



CLUTCH / BRAKE



ERD
Electrically
Released
Spring Set Brakes

Warner Electric

ERD Series Brakes provide dynamic braking with reliable, fast response...

The Warner Electric line of electrically released, dynamic, spring-set brakes (ERD) offers a high-performance, cost effective solution for power-off load holding applications.

These brakes (ERD) are typically applied where dynamic stopping of the load is desired when the electrical power is either accidentally or intentionally removed. They may be applied in any dry environment where a dependable heavy duty braking action is required, with no residual torque in the disengaged position.

These units are typically mounted horizontally, but vertical installations are also acceptable.

The initial operating Air Gap is factory set with provisions for wear adjustment after dynamic use.

This series of brakes are UL approved.



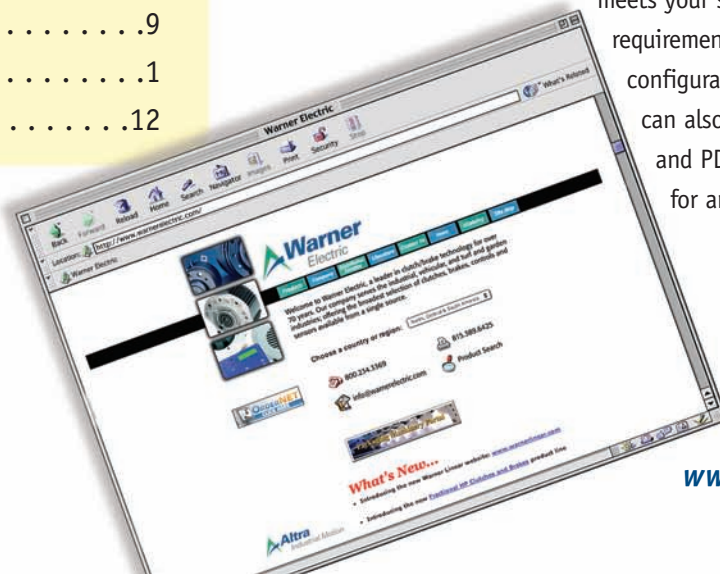
Contents

ERD Brake Applications	1
ERD Design	2
Selection	3
Specifications	4
Components	6
Dimensions	7
How to Order	9
Control Units	1
Part Numbers	12

Check Out **warnerelectric.com**

warnerelectric.com now features our new interactive eCATALOG making it faster and easier to find and spec the motion control products you need.

Within the Warner Electric Interactive eCATALOG, you can start your search for basic components, such as clutches or brakes, and then quickly refine your search from hundreds of possibilities to one that meets your specific power transmission requirements for NEMA, input/output configurations and other factors. You can also download specifications and PDF pages or submit an RFQ for any of your selections.



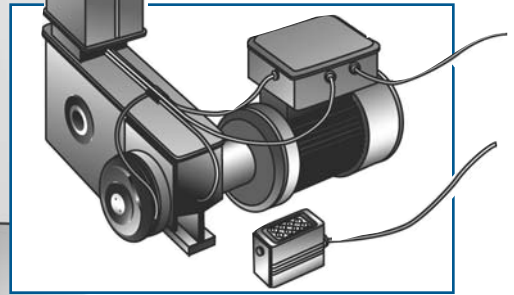
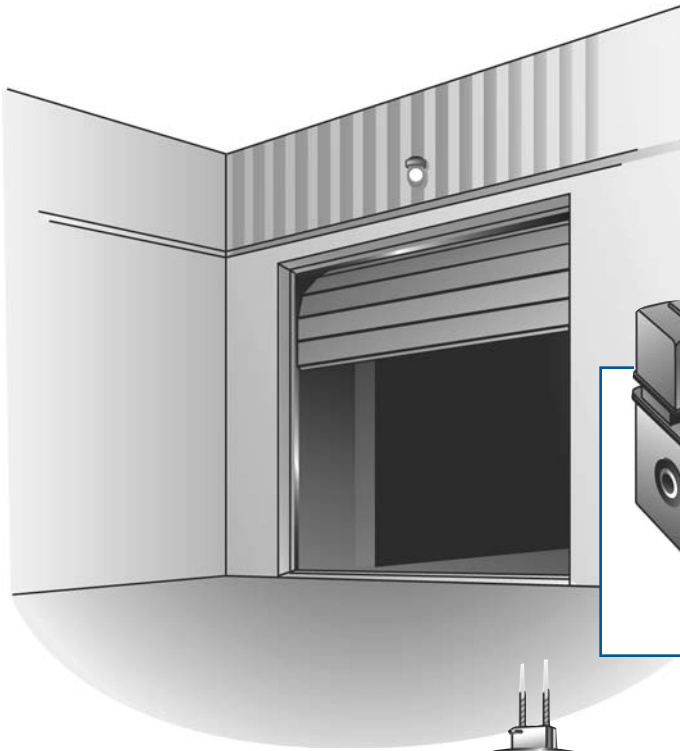
Find it fast at
www.warnerelectric.com



Applications

As a fail-safe, power-off brake, the ERD family is ideally suited for such load-stopping and holding applications as:

- Conveyors
- Machine Tools
- Robotics
- Medical X-Y Positioning
- Scooters
- Floor Sweepers/Cleaners
- Motor Brakes
- Overhead Doors
- Hoist/Winch
- Fork Lift

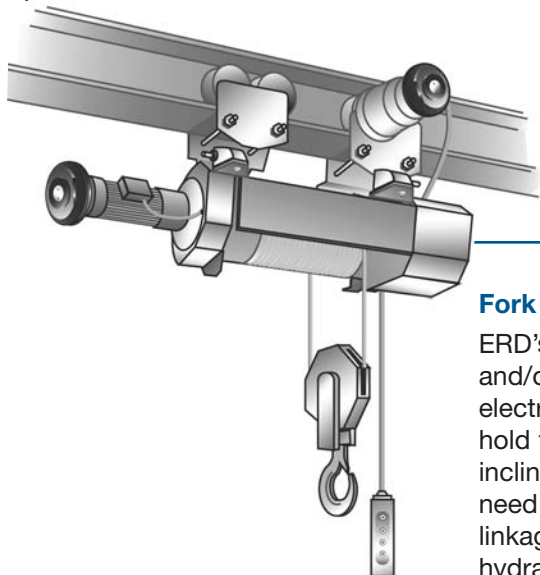
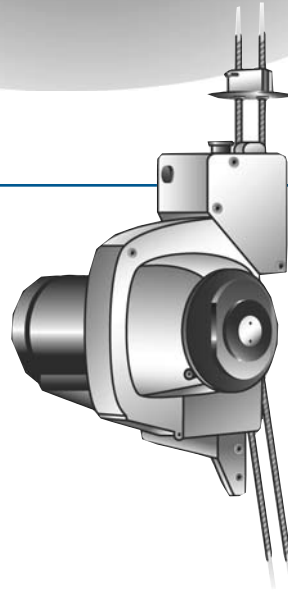


Overhead Door

The ERD can be used in conjunction with a photo eye. In this application, whenever the light beam is broken, voltage to the brake is removed. The brake then applies and holds the door in position. Further, the manual release feature allows the operator to open/close the door in the event of a power failure.

