(NEMA SIZE 5)

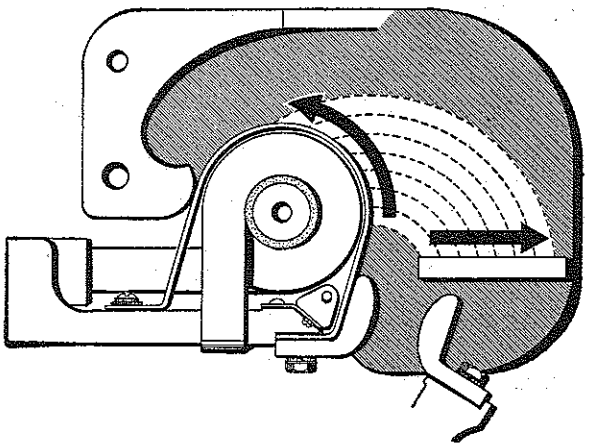
No. 3 DOUBLE POLE L LINE-ARC CONTACTOR
FOLIO 3
FOR DC OPERATION

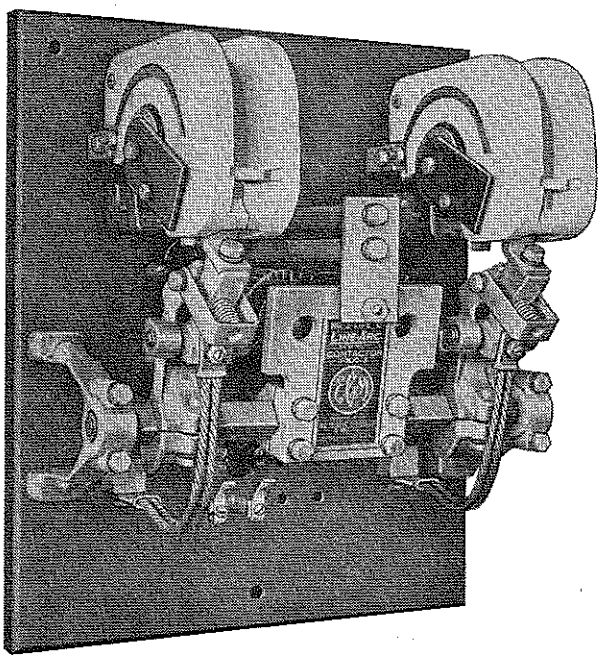
INSTRUCTIONS

TYPE L LINE-ARC CONTACTORS are general purpose direct current magnetic contactors.

Contactor Size NEMA	Contactor Size EC&M	Continuous Rating Amperes	Crane and Mill Rating Amperes	Rupturing Capacity Amperes
No. 5	No. 3	300	400	3000

LINE-ARC: These contactors derive their name from the manner in which they handle the arc. The Line-Arc principle of controlling the arc is simple . . . and automatic. There is nothing to adjust or wear out. At the instant the contacts start to separate, the arc is automatically transferred from the contacts to the arcing plate and circular guard over the blowout coil. The arc, as it travels along the arcing plate and circular guard, is stretched out in a line centered between the arc shields. Hence—cool contacts and the name Line-Arc.





This contactor has a horse shoe type magnetic circuit using two duplicate magnet coils connected in series.

Contactors for 115 and 230 volt service are supplied with half-voltage coils. Contactors for 550 volt service are supplied with 230 volt coils and suitable resistor mounted on the back of the base.

To remove the operating coils, first remove the control circuit arm and remove the stop plate. The magnet arm may then be lowered to remove the operating coils.

CAUTION — Before operating the contactor under **load**, be sure that the arc shields are lowered in their proper positions.

INSTALLATION: Mount the contactors vertically on rigid supports with at least 3¼" clearance above and in front of the arc shields to provide the proper distance for arcing clearance and also for removal of the arc shields. The life of the contactor will be considerably prolonged by installing it in a clean, dry place, preferably in a cabinet and as free as possible from external vibration or shock.

