



	Marine		Marine		Maritime		Navy
Description	Suitable for many shipboard and severe duty applications		Suitable for many shipboard and severe duty applications		Suitable for many Coast Guard, shipboard and severe duty applications when "ductile iron" is specified		Designed to Military Specification
Compliance (Note A)	IEEE 45 ABS		IEEE 45 ABS		IEEE 45 Federal Standard 46 ABS		MIL-B-16392C (Ships)
Spring Set Operation (Note E)	Armature Actuated Brake (AAB)		Solenoid Actuated Brake (SAB)				
Stearns Series (Note B)	350	360	1-056-200-K0	1-087-0xx-K0 1-082-0xx-K0 1-086-0xx-K0	1-087-Mxx	1-082-4xx 1-086-4xx	1-087-6xx 1-082-6xx 1-086-6xx
Enclosure	IP55	IP56	NEMA 4 IP56	(Note C) NEMA 4, IP54, IP56	IP55		NEMA 4 IP56
Enclosure Finish	DI - Water Based Primer Alum - Anodize MIL-A-8525 F		Water Based Primer		Alkyd Primer MIL TT-P-645C		Enamel MIL-E-15090
Coil	Encapsulated Construction Class H Insulation		Injection Molded Construction Class B Insulation		Injection Molded Construction Class B Insulation		Encapsulated Class H
Endplate or Mount Plate Material	Steel		Cast Iron		Ductile Iron		Ductile Iron
Housing Material	Cast Aluminum or Ductile Iron		Cast Iron		Ductile Iron		Ductile Iron
Support Plate Material	N/A		Steel	(Note H)	Ductile Iron		Ductile Iron
Pressure Plate & Stationary Disc Material	N/A		Brass		Brass		Brass
Self Adjusting (Note G)	No, Gap By Gage		No, Gap By Scale	Yes	Yes		Yes
Manual Release (Note D)	Optional		Maintained		Maintained		Non-Maintained

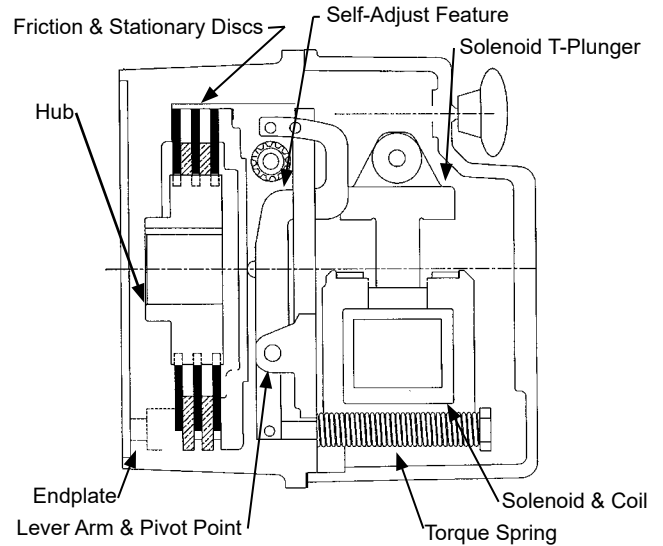
- A. IEEE 45 compliance nameplate is optional. ABS Certificate SB374021
- B. Additional options & modifications are included in the full 12 digit part number
- C. IP56 with side release option available in 1-087-000-K0 & 1-082-000-K0
- D. The maintained release holds the brake in a release condition until the brake is electrically, or manually, re-engaged
The non-maintained ("deadman") release is manually held in the released condition, re-setting when the force is removed
- E. Spring-set, Solenoid with coil & linkage actuated brake (SAB), AC voltage coil
Spring-set, Armature actuated direct-acting brake (AAB), DC voltage coil
- F. Carrier ring friction disc is standard with the 350 & 360 series and is an option in the SAB brakes
- G. Stainless Steel Self-Adjust is standard with the 1-08x-600 and 1-087-M00
- H. 1-087: cast aluminum; 1-082: cast iron; 1-086: ductile iron
- I. Dimension may differ from catalog brakes, dimensional drawing available on request.