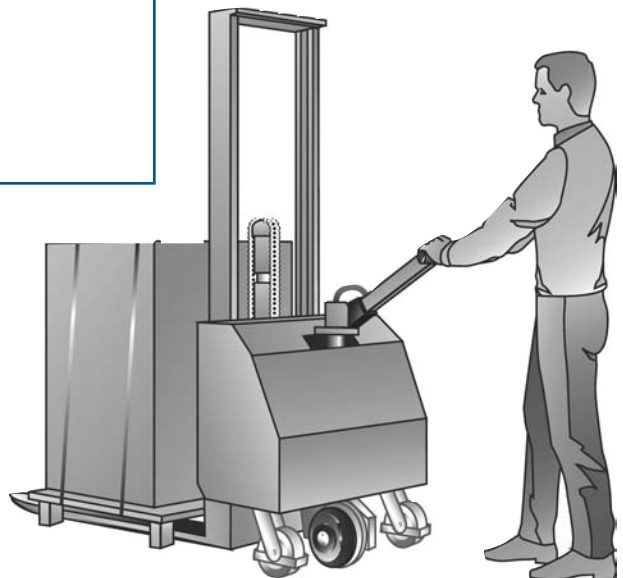
Hoist/Winch

The ERD with central torque adjustment can be used to consistently stop the rated load within a fixed distance by dialing-in the proper torque level on each production hoist. The addition of a manual release allows the load to be gradually and safely lowered to the ground in the event of power failure.



Fork Lift

ERD's are used as safety and/or parking brakes on electric fork trucks to hold the vehicle on inclines etc. without the need for manual brake linkage or expensive hydraulic brakes.

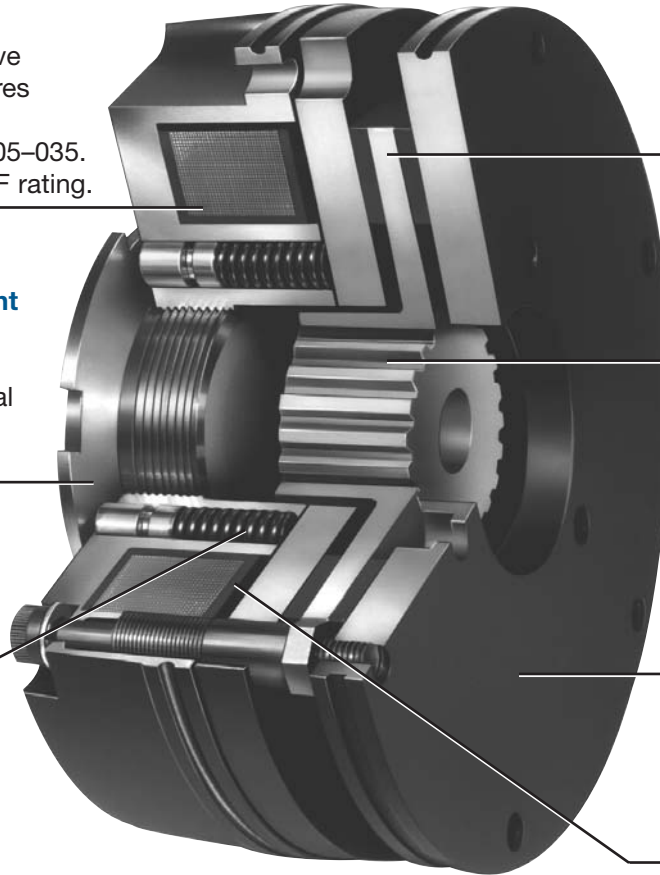


The Inside Story

6 Continuous duty coil is epoxy-sealed; windings have Class F insulation. Lead wires have standard Class B insulation rating on sizes 005–035. Sizes 060–300 have Class F rating.

2 Central Torque Adjustment (VAR 02) allows braking torque adjustment down to 50% of nominal rating; ideal for controlling stopping distances.

Compression Springs are used to provide balanced armature plate loading.



3 Friction Disc has double friction surfaces for increased torque in small package size.

7 Splined Center Hub is steel for wear resistance and available in a variety of bore sizes and keyways.

5 Friction Flange can easily be modified to suit unique bolt patterns. In special cases, brakes may be mounted directly to the motor without the need for the flange.

Air Gap is factory pre-set and easy to adjust during field maintenance.

ERD Series brakes are designed to safely keep the load in position in the event of a power or motor failure, whether intentional or accidental.

By applying voltage to the ERD, an electromagnetic field is created which causes the armature plate to pull-in against helical compression springs, thus releasing the brake. When power is removed, the springs force the armature to compress the friction carrier against the mounting flange, thus stopping and holding the load. Fully dynamic friction material on the carrier allows for repeated braking cycles from full motor speed with no torque fade.

An optional manual release allows the operator to safely move the load even when no power is available.

Brakes are available in eight different sizes ranging from 3.3 inches to 9.9 inches in diameter with torque capacities from 4 to 220 lb.ft.

Features/Benefits

- Dynamic friction material can stop loads from motor speeds up to 3600 RPM.
- Few moving parts means quiet operation.
- Lead and asbestos free, dynamic friction material is suited for high cycle rates.
- Variety of voltages available.
- Simple DC control (or AC with available rectifiers).
- Low power requirements for energy savings.
- Bi-directional stopping capability.
- Epoxy encapsulated coil for uniform heat transfer.
- Corrosion resistant.
- Low inertia rotating parts.
- Splined hub for quiet dependable operation.
- Metric and inch standard bore sizes.

Selection Procedure

Proper fail-safe brake selection involves determining, in order:

1. Static Holding Torque

The ERD brake nominal holding torque should exceed the torque from the load by a minimum safety factor of 2.0.

2. Dynamic Torque

This is determined from the equation:

$$T = \frac{5250 P K}{N}$$

where:

T = Dynamic Torque, ft.lb.

N = Motor Speed, RPM

P = Motor Horsepower

K = Momentary Peak Torque Factor (Typically 2.5)

Once the dynamic torque has been calculated, check the dynamic torque curves (to the right) at the required operating speed to determine the suitable brake.

3. Energy Capacity (Heat Dissipation)

Sizing of the ERD by energy capacity is a function of the cycling frequency (cycles per hour) and the single cycle energy put into the brake as determined from the equation:

$$E = 1.7 WR^2 \left(\frac{N}{100} \right)^2$$

where:

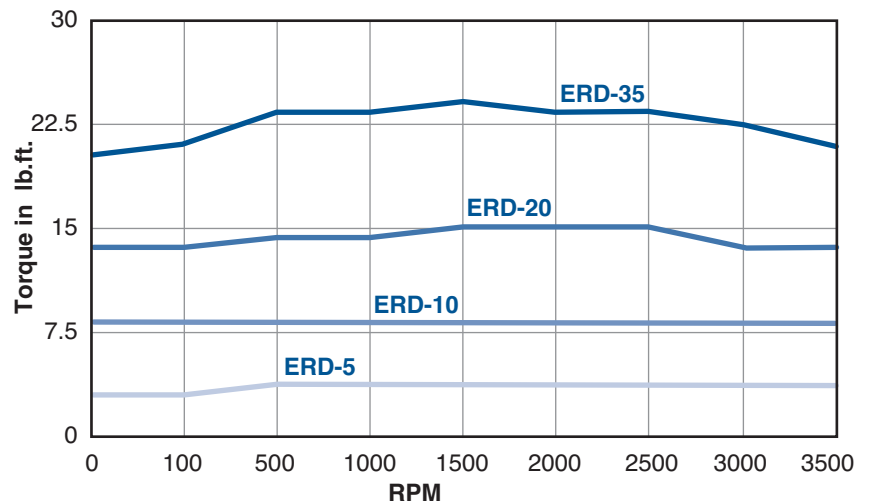
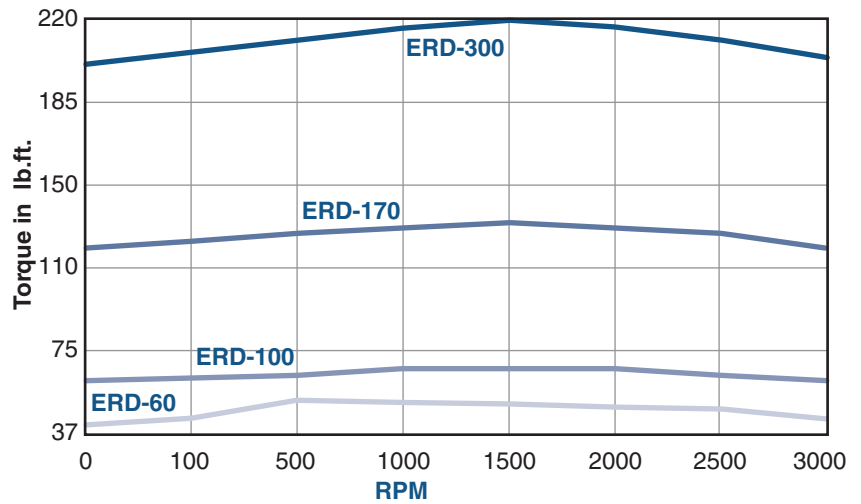
E = Single Cycle Energy, ft.lb.

