



TYPE HFO-1, SERIES A, NEMA SIZE 4, 150 AMPERE, DC CONTACTOR SINGLE POLE, NORMALLY OPEN

INSTALLATION AND ADJUSTMENT

Mount the contactor vertically on a rigid support. Provide at least 1" clearance above the top of the contactor base and 2" in front of the contactor for arcing clearance and arc chute removal.

With the contactor power OFF, remove the arc chute (1) and operate the contactor by hand. The contact tips should meet squarely. If they do not, adjust by the procedure described below in step 6 of "Contact Tip Replacement". When released, the contactor should open freely. If it does not, check for clearance around the bearing bracket (14) and the opening spring (25). 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 continuity. 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 1/16" 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 7/16" open end wrench is the only tool needed and the following procedure should be followed:

1. Remove the arc chute (1).
2. Unscrew the hex head bolt (38A) holding the flexible connector and movable contact tip in place.
3. Remove these parts and unscrew the hex head bolt (38B) holding the stationary contact tip in place.
4. Install a new stationary contact tip (36) and replace the bolt (38B)*
5. Reassemble the new movable contact tip (35) flexible connector (18), and bolt (38A)* in that order.

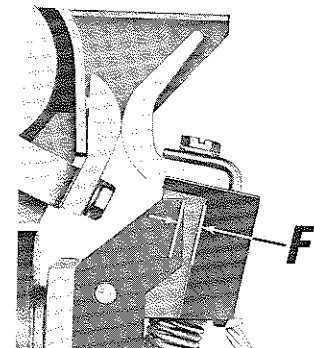
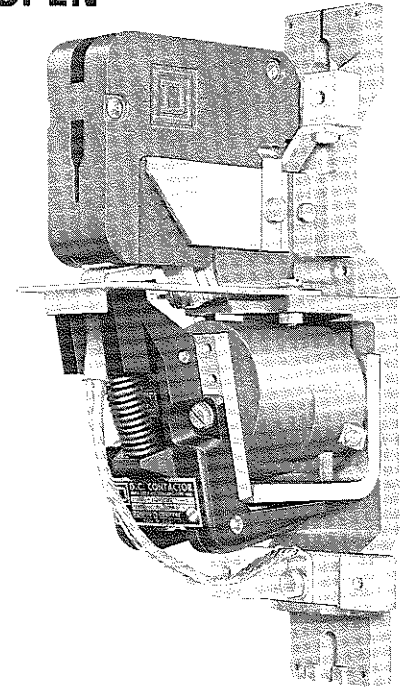
NOTE: * The special non-magnetic bolts and lockwashers supplied with the contact parts kit must be used.
• Minor revision since previous issue.

6. Operate the contactor by hand to see that the tips meet squarely. Contact tip alignment can be adjusted by loosening the tip retaining bolts and shifting the tips. After the contacts are properly aligned, retighten the bolts securely.
7. Replace the arc chute.

COIL REPLACEMENT

• To replace the operating coil, a screwdriver and a 7/16" open end wrench are needed and the following procedure should be followed:

1. Remove the arc chute.
2. Remove the coil leads.
- 3. Remove the two hairpin clips (20) and push the contact arm pin (19) out.
4. Remove the contact arm assembly.
5. Unscrew the hex head bolt (9) on the top of the magnet core and remove the coil.
6. Install the new coil and replace the core cap (23), the core cap spacer (22), lock-



washer (8), and hex head bolt (9). Make sure the core cap (heavy steel washer) is next to the coil.

