



SERVICE AND REPAIR PARTS

NEMA SIZE 1, SINGLE POLE, NORMALLY ONEN, P/N 59311/59312/59313 SERIES
NEMA SIZE 2, SINGLE POLE, NORMALLY OPEN, P/N 59321/59322/59323 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, or Arc Shield removal. Check nameplate data for correct equipment. Check that the contactor operating coil (26) is the correct voltage. With all power removed, pivot the Arc Shield upwards and operate the contactor by hand. The contact tips (21)(33) 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 IS PIVOTED TO THE FULLY DOWN POSITION.**

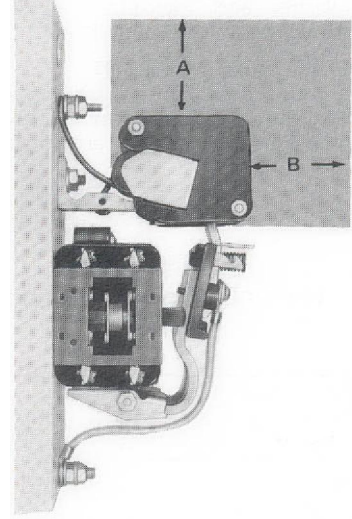
CONTACTOR TIP ADJUSTMENT

1. With all power removed, remove the Arc Shield.
2. Check that the square projection on the lower end of the movable contact (33) is seated in the recess in the finger board (32).
3. Make sure that the stationary contact tip is against the stationary contact bracket located on the blowout coil assembly. (Fig. 2).
4. Replace the Arc Shield and pivot back to its proper position.

CONTACT 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, remove the Arc shield.
2. Remove the movable contact finger (33) by removing the sems screw (35) and brass washer (8). To remove spring (31), push down toward contact and twist to right or left and release.
3. Remove the stationary contact tip by removing the Stainless Steel screw (1) and lockwasher located on stationary contact bracket (20).
4. Install the new stationary contact tip using the Stainless Steel screw and lockwasher.
5. Install new movable finger over spring hook on fingerboard. Replace spring by pushing down and releasing so that hook inside spring engages fingerboard hook. Replace shunt (36), brass washer and sems screw. On size 2 contactors, arc horn (34) is held under shunt by shunt screw (35).
6. Manually operate the contactor and check the contact tips for alignment. Align the contact tips to meet squarely.
7. Replace the Arc Shield and pivot back to its proper position.



ELECTRICAL CLEARANCES

Note: Shaded area for arcing clearances to ground, uninsulated enclosure or other control devis.

NEMA SIZES		
DIM.	1	2
A	2.5"	2.5"
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.

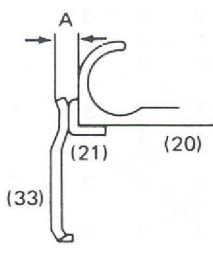


Fig. 2	CONTACTOR SIZE		A	
			MATED DIMENSION	
SIZE 1, 2 N.O.			NEW	REPLACE
	1	N.O.		3/8"
2	N.O.		13/32"	1/4"

AUXILIARY ELECTRICAL CONTACTS

1. With all power removed, check that auxiliary contact (39) has the proper follow-up. With new auxiliary contacts, the correct operating height is as shown in Fig. 3 when the armature (30) 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 terminal screws and remove terminal leads. NOTE POSITION OF LEADS so they can be replaced properly.

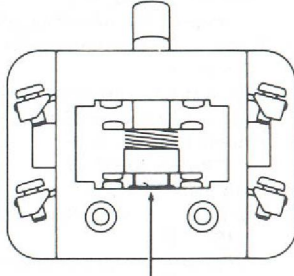


Fig. 3

PROPER OPERATED HEIGHT
The snap ring on plunger is even with bottom edge of cover opening

2. Remove fingerboard (32) by removing screws (12) and washers (13).
3. Remove Contact Assembly by removing slotted screws (38).
4. Install NEW CONTACT ASSEMBLY as shown in the exploded view.
5. Replace fingerboard, lockwashers and screws.
6. Manually operate the contactor and check the moving contacts for proper follow-up in Fig. 3.
7. Replace leads on terminals.

COIL REPLACEMENT

1. With all power removed, disconnect the coil leads.
2. Remove the hinge pin locknut (30) and hinge pin (30). The hinge pin is THREADED into the armature side piece.

3. Remove the armature assembly (30).
4. Remove the brass screw (29) on the front of the magnet core and remove non-magnetic spacer (28), core cap (27) and coil (26).
5. Install the new coil using the core cap, non-magnetic spacer and tighten the brass screw. Note that the steel core cap, which is thicker than the non-magnetic phosphor bronze spacer, must be installed against the coil. (See Exploded View).
6. Replace armature, hinge pin, lock washer and locknut.
7. Reconnect the coil leads.

