PRECISION TOOLS

STANDARD OF ACCURACY

CATALOG No. 8

THE LUFKIN RULE COMPANY
Established 1869

Plant and Executive Offices:
1730 Hess Street, Saginaw, Michigan

Branch Office and Warehouse:
132-138 Lafayette Street, New York, N.Y.

Canadian Office and Plant:
THE LUFKIN RULE CO. OF CANADA LIMITED
Barrie, Ontario

ROSE TOOLS, INC.
INTRODUCTION

PRECISION TOOL CATALOG NO. 8

Lufkin Precision Tools are the product of a separate division of our plant. The entire facilities of engineering, manufacturing, designing and inspection are devoted exclusively to measuring devices. Many years of experience and skill in fine toolmaking are incorporated in every Lufkin tool. Constant inspection is maintained with the most modern equipment and methods starting with the raw material through every phase of manufacture to the finished tool. Only highest quality materials are used and every tool is built to an exacting precision standard.

In the development of many of its products Lufkin has been the pioneer. Today, as through its whole history, Lufkin is the leader in noteworthy improvements in the industry. Lufkin products have worldwide distribution and are recognized as "The Standard of Accuracy" in the field of measuring.

GENERAL INFORMATION

ORDERING

When ordering, please specify complete stock number and name of item. Stocks of Lufkin Precision Tools are carried by industrial supply distributors and hardware and tool stores. All users are urged to purchase their requirements from these sources.

PRICES

Prices are shown in separate price list and are subject to change without notice.

GENERAL CATALOG

Lufkin General catalog No. 14 covers Measuring Tapes, Tape-Rules, Folding Rules, and other miscellaneous rules, etc., as well as Precision Tools. It will be sent on request to those interested in the complete line.

REPAIRS

A repair department staffed by competent mechanics is maintained for the repair of all Lufkin products. This service is available at reasonable cost. When goods are returned for repair, a letter or covering order giving full information as to what is desired should be mailed at the time goods are shipped. The shipping container should be plainly marked with the sender's name and address.

GUARANTY

Lufkin products are guaranteed against defects in workmanship and material. If any product is found unsatisfactory it may be returned to the factory for inspection and disposition. Any item found to be defective in workmanship or material will be replaced.
**Lufkin Chrome Clad**

**Full Finished Micrometers**

SERIES No. 1600

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**Lufkin Chrome Clad**

**Enamed, Heavy, Ribbed Frame Micrometers**

SERIES No. 1900

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Full Finished Micrometers in inches carry table of Decimal Equivalents of 8ths, 16ths, 32nds and 64ths of an inch.
Valuable Features of Lufkin Chrome Clad Micrometers

Lufkin Chrome Clad Non-Glare Satin Finish Micrometers have black filled graduations and figures. Finish has non-glare quality for easier reading in bright or poor light. Wear and rust-resistant. Extra Large Diameter Thimble has wider space between graduations for more accurate readings. Extra large figures, longer graduation lines on bezel of thimble are easier to read and reduce chance of error.


Rapid Graduations on Thimble, each thousandth clearly numbered, with every five thousandths having extra large figures. Faster, easier reading.

Ratchet Enclosed in Cap. New stytle with same function as old styled extended ratchet, but reduces overall length of micrometer giving tool better balance and "feel". Ratchet is used to apply equal pressure in taking measurements. New style ratchet cap is easier to use since ratchet is closer to fingers. Measurements are consistent and uniform.

Friction Thimble is similar to ratchet, but ratchet click is eliminated. Friction mechanism is part of thimble so using micrometer with one hand is easier and handier. Designed to apply consistent contact pressure for uniform readings.

Positive Action Cam Lock Nut: The spindle is securely held with a flick of the thumb. Cam provides more holding surface with no distortion of the spindle. Conveniently located and easier to use.

Adjustment Face: Simple, fast adjustment of Lufkin Outside Micrometer compensates for wear on anvil and spindle faces. Reading line keeps its original position directly in line of vision regardless of number of times faces may have to be ground and lapped.

Quality. Many years of experience in fine tool-making are incorporated in every Lufkin tool. Constant inspection is maintained through every phase of manufacture and most modern methods and equipment used. Every tool built to exacting precision standard—The Standard of Accuracy.

LUFKIN OUTSIDE MICROMETERS ARE EASIEST TO ADJUST FOR WEAR ON ANVIL AND SPINDLE FACES

Three parts, one-piece spindle, thimble and cap enter into adjustment for wear on anvil and spindle faces. Threaded portion of spindle engages screw nut. Thimble is screwed to spindle. Chuck is formed on end of thimble. Tightening cap locks thimble chuck to spindle family, for most secure setting. As cap does not touch spindle, it will not change setting.

Lufkin Micrometers always retain excellent features. Reading line keeps its original position, directly in line of vision regardless of number of adjustments needed to correct for wear on anvil and spindle faces. Thimble does not cover measurement lines on hub either after simply adjusting for wear or grinding and lapping made necessary by wear, thus avoiding error in reading.

Directions for Reading Lufkin Micrometers

To Read a Measurement to One Thousandth of an Inch: Read first the total of thousandths indicated by the lines on the hub, each line representing .005, .025, .075, .100, .125, etc. To this add intermediate thousandths, reading directly off thimble, where each .1 is .001, .025, .075, .100, .125, etc. To this add intermediate thousandths, reading directly off thimble, where each .1 is .001, .025, .075, .100, .125, etc.

Example: Cut to left: Hub reading total is .150
Thimble reading is .004
Total Measurement is .154 inch

To Read a Measurement to One Ten-Thousandth of an Inch: Measurements to ten-thousandths inch are obtained by using vernier graduations, a series of divisions on hub of our Micrometer. Per cut to right, hub bears ten of these division lines occupying same space as nine divisions on thimble, and numbered 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 6.

To reading on hub add reading on thimble, as detailed above, this giving total of full thousandths. To that add reading of that line on vernier which coincides with line on thimble. If that be the line numbered 4, it means .0004, i.e., 4/10,000ths inch.

Example: Cut to the right shows total measurement 1.546 inch. This is the grand total of 150 thousandths indicated on hub, plus 4 thousandths indicated on above, plus 6 ten-thousandths indicated on vernier.
Carbide Tipped Chrome Clad Micrometers

½-Inch • Full Finished Tapered Frame

No. CT1640

Micrometer with tungsten carbide tipped anvil and spindle face is recommended for use where severe abrasive conditions exist. Carbide has exceptional hardness and resistance to abrasion.

A valuable feature of this micrometer is the improved tapered frame. Measurements can be taken in places inaccessible to many other micrometers.

**Easy to read.** Chrome Clad non-glare satin finish with black filled graduations and figures.

**Rapid reading graduations on thimble.**

**Hardened one-piece spindle** with ground threads.

**Diameter spindle**, 195 inch.

**Anvil end** of micrometer can be inserted into a ½-inch opening to a depth of ¾ inch; a ¾-inch opening will permit measuring to a depth of ¾ inch.

**Table of decimal equivalents of 8ths, 16ths, 32nds and 64ths** is marked on the frame.

**Micro-lap finish** on anvil and spindle ends.

**Positive action lock nut.**

**Easy to adjust.**

<table>
<thead>
<tr>
<th>Range Limit</th>
<th>Measures by 1,000ths Inch</th>
<th>Measures by 10,000ths Inch</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to ½</td>
<td>CT1610</td>
<td>CT1610V</td>
<td>Plain</td>
</tr>
<tr>
<td>0 to ⅛</td>
<td>CT1630</td>
<td>CT1630V</td>
<td>With Ratchet Stop</td>
</tr>
<tr>
<td>0 to ¼</td>
<td>CT1640</td>
<td>CT1640V</td>
<td>With Lock Nut and Ratchet Stop</td>
</tr>
</tbody>
</table>

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

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Chrome Clad Micrometers

½-Inch • Full Finished Tapered Frame

No. 1640

A valuable feature of this micrometer is the improved tapered frame. Measurements can be taken in places inaccessible to many other micrometers.

**Easy to read.** Chrome Clad non-glare satin finish with black filled graduations and figures.

**Rapid reading graduations on thimble.**

**Hardened one-piece spindle** with ground threads.

**Diameter spindle**, 195 inch.

**Anvil end** of micrometer can be inserted into a ½-inch opening to a depth of ¾ inch; a ¾-inch opening will permit measuring to a depth of ¾ inch.

**Table of decimal equivalents of 8ths, 16ths, 32nds and 64ths** is marked on the frame.

**Micro-lap finish** on anvil and spindle ends.

**Positive action lock nut.**

**Easy to adjust.**

<table>
<thead>
<tr>
<th>Range Limit</th>
<th>Measures by 1,000ths Inch</th>
<th>Measures by 10,000ths Inch</th>
<th>Metric Measures by 100ths Min.</th>
<th>Equipment</th>
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</thead>
<tbody>
<tr>
<td>0 to ½</td>
<td>1610 1610V</td>
<td></td>
<td>0 to 13 1640M</td>
<td>Plain With Ratchet Stop</td>
</tr>
<tr>
<td>0 to ⅛</td>
<td>1630 1630V</td>
<td></td>
<td></td>
<td>With Lock Nut and Ratchet Stop</td>
</tr>
<tr>
<td>0 to ¼</td>
<td>1640 1640V</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Carbide Tipped Chrome Clad Micrometers

1-Inch • Full Finished Tapered Frame

No. CT1641

Micrometer with tungsten carbide tipped anvil and spindle face is recommended for use where severe abrasive conditions exist. Carbide has exceptional hardness and resistance to abrasion.

A valuable feature of this micrometer is the improved tapered frame. Measurements can be taken in places inaccessible to many other micrometers.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.

Extra large diameter thimble with wider spaces between graduations.

Extra large figures and longer graduation lines on bevel of thimble.

Rapid reading graduations on thimble.

Hardened one-piece spindle with ground threads.

Diameter spindle, .250 inch.

Anvil end of micrometer can be inserted into a 5/8-inch opening to a depth of 3/4 inch; a 7/16-inch opening will permit measuring to a depth of 9/16 inch.

Table of decimal equivalents of 8ths, 16ths, 32nds, and 64ths is marked on the frame.

Micro-lap finish on anvil and spindle ends.

Ratchet stop enclosed in cap; easier to use.

Positive action cam lock nut.

Easy to adjust.

Plush lined case can be supplied when ordered.

