

JUMPERING

This E.I. details methods of running jumpers on M.D.F's., I.D.F's., T.D.F's. and T.C.F's., the colour codes to be used on 2, 3 and 4 wire jumpers and methods of terminating jumpers.

1. GENERAL.

1.1 Jumpering facilities are provided at M.D.F's., I.D.F's., T.D.F's., T.C.F's. and graded equipment racks. They enable the connections between subscribers' lines and equipment and between the various ranks of equipment to be altered as required.

1.2 Depending on the application, the flexible jumper may consist of one, two, three, four or five insulated wires. The colour code of the insulation is in Section 3.

1.3 The following points must be observed when jumpering:-

Use the correct type of jumper wire having the correct colour code.

Run the wire as directly as possible between the terminating points and pass through the appropriate jumper rings.

The jumper must be firm but not as tight as to chafe the other jumpers.

Leave sufficient slack to allow the jumper to be removed and reterminated twice, i.e., about two inches.

Terminate the jumper as in E.I. INTERNAL PLANT INSTALLATION Wires and Cables T 3010.

Neatly finish off the end of the insulation at each termination.

When all jumpers have been run the job should be neat and tidy.

Solder each termination correctly; See E.I. INTERNAL PLANT INSTALLATION Wires and Cables T 3010.

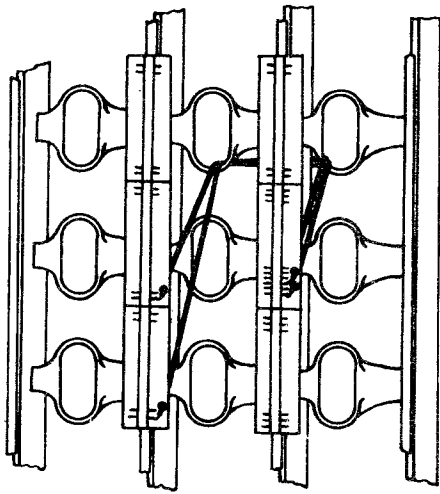
Don't stretch or join jumper wires under any circumstances.

Unravel jumpers so that the twist starts approximately $\frac{1}{4}$ " from the rear of the fanning strip.

Dress all jumpers and pile up neatly adjacent to the rows of tags they serve.

No more than 10 wires (for example, 5 twin jumpers) may pass through any one hole in the fanning strip.

1.4 On single sided T.C.F's. a special method of running jumpers must be used. This is to run the jumper from the highest terminal block through the jumper ring above the one adjacent to that block, horizontally to the jumper ring appropriate to the required vertical end down to the other terminal block. See Fig. 1.



1.5 When jumpering on graded type racks or horizontal T.C.F's., take care to ensure that the number of trunks leaving each terminal block is approximately the same. i.e., the "connecting points" for the common trunks are spread over all the terminal blocks in the grading group. In all other cases the jumpers must be taken from the first or last point at which the trunks appear in the grading.

A mark is made on the grading chart to indicate the point to which the jumper is connected as shown in Fig. 2. Typical jumpering on a graded rack is shown in Fig. 3.

FIG. 1. JUMPERING ON SINGLE SIDED T.C.F's.

