



# TYPE HDO-1, SERIES B, NEMA SIZE 2, 50 AMPERE, DC CONTACTOR SINGLE POLE, NORMALLY OPEN

## INSTALLATION AND ADJUSTMENT

Mount the contactor vertically on a rigid support. Provide at least .6" clearance above the top of the contactor base and 1.7" in front of the arc chute for arcing clearance and arc chute removal.

- With the contactor power OFF, lift straight up on the arc chute (1) and remove it from the contactor. Operate the contactor by hand to see that the contact tips meet squarely. If they do not, adjust by the procedure described below in step 9 of "Contact Tip Replacement". When released, the contactor should open freely. If it does not, check for the impaired operation of the contact arm assembly. Check all electrical connections to see that they are tight and replace the arc chute. No further adjustments are necessary.

**CAUTION:** Do not operate the contactor under load without the arc chute installed in its proper position.

## TROUBLESHOOTING

**PROBLEM:** Contactor will not close when energized.

- **SOLUTION:** Check the voltage at the operating coil terminals. An absence of voltage indicates a fault elsewhere in the circuitry. If the coil voltage is normal, disconnect the coil leads and check the coil for proper resistance. Resistance value for standard coils are listed in the parts lists on page 2. Resistance value for other coils are listed in the Class 9998 Magnet Coil Application Data catalog sheet. An open or shorted coil must be replaced.

## REPAIR and MAINTENANCE

### CONTACT TIP REPLACEMENT

To determine when the contact tips should be replaced, the contact follow up must be measured. The contact follow up is the distance "F" measured at the upper edge of the contact arm with the contactor fully closed, as shown on the right. When this distance is reduced to 1/32" or less, the contact tips must be replaced to assure that proper contact pressure is maintained.

Should it be necessary to replace the tips, a screwdriver is the only tool needed and the following procedure should be followed:

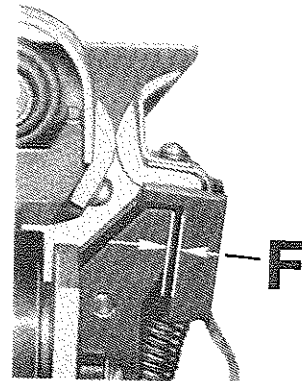
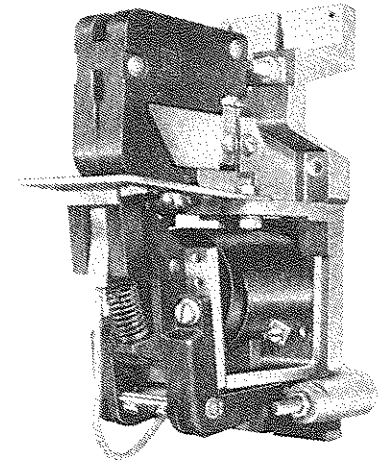
1. Lift straight up on the arc chute (1) and remove it from the contactor.
2. Unscrew the arc horn assembly (43), and remove the flexible connector and movable contact tip.
3. Loosen the two pan head screws (22) and push the contact arm pin (23) out.
4. Remove the contact arm assembly and unscrew the screw (41) holding the stationary contact tip in place.
5. Install the new stationary contact tip (39), screw (41)\*, and lock washer (40)\*.

6. Replace the contact arm assembly making sure that the opening spring (31) is seated properly over the head of screw 29.
7. Replace the contact arm pin (23) and tighten the two pan head screws (22).
8. Reassemble the new movable contact tip (42), flexible connector (24), and arc horn (43), in that order.
9. Operate the contactor by hand to see that the tips meet squarely. Contact tip alignment can be adjusted by loosening the tip retaining screws and shifting the tips. After the contacts are properly aligned, retighten the screws securely.
10. Replace the arc chute.

### COIL REPLACEMENT

To replace the operating coil, a screwdriver is required and the following procedure should be followed:

1. Lift straight up on the arc chute (1) and remove it.
2. Remove the coil leads.
3. Loosen the two pan head screws (22), and push the contact arm pin (23) out.



