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ER Series Electrically Released Brakes

Ideal for Dynamic Braking Applications

ER Series
Dynamic Engagement Brakes

This brake must be engaged while the shaft is in motion. Shaft speed should be 100 RPM or greater when the brake is engaged. This style brake offers a bulkhead flange mounting system, the highest torque rating offered by Warner Electric in the power released series, high cycle rate capability, and excellent life.

- Expands the electrically released product family with two larger sizes
- Designed for dynamic stopping operations
- High cycle rate capability
- nside or outside mount options for 475 or 650 sizes
- Normal or heavy duty options available in larger sizes

Selection Procedure

ER Series brakes are available in five sizes. Static torque ratings range from 10.5 lb.ft. to 400 lb.ft.

1. Verify that the brake will be cycled frequently in normal operation.
2. Determine the horsepower and speed at the brake location.
3. The correct size ER Series brake is shown at the intersection of the HP and shaft speed.
4. When ordering, specify voltage and bore size. Available bore sizes are listed in the specifications chart.

How to Order

1. Specify model number
2. For thru-shaft mounting, specify bore size. For ER-475 and ER-650 order bushing separately, ER-375 does not require a bushing.
3. Models ER-475 and ER-650: Specify inside or outside mount. Models ER-825 and ER-1225: Specify normal or heavy duty.
4. See the Controls Section for controls. ER Series brakes require a control with a potentiometer to vary brake channel output. Recommended are:
   For ER-825 use CBC-500, or -550.
   For ER-1225, use MCS-805-1 or -2.

Flange Mounted Brakes

Powerful permanent magnets.

Never needs adjustment–automatically compensates for wear.

Brake automatically engages when power is turned off.

Pre-burnished to assure rated torque upon installation.

Segmented armature design provides high heat dissipation and long service life.

Horsepower vs. Shaft Speed

HP	SHAFT SPEED AT BRAKE (IN RPM)																			
▼	100	200	300	400	500	600	700	800	900	1000	1100	1200	1500	1800	2000	2400	3000	3600	4000	4500
1/12																				
1/8																				
1/6																				
1/4							ER-375													
1/3																				
1/2																				
3/4																				
1							ER-475													
1-1/2																				
2							ER-650													
3																				
5							ER-825													
7-1/2																				
10																				
15							ER-1225													
20																				
25																				
30																				
40																				
50																				
60																				
75																				

*For applications with speeds below 100RPM, please contact Warner Electric Application Support.

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Specifications

Model	Bore Size	Voltage DC	Static Torque lb. ft.	Max. RPM	Drive	Inertia lb.ft.2 Arm. & Carrier	Inertia lb.ft.2 Hub	Weight lbs. Arm. & Carrier	Weight lbs. Hub	Total Weight lbs.
ER-375	.500" & .625"	90V	10.5	5000	–	.010	.001	.60	.49	4.5
ER-475	.500" to 1.000" Dodge #1008	90V	21	4500	–	.072	.006	1.13		6.3
ER-650	.500" to 1.375" Dodge #1310	90V	56	3600	–	.106	.020	2.3	1.6	13.2
ER-825 ND	.500" to 1.625" Dodge #1615	90V, 24V	125	3600	Pin Spline	.323 .326	.043 .006	4.783 5.263	1.857 .834	15.6
ER-825 HD	.500" to 1.500" Browning #H-1	90V, 24V	125	3600	Pin Spline	.323 .326	.043 .006	4.783 5.263	1.857 .834	15.6
ER-1225 ND	.937" to 3.00" Dodge #3030	35-75V	400	3000	Pin Spline	1.667 1.737	.380 .077	10.227 13.317	6.716 3.582	60.3
ER-1225 HD	.75" to 2.687" Browning #Q-1	35-75V	400	3000	Pin Spline	1.667 1.737	.380 .077	10.227 13.317	6.716 3.582	60.3

