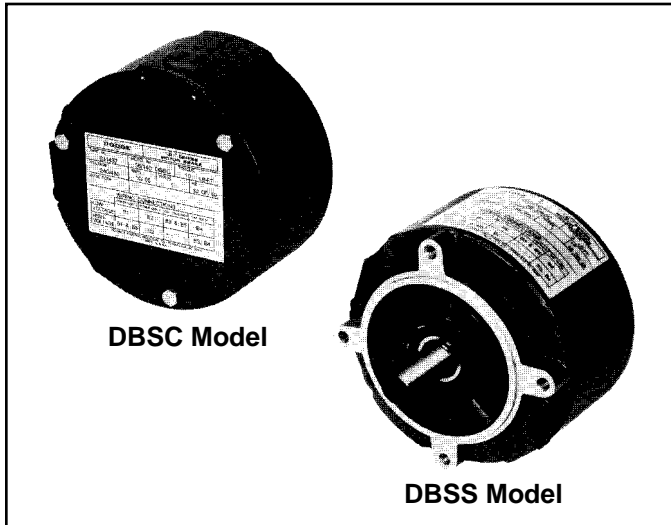


INSTRUCTION MANUAL FOR **DODGE**[®] D-SERIES SPRING-SET MOTOR BRAKES (STANDARD, WASHDOWN AND E-Z KLEEN ENCLOSURES)



PRE-INSTALLATION INSTRUCTIONS:

The DODGE D-Series motor brakes are manufactured to NEMA standards for mounting to C-face and double shafted motors. They operate as spring-set, electrically-released power-off brakes to provide a holding or parking action.

These DODGE motor brakes are factory assembled, adjusted and pre-burnished allowing for immediate operation after attachment to the motor. Chart 1 should be consulted to verify compatibility.

WARNING

When failure of brake or connecting equipment (gear-box, coupling, etc.) may allow unexpected machine movement an additional holding device is required at the load. Failure to observe this precaution could result in bodily injury.

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
 W = Washdown (NEMA 4)
 E = E-Z KLEEN/BISSC (Food Duty/NEMA 4X)
 XP = Explosion Proof

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
 Other as Noted on Brake Label

Frequency
 60 Hz
 50 Hz
 Blank if DC voltage only

CHART 1 (Important: See Note 1)

NEMA Motor Frame	Motor Shaft Dia.		DBSC Model (2)	DBSS Model (2)
	Drive End	Non-Drive (Fan) End		
56C	5/8"	5/8"	56DBSC-3 56DBSC-6 56DBSC-10 56DBSC-15 56DBSC-20 56DBSC-25	56DBSS-3 56DBSS-6 56DBSS-10 56DBSS-15 56DBSS-20 56DBSS-25
143TC/145TC	7/8"	7/8"	56DBSC-3 56DBSC-6 56DBSC-10 56DBSC-15 56DBSC-20 56DBSC-25	140DBSS-3 140DBSS-6 140DBSS-10 140DBSS-15 140DBSS-20 140DBSS-25
182TC/184TC	1 1/8"	7/8"	140DBSC-3 140DBSC-6 140DBSC-10 140DBSC-15 140DBSC-20 140DBSC-25	N/A
213TC/215TC	1 3/8"	1 1/8"	180DBSC-6 180DBSC-10 180DBSC-15 180DBSC-20 180DBSC-25 180DBSC-35 180DBSC-50	N/A

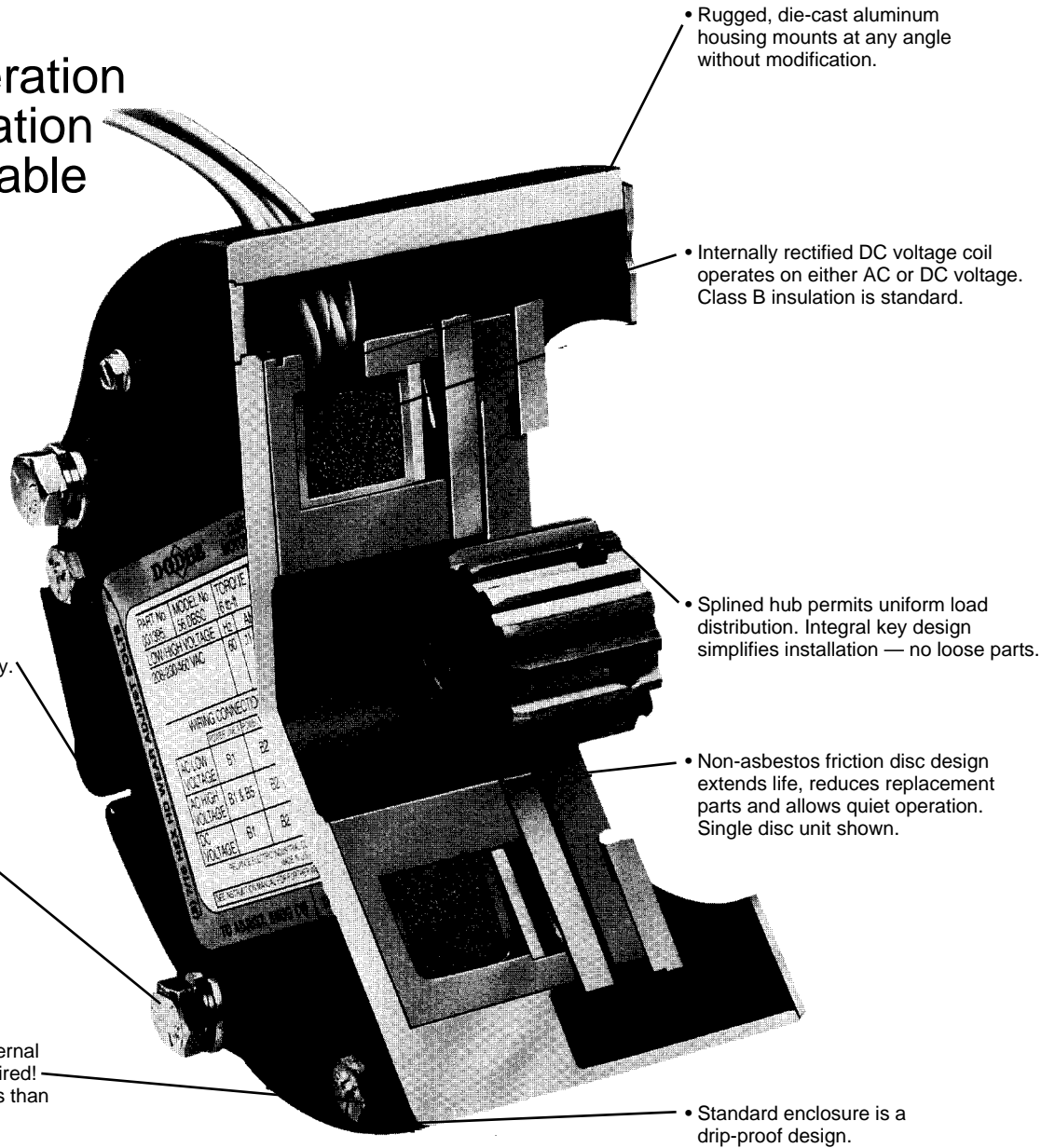
Notes:

- (1) Chart 1 is based on dimensions of Reliance Electric standard AC motors. As seen in the chart, the shaft at the non-drive end of 140, 180 and 210 frame motors is smaller than the drive end enabling the use of the smaller frame size brake. THIS MAY VARY WITH OTHER MOTOR MANUFACTURERS. For use of these brakes with other makes of motors, brake mounting dimensions should be verified with motor manufacturer.
- (2) These selections are also applicable for DBWC/DBWS & DBEC/DBES styles.

*Note: 180 frame motor brakes available with single C-face mounting only

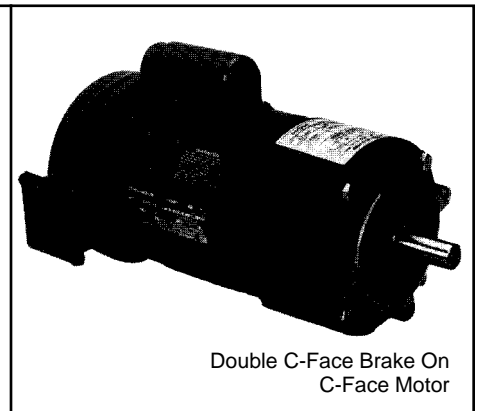
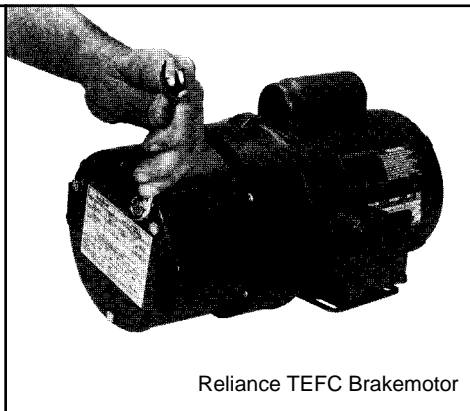
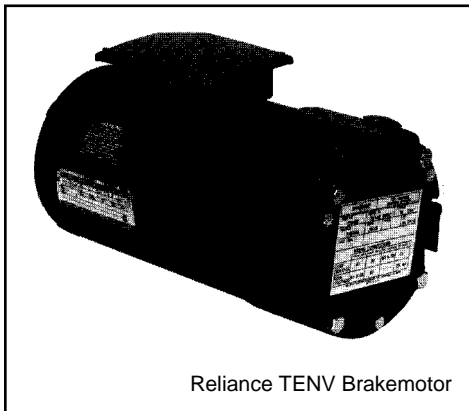
WARNING: Because of the possible danger to persons(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Reliance Electric Industrial Company nor are the responsibility of Reliance Electric Industrial Company. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a holding device must be an integral part of the driven equipment beyond the speed reducer output shaft.

