

RENEWAL PARTS AND INSTRUCTION PUBLICATION

No. 920 — Normally Open Single Pole D-c Contactor 8 Hour Current Rating — 810 Amperes

Care

Main Contacts

Main contacts should not be lubricated. Grease, dust or copper oxide have insulating qualities which increase the contact resistance and result in unnecessary heating. The contacts are normally self-cleaning. Dust and grease can be wiped off. A fine file should be used to remove excessive copper oxide, or to dress rough or pitted contacts. Care should be taken to remove as little copper as necessary.

Renewal of Contacts and Wear Allowance

Contacts should be renewed when the dimension A for the closed position of the contacts in Fig. 1 decreases to 3-3/4 inches, or when one contact measures 1-7/8 inches. For one contact, the minimum distance to the contact surface should be taken for this dimension. To insure satisfactory operation, both contacts should be replaced together.

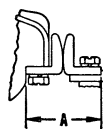


Fig. 1

Failure to renew the contacts at the proper time may cause serious damage to the contactor.

Silver faced contacts should be replaced as soon as the silver is worn off.

Magnetic Air Gap—These contactors are shipped from the factory with a magnetic gap of 7/16" nominal. This is measured along the

centerline of the core, item 24, to the armature lever, item 38, in a straight line.

Contact Spring Pressure

The contact pressure spring, item 20, is made of stainless steel. It is designed for long life and will retain its operating characteristics under heavy service conditions. Should excessive contact temperatures occur the spring may be checked as described below. It is only necessary to check the initial contact pressure. The final contact pressure may be checked only if equipped with new contacts.

The illustrations below, figures 2 and 3, provide the spring pressure range of values and the means of measuring. If the spring pressures are measured and found to be within the values given, the contact pressure spring is satisfactory. If the measured spring pressures are less than the values given, the spring should be replaced.

Electrical Interlocks

See page 4 for electrical interlocks. These electrical interlocks can accommodate two electrically isolated circuits. The addition of an electrical interlock to a contactor requires the addition of a mounting plate and operating bar (See Page 4).

The pneumatic timing interlock is equipped with a single pole double throw normally open normally closed unit switch. The circuits within the switch must be same polarity.

The proper location of the pneumatic timing interlock is shown on page 4. A mounting plate and operating bar is required to add the pneumatic timing interlock to this contactor.

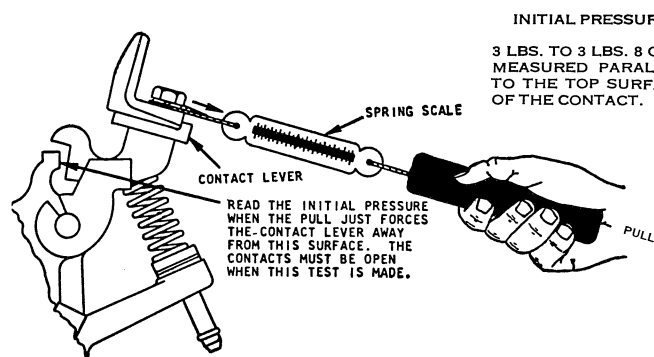


Fig. 2 (Initial Contact Pressure)

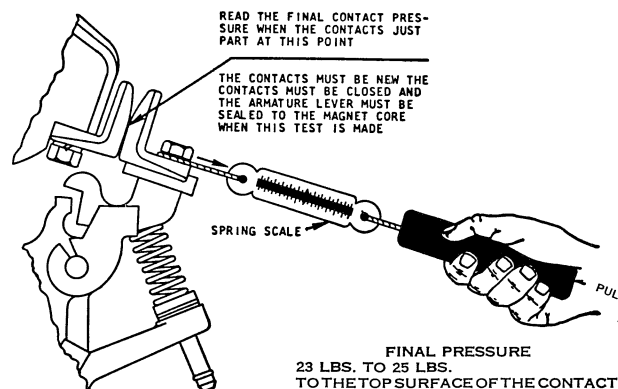


Fig. 3 (Final Contact Pressure)

Contact Heating and Application of Silver Contacts

Copper oxide forms very rapidly at excessive contact tip temperatures. If this condition occurs, check the remaining wear allowance (see Fig. 1 and paragraph "Renewal of Contacts") and the current carried by the contactor. If these are satisfactory, it is advisable to check the contact pressures (see Figs. 2 and 3 and paragraph "Contact Spring Pressure"). Copper contacts that are operated fairly often within their rating and wear allowance and with sufficient spring pressure seldom form oxide or require dressing.

