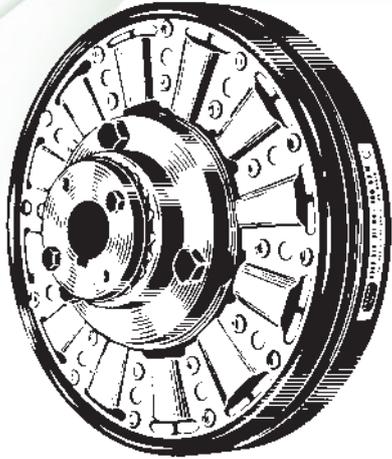




Warner Dry, Single-face Clutches/Brakes



Warner Clutches/Brakes are the most popular line of Electro-magnetic clutches/brakes now used in large numbers in a wide variety of machines in numerous industries. Typical models of dry, single-face design, they have many important performance and structural features. Easily used and installed, they can suit various applications involving operations ranging from simple starting and stopping to reversing, branch driving, positioning, including, speed variation, and intermittent tunning, in which they are especially serviceable when the running frequency is high. They come in end-to-end shaft, through shaft, and other standard types, plus a vriety of easily-used units including Electro-Pack clutch/brake units, Clutch-Coupler clutch units, and Electro-Sheave clutches with V pulleys.

FEATURES

1 No post-installation adjustment is required

All models incorporate an "auto-gap" mechanism for automatic adjustment. Friction disk wear does not necessitate arduous gap adjustment.

2 Easily assembled

Taper lock bushing is used to facilitate the assembly of the unit on the shaft and preclude loosening.

3 High heat release efficiency

A unique armature design enables frictional heat to be quickly released outside. This makes the unit serviceable in high-frequency on-off operations and under demanding service conditions.

4 Broad freedom in torque control

Torque can be varied over a wide range by varying the current. This makes possible such operations as slow starting, braking, and slipping for tension control.

5 Compact, lightweight, easily mounted

Compact and lightweight, the unit takes up only a minimum of space, and can be mounted with ease.

6 Durable, and economical in power consumption

Made of choice materials and carefully designed, the unit stays very long in service while long maintaining its initial performance characteristics, and consumes only a minimum of power.

7 An extensive line of units available

A wide variety of units are available to be readily used in automated machines.

MODELS NAMES



Models in clutch/brake series

- SF: Through shaft clutch
- SFC: End-to-end shaft clutch
- RF: Brake with replaceable friction disk
- PB/PBS: Brake with integrated field-friction disk
- EP/EPS: Clutch/brake unit
- CLC: Clutch unit
- ES: Clutch unit with pulley
- AR: Brake unit with holding arm
- RP: Reversible drive unit

Nominal number

HT suffixed to a number stands for "high torque".

Armature drive and field mounting types

- BMS: Spline-drive, ball bearing-mounted type
- BMP: Pin-drive, ball bearing-mounted type
- FMS: Spline-drive, flange-mounted type
- IMS: Spline-drive, inside-mounted type
- IMP: Pin-drive, inside-mounted type



SINFONIA TECHNOLOGY CO., LTD.
Formerly SHINKO ELECTRIC CO., LTD.

How to Select Warner Clutch/Brake Models (Simplified Model Selection Tables)

Clutch operating modes may be divided into two types:

The maximum torque is applied to the system after it has been started fully (for example, in a lathe, on which the work begins to be ground after its rotation has reached the regular speed).

The maximum torque is applied when the clutch is actuated (for example, in a conveyor system, in which case the load is already on the system when the clutch closes). By referring to Table I or II, it is easy to select the right clutch model for a particular application from the motor capacity and the clutch shaft speed involved.

If you are not sure which type of clutch operating mode is expected, use Table II.

If you have a brake in mind, use Table I. If the application you have in mind involves a high load GD2 or high actuating frequency or high turning speed, ask the manufacturer for a recommendation.