- Longer Life
- Quieter Operation
- Easy Installation
- Interchangeable



- Single C-face (fan end mounting) & Double C-face (coupler) configurations.
- Covers 56, 140 and 180 NEMA C-face mounting dimensions.
- Static torque ratings: 3-50 lb.-ft.
- 115/230/460/575 units available from stock.

- Brakes are available in washdown models completely sealed on the shaft per Underwriters Laboratories (U/L) Environmental Type 4 rating. Additionally these models with a food industry approved coating are available as an E-Z KLEEN Model for 'BISSC' Service.



All parts should be examined for any damage during the shipping and handling process. Measurements should be taken to ensure parts meet mounting requirements, such as hub and shaft fits, etc. All parts must be clean and free of any foreign material before attempting assembly. Care should be taken to ensure that contaminants (such as grease from the motor, oil from a gearbox, etc.) do not contact the friction faces as this will cause the brake to operate improperly.

Prior to shipment, the friction disc/discs has been centrally located in the brake. As a result, it is not recommended to engage the manual release mechanism to mount the brake. However, should the manual release mechanism be engaged prior to mounting the brake, the friction disc/discs may have to be centrally located and aligned during mounting.

It is recommended that the entire INSTALLATION and ELECTRICAL CONNECTIONS sections be read prior to starting installation in order to plan adequately for electrical connections.

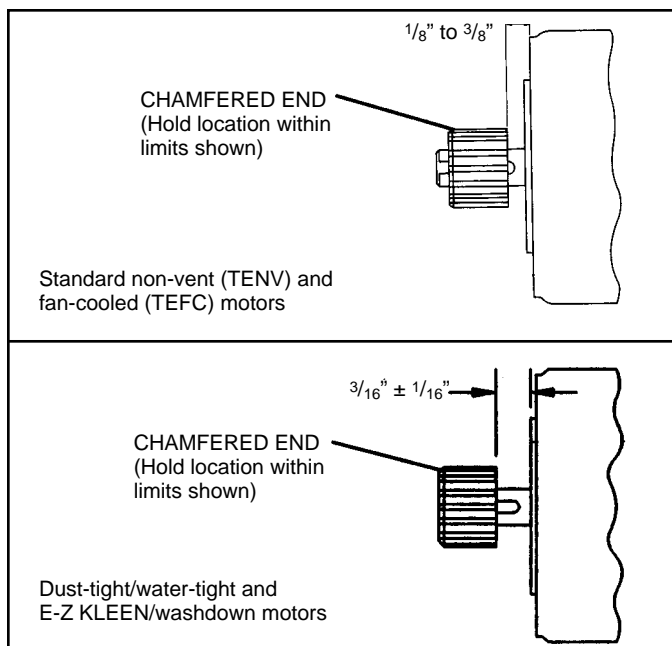
DANGER

This equipment is at line voltage when AC power is connected. Disconnect and lock out all ungrounded conductors of the AC power line. Failure to observe these precautions could result in severe bodily injury or loss of life.

INSTALLATION: 56/140 DBSC/DBWC/DBEC MODELS (Single C-face)

STEP 1. Remove any burrs from the motor shaft before attempting to mount the hub. Mount the splined hub onto the motor shaft. The hub utilizes an integral key so that no installation or securing of a key is necessary. See Diagram A below for proper positioning of the brake hub on the motor shaft. The chamfered end of the splined hub should be positioned away from the motor to provide a lead-in guide when mounting the brake. Secure the two hub setscrews to 75-80 lb.-in. of torque. The use of anaerobic adhesives either on the shaft/hub connection

DIAGRAM A: Hub Positioning



or the hub set screws is not recommended because of the possibility of uncured material contaminating the friction surfaces when the motor is started up.

Note: Prior to mounting the brake onto the hub, determine how electrical connections will be made. For example, external through the conduit egress in the brake housing or internal from the motor to the brake.

For these models wiring may be made easier by bringing the brake leads from the motor out through the lead wire access cover on the label side of the brake before making connections.

STEP 2. Mount the brake to the motor taking care to properly engage the splined hub with the splined bore of the friction disc in the brake. If force seems to be needed for proper mounting, look for other problem areas such as foreign matter in the spline or cocking of the brake. **DO NOT HAMMER BRAKE INTO PLACE.** Once the brake contacts the motor face, rotate the brake to align the mounting holes. If the motor shaft is not free to rotate due to an external load, it may be necessary to manually release the brake at this time in order to rotate it so as to align the mounting holes. Secure the (4) mounting bolts (3/8-16 UNC) provided to the motor with 300 lb.-in. of torque. The brake can be mounted in any orientation: horizontal, vertical (either end up) or on an incline without any adjustments.

INSTALLATION: MODEL 180 DBSC

STEP 1: Remove new brake from flange by loosening (4) mounting bolts (3/8-16 UNC).

STEP 2: Mount adapter flange to 180 motor flange with (4) mounting bolts (1/2-13 UNC). Tighten mounting bolts to 75 lb.-ft. of torque.

STEP 3: Remove any burrs from shaft before attempting to mount hub. Mount the splined hub onto the motor shaft. The hub utilizes an integral key so that no installation or securing of the key is necessary. Space hub from the flange face per diagram A. The chamfered end of the splined hub should be positioned away from the motor to provide a lead-in guide when mounting the brake. Secure the two setscrews to 20-25 in.-lbs. of torque. The use of anaerobic adhesives either on the shaft/hub connection or the hub set screws is not recommended because of the possibility of uncured material contaminating the friction surfaces when the motor is started up.

STEP 4: See Step 2 of 56/140 DBSC installation.

Note: Prior to mounting the brake onto the hub, determine how electrical connections will be made. For example, external through the conduit egress in the brake housing or internal from the motor to the brake.

For these models wiring may be made easier by bringing the brake leads from the motor out through the lead wire access cover on the label side of the brake before making connections.

INSTALLATION: DBSS/DBWS/DBES MODELS (Double C-Face)

These models are intended to be concentrically located between two pieces of equipment such as a motor and reducer. It is *not* intended to have a sheave, pulley, sprocket or any overhung load placed on the output shaft.

Note: There are two access holes in the brake housing for tightening the hub set screws. Positioning the hub setscrews in-line with these access holes by releasing the manual release levers and rotating the shaft will make location easier after the brake is positioned onto the motor shaft.

STEP 1. Slide brake onto motor shaft taking care first to remove any burrs on the motor shaft. If force seems to be needed for proper mounting, check for other problem areas. **DO NOT HAMMER BRAKE INTO PLACE.** Once the brake contacts the motor face, rotate the entire brake to align the mounting holes. Finger tighten the mounting bolts to secure the brake to the motor.

STEP 2. Tighten the (4) mounting thru bolts (³/₈-16 UNC) to the motor with 300 lb.-in. of torque.

STEP 3. Using the access holes in the housing, tighten the two setscrews in the splined hub to 75-80 lb.-in. The setscrews should be already aligned with the access holes so that no adjustments or movement of the motor shaft or hub are necessary to enable tightening of the setscrews. **Note:** Both (2) setscrews must be tightened to the recommended torque levels to ensure proper operation. Realignment of the hub setscrews with the housing access holes, if necessary, requires the use of both manual release levers to release the brake (see Manual Release Operation) and allow brake output shaft to rotate freely.

ELECTRICAL CONNECTIONS:

DANGER

The user is responsible for conforming with the National Electrical Code and all other applicable local codes. Wiring practices, grounding, disconnects and overcurrent protection are of particular importance. Failure to observe these precautions could result in severe bodily injury or loss of life.

CAUTION

If the brake is to be internally wired to the motor, be sure that the lead wires are not pinched when the mating faces are brought together. Failure to observe this precaution could result in damage to or destruction of the equipment.

CAUTION

If electrical soft-start or inverter is used in the system care must be taken to ensure that the brake is supplied with full voltage. Brake must have the full input voltage to ensure proper release and operation.

CAUTION

REPLACEMENT/RETROFIT APPLICATIONS: In order to ensure proper wiring connections when placing this brake in place of another, be sure to trace motor leads back to the motor conduit box. Brake lead markings may differ among brake manufacturers. If in doubt, voltages should be measured.

1) WIRING FOR THE FOLLOWING VOLTAGE UNITS:

- * **115/208-230 VAC 50 or 60 Hz**, 133/265 VAC 60 Hz, 110-125 VDC

- * **208-230/460 VAC 50 or 60 Hz**, 240/480 VAC 60 Hz, 220/440 VAC 50 Hz, 230 VDC

- * **287/575 VAC 60 Hz**, 275/550 VAC 60 Hz, 300/600 VAC 60 Hz

- * **104/208 VAC 50 or 60 Hz**, 100/200 VAC 60 Hz, 90-95 VDC

- * **190/380 VAC 50 or 60 Hz**, 200/400 VAC 60 Hz, 208/416 VAC 50 Hz

- * **250/500 VAC 50 or 60 Hz**

The above group of DODGE D-Series Motor Brakes operates on single phase, dual voltage AC and contains an internal rectifier to convert AC voltages to DC (**Note:** the brake coil is DC). The same brake will also run on single voltage DC.

