ELECTRO-MOTIVE DIVISION • GENERAL MOTORS CORPORATION
SERVICE DEPARTMENT

MAINTENANCE INSTRUCTION

POWER CONTACTOR -- 8458534

DESCRIPTION

The power contactor, Fig. 1, is a single-pole, normally open device, capable of connecting and interrupting DC current up to 1200 amperes at 1500 volts. It is designed for application in power circuits of diesel-electric equipment.

A four circuit interlock switch with two normally closed and two normally open contacts is enclosed in a dustproof housing. Circuit connections for the interlocks are provided by external terminal tabs. Terminal identification letters are molded into the interlock housing.

Arc interruption takes place wholly within the arc chute as two separate, but in series, arcs side-by-side. The magnetic field required to speed interruption is provided by a series blowout coil.

The arc chute is designed to operate under normal conditions of rating and environment, with the vent located not closer than three inches from an interfering surface.

The contactor is capable of closing on 1200 amperes at rated voltage. Much higher fault currents may be handled through main contacts for short intervals, without damage to the contacts.

SAFETY PRECAUTIONS

WARNING: This power contactor was designed for specific application to electric power circuits of diesel-electric equipment where the circuits and devices are enclosed in suitably protective cabinets. Care has been taken in the design of the equipment

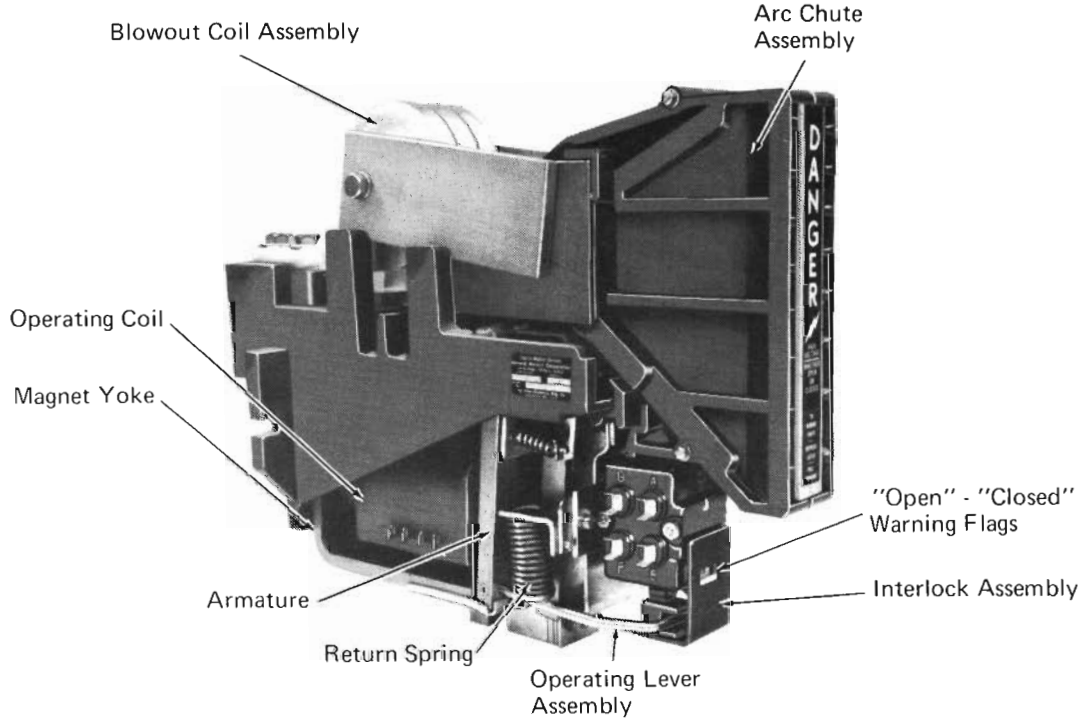

Fig. 1 - Power Contactor 8458534

*Note: Information contained herein is applicable to equipment being produced as of the date of publication.

to provide for the safety of operating and service personnel, provided reasonable care is exercised in the performance of operating and service functions.

The following safety considerations should always be carefully observed in the application, operation, or servicing of the equipment.

1. ELECTRICAL RATINGS of the equipment are values that should be considered to be EXTREMELY DANGEROUS to personnel.

2. EQUIPMENT SHOULD ALWAYS BE COMPLETELY DE-ENERGIZED BEFORE HANDLING OR PERFORMING ANY SERVICE OPERATIONS. De-energizing the operating coil is not sufficient to render the equipment safe; the power lines must also be disconnected or otherwise de-energized. If power lines are not de-energized, all parts of the device should be considered to be at the maximum system voltage.

3. IF INSPECTION OF ENERGIZED EQUIPMENT IS NECESSARY, DO NOT TOUCH OR HANDLE ANY PARTS. DO NOT STAND IN FRONT OF THE EQUIPMENT OR AT CLOSE RANGE TO PERFORM VISUAL INSPECTIONS. The discharge of hot gases and particles is always likely when the contactor is operated in an energized circuit.

4. A mechanical interlock is provided in the design to prevent the closing of main contacts until the arc chute is in position. TO AVOID EQUIPMENT DAMAGE OR DANGER TO PERSONNEL, DO NOT APPLY BYPASS DEVICES OR OTHERWISE ATTEMPT TO DEFEAT THE ACTION OF THIS INTERLOCK.

5. NEVER ATTEMPT TO REMOVE THE ARC CHUTE WHILE THE POWER CONTACTOR IS IN AN ENERGIZED OR CLOSED POSITION. Such action is extremely dangerous and would likely result in extensive damage.

6. Operating temperatures for the power contactor are high. Some parts of these devices may normally reach temperatures in excess of 93° C (200° F). SERIOUS BURNS CAN RESULT FROM HANDLING THE EQUIPMENT AFTER IT HAS BEEN IN SERVICE AND BEFORE IT HAS BEEN ALLOWED TO COOL.

MAINTENANCE

Only skilled personnel familiar with electrical equipment and the hazards involved should be permitted to service a power contactor. All safety precautions must be observed.

Minimum maintenance is required to keep the power contactor in serviceable condition. Moving mechanical parts should be free from excess friction. Parts should also be checked for excessive wear. The bearing surfaces of the contactor are designed to operate without lubrication. Do not oil or grease at any time.