Selection Table I Maximum Torque Is Applied After System Has Fully Been Started

Motor capacity	rpm	100	200	300	400	500	600	700	800	900	1000	1100	1200	1500	1800	2000	2400	3000	3600	4000	4600	5000	
0.015 (kW)	1/50 (HP)	250	250	250	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
0.035	1/30	400	250	250	250	250	250	250	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
0.065	1/12	400	250	250	250	250	250	250	250	250	250	250	250	160	160	160	160	160	160	160	160	160	160
0.1	1/8	400	400	250	250	250	250	250	250	250	250	250	250	250	250	160	160	160	160	160	160	160	160
0.125	1/5	400	400	400	250	250	250	250	250	250	250	250	250	250	250	250	160	160	160	160	160	160	160
0.2	1/4	500	400	400	400	400	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
0.25	1/3	500	400	400	400	400	400	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
0.4	1/2	650	500	500	400	400	400	400	400	400	400	400	400	400	250	250	250	250	250	250	250	250	250
0.55	3/4	825	650	500	500	500	400	400	400	400	400	400	400	400	400	400	250	250	250	250	250	250	250
0.75	1	1000	650	650	500	500	500	500	400	400	400	400	400	400	400	400	400	400	250	250	250	250	250
1.1	1 1/2	1000	825	650	650	650	500	500	500	500	500	500	400	400	400	400	400	400	400	400	400	400	400
1.5	2	1225	1000	825	650	650	650	650	500	500	500	500	500	400	400	400	400	400	400	400	400	400	400
2.2	3	1225	1000	1000	825	650	650	650	650	650	650	500	500	500	500	500	400	400	400	400	400	400	400
3.7	5	1525	1225	1000	1000	825	825	650	650	650	650	650	500	500	500	500	400	400	400	400	400	400	400
5.5	7 1/2	1525HT	1225	1225	1000	1000	1000	825	825	650	650	650	650	650	650	650	500	500	500	500	500	500	500
7.5	10	1525HT	1525	1225	1225	1000	1000	1000	1000	825	825	825	825	650	650	650	650	500	500	500	500	500	500
11	15		1525HT	1525	1225	1225	1225	1000	1000	1000	1000	1000	1000	825	650	650	650	650	650	650	650	500	500
15	20		1525HT	1525	1225	1225	1225	1225	1225	1000	1000	1000	1000	1000	825	825	650	650	650	650	650	500	500
19	25			1525HT	1525	1525	1225	1225	1225	1225	1225	1000	1000	1000	1000	1000	825	825	650	650	650	500	500
22	30			1525HT	1525HT	1525	1525	1225	1225	1225	1225	1225	1225	1000	1000	1000	1000	825	825	650	650	500	500
30	40			1525HT	1525HT	1525	1525	1525	1525	1525	1225	1225	1225	1225	1000	1000	1000	1000	825	825	650	650	500
37	50				1525HT	1525HT	1525HT	1525	1525	1525	1525	1225	1225	1225	1225	1225	1225	1000	1000	1000	1000	825	825
45	60					1525HT	1525HT	1525HT	1525	1525	1525	1525	1225	1225	1225	1225	1225	1225	1000	1000	1000	1000	825
55	75								1525HT	1525HT	1525HT	1525HT	1525	1525	1225	1225	1225	1225	1000	1000	1000	1000	825
75	100										1525HT	1525HT	1525HT	1525HT	1525	1525	1225	1225	1225	1000	1000	1000	825
92	125												1525HT	1525HT	1525HT	1525HT	1525	1525	1225	1225	1000	1000	825
110	150														1525HT	1525HT	1525HT	1525HT	1525	1525	1225	1225	1000

When an optical-waveguide cable is laid, the individual fibers have to be spliced together.