<table>
<thead>
<tr>
<th>Range Limits</th>
<th>Measures by 0.0001&quot; Inch</th>
<th>Measures by 0.00005&quot; Inch</th>
<th>Equipment</th>
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<td></td>
<td>No.</td>
<td>No.</td>
<td></td>
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<tr>
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<tr>
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<td>With Lock Nut</td>
</tr>
<tr>
<td>0 to 1</td>
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<tr>
<td>0 to 1</td>
<td>CT1651</td>
<td>CT1651V</td>
<td>With Friction Thimble</td>
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<td>0 to 1</td>
<td>CT1661</td>
<td>CT1661V</td>
<td>With Friction Thimble and Lock Nut</td>
</tr>
</tbody>
</table>

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Chrome Clad Micrometers

1-Inch • Full Finished Tapered Frame

No. 1641

A valuable feature of this micrometer is the improved tapered frame. Measurements can be taken in places inaccessible to many other micrometers.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.

Extra large diameter thimble with wider spaces between graduations.

Extra large figures and longer graduation lines on bevel of thimble.

Rapid reading graduations on thimble.

Hardened one-piece spindle with ground threads.

Diameter spindle, .250 inch.

Anvil end of micrometer can be inserted into a 5/8-inch opening to a depth of 3/4 inch; a 7/16-inch opening will permit measuring to a depth of 9/16 inch.

Table of decimal equivalents of 8ths, 16ths, 32nds, and 64ths is marked on the frame.

Micro-lap finish on anvil and spindle ends.

Ratchet stop enclosed in cap; easier to use.

Positive action cam lock nut.

Easy to adjust.

Plush lined case can be supplied when ordered.

<table>
<thead>
<tr>
<th>Range Limits</th>
<th>Measures by 0.0001&quot; Inch</th>
<th>Measures by 0.00005&quot; Inch</th>
<th>Metric Measures by 0.00005&quot; Min.</th>
<th>Equipment</th>
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<tr>
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<td>No.</td>
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<td>1611V</td>
<td>0 to 25</td>
<td>Plain</td>
</tr>
<tr>
<td>0 to 1</td>
<td>1621</td>
<td>1621V</td>
<td></td>
<td>With Lock Nut</td>
</tr>
<tr>
<td>0 to 1</td>
<td>1641</td>
<td>1641V</td>
<td></td>
<td>With Ratchet Cap and Lock Nut</td>
</tr>
<tr>
<td>0 to 1</td>
<td>1651</td>
<td>1651V</td>
<td></td>
<td>With Friction Thimble</td>
</tr>
<tr>
<td>0 to 1</td>
<td>1661</td>
<td>1661V</td>
<td></td>
<td>With Friction Thimble and Lock Nut</td>
</tr>
</tbody>
</table>

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Carbide Tipped Chrome Clad Micrometers

2 Inch • Full Finished Tapered Frame

No. CT1642

Micrometer with tungsten carbide tipped anvil and spindle face is recommended for use where severe abrasive conditions exist. Carbide has exceptional hardness and resistance to abrasion.

A valuable feature of this micrometer is the improved tapered frame. Measurements can be taken in places inaccessible to many other micrometers.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.

Extra large diameter thimble with wider spaces between graduations.

Extra large figures and longer graduation lines on body of thimble.

Rapid reading graduations on thimble.

Hardened one-piece spindle with ground threads.

Diameter spindle, .250 inch.

Anvil end of micrometer can be inserted into 9/16-inch opening to a depth of 1/4 inch; 1/4-inch opening will permit measuring to a depth of 1 1/4 inches.

Table of decimal equivalents of 8ths, 16ths, 32nds and 64ths is marked on the frame.

Micro-lap finish on anvil and spindle ends.

Ratchet stop enclosed in cap; easier to use.

Positive action cam lock nut.

Easy to adjust.

Furnished with 1-inch standard

Flush lined case supplied when ordered.

<table>
<thead>
<tr>
<th>Range</th>
<th>Measured by 1,000ths Inch</th>
<th>Measured by 10,000ths Inch</th>
<th>Equipment</th>
</tr>
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<tbody>
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<td>1 to 2</td>
<td>CT1612</td>
<td>CT1612V</td>
<td>Plain</td>
</tr>
<tr>
<td>1 to 2</td>
<td>CT1622</td>
<td>CT1622V</td>
<td>With Lock Nut</td>
</tr>
<tr>
<td>1 to 2</td>
<td>CT1642</td>
<td>CT1642V</td>
<td>With Ratchet Cap and Lock Nut</td>
</tr>
<tr>
<td>1 to 2</td>
<td>CT1662</td>
<td>CT1662V</td>
<td>With Friction Thimble and Lock Nut</td>
</tr>
</tbody>
</table>

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Chrome Clad Micrometers

2 Inch • Full Finished Tapered Frame

No. 1642

A valuable feature of this micrometer is the improved tapered frame. Measurements can be taken in places inaccessible to many other micrometers.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.

Extra large diameter thimble with wider spaces between graduations.

Extra large figures and longer graduation lines on body of thimble.

Rapid reading graduations on thimble.

Hardened one-piece spindle with ground threads.

Diameter spindle, .250 inch.

Anvil end of micrometer can be inserted into 9/16-inch opening to a depth of 1/4 inch; 1/4-inch opening will permit measuring to a depth of 1 1/4 inches.

Table of decimal equivalents of 8ths, 16ths, 32nds and 64ths is marked on the frame.

Micro-lap finish on anvil and spindle ends.

Ratchet stop enclosed in cap; easier to use.

Positive action cam lock nut.

Easy to adjust.

Furnished with 1-inch standard

Flush lined case supplied when ordered.

<table>
<thead>
<tr>
<th>Range</th>
<th>Measured by 1,000ths Inch</th>
<th>Measured by 10,000ths Inch</th>
<th>Metric Measures by 100ths Mm.</th>
<th>Equipment</th>
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</thead>
<tbody>
<tr>
<td>1 to 2</td>
<td>1612</td>
<td>1612V</td>
<td>1642M</td>
<td>Plain</td>
</tr>
<tr>
<td>1 to 2</td>
<td>1622</td>
<td>1622V</td>
<td>1642V</td>
<td>With Lock Nut</td>
</tr>
<tr>
<td>1 to 2</td>
<td>1642</td>
<td>1642V</td>
<td>25 to 50</td>
<td>With Ratchet Cap and Lock Nut</td>
</tr>
<tr>
<td>1 to 2</td>
<td>1662</td>
<td>1662V</td>
<td></td>
<td>With Friction Thimble and Lock Nut</td>
</tr>
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</table>

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Carbide Tipped Chrome Clad Micrometers
Black Enamel Heavy Duty Ribbed Frame

Micrometer with tungsten carbide tipped anvil and spindle face is recommended for use where severe abrasive conditions exist. Carbide has exceptional hardness and resistance to abrasion.

Designed for production work. Accurate, strong, durable and built to withstand hard usage. Choice of many students and vocational schools.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on barrel of thimble.
Rapid reading graduations on thimble.
Hardened one-piece spindle with ground threads. Large diameter spindle 270 inch for extra wear.
Micro-lap finish on anvil and spindle ends.

Ratchet stop enclosed in cap; easier to use.
Positive action cam lock nut.
Easy to adjust.
Non-slip finish on frame; easier to hold.

Chrome Clad Micrometers
Black Enamel Heavy Duty Ribbed Frame

A tool designed for production work. It is accurate, strong, durable and built to withstand hard usage. It is also the choice of many students and vocational schools.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on barrel of thimble.
Rapid reading graduations on thimble.
Hardened one-piece spindle with ground threads. Large diameter spindle 270 inch for extra wear.
Micro-lap finish on anvil and spindle ends.

Ratchet stop enclosed in cap; easier to use.
Positive action cam lock nut.
Easy to adjust.
Non-slip finish on frame; easier to hold.

Packing: One in a box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Carbide Tipped Chrome Clad Micrometers
Black Enamed Heavy Duty Ribbed Frame

No. CT1914

Micro-milled finish on anvils and spindle ends.
Ratchet stop enclosed in cap; easier to use.
Positive action cam lock nut.
Easy to adjust.
Non-slip finish on frame; easier to hold.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on bezel of thimble.
Rapid reading graduations on thimble.
Hardened one-piece spindle with ground threads.
Large diameter spindle, 2.70 inch for extra wear.

<table>
<thead>
<tr>
<th>Measures by 1.000ths inch</th>
<th>Measures by 10.000ths inch</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range 3 to 4 Inches No.</td>
<td>Range 4 to 5 Inches No.</td>
<td>Range 5 to 6 Inches No.</td>
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<td>CT1915</td>
<td>CT1916</td>
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<td>CT1924</td>
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<td>CT1926</td>
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<td>CT1944</td>
<td>CT1945</td>
<td>CT1946</td>
</tr>
<tr>
<td>CT1964</td>
<td>CT1965</td>
<td>CT1966</td>
</tr>
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</table>

Plain
With Lock Nut
With Lock Nut and Ratchet Cap
With Friction Thimble and Lock Nut

Chrome Clad Micrometers
Black Enamed Heavy Duty Ribbed Frame

No. 1914

A tool designed for production work. It is accurate, strong, durable and built to withstand hard usage. It is also the choice of many students and vocational schools.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on bezel of thimble.
Rapid reading graduations on thimble.
Hardened one-piece spindle with ground threads.
Large diameter spindle, 2.70 inch for extra wear.

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<th>Measures by 10.000ths inch</th>
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<tbody>
<tr>
<td>Range 3 to 4 Inches No.</td>
<td>Range 4 to 5 Inches No.</td>
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<tr>
<td>CT1914</td>
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<td>CT1916</td>
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<td>CT1924</td>
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<td>CT1946</td>
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<tr>
<td>CT1964</td>
<td>CT1965</td>
<td>CT1966</td>
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</table>

Plain
With Lock Nut
With Lock Nut and Ratchet Cap
With Friction Thimble and Lock Nut

Notes: Can be furnished in Metric in plain pattern only at no additional cost; add suffix "M" to No.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Carbide Tipped Chrome Clad Micrometers
Black Enamelled Heavy Duty Ribbed Frame

No. CT1917

Micrometer with tungsten carbide tipped anvil and spindle face is recommended for use where severe abrasive conditions exist. Carbide has exceptional hardness and resistance to abrasion.

Designed for production work. Accurate, strong, durable and built to withstand hard usage. Choice of many students and vocational schools.