Contacts and arc chute parts are normally oxidized and smoked from regular service. Other contactor parts should not show visible effects of high temperature operation.

The contactor must be kept clean, connections must be tight, and should be inspected and serviced at intervals as specified in the applicable Scheduled Maintenance Program.

MAIN CONTACTS

The main contact tips should be free of foreign objects, but need not be smooth. Contact tips should not be cleaned, dressed, or filed. The contacts will operate satisfactorily even though blackened, pitted, or eroded as shown in Fig. 2.

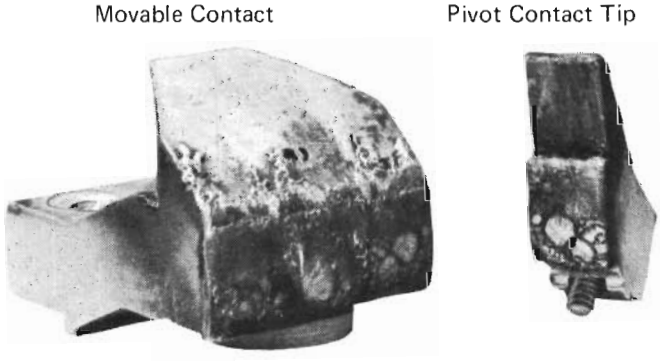

Fig. 2 – Usable Blackened And Pitted Contacts

Refer to Fig. 3 to determine if contacts are usable or require replacement. Overtravel is provided at the movable contact support to compensate for allowable wear.

INSPECTION AND REPLACEMENT

WARNING: De-energize the system before servicing the contactor.

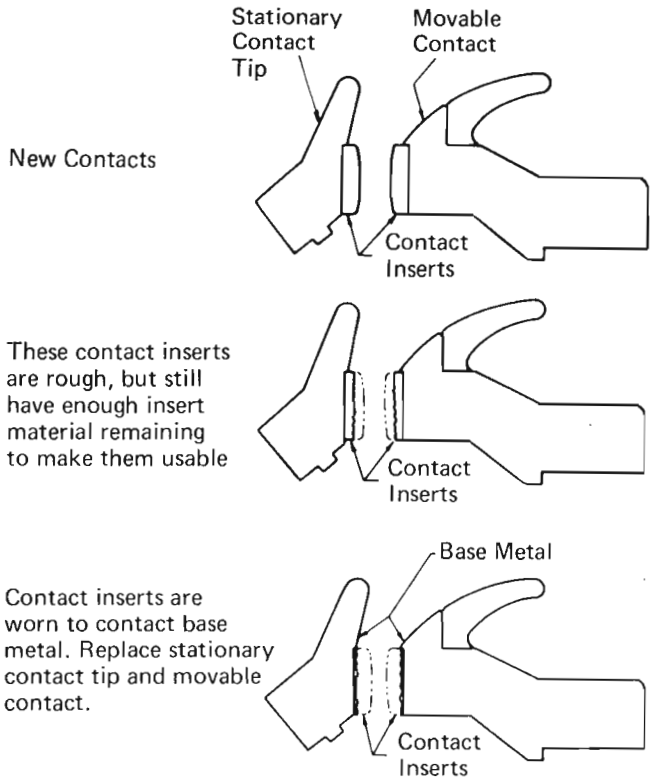

Fig. 3 - Main Contact Wear Limits

1. Press latch spring and remove arc chute by pulling forward, Fig. 4.

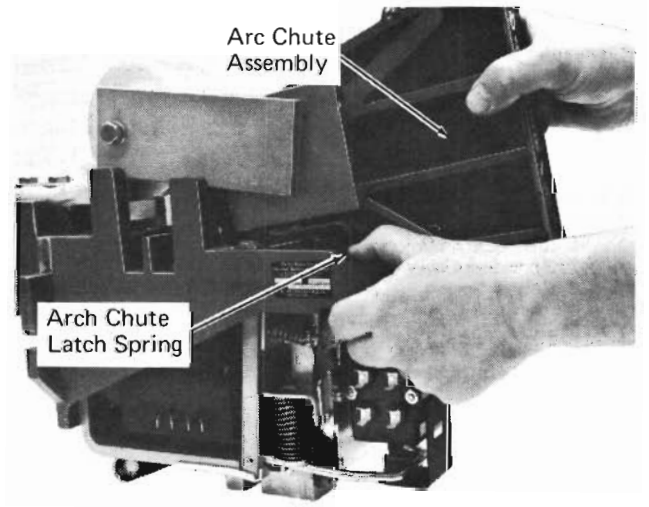

Fig. 4 - Removing Arc Chute

NOTE: When the arc chute is removed or not fully engaged, an interlock spring, Fig. 5, interferes with motion of the interlock to prevent closing of the contactor.

2. Inspect the three stationary contact tips, Fig. 5. If any tip is eroded to base metal, replace all three stationary contacts and the movable contact as follows:

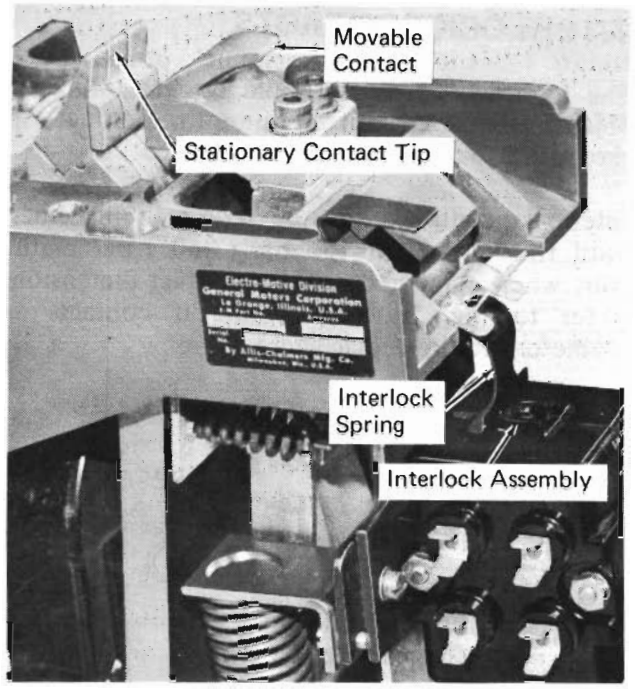

Fig. 5 - Contactor With Arc Chute Removal

a. Remove three screws and carefully remove stationary contacts.

b. Align new stationary contacts at tongue and groove interface with stationary support half, Fig. 6, and secure with screws and lockwashers.

