Motor Brakes

SPECIFICATION

D-Series Motor Brakes are designed with a single* non-asbestos friction disc for fewer adjustments, reduced replacement parts, and extended life. They are released when power is applied to the brake coil. The friction disc hub assembly and ultimately the load are free to turn. However, when power is taken away, intentionally or accidentally, an internal wave spring clamps the friction disc to stop and hold the load. The single* disc design has significantly fewer parts than competitive brakes and provides a dramatic improvement in brake friction disc life. Just as dramatic is the quiet operation compared to solenoid type brakes. DODGE D-Series motor brakes are available as stock off-the-shelf units in 2 configurations. DBSC C-Face brakes mount on the fan end (non-driving end) of a motor. DBSS double C-Face brakes are generally used as a coupler between standard C-Face motors and C-Face gear reducers.
* *35/50 ft–lb motor brakes employ two friction discs*

HOW TO ORDER

Motor Brakes are ordered by specifying the unit size, the motor frame size, and the voltage. Part numbers are found on the selection pages for each type of unit. Refer to the part number when ordering.

NOMENCLATURE

56 DBSS - 3 - MA - 115/230 VAC 60 HZ

NEMA C-face Designation
56 = 56C (5/8″shaft)
140 = 143TC/145TC (7/8″ shaft)
180 = 180TC/210TC (1-1/8″ shaft)

DODGE Brakes

Housing Enclosure
S = Standard Enclosure/Drip-Proof
E = E-Z KLEEN (Food Duty/NEMA 4X)

Mounting Configuration
C = C-face (Single)/Fan End Mounting
S = Shaft-out (Double C-face) Coupler

Static Torque Rating (Ft-Lbs)

Wear Adjustment Method
MA = Manually Adjusted

Coil Voltage
115/230 VAC
230/460 VAC
Others As Noted On Brake Label

Frequency
60Hz
50Hz
Blank If DC Voltage Only

Motor Brakes

Selection Procedure

4. Determine the motor frame size, horsepower and speed.
5. Use chart for brake static torque selection. Note that chart selections are based on a **1.4 service factor** and increased to the next highest standard brake torque rating. To select a brake using a different service factor, use the formula below to determine the required brake static torque.

   $T=\frac{HPx5252xSF}{RPM}$

   T=Brake Static Torque (Ft-Lbs)

   HP=Motor Horsepower

   SF=Service Factor Desired

   RPM=Motor Speed

   Once your torque requirement has been determined, select a brake with at least that capacity.
6. Consult Part Number charts on pages PT2–5 thru PT2–9 for appropriate part number. Brake voltage should be matched with motor voltage rating.
7. Verify mounting dimensions (C-face tenon, mounting bolt pattern, shaft size, etc.) from pages PT2–5 thru PT2–9.
8. In positioning applications, use of a fast response kit allows you to obtain faster stop times. To order see page PT2–36.
9. In positioning applications, use 2.0 SF

Brake Static Torque Ratings* (Ft-Lbs)

	Motor Speed (RPM)						
Motor HP	**750**	**900**	**1200**	**1500**	**1800**	**3000**	**3600**
1/4	3	3	3	3	3	3	3
1/3	6	3	3	3	3	3	3
1/2	6	6	6	3	3	3	3
3/4	10	10	6	6	6	3	3
1	10	10	10	6	6	3	3
1-1/2	15	15	10	10	10	6	6
2	20	20	15	10	10	6	6
3	35	25	20	15	15	10	10
5	50	50	35	25	25	15	15
7-1/2	-	-	50	50	35	20	20
10	-	-	-	50	50	35	25

* Selections based on 1.4 service factor and increased to next highest standard brake torque rating.

Motor Brakes

MOTOR BRAKE COIL DATA

DODGE D-Series motor brakes are equipped with DC voltage coils which are capable of a variety of nameplate voltage possibilities. Please consult Voltage Notes below the chart for these capabilities.

Coil Voltage	3 and 6 Ft-Lb		10 thru 50 Ft-Lb	
	Current Draw (Amps)	Resistance (Ohms)	Current Draw (Amps)	Resistance (Ohms)
115/230 VAC 60 Hz (1)	0.19	562	0.28	387
230/460 VAC 60 Hz (2)	0.10	2078	0.14	1550
287/575 VAC 60 Hz (3)	0.09	2987	0.12	2245
104/208 VAC 60 Hz (4)	0.24	384	0.31	290
190/380 VAC 50 Hz (5)	0.13	1341	0.19	923
250/500 VAC 50 Hz	0.10	2336	0.13	1793
48 VDC	0.48	100	0.58	1768
24 VDC	0.97	24.70	1.14	21.70
12 VDC	1.95	6.16	2.24	5.40

Voltage Notes:

(1) 115/208-230 VAC 50 or 60 Hz, 133/265 VAC 60 Hz, 110-125 VDC
(2) 208-230/460 VAC 50 or 60 Hz, 240/480 VAC 60 Hz, 220/440 VAC 50 Hz, 230 VDC
(3) 287/575 VAC 60 Hz, 275/550 VAC 60 Hz, 300/600 VAC 60 Hz
(4) 104/208 VAC 50 or 60 Hz, 100/200 VAC 60 Hz 90-95 VDC
(5) 190/380 VAC 50 Hz, 260/400 VAC 60 Hz, 208/416 VAC 50 Hz

General Notes:

(1) Current and Resistance values are approximate only.
(2) Current and Resistance for other nameplate voltages may vary slightly. Consult DODGE Engineering for actual values
(3) Coil Resistance is measured between leads B4 and B5.

ELECTRICAL CONNECTIONS

Standard DODGE D-Series motor brakes operate on single phase, dual voltage AC.

Connections should be made per Chart 1 (similar chart is also included in a label on the brake). To change the operating voltage, simply change the wiring connections per Chart 1.

When changing brake wiring connections for operation at another voltage, be sure to verify the brake's compatibility with the voltage desired.

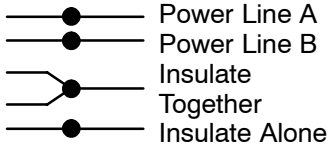
Consult Instruction Manual #499776 for complete details on Electrical Connections of DODGE D-Series motor brakes.

Chart 1

Voltage	Power Line A	Power Line B	Insulate Together	Insulate Alone
AC Voltage-Low(1)	B1	B2	B3 & B5	B4
AC Voltage-High(1)	B1 B5	B2	-	B3 B4
DC Voltage-Low	B1	B2	B3 & B5	B4

Notes:
(1) Unless specified, all brakes have dual voltage coils. For example, with a 230/460 VAC brake, low voltage = 230 VAC and high voltage = 460 VAC.

AC Voltage-Low and DC Voltage



AC Voltage-High