4. Remove the contact arm assembly.
5. Unscrew the screw (29) on the top of the magnet core and remove the coil.
6. Install the new coil and replace the core cap (26), the core cap spacer (27), lock washer (28), and screw (29). Make sure the core cap (heavy steel washer) is next to the coil.
7. Replace the contact arm assembly, making sure that the opening spring (31) is seated properly over the head of screw 29.
8. Replace the contact arm pin (23) and tighten the two pan head screws (22).
9. Reconnect the coil leads to the new coil and replace the arc chute.

### LUBRICATION

The type "H" contactor requires no lubrication. The pivot pins bear in a self-lubricating material.

**NOTE:** \*The special non-magnetic bolts and lockwashers supplied with the contact parts kit must be used.  
• Minor revision since previous issue.

Supersedes SB 7004-46 Dated 3/71

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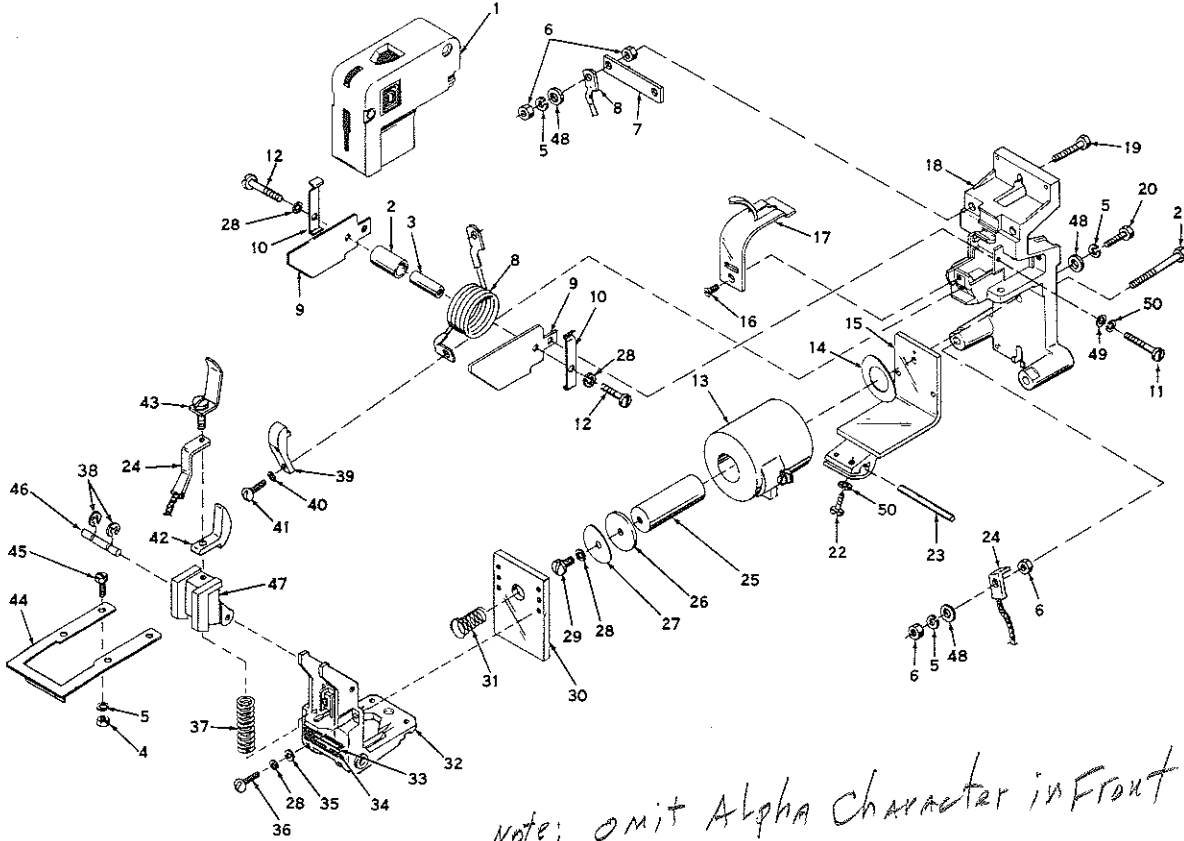
**SQUARE D COMPANY**

