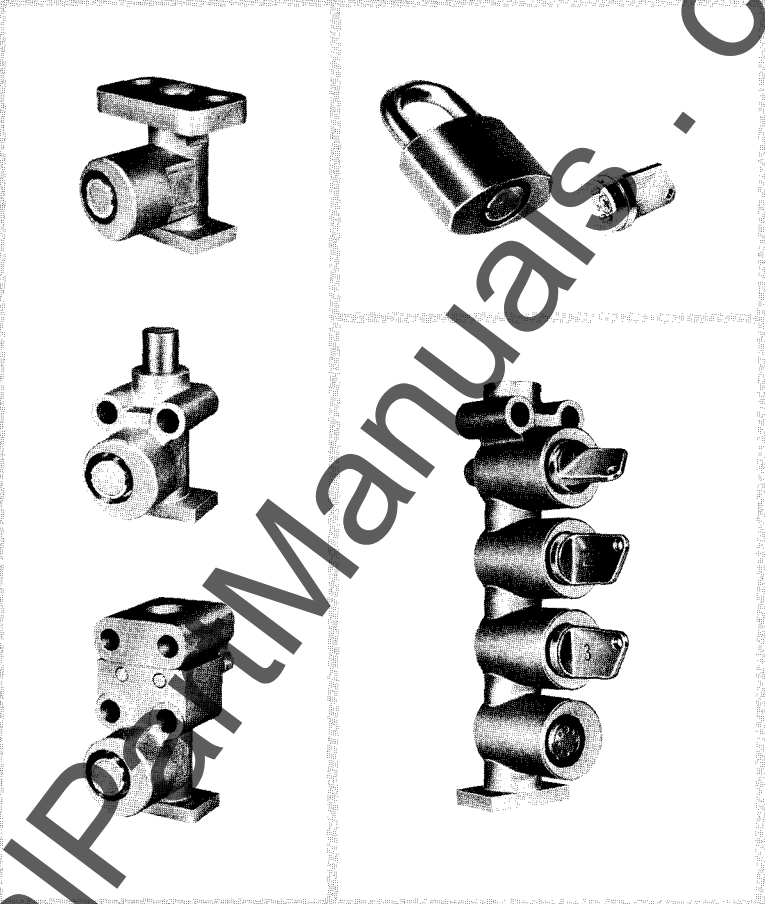
Class 9891
APRIL, 1982



Key Interlock

Application Schemes

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SQUARE D COMPANY

KEY INTERLOCK – APPLICATION SCHEMES

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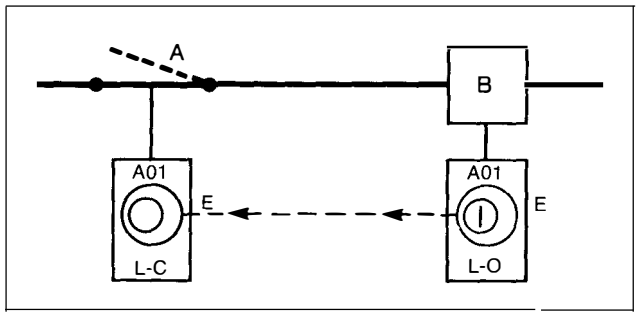
KEY INTERLOCK – APPLICATION SCHEMES

METHOD 1.

Function: To prevent the opening of Switch A when Breaker B is closed.



Switch A and Breaker B are in closed position. Key is held in Breaker B interlock.

1—Open breaker.

2—Turn key in L-O interlock on Breaker B to lock the breaker open. The key is now free.

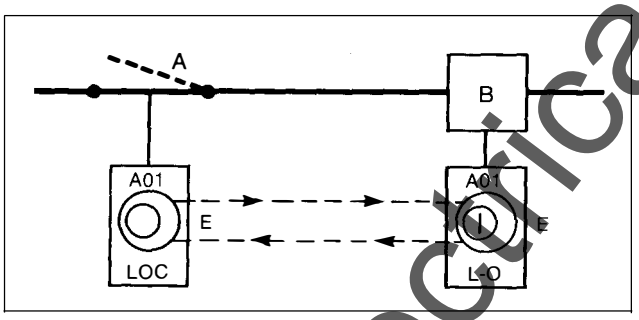
3—Insert key in L-C interlock on switch A and turn to unlock.

4—Opens switch A. Key is now held in switch A.

Reverse the sequence to restore service.

METHOD 2.

Function: To prevent operation of Switch A when Breaker B is closed. Permits reclosing the Breaker for servicing when the Switch is locked open.



Switch A and Breaker B are in the closed position. The Key is held in the Breaker interlock.

1—Open breaker.

2—Turn the key in the L-O interlock on breaker B to lock the breaker open. The key is now free.

3—Insert the key in L-O-C interlock on switch A and turn to unlock.

4—Open switch A

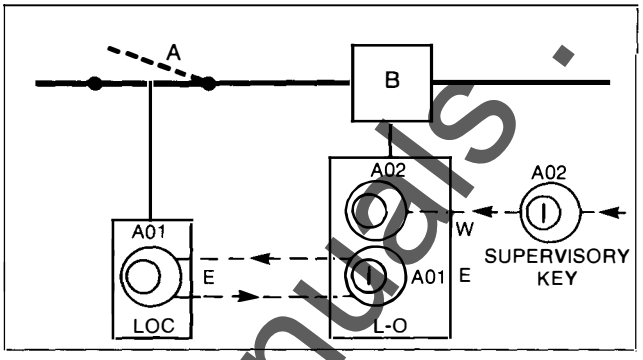
5—Turn the key in L-O-C interlock on switch A to lock it open. The key is now free.

6—Return the key to the breaker interlock and unlock for operation during servicing period.

Reverse the sequence to restore service.

METHOD 3.

Function: To prevent the operation of switch A when Breaker B is closed. Circuit cannot be cleared until proper supervisory key is obtained.



Breaker B and switch A are shown closed. Key A01 is held in the Breaker interlock. Key A02 is retained by the supervisor.

1—Obtain key A02 from supervisor.

2—Open breaker.

3—Insert key A02 in L-O interlock on Breaker B and turn key A01 to lock open. Key A02 is now held and key A01 is free.

4—Insert key A01 in L-O-C interlock on switch A and turn to unlock.

5—Open switch A.

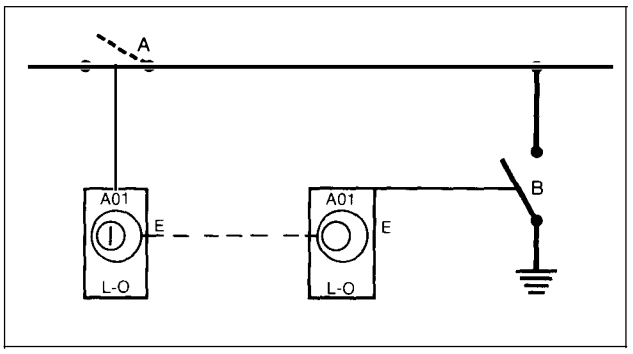
6—Turn key A01 in L-O-C interlock on switch A to lock open. Key A01 is now free.

7—Return key A01 to breaker interlock and unlock for operation during servicing period.

Reverse the sequence to restore service.

METHOD 4.

Function: To prevent the closing of Grounding Switch B when main Switch A is closed, and vice versa.



KEY INTERLOCK – APPLICATION SCHEMES

METHOD 4 (Cont'd)

Main Switch A shown closed and Grounding Switch B shown open. The key is held in Main Switch interlock.

1—Open main switch A.

2—Turn the key in L-O interlock on main switch to lock open. The key is now free.

3—Insert the key in L-O interlock on grounding switch B and turn to unlock. The key is now held.

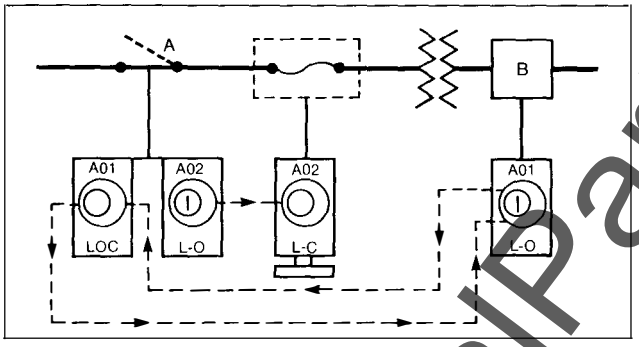
4—Close grounding switch B.

Reverse the sequence to restore service.

METHOD 5.

Function: To prevent the operation of disconnect switch A when breaker B is closed.

To prevent the opening of the fuse compartment door when the disconnect switch A is closed.



The breaker, fuse compartment door and disconnect switch are shown in closed positions. Key A01 is held in breaker interlock and key A02 is held in disconnect interlock.

To service the breaker:

1—Open the breaker.

2—Turn key A01 in L-O interlock on breaker to lock breaker open. Key A01 is now free.

3—Insert key A01 in L-O-C interlock on disconnecting switch and turn to unlock. Key A01 is now held.

4—Open disconnect.

5—Turn key A01 in L-O-C interlock on disconnect switch to lock open. Key A01 is now free.

6—Return key A01 to breaker interlock and unlock for operation of the breaker during servicing.

Reverse the sequence to restore service.

To open the fuse compartment door:

1—Proceed from operations 1 through 4 above.

2—Turn key A02 in L-O interlock on the disconnect switch to lock open. The key A02 is now free.

3—Insert the key A02 in L-C interlock on the fuse compartment door and turn to unlock. The key A02 is now held.