**Easy to read.** Chrome Clad non-glare satin finish with black filled graduations and figures.

**Extra large diameter thimble** with wider spaces between graduations.

**Extra large figures and longer graduation lines** on thimble.

**Rapid reading graduations** on thimble.

**Hardened one-piece spindle** with ground threads.

**Large diameter spindle** .250 inch for extra wear.

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Chrome Clad Micrometers
Black Enamelled Heavy Duty Ribbed Frame

No. 1917

A tool designed for production work. It is accurate, strong, durable and built to withstand hard usage. It is also the choice of many students and vocational schools.

**Easy to read.** Chrome Clad non-glare satin finish with black filled graduations and figures.

**Extra large diameter thimble** with wider spaces between graduations.

**Extra large figures and longer graduation lines** on thimble.

**Rapid reading graduations** on thimble.

**Hardened one-piece spindle** with ground threads.

**Large diameter spindle** .250 inch for extra wear.

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<table>
<thead>
<tr>
<th>Measures by 1,000ths Inch</th>
<th>Measures by 10,000ths Inch</th>
<th>Equipment</th>
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<td>CT1918</td>
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<td>CT1947</td>
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Plain

With Lock Nut

With Lock Nut and Ratchet Cap

With Friction Thimble and Lock Nut

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Equipment

<table>
<thead>
<tr>
<th>Range 6 to 7 inches No.</th>
<th>Range 7 to 8 inches No.</th>
<th>Range 8 to 9 inches No.</th>
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<td>1969</td>
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</tbody>
</table>

Plain

With Lock Nut

With Lock Nut and Ratchet Cap

With Friction Thimble and Lock Nut

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Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
**Carbide Tipped Chrome Clad Micrometers**

Black Enamelled Heavy Duty Ribbed Frame

No. CT191-10

Micrometer with tungsten carbide tipped anvil and spindle nose is recommended for use where severe abrasive conditions exist. Carbide has exceptional hardness and resistance to abrasion.

Designed for production work. Accurate, strong, durable and built to withstand hard usage. Choice of many students and vocational schools.

**Easy to read.** Chrome Clad non-glare satin finish with black filled graduations and figures.

**Extra large diameter thimbles** with wider spaces between graduations.

**Extra large figures and longer graduation lines** on level of thimble.

**Rapid reading graduations on thimble.**

**Hardened one-piece spindle** with ground threads.

**Large diameter spindle** 270 inch for extra wear.

<table>
<thead>
<tr>
<th>Measures by 0.00001 in.</th>
<th>Measures by 0.00005 in.</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range 9 to 10 inches</td>
<td>Range 9 to 10 inches</td>
<td>Plain</td>
</tr>
<tr>
<td>No. CT191-10</td>
<td>No. CT191-11</td>
<td>With Lock Nut &amp; Ratchet Cap</td>
</tr>
<tr>
<td>No. CT194-10</td>
<td>No. CT194-11</td>
<td>With Friction Thimble &amp; Lock Nut</td>
</tr>
</tbody>
</table>

Packing: One in a box.

**FOR PRICES SEE PRICE LIST**

---

**Chrome Clad Micrometers**

Black Enamelled Heavy Duty Ribbed Frame

No. 191-10

A tool designed for production work. It is accurate, strong, durable and built to withstand hard usage. It is also the choice of many students and vocational schools.

**Easy to read.** Chrome Clad non-glare satin finish with black filled graduations and figures.

**Extra large diameter thimble** with wider spaces between graduations.

**Extra large figures and longer graduation lines** on level of thimble.

**Hardened one-piece spindle** with ground threads.

**Large diameter spindle** 270 inch for extra wear.

**Micro-lap finish** on anvil and spindle ends. Ratchet stop enclosed in cap; easier to use. Positive action cam lock nut.

**Easy to adjust.**

**Non-slip finish** on frame: easier to hold.

Individually packed in finished wood case.

A 9-inch standard can be supplied for the 10-inch micrometer, a 10-inch standard for the 11-inch micrometer and a 11-inch standard for the 12-inch micrometer.

<table>
<thead>
<tr>
<th>Measures by 0.00001 in.</th>
<th>Measures by 0.00005 in.</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range 9 to 10 inches</td>
<td>Range 9 to 10 inches</td>
<td>Plain</td>
</tr>
<tr>
<td>No. 191-10</td>
<td>No. 191-11</td>
<td>With Lock Nut &amp; Ratchet Cap</td>
</tr>
<tr>
<td>No. 194-10</td>
<td>No. 194-11</td>
<td>With Friction Thimble &amp; Lock Nut</td>
</tr>
</tbody>
</table>

Packing: One in a Box.

**FOR PRICES SEE PRICE LIST**

ROSE TOOLS, INC.
No. 1641K Chrome Clad Micrometers
1-Inch • With Half Thousandths Divisions • Full Finished Tapered Frame

Micrometers with half thousandths divisions are preferred by some mechanics who desire to obtain finer readings without having to use a vernier. This micrometer has all the features of the full finished tapered frame micrometers described on previous pages.

No. 1641K, Micrometer with Half Thousandths Divisions, with Cam Lock Nut and Ratchet Cap.
No. 1641KV, Micrometer with Half Thousandths Divisions, with Cam Lock Nut and Ratchet Cap.
Measures to 10,000ths inch.

No. 1911K Chrome Clad Micrometers
1-Inch • With Half Thousandths Divisions • Black Enamelled Heavy Duty Ribbed Frame

Micrometers with half thousandths divisions are preferred by some mechanics who desire to obtain finer readings without having to use a vernier.

No. 1911K, Micrometer, Plain, with Half Thousandths Divisions.
No. 19141KV, Micrometer with Half Thousandths Divisions, with Cam Lock Nut and Ratchet Cap.
Measures to 10,000ths inch.

Note: Micrometers with half thousandths divisions can be furnished in other sizes.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST
LUFKIN

Stainless Steel Micrometer Calipers
(Patented)

Black Enamelled Heavy Duty Ribbed Frame

No. 51911

A strong and durable tool designed for production work. Hub and thimble are stainless steel, a valuable asset in certain industries and climatic conditions. Lufkin stainless steel micrometers will not rust or stain, assuring long life and dependable service. This smooth working micrometer has the easiest method of adjustment.

Rapid reading graduations on thimble.
Thimble and hub of stainless steel.
Hardened one-piece spindle with ground threads.
Large diameter spindle 270 inch for extra service.
Micro-lap finish on anvils and spindle ends.
Non-slip finish on frame; easier to hold.

<table>
<thead>
<tr>
<th>Measures by 0.0001 in.</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 11 9 to 1 in.</td>
<td>Plain</td>
</tr>
<tr>
<td>No. 11 1 to 2 in.</td>
<td>With Lock Nut</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measures by 0.0001 in.</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 11 6 to 7 in.</td>
<td>Plain</td>
</tr>
<tr>
<td>No. 11 7 to 8 in.</td>
<td>With Lock Nut</td>
</tr>
</tbody>
</table>

The cases are solidly constructed of choice hardwood. They are well finished and have banded covers and cheap. Wood cases accommodate and protect the micrometers when not in use and guard against any of the set or the standards being mislaid or lost.

Standards supplied with all sets unless otherwise specified.

Set of Three Micrometers—Range, 6 to 3 in.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 11</td>
<td>1811</td>
<td>1812</td>
<td>1813</td>
<td>1841</td>
<td>1842</td>
</tr>
</tbody>
</table>

Note: Ratchet stop can be furnished on above micrometers. Above micrometers can be furnished for measuring to 0.0001 in. on 3" through 6" sizes only. Specify by suffix "V" as "51941V" etc.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Chrome Clad Micrometer Sets in Wood Cases

The cases are solidly constructed of choice hardwood. They are well finished and equipped with a hinged cover and good lock. Wood cases give good protection to the tools when not in use. A separate rack is furnished for the standards.

Standards supplied with all sets unless otherwise specified.

No. 191C

Set of 4 Micrometers—Range, 0 to 4 inch—Black Enamelled, Heavy Duty, Ribbed Frame

<table>
<thead>
<tr>
<th>Set No.</th>
<th>Micrometer No.</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>191B</td>
<td>1911</td>
<td>1912</td>
</tr>
<tr>
<td>1912</td>
<td>1913</td>
<td>1914</td>
</tr>
<tr>
<td>192B</td>
<td>1921</td>
<td>1922</td>
</tr>
<tr>
<td>1922</td>
<td>1923</td>
<td>1924</td>
</tr>
<tr>
<td>193B</td>
<td>1931</td>
<td>1932</td>
</tr>
<tr>
<td>1932</td>
<td>1933</td>
<td>1934</td>
</tr>
<tr>
<td>194B</td>
<td>1941</td>
<td>1942</td>
</tr>
<tr>
<td>1942</td>
<td>1943</td>
<td>1944</td>
</tr>
<tr>
<td>195B</td>
<td>1951</td>
<td>1952</td>
</tr>
<tr>
<td>1952</td>
<td>1953</td>
<td>1954</td>
</tr>
<tr>
<td>196B</td>
<td>1961</td>
<td>1962</td>
</tr>
<tr>
<td>1962</td>
<td>1963</td>
<td>1964</td>
</tr>
</tbody>
</table>

Set of 6 Micrometers—Range, 0 to 6 inch—Black Enamelled, Heavy Duty, Ribbed Frame

<table>
<thead>
<tr>
<th>Set No.</th>
<th>Micrometer No.</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>191C</td>
<td>1911</td>
<td>1912</td>
</tr>
<tr>
<td>1912</td>
<td>1913</td>
<td>1914</td>
</tr>
<tr>
<td>1914</td>
<td>1915</td>
<td>1916</td>
</tr>
<tr>
<td>192C</td>
<td>1921</td>
<td>1922</td>
</tr>
<tr>
<td>1922</td>
<td>1923</td>
<td>1924</td>
</tr>
<tr>
<td>1924</td>
<td>1925</td>
<td>1926</td>
</tr>
<tr>
<td>193C</td>
<td>1931</td>
<td>1932</td>
</tr>
<tr>
<td>1932</td>
<td>1933</td>
<td>1934</td>
</tr>
<tr>
<td>1934</td>
<td>1935</td>
<td>1936</td>
</tr>
<tr>
<td>194C</td>
<td>1941</td>
<td>1942</td>
</tr>
<tr>
<td>1942</td>
<td>1943</td>
<td>1944</td>
</tr>
<tr>
<td>1944</td>
<td>1945</td>
<td>1946</td>
</tr>
<tr>
<td>195C</td>
<td>1951</td>
<td>1952</td>
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<tr>
<td>1952</td>
<td>1953</td>
<td>1954</td>
</tr>
<tr>
<td>1954</td>
<td>1955</td>
<td>1956</td>
</tr>
<tr>
<td>196C</td>
<td>1961</td>
<td>1962</td>
</tr>
<tr>
<td>1962</td>
<td>1963</td>
<td>1964</td>
</tr>
<tr>
<td>1964</td>
<td>1965</td>
<td>1966</td>
</tr>
</tbody>
</table>

Notes: Micrometers measuring to 10,000ths of an inch can be supplied at extra cost; add suffix "V" to No.
Can be supplied in Metric at no additional cost; add suffix "M" to No., such as 191M-A.
Can be supplied with carbide tipped measuring faces at extra cost; add prefix "CT" to No.