Brake Operation

Solenoid Actuated Brakes (SAB) are spring set power released brakes, acting through a solenoid and lever mechanism.

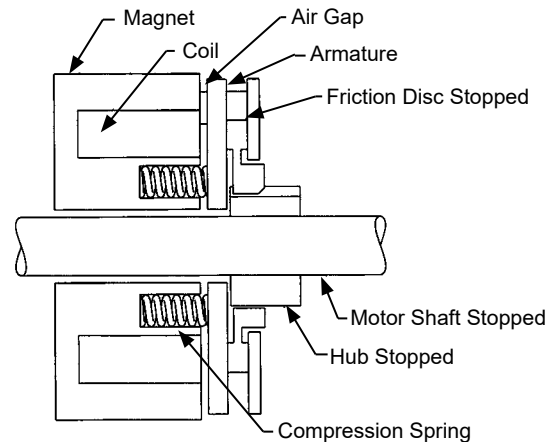
The 1-087-x00, 1-082-x00 and 1-086-x00 series brakes are self-adjusting for friction disc wear.

The endplate mounts to a C-face register & bolt circle, usually on the non-drive end of a motor. The brake hub is attached to the keyed shaft. The friction discs fit closely onto the splined outside diameter of the hub. When the coil is de-energized, the spring pulls the lever arm about a pivot point. This action applies spring force against the pressure plate compressing the pressure plate and friction discs within the brake endplate. The disc pack, hub and shaft are unable to rotate. A small single-phase AC, or DC, solenoid coil is used with the design's mechanical advantage to remove the spring force and allow shaft rotation. Coil pull in and holding amperage requirements are listed in Stearns Catalog #200.



Armature Actuated Brakes (AABs) are spring set power released direct acting brakes.

The brake hub is attached to a shaft. A carrier ring style friction disc fits closely to the outside diameter of the splined hub. The magnet body contains compression springs and an electrical coil. When electrical power is applied to the coil, the armature is drawn to the magnet body, the springs are compressed and the hub and friction disc are able to rotate. When electrical power is removed, the brake is spring set. The spring force moves the armature across a small precision air gap to clamp the carrier style friction ring between the armature and the mount surface which prevents hub and shaft rotation. The AAB coil requires DC voltage which can be supplied by a DC power source or an AC rectifier.



Stearns brakes operate at the selected voltage and frequency. Wire separately for use with a variable frequency motor drive (VFD).

Catalog brakes can be modified with additional modifications for use in severe duty or industry specific applications.

The full product catalog #200, sizing and selection charts, installation and part information is available at www.stearnsbrakes.com.

Navy Brakes - built to the former MIL-B-16392C

Ductile Iron Enclosure, brass stationary and pressure plates in the disc pack.
SAB Style: Power released spring set brake

Additional modifications will change the eighth through twelfth character of the part number.
Modification necessary for vertical above or below mount.
Adapters available for other C-face mount requirements.

The Master Plan details materials, construction and dimensional information

Series	Plan	R633 Carrier Plan
1-087-600	N1-1087-602-A	N1-087-602-D
1-082-600	N1-1082-602-A	N1-082-602-C
1-086-600	N1-1086-602-A	N1-086-602-C

Weapon and cargo elevators specifying MIL-E-17807B are constructed with bronze carrier ring style friction discs, ductile iron stationary and pressure plates. Due to weight, the carrier rings are horizontal use only.

