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# The Dings Direct-Acting Difference

When you need to stop and hold a motor quickly and reliably, you can count on a Dings Electromagnetic Spring-Set Brake to do the job. Dings' brakes are specifically engineered to provide you with years of trouble-free performance.

## Simplicity of Design

Our brakes operate on a very simple principle: while the motor is running with power engaged, an electromagnet within the brake pulls back the pressure plate, allowing the friction discs and motor shaft to rotate freely. When power is cut to the motor, the electromagnet releases, instantly stopping the rotating discs and preventing the motor shaft from turning. This **direct acting** design has only one moving part with no complicated linkages to break or fail. You won't have to worry about your brake - leaving you more time for your other responsibilities.

## AVAILABLE IN THESE CONFIGURATIONS:

**End Mount**

**Double C Face Coupler**

**Double Shafted with Foot Mount**

**NEMA 4X BISSC**

**Stainless Steel**

**Hazardous Location**

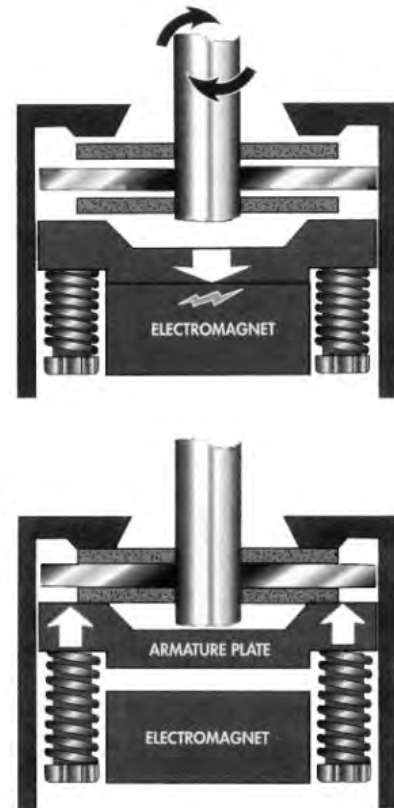
**Crane Duty**

**Marine Duty**

**Navy**

2D drawings and 3D  
electronic files are available at  
[www.dingsbrakes.com](http://www.dingsbrakes.com)

**NEW!!** See Dings brake operation on YouTube



**Dings' Brakes are used in many applications, including:**

- ♦Tire presses
- ♦Cranes and hoists
- ♦Elevators and walkways
- ♦Satellite positioning equipment
- ♦Conveyors and palletizers
- ♦Motors/speed reducers
- ♦Food and packaging machinery
- ♦And many more...

# Brake Selection Guide

To effectively determine which brake is appropriate for your particular application, you must first calculate the amount of torque required by the system. There are two types of situations in which a brake may be used: **Non-Overhauling** load and **Overhauling** load.

In the case of a non-overhauling load, gravitational forces do not change the energy in the system and the internal friction of the

system is sufficient to hold the load, i.e. an external means is not required to maintain system stability after it has stopped. Examples of this situation would include grinders, horizontal conveyors, etc.

To calculate the torque required in a non-overhauling load situation, refer to the formula and chart below. For overhauling loads, refer to Application Engineering at the end of the catalog.

To calculate torque for a non-overhauling application:

$$T_S = \frac{5252 \times P}{N} \times SF$$

Where,  $T_S$  = Static torque, lb-ft  
 $P$  = Motor horsepower, hp  
 $N$  = Motor full load speed, rpm  
 $SF$  = Service Factor  
 5252 = Constant

**Note:** Brakes with a 1.0 Service Factor are not intended for critical holding applications.

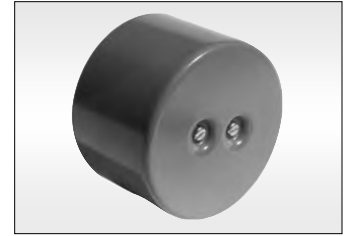
Motor Hp	1.0 Service Factor							1.4 Service Factor							2.0 Service Factor						
	Speed (RPM)							Speed (RPM)							Speed (RPM)						
	720/750	900/1000	1200	1500	1800	3000	3600	720/750	900/1000	1200	1500	1800	3000	3600	720/750	900/1000	1200	1500	1800	3000	3600
	Static Torque Rating of Brake (lb-ft)																				
1/6	11/2	11/2	3/4	3/4	3/4	3/8	3/8	3	11/2	11/2	11/2	3/4	3/4	3/8	3	3	11/2	11/2	11/2	3/4	3/4
1/4	3	3	11/2	11/2	3/4	3/4	3/4	3	3	11/2	11/2	11/2	3/4	3/4	6	3	3	3	11/2	11/2	3/4
1/3	3	3	3	11/2	11/2	3/4	3/4	6	3	3	3	11/2	11/2	3/4	6	6	3	3	3	11/2	11/2
1/2	6	3	3	3	3	11/2	3/4	6	6	6	3	3	11/2	11/2	10	6	6	6	3	3	11/2
3/4	6	6	6	3	3	11/2	11/2	10	10	6	6	6	3	11/2	15	10	10	6	6	3	3
1	10	6	6	6	3	3	3	15	10	10	6	6	3	3	15	15	10	10	6	6	3
1 1/2	15	10	10	6	6	3	3	20	15	10	10	10	6	6	25	20	15	15	10	6	6
2	15	15	10	10	6	6	3	25	20	15	10	10	6	6	35	25	20	15	15	10	6
3	25	20	15	15	10	6	6	35	25	20	15	15	10	10	50	35	35	25	20	15	10
5	50	35	25	20	15	10	10	75	50	35	25	25	15	15	75	75	50	35	35	20	15
7 1/2	70	50	35	35	25	15	15	105	70	50	50	35	20	20	125	105	75	75	50	35	25
10	75	70	50	50	35	20	15	105	105	70	50	50	35	25	175	125	105	75	75	35	35
15	125	105	70	70	50	35	25	175	125	105	75	75	50	35	230	175	175	105	105	75	50
20	180	125	105	75	70	50	35	230	175	125	105	105	50	50	330	270	175	175	125	75	75
25	230	180	125	105	75	50	50	270	230	175	125	105	75	75	450	330	230	175	175		75
30	230	180	180	125	105	75	50	330	270	230	175	125	75	75	450	360	270	230	175		
40	330	270	180	180	125	75	75	450	330	270	230	175					360	330	270		
50	450	330	230	180	180		75		450	330	270	230					450	360	330		
60	450	360	270	230	180					450	330	270						450	360		
75		450	330	270	230						450	330							450		
100			450	360	330							450									
125				450	450																
150					450																

## Selection by Frame Size x= mounts directly, ①= adaptor required

Brake Series	Torque Ratings in lb-ft	Motor Frame Size																			
		small/fractional hp	48C	56C	143TC 145TC	182TC 184TC	213TC 215TC	254TC 256TC 254UC 256UC	284TC 286TC 284UC 286UC	324/326TC 324/326UC 324/326TSC 324/326USC	364/365TC 364/365UC 364/365TSC 364/365USC	404/405TC 404/405UC 404/405TSC 404/405USC									
40	3/8 & 3/4	X																			
50	1.5-6		X	①	①																
5600 Style 60	1.5-25		①	X	X	①	①	①	①												
60	1.5-25		①	X	X	①	①	①	①												
1-70	1.5-25			①	①	X	X	X	①												
70	10-105			①	①	X	X	X	①												
80	25-175					①	①	①	X	①	①	①	X	①							①
90	125-450												①	X	X	X	X	X	X	X	X

# 40 Series End Mount

For Small AC and DC Motors  
Torque Ratings: 3/8 and 3/4 lb-ft



Designed for Dayton®, Bison, Bodine® and Klauber (KMG) type motors and gearmotors.

## Specifications:

Reaction Time: 15-20 milliseconds (release and set)  
Maximum RPM: 3600  
CSA File #LR13814  
Instructions & Parts Manual: BK4042

## Design Features:

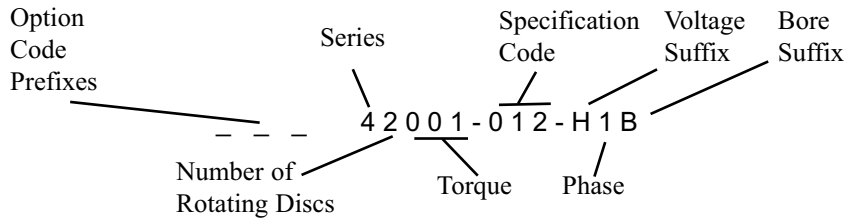
Selectable torque: Two rotating friction discs are used for 3/4 lb-ft torque and one friction disc is used for 3/8 lb-ft torque.  
Retrofit to small AC and DC motors.  
Plated internal parts - RoHS compliant.

## Enclosure Type:

Dripproof Enclosure  
NEMA 2, IP40  
Steel cover and mounting bracket

Model #	Torque lb-ft (lb-in)	Wt. Lbs.	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Manual Release	List Price
42001-012	3/8 or 3/4 (4.5 or 9)	3	0.001	No	\$180
42001-013	3/8 or 3/4 (4.5 or 9)	3	0.001	Yes	\$228

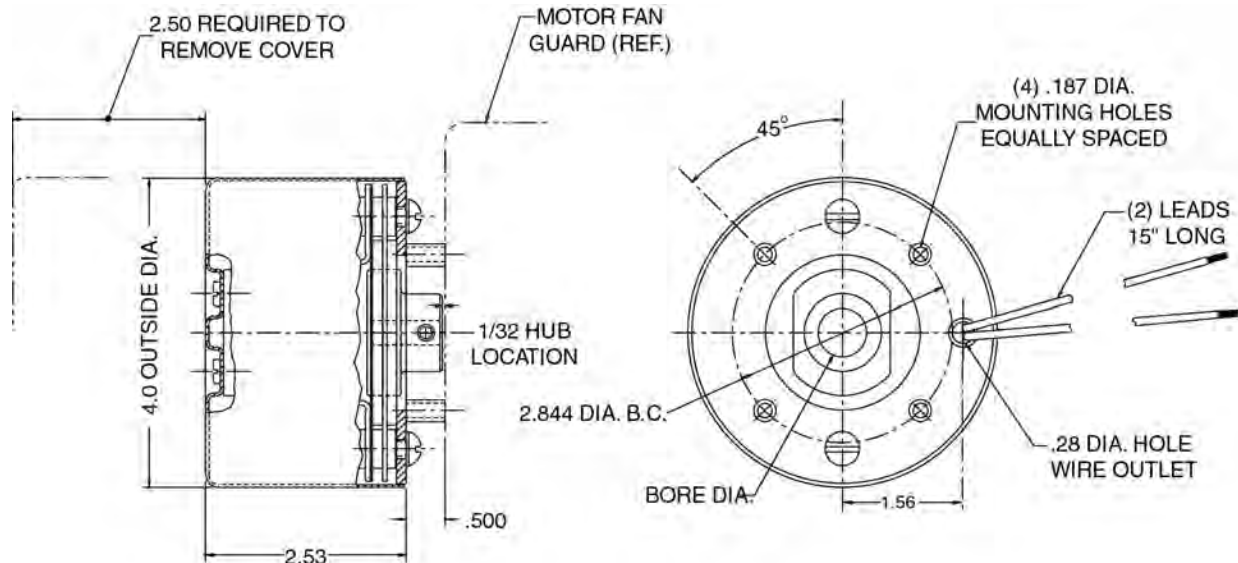
## Brake Model Number Definition



Standard Voltages (single phase only):		
Suffix	Voltage	
H	115V, 60Hz	
M	220/230V, 60 Hz	
Optional DC voltages are available:		
Suffix	Voltage	Adder
A	12 Vdc	\$70
B	24 Vdc	\$70

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
A	8mm	None
B	3/8"	None
C	1/2"	None
D	5/8"	None
Maximum bore diameter is 5/8".		

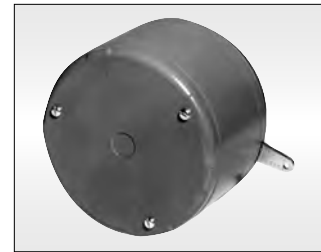
Available Options:	Prefix
Direct Current (DC Voltage)	D
Class H Insulation	Q
<b>Refer to pages 51-56 for option descriptions and pricing.</b>	



# 50 Series End Mount

NEMA Frame Size 48C

Torque Ratings: 1.5 to 6 lb-ft



Ideal for OEM applications and brake kits

## Specifications:

Reaction Time: 15-20 milliseconds  
(release and set)

AK: 3" Register

AJ: 3.75" Bolt Circle

Thermal Capacity: 4 HPS/MIN

Maximum RPM: 3600

CSA File #LR13814

Coil insulation: Class B Standard,  
Class H Optional

Instructions & Parts Manual: BK4618

## Enclosure Type:

Dripproof Enclosure

NEMA 2, IP40

Steel cover and mounting bracket

## Design Features:

RoHS compliant

Torque adjustable for specific applications

Spring set, electrically released

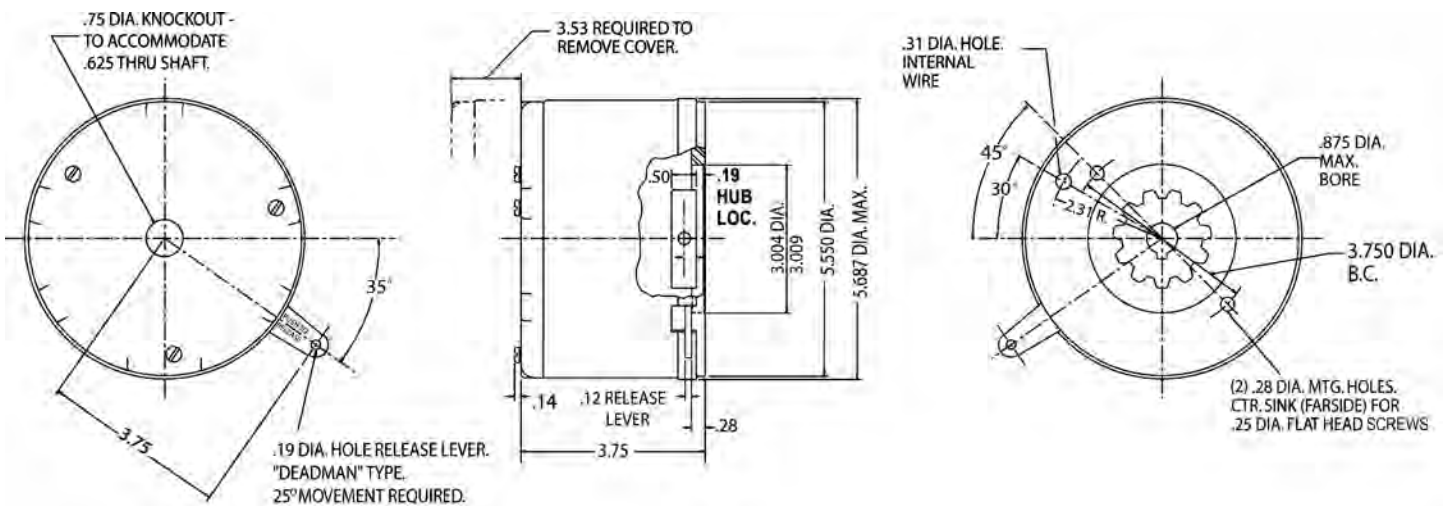
Deadman release (Available without release)

Splined hub

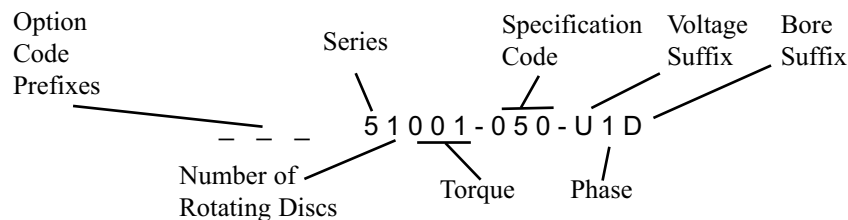
Through shaft knockout standard, all models

Torque lb-ft	Model # Internal lead connection	Replaces Stearns® Model Number	List Price Internal lead connection	Model # Internal/external lead connection	Replaces Stearns® Model Number	List Price Internal/external lead connection	Wt Lbs.	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Manual Release*
1.5	51001-050	1-048-151-01	\$380	51001-080	1-048-151-00	\$420	7	0.002	Yes*
3	51003-050	1-048-161-01	\$395	51003-080	1-048-161-00	\$435	7	0.002	Yes*
6	51006-050	1-048-171-01	\$410	51006-080	1-048-171-00	\$450	7	0.002	Yes*

\*For brakes without manual release, use model 5xxxx-05A or 5xxxx-08A. Stearns® is a registered trademark of Rexnord Corporation.



## Brake Model Number Definition



Standard Voltages (single phase only):	
Suffix	Voltage
U	230/460V, 60 Hz or 190/380V, 50 Hz
R	115/230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz
Special voltages available.	

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
D	5/8"	3/16" x 3/32"
Special bore sizes available.		

Available Options:	Prefix
Adapter to Larger Frame Size(s)	A
Direct Current (DC Voltage)	DD
Tropical Protection	P
Class H Insulation	Q
<b>Refer to pages 51-56 for option descriptions and pricing.</b>	

# 60 Series End Mount

## 5600 Style

NEMA Frame Sizes 56C, 143TC, 145TC

Torque Ratings: 1.5 to 25 lb-ft



Ideal for OEM Applications and Brake Kits

### Specifications:

Reaction Time: 15-20 milliseconds (release and set)  
 AK: 4.5" Register  
 AJ: 5.88" Bolt Circle  
 Thermal Capacity: 6 HPS/MIN  
 Maximum RPM: 3600  
 CSA File #LR13814  
 Coil insulation: 1.5 – 3 lb-ft Class B std, Class H Optional  
 6 – 25 lb-ft Class H std  
 Mounting: 1.5 – 6 lb-ft are all-position mounting  
 10 – 25 lb-ft horizontal mounting only  
 Instructions & Parts Manual: BK4684

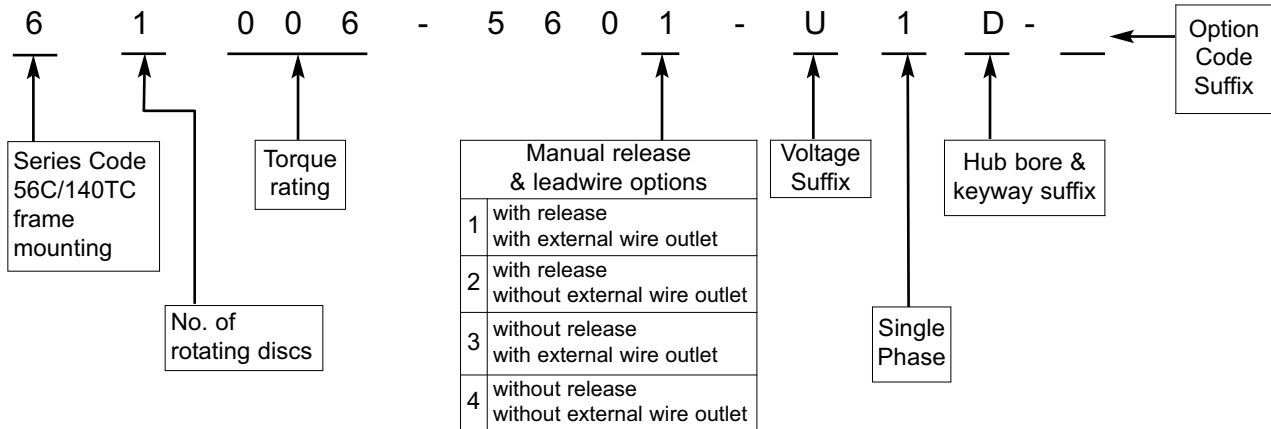
### Design Features:

RoHS compliant  
 Direct acting design with no linkages to break  
 One moving part for longer life  
 Single point air gap adjustment  
 Through shaft knockout standard on all models  
 Splined hub  
 Spring set, electrically released  
 Manual release, automatic reset

### Enclosure Type:

Dripproof Enclosure  
 NEMA 2, CSA 2, IP41  
 Stamped steel cover with steel bracket

### \*Brake Model Number Description



Standard Voltages (single phase only):	
Suffix	Voltage
Y	110/220V, 50Hz
P	575V, 60 Hz
R	115/230V, 60 Hz
T	220/440V, 60 Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
1	115/208-230V, 60 Hz
5	208-230/460V, 60 Hz

Special voltages available.

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
D	5/8"	3/16" x 3/32"
F	7/8"	3/16" x 3/32"

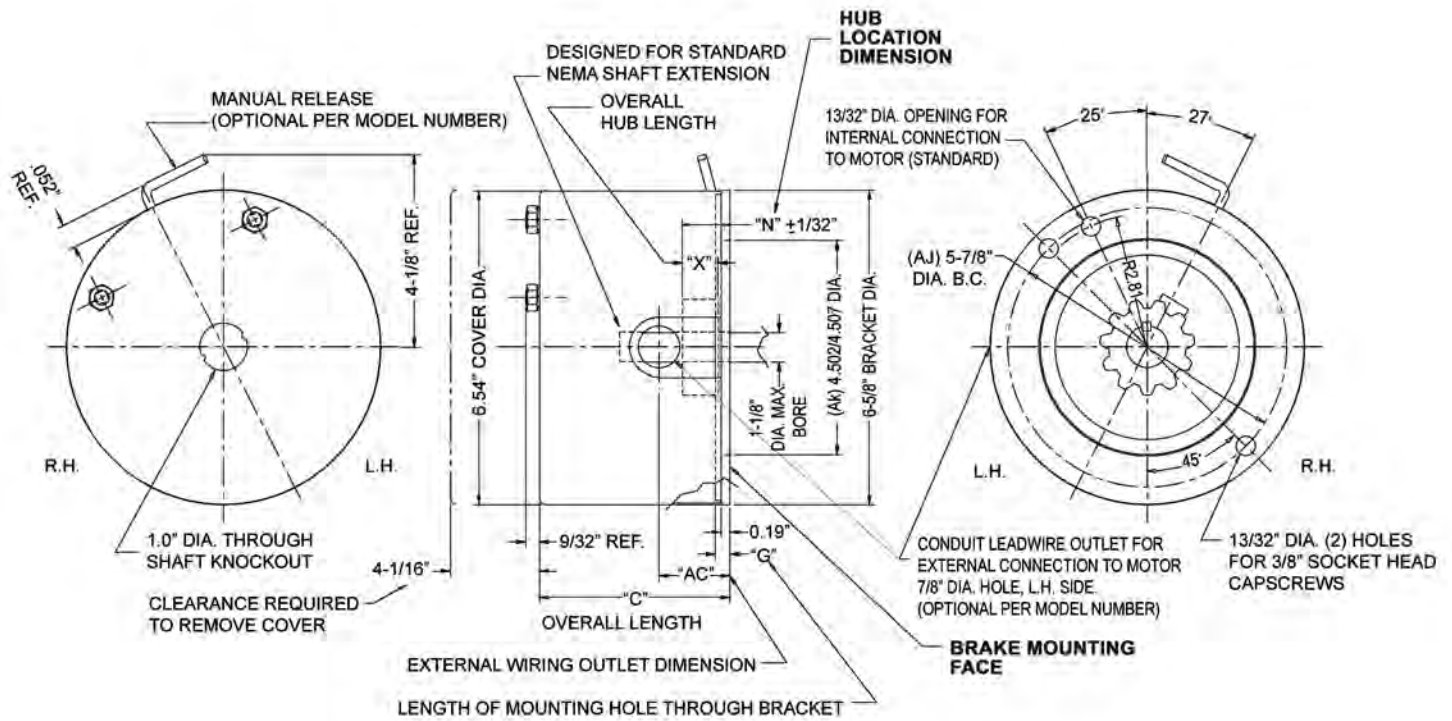
Special bore sizes available.

Available Options:	Suffix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Class H Insulation	Q

Refer to pages 51-56 for option descriptions and pricing.

Torque Rating lb-ft	Model Number*	Direct Drop-in replacement for Stearns® Model	Number of friction discs	Thermal Capacity HPS/MIN	Inertia lb-ft <sup>2</sup>	Dimensions					List Price
						C	AC	G	X	N ± 1/32"	
1.5	61001-560*	1-056-001-00	1	6	0.006	4.01	1.50	0.31	0.81	1.00	\$430.00
3	61003-560*	1-056-011-00	1	6	0.006	4.01	1.50	0.31	0.81	1.00	\$450.00
6	61006-560*	1-056-021-00	1	6	0.006	4.01	1.50	0.31	0.81	1.00	\$515.00
10	62010-560*	1-056-031-00	2	6	0.011	4.01	1.50	0.31	0.81	1.00	\$615.00
15	62015-560*	1-056-041-00	2	6	0.011	4.01	1.50	0.31	0.81	1.00	\$715.00
20	63020-560*	1-056-051-00	3	6	0.015	4.39	1.88	0.69	1.18	1.38	\$805.00
25	63025-560*	1-056-061-00	3	6	0.015	4.39	1.88	0.69	1.18	1.38	\$900.00

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# 60 Series End Mount

NEMA Frame Sizes 56C, 143TC, 145TC

Torque Ratings: 1.5 to 25 lb-ft

## Dripproof NEMA 2, CSA 2, IP41



### 60 Series Specifications:

Reaction Time: 15-20 milliseconds  
(release and set)

AK: 4.5" Register

AJ: 5.88" Bolt Circle

Thermal Capacity: 6 HPS/MIN

Maximum RPM: 3600

Coil insulation:

Class B : 1.5, 3, 10 & 15 lb-ft brakes (Class H optional)

Class H : 6, 20 & 25 lb-ft brakes

CSA File #LR13814

### Design Features:

- Direct acting design with no linkages to break
- One moving part for longer life
- Torque adjustable for specific applications
- Spined hub
- Spring set, electrically released
- Manual release, automatic reset
- Plated internal parts - RoHS compliant
- All position brake available

### NEMA 2 Brake Specifications:

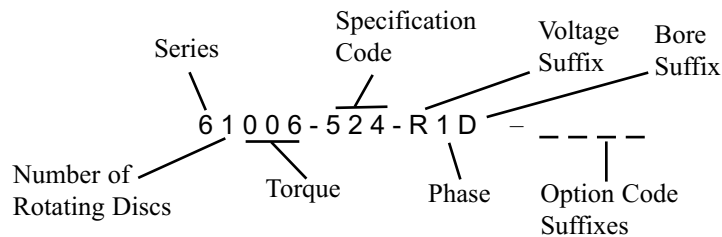
External paint: Red primer

Lead wires: Internal or conduit connections

Nameplate: Thermally printed adhesive label (pre-masked)

Instructions and Parts Manual: BK4655

### Brake Model Number Description



#### Standard AC Voltages

(single phase only):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

#### Optional DC Voltages

(See price for DC modification):

Suffix	Voltage	List Price
A	12	\$300
B	24	\$300
C	36	\$300
D	48	\$300
7	76	\$300
E	95	\$300
H	115	\$300
M	230	\$300

Special voltages available.

#### Available Options:

	Suffix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Class H Insulation	Q
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

Refer to pages 51-56 for option descriptions & pricing.

#### Standard Hub Bore Sizes:

Suffix	Size	Keyway
D	5/8"	3/16" x 3/32"
F	7/8"	3/16" x 3/32"

Special bore sizes available.

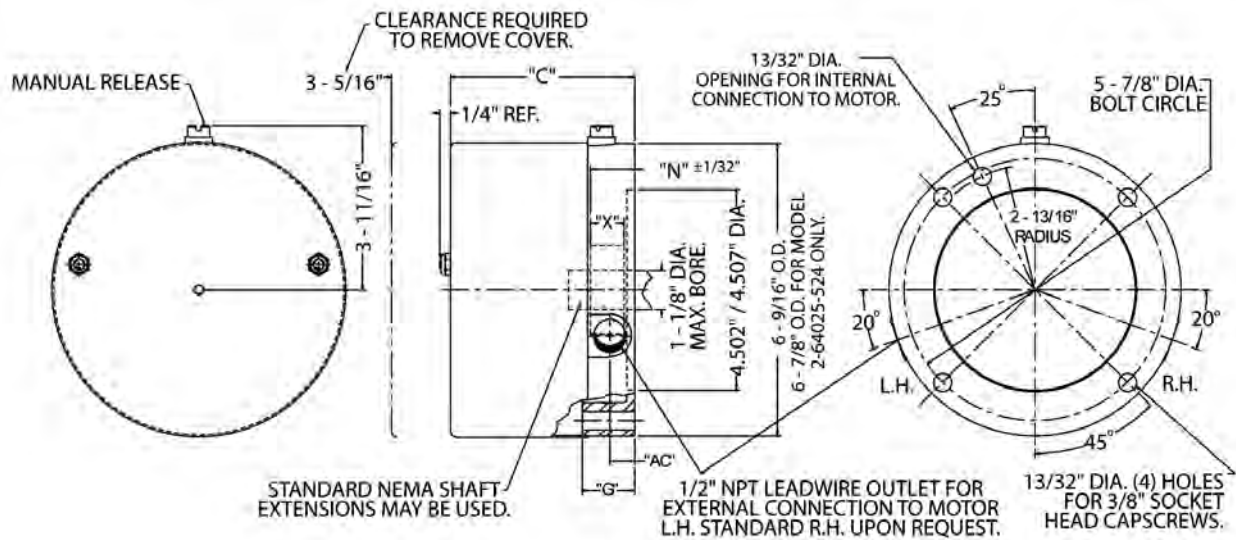


# NEMA 2 / IP41 Enclosure

Torque lb-ft	Dings Model #	Replacement for Stearns® Model (NOTE1)	Construction	Wt. Lbs.	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches					List Price
						C	N	X	AC	G	
1.5	61001-524	1-056-001-00	Aluminum/Steel	8	0.006	4.13	1.13	0.88	0.59	1.19	\$430
3	61003-524	1-056-011-00	Aluminum/Steel	8	0.006	4.13	1.13	0.88	0.59	1.19	\$450
6	61006-524	1-056-021-00	Aluminum/Steel	8	0.006	4.13	1.13	0.88	0.59	1.19	\$515
10	62010-524	1-056-031-00	Aluminum/Steel	8	0.010	4.13	1.13	0.88	0.59	1.19	\$615
15	63015-524	1-056-041-00	Aluminum/Steel	9	0.015	4.50	1.44	1.19	0.59	1.56	\$715
20	63020-524	1-056-051-00	Aluminum/Steel	9	0.015	4.50	1.44	1.19	0.59	1.56	\$805
25	64025-524	1-056-061-00	Cast Iron/Steel	16	0.020	5.19	2.00	1.34	1.56	2.25	\$900

NOTE 1: Hub length and location differ.  
For a direct drop-in, refer to Dings 5600 Series Brake on pages 5 & 6.