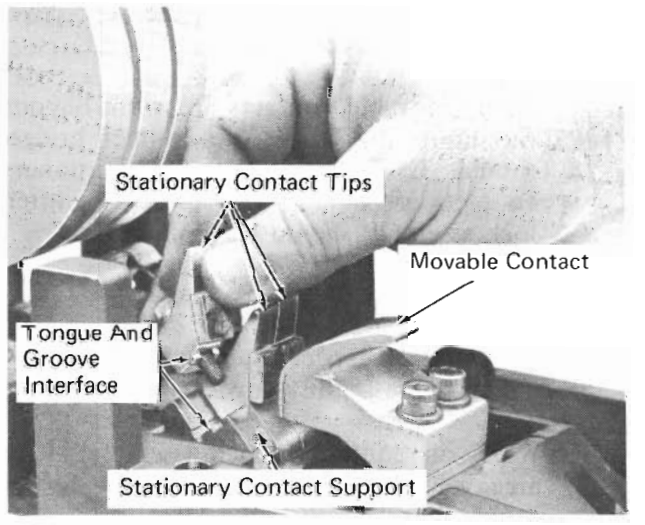

Fig. 6 - Stationary Contact Tip Replacement

c. Replace movable contact by removing two screws, Fig. 6. Apply new contact which is self-aligning. Secure with two screws.

INTERLOCK CONTACTS

The interlock contacts should be free of foreign objects, but need not be smooth. Contact tips should not be cleaned, dressed or filed.

Interlock contacts do not require replacement until they are worn 1.5 mm (.060") per mating pair, when compared to new contact dimensions. Refer to Fig. 7 to determine if contacts are usable or require replacement.

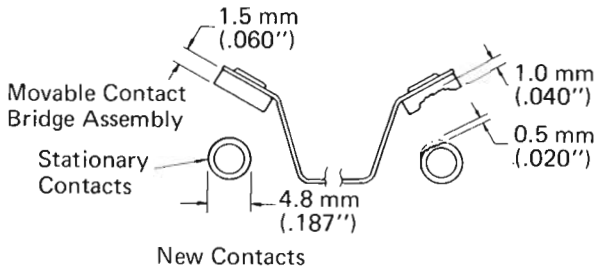

Fig. 7 - Interlock Contact Wear Limits

INSPECTION

1. Remove screw (6, Fig. 8) from bottom of interlock assembly and remove slider (5) and interlock operator (4).

2. Slit labels (12) along parting between the two interlock covers.

3. Remove two screws (11) from interlock covers and carefully remove the left cover half, exposing the contacts.

NOTE: If the movable contacts are worn beyond the limits in Fig. 7, the contact bridges should be replaced. If the stationary contacts are defective or loose, the interlock assembly should be replaced.

REPLACEMENT

1. Remove contact carrier assembly (10, Fig. 8) from interlock assembly cover.

NOTE: Work on contact carrier assembly in an area where small parts will not be lost if dropped.

2. Hold contact carrier assembly in the palm of hand and loosen screw (13) so that top, center, and bottom elements of the contact carrier can be separated sufficiently to remove an upper and lower set of contact bridges (14). Insert two new contact bridges.

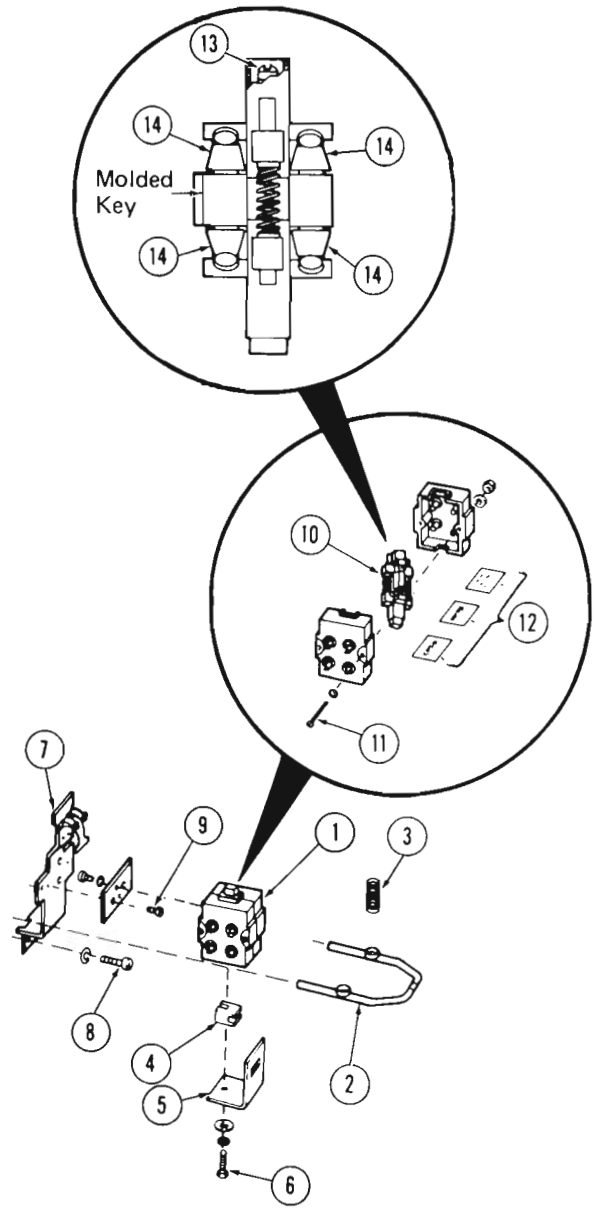

Fig. 8 - Interlock Assembly, Exploded View

CAUTION: Ensure that each contact bridge is positioned properly and not inverted since this could cause malfunction of the contactor. See 14, Fig. 8 for correct position of contact bridges.

3. Turn over contact carrier assembly in palm of hand and repeat Step 2 for remaining two contact bridges and tighten screw (13). Ensure brass sleeve on each contact bridge assembly is free after screw is tightened.