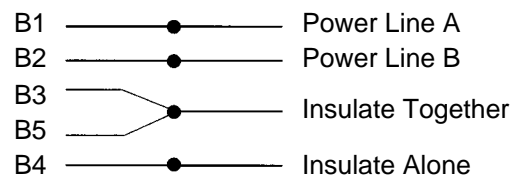
There are 5 lead wires coming out of the brake. Each wire is clearly marked every 1¹/₂". Lead wires are gray with the exception of B-5 (used for Hi-pot testing—see Maintenance Guide for procedure) which is red. Wiring connections should be made per Chart 2 (a similar chart is also included in a label on the brake). To change the operating voltage, simply change the wiring connections per Chart 2. Note that for DC operation, the connections are the same as for the low voltage AC input. When changing brake wiring connections for operation at another voltage, be sure to verify the brake's compatibility with the voltage desired.

CHART 2: WIRING CONNECTIONS (see also Wiring Schematic below)

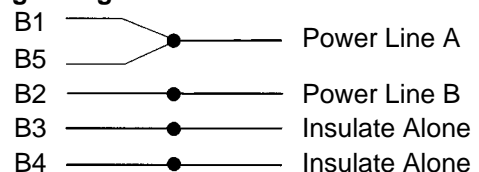
Voltage	Power Line A	Power Line B	Insulate Together	Insulate Alone
AC Voltage-Low	B1	B2	B3 & B5	B4
AC Voltage-High	B1 & B5	B2	—	B3 B4
DC Voltage-Low	B1	B2	B3 & B5	B4

WIRING SCHEMATIC

AC Voltage—Low and DC Voltage



AC Voltage—High



2) WIRING FOR THE FOLLOWING VOLTAGE UNITS:

- * 48 VDC

- * 24 VDC

- * 12 VDC

This group of DODGE D-Series Motor Brakes operates on single voltage DC only. There are two white lead wires coming out of the brake. These leads should be

wired to the incoming DC power source. Note that these connections are not polarity sensitive. The two lead wires may also be used to check the coil resistance.

3) GENERAL INSTRUCTIONS:

Each brake has a standard 3/4" threaded conduit connection for use with a conduit box or flexible conduit. Care should be taken to not screw the conduit connection too far into the housing as this may pinch the lead wires. Use jam nut to secure the conduit, without pinching the wires.

An opening is provided in the brake housing to make wiring connections if a conduit box or flexible conduit is not used. Remove the (2) cover plate screws as well as the plate. Route brake and motor leads through the brake housing. Cut off excess wire lengths and make proper wiring connections. Coil and route wires back into the brake housing. Replace cover plate.

4) SPECIAL WIRING INSTRUCTIONS:

Consult the chart below when making brake connections to standard Reliance Electric motors.

STANDARD BRAKE CONNECTIONS FOR RELIANCE ELECTRIC MOTORS

Motor	Volts	Connect
3-Phase Dual Voltage	Low	B1 — T1 & T7 B2 — T2 & T8 B3 & B5 — Insulate B4 — Insulate
	High	B1 & B5 — T1 B3 — Insulate B4 — Insulate B2 — T2
2-Phase Dual Voltage	Low	B1 — T1 & T7 B2 — T3 & T5 B3 & B5 — Insulate B4 — Insulate
	High	B1 & B5 — T1 B3 — Insulate B4 — Insulate B2 — T3
1-Phase Dual Voltage	Low	B1 — T1 & T3 B2 — T2 & T4 B3 & B5 — Insulate B4 — Insulate
	High	B1 & B5 — T1 B3 — Insulate B4 — Insulate B2 — T4
Separately Connected Brake	Low	B1 — L1 B2 — L2 B3 & B5 — Insulate B4 — Insulate
	High	B1 & B5 — L1 B3 — Insulate B4 — Insulate B2 — L2

Notes:

- 1) Check compatibility of motor and brake voltages with power supply.
- 2) Insulate means: tie together (or alone) and cap off.

For example: B3 & B5 insulate means $\begin{matrix} B3 \\ B5 \end{matrix} \rightarrow$ Cap off & insulate
 B4 insulate means $B4 \rightarrow$ Cap off & insulate

Consult the chart below when making brake connections to Reliance Electric thermally protected motors.

BRAKE CONNECTIONS FOR RELIANCE ELECTRIC SINGLE PHASE THERMALLY PROTECTED MOTORS USING 115/230 VAC BRAKE COIL

Motor	Volts (Motor)	Connect
1 -Phase Dual Voltage	High (230)	B1 — P2 B2 — T2 — T3 — T8 B3 — B5 Insulate Together B4 — Insulate Alone
1 -Phase Dual Voltage	Low (115)	B1 — T3 — T8 — P2 B2 — T2 — T4 — T5 — L2 B3 — B5 Insulate Together B4 — Insulate Alone
1 -Phase Single Voltage	High (230)	B1 — B5 — T1 — T8 B2 — T4 — T5 — L2 B3 — Insulate Alone B4 — Insulate Alone
1-Phase Single Voltage	Low (115)	B1 — T1 — T8 B2 — T4 — T5 — L2 B3 — B5 Insulate Together B4 — Insulate Alone

Note:

- 1) Use existing motor connection decal and connect brake per above.

BRAKE CONNECTIONS FOR RELIANCE ELECTRIC THREE PHASE THERMALLY PROTECTED MOTORS USING 133/266 VAC BRAKE COIL

Motor	Volts (Motor)	Connection
3-Phase Dual Voltage	High (460)	B1 — T1 — L1 B2 — T4 — T7 B3 — B5 Insulate Together B4 — Insulate Alone
3-Phase Dual Voltage	Low (230)	B1 — T1 — T7 — L1 B2 — T4 — P4 B3 — B5 Insulate Together B4 — Insulate Alone

Notes:

- 1) Use existing motor connection decal and connect brake per above using special 133/266 volt brake coil.
- 2) Three-phase thermally protected single voltage — no standard connection available.

5) ALTERNATE SWITCHING METHODS

To obtain faster stop times, alternate switching methods can be used. Consult DODGE.

BRAKE COIL DATA: CURRENT/RESISTANCE RATINGS (see notes below)

Coil Voltage Low/High	3 & 6 Ft.-Lb.		10 - 50 Ft.-Lb.	
	Current Draw (A)	Resistance (8) (Ohms)	Current Draw (A)	Resistance (8) (Ohms)
115/230 VAC (1)	0.19	562	0.28	387
230/460 VAC (2)	0.10	2078	0.14	1550
287/575 VAC (3)	0.09	2987	0.12	2245
104/208 VAC (4)	0.24	384	0.31	290
190/380 VAC (5)	0.13	1341	0.19	923
250/500 VAC (6)	0.10	2336	0.13	1793
48 VDC	0.48	100	0.58	82
24 VDC	0.97	24.7	1.14	21.7
12 VDC	1.95	6.2	2.24	5.4

Notes:

Other nameplate voltage capabilities:

- 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) 237/575 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 or 60 Hz, 200/400 VAC 60 Hz, 208/416 VAC 50 Hz
- 6) 250/500 VAC 50 or 60 Hz
- 7) Values for other nameplate voltages will vary. Consult DODGE Engineering for actual values.
- 8) Coil resistance is measured between leads B4 and B5. Measured resistance may vary $\pm 7\frac{1}{2}\%$ from nominal values.

MANUAL RELEASE OPERATION:

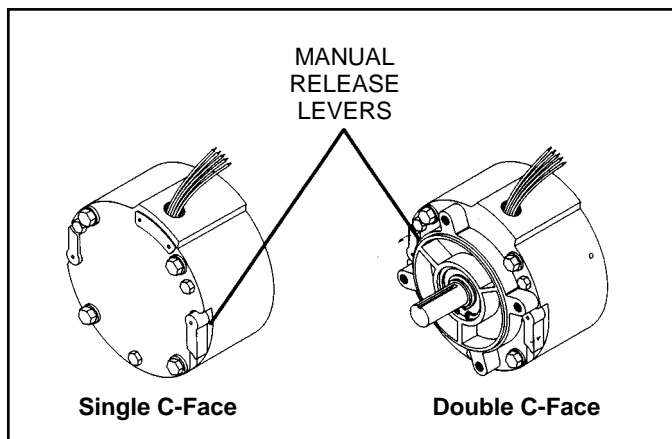
WARNING

Do not manually release brake before blocking overhauling loads to prevent unexpected machine movement. Failure to observe this precaution could result in bodily injury.

The manual release levers are located on the back of the brake opposite the input hub for the single C-face models (see Diagram B). On the double C-face models they are located on the output shaft side.

If it is necessary to manually release the brake, simultaneously turn the (2) levers counterclockwise (CCW), approximately 90 degrees to their stop positions. The manual release levers will reset automatically the next time the brake is energized. Note: They may also be moved into the reset position manually.

DIAGRAM B



MAINTENANCE GUIDE

(See Reference Sheet Drawings — pages 9-11)

DANGER

This equipment is at line voltage when AC power is connected. Disconnect and lock out all ungrounded conductors of the AC power line. Failure to observe these precautions could result in severe bodily injury or loss of life.