WR² = Load Inertia, lb.ft²

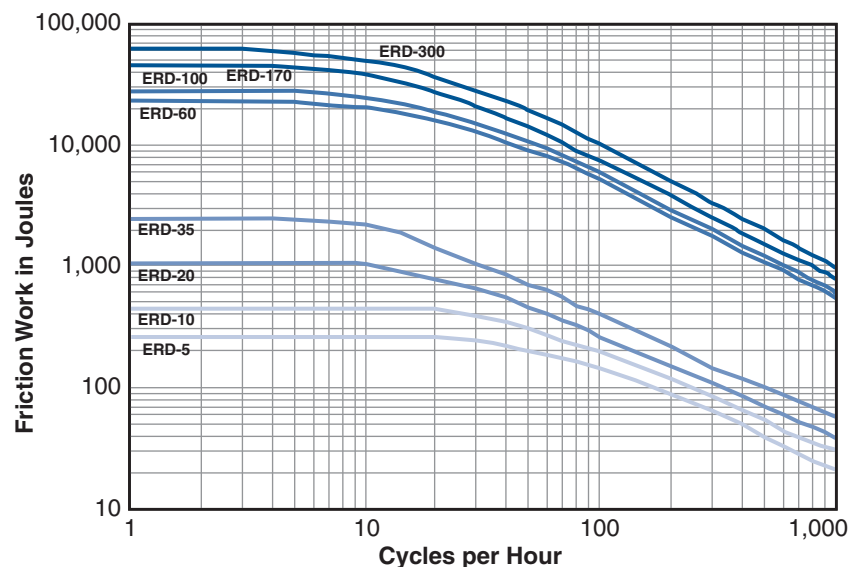
N = Speed, RPM

Applying the energy per cycle with the cycle rate to the energy curve, the brake selection is verified.

Dynamic torque



Energy capacity



Note: To convert Joules/min. to ft.lbs./min, multiply times .7376

Specifications

Technical Data

	Options	Units	ERD 5	ERD 10	ERD 20	ERD 35	ERD 60	ERD 100	ERD 170	ERD 300
Holding Torque		in.lb.	45	85	175	310	530	890	1500	2650
		ft.lb.	4	7	15	26	44	75	125	221
Maximum Speed		RPM	3600	3600	3600	3600	3600	3600	3600	3600
Rotating Inertia	S	lb.in. ²	0.041	0.137						
	M	lb.in. ²	0.103	0.321	0.957	2.529	7.415	12.472	14.010	29.386
Current Draw		Amps								
	24 VDC		0.83	1.03	1.22	1.61	1.94	2.35	2.73	4.11
	103.5 VDC*		0.21	0.26	0.31	0.41	0.49	0.57	0.69	1.122
	207 VDC*		0.09	0.12	0.14	0.18				
Resistance at Ambient Temperature	24 VDC	Ohms	28.9	23.4	19.6	14.9	12.4	10.22	8.78	5.83
	103.5 VDC*		454	372	310	233	166.2	168.6	139.2	85.63
	207 VDC*		2380	1813	1545	1175				
Weight		lbs	2	4	7	10	14	22	34	57

* The controls designed on pages 10 and 11 provide output voltages to operate these brakes.

Ordering Procedure

Specify:

- 1. Size:** upon sizing criteria, select a size. 5, 10, 20, 35, 60, 100, 170, or 300
- 2. Variation:**
 0 – No torque adjustment
 2 – With central torque adjusting ring
- 3. Friction Disc:**
 Metallic carrier is standard.
 Thermoplastic carrier is available on sizes 5 & 10.
 High torque carrier available on sizes 060 through 300.
- 4. Options:**
 Dust Cover
 Manual Release
- 5. Friction Flange & Mounting Screws:**
 Thick Flange is standard – Requires Short Screws.
 Thin Flange available up to Size 35 – Requires Long Screws.
 No Mounting Flange is an option – Requires Long Screws.
- 6. Voltage:**
 24 DC is standard.
 96, 103.5 (90)* & 207/215* DC are modifications.

* Coil voltages can vary slightly depending on unit size.

7. Bore Size:

Pilot bored hubs available in all sizes. See table for US-English and Metric bore sizes available by ERD size. Special bores available on request.

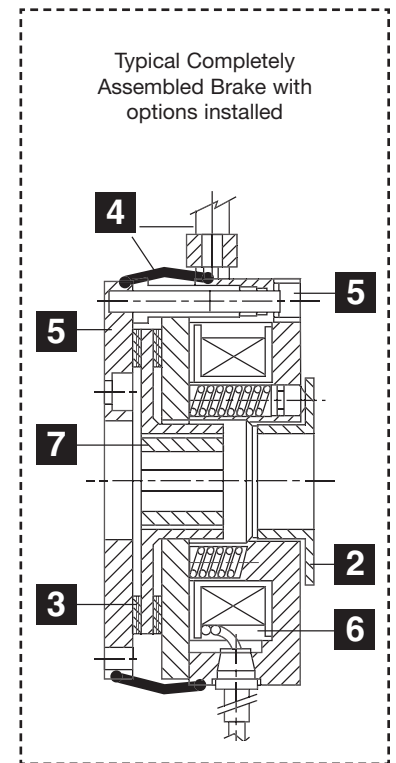
8. Detection Kit – Micro Switch

For Service Manual, request catalog P-229. This option not retrofittable. Requires a 25 piece minimum order for sizes 005 thru 035.

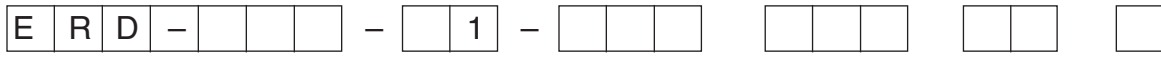
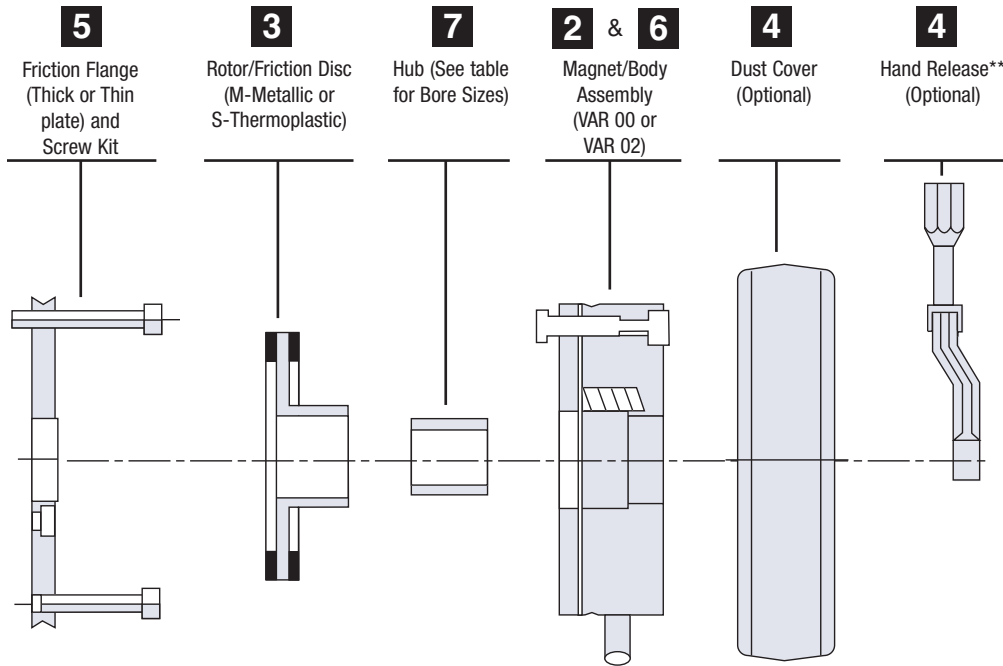
Caution:

These units are designed for dry operation. The brake must be free from oil and grease.