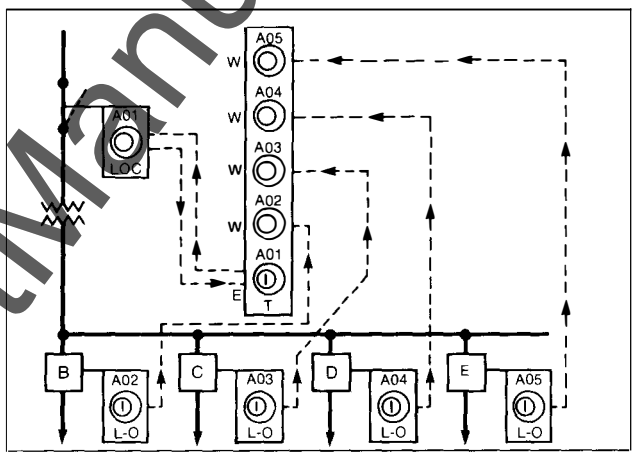
4—Open the fuse compartment door.

Reverse the sequence to restore service.

METHOD 6.

Function: To prevent the operation of disconnect switch A when breakers B, C, D and E are closed. (Breakers may be opened in any sequence.)

(Electrical circuit is equivalent to method 7)



Disconnect A and Breakers B, C, D and E are shown in the closed position. The Key A01 is held in Transfer interlock. Keys A02, A03, A04 and A05 are held in the interlocks on Breaker B, C, D and E.

1—Open breakers B, C, D and E.

2—Turn the key in L-O interlock on each Breaker B, C, D and E to lock the breakers open. The keys A02, A03, A04, A05 are now free.

3—Insert keys A02, A03, A04 and A05 in the transfer interlock.

4—Turn key A01 in the Transfer interlock. Key A01 is now free. (Keys A02, A03, A04 and A05 are now held.)

5—Insert key A01 in L-O-C interlock on disconnect A and turn to unlock. Key A01 is now held.

6—Open disconnect A.

7—Turn key A01 in LOC interlock on disconnect A to lock open. Key A01 is now free.

8—Insert key A01 in Transfer interlock and turn. Key A01 is now held. Keys A02, A03, A04 and A05 are now free.

9—Return keys A02, A03, A04 and A05, as desired, to breaker interlocks and unlock for operation during servicing.

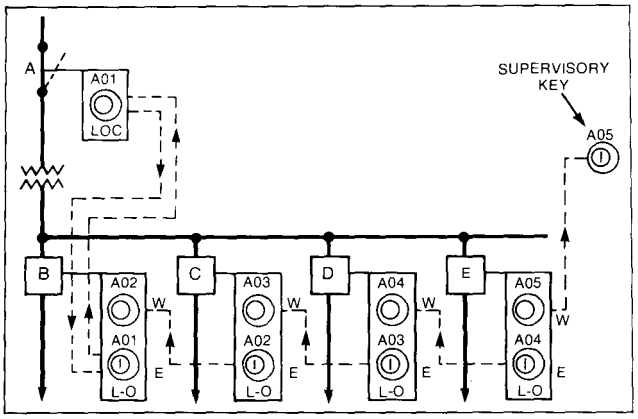
Reverse the sequence to restore service.

METHOD 7.

Function: To prevent the operation of disconnect switch A when breakers B, C, D and E are closed.

Note: *Breakers must be opened in prearranged sequence.*

(Electrical circuit is equivalent of Method 6.)



Disconnect A and Breakers B, C, D and E are shown in the closed positions. Key A01 is held in the breaker B interlock. Key A02 is held in the breaker C interlock, key A03 is held in the breaker D interlock and key A04 is held in the breaker E interlock. Key is A05 is held free in the breaker E interlock or is retained by the supervisor.

1—Obtain key A05 from supervisor.

2—Open breaker E.

3—Insert key A05 in the L-O interlock on Breaker E and turn Key A05 to lock open.
Key A05 is now held. Key A04 is now free.

4—Open breaker D.

5—Insert key A04 in L-O interlock on breaker D and turn key A03 to lock the breaker open. Key A04 is now held. Key A03 is now free.

6—Open breaker C.

7—Insert key A03 in L-O interlock on breaker C and turn key A02 to lock the breaker open. Key A03 is now held. Key A02 is now free.

8—Open breaker B.

9—Insert key A02 in L-O interlock on breaker B and turn key A01 to lock the breaker open. Key A02 is now held. Key A01 is now free.

10—Insert key A01 in L-O-C interlock on disconnect A and turn to unlock. Key A01 is now held.

11—Open the disconnect.

12—Turn the key A01 in L-O-C interlock on disconnect A to lock it open. Key A01 is now free.

13—Insert key A01 in L-O interlock on breaker B and turn it to unlock. Key A01 is now held and key A02 is free.

14—Breaker A may now be operated for servicing.

15—Insert key A02 in L-O interlock on breaker C and turn it to unlock. Key A02 is now held, and key A03 is free.

16—Breaker C may now be operated for servicing.

17—Insert key A03 in L-O interlock on breaker D and turn it to unlock. Key A03 is now held and key A04 is free.

18—Breaker D may now be operated for servicing.

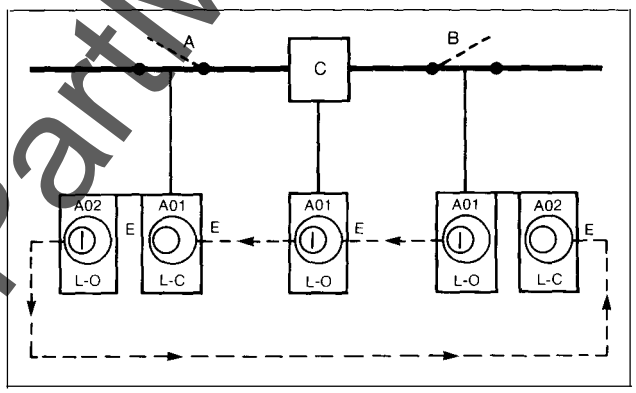
19—Insert key A04 in L-O interlock on breaker E and turn it to unlock. Key A04 is now held and the supervisor's key A05 is free.

20—Breaker E may now be operated for servicing.

Reverse the sequence to restore service.

METHOD 8.

Function: To prevent the operation of Disconnects A and B when Breaker C is closed, to permit servicing of the Breaker when the disconnects are locked open.



Breaker C and the disconnects A and B are shown closed. One key A01 is held in the breaker L-O interlock and the other key A01 is held in L-O interlock on disconnect B. Key A02 is held in L-O interlock on disconnect A.

1—Open the breaker.

2—Turn key A01 in L-O interlock on the breaker to lock it open. Key A01 is now free.

3—Insert key A01 in L-C interlock on disconnect A and turn it to unlock. Key A01 is now held.

4—Open disconnect A.

5—Turn key A02 in L-O interlock on disconnect A to lock it open. Key A02 is now free.

6—Insert key A02 in L-C interlock on disconnect B and turn it to unlock. Key A02 is now held.

7—Open disconnect B.

8—Turn key A01 in L-O interlock on disconnect B to lock it open. Key A01 is now free.

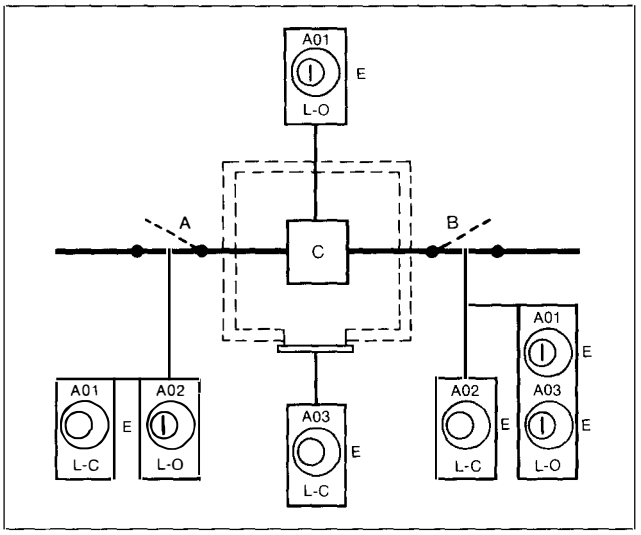
9—Insert key A01 in breaker L-O interlock and turn it to unlock it for operation during servicing.

Reverse the sequence to restore service.

KEY INTERLOCK – APPLICATION SCHEMES

METHOD 9.

Function: To prevent the operation of Disconnects A and B with Breaker C closed, and to prevent access to the Breaker compartment with the Disconnects closed.



Disconnects A and B, breaker C, and the door are normally closed. Keys A01 are held in L-O interlock on Breaker C and the L-O interlock on disconnect B. The key A02 is held in the L-O interlock on disconnect A. The key A03 is held in the L-O interlock on disconnect B.

1—Open the breaker.

2—Turn key A01 in L-O interlock on the breaker to lock it open. Key A01 is now free.

3—Insert key A01 in the L-C interlock on disconnect A and turn it to unlock. Key A01 is now held.

4—Open disconnect A.

5—Turn key A02 in the L-O interlock on disconnect A to lock open. Key A02 is now free.

6—Insert key A02 in the L-C interlock on disconnect B and turn it to unlock. Key A02 is now held.

7—Open disconnect B.

8—Turn keys A01 and A03 in the L-O interlock on disconnect B to lock it open. Keys A01 and A03 are now free.

9—Insert key A01 in the breaker L-O interlock and turn it to unlock for operation during servicing.

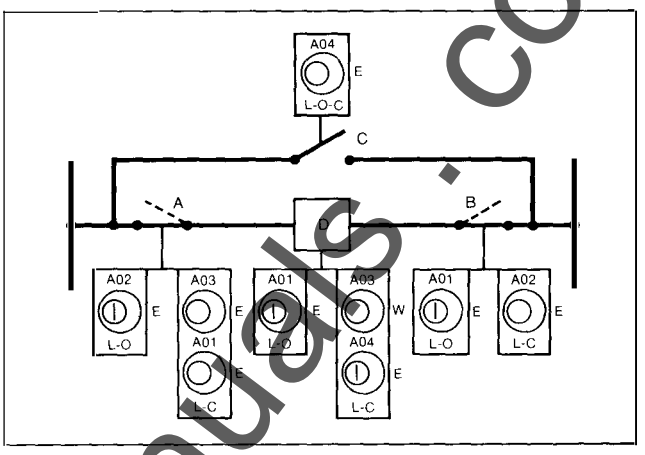
10—Insert key A03 in L-C interlock (Type D) on the compartment door and turn it to unlock. Key A03 is now held.