Torque (lb-ft)	Model Number*	NEMA Frame Size
10	1-087-612-00	182-256TC
15	1-087-622-00	
25	1-087-632-00	
35	1-087-642-00	
50	1-087-652-00	
75	1-087-662-00	
105	1-087-682-00	324-405TC
125	1-082-612-00	
175	1-082-622-00	
230	1-082-632-00	
330	1-082-642-00	
440	1-082-652-00	
370	1-086-612-XO	444-445TSC
500	1-086-622-XO	
750	1-086-632-XO	
1000	1-086-642-XO	
500	1-086-662-XO	505SC
750	1-086-672-XO	
1000	1-086-682-XO	



Obsolete Navy Brake Interchange List

Static Torque (lb-ft)	Style	Obsolete Brake Model Number	NEMA Frame Size	Obsolete Brake Master Plan	Replacement Brake Model Number	Static Torque (lb-ft)
3	NA-82-9	1-028-311-00	182-256TC	N1037-A	NO Direct Replacement	3
10	NA-82A-9	1-028-321-00	182-256TC		1-087-612-00	10
15	NA-82C-9	1-028-331-00	182-256TC		1-087-622-00	15
25	NA-82B-9	1-028-341-00	182-256TC		1-087-632-00	25
35	NA-84A-9	1-028-351-00	182-256TC		1-087-642-00	35
50	NA-84B-9	1-028-361-00	182-256TC		1-087-652-00	50
75	NA-86B-9	1-028-381-00	182-256TC	1-087-662-00	75	
90	NA-1006B	1-021-111-00	Special pre-NEMA Frame	N1190A	NO Direct Replacement	---
135	NA-1008B	1-021-121-00	Special pre-NEMA Frame		NO Direct Replacement	---
180	NA-1304C-13	1-023-111-00	324-405TC	N322H	1-082-622-00	175
270	NA-1306C-13	1-023-121-00	324-405TC		1-082-642-00	330
360	NA-1308C-13	1-023-131-00	324-405TC		1-082-652-00	440
180	NA-1304C-16	1-023-141-00	444-445TSC	N322H	1-082-622-00 with adapter. See ordering Information	175
270	NA-1306C-16	1-023-151-00	444-445TSC		1-082-642-00 with adapter. See ordering Information	330
360	NA-1308C-16	1-023-161-00	444-445TSC		1-086-612 the full part number is a de-rated torque	derated to 370
10-105		1-087-400	182-256TC		1-087-M00	10-105

Marine Duty Spring Set Brake

Cast Iron Enclosure, brass stationary and pressure plates in the disc pack.
SAB style: Power released spring set brake.

Additional modifications will change the eight through twelfth characters of the part number. Options are listed on the pamphlet back cover and in the catalog.

Additional options and modifications are recorded in the 8-12 position.

1-056-200-K0

56TC - 145TC mount: 5-7/8" bolt circle, 4-1/2" register

IP56 (close mount), NEMA 4X, side release

Dimensional drawing side release 1-056-202-D

Lb-Ft	AC Part Number
3	1-056-212-K0
6	1-056-222-K0
10	1-056-232-K0
15	1-056-242-K0
20	1-056-252-K0
25	1-056-262-K0



1-087-000-K0

182TC - 256TC mount: 7-1/4" bolt circle, 8-1/2" register

IP56 (close mount), NEMA 4 & 4X. IP56 with side release option

Dimensional drawing pull release 1-087-002-D; side release: 1-087-002-ZD

Lb-Ft	AC Part Number
10	1-087-012-K0
15	1-087-022-K0
25	1-087-032-K0
35	1-087-042-K0
50	1-087-052-K0
75	1-087-062-K0
105	1-087-082-K0



1-082-000-K0

324TC - 405TC mount: 11" bolt circle, 12-1/2" register

IP54, NEMA 4 & 4X. IP56 with side release option

Dimensional drawing pull release 1-082-002-D; side release 1-082-002-ZD

Lb-Ft	AC Part Number
125	1-082-012-K2
175	1-082-022-K2
230	1-082-032-K2
330	1-082-042-K2
440	1-082-052-K2