WARNING

Do not manually release brake before blocking overhauling loads to prevent unexpected machine movement. Failure to observe this precaution could result in bodily injury.

1. TASK: Wear Adjustment.

PROCEDURE:

Note: New brakes DO NOT require wear adjustment. If new brake appears to coast more than desired, see troubleshooting guide, Step 1.

Adjustment of the air gap is necessary if either or both of the following conditions are observed:

- 1) A decrease in braking torque. Adjustment is recommended when braking torque drops to approximately 80% of its static rating.
- 2) Complete lack of disengagement (dragging), or motor stalled.

STEP 1. Before attempting any adjustment to the brake, be sure the power is turned off and there is no possibility of motor start-up. The brake must be de-energized before attempting wear adjustment.

STEP 2. Turn the 3 smaller hex head bolts clockwise (CW) progressively to 50 lb.-in. For 35 and 50 lb.-ft.

models, first loosen bolt head locks. (**Caution:** These locks must be reinstalled after adjustment.) **DO NOT OVERTIGHTEN.** Then turn each of the bolts back counter clockwise (CCW) 1/2 of a full turn (180 degrees). If more than one full turn is required, see troubleshooting guide, Step 2. This resets the air gap to the proper amount. Turn power back on and check for normal operation.

If adjustment intervals become more frequent, brake friction disc may be nearing the end of its normal life; see replacement procedure.

2. TASK: Friction Disc Replacement.

PROCEDURE:

Note: The new friction disc/discs must be clean and free of any grease, oil or other contaminants which might result in a loss of torque. Block load, if required.

- 1) Disconnect and lock out all electrical power to the motor and brake.
- 2) Remove brake from motor.
- 3) a. For standard models, remove pilot plate on brake input by removing the four (4) #6-32 pan head screws.
b. For sealed models (Washdown & E-Z KLEEN), remove pilot plate by gently and uniformly pulling thru bore of lip seal. Pilot plate is held in position by an O.D. 'O-ring' seal and the 'O-ring' seals on the mounting bolts.
- 4) Alternately turn counterclockwise (CCW) but do not completely remove the (3) manual adjustment bolts until the pressure plate is free and can be removed from the brake assembly. It is important to alternately turn these bolts so as not to cock the pressure plate. No more than 1-2 revolutions per bolt, then move to the next bolt. Continue until the plate is free.
- 5) After pressure plate is out, remove the old friction disc. For double disc units, remove disc 1, floating plate and disc 2. Replace both discs and inspect floating plate. At this time use dry, filtered compressed air to blow out any loose wear particles and visually inspect the steel wear surfaces of both the clapper and pressure plates.
- 6) Place the new friction disc onto the clapper plate with the 3" diameter boss facing up, away from the clapper. For double disc units, install thinner disc onto clapper plate, followed by floating plate and thicker disc. Friction discs on double disc unit should be installed with 3" diameter boss facing up, away from clapper.
- 7) Reassemble brake following the BRAKE REASSEMBLY PROCEDURE beginning at step 8.

3. TASK: Manual Release Adjustment.

PROCEDURE:

The manual release levers need adjusting if:

- 1) Levers will not stay in the brake released position (i.e., 90 degrees from housing).
- 2) Levers will not rotate back to the full engage position when the brake is energized.

For Condition (1): With power to the brake off, manually hold the lever out (90 degrees from the housing) and insert a 7/64 hex key into the hex-head cap screw in the release lever. Slowly turn clockwise (CW) until the lever will maintain this position by itself. Repeat this procedure for the other lever. Rotate both levers simultaneously to the brake released position; they should maintain this position. If not, repeat the procedure. Next, supply power to the brake. The levers should snap back to their original position.

For Condition (2): Start with the levers in the brake released position. With power supplied to the brake insert a 7/64 hex key into the hex-head cap screw in the release lever. Slowly turn counterclockwise (CCW) until the lever snaps back to the housing. Repeat this procedure with the other lever. To test, with power off to the brake, use the manual release levers to release the brake. Supply power to the brake and both levers should snap back to the housing. If not, repeat procedure.

4. TASK: Coil Replacement.

PROCEDURE:

- 1) Follow steps 1 through 5 outlined under FRICTION DISC REPLACEMENT.
- 2) Place the unit open end up and press down continually on the clapper plate in order to release the spring force from the manual release mechanism. This pressure should be maintained until step 5.
- 3) Unscrew the (2) socket head cap screws which are recessed in the manual release knobs. Lift out the manual release shaft/return spring/retaining ring assembly.
- 4) Remove clapper plate and wave spring.
- 5) Remove the aluminum spring plate and (3) brass "flux busters." The flux busters should be secured to the aluminum spring plate using RTV sealant (flux busters are used on 3, 6 and 10 ft-lb units only). It may be necessary to turn the brake over with the open end down and gently tap the brake housing on a clean flat surface to remove the spring plate.
- 6) Remove the old coil from the brake housing. It may be necessary to apply a prying force in order to remove the old coil as it was installed using several drops of RTV sealant to keep the coil positioned. Care should be taken not to scratch the machined surface of the field cup.
- 7) Using dry, filtered compressed air blow out housing to remove loose wear particles.
- 8) Reassemble brake following the BRAKE REASSEMBLY PROCEDURE beginning at step 1.

5. TASK: Brake Reassembly.

PROCEDURE:

This procedure begins with an empty housing to completely rebuild the brake. Care should be taken to ensure that work is started with the proper step depending on the procedures being performed.

- 1) Place (3) small drops of RTV silicon in the bottom of the field cup to secure the coil in the housing.

- 2) After first feeding the (5) lead wires through the egress hole in the field cup, insert the coil into the housing. The side with the notch in the flange of the coil bobbin goes down inside the housing. Do not force coil into the housing as this may cause damage. The top flange of the coil must sit below the counterbore in the field cup.
- 3) Place the aluminum spring plate on top of the coil aligning the (3) brass "flux busters" in the small notches in the O.D. The "flux busters" should be attached to the spring plate with RTV approximately 120 degrees apart. "Flux busters" are not required for use in 15 thru 50 ft.-lbs. units.
- 4) Place wave spring on top of aluminum spring plate.
Wave springs are painted on the edge with different colors corresponding to different torque ratings as follows:

Orange = 3 ft-lb	Red = 15 ft-lb & 35 ft-lb
Green = 6 ft-lb	Yellow = 20 ft-lb
Blue = 10 ft-lb	White = 25 ft-lb & 50 ft-lb
- 5) Place clapper plate on top of wave spring.
- 6) Place the new friction disc onto the clapper plate with the 3" diameter boss facing up, away from the clapper. For double disc units, install thinner disc onto clapper plate, followed by floating plate and thicker disc. Friction discs on double disc unit should be installed with 3" diameter boss facing up, away from clapper.
- 7) Place the pressure plate back into the housing making sure the pressure plate ears do not cover the manual release mechanism access holes. Alternately tighten the (3) manual adjustment bolts making sure the 3" diameter boss on the friction disc pilots into the bore of the pressure plate. It is important to tighten the bolts no more than 1-2 revolutions per bolt before moving to the next bolt to avoid cocking the pressure plate. Continue to tighten until the pressure plate is pulled all the way down. Do not attempt to over tighten as this may damage the plate.
- 8) Replace the manual release shaft assembly into the brake housing through the open end of the housing. Ensure that the flange on the manual

release shaft seats against the clapper plate. The tang end of the torsional spring should rest on top of the cast boss inside the housing. Insert a screwdriver into the slot in the manual release shaft next to the torsional spring. Rotate the shaft clockwise (CW) approximately 20 degrees and insert the manual release lever into the slot in the other end (protruding through the brake housing) of the manual release shaft. Install the #6 socket head cap screw to attach the lever to the shaft. Snug, but do not overtighten, the cap screw with a $\frac{7}{64}$ hex key.

Back off the (3) manual adjustment bolts $\frac{1}{2}$ turn (180 degrees).

- 9) Follow instructions in MANUAL RELEASE ADJUSTMENT PROCEDURE to set the manual release.
- 10) Follow instructions in WEAR ADJUSTMENT PROCEDURE to reset air gaps.

6. TASK: Hi-pot Coil Testing.

CAUTION

If Hi-pot testing the brake coil, take care to increase the voltage slowly (see Troubleshooting Guide for procedure details). Instantaneous exposure to high voltages may damage the internal rectifier.

PROCEDURE:

All coils are 100% Hi-pot tested at the factory, after assembly in the brake.

Hi-pot test between the red (B5) lead and the brake housing. AC voltage must be raised slowly (a minimum of 1 second) from 0 volts to 1500 volts. Hold voltage at 1500 volts for a maximum of one second then slowly decrease to 0 volts. Make sure all other leads are capped off or otherwise isolated from contact with personnel or equipment. **Note:** The Hi-pot tester used must have a variable rheostat control in order to raise and lower the voltage as slowly as possible (over a minimum of 1 second). Slowly turning the rheostat will help prevent damaging the diode or rectifier in the circuit.

