

Left: No. 123-6 Series 6" Inch Reading Master Vernier Caliper.
Right: No. 123EM-6 Millimeter Reading Master Vernier Caliper.

Master Vernier Calipers

No. 123 Series 0-72"

No. 123M Series 0-600mm

No. 123EM Series
0-24" / 0-600mm

This vernier caliper is the ultimate example of slide caliper design. It is more accurate, has the easiest reading vernier style, is stronger and is offered in much longer lengths than other slide calipers.

Readability Features

- ◆ Long 50-division vernier scales, made popular by Starrett. This feature permits just half as many bar graduations as conventional single-vernier tools. These widely-spaced graduations make possible easy reading to .001" or 0.02mm without requiring a magnifying glass
- ◆ Flush fitting of the vernier scales to the main scale means that these are in the same plane, which eliminates parallax. Vernier scales are adjustable
- ◆ The open-face design of the slide allows both the inside and outside vernier scale on the same side, thus allowing both verniers to be read without turning the tool over
- ◆ Black lines and figures against the Starrett satin chrome finish make reading a pleasure, not an effort
- ◆ Screw-type adjusting nut allows for fine measuring adjustments
- ◆ Lock nut to hold measurements

Long-Life and Accuracy Features

- ◆ These tools are made of the finest tool steel. This makes the jaws harder and longer-wearing than stainless tools. All tools through 24" (600mm) also have hardened and stabilized bars
- ◆ Measuring surfaces are hardened, ground and lapped to close limits
- ◆ All graduations are machine divided for accuracy, not photo-engraved. They are also deeper and sharper
- ◆ The combination straight and angular ways on the master bar allow for positive alignment of graduations and easy adjustment of the flush-fitting verniers
- ◆ Sizes through 24" have divider points on the back side to accurately set dividers and trammels as needed
- ◆ Tools with inch and millimeter graduations on the same bar have outside readings only. (Inside readings must be compensated for by adding the nib width to the indicated reading.)
- ◆ The longer length of the adjusting jaw slide provides a longer bearing surface on the master bar, ensuring squareness with the solid jaw and extra resistance to springing
- ◆ Tight, smoothly fitted slides for maximum accuracy and easy adjustment
- ◆ Made to rigid Starrett standards



No. 123 Series Specifications

Inch Reading / Graduation – .001"

Range	Bar Width	Approx. Jaw Depth	Max. Nib Width Closed	Description	Catalog No.	EDP No.
0-6"	11/16"	1-9/16"	.250"	Caliper in Finished Wood Case Caliper, SLC*, in Finished Wood Case	123Z-6 123Z-6 W/SLC	50524 66925
				Caliper without Case Caliper, SLC*, without Case	123-6 123-6 W/SLC	50525 66926
0-12"	15/16"	2-5/16"	.300"	Caliper In Finished Wood Case Caliper, SLC*, in Finished Wood Case	123Z-12 123Z-12 W/SLC	50526 66927
				Caliper without Case Caliper, SLC*, without Case	123-12 123-12 W/SLC	50527 66928
0-24"	15/16"	2-5/16"	.300"	Caliper in Finished Wood Case	123Z-24	50528
0-36"	1-3/8"	3"	.500"	Caliper in Finished Wood Case	123Z-36	50530
0-48"	1-3/8"	3"	.500"	Caliper in Finished Wood Case	123Z-48	50532
0-60"	2-1/2"	4-1/2"	.750"	Caliper in Finished Wood Case	123Z-60	64383
	1-3/8"	3"	.500"	Lightweight Caliper in Finished Wood Case	‡ L123Z-60	63189
0-72"	2-1/2"	4-1/2"	.750"	Caliper in Finished Wood Case	123Z-72	64374
	1-3/8"	3"	.500"	Lightweight Caliper in Finished Wood Case	‡ L123Z-72	63190

Millimeter Reading / Graduation – 0.02mm

0-150mm	17.46mm	40mm	6.4mm	Caliper Without Case	123M-150	56099
0-300mm	23.81mm	58mm	7.6mm	Caliper in Finished Wood Case	123MZ-300	56102
				Caliper without Case	123M-300	56101
0-600mm	23.81mm	58mm	7.6mm	Caliper in Finished Wood Case	123MZ-600	56104