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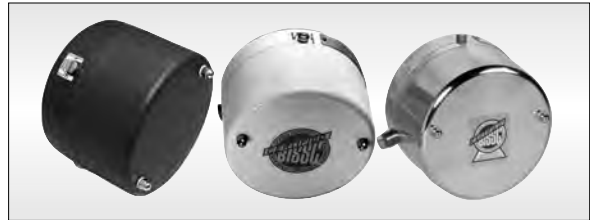
# 60 Series End Mount

NEMA Frame Sizes 56C, 143TC, 145TC

Torque Ratings: 1.5 to 25 lb-ft

## NEMA 4/4X, CSA 4, IP56

without hub seal for Non-TEFC applications



### 60 Series Specifications:

- Reaction Time: 15-20 milliseconds (release and set)
- AK: 4.5" Register
- AJ: 5.88" Bolt Circle
- Thermal Capacity: 6 HPS/MIN
- Maximum RPM: 3600
- Coil insulation:
- Class B : 1.5, 3, 10 & 15 lb-ft brakes (Class H optional)
- Class H : 6, 20 & 25 lb-ft brakes
- CSA File #LR13814

### Design Features:

- Direct acting design with no linkages to break
- One moving part for longer life
- Torque adjustable for specific applications
- Splined hub
- Spring set, electrically released
- Manual release, automatic reset
- Plated internal parts - RoHS compliant
- All position brake available

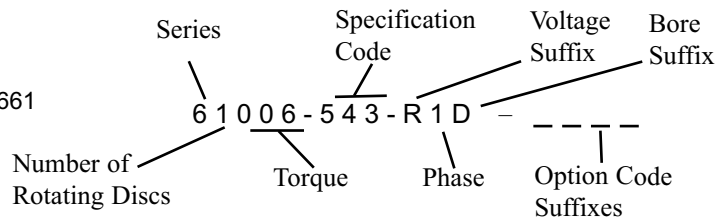
### NEMA 4 Non-TEFC Specifications:

- External paint: Red primer
- Lead wires: Internal or conduit connections
- Nameplate: Aluminum/Steel brake = Thermally printed adhesive label (pre-masked)
- Cast iron brake = Riveted stamped stainless steel
- Instructions and Parts Manual: Aluminum/Steel brake = BK4710
- Cast iron brake = BK4660

### NEMA 4X Non-TEFC Specifications:

- External paint: Cast Iron: FDA approved white epoxy
- Stainless Steel: None
- BISSC Certified Authorization #695
- Lead wires: Internal or conduit connections
- Nameplate: Riveted stamped stainless steel (pre-masked)
- Instructions and Parts Manual: Cast iron brake = BK4660
- Stainless steel brake = BK4661

### Brake Model Number Description



Standard AC Voltages (single phase only):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

Optional DC Voltages (See price for DC modification):		
Suffix	Voltage	List Price Adder
A	12	\$300
B	24	\$300
C	36	\$300
D	48	\$300
7	76	\$300
E	95	\$300
H	115	\$300
M	230	\$300

Special voltages available.

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
D	5/8"	3/16" x 3/32"
F	7/8"	3/16" x 3/32"

Special bore sizes available.

Available Options:	Suffix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Class H Insulation	Q
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

Refer to pages 51-56 for option descriptions & pricing.

## NEMA 4 / IP56 Enclosure no hub seal

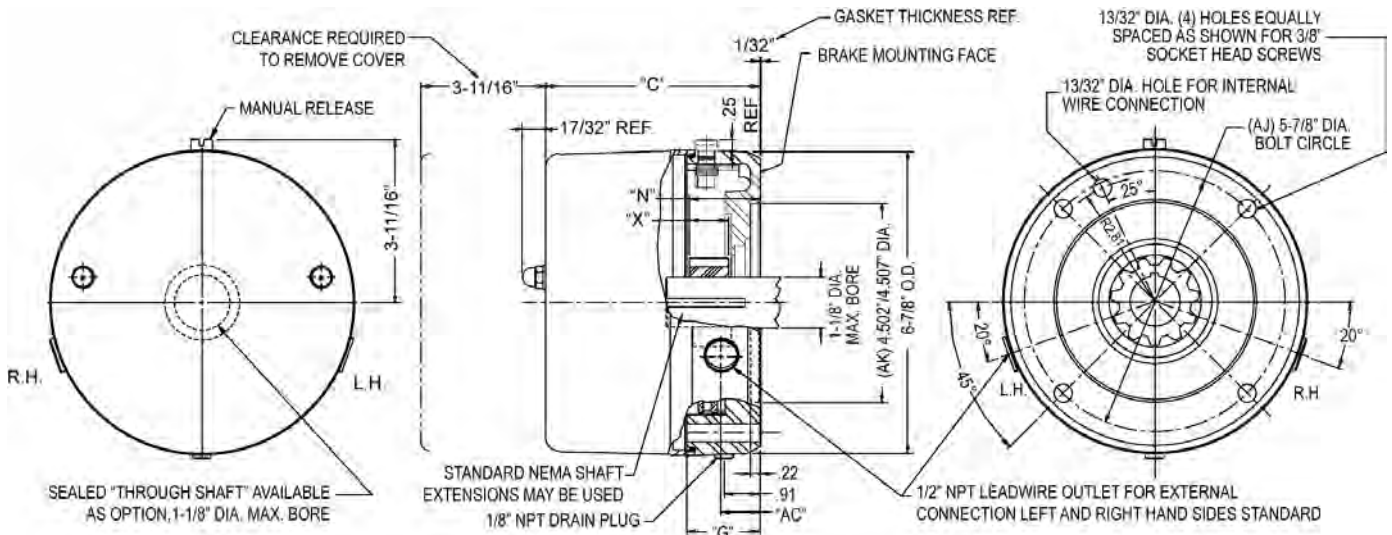
Torque lb-ft	Dings Model #	Replacement for Stearns® Model (NOTE1)	Construction	Wt. Lbs.	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches					List Price
						C	N	X	AC	G	
1.5	61001-545	1-056-002-80	Aluminum/Steel	10	0.008	4.13	1.13	0.88	0.59	1.19	\$500
	61001-543	—	Cast Iron	16	0.008	4.81	1.59	0.88	0.94	1.63	\$800
3	61003-545	1-056-012-80	Aluminum/Steel	10	0.008	4.13	1.13	0.88	0.59	1.19	\$520
	61003-543	—	Cast Iron	16	0.008	4.81	1.59	0.88	0.94	1.63	\$835
6	61006-545	1-056-022-80	Aluminum/Steel	10	0.008	4.13	1.13	0.88	0.59	1.19	\$585
	61006-543	—	Cast Iron	17	0.008	4.81	1.59	0.88	0.94	1.63	\$930
10	62010-545	1-056-032-80	Aluminum/Steel	10	0.013	4.13	1.13	0.88	0.59	1.19	\$690
	62010-543	—	Cast Iron	17	0.013	4.81	1.59	0.88	0.94	1.63	\$1,040
15	63015-545	1-056-042-80	Aluminum/Steel	11	0.019	4.50	1.44	1.19	0.96	1.56	\$790
	63015-543	—	Cast Iron	18	0.019	5.13	1.90	1.19	1.25	1.94	\$1,180
20	63020-545	1-056-052-80	Aluminum/Steel	11	0.019	4.50	1.44	1.19	0.96	1.56	\$875
	63020-543	—	Cast Iron	18	0.019	5.13	1.90	1.19	1.25	1.94	\$1,280
25	64025-543	—	Cast Iron	19	0.024	5.44	2.05	1.34	1.56	2.25	\$1,425

NOTE 1: Hub length and location differ.

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## WASHDOWN NEMA 4X / IP56 Enclosure no hub seal

Torque lb-ft	Model #	Construction	Wt. Lbs.	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches					List Price
					C	N	X	AC	G	
1.5	61001-5115	Cast Iron	16	0.008	4.81	1.59	0.88	0.94	1.63	\$855
	61001-5141	Stainless Steel	16	0.008	4.81	1.59	0.88	0.94	1.63	\$2,339
3	61003-5115	Cast Iron	16	0.008	4.81	1.59	0.88	0.94	1.63	\$890
	61003-5141	Stainless Steel	16	0.008	4.81	1.59	0.88	0.94	1.63	\$2,350
6	61006-5115	Cast Iron	17	0.008	4.81	1.59	0.88	0.94	1.63	\$985
	61006-5141	Stainless Steel	17	0.008	4.81	1.59	0.88	0.94	1.63	\$2,415
10	62010-5115	Cast Iron	17	0.013	4.81	1.59	0.88	0.94	1.63	\$1,095
	62010-5141	Stainless Steel	17	0.013	4.81	1.59	0.88	0.94	1.63	\$2,515
15	63015-5115	Cast Iron	18	0.019	5.13	1.90	1.19	1.25	1.94	\$1,235
	63015-5141	Stainless Steel	18	0.019	5.13	1.90	1.19	1.25	1.94	\$2,615
20	63020-5115	Cast Iron	18	0.019	5.13	1.90	1.19	1.25	1.94	\$1,335
	63020-5141	Stainless Steel	18	0.019	5.13	1.90	1.19	1.25	1.94	\$2,700
25	64025-5115	Cast Iron	19	0.022	5.44	2.05	1.34	1.56	2.25	\$1,480
	64025-5141	Stainless Steel	19	0.022	5.44	2.05	1.34	1.56	2.25	\$2,810



# 60 Series End Mount

NEMA Frame Sizes 56C, 143TC, 145TC  
Torque Ratings: 1.5 to 25 lb-ft

## NEMA 4/4X, CSA 4, IP56\* with hub seal for TEFC applications



\*To obtain full IP56 protection, the customer shaft, hub bore, key and keyway's mating surface(s) must be sealed to meet IP56. Considerations should be reviewed to appropriately seal mounting hardware as well. Contact factory for details and/or assistance.

### 60 Series Specifications:

Reaction Time: 15-20 milliseconds (release and set)  
AK: 4.5" Register  
AJ: 5.88" Bolt Circle  
Thermal Capacity: 6 HPS/MIN  
Maximum RPM: 3600  
Coil insulation:  
Class B : 1.5, 3, 10 & 15 lb-ft brakes (Class H optional)  
Class H : 6, 20 & 25 lb-ft brakes  
CSA File #LR13814

### Design Features:

Direct acting design with no linkages to break  
One moving part for longer life  
Torque adjustable for specific applications  
Splined hub  
Spring set, electrically released  
Manual release, automatic reset  
Plated internal parts - RoHS compliant  
All position brake available

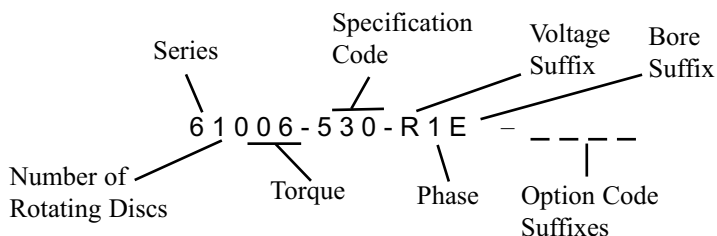
### NEMA 4 TEFC Specifications:

External paint: Red primer  
Lead wires: Conduit connections  
Nameplate: Aluminum/Steel brake: Thermally printed adhesive label (pre-masked)  
Cast iron brake: Riveted stamped stainless steel  
Instructions and Parts Manual: Aluminum/Steel brake = BK4710  
Cast iron brake = BK4660

### NEMA 4X TEFC Specifications:

External paint: Cast Iron: FDA approved white epoxy  
Stainless Steel: None  
BISCC Certified Authorization #695  
Lead wires: Conduit connections  
Nameplate: Riveted stamped stainless steel (pre-masked)  
Instructions and Parts Manual:  
Cast iron brake = BK4660  
Stainless steel brake = BK4661

### Brake Model Number Description



Standard AC Voltages (single phase only):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

Optional DC Voltages (See price for DC modification):		
Suffix	Voltage	List Price
		<b>Adder</b>
A	12	\$300
B	24	\$300
C	36	\$300
D	48	\$300
7	76	\$300
E	95	\$300
H	115	\$300
M	230	\$300

Special voltages available.

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
D	5/8"	3/16" x 3/32"
F	7/8"	3/16" x 3/32"

Special bore sizes available.

Available Options:	Suffix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Class H Insulation	Q
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

**Refer to pages 51-56 for option descriptions & pricing.**

## NEMA 4 / IP56 Enclosure With hub seal

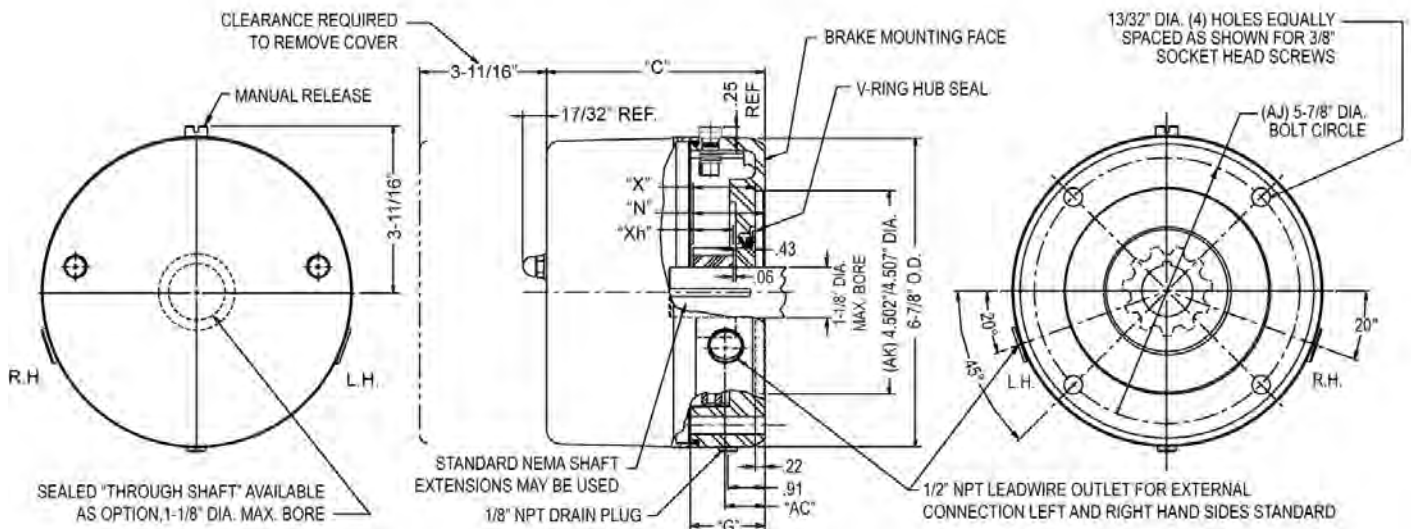
Torque lb-ft	Model #	Replacement for Stearns® Model (NOTE1)	Construction	Wt. lbs.	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches						List Price
						C	N	X Overall length of hub, gap, & V-ring	Xh Hub only length	AC	G	
1.5	61001-535	1-056-002-00	Aluminum/Steel	10	0.008	4.72	1.68	1.47	.88	1.18	1.63	\$565
	61001-530	—	Cast Iron	16	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$900
3	61003-535	1-056-012-00	Aluminum/Steel	10	0.008	4.72	1.68	1.47	.88	1.18	1.63	\$585
	61003-530	1-056-212-00	Cast Iron	16	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$935
6	61006-535	1-056-022-00	Aluminum/Steel	10	0.008	4.72	1.68	1.47	.88	1.18	1.63	\$650
	61006-530	1-056-222-00	Cast Iron	17	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$1,030
10	62010-535	1-056-032-00	Aluminum/Steel	10	0.013	4.72	1.68	1.47	.88	1.18	1.63	\$755
	62010-530	1-056-232-00	Cast Iron	17	0.013	4.81	1.59	1.37	.88	0.94	1.63	\$1,140
15	63015-535	1-056-042-00	Aluminum/Steel	11	0.019	5.10	2.00	1.78	1.19	1.18	1.94	\$855
	63015-530	1-056-242-00	Cast Iron	18	0.019	5.13	1.90	1.93	1.19	0.94	1.94	\$1,280
20	63020-535	1-056-052-00	Aluminum/Steel	11	0.019	5.10	2.00	1.78	1.19	1.18	1.94	\$940
	63020-530	1-056-252-00	Cast Iron	18	0.019	5.13	1.90	1.93	1.19	0.94	1.94	\$1,380
25	64025-530	1-056-262-00	Cast Iron	19	0.024	5.44	2.05	1.83	1.34	1.56	2.25	\$1,525

## WASHDOWN NEMA 4X / IP56 Enclosure With hub seal

Torque lb-ft	Model #	Replacement for Stearns® Model (NOTE1)	Construction	Wt. lbs.	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches						List Price
						C	N	X Overall length of hub, gap, & V-ring	Xh Hub only length	AC	G	
1.5	61001-5116	—	Cast Iron	16	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$920
	61001-5140	—	Stainless Steel	16	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$2,439
3	61003-5116	1-056-214-00	Cast Iron	16	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$955
	61003-5140	1-056-914-00	Stainless Steel	16	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$2,450
6	61006-5116	1-056-224-00	Cast Iron	17	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$1,050
	61006-5140	1-056-924-00	Stainless Steel	17	0.008	4.81	1.59	1.37	.88	0.94	1.63	\$2,515
10	62010-5116	1-056-234-00	Cast Iron	17	0.013	4.81	1.59	1.37	.88	0.94	1.63	\$1,160
	62010-5140	1-056-934-00	Stainless Steel	17	0.013	4.81	1.59	1.37	.88	0.94	1.63	\$2,615
15	63015-5116	1-056-244-00	Cast Iron	18	0.019	5.13	1.90	1.93	1.19	0.94	1.94	\$1,300
	63015-5140	1-056-944-00	Stainless Steel	18	0.019	5.13	1.90	1.93	1.19	0.94	1.94	\$2,715
20	63020-5116	1-056-254-00	Cast Iron	18	0.019	5.13	1.90	1.93	1.19	0.94	1.94	\$1,400
	63020-5140	1-056-954-00	Stainless Steel	18	0.019	5.13	1.90	1.93	1.19	0.94	1.94	\$2,800
25	64025-5116	1-056-264-00	Cast Iron	19	0.022	5.44	2.05	1.83	1.34	1.56	2.25	\$1,545
	64025-5140	1-056-964-00	Stainless Steel	19	0.022	5.44	2.05	1.83	1.34	1.56	2.25	\$2,910

NOTE 1: Hub length and location differ.

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# 60 Series Double C Face

**NEMA Frame Sizes 56C, 143TC, 145TC**  
**Torque Ratings: 1.5 to 20 lb-ft**



## Specifications:

Reaction Time: 15-20 milliseconds (release and set)  
AK: 4.5" Register  
AJ: 5.88" Bolt Circle  
Thermal Capacity: 6 HPS/MIN  
Maximum RPM: 3600  
CSA File #LR13814  
Coil insulation:  
Class B : 1.5, 3, 10 & 15 lb-ft brakes (Class H optional)  
Class H : 6 & 20 lb-ft brakes  
Instructions and Parts Manual:  
NEMA 2 = BK4650  
NEMA 4 = BK4652  
NEMA 4X aluminum = BK4646  
NEMA 4X stainless steel = BK4651

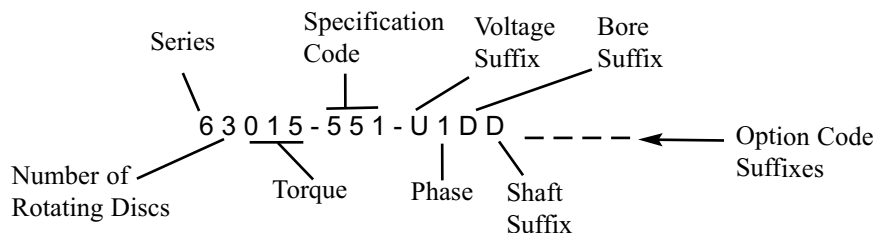
## Design Features:

Direct acting design with no linkages to break  
One moving part for longer life  
Torque adjustable for specific applications  
Splined hub  
Plated internal parts - RoHS compliant  
Spring set, electrically released  
Lead wires for internal or conduit connections  
Manual release, automatic reset  
All position brake available

## Enclosure Types:

**Dripproof NEMA 2, CSA 2, IP41**  
Aluminum bracket & housing with steel wrap cover  
Exterior Paint: Gray enamel  
Nameplate: Thermally printed adhesive label  
**Waterproof/Dusttight Enclosure NEMA 4, CSA 4, IP56**  
Aluminum bracket and housing with stainless steel caps  
Exterior Paint: Gray enamel  
Nameplate: Stainless steel  
**Washdown Enclosure NEMA 4X, CSA 4, IP56**  
**WHITE BISSC**  
Aluminum bracket and housing with stainless steel caps  
and FDA Approved white epoxy paint  
**BISSC Certified** Authorization #695  
Nameplate: Stainless steel  
**STAINLESS STEEL BISSC**  
300 Series Stainless steel bracket, housing and caps  
**BISSC Certified** Authorization #695  
Nameplate: Stainless steel

## Brake Model Number Definition



Standard AC Voltages (single phase only):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

Optional DC Voltages (See price for DC modification):		
Suffix	Voltage	List Price
A	12	\$300
B	24	\$300
C	36	\$300
D	48	\$300
7	76	\$300
E	95	\$300
H	115	\$300
M	230	\$300

Special voltages available.

Standard Hub Bore & Shaft Sizes:		
Suffix	Size	Keyway
D	5/8"	3/16" x 3/32"
F	7/8"	3/16" x 3/32"

Special bore sizes available.

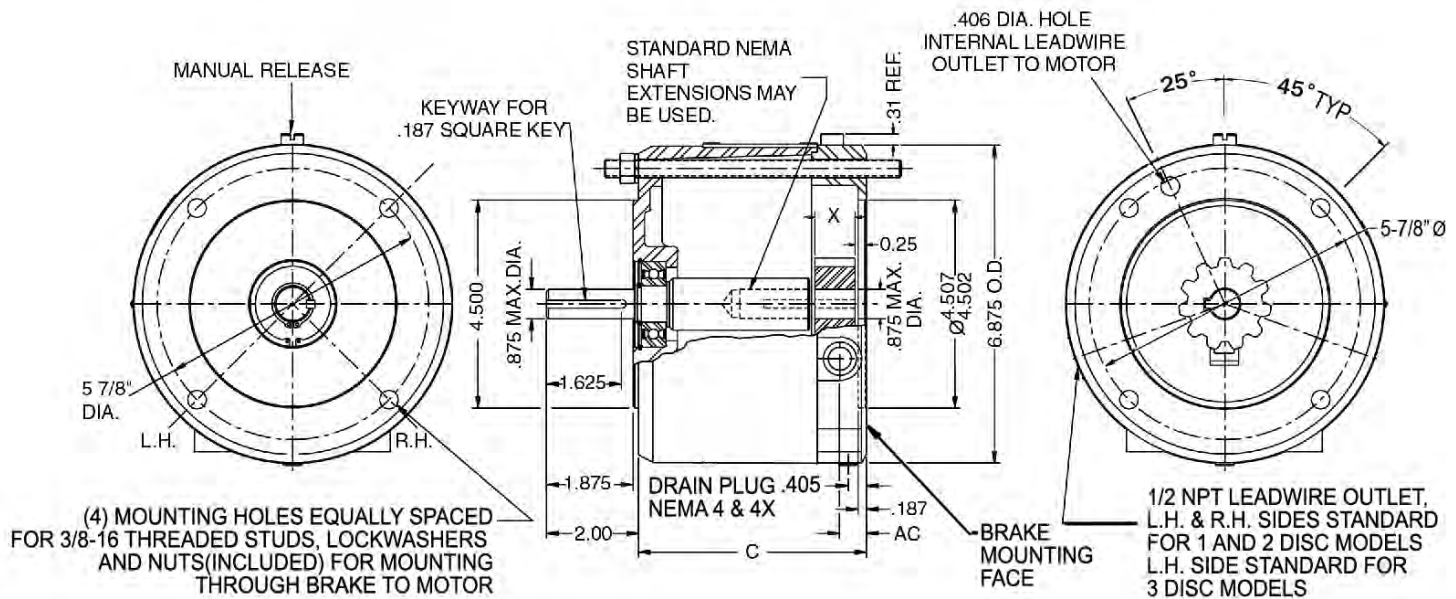
Available Options:	Suffix
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Class H Insulation	Q
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

**Refer to pages 51-56 for option descriptions & pricing.**

Torque lb-ft	Dings Model #	Replacement for Stearns® Model (NOTE1)	Enclosure	Construction	Wt. Lbs.	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches				List Price
							C	X		AC	
								1-Piece Shaft*	2-Piece Shaft*		
1.5	61001-551	1-056-701-0X	NEMA 2	Cast Aluminum	11	0.006	4.94	0.81	0.88	0.59	\$480
	61001-5153	1-056-702-0X	NEMA 4	Cast Aluminum	11	0.006	4.94	0.81	0.88	0.59	\$615
	61001-5155	1-056-704-0X	NEMA 4X	Cast Aluminum	11	0.006	4.94	0.81	0.88	0.59	\$690
	61001-5145	—	NEMA 4X	Stainless Steel	20	0.006	5.07	0.81	0.88	0.63	\$2,454
3	61003-551	1-056-711-0X	NEMA 2	Cast Aluminum	11	0.006	4.94	0.81	0.88	0.59	\$500
	61003-5153	1-056-712-0X	NEMA 4	Cast Aluminum	11	0.006	4.94	0.81	0.88	0.59	\$635
	61003-5155	1-056-714-0X	NEMA 4X	Cast Aluminum	11	0.006	4.94	0.81	0.88	0.59	\$710
	61003-5145	1-056-71S-0X	NEMA 4X	Stainless Steel	20	0.006	5.07	0.81	0.88	0.63	\$2,474
6	61006-551	1-056-721-0X	NEMA 2	Cast Aluminum	12	0.006	4.94	0.81	0.88	0.59	\$565
	61006-5153	1-056-722-0X	NEMA 4	Cast Aluminum	12	0.006	4.94	0.81	0.88	0.59	\$700
	61006-5155	1-056-724-0X	NEMA 4X	Cast Aluminum	12	0.006	4.94	0.81	0.88	0.59	\$775
	61006-5145	1-056-72S-0X	NEMA 4X	Stainless Steel	21	0.006	5.07	0.81	0.88	0.63	\$2,539
10	62010-551	1-056-731-0X	NEMA 2	Cast Aluminum	12	0.010	4.94	0.81	—	0.59	\$665
	62010-5153	1-056-732-0X	NEMA 4	Cast Aluminum	12	0.010	4.94	0.81	—	0.59	\$805
	62010-5155	1-056-734-0X	NEMA 4X	Cast Aluminum	12	0.010	4.94	0.81	—	0.59	\$880
	62010-5145	1-056-73S-0X	NEMA 4X	Stainless Steel	21	0.010	5.07	0.81	—	0.63	\$2,639
15	63015-551	1-056-741-0X	NEMA 2	Cast Aluminum	13	0.014	5.31	1.19	—	0.87	\$765
	63015-5153	1-056-742-0X	NEMA 4	Cast Aluminum	13	0.014	5.31	1.19	—	0.87	\$905
	63015-5155	1-056-744-0X	NEMA 4X	Cast Aluminum	13	0.014	5.31	1.19	—	0.87	\$980
	63015-5145	1-056-74S-0X	NEMA 4X	Stainless Steel	23	0.014	5.44	1.19	—	0.94	\$2,739
20	63020-551	1-056-751-0X	NEMA 2	Cast Aluminum	13	0.014	5.31	1.19	—	0.87	\$855
	63020-5153	1-056-752-0X	NEMA 4	Cast Aluminum	13	0.014	5.31	1.19	—	0.87	\$990
	63020-5155	1-056-754-0X	NEMA 4X	Cast Aluminum	13	0.014	5.31	1.19	—	0.87	\$1,065
	63020-5145	1-056-75S-0X	NEMA 4X	Stainless Steel	23	0.014	5.44	1.19	—	0.94	\$2,824

NOTE 1: Hub length and location differ.

\*Brakes rated 1.5 through 6 lb-ft include “2-piece shaft” as standard. This includes a separate hub and shaft.  
The “1-piece” hub and shaft is available as a modification.  
Brakes rated 10 through 20 lb-ft have a 1-piece hub and shaft.



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# 1-70 Series End Mount

**NEMA Frame Sizes 182TC through 256TC/UC**

**Torque Ratings: 1.5 to 25 lb-ft**



## Specifications:

Reaction Time: 15-20 milliseconds  
(release and set)

AK: 8.5" Register

AJ: 7.25" Bolt Circle

Thermal Capacity: 6 HPS/MIN

Maximum RPM: 3600

CSA File #LR13814

Coil insulation:

1.5 – 15 lb-ft Class B Standard, Class H Optional

20 & 25 lb-ft Class H Standard

Instructions and Parts Manual: BK4755

## Design Features:

Direct acting design with no linkages to break

One moving part for longer life

Torque adjustable for specific applications

Splined hub

Plated internal parts - RoHS compliant

Spring set, electrically released

Lead wires for internal or conduit connections

Manual release, automatic reset

All position brake available

## Enclosure Types:

### Dripproof Enclosure NEMA 2, CSA 2, IP41

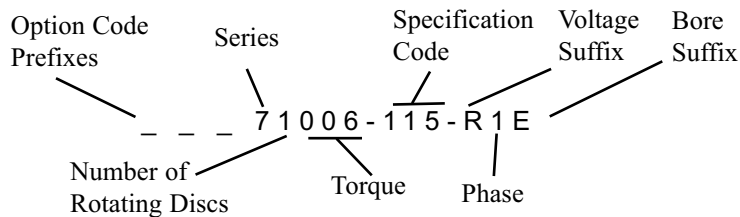
Stamped steel cover with aluminum  
bracket & cast iron adapter, 1.5 - 20 lb-ft

Stamped steel cover with cast iron  
bracket & adaptor, 25 lb-ft

External paint: Red primer

Nameplate: Thermally printed adhesive label (pre-masked)

## Brake Model Number Description



Standard AC Voltages (single phase only):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz
Special voltages available.	

Optional DC Voltages (See price for DC modification):		
Suffix	Voltage	List Price Adder
A	12	\$300
B	24	\$300
C	36	\$300
D	48	\$300
7	76	\$300
E	95	\$300
H	115	\$300
M	230	\$300
Special voltages available.		