Packing: One Set in a Box.

FOR PRICES SEE PRICE LIST

Chrome Clad Micrometer Sets in Wood Cases

The cases are solidly constructed of choice hardwood. They are well finished and equipped with a hinged cover and a good lock. Wood cases give good protection to the tools when not in use. A separate rack is furnished for the standards.

Standards supplied with all sets unless otherwise specified.

Notes: Micrometers measuring to 10,000ths of an inch can be supplied at extra cost; add suffix "V" to No., such as 191V-E.
Can be supplied in Metric at no additional cost; add suffix "M" to No., such as 191M-E.
Can be supplied with carbide tipped measuring faces at extra cost; add prefix "CT" to No.

Packing: One Set in a Box.

FOR PRICES SEE PRICE LIST
Chrome Clad Paper Gage Micrometers

Full Finished Frame

No. 3630

Used in measuring the thickness of paper, sheet rubber, cardboard and other soft materials. Furnished with anvil and spindle faces 3/16 inch in diameter so that accurate measurements can be taken without compressing the article measured.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.

Rapid reading graduations on thimble.

Hardened one-piece spindle with ground threads.

Table of decimal equivalents of 8ths, 16ths, 32nds and 64ths is marked on the frame.

Easy to adjust. Finger ring can be furnished; please specify.

<table>
<thead>
<tr>
<th>Range/Inches</th>
<th>No.</th>
<th>Measures by</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 3/4</td>
<td>3610</td>
<td>1,000ths of an inch</td>
<td>Plain</td>
</tr>
<tr>
<td>0 to 3/4</td>
<td>3630</td>
<td>1,000ths of an inch</td>
<td>With Ratchet</td>
</tr>
</tbody>
</table>

Packing: One in a Box.

Chrome Clad Tubing Micrometers

1/2-Inch • Full Finished Tapered Frame

No. 2630

For accurately measuring thickness of tubing, etc., in range from 0 to 3/4 inch. Will measure tubing down to 3600th inside diameter. For measuring by thousandths of an inch.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.

Rapid reading graduations on thimble.

Hardened one-piece spindle with ground threads.

Spindle diameter, 1/32 inch.

Spindle and anvil end is rounded for making contact at only one point on the inside of tube, giving exact thickness.

Table of decimal equivalents of 8ths, 16ths, 32nds and 64ths is marked on the frame.

Micro-top finish on spindle end.

Easy to adjust.

No. 2610, Tubing Micrometer, Plain.

No. 2630, Tubing Micrometer, with Ratchet Stop.

Note: Can be supplied in Metric, 0 to 13 mm. at no additional cost.

FOR PRICES SEE PRICE LIST
Chrome Clad Deep Throat Micrometers

Black Enameled Heavy Duty Ribbed Frame

Designed especially for gauging the thickness of metal sheets and plates, and for other applications requiring a micrometer with a deep throat. Deep throat permits measurements up to 3 1/2 inches from the edge of the work.

Easy to read. Chrome Clad non-glace satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on level of thimble.
Rapid reading graduations on thimble.

Hardened one-piece spindle with ground threads.
Large diameter spindle, 270 inch for extra wear.
Micro-lap finish on anvils and spindle end.
Ratchet stop enclosed in cap; easier to use.
Easy to adjust.
Non-slip finish on frame; easier to hold.

Number | Range       | Description          |
--------|-------------|----------------------|
3911    | 6 to 1 inch | Plain                |
3931    | 6 to 1 inch | With Ratchet Cap     |

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Chrome Clad Tubing Micrometers

For accurately measuring thickness of tubing, etc., in range from 0 to 1 inch. Will measure tubing down to 3 1/2 inch inside diameter. For measuring by thousands of an inch.

Easy to read. Chrome Clad non-glace satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on level of thimble.
Hardened one-piece spindle with ground threads.
Spindle diameter, 270 inch.

Spindle end is flat and anvil end is rounded permitting contact at only one point on the inside of the tube, giving exact thickness.
Table of decimal equivalents of 32nds, 16ths, 32nds and 64ths is marked on the frame.
Micro-lap finish on spindle end.
Ratchet stop enclosed in cap; easier to use.
Easy to adjust.

No. 2611, Tubing Micrometer, Plain.
No. 2651, Tubing Micrometer, with Ratchet Cap.
No. 2651, Tubing Micrometer, with Friction Thimble.

Chrome Clad Tubing Micrometers

For accurately measuring thickness of tubing, etc., in range from 0 to 1 inch. Will measure tubing down to 3 1/2 inch inside diameter. For measuring by thousands of an inch.

Easy to read. Chrome Clad non-glace satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on level of thimble.
Hardened one-piece spindle with ground threads.
Spindle diameter, 270 inch.

Spindle end is flat and anvil end is rounded permitting contact at only one point on the inside of the tube, giving exact thickness.
Table of decimal equivalents of 32nds, 16ths, 32nds and 64ths is marked on the frame.
Micro-lap finish on spindle end.
Ratchet stop enclosed in cap; easier to use.
Easy to adjust.
Non-slip finish on frame; easier to hold.

No. 2911, Tubing Micrometer, Plain.
No. 2951, Tubing Micrometer, with Ratchet Cap.
No. 2951, Tubing Micrometer, with Friction Thimble.

Note: Can be supplied in Metric, 0 to 25 mm., at no additional cost.

Packing: One in a Box.
Chrome Clad Millmenns Micrometers
1-Inch • Full Finished Frame

Specifically designed for rapid gaging of hot or cold metals. For measuring by thousandths of an inch. Range, 0 to 1 inch.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on barrel of thimble.
Hardened one-piece spindle with ground threads.
Spindle diameter, .250 inch.

No. 111, Millmenns Micrometer, Plain.
No. 121, Millmenns Micrometer, with Thumb Screw Lock Nut.

Note: Can be supplied with carbide tipped measuring face at extra cost; add prefix "CT" to No.
Packing: One in a Box.

FOR PRICES SEE PRICE LIST

No. 121H Chrome Clad Millmenns Micrometer with Handle for Gaging Hot Metals
1-Inch • Full Finished Frame

Specifically designed for rapid gaging of hot metals. For measuring by thousandths of an inch. Range, 0 to 1 inch.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on barrel of thimble.
Hardened one-piece spindle with ground threads.
Spindle diameter, .250 inch.
Long barrel on anvil and spindle permits easy access to the work.

Table of decimal equivalents of 8ths, 16ths, 32nds and 64ths is marked on the frame.
Micro-lap finish on anvil and spindle ends.
Screw nut will not loosen from effects of heat.
Easy to adjust.

Adjustment of micrometer is fast, simple and positive. To adjust anvil, remove the anvil lock screw at outer end of frame with a screwdriver. Turn spindle to zero. Turn anvil adjusting screw until anvil makes contact with the spindle. Replace anvil lock screw. This screw locks the anvil in proper position as well as serving as a protective cap. In addition to the anvil adjustment, the micrometer has the same spindle adjustment as our standard outside micrometers.

No. 121H, Millmenns Micrometer with Handle for Gaging Hot Metals.

Note: Can be supplied with carbide tipped measuring face at extra cost; add prefix "CT" to No.
Packing: One in a Box.

FOR PRICES SEE PRICE LIST
Chrome Clad Millmens Micrometers with Handle for Gaging Hot Metals

Extra Heavy Duty Ribbed Frame

No. 9208H

Specifically designed for rapid gaging of hot metals. For measuring by thousandths of an inch. Same spindle adjustment as our standard outside micrometers.

Easy to read. Chrome Clad non-glares satin finish with black filled graduations and figures.

Extra large diameter thimble with wider spaces between graduations.

Extra large figures and longer graduation lines on bevel of thimble.

Hardened one-piece spindle with ground threads.

Spindle diameter, .270 inch.

Long bevel on anvil and spindle permits easy access to the work.

Micro-lap finish on anvil and spindle ends.

Screw nut will not loosen from effects of heat.

Wing head lock nut is easier to grasp and lock and easily released even with gloved hand.

Easy to adjust. Ample size hardwood handle is securely fastened.

No. 9208H, Millmens Micrometer. Range, 0 to 1/2 Inch.

No. 9218H, Millmens Micrometer. Range, 0 to 1 Inch.

Medium Weight Enamelled Ribbed Frame

No. 922H. Millmens Micrometer. Range, 1 to 2 Inches.

Note: Can be supplied with carbide tipped measuring faces at extra cost; add prefix "CT" to No.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

No. 1942½ Chrome Clad Crankshaft Micrometer

Heavy Duty Rigid Ribbed Frame

A custom designed micrometer for crankshaft measuring by thousandths of an inch.

Graduations are on the under side of the hub, plainly visible for accurate measurements without removing micrometer from the work. This micrometer has the same smooth action and improved adjustment features as other Lufkin micrometers. Extended anvil and special length give good depth clearance.

Finished wood case for this micrometer is furnished only when ordered.

Easy to read. Chrome Clad non-glares satin finish with black filled graduations and figures.

Extra large diameter thimble with wider spaces between graduations.

Extra large figures and longer graduation lines on bevel of thimble.

Non-slip finish on frame; easier to hold.

No. 1942½, Crankshaft Micrometer with Lock Nut and Ratchet Cap. Range: 1 1/2 to 2 1/2 inches.

2-Inch Standard. (Supplied Only When Ordered).