11—Open the compartment door to service breaker.

Reverse the sequence to restore service.

METHOD 10.

Function: To prevent the operation of disconnects A and B and by-pass disconnect C under load. It provides for the closing of by-pass disconnect C before the breaker circuit is opened, or permits the breaker circuit to be opened with the by-pass disconnect C remaining open.



Disconnects A and B and breaker D are normally closed. By-pass disconnect C is normally open. Keys A01, A02, and A04 are normally held in the locks as indicated. Key A03 is normally free.

To transfer the load from the breaker and disconnects to the by-pass switch

1—Obtain key A03 which is free and insures that both of the disconnects A and B are locked closed.

2—Insert key A03 in L-C interlock on breaker D and turn it to lock closed. Key A03 is held and key A04 is now free.

3—Insert key A04 in L-O-C interlock on by-pass disconnect C and turn it to unlock. Key A04 is now held.

4—Close by-pass disconnect C.

5—Turn key A04 in L-O-C interlock on by-pass disconnect C to lock it closed. Key A04 is now free.

6—Insert key A04 in L-C interlock on breaker D and turn it to unlock. Key A04 is held and key A03 is now free.

7—Open breaker D.

8—Turn key A01 in the L-O interlock on breaker D to lock it open. Key A01 is now free.

9—Insert keys A01 and A03 in the L-C interlock on disconnect A and turn it to unlock. Keys A01 and A03 are now held.

10—Open disconnect A.

11—Turn key A02 in the L-O interlock on disconnect A to lock it open. Key A02 is now free.

12—Insert key A02 in the L-C interlock on disconnect B and turn it to unlock. The key A02 is now held.

13—Open disconnect B.

14—Turn key A01 in the L-O interlock on disconnect B to lock it open. The key A01 is now free.

15—Insert the key A01 in the L-O interlock on breaker D and turn it to unlock to permit operation during servicing.

To open disconnects A and B and breaker D, leaving the by-pass disconnect C open.

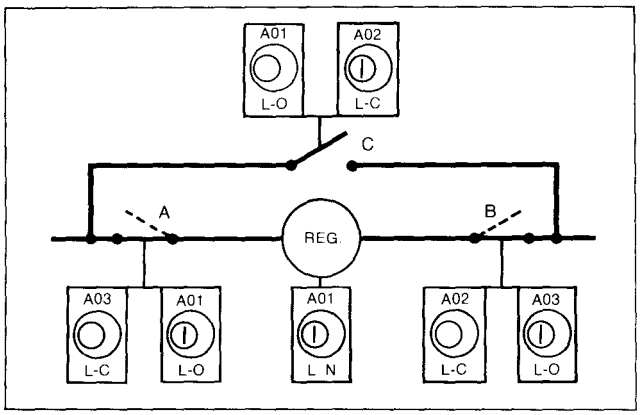
1—Proceed from operations 7 to 15 above.

METHOD 11.

Function: To prevent the operation of disconnects A and B and by-pass disconnect C under load.

Permits by-pass disconnect C to operate only when the regulator is in the neutral position.

Permits the isolation of the regulator for servicing.



Disconnects A and B are normally closed. The regulator is normally in operation. The By-pass disconnect C is normally open.

One key A01 is held in the regulator L-N (Locked Neutral) interlock and the second key A01 is held in the L-O interlock on disconnect A. The key A02 is held in the L-C interlock on the disconnect C. The key A03 is held in the L-O interlock on disconnect B.

1—Operate the regulator to the neutral position.

2—Turn key A01 in L-N interlock on the regulator to lock it in a neutral position. The key A01 is now free.

3—Insert key A01 in the L-O interlock on the by-pass disconnect C and turn it to unlock. The key A01 is now held.

4—Close the by-pass disconnect C.

5—Turn key A02 in the L-C interlock on by-pass disconnect C to lock it closed. The key A02 is now free.

6—Insert the key A02 in the L-C interlock on disconnect B and turn it to unlock. The key A02 is now held.

7—Open the disconnect B.

8—Turn the key A03 in the L-O interlock on the disconnect B to lock it open. The key A03 is now free.

9—Insert the key A03 in the L-C interlock on the disconnect A and turn it to unlock. The key A03 is now held.

10—Open the disconnect A.

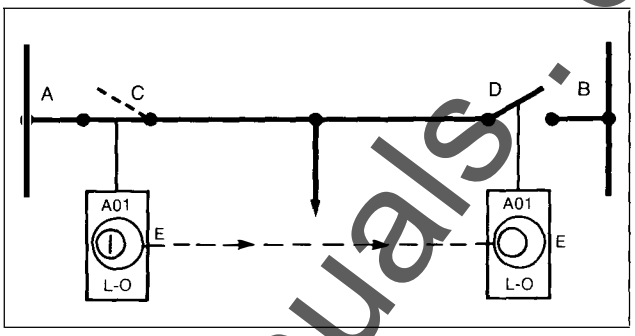
11—Turn the key A01 in the L-O interlock on the disconnect A to lock it open. The key A01 is now free.

12—Insert the key A01 in the regulator L-N interlock and turn it to unlock. This permits the regulator to be operated during inspection and servicing.

Reverse the sequence to restore service.

METHOD 12.

Function: To prevent the paralleling of lines A and B.
—Single load, fed from either source.



Disconnect C is shown closed and disconnect D is shown open. Key A01 is held in the disconnect C interlock.

1—Open switch C.

2—Turn key A01 in the L-O interlock on switch C to lock it open. Key A01 is now free.

3—Insert key A01 in the L-O interlock on switch D and turn it to unlock. Key A01 is now held.

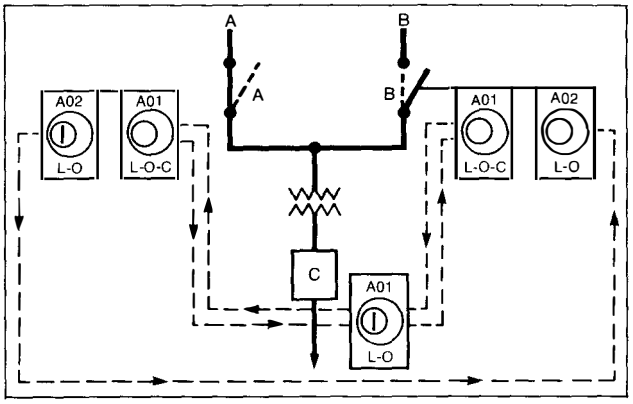
4—Close switch D.

Reverse the sequence to restore service through switch C.

METHOD 13.

Function: To prevent the paralleling of lines A and B.
—Single load, fed from either source.

To prevent the operation of disconnect switches A and B when the breaker C is closed.



Breaker C and the disconnect A are shown in the closed position. Disconnect B is shown in the open position. The key A01 is held in the breaker C interlock. The key A02 is held in the disconnect A, L-O interlock.

KEY INTERLOCK – APPLICATION SCHEMES

METHOD 13. (Cont'd)

To service the breaker:

1—Open breaker C.

2—Turn key A01 in the L-O interlock on the breaker to lock it open. Key A01 is now free.

3—Insert key A01 in the L-O-C interlock on disconnect A and turn it to unlock. Key A01 is now held.

4—Open disconnect switch A.

5—Turn key A01 in the L-O-C interlock on disconnect A to lock it open. Key A01 is now free.

6—Return key A01 to the breaker interlock and unlock it for operation of the breaker during servicing.

To transfer the load from line A to line B:

1—Open breaker C.

2—Turn key A01 in the L-O interlock on the breaker to lock it open. Key A01 is now free.

3—Insert key A01 in the L-O-C interlock on disconnect A and turn it to unlock. Key A01 is now held.

4—Open disconnect switch A.

5—Turn key A01 in the L-O-C interlock and key A02 in L-O interlock on disconnect A to lock open. Keys A01 and A02 are now free.

6—Insert key A01 in the L-O-C interlock on disconnect B and turn it to unlock. Key A01 is now held.

7—Insert key A02 in the L-O interlock on disconnect B and turn it to unlock. Key A02 is now held.

8—Close disconnect switch B.

9—Turn key A01 in the L-O-C interlock on disconnect B to lock it closed. Key A01 is now free.

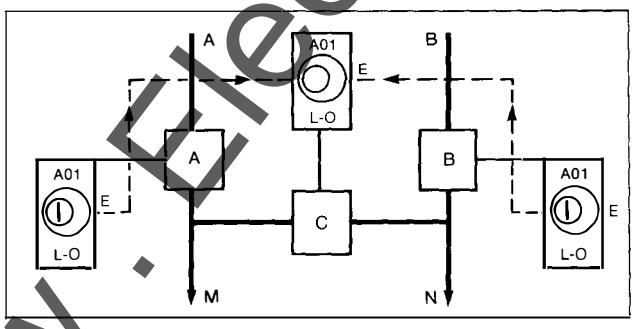
10—Insert key A01 in the breaker interlock and turn it to unlock. The key A01 is now held.

11—Close the breaker.

Reverse the sequence to restore service through line A.

METHOD 14.

Function: To prevent the paralleling of lines A and B.
—Two loads, fed from either source.



Breaker A is closed to supply load M. Breaker B is closed to supply load N. Tie-Breaker C is open. The keys A01 are held in the interlocks on both breakers A and B. Tie-Breaker C cannot be closed unless either A or B is locked open.

To transfer load N to breaker A, proceed as follows.

1—Open breaker B.

2—Turn key A01 in the L-O interlock on breaker B to lock it open. Key A01 is now free.