MAGNET AIR GAP: To insure quick release of the magnet arm, a non-magnetic spacer .0159" thick is placed between the magnet cores and the core caps. See that the magnet faces are free from oil or sticky foreign material.

BEARINGS: Type L contactors are equipped with Nitralloy pins and oil-filled bearings. These bearings are self-lubricating and require no lubrication in the field.

OPERATING COILS: These contactors will operate satisfactorily on 80% of normal control voltage when the coils are hot and will hold in on 20% of normal voltage. The coils will stand 110% of normal voltage continuously.

ELECTRICAL INTERLOCKS: These consist of stationary contacts mounted on the base and a moving contact attached to the bottom of the magnet arm. The moving contact should provide ⅛" follow-up when the magnet arm reaches its limit of travel, either completely closed or completely opened. The rating of these electrical interlocks is as follows:

	Max. Inrush	Cont. Amps.	Rupturing Capacity Amps. Inductive			
			115 V.	250 V.	440 V.	550 V.
A.C.	30	15	10	10	5	5
D.C.	30	15	2.5	1.0	.4	.4

(Continued on Page 4)

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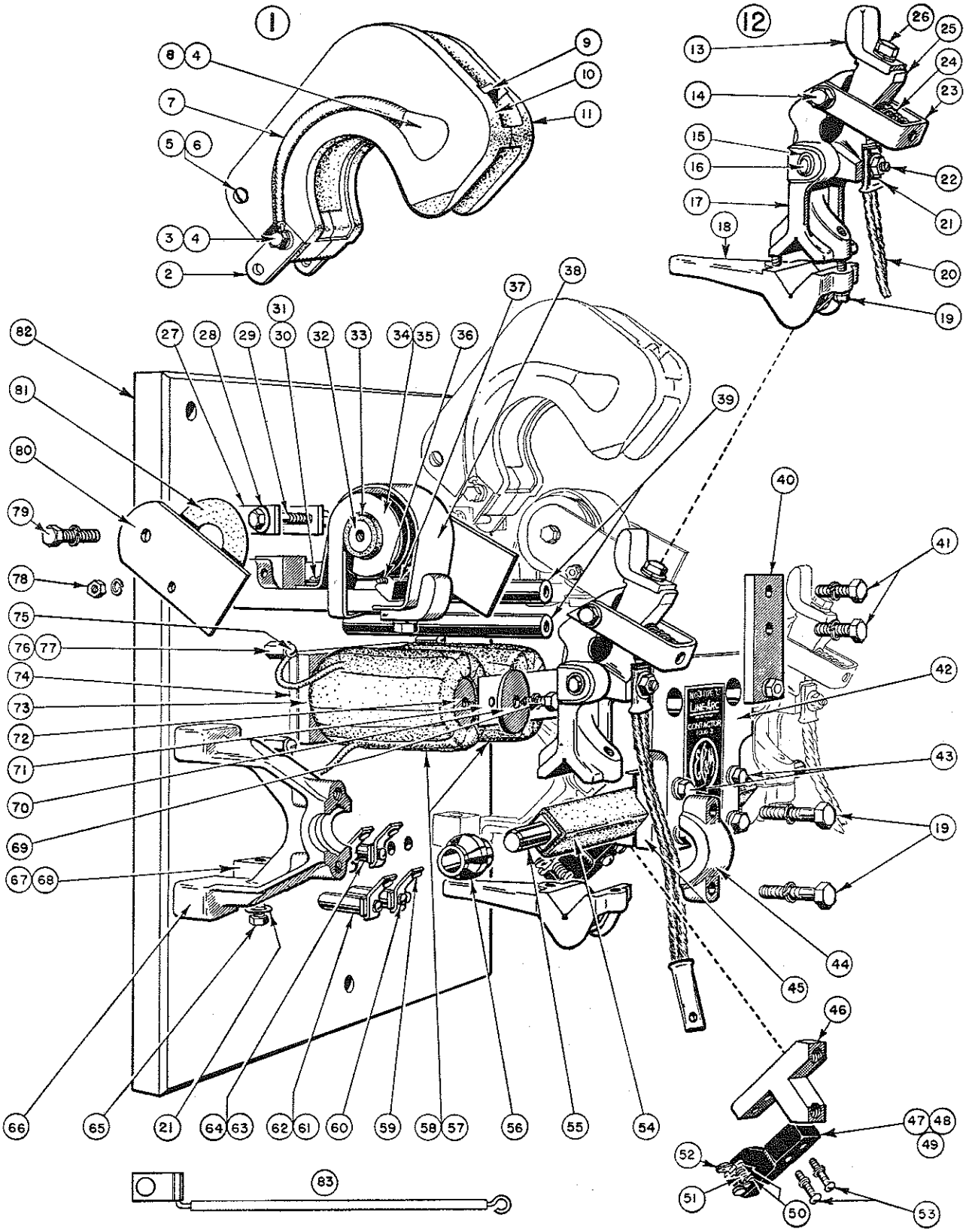