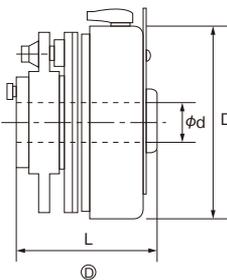
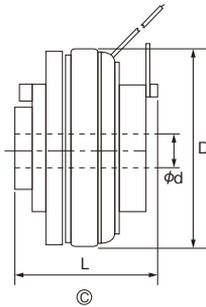
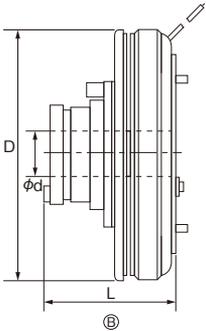
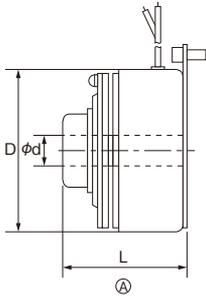
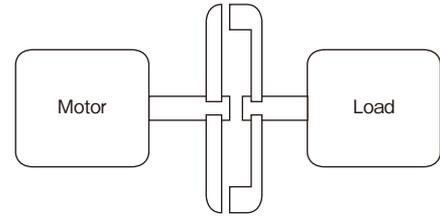
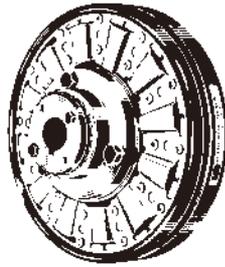
Selection Table II Maximum Torque Is Applied When System Is Started

Motor capacity	rpm	100	200	300	400	500	600	700	800	900	1000	1100	1200	1500	1800	2000	2400	3000	3600	4000	4600	5000	
0.015 (kW)	1/50 (HP)	250	250	250	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
0.035	1/20	400	250	250	250	250	250	250	250	250	160	160	160	160	160	160	160	160	160	160	160	160	160
0.065	1/12	400	400	250	250	250	250	250	250	250	250	250	250	250	250	250	160	160	160	160	160	160	160
0.1	1/8	400	400	400	400	250	250	250	250	250	250	250	250	250	250	250	250	250	250	160	160	160	160
0.125	1/6	500	400	400	400	400	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
0.2	1/4	500	400	400	400	400	400	400	400	250	250	250	250	250	250	250	250	250	250	250	250	250	250
0.25	1/3	500	500	400	400	400	400	400	400	400	400	250	250	250	250	250	250	250	250	250	250	250	250
0.4	1/2	650	650	500	500	500	400	400	400	400	400	400	400	400	400	400	400	250	250	250	250	250	250
0.55	3/4	825	650	650	500	500	500	500	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
0.75	1	1000	825	650	650	500	500	500	500	500	500	500	400	400	400	400	400	400	400	400	400	400	400
1.1	1 1/2	1225	1000	825	650	650	650	650	650	500	500	500	500	500	500	500	400	400	400	400	400	400	400
1.5	2	1225	1000	825	825	650	650	650	650	650	500	500	500	500	500	500	500	500	400	400	400	400	400
2.2	3	1525	1225	1000	1000	825	825	825	650	650	650	650	650	650	650	500	500	500	500	500	500	500	500
3.7	5	1525	1225	1225	1000	1000	1000	825	825	825	825	825	825	825	650	650	650	650	650	650	650	650	650
5.5	7 1/2	1525HT	1525	1225	1225	1000	1000	1000	1000	1000	1000	1000	1000	825	825	825	825	825	825	825	825	825	825
7.5	10	1525HT	1525	1225	1225	1225	1225	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
11	15		1525HT	1525HT	1525	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
15	20		1525HT	1525HT	1525HT	1525HT	1525	1525	1525	1525	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
19	25			1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525	1525	1525	1525	1525	1525	1525	1525	1525	1525
22	30				1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT
30	40					1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT	1525HT

The picture shows a multiple splicer with fibers spliced in pairs by means of an AC arc.

