

Martindale Growlers

General Information

When an alternating current is passed through a Growler, it sets up a magnetic flux in the iron of the armature or stator spanned by the jaws of the Growler.

As this flux passes through any coil, it induces a potential. A current will flow if the coil is short-circuited. When current flows, it sets up a magnetic field around the shorted coil which can be detected with an iron feeler. (The increased load on the Growler sometimes changes the tone of the hum; hence the name "Growler".) In many cases a meter can be used to measure a change in magnetic flux (Type B-1-M), or to measure the increased current requirements of the Growler (M-1 Meter-Unit). Open coils can also be found; see discussion below.

Both B-1 and B-1-M have Adjustable Jaws with Face Length 2-1/2".



**At Left:
Type B-1 Adjustable
Bench Growler**



**At Right:
Type B-1-M Adjustable Bench
Growler with meter and conti-
nuity test.**

Type B-1 has adjustable jaws 2-1/2" long. Armature capacity: 1" to 18" diameter. There are no obstructions at the ends of the jaws, thus allowing small armatures with fans, bearings, etc., to fit properly.

Type B-1-M is the same size as B-1, and has in addition a meter and continuity test prods. The meter is connected to a secondary winding on the Growler and shows changes in magnetic flux as shorts are encountered. The test prods are used to detect grounds. A light in one prod glows when a circuit is complete. The test current is 1 milliampere at 115 volts — shock-proof, and safer than required. Both prods are protected from ground.



**Type U-2 Universal Adjustable Growler
may be used as both an external
Growler for armatures and an Internal
Growler for stators.**

Adjustable Jaws. Face Length 4".

Type U-2 Growler has adjustable jaws 4" long, and may be used on armatures over 1", and on stators over 5-3/4" inside diameter. The U-2 can be used with the M-1 Meter Unit.

M-1 Meter Unit is designed for use with the U-2 Growler. The meter shows variations in the line current drawn by the Growler when a short is encountered. The adjusting knob sets the meter pointer to mid-scale on a good coil. The test prods are used for detecting grounds, as on the B-1-M.

No. M-1 Meter Unit



Foot-Switch

A Foot-Switch with an 8 ft. line cord, and a female connection is available for use with any of the Growlers. Large armatures cannot be easily rotated without shutting off the Growler current. This is conveniently done with the Foot-Switch, while the hands are left free to turn the armature.



Type F and I-X Growler

**Type F and Type I-X
both have built-in
feeler. Type F has
fixed position feeler,
Type I-X feeler is
adjustable.**

Types F and I-X are similar in appearance, with built-in feeler as pictured, except the feeler on Model I-X is adjustable, which gives it a wider range of applications. Both have fixed jaws 2" long, and a thumb-switch.

Both can be used in stators as small as 2-3/8" inside diameter, and on armatures from 2-1/2" diameter up. The built-in feeler makes testing a one-hand operation, and is especially desirable in small stators where there isn't room for a separate feeler. The adjustable feeler on the I-X is more satisfactory where a variety of large and small armatures and stators are involved.

How Growlers Are Used

The most common way of using a Growler is the "feeler method" in which the Growler spans a slot containing a coil, and a "feeler" of iron, such as a hack-saw blade is held about 1/4" above the slot containing the other side of the same coil.



If the coil is shorted the feeler will be pulled down to the slot and will stick and vibrate. The action is very positive and is recognized instantly.

The feeler can also be used on the same side of the coil that is spanned by the Growler, either a separate feeler or the convenient built-in feeler of Types F and I-X.

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Open Circuits

Open circuits can be detected by shorting adjacent commutator bars with a screw driver, or any other piece of metal. Good coils will spark as the bars are shorted. No sparks indicate the coil is open. Test field coils by shorting lead wires. Another way is to use a continuity tester — such as the one on the M-1 Meter Unit and B-1-M Growler, or others shown in this catalog.

Grounds can also be detected with a continuity tester.

Specifications

| Type | Length Face | Range for Armatures, Diameter | Range for Stators, Diameter | Weight — Lbs. Net Ship | | Catalog Number | |
|----------------|-------------|-------------------------------|-----------------------------|---------------------------|--------|---------------------|---------------------|
| | | | | | | 115 V. 50/60 Hz. | 230 V. 50/60 Hz. |
| U-2 | 4" | 1" & up | 5-3/4" & up | 18-3/4 | 20 | GRLRU2A | GRLRU2B |
| B-1 | 2-1/2" | 1" - 18" | — | 11-1/4 | 12-1/2 | GRLRB1A | GRLRB1B |
| B-1-M | 2-1/2" | 1" - 18" | — | 12 | 15 | GRLRB1MA | GRLRB1MB |
| F | 2" | 2-1/2"-12" | 2-3/8"-12" | 3-1/2 | 5-1/2 | GRLRFA | GRLRFB |
| I-X | 2" | 2-1/2"-12" | 2-3/8"-12" | 3-1/2 | 5-1/2 | GRLRIXA | GRLRIXB |
| M-1 Meter Unit | — | — | — | 4-3/4 | 6-3/4 | GRLR23A | GRLR23B |
| Foot Switch | — | — | — | 2-1/2 | 3-1/2 | JGRLFSA | GRLR19 |