SHUNT REPLACEMENT

The shunt (36) 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 (26) by removing hex nut (4), washer (3), and shunt.
2. Disconnect the top end of the shunt by removing screw (35), washer (8) and the shunt.
3. Install the new shunt. Connect the top end of the shunt by replacing washer and screw.
4. Connect the bottom end of the shunt by replacing the shunt, nut and washer.

CAUTION: SHUNT MUST BE DIRECTLY AGAINST MOVABLE CONTACT (33) OR ARC HORN (34) AT THE TOP END AND DIRECTLY AGAINST THE WIRE TERMINAL AT THE BOTTOM.

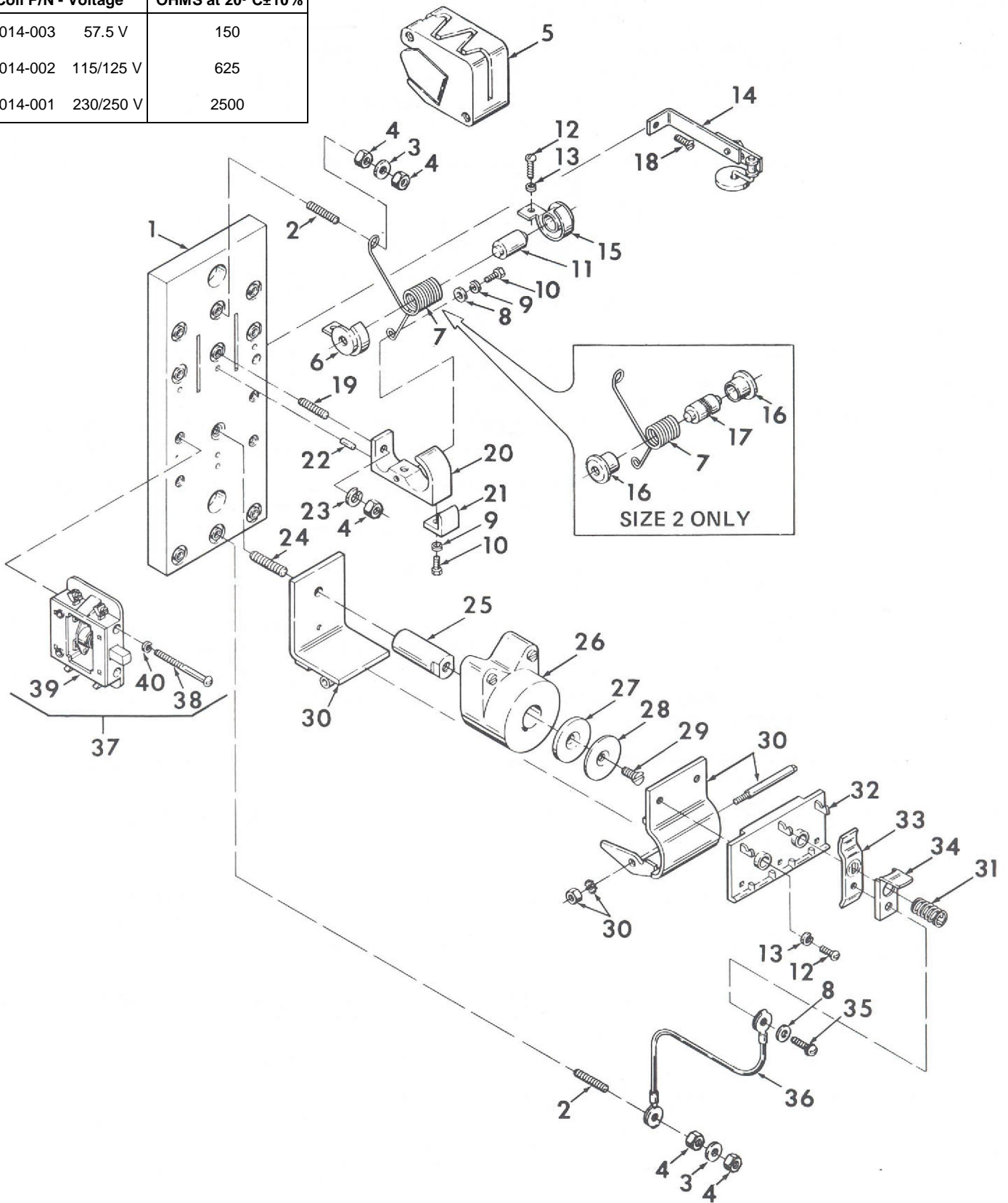
Size 1 and 2 Normally Open Contactor

Item No.	Description	Part No.	Qty.			Item No.	Description	Part No.	Qty.		
			1 Pole	2 Pole	3 Pole				1 Pole	2 Pole	3 Pole
1	Base (Size 1 & 2)	68013-001	1			* 21	Stationary Contact Tip (Standard, Size 1)	2315-000	1	2	3
	Base (Size 1 & 2)	68013-002		1			Stationary Contact Tip (Standard, Size 2)	2317-000	1	2	3
	Base (Size 1)	68013-003			1		Stationary Contact Tip (Silver, Size 2)	2315-001	1	2	3
	Base (Size 2)	68035-001			1		Stationary Contact Tip (Silver, Size 2)	2317-001	1	2	3
2	Stud (1/4-20 x 1-1/8")	66475-015	2	4	6		Groove Pin	57404-001	1	2	3
3	Flat Washer (Brass, 1/4")	48251-010	2	4	6		Lockwasher (1/4")	47252-038	1	2	3
4	Hex Nut (1/4-20)	47253-021	5	10	15		Stud (5/16-18 x 1-1/4")	66475-017	1	1	1
*5	Arc Shield Assembly (Size 1)	42855-000	1	2	3		Core	58660-001	1	1	1
	Arc Shield Assembly (Size 2)	42856-000	1	2	3	22	Coil (57.5 Volts)	68014-003	1	1	1
6	Blowout Coil Support (L.H., Size 1)	42872-000	1	2	3	23	Coil (115/125 Volts)	68014-002	1	1	1
7	Blowout Coil (5 Amp) Size 1	58726-004	1	2	3	24	Coil (230/250 Volts)	68014-001	1	1	1
	Blowout Coil (10 Amp) Size 1	58726-003	1	2	3	25	Core Cap	18048-000	1	1	1
	Blowout Coil (15 Amp) Size 1	58726-006	1	2	3	*26	Non-Magnetic Spacer	19683-001	1	1	1
	Blowout Coil (25 Amp) Sizes 1 & 2	58726-002	1	2	3		Flat Head Screw (Brass, 1/4-20 x 1/2")	47665-108	1	1	1
	Blowout Coil (50 Amp) Size 2	58726-001	1	2	3	27	Armature-Stator-Hinge Pin Assembly	58675-001	1	1	1
8	Flat Washer (Brass, No. 10)	47251-008	2	4	6	28	Finger Spring (Size 1)	4657-000	1	2	3
9	Lockwasher (No. 10)	47252-065	2	4	6	29	Finger Spring (Size 2)	8838-000	1	2	3