Exceeding the maximum rotation speed listed in the catalog will invalidate the guarantee.



Product Configuration



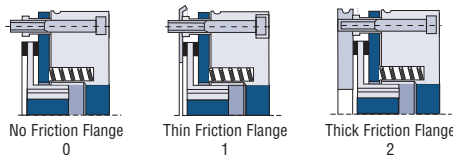
1 Size:
 005, 010, 020, 035, 060,
 100, 170, 300

2 Variation:
 0 – VAR 00 – No torque adjustment
 2 – VAR 02 – With central torque adjusting ring

3 Friction Disc:
 M- Metallic carrier is standard
 S- Thermoplastic carrier is available on sizes 5 & 10
 H- High torque carrier available on sizes 060 through 300

4 Options:
 0- None
 1- Dust Cover
 2- Hand Release**
 3- Dust Cover and Hand Release

5 Friction Flange and Screw Kits:
 0- No Friction Flange
 1- Thin Friction Flange
 2- Thick Friction Flange



Cable Std.

8 Detection kit:
 0-None
 1-With

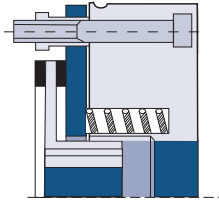
7 Bore Size:
 See Bore Size Table

6 Voltage:
 24 DC is standard
 96, 103.5 (90)* & 207/215* DC are modifications

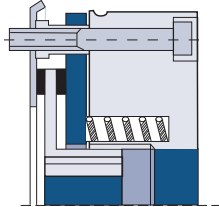
* Coil voltages can vary slightly depending on unit size.
 ** Manual release available on variation 02 only.

Components

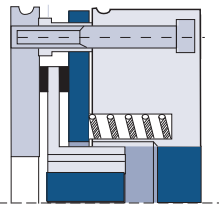
4 Mounting Options (by customer)



No Friction Flange
 Requires long screw kit

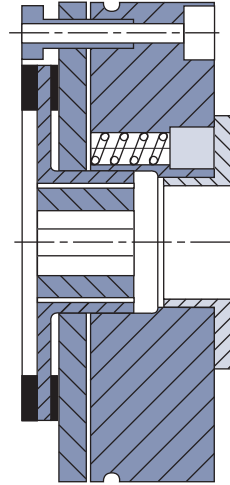


Thin Friction Flange
 Requires long screw kit
 Available on sizes 005
 thru 035 only.



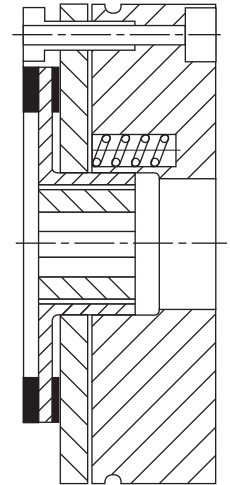
**Thick Friction Flange
 (Standard)**
 Requires short screw kit

2 Magnet Assembly Variations



VAR 02

- Torque reduction up to 50% by loosening one nut.
- Available in all sizes.
- Central nut has several “Detents” per turn allowing accurate torque adjustment.
- The brake is factory set at the minimum torque (50% of max. torque).

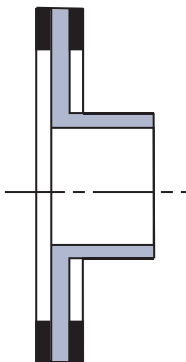


VAR 00

No torque adjustment possible

- Available in all sizes.
- No hand release option available.

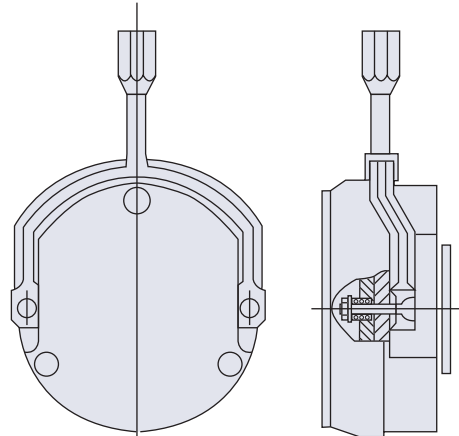
3 Rotor/Friction Disc



Available in two styles
 M – Metallic (Standard)
 S – Thermoplastic (Low inertia)
 Sizes 005 & 010 only

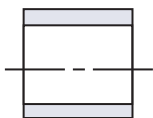
- Large thermoplastic bore hubs (Available in sizes 005 and 010 only)
- Large bore metallic disc (Available in sizes 005 thru 035)
- High torque metallic discs (Available in sizes 060 thru 300. Requires lower speed of rotation.)

4 Manual Release (Optional)



Automatically returns to “neutral position” when released, thereby restoring holding torque to the brake.
 Designed to be retrofitted, except to VAR 00.

7 Hub



See Table for hub, bore and keyway size availability by ERD size.

4 Dust Cover (Optional)

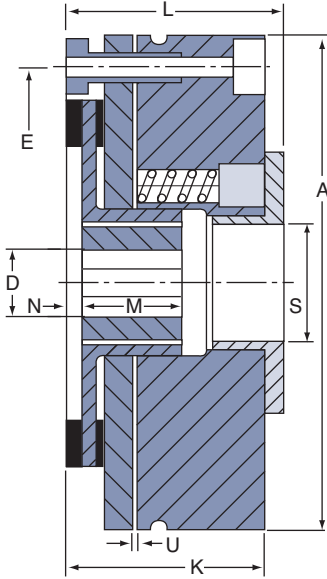
Available in all sizes.



