

SERVICE AND REPAIR PARTS

NEMA SIZE 1, NORMALLY CLOSED, P/N 58870 SERIES
NEMA SIZE 2, NORMALLY CLOSED, P/N 58871 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 (A), and in front of the arc shield (B) for arcing clearance and arc chute removal. Check that the contactor operating coil (5) is the correct voltage. With all power removed, pivot the arc shield upwards and operate the contactor by hand. The contact tips (10 & 28) should meet SQUARELY. If they do not, align them by the procedure described below. Replace arc shield (37.) CAUTION: DO NOT OPERATE THE CONTACTOR UNDER LOAD UNLESS THE ARC SHIELD IS FULLY SEATED IN POSITION.

CONTACTOR TIP ADJUSTMENT

1. With all power removed, remove the arc shield (37) and set it aside.
2. Check that the square projection on the lower end of the movable contact (10) is seated in the recess in the fingerboard (9).
3. Make sure the stationary contact tip (28) is tightly bolted against the stationary contact support (27) (Fig. 2)
4. Check that the contact tip (28) surfaces are aligned both vertically and horizontally.
5. Replace the arc shield (37) back to the fully downward position.

CONTACT TIP REPLACEMENT

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

1. With all power removed, remove the arc shield (37).
2. Remove the movable contact finger (10) by removing the SEMS screw (24) and brass washer (23). To remove the contact spring (11), push toward the contact, twist and release.
3. Remove the stationary contact tip (28) by removing the stainless steel screw (35) and lock washer (34) located on the stationary contact support (27).
4. Install the new stationary contact tip (28) using new hardware provided.
5. Install new movable finger (10) over the spring hook on the fingerboard (9). Replace contact spring (11) by pushing down and releasing so that the internal spring loop engages the fingerboard hook.
6. Replace the shunt (12) using the brass flat washer (23) and sems screw (24). On size 2 contactors the arc horn (52) is held under the shunt by the sems screw (24).
7. Check that the contacts tips meet squarely.
8. Reinstall arc chute and pivot into position.

ELECTRICAL CLEARANCES

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

NEMA SIZES

DIM.	SIZE	
	1	2
A	3.5"	3.5"
B	.75"	.85"

Fig. 1

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	
		1	N.C.	3/8"	7/32"
1	N.C.	3/8"	7/32"		
2	N.C.	13/32"	1/4"		

SIZE 1 & 2 N.C.

AUXILIARY ELECTRICAL CONTACTS

With all power sources removed, check that auxiliary contact (45) has the proper "follow-up". With new auxiliary contacts, the correct operating height is as shown in Fig. 3 when the armature is **FULLY CLOSED**. 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 wire terminal screws and remove terminal leads. NOTE POSITION OF LEADS so they can be replaced properly.
2. Remove fingerboard (9) with the fingers intact by removing the screws (22) and lock washers (21).
3. Remove Auxiliary Contact Assembly by removing slotted screws (48).
4. Install NEW CONTACT ASSEMBLY as shown in the exploded view.
5. Replace fingerboard (9) and hardware (21, 22.)

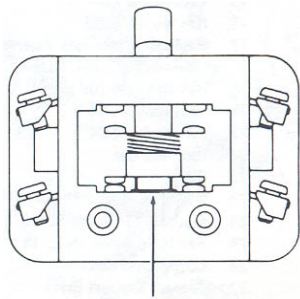


Fig. 3

PROPER OPERATED HEIGHT

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

6. Manually operate the contactor and check the moving contacts for proper follow-up in Fig. 3.
7. Replace terminal leads.

OPERATING COIL REPLACEMENT

1. With all power removed, disconnect the coil leads.
2. Remove the armature hinge pin locking nut (19, 20) then remove the armature hinge pin (18).
3. Remove the armature assembly (8) and return spring (13).
4. Remove the screw (7) on the front of the magnet core and remove core cap (6) and coil (5).
5. Install the new coil using the core cap (6), and tighten the screw (7) securely.
6. Replace the armature (8) and armature hinge pin (18) and tighten hardware (19, 20.) Check that the armature pivots freely.
7. Re-install the return spring (13).
8. Reconnect the coil leads.

