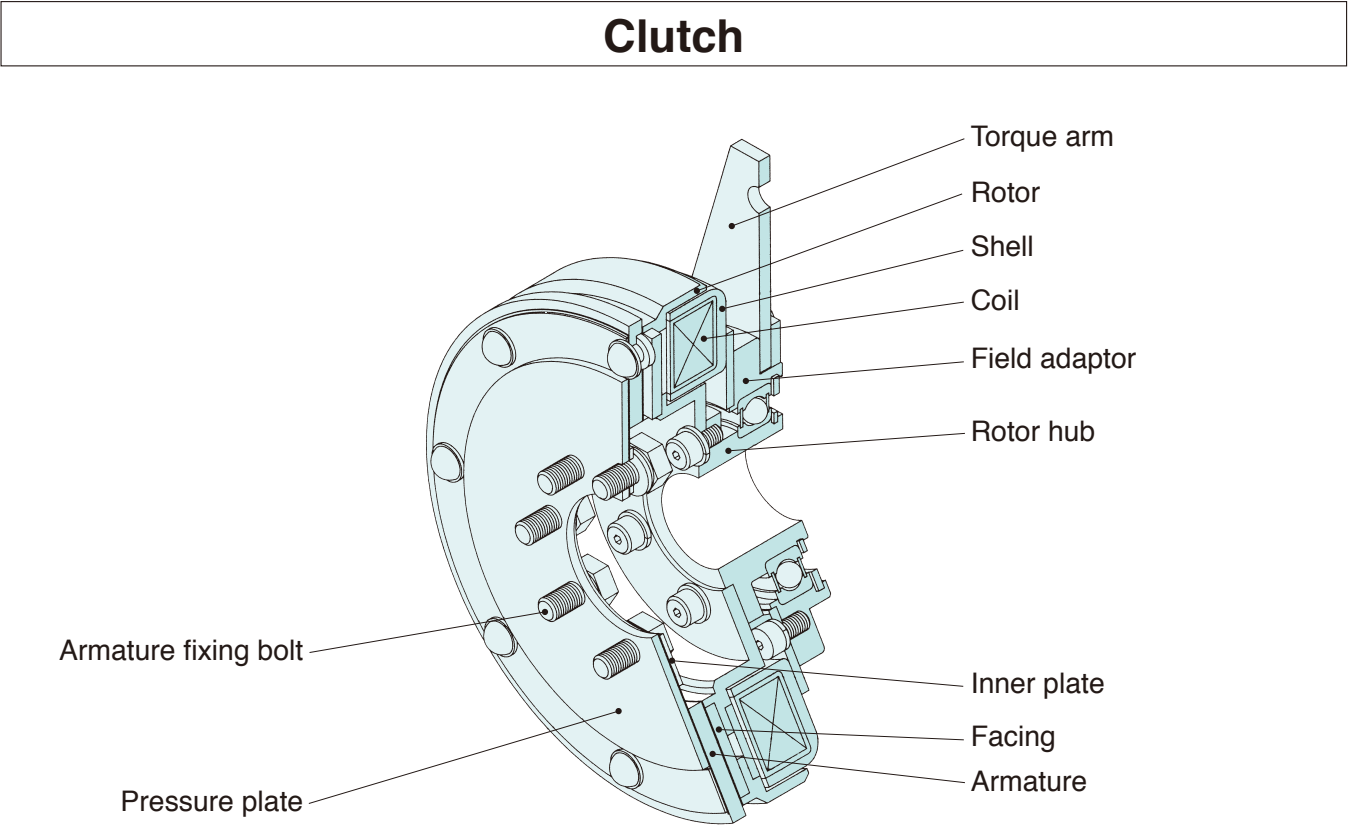


List of Models

Type	Disc-shaped leaf spring system clutch
	SF
Appearance	

Structure



Indication of type

SF-650/BMF

Model symbol

●SF : Clutch

Nominal number

HT ... High torque

HHT ... High high torque

Model symbol

●BMF : Leaf spring drive ball bearing installation type

Clutch or Brake Selection Guide

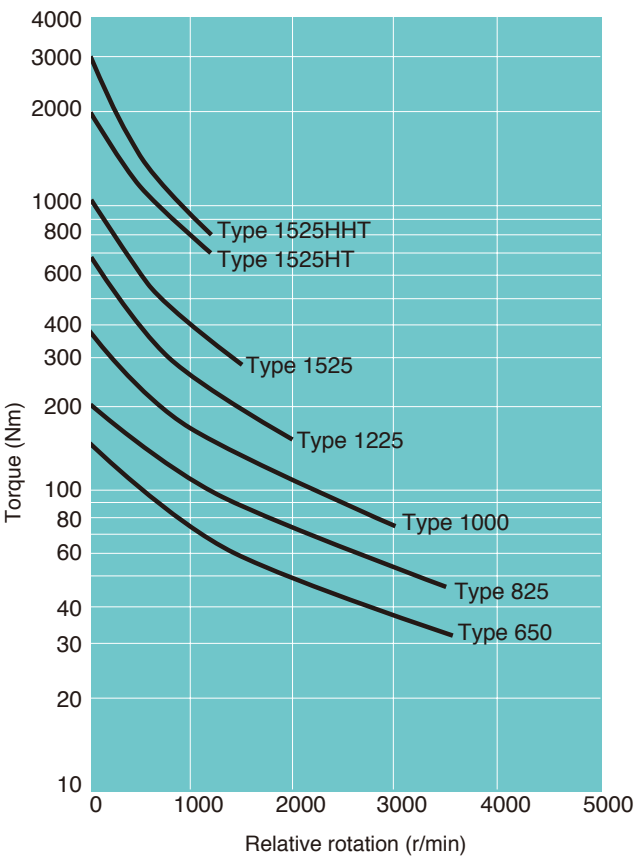
■Clutch model for general usage shall be selected by selection table.

In case of usage with engines, suitable model shall be selected based on the load capacity and the rpm of clutch shaft from below table.

the load capacity r/min (kW) (PS)		300	400	500	600	700	800	900	1000	1100	1200	1500	1800	2000	2400
		650	650	—	—	—	—	—	—	—	—	—	—	—	—
0.74	1	650	650	—	—	—	—	—	—	—	—	—	—	—	—
1.1	1½	650	650	650	—	—	—	—	—	—	—	—	—	—	—
1.48	2	825	650	650	650	650	—	—	—	—	—	—	—	—	—