Brakes

Inches (mm) millimeters

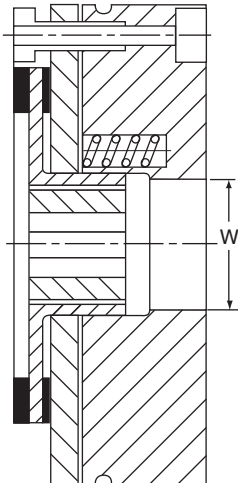
VAR 02



ERD Size	A	D Max.	E	K	L Max.	M +0.000/-0.008
5	3.307 (84)	0.5 (12)	2.835 (72)	1.378 (35)	1.575 (40)	0.709 (18)
10	4.016 (102)	0.625 (15)	3.543 (90)	1.614 (41)	1.831 (46.5)	0.787 (20)
20	5.000 (127)	1.0 (24)	4.409 (112)	1.870 (47.5)	2.185 (55.5)	0.787 (20)
35	5.787 (147)	1.125 (28)	5.197 (132)	2.146 (54.5)	2.559 (65)	0.984 (25)
60	6.378 (162)	1.25 (32)	5.709 (145)	2.520 (64)	2.933 (74.5)	1.181 (30)
100	7.402 (188)	1.500 (41)	6.693 (170)	2.795 (71)	3.209 (81.5)	1.181 (30)
170	8.465 (215)	1.95 (50)	7.717 (196)	3.268 (83)	3.780 (96)	1.378 (35)
300	9.921 (252)	2.125 (54)	9.055 (230)	3.819 (97)	4.528 (115)	1.575 (40)

ERD Size	N	S	U +/-0.002	W
5	0.079 (2)	0.748 (19)	0.008 (0.2)	0.925 (23.5)
10	0.118 (3)	0.945 (24)	0.008 (0.2)	1.122 (28.5)
20	0.157 (4)	1.378 (35)	0.008 (0.2)	1.594 (40.5)
35	0.118 (3)	1.575 (40)	0.012 (0.3)	1.909 (48.5)
60	0.118 (3)	1.890 (48)	0.012 (0.3)	2.303 (58.5)
100	0.118 (3)	2.047 (52)	0.012 (0.3)	2.500 (63.5)
170	0.177 (4.5)	2.362 (60)	0.012 (0.3)	2.894 (73.5)
300	0.197 (5)	2.874 (73)	0.012 (0.3)	3.484 (88.5)

VAR 00



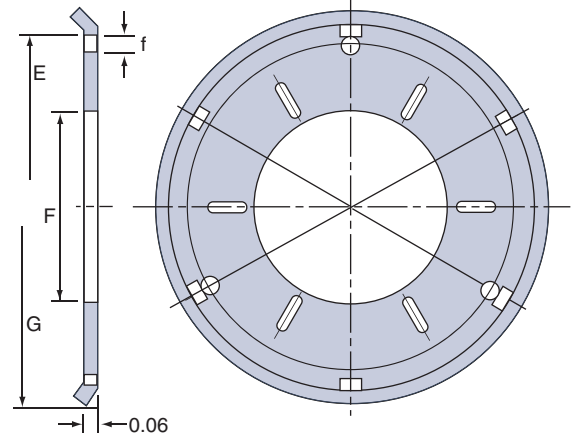
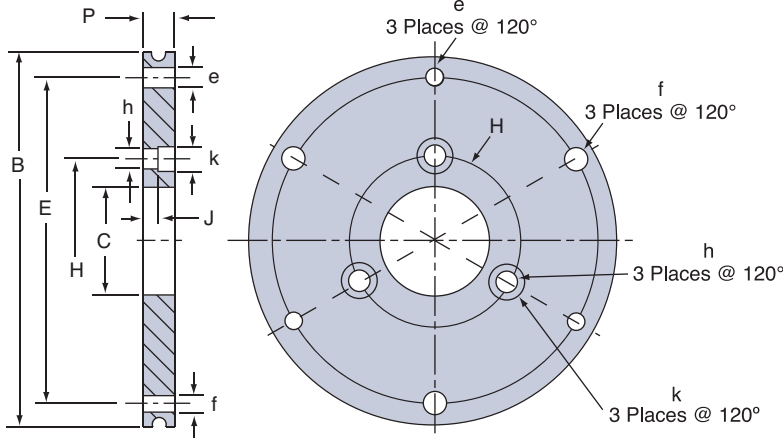
1. Concentricity of field mounting pilot diameter with rotor mounting shaft within .006 T.I.R.
2. Squareness of field mounting face with rotor mounting shaft within .006 T.I.R. measured at field mounting bolt circle.
3. Rotor mounting shaft concentric with armature center of rotation within .006 T.I.R.
4. Armature hub pilot diameter to be concentric with armature center of rotation within .010 T.I.R.
5. If customer does not use a friction flange, the mating surface must be square to their mounting shaft within .006" and flat within .002".

Dimensions

Friction Plates

Thick friction plate

Thin friction plate

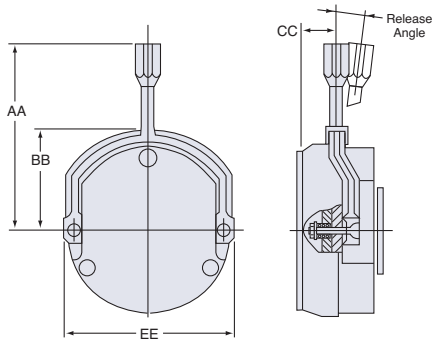


Inches (mm) millimeters

ERD Size	B	C	E	e Bolt Pattern	f Bolt Clearance Holes	F	G	H	h	k Bolt Clearance Holes	J	P
5	3.268 (83)	0.787 (20)	2.835 (72)	3xM4	3x0.177 3(4.5)	1.654 (42)	3.425 (87)	1.181 (30)	3x0.177 (4.5)	3x0.315 (8)	0.079 (2)	0.236 (6)
10	3.937 (100)	1.181 (30)	3.543 (90)	3xM5	3x0.217 3(5.5)	2.126 (54)	4.213 (107)	1.772 (45)	3x0.217 (5.5)	3x0.394 (10)	0.079 (2)	0.276 (7)
20	4.921 (125)	1.575 (40)	4.409 (112)	3xM6	3x0.256 3(6.5)	2.362 (60)	5.217 (132.5)	2.205 (56)	3x0.260 (6.5)	3x0.433 (11)	0.118 (3)	0.354 (9)
35	5.709 (145)	1.772 (45)	5.197 (132)	3xM6	3x0.256 3(6.5)	2.953 (75)	6.004 (152.5)	2.441 (62)	3x0.260 (6.5)	3x0.433 (11)	0.118 (3)	0.354 (9)
60	6.299 (160)	2.165 (55)	5.709 (145)	3xM8	3x0.335 3(8.3)			2.913 (74)	3x0.327 (8.3)	3x0.551 (14)	0.118 (3)	0.433 (11)
100	7.283 (185)	2.559 (65)	6.693 (170)	3xM8	3x0.335 3(8.3)			3.307 (84)	3x0.327 (8.3)	3x0.551 (14)	0.118 (3)	0.433 (11)
170	8.346 (212)	2.953 (75)	7.717 (196)	6xM8	6x0.335 6(8.3)			3.937 (100)	3x0.327 (8.3)	6x0.551 (14)	0.118 (3)	0.433 (11)
300	9.843 (250)	3.543 (90)	9.055 (230)	6xM10	6x0.413 6(10.3)			4.724 (120)	3x0.406 (10.3)	6x0.670 (17)	0.118 (3)	0.433 (11)

The thick mounting flange provides the proper material and mounting tolerances for the brake. The thin mounting flange provides the proper material in applications where flatness, squareness and concentricity requirements are met on the machine already.

Manual Release



ERD Size	AA	BB	CC	DD	EE	Release Angle
5	3.86 (98)	2.09 (53)	0.67 (17)	3.46 (88)	3.46 (88)	10°
10	4.21 (107)	2.44 (62)	0.71 (18)	4.17 (106)	4.17 (106)	9°
20	5.08 (129)	2.99 (76)	0.98 (25)	5.20 (132)	5.20 (132)	8°
35	5.47 (139)	3.39 (86)	0.87 (22)	5.98 (152)	5.98 (152)	8°
60	7.44 (189)	4.09 (104)	1.57 (40)	6.53 (166)	6.54 (166)	15°
100	8.07 (205)	4.72 (120)	1.73 (44)	7.56 (192)	7.36 (187)	15°
170	9.45 (240)	5.51 (140)	2.09 (53)	8.62 (219)	8.78 (228)	15°
300	12.32 (313)	6.38 (162)	2.40 (61)	10.8 (256)	10.33 (262.5)	20°

Dust Cover



Hub Bore and Keyway Sizes

U.S. English

Bore in.	Keyway		Available Bores							
	Width	Depth	5	10	20	35	60	100	170	300
3/8	3/32	3/64	Std.							
1/2	1/8	1/16	*	Std.	Std.					
5/8	3/16	3/32	*(Max.)	*	Std.	Std.	Std.	Std.		
3/4	3/16	3/32		*(Max.)	Std.	Std.				
7/8	3/16	3/32			Std.(Max.)	Std.			Std.	
1	1/4	1/8			*(Max.)	Std.	Std.	Std.		Std.
1-3/8	5/16	5/32				*(1-1/8Max.)		Std.	Std.	Std.
1-3/4	3/8	3/16							Std.	Std.