No. 3 DOUBLE POLE L LINE-ARC CONTACTOR, FOLIO 3

NOTE: Indented items are component parts of item immediately preceding.

Item No.	List No.	Description
1	LT-3024-A	Assembled Arc Shield, 2 req'd.
2	LT-1049	Arc Shield Hinge, 2 req'd.
3		¼"-20x2½" H.I. Cap Screw, Nut & Shake-proof Lk. Washer
4	ZO-1150	Cup Washer
5	FP-23A36	Binding Screw
6	FP-23A13	Binding Post
7	LT-3081	Arc Plate Connector, 2 req'd.
8		10-24x1" F.I. Mch. Screw, 2 req'd. (not shown)
9	LT-3032	Arc Plate
10	LT-3035	Arc Shield, left hand
11	LT-3036	Arc Shield, right hand
12 ⊙	L-3203-G	Assembled Contact Arm, Complete, 2 req'd.
†13	LT-3031	Contact Tip
14		5/16"-18x½" H.I. Cap Screw & Lk. Washer
15	FP-24B13	Bearing, 2 req'd.
16	LT-2037	Auxiliary Arm Pin
17 ⊙	L-3204-A	Contact Arm, Complete with Bearing Item 15
18	LT-3123	Contact Arm Clamp
19		⅜"-16x1½" H.I. Cap Screw & Lk. Washer
†20	LT-3114-A	Connector
21		⅜" Std. I. Washer & Lk. Washer
22	LT-3395	Set Screw & ⅜"-16 H.I. Nut
23 ⊙	L-3021	Spring Bracket
†24 ⊙	L-3027	Contact Spring
25	LT-3028-A	Auxiliary Arm
26		⅜"-16x⅞" H.I. Cap Screw & Lk. Washer
27	LT-3050	Arc Shield Clip
28	B5-0502-004-01	Spring Washer, 2 req'd.
29		¼"-20x2¾" H.I. Cap Screw with 2 Nuts
30		⅜"-16x¾" R.I. Mch. Screw & Lk. Washer
31	LT-1068	Washer
32	LT-3039	Blowout Core
33	LT-3074	Insulator, for Blowout Core
34	LT-3657-AB	Blowout Coil & Contact Bracket, for 1¼" & 1½" Base
35	LT-3658-AB	Blowout Coil & Contact Bracket, for 2" Base
36	LT-3072	Stud, for Blowout Ear Spacer
37	LT-3064	Blowout Ear Spacer
38	LT-3265-A	Blowout Guard
39 ⊙	L-3219	Stop Bar, 2 req'd.
40 ⊙	L-1214-A	Stop Plate (Includes Spl. Cap Screw LTZ-1304, 5/16" H.I. Jam Nut & Lk. Washer)
41		5/16"-18x¾" H.I. Cap Screw & Lk. Washer
42 ⊙	L-3210	Armature Plate
43		⅜"-16x1¾" H.I. Cap Screw & Lk. Washer
44	LT-3125	Bearing Bracket Clamp
45 ⊙	L-3211	Clamp
46 ⊙	L-3206	Magnet Arm Clamp
47 ⊙	EL-1-A	Control Circuit Arm, Complete, for Open or Closed Control Circuit
48 ⊙	EL-2-A	Control Circuit Arm, Complete, for Open and Closed Control Circuit
49 ⊙	EL-3	Control Circuit Arm, only
50 ⊙	EL-87	Spring Retainer, 2 req'd.
†51 ⊙	EL-49	Spring
†52 ⊙	EL-84-A	Contact Bridge, 1 req'd. for Item 47, 2 for Item 48
53		10-24x1" R.I. Mch. Screw & Lk. Washer
54	LTZ-3775	Insulator, for Shaft
55 ⊙	L-3208-A	Shaft, Complete with Insulator, Item 54
56	LT-3121	Bearing
†57	LT-4704-AE	Coil, for 230 Volt