Warner Clutches (End-to-End Shaft Type), SFC Series

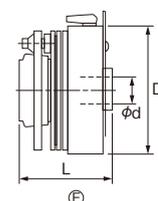
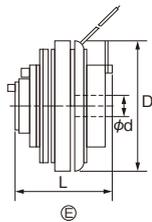
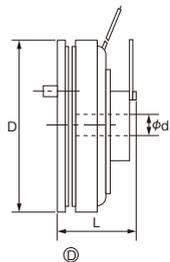
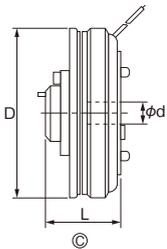
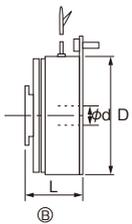
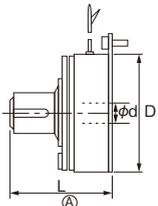
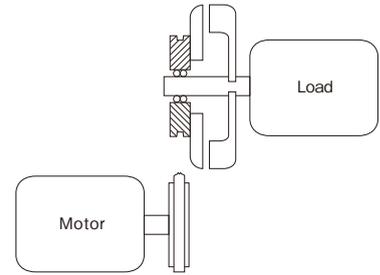
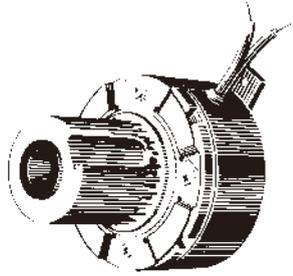
Have high power capacity, and tolerate high-frequency actuation. End-to-end shaft design.



Model	Drawing number	Static friction torque (Nm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)			Weight (kg)
					D	L	d	
SFC-250/BMS-AG	A	7	24	7	67	55.3	12	0.77
SFC-250/FMS-AG	A	7	24	7	67	50.5	12	0.75
SFC-400/BMS-AG	A	28	24	8	108	67	18	2.3
SFC-400/FMS-AG	A	28	24	8	108	59.3	18	2.3
SFC-500/BMP	D	70	24	23	135	95.5	28	4.0
SFC-501/BMS	A	70	24	23	135	83.2	28	4.1
SFC-650/IMS	B	130	24	26	169.5	92	28	6.6
SFC-650/BMS	C	130	24	26	169.5	124	28	7.9
SFC-825/IMS	B	180	24	25	218	105.5	28	11
SFC-825/BMS	C	200	24	28	218	108.1	28	11
SFC-1000/IMS	B	350	24	31	262	134.9	48	19
SFC-1000/BMS	C	350	24	31	262	168.9	48	21
SFC-1225/IMS	B	650	24	27	322.5	148.1	50	32
SFC-1225/BMS	C	650	24	27	322.5	188.1	50	36
SFC-1525/IMS	B	1000	24	32	398	150.9	50	44
SFC-1525/BMS	C	1000	24	32	398	186.9	50	54
SFC-1525HT/IMS	B	1800	24	143	400.8	184	75	51
SFC-1525HT/BMS	C	1800	24	143	400.8	200.7	75	61

Warner Clutches (Through Shaft Type), SF Series

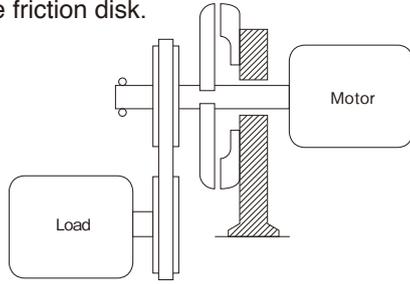
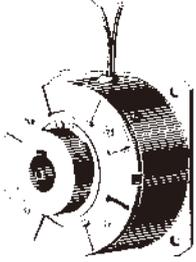
Have high power capacity, and tolerate high-frequency actuation. Through-shaft design.