Silver faced contacts are used where the contactor remains closed for long periods of time and is not subject to frequent operation, (nominally eight hours or more). Do not use silver faced contacts unless the contactor was so equipped originally. Silver faced contacts should **not** be filed or dressed unless sharp projections, caused by heavy arcing, extend beyond the contact surface. Such projections should be filed down to the surface only.

Armature Lever and Magnet Core

Keep the surface of the magnet core, item 24, and the armature lever, item 38, which come together when the contactor closes, clean and free of dirt and oil.

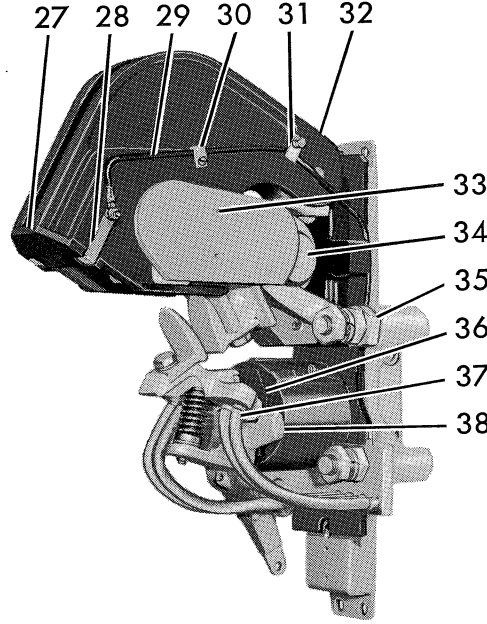
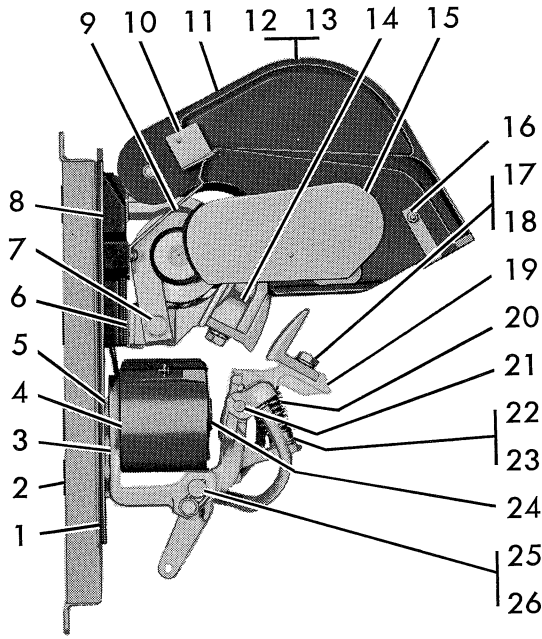
The contact lever and armature lever shafts, items 21 and 25 respectively, should be lubricated occasionally with a drop or two of SAE No. 20 oil. Lubricate at oil holes in the above levers.

Wipe off excess oil.

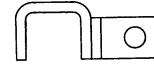
Arc Shields

The arc shields, items 11 and 32, should be replaced before they wear through so the arc will not touch the metal pole pieces, item 15.

The arc shields can easily be raised for inspection or renewal of the contact parts. However, be sure that they are lowered to their normal position before the contactor is allowed to operate. If this is not done, no blowout effect is obtained and the contacts will wear very rapidly.



Connector
Item 35
used without
blowout.



NOTE: Pictures show arc shields in raised position. Lower before operating.