Inch and Millimeter Reading / Graduation – .001" and 0.02mm

0-6" (150mm)	11/16" (17.46mm)	1-9/16" (40mm)	.250" (6.35mm)	Caliper in Finished Wood Case	123EMZ-6	50534
				Caliper without Case	123EM-6	50535
0-12" (300mm)	15/16" (23.81mm)	2-5/16" (58mm)	.300" (7.62mm)	Caliper in Finished Wood Case	123EMZ-12	50536
				Caliper without Case	123EM-12	50537
0-24" (600mm)	15/16" (23.81mm)	2-5/16" (58mm)	.300" (7.62mm)	Caliper in Finished Wood Case	123EMZ-24	50538

NOTE: For inside measurements, the thickness of the nibs must be added to the caliper reading as follows:

Catalog No.	Range	Add Nib Thickness Below to Caliper Reading
No. 123 E & M	0-6" or 150mm	.250" (Inch) or 6.35mm (Metric)
No. 123 E & M	0-12" or 300mm	.300" (Inch) or 7.62mm (Metric)
No. 123 E & M	0-24" or 600mm	.300" (Inch) or 7.62mm (Metric)

NOTES: * Includes redemption card for Standard Letter of Certification (SLC).

‡ Lightweight versions weigh approximately 10 lbs. for the 60" model and 12 lbs. for the 72" model. Regular 60" model weighs approximately 32 lbs. and the regular 72" weighs approximately 36 lbs.

Other sizes available on special order – priced on application. Special jaws priced on application.

HARDENED BARS on 6", 12" and 24" models: these models are also furnished with center points for dividers.

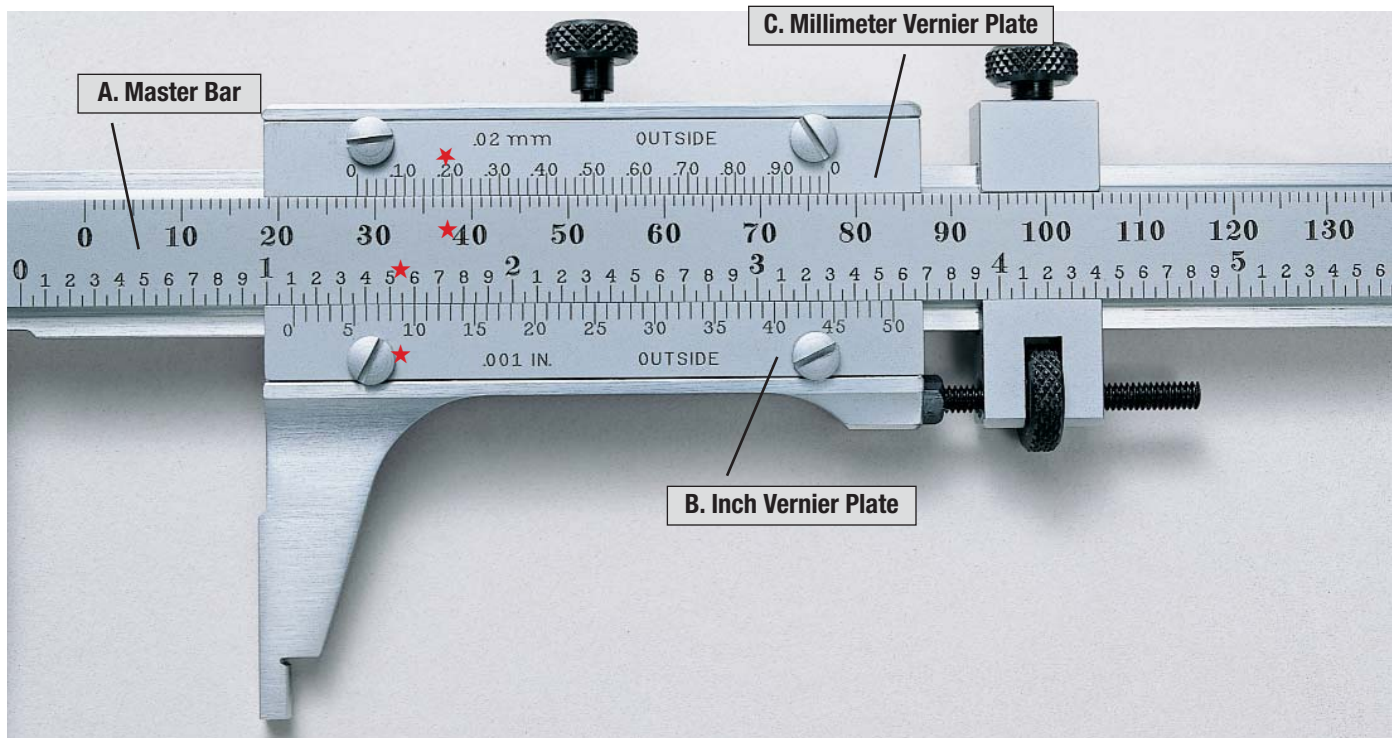
Packed one in a box.