TROUBLESHOOTING GUIDE

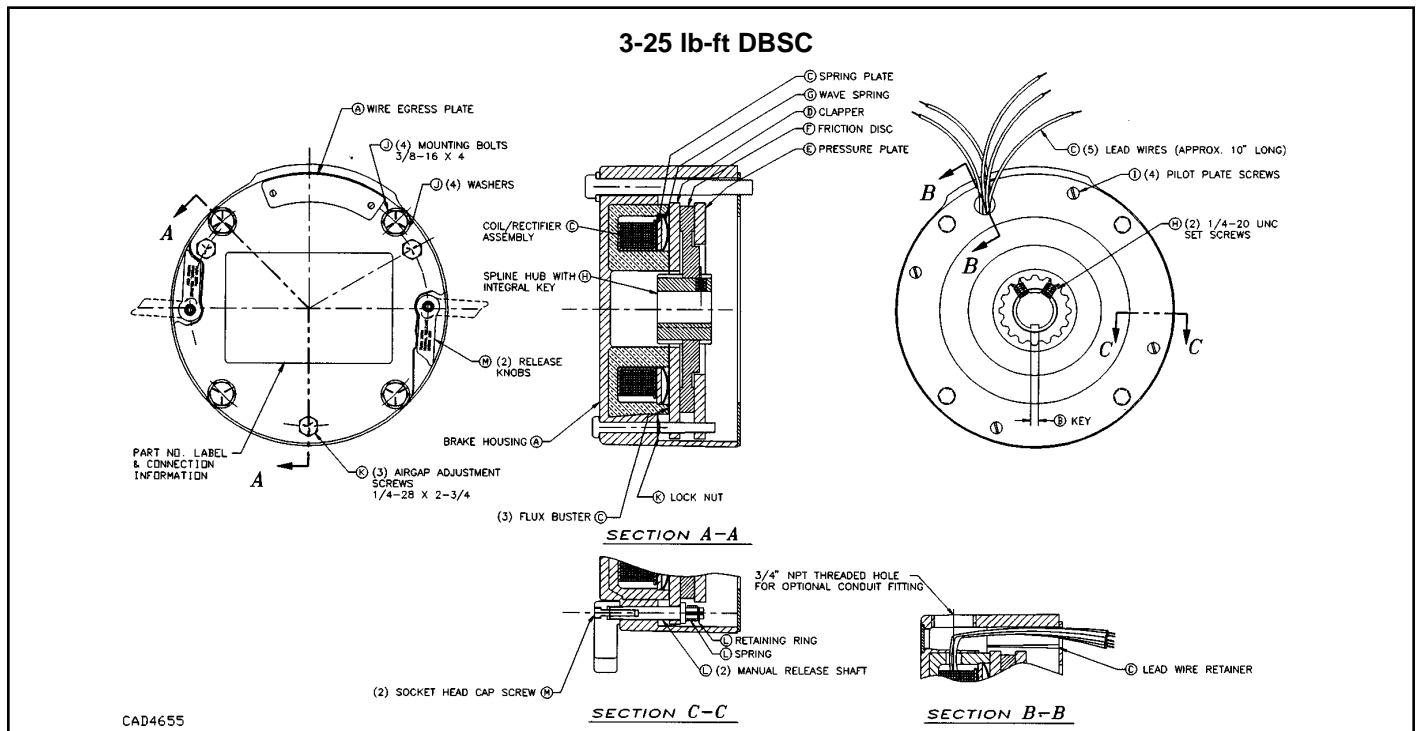
(See Reference Sheet Drawings—pages 9-11)

DANGER

Subsequent steps require rotating parts and/or electrical circuits to be exposed. Stay clear if unit must be running or disconnect and lock out or tag power source if contact must be made. Failure to observe these precautions could result in severe bodily injury or loss of life.

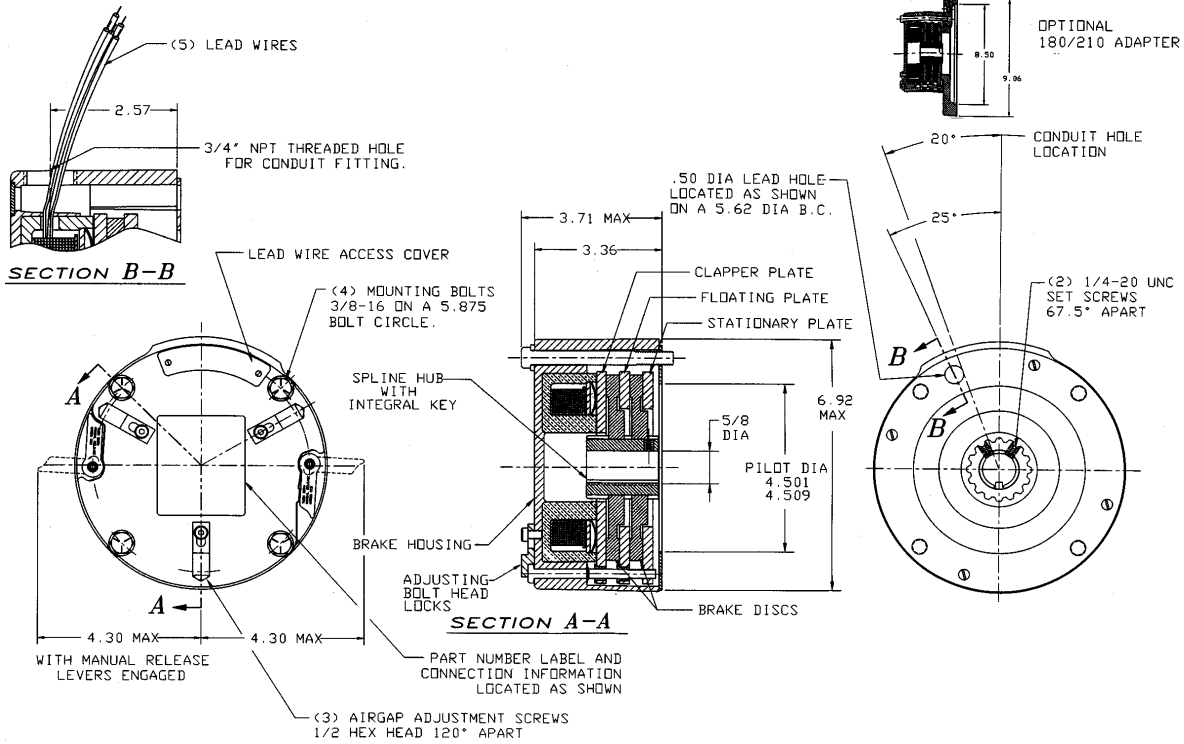
SYMPTOM	POSSIBLE CAUSE(S)	SOLUTION
1) Loss of Torque	Improper Switching Method	If new brake appears to coast farther than desired, an alternate switching method may be required, such as fast response circuit. Consult DODGE.
(Coasting)	Brake Disc Worn	See Wear Adjustment Procedure — Maintenance Guide
	Brake Too Small	Check Application
	Excessive Cycle Rate (Disc Too Hot/Torque Fade)	Reduce Cycle Rate & Check Application
	Friction Surfaces Contaminated	Replace Friction Disc — Maintenance Guide
	Brake Worn Out (Frequent Adjustment)	Replace Friction Disc — Maintenance Guide
2) Brake Not Releasing	Open Circuit (Brake Wires Pinched or Broken) (Open Coil)	Check Resistance Between Brake Leads (B4 & B5) for Continuity
	Improper or No Voltage to Brake	Establish Proper Voltage. If input voltage is okay, check for DC voltage across leads B4 & B5. If no voltage exists, rectifier may be blown. Replace coil or use rectifier replacement kit.
	Requires Adjustment	See Wear Adjustment Procedure — Maintenance Guide
	Manual Release Out of Adjustment	See Manual Release Adjustment Procedure — Maintenance Guide
3) Motor Stalled	Brake Not Releasing	(See Symptom 2)
4) High Housing Temperature 80°C (176°F) Maximum	Excessive Cycle Rate	Reduce Cycle Rate
	High Ambient Temperature	Reduce Cycle Rate and/or Load Inertia (Add External Cooling Fan)
	Excessive Load Inertia	Reduce Load Inertia
	Brake Not Releasing	See symptom 2

REFERENCE SHEET DRAWINGS (Also Use for Replacement Parts)

