

**Series 56,000; 56,100; 56,200; 56,300; 56,400;
56,500; 56,600; 56,700; and 56,900**
Mounting Face: NEMA 56C, 143TC and 145TC

Engineering Specifications

Maximum Solenoid Cycle Rate: ① Thermal Capacity: ②
AC 36 cycles/min Horizontal 9 hp-sec/min (112 watts)
DC 10 cycles/min Vertical 6.5 hp-sec/min (80 watts)

- 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 motor. Refer to Selection Procedure Section.

**Series 56,000; 56,100; 56,300;
56,500; and 56,700**

Nominal Static Torque	Number of Friction Discs	Coil Size		Inertia (WK ²)
		AC	DC	
1.5-3 (2-4)	1	4	4+	.008 (3.36)
6 (8)	1	K4	K4+	.008 (3.36)
10 (14)	2	K4	K4+	.014 (5.88)
15 (20)	2	K4+	M4+	.014 (5.88)
20 (27)	3	K4+	M4+	.020 (8.40)
25 (34)	3	M4+	P4+	.020 (8.40)

**Series 56,200; 56,400;
56,600; and 56,900**

Nominal Static Torque	No. of Friction discs	Coil Size		Inertia (WK ²)
		AC	DC	
3-6 (4-8)	2	4	4+	.014 (5.88)
10 (14)	2	K4	K4+	.014 (5.88)
15 (20)	2	K4+	M4+	.014 (5.88)
20 (27)	3	K4+	M4+	.020 (8.40)
25 (34)	3	M4+	P4+	.020 (8.40)

Current Ratings (amperes)

Solenoid Coil Size*	AC Current	Voltage: 60 Hz					Voltage: 50 Hz			Voltage: DC				
		115	200	230	400	460	575	110	220	380	24	95	115	230
4	Inrush	3.6	2.1	1.8	1.1	.9	.7	4.1	2.1	.9	13.3	3.6	2.8	1.5
	Holding	.3	.2	.2	.08	.08	.06	.3	.2	.08	.3	.1	.05	.03
4+	Inrush	-	-	-	-	-	-	-	-	-	12.0	4.7	3.7	2.0
	Holding	-	-	-	-	-	-	-	-	-	.4	.1	.08	.04
K4	Inrush	4.3	2.5	2.2	1.3	1.1	.9	3.8	1.9	1.1	17.5	4.7	3.7	2.0
	Holding	.3	.2	.2	.1	.08	.07	.4	.2	.08	.4	.1	.08	.04
K4+	Inrush	4.6	2.5	2.3	1.2	1.0	.9	4.9	2.0	1.0	20.5	7.5	5.5	2.0
	Holding	.4	.2	.2	.1	.1	.08	.4	.2	.1	.5	.1	.08	.04
M4	Inrush	3.0	1.7	1.5	.9	.8	.6	-	-	.8	-	-	-	-
	Holding	.6	.3	.3	.2	.1	.21	-	-	.1	-	-	-	-
M4+	Inrush	4.6	2.5	2.3	1.2	1.0	.9	4.1	2.0	1.3	30.3	7.9	5.5	2.0
	Holding	.4	.2	.2	.1	.1	.08	.4	.2	.1	.5	.1	.1	.04
P4+	Inrush	-	-	-	-	-	-	-	-	-	30.3	11.3	8.4	3.0
	Holding	-	-	-	-	-	-	-	-	-	.5	.1	.08	.04

Motor Frame Adapters: Series 56,000 through 56,600

WARNING! Before selecting an adapter to mount a brake on a larger motor frame, the torque and thermal capacity required by the application should be determined as shown in the "Selection Procedure" section. A larger motor may indicate a requirement for greater thermal capacity than the brake is designed for. The brake selection must be matched to the motor and application requirements, before use of an adapter is considered.