Model	Drawing number	Static friction torque (Nm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)			Weight (kg)
					D	L	d	
SF-250/BMS-AG	A	7	24	7	67	85	12	0.79
SF-250/FMS	A	7	24	7	67	81.5	12	0.77
SF-250/BMG	B	7	24	7	67	54.3	12	0.77
SF-250/FMG	B	7	24	7	67	49.5	12	0.75
SF-400/BMS-AG	A	28	24	8	108	96.7	18	2.4
SF-400/FMS	A	28	24	8	108	89	18	2.3
SF-400/BMG	B	28	24	8	108	64.3	18	2.3
SF-400/FMG	B	28	24	8	108	56.4	18	2.3
SF-500/BMP	F	70	24	23	135	96.5	28	3.5
SF-501/BMS	E	70	24	23	135	78.2	28	3.8
SF-650/IMS	C	130	24	26	169.5	93	28	6.4
SF-650/IMP	D	130	24	26	169.5	63	28	5.9
SF-650/BMS	E	130	24	26	169.5	125	28	7.7
SF-650/BMP	D	130	24	26	169.5	95	28	6.2
SF-825/IMS	C	180	24	25	218	91.4	28	11
SF-825/IMP	D	180	24	25	218	63.5	28	9.0
SF-825/BMS	E	200	24	28	218	94.3	28	11
SF-825/BMP	D	200	24	28	218	66.4	28	9.9
SF-1000/IMS	C	350	24	31	262	93.1	48	17
SF-1000/IMP	D	350	24	31	262	64.3	48	15
SF-1000/BMS	E	350	24	31	262	127.1	48	19
SF-1000/BMP	D	350	24	31	262	98.3	48	17
SF-1225/IMS	C	650	24	27	322.5	109.2	50	31
SF-1225/IMP	D	650	24	27	322.5	75.4	50	25
SF-1225/BMS	E	650	24	27	322.5	149.2	50	34
SF-1225/BMP	D	650	24	27	322.5	114.6	50	29
SF-1525/IMS	C	1000	24	32	398	112	50	43
SF-1525/IMP	D	1000	24	32	398	75.4	50	34
SF-1525/BMS	E	1000	24	32	398	148	50	48
SF-1525/BMP	D	1000	24	32	398	111.4	50	43
SF-1525HT/IMS	C	1800	24	143	400.8	147.3	75	49
SF-1525HT/BMS	D	1800	24	143	400.8	164	75	59

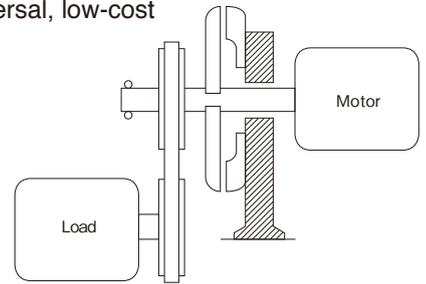
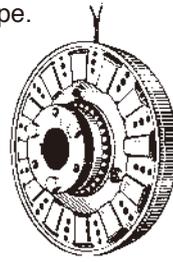
Warner Brakes (with Replaceable Friction Disk), RF Series

High braking torque. Distinguished durability. Replaceable friction disk.

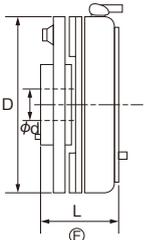
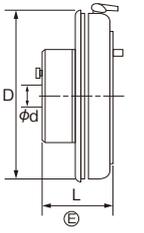
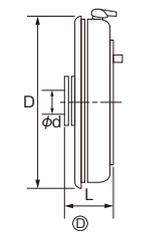
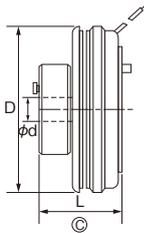
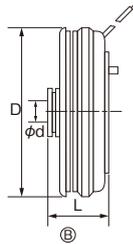
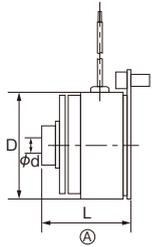


Warner Brakes (with Integrated Field-Friction Disk), PB Series

Integrated field-friction disk. Easily-mounted, universal, low-cost type.