3—Insert Key A01 in L-O interlock on tie-breaker C and turn it to unlock. Key A01 is now held.

4—Close tie-breaker C.

Reverse the sequence to restore service

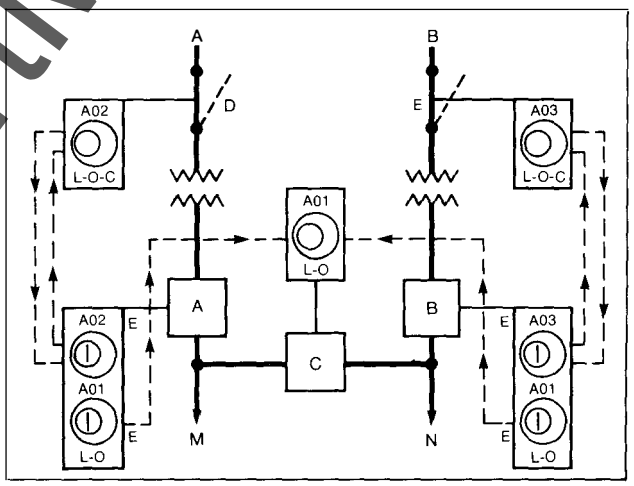
Load M can be supplied through breaker B in a similar manner.

METHOD 15.

Function: To prevent the paralleling of lines A and B.
—Two loads, fed from either source. (One tie-breaker).

To prevent the operation of disconnect switch D when breaker A is closed.

To prevent the operation of disconnect switch E when breaker B is closed.



The disconnect switches D and E and breakers A and B are closed. Breaker A is closed to supply the load M. Breaker B is closed to supply the load N. Tie-Breaker C is open. Keys A01 and A02 are held in the interlock on breaker A. Keys A01 and A03 are held in the interlock on breaker B. The Tie-Breaker C cannot be closed until either breaker A or B is locked open.

To transfer load N to breaker A, proceed as follows:

1—Open breaker B.

2—Turn key A01 in L-O interlock on breaker B to lock it open. Keys A01 and A03 are now free.

3—Insert key A01 in L-O interlock on tie-breaker C and turn it to unlock. Key A01 is now held.

4—Close tie-breaker C.

Reverse the sequence to restore service through breaker B. Load M can be supplied through breaker B in a similar manner.

METHOD 15 (Cont'd)

To service Breaker B, proceed as follows:

1—Open breaker B.

2—Turn key A01 in the L-O interlock on breaker B to lock it open. Keys A01 and A03 are now free.

3—Insert key A03 in the L-O-C interlock on disconnect E and turn it to unlock. Key A03 is now held.

4—Open disconnect E.

5—Turn key A03 in the L-O-C interlock on disconnect E to lock it open. Key A03 is now free.

6—Return key A03 to the L-O interlock on breaker B and unlock it for operation of the breaker during servicing.

Reverse the sequence to restore service.

Breaker A can be serviced in a similar manner.

METHOD 16

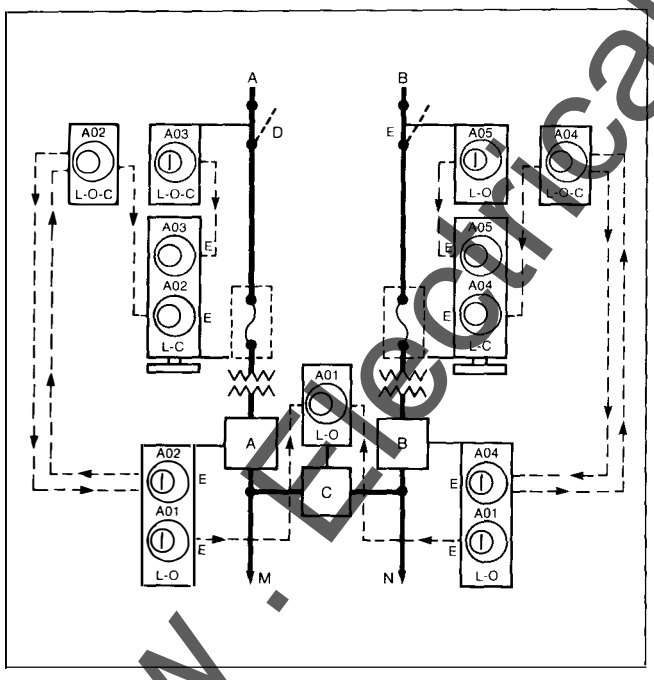
Function: To prevent paralleling of lines A and B.

—Two loads, fed from either source. (One tie-breaker).

To prevent the operation of disconnect switch D when breaker A is closed.

To prevent the operation of disconnect switch E when breaker B is closed.

To prevent the opening of the fuse compartment door when the associated disconnects D or E and breakers A and B are closed.



Disconnect switch D, and Breaker A are closed to supply load M. Disconnect switch E and breaker B are closed to supply load N. Tie-breaker C is open. Keys A01 and A02 are held in the interlock on breaker A. Key A03 is held in the L-O interlock on disconnect D. Keys A01 and A04 are held in the interlock on the breaker B. Key A05 is held in the L-O interlock on the disconnect E. The tie-breaker C cannot be closed until either breaker A or B is locked open.

To transfer load N to breaker A, proceed as follows:

1—Open breaker B.

2—Turn key A01 in L-O interlock on breaker B to lock it open. Keys A01 and A04 are now free.

3—Insert key A01 in L-O interlock on tie-breaker C and turn it to unlock. Key A01 is now held.

4—Close tie-breaker C.

Reverse the sequence to restore service through breaker B. Load M can be supplied through breaker B in a similar manner.

To service breaker B, proceed as follows:

1—Open breaker B.

2—Turn key A01 in L-O interlock on breaker B to lock it open. Keys A01 and A04 are now free.

3—Insert key A04 in the L-O-C interlock on disconnect E and turn it to unlock. Key A04 is now held.

4—Open disconnect E.

5—Turn key A04 in L-O-C interlock on disconnect E to lock it open. Key A04 is now free.

6—Return key A04 to L-O interlock on breaker B and unlock it for operation of breaker during servicing.

Reverse the sequence to restore service. Breaker A can be serviced in a similar manner.

To enter the fuse compartment on line B, proceed as follows:

1—Open breaker B.

2—Turn key A01 in L-O interlock on breaker B to lock it open. Keys A01 and A04 are now free.

3—Insert key A04 in L-O-C interlock on disconnect E and turn to unlock. Key A04 is now held.

4—Open disconnect E.

5—Turn key A04 in L-O-C interlock on disconnect E to lock it open. Key A04 is now free.

6—Turn key A05 in L-O interlock on disconnect E to lock it open. Key A05 is now free.

7—Insert keys A04 and A05 in L-C interlock on the fuse compartment door and turn it to unlock. Keys A04 and A05 are now held.

8—Open the fuse compartment door.

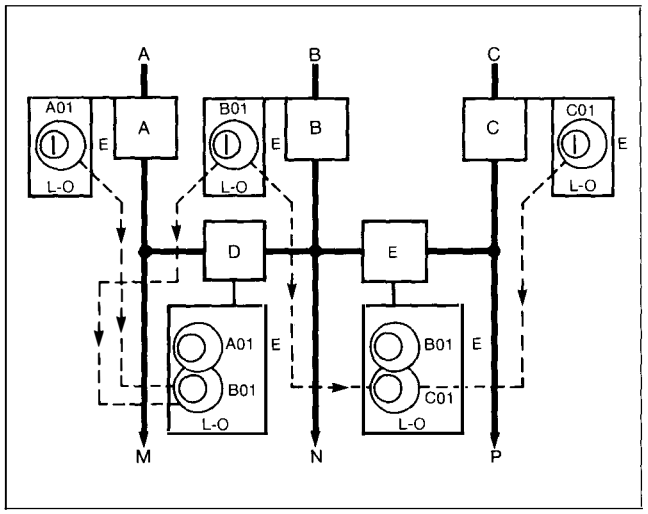
Reverse the sequence to restore service.

The fuse compartment on line A can be entered in a similar manner.

KEY INTERLOCK – APPLICATION SCHEMES

METHOD 17.

Function: To prevent paralleling of lines A, B, and C.
—Three loads, fed from any source. (Two tie-breakers).



Breaker A is closed to supply load M. Breaker B is closed to supply Load N. Breaker C is closed to supply the load P. Keys A01, B01 and C01 are held in the L-O interlocks of breakers A, B, and C. The tie-breakers D and E are locked open.

Tie-breaker D interlock has a master or apartment lock and it can be unlocked for operation with either keys A01 or B01. The tie-breaker E has a master or apartment lock, and it can be unlocked for operation with either keys B01 or C01.

To transfer load M and breaker A to breaker B.

1—Open the breaker A.

2—Turn the key A01 in the L-O interlock on breaker A to lock it open. The key A01 is now free.

3—Insert the key A01 in the L-O interlock on tie-breaker D and turn it to unlock. Key A01 is now held.

4—Close the tie-breaker D.

Reverse the sequence to restore service through breaker A.

To transfer the load M and N from the breakers A and B to breaker C.

1—Close the tie-breaker D as above.

2—Turn the key B01 in the L-O interlock on breaker B to lock it open. The key B01 is now free.

3—Insert the key B01 in the L-O interlock on the tie-breaker E and turn it to unlock. The key B01 is now held.

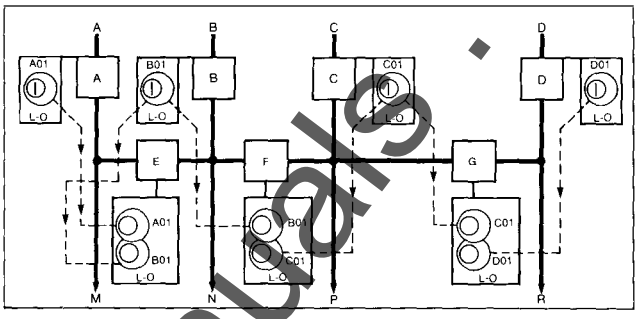
4—Close the tie-breaker E.

