LT3

LINE-EARTH

LOOP TESTER

Operating Instructions

TO BE READ BEFORE CONNECTING INSTRUMENT TO CIRCUIT

Model No. LT3 **Catalogue N**

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MEGGER

LINE-EARTH LOOP TESTER

PRINCIPLE OF OPERATION

trument passes a short duration current from the
ductor through the consumer's earth continuity con-
ınd the earth return path to the neutral of the supply
ner (i.e. through the actual earth fault path) and
:s in ohms the value of this loop, to determine
it is low enough to enable adequate current to pass
'ating the protective gear in the event of an earth

REPLACEMENT OF FUSE

'he instrument is protected by a 5 ampere fuse)

:onnect tester from any external circuit.

ı instrument face downwards.

ıove plate by removing 6 BA screw and inserting
e of coin in the slot and lifting.

lace blown fuse. For details of fuse, see below.

lace cover and retaining screw.

SPARE PART NUMBERS

	E & V Part Numbers
amp (5mm. × 20mm.)	25413 - 272
... ...	6320 - 057
ad	6320 - 048
ces test lead	6320 - 049

3-PIN SOCKET TEST

FOR SINGLE PHASE 200-260V A.C. OUTLETS

Making polarity and earth circuit continuity test

1. Fit suitable plug to instrument mains lead observing correct polarity, i.e., brown to line, blue to neutral, green/yellow to earth.

2. Insert connector (at other end of lead) into socket on instrument.

3 Make sure that the link is in position between the red and black sockets on the instrument.

4. Insert the mains plug into the socket under test.

5. Observe L-N and L-E dial lamps. Both should light. The L-E lamp indicates that earth circuit continuity and polarity are correct, while the L-N lamp indicates "set ready".
If the L-E lamp does not light, check polarity and correct if necessary. If there is still no light, there is an open circuit in the earth continuity conductor which should be corrected before proceeding further.

Actual Loop Test

6. Press button and read scale. The pointer will indicate while the button is pressed the reading falling very slowly as the internal capacitors discharge.

7. To repeat the test, release button, wait at least 20 seconds, then press button. This process can be repeated indefinitely.

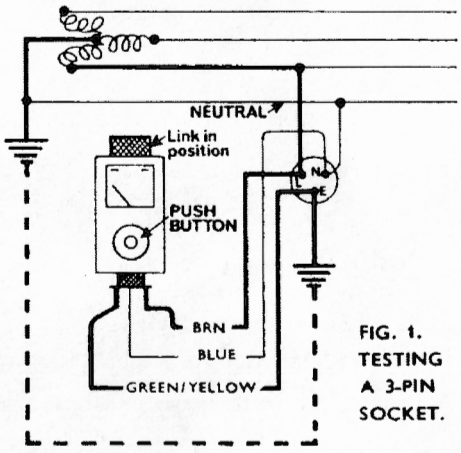


FIG. 1. TESTING A 3-PIN SOCKET.

APPLIANCE EARTH TEST

FOR SINGLE PHASE 200 - 260V CIRCUITS

Portable Appliances

1. Make sure metal work of appliance is not connec any circuit.
2. Carry out tests, page 2, operations 1 to 7, on a outlet to determine the loop resistance (R_L).
3. Remove mains plug from the socket just tested.
4. Remove link between red and black sockets at tester.
5. Take leads supplied with instrument and plug or each socket of tester.
6. Clip one clip to the metal work of the applianc other to the earth wire of the appliance or to th pin of the plug on the lead from the appliance.
7. Insert tester plug into mains supply socket, button and read total loop resistance (R_T).
8. Remove mains plug from supply socket before c necting appliance and leads.
9. Appliance earth resistance $(R_A) = (R_T - R_L)$.

Lighting Fittings

1. Make sure metal work to be tested is not connec live side of circuit.
2. Choose a socket outlet and test as page 2, ope 1 to 7.
3. Before proceeding further disconnect tester fro mains socket just tested.
4. Remove link between red and black sockets at tester.
5. Insert test lead plug in red socket.
6. Connect other end of test lead to metal work tested and re-connect tester to mains socket.
7. Press button and read as before.