Center Distance Attachment

PT26151 / EDP 64440

A set of two jaws with body sizes of .400" and conical points, enabling the user to measure the center distance between holes or center-punched locations that are at least .400" apart and less than .400" in diameter.

- ◆ Can be used with metric calipers by setting the caliper to 10.16mm
- ◆ Will fit Starrett Nos. 797 and 120, 6" through 12", No. 123, 6" through 24", and No. 1202, 4" through 12" sizes



How to Read a Starrett 50-Division Vernier Caliper Gage Graduated in Inches and Millimeters (Direct Reading)

Inch Reading

- ◆ Refer to the lower bar graduations and the inch vernier plate. Inches are numbered in sequence over the full range of the bar. Every second graduation between the inch lines is numbered and equals $.100''$. Each bar graduation is $.050''$
- ◆ The vernier plate is divided into 50 parts, each representing $.001''$. Every fifth line is numbered – 5, 10, 15, 20 ... 45, 50 – for easy counting
- ◆ To read the gage, first count how many inches and how many $.050''$ lines lie between the zero line on the bar and the zero line on the vernier plate and add them
- ◆ Then count the number of graduations on the vernier plate from its zero line to the line that coincides with a line on the bar. Multiply the number of vernier plate graduations you counted by $.001''$ and add this figure to the number of inches and $.050''$ lines you counted on the bar. This is your total reading

Example

- ★ In the photo, the vernier plate zero line is one inch ($1.000''$) plus $.100''$ beyond the zero line on the bar, or $1.100''$. The 9th graduation on the vernier plate coincides with a line on the bar (as indicated by stars). $9 \times .001$ ($.009''$) is therefore added to the $1.100''$ bar reading, and the total reading is $1.109''$

Millimeter Reading

- ◆ Refer to the upper bar graduations and millimeter vernier plate. Each bar graduation is 1.00mm . Every tenth graduation is numbered in sequence – 10mm, 20mm, 30mm, 40mm, etc. – over the full range of the bar. This provides for direct reading in millimeters
- ◆ The vernier plate is divided into 50 parts, each representing 0.02mm . Every fifth line is numbered in sequence – 0.10mm, 0.20mm, 0.30mm ... 0.80mm, 0.90mm – providing for direct reading in hundredths of a millimeter
- ◆ To read the gage, first count how many millimeters lie between the zero line on the bar and the zero line on the vernier plate
- ◆ Then find the graduation on the vernier plate that coincides with a line on the bar and note its value in hundredths of a millimeter. Add the vernier plate reading in hundredths of a millimeter to the number of millimeters you counted on the bar. This is your total reading

