

SERVICE AND REPAIR PARTS

NEMA SIZE 3, SINGLE POLE, NORMALLY CLOSED, P/N 58867 SERIES
NEMA SIZE 4, SINGLE POLE, NORMALLY CLOSED, P/N 58868 SERIES

INSTALLATION AND ADJUSTMENT

Mount the contactor vertically on a rigid support. Refer to Figure 1 for proper clearances above the top of the contactor, dimension A, and in front of the Arc Shield, dimension B, for arcing clearance, and Arc Shield removal. Check nameplate data for correct equipment. Check that the contactor operating coil (48) is the correct voltage. With all power removed, pivot the Arc Shield (12) upwards and operate the contactor by hand. The contact tips (15) should meet SQUARELY. If they do not, align them by the procedure in the Contact Tip Adjustment. Pivot the Arc Shield back to its proper position.

CAUTION: DO NOT OPERATE THE CONTACTOR UNDER LOAD UNLESS THE ARC SHIELD (12) IS PIVOTED TO THE FULLY DOWN POSITION

CONTACTOR TIP ADJUSTMENT

1. With all power removed, pivot the arc shield (12) upward.
2. Check that the movable contact tip (15) is against the ledge located on the movable contact holder (36) (Fig. 2).
3. Make sure that the stationary contact tip (15) is against the ledge on the stationary support (26). (Fig. 2).
4. The contact tip surfaces must be aligned both vertically and horizontally (Fig. 2).
5. Pivot the Arc Shield (12) back to its proper position.

CONTACTOR TIP REPLACEMENT

The contact tips should be replaced when the contacts are worn down to dimensions shown in Figure 2.

1. With all power removed, pivot arc shield (12) upward.
2. Remove the movable contact tip (15) by removing the stainless steel cap screw (17) and lock-washer (61) and arc horn (31) located on contact arm (36).
3. Remove the stationary contact tip (15) by removing the stainless steel cap screw (17) and lock-washer (61) located on stationary contact support (26).
4. Install the new stationary contact tip (15) using the stainless steel screw (17) and lockwasher (61) provided.

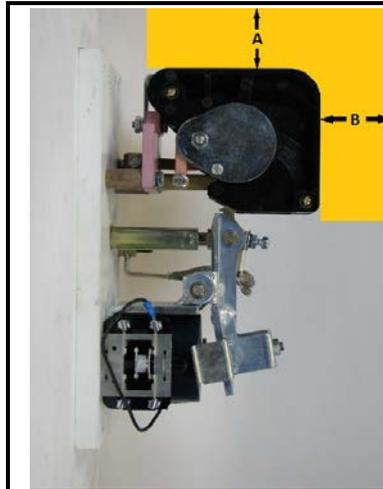


Fig. 1

ELECTRICAL CLEARANCES

Note: Shaded area for arcing clearances to ground, un-insulated enclosure or other control devices.

NEMA SIZES

DIM.	3	4
A	4 1/4"	4 1/4"
B	2 3/4"	2 3/4"

WARNING: ALL METAL PARTS OF THE CONTACTOR MAY BE AT LINE VOLTAGE. ALL POWER MUST BE DISCONNECTED FROM THE CONTACTOR BEFORE PERFORMING ANY ADJUSTMENT, MAINTENANCE OR TROUBLE-SHOOTING PROCEDURES.

CAUTION: FAILURE TO CONNECT THE OPERATING COIL TO THE PROPER VOLTAGE MAY RESULT IN IMPROPER CONTACTOR OPERATION OR DAMAGE TO THE COIL.

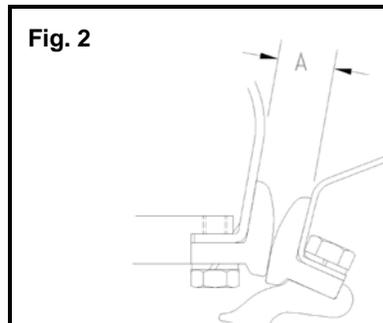


Fig. 2

CONTACTOR SIZE		A MATED DIMENSION	
		NEW	REPLACE
3	N.C.	19/32"	5/16"
4	N.C.	19/32"	5/16"

5. Install the new movable contact tip (15) and arc horn (31) using the stainless steel screw (17) and lockwasher (61) provided.
6. Replace the contact spring (35) with the new spring provided.
7. Manually operate the contactor and check the contact tips for alignment. Align the contact tips to meet squarely.
8. Pivot the Arc Shield (12) back to its proper position.

AUXILIARY ELECTRICAL CONTACTS

1. With all power removed, check that auxiliary contact (55) has the proper follow-up. With new auxiliary contacts, the correct operating height is as shown in Fig. 3.
2. If adjustment is needed bend the lower portion of the striker (57) (63).