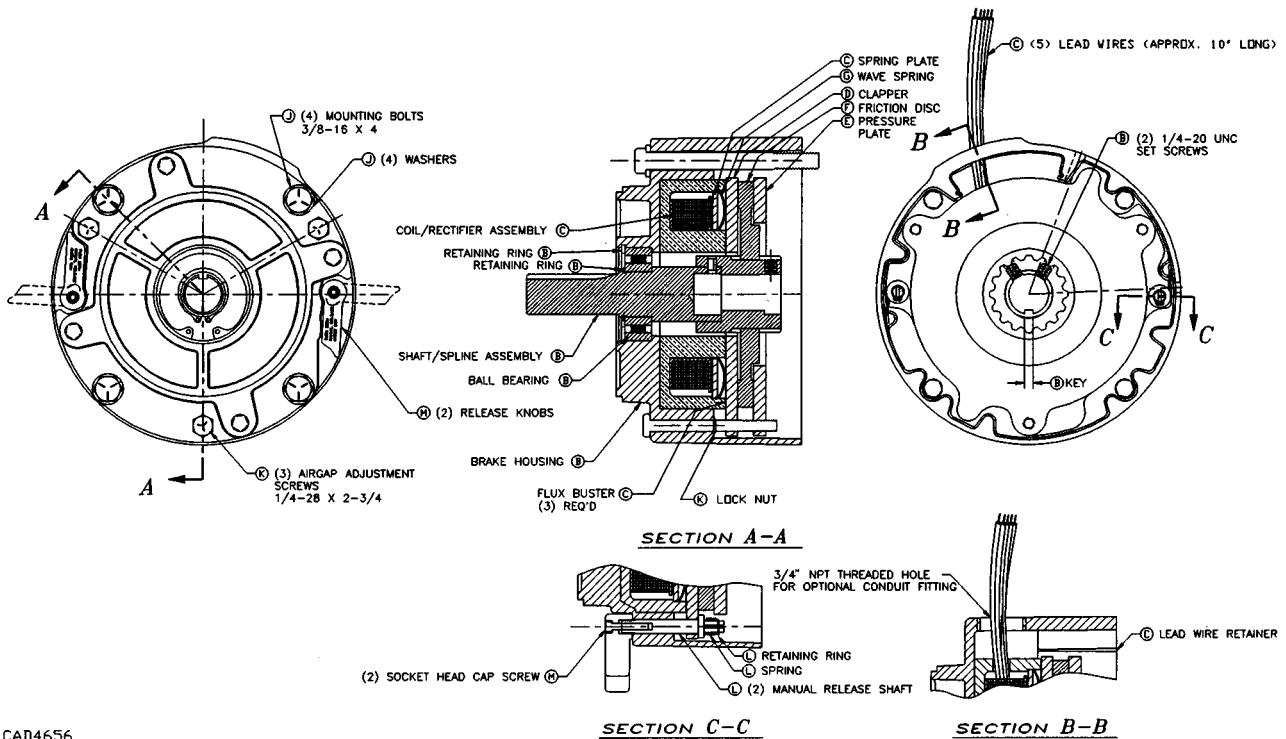


**REFERENCE SHEET DRAWINGS
(Also Use for Replacement Parts)**

35-50 lb-ft DBSC



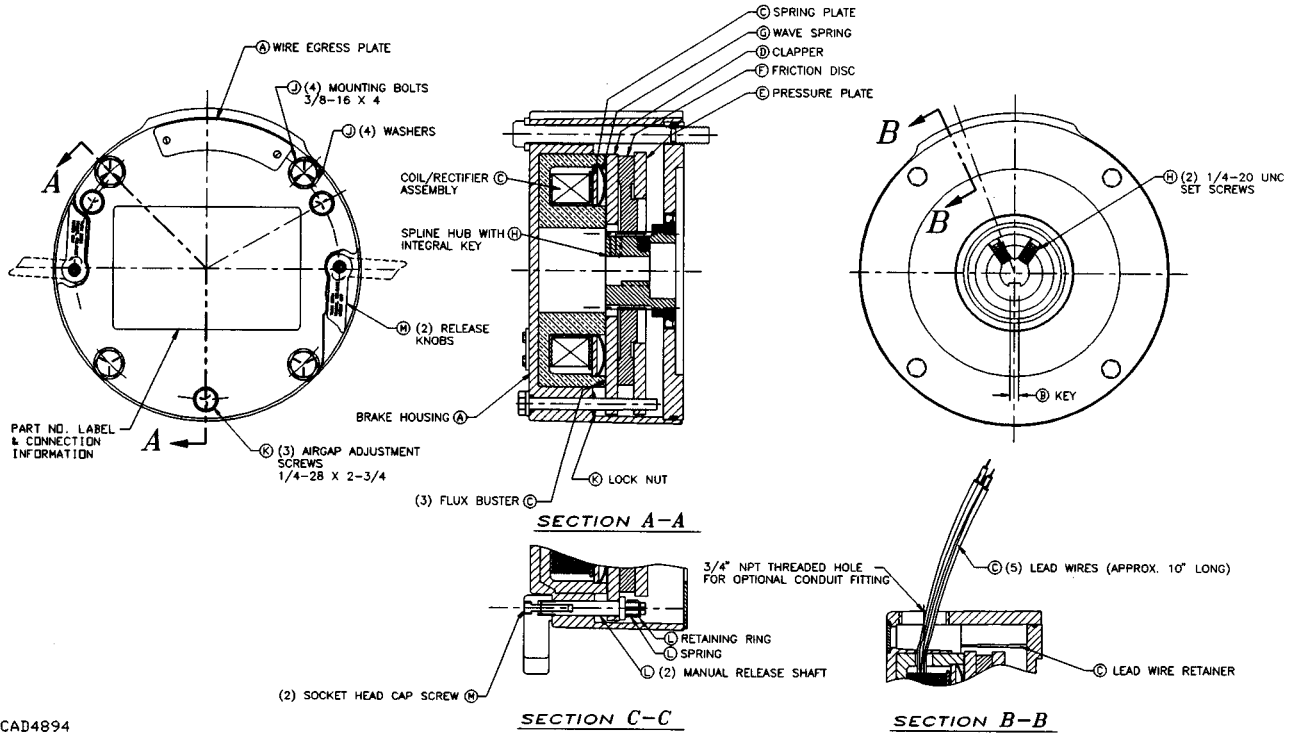
DBSS Model



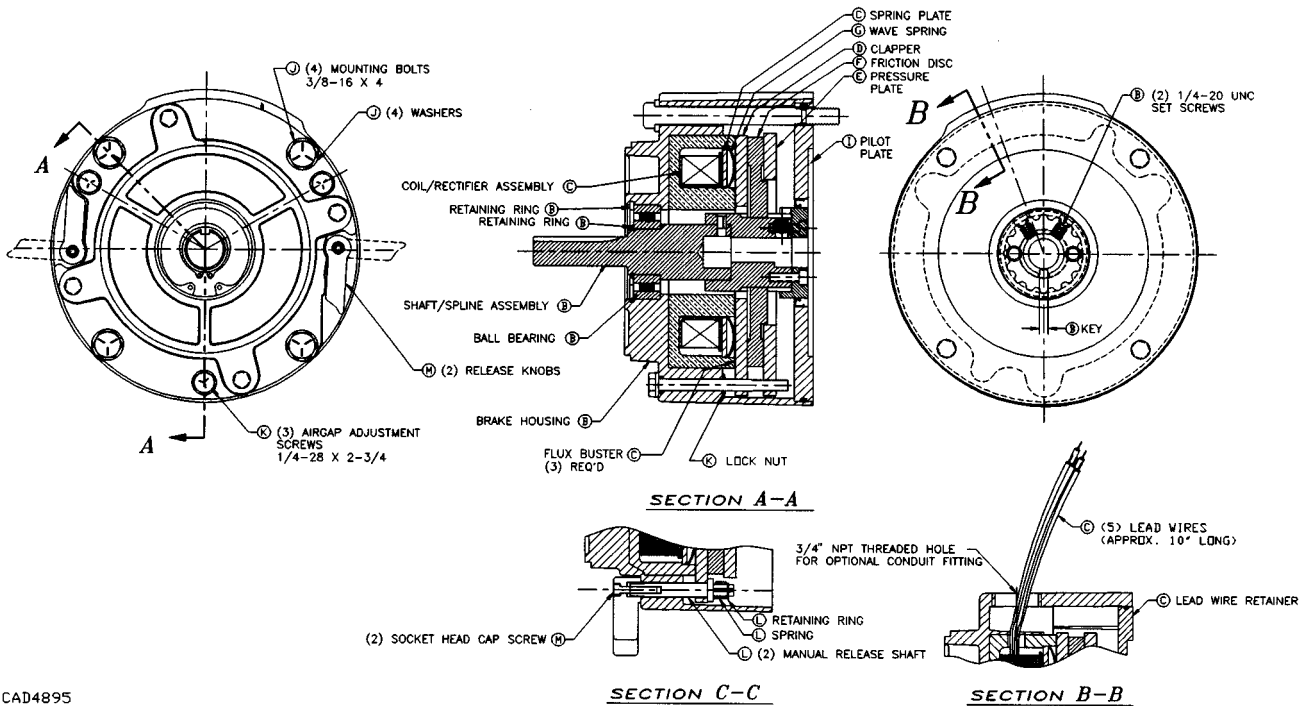
CAD4656

REFERENCE SHEET DRAWINGS (Also Use for Replacement Parts)