To Adapt to NEMA Frame Size	AK Dim.	Reg. No.	Brake Enclosure ①	Brake Torque	Adapter Stock Number	Additional Shaft Length Required
	in. (mm)					in. (mm)
182TC 184TC 213TC 215TC 254TC 256TC	8.50 (215.90)	-9	IP 23	1.5-15	5-55-5041-00 List \$700.00	.94 (23.81)
	8.50 (215.90)	-9	IP 54	1.5-6	5-55-5041-00 List \$700.00	.94 (23.81)
	8.50 (215.90)	-9	IP 23	20 & 25	5-55-5043-00 List \$700.00	.94 (23.81)
	8.50 (215.90)	-9	IP 54	10-25	5-55-5043-00 List \$700.00	.94 (23.81)

① 56,300 Series have NEMA 1 enclosure. For adapter dimensions, see Technical Data

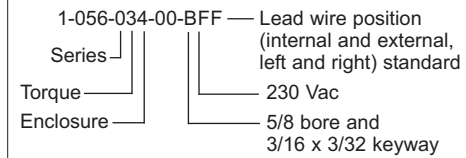
Brake set and release times in milliseconds, when brake and motor are switched separately (for T1/T2 definitions, see page 98):

Static Torque lb-ft	Coil Size	T1	T2
1.5 - 25	4, K4, K4+, M4+	25	14

Ordering and Identification Information

The following example and tables provide information for selecting the appropriate three-letter suffix when ordering a Stearns Brake.

Example of a complete part number:



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
Z	.460	pilot bore

Minimum bore is .500. Maximum allowable bore is 1.25. For through-shaft applications, .875 is maximum

*These bores are non-standard. Add \$225.00 to list price.

**Keyseats made to ANSI B17.1 Standard.

Standard AC Voltage Ratings

Character	Voltage	Hertz
B	115	60
D	110	50
E	200	60
F	230	60
	190	50
H	220	50
L	460	60
	380	50
M	415	50
N	575	60
O	110/220	50
P	115/208-230	60
Q	208-230/460	60
	190/380	50
R	200/400	60

Direct Current

Character	Voltage
T	12
U	24
V	36
W	48
X	95
Y	115
Z	230

Consult factory if other DC voltage is needed.

Voltages below 70VDC are polarity sensitive.

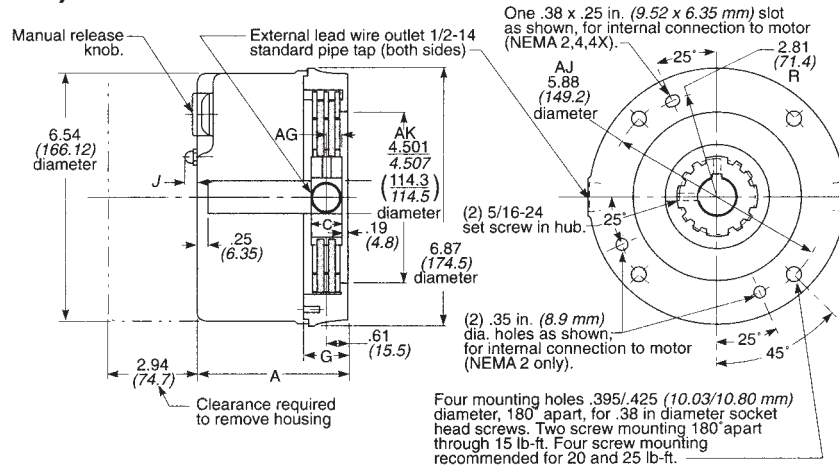
Modifications are available—see SAB Modification Section

Dimensional Drawings are on the pages following.

Series 56,000 (1-056-0XX-00) & Series 56,000-80 (1-056-0XX-80)

[BACK TO PRODUCT OVERVIEW](#)

Mounting Face: NEMA 56C,
143TC and 145TC
4.5" AK, 5.88" AJ



Series 56,000 Pricing (Discount Symbol B4)