Packing: One in a Box.
Chrome Clad Micrometers With Interchangeable Anvils

Heavy Duty Ribbed Frame

Lufkin Micrometers with interchangeable anvils are popular in many auto and machine shops. Each micrometer is supplied with a set of readily interchangeable anvils permitting a wide range of measure. The anvils are accurately and securely held in place by a knurled nut at the outer end of the anvil and an adjusting nut at the base of the anvil. The frame used on micrometers through 8-inch is of "I" bar construction, rigid and sturdy. The 9 to 12-inch range have sturdy, perforated, rigid ribbed frames. This micrometer has the same smooth action and adjustment features as other Lufkin micrometers. Standards are supplied with micrometers.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures. Extra large diameter thimble with wider spaces between graduations. Extra large figures and longer graduation lines on thimble. Rapid reading graduations on thimble.

For Measuring by 0.0008 of an Inch.

<table>
<thead>
<tr>
<th>Range</th>
<th>0 to 4 Inch No.</th>
<th>1 to 6 Inches No.</th>
<th>3 to 9 Inches No.</th>
<th>6 to 12 Inches No.</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>844A</td>
<td>846A</td>
<td>849A</td>
<td>8412A</td>
<td>8412AX</td>
<td>With Lock Nut &amp; Ratchet Cap</td>
</tr>
</tbody>
</table>

Packing: One in a Hinged Wooden Box, with Clasp.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Chrome Clad Screw Thread Micrometers With Swivel Anvil

ROSE TOOLS, INC.

No. 611T

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.

Extra large figures and longer graduation lines on bevel of thimble.

Rapid reading graduations on thimble.
Hardened one-piece spindle with ground threads.
Spindle and anvils are shaped to conform to the standard angle of threads for which they are selected.

Easy to adjust.

<table>
<thead>
<tr>
<th>For Measuring by 1.0000s in.</th>
<th>For Measuring by 10.0000s in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Inch Capacity</td>
<td>2-Inch Capacity</td>
</tr>
<tr>
<td>611T</td>
<td>B-13</td>
</tr>
<tr>
<td>611T</td>
<td>14-20</td>
</tr>
<tr>
<td>611T</td>
<td>22-30</td>
</tr>
<tr>
<td>611T</td>
<td>32-40</td>
</tr>
</tbody>
</table>

Always specify range of threads in addition to stock number just as underscored.

Chrome Clad Thread Comparator Micrometers

ROSE TOOLS, INC.

Heavy Duty Rigid Ribbed Frame

No. 1911C

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.
Extra large diameter thimble with wider spaces between graduations.
Extra large figures and longer graduation lines on bevel of thimble.

This is a micrometer of many uses. It is suited for making quick comparisons in cutting screw threads, for measuring web, thickness of drills and taps, and for measuring in small grooves and recesses where a regular micrometer cannot be used. For measuring by thousands of an inch.

Anvil and spindle faces are concave, pointed about 1/16-inch flat rather than sharp. Micrometer is set at zero when anvils and spindle are in contact. This smooth working micrometer has the easiest method of adjustment.

Rapid reading graduations on thimble.
Hardened one-piece spindle with ground threads.

Easy to adjust.

No. 1911C, Plain, Range: 0 to 1 Inch.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Chrome Clad Micrometer Heads

ROSE TOOLS, INC.

1/2-Inch

No. 010

Lufkin Micrometer Heads are readily attached to machine tools, special gages, etc., where micrometer accuracy is required. They are smooth working with an easy method of adjustment. When the 1/2-inch micrometer head is set at zero, the spindle extends 1 1/4 inch. When desired heads can be furnished with 1 1/2 inch, spindle extension at no extra charge.

The length of the lower end of the hub or clamping surface is 1 1/4 inch, and the diameter is .3755 inch. These heads can be furnished with Carbide Tips.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.

Rapid reading graduations on thimble.

<table>
<thead>
<tr>
<th>For Measuring by 1.0000s in.</th>
<th>For Measuring by 10.0000s in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>Equipment</td>
</tr>
<tr>
<td>0 to 1/2</td>
<td>0 to 1/2</td>
</tr>
<tr>
<td>0 to 1/2</td>
<td>0 to 1/2</td>
</tr>
<tr>
<td>0 to 1/2</td>
<td>0 to 1/2</td>
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<td>0 to 1/2</td>
<td>0 to 1/2</td>
</tr>
<tr>
<td>0 to 1/2</td>
<td>0 to 1/2</td>
</tr>
</tbody>
</table>

Chrome Clad Micrometer Heads

1-Inch

No. 011

These Lufkin Micrometer Heads are readily attached to machine tools, special gages, etc., with micrometer accuracy required. They are smooth working with an easy method of adjustment. When the 1-inch micrometer head is set at zero, the spindle extends 1 1/4 inch. The length of the lower end of the hub or clamping surface is 1 1/4 inch; the diameter is .3755 inch.

These heads can be furnished with Carbide Tips.

Easy to read. Chrome Clad non-glare satin finish with black filled graduations and figures.

Rapid reading graduations on thimble.

<table>
<thead>
<tr>
<th>For Measuring by 1.0000s in.</th>
<th>For Measuring by 10.0000s in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>Equipment</td>
</tr>
<tr>
<td>0 to 1</td>
<td>0 to 1</td>
</tr>
<tr>
<td>0 to 1</td>
<td>0 to 1</td>
</tr>
<tr>
<td>0 to 1</td>
<td>0 to 1</td>
</tr>
<tr>
<td>0 to 1</td>
<td>0 to 1</td>
</tr>
<tr>
<td>0 to 1</td>
<td>0 to 1</td>
</tr>
</tbody>
</table>

Chrome Clad Metric Micrometer Heads 13 Mm. and 25 Mm.

Some general description as those described above are graduated in Metric.

When the 13 mm. micrometer head is set at zero, the spindle extends 14.3 mm. The length of the lower end of the hub or clamping surface is 10 mm. and the diameter is 9.5 mm. Spindle diameter, 195 inch.

When the 25 mm. micrometer head is set at zero, the spindle extends 27 mm. The length of the lower end of the hub or clamping surface is 19 mm. and the diameter is 9.5 mm. Spindle diameter, 230 inch.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST
Ball Attachments for Micrometers
Fit Anvil or Spindle

Your regular micrometer can have added utility. Using a ball attachment with your regular micrometer, it can be used for measuring tubing walls and other rounded surfaces.

Lufkin ball attachments are easily applied to anvil or spindle or two balls can be used together.

Each ball fits freely in its retainer, insuring contact with anvil or spindle.

Balls are .200-inch diameter, necessitating subtracting .200-inch from reading for each ball used.

<table>
<thead>
<tr>
<th>No.</th>
<th>For Micrometer Series</th>
<th>Fits Anvil or Spindle Diameter, Inches</th>
<th>No. in Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>1600</td>
<td>.250</td>
<td>6</td>
</tr>
<tr>
<td>19</td>
<td>1900</td>
<td>.270</td>
<td>6</td>
</tr>
</tbody>
</table>

Flexible Cases for Micrometers

These cases are light and flexible, suitable for pocket use as well as protecting tool from scratches and other damage resulting from contact with other tools. Equipped with snap fastener.

For prices see price list.

Plush-Lined Leather Cases for Micrometers

A rigid, fine appearing case affording best protection for micrometers because dust, dirt, and grit are excluded. Also protects tool from scratches and other damage resulting from contact with other tools.

These fitted cases are solidly constructed with square edges and rounded corners. Lined with black plush. Outside covered with black, seal-grain genuine leather.

Cover is hinged and has slide clasp.

No. 91, Plush Lined Case for One-Inch Micrometers.
No. 92, Plush Lined Case for Two-Inch Micrometers.

Finished Wood Cases for Larger Size Micrometers

A well finished, substantial case made of choice hardwood. They have a hinged cover and clasp. Longer tool life can be expected if the tool is properly protected from dust and grit.

Wood Case for Three-Inch Micrometers.
Wood Case for Four-Inch Micrometers.
Wood Case for Five-Inch Micrometers.
Wood Case for Six-Inch Micrometers.
Wood Case for Seven-Inch Micrometers.
Wood Case for Eight-Inch Micrometers.
Wood Case for Nine-Inch Micrometers.
Wood Case for Ten-Inch Micrometers.
Wood Case for Eleven-Inch Micrometers.
Wood Case for Twelve-Inch Micrometers.

Packing: One in a Box.

For prices see price list.
Series 680 Chrome Clad Tubular Inside Micrometers

Lufkin's finest line of Inside Micrometers. Rigid tubular construction, yet light in weight. Made of precision ground tubing rather than a solid rod. Measuring rods can be added to either end of micrometer head. This feature permits the micrometer head to be in a centered position at all times. The head being centered and in line of vision, allows the mirror to get a more sensitive feel and a more precise measurement.

Micrometer head has chrome clad non-glare satin finish.
Rapid reading graduations on thimble (each thousandth numbered).
Spindle threads hardened and ground.
Anvil ends precision ground and hardened.
Adjustable extension rods are readily attached to head by removing hardened end cap (or anvil) of head with the friction wrench which is supplied. Each rod is marked with its length and adjusted

for accurate measurement and can be adjusted for wear. Simply slip the friction wrench over graduated sleeve and rotate it in either direction in the thimble until the zero line coincides with reading on thimble. As this would affect the measurement when extension rods are used, each rod is individually adjustable, by means of a hardened and ground plug at one end, which can be turned either in or out of the rod. A tension screw nut at end of screw is provided for adjusting tension on threads.

<table>
<thead>
<tr>
<th>No.</th>
<th>Range (Inches)</th>
<th>No. of Measuring Rods</th>
<th>Screw Movement (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>680A</td>
<td>1/8-8</td>
<td>5</td>
<td>1/8</td>
</tr>
<tr>
<td>680B</td>
<td>1/8-12</td>
<td>8</td>
<td>1/8</td>
</tr>
<tr>
<td>681C</td>
<td>1/8-12</td>
<td>7</td>
<td>1/8</td>
</tr>
<tr>
<td>681D</td>
<td>1/8-12</td>
<td>8</td>
<td>1/8</td>
</tr>
<tr>
<td>681K</td>
<td>1/8-12</td>
<td>10</td>
<td>1/8</td>
</tr>
<tr>
<td>681ID</td>
<td>1/8-32</td>
<td>10</td>
<td>1/8 &amp; 1 (2 Heads)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Range (Mm)</th>
<th>No. of Measuring Rods</th>
<th>Screw Movement (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>680A-M</td>
<td>40-200</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>680B-M</td>
<td>40-300</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>681C-M</td>
<td>100-600</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>681D-M</td>
<td>100-600</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>681K-M</td>
<td>100-600</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>681ID-M</td>
<td>40-800</td>
<td>10</td>
<td>13 &amp; 25 (2 Heads)</td>
</tr>
</tbody>
</table>

*Finished with handle to help maintain perfect balance essential to accuracy. May be attached anywhere along the head or the extension rods. Finish lock nut. With lock nut on 1-inch head. With lock nut on 2-inch head.