NOTE: Pictures show power terminal block for surface mounting front connection in place. For other types of mounting see page 3

10-4248

RENEWAL PARTS — Information Required

To insure prompt handling of renewal parts orders, please include the following: **DESCRIPTION, PART NO., AND QUANTITY REQUIRED.**

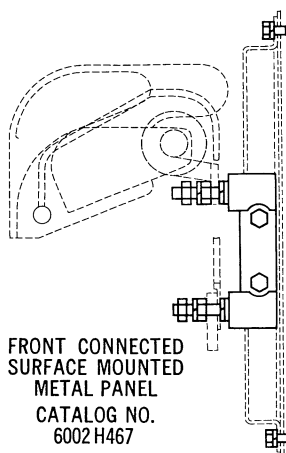
- ▲ Recommended Spare Parts:
 A Renewal Set of Contacts W/Copper Contacts, Part No. 6-189-4 (includes items 17, 18 and 20).
 A Renewal Set of Contacts W/Silver Contacts, Part No. 6-189-8 (includes items 17, 18 and 20).

PARTS LIST

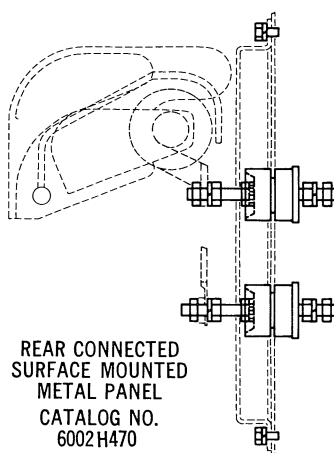
Item No.	Description of Part	No. Req.	Part No.	Item No.	Description of Part	No. Req.	Part No.
1	Insulator.....	1	56-3686	▲19	Contact Lever Complete (includes one of quantity shown under items 17, 18 and 37) With Copper Contact.....	1	24-4584
2	Mounting Insulators			▲20	Spring.....	1	69-2376
	Insulator for 3/8 Screw.....	3	56-2698-2	▲21	Shaft (includes 2 retaining rings)...	1	13-4330-3
	Disc.....	3	16-1837		Retaining Ring.....	2	29-1264
	Insulator for 1/2 Screw.....	1	56-2814	22	Shim Washer		
	Disc.....	1	16-1837-2		Washer .016 Thick.....	2	916-1164Z
3	Magnet Frame.....	1	17-7275		Washer .032 Thick.....	7	16-319
▲4	Coil (give number on coil).....	1	23	Adjusting Pin.....	1	13-593
5	Washer (under magnet frame).....	1	16-2315		Retaining Ring.....	1	29-541
	Washer (top).....	1	16-2316	24	Core.....	1	51-979
6	Shim Washer.....	2	16-1879	25	Shaft.....	1	13-3859-4
7	Blowout Coil Mounting Screw			26	Pin.....	1	13-3862
	1/2-13 x 1.250 Long Hex. Screw..	1	911-5890Z		5/16-18 x .750 Long Hex. Screw..	1	911-5606Z
	1/2 Helical Lockwasher.....	1	916-199		5/16 Helical Lockwasher.....	1	916-198
8	Moulded Base.....	1	17-7340		5/16 Flat Washer.....	1	916-801Z
9	Latch (used with blowout).....	1	52-853	27	Arc Deflector.....	1	73-1633
10	Hasp.....	1	52-879	28	Bracket.....	2	79-9197-4
▲11	Arc Shield (left hand).....	1	62-460-2	29	Connector.....	1	25-1927-4
12	Blowout Complete (includes items 7, 13, 14 and 34) With Copper Contact.....	1	62-565-2	30	Clamp.....	1	79-4180-26
13	Arc Shield Complete (includes items 10, 11, 15, 16 and 27 through 33)	1	62-565-3	31	Clamp.....	1	19-1248-3
14	Contact Post (includes one of quantity shown under items 17 and 18) With Copper Contact.....	1	18-1417	▲32	Arc Shield (right hand).....	1	62-460
			62-457	33	Pole Piece Mounting Screw		
15	Pole Piece.....	2	19-945-7		#10-32 x .875 Lg. Flathead Screw.	4	11-863
	Strap.....	2	62-459		#10 External Tooth Washer.....	4	916-101
	Inner Arc Shield.....	2	62-561-2	34	Blowout Coil.....	1	9-460-447
16	Arc Horn.....	1	916-484Z	35	Connector (used without blowout)..	1	25-1850
	#10 Helical Lockwasher.....	2	915-322Z		1/2-13 x 1.250 Long Hex. Screw..	1	911-5890Z
	#10-32 Hex. Nut.....	2		1/2 Helical Lockwasher.....	1	916-199
▲17	Contact (stationary and movable)..			36	Coil Clamp.....	1	55-1553
	Copper.....	2	23-4026	37	Contact Lever with Connector.....	1	24-4584-2
*	Silver Faced.....	2	23-1288	38	Armature Lever.....	1	24-4585
18	Contact Mounting Screw				Stop.....	1	18-1576
	1/2-13 x 1.000 Long Hex. Screw..	2	911-5888Z				
	1/2 Helical Lockwasher.....	2	916-199				