Warner Brakes, RF Series

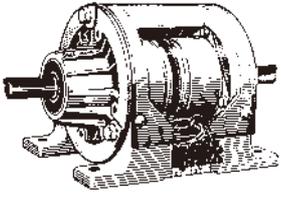


Model	Drawing number	Static friction torque (Nm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)			Weight (kg)
					D	L	d	
RF-250/FMS-AG	A	7	24	7	67	50	12	0.65
RF-400/FMS-AG	A	28	24	8	108	59.2	18	2.0
RF-825/IMS	B	180	24	25	218	81.3	28	9.0
RF-825/IMP	C	180	24	25	218	104	28	10.5
RF-1000/IMS	B	350	24	31	262	110.1	48	16
RF-1000/IMP	C	350	24	31	262	112.7	48	15
RF-1225/IMS	B	650	24	27	322.5	121.4	50	25
RF-1225/IMP	C	650	24	27	322.5	151.6	50	29.5
RF-1525/IMS	B	1000	24	32	398	121.4	50	33
RF-1525/IMP	C	1000	24	32	398	126.2	50	38.5
RF-1525HT/IMS	B	1800	24	143	400.8	119.2	75	38

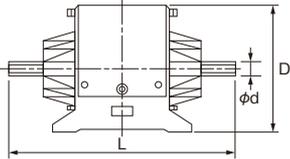
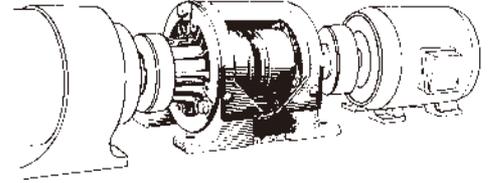
Warner Brakes, PB/PBS Series

Model	Drawing number	Static friction torque (Nm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)			Weight (kg)
					D	L	d	
PB-260/FMS-AG	A	7	24	9.7	68	50	12	0.55
PB-400/FMS-AG	A	28	24	8	102	52	18	1.3
PB-500/IMP	F	55	24	21	128.6	74	28	2.7
PB-501/IMS	D	55	24	21	134	61.5	28	2.6
PB-650/IMS	D	130	24	21	164	57.4	28	4.7
PB-650/IMP	F	130	24	21	165	71	28	5.0
PBS-825/IMS	D	180	24	30	218	69.9	28	6.9
PBS-825/IMP	E	180	24	30	218	92.6	28	7.3
PB-1000/IMS	D	350	24	27	262	97.7	48	12
PB-1000/IMP	E	350	24	27	262	100.3	48	11
PB-1225/IMS	D	650	24	22	320	104.2	50	19
PB-1225/IMP	E	650	24	22	320	134.4	50	20
PB-1525/IMS	D	1000	24	25	394	107.4	50	26
PB-1525/IMP	E	1000	24	25	394	112.2	50	27

Electro-Pack Clutch/Brake Units, EP/EPS Series



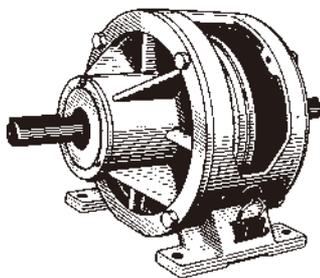
Compact double-shaft units incorporating a Warner clutch/brake. Carefully centered at the factory, they only need lead connections at the installation site.



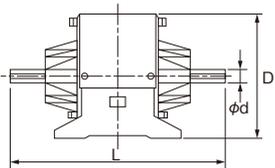
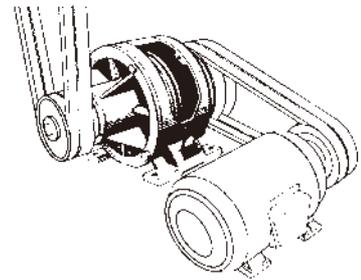
Model	Static friction torque (Nm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)			Weight (kg)
				D	L	d	
EP-250	7	24	7	117	225	13	3.0
	7		9.7				
EP-400	28	24	8	175	298	19	8.8
	28		8				
EP-500	70	24	23	202.5	394	22	13
	55		21				
EP-501	70	24	23	202.5	375	22	14
	55		21				
EPS-650	130	24	26	235	448	28	42
	130		21				
EP-825	180	24	25	264	524	28	60
	180		30				
EPS-1000	350	24	31	312	620	48	100
	350		27				
EPS-1225	650	24	27	372	676	50	150
	650		22				
EPS-1525	1000	24	32	452	708	50	213
	1000		25				
EPS-1525HT	1800	24	143	461	830	75	270
	1800		143				