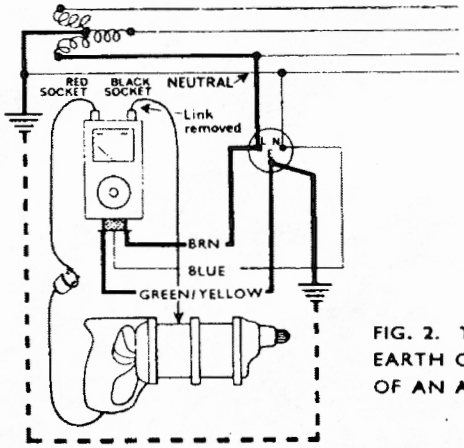


FIG. 2. TESTINC EARTH CONNEC OF AN APPLIAN

'HASE APPARATUS EARTH TEST

NO NEUTRAL AVAILABLE

FOR 348 - 450V CIRCUITS

tions

nder circuit dead by opening main switch.

nnect as Fig. 3, i.e., brown and blue leads to lines ınd 2 respectively. Green/yellow lead to earth con-ɔtion on machine. If it is more convenient the earth ınection on the machine can be connected directly the red socket after removing the link between red d black sockets of tester, see diagram.

)se the main switch but do not close contactor.

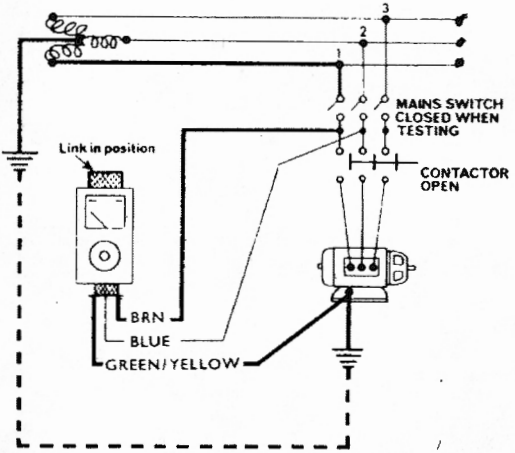
e L - E and L - N lamps should light. If either or both ıps do not light check the circuit and correct any ılts found. Do **not** press tester button before so ing.

Loop Test

th lamps indicating correctly and circuit correctly red: press tester button and read loop resistance.

repeat the test release the button, wait at least seconds, then press the button. This process can repeated indefinitely.

e line conductor checked by the above test is that nnected to the BROWN mains lead of the Loop ster. To check all conductors of a three phase circuit ree tests are required.



IG. 3. TESTING THE EARTHING OF 3-PHASE APPARATUS WHERE NO NEUTRAL IS AVAILABLE.

3-PHASE APPARATUS EARTH TEST

NEUTRAL CONDUCTOR AVAILABLE

FOR 348 - 450V CIRCUITS

Instead of connecting tester between lines use one line at a time and the neutral conductor, thereby performing three " single phase " tests.

Connections

1. Connect green/yellow lead to earth continuity conductor under test, or alternatively remove link and connect clip lead from red socket on tester to earth continuity conductor.
2. Obtain a single phase supply from a power socket lighting point, or distribution box. Connect brown lead to line, blue lead to neutral.

Tests

3 · Carry out the preliminary open circuit and polarity tests and the actual loop test in the manner previously described.

Note : This method has the advantage that the apparatus under test need not be switched off. It is probably the more convenient to use provided the readings obtained are within the prescribed limit for the apparatus under test. If, however, the readings are high, this may be due to the resistance of the comparatively small cross-section line conductor to the lighting point or power socket, etc., together with that of the long lead from the instrument to the earthing point of the apparatus under test.

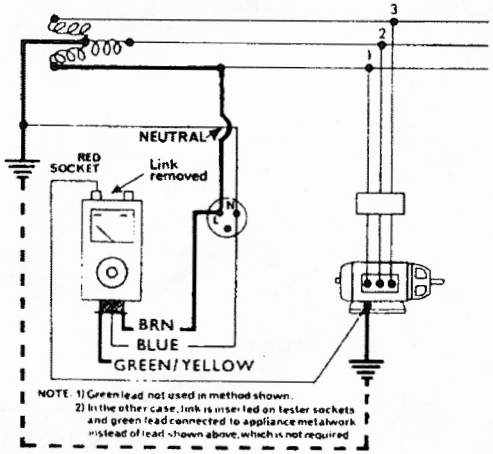


FIG. 4. TESTING THE EARTHING OF 3-PHASE APPARATUS WHEN A NEUTRAL CONDUCTOR IS AVAILABLE.