Metric

Bore (mm)	Keyway		Available Bores							
	Width	Depth	5	10	20	35	60	100	170	300
8			P.B.							
10			Std.	P.B.	P.B.					
11	4	2	Std.	Std.	Std.					
14	5	2.5	*	Std.	Std.	P.B.	P.B.			
15	5	2.5	*		Std.	Std.		P.B.		
18				*	Std.	Std.				
20	6	3		*(20Max.)	Std.	Std.			P.B.	
22	6	3			Std.	Std.				
24	8				*	Std.				
25	8	3.5				Std.	Std.	Std.		P.B.
28	8	3.5			*(28Max.)	*				
30	8	3.5				*(32Max.)	Std.	Std.		
35	10	4					(32Max.)	Std.	Std.	Std.
40	12	4						Max.	Std.	Std.
45	14	4.5							Std.	Std.
50	14	4.5							Max.	(54 Max.)

P.B. = Pilot Bore, * = Large Bore Hub, which requires use of a large bore friction disc.

Design Considerations/Limitations

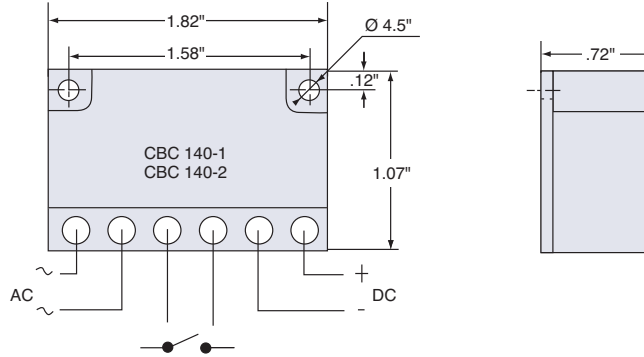
1. Check the airgap periodically and reset as required per instructions found on page 4 of the service manual P-229. Inspection interval(s) depend on the frequency of brake application.
2. Check friction material thickness periodically per dimension N (see page 7) and replace when below the minimum shown below.

Inches (mm) millimeters

ERD Size	5	10	20	35	60	100	170	300
Min.	0.009	0.008	0.012	0.009	0.010	0.010	0.012	0.013
Thickness	(0.22)	(0.21)	(0.31)	(0.22)	(0.24)	(0.24)	(0.31)	(0.32)

Control Units

Dimensions



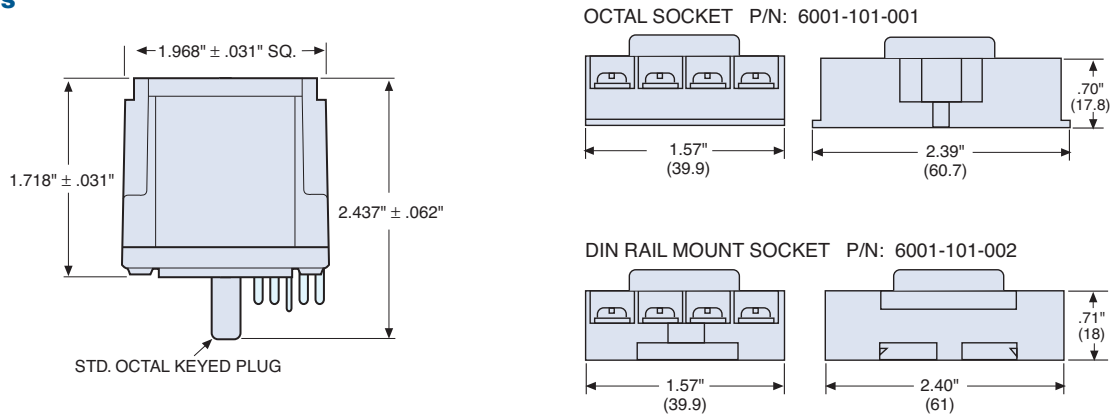
Specifications

	CBC-141-1		CBC-141-2	
Part Number	ACG830A1P1		ACG830A1P2	
Frequency (Hz)	50/60		50/60	
Input Voltage	230 VAC	30	115	230
Output Voltage	103.5 VDC	24	103.5	207
Max. Current (A)	1	2	2	2

CBC-141-1: Supply unit with single wave rectification for low current.

CBC-141-2: Supply unit with dual wave rectification for low current.

Dimensions

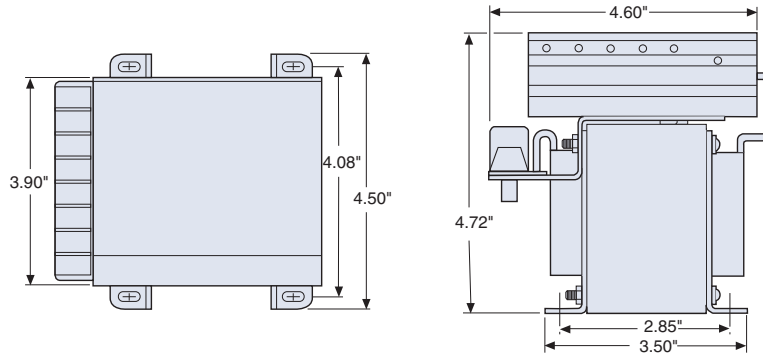


Specifications

	CBC-801-1	CBC-801-2
Part No.	6001-448-004	6001-448-006
Input Voltage	120 VAC, 50/60 Hz	220/240 VAC, 50/60 Hz
Output Voltage	90 VDC, 1.25 A max.	90 VDC, 1.25 A max.
Circuit Protection	Fused 1.6 Amp, 250 V fast-blo	Fused 1.6 Amp, 250 V fast-blo
Ambient Temperature	-23° to 116°F (-31° to 47°C)	
Max. Cycle Rate	Limited by the clutch or brake, variable with application	
Switching	Single pole, double throw Minimum contact rating: 10 Amp, 28 VDC resistive or 10 Amp, 120 VAC inductive	
Status Indicator	Red LED indicates brake is energized, Green LED indicates clutch is energized	
Mounting	Two versions of octal socket are available: 6001-101-001 foot mount 6001-101-002 DIN rail mount	

All dimensions nominal unless otherwise specified.

Dimensions



Specifications

	CBC-450-90	CBC-450-24
Part No.	6006-448-006	6006-448-005
Input Voltage	120/220/240/380/480 VAC	120/220/240/380/480 VAC
Output Voltage	90 VDC	24 VDC
Output Current	1 Amp/Channel 1.2 Amps Total	4 Amps/Channel 4 Amps Total
Auxiliary Supply	12 VDC 250 mA	12 VDC 250 mA
Circuit Protection	Fused 1.5 Amp	Fused 5 Amp
Ambient Temperature	+32° to 122°F (0° to 50°C)	+32° to 122°F (0° to 50°C)
Status Indicators	Red LED indicates channel is energized.	Red LED indicates channel is energized.
Adjustments	Jumper for single or dual operation.	Jumper for single or dual operation.
Inputs	3 Optically isolated, 10-30 VDC, 3-9 mA for Channel 1, Channel 2 and Channel 2 override (E-stop).	3 Optically isolated, 10-30 VDC, 3-9 mA for Channel 1, Channel 2 and Channel 2 override (E-stop).