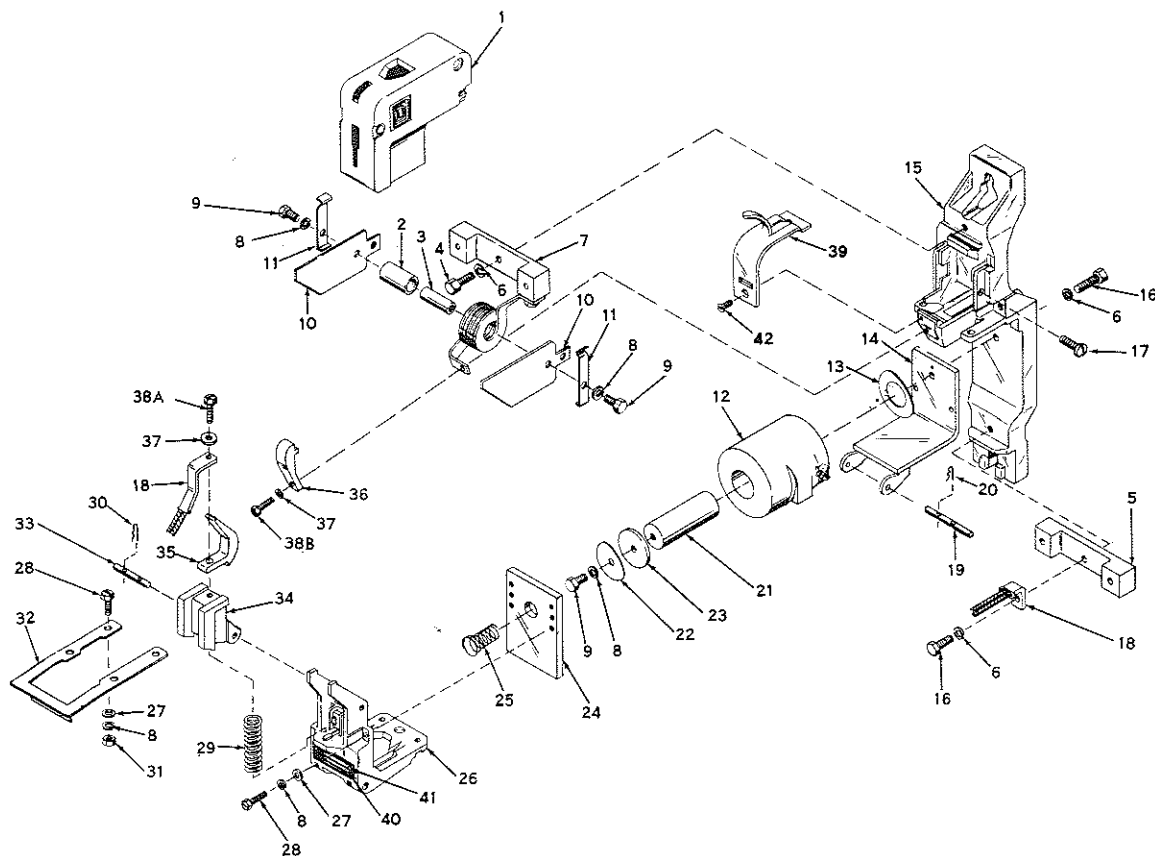
- 7. Replace the contactor arm assembly, contact arm pin (19) and two hairpin clips (20).
8. Reconnect the coil leads to the coil and replace the arc chute.

LUBRICATION

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



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Item No.	Part No.	Description	Item No.	Part No.	Description
* 1	A51017-035-50	Assembled Arc Chute	22	B50502-006-06	Core Cap Spacer
2	B50512-052-28	Blowout Core Insulator	23	B50502-006-05	Core Cap
3	B50502-776-14	Blowout Core	24	A51017-043-01	Armature
4	21401-22240	5/16" -18x3/4" Steel Hex Cap Screw	25	B50502-602-03	Opening Spring
5	A51017-029-01	Bottom Terminal Block	26	C51017-044-01	Contact Arm
6	23701-00220	5/16" Plain Lock Washer, 3 Req'd.	27	23601-00200	1/4" Plain Washer, 4 Req'd.
7	A51017-054-50	Blowout Coil and Top Terminal Block Assembly	28	21408-20240	1/4" -20x3/4" Slotted Steel Hex Cap Screw, 4 Req'd.
8	23701-00200	1/4" Plain Lock Washer, 7 Req'd.	29	B50502-602-04	Auxiliary Arm Spring
9	21401-20160	1/4" -20x1/2" Steel Hex Cap Screw, 3 Req'd.	*30	A50502-701-03	Hairpin Clip (Aux. Arm Pin), 2 Req'd.
10	A51017-032-01	Blowout Ear, 2 Req'd.	31	23003-00200	1/4" -20 Hex Jam Nut, 2 Req'd.
11	A51017-034-01	Arc Shield Spring, 2 Req'd.	32	A51017-053-01	Stop Plate
*12	A51017-056-50	Assembled Operating Coil (240 V)	*33	A51017-059-01	Pin (Auxiliary Arm)
	A51017-056-51	Assembled Operating Coil (120 V)	34	B51017-045-50	Auxiliary Arm
13	A51017-041-01	Spring Washer	*35	Class 9998 Type HF-1 Kit	Movable Contact Tip (Copper)
14	A51017-037-50	Assembled Magnet Frame	*36		Stationary Contact Tip (Copper)
15	D51017-028-50	Assembled Contactor Base	*37		1/4" Si.-Br. Lock Washer, 2 Req'd.
16	21401-22320	5/16" -18x1" Steel Hex Cap Screw, 2 Req'd.	*38A		1/4" -20x3/4" Si.-Br. Hex Cap Screw, 2 Req'd.
*17	21590-16120	#10-24x3/4" Pan Hd. Thr'd. Form Screw	*38B		
18	A51018-050-50	Assembled Connector	39	A51017-033-01	Blowout Guard
*19	A51017-061-01	Pin (Contact Arm)	40	A51139-081-03	Nameplate
*20	A50502-701-04	Hairpin Clip (Contact Arm Pin), 2 Req'd.	41	21509-12080	No. 6-32x1/4" Pan Head Screw, 2 Req'd.
21	A51017-040-50	Assembled Coil Core	42	21201-16100	No. 10-24x5/16" Flat Head Steel Screw

NOTE: Electrical and Mechanical Interlocks, Pneumatic Timers, and Tie Bars are listed under Class 9999 User Modification Kits. See Service Bulletin 9999-1

* Essential Parts for General Maintenance.

• Minor revision since previous issue.