†58	LT-4705-AE	Coil, for 115 Volt
†59 ⊙	EL-6-A	Contact
60		10-24x½" R.I. Mch. Screw & Lk. Washer
61 ⊙	EL-29	Stud, for 1¼" Base (list number stamped on Stud)
62 ⊙	EL-30	Stud, for 1½"-2" Base (list number stamped on Stud)
63 ⊙	EL-17	Stud, for 1¼" Base (list number stamped on Stud)
64 ⊙	EL-18	Stud, for 1½"-2" Base (list number stamped on Stud)
65		⅜"-16x1" H.I. Cap Screw
66	LT-3115	Bearing Bracket
67	LT-3044-A	Main Terminal Stud, for 1¼" Base
68	LT-3045-A	Main Terminal Stud, for 1½"-2" Base
69		¼"-20x¾" H.B. Cap Screw & Lk. Washer, 2 reqd.
70	LT-4067	Core Cap, 2 req'd.
71	LT-4752	Non-magnetic Spacer
72 ⊙	L-4015-A	Core
73	LT-4729-A	Coil Frame
74 ⊙	L-3212	Spacer
75		10-24x⅜" R.I. Mch. Screw & Lk. Washer
76	LTZ-1810	Coil Terminal Stud, for 1¼"-1½" Base
77	LTZ-1811	Coil Terminal Stud, for 2" Base
78		10-24 H.I. Nut & Washer for Blowout Ear Spacer Stud
79		¼"-20x½" H.I. Cap Screw & Lk. Washer
80	LT-3052	Blowout Ear
81	LT-3075	Blowout Ear Insulator
82		Base, furnish thickness and number of Poles
83	LT-3128-A	Blowout Connector

⊙ These are new parts used in Folio 3 Contactors and are not interchangeable with parts of previous design contactors. All other parts are interchangeable.

† Essential Parts for General Maintenance.

No. 3 DOUBLE POLE L LINE-ARC CONTACTOR, FOLIO 3

MECHANICAL INTERLOCKS: These are horizontal bakelite bars, pivoted at the center. They are carefully ground at the factory to suit the contactors with which they are used. They must prevent the contacts of both contactors touching simultaneously but not interfere with the complete closure and seal of either contactor alone. CAUTION — The interlock should maintain one set of contacts open at least ⅜" when the other contacts just touch.

MAIN CONTACTS: These are made of pure copper by a special forging process to give high Brinell hardness throughout their entire thickness. These contacts close with a slight rolling action, there is no wiping action. Contactors are adjusted at the factory to give simultaneous closing of the contacts.

The stationary and moving contacts may wear unequally, depending upon polarity. It may not be necessary to change both contact tips when replacement is necessary. The best operation is obtained with positive connected to the stationary contacts and negative to the moving contacts. Wiring diagrams are so arranged by the EC&M Company.