Bushing Part Numbers

Shaft Size	Keyway Size	Bushing Number Warner Electric	Bushing Number Browning
1/2	1/8 x 1/16	180-0002	
9/16	1/8 x 1/16	180-0003	
5/8	3/16 x 3/32	180-0004	
11/16	3/16 x 3/32	180-0005	
3/4	3/16 x 3/32	180-0006	
13/16	3/16 x 3/32	180-0007	
7/8	3/16 x 3/32	180-0008	
15/16	1/4 x 1/8	180-0009	H-1
1	1/4 x 1/8	180-0010	
1-1/16	1/4 x 1/8	180-0011	
1-1/8	1/4 x 1/8	180-0012	
1-3/16	1/4 x 1/8	180-0013	
1-1/4	1/4 x 1/8	180-0014	
1-5/16	5/16 x 5/32	180-0015	
1-3/8	5/16 x 5/32	180-0016	
1-7/16	3/8 x 3/16	180-0017	H-2
1-1/2	3/8 x 3/16	180-0018	
3/4	3/16 x 3/32	180-0026	
13/16	3/16 x 3/32	180-0027	
7/8	3/16 x 3/32	180-0028	
15/16	1/4 x 1/8	180-0029	
1	1/4 x 1/8	180-0030	
1-1/16	1/4 x 1/8	180-0031	
1-1/8	1/4 x 1/8	180-0032	
1-3/16	1/4 x 1/8	180-0033	
1-1/4	1/4 x 1/8	180-0034	
1-5/16	5/16 x 5/32	180-0035	QI-1
1-3/8	5/16 x 5/32	180-0036	
1-7/16	3/8 x 3/16	180-0037	
1-1/2	3/8 x 3/16	180-0038	
1-9/16	3/8 x 3/16	180-0039	
1-5/8	3/8 x 3/16	180-0040	
1-11/16	3/8 x 3/16	180-0041	
1-3/4	3/8 x 3/16	180-0042	
1-13/16	1/2 x 1/4	180-0043	
1-7/8	1/2 x 1/4	180-0044	
1-15/16	1/2 x 1/4	180-0045	
2	1/2 x 1/4	180-0046	
2-1/16	1/2 x 1/4	180-0047	
2-1/8	1/2 x 1/4	180-0048	QI-2
2-3/16	1/2 x 1/4	180-0049	
2-1/4	1/2 x 1/4	180-0050	

Shaft Size	Keyway Size	Bushing Number Warner Electric	Bushing Number Browning
2-5/16	5/8 x 5/16	180-0051	
2-3/8	5/8 x 5/16	180-0052	
2-7/16	5/8 x 5/16	180-0053	
2-1/2	5/8 x 5/16	180-0054	QI-2
2-9/16	5/8 x 5/16	180-0055	
2-5/8	5/8 x 5/16	180-0056	
2-11/16	5/8 x 5/16	180-0057	
1/2	1/8 x 1/16	180-0131	
9/16	1/8 x 1/16	180-0132	
5/8	3/16 x 3/32	180-0133	
11/16	3/16 x 3/32	180-0134	
3/4	3/16 x 3/32	180-0135	
13/16	3/16 x 3/32	180-0136	
7/8	3/16 x 3/32	180-0137	
15/16	1/4 x 1/8	180-0138	
1	1/4 x 1/8	180-0139	
1-1/16	1/4 x 1/8	180-0140	1615
1-1/8	1/4 x 1/8	180-0141	
1-3/16	1/4 x 1/8	180-0142	
1-1/4	1/4 x 1/8	180-0143	
1-5/16	5/16 x 5/32	180-0144	
1-3/8	5/16 x 5/32	180-0145	
1-7/16	3/8 x 3/16	180-0146	
1-1/2	3/8 x 3/16	180-0147	
1-9/16	3/8 x 3/16	180-0148	
1-5/8	3/8 x 3/16	180-0149	
15/16	1/4 x 1/8	180-0262	
1	1/4 x 1/8	180-0263	
1-1/16	1/4 x 1/8	180-0264	
1-1/8	1/4 x 1/8	180-0265	
1-3/16	1/4 x 1/8	180-0266	
1-1/4	1/4 x 1/8	180-0267	
1-5/16	5/16 x 5/32	180-0268	
1-3/8	5/16 x 5/32	180-0269	3030
1-7/16	3/8 x 3/16	180-0270	
1-1/2	3/8 x 3/16	180-0271	
1-9/16	3/8 x 3/16	180-0272	
1-5/8	3/8 x 3/16	180-0273	
1-11/16	3/8 x 3/16	180-0274	
1-3/4	3/8 x 3/16	180-0275	
1-13/16	1/2 x 1/4	180-0276	
1-7/8	1/2 x 1/4	180-0277	

