



MARTINDALE GROWLERS U-2, B-1, B-1-M, F, AND I-X INSTRUCTIONS

GENERAL

All Martindale Growlers are for use on AC only, either 115 or 230 volt, 50/60 cycles. (See nameplate for voltage).

B-1 is a bench type Growler, with adjustable jaws, for testing armatures. The jaws are tight, to prevent spreading under the weight of a heavy armature, and to prevent magnetic attraction from pulling them together when no armature is in the slot.

B-1-M is similar to B-1, but is equipped with a meter and with prods for determining opens and grounds.

U-2 may be used as a bench type, or as a hand tester for large armatures, and on all stators from 5-3/4" I.D. up. It has adjustable jaws similar to those in B-1.

F is a hand tester, smaller than the U-2, with a built-in feeler, for use on armatures or stators.

I-X is the same as type f, but with an adjustable feeler.

M-1 Meter Unit can be used with any Growler, and measures the current input to the Growler. Prods are used for detecting opens and grounds.

FOOT-SWITCH shown in the Martindale Catalog is used for turning the Growler current on and off while a large armature is being rotated in one of the bench-type Growlers. Armatures turn easier with the current off and the FOOT-SWITCH leaves both hands free.

CAUTION: DO NOT LEAVE GROWLER ON without an armature in the jaws, as the current draw is greater and will cause overheating.

Short Circuit Test (Without Meter):

On large armatures and stators shorted turns in a coil are sometimes detected by a change in tone of the Growler hum (hence its name). A more sensitive way of detecting shorted turns is to use a thin soft-iron feeler, or a hack saw blade. The feeler is held along the slot which contains the other side of the coil spanned by the Growler. If there is a short the feeler will stick and vibrate. The action is quite positive.

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Built-in feelers on the F and I-X models work on the same side of the coil spanned by the Growler, making it a quicker, one hand operation, especially in small stators, but not so sensitive as a separate feeler. A separate feeler can be used with these models and is recommended where possible.

Short Circuit Test (With Meter):

Any one of the Growlers can be plugged into the M-1 Meter Unit. The meter measures the current drawn by the Growler. Adjust the knob of the M-1 Meter Unit so that the pointer reads about 3/4 of full scale. With the B-1-M, spread the jaws with an armature in place until the meter reads about mid-scale. A slight increase will show as each slot passes the magnetic field of the Growler. A variation in the uniform pattern indicates a coil with shorted turns. The shorted section will warm noticeably in a few moments if left in the Growler. Results can also be checked with a feeler as mentioned above.

Open Circuit Test:

Open coils in an armature can be detected by shorting adjacent commutator bars of the coils spanned by the Growler. In a stator, adjacent lead wires are shorted. A good coil will produce sparks; an open coil will not.

Prods on the B-1-M Growler, and the M-1 Meter Unit, are used to check from bar-to-bar for opens. A light in one of the prods will indicate when the circuit is complete. Use the prods on adjacent bars, and test completely around the commutator, or field coil leads.

Ground Test:

All armatures and stators should be tested for shorts to ground. With the B-1-M Growler, or M-1 Meter Unit, touch one prod to the commutator, and the other prod to the shaft. This can also be done at a higher voltage, such as one of the Martindale Hypot Insulation Tester provides. The Martindale Megohm Tester and Voltmeter or Martindale V.A.O. Tester are also excellent for ground tests. See the latest Martindale Catalog for details.