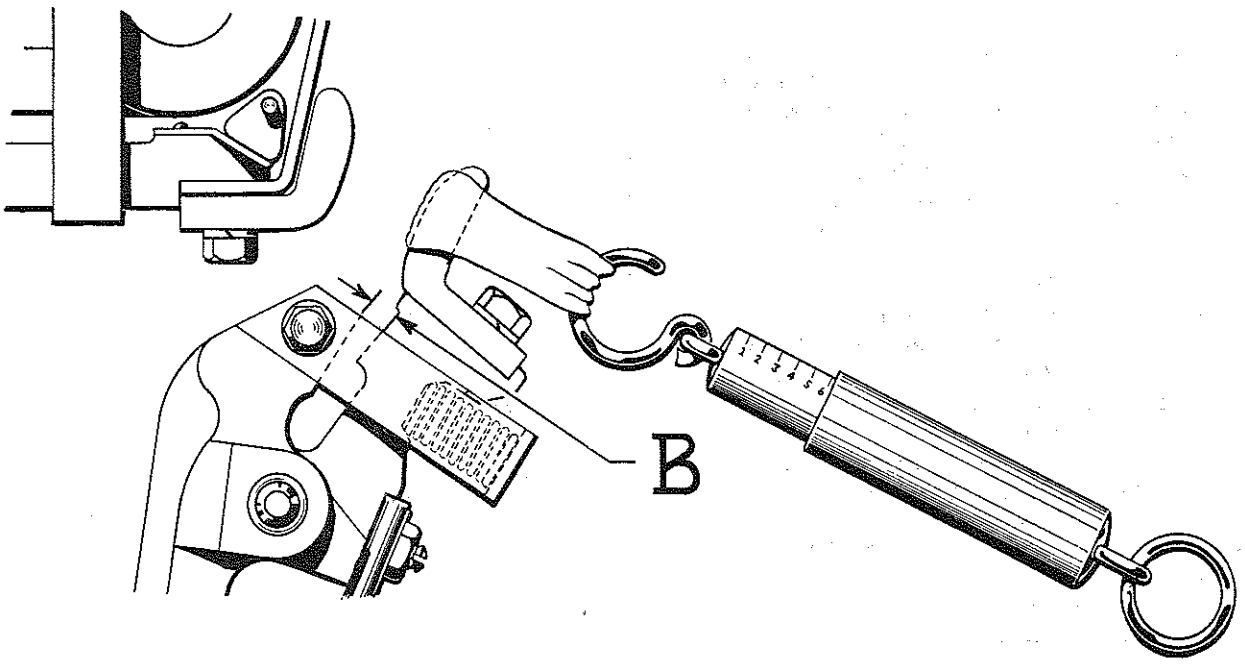
MAIN CONTACT OPENING: In the table at right is shown the correct dimension for contact opening. Contact follow-up is necessary so that the contact pressure will be maintained as the contacts wear. The follow-up is the amount of opening between the moving contact auxiliary arm and its stop shown at "B" in the sketch below, WITH THE CONTACTOR FULLY CLOSED. Follow-up decreases with contact wear. When dimension "B" is reduced to 1/32", the contacts must be replaced.

MAIN CONTACT PRESSURE: Type L contactors are designed with contact pressures as given in the table below. A slight arcing or spitting of the contacts when closing may be an indication that the contact tips or springs should be replaced.

To check spring pressures, a spring balance may be used with a tape on the hook passing around the contact tip at its point of contact and pulled at right angles to the auxiliary contact arm, as shown in the sketch below. Contact pressure is correct if the balance scale shows a pull as given in the following table with the arm just leaving its stop "B".

CONTACT OPENING WHEN NEW	
Contact Opening at "B" with Contactor fully closed	.300

CONTACT PRESSURE IN POUNDS	
Surfaces at "B" just breaking (new or old)	5.5 - 6.5
Sealed, Contactor fully closed (when new)	10 - 11



PRINTED IN U. S. A. 8-66