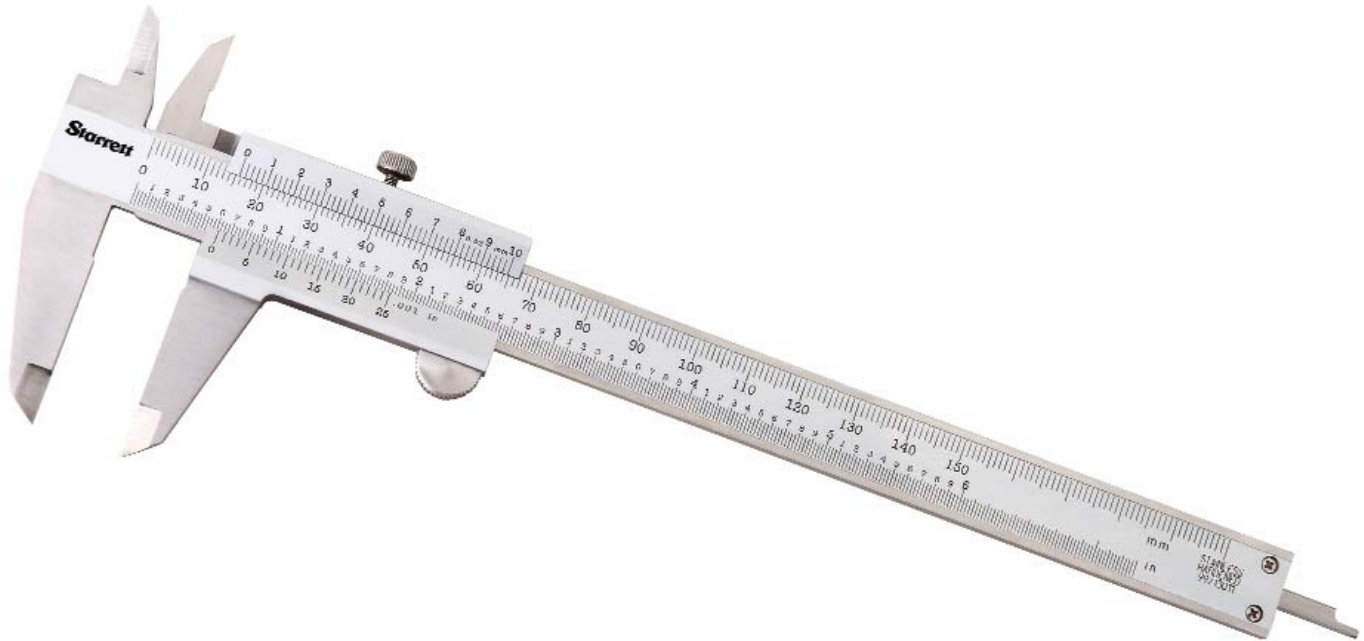
Example

- ★ In the photo, the vernier plate zero line is 28 millimeters beyond the zero line on the bar, and the 0.18mm graduation on the vernier plate coincides with a line on the bar (as indicated by stars). 0.18 millimeters is therefore added to the 28mm bar reading, and the total reading is 28.18 millimeters



Vernier Calipers

No. 125 Series 0-12" 0-300mm



The 125 Series is a high quality, basic vernier caliper that offers both inch and metric measurement.

- ◆ High quality basic vernier caliper
- ◆ Lock screw for sliding jaw
- ◆ Hardened stainless steel depth rod
- ◆ Graduations: .001" inch, 0.020mm metric
- ◆ Sharp, black graduations on the satin finished bar
- ◆ Starrett Global Series

Range	Description	Catalog No.	EDP No.
0-6", 0-150mm	Metric/Inch, 0-6"/150mm Caliper	125MEA-6/150	61660
0-8", 0-200mm	Metric/Inch, 0-8"/200mm Caliper	125MEA-8/200	61882
0-12", 0-300mm	Metric/Inch, 0-12"/300mm Caliper in Plastic Case	125MEA-12/300	61886

Packed one in a box.



