

The following are the instructions for use inserted in the lid of the Megger:-

INSTRUCTIONS.

POSITION---Stand the Megger on a firm and fairly level base and hold it firmly. Turn the winch handle smoothly and steadily in a clockwise or right handed direction. The Generator when running at 100 revolutions of the handle per minute applies the rated voltage to the insulation under test.

TO TEST INSULATION between a circuit and earth, connect the LINE terminal to the circuit, and the EARTH terminal to a good earth. For insulation between two wires, connect one wire to each terminal.

PRECAUTION.---'The Megger is accurately astatic, and stray magnetic fields no matter how strong, do not cause errors in the scale reading. But a powerful magnetic field may partially demagnetise the generator field magnets and cause the machine to give less than its rated voltage. To guard against this, do not use or carry the Megger within three feet of any pole piece or field coil of a dynamo at work.

The Electrical Review December 9th 1904

THE "MEGGER"

We recently inspected Evershed's Patent Megger, the new self contained ohmmeter and Generator for testing insulation resistance which has been put on the market this month by Messrs, Evershed and Vignoles, Lt.d., of Acton. Lane Works, Chiswick. This instrument, which has been in the course at evolution for the last four years, is a natural development from the well known testing set of world-wide reputation, and must be admitted to be a credit to it's parentage, for it is the most ingenious and perfect practical testing instrument that we have seen.

The apparatus is entirely contained in one box; the hand dynamo, which is very easy-running, gives pressures up to 1,000 volts, and the ohmmeter reads up to no less than 2,000 megohms.

The scale is direct reading and approximately logarithmic having , nearly uniform accuracy over a very wide range, so that it has been possible to dispense with the use of shunts and the second scale for low resistances; the dial is covered with a hinged lid, inside which are the printed directions for use. The movement is perfectly dead-beat and astatic, so that the reading is obtained directly the handle at the generator is turned at full speed-that is, in a few seconds at most and is unaffected by stray fields.

There are only two terminals, respectively marked LINE and EARTH, and the former is provided with a guard ring so that internal leakage is entirely harmless, the instrument does not need levelling, except in the highest ranges. A leather handle is provided for carrying the instrument, which weighs in all 18 lbs; the handle is detachable by means of a novel patent latch at "one end, to expose the dial. The generator handle folds back when not In use, 'the dimensions of the box are 6 1/4 X 6 1/4 X 12 in.

The dynamo is of the same type as of old, and is noteworthy for its tiny roller bearings and the ingenious mode of current collection, the commutator taking the shape of divided disks, running contact with pivoted spring disks, with the minimum of friction and the maximum of reliability and durability, The EMF, in the high-range , instruments has to be exceedingly uniform, on account of the presence of capacity in the cables tested; although fluctuations of voltage have no effect on pure resistance tests, the surging set up thereby when capacity is present would vitiate the readings, and to avoid this defect the generator in this case has eight coils, and is provided with an absurdly simple constant speed device, consisting of a centrifugally operated clutch. So effectual is this, that we can vouch for the fact that, after the normal speed of rotation of the handle is attained the voltage remains constant, no matter how much faster the handle is turned. This is a most striking and unexpected feature of the apparatus, and renders it applicable to the testing of cables of large capacity. The high range instruments are also provided with a terminal, to which the guard wire, essential to accuracy in cable testing, can be attached, this is, we believe, the only self contained instrument in existence which enables one to test the insulation resistance of a few hundred yards of cable at pressures up to 1,000 volts.

So far we have not referred to the fundamental novelty in the construction of the ohmmeter namely, the fact that the movement is of the moving coil type, To this must be ascribed the enormous increase in the sensibility and aperiodicity at the instrument.

The permanent magnet system is common to both the generator and the ohmmeter. The movement consists a current coil, passing twice through the field in the annular space between the pole-pieces and the cylindrical core, and a pressure coil, of which one leg is axial with regard to the movement, and the other leg moves in the field, To the latter is attached a little compensating coil in series with the pressure coil, which ensures immunity from interference due to stray fields. The coils are wound on copper formers, which give the dead beat quality, and carried on steel pivots with strong spherical ends working in sapphire hearings, Thanks to the vibration due to the gearing of the generator, frictional errors are entirely eliminated, whilst the pivots are so strong that there is absolutely no risk of breaking them, The currents are led into the movement by means of patent phosphor-bronze strips a fraction of a mil in thickness, which exercise a control less than 1/400 of that of the pressure coil, and are so guided by means of light bobbins that they cannot become entangled or displaced, the movement is balanced, and it is only in the instruments of the highest range that levelling screw have to be provided.

The internal mechanism requires no attention, so the cover of the box is sealed dust-tight (with a dust-proof washer on the spindle which carries the handle) and is screwed down.

We may note that the principle of the ohmmeter is identical with that of the older types; the only essential difference is that it has been turned inside out---the magnetic needle, so to speak, is fixed and the coils are free to move. But this change has resulted in an immense improvement. The foregoing is but a brief description, but may serve to indicate the remarkable progress that has been made by Messrs Evershed & Vignoles who have not been content "to let well alone," but have laboured incessantly to surpass their own high standard of excellence.