4. Place contact carrier assembly (10) into the interlock cover half remaining on the contactor. Ensure that the screw (13) in the contact carrier is at the end of the interlock cover stamped C-D, and that the molded key is outside the cover. Move contact carrier from end to end to ascertain that the contact bridge assemblies are correctly related to the stationary contacts inside the interlock cover. Align bottom and top elements of the contact carrier assembly rotationally, if required, so that they do not bind in the square bearing hole of the interlock cover.

5. Apply the other cover half to the interlock assembly and secure with two screws, lockwashers, and nuts. Lockwashers are to be used under screw heads and under nuts.

INTERLOCK ASSEMBLY

1. Remove return springs (3, Fig. 8) with a screwdriver.

2. Remove operating lever (2) from armature by releasing two set screws (not shown here).

3. Remove two screws (8) from bottom terminal assembly and swing the support bracket (7) forward, with interlock assembly attached, until disengaged from the terminal molding, Fig. 9.

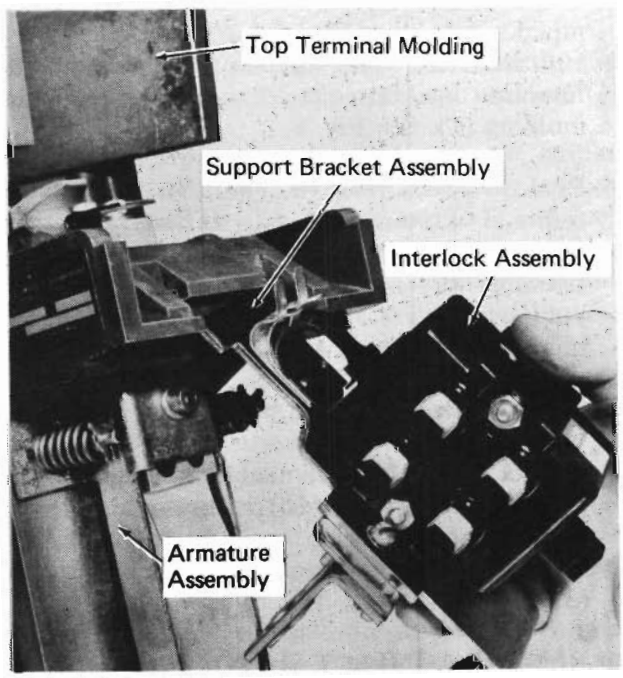

Fig. 9 – Removing Support Bracket And Interlock Assembly

4. Remove two screws (9, Fig. 8) and remove interlock assembly from support bracket.

5. Attach new interlock assembly to support bracket with screws.

6. Position top end of interlock support bracket under front end of top terminal molding.

7. Loosely attach interlock support bracket to bottom terminal assembly with two screws and lockwashers. Center movable contact support in the opening of the terminal molding, and tighten screws.

8. Insert ends of operating lever (88, Fig. 11) into holes at bottom of armature (42) until ends are flush with back face of armature.

9. Tighten set screws (102).

10. Insert both return springs between cups on operating lever (2) and the spring location buttons on return spring bracket. Springs must be fully seated in cups.

11. Attach interlock operator and slider to bottom of contact carrier assembly (10) with screw, Belleville washer, and lockwasher. Flattened portion of operating lever must be nested inside recess in interlock operator.

NOTE: Ensure slider (5) does not interfere with motion of interlock contact carrier.

ARC CHUTE

If maintenance of the arc chute is required, proceed as follows:

DISASSEMBLY

Remove three screws for easy access to all parts inside arc chute. Replace arc runners, Fig. 10, only if a hole has been burned through the brass portion.

REASSEMBLY

Because of the interlocking fit of several parts of the arc chute, refer to Fig. 10, and use the following assembly sequence:

1. Lay the right-hand arc chute molding marked 14-429-405 on a bench.

2. Insert upper arc runner into slot in arc chute molding.

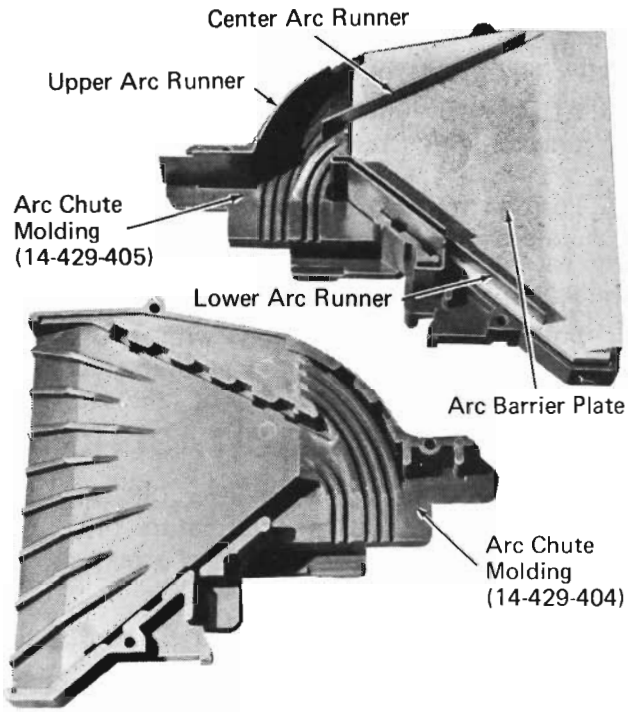

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Fig. 10 – Arc Chute Assembly

3. Insert center arc runner into slot in arc chute molding.

4. Slide the arc barrier plate between the upper and lower legs of the center arc runner, and nest it into the arc chute molding until right-hand face of arc barrier plate is in line with arc chute molding.

5. Insert lower arc runner into slot in arc chute molding.

6. Place arc chute molding marked 14-429-404 over the above assembly and move about slightly until all parts are nested.

7. Secure the assembly with three each of the following: screw, lockwasher, plain washer, and nut. The washers are to be placed under head of screw. Do not tighten screws.

8. Torque arc chute molding screws to 0.8 N·m - 1.13 N·m (7-10 in. lbs).

CAUTION: Design clearances are such that a variable opening will appear along the interface between the two arc chute moldings after arc chute molding screw is tightened. Pole plates and pole inserts are bonded with silicone rubber compound to the exterior of the arc chute molding at the factory and are not to be removed.