Gear Tooth Vernier Calipers

No. 456 Series
20-2 Diametral Pitch

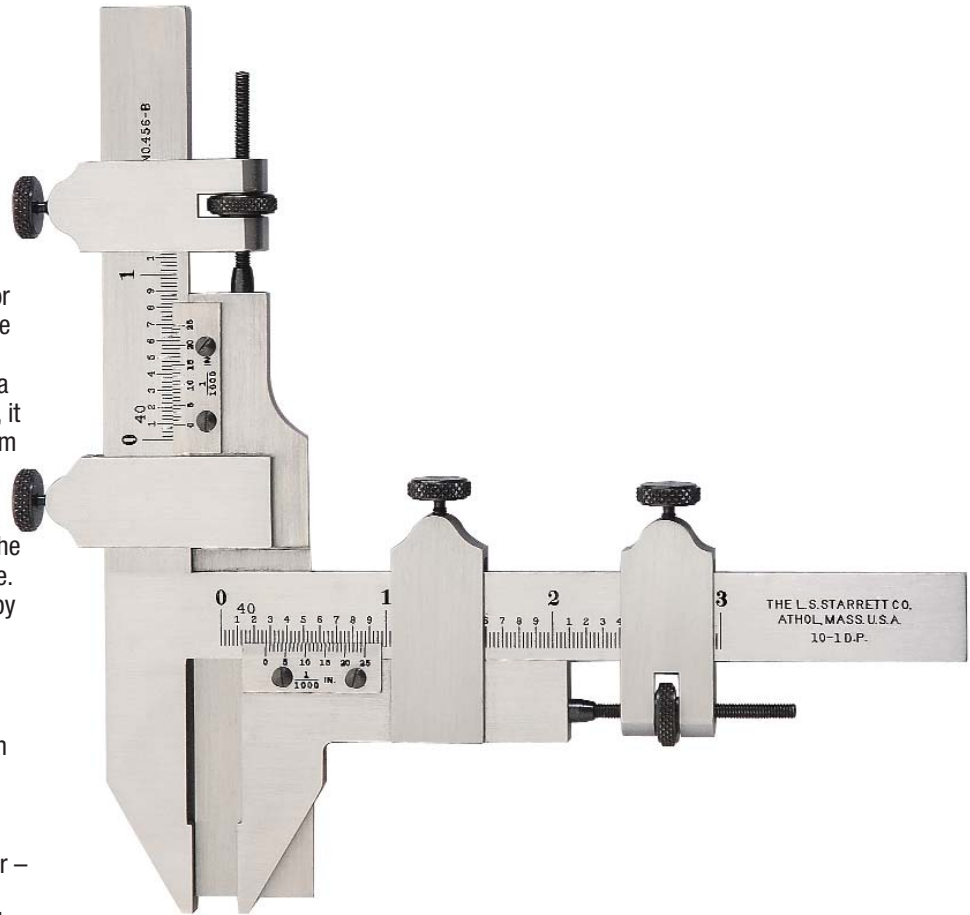
No. 456M Series
1 1/4-25mm Module

The Starrett No. 456 Gear Tooth Vernier Caliper is designed to measure in .001" or 0.02mm the thickness of gear teeth at the pitch line (the chordal thickness of the teeth) using the distance from the top of a tooth to the chord. For the same purpose, it can also be used for measuring hobs, form and thread tools, etc.

The thickness of a tooth at the pitch line is measured by an adjustable jaw after the addendum is set by the adjustable tongue. Each of these is adjusted independently by screws on the graduated bars.

For Tool Operation:

- a. Find on the chart, furnished with the tool, the number of teeth of the gear in question, and find the corrected addendum (s"). This figure is for one diametral pitch for inch measure, so divide it by the diametral pitch number – this figure is also for a one millimeter module for metric measure, so multiply it by the required module number. This gives a corrected addendum for this particular number of teeth.
- b. Next, measure the actual outside diameter of the gear and add or subtract one-half the difference between the theoretical gear diameter and actual measured gear diameter from the corrected addendum (s") found in the first step.



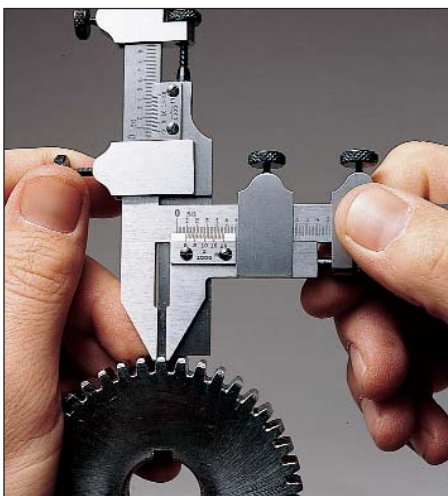
- c. Set the new calculated addendum figure on the adjustable tongue of the tool.
- d. Now, with the tongue on the top of the tooth, measure the chordal thickness with the horizontal vernier jaw and compare with the figure in the "t" column in the chart.
- e. All inch graduations are read to .001". However the No. 456A is graduated by .020" increments and the No. 456B is graduated by .025" increments. Nos. 456MA and 456MB are read to 0.02mm and graduated by 0.5mm increments.