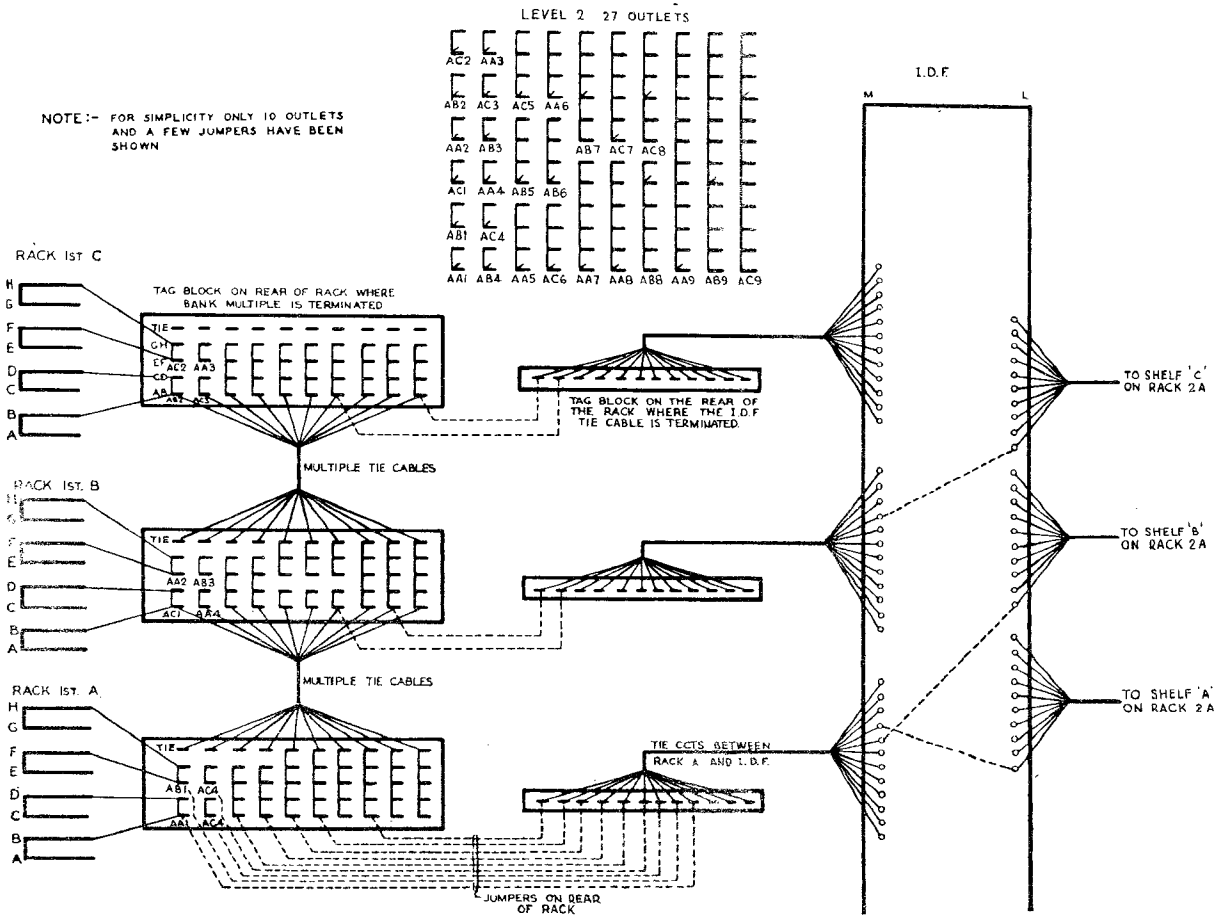


FIG. 2. GRADING USING GRADED SELECTOR RACKS.