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2.5M



**TYPE HD-1, SERIES B, NEMA SIZE 2, 50 AMPERE,  
DC CONTACTOR, S.P., N.O.**



Item No.	Part No.	Description	Item No.	Part No.	Description
✓ 1.	A5105-035-50	Assembled Arc Chute	✓ 24.	A51016-050-50	Assembled Connector
✓ 2.	B50512-052-29	Blowout Core Insulator	25.	A51015-040-50	Assembled Coil Core
3.	B50502-776-06	Blowout Core	26.	B50502-006-08	Core Cap
4.		1/4"-20 Hex Steel Jam Nut, 2 Req'd.	27.	B50502-006-09	Core Cap Spacer
5.		1/4" Plain Lock Washer, 5 Req'd.	28.		# 10 Plain Lock Washer, 5 Req'd
6.		1/4"-20 Hex Steel Nut, 4 Req'd.	29.		# 10-24x3/8" Pan Head Steel Screw
7.	A51015-119-01	Terminal Tie Bar	30.	A51015-043-01	Armature
✓ 8.	A51015-054-50	Assembled Blowout Core	✓ 31.	B50502-602-07	Opening Spring
✓ 9.	A51015-032-01	Blowout Ear, 2 Req'd.	✓ 32.	C51015-103-50	Contact Arm Assembly with Bushings
10.	A51015-034-01	Arc Shield Spring, 2 Req'd.	33.	A51139-173-03	Nameplate
11.		# 8-32x3/8" Hex Pan Head, Tri-Lobe Screw, 2 Req'd.	34.		# 6-32x1/4" Pan Head, Type F, Tapping Screw, 2 Req'd
12.		# 10-24x1/2" Hex Head Steel Screw, 2 Req'd.	35.		# 10 Plain Washer, 2 Req'd
✓ 13.	A51015-056-50	Assembled Operating Coil (240V Approximate Resistance 2114 ohms)	36.		# 10-24x5/8" Pan Head Steel Screw, 2 Req'd
✓	A51015-056-51	Assembled Operating Coil (120V Approximate Resistance 543 ohms)	37.	B50502-602-18	Auxiliary Arm Spring
✓ 14.	A51017-041-01	Spring Washer	38.	29907-01410	E Ring
✓ 15.	A51015-076-50	Assembled Magnet Frame	39.		Stationary Contact Tip
✓ 16.		# 6-32x1/4" Flat Head Steel Screw	40.	Class 9998	# 10 Silicon Bronze Lock Washer
✓ 17.	A51015-033-01	Blowout Guard	41.	Type HD-1	# 10-24x1/2" Round Head Silicon Bronze Screw
18.	C51015-028-50	Assembled Contactor Base	42.	Kit	Movable Contact Tip
19.		1/4"-20x1" Hex Head Steel Screw, 2 Req'd.	43.		Assembled Arc Horn
20.		1/4"-20x7/8" Hex Head Steel Screw	44.	A51015-053-01	Stop Plate
21.		1/4"-20x1-3/4" Hex Head Steel Screw, 2 Req'd.	45.		1/4"-20x5/8" Hex Head Slotted Steel Screw, 2 Req'd
22.		# 8-32x3/8" Pan Head Screw, 2 Req'd	46.	A51015-059-01	Auxiliary Arm Pin
23.	A51015-102-01	Contact Arm Pin	47.	B51015-145-50	Auxiliary Arm
			48.		1/4" Plain Washer, 3 Req'd
			49.		# 8 Plain Washer
			50.		# 8 Plain Lock Washer

Standard hardware, listed without a Square D part number, should be obtained from a local hardware supplier.

NOTE: Parts Kits are Sold Only as Complete Kits and are Listed Under Class 9999 of Catalog. User Modification Kits Such as Interlocks, Tie Bars, and Timers are Listed Under Class 9998.

\*Essential Parts for General Maintenance.

• Minor revision since previous issue.

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