Graduation – .001"

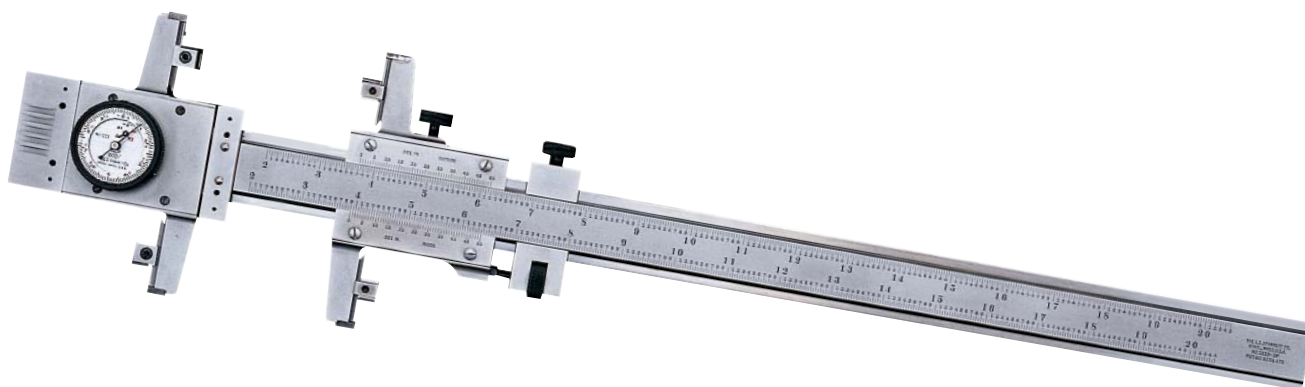
Range	Description	Catalog No.	EDP No.
20-2 Diametral Pitch	Caliper in Case	456AZ	52420
	Caliper without Case	456A	52422
10-1 Diametral Pitch	Caliper in Case	456BZ	52424
	Caliper without Case	456B	52426

Graduation – 0.02mm

1-1/4-12mm Module	Caliper in Case	456MAZ	52421
	Caliper without Case	456MA	52423
2-1/2-25mm Module	Caliper in Case	456MBZ	52425
	Caliper without Case	456MB	52427



Available with carbide measuring surfaces on special order. Available with attractive, protective case – sent with case unless otherwise ordered. Packed one in a box.



Special Master Dial Indicator Vernier Calipers

No. 1223 Series 2-48"

**No. 1223M Series
50-900mm**

The No. 1223 Series are so versatile that we make some models available as standard. However, special vernier tools like these can be built to your specifications by application through our Special Gage Department. The tool eliminates the need for skilled operator "feel" because it automatically sets in the correct gaging pressure.

- ◆ Tool has the basic Starrett No. 123 Master Bar with all of its advantages
- ◆ The slide and the dial gage sensing unit have inside and outside measuring jaws
- ◆ Direct outside and inside measurements in .001" (or 0.02mm) are read from the vernier after the indicator is zeroed. Out-of-roundness can be checked within .0001" (or 0.01mm) using the dial gage
- ◆ To use the caliper as a comparator, the vernier slide is set to the desired dimension and clamped. Plus or minus variations, outside or inside, are then read directly from the dial indicator
- ◆ All jaws have carbide measuring faces
- ◆ Adjustable work rests attached to the jaws permit the caliper to be placed on the work with the jaws at the correct measuring depth. The work rests have an adjustment range from 1/8-1" (3-25mm) and are locked in the desired position by a locking screw. Work rests are carbide-faced for long wear
- ◆ The dial gage head or sensing unit has a slide mounted on preloaded ball bearings at the end of the caliper bar. Movement of the jaws on the sensing unit actuates a dial indicator graduated in .0001" (or 0.01mm) with one complete revolution reading .010" (or 1mm). The indicator has a total range of $\pm .020"$ (or ± 1 mm), each .010" indicated by a telltale hand. Plus graduations are shown in black and minus graduations are shown in red. The indicator can be set to zero by a fine adjustment screw or by the bezel.
- ◆ A preload reversing switch on the back of the sensing unit permits instant changeover of the dial indicator for outside or inside readings
- ◆ A calibration master accurate to $\pm .000050"$ (or 0.001mm) is also available at extra charge for checking the relation between the vernier and the dial indicator zero. To check, set the vernier to the exact size of the master, place the master between either the "inside" or "outside" jaws, and adjust the dial indicator so that both the small and large hands read zero

Inch Reading

Range	Vernier Graduation	Dial Gage Head		Work Rest Adjustment	Catalog No.	EDP No.
		Grad.	Range			
2-18"	.001"	.0001"	$\pm .020"$	1/8-1"	1223-18	56137
2-24"					1223-24	56138
2-36"					1223-36	56139
2-48"					1223-48	56140

Millimeter Reading

50-450mm	0.02mm	0.01mm	± 1 mm	3-25mm	1223M-450	64366
50-600mm					1223M-600	64382
50-900mm					1223M-900	64373

Available with finished wood case – sent without case unless otherwise ordered. Calibration master available at extra charge. Packed one in a box.