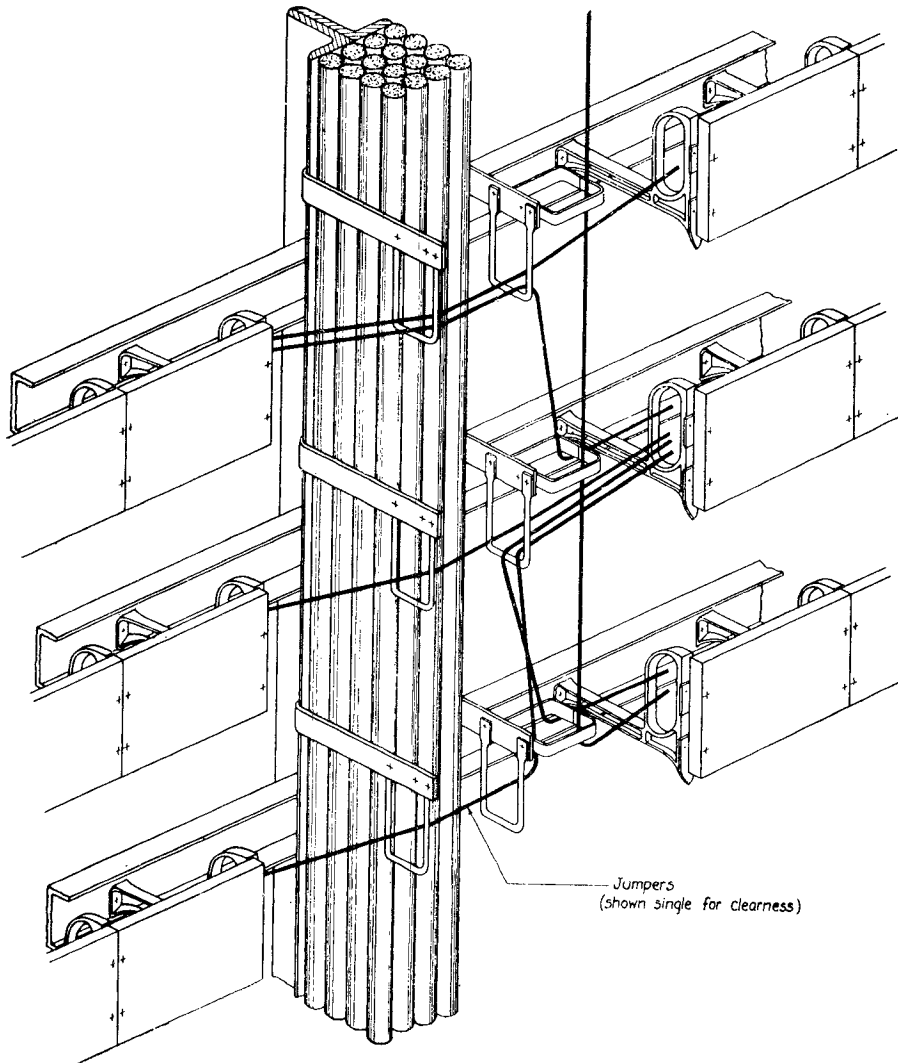


FIG. 3. JUMPERING ON A GRADED RACK.

- 1.6 In most cases the standard types of jumper wire should be used but in certain instances it may be desirable to use switchboard wire for jumpering to conserve space.
- 1.7 Other methods of interconnecting are often used in conjunction with jumpering. Particular examples are the straps on graded 2000 type racks and piano wire assemblies of pre-2000 type racks. In interconnecting using these methods take care to see that the bare wire straps are -

Clean;

run neatly and correctly;

not liable to touch;

terminated correctly;

soldered correctly.

2. ORGANISATION FOR RUNNING JUMPERS.

2.1 The factors which affect the running of jumpers are:-

- (i) the length of run
- (ii) number of jumpers to be run
- (iii) number of wires per circuit.

2.2 Large Numbers of Jumpers. When many jumpers are to be run it is convenient to use 2 or 3 reels of jumper wire with one man solely engaged in pre-stripping the free end of each reel in turn. On a T.C.F. or T.D.F. the jumper is fed through the appropriate hole to a man at the rear of the rack who then runs it to the far end and passes it through to a third man who proceeds to terminate the jumper. Whilst he is terminating this jumper the next one is being run in and the 3rd reel is being stripped. One of the group is required to mark on the running list as each jumper is run. As each jumper is terminated it can be pulled back and cut off in readiness to pre-strip the next jumper from that reel.

On an M.D.F. or I.D.F. a similar system is desirable although it may be necessary to have two men running the jumpers along the horizontal trays. Jumpers on an M.D.F. should be run from the line side and terminated immediately on the equipment side.

2.3 Small Numbers of Jumpers. These will generally be run by two men, one on each side of the frame. Individual cases should be examined on their merits and a decision made as to the number of men to be used for most efficient working.

2.4 In all cases take particular care that records are kept correctly.

3. JUMPER COLOUR CODE.

3.1 Jumper Colour Codes are:-

Twin.

Red - negative

White - positive

Triple.

Red - negative

White - positive

Blue - private

Quad.

Green - meter

Red - negative

White - positive

Blue - private.

END.