Available Options:	Prefix
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Class H Insulation	Q
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS
<b>Refer to pages 51-56 for option descriptions &amp; pricing.</b>	

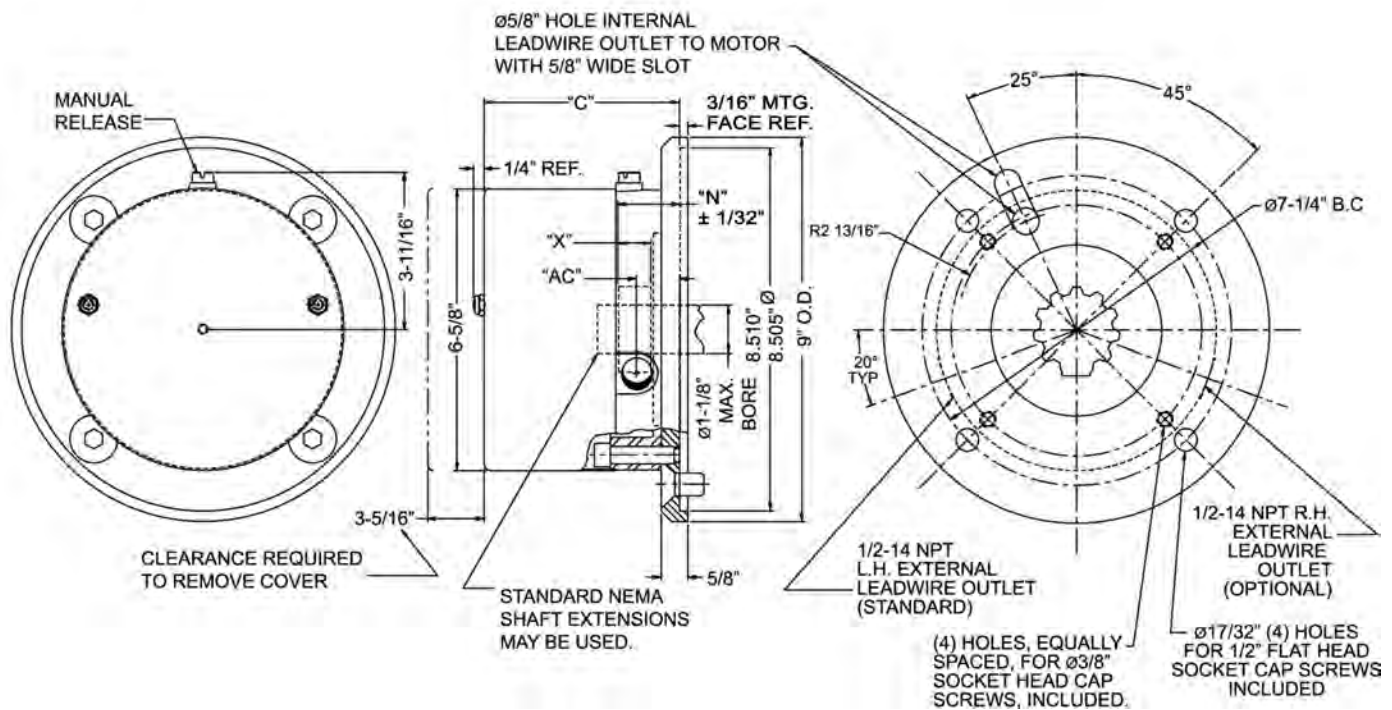
Standard Hub Bore Sizes:		
Suffix	Size	Keyway
D	5/8"	3/16" x 3/32"
F	7/8"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
Special bore sizes available.		



Torque lb-ft	Model #	Replacement for Stearns® Model (NOTE1)	Enclosure	Construction	Wt. Lbs.	Inertia WK <sup>2</sup> lb-ft <sup>2</sup>	Dimensions				List Price
							C	N	X	AC	
1.5	71001-115	—	NEMA 2	Aluminum/Steel	10	0.006	4.57	1.69	0.88	1.21	\$705
3	71003-115	—	NEMA 2	Aluminum/Steel	10	0.006	4.57	1.69	0.88	1.21	\$730
6	71006-115	—	NEMA 2	Aluminum/Steel	10	0.006	4.57	1.69	0.88	1.21	\$765
10	72010-115	1-056-531-00	NEMA 2	Aluminum/Steel	10	0.010	4.94	1.87	1.19	1.50	\$840
15	73015-115	1-056-541-00	NEMA 2	Aluminum/Steel	11	0.015	4.94	1.87	1.19	1.50	\$940
20	73020-115	1-056-551-00	NEMA 2	Aluminum/Steel	11	0.015	4.94	1.87	1.19	1.50	\$1,030
25	74025-115	1-056-561-00	NEMA 2	Cast Iron/Steel	18	0.020	5.63	2.44	1.34	2.19	\$1,125

NOTE 1: Hub length and location differ.

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# 70 Series End Mount

## 8700 Style

NEMA Frame Sizes 182TC through 256TC/UC

Torque Ratings: 10 to 105 lb-ft

## Dripproof NEMA 2, CSA 2, IP43



Direct replacement for Stearns® brakes

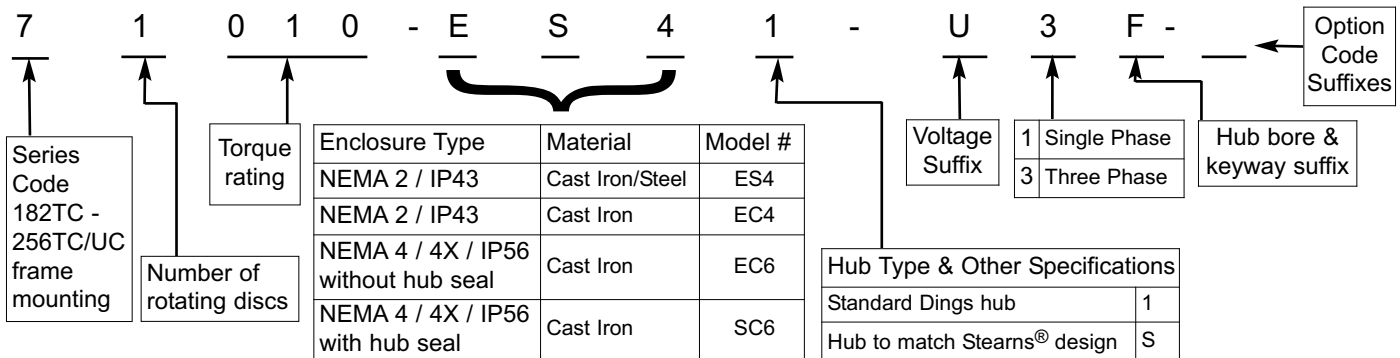
### 70 Series Specifications:

- Reaction Time: 20-25 milliseconds (release and set)
- AK: 8.5" Register
- AJ: 7.25" Bolt Circle
- Maximum RPM: 3600
- CSA File #LR13814
- Coil insulation: Class H standard
- External paint: Red primer
- Lead wires: Internal or conduit connections
- Nameplate: Thermally printed adhesive label (pre-masked)
- Instructions and Parts Manual:
  - Dings Standard = BK4772
  - Stearns Replacement = BK4772S

### Design Features:

- RoHS compliant
- No disassembly required for mounting
- Direct acting design with no linkages to break
- Torque adjustable for specific applications
- External manual release with automatic reset
- One moving part for longer life
- Splined hub
- Spring set, electrically released
- All position brake available

### Brake Model Number Definition



Standard Voltages	
(Single or three Phase):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz
Special voltages available.	

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
F	7/8"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
J	1 1/4"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
M	1 5/8"	3/8" x 3/16"
Special bore sizes available.		

Available Options:	Suffix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Vertical Mounting, over motor	VO
Vertical Mounting, under motor	VU
Micro-Switch Warning	XS
<b>Refer to pages 51-56 for option descriptions &amp; pricing.</b>	

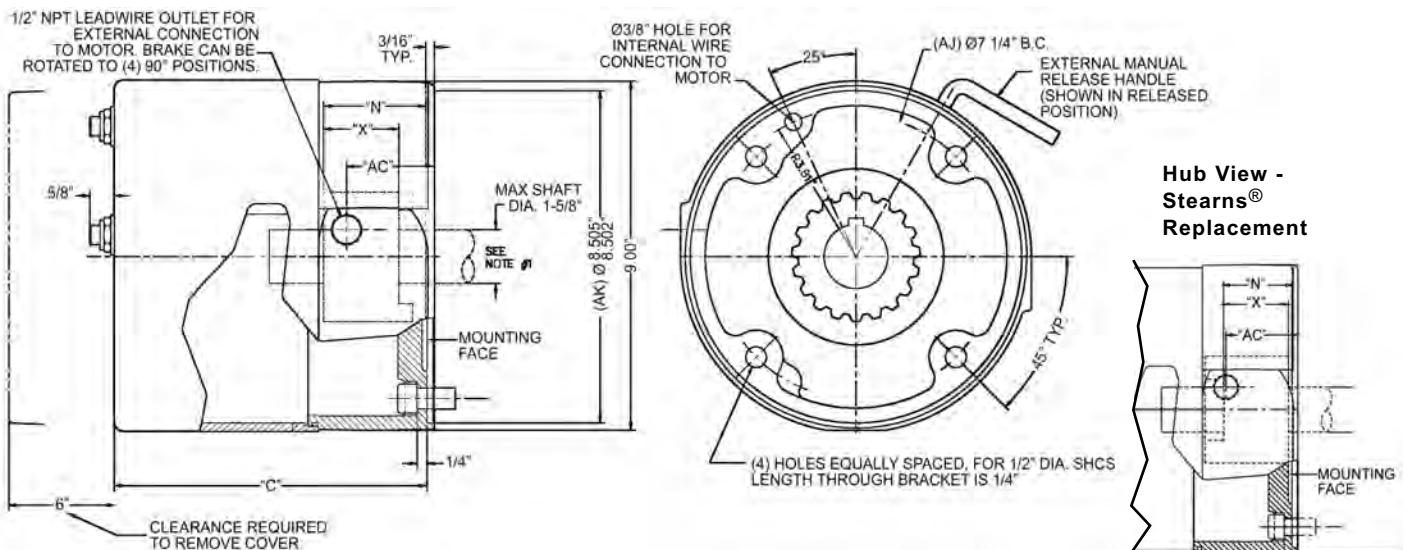
## NEMA 2 / IP43 Enclosure DINGS STANDARD

Torque lb-ft	Model # Dings Standard	Replaces Dings 2-post Brake Models	Replaces Dings 4-post Brake Models	Construction	Weight lbs.	Thermal Capacity HPS/Min	Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	Dimensions in inches				List Price
								C	"N" Hub Location	"X" Hub Length	AC	
10	71010-ES41	6-71010-96	6-71010-97	Cast Iron/Steel	30	10	.047	6.91	1.50	1.00	1.13	\$925
	71010-EC41	R71010	6-71010-55	Cast Iron	41	10	.047	6.91	1.50	1.00	1.13	\$970
15	71015-ES41	6-71015-96	6-71015-97	Cast Iron/Steel	30	10	.047	6.91	1.50	1.00	1.13	\$975
	71015-EC41	R71015	6-71015-55	Cast Iron	41	10	.047	6.91	1.50	1.00	1.13	\$1,025
25	72025-ES41	6-72025-96	6-72025-97	Cast Iron/Steel	32	11	.075	6.91	2.00	1.50	1.13	\$1,050
	72025-EC41	R72025	6-72025-55	Cast Iron	43	11	.075	6.91	2.00	1.50	1.13	\$1,100
35	72035-ES41	6-72035-96	6-72035-97	Cast Iron/Steel	32	11	.075	6.91	2.00	1.50	1.13	\$1,200
	72035-EC41	R72035	6-72035-55	Cast Iron	43	11	.075	6.91	2.00	1.50	1.13	\$1,280
50	73050-ES41	6-73050-96	6-73050-97	Cast Iron/Steel	37	12	.103	7.47	2.50	2.00	1.69	\$1,500
	73050-EC41	R73050	6-73050-55	Cast Iron	48	12	.103	7.47	2.50	2.00	1.69	\$1,575
75	74075-ES41	6-74075-96	6-74075-97	Cast Iron/Steel	42	13	.131	8.03	3.00	2.50	2.25	\$2,000
	74075-EC41	R74075	6-74075-55	Cast Iron	53	13	.131	8.03	3.00	2.50	2.25	\$2,090
105	74105-ES41	NEW	NEW	Cast Iron/Steel	42	13	.131	8.03	3.00	2.50	2.25	\$2,700
	74105-EC41	NEW	NEW	Cast Iron	53	13	.131	8.03	3.00	2.50	2.25	\$2,900

## NEMA 2 / IP43 Enclosure STEARNS® REPLACEMENT

Torque lb-ft	Model # Stearns Replacement	Direct Drop-in replacement for Stearns® Model	Construction	Weight lbs.	Thermal Capacity HPS/Min	Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	Dimensions in inches				List Price
							C	"N" Hub Location	"X" Hub Length	AC	
10	71010-ES4S	1-087-011-00	Cast Iron/Steel	30	10	.045	6.91	1.13	1.00	1.13	\$925
	71010-EC4S	N/A	Cast Iron	41	10	.045	6.91	1.13	1.00	1.13	\$1,065
15	71015-ES4S	1-087-021-00	Cast Iron/Steel	30	10	.045	6.91	1.13	1.00	1.13	\$975
	71015-EC4S	N/A	Cast Iron	41	10	.045	6.91	1.13	1.00	1.13	\$1,115
25	71025-ES4S	1-087-031-00	Cast Iron/Steel	30	11	.074	6.91	1.13	1.00	1.13	\$1,050
	71025-EC4S	N/A	Cast Iron	41	11	.074	6.91	1.13	1.00	1.13	\$1,190
35	72035-ES4S	1-087-041-00	Cast Iron/Steel	32	11	.074	6.91	1.13	1.00	1.13	\$1,200
	72035-EC4S	N/A	Cast Iron	43	11	.074	6.91	1.13	1.00	1.13	\$1,340
50	72050-ES4S	1-087-051-00	Cast Iron/Steel	32	12	.077	6.91	1.63	1.50	1.13	\$1,500
	72050-EC4S	N/A	Cast Iron	43	12	.077	6.91	1.63	1.50	1.13	\$1,640
75	73075-ES4S	1-087-061-00	Cast Iron/Steel	37	13	.077	7.47	1.63	1.50	1.69	\$2,000
	73075-EC4S	N/A	Cast Iron	48	13	.077	7.47	1.63	1.50	1.69	\$2,140
105	74105-ES4S	1-087-081-00	Cast Iron/Steel	42	13	.136	8.03	2.13	2.00	2.25	\$2,700
	74105-EC4S	N/A	Cast Iron	53	13	.136	8.03	2.13	2.00	2.25	\$2,840

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# 70 Series End Mount

## 8700 Style

NEMA Frame Sizes 182TC through 256TC/UC

Torque Ratings: 10 to 105 lb-ft

## NEMA 4 / 4X, CSA 4, IP56 without hub seal for Non-TEFC applications



Direct replacement for Stearns® brakes

### NEMA 4 / 4X Non-TEFC Specifications:

Reaction Time: 20-25 milliseconds (release and set)

AK: 8.5" Register

AJ: 7.25" Bolt Circle

Maximum RPM: 3600

CSA File #LR13814

Coil insulation: Class H standard

Enclosure: Cast iron

External paint: NEMA 4, Red primer

NEMA 4X, FDA approved white epoxy

Lead wires: Internal or conduit connections

Nameplate: Stamped stainless steel

Instructions and Parts Manual:

NEMA 4 = BK4773

NEMA 4X = BK4774

### Design Features:

RoHS compliant

No disassembly required for mounting

Direct acting design with no linkages to break

Torque adjustable for specific applications

External manual release with automatic reset

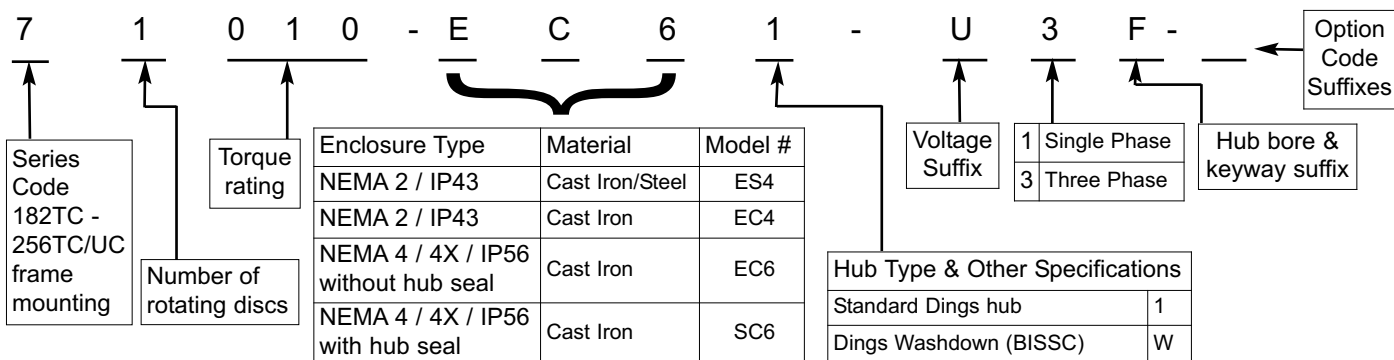
One moving part for longer life

Splined hub

Spring set, electrically released

All position brake available

### Brake Model Number Definition



Standard Voltages	
(Single or three Phase):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz
Special voltages available.	

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
F	7/8"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
J	1 1/4"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
M	1 5/8"	3/8" x 3/16"
Special bore sizes available.		

Available Options:	Prefix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Vertical Mounting, over motor	VO
Vertical Mounting, under motor	VU
Micro-Switch Warning	XS
<b>Refer to pages 51-56 for option descriptions &amp; pricing.</b>	

## NEMA 4 / IP56 Enclosure *without hub seal* for non-TEFC applications

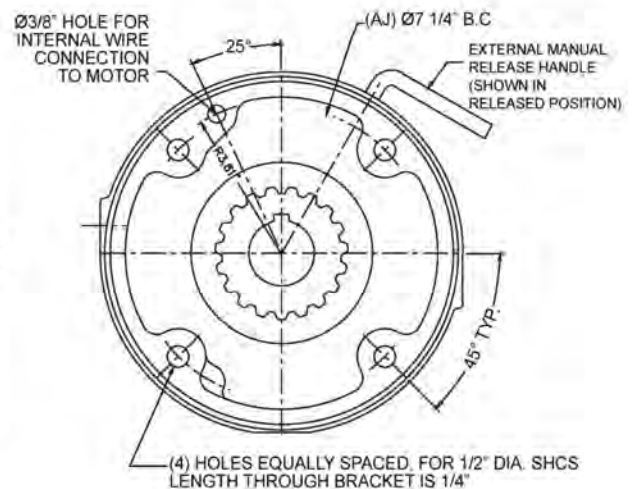
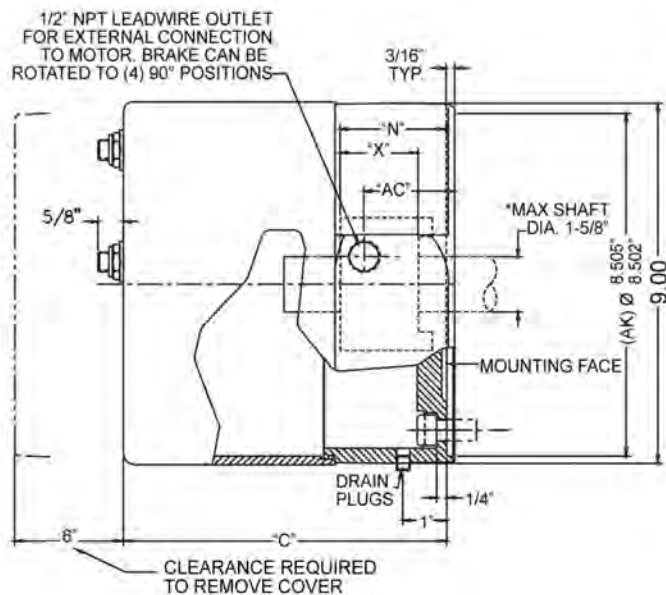
### Cast Iron Construction

Torque lb-ft	Model # Dings Standard	Replaces Dings 2-post Brake Models	Replaces Dings 4-post Brake Models	Weight lbs.	Thermal Capacity HPS/Min	Dimensions in inches					List Price
						Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	C	N Hub Location	X Hub Length	AC	
10	71010-EC61	R71010-37	6-71010-58	41	10	.047	6.91	1.50	1.00	1.13	\$1,445
15	71015-EC61	R71015-37	6-71015-58	41	10	.047	6.91	1.50	1.00	1.13	\$1,495
25	72025-EC61	R72025-37	6-72025-58	43	11	.075	6.91	2.00	1.50	1.13	\$1,570
35	72035-EC61	R72035-37	6-72035-58	43	11	.075	6.91	2.00	1.50	1.13	\$1,720
50	73050-EC61	R73050-37	6-73050-58	48	12	.103	7.47	2.50	2.00	1.69	\$2,000
75	74075-EC61	R74075-37	6-74075-58	53	13	.130	8.03	3.00	2.50	2.25	\$2,500
105	74105-EC61	NEW	NEW	53	13	.130	8.03	3.00	2.50	2.25	\$3,200

## WASHDOWN NEMA 4X / IP56 Enclosure *without hub seal* for non-TEFC applications

### Cast Iron Construction

Torque lb-ft	Model # Dings Standard	Replaces Dings 2-post Brake Models	Replaces Dings 4-post Brake Models	Weight lbs.	Thermal Capacity HPS/Min	Dimensions in inches					List Price
						Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	C	N Hub Location	X Hub Length	AC	
10	71010-EC6W	R71010-91	6-71010-92	41	10	.047	6.91	1.50	1.00	1.13	\$1,700
15	71015-EC6W	R71015-91	6-71015-92	41	10	.047	6.91	1.50	1.00	1.13	\$1,750
25	72025-EC6W	R72025-91	6-72025-92	43	11	.075	6.91	2.00	1.50	1.13	\$1,825
35	72035-EC6W	R72035-91	6-72035-92	43	11	.075	6.91	2.00	1.50	1.13	\$1,975
50	73050-EC6W	R73050-91	6-73050-92	48	12	.103	7.47	2.50	2.00	1.69	\$2,275
75	74075-EC6W	R74075-91	6-74075-92	53	13	.130	8.03	3.00	2.50	2.25	\$2,775
105	74105-EC6W	NEW	NEW	53	13	.130	8.03	3.00	2.50	2.25	\$3,455



# 70 Series End Mount

## 8700 Style

NEMA Frame Sizes 182TC through 256TC/UC

Torque Ratings: 10 to 105 lb-ft

## NEMA 4, CSA 4, IP56\* with hub seal for TEFC applications

\*To obtain full IP56 protection, the customer shaft, hub bore, key and keyway's mating surface(s) must be sealed to meet IP56. Considerations should be reviewed to appropriately seal mounting hardware as well. Contact factory for details and/or assistance.



Direct replacement for Stearns® brakes

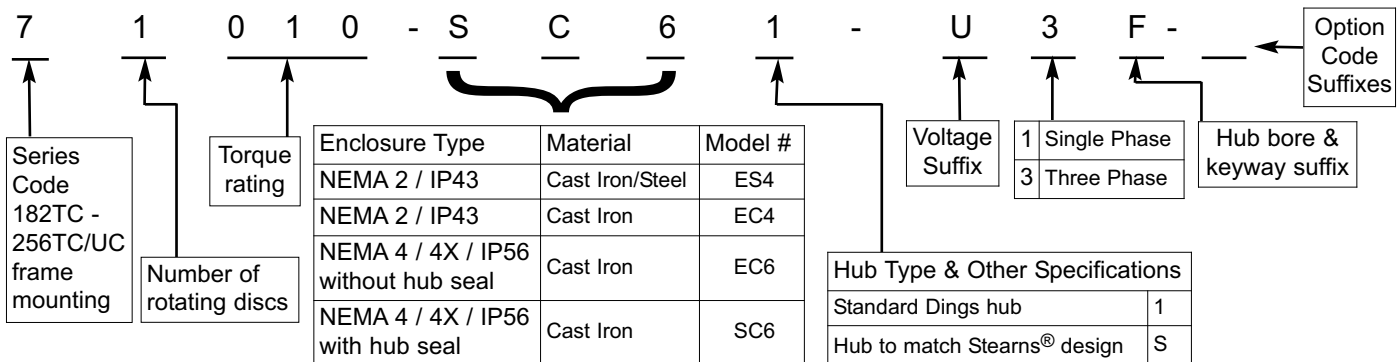
### NEMA 4 TEFC Specifications:

Reaction Time: 20-25 milliseconds (release and set)  
 AK: 8.5" Register / AJ: 7.25" Bolt Circle  
 Maximum RPM: 3600  
 CSA File #LR13814  
 Coil insulation: Class H standard  
 Enclosure: Cast iron  
 External paint: Red primer  
 Lead wires: Conduit connections  
 Nameplate: Stamped stainless steel  
 Instructions and Parts Manual:  
 Dings Standard = BK4773  
 Stearns Replacement = BK4773S

### Design Features:

RoHS compliant  
 No disassembly required for mounting  
 Direct acting design with no linkages to break  
 Torque adjustable for specific applications  
 External manual release with automatic reset  
 One moving part for longer life  
 Splined hub  
 Spring set, electrically released  
 All position brake available

### Brake Model Number Definition



Standard Voltages	
(Single or three phase):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz
Special voltages available.	

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
F	7/8"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
J	1 1/4"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
M	1 5/8"	3/8" x 3/16"
Special bore sizes available.		

Available Options:	Prefix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Vertical Mounting, over motor	VO
Vertical Mounting, under motor	VU
Micro-Switch Warning	XS

Refer to pages 51-56 for option descriptions & pricing.

## NEMA 4 / IP56 Enclosure with hub seal DINGS STANDARD

Cast Iron Construction

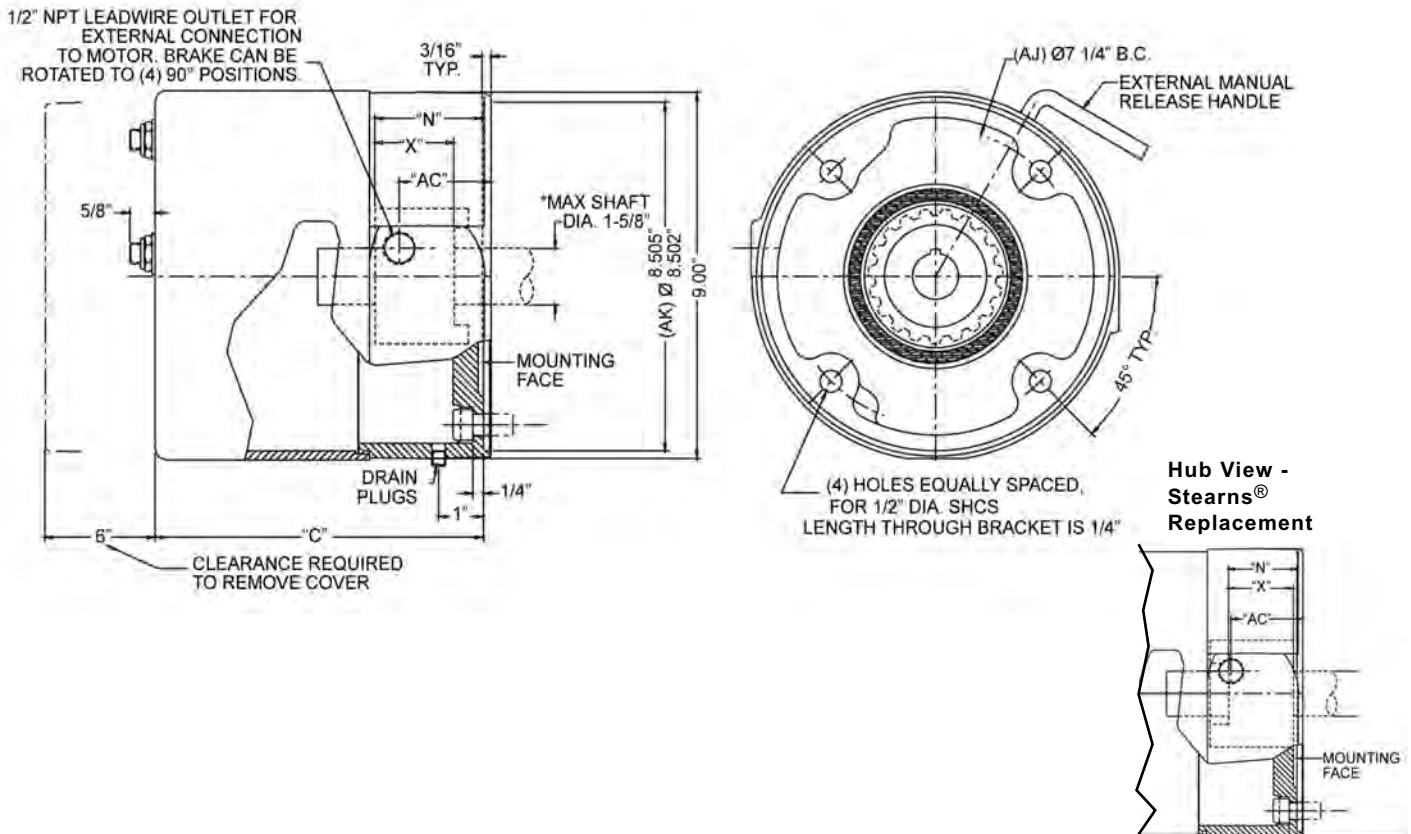
Torque lb-ft	Model # Dings Standard	Replaces Dings 2-post Brake Models	Replaces Dings 4-post Brake Models	Weight lbs.	Thermal Capacity HPS/Min	Dimensions in inches					List Price
						Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	C	N Hub Location	X Hub Length	AC	
10	71010-SC61	R71010-4	6-71010-57	41	10	.047	6.91	1.50	1.00	1.13	\$1,525
15	71015-SC61	R71015-4	6-71015-57	41	10	.047	6.91	1.50	1.00	1.13	\$1,575
25	72025-SC61	R72025-4	6-72025-57	43	11	.075	6.91	2.00	1.50	1.13	\$1,650
35	72035-SC61	R72035-4	6-72035-57	43	11	.075	6.91	2.00	1.50	1.13	\$1,800
50	73050-SC61	R73050-4	6-73050-57	48	12	.103	7.47	2.50	2.00	1.69	\$2,100
75	74075-SC61	R74075-4	6-74075-57	53	13	.130	8.03	3.00	2.50	2.25	\$2,600
105	74105-SC61	NEW	NEW	53	13	.130	8.03	3.00	2.50	2.25	\$3,300

## NEMA 4 / IP56 Enclosure with hub seal STEARNS® REPLACEMENT

Cast Iron Construction

Stearns® Replacement	Torque lb-ft	Dings Model # Stearns® Replacement	Direct Drop-in replacement for Stearns® Model	Weight lbs.	Thermal Capacity HPS/Min	Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	Dimensions in inches				List Price
							C	N Hub Location	X Hub Length	AC	
	10	71010-SC6S	1-087-012-00	41	10	.045	6.91	1.13	1.00	1.13	\$1,525
	15	71015-SC6S	1-087-022-00	41	10	.045	6.91	1.13	1.00	1.13	\$1,575
	25	71025-SC6S	1-087-032-00	41	11	.045	6.91	1.13	1.00	1.13	\$1,650
	35	72035-SC6S	1-087-042-00	43	11	.074	6.91	1.13	1.00	1.13	\$1,800
	50	72050-SC6S	1-087-052-00	43	12	.077	6.91	1.63	1.50	1.13	\$2,100
	75	73075-SC6S	1-087-062-00	48	13	.105	7.47	1.63	1.50	1.69	\$2,600
	105	74105-SC6S	1-087-082-00	53	13	.136	8.03	2.13	2.00	2.25	\$3,300

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# 70 Series End Mount

## 8700 Style

NEMA Frame Sizes 182TC through 256TC/UC

Torque Ratings: 10 to 105 lb-ft

## NEMA 4X, CSA 4, IP56\* with hub seal for TEFC applications



Direct replacement for Stearns® brakes

\*To obtain full IP56 protection, the customer shaft, hub bore, key and keyway's mating surface(s) must be sealed to meet IP56. Considerations should be reviewed to appropriately seal mounting hardware as well. Contact factory for details and/or assistance.