Nominal Static Torque lb-ft (Nm)	Enclosure	Basic Model Number and List Price**			
		AC	AC List Price**	DC	DC List Price**
1.5 (2)	IP 23	1-056-001-00	\$430.00	1-056-005-00	\$730.00
	IP 54	1-056-002-00	565.00	1-056-006-00	865.00
	IP 55	1-056-004-00	640.00	1-056-008-00	940.00
3 (4)	IP 23	1-056-011-00	450.00	1-056-015-00	750.00
	IP 54	1-056-012-00	585.00	1-056-016-00	885.00
	IP 55	1-056-014-00	660.00	1-056-018-00	960.00
6 (8)	IP 23	1-056-021-00	515.00	1-056-025-00	815.00
	IP 54	1-056-022-00	650.00	1-056-026-00	950.00
	IP 55	1-056-024-00	725.00	1-056-028-00	1,025.00
10 (14)	IP 23	1-056-031-00	615.00	1-056-035-00	915.00
	IP 54	1-056-032-00	755.00	1-056-036-00	1,055.00
	IP 55	1-056-034-00	830.00	1-056-038-00	1,130.00
15 (20)	IP 23	1-056-041-00	715.00	1-056-045-00	1,015.00
	IP 54	1-056-042-00	855.00	1-056-046-00	1,155.00
	IP 55	1-056-044-00	930.00	1-056-048-00	1,230.00
20 (27)	IP 23	1-056-051-00	805.00	1-056-055-00	1,105.00
	IP 54	1-056-052-00	940.00	1-056-056-00	1,240.00
	IP 55	1-056-054-00	1,015.00	1-056-058-00	1,315.00
25 (34)	IP 23	1-056-061-00	900.00	1-056-065-00	1,200.00
	IP 54	1-056-062-00	1,035.00	1-056-066-00	1,335.00
	IP 55	1-056-064-00	1,110.00	1-056-068-00	1,410.00

Series 56,000- 80* Pricing (Discount Symbol B4)

Nominal Static Torque lb-ft (Nm)	Enclosure	Basic Model Number and List Price**			
		AC	AC List Price**	DC	DC List Price**
1.5 (2)	IP 54	1-056-002-80*	\$500.00	1-056-006-80*	\$800.00
3 (4)	IP 54	1-056-012-80*	520.00	1-056-016-80*	820.00
6 (8)	IP 54	1-056-022-80*	585.00	1-056-026-80*	885.00
10 (14)	IP 54	1-056-032-80*	690.00	1-056-036-80*	990.00
15 (20)	IP 54	1-056-042-80*	790.00	1-056-046-80*	1,090.00
20 (27)	IP 54	1-056-052-80*	875.00	1-056-056-80*	1,175.00
25 (34)	IP 54	1-056-062-80*	970.00	1-056-066-80*	1,270.00

Dimensions for estimating only.
For installation purposes request certified prints.

Enclosure: Lightweight Steel Housing, Aluminum Endplate

Enclosure Protection: IP 23, 54 & 55
(formerly referred to by Stearns as NEMA 2, 4 & 4X* respectively)
(*BISSC certified)

Mounting: Fanguard mounted brakes requiring IP 54 or IP 55 protection may require additional sealing measures beyond seals provided with the brake. Refer to Installation & Service Instruction sheets.

Installation and Service: P/N 8-078-905-60

Parts List: P/N 8-078-906-00

Modifications: Pages 51-60

IP 23 Dimensions

Nominal Static Torque lb-ft (Nm)	Dimensions in Inches (Dimensions in Millimeters)					Wt lbs (Kg)
	A	AG	C Hub Width	G	J	
1.5 (2)	4.06 (103.1)	.52 (13.2)	.81 (20.6)	1.23 (31.2)	.31 (7.9)	8 (3.6)
3 (4)						8 (3.6)
6 (8)						8 (3.6)
10 (14)						8 (3.6)
15 (20)						8 (3.6)
20 (27)	4.50 (114.3)	.52 (13.2)	1.18 (30.0)	1.66 (42.2)	.31 (7.9)	9 (4.0)
25 (34)						9 (4.0)

IP 54 / 55 Dimensions

Nominal Static Torque lb-ft (Nm)	Dimensions in Inches (Dimensions in Millimeters)					Wt lbs (Kg)
	A	AG	C Hub Width	G	J	
1.5 (2)	4.06 (103.1)	.47 (11.9)	.81 (20.6)	1.21 (30.7)	.37 (9.4)	8 (3.6)
3 (4)						8 (3.6)
6 (8)						8 (3.6)
10 (14)	4.51 (114.6)	.59 (15.0)	1.18 (30.0)	1.66 (42.2)	.37 (9.4)	9 (4.0)
15 (20)						9 (4.0)
20 (27)						9 (4.0)
25 (34)						9 (4.0)

* 56,000-80 Series includes a C-face gasket only, no hub seal.

** Subtract \$30.00 for brake ordered less hub.

SELECTION - Solenoid Actuated Brakes

NOTE: For overhauling/high inertia loads, to stop in a specified time/distance, or for brakes combined with variable frequency drives, please refer to *Application Engineering Section*.

Stearns Solenoid Actuated Brakes can be easily selected from Table 1 and 2.