1-086-000-K0

324TC - 405TC mount: 14" bolt circle, 16" register

Cast Iron Enclosure, IP54, NEMA 4

Dimensional drawing pull release 1-086-002-D

Lb-Ft	AC Part Number
500	1-086-022-K2
750	1-086-032-K2
1000	1-086-042-K2



Marine Duty Spring Set Brake

AAB: Armature Actuated Style Spring Set Brakes

- Ductile Iron Cover, DC Coil, IP56 Rating
- Corrosion resistant finish over steel magnet body, armature and splined hub
- Sizes range from 35 lb-ft to 300 lb-ft
- Typical options listed on the pamphlet back cover
- Rectifiers are listed in catalog

The 350 & 360 series enclosures are rated IP56, NEMA 4. The magnet body and coil are designed as a Class H insulation system. No modification for vertical use is needed. Selection is made through a series of material and construction choices and options. **A full part number is provided after all specifications are considered.** The AAB style brake has a long performance life when the small, precision air gap is properly maintained. Coil engage and release times are listed in the catalog.

The 350 series is pressure plate mounted

The magnet body is farthest from the mount surface. The carrier ring style friction disc is close to the mount surface. Cover plugs are removed to reach the under-cover threaded retracting style maintained release bolts.

- Conduit box option
- Mechanical status switch available
- Six bolt adjustment by feeler gage
- Viton flat gasket between housing and pressure plate mount
- Covers available in die cast aluminum or ductile iron

The 360 series is magnet body mounted

The magnet body is closest to the mount surface. The carrier ring style friction disc farthest from the mount surface. The friction disc can be changed without removing the magnet body.

- External non-maintained release
- Under-cover threaded retracting style maintained release bolts with optional external yoke release
- Conduit box option
- Mechanical status switch available
- Longer hub with four set screws accepts larger diameter shaft
- Three bolt adjustment by feeler gage
- Viton O-ring between housing & pressure plate mount
- Covers available in die cast aluminum or ductile iron



Basic Selection

The full part number is assigned at purchase order

- Bore Size?
- Torque Required?
- Magnet Body Mount (360) or Pressure Plate Mount (350)
- Mounting Dimensions: NEMA C-face or metric bolt circle?
- Factory de-rate torque for longer wear life or due to shaft diameter?
- AC voltage selection? Rectifier choice will determine the DC coil voltage.
- Conduit Box?

AAB	Model	Torque (lb-ft)	Shaft Bore (Min/Max) (in / mm)	
350-6	350-6	350-6	1-1/8 - 1-3/8	30-35
350-7	350-7	350-7	1-3/8 - 1-5/8	30-48
350-8	350-8	350-8	1-5/8 - 1-7/8	35-45
350-9	350-9	350-9	1-7/8 - 2-1/8	30-70
360-6	360-6	360-6	1-1/8 - 1-5/8	30-40
360-7	360-7	360-7	1-3/8 - 1-7/8	30-48
360-8	360-8	360-8	1-5/8 - 2	35-50
360-9	360-9	360-9	1-7/8 - 2-3/8	40-60



* List Price varies by torque, mount, options, conduit box & external yoke release

Maritime Duty Spring Set Brake

Ductile Iron Enclosure, brass stationary & pressure plates in the disc pack

SAB style: Power released spring set brake

Additional modifications will change the eighth through twelfth character of the part number.

Options are listed on the pamphlet back cover and in the catalog.

All SAB brakes are rated for fixed frequency & voltage. Wire separate from a variable frequency drive (VFD).

Modify for vertical above or below use.

1-087-M00

182TC - 256TC mount: 7-1/4" bolt circle, 8-1/2" register

IP56 (close mount), NEMA 4 and pull release

Dimensional drawing: 1-087-M02-D

Lb-Ft	Model Number	Type
10	1-087-M12-00	AC
15	1-087-M22-00	AC
25	1-087-M32-00	AC
35	1-087-M42-00	AC
50	1-087-M52-00	AC
75	1-087-M62-00	AC
105	1-087-M82-00	AC



Mount adapters are available for use with:

56-145TC, 5-7/8" AJ Bolt Circle

284-286TC, 9" AJ Bolt Circle

324-405TC, 11" AJ Bolt Circle



The 1-087-400 is out of production.

