INTERNAL

SUPERMICROMETER

Pratt & Whitney
Measurement Systems, Inc.

INTERNAL SUPERMICROMETER

THE STANDARD OF ACCURACY

Fast, direct measurement

In today's field of metrology, the Pratt & Whitney* Internal Supermicrometer** is a unique measuring instrument that provides a universal means of direct internal diametrical measurement. It can determine and display internal dimensions without the need for individual reference masters for each new dimension being assured and verified.

Dual capability allows you to use the Internal Supermike as a highly accurate comparator as well. This versatile instrument features an inch/metric (switchable) microprocessor-based digital display for fast part measurements in the format you need, and standard RS232C output to interface with the latest state-of-the-art peripherals.

The Internal Supermike, certified traceable to the National Bureau of Standards, continues the "Standard of Accuracy" set by Francis Pratt & Amos Whitney over 125 years ago to give you the best built metrology instruments for quality control and long-life reliability.

Simple and easy to use

Anyone can use the Internal Supermike. Mastering is easily accomplished using a master ring gage or gage blocks and caliper jaws. First, set the desired measuring pressure (as illustrated below) and elevate the gaging fingers to the required distance above the table surface. Place the master at its approximate center position around the retracted fingers. Now rotate the digital inch module until the gaging fingers contact the master. Locate the maximum diameter with the Y-axis table adjustment as determined by the analog meter. Rotate the digital inch module clockwise until the analog meter is precisely at zero. Then preset the certified value of the master on the microprocessor-based digital display.

Once mastered, measure parts in the same manner by zeroing on the analog meter and reading the value on the display. You no longer need stacks of questionable masters and intricate setups that cause unreasonable inspection time. With *system* accuracy to 30 millionths and repeatability to 10 millionths, the Internal Supermike increases productivity with guaranteed accuracy and continuous high performance.

Gage management

Pratt & Whitney's Gage Management Software Program puts the history of all gage functions at your fingertips making QA management easier than it's ever been before. It includes a full range of options for gage measurement, operation sequencing, automatic comparison with standards and tolerance specifications, storage and retrieval of measurements. It is also capable of printing calibration tables and certification, gage recall and recalibration scheduling, calibration histories and gage management reports.

Gage management center

Now you can create a complete quality control center to accurately measure and record all your internal and external measurement needs with Pratt & Whitney's companion External Supermicrometer. With these two instruments, computer interface and printer you have a total measurement center right in your own plant for fast QA inspection of all your part requirements.

Guaranteed service

Pratt & Whitney offers a full one-year warranty and a network of nationwide service personnel who receive up-to-the-minute factory training to provide you with fast, experienced product support. We've built the Internal Supermike to exacting standards of accuracy to guarantee you years of high productivity, reliability and product integrity. Our reputation as well as yours depends on it.

Setting measuring pressure

Positioning a ring gage

Zeroing the analog meter & printing the measurement

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** Internal Supermicrometer is a trademark of Pratt & Whitney Measurement Systems, Inc.

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Rugged Cast Iron Base
A heavily ribbed and seasoned base is offered to provide mechanical stability and maintain the critical relationship between the measuring head and the reference finger. Supported by four leveling screws this instrument is easily and safely positioned.

Floating Table
With the lock disengaged, the floating table feature facilitates the centering of the ring gage. The larger, Y-axis adjustment knob permits "in-out" adjustment of the table to assist locating the part at its maximum diametral reading.

Finger Elevating Mechanism
With the convenient handwheel, the elevating mechanism is easily operated to provide vertical adjustment of up to 2 in./50 mm. The displacement mechanism includes a dial indicator with .001 resolution referenced to the table surface to establish measuring depth of the reading being taken.

Adjustable Pressure Tailstock
Our exclusive Electrolimit Tailstock offers adjustable pressure from 4-16 oz./1.11-4.45 N. The unique mounting of the gaging reference finger provides a friction-free system for smooth, guaranteed repeatability. The Electrolimit LVDT transducer provides high reliability and optimum performance.

Diamond-Tipped Gaging Fingers
Precision manufactured to extremely close tolerances to guarantee linearity of the system. Diamond contacts assure maximum wear life. Various sizes are available.

Direct Reading, Microprocessor-Based Digital Display
Easy-to-read digital display provides *direct* reading in inch or metric units. The membrane keyboard includes preset capability, print command and RS232C communication link with programmable output characteristics.

Calibrated Analog Meter
Establishes the reference zero for taking direct measurements from the microprocessor-based digital display. The meter also has an inch/metric calibrated scale for use in determining size deviation from a setting master.

Digital Inch Module
Divides the inch into .000010 in./0.0003 mm increments for high resolution. Specially manufactured on precision equipment, the lead screw moves the spindle longitudinally to the measuring position.

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SPECIFICATIONS

Measuring Range	.250 - 10 in.	6.35 - 254 mm*
Direct Setting Digital Module Range	0 - 1.00000 in.	0 - 25.4 mm
Floating Worktable Table Float Range In and out adjustment to locate maximum ID	19 in. x 12 in. 0.5 in. ±.250 in.	48 x 30 cm 12 mm ±6 mm
Finger Elevation Range	0 - 2.000 in.	0 - 50.8 mm
Adjustable Gaging Pressure	4 - 16 oz.	1.11 - 4.45 N
Dimensions	27 x 18.5 x 20 in.	69 x 47 x 51 cm
Height to Floating Worktable	18.5 in.	470 mm
Readouts		
Zero Center Meter Direct Reading	1 minor division = 0.00001 in. (0.0004 in. Full Scale)	1 minor division = .0002 mm (.010 mm Full Scale)
Comparator Reading	1 minor division = 0.000005 in. (±0.0001 in. scale calibration)	1 minor division = .0001 mm (±.002 mm scale calibration)
Digital Readout (with removable pedestal mounting)	Inch/Metric (switchable) floating zero, preset capability - 7 digits, RS 232 output connector	
Finger Elevation Readout	0.001 in.	Division on mechanical dial indicator
Standard gaging fingers		
Set No. 1 (B303359) ID Range Measuring Depth	.250 - 1 in. 0.5 in.	6.35 - 25.4 mm 12.7 mm
Set No. 2 (B303360) ID Range Measuring Depth	1 - 10 in. 1.0 in.	25.4 - 254 mm 25.4 mm
Set No. 3 (B303361) ID Range Measuring Depth	1.5 - 10 in. 2 in.	38.1 mm - 254 mm 50.8 mm

*Special fingers are available to cover the range from 0.040 - 14 in. (1 - 355 mm). Priced on application.
Inch readout: Least Significant Digit = 0.000010 in.
Metric readout: Least Significant Digit = .XXXmm
NOTE: Metric LSD rounds off to nearest 0.000010 in.
Specifications, prices and equipment are subject to change without notice.

WARRANTY POLICY

Any part which, under normal operating conditions in the plant of the original purchaser, proves defective in material or workmanship within 1 year from the date of shipment as determined by Pratt & Whitney's inspection, will be repaired free of charge, f.o.b. factory Bloomfield, Connecticut, provided that the product has been properly installed, maintained and operated witin the limits of rated and normal usage.

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