

CONTACTORS, RELAYS, AND TRANSFER SWITCHES
 HAVING NO KS DESIGNATIONS AND
 USED IN ENGINE CONTROL CIRCUITS

1. GENERAL

1.01 This addendum supplements Section A401.577, Issue 2-D, and replaces Addendum A401.577, Issue 1.

1.02 (a) Issue 1 of this Addendum included additional relay codes, gave detailed procedure for measuring contact gap, and made changes in the text.

(b) It is reissued to include the equipment used in the control circuits associated with KS-5667 and KS-5750 engine-alternator sets. Changes made in this issue are marked by arrows.

Under 1.01

In the table of circuits

Add: SD-81044-01 SD-81055-01
 SD-81056-01 SD-81106-01
 SD-81144-01

In the table of contactors, etc.

<u>Under</u>	<u>Manufacturer</u>	<u>Type or Code</u>
	<u>Contactors</u>	
<u>Add:</u>	Cutler-Hammer	10-1087, etc. 10-1018 84-1924-3, etc. 64712 x 8F5

<u>Under</u>	<u>Relays</u>
<u>Add:</u>	Automatic Switch X5406 X5426 Type 107S13 Cutler-Hammer 1275-1, etc. 10-562-9 66948 XI-B Struthers-Dunn A2N1M 100, etc. 89XXM100 2MXX100

<u>Under</u>	<u>Transfer Switches</u>
<u>Add:</u>	Automatic Switch Cat.119S8C

Under 1.12

Change: The last sentence.

To Read: They should also refer to the KS and list numbers of the engine set.

2. REQUIREMENTS

Under 2.02

Change: (b)

To Read:

(b) Where electrical requirements are not specified in the Circuit Requirements Table, operation of a relay shall be checked at the minimum coil voltage specified on the nameplate, where the operating voltage is expressed as a range. Where a nominal value is given, check at a value which is 10 per cent less than the nominal.

In (c)

Cancel: Note

Under: 2.07

Change: Each appearance of the word "separation"

To Read: "gap"

Add:

(c) Unless specified in the Circuit Requirements Table, contact gaps of relays in SD-81044-01 shall be as follows:

Relay PR	Min. 1/16"
Relay LO	Min. 1/16"
Transfer Switch TS	
Main Contacts	Min. 9/16"
Use thickness gauge for 1/16" gap and scale for 9/16" gap.	

Under 2.08

In the table under (b)

<u>Manufacturer</u>	<u>Code</u>	<u>Contact Pressure or Follow</u>
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<u>Under</u>	<u>Relays</u>
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Add:

Automatic Switch Co.	PR and LO of SD-81044-01	All contacts 40 grams min.
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Under Transfer Switches

Change: The first sentence

Add:

To Read:

Automatic Switch Cat. 119S8C Main con-
tacts 10 oz
(300 grams)
min. Auxili-
ary con-
tacts 40 grams
min.

A check of the operation of a
voltage-rated relay, excepting the
Automatic Switch Company's type 107S11 and
107S13 is made by connecting a voltmeter
across the coil terminals.

Change: (5)

After #2.12

To Read:

Add:

(5) Operate, nonoperate, and re-
lease adjustments, except as
noted in 3.02 (1), above, may be
made by making changes in the
contact pressure or the tension
of the armature spring, as
applicable. Whenever any changes
are made, care should be taken
that the other requirements con-
tinue to be met. For the Auto-
matic Switch Company's 107S11 and
107S13 relay, these adjustments
are made by changing taps on the
reactor and by adjusting the
rheostat. Refer to local job
information. For the PR relay
in SD-81044-01, adjustment is
made by means of the rheostat.

*2.13 Automatic Switch Company, Cat.
119S8C Transfer Switch: The auxi-
liary contacts shall be adjusted to break
when the solenoid core has moved from
its normal position.

Minimum 1/4"
Maximum 5/16"

Use scale

3. ADJUSTING PROCEDURES

In 3.001

In (8)

Under Gauges

↗ Add: In the table

Cancel: Gauge-nest, thickness, KS-6909

<u>Control Circuit</u>	<u>Designation</u>
SD-81044-01	PR

Add: Gauge, No. 89
Gauge, No. 161A
Gauge, No. 91681M
Gauge, push-pull, tension No. 79B,
1000 grams

Add:

(11) When checking an Automatic Switch
Company's Transfer Switch, Bul 905,
Bul 907 or Bul 908, operate the BY PASS
switch to the NORMAL LINE TO LOAD position.
Disconnect and tape the leads at terminals
L3, L4, A3, and A4. Set up the checking
circuit shown in Fig. 13 using wire of the
sizes specified below. The operating coil
is designed for momentary duty only and
for that reason the contactor should not
be operated more often than once per
minute.

↗ Under Test Apparatus

Add: Enclosed safety switch, 30-ampere,
220-volt, double-pole, double-
throw. (Bull Dog Electric Products
Co., Detroit, Mich., or Square D Co.,
Milwaukee Wis. suggested).

<u>Capacity of Transfer Switch</u> <u>Amperes</u>	<u>Wire Size</u> <u>Minimum</u>
100	#14
150	#12
200	#8
300	#8

L Wire, as specified

Under 3.02

In: (1)

L

Check the electrical requirements, using the engine-alternator under manual control as the source of voltage.