SHUNT REPLACEMENT

The shunt (12) should be replaced when the flexible braided wires are broken or burned or if the wires are

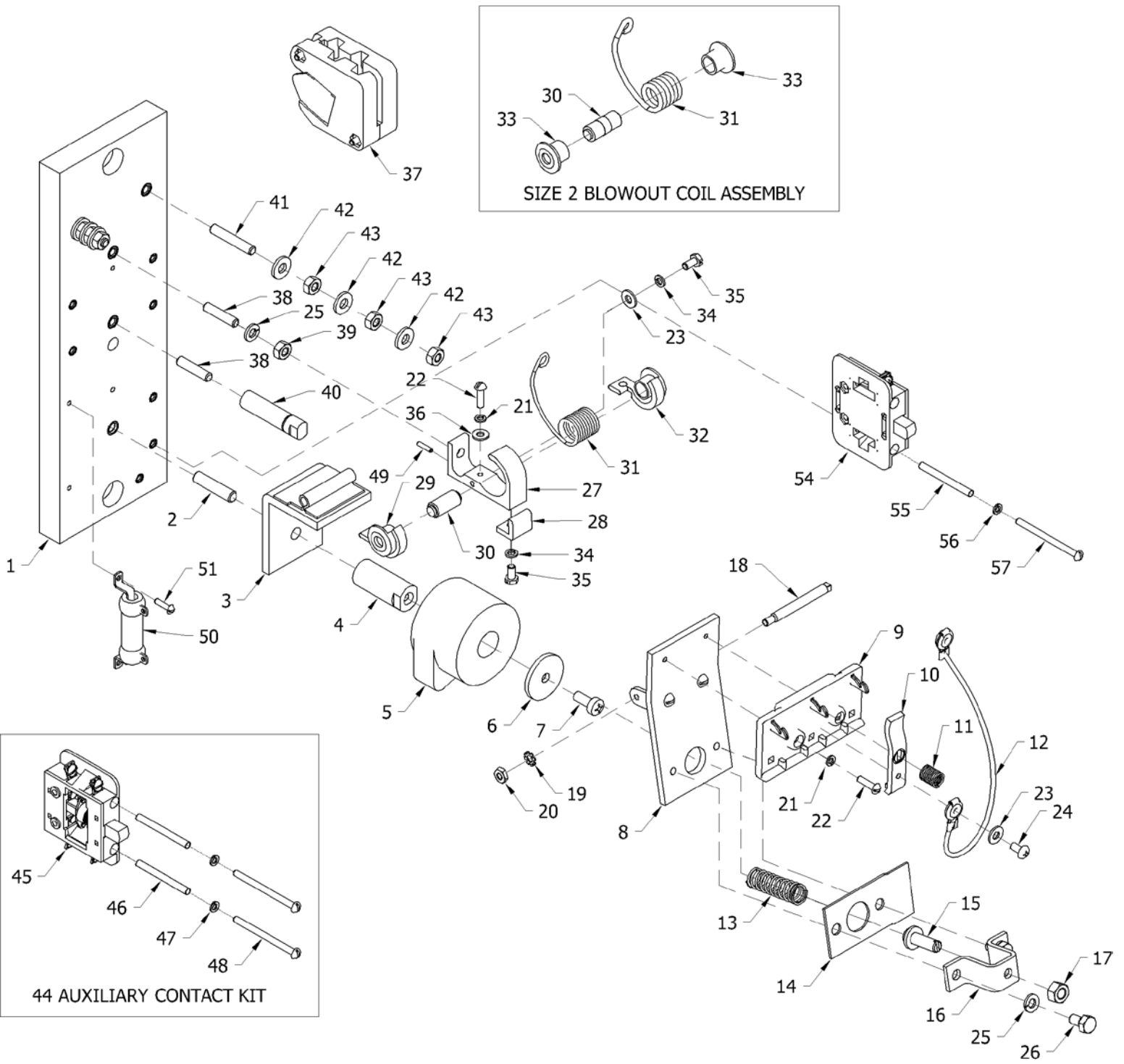
loose in the terminal connectors on either end of the shunt:

1. With all power removed, disconnect the top end of the shunt (12) by removing SEMS screw (24), washer (23) and shunt (12) and arc horn (52).
2. Disconnect the top end of the shunt by removing hex nut (43), washer (42) and the shunt.
3. Install the new shunt. Connect the top end of the shunt by replacing the arc horn (52, size 2 only) washer (23) and SEMS screw (24).
4. Connect the bottom end of the shunt by replacing the shunt (12), brass flat washer (42) and brass hex nut (43).

CAUTION: SHUNT (12) MUST BE DIRECTLY AGAINST MOVABLE CONTACT (10) AT THE TOP END AND DIRECTLY AGAINST THE WIRE TERMINALS AT THE BOTTOM.