The auxiliary electrical contacts should be replaced when inspection of the contacts shows that they are burned or badly pitted. It is necessary that the entire auxiliary block be replaced as a unit.

1. With all power "OFF", loosen terminal screws and remove terminal leads. NOTE POSITION OF LEADS so they can be replaced properly.
2. Remove Contact Assembly by removing slotted screws (52).
3. Install NEW CONTACT ASSEMBLY (55) as shown in the exploded view.
4. Manually operate the contactor and check the moving contacts for proper follow-up in Fig. 3.
5. Replace terminal leads.

OPERATING COIL REPLACEMENT

1. With all power removed, disconnect the coil leads.
2. Remove the armature bearing pin (34) by removing the screw (46).
3. Remove the armature/moving assembly (33) and return spring (51).
4. Remove the screw (50) on the front of the magnet core and remove core cap (49) and coil (48).
5. Install the new coil (48) using the core cap (49), and tighten the screw (50). It is recommended that loctite thread lock be used on the core cap screw and that the screw is very tight (100 in-lbs).
6. Replace the armature/moving assembly (33), return spring (51), and armature bearing pin (34). Re-install and tighten the screw (46).
7. Reconnect the coil leads, including the flying lead which transitions the coil.

SHUNT REPLACEMENT

The shunt (38) should be replaced when the flexible braided wires are broken or burned or if the wires are loose in the terminal connectors on either end of the shunt:

1. With all power removed, disconnect the bottom end of the shunt (38) from the lower field wiring stud (20) by removing hex nuts (30), flat washers (19), shunt (38), and power cable.
2. Disconnect the top end of the shunt by loosening the hex nut (9) then removing the screw (37), flat washer (6), lockwasher (7) and the shunt (38).
3. Install the new shunt. Be certain that the contact pin (32) is oriented inside the holder arm (36) so that the divit

feature of the pin is visible at the bottom of the threaded hole in the holder. If the pin is not oriented correctly the pin will fall out in service.

4. Spin the nut (9) to the bottom of the screw (37) head. Place the top end of the new shunt on the contact holder arm (36) and install by replacing the screw/nut, lockwasher (7) and flat washer (6) as shown.
5. Check that the bearing pin (18) is centered and tighten the screw (37) very tight (100 in-lbs).
6. Hold the shunt ferrule straight in line with the vertical center line of the holder arm and tighten the nut (9) to 100 in-lbs.
7. Connect the bottom end of the shunt (38) to the lower stud (20), using the flat washers (19) and hex nut (30). Replace the power connection.

CAUTION: SHUNT MUST BE DIRECTLY AGAINST MOVABLE CONTACT HOLDER ARM (36) AT THE TOP END.

FAILURE TO FOLLOW THE STEPS ABOVE COULD CAUSE PREMATURE WEAR OF THE CONTACT HOLDER ARM IF SCREW (41) IS NOT TIGHT.