*Silver faced contacts are used only where the contacts remain closed for long periods, (nominally eight hours or more).
 Do not use silver faced contacts unless the contactor was so equipped originally.

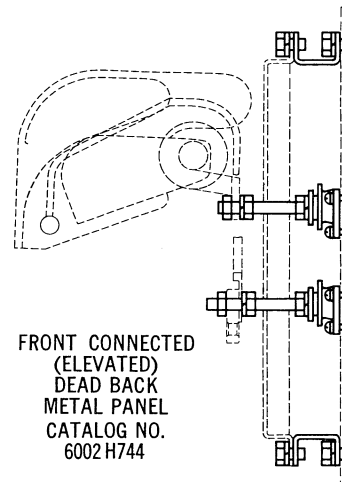
▲We recommend that these items be stocked. The quantity to be stocked will depend on the total number in use.

CONTACTOR MOUNTING MATERIAL


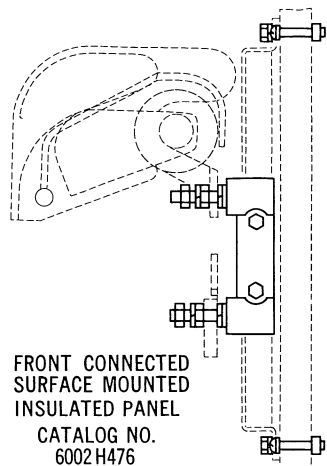
FRONT CONNECTED
SURFACE MOUNTED
METAL PANEL
CATALOG NO.
6002H467



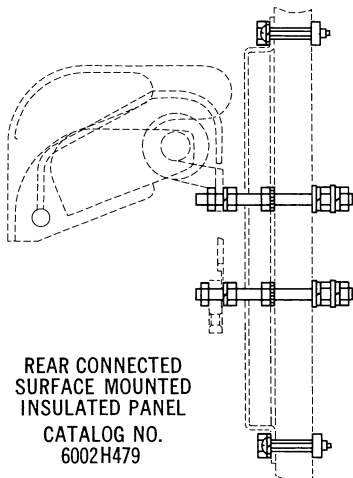
REAR CONNECTED
SURFACE MOUNTED
METAL PANEL
CATALOG NO.
6002H470



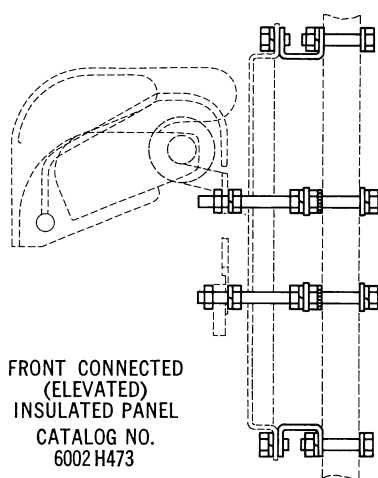
FRONT CONNECTED
(ELEVATED)
DEAD BACK
METAL PANEL
CATALOG NO.
6002H744



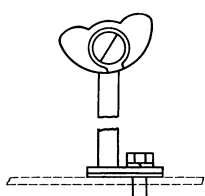
FRONT CONNECTED
SURFACE MOUNTED
INSULATED PANEL
CATALOG NO.
6002H476



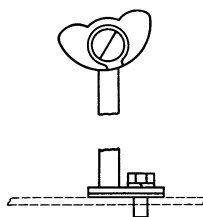
REAR CONNECTED
SURFACE MOUNTED
INSULATED PANEL
CATALOG NO.
6002H479



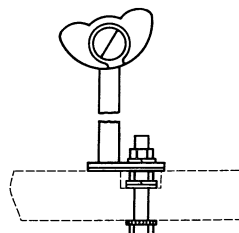
FRONT CONNECTED
(ELEVATED)
INSULATED PANEL
CATALOG NO.
6002H473

MECHANICAL INTERLOCKS


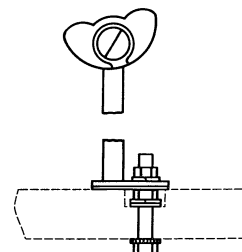
SURFACE MOUNTED
METAL PANEL
CATALOG NO.
6002H648