Shaft Size	Keyway Size	Bushing Number Warner Electric	Bushing Number Browning
1-15/16	1/2 x 1/4	180-0278	
2	1/2 x 1/4	180-0279	
2-1/16	1/2 x 1/4	180-0280	
2-1/8	1/2 x 1/4	180-0281	
2-3/16	1/2 x 1/4	180-0282	
2-1/4	1/2 x 1/4	180-0283	
2-5/16	5/8 x 5/16	180-0284	
2-3/8	5/8 x 5/16	180-0285	
2-7/16	5/8 x 5/16	180-0286	3030
2-1/2	5/8 x 5/16	180-0287	
2-9/16	5/8 x 5/16	180-0288	
2-5/8	5/8 x 5/16	180-0289	
2-11/16	5/8 x 5/16	180-0290	
2-3/4	5/8 x 5/16	180-0291	
2-13/16	3/4 x 3/8	180-0292	
2-7/8	3/4 x 3/8	180-0293	
2-15/16	3/4 x 3/8	180-0294	
3	3/4 x 3/8	180-0295	
1/2	1/8 x 1/16	180-0410	
9/16	1/8 x 1/16	180-0411	
5/8	3/16 x 3/32	180-0412	
11/16	3/16 x 3/32	180-0413	
3/4	3/16 x 3/32	180-0414	1008
13/16	3/16 x 3/32	180-0415	
7/8	3/16 x 3/32	180-0416	
15/16	1/4 x 1/16	180-0417	
1	1/4 x 1/16	180-0418	
1/2	1/8 x 1/16	180-0421	
9/16	1/8 x 1/16	180-0422	
5/8	3/16 x 3/32	180-0423	
11/16	3/16 x 3/32	180-0424	
3/4	3/16 x 3/32	180-0425	
13/16	3/16 x 3/32	180-0426	
7/8	3/16 x 3/32	180-0427	
15/16	1/4 x 1/16	180-0428	1310
1	1/4 x 1/8	180-0429	
1-1/16	1/4 x 1/8	180-0430	
1-1/8	1/4 x 1/8	180-0431	
1-3/16	1/4 x 1/8	180-0432	
1-1/4	1/4 x 1/8	180-0433	
1-5/16	15/16 x 5/32	180-0434	
1-3/8	15/16 x 5/32	180-0435	

Browning® is registered to Emerson Electric Co.
Dodge and Browning bushings are also available in metric bores.

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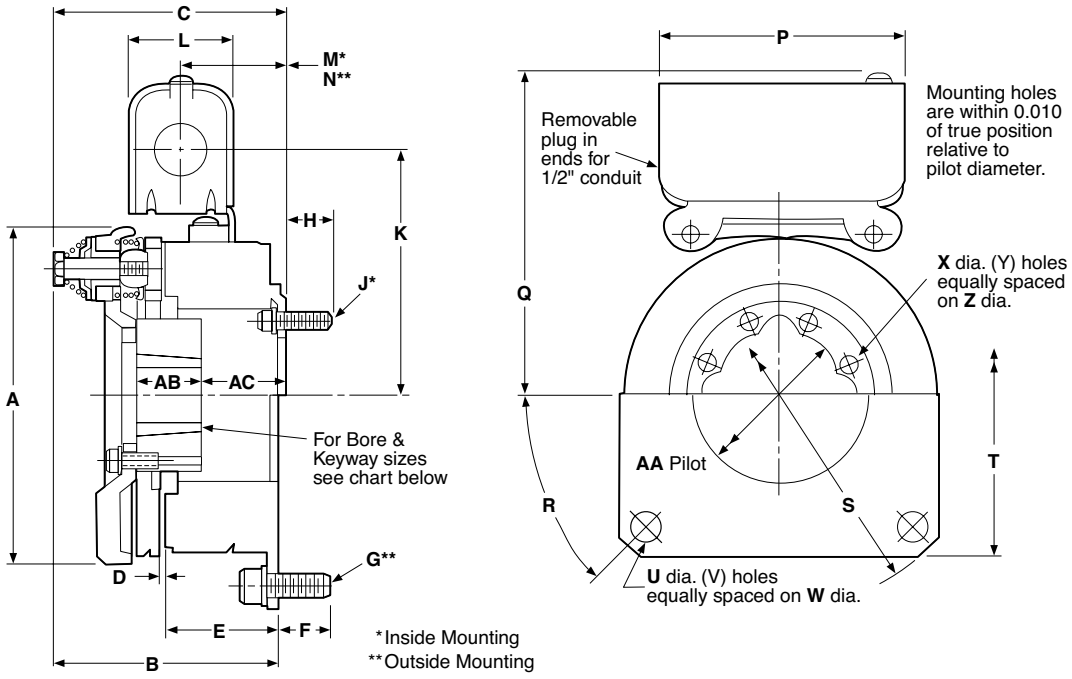
ER Series Electrically Released Brakes