REBUILDING CONTACTOR

Under ordinary circumstances, replacement of the contacts and interlock contacts is the extent of the periodic maintenance needed to ensure reliable operation. However, if the contactor is to be serviced or rebuilt for other reasons, use the following procedure.

DISASSEMBLY

WARNING: Do not disassemble contactor in cabinet. Disconnect contactor power cables and leads to interlock assembly, and then remove contactor from control cabinet.

TO REMOVE MAGNET COIL (31, FIG. 11) ONLY

1. Remove two screws (27) and separate blowout coil assembly (C) from contactor.

2. Remove movable contact (51) by removing two screws (53).

3. Remove two return springs (89).

4. Release two set screws (102) and withdraw operating lever assembly (88) from armature (42).

5. Remove two screws (39) from bottom terminal assembly (37) and with interlock (G) still attached, swing the support bracket (54) forward until disengaged from top terminal molding (1). See Fig. 9.

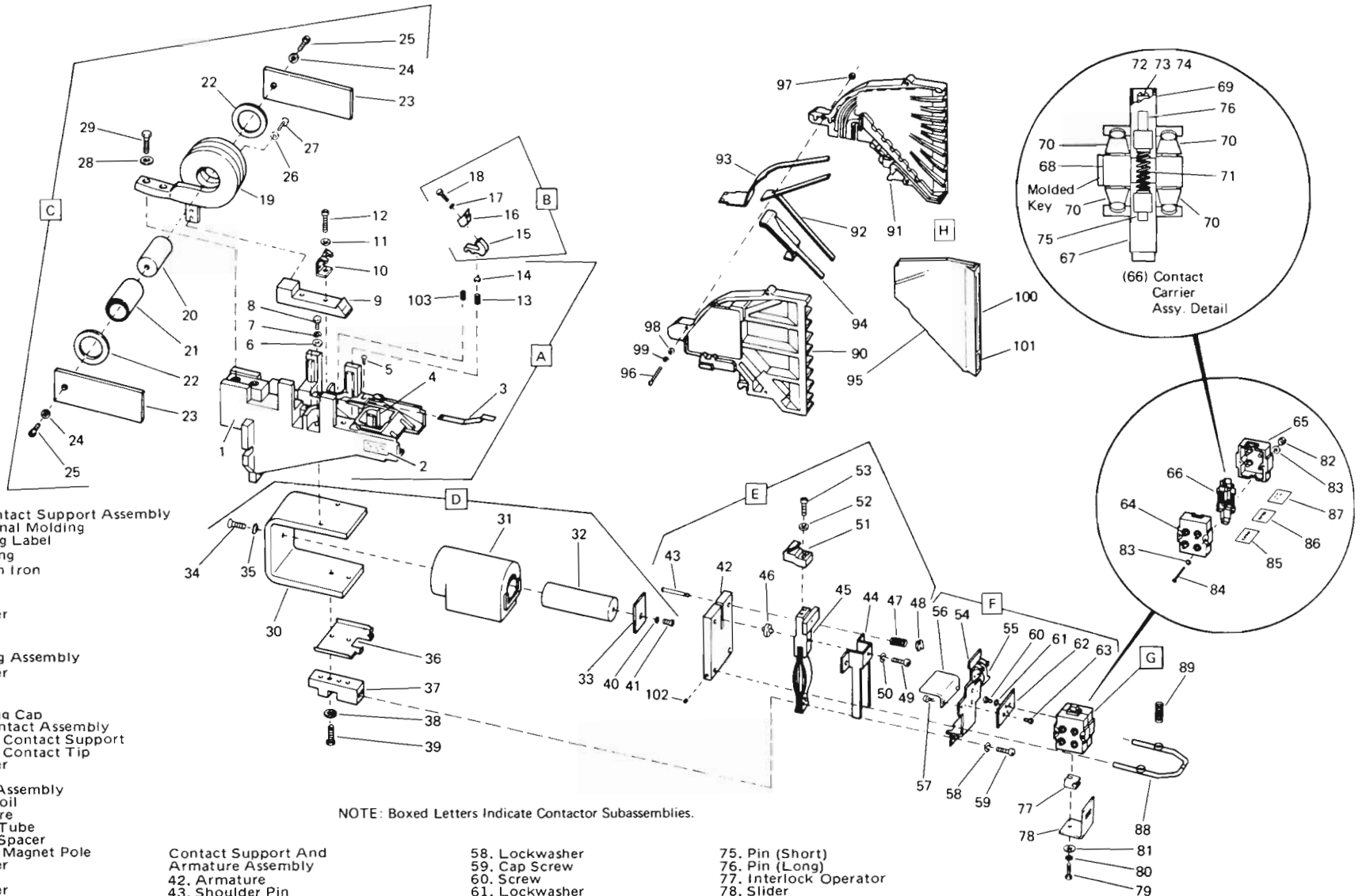
6. Remove two screws (8, Fig. 11). Lift off top terminal molding (1) and stationary contact assembly (A). Contact support and armature assembly (E) is free to be removed. Magnet yoke assembly (D) is now separated from the remainder of the device.

7. Remove screw (41) and pole plate (33).

8. Magnet coil (31) is cemented to magnet yoke (30). Using a screwdriver, separate with a wedging action, being careful not to damage the coil. Slide magnet coil off magnet core (32).

TO REMOVE CONTACT SUPPORT AND ARMATURE ASSEMBLY (E, FIG. 11) ONLY

1. Remove movable contact (51) by removing two screws (53).



Stationary Contact Support Assembly
1. Top Terminal Molding
2. Engineering Label
3. Latch Spring
4. Hold Down Iron
5. Tap Screw
6. Washer
7. Lockwasher
8. Cap Screw
9. Terminal
10. Leaf Spring Assembly
11. Lockwasher
12. Screw
13. Spring
14. Pivot Spring Cap
Stationary Contact Assembly
15. Stationary Contact Support
16. Stationary Contact Tip
17. Lockwasher
18. Cap Screw
Blowout Coil Assembly
19. Blowout Coil
20. Magnet Core
21. Insulating Tube
22. Insulating Spacer
23. Stationary Magnet Pole
24. Lockwasher
25. Screw
26. Lockwasher
27. Screw
28. *Washer
29. *Screw
Magnet Yoke Assembly
30. Magnet Yoke
31. Magnet Coil
32. Magnet Core
33. Pole Plate
34. Screw
35. Lockwasher
36. Armature Guide
37. Bottom Terminal Assembly
38. Lockwasher
39. Cap Screw
40. Lockwasher
41. Screw