Item No.	Description	Part No.	Qty.		Item No.	Description	Part No.	Qty.	
			Size 1	Size 2				Size 1	Size 2
1	Insulating base	58875-001	1	1	32	Blowout Coil Support RH	42871-000	1	
2	Stud 5/16-18x1-3/8	57439-010	1	1	33	Blowout Coil Insulator Size 2	42014-000		2
3*	Stator Frame	58663-000	1	1	34	Lock Washer #10	47252-065	2	2
4*	Operating Coil Core	58660-001	1	1	35	Hex Bolt 10-24 x 3/8	47779-042	2	2
5*	Operating Coil 115/125V (230/250V Ct)	68014-002	1	1	36	Flat Washer brass #8	47251-007	1	
	Operating Coil 57.5V (115/125V Cont)	68014-003	1	1	37*	Arc Shield	42855-001	1	
	Operating Coil 175V (230/250V Cont)	19970-000	1	1		Arc Shield	42856-001		1
	Operating Coil 75V (115V Cont)	18477-000	1	1	38	Stud 1/4-20 x 1-1/8	66475-035	2	2
6*	Core Cap	21440-000	1	1	39	Hex Nut 1/4-20	47253-021	1	1
7	Fillister Head Screw 1/4-20 x 5/8	47244-147	1	1	40	Lockout Core	58880-001	1	1
8*	Armature Plate	58878-000	1	1	41	Stud brass 1/4-20 x 1-1/2	57438-039	2	2
9*	Finger Board	42005-000	1	1	42	Flat Washer brass 1/4	47251-041	6	6
10*	Moving Contact Finger	05721-000	1		43	Hex Nut brass 1/4-20	47254-011	6	6
	Moving Contact Finger	05722-000		1					
	Moving Contact Finger AgCdO	05721-001	1		44	Auxiliary Contact Kit	68040-001		
	Moving Contact Finger AgCdO	05722-001		1	45*	Auxiliary contact block	67976-001		
11*	Finger Spring	04657-000	1	1	46	Screw sheath	73108-000		
12*	Finger Shunt size 1	04870-002	1		47	Lock washer No. 8	47252-006		
	Finger Shunt size 2	04873-001		1	48	Round head screw 8-32 x 2-1/4	47241-261		
13*	Operating Spring	08778-000	1	1	49	Groove pin 7/64 x 3/8	57404-001	1	1
14	Auxiliary Striker Plate	59562-001	1	1	50*	Resistor Assembly 230V operation	73446-002	1	1
15	Operating Spring Adjustment Screw	42899-000	1	1		Resistor Assembly 125V operation	73447-002	1	1
16	Operating Spring Adjustment Bracket	42960-000	1	1	51	Screw #6 x 3/8 self tapping B	47792-008	2	2
17	Hex Nut 5/16-24	47253-204	1	1					
18*	Armature Hinge Pin	18581-000	1	1	52*	Arc horn (n/s)	49029-000		1
19	External Lock Washer #10	47303-006	1	1					
20	Hex Nut 10-32 Brass	47254-009	1	1	53	Fingerboard Spacer (n/s)	58876-000		1
21	Split Lock Washer # 8	47252-064	3	2					
22	Screw 8-32 x 5/8	47241-104	3	2	54*	Auxiliary contact block, nc coil transition	67976-301	1	1
23	Brass Flat Washer #10	47251-008	2	2	55	Screw sheath	73108-000	2	2
24	Screw 10-32 x 3/8	49137-083	1	1	56	Lock washer No. 8	47252-006	2	2
25	Lock Washer 1/4	47252-038	3	3	57	Round head screw 8-32 x 2-1/4	47241-261	2	2
26	Hex Bolt 1/4-20 x 1/2	47246-061	2	2					
27	Stationary Contact Support	58661-001	1						
	Stationary Contact Support	58861-002		1					
28*	Stationary Contact copper Size 1	02315-000	1						
	Stationary Contact AgCdO Size 1	02315-001	1						
	Stationary Contact copper size 2	02317-000		1					
	Stationary Contact AgCdO size 2	02317-001		1					
29	Blowout Coil Support LH	42872-000	1						
30	Blowout Coil Core	42023-000	1						
	Blowout Coil Core	42024-000		1					
31	Blowout Coil 25A	58726-002	1	1					
	Blowout Coil 5A	58726-004	1						
	Blowout Coil 10A	58726-003	1						
	Blowout Coil 15A	58726-006	1						
	Blowout Coil 50A	58726-001		1					
	Blowout Coil 38A	58726-007		1					

* Recommended Parts for Maintenance
n/s not shown



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"> a. Check mechanical interlock interference. b. Manually close the contact arm; check that the armature hinge pins are not binding. c. Manually close the contactor; check that the armature bearings are not binding.
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 (11). 3. Remove foreign matter. 4. Check for contact wear 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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