### NEMA 4X TEFC Specifications:

Reaction Time: 20-25 milliseconds (release and set)

AK: 8.5" Register / AJ: 7.25" Bolt Circle

Maximum RPM: 3600

CSA File #LR13814

Coil insulation: Class H standard

Enclosure: Cast iron

External paint: FDA approved white epoxy

Lead wires: Conduit connections

Nameplate: Stamped stainless steel

Instructions and Parts Manual:

Dings Standard = BK4774

Stearns Replacement = BK4774S

### Design Features:

RoHS compliant

No disassembly required for mounting

Direct acting design with no linkages to break

Torque adjustable for specific applications

External manual release with automatic reset

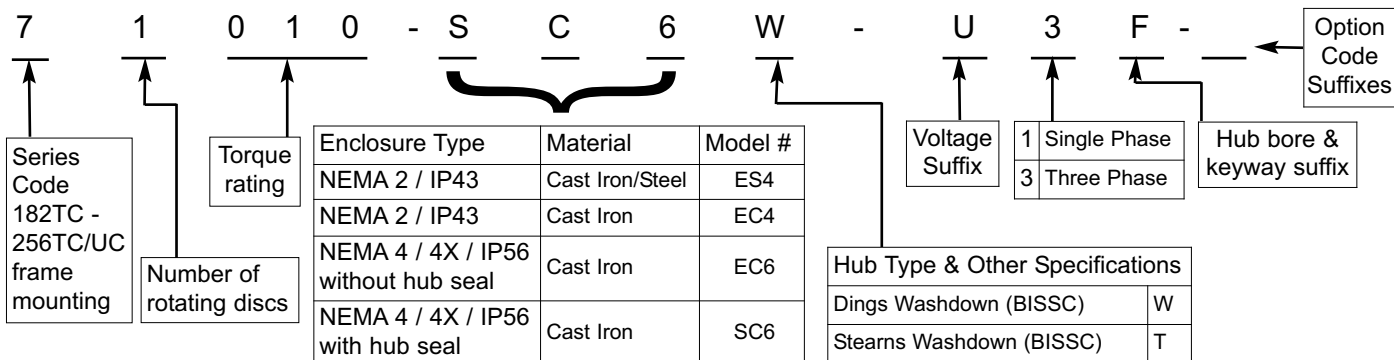
One moving part for longer life

Splined hub

Spring set, electrically released

All position brake available

### Brake Model Number Definition



Standard Voltages	
(Single or three phase):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz
Special voltages available.	

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
F	7/8"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
J	1 1/4"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
M	1 5/8"	3/8" x 3/16"
Special bore sizes available.		

Available Options:	Prefix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Vertical Mounting, over motor	VO
Vertical Mounting, under motor	VU
Micro-Switch Warning	XS
<b>Refer to pages 51-56 for option descriptions &amp; pricing.</b>	



# WASHDOWN NEMA 4X / IP56 Enclosure with hub seal DINGS STANDARD

Cast Iron Construction

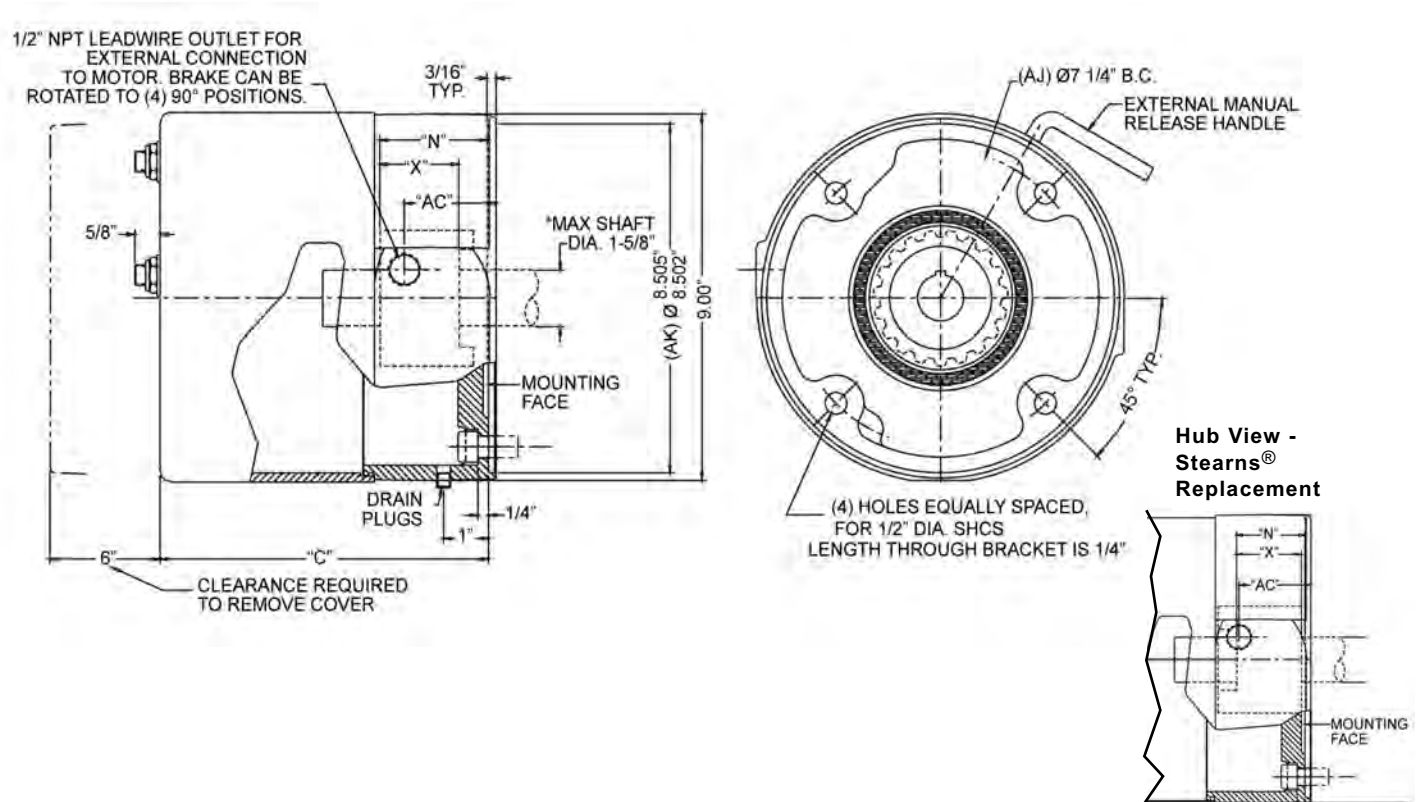
Torque lb-ft	Model # Dings Standard	Replaces Dings 2-post Brake Models	Replaces Dings 4-post Brake Models	Weight lbs.	Thermal Capacity HPS/Min	Dimensions in inches					List Price
						Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	C	N Hub Location	X Hub Length	AC	
10	71010-SC6W	6-71010-93	6-71010-94	41	10	.047	6.91	1.50	1.00	1.13	\$1,780
15	71015-SC6W	6-71015-93	6-71015-94	41	10	.047	6.91	1.50	1.00	1.13	\$1,830
25	72025-SC6W	6-72025-93	6-72025-94	43	11	.047	6.91	2.00	1.50	1.13	\$1,905
35	72035-SC6W	6-72035-93	6-72035-94	43	11	.075	6.91	2.00	1.50	1.13	\$2,055
50	73050-SC6W	6-73050-93	6-73050-94	48	12	.075	7.47	2.50	2.00	1.69	\$2,355
75	74075-SC6W	6-74075-93	6-74075-94	53	13	.103	8.03	3.00	2.50	2.25	\$2,855
105	74105-SC6W	NEW	NEW	53	13	.131	8.03	3.00	2.50	2.25	\$3,555

# WASHDOWN NEMA 4X / IP56 Enclosure with hub seal STEARNS® REPLACEMENT

Cast Iron Construction

Stearns® Replacement	Torque lb-ft	Dings Model # Stearns® Replacement	Direct Drop-in replacement for Stearns® Model	Weight lbs.	Thermal Capacity HPS/Min	Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	Dimensions in inches				List Price
							C	N Hub Location	X Hub Length	AC	
	10	71010-SC6T	1-087-012-B0	41	10	.045	6.91	1.13	1.00	1.13	\$1,780
	15	71015-SC6T	1-087-022-B0	41	10	.045	6.91	1.13	1.00	1.13	\$1,830
	25	71025-SC6T	1-087-032-B0	41	11	.045	6.91	1.13	1.00	1.13	\$1,905
	35	72035-SC6T	1-087-042-B0	43	11	.074	6.91	1.13	1.00	1.13	\$2,055
	50	72050-SC6T	1-087-052-B0	43	12	.077	6.91	1.63	1.50	1.13	\$2,355
	75	73075-SC6T	1-087-062-B0	48	13	.105	7.47	1.63	1.50	1.69	\$2,855
	105	74105-SC6T	1-087-082-B0	53	13	.136	8.03	2.13	2.00	2.25	\$3,555

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# 70 Series Double C Face

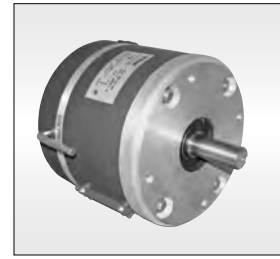
## 8700 Style

NEMA Frame Sizes 182TC through 256TC/UC

Torque Ratings: 10 to 105 lb-ft

## Dripproof NEMA 2, CSA 2, IP43

**NEW DESIGN**



**No Disassembly  
Required for Mounting**

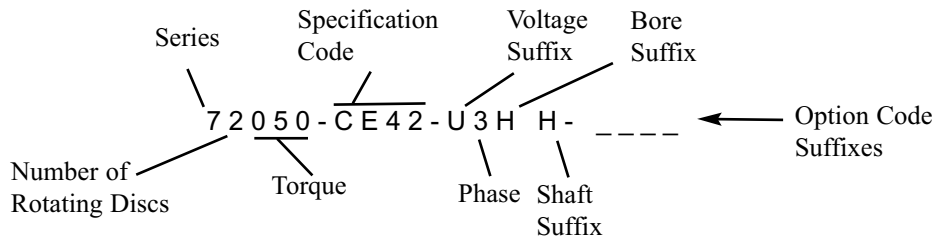
### Specifications:

Reaction Time: 20-25 milliseconds (release and set)  
 AK: 8.5" Register  
 AJ: 7.25" Bolt Circle  
 Maximum RPM: 3600  
 CSA File #LR13814  
 Coil insulation: Class H Standard  
 Construction: Cast Iron Bracket, Aluminum Housing  
 Instruction & Parts Manual: BK4770

### Design Features:

RoHS compliant  
 Torque adjustable for specific applications  
 Splined hub  
 Spring set, electrically released  
 Lead wires for conduit connections  
 (internal connection available)  
 Manual release, automatic reset  
 All position brake available

### Brake Model Number Definition



### Standard Voltages (Single or three phase):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

### Standard Hub Bore & Shaft Sizes:

Suffix	Bore Size	Shaft Size	Keyway
H	1 1/8"	1 1/8"	1/4" x 1/8"
K	1 3/8"	1 3/8"	5/16" x 5/32"
M	1 5/8"*	1 5/8"	3/8" x 3/16"

\*For brakes below 75 lb-ft torque rating that require 1-5/8" bore size, contact factory.

### Available Options:

	Suffix
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

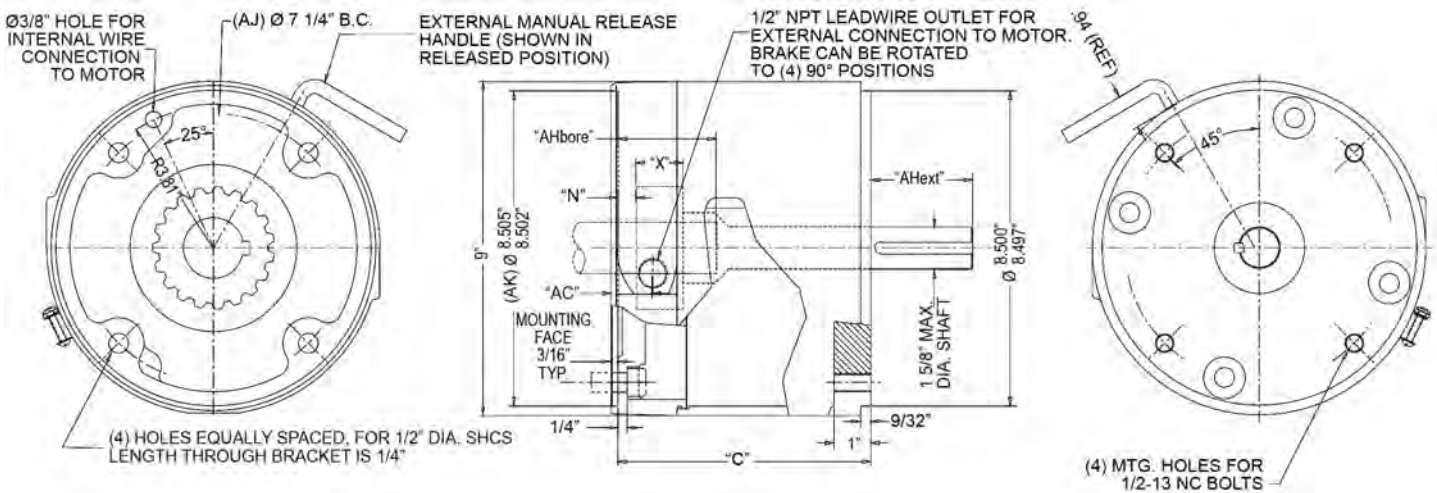
**Refer to pages 51-56 for option descriptions & pricing.**

**NEMA 2 / IP43 Enclosure**

Construction: Cast Iron Bracket, Aluminum Housing

Torque lb-ft	Dings Model #	Replaces Stearns® Model (NOTE1)	Thermal Capacity HPS/MIN	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches				AHbore Max Motor Shaft Length			AHext Brake Shaft Extension Length			List Price
					C	X	AC	N	1.125	1.375	1.625	1.125	1.375	1.625	
									Dia	Dia	Dia	Dia	Dia	Dia	
10	71010-CE42	1-087-711	10	0.055	7.53	1.00	1.13	0.13	2.63	3.13	N/A	2.63	3.13	3.75	\$2,375
15	71015-CE42	1-087-721	10	0.055	7.53	1.00	0.13	\$2,400							
25	72025-CE42	1-087-731	11	0.076	7.53	1.00	0.13	\$2,450							
35	72035-CE42	1-087-741	11	0.076	7.53	1.00	0.13	\$2,600							
50	72050-CE42	1-087-751	11	0.076	7.53	1.00	0.13	3.75	3.75	3.75	2.63	3.13	3.75	\$2,750	
75	74075-CE41	1-087-761	13	0.145	8.66	2.38	0.50							\$2,795	
105	74105-CE41	1-087-781	13	0.145	8.66	2.38	0.50							\$3,100	

NOTE 1: Hub length and location may differ.



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# 70 Series Double C Face

## 8700 Style

NEMA Frame Sizes 182TC through 256TC/UC

Torque Ratings: 10 to 105 lb-ft

## NEMA 4, CSA 4, IP56



**No Disassembly  
Required for Mounting**

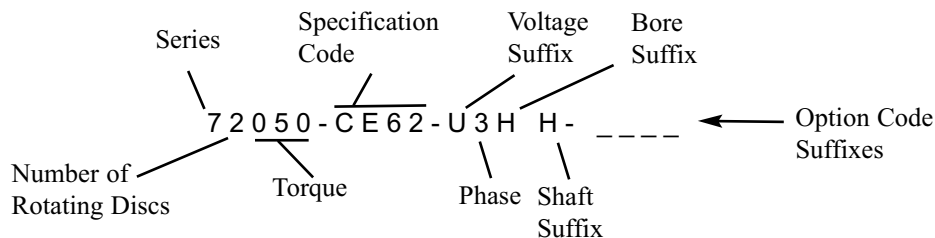
### Specifications:

Reaction Time: 20-25 milliseconds (release and set)  
 AK: 8.5" Register  
 AJ: 7.25" Bolt Circle  
 Maximum RPM: 3600  
 CSA File #LR13814  
 Coil insulation: Class H Standard  
 Construction: Cast Iron Bracket, Aluminum Housing  
 Instruction & Parts Manual: BK4770

### Design Features:

RoHS compliant  
 Torque adjustable for specific applications  
 Splined hub  
 Spring set, electrically released  
 Lead wires for conduit connections  
 (internal connection available)  
 Manual release, automatic reset  
 All position brake available

### Brake Model Number Definition



### Standard Voltages (Single or three phase):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

### Standard Hub Bore & Shaft Sizes:

Suffix	Bore Size	Shaft Size	Keyway
H	1 1/8"	1 1/8"	1/4" x 1/8"
K	1 3/8"	1 3/8"	5/16" x 5/32"
M	1 5/8"*	1 5/8"	3/8" x 3/16"

\*For brakes below 75 lb-ft torque rating that require 1-5/8" bore size, contact factory.

### Available Options:

	Suffix
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

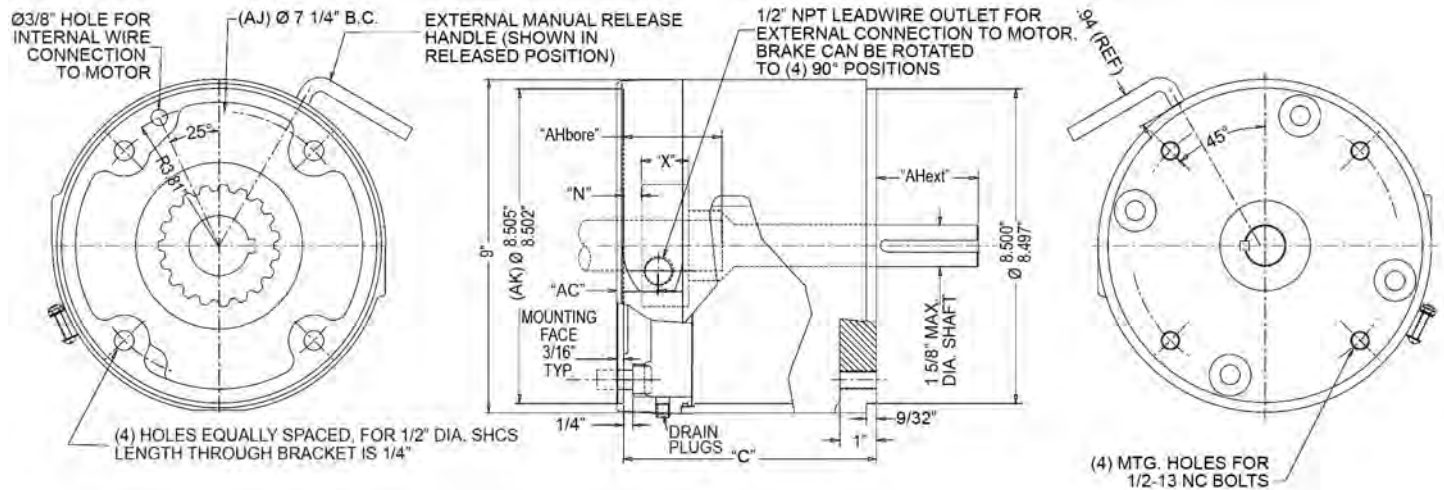
**Refer to pages 51-56 for option descriptions & pricing.**

**NEMA 4 / IP56 Enclosure**

Construction: Cast Iron Bracket, Aluminum Housing

Torque lb-ft	Dings Model #	Replaces Stearns® Model (NOTE1)	Thermal Capacity HPS/MIN	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches				AHbore Max Motor Shaft Length			AHext Brake Shaft Extension Length			List Price
					C	X	AC	N	1.125	1.375	1.625	1.125	1.375	1.625	
									Dia	Dia	Dia	Dia	Dia	Dia	
10	71010-CE62	1-087-712	10	0.055	7.53	1.00	1.13	0.13	2.63	3.13	N/A	2.63	3.13	3.75	\$2,925
15	71015-CE62	1-087-722	10	0.055	7.53	1.00	0.13	\$2,975							
25	72025-CE62	1-087-732	11	0.076	7.53	1.00	0.13	\$3,050							
35	72035-CE62	1-087-742	11	0.076	7.53	1.00	0.13	\$3,200							
50	72050-CE62	1-087-752	11	0.076	7.53	1.00	0.13	\$3,350							
75	74075-CE61	1-087-762	13	0.145	8.66	2.38	2.25	0.50	3.75	3.75	3.75	\$3,395			
105	74105-CE61	1-087-782	13	0.145	8.66	2.38	2.25	0.50				\$3,500			

NOTE 1: Hub length and location may differ.



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# 70 Series Double C Face

## 8700 Style

NEMA Frame Sizes 182TC through 256TC/UC

Torque Ratings: 10 to 105 lb-ft

## NEMA 4X, CSA 4, IP56

**NEW DESIGN**



**No Disassembly  
Required for Mounting**

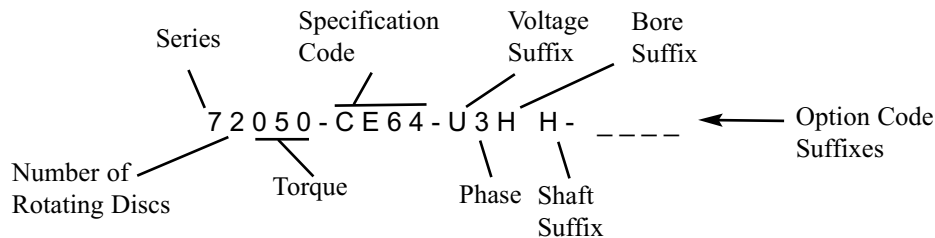
### Specifications:

Reaction Time: 20-25 milliseconds (release and set)  
 AK: 8.5" Register  
 AJ: 7.25" Bolt Circle  
 Maximum RPM: 3600  
 CSA File #LR13814  
 Coil insulation: Class H Standard  
 Construction: Cast Iron Bracket, Aluminum Housing  
 BISSC Certified Authorization #695  
 Exterior paint: FDA approved white epoxy paint  
 Plated internal parts - RoHS compliant  
 Instruction & Parts Manual: BK4771

### Design Features:

RoHS compliant  
 Torque adjustable for specific applications  
 Splined hub  
 Spring set, electrically released  
 Lead wires for conduit connections  
 (internal connection available)  
 Manual release, automatic reset  
 All position brake available

### Brake Model Number Definition



### Standard Voltages (Single or three phase):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

### Standard Hub Bore & Shaft Sizes:

Suffix	Bore Size	Shaft Size	Keyway
H	1 1/8"	1 1/8"	1/4" x 1/8"
K	1 3/8"	1 3/8"	5/16" x 5/32"
M	1 5/8"*	1 5/8"	3/8" x 3/16"

\*For brakes below 75 lb-ft torque rating that require 1-5/8" bore size, contact factory.

### Available Options:

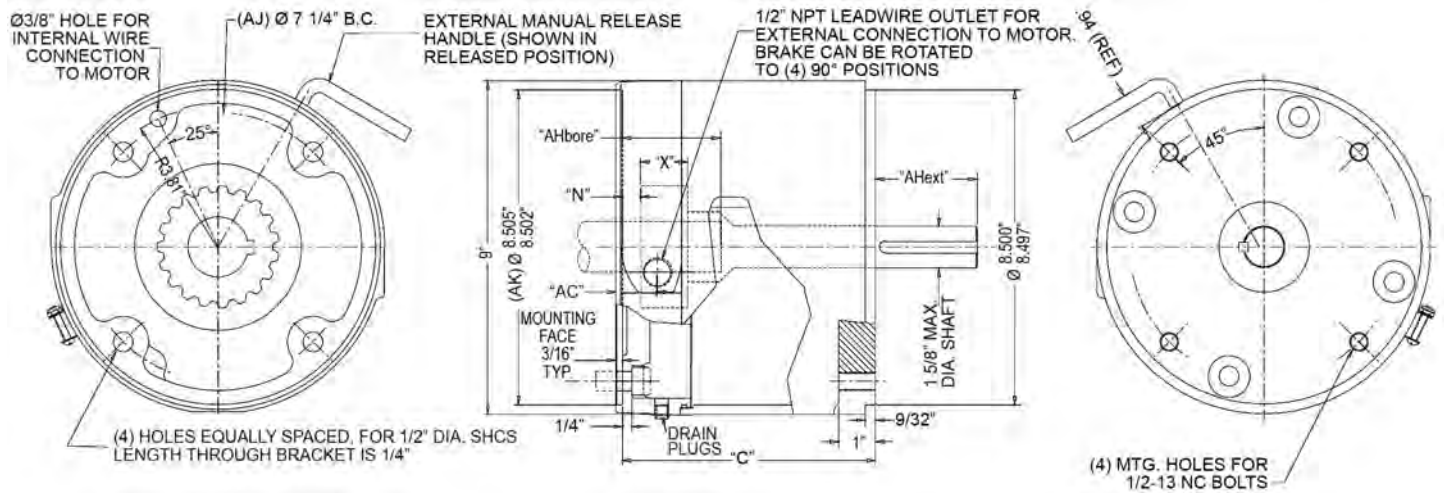
	Suffix
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

**Refer to pages 51-56 for option descriptions & pricing.**

**NEMA 4X / IP56 Enclosure** Construction: Cast Iron Bracket, Aluminum Housing

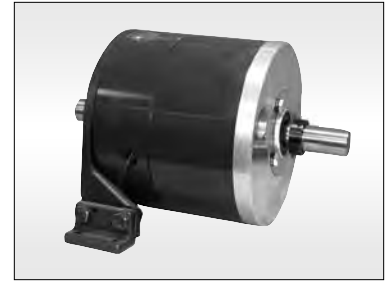
Torque lb-ft	Dings Model #	Replaces Stearns® Model (NOTE1)	Thermal Capacity HPS/MIN	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches				AHbore Max Motor Shaft Length			AHext Brake Shaft Extension Length			List Price
					C	X	AC	N	1.125	1.375	1.625	1.125	1.375	1.625	
									Dia	Dia	Dia	Dia	Dia	Dia	
10	71010-CE64	1-087-712	10	0.055	7.53	1.00	1.13	0.13	2.63	3.13	N/A	2.63	3.13	3.75	\$3,180
15	71015-CE64	1-087-722	10	0.055	7.53	1.00	0.13	\$3,230							
25	72025-CE64	1-087-732	11	0.076	7.53	1.00	0.13	\$3,305							
35	72035-CE64	1-087-742	11	0.076	7.53	1.00	0.13	\$3,455							
50	72050-CE64	1-087-752	11	0.076	7.53	1.00	0.13	3.75	3.75	3.75				\$3,605	
75	74075-CE63	1-087-762	13	0.145	8.66	2.38	0.50							\$3,650	
105	74105-CE63	1-087-782	13	0.145	8.66	2.38	0.50							\$3,755	

NOTE 1: Hub length and location may differ.



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# 70 Series Double Shafted with Foot Mount



Torque Ratings: 10 to 105 lb-ft

## Specifications:

Reaction Time: 20-25 milliseconds (release and set)  
 Maximum RPM: 3600  
 Coil insulation: Class H Standard

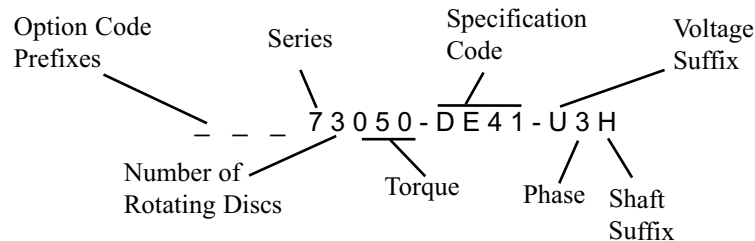
## Enclosure Types:

**Dripproof Enclosure, NEMA 2, CSA 2, IP43, Model 70000-DE41**  
**NEMA 4, CSA 4, IP56, Model 70000-DE61**  
 Cast iron bracket and aluminum housing  
 Exterior paint: Red primer

## Design Features:

RoHS compliant  
 Torque adjustable for specific applications  
 Splined hub  
 Spring set, electrically released  
 Lead wires for conduit connections  
 (internal connection available)  
 Manual release, automatic reset  
 All position brake available

## Brake Model Number Definition



### Standard Voltages

(single or three phase):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
5	208-230/460V, 60 Hz
R	115/230V, 60 Hz
1	115/208-230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

### Standard Shaft Sizes:

Suffix	Shaft Size	Keyway
H	1 1/8"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
M	1 5/8"	3/8" x 3/16"

Special shaft sizes available.

### Available Options:

	Prefix
Heavy-Duty Rotating Friction Disc	H
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

Refer to pages 51-56 for option descriptions & pricing.



## NEMA 2 Specifications

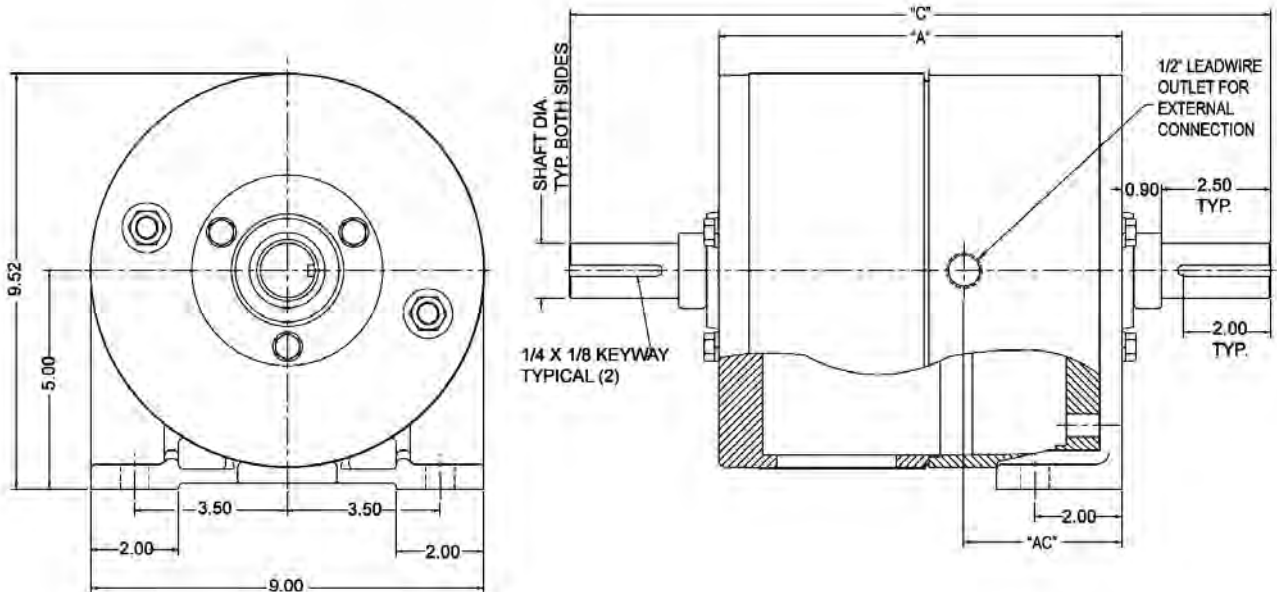
Torque lb-ft	Model #	Replacement for Stearns® Model (NOTE1)	Enclosure	Wt. Lbs.	Thermal Capacity HPS/MIN	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches				List Price
							A	C 1-1/8" shaft	C 1-3/8" shaft	AC	
10	71010-DE41	1-087-211-00	NEMA 2	45	10	0.069	NEW BRAKE DESIGN- CONTACT FACTORY FOR OUTLINE DRAWING				\$2,475
15	71015-DE41	1-087-221-00	NEMA 2	45	10	0.069					\$2,525
25	72025-DE41	1-087-231-00	NEMA 2	49	11	0.110					\$2,600
35	72035-DE41	1-087-241-00	NEMA 2	49	11	0.110					\$2,750
50	73050-DE41	1-087-251-00	NEMA 2	53	12	0.150					\$3,050
75	74075-DE41	1-087-261-00	NEMA 2	57	13	0.190					\$3,550
105	74105-DE41	1-087-281-00	NEMA 2	57	13	0.190					\$4,250

## NEMA 4 Specifications

Torque lb-ft	Model #	Replacement for Stearns® Model (NOTE1)	Enclosure	Wt. Lbs.	Thermal Capacity HPS/MIN	Inertia Wk <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches				List Price
							A	C 1-1/8" shaft	C 1-3/8" shaft	AC	
10	71010-DE61	1-087-212-00	NEMA 4	45	10	0.069	NEW BRAKE DESIGN- CONTACT FACTORY FOR OUTLINE DRAWING				\$2,675
15	71015-DE61	1-087-222-00	NEMA 4	45	10	0.069					\$2,725
25	72025-DE61	1-087-232-00	NEMA 4	49	11	0.110					\$2,800
35	72035-DE61	1-087-242-00	NEMA 4	49	11	0.110					\$2,950
50	73050-DE61	1-087-252-00	NEMA 4	53	12	0.150					\$3,250
75	74075-DE61	1-087-262-00	NEMA 4	57	13	0.190					\$3,750
105	74105-DE61	1-087-282-00	NEMA 4	57	13	0.190					\$4,450

NOTE 1: Not a direct drop-in for Stearns models; review outline drawing and dimensions.