Contact Support And Armature Assembly
42. Armature
43. Shoulder Pin
44. Hold-On Magnet
45. Contact Support Assembly
46. Open-Stop
47. Spring
48. "X" Washer
49. Screw
50. Lockwasher
51. Movable Contact
52. Lockwasher
53. Cap Screw
Support Bracket Assembly
54. Support Bracket
55. Interlock Spring (Part Of Item 54)
56. Return Spring Bracket
57. Screw
58. Lockwasher
59. Cap Screw
60. Screw
61. Lockwasher
62. Interlock Support
63. Screw
Interlock Assembly
64. Contact Assembly (A-B, E-F) Cover
65. Contact Assembly (C-D, G-H) Cover
66. Contact Carrier
67. Top Element
68. Center Element
69. Bottom Element
70. Contact Bridge (Short)
71. Spring
72. Screw
73. Washer
74. Lockwasher
75. Pin (Short)
76. Pin (Long)
77. Interlock Operator
78. Slider
79. Screw
80. Lockwasher
81. Belleville Washer
82. Nut
83. Lockwasher
84. Screw
85. "Open" Label
86. "Closed" Label
87. "Marking" Label
88. Operating Lever
89. Return Spring
Arc Chute Assembly
90. Arc Chute Molding, Left Hand
91. Arc Chute Molding, Right Hand
92. Arc Runner, Center
93. Arc Runner, Upper
94. Arc Runner, Lower
95. Arc Barrier Molding
96. Screw
97. Nut
98. Washer
99. Lockwasher
100. Label
101. Label
102. Set Screw
103. Spring

*For shipping purposes only, discard.

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Fig. 11 – Contactor 8458534, Exploded View

2. Remove two return springs (89).

3. Release two set screws (102) and remove operating lever assembly (88).

4. Remove two screws (53) from bottom terminal assembly (37) and lift support bracket assembly (54) with interlock assembly (G) from front of top terminal molding (1). See Fig. 9.

5. Release screws (39, Fig. 11) sufficiently to provide clearance at bottom of armature (42) so that contact support and armature assembly (E) can be lifted from remainder of the device.

TO SEPARATE CONTACT SUPPORT ASSEMBLY (45, FIG. 11) FROM CONTACT SUPPORT AND ARMATURE ASSEMBLY (E)

1. Lay the control support and armature assembly (E) on a workbench with the armature (42) face down.

2. Apply pressure to "ears" of "X" washer (48) with pliers to free spring.

3. Repeat Step 2 to remove second washer and spring.

4. Remove shoulder pins (43).

5. Lift the contact support assembly (45) off of armature (42). Let the open-stop (46) fall free.

6. Remove screw (49) to free the contact support assembly (45) from hold-on magnet (44).

TO REMOVE THREE STATIONARY CONTACT ASSEMBLIES (B, FIG. 11)

1. Remove blowout coil assembly (C) by removing two screws (27).

2. Take out terminal (9) and leaf spring (10) by removing two screws (12).

3. Lift out stationary contact assemblies (B).

4. Remove springs (13) with caps (14).

5. Lift out springs (103).

BUILDING SUB-ASSEMBLIES

To rebuild the contactor, start by building the major sub-assemblies. Perform the procedures and adjustments as follows:

STATIONARY CONTACT ASSEMBLY (B, FIG. 11)

1. Mate the contact support (15) to the contact tip (16).

2. Secure the halves, using screws (18) and lockwashers (17), making certain that the halves are centered to each other.

STATIONARY CONTACT SUPPORT ASSEMBLY (A, FIG. 11)

1. Ensure that support areas for springs (103, 13) are free of foreign particles. Place top terminal molding (1) in a horizontal position.

2. Place a spring (103) over each of the three small pins (rear) in the top terminal molding (1).

3. Place a spring (13) over each of the three larger pins in the top terminal molding (1).

4. Attach a spring cap (14) to the bottom of each of the three stationary contact assemblies (B). The two "ears" on spring cap are bent inward to bind on stationary contact support (15). See Fig. 12.

5. Place one stationary contact assembly (B, Fig. 11) with spring cap (14) attached, over spring (103) and spring (13), making certain that the spring cap (14) is firmly seated over the top of spring (13). Position the remaining stationary contact assemblies in the same manner.

6. Insert the pointed nose of terminal (9) into the cavity in the back of stationary contact, engaging the pivots of the mating parts. See Fig. 13.

7. With the pivots engaged and the stationary contacts held back against the stop in the top terminal molding (1, Fig. 11) insert screw (12) with lockwasher (11) into the rear hole of terminal (9). Tighten so that pivots remain engaged.

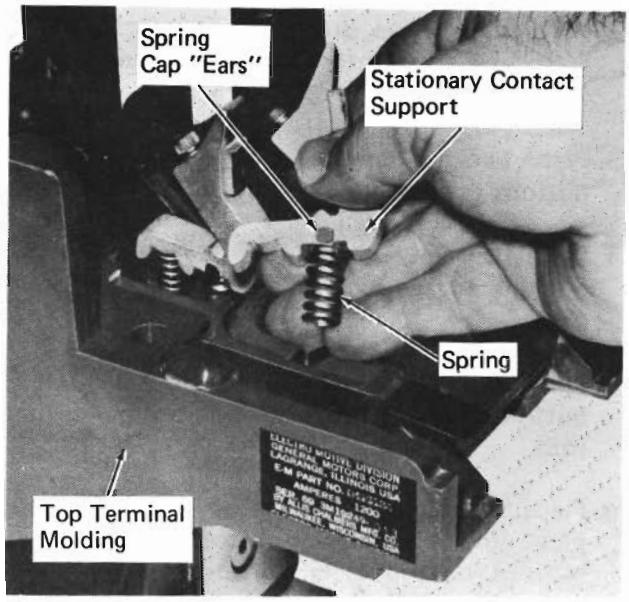

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Fig. 12 - Stationary Contact Assembly