Reverse the sequence to restore service (M and N through breakers A and B.)

Any of the loads M, N, P or R can be transferred from its own supply to any adjacent supply.

METHOD 18.

To prevent the paralleling of lines A, B, C and D.
—Four loads, fed from any source. (Three tie-breakers).



Breaker A is closed to supply load M. Breaker B is closed to supply load N. Breaker C is closed to supply load P. Breaker D is closed to supply load R. The keys A01, B01, C01 and D01 are held in the L-O interlocks of breakers A, B, C and D. The breakers E, F and G are locked open. Breaker E interlock has a master or apartment lock and it can be unlocked for operation with either keys A01 or B01. Breaker F interlock has a master or apartment lock and it can be unlocked for operation with either keys B01 or C01. The breaker G interlock has a master or apartment lock and it can be unlocked for operation with either keys C01 or D01.

To transfer the load M from breaker A to breaker B.

1—Open the breaker A.

2—Turn the key A01 in the L-O interlock on breaker A to lock it open. The key A01 is now free.

3—Insert key A01 in L-O interlock on tie-breaker E and turn it to unlock. Key A01 is now held.

4—Close tie-breaker E.

Reverse the sequence to restore service through breaker A.

To transfer the loads M and N from the breakers A and B to breaker C.

1—Close tie-breaker E as above.

2—Open breaker B.

3—Turn key B01 in L-O interlock on breaker B to lock it open. Key B01 is now free.

4—Insert key B01 in L-O interlock on tie-breaker F and turn it to unlock. Key B01 is now held.

5—Close tie-breaker F.

Reverse the sequence to restore service (M and N through breakers A and B).

To transfer the load R from breaker D to breaker C.

1—Open breaker D.

2—Turn key D01 in L-O interlock on breaker D to lock it open. Key D01 is now free.

3—Insert key D01 in L-O interlock on tie-breaker G and turn it to unlock. Key D01 is now held.

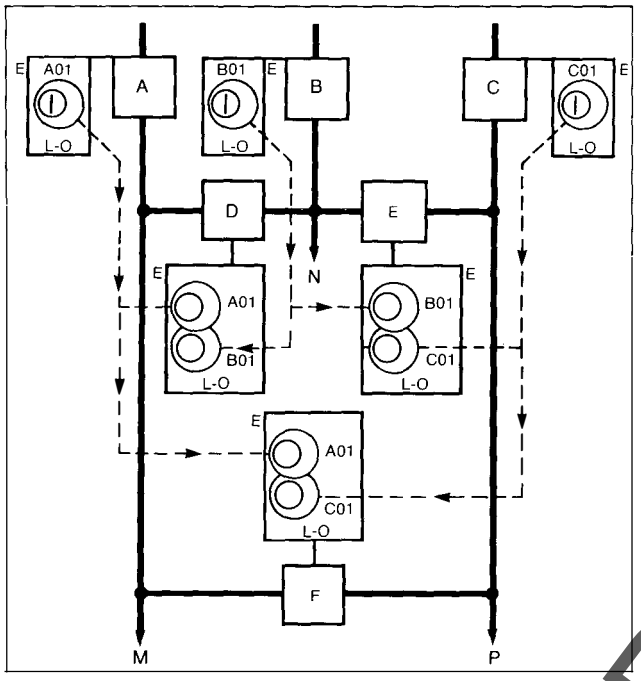
4—Close tie-breaker G.

Reverse the sequence to restore service through breaker D.

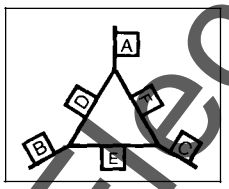
METHOD 19.

Function: To prevent the paralleling of lines A, B, and C.

—Three loads, fed from any source (Three tie-breakers).



Breaker A is closed to supply load M. Breaker B is closed to supply the load N. Breaker C is closed to supply load P. The keys A01, B01, and C01 are held in the L-O interlocks of breakers A, B, and C. The tie-breakers D, E, and F are locked open. The master or apartment lock interlocks are mounted on the tie-breakers D, E, and F, and can be unlocked for operations with either keys A01 or B01, B01 or C01, and A01 or C01 respectively.



To transfer load M from breaker A to breaker B.

1—Open breaker A.

2—Turn key A01 in L-O interlock on breaker A to lock it open. The key is now free.

3—Insert key A01 in L-O interlock on tie-breaker D and turn it to unlock. Key A01 is now held.

4—Close tie-breaker D.

Reverse the sequence to restore service through breaker A.

To transfer load M and N from breakers A and B to breaker C.

1—Close tie-breaker D as above.

2—Open breaker B.

3—Turn key B01 in L-O interlock on breaker B to lock it open. Key B01 is now free.

4—Insert key B01 in L-O interlock on breaker E and turn it to unlock. Key B01 is now held.

5—Close tie-breaker E.

Reverse the sequence to restore service (loads M and N) through breakers A and B.

To transfer load P from breaker C to breaker A.

1—Open breaker C.

2—Turn key C01 in L-O interlock on breaker C to lock it open. Key C01 is now free.

3—Insert key C01 in L-O interlock on tie-breaker F and turn it to unlock. Key C01 is now held.

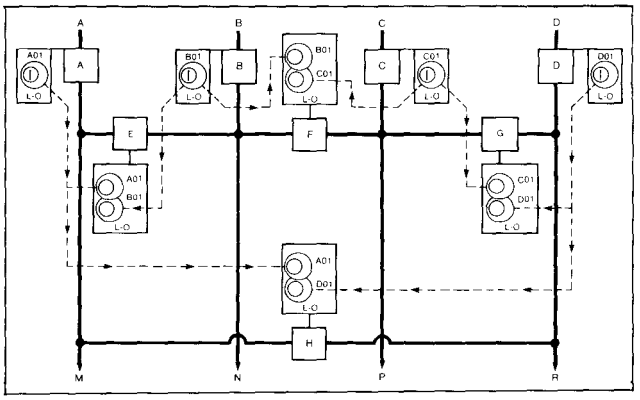
4—Close tie-breaker F.

Reverse the sequence to restore service through breaker C.

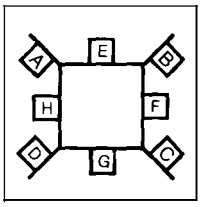
METHOD 20.

Function: To prevent the paralleling of lines A, B, C, and D.

—Four loads fed from any source. (Four tie-breakers).



Breaker A is closed to supply load M.
Breaker B is closed to supply load N.
Breaker C is closed to supply load P.
Breaker D is closed to supply load R.



Keys A01, B01, C01 and D01 are held in L-O interlocks of breakers A, B, C and D. The tie-breakers E, F, G and H are locked open. Breaker E interlock has a master or apartment lock and it can be unlocked for operations with either keys A01 or B01. Breaker F interlock has a master or apartment

METHOD 20 (Cont'd)

lock and it can be unlocked for operation with either keys B01 or C01. Breaker G interlock has a master or apartment lock and it can be unlocked for operation with either keys C01 or D01. Breakers H interlock has a master or apartment lock and it can be unlocked for operation with either keys A01 or D01.

To transfer load M from breaker A to breaker B.

1—Open breaker A.

2—Turn key A01 in L-O interlock on breaker A to lock it open. Key A01 is now free.

3—Insert key A01 in L-O interlock on tie-breaker E and turn it to unlock. Key A01 is now held.

4—Close tie-breaker E.

Reverse the sequence to restore service through breaker A.

To transfer load M and N from breaker A and B to breaker C.

1—Close tie-breaker E as above.

2—Open breaker B.

3—Turn key B01 in L-O interlock on breaker B to lock it open. Key B01 is now free.

4—Insert key B01 in L-O interlock on tie-breaker F and turn it to unlock. Key B01 is now held.

5—Close tie-breaker F.

Reverse the sequence to restore service (M and N) through breakers A and B.

To transfer load R from breaker D to breaker C.

1—Open breaker D.

2—Turn key D01 in L-O interlock on breaker D to lock it open. Key D01 is now free.

3—Insert key D01 in L-O interlock on tie-breaker G and turn it to unlock. Key D01 is now held.

4—Close tie-breaker G.

Reverse the sequence to restore service through breaker D.

To transfer load M from breaker A to breaker D.

1—Open breaker A.

2—Turn key A01 in L-O interlock on breaker A to lock it open. Key A01 is now free.

3—Insert key A01 in L-O interlock on tie-breaker H and turn it to unlock. Key A01 is now held.

4—Close tie-breaker H.

Reverse the sequence to restore service through breaker A.

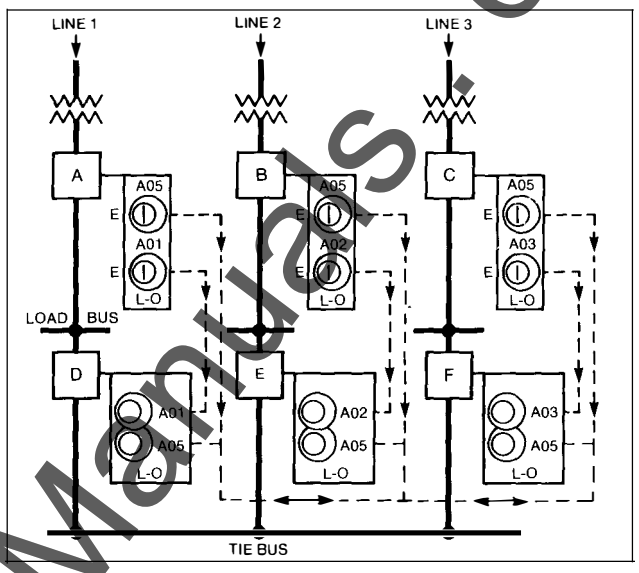
Any of the loads M, N, P, or R can be transferred from its own supply to any adjacent supply.