2.22	3	1000	825	825	650	650	650	650	650	650	—	—	—	—	—
3.7	5	1225	1000	1000	825	825	825	825	650	650	650	650	650	—	—
5.5	7½	1225	1225	1225	1000	1000	1000	825	825	825	825	650	650	650	650
7.4	10	1525	1225	1225	1225	1225	1000	1000	1000	1000	825	825	825	650	650
11	15	1525HT	1525	1525	1525	1225	1225	1225	1225	1000	1000	1000	825	825	825
14.7	20	1525HT	1525HT	1525	1525	1525	1225	1225	1225	1225	1225	1000	1000	1000	825
18.4	25	1525HHT	1525HT	1525HT	1525HT	1525	1525	1525	1225	1225	1225	1225	1000	1000	1000
22	30	1525HHT	1525HHT	1525HT	1525HT	1525HT	1525	1525	1525	1525	1225	1225	1225	1225	1000
29.4	40	1525HHT	1525HHT	1525HHT	1525HT	1525HT	1525HT	1525HT	1525	1525	1525	1525	1225	1225	1225
36.7	50	—	—	1525HHT	1525HHT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525	1525	1225	1225
73.5	100	—	—	—	—	1525HHT	1525HHT	1525HHT	1525HHT	1525HHT	1525HHT	1525HHT	—	—	—
110	150	—	—	—	—	—	—	—	—	1525HHT	1525HHT	—	—	—	—