Part Numbers

1 ERD005	
Description	Part Number
2 & 6 Variation 00 – 24 VDC	A5UE005A01P1
Variation 00 – 103.5 VDC	A5UE005A01P2
Variation 00 – 207 VDC	A5UE005A01P3
Variation 02 – 24 VDC	A5UE005A21P1
Variation 02 – 103.5 VDC	A5UE005A21P2
Variation 02 – 207 VDC	A5UE005A21P3
3 Friction Disc	
Standard Synthetic Disc	A5UE005B1P1
Large Bore Synthetic Disc	A5UE005B3P1
Standard Metallic Disc	A5UE005B2P1
Large Bore Metallic Disc	A5UE005B8P1
4 Options	
Hand Release	A5UE005K1P1
Dust Cover	A5UE005C4P1
5 Friction Flange & Screw Kit	
Thin Flange	A5UE005C300P1
Thick Flange	A5UE005C301P1
Short Screw	A5UE005K2P1
Long Screw	A5UE005K2P2
7 Hub Bore size	
Hub Pilot Bore – 8MM	A5UE005C500P1
Hub Bored W/Keyway – 11MM	A5UE005C500P2
Hub Bored W/Keyway – 8MM	A5UE005C500P4
Hub Bored W/Keyway – 10MM	A5UE005C500P5
Hub Bored W/O Keyway – 10MM	A5UE005C500P6
Hub Bored W/Keyway – 3/8"	A5UE005C500P9
Large Bore Hub W/Keyway – 1/2"	A5UE005C503P6
Large Bore Hub W/Keyway – 5/8"	A5UE005C503P5
8 Detection Kit	V4NST7
1 ERD010	
Description	Part Number
2 & 6 Variation-00 – 24 VDC	A5UE010A01P1
Variation-00 – 103.5 VDC	A5UE010A01P2
Variation-00 – 207 VDC	A5UE010A01P3
Variation 02 – 24 VDC	A5UE010A21P1
Variation 02 – 103.5 VDC	A5UE010A21P2
Variation 02 – 207 VDC	A5UE010A21P3
3 Friction Disc	
Standard Synthetic Disc	A5UE010B1P1
Large Bore Synthetic Disc	A5UE010B3P1
Standard Metallic Disc	A5UE010B2P1
Large Bore Metallic Disc	A5UE010B5P1
4 Options	
Hand Release	A5UE010K1P1
Dust Cover	A5UE010C4P1
5 Friction Flange & Screw Kit	
Thin Flange	A5UE010C308P1
Thick Flange	A5UE010C301P1
Short Screw	A5UE010K2P1
Long Screw	A5UE010K2P2
7 Hub Bore size	
Pilot Bore – 10MM	A5UE010C500P1
Hub W/Keyway – 10MM	A5UE010C500P9
Hub W/Keyway – 11MM	A5UE010C500P5
Hub W/Keyway – 14MM	A5UE010C500P6
Hub W/O Keyway – 0.625"	A5UE010C500P7
Hub Bored W/Keyway – 1/2"	A5UE010C500P13
Large Bore Hub W/Keyway – 5/8"	A5UE010C500P14
Large Bore Hub W/Keyway – 3/4"	consult factory

8 Detection Kit	V4NST7
1 ERD020	
Description	Part Number
2 & 6 Variation 00 – 24 VDC	A5UE020A01P1
Variation 00 – 103.5 VDC	A5UE020A01P2
Variation 00 – 207 VDC	A5UE020A01P3
Variation 02 – 24 VDC	A5UE020A21P1
Variation 02 – 103.5 VDC	A5UE020A21P2
Variation 02 – 207 VDC	A5UE020A21P3
3 Friction Disc	
Standard Synthetic Disc	N/A
Large Bore Synthetic Disc	N/A
Standard Metallic Disc	A5UE020B2P1
Large Bore Metallic Disc	A5UE020B3P1
4 Options	
Hand Release	A5UE020K1P1
Dust Cover	A5UE020C4P1
5 Friction Flange & Screw Kit	
Thin Flange	A5UE020C300P1
Thick Flange	A5UE020C301P1
Short Screw	A5UE020K2P1
Long Screw	A5UE020K2P2
7 Hub Bore size	
Pilot Bore – 10MM	A5UE020C500P1
Hub Bored W/Keyway – 15MM	A5UE020C500P2
Hub Bored W/Keyway – 20MM	A5UE020C500P3
Hub Bored W/Keyway – 18MM	A5UE020C500P5
Hub Bored W/Keyway – 11MM	A5UE020C500P6
Hub Bored W/Keyway – 14MM	A5UE020C500P7
Hub Bored W/Keyway – 1/2"	A5UE020C500P15
Hub Bored W/Keyway – 5/8"	A5UE020C500P16
Hub Bored W/Keyway – 3/4"	A5UE020C500P17
Hub Bored W/Keyway – 7/8"	A5UE020C500P18
Large Bore Hub W/Keyway – 1"	consult factory
8 Detection Kit	V4NST7
1 ERD035	
Description	Part Number
2 & 6 Variation-00 – 24 VDC	A5UE035A01P1
Variation-00 – 103.5 VDC	A5UE035A01P2
Variation-00 – 207 VDC	A5UE035A01P3
Variation 02 – 24 VDC	A5UE035A21P1
Variation 02 – 103.5 VDC	A5UE035A21P2
Variation 02 – 207 VDC	A5UE035A21P3
3 Friction Disc	
Standard Synthetic Disc	N/A
Large Bore Synthetic Disc	N/A
Standard Metallic Disc	A5UE035B2P1
Large Bore Metallic Disc	A5UE035B5P1
4 Options	
Hand Release	A5UE035K1P1
Dust Cover	A5UE035C4P1
5 Friction Flange & Screw Kit	
Thin Flange	A5UE035C300P1
Thick Flange	A5UE035C301P1
Short Screw	A5UE035K2P1
Long Screw	A5UE035K2P2
7 Hub Bore size	
Pilot Bore Hub – 14MM	A5UE035C500P1
Hub Bored W/Keyway – 20MM	A5UE035C500P2



Hub Bored W/Keyway – 25MM	A5UE035C500P3
Hub Bored W/Keyway – 24MM	A5UE035C500P5
Hub Bored W/Keyway – 15MM	A5UE035C500P7
Hub Bored W/Keyway – 18MM	A5UE035C500P8
Hub Bored W/Keyway – 22MM	A5UE035C500P12
Hub Bored W/Keyway – 5/8"	A5UE035C503P1
Hub Bored W/Keyway – 3/4"	A5UE035C503P3
Hub Bored W/Keyway – 7/8"	A5UE035C503P4
Hub Bored W/Keyway – 1"	A5UE035C503P2
Large Bore Hub W/Keyway - 1-1/8"	consult factory
8 Detection Kit	V4NST7
Rectifiers	
Half Wave	MCS-141-1 ACG830A1P1
Full Wave	MCS-141-2 ACG830A1P2

1 ERD060

Description	Part Number
2 & 6 Variation 00 – 24 VDC	BT212094250
Variation 00 – 103.5 VDC	BT212094251
Variation 00 – 207 VDC	BT212094252
Variation 02 – 24 VDC	BT212094246
Variation 02 – 103.5 VDC	BT212094247
Variation 02 – 207 VDC	BT212094248

3 Friction Disc

Standard Metallic Friction Disc (M)	BT212094481
Metallic Friction Disc (HT)	BT212094185