DBWC/DBEC Model



DBWS/DBES Model



REPLACEMENT PARTS LIST

Description	Unit Size—Static Torque							
	3 Ft-Lb	6 Ft-Lb	10 Ft-Lb	15 Ft-Lb	20 Ft-Lb	25 Ft-Lb	35 Ft-Lb	50 Ft-Lb
DBSC Housing/Field Cup Assembly	031569	031569	031569	031569	031258	031258	032398	032411
DBWC Housing/Field Cup Assembly	031675	031675	031675	031675	031699	031699		
DBEC Housing/Field Cup Assembly	031715	031715	031715	031715	031927	031927		
56DBSS Hsg & Shaft/Hub Assembly (1)	031570	031570	031570	031570	031259	031259		
140DBSS Hsg & Shaft/Hub Assembly (1)	031571	031571	031571	031571	031260	031260		
56DBWS Hsg & Shaft/Hub Assembly (1)	031789	031789	031789	031789	030343	030343		
140DBWS Hsg & Shaft/Hub Assembly (1)	031799	031799	031799	031799	030342	030342		
56DBES Hsg & Shaft/Hub Assembly (1)	030347	030347	030347	030347	030345	030345		
140DBES Hsg & Shaft/Hub Assembly (1)	030346	030346	030346	030346	030344	030344		
Coil/Rectifier Assy (2)								
115/230 VAC 60 HZ (3)	031574	031574	031575	031643	031644	031644	031643	031644
230/460 VAC 60 Hz (4)	031576	031576	031577	031647	031648	031648	031647	031648
287/575 VAC 60 HZ (5)	031578	031578	031579	031651	031652	031652	031651	031652
104/208 VAC 60 HZ (6)	031625	031625	031626	031641	031642	031642	031641	031642
190/380 VAC 50 HZ (7)	031627	031627	031628	031645	031646	031646	031645	031646
250/500 VAC 50 HZ	031629	031629	031630	031649	031650	031650	031649	031650
48 VDC	031631	031631	031632	031653	031654	031654	031653	031654
24 VDC	031633	031633	031634	031655	031656	031656	031655	031656
12 VDC	031635	031635	031636	031657	031658	031658	031657	031658
Clapper Plate	031580	031580	031580	031580	031580	031580	032412	032412
Floating Plate							032419	032419
Pressure Plate (DBSC/DBSS/DBWC/DBEC)	031581	031581	031581	031581	031581	031581	032415	032415
Pressure Plate (DBWS/DBES)	031787	031787	031787	031787	031787	031787		
Friction Disc (thick)	031582	031582	031582	031582	031582	031582	031582	031582
Friction Disc 2 (thin)							032418	032418
Wave Spring	031583 (orange)	031584 (green)	031585 (blue)	031586 (red)	031587 (yellow)	031588 (white)	031586 (red)	031588 (white)
DBSC Splined Hub w/ 2 S.S.								
5/8" bore, Integral Key (Std.)	031589	031589	031589	031589	031589	031589		
7/8" bore, Integral Key (Std.)	031590	031590	031590	031590	031590	031590		
5/8" bore, Keyway	031186	031186	031186	031186	031186	031186		
7/8" bore, Keyway	031187	031187	031187	031187	031187	031187		
3/4" bore, Keyway	031599	031599	031599	031599	031599	031599		
1 1/8" bore, Integral Key (Std.)	032416	032416	032416	032416	032416	032416	032416	032416
56DBWS/DBES Hub End Plate & Seal	031930	031930	031930	031930	031930	031930		
140DBWS/DBES Hub End Plate & Seal	031931	031931	031931	031931	031931	031931		
DBSC/DBSS Pilot Plate w/4 Screws	031591	031591	031591	031591	031591	031591	031591	031591
DBWC/DBWS/DBEC/DBWS Pilot Plate & O-Ring	031949	031949	031949	031949	031949	031949		
DBSC/DBSS Mounting Bolts & Washers	031592	031592	031592	031592	031592	031592		
DBWC/DBWS Mounting Bolts & Washers	031803	031803	031803	031803	031803	031803		
DBEC/DBES Mounting Bolts & Washers	031804	031804	031804	031804	031804	031804		
DBSC/DBSS Manual Adjust Screw Assembly	031593	031593	031593	031593	031593	031593		
DBWC/DBWS Manual Adjust Screw Assembly	031819	031819	031819	031819	031819	031819		
DBEC/DBES Manual Adjust Screw Assembly	031822	031822	031822	031822	031822	031822		
DBSC/DBSS Man. Release Mech. less levers (8)	031594	031795	031796	031796	031796	031796	031796	031796
DBWC/DBWS Man. Release Mech. less levers (8)	031790	031665	031791	031791	031791	031791		
DBEC/DBES Man. Release Mech. less levers (8)	031790	031665	031791	031791	031791	031791		
Manual Release Levers	031595	031595	031595	031595	031595	031595	031595	031595
DBSC/DBSS/DBWC/DBWS Lever Mounting Screw	031239	031239	031239	031239	031239	031239	031239	031239
DBEC/DBES Lever Mounting Screw	031960	031960	031960	031960	031960	031960		
Adapter Flange (180/140)	024450	024450	024450	024450	024450	024450	024450	024450

Notes:

- (1) Consists of: Housing, Field Cup, Shaft, Hub, Bearing & Retaining Ring.
- (2) Consists of: Coil, Rectifier, Spring Plate, Flux Busters (if required) & Wire Protector.
- (3) 115/208-230 VAC 50 or 60 Hz, 113/265 VAC 60 Hz, 110-125 VDC.
- (4) 208-230/460 VAC 50 or 60 Hz, 240/480 VAC 60 Hz, 220/440 VAC 50 Hz, 230 VDC.
- (5) 287/575 VAC 60 Hz, 275/550 VAC 60 Hz, 300/600 VAC 60 Hz.
- (6) 104/208 VAC 50 or 60 Hz, 100/200 VAC 60 Hz, 90-95 VDC.
- (7) 190/380 VAC 50 Hz, 200/400 VAC 60 Hz, 208/416 vAC 50 Hz.
- (8) Consists of: Manual Release Shaft, Retaining Ring & Spring.

REPLACEMENT PARTS LIST

Description	Unit Size—Static Torque							
	3 Ft-Lb	6 Ft-Lb	10 Ft-Lb	15 Ft-Lb	20 Ft-Lb	25 Ft-Lb	35 Ft-Lb	50 Ft-Lb
DBSC COMPLETE UNITS 56 Frame, 5/8" Bore, 4 1/2" Pilot Diameter								
115/230 VAC 60 Hz (1)	031351	031393	031435	031477	031507	031537		
230/460 VAC 60 Hz (2)	031353	031395	031437	031479	031509	031539		
287/575 VAC 60 Hz (3)	031355	031397	031439	031481	031511	031541		
104/208 VAC 60 Hz (4)	031000	031015	031030	031043	031058	031073		
190/380 VAC 50 Hz (5)	031001	031016	031031	031044	031059	031074		
250/500 VAC 50 Hz	031002	031017	031032	031045	031060	031075		
48 VDC	031003	031018	031033	031046	031061	031076		
24 VDC	031004	031019	031034	031047	031062	031077		
12 VDC	031005	031020	031035	031048	031063	031078		
DBSC COMPLETE UNITS 140 Frame, 7/8" Bore, 4 1/2" Pilot Diameter								
115/230 VAC 60 Hz (1)	031007	031022	031037	031050	031065	031080		
230/460 VAC 60 Hz (2)	031009	031024	031039	031052	031067	031082		
287/575 VAC 60 Hz (3)	031011	031026	031041	031054	031069	031084		
104/208 VAC 60 Hz (4)	031006	031021	031036	031049	031064	031079		
190/380 VAC 50 Hz (5)	031008	031023	031038	031051	031066	031081		
250/500 VAC 50 Hz	031010	031025	031040	031053	031068	031083		
48 VDC	031012	031027	031042	031055	031070	031085		
24 VDC	031013	031028	031060	031056	031071	031086		
12 VDC	031014	031029	031061	031057	031072	031087		
DBSC COMPLETE UNITS 140 Frame, 1 1/8" Bore, 4 1/2" Pilot Diameter								
115/230 VAC 60 Hz (1)		029820	029829	029838	029847	029856	032432	032410
230/460 VAC 60 Hz (2)		029821	029830	029839	029848	029857	032433	032424
287/575 VAC 60 Hz (3)		029822	029831	029840	029849	029858	032434	032425
104/208 VAC 60 Hz (4)		029823	029832	029841	029850	029859	032435	032426
190/380 VAC 50 Hz (5)		029824	029833	029842	029851	029860	032436	032427
250/500 VAC 50 Hz		029825	029834	029843	029852	029861	032437	032428
12 VDC		029826	029835	029844	029853	029862	032438	032429
24 VDC		029827	029836	029845	029854	029863	032439	032430
48 VDC		029828	029837	029846	029855	029864	032440	032431
DBSC COMPLETE UNITS 180 Frame, 1 1/8" Bore, 8 1/2" Pilot Diameter								
115/230 VAC 60 Hz (1)		027023	027032	027041	027050	027059	027068	027077
230/460 VAC 60 Hz (2)		027024	027033	027042	027051	027060	027069	027078
287/575 VAC 60 Hz (3)		027025	027034	027043	027052	027061	027070	027079
104/208 VAC 60 Hz (4)		027026	027035	027044	027053	027062	027071	027080
190/380 VAC 50 Hz (5)		027027	027036	027045	027054	027063	027072	027081
250/500 VAC 50 Hz		027028	027037	027046	027055	027064	027073	027082
12 VDC		027029	027038	027047	027056	027065	027074	027083
24 VDC		027030	027039	027048	027057	027066	027075	027084
48 VDC		027031	027040	027049	027058	027067	027076	027085
DBSS COMPLETE UNITS 56 Frame, 5/8" Bore/Shaft, 4 1/2" Pilot Diameter								
115/230 VAC 60 Hz (1)	031369	031411	031453	031342	031345	031348		
230/460 VAC 60 Hz (2)	031371	031413	031455	031343	031346	031349		
287/575 VAC 60 Hz (3)	031373	031415	031457	031344	031347	031350		
104/208 VAC 60 Hz (4)	031088	031100	031112	031124	031136	031148		
190/380 VAC 50 Hz (5)	031089	031101	031113	031125	031137	031149		
250/500 VAC 50 Hz	031090	031102	031114	031126	031138	031150		
48VDC	031091	031103	031115	031127	031139	031151		
24VDC	031092	031104	031116	031128	031140	031152		
12VDC	031093	031105	031117	031129	031141	031153		
DBSS COMPLETE UNITS 140 Frame, 7/8" Bore/Shaft, 4 1/2" Pilot Diameter								
115/230 VAC 60 Hz (1)	031375	031417	031459	031495	031525	031555		
230/460 VAC 60 Hz (2)	031377	031419	031461	031497	031527	031557		
287/575 VAC 60 Hz (3)	031379	031421	031463	031499	031529	031559		
104/208 VAC 60 Hz (4)	031094	031106	031118	031130	031142	031154		
190/380 VAC 50 Hz (5)	031095	031107	031119	031131	031143	031155		
250/500 VAC 50 Hz	031096	031108	031120	031132	031144	031156		
48VDC	031097	031109	031121	031133	031145	031157		
24VDC	031098	031110	031122	031134	031146	031158		
12VDC	031099	031111	031123	031135	031147	031159		

Notes:

- (1) 115/208-230 VAC 50 or 60 Hz, 113/265 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, 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, 200/400 VAC 60 Hz, 208/416 vAC 50 Hz.