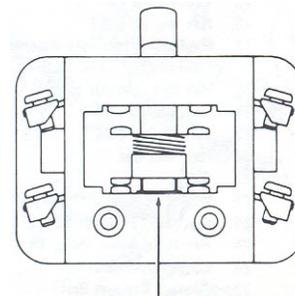
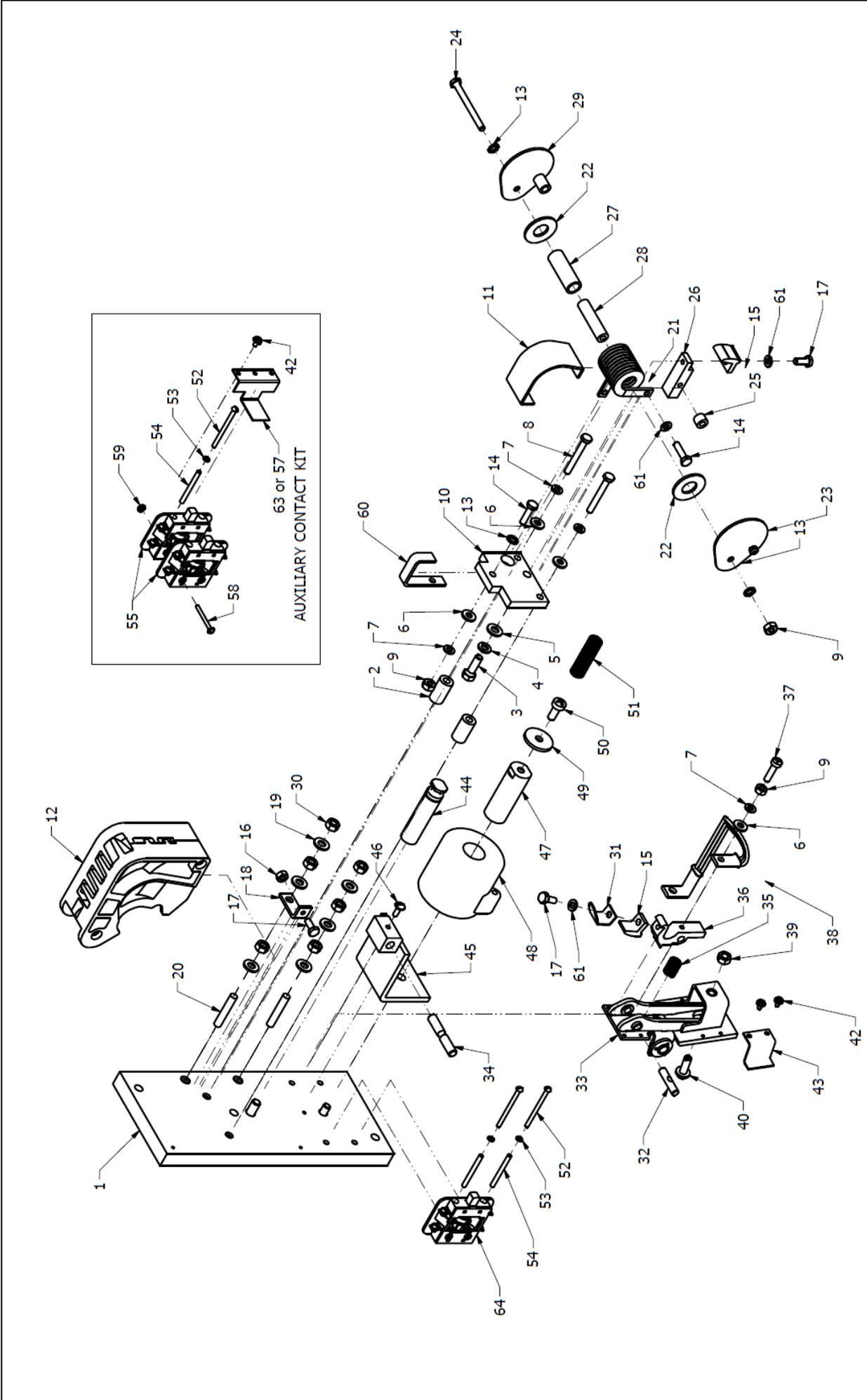


Fig. 3

PROPER OPERATED HEIGHT

The snap ring on plunger is even with bottom edge of cover opening. This does not apply to the aux contact being used to transition the operating coil.