1-087-400 OD was 9.47 OD; the 1-087-M00 is 11.88 OD



1-082-400

324TC-405TC mount: 11" bolt circle, 12-1/2" register

IP56 (close mount), NEMA 4 and pull release

Dimensional drawing: 1-082-402-D

Lb-Ft	Model Number	Type
125	1-082-412-00	AC
175	1-082-422-00	AC
230	1-082-432-00	AC
330	1-082-442-00	AC
440	1-082-452-00	AC

Mount adapters are available for use with:

182-256TC, 7-1/4" AJ Bolt Circle

284-286TC, 9" AJ Bolt Circle

444-505TC, 14" AJ & 14.5" AJ Bolt Circle



500-1000 Lb-ft, see the 1-086-600 Navy series (page 7)

Stainless Steel Spring Set Brakes

Severe Wash Down Enclosure IP56, NEMA 4x
SAB style: Power released spring set brake

NEMA 56C to 145TC

5-7/8" bolt circle (AJ), 4-1/2" register (AK)

1-056-900 Series

- Optimum Corrosion Protection
- NEMA 4x, IP56, IP57 rating with close couple mount
- 300 Series stainless steel enclosure and hardware
- Viton® gaskets and o-rings
- No exposed paint surface
- Universal horizontal / vertical mount
- External maintained side release rests with voltage application
- Options list on the pamphlet back cover
- Dimensional, inrush and amperage information available at www.stearnsbrakes.com



C-face Mount - non-drive end



In Line drive end coupler style
Between two C-face registers

Non-Drive End Motor Mount

Dimensional Drawing: 1-056-904-D
Select torque, shaft bore, voltage

Nominal Static Torque lb-ft (Nm)	Basic Model Number and List Price*
	AC
3 (4)	1-056-914-00
6 (8)	1-056-924-00
10 (14)	1-056-934-00
15 (20)	1-056-944-00
20 (27)	1-056-954-00
25 (34)	1-056-964-00

Drive End Coupler Mount

Dimensional Drawing: 1-056-904-5D
Select torque, 5/8 or 7/8 shaft & bore, voltage

Nominal Static Torque lb-ft (Nm)	Type	Basic Model Number and List Price	Wt. Lbs. (kg)
3	AC	1-056-71S-0X	22 (10)
6	AC	1-056-72S-0X	22 (10)
10	AC	1-056-73S-0X	22 (10)
15	AC	1-056-74S-0X	22 (10)
20	AC	1-056-75S-0X	22 (10)
25	AC	1-056-76S-0X	22 (10)

• 5/8" or 7/8" shaft/bore size

- (for 5/8", use "05" in place of "0X" in model number)
- (for 7/8", use "07" in place of "0X" in model number)

Engineering Specifications

Nominal Static Torque Lb-ft (Nm)	No. of Friction Discs	Coil Size	Maximum Solenoid Cycle Rate ⁽¹⁾	Thermal Capacity ⁽²⁾		Inertia (Wk ²)
				hp-sec/min (watts)		
				AC	cycles/min	Horizontal
3 (4)	2	4	36	9 (11.2)	6.5 (80)	.014 (5.88)
6 (8)	2	K4	36	9 (11.2)	6.5 (80)	.014 (5.88)
10 (14)	2	K4	36	9 (11.2)	6.5 (80)	.014 (5.88)
15 (20)	2	K4+	36	9 (11.2)	6.5 (80)	.014 (5.88)
20 (27)	3	K4+	36	9 (11.2)	6.5 (80)	.020 (8.40)

(1) Maximum solenoid cycle rate is based on ambient temperature of 72°F (22°C) with 50% duty cycle. Does not relate to brake cycle rate (see Thermal Capacity).

(2) Thermal capacity rating is based on ambient temperature of 72°F (22°C), stop time of one second or less, with no heat absorbed from the motor.