(ELEVATED)
METAL PANEL
CATALOG NO.
6002H649



SURFACE MOUNTED
INSULATED PANEL
CATALOG NO.
6002H650

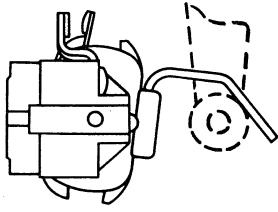


(ELEVATED)
INSULATED PANEL
CATALOG NO.
6002H651

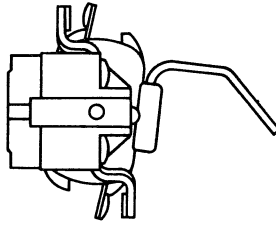
The coil numbers listed in the table at the right are for common d-c voltages on continuous duty applications. Coils for other voltages or intermittent duty are to be ordered by specifying the coil number appearing on the coil together with the complete nameplate data on the controller.

OPERATING COILS			
VOLTS DC	115	230	550
COIL PART NO.	9-1688-2	9-1688-1	9-1688-3

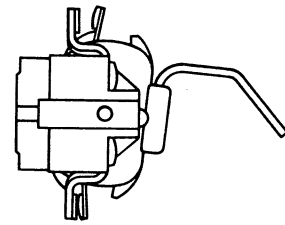
UNIT TYPE ELECTRICAL INTERLOCKS



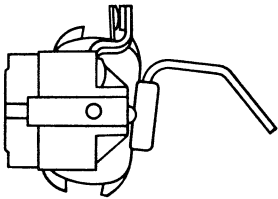
ONE NORMALLY OPEN
CATALOG NO. 10923 H1



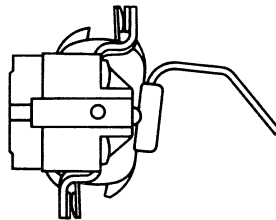
TWO NORMALLY OPEN
CATALOG NO. 10923 H2



ONE NORMALLY OPEN
ONE NORMALLY CLOSED
CATALOG NO. 10923 H3

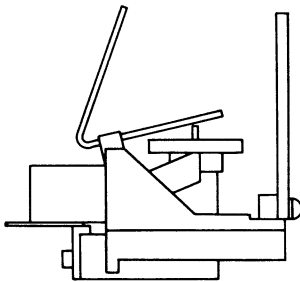


ONE NORMALLY CLOSED
CATALOG NO. 10923 H4

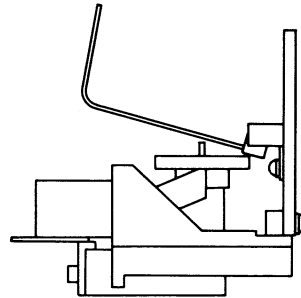


TWO NORMALLY CLOSED
CATALOG NO. 10923 H5

PNEUMATIC TIMING ELECTRICAL INTERLOCKS

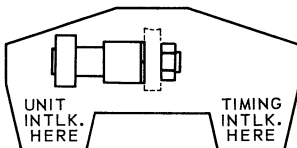


ON DELAY TIMING
CATALOG NO. 10923 H31

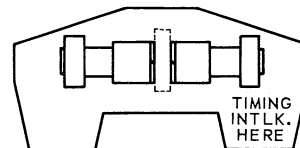


OFF DELAY TIMING
CATALOG NO. 10923 H26

MOUNTING MATERIAL FOR ELECTRICAL INTERLOCKS



MOUNTING MATERIAL FOR ONE UNIT INTERLOCK OR ONE TIMING INTERLOCK
CATALOG NO. 10923 H38



MOUNTING MATERIAL FOR TWO UNIT INTERLOCKS OR ONE UNIT AND ONE TIMING INTERLOCK
CATALOG NO. 10923 H19