

Micro-Metrics Co. MG402 Microgroover



The Microgroover is a major accessory tool for creating coating incisions for film thickness measurements with the Tooke Inspection Gauge. This tool greatly extends the range of the measuring technique to include almost any coating on any substrate. The Microgroover is especially effective on hard and brittle (concrete) materials, as well as soft or elastomeric (rubber) substances. In addition, fibrous composites are incised easily and cleanly. Aside from film thickness measurements, small-scale operations of cutting, grinding, sawing, and polishing can be performed with this useful cordless power tool.

Description

Principle: The Microgroover is a high-speed rotary tool for creating the small, almost microscopic, incisions required for measurements with the Tooke Paint Inspection Gauge. This technique completely eliminates the deformations of coating and substrate, which may occur when conventional gauge cutting tips are used.

The high-speed cutter, usually with either tungsten carbide or diamond-studded surfaces, “erodes” away surface material in a precise pattern, leaving adjacent and underlying areas totally undisturbed. Hard, brittle, tough, fibrous, tender, or elastomeric materials exhibit clean, non-tearing, controlled disintegration under the rotary cutter.

Grinder Construction: The Grinder unit is the Dremel Minimite[®] Model 750 Cordless Rotary Tool. It comes in a flexible carrycase that can be attached to the Paint Inspection Gauge carry case. It is furnished complete with charger, and with special accessories for grooving operations. The Grinder is powered by rechargeable Ni-Cad batteries in a removable battery pack. A full charge should suffice for 100 or more measurements. The charger will completely recharge in three hours. The Microgroover adaptation utilizes drill-like grinder tips for groove cutting operations (cylindrical face cutting). The mode of incision is explained below.



Holding Microgroover for grooving.

Grooving

For precise and rapid measurements, a “drum mode” of cutting was developed. In this mode the grinder is fitted with the No. 9902 tungsten carbide cutter (or equivalent) installed in precise position. With the round rim of the Microgroover in continuous contact with the work surface, the unit is pivoted until the tip contacts the surface. A light touch with the rotating tip creates the required incision.

The cutting angles (slopes) of 1×, 2× and 4× are accomplished by using the Positioning Block to elevate the contact shoulder of the Microgroover as required. The required shoulder elevations are as follows:

- 1×0.97" (block resting on narrow face)
- 2×0.41" (block resting on wide face)
- 2×0.41" (block resting on wide face)

Specifications

Grinder Unit: Dremel 750 MiniMite® Cordless Tool

Motor: 4.8 volt DC; 5/10 thousand-RPM

Carrycase: Flexible plastic, 2"x2"x8"

Battery Pack: Plugs into bottom of grinder or charger

Charger: Plugs into 110 volt AC outlet

Accessories: Bits and Positioning Block

Shipping Weight: 2 pounds



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