METHOD 21.

Function: To prevent the paralleling of three power sources through a common tie bus not normally in service.

To permit the feeding of any load bus from a second power source through the tie bus.

To permit only one power source to supply all three load busses through the tie bus.



Breakers A, B and C are normally closed. Breakers D, E, and F are normally open. Under normal conditions, keys A01 and A05 are held in breaker A interlock, keys A02 and A05 are held in breaker B interlock and keys A03 and A05 are held in breaker C interlock.

To transfer the load from line No. 1 to line No. 2 or line No. 3 through tie bus, proceed as follows:

1—Open breaker A.

2—Turn key A01 in L-O interlock on breaker A to lock the breaker open. Keys A01 and A05 are now free.

3—Insert key A01 in L-O interlock on breaker D and turn to unlock. Key A01 is now held.

4—Close breaker D.

5—Insert key A05 in L-O interlock on either breaker E or F and turn to unlock. Key A05 is now held.

6—Close breaker E or F (whichever is selected).

Reverse the sequence to restore load to line No. 1.

To transfer the load from lines No. 1 and No. 2 to line No. 3 through tie bus, proceed as follows:

1—Close breaker D as per steps 1 to 4 above.

2—Open breaker B.

3—Turn key A02 in L-O interlock on breaker B to lock the breaker open. Keys A02 and A05 are now free.

4—Insert key A02 in L-O interlock on breaker E and turn to unlock. Key A02 is now held.

5—Close breaker E.

6—Insert one of the A05 keys from either breaker A or B in L-O interlock on breaker F and turn to unlock. Key A05 is now held.

7—Close breaker F.

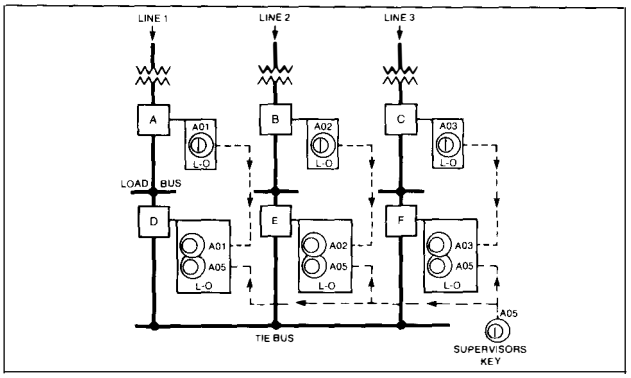
Reverse the sequence to restore load to lines No. 1 and No. 2.

METHOD 22.

Function: To prevent the paralleling of three power sources through a common tie bus not normally in service.

To permit the feeding of any load bus from a second power source through the tie bus only when authorized by supervisor.

To permit only one power source to supply all three load busses through the tie bus only when authorized by supervisor.



Breakers A, B and C are normally closed. Breakers D, E and F are normally open. Under normal conditions Key A01 is held in breaker A interlock, Key A02 is held in breaker B interlock and Key A03 is held in breaker C interlock. Key A05 is retained by the supervisor.

To transfer the load from line No. 1 to line No. 2 or line No. 3 through tie bus, proceed as follows:

1—Open breaker A.

2—Turn key A01 in L-O interlock on breaker A to lock the breaker open. Key A01 is now free.

3—Insert key A01 in L-O interlock on breaker D and turn to unlock. Key A01 is now held.

4—Close breaker D.

5—Insert Supervisor's key A05 (only one A05 is available) in L-O interlock on either breaker E or F and turn to unlock. Key A05 is now held.

6—Close breaker E or F (whichever is selected).

Reverse sequence to restore the load to line No. 1.

To transfer the load from lines No. 1 and No. 2 to line No. 3 through tie bus, proceed as follows:

1—Close breaker D as per steps 1 to 4 above.

2—Open breaker B.

3—Turn key A02 in L-O interlock on breaker B to lock the breaker open. Key A02 is now free.

4—Insert key A02 in L-O interlock on breaker E and turn to unlock. Key A02 is now held.

5—Close breaker E.

6—Insert Supervisor's key A05 in L-O interlock on breaker F and turn key to unlock. Key A05 is now held.

7—Close breaker F.

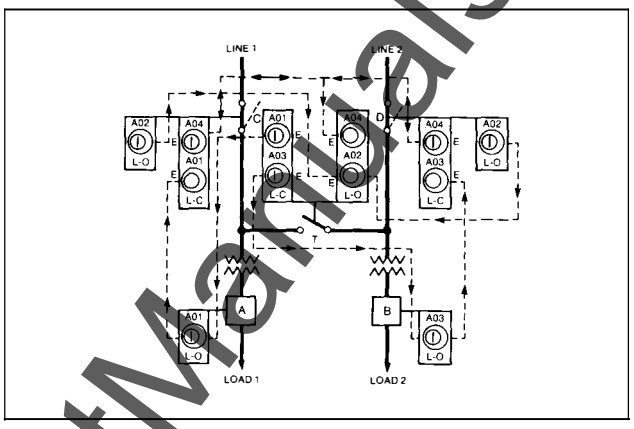
Reverse the sequence to restore the load to lines No. 1 and No. 2.

METHOD 23.

Function: To prevent the paralleling of incoming primary sources, lines 1 and 2, through primary tie bus disconnect.

To prevent the operation (open or closed) of disconnects under load.

It permits one power source to supply both loads through tie bus.



Under normal conditions breakers A and B are closed, disconnects C and D are locked closed, and tie bus disconnect C is locked open. Keys A01 are held in L-O interlock on breaker A and L-C interlock on tie bus disconnect T. Keys A02 are held in L-O interlock on disconnects C and D. Keys A03 are held in L-O interlock on breaker B and L-C interlock on tie bus disconnect T. Keys A04 (free keys) are shown removably held in the L-C interlocks on disconnects C and D.

To transfer load No. 1 from line 1 to line 2 through bus tie disconnect T, proceed as follows:

1—Open breaker A.

2—Turn key A01 in L-O interlock on breaker A to lock open. Key A01 is now free.

3—Insert key A01 in L-C interlock on disconnect C and turn to unlock. Keys A01 and A04 are now held.

4—Open disconnect C.

5—Turn key A02 in L-O interlock on disconnect C to lock open. Key A02 is now free.

6—Insert keys A02 and free key A04 (from L-C interlock on disconnect D) in L-O interlock on bus tie disconnect T and turn to unlock. Keys A02 and A04 are now held.

7—Close bus tie disconnect T.

8—Turn key A03 in L-C interlock on disconnect T to lock closed. Keys A01 and A03 are now free.

9—Insert key A01 in L-O interlock on breaker A and turn to unlock. Key A01 is now held.

10—Close breaker A.

Reverse the sequence to restore load No. 1 to line 1.

To transfer load No. 2 from line 2 to line 1 through the bus tie disconnect T, proceed in a similar manner.

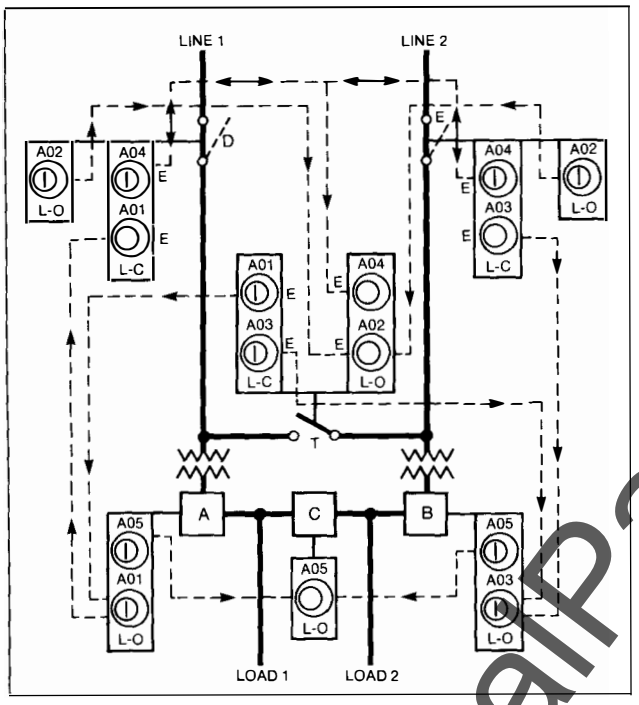
KEY INTERLOCK – APPLICATION SCHEMES

METHOD 24.

Function: To prevent the paralleling of incoming primary sources, lines 1 and 2, through the primary tie bus disconnect or the secondary tie bus breaker.

To prevent the operation (open or closed) of the disconnects under load.

It permits one power source to supply both loads through either the primary or secondary tie bus.



Under normal conditions breakers A and B are closed, breaker C is locked open, disconnects D and E are locked closed and tie disconnect T is locked open. Keys A01 are held in the L-O interlock on breaker A and the L-C interlock on primary tie bus disconnect T. Keys A02 are held in the L-O interlocks on disconnects D and E. Keys A03 are held in the L-O interlock on breaker B and L-C interlock on primary tie bus disconnect T. Keys A04 (free keys) are shown removably held in the L-C interlocks on disconnects D and E. Keys A05 are held in the L-O interlocks on breakers A and B.

To transfer load No. 1 from line 1 to line 2 through primary bus tie disconnect T.

1—Open breaker A.

2—Turn key A01 in the L-O interlock on breaker A to lock open. Keys A01 and A05 are now free.

3—Insert key A01 and "free key A04" in the L-O interlock on disconnect D and turn to unlock. Keys A01 and A04 are now held.

4—Open Disconnect D.

5—Turn key A02 in L-O interlock on disconnect D to lock open. Key A02 is now free.

6—Insert key A02 and free key A04 (from the L-C interlock on disconnect E) in the L-O interlock on primary bus tie disconnect T and turn to unlock. Keys A02 and A04 are now held.