Hub Selection

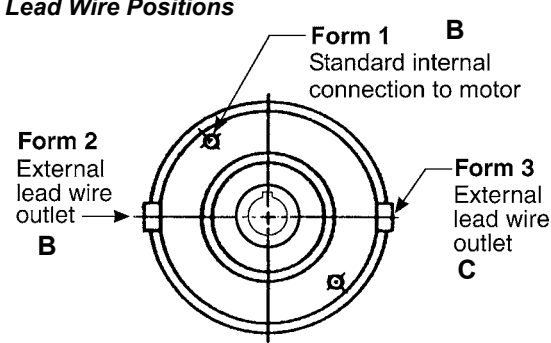
Character	Bore (in.)	Keyway** (in. x in.)
A*	5/8	1/8 x 1/16
B	5/8	3/16 x 3/32
C	3/4	3/16 x 3/32
D	7/8	3/16 x 3/32
E	1-1/8	1/4 x 1/8
F*	1-1/4	1/4 x 1/8
K	1/2	1/8 x 1/16
L*	1	1/4 x 1/8
N*	9/16	1/8 x 1/16
O*	11/16	3/16 x 3/32
P*	1-1/16	1/4 x 1/8
R*	13/16	3/16 x 3/32
S*	15/16	1/4 x 1/8

Stearns Division of Rexnord Industries, LLC, has over 60 years experience with supporting marine, maritime, drilling, port and similar severe duty applications. Many options and modifications are available to adapt the SAB and AAB style spring set brakes to meet your application. The following list are common severe duty options. These modifications can be added to the standard industrial or hazardous duty brakes as detailed in the Stearns catalog. Design, application and field support is readily available by phone, fax or e-mail to talk about your specification and additional options or brake solutions.

Option	Application	SAB	AAB
IEEE 45 nameplate	Add to Marine brakes, standard on Navy & Maritime	X	X
Coil: Encapsulated construction, Class H Insulation	Robust construction for temperature extremes & high cycle rates. Class H is standard in the AAB	See Page 1	Std
Space Heater	Maintain a consistent temperature to reduce brake condensation and resulting corrosion	X	X
Carrier ring friction disc	Weapons lift and extreme inertia loads	X	Std
Hardware, external: Stainless Mount	Outdoor saltwater or vapor exposure	X	X
Gasket: Brake to Motor	Neoprene gasket for close couple IP 56/57 mount	X	X
Epoxy or Enamel paint finish	Enclosure corrosion, compare to spec page one	X	X
Internal endplate finish	Corrosion control in disc pack area	X	N/A
Stainless steel hub	Extreme corrosion environments	X	X
Stainless steel self-adjust mechanism	Page one, Note G. All steel self adjust is an option also (no synthetic bushing)	X	N/A
Manual adjust only	Disable the self adjust feature in 1-08X-000 series	X	N/A
Terminal strip	Simplify wiring and maintenance	X	N/A
Conduit box	External conduit box with terminal strip	X	X
Status switch	Set as normally open or closed to confirm set or release	X	X
Proximity switch	Confirm brake set or release	X	N/A
Encoder mounted inside brake	Non-standard shaft requirements, brochure available detailing this option		
Housing machining for external encoder mount	Rigidly attach or tether an encoder to the brake	X	X
Carrier ring friction disc construction	Extreme duty applications, horizontal only	See Page 1	Std
Adapters	Adapt brake to a larger or smaller C-face mount	X	X
Through shaft	Through bore & seal in housing	X	X
Manual release alternatives	Maintained, non-maintained, full, under-cover	X	X
Vertical mount	Specify mount above or below the motor	X	N/A

Specify

- Basic brake part number (enclosure rating & torque)
- Shaft bore & keyway
- Leadwire position
- Options & modifications including vertical above or below mount
- Information that would be useful in selecting the correct brake



Position	Form
A	1
B	2
C	3
F	1,2,3
G	2,3

View facing brake mounting register.