Note: Micrometers with range beyond 40 inches can be supplied. Prices on request.

Packing: One in a Nicely Finished Wooden Box.

No. 9A Height Gage Attachments

Patented

Used in conjunction with No. 680 series micrometers. Useful on jigs, fixtures and in machine construction work, suitable also for use in lining up shafing, etc.

Well proportioned, accurately grooved and hardened. Knurled chuck firmly holds inside micrometer rod in place. Hose extends entirely through, permitting micrometer rod to rest directly on any surface from which measurement is being taken, an essential feature when working on cylindrical objects. Milled finish.

Packing: One in a Box.

No. 9A, Showing
Application with Micrometer

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Series 80 Chrome Clad Inside Micrometers—Solid Rods

Packed: One in a Box. FOR PRICES SEE PRICE LIST

Precision End Measuring Rods

Lufkin End Measuring Rods serve as an accurate and dependable means for obtaining spacings and table setting locations on jig boring mills and other precision machine work. They are made from select high quality steel, lapped to very close tolerances. Contact surfaces are hardened. Greater accuracy is assured because Lufkin precision end measuring rods are manufactured under controlled conditions, temperature and other factors remaining constant.

Micrometer heads have Chrome Clad satin finish for easy reading. Each thousandth is numbered for rapid and accurate reading. Two heads are furnished with each standard set, one with red identifying ring, one with black identifying ring. Micrometer heads have inch movement of the screw. The knurled movement of the screw has hardened and ground threads.

The hardened supporting sections of the rods are 1⁄4-inch in diameter to fit properly in the groove of the machine bed. They are accurately ground parallel to the axis of the measuring faces. The contact faces of the rods are precision ground and lapped parallel to each other. Rods have chrome clad satin finish. Precision end measuring heads and rods can be furnished individually or in sets. Fitted measuring heads and rods can be furnished with fitted wood case.

Features:
- Micrometer head has Chrome Clad non-glare satin finish.
- Rapid reading graduations on thimble (each thousandth numbered).
- Spindle threads and contact points hardened and ground.

Extension rods and collars are used to obtain the range. Each rod is marked with the range of the micrometer when used with that rod. For example: using the 3 to 4-inch rod, the movement allows measurements from 3 to 3 1/2 inches, adding 1/8-inch increases the range with the same rod from 3 1/2 to 4 inches. Use of collars applies to all extension rods. The zero mark on head, collar and rod should be in alignment in assembling the tool for use. When assembled, the shoulder on the rod fits firmly against the head or collar.

Provision is made for adjusting tension and taking up wear on the screw. Contact points of the rods are adjustable for maintaining their individual lengths by means of wrenches furnished with each set.

Handle can be furnished for 80A, 80B and 81D sets. Handles can be inserted in the head by removing the knurled screw opposite the knurled and grooved extension rod lock screw. Handle supplied only when ordered.

Fitted cases are available for all sets; supplied only when ordered.

### Precision End Measuring Rods

<table>
<thead>
<tr>
<th>No.</th>
<th>Range</th>
<th>No. of Rods</th>
<th>Rod Dia. Inches</th>
<th>Movement of Rods</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>80A</td>
<td>2 to 8</td>
<td>6</td>
<td>5/8</td>
<td>3/4</td>
<td>Complete with Solid Rods and 1/8-Inch Collar</td>
</tr>
<tr>
<td>80B</td>
<td>2 to 12</td>
<td>10</td>
<td>5/8</td>
<td>3/4</td>
<td>Complete with Tubular Rods and One 1-Inch and Two 1/2-Inch Collars</td>
</tr>
<tr>
<td>81C</td>
<td>8 to 32</td>
<td>4</td>
<td>5/8</td>
<td>3/4</td>
<td>Consists of Micrometers sets 80A and 81C</td>
</tr>
</tbody>
</table>

### Extra Heads and Rods

<table>
<thead>
<tr>
<th>No.</th>
<th>Measurement</th>
<th>Extra Heads Only</th>
<th>Extra Rods Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>981</td>
<td>Inches</td>
<td>981</td>
<td>981M</td>
</tr>
<tr>
<td>981M</td>
<td>Metric</td>
<td>981M</td>
<td>981M</td>
</tr>
</tbody>
</table>

Note: Sets other than listed can be supplied; information and prices on application.

Packing: One in a Box. FOR PRICES SEE PRICE LIST
Chrome Clad Micrometer Depth Gages

1-Inch Movement

For measuring with micrometer accuracy the depth of holes, slots, etc.

Olding bases have knurled top surface, affording the firm hold essential for accurate measurement.

Rods are inserted through hole in the screw and securely fastened by knurled cap. Each rod has a means of individual length adjustment and end of each is hardened and lapped. Rods are centerless ground. Diameter of rods, approximately 1/8 inch.

Base is 1/8 inch wide, and is hardened and ground.

Head has Chrome Clad non-glare satin finish.

Rapid reading graduations on thimble (each thousandth numbered).

Threads are hardened and ground.

Lock nut engages the rod at any point, holding this reading.

Measures by 0.0001ths Inch

<table>
<thead>
<tr>
<th>2-Inch Base</th>
<th>4-Inch Base</th>
<th>5-Inch Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Range</td>
<td>2</td>
</tr>
<tr>
<td>513</td>
<td>0 to 3 Inch</td>
<td>3</td>
</tr>
<tr>
<td>1513RS</td>
<td>0 to 3 Inch</td>
<td>6</td>
</tr>
<tr>
<td>513 0 to 6</td>
<td>0 to 6 Inch</td>
<td>3</td>
</tr>
<tr>
<td>1513RS 0 to 6</td>
<td>0 to 6 Inch</td>
<td>6</td>
</tr>
</tbody>
</table>

Measure by 0.0001ths Inch

| No. | Range | 3 |
| 513M | 0 to 75 Min. | 3 |

With lock nut. With lock nut and ratchet cap. Above sets can also be furnished with rods ground to a 1/8 inch radius at no extra charge.

Extra Rods

Extra rods are available in 0 to 1, 1 to 2, 2 to 3, 3 to 4, 4 to 5, 5 to 6, 6 to 7, 7 to 8 and 8 to 9-inch ranges.

When ordering rods only, the finest degree of accuracy is assured by returning the gage to the factory for fitting.

Packing: One Gage with Rods in Hinged Wood Box with Clasp.

Available also without wood case.

FOR PRICES SEE PRICE LIST

Chrome Clad Micrometer Depth Gages

Graduated Base 1-Inch Movement

No. 515 GRS

Measures the depth of holes, slots, projections, etc. with micrometer accuracy.

Rose is graduated on one side to permit taking measurements in various locations at a specified distance from the edge of the work. Graduations are in 0.001ths (.001) and extend 2.4 inches both sides of zero located in the exact center of base.

The base, 5 inches long by 1/16 inch wide, is elongated with knurled top surface for firm holding. Base is hardened and ground.

The micrometer head has a Chrome Clad non-glare satin finish. Graduations on the thimble are rapid reading (each thousandth is numbered). Hardened and ground threads.

The rods, approximately 1/8 inch in diameter are centerless ground and have hardened and lapped measuring ends. Rods are inserted through hole in screw and securely fastened by knurled cap. Each rod has means of individual length adjustment.

<table>
<thead>
<tr>
<th>Number</th>
<th>Range</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>515G</td>
<td>0 to 3 inch</td>
<td>3</td>
</tr>
<tr>
<td>515GRS</td>
<td>0 to 3 inch</td>
<td>3</td>
</tr>
<tr>
<td>515RS</td>
<td>0 to 3 inch</td>
<td>3</td>
</tr>
</tbody>
</table>

With Lock Nut
With Lock Nut and Ratchet
With Lock Nut
With Lock Nut and Ratchet

NOTE: Sets can also be furnished with rods ground to a 3/32 inch radius at no extra charge.

Extra Rods

Extra rods are available in any of the following ranges: 0-1", 1-2", 2-3", 3-4", 4-5", 5-6", 6-7", 7-8", 8-9". When ordering rods only, return gage to factory for accurate fitting.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Chrome Clad Micrometer Depth Gages

1-Inch Movement • 2-Inch Base

No. 212

This gage is especially suitable for measuring with micrometer accuracy depths of very small holes, slots, etc. and for use in small places.

To permit use in small openings and in confined locations, the diameter of the measuring rods of this gage is 3/8 inch, length of oblong base is 2 inches, and its width 3/16 inch.

Three rods are furnished with this gage, giving measurements from 0 to 3 inches by thousandths of an inch. The rods are inserted through a hole in the screw and are securely fastened by the knurled cap. To compensate for wear, each rod is equipped with an adjusting nut to maintain its length. The end of each rod is hardened and lapped. Rods are centerless ground. Base is hardened and ground, and its form assures firm hold.

Head has Chrome Clad non-glare satin finish.

Rapid reading graduation on thimble (each thousandth numbered).

Lock nut engages the rod at any point, holding the reading.

No. 212, Micrometer Depth Gage.
No. 212S5, Micrometer Depth Gage, with Ratchet Stop.

Packing: One Gage with Rods in Hinged Wood Box with Clasp.

FOR PRICES, ROSE TOOLS, INC.
ROSE TOOLS, INC.

Depth Gages

Case Hardened Steel Heads + Tempered Steel Blades

Blades are tempered steel, machine divided, fitted in slot of head. They can be securely clamped at any point by means of knurled nut and tension spring. Removable for use separately as scales.

No. 510, 6 Inch; No. 512, 6 Inch

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Type Depth Gage</th>
<th>Markings</th>
</tr>
</thead>
<tbody>
<tr>
<td>510</td>
<td>6 Inch</td>
<td>With Narrow, 5/8-Inch, Spring Tempered Rule</td>
<td>Rule Marked One Side 32nds, Other Side 64ths Inch (Rule No. 2310)</td>
</tr>
<tr>
<td>512</td>
<td>6 Inch</td>
<td>With Round, Graduated Rod (Rod While Round is Graduated, a Distinctive Feature)</td>
<td>Rod is Tempered, 1/10-Inch in Diameter, Permitting Access to Small Holes. Rod Is Graduated 4 Inches to 32nds. Measurement Is Arrived at without the Additional Use of a Rule, Making this the Ideal Tool of Its Kind</td>
</tr>
<tr>
<td>510M</td>
<td>15-Centimeter, Wide Spring Tempered Rule</td>
<td>Rule is Marked One Side Millimeters, Other Side 5/16 Min. (Rule No. 5200M)</td>
<td></td>
</tr>
</tbody>
</table>

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.