Item No.	Description	Part No.	Qty.		Item No.	Description	Part No.	Qty.	
			Size 3	Size 4				Size 3	Size 4
1	Mounting Base	58866-002	1	1	40	Spring Adjustment Screw	42899-000	1	1
2	Spacer	57690-000	2	2	41	Auxiliary Contact Assembly Kit (Consists of items 42, 63, 52, 53, 54, & 55)	68011-004	+	+
3	Hex Head Screw (5/16-18 x 3/4")	47246-079	1	1					
4	Internal Lockwasher (5/16")	47304-010	1	1					
5	Flat Washer (5/16")	47250-505	1	1	42	Sems Screw (8-32 x 5/16")	47661-095	2	2
6	Flat Washer (1/4")	47250-502	4	4	43	Auxiliary Striker (coil transition)	48647-003	1	1
7	Split Lockwasher (1/4")	47252-038	4	4	44	Lockout Core	57658-004	1	1
8	Hex Head Screw (1/4-20 x 2")	47246-071	2	2	45	Stator Assembly	19795-000	1	1
9	Hex Jam Nut (1/4-20)	47253-601	2	2	46	Sems Screw (10-24 X .625")	49137-076	2	2
10	Blowout Coil Mounting Base	58667-001	1	1	47	Stator Core	58672-001	1	1
11	Blowout Guard Assembly	17343-000	1	1	48	Operation Coil (230V)	68091-001	1	1
*12	Arc Shield Assembly	59694-501	1	1		Operation Coil (115V)	68091-002	1	1
13	Lockwasher (1/4" External Tooth)	47303-008	3	3		Operation Coil (24V)	68091-003	1	1
14	Hex Head Screw (1/4-20 x 1") SS	47779-066	1	1	49	Core Cap	42940-000	1	1
*15	Contact Tip (Standard)	17279-000	2	2	50	Fillister Head Cap Screw (5/16-18 x 3/4)	48624-307	1	1
	Contact Tip (AgWC)	17279-003	2	2	51	Armature Operating Spring	19257-000	1	1
16	Hex Nut (1/4-20) – Brass	47254-011	6	6	52	Round Head Screw (8-32 x 2 1/16")	47241-261	2	2
17	Hex Head Cap Screw – Stainless (1/4-20 x 5/8")	47779-063	2	2	53	Lock Washer (No. 8)	47252-006	2	2
18	Terminal	58861-001	1	1	54	Screw Insulating Sleeve	73108-000	2	2
19	Flat Washer (5/16") – Brass	47251-012	6	6	55	Auxiliary Contact Block	67976-001	1	1
20	Stud (5/16-18 x 1-3/4") – Brass	57438-042	2	2	56	Double Auxiliary Contact Assembly Kit (Consists of items 42, 52, 53, 54, 55, 57, 58 & 59)	68011-005	+	+
21	Blowout Coil 250V (size 3)	58860-001	1	1	57	Double Striker	48647-002	1	1
	Blowout Coil 250V (size 4)	58860-002	1	1	58	Sems Screw (6-32 x 1-1/2")	47661-088	2	2
	Blowout Coil 550V (size 3)	58860-004	1	1	59	Nut (6-32)	47253-012	2	2
	Blowout Coil 550V (size 4)	58860-003	1	1	60	Arc Shield Retainer	68323-001	1	1
22	Blowout Coil Insulator Washer	16961-000	2	2	61	Stainless split lockwasher (1/4)	47252-238	3	3
23	Flux Plate Assembly (L.H.)	19695-000	1	1	62	Hex nut (1/4-20)	47253-021	1	1
24	Hex Head Screw (1/4-20 x 2-3/4")	47246-094	1	1	63	Single Striker	48647-001	1	1
25	Blowout Coil Spacer	16971-001	1	1	64	NC aux contact assembly (coil transition)	67976-301	1	1
	Blowout Coil spacer	16971-000	1	1					
26	Stationary Contact Bracket	58665-002	1	1					
27	Blowout Coil Core Insulator	17351-000	1	1					
28	Blowout Coil Core	66870-034	1	1					
29	Flux Plate Assembly (R.H.)	19694-000	1	1					
30	Hex Nut (5/16-18) Brass	47254-013	6	6					
*31	Arc Horn	68056-001	1	1					
32	Movable Contact Bearing Pin	16968-000	1	1					
33	Armature Assembly	19797-002	1	1					
34	Armature Bearing Pin	58843-001	1	1					
35	Finger Contact Spring	16960-000	1	1					
36	Contact Holder Arm	16927-000	1	1					
37	Fillister Head Screw (1/4-20 x 1")	47244-150	1	1					
38	Finger Shunt Assembly (size 3)	16966-000	1	1					
	Finger Shunt Assembly (size 4)	17408-000	1	1					
39	Hex Nut (5/16-24)	47253-204	1	1					



TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	SOLUTION
Contacts will not operate or operation is sluggish.	<ol style="list-style-type: none"> 1. Improper or defective operating coil. 2. Low control circuit voltage. 3. Loose connection in control circuit. 4. Mechanical interference or binding. 	<ol style="list-style-type: none"> 1. Check coil part number resistance to determine if coil is defective. 2. Check that control circuit voltage is a minimum of 80% of rated coil voltage. If it is zero, the problem is elsewhere in the circuit. 3. Check connections and tighten if loose. 4. Check for mechanical interference or bindings: <ol style="list-style-type: none"> 4a. Check mechanical interlock interference. 4b. Manually close the contact arm, check that the armature hinge pins are not binding. 4c. Manually close the contactor, check that the armature bearings are not binding.
Contacts will not open.	<ol style="list-style-type: none"> 1. Core cap spacer damaged or missing. 	<ol style="list-style-type: none"> 1. Inspect core cap spacer.
Contact tips overheating, short contact tip life.	<ol style="list-style-type: none"> 1. Loose connections. 2. Movable or stationary contact tip not properly aligned 3. Foreign matter on contact surfaces. 4. Contact tips worn beyond recommended limits. 5. Contact surfaces severely scored or burned 6. Arc shield not properly installed 7. Normal load currents below 5% of rated current of contactor. 8. Excessive current. 	<ol style="list-style-type: none"> 1. Check contact tips and shunt connections and tighten if loose. 2. Align contact tips by the procedure listed in the ADJUSTMENT-Contact Tip Alignment instructions in this Service Bulletin. Check for positive contact pressure from spring (31). 3. Remove foreign matter. 4. Check for contact war by the procedure listing in the MAINTENANCE-Contact Tip Replacement instructions in this Service Bulletin. 5. Inspect contact surfaces and dress with a file as required. 6. Check that arc shield is pivoted to the fully down position. 7. Use a smaller size contactor to improve blowout action. 8. Check that load currents are within contactor rating.
Operating Coil Overheats.	<ol style="list-style-type: none"> 1. Improper or defective 2. High voltage condition on coil. 3. Loose connection at coil terminals. 	<ol style="list-style-type: none"> 1. Check coil part number and resistance to determine if coil is defective. 2. Check that control circuit voltage does not exceed 110% of rated coil voltage for extended periods. 3. Check connection and tighten if loose.

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