ER-375, ER-475, ER-650



Dimensions

All dimensions are nominal, unless otherwise noted.

Size	A Max.	B Max.	C Max.	D	E	F Max.	G	H Max.	J	K	L	M	N	P
375	4.078	2.583	2.583	.032	1.410	.600	5/16-18 UNC-3A	—	—	3.325	1.547	—	—	3.750
475	5.172	3.195	3.274	.031	1.630	.431	3/8-16 UNC-3A	.390	8-32	3.875	1.547	1.354	1.236	3.750
650	6.578	3.525	3.525	.032	1.880	.542	5/16-18 UNC-3A	.542	5/16-18 UNC-3A	4.800	1.547	—	—	3.750

Size	Q Max.	R	S	T Sq.	U	V	W Dia.	X	Y	Z Dia.	AA Dia.	AB	AC
375	4.505	—	5.625 5.623	—	.350 .341	3	5.000	—	—	—	—	23/32	1-3/4
475	5.000	45°	6.500 6.498	5.000	.419 .403	4	5.875	.208 .201	8	2.375	2.065 2.062	29/32	1-3/16 I.M. 1-1/16 O.M.
650	5.844	45°	8.000 7.998	6.500	.358 .338	4	7.250	.358 .338	4	3.688	2.822 2.820	1-1/32	1-3/8

Mounting Requirements

Customer Shall Maintain:

1. Squareness of brake mounting face with armature hub shaft within .006 T.I.R.
2. Concentricity of brake mounting pilot diameter with armature hub shaft within .010 T.I.R.
3. If magnet mounting surface is a magnetic material, the magnet is to be insulated approximately 1/2" from that surface with a plate or spacers of non-magnetic material.

ER-375 available outside mounted only.

Bore and Keyway Dimensions

Size	Bore Dia.	Keyway
375	.501/.500	1/8 x 1/16
	.626/.625	3/16 x 3/32
475	.500 - .562	1/8 x 1/16
	.625 - .875	3/16 x 3/32
	.937 - 1.000	1/4 x 1/8
650	.500 - .562	1/8 x 1/16
	.625 - .875	3/16 x 3/32
	1.000 - 1.250	1/4 x 1/8
	1.312 - 1.375	5/16 x 5/32

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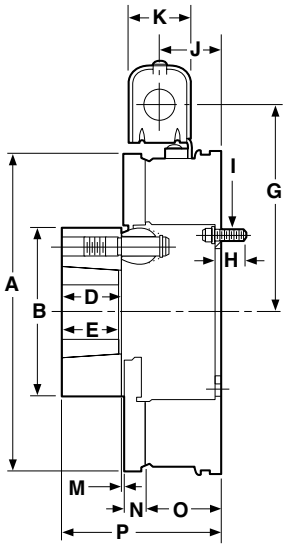
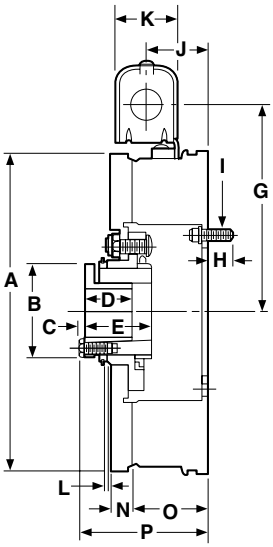
ER Series Electrically Released Brakes