Depth Gages

Combination Depth Gage and Hook Rule

Case Hardened Steel Heads + Tempered Steel Blades

No. 511, 6-Inch; No. 511A, 6-Inch; No. H-511

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Type Depth Gage</th>
<th>Markings</th>
</tr>
</thead>
<tbody>
<tr>
<td>511</td>
<td>6-Inch</td>
<td>With Narrow, 5/8-Inch, Spring Tempered Rule</td>
<td>Rule Marked One Side 32nds, Other Side 64ths Inch (Rule No. 2310) One Side of Head Is Marked, Both Right and Left, with 30, 45 and 60 Degree Lines</td>
</tr>
<tr>
<td>511A</td>
<td>6-Inch with Hook Rule</td>
<td>With 5/8-Inch Wide Spring Tempered Rule</td>
<td>With Degree Lines on Head, as Described Above. Rule Marked One Side 32nds, Other Side 64ths Inch. (Rule No. H-2310)</td>
</tr>
<tr>
<td>H-511</td>
<td>6-Inch with Hook Rule</td>
<td>With Narrow, 5/8-Inch, Spring Tempered Rule and Round Graduated Rod</td>
<td>Rule Marked One Side 32nds, Other Side 64ths Inch (Rule No. H-2310) One Side of Head Is Marked, Both Right and Left, with 30, 45 and 60 Degree Lines. Rod Is Graduated 4 Inches to 32nds Inch</td>
</tr>
<tr>
<td>H-511A</td>
<td>6-Inch with Hook Rule</td>
<td>With 5/8-Inch Wide Spring Tempered Rule with Hook and Round Graduated Rod</td>
<td>With Degree Lines on Head, as Described Above. Rule Marked One Side 32nds, Other Side 64ths Inch. (Rule No. H-2310) Rod Is Graduated 4 Inches to 32nds Inch</td>
</tr>
</tbody>
</table>

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Depth Gages
With Graduated Steel Rule
Designed for Spanning Wider Openings

These depth gages have bases 3 1/2, 6 and 10-inches wide, a range to cover practically all requirements. All bases have gaging positions at center and at end, making them more suitable to taking difficult measurements. Measuring edge of base is beveled, giving line contact with work surface.

Blade (rule) fits in bead slots and can be clamped securely at any length by knurled nut and tension spring. Made entirely of tempered steel. The flat blades are 3/4-inch wide and are machine divided. One side graduated to 22ths, the other side to 64ths (rule No. 2310). The rule is removed readily for use separately as a scale.

<table>
<thead>
<tr>
<th>No.</th>
<th>With Rule Inches</th>
<th>With Rule Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>509A</td>
<td>3 1/2</td>
<td>4</td>
</tr>
<tr>
<td>509B</td>
<td>3 1/4</td>
<td>6</td>
</tr>
<tr>
<td>509C</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>509D</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>509E</td>
<td>10</td>
<td>6</td>
</tr>
</tbody>
</table>

Notes: Rule No. 2311 graduated in 64ths and 100ths can be used in place of No. 2310. Metric, No. 509 Series Depth Gages can be furnished with Metric Rule No. 2491M.

Prices same as gages with corresponding length rule in inches.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Series No. 800
Vernier Height Gage

Balanced Design of Base and Bar
Sturdy Construction
Long Bar Provides Full Measuring Capacity
Larger Numerals, Fine Closer Markings, All Black Filled
Extra Long Arm on Sliding Jaw
Base and Sliding Jaw Have Top and Bottom Surfaces Hardened, Ground and Lapped

Accurately measures and marks off vertical distances from a plane surface. Reads to thousandths of inches by means of a Vernier on sliding jaw.

Graduations are machine cut, fine, and black filled. Top and bottom surfaces of sliding jaw are hardened, ground and lapped enabling scriber to be set either on top or bottom surface of sliding jaw arm. Sliding jaw has an extra long arm which permits scriber to be clamped in underside position and sliding jaw lowered to its lowest measuring position. The bottom of the base is ground and lapped.

Base of the 18 and 24-inch gages are channeled on both sides. Channels are finished in enamel. All other surfaces are bright.

Depth gage attachments can be attached to straight scriber. Attachment for 12-inch gage will enter holes not less than 1/2 in. in diam. to a depth of 5 1/2 in. Attachment for 18 and 24-in. gage will enter holes not less than 1 1/4 in. in diam. to a depth of 8 in.

Offset scriber for 12-in. gage is 3 in. long overall and has a 1/2-in. offset. It extends the range to 9 1/4 in.

<table>
<thead>
<tr>
<th>Size</th>
<th>Bar Inches</th>
<th>Bar Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>3 1/8 x 1/4</td>
<td>3 1/8 x 1/4</td>
</tr>
<tr>
<td>18</td>
<td>3 1/8 x 1/4</td>
<td>3 1/8 x 1/4</td>
</tr>
<tr>
<td>24</td>
<td>3 1/8 x 1/4</td>
<td>7 3/8 x 1/4</td>
</tr>
</tbody>
</table>

Offset scriber for 12-in. gage is 3 in. long overall and has a 1/2-in. offset. It extends the range to 9 1/4 in.

For Prices See Price List
Combination Squares • Bevel Protractors

Combination Sets

General Description

These tools consist of an accurately made divided, tempered steel rule (or blade), on which slide the square head (or stock), the center head and the protractor head, furnished singly or as a set.

All ground faces and the examined parts of all heads are exceptionally well finished. Square heads have square and miter faces and all, except the 4-inch and No. 135, are equipped with level glass and numer. All protractor heads have level. All heads can be accurately quickly and securely set at any point along the blade, and readily removed so blade can be used separately as a rule and square head as a level. Arms of our center heads are ground to equal length and have ends uniformly machined to give accurate result on large as well as small diameters. The revolving turret of our protractor heads has degrees numbered from 0 to 90 to left and to right of center. Those protractor heads which have shoulder extending from only one side of blade are known either as “single,” “plain,” or “not reversible”; those with shoulder extending from both sides, as “double” or “reversible.” Our reversible protractor heads readily can be converted to single type.

We Offer Combination Squares and Sets of Two Kinds

With Square and Center Heads Drop Forged and Hardened

With Center Heads Not Hardened

In the design and manufacture of Lufkin Combination Squares, first consideration is given to accuracy and to insure continued accuracy. A well balanced fine appearing tool. All Lufkin Combination Squares are equipped with patented bolt which permits reversing the blade in the head without removing the nut. Hardened heads are so marked.

Combination Square Sets are made up by adding parts to the basic square. For example: The No. 935 Combination Set is made up of the No. 35C Square and Center Head plus a No. 06 Protractor Head.

A Combination Set Has Perhaps More Applications in Use Than Any Other Hand Tool Made for Mechanics

These uses are so many and so varied that this tool is almost indispensable to all mechanics in metal working, machinists, pattern makers, and others.

It is an ideal tool for transferring exact measurements and laying out work; is well suited also for leveling surfaces with another for measuring and squaring in mortises, etc. It serves as a handy gage in many places where micrometer accuracy is not required. We list below but a few of its many applications.

Try and Mitre Squares • With Adjustable Length Blade

(Take the Place of a Whole Set of Common Squares)

<table>
<thead>
<tr>
<th>Height Gage</th>
<th>Level</th>
<th>Depth Gage</th>
<th>Plumb</th>
<th>Bore Protractor</th>
<th>Steel Scale</th>
<th>Marking Gage</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>6</td>
<td>8</td>
<td>12</td>
<td>18</td>
<td>24</td>
<td>36</td>
</tr>
</tbody>
</table>

Combination Squares

Blade with Square Head Only

Level in Square Head (4-Inch Excepted)

Tempered Blade

Patented Bolt Permits Reversing Blade in the Head without Removing Nut

Showing Reverse Side of Blade

<table>
<thead>
<tr>
<th>With Drop Forged and Hardened Head No.</th>
<th>With Center Head No.</th>
<th>Length</th>
<th>Graduations</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-7</td>
<td>25</td>
<td>4, 6, 9, 12</td>
<td>No. 4 (8ths, 16ths, 32nds, 64ths In.)</td>
</tr>
<tr>
<td></td>
<td>25-7</td>
<td>18, 24 In.</td>
<td>No. 7 (10ths, 32nds, 64ths, 100ths, In.)</td>
</tr>
<tr>
<td>35-4R</td>
<td>25-4R</td>
<td>12, 15, 24 In.</td>
<td>No. 4 Rapid Reading (8ths, 16ths, 32nds, 64ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th</td>
</tr>
<tr>
<td>35-7R</td>
<td>25-7R</td>
<td>12, 15, 24 In.</td>
<td>No. 7 Rapid Reading (10ths, 32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>35-16R</td>
<td>25-16R</td>
<td>12, 15, 24 In.</td>
<td>No. 16 Rapid Reading (32nds, 60ths, 100ths, In.); 32nds Numbered Every 4th Division; 60ths Every 6th; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>35ME</td>
<td>25ME</td>
<td>10, 15, 20, 30</td>
<td>Other Side Millimeters and 32nds Inch; Other Side Millimeters and 64ths Inch</td>
</tr>
</tbody>
</table>

When ordering specify Catalog No. and length.

<table>
<thead>
<tr>
<th>Combination Square Blade Widths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>9</td>
</tr>
</tbody>
</table>

Note: For general description of Combination Squares, see page 50.