10	Hex Head Screw – Stainless (10-24 x 3/8")	47779-042	2	4	6		Finger Board	42005-000	1	1	1
11	Blowout Coil Core (Size 1)	42023-000	1	2	3	* 31	Movable Finger (Standard, Size 1)	5721-000	1	2	3
12	Round Head Screw (8-32 x 5/8") Size 1	47241-104	3	4	5		Movable Finger (Standard, Size 2)	5722-000	1	2	3
	Round Head Screw (8-32 x 5/8") Size 2	47241-104	2	2	2	32	Movable Finger (Silver, Size 1)	5721-000	1	2	3
13	Lockwasher (No. 8) Size 1	47252-064	3	4	5	* 33	Movable Finger (Silver, Size 2)	5722-001	1	2	3
	Lockwasher (No. 8) Size 2	47252-064	2	2	2		Arc Horn (Size 2 Only)	42029-000	1	2	3
14	Mechanical Interlock Assembly Kit (Includes Item 18)	68040-001	1			34	Sems Screw (10-32 x 3/8")	47800-128	1	2	3
	Mechanical Interlock Assembly Kit (Includes Item 18)	68040-002		1	1	35	Finger Shunt (Size 1)	4870-001	1	2	3
15	Blowout Coil Support (R.H., Size 1)	42871-000	1	2	3	36	Finger Shunt (Size 2)	4873-000	1	2	3
16	Blowout Coil Insulator (Size 2)	42014-000	2	4	6	37	Auxiliary Contact Assembly Kit (Consists of items 38, 39, and 40)	68040-003		as req'd	
17	Blowout Coil Core (Size 2)	42024-000	1	2	3	38	Screw (8-32 x 2-1/16")			2 per auxiliary	
18	Round Head Sems (10-24 x 3/8")		1	1	1	*39	Auxiliary Contact Block	67976-001		as req'd	
19	Stud (1/4-20 x 7/8")	66475-016	1	2	3	40	Lockwasher (No. 8)			2 per auxiliary	
20	Stationary Contact Support (Size 1)	58661-001	1	2	3						
	Stationary Contact Support (Size 2)	58661-002	1	2	3						

* Recommended Parts for Maintenance



COIL CHART		
Coil P/N - Voltage	OHMS at 20° C±10%	
68014-003 57.5 V	150	
68014-002 115/125 V	625	
68014-001 230/250 V	2500	



TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	SOLUTION
Contacts will no operate or operation is sluggish.	<ol style="list-style-type: none"> 1. Improper or defective operating coil. 2. Low control circuit 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.
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.

Hubbell Industrail Controls, Inc.

a subsidiary of Hubbell Incorporated
 4301 Cheyenne Dr., Archdale, NC 27263
 Telephone (336) 434-2800 • FAX (336) 434-2803
<http://www.hubbell-icd.com>
Sales@hubbell-icd.com