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# 80 Series End Mount

NEMA Frame Sizes 284TC/UC, 286TC/UC

Torque Ratings: 25 to 175 lb-ft

## Dripproof NEMA 2, CSA 2, IP41



**No Disassembly  
Required for Mounting**

### 80 Series Specifications:

Reaction Time: 20-25 milliseconds  
(release and set)

AK: 10.5" Register

AJ: 9.00" Bolt Circle

Maximum RPM: 2400

CSA File #LR13814

Coil insulation: Class H

### NEMA 2 Specifications:

External paint: Red primer

Lead wires: Internal or conduit connections

Nameplate: Stamped stainless steel

HEAVY DUTY 4 Post Design

Instruction & Parts Manual:

NEMA 2 cast iron/steel: BK4804

NEMA 2 cast iron/aluminum: BK4604

### Design Features:

RoHS compliant

No disassembly required for mounting

Direct acting design with no linkages to break

One moving part for longer life

Torque adjustable for specific applications

Splined hub

Spring set, electrically released

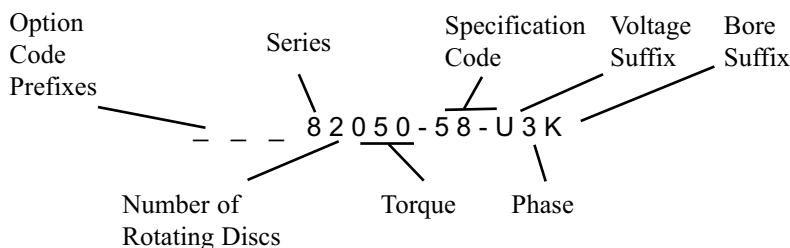
Manual release, automatic reset

All position brake available

**External manual release available**

**Refer to brake options on pages 51-56**

### Brake Model Number Definition



#### Standard Voltages (single and three phase):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
R	115/230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

#### Standard Hub Bore Sizes:

Suffix	Size	Keyway Width
F	7/8"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
J	1 1/4"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
M	1 5/8"	3/8" x 3/16"
N	1 7/8"	1/2" x 1/4"

Special bore sizes available.

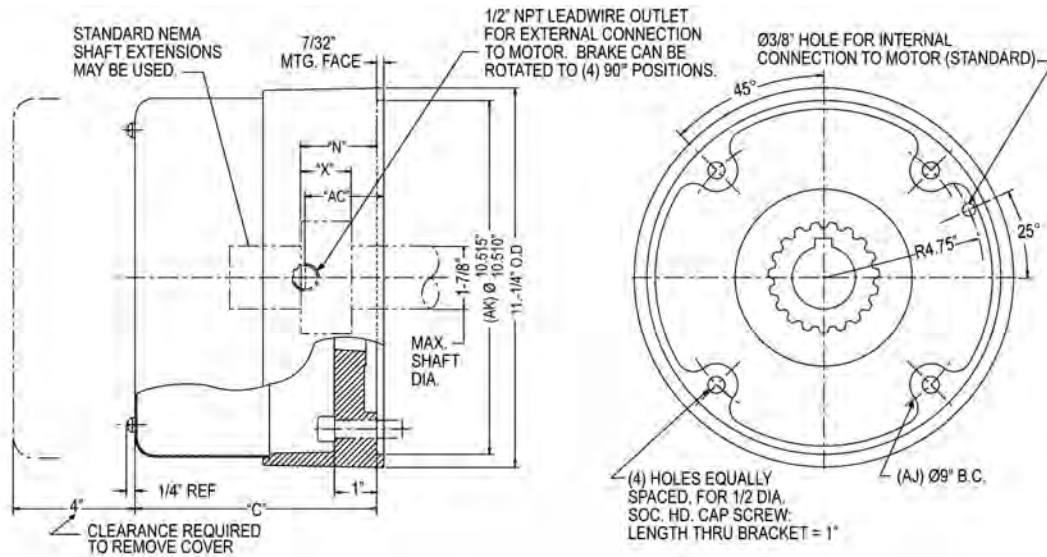
#### Available Options:

	Prefix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Ductile Iron Stationary Disc	E
Foot Mounting Bracket	F
Harsh Environment Protection	G
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
High Tensile Studs	J
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

**Refer to pages 51-56 for option descriptions & pricing.**

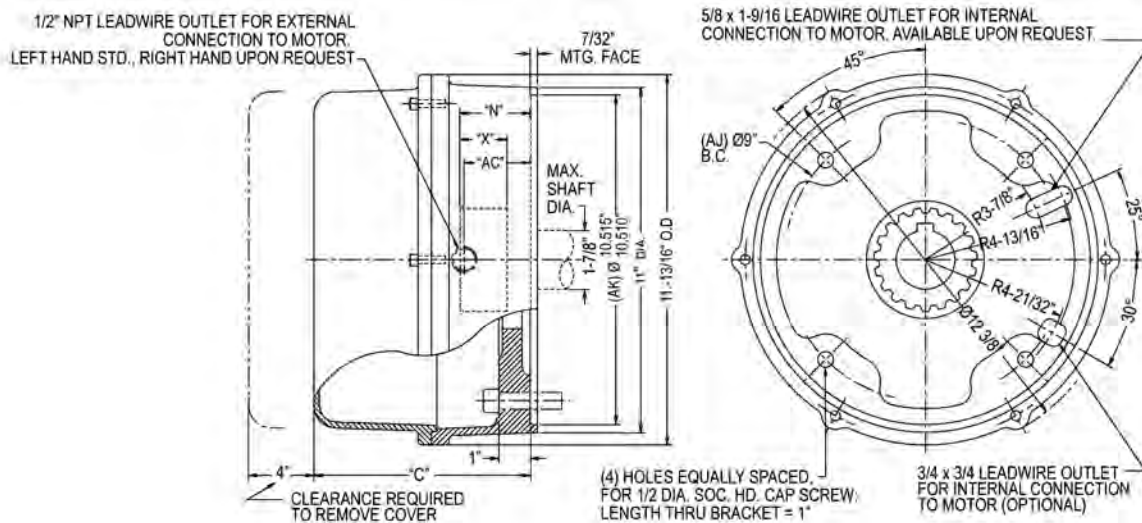
## NEMA 2 / IP41 Enclosure, Cast Iron/Steel

Torque lb-ft	Model #	Construction	Wt. Lbs.	Thermal Capacity HPS/Min	Inertia WK <sup>2</sup> Lb-Ft <sup>2</sup>	Dimensions in inches				List Price
						C	N	X	AC	
25	81025-58	Cast Iron/Steel	57	15	0.084	5.95	1.75	1.00	1.48	\$1,500
35	81035-58	Cast Iron/Steel	57	15	0.084	5.95	1.75	1.00	1.48	\$1,600
50	82050-58	Cast Iron/Steel	65	17	0.158	6.58	2.25	1.50	2.10	\$1,650
70	82070-58	Cast Iron/Steel	65	17	0.158	6.58	2.25	1.50	2.10	\$2,100
75	83075-58	Cast Iron/Steel	70	19	0.233	7.20	2.75	2.00	2.73	\$2,150
105	83105-58	Cast Iron/Steel	70	19	0.233	7.83	2.75	2.00	3.35	\$2,800
125	84125-58	Cast Iron/Steel	75	21	0.307	8.12	3.25	2.50	3.60	\$3,300
175	85175-58	Cast Iron/Steel	81	21	0.384	8.75	3.87	3.12	4.23	\$4,500



## NEMA 2 / IP41 Enclosure, Cast Iron/Aluminum

Torque lb-ft	Model No.	Wt. Lbs.	Thermal Capacity HPS/Min	Inertia WK <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches				List Price
					C	N	X	AC	
25	81025-28	60	15	0.084	6.31	1.75	1.00	1.73	\$1,830
35	81035-28	60	15	0.084	6.31	1.75	1.00	1.73	\$1,880
50	82050-28	68	17	0.158	6.94	2.25	1.50	2.35	\$1,930
70	82070-28	68	17	0.158	6.94	2.25	1.50	2.35	\$2,180
75	83075-28	73	19	0.233	7.56	2.75	2.00	2.98	\$2,430
105	83105-28	74	19	0.233	7.56	2.75	2.00	2.98	\$2,910
125	84125-28	79	21	0.307	8.12	3.25	2.50	3.60	\$3,380
175	85175-28	85	21	0.384	8.81	3.87	3.12	4.23	\$4,580



# 80 Series End Mount

NEMA Frame Sizes 284TC/UC, 286TC/UC

Torque Ratings: 25 to 175 lb-ft

## NEMA 4, CSA 4, IP56 without hub seal for Non-TEFC applications



**No Disassembly  
Required for Mounting**

### 80 Series Specifications:

Reaction Time: 20-25 milliseconds  
(release and set)

AK: 10.5" Register

AJ: 9.00" Bolt Circle

Maximum RPM: 2400

CSA File #LR13814

Coil insulation: Class H

### NEMA 4 Non-TEFC Specifications:

Without hub seal for non-TEFC applications

External paint: Red primer

Lead wires: Internal or conduit connections

Nameplate: Stamped stainless steel

HEAVY DUTY 4 Post Design

Instruction & Parts Manual: BK4814

### Design Features:

RoHS compliant

No disassembly required for mounting

Direct acting design with no linkages to break

One moving part for longer life

Torque adjustable for specific applications

Splined hub

Spring set, electrically released

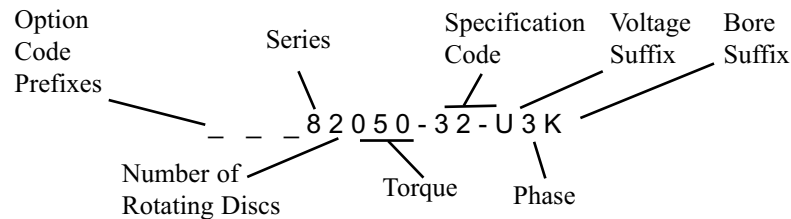
Manual release, automatic reset

All position brake available

**External manual release available**

**Refer to brake options on pages 51-56**

### Brake Model Number Definition



#### Standard Voltages (single and three phase):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
R	115/230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

#### Standard Hub Bore Sizes:

Suffix	Size	Keyway Width
F	7/8"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
J	1 1/4"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
M	1 5/8"	3/8" x 3/16"
N	1 7/8"	1/2" x 1/4"

Special bore sizes available.

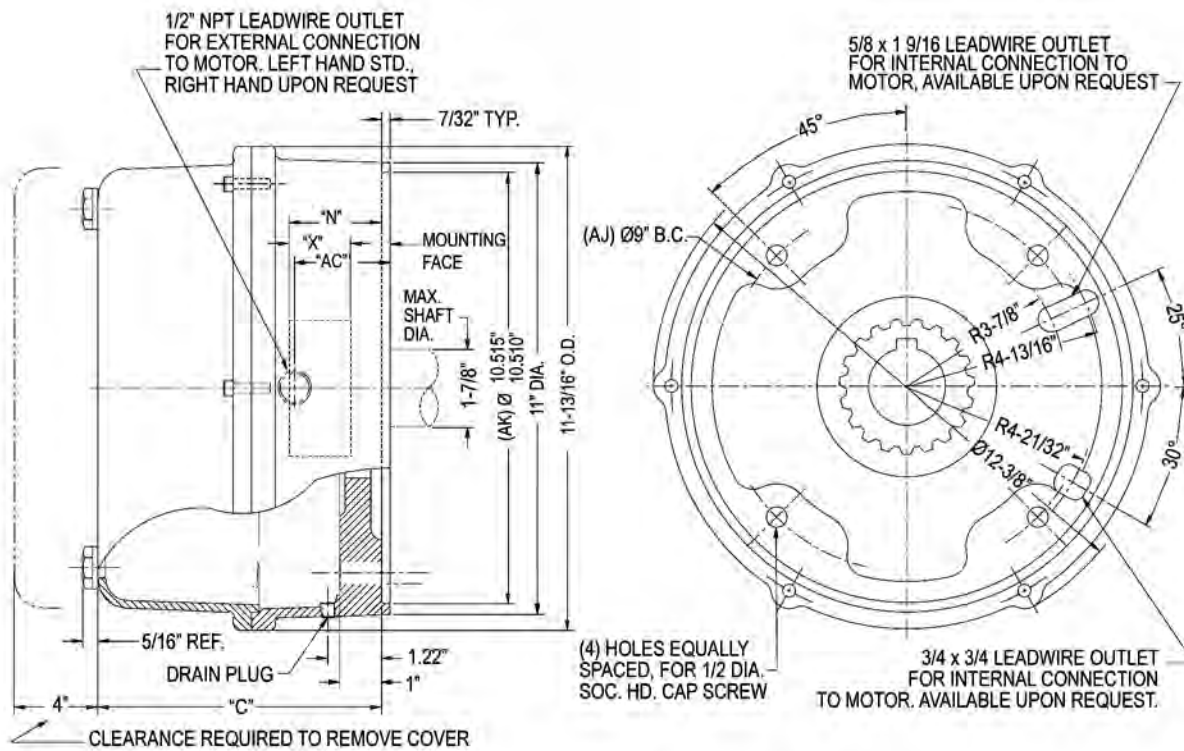
#### Available Options:

Option	Prefix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Ductile Iron Stationary Disc	E
Foot Mounting Bracket	F
Harsh Environment Protection	G
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
High Tensile Studs	J
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

**Refer to pages 51-56 for option descriptions & pricing.**

## NEMA 4 / IP56 Enclosure without hub seal for non-TEFC applications

Torque lb-ft	Model No.	Construction	Wt. Lbs.	Thermal Capacity HPS/Min	Inertia WK <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches				List Price
						C	N	X	AC	
25	81025-32	Cast Iron	57	15	0.084	6.25	1.75	1.00	1.73	\$2,000
35	81035-32	Cast Iron	57	15	0.084	6.25	1.75	1.00	1.73	\$2,150
50	82050-32	Cast Iron	65	17	0.158	6.87	2.25	1.50	2.35	\$2,350
70	82070-32	Cast Iron	65	17	0.158	6.87	2.25	1.50	2.35	\$2,600
75	83075-32	Cast Iron	70	19	0.233	7.50	2.75	2.00	2.98	\$2,850
105	83105-32	Cast Iron	70	19	0.233	7.50	2.75	2.00	2.98	\$3,300
125	84125-32	Cast Iron	75	21	0.307	8.12	3.25	2.50	3.60	\$3,800
175	85175-32	Cast Iron	81	21	0.384	8.75	3.87	3.12	4.23	\$5,850



# 80 Series End Mount

NEMA Frame Sizes 284TC/UC, 286TC/UC

Torque Ratings: 25 to 175 lb-ft

## NEMA 4, CSA 4, IP56\* with hub seal for TEFC applications

\*To obtain full IP56 protection, the customer shaft, hub bore, key and keyway's mating surface(s) must be sealed to meet IP56. Considerations should be reviewed to appropriately seal mounting hardware as well. Contact factory for details and/or assistance.



**No Disassembly  
Required for Mounting**

### 80 Series Specifications:

Reaction Time: 20-25 milliseconds  
(release and set)  
AK: 10.5" Register  
AJ: 9.00" Bolt Circle  
Maximum RPM: 2400  
CSA File #LR13814  
Coil insulation: Class H

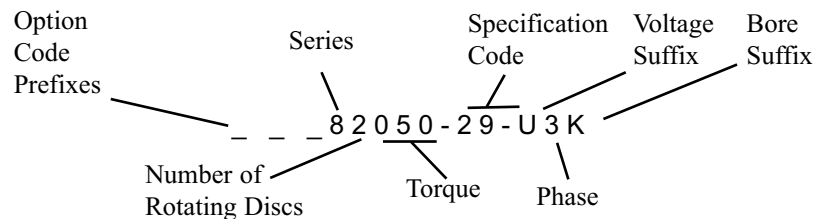
### Design Features:

RoHS compliant  
No disassembly required for mounting  
Direct acting design with no linkages to break  
One moving part for longer life  
Torque adjustable for specific applications  
Splined hub  
Spring set, electrically released  
Manual release, automatic reset  
All position brake available  
**External manual release available**  
**Refer to brake options on pages 51-56**

### NEMA 4 TEFC Specifications:

External paint: Red primer  
Lead wires: Conduit connections  
Nameplate: Stamped stainless steel  
HEAVY DUTY 4 Post Design  
Instruction & Parts Manual: BK4814

### Brake Model Number Definition



#### Standard Voltages (single and three phase):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
R	115/230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

#### Standard Hub Bore Sizes:

Suffix	Size	Keyway Width
F	7/8"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
J	1 1/4"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
M	1 5/8"	3/8" x 3/16"
N	1 7/8"	1/2" x 1/4"

Special bore sizes available.

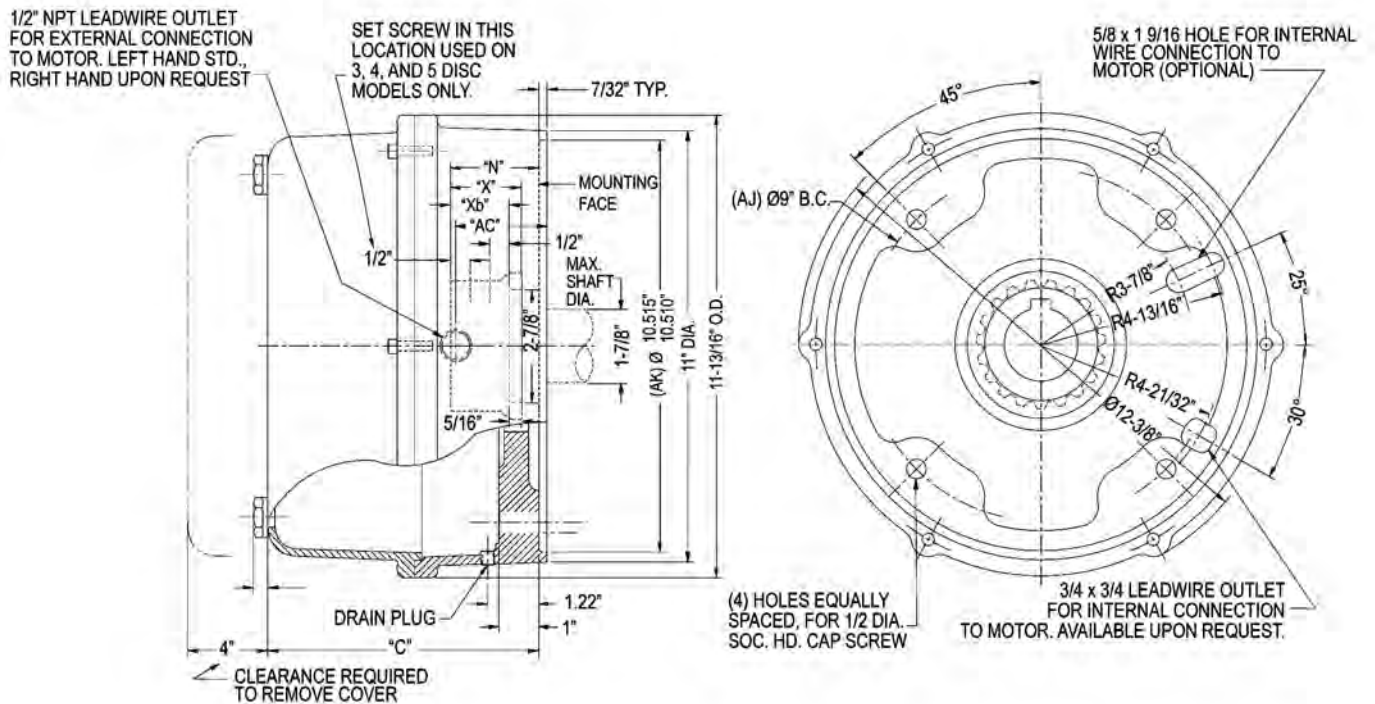
#### Available Options:

Option	Prefix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Ductile Iron Stationary Disc	E
Foot Mounting Bracket	F
Harsh Environment Protection	G
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
High Tensile Studs	J
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

**Refer to pages 51-56 for option descriptions & pricing.**

## NEMA 4 / IP56 Enclosure with hub seal

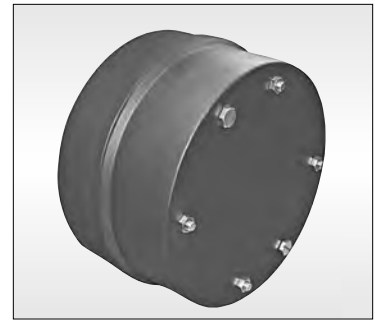
Torque lb-ft	Model No.	Construction	Wt. Lbs.	Thermal Capacity HPS/Min	Inertia WK <sup>2</sup> lb-ft <sup>2</sup>	Dimensions in inches					List Price
						C	N	X	Xb	AC	
25	81025-29	Cast Iron	57	15	0.084	6.25	1.75	1.31	1.00	1.73	\$2,100
35	81035-29	Cast Iron	57	15	0.084	6.25	1.75	1.31	1.00	1.73	\$2,250
50	82050-29	Cast Iron	65	17	0.158	6.87	2.25	1.81	1.50	2.35	\$2,450
70	82070-29	Cast Iron	65	17	0.158	6.87	2.25	1.81	1.50	2.35	\$2,700
75	83075-29	Cast Iron	70	19	0.233	7.50	2.75	2.31	2.00	2.98	\$2,950
105	83105-29	Cast Iron	70	19	0.233	7.50	2.75	2.31	2.00	2.98	\$3,400
125	84125-29	Cast Iron	75	21	0.307	8.12	3.25	2.81	2.50	3.60	\$3,900
175	85175-29	Cast Iron	81	21	0.384	8.75	3.87	3.44	3.13	4.23	\$5,950



# 90 Series End Mount

NEMA Frame Sizes 324TC/UC/TSC/USC  
through 405TC/UC/TSC/USC  
Torque Ratings: 125 to 450 lb-ft

Direct “Drop-in” Replacement for Stearns® 82,000 Series



**No Disassembly  
Required for Mounting**

## Specifications:

- Reaction Time: 20-25 milliseconds (release and set)
- AK: 12.5” Register
- AJ: 11” Bolt Circle
- Thermal Capacity: 20 HPS/MIN
- Maximum RPM: 1800
- Coil insulation: Class H Standard
- CSA File #LR13814 (IEEE nameplate standard)
- External paint: Red primer
- Instructions & parts manual:
  - NEMA 2 = BK4699
  - NEMA 4 = BK4696

## Design Features:

- RoHS compliant
- Torque adjustable for specific applications
- Splined hub
- Spring set, electrically released
- Lead wires for conduit connections
- Manual release, automatic reset
- High tensile studs standard

## Enclosure Types:

### Dripproof Enclosure 90000-50

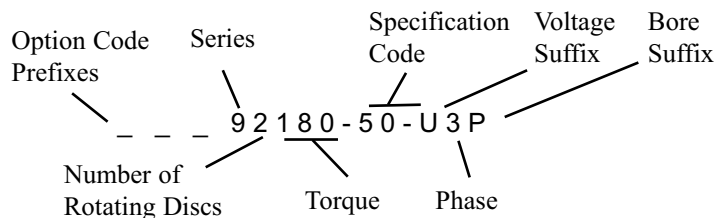
- NEMA 2, CSA 2, IP41
- Cast iron cover and bracket

### Waterproof/Dusttight Enclosure 90000-51

- NEMA 4, CSA 4, IP56\*
- Cast iron cover and bracket
- Also available without hub seal for non-TEFC applications, model 90000-52

\*To obtain full IP56 protection, the customer shaft, hub bore, key and keyway’s mating surface(s) must be sealed to meet IP56. Considerations should be reviewed to appropriately seal mounting hardware as well. Contact factory for details and/or assistance.

## Brake Model Number Definition



Standard Voltages (three phase only):	
Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
R	115/230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

Standard Hub Bore Sizes:		
Suffix	Size	Keyway
N	1 7/8"	1/2" x 1/4"
O	2 1/8"	1/2" x 1/4"
P	2 3/8"	5/8" x 5/16"
Q	2 7/8"	3/4" x 3/8"

Special bore sizes available.

Available Options:	Prefix
Adapter to Larger Frame Size(s)	A
Reverse Adapter	AB
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
External Breather	K
Marine/Maritime Duty with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	M
Marine/Maritime Duty	N
Tropical Protection	P
Internal Space Heater	R
Stainless Steel Stationary Disc	S
Through Shaft	T
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU
Micro-Switch Warning	XS

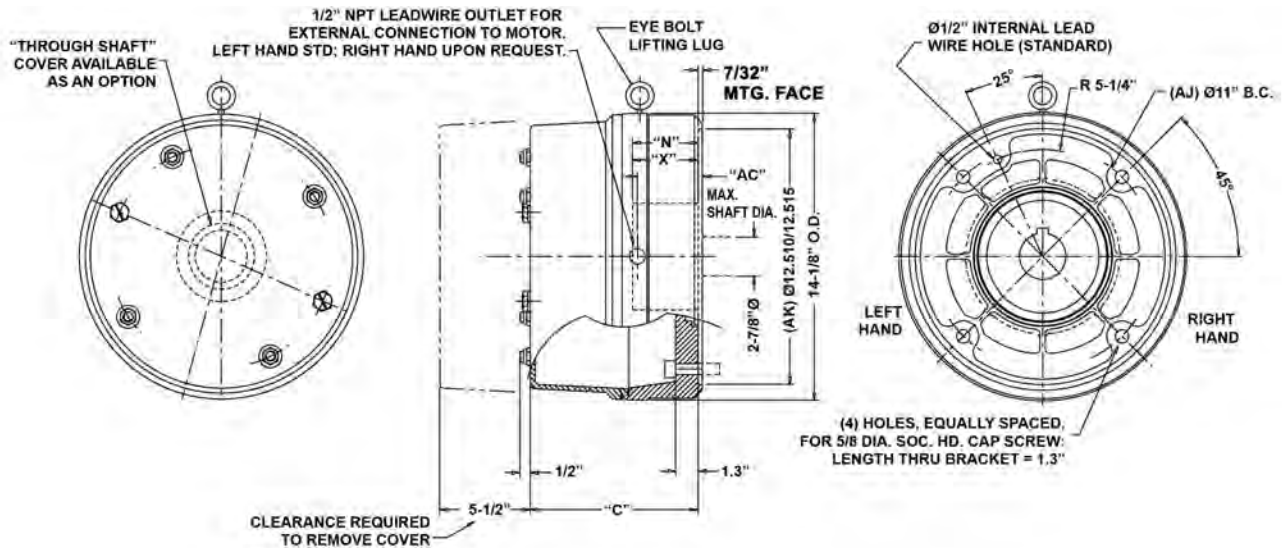
**Refer to pages 51-56 for option descriptions & pricing.**



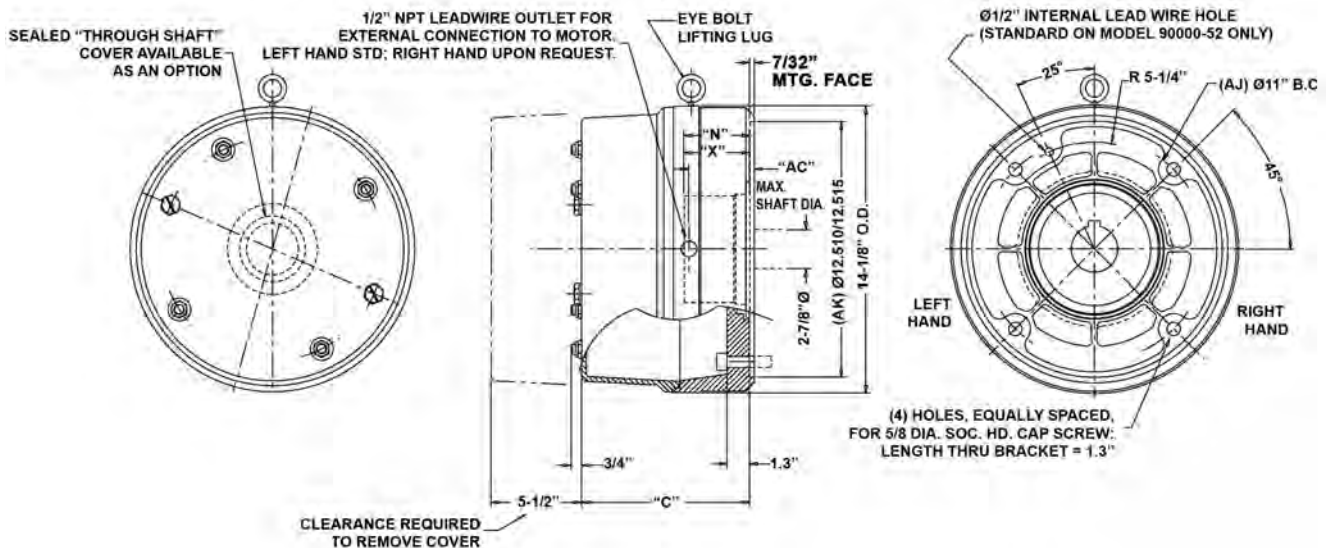
Torque lb-ft	Model #	Replacement for Stearns® Model	Enclosure	Construction	Wt. Lbs.	Inertia Wk <sup>2</sup> Lb-Ft <sup>2</sup>	Dimensions in inches				List Price
							C	N	X	AC	
125	92125-50	1-082-011-02	NEMA 2	Cast Iron	126	1.0	7.88	2.31	2.31	2.19	\$4,800
	92125-51	1-082-012-02	NEMA 4	Cast Iron	128	1.0	7.88	2.31	2.31	2.19	\$6,250
180	92180-50	1-082-021-02	NEMA 2	Cast Iron	126	1.0	7.88	2.31	2.31	2.19	\$5,150
	92180-51	1-082-022-02	NEMA 4	Cast Iron	128	1.0	7.88	2.31	2.31	2.19	\$6,600
230	93230-50	1-082-031-02	NEMA 2	Cast Iron	139	1.3	8.25	2.94	2.94	2.19	\$5,700
	93230-51	1-082-032-02	NEMA 4	Cast Iron	139	1.3	8.25	2.94	2.94	2.19	\$7,150
270	93270-50	—	NEMA 2	Cast Iron	139	1.3	8.25	2.94	2.94	2.19	\$6,350
	93270-51	—	NEMA 4	Cast Iron	139	1.3	8.25	2.94	2.94	2.19	\$7,650
330	94330-50*	1-082-041-02*	NEMA 2	Cast Iron	147	1.6	8.88	3.56	3.56	3.44	\$7,800
	94330-51*	1-082-042-02*	NEMA 4	Cast Iron	149	1.6	8.88	3.56	3.56	3.44	\$8,800
360	94360-50	—	NEMA 2	Cast Iron	147	1.6	8.88	3.56	3.56	3.44	\$8,050
	94360-51	—	NEMA 4	Cast Iron	149	1.6	8.88	3.56	3.56	3.44	\$9,050
450	95450-50*	1-082-051-02*	NEMA 2	Cast Iron	157	1.9	9.28	4.19	4.19	4.06	\$8,700
	95450-51*	1-082-052-02*	NEMA 4	Cast Iron	159	1.9	9.28	4.19	4.19	4.06	\$9,700

\*Specify requirement for Stearns replacement at time of order Stearns® is a registered trademark of Rexnord Corporation.