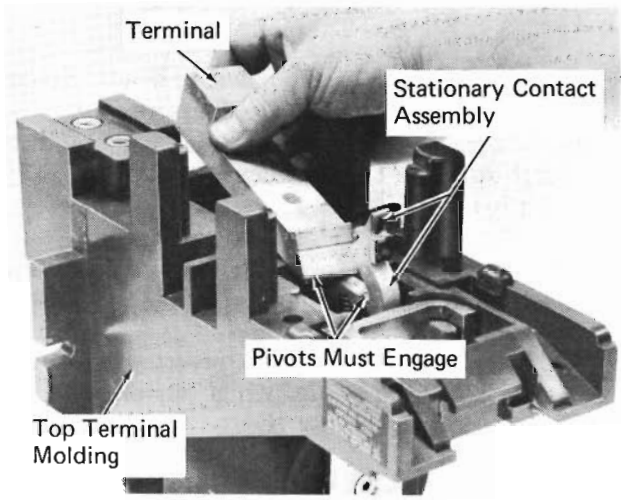

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Fig. 13 - Terminal Assembly

8. Place leaf spring assembly (10) over front hole of the terminal (9) and add lockwasher (11) and screw (12).

9. Tighten both screws (12), making certain that rear end of terminal (9) touches stop in top terminal molding (1).

10. Check for freedom of movement of each stationary contact. Gap behind contact shall be 0.8 mm (.030") to 1.1 mm (.045"). See Fig. 14.

BLOWOUT COIL ASSEMBLY (C, FIG. 11)

1. Attach magnet core (20) to one stationary magnet pole (23) using screw (25) and lockwasher (24).

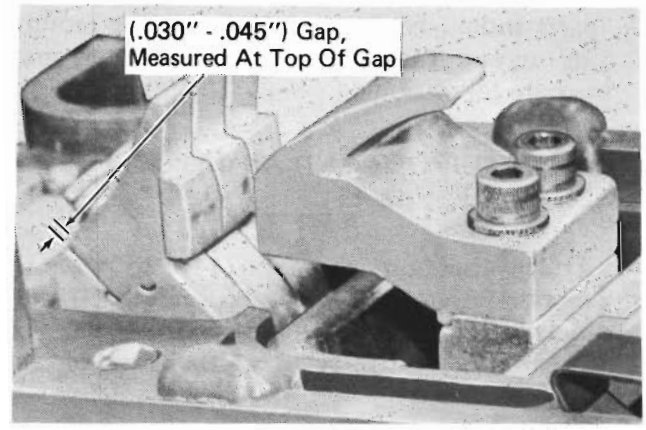

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Fig. 14 - Stationary Contact Cap

2. Place the following parts over magnet core (20) in the following sequence:

   a. Insulating tube (21).

   b. Insulating spacer (22).

   c. Blowout coil (19) (no preferred orientation).

   d. Insulating spacer (22).

3. Attach stationary magnet pole (23) to free end of magnet core (20) using screw (25) and lockwasher (24). Long ends of stationary magnets (23) should point in same direction with edges parallel to each other. Make certain that both insulating spacers (22) are free over the insulating tube (21).

MAGNET ASSEMBLY (D, FIG. 11)

1. Attach magnet core (32) to magnet yoke (30) with screw (34) and lockwasher (35).

2. Apply a bead of silicone rubber compound 6.35 mm (1/4") diameter and 25.4 mm (1") long to the inside face of magnet yoke (30) adjacent to the magnet core (32).

3. Place magnet coil (31) over magnet core (32) with flat section of magnet coil toward leg of magnet yoke, as shown in Fig. 11.

4. Position pole plate (33) into rectangular area on face of magnet coil (31) and attach securely with screw (41) and lockwasher (40).

5. Position armature guide (36) and bottom terminal assembly (37) over matching holes in magnet yoke (30) and fasten with two cap screws (39) and two lockwashers (38). Both

parts should be forward as far as the mounting screws (39) will allow, but later may require repositioning.

CONTACT SUPPORT AND ARMATURE ASSEMBLY (E, FIG. 11)

1. Attach hold-on magnet (44) to contact support assembly (45), using screw (49) with lockwasher (50). Center contact support assembly visually between the legs of the hold-on magnet.

2. Place one end of open-stop (46) into hole in contact support assembly (45), opposite screw (49).

3. Place contact support assembly (45) with attached hold-on magnet (44) on the armature (42). Free end of open-stop (46) is to be positioned in slot in armature (42).

4. Push two shoulder pins (43) through holes in armature assembly (42) and large holes in hold-on magnet (44).

5. Place armature assembly on bench, face down, and position springs (47) over shoulder pins (43).

6. Compress springs (47) until "X" washer (48) can be slipped into recess in shoulder pins (43). Repeat with second spring.

7. Use pliers to lock "X" washer into recess of each shoulder pin.

8. Center each spring (47) between the three small bosses extending from the support surface of hold-on magnet (44).

INTERLOCK ASSEMBLY (G, FIG. 11)

The interlock assembly has four major parts: interlock support (62), two cover and contact assemblies (64) and (65) and contact carrier assembly (66).

Assemble the contact carrier (66) first. Work in an area where small parts will not be lost if dropped. See Fig. 11 to determine proper orientation of components, and proceed as follows:

1. Place screw (72) with washer (73) and (74) into center hole of bottom element (69).

2. With screw head down, place two long pins (76), heads up, into holes in bottom element (69).

3. Place two contact bridge assemblies (70) over buttons on bottom element (69).

4. Place center element (68) over screw so that buttons engage with contact bridge assemblies (70).

5. Place two contact bridge assemblies (70) over buttons on top surface of center element (68).

6. Place top element (67) over screw; carefully pick up stacked assembly of parts and nest buttons of top element into contact bridge assemblies (70).

7. While holding all parts together, start screw (72).

8. Insert short pins (75) with heads inward toward long pins (76). Tighten screw (72).

9. Insert springs (71) between heads of pins (75) and (76).

10. The brass sleeves on the contact assemblies must be free after assembly.

NOTE: The above assembly is inverted with head of screw (72) up when installed in the interlock assembly (G).

11. Attach interlock support (62) to contact assembly cover (65), marked "C-D and G-H" using two screws (60).

12. Thoroughly clean contact assembly covers (64) and (65) and contact carrier assembly (66) before proceeding.

13. Place contact carrier assembly (66) into the contact assembly cover (65), observing that screw in contact carrier assembly is at the C-D end of cover (65) and that molded key of center element (68) is outside the cover. Move contact carrier assembly from end to end to ascertain that the contact bridges (70) are correctly related to the stationary contacts inside cover (65).