Characteristics

1 Relative Speed vs. Torque



2 Response Characteristics

Model \ Description	SF-□□□/BMF						
	650	825	1000	1225	1525	1525 HT	1525 HHT
Armature pull-in time ta (ms)	100	120	120	200	240	120	100
Torque build-up time tp (ms)	220	250	340	510	560	320	300
Armature release time tar (ms)	80	100	140	200	200	300	400

(Note) 1. Refer to the above table for calculating the clutch engagement time and braking time.
2. Torque build-up time includes armature pull-intime.

3 Total life/Max speed/Inertia J

●Leaf spring system clutch type SF

Model	Total workload before adjustment (J)	Total workload before wear limit (J)	Max speed of rotation (r/min)	Inertia J (kgm ²)	
				Armature side	Rotor side
SF- 650/BMF	0.77×10 ⁸	4.0×10 ⁸	3600	4.00×10 ⁻³	9.50×10 ⁻³
SF- 825/BMF	2.16×10 ⁸	8.5×10 ⁸	3500	1.30×10 ⁻²	2.23×10 ⁻²
SF-1000/BMF	2.45×10 ⁸	10.5×10 ⁸	3000	2.48×10 ⁻²	4.65×10 ⁻²
SF-1225/BMF	4.11×10 ⁸	18.0×10 ⁸	2000	6.25×10 ⁻²	1.24×10 ⁻¹
SF-1525/BMF	6.49×10 ⁸	41.0×10 ⁸	1600	2.20×10 ⁻¹	2.66×10 ⁻¹
SF-1525HT/BMF	4.79×10 ⁸	31.0×10 ⁸	1200	2.20×10 ⁻¹	2.85×10 ⁻¹
SF-1525HHT/BMF	3.23×10 ⁸	19.0×10 ⁸	1200	2.20×10 ⁻¹	3.03×10 ⁻¹

Precautions for use

■Pre-installation precautions

- 1 Please take care not to contaminate the friction surface with oil or other foreign matters. If it is contaminated please wipe with thinner.
- 2 Please do not hang the product by lead cable. Please do not vibrate or shock this clutch.

■Installation precautions

- 1 The degree of fitting between the clutch and the shaft should be H7. js6 as defined in JIS B0401, and they should be fixed with no play in the axial direction.
- 2 Please install clutch with specified gap (refer to the external dimension diagram). Please fix clutch to the shaft firmly with nut.
- 3 Do not tighten the field detent. Leave it as loose as a common detent is.
- 4 The mounting screws should be fixed with an adhesive to keep them from loosening.

■Pre-operation precautions

- 1 Make sure that the gap sets at the prescribed position after installation
- 2 Make sure that the static unit (Field) and the rotating unit (Rotor) never touch each other
- 3 Turn ON and OFF the electric power without starting the engine to make sure if Armature movement is lightly and smooth under the static condition
- 4 There may be some possible case that the clutch unit does not produce the rated torque in the initial stage. Please repeat turning ON and OFF the power switch for 20 to 30 times without a load before driving the engine for break-in operation.