### OUTLINE DRAWING, NEMA 2 ENCLOSURE



### OUTLINE DRAWING, NEMA 4 ENCLOSURE



# Series 100

## 8600 Style

NEMA Frame Sizes 444 and 445TC/UC/TSC/USC (16.0" AK, 14.0" AJ)  
or 505TC/UC/TSC/USC (16.5" AK, 14.5" AJ)

Torque Ratings: 500 - 1000 lb-ft

Replacement for Stearns®  
86,000 and 86,100 Series Brakes



**Available  
Mid-2017**

### Specifications:

Reaction Time: 20-25 milliseconds  
(release and set)  
444/445 Frame AK: 16.0" Register  
AJ: 14.00" Bolt Circle  
505TC Frame AK: 16.5" Register  
AJ: 14.50" Bolt Circle  
Maximum RPM: 1800  
CSA File Pending  
Coil insulation: Class H  
External paint: Red primer

### Design Features:

RoHS Compliant  
Direct acting design with no linkages to break  
Torque adjustable for specific applications  
External manual release with automatic reset  
One moving part for longer life  
Splined hub  
Spring set, electrically released

### Enclosure Types:

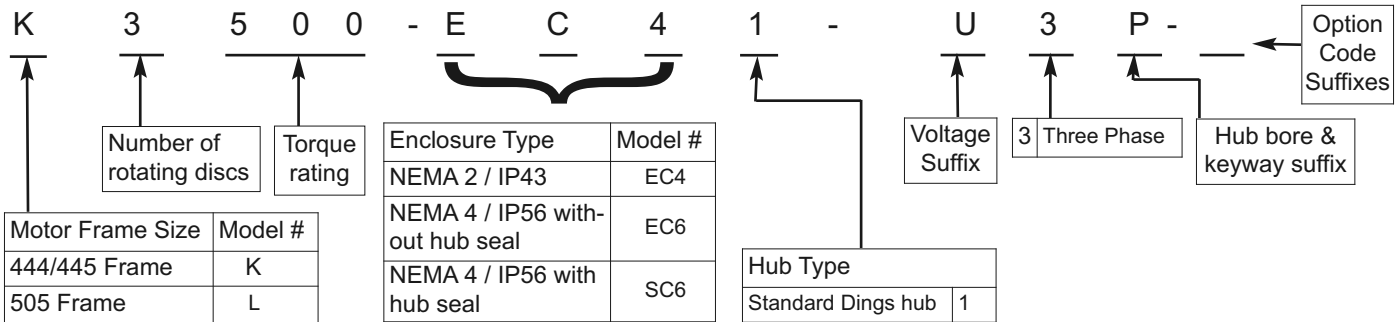
**Dripproof Enclosure NEMA 2, CSA 2, IP41**

Cast iron

**Waterproof/Dusttight Enclosure NEMA 4, CSA 4, IP56**

Cast iron

### Brake Model Number Definition



### Voltages (three phase only):

Suffix	Voltage
U	230/460V, 60 Hz or 190/380V, 50 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

### Hub Bore Sizes:

Suffix	Size	Keyway
P	2 3/8"	5/8" x 5/16"
Q	2 7/8"	3/4" x 3/8"
S	3 3/8"	7/8" x 7/16"
O	3 7/8"	1" x 1/2"

Special bore sizes available.

# Hazardous Location Brakes

A hazardous location is an explosive atmosphere due to the presence of flammable gases, vapors, or liquids (Class I), combustible dusts (Class II), or ignitable fibers & flyings (Class III). Dings provides brakes for Division 1, Class I Group C and D, and Division 1, Class II Groups E, F and G, hazardous locations. The National Electrical Code (NEC) defines hazardous locations by Class, Division and Group. For more information about hazardous locations please refer to: <http://www.ul.com/global/eng/pages/offerings/services/hazardouslocations/>.

## Hazardous Location Classifications

### Class I Locations

Locations in which ignitable concentrations of flammable gases, flammable liquid-produced vapors, or combustible liquid-produced vapors can exist under normal operating conditions. An electric disc brake for Class I locations must be capable of withstanding an explosion of a specified gas or vapor that may occur within it and prevent the ignition of the gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and operate at such an external temperature that a surrounding flammable atmosphere will not be ignited thereby.

### Class II Locations

Locations in which combustible dust is in the air under normal operating conditions in quantities sufficient to produce explosive or ignitable mixtures. An electric disc brake for Class II locations must be enclosed in a manner that excludes dusts and does not permit heat generated inside of the enclosure to cause ignition of exterior accumulations of a specified dust on or in the vicinity of the enclosure.

### Divisions

Each hazardous-location Class is also divided into two Divisions, 1 and 2. Division 1 brakes can be used in both Division 1 and Division 2 environments. Division 2 brakes can be used in Division 2 environments ONLY. Note that the brake and motor must be rated for the same Division; i.e., a Division 1 brake must be used on a motor which is also rated for Division 1.

#### Division 1

A Division 1 location is a location where an ignitable concentration of a flammable or combustible material is present under normal operating conditions.

#### Division 2

A Division 2 location is a location where an ignitable concentration of a flammable or combustible material is present only under abnormal operating condition.

### Groups

Class I gases and vapors are listed in four Groups: A, B, C and D. These materials are grouped according to explosion pressure, ignition temperature and the conductivity of the hazardous substance. Class II airborne dusts are listed in three Groups: E, F, and G. These groups are classified according to ignition temperature and electrical conductivity.

### Brake Selection

When selecting a Dings hazardous-location disc brake, the Class and Group designations of the hazardous atmosphere and its ignition temperature must be known. For more information on hazardous location responsibilities, see: <http://www.ul.com/global/eng/pages/offerings/services/hazardouslocations/>.

1. Determine the Class and Group designation of the hazardous atmosphere.
2. For Class I hazardous substances, determine the ignition temperature of the explosive gas or vapor.

Select a brake listed for the appropriate group and operating temperature code, with a maximum external operating temperature that does NOT exceed the ignition temperature of the explosive gas or vapor. The operating temperature code for Dings Hazardous Location brakes is T3C. For an explanation of temperature codes refer to: <http://www.ul.com/global/documents/offerings/services/hazardouslocations/CII-Tcodes>.

NOTE: Maximum exterior surface temperature is based on operation in an ambient of 32°F to 104°F (0° to 40°C).

### Brake Labels and Listing

Dings brakes for use in hazardous locations are marked to show the Class, Group, and Operating Temperature Code of the brake. Compliance with the NEC is demonstrated by UL Listing of the product in Underwriters Laboratories Hazardous Location Equipment Directory. A label displaying the UL Listing mark and required rating information will be found on each Dings brake to confirm the Listing. In Canada, the Canadian Standards Association (CSA) is an organization with the responsibility to publish and administer national electrical standards as well as to test and certify electrical products. The CSA mark is not on Dings hazardous-location brakes as standard, but can be requested as an option. Dings motor-mounted, hazardous-location electric disc brakes are Listed only when mounted directly to a Listed hazardous-location motor of the same Class and Group at the motor manufacturer's facility, and where the combination has been accepted by UL. This procedure completes the explosion-proof assembly of the brake. However, Listed hazardous-location brakes with a foot mounting option are also available for coupling to a motor, and may be installed by anyone. Installation and servicing must be in compliance with all existing local safety codes. All wiring and electrical connections must comply with the National Electric Code (NEC) and local electrical codes in effect at the time. For additional information see the UL website: <http://www.ul.com/hazloc/codes/html>. Hazardous Location inspection authorities are responsible for verifying and authorizing the use of suitably designed, manufactured and installed Hazardous Location equipment. When questions arise always consult the local Authority Having Jurisdiction (AHJ) for directions and approvals. Dings Division 1 hazardous location brakes are provided without gaskets. If the brake is used in a high humidity or low temperature environment, internal electric heaters should be used.

**NOTE: Foot mount required for hazardous location brakes if purchased by other than a U.L. authorized electric motor manufacturer or shop. Brakes used with a foot mount are suitable for use in Division 1 or Division 2 applications.**

3. For Class II hazardous substances, select a brake listed for the appropriate group and operating temperature code. The operating temperature code for Dings Hazardous Location brakes is T3C. For an explanation of temperature codes refer to: <http://www.ul.com/global/documents/offerings/services/hazardouslocations/CII-Tcodes>.

NOTE: Maximum exterior surface temperature is based on operation in an ambient of 32°F to 104°F (0° to 40°C).

### Thermal Considerations

One of the design requirements of hazardous location brakes is to limit exterior surface temperature. The surface temperature of the enclosure must not exceed a specified limit as a result of heat energy created in stopping the motor and load. This NEC restriction on the exterior surface temperature limits the hazardous-location brake's ability to dissipate heat, resulting in less thermal capacity than a comparable brake with a standard or dust-tight, waterproof enclosure. **THEREFORE, HAZARDOUS-LOCATION BRAKES ARE INTENDED ESSENTIALLY FOR NON-CYCLIC OR HOLDING PURPOSES, BUT MAY BE USED FOR STOPPING LIGHT INERTIAL LOADS.**

# 60 Series Hazardous Location

## DIVISION 1 HAZARDOUS LOCATION

NEMA Frame Sizes 56C through 145TC

Torque Ratings: 1.5 to 15 lb-ft



RoHS Compliance upon request- can be constructed to meet the requirements of the Restriction of Hazardous Substances Directive

### Specifications:

Reaction Time: 15-20 milliseconds (release and set)  
 AK: 4.5" Register  
 AJ: 5.88" Bolt Circle  
 Maximum RPM: 3600  
 Coil insulation: Class B  
 Instructions and Parts Manual: BK4614

### Enclosure Types:

Cast iron cover and bracket

### Enclosure Protection:

NEMA 2, and Hazardous Location NEMA 7, 9

### Certifications:

CSA File No. LR 19464 (CSA nameplate upon request)  
 UL File No. E27811 Class I Group C and D, Class II Groups E, F, and G

### Design Features:

Torque adjustable for specific applications  
 Splined hub  
 Spring set, electrically released  
 Manual release, automatic reset

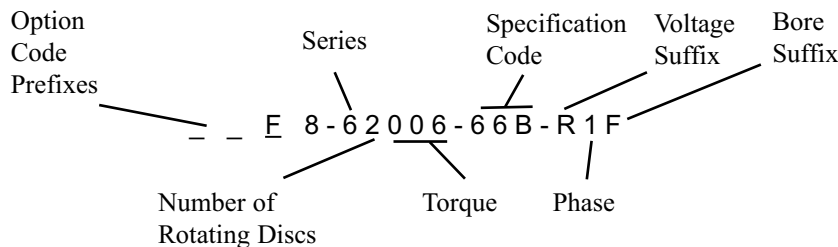
**NOTE: Foot mount required for hazardous location brakes if purchased by other than a U.L. authorized electric motor manufacturer or shop. Brakes used with a foot mount are suitable for use in Division 1 or Division 2 applications.**

**Special Note:** Dings 60 Series Hazardous Location Brakes are equipped with a thermal overload release mechanism. When the external surface of the brake approaches the specified temperature limit, the mechanism will automatically release the brake and hold it in the released position. This prevents the surface temperature from rising to a level that could ignite surrounding gases or dust by releasing the brake and thereby stopping a further increase in temperature.

**Caution:** Once the brake has been released by the thermal overload mechanism, control over the rotation of the motors and movement of the load is lost. This uncontrolled rotation of the motor and movement of the load could cause injury to personnel and damage to property.

Dings 60 Series Hazardous Location Brakes are also equipped with a thermal switch. When properly wired into the motor starting circuit, the thermal switch shuts down the motor before the thermal overload mechanism releases the brake. When the thermal switch activates, it stops the motor and load, preventing the uncontrolled motion described in the "caution" above. See bulletin BK4614X.

### Brake Model Number Definition



Standard Hub Bore Sizes:			Standard Voltages		Available Options:	
Suffix	Size	Keyway	(Single phase only):			Prefix
D	5/8"	3/16" x 3/32"	<b>Suffix</b>	<b>Voltage</b>	Foot Mounting Bracket	F
E	3/4"	3/16" x 3/32"	Y	110/220V, 50Hz	Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
F	7/8"	3/16" x 3/32"	U	230/460V, 60 Hz or 190/380V, 50 Hz	Vertical Mounting	
G	1"	3/16" x 3/32"	R	115/230V, 60 Hz	Vertical Over, or above motor	VO
H	1 1/8"	1/4" x 1/8"	T	220/440V, 60 Hz	Vertical Under, or below motor	VU
Special bore sizes available.			P	575V, 60 Hz	<b>Refer to pages 51-56 for option descriptions &amp; pricing.</b>	
			Special voltages available.			

# DIVISION 1 HAZARDOUS LOCATION

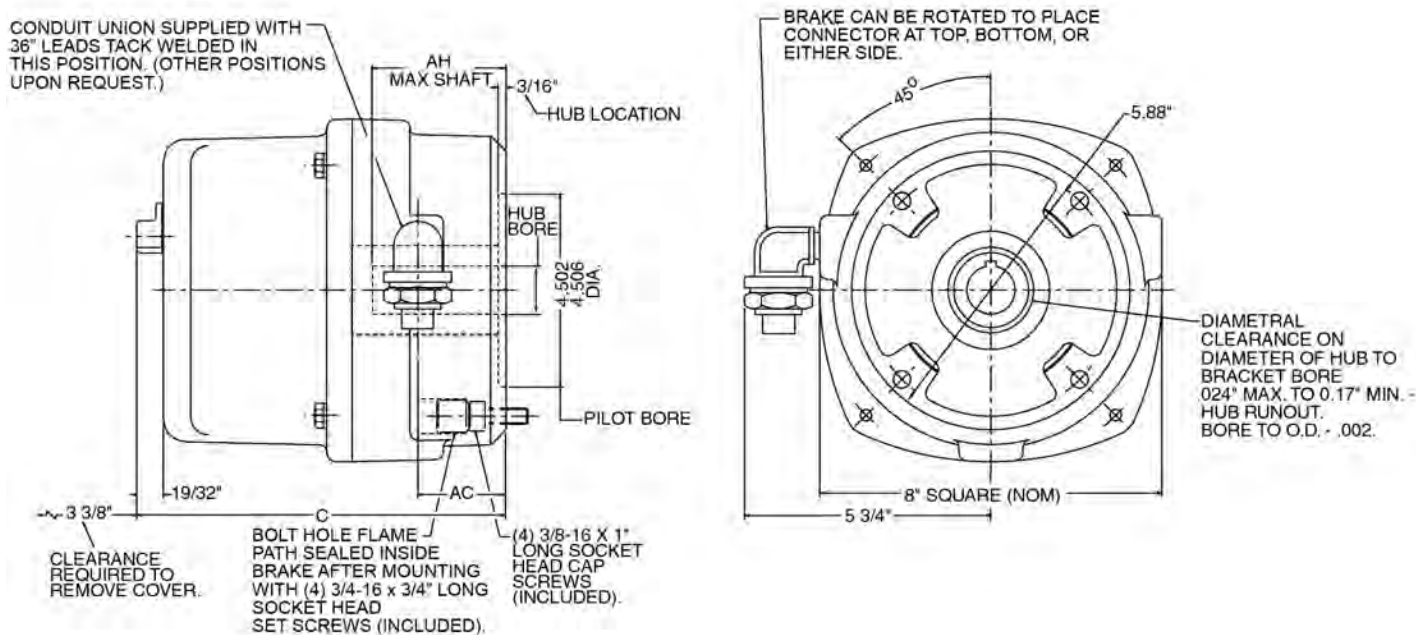
Torque lb-ft	Dings Model #	Replacement for Stearns® Model (NOTE1)	Construction	Wt. Lbs.	Thermal Capacity HPS/MIN*	Inertia WK <sup>2</sup> Lb.Ft. <sup>2</sup>	Dimensions in inches				List Price without foot mount	List Price with foot mount
							C	AH		AC		
								Max.	Min.			
1.5	F8-61001-66B	1-065-311-05	Cast Iron	42	6	0.020	7 15/16	2 3/8	1 3/4	2 1/16	\$2,330	\$2,850
3	F8-61003-66B	1-065-321-05	Cast Iron	42	6	0.020	7 15/16	2 3/8	1 3/4	2 1/16	\$2,450	\$2,970
6	F8-62006-66B	1-065-331-05	Cast Iron	44	6	0.030	8 5/16	2 3/4	2	2 7/16	\$2,590	\$3,110
10	F8-63010-66B	1-065-351-05	Cast Iron	47	6	0.040	8 11/16	3 1/8	2 1/4	2 13/16	\$2,795	\$3,315
15	F8-63015-66B	1-065-361-05	Cast Iron	47	6	0.040	8 11/16	3 1/8	2 1/4	2 13/16	\$2,915	\$3,435

\*Hazardous location brakes are intended for non-cyclic or holding purposes only, but may be used for stopping light inertial loads.

**NOTE 1: Not a direct drop-in for Stearns models; review outline drawing and dimensions, and specifications**

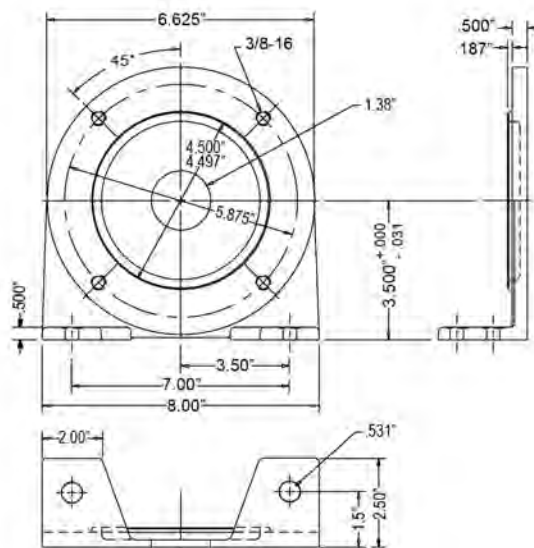
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## BRAKE DIMENSIONS



Hazardous location brakes are provided with a foot mounting bracket.

## FOOT MOUNTING BRACKET DIMENSIONS



# 70 Series Hazardous Location

## DIVISION 1 HAZARDOUS LOCATION

NEMA Frame Sizes 182TC through 256TC

Torque Ratings: 10 to 75 lb-ft



RoHS Compliance upon request- can be constructed to meet the requirements of the Restriction of Hazardous Substances Directive

### Specifications:

Reaction Time: 20-25 milliseconds (release and set)

AK: 8.5" Register

AJ: 7.25" Bolt Circle

Maximum RPM: 3600

Coil insulation: Class B Std., Class H Optional

Instructions and Parts Manual: BK4606

### Enclosure Types:

Cast iron cover and bracket R70000-9

### Enclosure Protection:

NEMA 2, and Hazardous Location NEMA 7, 9

### Certifications:

CSA File No. LR 19464 (CSA nameplate upon request)

UL File No. E27811 Class I Group C and D, Class II Groups E, F, and G

### Design Features:

Torque adjustable for specific applications

Splined hub

Spring set, electrically released

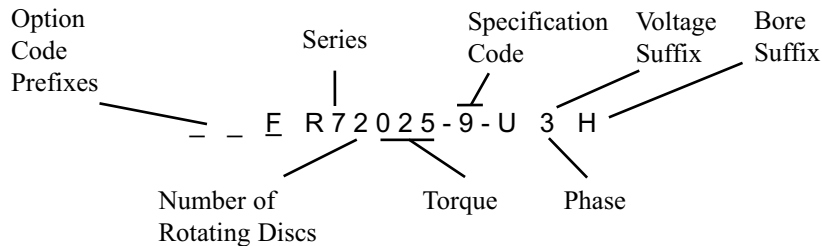
Manual release, automatic reset

**NOTE: Foot mount required for hazardous location brakes if purchased by other than a U.L. authorized electric motor manufacturer or shop. Brakes used with a foot mount are suitable for use in Division 1 or Division 2 applications.**

**Special Note:** Dings 70 Series Hazardous Location Brakes are equipped with a thermal overload release mechanism. When the external surface of the brake approaches the specified temperature limit, the mechanism will automatically release the brake and hold it in the released position. This prevents the surface temperature from rising to a level that could ignite surrounding gases or dust by releasing the brake and thereby stopping a further increase in temperature.

**Caution:** Once the brake has been released by the thermal overload mechanism, control over the rotation of the motors and movement of the load is lost. This uncontrolled rotation of the motor and movement of the load could cause injury to personnel and damage to property.

### Brake Model Number Definition



#### Standard Hub Bore Sizes:

Suffix	Size	Keyway
F	7/8"	3/16" x 3/32"
G	1"	3/16" x 3/32"
H	1 1/8"	1/4" x 1/8"
J	1 1/4"	1/4" x 1/8"
K	1 3/8"	5/16" x 5/32"
L	1 1/2"	3/8" x 3/16"
M	1 5/8"	3/8" x 3/16"

Special bore sizes available.

#### Standard Voltages

(Single or three phase):

Suffix	Voltage
Y	110/220V, 50Hz
U	230/460V, 60 Hz or 190/380V, 50 Hz
R	115/230V, 60 Hz
T	220/440V, 60 Hz
P	575V, 60 Hz

Special voltages available.

#### Available Options:

Option	Prefix
Foot Mounting Bracket	F
Heavy-Duty Rotating Friction Disc with Hardened Steel Hub	H
Class H Insulation	Q
Internal Space Heater	R
Vertical Mounting	
Vertical Over, or above motor	VO
Vertical Under, or below motor	VU

**Refer to pages 51-56 for option descriptions & pricing.**

# DIVISION 1 HAZARDOUS LOCATION

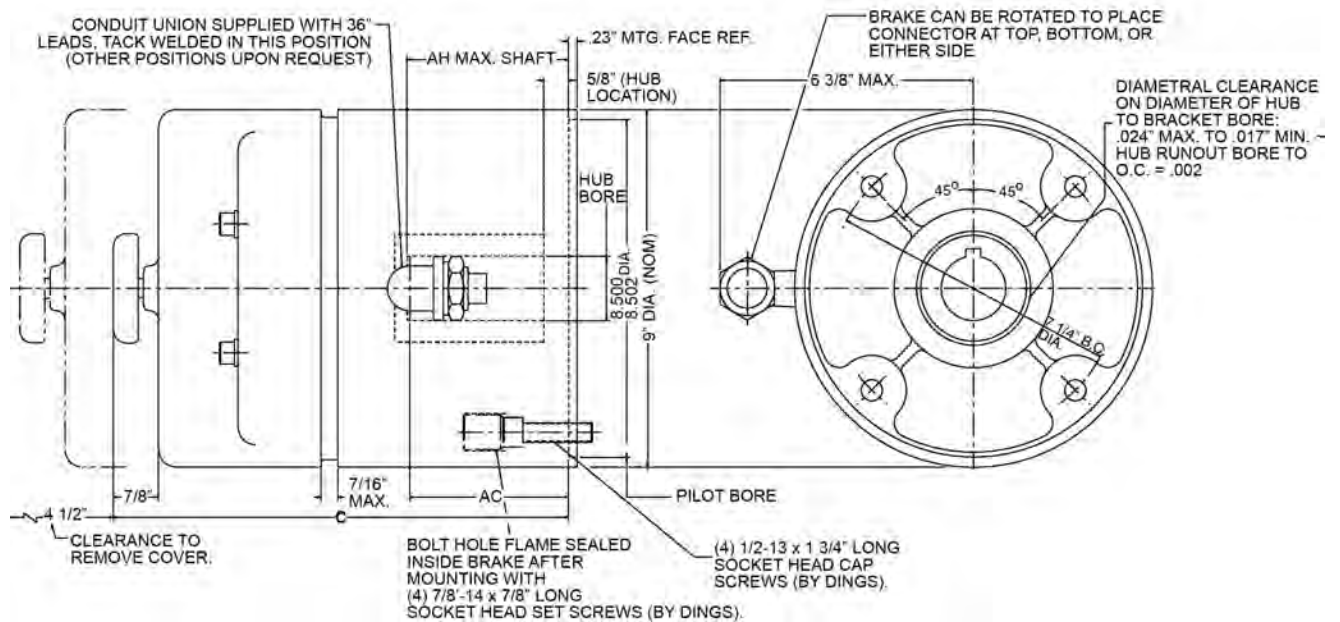
Torque lb-ft	Model #	Replacement for Stearns® Model (NOTE1)	Construction	Wt. Lbs.	Thermal Capacity HPS/MIN*	Inertia WK <sup>2</sup> Lb.Ft. <sup>2</sup>	Dimensions in inches			List Price without foot mount	List Price with foot mount	
							C	AH				AC
							Max.	Min.				
10	FR71010-9	1-087-311-00	Cast Iron	69	10	0.035	10 5/8	3 7/16	2 3/8	3 13/32	\$3,350	\$4,445
15	FR71015-9	1-087-321-00	Cast Iron	69	10	0.035	10 5/8	3 7/16	2 3/8	3 13/32	\$3,500	\$4,595
25	FR72025-9	1-087-331-00	Cast Iron	74	11	0.076	11 1/4	3 3/4	2 5/8	4 1/32	\$3,725	\$4,820
35	FR73035-9	1-087-341-00	Cast Iron	79	12	0.102	11 7/8	4 3/8	3	4 21/32	\$4,000	\$5,095
50	FR74050-9	1-087-351-00	Cast Iron	84	13	0.130	12 1/2	5 1/8	3 1/2	5 9/32	\$4,700	\$5,795
75	FR75075-9	1-087-361-00	Cast Iron	84	13	0.115	12 1/2	5 1/8	3 1/2	5 9/32	\$5,700	\$6,795

\*Hazardous location brakes are intended for non-cyclic or holding purposes only, but may be used for stopping light inertial loads.

NOTE 1: Not a direct drop-in for Stearns models; review outline drawing and dimensions, and specifications.

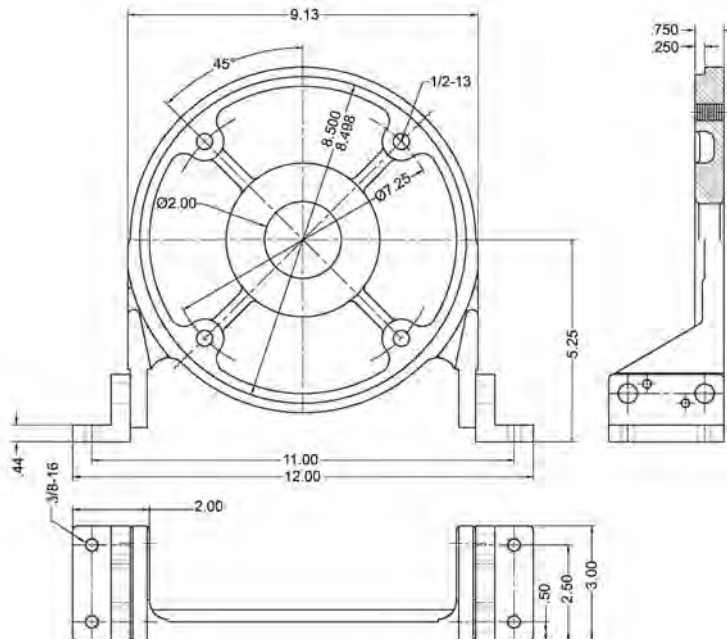
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## BRAKE DIMENSIONS



Hazardous location brakes are provided with a foot mounting bracket.

## FOOT MOUNTING BRACKET DIMENSIONS



# Marine/Maritime Duty Brakes

Torque Ratings: 1.5 to 450 lb-ft

Dings Marine duty brakes are suitable for many shipboard, dockside and severe duty applications where water, salt water and salt vapor exist.