14. Mate contact assembly cover (64) to the above assembly and secure with two screws

(84), nuts (82) and lockwashers (83). Lockwashers are to be used under screw heads and under nuts.

NOTE: The contact carrier assembly should operate freely in the final assembly. Align bottom element and top element rotationally so they do not bind in the square bearing holes in the covers.

SUPPORT BRACKET ASSEMBLY (F, FIG. 11) AND RETURN SPRING BRACKET (56)

Attach return spring bracket (56) to support bracket (54) with screws (57).

FINAL ASSEMBLY

The following sequence should be observed to complete contactor assembly.

1. Place contact support and armature assembly (E, Fig. 11) into position in front of magnet yoke assembly (D) so that armature (42) rests behind two fingers of armature guide (36).

2. Place top terminal assembly (1) over magnet yoke assembly (D) and contact support and armature assembly (E) and secure with two screws (8), washers (6), and lockwashers (26). Magnet yoke assembly (D) must touch the back wall of cavity in top terminal molding (1).

3. Position top end of support bracket (54) under front end of top terminal molding (1).

4. Attach support bracket (54) and contact support assembly (45) to bottom terminal assembly (37) with two screws (53) and lockwashers (52). Do not tighten screws (53) at this time. Center contact support assembly (45) in the opening of top terminal molding (1) and tighten screws (53).

5. Attach movable contact (51) to top of contact support assembly (45) with two cap screws (53) and lockwashers (52). Tongue on movable contact (51) must be in full contact with vertical face of step at top end of contact support assembly (45).

6. Bottom ends of hold-on magnet (44) must not bind between support bracket (54) and armature guide (36). Correct by releasing screws (39), allowing armature guide (36) to move back to develop a slight clearance. Retighten screws (39). Armature (42) must be free to move behind the rear fingers on armature guide (36).

7. Attach interlock assembly (G) to support bracket (54) with two screws (63).

8. Insert ends of operating lever (88) into holes at bottom of armature (42) until ends are flush with back face of armature. Tighten set screws (102).

9. Insert two return springs (89) between cups on operating lever (88) and spring location buttons on return spring bracket (56). Springs must be fully seated in cups.

10. Attach interlock operator (77) and slider (78) to bottom end of contact carrier assembly (66) using screw (79), Belleville washer (81), and lockwasher (80). Flattened portion of operating lever (88) must be nested inside recess in interlock operator (77).

NOTE: Ensure slider (78) does not interfere with motion of contact carrier (66).

11. Attach blowout coil assembly (C) to terminal (9) using two screws (27) and lockwashers (26).

12. Slide arc chute assembly (H) into position, making certain that the latch spring (3) holds the arc chute assembly in position.

CONTACTOR ADJUSTMENTS

After assembly of contactor, check the following conditions and make the adjustments if required.

NOTE: To close the contactor without the arc chute in position, push bottom end of interlock spring (55, Fig. 11) back to clear the top end of contact carrier assembly (66).

1. Top of contact carrier assembly (66) should be within 0.8 mm (.030") of top of interlock housing when device is de-energized, and the step on lower portion should be within 0.8 mm (.030") of bottom of interlock housing when device is energized. If adjustment is required, place a block between armature (42) and pole plate (33) to prevent damage to interlock spring (55). With a large adjustable

wrench (300-400 mm [12-16"]) bend the operating lever (88) in front of the spring cups, one side at a time. In making adjustment, overbend and then bend back slightly to the desired position, relieving the internal stresses in the lever.

2. With contactor closed and 0.8 mm (1/32") horizontal clearance between operating lever (88) and interlock operator (77). If adjustment is required, loosen set screws (102) in armature which hold operating lever, move operating lever outward and tighten set screws.

3. Without arc chute assembly (H) attached, the interlock spring (55) should be over the movable contact carrier assembly (66) so the main contacts will remain separated by 6.4 mm (1/4") when the contactor is energized with 74 V DC.

SERVICE DATA

SPECIFICATIONS

MAIN CONTACTS

Contact Rating	1200 amperes - continuous
1 Normally Open Contact	1200 amps at 1500 volts
Contact Wear Allowance (total)	3.2 mm (.125") (1/8")
Contact Opening (nominal)	12.3 mm (.484")
Contact Pressure (nominal) – 8458534	6.8 kg - 11.3 kg (15-25 lbs)

INTERLOCK CONTACTS

A-B, C-D Contacts	Normally Closed
E-F, G-H Contacts	Normally Open
Contact Spring Pressure (at 2.4 mm [.094"] [3/32"] deflection)	1.1 kg (.25 lbs)
Contact Opening	4.8 mm (.188") (3/16")
Contact Lift	2.4 mm (.094") (3/32")
Contact Wear Allowance (total)	1.5 mm (.060")

MAGNET COIL

Rating	74 V DC
Resistance (at 20° C [68° F])	120 ohms (± 10%)

OPERATION

Working Voltage (continuous)	74 V DC
Pickup (at 20° C [68° F])	48 V DC max.
Dropout (at 20° C [68° F])	5-28 V DC

HI-POT

	60 Hz, 1 Minute
Magnet Coil To Mounting	600 V RMS
Magnet Coil To Main Contacts	5400 V RMS
Main Contacts To Mounting	
Main Contacts To Interlock Contacts	
Between Open Main Contacts	
Interlock Contacts To Mounting	
Interlock To Interlock	

NOTE: Hi-Pot values above 5400 volts are not recommended.

MATERIAL:

Silicone Rubber Compound	8453256

REPLACEMENT KITS

Individual piece parts are no longer available. However, the following basic replacement kits are offered. (See Parts Catalog for detailed description of individual kits.)

Support Bracket Kit	8488953
Stationary Contact Kit	8488951
Blowout Magnet Kit	8488956
Blowout Coil Kit	8488954
Magnet Yoke Kit	8488952
Bottom Terminal Kit	8488955
Armature Kit	8488950
Main Contact Kit	8488949
Interlock Support Bracket Kit	8488947
Interlock Kit	8488946
Arc Runner Kit	8488948
Arc Chute Assembly Kit	8424738
Magnet Coil	8424741

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