Note: In the above table, static friction torque and power consumption data consists of clutch (top) and brake (bottom) values.

Clutch-Coupler Clutch Units, CLC Series



Designed for easy magnetic clutch installation. Only lead connections are required after the driving and driven shafts are coupled.

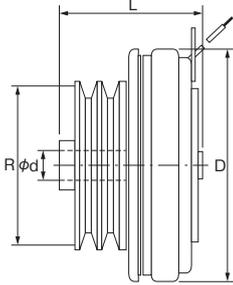
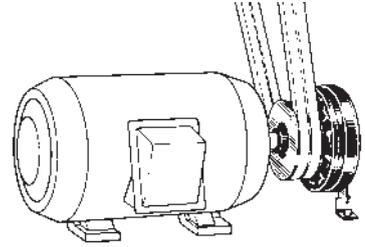


Model	Static friction torque (Nm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)			Weight (kg)
				D	L	d	
CLC-250	7	24	7	117	198	13	2.4
CLC-400	28	24	8	175	264	19	6.0
CLC-501	70	24	23	204.5	352	22	16
CLC-825	180	24	25	264	460	28	46
CLC-1000	350	24	31	312	553	48	82
CLC-1225	650	24	27	372	610	50	118
CLC-1525	1000	24	32	452	638	50	180
CLC-1525HT	1800	24	143	461	682	75	203

Electro-Sheave Clutch Units with V Pulley, ES Series

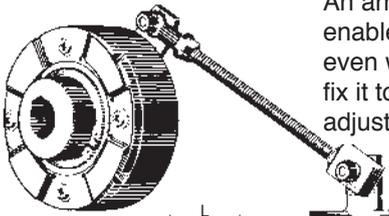


Integrated Warner clutch-V pulley units. Only a wrench is required to install an ES on any machine. No designing, machining, or centering is required.

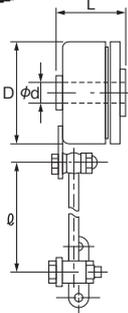
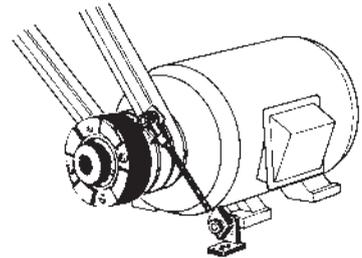


Model	Static friction torque (Nm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)				Weight (kg)
				D	L	c	R	
ES-500-A2-19J	70	24	23	135	155	19	100	6.3
ES-500-B2-24J	70	24	23	135	155	24	150	8.5
ES-500-B2-28J	70	24	23	135	155	28	150	8.5
ES-825-B2-28J	200	24	28	218	135	28	150	17
ES-825-B4-38J	200	24	28	218	170	38	150	23
ES-1000-B4-38J	350	24	31	262	192	38	200	35
ES-1225-C3-42J	650	24	27	322.5	248	42	236	51

Brake Units with Holding Arm, Series AR

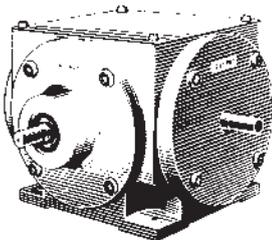


An arm and a rod are provided to enable the unit to be installed easily even where no frame is available to fix it to. Just key the rotary shaft. No adjustment is required.