## STANDARD FEATURES

- Enclosure Rating: IP56/NEMA 4X
- Compliant with IEEE 45.  
IEEE 45 nameplate must be requested
- Housing Material: Cast Iron (ductile iron optional)
- Pressure Plate: Plated Steel
- Stationary Disc: Steel
- Plated hardware
- Manual Release is maintained with automatic reset
- Coil Insulation: Class B or Class H, see specific brake series
- Housing exterior and interior are painted with a primer and high solid epoxy paint (non-military). For MIL-SPEC paint, see OPTIONS
- Interior parts are zinc plated or painted.
- Hub seals included

### 60 Series – 56C - 143/145TC

Torque lb-ft.	Model No.	Coil Insulation	List Price
1.5	N61001-530	B	\$1,460
3	N61003-530	B	\$1,495
6	N61006-530	B	\$1,590
10	N62010-530	B	\$1,700
15	N63015-530	B	\$1,840
20	N63020-530	H	\$1,940
25	N64025-530	H	\$2,085



### 70 Series – 182TC - 256TC HEAVY DUTY 4 Post Design

Torque lb-ft.	Model No.	Coil Insulation	List Price
10	N71010-SC61	H	\$2,405
15	N71015-SC61	H	\$2,455
25	N72025-SC61	H	\$2,530
35	N72035-SC61	H	\$2,680
50	N73050-SC61	H	\$2,980
75	N74075-SC61	H	\$3,480
105	N74105-SC61	H	\$3,930



### 80 Series – 284TC/286TC HEAVY DUTY 4 Post Design

Torque lb-ft.	Model No.	Coil Insulation	List Price
25	N81025-29	H	\$2,975
35	N81035-29	H	\$3,125
50	N82050-29	H	\$3,325
75	N83075-29	H	\$3,825
105	N83105-29	H	\$4,275
125	N84125-29	H	\$4,775
175	N84175-29	H	\$6,825

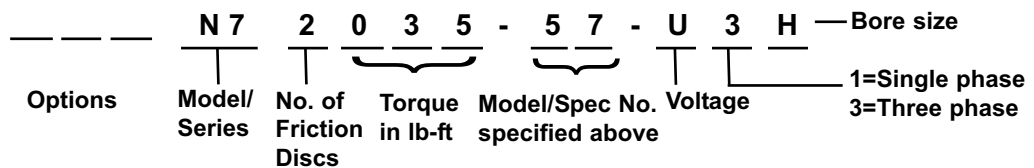


### 90 Series – 324TC-405TC HEAVY DUTY 4 Post Design

Torque lb-ft.	Model No.	Coil Insulation	List Price
125	N92125-51	H	\$7,315
180	N92180-51	H	\$7,665
270	N93270-51	H	\$8,715
360	N94360-51	H	\$10,115
450	N95450-51	H	\$10,765



### Model Number Example



OPTIONS Description	Prefix	List Price Adder			
		Series			
		60	70	80	90
Class H insulation	Q	\$125	Std	Std	Std
Space heater	R	\$210	\$225	\$225	\$275
Breather drain	K	\$235	\$250	\$250	\$250
Tropical protection	P	\$140	\$155	\$170	\$185
Stainless steel stationary disc (add per disc)	S	\$210	\$305	\$405	\$645
Stainless hardware	X	\$170	\$170	\$170	\$250
Military primer & top coat per TT-P-645 & MIL-DTL-15090	M	\$610	\$790	\$920	\$1,065
Heavy duty friction discs	H	\$160	\$170	\$310	\$500
and hardened hub		\$50	\$80	\$130	\$350
Ductile iron enclosure	X	\$750	N/A	\$1,050	\$1,200

Standard Voltages:	Suffix	Voltage
Y		110/220V, 50Hz
U		230/460V, 60 Hz or 190/380V, 50 Hz
R		115/230V, 60 Hz
T		220/440V, 60 Hz
P		575V, 60 Hz

Standard Hub Bore Sizes:	Suffix	Size	Series
D		5/8"	60
F		7/8"	60,70,80
H		1 1/8"	70,80
J		1 1/4"	70,80
K		1 3/8"	70,80
M		1 5/8"	70,80
N		1 7/8"	80
O		2 1/8"	90
P		2 3/8"	90
Q		2 7/8"	90



# Naval Service

NEMA Frame Sizes 182TC through 286TC  
Torque Ratings: 3 to 180 lb-ft

## Specifications:

### 70 Series

Reaction Time: 15-20 milliseconds (release & set)  
AK: 8.5" Register    AJ: 7.25" Bolt Circle  
Maximum RPM: 3600

### 80 Series

Reaction Time: 20-25 milliseconds (release & set)  
AK: 10.5" Register    AJ: 9.00" Bolt Circle  
Maximum RPM: 2400

Conforms to MIL-B-16392 specifications

## Design Features:

- Splined hub
- Deadman release
- 36" leadwire length
- Spring set, electrically released
- Aluminum bronze stationary discs
- Ductile iron construction
- Torque adjustable for specific applications
- Coil insulation: Class B Standard, Class H Optional  
(Class H standard on 80 Series single phase)
- Housing exterior and interior are primed and top coated per MIL-E-917. Internal parts are zinc plated or painted. Meets IEEE 45 and CFR110.1-1 standards.
- Also available* - nonmagnetic construction
  - 70 Series nonmagnetic model 70000-85
  - 80 Series nonmagnetic model 80000-51

## 70 Series—Frame Sizes 182TC - 256TC

Torque lb-ft	Model #	Wt. Lbs.	Thermal Capacity HPS/MIN	Inertia WK <sup>2</sup> Lb-ft <sup>2</sup>	List Price
3	71003-42	54	11	0.028	\$8,500.00
10	71010-42	54	11	0.028	\$8,760.00
15	71015-42	54	11	0.028	\$8,835.00
25	72025-42	58	12	0.051	\$8,950.00
35	72035-42	58	12	0.051	\$9,085.00
50	73050-42	62	13	0.075	\$9,350.00
75	74075-42	66	14	0.099	\$9,775.00

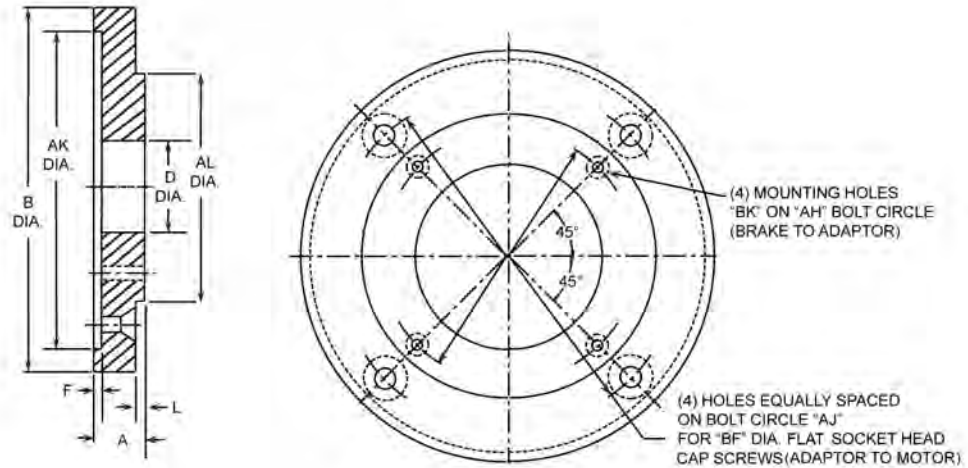


## 80 Series—Frame Sizes 284TC and 286TC

Torque lb-ft	Model #	Wt. Lbs.	Thermal Capacity HPS/MIN	Inertia WK <sup>2</sup> Lb-ft <sup>2</sup>	List Price
25	81025-27	80	15	0.084	\$9,225.00
35	81035-27	80	15	0.084	\$9,360.00
50	82050-27	86	17	0.158	\$9,950.00
75	83075-27	90	19	0.233	\$10,450.00
90	83090-27	90	19	0.233	\$11,150.00
135	84135-27	97	21	0.309	\$17,600.00
180	85180-27	104	21	0.384	\$19,250.00

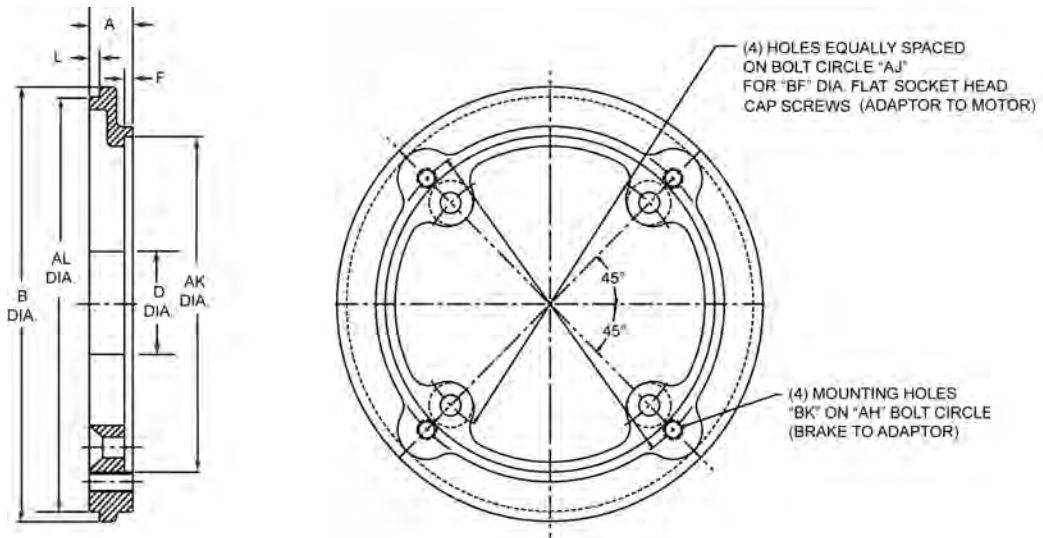


# Motor Frame Adaptors



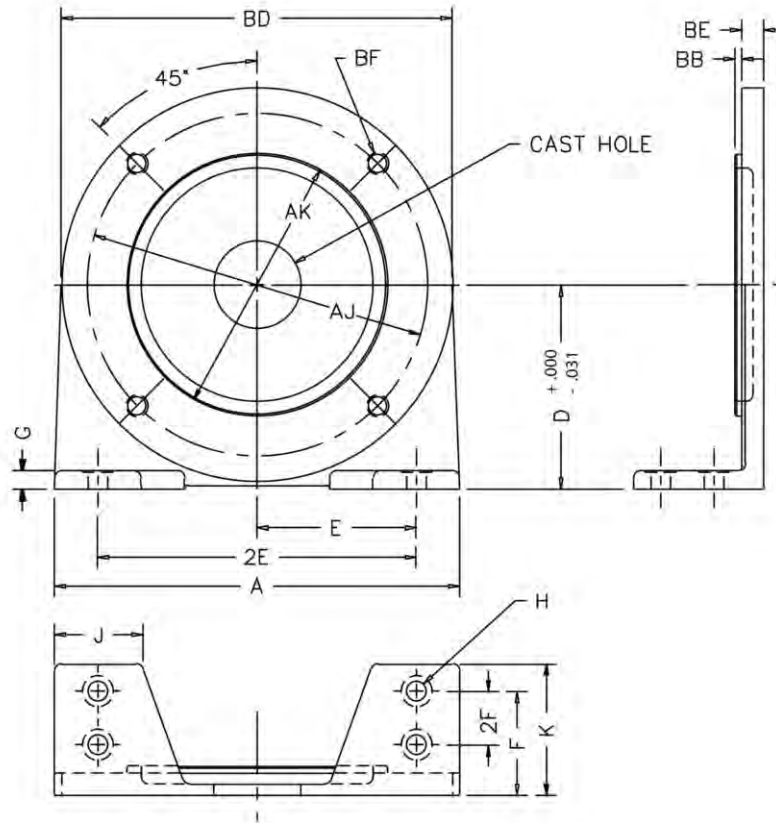
Brake Series	NEMA C Face BRAKE SIDE	NEMA C Face MOTOR SIDE	Brake Bracket Material	Brake Model Prefix	Adaptor Part Number	Dimensions in inches										
						A	AH	AJ	AK	AL	B	BF	BK	D	F	L
60	56C, 143TC, 145TC	182TC-256TC	Aluminum	A	G060539-001	0.75	5.88	7.25	8.50	4.50	9.00	1/2-13	3/8-16	4.00	0.19	0.12
		182TC-256TC	Cast Iron	A	G060540-001	0.75	5.88	7.25	8.50	4.50	9.00	1/2-13	3/8-16	4.00	0.19	0.12
60 Hazardous Location	56C, 143TC, 145TC	182TC-256TC	Aluminum	A	G060552-001	0.75	5.88	7.25	8.50	4.50	9.00	1/2-13	3/8-16	4.00	0.19	0.13
		182TC-256TC	Cast Iron	A	G060553-001	0.75	5.88	7.25	8.50	4.50	9.00	1/2-13	3/8-16	4.00	0.19	0.12
70	182TC-256TC	284-286TC/UC	Cast Iron	A	G070558-001	1.09	7.25	9.00	10.50	8.50	11.00	1/2-13	1/2-13	8.00	0.23	0.25
		324TC-405TC	Cast Iron	AA	G070535-001	1.09	7.25	11.00	12.50	8.50	13.00	5/8-11	1/2-13	6.00	0.23	0.25
70 Hazardous Location	182TC-256TC	284-286TC/UC	Cast Iron	A	G070534-001	1.09	7.25	9.00	10.50	8.50	11.00	1/2-13	1/2-13	8.00	0.23	0.25
80	284-286TC/UC	324TC-405TC	Cast Iron	A	G080202-001	1.22	9.00	11.00	12.50	10.50	13.00	1/2-13	1/2-13	10.00	0.23	0.25
		444-445TC/UC	Cast Iron	AA	G080203-001	1.09	9.00	9.00	10.50	10.50	16.50	5/8-11	1/2-13	8.00	0.23	0.25
90	324TC-405TC	444-445TC/UC	Cast Iron	A	L090018-001	1.74	11.00	14.00	16.00	12.50	17.00	5/8-11	5/8-11	12.00	0.25	0.25
		505TC/UC	Cast Iron	AA	L090018-002	1.74	11.00	14.50	16.50	12.50	17.00	5/8-11	5/8-11	12.00	0.25	0.25

# Reverse Adaptors



Brake Series	NEMA C face BRAKE SIDE	NEMA C face MOTOR SIDE	P/N Prefix	Adaptor Part Number	Dimensions in inches										
					A	AH	AJ	AK	AL	B	BF	BK	D	F	L
60	56C, 143TC, 145TC	48C	AB	G060546-001	0.50	5.88	3.75	3.00	4.50	6.50	1/4-20	3/8-16	3.00	0.50	0.13
70	182TC-256TC	56C, 143TC, 145TC	AB	G070560-001	0.50	7.25	5.88	4.50	8.50	8.50	3/8-16	1/2-13	4.50	0.50	0.50
70 Hazardous Location	182TC-256TC	56C, 143TC, 145TC	AB	G070536-001	0.50	7.25	5.88	4.50	8.50	8.50	3/8-16	1/2-13	4.50	0.50	0.50
80	284-286TC/UC	182TC-256TC	AB	G080204-001	1.09	9.00	7.25	8.50	10.50	11.00	1/2-13	1/2-13	8.00	0.22	0.25
90	324TC-405TC	284-286TC/UC	AB	G090238-001	0.88	11.00	9.00	10.50	12.50	12.50	1/2-13	1/2-13	7.75	0.22	0.66

# Foot Mounting Brackets



Brake Series	Foot Mounting Kit	Dimensions in inches							
		A	AJ	AK	BB	BD	BE	BF	D
60	G060559-001	8.00	5.88	4.500/4.497	.19	6.63	.50	3/8-16	3.50
70	G070561-001	9.00	7.25	8.500/8.497	.25	9.00	.50	1/2-13	5.00
80	G080208-001	11.00	9.00	10.500/10.497	.25	11.00	.50	1/2-13	6.00
90	G090288-001	20.00	11.00	12.500/12.497	.28	14.00	1.50	5/8-11	8.25
60 Hazardous Location	G060559-001	8.00	5.88	4.500/4.497	.19	6.63	.50	3/8-16	3.50
70 Hazardous Location	G070545-001	9.00 OR 12.50	7.25	8.500/8.498	.25	9.00	.50	1/2-13	5.00

Brake Series	Torque lb-ft	Bracket Weight lbs.	Dimensions in inches									
			E	2E	F	2F	G	H (Hole)		J	K	Cast Hole
								Dia.	Qty.			
60	1.5-25	7	3.500	7.00	1.50	-	.500	.531	2	2.00	2.50	1.38
70	10-70	8	3.500	7.00	2.00	-	.437	.656	2	2.00	3.00	1.75
80	25-175	12	4.250	8.50	2.00	-	.500	.656	2	2.50	3.00	3.50
90	125-450	78	9.000	18.00	5.50	4.50	.937	.656	4	3.00	6.50	4.00
60 Hazardous Location	1.5-15	7	3.500	7.00	1.50	-	.500	.531	2	2.00	2.50	1.38
70 Hazardous Location	10-75	11	2.750 OR 5.812	5.50 OR 11.63	2.50	-	.500	.656	2	1.75	3.00	2.00

# Brake Options

## A Adaptor to Next Larger Size



### List Price Adders:

50 Series	\$235
60 Series End Mount	\$320
60 Series Double C Face	\$320
60 Series Hazardous	\$320
70 Series End Mount	\$375
70 Series Double C Face	\$375
70 Series Hazardous	\$375
80 Series	\$450
90 Series	\$1,025

Increases C face dimension to allow mounting to next larger motor frame size.

## AB Reverse Adaptor to Next Smaller Size



### List Price Adders:

60 Series End Mount	\$235
60 Series Double C Face	\$235
60 Series Hazardous	\$235
70 Series End Mount	\$320
70 Series Double C Face	\$320
70 Series Hazardous	\$320
80 Series	\$375
90 Series	\$580

Reduces C face dimension to allow mounting to next smaller motor frame size.

## B Aluminum Bronze Stationary Disc



### List Price Adders:

70 Series End Mount (N/A on 8700 Style)	\$450/disc
80 Series	\$550/disc
90 Series	\$645/disc

Provides extra corrosion resistance.

## C Conduit Box



### List Price Adders:

60 Series	\$300
70 Series	\$300
80 Series	\$300
90 Series	\$300

External junction box to connect brake leads. No terminal blocks included unless requested.

## DD DC Voltage



### List Price Adders:

40 Series	\$70
50 Series	\$300
60 Series End Mount	\$300
60 Series Double C Face	\$300
1-70 Series End Mount	\$300

Special coil and electronic circuit allows brake to operate on DC voltage. Not intended for half wave rectified DC power.

## E Ductile Iron Stationary Disc



### List Price Adders:

70 Series End Mount (N/A on 8700 Style)	\$130/disc
70 Series Double C Face	\$130/disc
80 Series	\$160/disc

Ductile iron provides greater strength for high cycle applications.

# Brake Options

## F Foot Mounting Bracket



### List Price Adders:

60 Series End Mount	\$350
60 Series Double C Face	\$350
60 Series Hazardous	\$520
70 Series End Mount	\$450
70 Series Double C Face	\$450
70 Series Hazardous	\$1,095
80 Series	\$475
90 Series	\$1,325

Allows brake to be supported without having to be mounted to a motor C Face.

## H Heavy Duty Rotating Friction Disc with Hardened Steel Hub



Metal disc center provides extra tooth support for high cycle/shock applications.

### Single Disc Brake

#### List Price Adders:

60 Series End Mount	\$160
60 Series Double C Face	\$160
60 Series Hazardous	\$160
70 Series End Mount	\$170
70 Series Double C Face	\$80
70 Series Hazardous	\$80
80 Series	\$310
90 Series	\$500

#### Additional Adders (Per Disc):

60 Series	\$50
70 Series	\$80
80 Series	\$130
90 Series	\$350

## J High Tensile Stud



### List Price Adders:

70 Series End Mount	\$145
(N/A on 8700 Style)	
80 Series	\$145

Studs are made from high strength steel for use in high cycle/shock applications.

## K External Breather



### List Price Adders:

60 Series End Mount	\$235
70 Series End Mount	\$250
80 Series	\$250
90 Series	\$250

Prevents ingress of moisture in humid conditions, reducing corrosion.

## M Marine/Maritime Duty Brake with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090

Special **Military spec.** enamel paint along with plating or painting of interior components provides additional corrosion protection for brakes exposed to severe weather conditions. Meets IEEE 45, CFR110.1-1 standards.

### List Price Adders:

60 Series End Mount	\$1,170
60 Series Double C Face	\$1,170
70 Series End Mount	\$1,420
70 Series Double C Face	\$1,420
80 Series	\$1,795
90 Series	\$2,130

## N Marine/Maritime Duty Brake

High Solids epoxy paint along with plating or painting of interior components provides additional corrosion protection for brakes exposed to severe weather conditions. Intended for **non-military** offshore applications.

### List Price Adders:

60 Series End Mount	\$560
60 Series Double C Face	\$560
70 Series End Mount	\$630
70 Series Double C Face	\$630
80 Series	\$875
90 Series	\$1,065

# Brake Options

## P Tropical Protection

Special anti-fungal coating on electrical coils provides protection for brakes exposed to hot, humid conditions.

### List Price Adders:

60 Series	\$140
70 Series	\$155
80 Series	\$175
90 Series	\$300

## Q Class H Coil Wire Insulation



### List Price Adders:

50 Series	\$100
60 Series End Mount	\$125
60 Series Double C Face	\$125
70 Series End Mount	\$155
70 Series 8700 Style	Standard
70 Series Double C Face	\$155
80 Series	Standard
90 Series	Standard

High temperature coil wire insulation for extra thermal protection in high temperature applications.

## R Heater



### List Price Adders:

60 Series End Mount	\$210
60 Series Double C Face	\$210
70 Series End Mount	\$225
70 Series Double C Face	\$225
80 Series	\$225
90 Series	\$275

Special resistor helps dissipate moisture in brakes exposed to cold or humid conditions.

## S Stainless Steel Stationary Disc



### List Price Adders:

60 Series End Mount	\$210/disc
70 Series End Mount	\$305/disc
80 Series	\$405/disc
90 Series	\$645/disc

High quality stainless steel discs provide extra corrosion resistance.

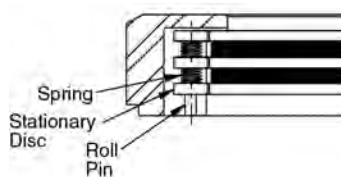
## T Through Shaft



Series	List Adder	Enclosure
40	\$25	NEMA 2, IP40
50	\$25	NEMA 2, IP40
60	\$25	Steel Cover NEMA 2, IP41
60	\$110	Cast Iron Cover NEMA 2, IP41
60	\$225	Cast Iron Cover NEMA 4, IP54
70	\$25	Steel Cover NEMA 2, IP41
70	\$225	Cast Iron Cover NEMA 2, IP41
70	\$300	Cast Iron Cover NEMA 4, IP54
80	\$25	Steel Cover NEMA 2, IP41
80	\$225	Cast Iron Cover NEMA 2, IP41
80	\$300	Cast Iron Cover NEMA 4, IP54
90	\$225	NEMA 2
90	\$520	NEMA 4

Special cover allows shaft to continue through the brake enclosure.

## VO/VU Vertical Over/Vertical Under Mounting



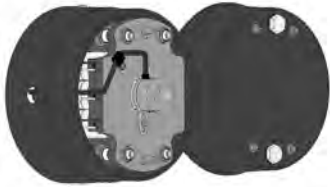
### List Price Adders (Per Disc):

60 Series End Mount	\$10
70 Series Vertical Over	\$30
70 Series Vertical Under	\$20
80 Series	\$30
90 Series (NEW)	\$75

Special springs stabilize discs allowing brake to be mounted in a vertical position either over or under the motor.

# Brake Options

## **XE** *Smart Brake* Encoder Brake



### List Price Adders:

60 Series End Mount	\$1,535
70 Series End Mount	\$2,200
80 Series	\$2,270
90 Series	\$2,400

Internally mounted encoder provides feedback on brake positioning and speed. Pricing includes Encoder Products Company Model 260 encoder. For encoder details or for other encoders, contact factory.

## **XS** Microswitch Warning



### List Price Adders:

60 Series End Mount	\$415
60 Series Double C Face	\$415
70 Series End Mount	\$450
70 Series Double C Face	\$450
80 Series	\$450
90 Series	\$450

Switch provides a NO/NC contact to alert when brake is released electrically or manually.

## **XT** Tach Machining



### List Price Adders:

60 Series End Mount	\$585
70 Series End Mount NEMA 2	\$700
70 Series End Mount NEMA 4	\$850
80 Series End Mount NEMA 2	\$700
80 Series End Mount NEMA 4	\$850

(Models with cast iron covers only)

Machined face on cover allows mounting of tachometer or resolver.

## **External Manual Release** MARK II Design



### List Price Adders:

70 Series End Mount (N/A on 8700 Style)	\$400
80 Series	\$425

Single point, hand activated, external release lever. Manually set / automatically reset by manually

deactivating or energizing the brake.

Available on brakes with cast covers only.

## **External Manual Release** MARK III Design



### List Price Adders:

70 Series End Mount (N/A on 8700 Style)	\$325
80 Series	\$350

Dual, hand activated, external release knobs. Manually set / automatically

reset by manually deactivating or energizing the brake. Available on brakes with cast covers only.

# Brake Option List Price Additions

	Specification Number→	40 Series	50 Series	60 Series								1-70 Series
		NEMA 2	NEMA 2	NEMA 2			NEMA 4		NEMA 4X		Haz Location	NEMA 2
		End Mount	End Mount	End Mount	End Mount	CC	End Mount	CC	End Mount	CC	End Mount	End Mount
		-012 -013	-050 -05A	-524	-5601 -5602 -5603 -5604	-551	-530 -535 -543 -545	-5153	-5115 -5116 -5140 -5141	-5145 -5155	-66B -67B	-115
Prefix	Option Description											
A	Adaptor to next frame size	-	\$235	\$320	\$320	\$320	\$320	\$320	\$320	\$320	\$320	\$375
AA	Double Adaptor to 2nd larger frame size	-	-	-	-	-	-	-	-	-	-	\$575
AB	Reverse Adaptor to next smaller frame size	-	-	\$235	\$235	\$235	\$235	\$235	\$235	\$235	\$235	\$320
B	Aluminum Bronze Stat Disc (Per Disc) (Number of Stat Discs=# Rotating Discs +1)	-	-	-	-	-	-	-	-	-	-	-
C	Conduit Box	-	-	\$300		\$300	\$300	\$300				
DD	Direct Current (DC Voltage)	\$70	\$300	\$300	-	\$300	\$300	\$300	\$300	\$300	-	\$300
DA	Drain Hole Special	-	-	*	-	*	*	*	*	*	-	*
E	Ductile Iron Stat Discs Per Disc (4 Post) (Number of Stat Discs=# Rotating Discs +1)	-	-	-	-	-	-	-	-	-	-	-
F	Foot Mounting Bracket	-	-	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$520	\$450
H	Heavy Duty Friction Discs/Hardened Hub	1st Disc	-	-	\$160	-	\$160	\$160	\$160	\$160	\$160	\$160
		Each Add'l Disc	-	-	\$50	-	\$50	\$50	\$50	\$50	\$50	\$50
J	High Tensile Stud***	-	-	-	-	-	-	-	-	-	-	-
K	External Breather	-	-	-	-	-	\$235	-	\$235	-	-	-
M	Marine/Maritime Duty Brake with MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	-	-	\$1,170	-	\$1,170	\$1,170	\$1,170	-	-	*	\$1,170
N	Marine/Maritime Duty Brake	-	-	\$560	-	\$560	\$560	\$560	-	-	*	\$560
P	Tropical (Moisture/Fungus) Protection	-	-	\$140	-	\$140	\$140	\$140	\$140	\$140	\$140	\$140
Q	Class H Insulation	-	\$100	\$125	\$125	\$125	\$125	\$125	\$125	\$125	-	\$125
R	Heater (Specify voltage)	-	-	\$210	-	\$210	\$210	\$210	\$210	\$210	-	\$210
S	Stainless Stat Disc (Per Disc) (Number of Stat Discs=# Rotating Discs +1)	-	-	\$210	-	\$210	\$210	\$210	\$210	\$210	-	\$210
T	Thru-Hole in cover for shaft extension	Cast Cover	-	-	-	-	\$225	-	**	-	-	-
		Steel Cover	-	\$25	\$25	-	-	-	-	-	-	\$25
VO	Vertical Mount Over Motor- cost per disc	-	-	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10
VU	Vertical Mount Under Motor- cost per disc	-	-	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10
W	Electronic Wear Indicator Switch	-	-	-	-	-	-	-	-	-	-	-
X	Special Modifications	*	*	*	*	*	*	*	*	*	*	*
XE	Smart Brake Encoder Option	-	-	\$1,535	-	-	\$1,535	-	\$1,535	-	-	\$1,535
XS	Micro Switch (Brake Released/Engaged)	-	-	\$415	-	\$415	\$415	\$415	\$415	\$415	-	\$415
XT	Tach Mounting (Cast Cover Only)	-	-	**	-	-	\$585	-	\$585	-	-	**
Y	Manual Release Handle	-	-	\$45	-	\$45	\$45	\$45	\$45	\$45	-	\$45
Z	Stabilizer Clip Rotating (Per Rotating Disc)	-	\$10	\$10	-	Std.	\$10	Std.	\$10	Std.	\$10	\$10
	One Piece Hub/Shaft (Brakes 1-6 lb.ft. only)	-	-	-	-	\$270	-	\$270	-	\$270	-	-
	Corrosion Resistant Internal Parts	-	-	\$135	-	\$135	\$135	\$135	Std.	Std.	\$135	\$135
	Deadman Release	-	Std.	-	-	-	-	-	-	-	-	-
	Non Standard Voltages	\$165	\$165	\$165	\$165	\$165	\$165	\$165	\$165	\$165	\$165	\$165
	Non Standard Bore Sizes	\$135	\$180	\$180	\$180	\$180	\$180	\$180	\$180	\$180	\$180	\$180

\*-Contact your Local Dings Dynamics Distributor or Factory Representative for availability and pricing.