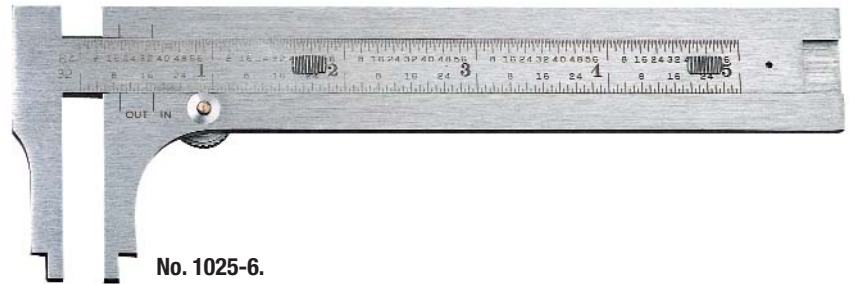
Stainless Steel Pocket Slide Calipers

No. 1025 Series
Inch Reading 5", 6"

No. 1025ME
Inch and Millimeter Reading
5"/130mm

These are very handy tools that permit quick and accurate outside and inside measurements. Their compact size fits easily in shop coat pockets and since there are no knife edges on the tools, they won't tear up pockets. Calipers are made of fine quality stainless steel.

- ◆ Accurate readings for both inside and outside measurements are made directly from the two lines marked "in" and "out" on one side of the stock
- ◆ Handy inch or millimeter scale on the back of the stock



No. 1025-6.

- ◆ Knurled thumb pieces to activate the slide
- ◆ Knurled clamp screw with a left hand thread for easy one-hand operation
- ◆ A slide stop prevents tool from being disassembled
- ◆ Straight measuring surface for outside measuring and rounded nibs for inside or hole measurements

Inch Reading

Size	Range		Depth of Jaws	Width of Nibs Closed	Graduations		Catalog No.	EDP No.
	Outside	Inside			Slide	Stock		
5"	0-3-3/4"	1/4-4"	1-3/8"	1/4"	32nds & 64ths	32nds	1025-5	53123
6"	0-4-3/4"	1/4-5"	1-3/8"	1/4"	32nds & 64ths	32nds	1025-6	53124

Inch and Millimeter Reading

5" (130mm)	0-3-3/4" or 0-96mm	1/4-4" or 6-100mm	1-3/8" or 36mm	.236" or 6mm	64ths & 1/2mm	millimeters	1025ME-130	65860
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CASES

Description	Catalog No.	EDP No.
5" and 130mm Vinyl Case	1025ZZ-5	55269
6" Vinyl Case	1025ZZ-6	55270

Available with protective vinyl case – sent without case unless otherwise ordered. Packed one in a box.

Stainless Steel Pocket Slide Caliper and Circumference Gage

No. 424 3-1/2"

This extremely handy caliper gives direct readings of both circumference and diameter in a single setting.

- ◆ Especially useful for obtaining instant circumference and diameter measurements of rope, cordage, metal rods, pipe, tubing, etc.
- ◆ Also for checking cutting speeds on lathe work. (Rule: Cutting Speed in Feet per Minute = Circumference divided by 12 x Revolutions per Minute.)



- ◆ The jaws are 1-3/8" deep and therefore will caliper a cylinder up to 2-3/4" diameter

- ◆ The upper edge of the slide is graduated from 0 to 11 circumference inches in 16ths and the lower edge from 0 to 3-1/2" standard measurement in 32nds

Size	Range		Graduations		Depth of Jaws	Catalog No.	EDP No.
	Dia.	Circumference	Dia.	Circumference			
3-1/2"	0-3-1/2"	0-11"	32nds	16ths	1-3/8"	424	51527

Packed one in a box.