Given motor data:

1. Horsepower (hp)
2. Speed (RPM)
3. NEMA C-face frame size

Determine:

1. Static torque rating of the brake (lb-ft)
2. Brake series

Step 1 – Given the motor horsepower and speed, select the brake torque from Table 1. Torque in table 1 is calculated using formula:

$$T_s = \frac{5,252 \times P}{N} \times SF$$

Where, T_s = Static torque, lb-ft

P = Motor horsepower, hp

N = Motor full load speed, rpm

SF = Service Factor

5,252 = constant

Example: Given a 5 hp, 1800 RPM motor, the selected brake is 20 or 25 lb-ft.

Step 2 – Given the NEMA C-face motor frame size, select the brake series from Table 2.

Example: Given the 5 hp, 1800 RPM motor in Step 1 with a NEMA 184TC frame, Series 87,000; 87,300 or 87,700 Brakes can be selected to mount directly to the motor.

Table 1 – Torque Selection

In this table, brake torque ratings are no less than 140% of the motor full load torque.

Motor hp	Brakemotor Shaft Speed (RPM)						
	700	900	1200	1500	1800	3000	3600
	Static Torque Rating of Brake (lb-ft)						
1/6	3	1.5	1.5	1.5	0.75	0.5	0.5
1/4	3	3	3	1.5	1.5	0.75	0.5
1/3	6	3	3	3	1.5	1.5	0.75
1/2	6	6	3	3	3	1.5	1.5
3/4	10	6	6	6	6	3	3
1	15	10	6	6	6	3	3
1-1/2	20	15	10	10	10	6	3
2	25	20	15	10	10	6	6
3	35	25	20	15	15	10	6
5	75	50	35	25	20 or 25	15	10
7-1/2	105	75	50	50	35	25	15
10	105	105	75	50	50	25	25
15	175	125	105	75	75	50	35
20	230	175	125	105	105	50	50
25	330	230	175	125	105	75	50
30	330	330	230	175	125	75	75
40	440	330	330	230	175	105	105
50	550	440	330	330	230	*	*
60	750	500	440	330	330	*	*
75	1000	750	500	440	330	*	*
100	—	1000	750	500	440	*	*
125	—	1000	1000	750	500	*	*
150	—	—	1000	750	750	*	*
200	—	—	—	1000	1000	*	*
250	—	—	—	—	1000	*	*

*See catalog pages for maximum rpm by series. Thermal capacity must be considered in load stops over 1800 rpm.

Table 2 – Brake Series Selection by NEMA Frame Size

Torque Range (lb-ft)	Brake Series	C-Face Motor Frame Size											
		48C	56C	143TC 145TC	182TC 184TC	213TC 215TC	254TC 254UC 256TC 256UC	284TC 284UC 286TC 286UC	324TC 324UC 326TC 326UC	364TC 364UC 365TC 365UC	404TC 404UC 405TC 405UC	444TC 444UC 445TC 445UC	504UC 504SC 505C 505SC
Manually-Adjusted Brakes (require periodic adjustment to compensate for friction disc wear)													
1.5-6 1.5-25 10-25	48,100 56,X00 56,500	①	①	①	②	②	②						
Self-Adjusting Brakes (automatically compensate for friction disc wear)													
6-105 50-105 125-230 125-440 500-1000 500-1000	87,X00 87,100 81,000 82,000 86,000 86,100		③	③	①	①	①	②	②	②	②		
Division I Hazardous Location Brakes (for atmospheres containing explosive gases or ignitable dusts) / Motor Mounted													
1.5-15 10-105 125-330	65,300 87,300 82,300		①	①	②	②	②	②	②	②	②		
Division I Hazardous Location Brakes (for atmospheres containing explosive gases or ignitable dusts) / Foot Mounted													
10-105 125-330	87,300 82,300				④	④	④		④	④	④		
Division 2 Hazardous Location Brakes													
1.5-25 6-105	56,800 87,800		①	①	②	②	②	②	②	②	②		
Double C-Face Brake Couplers (for direct coupling a C-face motor to a C-face gear reducer)													
1.5-25 10-105	56,700 87,700		①	①	①	①	①						

- ① Brake mounts directly to motor C-face.
- ② Adapter required to mount brake to motor C-face. Refer to brake specifications for adapter information.
- ③ Brake endplate modified for direct mounting to motor C-face without an adapter.
- ④ Brake is foot mounted for coupling to a hazardous-location motor.