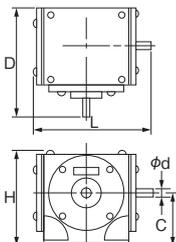
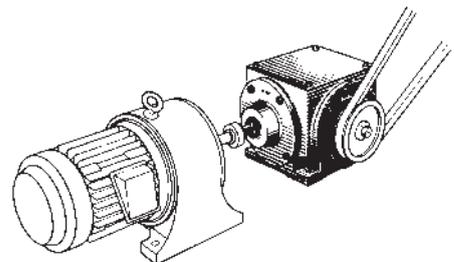


Model	Static friction torque (Nm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)				Weight (kg)
				D	L	c	Y	
AR-250	7	24	7	67	47	12	124	0.78
AR-400	28	24	8	108	60	18	192	2.1
AR-500	70	24	23	136	81.4	28	265	5.5
AR-825	180	24	30	218	95	30	295	10.9

Rever-Pack Reversible Drive Units, RP Series



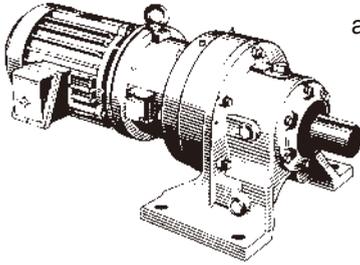
A bevel gear-clutch combination is incorporated in a compact unit offering superb performance in reversible or reciprocating operations in various machines.



Model	Static friction torque (kgm)	Rated voltage (DC-V)	Power consumption at 75 (W)	Outside dimensions (mm)					Weight (kg)
				D	L	d	H	C	
RP-250	7	24	7	180	188	11	138	71	5.0
RP-400	28	24	8	260	255	16	200	100	15

Cyclopack: Drive Units with Clutches/Brakes and Reduction Gear

"Cyclopacks" are a completely new type of drive units consisting of Warner Clutches/Brakes reputed for their contribution to automation and high efficiency combined with Sumitomo "Cyclo" Reduction Gear known as top-quality products in the industry into compact assemblies which in their turn are integrated with standard motors.



Model: CHHCM
3-phase squirrel-cage motors
Motor Capacity: 0.2-7.5 kW
Electro magnetic clutches/brakes
Static torque: 6-180 Nm



For safe and reliable operation, it is essential to read the user's manual carefully before using this equipment.

We have a new slogan in Japan; "ECOing" a combination of "eco" and "ing". This is to promote eco-friendly technological development and manufacturing. Our ecological activities are of course not limited to Japan and practiced in many countries around the world.

SINFONIA TECHNOLOGY CO., LTD. continually upgrades and improves its products.
Actual features and specifications may therefore differ slightly from those described in this catalog.

Formerly SHINKO ELECTRIC CO., LTD.

 **SINFONIA** SINFONIA TECHNOLOGY CO., LTD.

Shiba NBF Tower, 1-30, Shiba-daimon 1-chome, Minato-ku, Tokyo, 105-8564, Japan
TEL +81-3-5473-1826 FAX +81-3-5473-1845

SINFONIA TECHNOLOGY (SINGAPORE) PTE. LTD.

96 Robinson Road, #13-02 SIF Building, Singapore 068899
TEL +65-6223-6122 FAX +65-6225-2729

PT. SINFONIA TECHNOLOGY INDONESIA

Graha Paramita 8th Floor Suite E Jl. Denpasar Raya Block D2 KAV. 8 Kuningan, Jakarta 12940, Indonesia
TEL: 021-252-3606 (hunting) FAX: 021-252-3608

SINFONIA TECHNOLOGY (SHANGHAI) CO., LTD.

Room3006, Building B Far East International Plaza, No 317, Xian Xia Road, Changning District, Shanghai, China
Zip Code:200051
TEL +86-21-6275-0606 FAX +86-21-3209-8975

CODE

E71-100

<http://www.sinfo-t.jp>