7—Close bus tie disconnect T.

8—Turn key A03 in the L-C interlock on bus tie disconnect T to lock closed. Keys A01 and A03 are now removable.

9—Insert key A01 in the L-O interlock on breaker A and turn to unlock. Key A01 is now held.

10—Close breaker A.

Reverse this procedure to restore service to line 1.

Load No. 2 can be supplied from No. 1 through the primary bus tie in a similar manner.

To transfer load No. 1 from line 1 to line 2 through secondary tie breaker C.

1—Open breaker A.

2—Turn key A01 in the L-O interlock on breaker A to lock open. Keys A01 and A05 are now removable.

3—Insert key A05 in the L-O interlock on tie breaker C and turn to unlock. Key A05 is now held.

4—Close tie breaker C.

Reverse this procedure to restore service on line 1.

Load No. 2 can be supplied from line No. 1 through the secondary tie breaker C in a similar manner.

METHOD 25.

Function: To prevent the paralleling of incoming primary sources, lines 1 and 2.

To prevent the operation (open or closed) of the disconnects under load. (Permits transformer primary disconnects (K&L) to open and close the transformer magnetizing current.*)

Permits isolating breakers for servicing

Permits one power source to supply both loads through tie bus.

Under normal conditions, breakers A, B, C and D are closed, disconnects, E, F, G, H, K and L are locked closed and bus tie disconnect T is locked open. Keys A01 are held in the L-O interlock on breaker C and the L-C interlock on bus tie disconnect T. Keys A02 are held in the L-O interlocks on breaker A and disconnect E. Key A03 is held in the L-O interlock on disconnect F. Key A04 is held in the L-O interlock on breaker C. Keys B01 are held in the L-O interlock on breaker D and the L-C interlock on bus tie disconnect T. Keys B02 are held in the L-O interlocks on breaker B and disconnect G. Key B03 is held in the L-O interlock on disconnect H. Key B04 is held in the L-O interlock on breaker D. Keys T01 are held in the L-O interlocks on disconnects F and H.

METHOD 25 (Cont'd)

To transfer load No 1 from line 1 to line 2 through bus tie disconnect T:

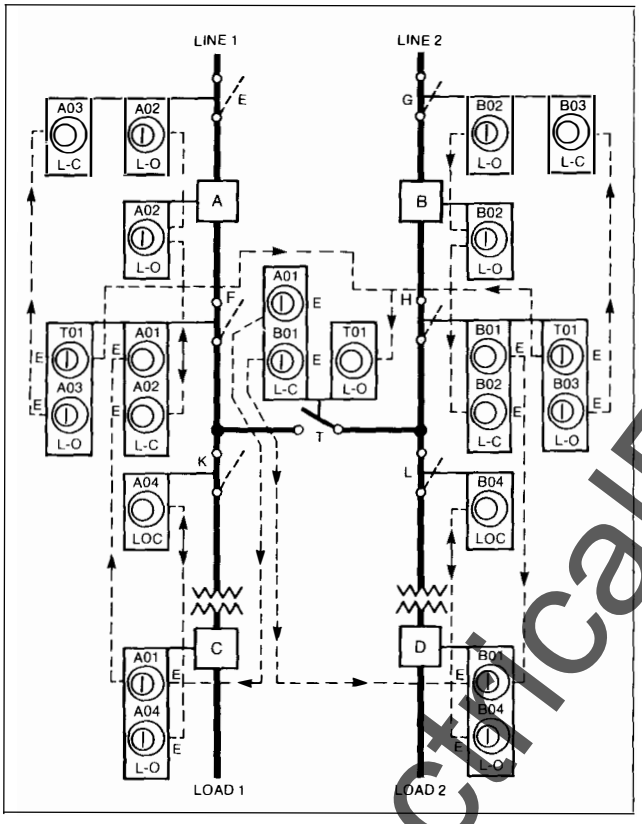
1—Open breaker A.

2—Turn key A02 in the L-O interlock on breaker A to lock the breaker open. Key A02 is now free.

3—Open breaker C.

4—Turn key A04 in the L-O interlock breaker C to lock the breaker open. Keys A01 and A04 are now free.

5—Insert key A02 from the L-O interlock on breaker A and key A01 from the L-O interlock on breaker C, in the L-C interlock on disconnect F and turn to unlock. Keys A01 and A02 are now held.



6—Open disconnect F.

7—Turn key A03 in the L-O interlock on disconnect F to lock open. Keys A03 and T01 are now free.

8—Insert key T01 in the L-O interlock on bus tie disconnect T and turn to unlock. Key T01 is now held.

9—Close bus tie disconnect T.

10—Turn key B01 in the L-C interlock on bus tie disconnect T to lock closed. Keys A01 and B01 are now free.

11—Insert key A01 in the L-O interlock on breaker C and turn to unlock. Keys A01 and A04 are now held.

12—Close breaker C.

Reverse the sequence to restore load No. 1 to line 1.

To transfer load No. 2 from line 2 to line 1, proceed in a similar manner.

To isolate breaker A for servicing:

1—Proceed from normal position with operations as in 1 through 7 above.

2—Insert key A03 in the L-C interlock on disconnect E and turn to unlock. Key A03 is now held.

3—Open disconnect E.

4—Turn key A02 in the L-O interlock on disconnect E to lock open. Key A03 is now free.

5—Return key A02 to breaker A and unlock for operation during servicing.

Reverse the sequence to restore service.

To isolate breaker B for servicing, proceed in a similar manner.

To isolate breaker C for servicing, proceed as follows:

1—Open breaker C.

2—Turn key A04 in the L-O interlock on breaker C to lock breaker open. Keys A01 and A04 are now free.

3—Insert key A04 in the L-O-C interlock on disconnect K and turn to unlock. Key A04 is now held.

4—Open disconnect K.

5—Turn key A04 in the L-O-C interlock on disconnect K to lock disconnect open. Key A04 is now free.

6—Return key A04 to breaker C and unlock for operation during servicing.

Reverse the sequence to restore service.

To isolate breaker D for servicing, proceed in a similar manner.

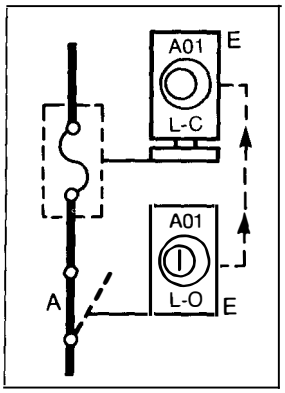
*To prevent primary disconnects (K&L) from opening magnetizing current only, additional interlocks should be provided for disconnects K&L.

KEY INTERLOCK – APPLICATION SCHEMES

METHOD 26.

Function: To prevent opening the fuse compartment door when the interrupter switch A is closed.

To prevent closing the interrupter switch until the fuse compartment door is locked closed.



The fuse compartment door and Interrupter are shown in closed position. Key A01 is held in the interrupter interlock.

1—Open the interrupter.

2—Turn key A01 in the L-O interlock on interrupter switch to lock open. Key A01 is now free.

3—Insert Key A01 in the L-C interlock on fuse compartment door and turn to unlock. Key A01 is now held.

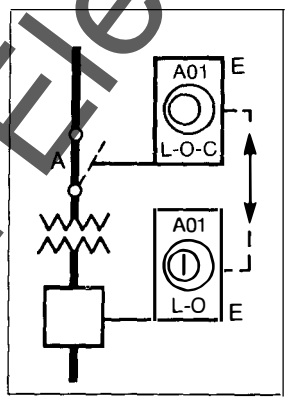
4—Open the fuse compartment door.

Reverse the sequence to restore service.

METHOD 27.

Function: To prevent the operation (open or closed) of interrupter switch A when breaker is closed.

Permits the breaker to be serviced and operated while the interrupter switch is locked open.



The Interrupter and Breaker are shown in closed position. Key A01 is held in the breaker interlock.

1—Open the breaker.

2—Turn key A01 in the L-O interlock on the breaker to lock the breaker open. Key A01 is now free.

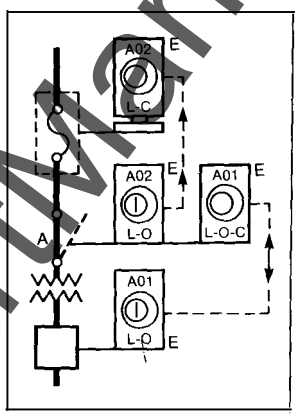
3—Insert key A01 in the L-O-C interlock on the interrupter and turn to unlock. Key A01 is now held.

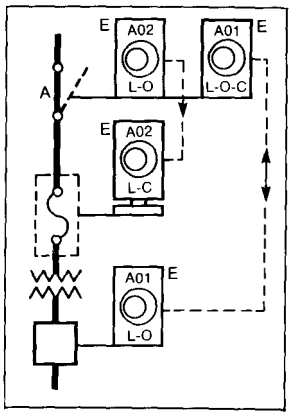
4—Open the interrupter.

5—Turn key A01 in the L-O-C interlock on interrupter to lock open. Key A01 is now free.

6—Return key A01 to the breaker interlock and unlock for the operation of breaker during servicing.

Reverse the sequence to restore service.





METHOD 28.

Function: To prevent the operation (open or closed) of interrupter switch A when the breaker is closed.

To prevent opening the fuse compartment door when the interrupter switch A is closed.

To prevent closing the interrupter switch until the fuse compartment door is locked closed.

Permits the breaker to be serviced and operated while the interrupter is locked open.

The Breaker, Fuse compartment door and Interrupter are shown in closed position. Key A01 is held in the breaker interlock and key A02 is held in the interrupter interlock.

To service the breaker:

1—Open the breaker.

2—Turn key A01 in the L-O interlock on the breaker to open. Key A01 is now free.

3—Insert key A01 in the L-O-C interlock on the interrupter and turn to unlock. Key A01 is now held.