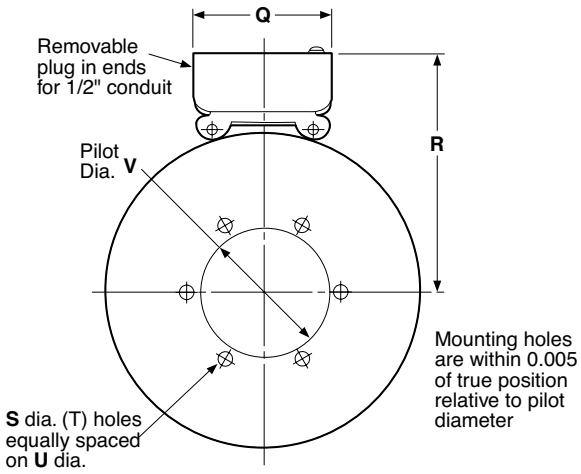
ER-825, ER-1225

ER-825 and ER-1225
Normal Duty (N.D.)



ER-825 and ER-1225
Heavy Duty (H.D.)





ER-825 & ER-1225 Magnet View
(Same for Pin Drive and Spline Drive)

Size	A Max.	B Dia.	C	D	E	G	H Max.	I	J	K Min.	L Min.
825 N.D.	8.656	4.625	—	1.593	1.500	5.625	.531	5/16-18 UNC-3A	1.687	1.546	—
825 H.D.	8.656	2.500	.156	1.250	1.765	5.625	.531	5/16-18 UNC-3A	1.687	1.546	.062
1225 N.D.	12.671	6.875	—	3.000	3.000	7.671	.546	5/16-18 UNC-3A	1.718	1.546	—
1225 H.D.	12.671	4.093	.234	2.500	2.171	7.671	.546	5/16-18 UNC-3A	1.718	1.546	.062

Size	M When New	N	O	P Max.	Q	R Max.	S	T	U	V
825 N.D.	.093	.562	2.080 .338	4.359	3.750	6.750 3.501	.358	6	4.250	3.503
825 H.D.	—	.531	2.080 .338	3.546	3.750	6.750 3.501	.358	6	4.250	3.503
1225 N.D.	.156	.593	2.500 .338	6.218	3.750	8.796 6.376	.358	6	7.250	6.378
1225 H.D.	—	.562	2.500 .338	5.031	3.750	8.796 6.376	.358	6	7.250	6.378

Bore and Keyway Dimensions

ER-825	Bore Dia.	Keyway
Pin Drive	.500 - .562	1/8 x 1/16
	.625 - .875	3/16 x 3/32
	.937 - 1.250	1/4 x 1/8
	1.312 - 1.375	5/16 x 5/32
	1.437 - 1.500	3/8 x 3/16
	1.562 - 1.625*	3/8 x 3/16
Spline Drive	.500 - .562	1/8 x 1/16
	.375 - .625	3/16 x 3/32
	.937 - 1.187	1/4 x 1/8
	1.250*	1/4 x 1/8
	1.312- 1.375*	5/16 x 5/32
	1.437 - 1.500*	3/8 x 3/16
ER-1225		
Pin Drive	.937 - 1.250	1/4 x 1/8
	1.312 - 1.375	5/16 x 5/32
	1.437 - 1.750	3/8 x 3/16
	1.812- 2.250	1/2 x 1/4
	2.312 - 2.750	5/8 x 5/16
	2.187 - 3.000*	3/4 x 3/8
Spline Drive	.750 - .875	3/16 x 3/32
	.937- 1.250	1/4 x 1/8
	1.312 - 1.375	5/16 x 5/32
	1.437 - 1.750	3/8 x 3/16
	1.812 - 2.062	1/2 x 1/4
	2.125 - 2.250*	1/2 x 1/4
	2.312 - 2.687	5/8 x 5/16

*Key furnished

Mounting Requirements

Customer Shall Maintain

1. Squareness of magnet mounting face with armature shaft within .006 T.I.R.
2. Concentricity of magnet mounting pilot diameter with armature shaft within .010 T.I.R.
3. If magnet mounting surface is a magnetic material, the magnet is to be insulated approximately 1/2" from that surface with a plate or spacers of non-magnetic material.

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