4 Options

Dust Cover	BT312026932
Hand Release	BT212094492

5 Friction Flange & Screw Kit

Thick Friction Plate	BT312026917
Short Screw (for Thick Friction Plate)	BT212094220
Long Screw (for No Friction Plate)	BT212094221

7 Hub Bore Size

Pilot Bore Hub – 14MM	BT312026935
Hub Bored W/Keyway – 25MM	BT312026936
Hub Bored W/Keyway – 30MM	BT312026937
Hub Bored W/Keyway – 5/8"	BT312028396
Hub Bored W/Keyway – 1"	BT312028397

8 Detection Kit

	BT212094817
--	-------------

1 ERD100

Description	Part Number
2 & 6 Variation 00 – 24 VDC	BT212094258
Variation 00 – 103.5 VDC	BT212094259
Variation 00 – 207 VDC	BT212094260
Variation 02 – 24 VDC	BT212094254
Variation 02 – 103.5 VDC	BT212094255
Variation 02 – 207 VDC	BT212094256

3 Friction Disc

Standard Metallic Friction Disc (M)	BT212094497
Metallic Friction Disc (HT)	BT212094186

4 Options

Dust Cover	BT312026934
Hand Release	BT212094508

5 Friction Flange & Screw Kit

Thick Friction Plate	BT312026928
Short Screw (for Thick Friction Plate)	BT212094223
Long Screw (for No Friction Plate)	BT212094224

7 Hub Bore Size

Pilot Bore Hub – 15MM	BT312026938
Hub Bored W/Keyway – 25MM	BT312026939
Hub Bored W/Keyway – 30MM	BT312026940

Hub Bored W/Keyway – 35MM	BT312026941
Hub Bored W/Keyway – 5/8"	BT312028398
Hub Bored W/Keyway – 1"	BT312028398
Hub Bored W/Keyway – 1-3/8"	BT312028400
Detection Kit	BT212094817

8

ERD170

Description	Part Number
1 Variation 00 – 24 VDC	BT212094358
2 & 6 Variation 00 – 103.5 VDC	BT212094359
Variation 00 – 207 VDC	BT212094360
Variation 02 – 24 VDC	BT212094355
Variation 02 – 103.5 VDC	BT212094356
Variation 02 – 207 VDC	BT212094357

Friction Disc

3 Standard Metallic Friction Disc (M)	BT212094448
Metallic Friction Disc (HT)	BT212094329

Options

4 Dust Cover	BT312027158
Hand Release	BT212094522

Friction Flange & Screw Kit

5 Thick Friction Plate	BT312027135
Short Screw (for Thick Friction Plate)	BT212094350
Long Screw (for No Friction Plate)	BT212094351

Hub Bore Size

7 Pilot Bore Hub – 20MM	BT312027150
Hub Bored W/Keyway – 35MM	BT312027151
Hub Bored W/Keyway – 40MM	BT312027152
Hub Bored W/Keyway – 45MM	BT312027153
Hub Bored W/Keyway – 7/8"	BT312028401
Hub Bored W/Keyway – 1-3/8"	BT312028402
Hub Bored W/Keyway – 1-3/4"	BT312028403

Detection Kit

	BT212094817
--	-------------

8

ERD300

Description	Part Number
1 Variation 00 – 24 VDC	BT212094364
2 & 6 Variation 00 – 103.5 VDC	BT212094365
Variation 00 – 207 VDC	BT212094366
Variation 02 – 24 VDC	BT212094361
Variation 02 – 103.5 VDC	BT212094362
Variation 02 – 207 VDC	BT212094363

Friction Disc

3 Standard Metallic Friction Disc (M)	BT212094449
Metallic Friction Disc (HT)	BT212094334

Options

4 Dust Cover	BT312027159
Hand Release	BT212094536

Friction Flange & Screw Kit

5 Thick Friction Plate	BT312027146
Short Screw (for Thick Friction Plate)	BT212094353
Long Screw (for No Friction Plate)	BT212094354

Hub Bore Size

7 Pilot Bore Hub – 25MM	BT312027154
Hub Bored W/Keyway – 35MM	BT312027155
Hub Bored W/Keyway – 40MM	BT312027156
Hub Bored W/Keyway – 45MM	BT312027157
Hub Bored W/Keyway – 1"	BT312028404
Hub Bored W/Keyway – 1-3/8"	BT312028405
Hub Bored W/Keyway – 1-3/4"	BT312028406

Detection Kit

	BT212094817
--	-------------

8

ALTRA INDUSTRIAL MOTION

Warner Electric

Electromagnetic Clutches
and Brakes - USA

South Beloit, IL
815-389-3771

For application assistance:
1-800-825-9050

Electromagnetic Clutches
and Brakes - Europe

St Barthelemy d'Anjou, France
+33 (0)2 41 21 24 24

For sales office:
+33 (0)2 41 21 24 76

Precision Electric Coils and
Electromagnetic Clutches and
Brakes - USA

Columbia City, IN
260-244-6183

Inertia Dynamics

Spring Set Brakes; Power On and
Wrap Spring Clutch/Brakes

Torrington, CT
860-482-4444

Matrix International

Electromagnetic Clutches
and Brakes, Pressure Operated
Clutches and Brakes

Brechin, Scotland
+44 (0) 1356 602000

U.S.
815-389-3771

Warner Linear

Linear Actuators and
Guideways - USA

Belvidere, IL
815-547-1106

For application assistance:
1-800-825-9050

TB Wood's

V-Belt Drives, Synchronous Drives,
Flexible Couplings, Variable
Frequency AC Drives

Chambersburg, PA
717-264-7161

For assistance:
1-888-829-6637
Press #5 - Customer Service
Press #7 - Mechanical Applications
Press #8 - Electronic Applications

**Wichita Clutch and
Industrial Clutch**

Pneumatic and Oil Immersed
Clutches and Brakes - USA

Wichita Falls, TX
940-723-3400

Pneumatic Clutches
and Brakes - Europe

Bedford, England
+44 (0)1234 350311

Twiflex Limited

Caliper Brakes and Thrusters

Twickenham, England
+44 (0) 20 8894 1161

Formsprag Clutch

Overrunning Clutches
and Holdbacks

Warren, MI
586-758-5000

For application assistance:
1-800-927-3262

Marland Clutch

Roller Ramp and Sprag Type
Overrunning Clutches
and Backstops

Burr Ridge, IL
630-455-1752

Stieber Clutch

Overrunning Clutches
and Holdbacks

Heidelberg, Germany
+49 (0)6221 30 47 0

Boston Gear

Enclosed and Open Gearing,
Electrical and Mechanical
P.T. Components

Charlotte, NC
704-688-7300

For customer service:
1-800-825-6544

For application assistance:
1-800-816-5608

Huco Dynatork

Precision Couplings
and Air Motors

Hertford, England
+44 (0) 1992 501900

U.S.
800-825-6544

Ameridrives Couplings

Gear Couplings, Mill Spindles,
Universal Joints

Erie, PA
814-480-5000

Bibby Transmissions

Disc, Gear, Grid Couplings,
Overload Clutches

Dewsbury, England
+44 (0) 1924 460801

**Nuttall Gear and
Delroyd Worm Gear**

Worm Gear and
Helical Speed Reducers

Niagara Falls, NY
716-298-4100

Saftek Friction

Non-asbestos Brake and Clutch
Materials

Telford, England
+44 (0) 1952 581122

**Altra Industrial Motion -
Asia Pacific and Africa**

China	852 2615 9313
Taiwan	886 2 2577 8156
Singapore	65 6487 4464
Thailand	66 2 322 5527
Australia	612 9894 0133
S. Africa	27 11 918 4270

www.warnerelectric.com



Warner Electric
449 Gardner Street • South Beloit, IL 61080
815-389-3771 • Fax: 815-389-2582
www.warnerelectric.com
An Altra Industrial Motion Company