METHOD 28.(Cont'd)

4—Open the interrupter.

5—Turn key A01 in the L-O-C interlock on interrupter to lock it open. Key A01 is now free.

6—Return key A01 to the breaker interlock and unlock for the operation of breaker during servicing.

Reverse this sequence to restore service.

To open the fuse compartment door:

1—Proceed from normal position with operations as in 1 through 4 above.

2—Turn key A02 in the L-O interlock on the interrupter switch to lock it open. Key A02 is now free.

3—Insert key A02 in the L-C interlock on the fuse compartment door and turn to unlock. Key A02 is now held.

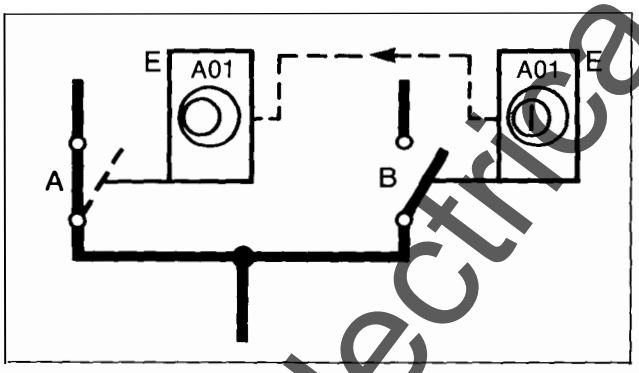
4—Open the fuse compartment door.

Reverse the sequence to restore service.

METHOD 29.

Function: To prevent dropping the load—when shifting from one source to another.

To prevent opening both interrupter switches A and B at the same time—(Permits both interrupter switches to be closed at the same time).



Interrupter A is shown closed and interrupter B is shown open. Key A01 is held in interrupter B interlock.

1—Close interrupter B.

2—Turn key A01 in the L-C interlock on interrupter B to lock closed. Key A01 is now free.

3—Insert key A01 in the L-C interlock on interrupter A and turn to unlock. Key A01 is now held.

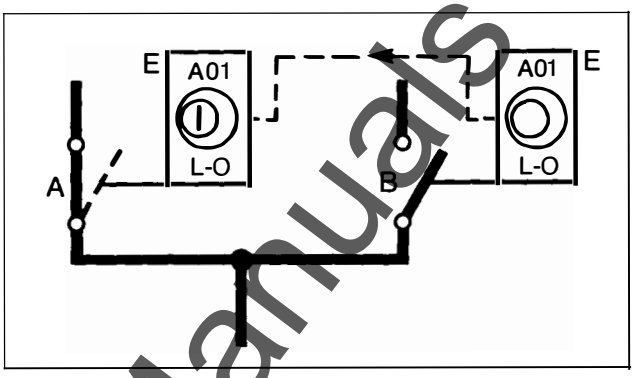
4—Open interrupter A.

Reverse this sequence to restore service through interrupter B.

METHOD 30.

Function: To prevent paralleling lines A and B—requires dropping load when shifting from one source to another.

To prevent closing both interrupter switch A and B at the same time—(Permits both interrupter switches to be opened at the same time).



Interrupter A is shown closed and interrupter B is shown open. Key A01 is held in interrupter A interlock.

1—Open interrupter A.

2—Turn key A01 in the L-O interlock on interrupter A to lock. Key A01 is now free.

3—Insert key A01 in L-O interlock on interrupter B and turn to unlock. Key A01 is now held.

4—Close interrupter B.

Reverse the sequence to restore service through interrupter A.

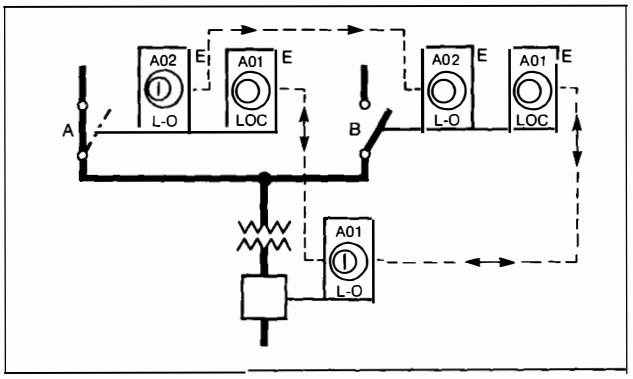
METHOD 31.

Function: To prevent paralleling lines A and B—requires dropping load when shifting from one source to another.

To prevent closing both interrupter switch A and B at the same time—(Permits both interrupter switches to be opened at the same time).

To prevent operation (open or closed) of either interrupter switch when breaker is closed.

Permits the breaker to be serviced and operated while both interrupter switches are locked open.



KEY INTERLOCK – APPLICATION SCHEMES

METHOD 31 (Cont'd)

The Breaker and Interrupter A are shown in closed position. Interrupter B is shown in the open position. Key A01 is held in breaker interlock. Key A02 is held in interrupter A interlock.

To service the breaker:

1---Open the breaker.

2—Turn key A01 in the L-O interlock on breaker to lock breaker open. Key A01 is now free.

3--Insert key A01 in the L-O-C interlock on interrupter A and turn to unlock. Key A01 is now held.

4—Open interrupter A.

5—Turn key A01 in L-O-C interlock on interrupter A to lock open. Key A01 is now free.

6—Return key A01 to breaker interlock and unlock for operation of breaker during servicing.

Reverse the sequence to restore service.

To transfer load from interrupter A to interrupter B.

1—Proceed from normal positions with operations as in 1 through 4 above.

2—Turn key A01 in L-O-C interlock and key A02 in L-O interlock on interrupter A to lock open. Keys A01 and A02 are now free.

3—Insert key A01 in L-O-C interlock and key A02 in L-O interlock on interrupter B and turn to unlock. Keys A01 and A02 are now held.

4—Close interrupter B.

5—Turn key A01 in L-O-C interlock on interrupter B to lock closed. Key A01 is free and key A02 is held.

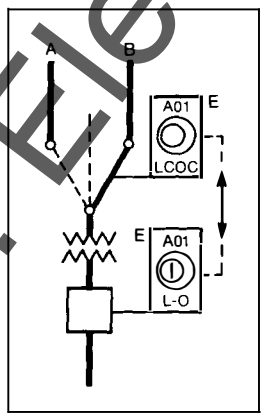
6—Insert key A01 in L-O interlock on breaker and turn to unlock. Key A01 is now held.

7---Close breaker.

Reverse the sequence to restore service through interrupter A.

METHOD 32.

Function: To prevent operation (closed, open or closed) of interrupter switch when breaker is closed.



Permits the breaker to be serviced and operated while the interrupter switch is locked open.

The Breaker and Interrupter are shown in closed position, connected to line B. Key A01 is held in breaker interlock.

To service breaker:

1—Open breaker.

2—Turn key A01 in L-O interlock on breaker to lock breaker open. Key A01 is now free.

3—Insert key A01 in L-C-O-C interlock on interrupter and turn to unlock. Key A01 is now held.

4---Open interrupter.

5—Turn key A01 in L-C-O-C interlock on interrupter lock open. Key A01 is now free.

6—Return key A01 to breaker interlock and unlock for operation of breaker during servicing.

Reverse the sequence to restore service through either line A or line B.

To transfer interrupter from line B to line A:

1—Proceed from normal position with operations as in steps 1, 2 and 3 above.

2—Open interrupter switch from line B and connect to line A.

3—Turn key A01 in L-C-O-C interlock on interrupter to lock closed. Key A01 is now free.

4—Insert key A01 in L-O interlock on breaker and turn to unlock. Key A01 is now held.

5—Close breaker.

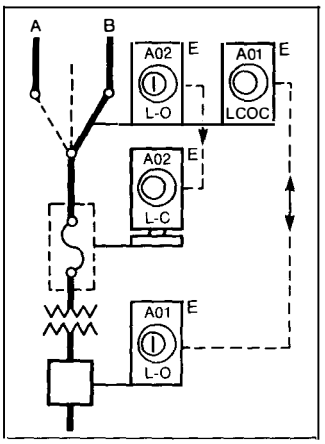
Reverse the sequence to restore service through either line A or line B.

METHOD 33.

Function: To prevent operation (closed, open or closed) of the interrupter switch when breaker is closed.

To prevent opening the fuse compartment door when the interrupter switch A is closed.

To prevent closing the interrupter switch until fuse compartment door is locked closed.



METHOD 33 (Cont'd)

Permits the breaker to be serviced and operated while the interrupter switch is locked open.

The Breaker, Fuse compartment door and Interrupter are shown in closed position, connected to line B. Key A01 is held in breaker interlock and key A02 is held in interrupter interlock.

To service breaker:

1—Open breaker.

2—Turn key A01 in L-O interlock on breaker to lock breaker open. Key A01 is now free.

3—Insert key A01 in L-C-O-C interlock on interrupter and turn to unlock. Key A01 is now held.

4—Open interrupter.

5—Turn key A01 in L-C-O-C interlock on interrupter to open. Key A01 is now free.

6—Return key A01 to breaker interlock and unlock for operation of breaker during servicing.

Reverse the sequence to restore service through either line A or line B.

To open fuse compartment door.

1—Proceed from normal position with operations as in 1 through 4 above.

2—Turn key A02 in L-O interlock on interrupter to lock open. Key A02 is now free.

3—Insert key A02 in L-C interlock on fuse compartment door and turn to unlock. Key A02 is now held.

4—Open fuse compartment door.

Reverse the sequence to restore service.

To transfer interrupter from line B to line A.

1—Proceed from normal position with operations as in steps 1, 2 and 3 above.

2—Open interrupter switch from line B and connect to line A.

3—Turn key A01 in L-C-O-C interlock on interrupter to lock closed. Key A01 is now free.

4—Insert key A01 in L-O interlock on breaker and turn to unlock. Key A01 is now held.

5—Close breaker.

Reverse the sequence to restore service through line B.

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