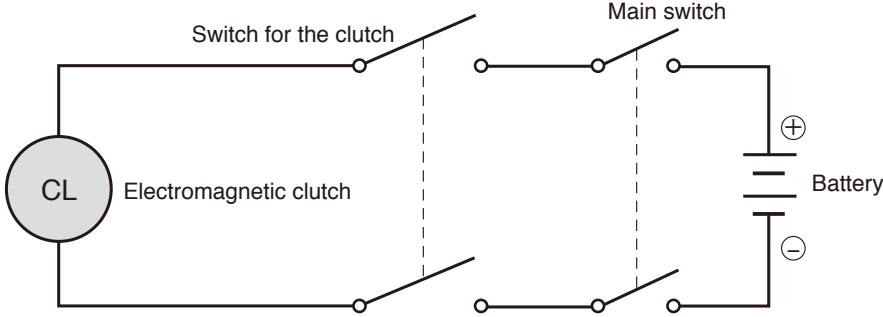
■Wiring precautions

- 1 Supply the specified rated voltage

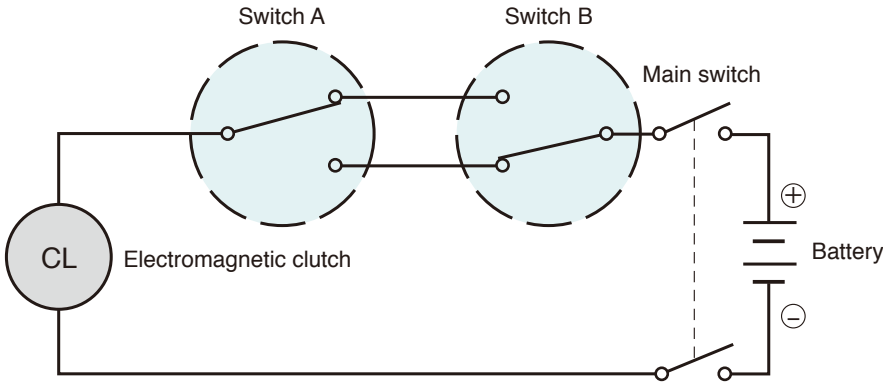
Never attempt grand the earth of (-) cable onto the engine or the clutch body.

If grand the earth of (-) cable onto the engine or the clutch body, it will be a cause of electric erosion for crank shaft or propeller shaft. Both (+) (-) cable must be connected to battery.