# Brake Option List Price Additions

		70 Series										80 Series			90 Series		
		NEMA 2		NEMA 4		NEMA 4X		NEMA 2	NEMA 4	Haz Location	NAVY	NEMA 2	NEMA 4	NAVY	NEMA 2	NEMA 4	
		End Mount	CC	End Mount	CC	End Mount	CC	Foot Mounted	Foot Mounted	End Mount	End Mount	End Mount	End Mount	End Mount	End Mount	End Mount	
Specification Number→		-ES41 -EC41 -ES4S -EC4S	-CE41 -CE42	-EC61 -SC61 -SC6S	-CE61 -CE62	-EC6W -SC6W -SC6T	-CE63 -CE64	-DE41	-DE61	-9	-42 -85	-28 -58	-29 -32	-27 -52	-50	-51 -52	
Prefix	Option Description																
A	Adaptor to next frame size	\$375	\$375	\$375	\$375	\$375	\$375	-	-	\$375	\$375	\$450	\$450	\$450	\$1,025	\$1,025	
AA	Double Adaptor to 2nd larger frame size	\$575	\$575	\$575	\$575	\$575	\$575	-	-	\$575	\$575	\$1,025	\$1,025	\$1,025	-	-	
AB	Reverse Adaptor to next smaller frame size	\$320	\$320	\$320	\$320	\$320	\$320	-	-	\$320	\$320	\$375	\$375	\$375	\$580	\$580	
B	Aluminum Bronze Stat Disc Per Disc (Number of Stat Discs =# Rotating Discs-1)	-	-	-	-	-	-	-	-	-	-	\$550	\$550	-	\$645	\$645	
C	Conduit Box	\$300	\$300	\$300	\$300	\$300	-	\$300	\$300	-	-	\$300	\$300	-	\$300	\$300	
DA	Drain Hole Special	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
E	Ductile Iron Stat Discs Per Disc (Number of Stat Discs=# Rotating Discs-1)	-	-	-	-	-	-	-	-	-	-	\$160	\$160	-	-	-	
F	Foot Mounting Bracket	\$450	\$450	\$450	\$450	\$450	\$450	Std.	Std.	\$1,095	\$450	\$475	\$475	\$475	\$1,325	\$1,325	
H	Heavy Duty Friction Discs/Hardened Hub	1st Disc	\$170	\$80	\$170	\$80	\$170	\$80	\$80	\$80	\$80	\$170	\$310	\$310	\$310	\$500	\$500
		Each Add'l Disc	\$80	\$80	\$80	\$80	\$80	\$80	\$80	\$80	\$80	\$80	\$130	\$130	\$130	\$350	\$350
J	High Tensile Stud	-	-	-	-	-	-	-	-	Std.	\$145	\$145	\$145	\$145	Std.	Std.	
K	External Breather	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	-	\$250	\$250	\$250	\$250	\$250	\$250	
M	Marine/Maritime Duty Brake, MIL-SPEC paint per TT-P-645 & MIL-DTL-15090	\$1,420	\$1,420	\$1,420	\$1,420	-	-	\$1,420	\$1,420	*	Std.	\$1,795	\$1,795	Std.	\$2,130	\$2,130	
N	Marine/Maritime Duty Brake	\$630	\$630	\$630	\$630	-	-	\$630	\$630	*	-	\$875	\$875	-	\$1,065	\$1,065	
P	Tropical (Moisture/Fungus) Protection	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$170	\$170	\$170	\$185	\$185	
Q	Class H Insulation	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	\$155	\$155	Std.	Std.	Std.	Std.	Std.	
R	Heater (Specify voltage)	\$225	\$225	\$225	\$225	\$225	\$225	\$225	\$225	\$225	\$225	\$225	\$225	\$225	\$275	\$275	
S	Stainless Stationary Disc (Per Disc)	\$305	\$305	\$305	\$305	\$305	\$305	\$305	\$305	-	Std.	\$405	\$405	Std.	\$645	\$645	
T	Thru-Hole in cover for shaft extension	Cast Cover	\$225	-	\$300	-	\$300	-	-	-	-	\$225	\$300	-	\$225	\$520	
		Steel Cover	\$25	-	-	-	-	-	-	-	-	-	\$25	-	-	-	-
VO	Vertical Mount Over Motor-cost per disc	\$30	\$30	\$30	\$30	\$30	\$30	\$30	\$30	\$30	\$30	\$30	\$30	\$30	\$75	\$75	
VU	Vertical Mount Under Motor-cost per disc	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$30	\$30	\$30	\$75	\$75	
W	Electronic Wear Indicator Switch	*	*	*	*	*	*	*	*	-	*	*	*	*	-	-	
X	Special Modifications	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
XE	Smart Brake Encoder Option	\$2,200	-	\$2,200	-	\$2,200	-	-	-	-	-	\$2,270	\$2,270	-	\$2,400	\$2,400	
XS	Micro Switch (Brake Released/Engaged)	\$450	\$450	\$450	\$450	\$450	\$450	\$450	\$450	-	\$450	\$450	\$450	\$450	\$450	\$450	
XT	Tach Mounting (Cast Cover Only)	\$700	-	\$850	-	-	-	-	-	-	-	\$700	\$850	-	\$1,100	\$1,375	
Y	Manual Release Handle	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	-	-	-	-	-	-	-	
	Corrosion Resistant Internal Parts	*	\$170	*	\$170	*	Std.	\$170	\$170	\$170	Std.	\$245	\$245	Std.	\$340	\$340	
	Deadman Release	*	*	*	*	*	*	*	*	*	Std.	*	*	Std.	-	-	
	Non Standard Voltages	\$175	\$175	\$175	\$175	\$175	\$175	\$175	\$175	\$175	\$175	\$175	\$175	\$175	\$200	\$200	
	Non Standard Bore Sizes	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$210	\$250	\$250	\$250	\$335	\$335	
	External Release (Mark II Release)	-	-	-	-	-	-	-	-	-	-	\$425	\$425	-	-	-	
	External Release (Mark III Release)	-	-	-	-	-	-	-	-	-	-	\$350	\$350	-	-	-	

\*Contact your Local Dings Dynamics Distributor or Factory Representative for availability and pricing.

# Application Engineering- Overhauling Loads

**TABLE OF SYMBOLS**

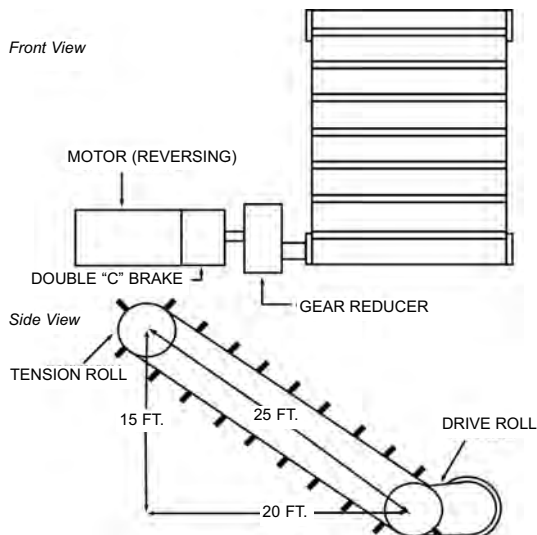
$W_B$	Weight of overhauling load
$W_B$	Total weight of load acting at motor brake
$V_B$	Linear velocity of load subjected to linear motion
$\Theta_B$	Angle of inclination for overhauling load
$W_{KB}$	Total rotational moment of inertia acting at motor brake
$N_B$	Rotational speed of load
$N_B$	Rotational speed of brake
$T_B$	Torque required at brake to hold overhauling load
$T_{BM}$	Minimum brake torque to stop and hold application
$T_{SB}$	Torque rating of selected brake
$t_{SB}$	Stopping time of application using selected brake
TDSB	Total distance travelled by linear load during stop
HPSB	Horsepower seconds per stop
ASMB	Allowable stops per minute
RTCB	Rated thermal capacity of brake

The procedure for sizing a brake in an application subjected to overhauling loads has four steps:

- I. Determine rotational moment of inertia acting at motor brake.
- II. Determine minimum torque required to stop and hold system.
- III. Calculate system performance using selected brake.
- IV. Evaluate system performance.

Before starting this process, the following application information is needed to conduct the sizing calculations:

- ♦ A detailed sketch of the brake-motor application.
- ♦ Motor data, including horsepower rating, speed (rpm), rotational inertia (lb-ft<sup>2</sup>) and NEMA frame size.
- ♦ Rotational inertia (lb-ft<sup>2</sup>) of all system components acting at the brake.
- ♦ Rotational speed (rpm) of all system components acting at the brake.
- ♦ Weight (lbs) and velocity (ft/min) of loads subjected to linear motion.
- ♦ Angle of inclination if overhauling load is not acting vertically.
- ♦ Cycle rate of system (stops/min).



**Example: Application Information for Bucket Conveyor**

**Motor Data:**

Horsepower Rating	5 HP
Speed	1,760 RPM
Rotational Inertia	0.30 lb-ft <sup>2</sup>
NEMA Frame Size	184 TC

**Rotational Inertia of All Active System Components:**

**Motor Brake Data:**

Rotational Inertia	0.11 lb-ft <sup>2</sup>
--------------------	-------------------------

**Gear Reducer Data:**

Gear Reduction Ratio	50:1
Gear Reducer Inertia	0.14 lb-ft <sup>2</sup>

**Drive Roll Data:**

Roll Diameter	0.955 ft
Roll Length	2.5 ft
Rotational Inertia	99.338 lb-ft <sup>2</sup>
Tension Roll Data	Same as Drive Roll

**Rotational Speed of All Components Acting at Brake:**

Motor	1,760 RPM
Brake	1,760 RPM
Gear Reducer	1,760 RPM (in) 35.2 RPM (out)
Drive Roll	35.2 RPM
Tension Roll	35.2 RPM

**Weight and Velocity of Loads Subjected to Linear Motion:**

For this example, we will use the following conveyor data:

Empty weight of conveyor belt (per foot basis)	15 lbs
Total length of conveyor belt	53 ft
Empty weight of conveyor bucket	20 lbs
Spacing of buckets on conveyor	1 ft
Total number of buckets on conveyor	52
Load capacity of each bucket	75 lbs

$$W_C = (53 \text{ ft})(15 \text{ lb/ft}) + (52)(20 \text{ lbs}) = 1,835 \text{ lbs}$$

$$W_L = (0.5)(52)(75 \text{ lbs}) = 1,950 \text{ lbs}$$

*\*The  $W_L$  calculation assumes that only half of the buckets will carry a load at any given instant.*

$$W = W_C + W_L = 3,785 \text{ lbs}$$

(For velocity calculations)

$$V_L = (35.2 \text{ rev/min})(0.955 \text{ ft})\pi = 105.6 \text{ ft/min}$$

Angle of Inclination:

$$\Theta = \text{SIN}^{-1}\left(\frac{H}{L}\right) = \text{SIN}^{-1}\left(\frac{15}{25}\right) = 36.87^\circ$$

$$\text{SIN } \Theta = 0.600$$

Then: (For weight calculations)

Cyclic Rate of System:

Maximum of 2 stops/minute.

Using the application information, select a brake for this system.

# Application Engineering- Overhauling Loads

## I. DETERMINE ROTATIONAL MOMENT OF INERTIA ACTING AT MOTOR BRAKE

Known Quantities:

Motor	0.3000 lb-ft <sup>2</sup>
Brake	0.1100 lb-ft <sup>2</sup>
Gear Reducer	0.1400 lb-ft <sup>2</sup>

(A) Contribution from rotary load at different speed than brake shaft:

(For Drive Roller)

$$WK_{DR}^2 = WK_{DRD}^2 \left( \frac{N_L}{N_B} \right)^2 = (99.338 \text{ lb-ft}^2) \left( \frac{35.2}{1760} \right)^2 = 0.0397 \text{ lb-ft}^2$$

(For Tension Roller)

$$WK_{TR}^2 = WK_{TRD}^2 \left( \frac{N_L}{N_B} \right)^2 = (99.338 \text{ lb-ft}^2) \left( \frac{35.2}{1760} \right)^2 = 0.0397 \text{ lb-ft}^2$$

\*This assumes that there is no slippage between conveyor belt and rollers.

(B) Contribution from loads subjected to linear motion:

$$WK_L^2 = W \left( \frac{V_L}{2\pi N_B} \right)^2 = (3,785 \text{ lbs}) \left( \frac{105.6}{2\pi 1760} \right)^2 = 0.3452 \text{ lb-ft}^2$$

Then:

$$WK_T^2 = WK_M^2 + WK_B^2 + WK_{GR}^2 + WK_{DR}^2 + WK_{TR}^2$$

$$WK_T^2 = 0.9746 \text{ lb. ft.}^2$$

## II. DETERMINE MINIMUM TORQUE REQUIRED TO STOP AND HOLD SYSTEM

(A) Calculate overhauling torque of fully loaded conveyor belt:

$$T_O = \frac{(0.158)(\sin(\Theta))(W_L)(V_L)}{N_B}$$

$$T_O = \frac{(0.158)(0.600)(1950 \text{ lb})(105.6 \text{ ft/min})}{1760 \text{ RPM}} = 11.092 \text{ lb. ft.}$$

(B) Calculate minimum brake torque:

$$T_{BM} = \frac{(WK_T^2)(N_B)}{308t} + T_O$$

$$T_{BM} = \frac{(0.9746 \text{ lb. ft.}^2)(1760)}{(308)(1)} + 11.092 \text{ lb. ft.}$$

$$T_{BM} = 5.569 \text{ lb. ft.} + 11.092 \text{ lb. ft.} = 16.661 \text{ lb. ft.}$$

Please note that the maximum stopping time should not exceed one second.

Therefore, we must select a brake with a torque rating of at least 16.661 lb-ft which fits on a NEMA 184 TC frame size.

Selected Brake Data:

Dings Model Number	4-72025-46
Enclosure Type	NEMA 4
Brake Style	Double "C" Face
Rated Thermal Capacity	12
Rotational Inertia	0.1097 lb-ft <sup>2</sup>

## III. CALCULATE SYSTEM PERFORMANCE USING SELECTED BRAKE

(A) Stopping time calculation:

$$t_{SB1} = \frac{(WK_T^2)(N_B)}{(308)(T_{SB} + T_O)} = \frac{(0.9746 \text{ lb. ft.}^2)(1760)}{(308)(25+11.092)} = 0.154 \text{ sec}$$

$$t_{SB4} = \frac{(WK_T^2)(N_B)}{(308)(T_{SB} - T_O)} = \frac{(0.9746 \text{ lb. ft.}^2)(1760)}{(308)(25-11.092)} = 0.400 \text{ sec}$$

(B) Travel distance during stop calculations:

$$TDS_1 = \frac{0.5 V_L t_{SB1}}{60} = \frac{(0.5)(105.6 \text{ ft/min})(0.154 \text{ s})}{60} = 0.136 \text{ ft}$$

$$TDS_4 = \frac{0.5 V_L t_{SB4}}{60} = \frac{(0.5)(105.6 \text{ ft/min})(0.400 \text{ s})}{60} = 0.352 \text{ ft}$$

(C) Thermal requirement calculations:

(without overhauling load)

$$\text{H.P. Sec/Stop} = WK_T^2 \left( \frac{N_B}{1800} \right)^2 = (0.9746 \text{ lb. ft.}^2) \left( \frac{1760}{1800} \right)^2 = 0.932 \text{ HPS/Stop}$$

(with ascending overhauling load)

$$\begin{aligned} \text{H.P. Sec/Stop}_{oi} &= \text{H.P. Sec/Stop} \left( \frac{T_{SB}}{T_{SB} + T_O} \right) \\ &= (0.932) \left( \frac{25}{25+11.092} \right) = 0.646 \text{ HPS/Stop}_{oi} \end{aligned}$$

(with descending overhauling load)

$$\begin{aligned} \text{H.P. Sec/Stop}_{oi} &= \text{H.P. Sec/Stop} \left( \frac{T_{SB}}{T_{SB} - T_O} \right) \\ &= (0.932) \left( \frac{25}{25-11.092} \right) = 1.675 \text{ HPS/Stop}_{oi} \end{aligned}$$

Since the worst case scenario is a descending overhauling load, it will be used to determine allowable stops:

(D) Allowable stops calculation:

$$\text{ASM} = \frac{\text{RTC}}{\left( \frac{\text{HPS}_{oi}}{\text{MIN}} \right)} = \frac{12}{1.675} = 7.16 \frac{\text{STOPS}}{\text{MIN}}$$

## IV. EVALUATE SYSTEM PERFORMANCE

(1) Stopping time of system is less than one second so brake torque is adequate.

(2) Allowable stops per minute is more than three times the specified number of two, so rated thermal capacity is adequate.

Therefore, we can conclude that the brake will function as intended.

# Product Warranty

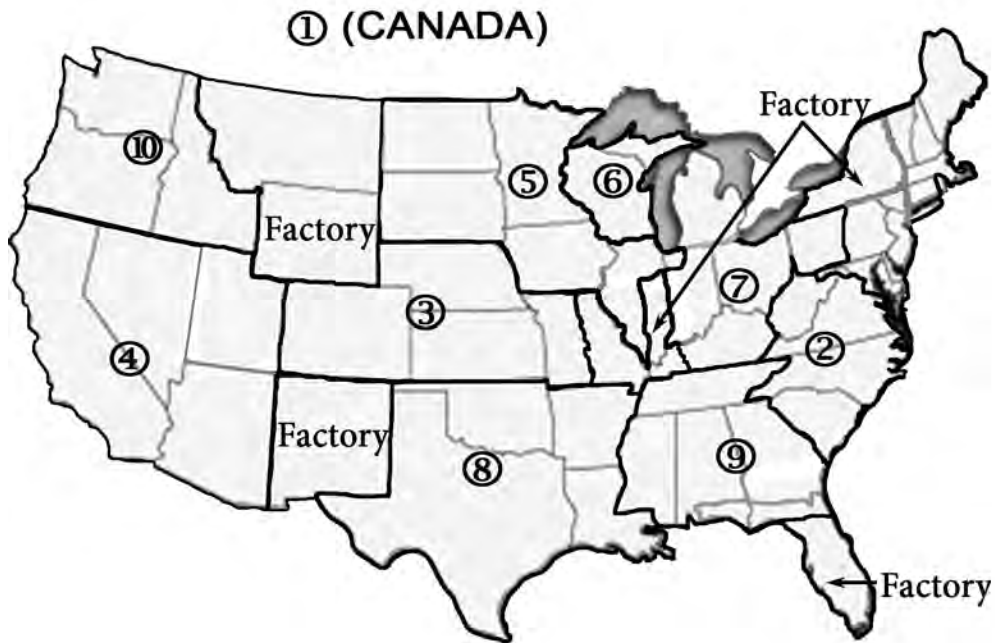
Seller warrants products manufactured by it and supplied hereunder to be free from defects in material and workmanship under normal use and proper maintenance for a period of twelve months from date of shipment. If within such period any such products shall be proved to Seller's reasonable satisfaction to be defective, such products shall be repaired or replaced at Seller's option. Seller's obligation and Buyer's exclusive remedy hereunder shall be limited to such repair and replacement and shall be conditioned upon Seller's receiving written notice of any alleged defect no later than 10 days after its discovery within the warranty period and, at Seller's option, the return of such products to Seller, f.o.b. its factory, when such return is feasible. Seller reserves the right to satisfy its warranty obligation in full by reimbursing Buyer for all payments it makes hereunder, and Buyer shall thereupon return the products to Seller. Seller shall have the right to remedy such defects. Seller makes no warranty with respect to wear or use items, such as belts, chains, sprockets, discs and coils, all of which are sold strictly AS IS.

**The foregoing warranties are exclusive and in lieu of all other express and implied warranties (except of title) including but not limited to implied warranties of merchantability, fitness for a particular purpose, performance or otherwise,** and in no event shall the Seller be liable for claims (based upon breach of express or implied warranty, negligence, product liability, or otherwise) for any other damages, whether direct, immediate, incidental, foreseeable, consequential, or special.

## Conversions

Measurement	Base Unit	Convert to	Factor
Torque	pound-feet (lb-ft)	Newton-meter (Nm)	1.355818
	Newton-meter (Nm)	pound-feet (lb-ft)	.73756
	pound-inches (lb-in)	Newton-meter (Nm)	.113
	Newton-meter (Nm)	pound-inches (lb-in)	8.85
	ounce-inches (oz-in)	Newton-meter (Nm)	.007062
	Newton-meter (Nm)	ounce-inches (oz-in)	141.611
Horsepower	horsepower (hp)	kilowatt (Kw)	.7457
	kilowatt (Kw)	horsepower (hp)	1.341
Weight	pound (lb)	kilogram (kg)	.453592
	kilogram (kg)	pound (lb)	2.20462
Inertia	pound-feet squared (lb-ft <sup>2</sup> )	kilogram-meter squared (kgm <sup>2</sup> )	.042
	kilogram-meter squared (kgm <sup>2</sup> )	pound-feet squared (lb-ft <sup>2</sup> )	23.81
Length	inch	millimeter (mm)	25.4
	millimeter (mm)	inch	.03937

# Sales Offices



Company	Address	City	State	Phone No	Fax No
①	Advantage Sales Network Canada	80 Hale Road, Unit 1 Brampton	ON	905-455-6969	905-455-6061
②	B C & H Company North Carolina, South Carolina, Virginia, West Virginia	1011 Van Buren Ave Indian Trail	NC	704-575-0458	704-847-3651
③	J.T. Chapman Company Colorado, Kansas, Missouri-Western, Nebraska	3251 Royalty Row Irving	TX	800-494-1918	972-438-5507
④	Empower Sales Arizona, California, Nevada, Utah	74998 Country Club Dr Palm Desert	CA	760-779-5182	760-779-5183
⑤	Kacey Enterprises, Inc. Illinois-Northern & Western, Indiana-Northwest, Iowa, Minnesota, North Dakota, South Dakota	346 Taft Ave. Ste 203 Glen Ellyn	IL	630-790-9783	630-790-9654
⑥	LR Industrial Sales LLC Wisconsin, Upper Peninsula of Michigan	PO Box 44418 Racine	WI	262-939-3189	262-320-0608
⑦	Motion Control Resources Indiana, Kentucky-Eastern, Ohio, Pennsylvania-Western, Lower Michigan	6519 Eastland Road Brookpark	OH	440-829-2633	440-234-1200
⑧	Robco, Inc. Arkansas, Louisiana, Oklahoma, Texas	1523 Crescent Carrollton	TX	972-242-3300	972-245-2328
⑨	J.S., Inc. Alabama, Florida- Panhandle, Georgia, Mississippi, Tennessee	2032 Valleydale Rd Birmingham	AL	205-913-5230	866-809-9926
⑩	Gent Components, Inc. Idaho, Oregon, Washington	4701 Colorado Ave S Seattle	WA	206-767-2780	206-767-2821

# Model Number Index - Cross Reference to Stearns® Model Numbers

48C FRAME END MOUNT BRAKE			
Torque lb-ft	Dings Model #	Stearns® Model Number	Page Number
<b>NEMA 2, IP40 Enclosure</b>			
1.5	51001-050	1-048-151-01	4
3	51003-050	1-048-161-01	4
6	51006-050	1-048-171-01	4
1.5	51001-080	1-048-151-00	4
3	51003-080	1-048-161-00	4
6	51006-080	1-048-171-00	4

56C/143-145TC FRAME DOUBLE C FACE BRAKE			
Torque lb-ft	Dings Model #	Stearns® Model Number	Page Number
<b>NEMA 2 / IP41 Enclosure</b>			
1.5	61001-551	1-056-701-0X	13
3	61003-551	1-056-711-0X	13
6	61006-551	1-056-721-0X	13
10	62010-551	1-056-731-0X	13
15	63015-551	1-056-741-0X	13
20	63020-551	1-056-751-0X	13
<b>NEMA 4 / IP56 Enclosure</b>			
1.5	61001-5153	1-056-702-0X	13
3	61003-5153	1-056-712-0X	13
6	61006-5153	1-056-722-0X	13
10	62010-5153	1-056-732-0X	13
15	63015-5153	1-056-742-0X	13
20	63020-5153	1-056-752-0X	13
<b>NEMA 4X / IP56 Enclosure</b>			
1.5	61001-5155	1-056-704-0X	13
3	61003-5155	1-056-714-0X	13
6	61006-5155	1-056-724-0X	13
10	62010-5155	1-056-734-0X	13
15	63015-5155	1-056-744-0X	13
20	63020-5155	1-056-754-0X	13
<b>NEMA 4X / IP56 Stainless Steel</b>			
3	61003-5145	1-056-71S-0X	13
6	61006-5145	1-056-72S-0X	13
10	62010-5145	1-056-73S-0X	13
15	63015-5145	1-056-74S-0X	13
20	63020-5145	1-056-75S-0X	13

56C/143-145TC FRAME END MOUNT BRAKE			
Torque lb-ft	Dings Model #	Stearns® Model Number	Page Number
<b>NEMA 2 / IP41 Enclosure</b>			
1.5	61001-5601	1-056-001-00	5
3	61003-5601	1-056-011-00	5
6	61006-5601	1-056-021-00	5
10	62010-5601	1-056-031-00	5
15	62015-5601	1-056-041-00	5
20	63020-5601	1-056-051-00	5
25	63025-5601	1-056-061-00	5
1.5	61001-524	1-056-001-00	7
3	61003-524	1-056-011-00	7
6	61006-524	1-056-021-00	7
10	62010-524	1-056-031-00	7
15	63015-524	1-056-041-00	7
20	63020-524	1-056-051-00	7
25	64025-524	1-056-061-00	7
<b>NEMA 4 / IP56 Enclosure</b>			
1.5	61001-535	1-056-002-00	11
3	61003-535	1-056-012-00	11
3	61003-530	1-056-212-00	11
6	61006-535	1-056-022-00	11
6	61006-530	1-056-222-00	11
10	62010-535	1-056-032-00	11
10	62010-530	1-056-232-00	11
15	63015-535	1-056-042-00	11
15	63015-530	1-056-242-00	11
20	63020-535	1-056-052-00	11
20	63020-530	1-056-252-00	11
25	64025-530	1-056-262-00	11
1.5	61001-545	1-056-002-80	9
3	61003-545	1-056-012-80	9
6	61006-545	1-056-022-80	9
10	62010-545	1-056-032-80	9
15	63015-545	1-056-042-80	9
20	63020-545	1-056-052-80	9
<b>NEMA 4X / IP56 Enclosure</b>			
3	61003-5116	1-056-214-00	11
3	61003-5140	1-056-914-00	11
6	61006-5116	1-056-224-00	11
6	61006-5140	1-056-924-00	11
10	62010-5116	1-056-234-00	11
10	62010-5140	1-056-934-00	11
15	63015-5116	1-056-244-00	11
15	63015-5140	1-056-944-00	11
20	63020-5116	1-056-254-00	11
20	63020-5140	1-056-954-00	11
25	64025-5116	1-056-264-00	11
25	64025-5140	1-056-964-00	11

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# Model Number Index - Cross Reference to Stearns® Model Numbers

<b>182/184TC-254/256TC FRAME END MOUNT BRAKE</b>			
Torque lb-ft	Dings Model #	Stearns® Model Number	Page Number
<b>NEMA 2 / IP43 Enclosure</b>			
10	71010-ES4S	1-087-011-00	17
15	71015-ES4S	1-087-021-00	17
25	71025-ES4S	1-087-031-00	17
35	72035-ES4S	1-087-041-00	17
50	72050-ES4S	1-087-051-00	17
75	73075-ES4S	1-087-061-00	17
105	2174105-ES4S	1-087-081-00	17
<b>NEMA 4 / IP56 Enclosure</b>			
10	71010-SC6S	1-087-012-00	21
15	71015-SC6S	1-087-022-00	21
25	71025-SC6S	1-087-032-00	21
35	72035-SC6S	1-087-042-00	21
50	72050-SC6S	1-087-052-00	21
75	73075-SC6S	1-087-062-00	21
105	74105-SC6S	1-087-082-00	21
<b>NEMA 4X / IP56 Enclosure</b>			
10	71010-SC6T	1-087-012-B0	23
15	71015-SC6T	1-087-022-B0	23
25	71025-SC6T	1-087-032-B0	23
35	72035-SC6T	1-087-042-B0	23
50	72050-SC6T	1-087-052-B0	23
75	73075-SC6T	1-087-062-B0	23
105	74105-SC6T	1-087-082-B0	23

<b>284TC/UC-286TC/UC FRAME END MOUNT BRAKE</b>			
Torque lb-ft	Dings Model #	Stearns® Model Number	Page Number
<b>NEMA 2 / IP41 Enclosure</b>			
25	81025-58	1-087-031-00 with adaptor	41
35	81035-58	1-087-041-00 with adaptor	41
50	82050-58	1-087-151-00	41
75	83075-58	1-087-161-00	41
105	83105-58	1-087-181-00	41
125	84125-58	1-087-191-00	41
175	85175-58	1-082-021-02 with adaptor	41
<b>NEMA 4 / IP56 Enclosure</b>			
25	81025-29	1-087-032-00 with adaptor	45
35	81035-29	1-087-042-00 with adaptor	45
50	82050-29	1-087-151-00	45
75	83075-29	1-087-161-00	45
105	83105-29	1-087-181-00	45
125	84125-29	1-087-191-00	45
175	85175-29	1-082-022-02 with adaptor	45

<b>182/184TC-254/256TC FRAME DOUBLE C FACE BRAKE</b>			
Torque lb-ft	Dings Model #	Stearns® Model Number	Page Number
<b>NEMA 2 / IP43 Enclosure</b>			
10	71010-CE42	1-087-711-0X	31
15	71015-CE42	1-087-721-0X	31
25	71025-CE42	1-087-731-0X	31
35	72035-CE42	1-087-741-0X	31
50	72050-CE42	1-087-751-0X	31
75	73075-CE41	1-087-761-0X	31
105	74105-CE41	1-087-781-0X	31
<b>NEMA 4 / IP56 Enclosure</b>			
10	71010-CE62	1-087-712-0X	33
15	71015-CE62	1-087-722-0X	33
25	71025-CE62	1-087-732-0X	33
35	72035-CE62	1-087-742-0X	33
50	72050-CE62	1-087-752-0X	33
75	73075-CE61	1-087-762-0X	33
105	74105-CE61	1-087-782-0X	33
<b>NEMA 4X / IP56</b>			
10	71010-CE64	1-087-712-BX	35
15	71015-CE64	1-087-722-BX	35
25	71025-CE64	1-087-732-BX	35
35	72035-CE64	1-087-742-BX	35
50	72050-CE64	1-087-752-BX	35
75	73075-CE63	1-087-762-BX	35
105	74105-CE63	1-087-782-BX	35

<b>324TC/UC-405TC/UC FRAME END MOUNT BRAKE</b>			
Torque lb-ft	Dings Model #	Stearns® Model Number	Page Number
<b>NEMA 2 / IP41 Enclosure</b>			
125	92125-50	1-082-011-02	47
180	92180-50	1-082-021-02	47
230	93230-50	1-082-031-02	47
330	94330-50	1-082-041-02	47
450	95450-50	1-082-051-02	47
<b>NEMA 4 / IP56 Enclosure</b>			
125	92125-51	1-082-012-02	47
180	92180-51	1-082-022-02	47
230	93230-51	1-082-032-02	47
330	94330-51	1-082-042-02	47
450	95450-51	1-082-052-02	47

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# Magnetic Separators Product Line

*Providing Separation Solutions Since 1899*

Dings magnetic separators for ferrous and nonferrous metals are used in a wide variety of industries such as **Construction/Demolition, Foundry, Mining & Aggregate, Recycling, and Scrap.**

In addition to ensuring product purity, they prevent costly repairs and downtime by protecting processing equipment from damaging metal. Reclaiming metals, recovering saleable materials, and concentrating minerals are other important uses for Dings products.

## Product Overview

**10-YEAR WARRANTY**  
against coil burnout

### Overhead Magnets

Overhead separators suspend above belt or vibratory conveyors, magnetically lifting ferrous metals out of bulk material. Separated steel objects are held against the magnet until removed – automatically on self-cleaning models, or manually on stationary models.



**Our innovative coil design allows us to offer the LONGEST WARRANTY IN THE INDUSTRY against coil burnout.**

**Types:**

- Electromagnets – Self-Cleaning or Stationary
- Permanent Magnets – Self-Cleaning or Stationary
- Severe Duty - Self-Cleaning
- Solid Waste Magnetic Systems

**Lifetime Guarantee**  
on Magnetism

### Magnetic Head Pulleys

Dings Perma Pulleys are permanent (nonelectric) magnetic separators that operate as head pulleys on belt conveyors. These low-cost, self-cleaning magnets remove tramp iron and purify materials conveyed in bulk form.



**Our Patented Flux Control Circuit Provides Ultimate Magnetic Power allowing us to offer a LIFETIME GUARANTEE on magnetism**

**Lifetime Guarantee**  
on Magnetism

### Magnetic Drums

The Deep Draw Drums is a permanent self-cleaning separator. Its rugged construction is ideal for separating ferrous metal from material such as shredded cars, slag, crushed ore, and ash at mass burn plants. Electromagnetic drums are also available for scrap recycling.



**Type:**

- Self-Cleaning Permanent & Electromagnetic Scrap Recycling Drums

### Eddy Current Separators

The Eddy Current Separator is ideal for recovering nonferrous metals from recyclables, plastics, glass, material processed at composting or waste-to-energy facilities, automotive shredder residue, and other processed materials.



### Services

**In-House Testing**

Unsure which product is best for your application? Send us a sample of your product with a description of what you are trying to accomplish. We'll test it on equipment in-house at no charge, and recommend the best equipment for your particular application.

**Custom Design**

Our highly experienced sales engineers will work with you to design the perfect separator for your application.

Our engineers will provide certified prints prior to production to ensure everything meets your requirements.

**Rebuilds**

If your magnet has been damaged, consider having Dings rebuild it. In many cases, we can bring a magnet back to near-new condition at a cost substantially less than that of a new one.