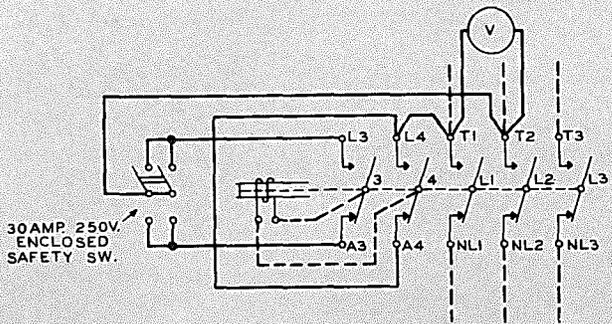


Fig. 13 - Checking Circuit

Under 3.07

Change: The title.

To Read: Contact Gap (Rq. 2.07)

Change: (2)

To Read:

(2) Contact gaps are specified on a minimum basis. When checking, use thickness gauges as follows:

Gap	Gauge
1/16"	No. 89
3/32"	No. 161A (0.094")
1/8"	No. 91681M

Add:

(3) Except as specified below, NC contact gaps should be measured with the relay fully operated, either electrically or manually, and NO contact gaps with the relay released. The following relays have movable contacts arranged for transfer and the gap of each contact should be measured while its associated contact is just made, without any follow or flexing of the contact pressure spring. The armature should be moved by hand.

Relay Code Circuit Designation

Auto. Sw. No. X5426	TR
16135	TR
Dunco 89XBX101	LC

(4) To adjust the contact gaps of relays having both NO and NC contacts, or NC contacts only, raise or lower the stationary NC contacts by rotating them, if mounted on screws. Retighten the lock nut before leaving. Contacts mounted on flat strips may be adjusted by forming the strips with pliers. Where only NO contacts are present, the work should be done in a similar manner on the stationary contacts or the armature back stop should be adjusted.

(5) After any change in a contact gap, check the gaps of the other contacts of the relay and 2.02, 2.05, 2.06, and 2.08.

Under 3.10

In *(6)

Change: The table

To Read:

KS-5636, Lists 1, 3, 7, 8, & 30 9/32"

KS-5636, Lists 4, 5, 6, 40, 50 & 60 11/32"

KS-5664, List 1 7/32"

After *#3.12

Add:

*3.13 Automatic Switch Company
Cat. 11958C Transfer
Switch

(1) The stationary contacts are adjustable by rotating them, as required, on their supporting studs. Connect the 81A test set to the pair of contacts being checked. Obtain partial operation of the switch by slowly moving the manual operating lever in the required direction. With the steel scale held

against the support, with its end against the yoke, observe the travel of the core, to which the yoke is attached, at the moment the contacts break.

Adjust the stationary contact as required. See Fig. 13, which shows the operating mechanism and movable contact assembly, omitting the stationary contacts.

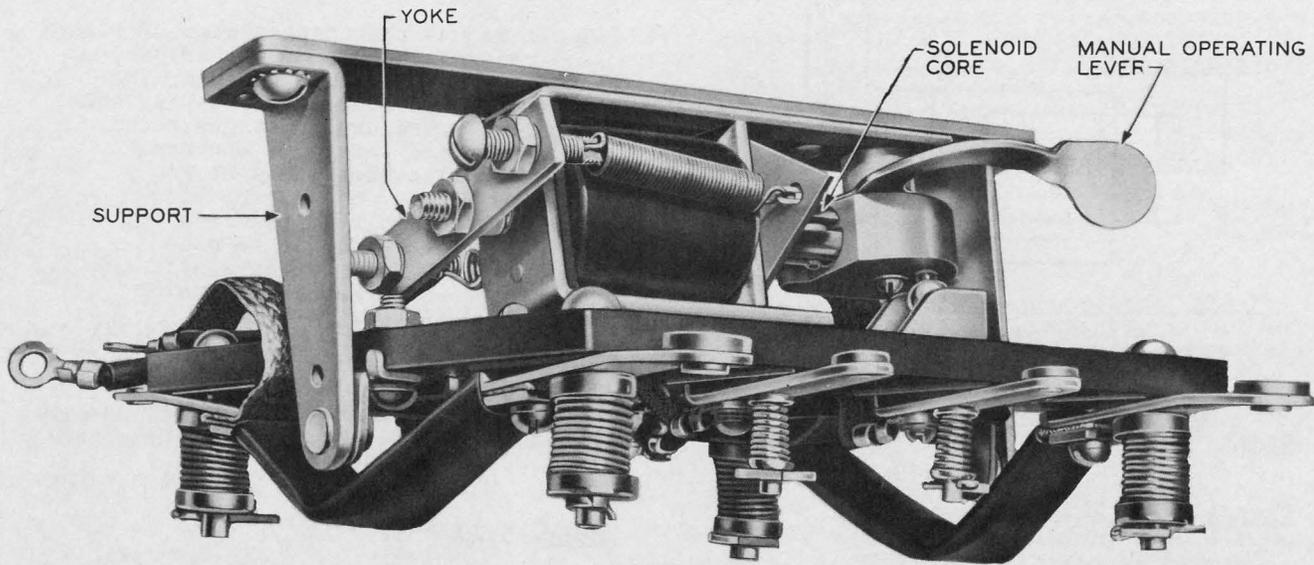


Fig. 14 - Automatic Switch Compaany Transfer
Switch Cat. 119S8C

Bell Telephone Laboratories, Inc.