●Wiring for single operation

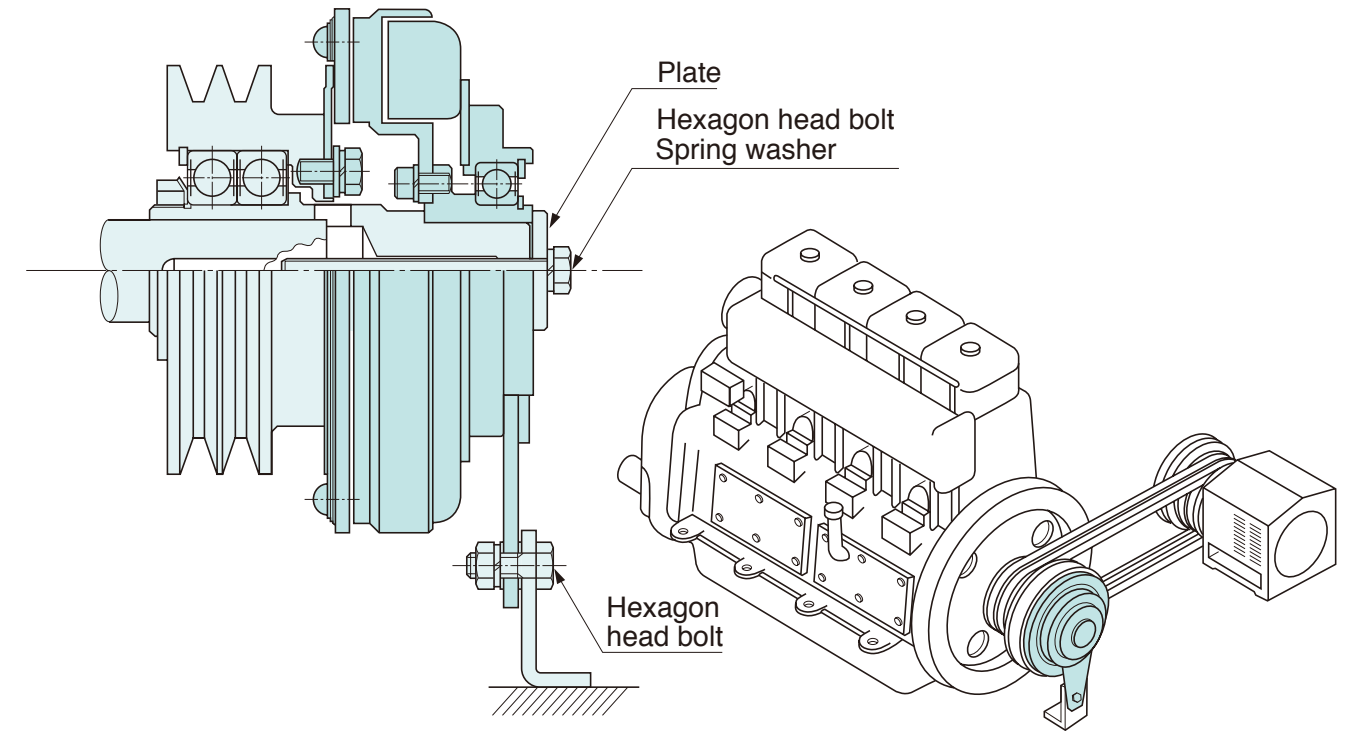


●Wiring for double operation



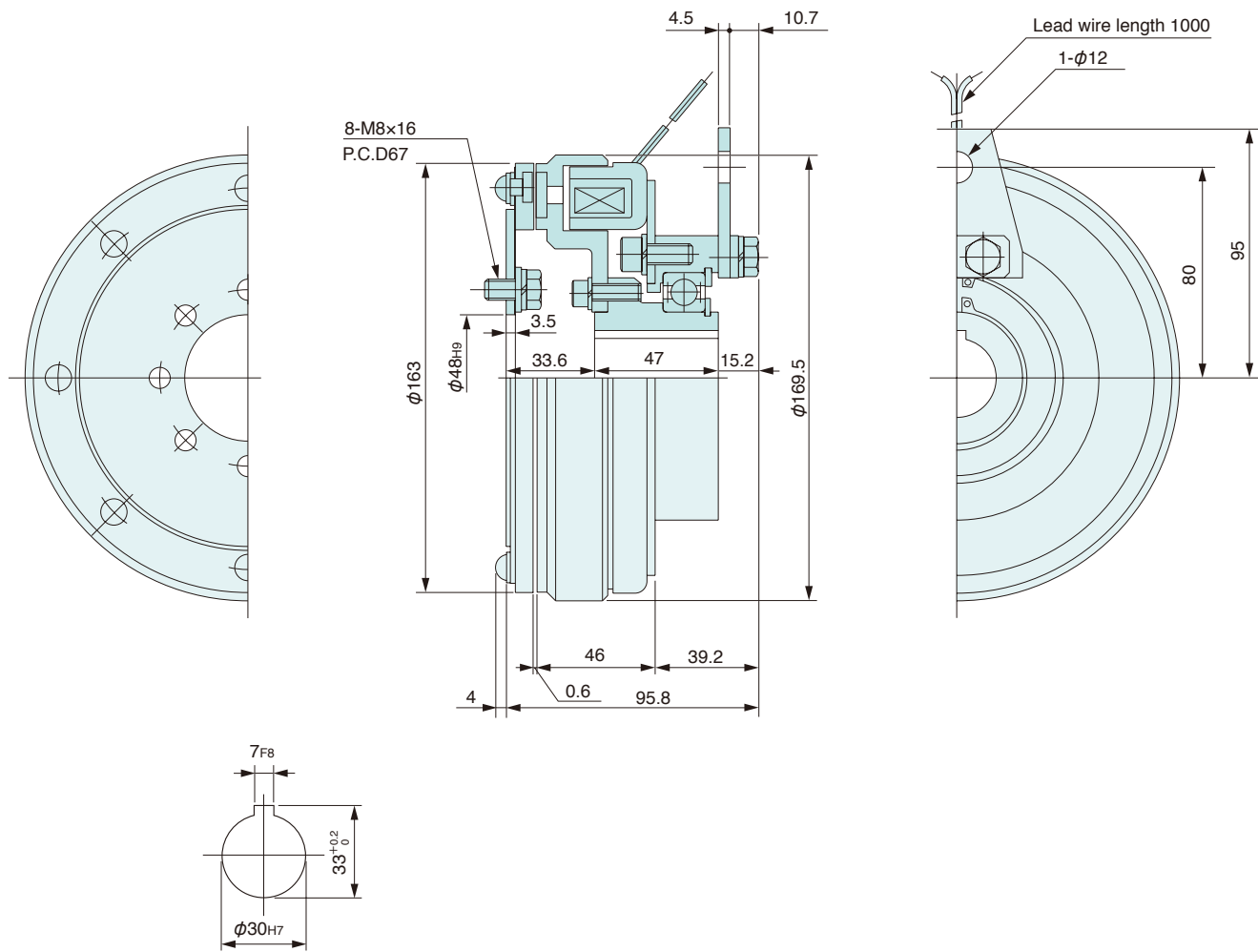
Installation Example

SF



Leaf Spring System Clutch
SF-650/BMF

Model	Static friction torque(Nm)	Rated voltage(DC-V)	Power consumption at75°C(W)	Mass(kg)
SF-650/BMF	130	24	26	6.0