COMPLETE UNIT PART NUMBERS—DBWC/DBWS Models

Description	Unit Size — Static Torque					
	3 Ft-Lb	6 Ft-Lb	10 Ft-Lb	15 Ft-Lb	20 Ft-Lb	25 Ft-Lb
DBWC COMPLETE UNITS 56 Frame, 5/8" Bore						
115/230 VAC 60 Hz (1)	031331	031189	031190	031191	031192	031193
230/460 VAC 60 Hz (2)	031674	031677	031327	031328	031329	031330
287/575 VAC 60 Hz (3)	031194	031195	031196	031197	031198	031199
104/208 VAC 60 Hz (4)	029051	029054	029057	029060	029063	029066
190/380 VAC 50 Hz (5)	029052	029055	029058	029061	029064	029067
250/500 VAC 50 Hz	029053	029056	029059	029062	029065	029068
48 VDC	029074	029077	029080	029083	029086	029089
24 VDC	029073	029076	029079	029082	029085	029088
12 VDC	029072	029075	029078	029081	029084	029087
DBWC COMPLETE UNITS 140 Frame, 5/8" Bore						
115/230 VAC 60 Hz (1)	029508	029511	029514	029517	029520	029523
230/460 VAC 60 Hz (2)	029509	029512	029515	029518	029521	029524
287/575 VAC 60 Hz (3)	029510	029513	029516	029519	029522	029525
104/208 VAC 60 Hz (4)	029526	029529	029532	029535	029538	029541
190/380 VAC 50 Hz (5)	029527	029530	029533	029536	029539	029542
250/500 VAC 50 Hz	029528	029531	029534	029537	029540	029543
48 VDC	029092	029095	029098	029101	029104	029107
24 VDC	029091	029094	029097	029100	029103	029106
12 VDC	029090	029093	029096	029099	029102	029105
DBWS COMPLETE UNITS 56 Frame, 5/8" Bore						
115/230 VAC 60 Hz (1)	031720	030351	030354	030357	030360	030363
230/460 VAC 60 Hz (2)	031615	030352	030355	030358	030361	030364
287/575 VAC 60 Hz (3)	031721	030353	030356	030359	030362	030365
104/208 VAC 60 Hz (4)	029144	029147	029150	029153	029156	029159
190/380 VAC 50 Hz (5)	029145	029148	029151	029154	029157	029160
250/500 VAC 50 Hz	029146	029149	029152	029155	029158	029161
48 VDC	029164	029167	029170	029173	029176	029179
24 VDC	029163	029166	029169	029172	029175	029178
12 VDC	029162	029165	029168	029171	029174	029177
DBWS COMPLETE UNITS 140 Frame, 5/8" Bore						
115/230 VAC 60 Hz (1)	029180	029183	029186	029189	029192	029196
230/460 VAC 60 Hz (2)	029181	029184	029187	029190	029193	029197
287/575 VAC 60 Hz (3)	029182	029185	029188	029191	029194	029198
104/208 VAC 60 Hz (4)	029199	029202	029205	029208	029211	029214
190/380 VAC 50 Hz (5)	029200	029203	029206	029209	029212	029215
250/500 VAC 50 Hz	029201	029204	029207	029210	029213	029216
48 VDC	029218	029221	029224	029227	029230	029233
24 VDC	029219	029222	029225	029228	029231	029234
12 VDC	029220	029223	029226	029229	029232	029235

Notes:

Other voltages covered

- (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 or 60 Hz, 200/400 VAC 60 Hz, 208/416 VAC 50 Hz.

COMPLETE UNIT PART NUMBERS—DBEC/DBES Models

Description	Unit Size — Static Torque					
	3 Ft-Lb	6 Ft-Lb	10 Ft-Lb	15 Ft-Lb	20 Ft-Lb	25 Ft-Lb
DBEC COMPLETE UNITS 56 Frame, 5/8" Bore						
115/230 VAC 60 Hz (1)	031910	031913	031915	031918	031921	031924
230/460 VAC 60 Hz (2)	031716	031718	031916	031919	031922	031925
287/575 VAC 60 Hz (3)	031911	031914	031917	031920	031923	031926
104/208 VAC 60 Hz (4)	030753	030756	030759	030762	030765	030768
190/380 VAC 50 Hz (5)	030754	030757	030760	030763	030766	030769
250/500 VAC 50 Hz	030755	030758	030761	030764	030767	030770
48 VDC	030861	030864	030867	030870	030873	030876
24 VDC	030860	030863	030866	030869	030872	030875
12 VDC	030859	030862	030865	030868	030871	030874
DBEC COMPLETE UNITS 140 Frame, 5/8" Bore						
115/230 VAC 60 Hz (1)	029436	029439	029442	029445	029448	029451
230/460 VAC 60 Hz (2)	029437	029440	029443	029446	029449	029452
287/575 VAC 60 Hz (3)	029438	029441	029444	029447	029450	029453
104/208 VAC 60 Hz (4)	029454	029457	029460	029463	029466	029469
190/380 VAC 50 Hz (5)	029455	029458	029461	029464	029467	029470
250/500 VAC 50 Hz	029456	029459	029462	029465	029468	029471
48 VDC	029492	029495	029498	029501	029504	029507
24 VDC	029491	029494	029497	029500	029503	029506
12 VDC	029490	029493	029496	029499	029502	029505
DBES COMPLETE UNITS 56 Frame, 5/8" Bore						
115/230 VAC 60 Hz (1)	030381	030384	030387	030390	030393	030396
230/460 VAC 60 Hz (2)	030382	030385	030388	030391	030394	030397
287/575 VAC 60 Hz (3)	030383	030386	030389	030392	030395	030398
104/208 VAC 60 Hz (4)	030735	030738	030741	030744	030747	030750
190/380 VAC 50 Hz (5)	030736	030739	030742	030745	030748	030751
250/500 VAC 50 Hz	030737	030740	030743	030746	030749	030752
48 VDC	030843	030846	030849	030852	030855	030858
24 VDC	030842	030845	030848	030851	030854	030857
12 VDC	030841	030844	030847	030850	030853	030856
DBES COMPLETE UNITS 140 Frame, 5/8" Bore						
115/230 VAC 60 Hz (1)	029400	029403	029406	029409	029412	029415
230/460 VAC 60 Hz (2)	029401	029404	029407	029410	029413	029416
287/575 VAC 60 Hz (3)	029402	029405	029408	029411	029414	029417
104/208 VAC 60 Hz (4)	029418	029421	029424	029427	029430	029433
190/380 VAC 50 Hz (5)	029419	029422	029425	029428	029431	029434
250/500 VAC 50 Hz	029420	029423	029426	029429	029432	029435
48 VDC	029474	029477	029480	029483	029486	029489
24 VDC	029473	029476	029479	029482	029485	029488
12 VDC	029472	029475	029478	029481	029484	029487

Notes:

Other voltages covered

- (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 or 60 Hz, 200/400 VAC 60 Hz, 208/416 VAC 50 Hz.

D-SERIES MOTOR BRAKE WARRANTY

DODGE will cover all defects due to material and workmanship (if properly installed, operated and maintained in accordance with DODGE specifications) for a period of one year in service or 18 months from date code, *whichever occurs first*.

If within the warranty timeframe a customer has a rectifier failure only, DODGE will supply a rectifier replacement kit to the customer at no charge which can be installed in the motor conduit box. If the unit fails for reasons other than the rectifier, a returned goods authorization should be obtained from DODGE Customer Service at (803) 297-4800, and the unit should be returned to DODGE at the address below for inspection to determine the actual cause of failure.

If the failure was due to defects in material or workmanship DODGE, at its discretion, will either repair, replace or issue credit for the failed unit. This warranty shall not apply where equipment is operated above rated load capacity or is subjected to accident, alteration, misuse or abuse. In either case, inbound and outbound transportation charges are the buyer's responsibility.

Except as directly modified herein, this product is subject to the Reliance Electric Standard Terms and Conditions of Sale.

Return to: RELIANCE ELECTRIC CO.
DODGE CLUTCH BRAKE
146 POWDER MILL ROAD
COLLINSVILLE, CT 06022
ATTN: WARRANTY INSPECTION

DODGE / P.O. Box 499 / 6040 Ponders Court / Greenville, S.C. 29602-0499 / (803) 297-4800

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Printed in U.S.A.

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