Unit : mm

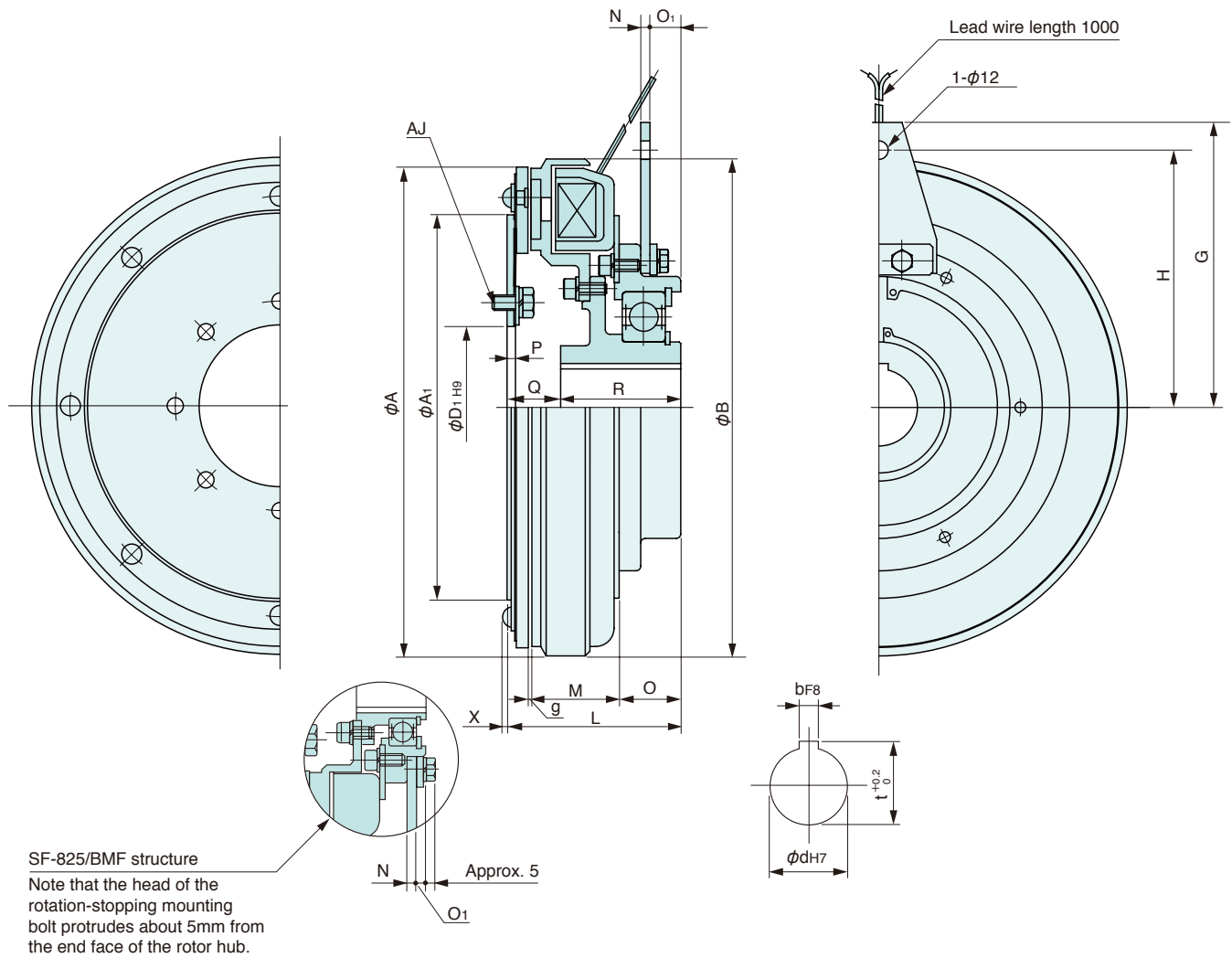
Leaf Spring System Clutch

Some are made to order.

SF-825, 1000, 1225, 1525, 1525HT, 1525HHT/BMF

Model	Static friction torque(Nm)	Rated voltage(DC-V)	Power consumption at75°C(W)	Mass(kg)
SF-825/BMF	200	24	33.5	11
SF-1000/BMF	350	24	31	19
SF-1225/BMF	650	24	27	29
SF-1525/BMF	1000	24	32	38
SF-1525HT/BMF	1800	24	143	53
SF-1525HHT/BMF	3000	24	143	65

(Note) SF-1525HHT is build-to-order product



Unit : mm

Model	Diameter direction						Shaft direction										Attachment			Shaft hole		
	A	A ₁	B	D ₁	G	H	L	M	N	O	O ₁	P	Q	R	X	g	Number	P.C.D	Bolt	d	b	t
SF-825	218	170	218	60	150	132	86.4	48.4	6	26.5	6.2	3.8	41.4	45	4.4	0.6	8	83	M10x20	40	10	43.5
SF-1000	255	210	262	90	173	155	95.6	49.2	6	34	14	3.8	31.6	64	5	0.8	8	116	M10x20	50	12	53.5
SF-1225	312	250	322.5	105	185	167	112.6	58.7	6	40	20	5.5	34.6	78	2.9	0.8	8	136	M10x20	50	12	53.5
SF-1525	389	320	398	120	203	185	115	58.7	6	36	16	5.7	40	75	4.3	1.0	8	156	M12x25	50	12	53.5
SF-1525HT	389	320	400.8	120	208	190	131	58.7	6	52	30	5.7	40	91	4.3	1.0	8	156	M12x25	75	20	81
SF-1525HHT	390	345	400.8	124	228	210	161	58.7	6	79.2	57	9.6	55	106	1.0	1.0	12	156	M12x35	90	24	98

Micro Clutches/Brakes

Powerful Office Automation/
Factory Automation Micro Series

Micro

Series

Our ultra-compact electromagnetic clutches/brakes truly represent the whole of our engineering expertise expressed in a small, elegant package. In addition to its diminutive size, this field-proven micro clutches/brakes feature exceptional reliability, rapid response time and high torque. Our device will provide exceptional performance whether it is used for Office Automation, Computer Peripherals, Factory Automation or other precision machinery.