Packing: One in a Box.
Combination Squares

Blade with Square and Center Heads
Level in Square Head (4-inch Excepted) • Tempered Blade
Patented Bolt Permits Reversing Blade in the Head without Removing Nut

Showing Reverse Side of Blade

<table>
<thead>
<tr>
<th>With Drop Forged and Hardened Heads No.</th>
<th>With Cast Heads No.</th>
<th>Length</th>
<th>Graduations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3SC-7</td>
<td>25C</td>
<td>4, 6, 9, 12, 18, 24 In.</td>
<td>No. 4 (8ths, 16ths, 32nds, 64ths In.)</td>
</tr>
<tr>
<td>3SC-4R</td>
<td>25C-4R</td>
<td>12, 18, 24 In.</td>
<td>No. 4 Rapid Reading (8ths, 16ths, 32nds, 64ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th</td>
</tr>
<tr>
<td>3SC-7R</td>
<td>25C-7R</td>
<td>12, 18, 24 In.</td>
<td>No. 7 Rapid Reading (16ths, 32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>3SC-16R</td>
<td>25C-16R</td>
<td>12, 18, 24 In.</td>
<td>No. 16 Rapid Reading (32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>3SCME</td>
<td>25CME</td>
<td>10, 15, 20, 30, 50, 60 Cm.</td>
<td>Metric and English; One Side 1/6 Millimeters and 32nds Inch; Other Side Millimeters and 64ths Inch</td>
</tr>
</tbody>
</table>

When ordering specify catalog No. and length.

Combination Square Blade Widths

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5/32</td>
</tr>
<tr>
<td>6</td>
<td>5/32</td>
</tr>
<tr>
<td>9</td>
<td>5/32</td>
</tr>
</tbody>
</table>

Note: For general description of Combination Squares, see page 50.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Combination Sets

Blade with Square, Center and Non-Reversible Protractor Heads
Level in All Square and Protractor Heads • Tempered Blade
Patented Bolt Permits Reversing Blade in the Head without Removing Nut

Showing Reverse Side of Blade

With Square and Center Blade Drop Forged and Hardened Heads No.

<table>
<thead>
<tr>
<th>Length</th>
<th>Graduations</th>
</tr>
</thead>
<tbody>
<tr>
<td>52S</td>
<td>No. 4 (8ths, 16ths, 32nds, 64ths In.)</td>
</tr>
<tr>
<td>52S-7</td>
<td>No. 7 (16ths, 32nds, 64ths, 100ths In.)</td>
</tr>
<tr>
<td>52S-4R</td>
<td>No. 4 Rapid Reading (8ths, 16ths, 32nds, 64ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th</td>
</tr>
<tr>
<td>52S-7R</td>
<td>No. 7 Rapid Reading (16ths, 32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>52S-16R</td>
<td>No. 16 Rapid Reading (32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>52SME</td>
<td>No. 4 (8ths, 16ths, 32nds, 64ths In.)</td>
</tr>
<tr>
<td>52S-7</td>
<td>No. 7 (16ths, 32nds, 64ths, 100ths In.)</td>
</tr>
<tr>
<td>52S-4R</td>
<td>No. 4 Rapid Reading (8ths, 16ths, 32nds, 64ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th</td>
</tr>
<tr>
<td>52S-7R</td>
<td>No. 7 Rapid Reading (16ths, 32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>52S-16R</td>
<td>No. 16 Rapid Reading (32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>52SME</td>
<td>No. 4 (8ths, 16ths, 32nds, 64ths In.)</td>
</tr>
<tr>
<td>52S-7</td>
<td>No. 7 (16ths, 32nds, 64ths, 100ths In.)</td>
</tr>
<tr>
<td>52S-4R</td>
<td>No. 4 Rapid Reading (8ths, 16ths, 32nds, 64ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th</td>
</tr>
<tr>
<td>52S-7R</td>
<td>No. 7 Rapid Reading (16ths, 32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>52S-16R</td>
<td>No. 16 Rapid Reading (32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
</tbody>
</table>

When ordering, specify catalog No. and length.

Combination Square Blade Widths

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>5/32</td>
</tr>
<tr>
<td>12</td>
<td>5/32</td>
</tr>
</tbody>
</table>

Note: For general description of Combination Squares, see page 50.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
### Combination Sets

Blade with Square, Center and Reversible Protractor Heads
Level in All Square and Protractor Heads • Tempered Blade
Patented Bolt Permits Reversing Blade in the Head without Removing Nut

![Showing Reverse Side of Blade](image)

<table>
<thead>
<tr>
<th>With Square and Center Heads Drop Forged and Hardened No.</th>
<th>With Cast Heads No.</th>
<th>Length</th>
<th>Graduations</th>
</tr>
</thead>
<tbody>
<tr>
<td>63S</td>
<td>625</td>
<td>9, 12, 18, 24 In.</td>
<td>No. 4 (8ths, 16ths, 32nds, 64ths In.)</td>
</tr>
<tr>
<td>635-7</td>
<td>625-7</td>
<td>12, 18, 24 In.</td>
<td>No. 7 (16ths, 32nds, 64ths, 100ths In.)</td>
</tr>
<tr>
<td>635-4R</td>
<td>625-4R</td>
<td>12, 18, 24 In.</td>
<td>No. 4 Rapid Reading (8ths, 16ths, 32nds, 64ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th.</td>
</tr>
<tr>
<td>635-7R</td>
<td>625-7R</td>
<td>12, 18, 24 In.</td>
<td>No. 7 Rapid Reading (16ths, 32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th.</td>
</tr>
<tr>
<td>435-16R</td>
<td>625-16R</td>
<td>12, 18, 24 In.</td>
<td>No. 16 Rapid Reading (32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th.</td>
</tr>
<tr>
<td>635ME</td>
<td>625ME</td>
<td>20, 30, 50, 60 Cm.</td>
<td>Metric and English; One Side 1/4 Millimeters and 32nds; Other Side Millimeters and 64ths Inch</td>
</tr>
</tbody>
</table>

#### When ordering, specify catalog No. and length.

<table>
<thead>
<tr>
<th>Combination Square Blade Widths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>12</td>
</tr>
</tbody>
</table>

**Note:** For general description of Combination Squares, see page 50.

**Packing:** One in a Box. **FOR PRICES SEE PRICE LIST**

### Combination Squares

(Junior Size)

Blade with Square Head Only or Blade with Square and Center Heads
All Heads Drop Forged and Hardened • Tempered Steel Blade
Patented Bolt Permits Reversing Blade in the Head without Removing Nut

Lufkin "Junior" Combination Squares are a quality tool designed for the tool, die and pattern maker.

They are smaller in size and lighter in weight, but of the same general pattern as our Nos. 35 and 35C. The blade is narrower, 5/8 inch, and the square and center heads are smaller.

A distinctive feature is a rapid reading graduation. No. 4 graduations divided 8ths, 16ths, 32nds and 64ths inch; 64ths numbered every 8th division; 32nds numbered every 4th division. No. 7 graduations divided 16ths, 32nd, 64ths and 100ths inch; 32nds numbered every 4th division; 64ths numbered every 8th division; 100ths numbered every 10th division.

Made only with 6-inch blade.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15S</td>
<td>Blade with Square Head only. No. 4 Graduation. Rapid Reading</td>
</tr>
<tr>
<td>15S-7R</td>
<td>Blade with Square and Center Heads. No. 4 Graduation. Rapid Reading</td>
</tr>
<tr>
<td>15S-7C</td>
<td>Blade with Square and Center Heads. No. 7 Graduation. Rapid Reading</td>
</tr>
<tr>
<td>15S-7C-R</td>
<td>Blade Only for above (specify graduation)</td>
</tr>
</tbody>
</table>

**Note:** For general description of Combination Squares, see page 50.

**Packing:** One in a Box. **FOR PRICES SEE PRICE LIST**
Bevel Protractors
Blade with Non-Reversible Protractor Head Only • Single Head
Has Shoulder on One Side of Blade • Tempered Blade • Patented
Bolt Permits Reversing Blade in the Head without Removing Nut

Showing Reverse Side of Blade

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>9, 12, 18, 24 In.</td>
<td>No. 4 (8ths, 16ths, 32nds and 64ths In.)</td>
</tr>
<tr>
<td>5-7</td>
<td>12, 18, 24 In.</td>
<td>No. 7 (16ths, 32nds, 64ths and 100ths In.)</td>
</tr>
<tr>
<td>5-4R</td>
<td>12, 18, 24 In.</td>
<td>No. 4 Rapid Reading (8ths, 16ths, 32nds, 64ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th</td>
</tr>
<tr>
<td>5-7R</td>
<td>12, 18, 24 In.</td>
<td>No. 7 Rapid Reading (16ths, 32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>5-16R</td>
<td>12, 18, 24 In.</td>
<td>No. 16 Rapid Reading (32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>5ME</td>
<td>20, 30, 50, 60 Cm.</td>
<td>Metric and English; One Side 1/8 Millimeters and 32nds; Other Side Millimeters and 64ths Inch</td>
</tr>
</tbody>
</table>

When ordering, specify catalog No. and length.

Combination Square Blade Widths

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width, Inches</th>
<th>Length</th>
<th>Approximate Width, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>24</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: For general description of Bevel Protractors, see page 50.

Packing: One in a Box.

For Prices See Price List

---

Bevel Protractors
Blade with Reversible Protractor Head Only • Double Head
Has Shoulder on Both Sides of Blade • Convertible to Single
Type • Tempered Blade • Patented Bolt Permits Reversing Blade in the Head without Removing Nut

Showing Reverse Side of Blade

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>9, 12, 18, 24 In.</td>
<td>No. 4 (8ths, 16ths, 32nds, 64ths In.)</td>
</tr>
<tr>
<td>6-7</td>
<td>12, 18, 24 In.</td>
<td>No. 7 (16ths, 32nds, 64ths, 100ths In.)</td>
</tr>
<tr>
<td>6-4R</td>
<td>12, 18, 24 In.</td>
<td>No. 4 Rapid Reading (8ths, 16ths, 32nds, 64ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th</td>
</tr>
<tr>
<td>6-7R</td>
<td>12, 18, 24 In.</td>
<td>No. 7 Rapid Reading (16ths, 32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>6-16R</td>
<td>12, 18, 24 In.</td>
<td>No. 16 Rapid Reading (32nds, 64ths, 100ths In.); 32nds Numbered Every 4th Division; 64ths Every 8th; 100ths Every 10th</td>
</tr>
<tr>
<td>6ME</td>
<td>20, 30, 50, 60 Cm.</td>
<td>Metric and English; One Side 1/8 Millimeters and 32nds; Other Side Millimeters and 64ths Inch</td>
</tr>
</tbody>
</table>

When ordering, specify catalog No. and length.

Combination Square Blade Widths

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width, Inches</th>
<th>Length</th>
<th>Approximate Width, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>12</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>24</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: For general description of Bevel Protractors, see page 50.

Packing: One in a Box.

For Prices See Price List

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ROSE TOOLS, INC.
Separate Parts of Combination Squares, Bevel Protractors and Combination Sets
Square, Center and Protractor Heads Only

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>2504</td>
<td>4, 6, 9, 12, 15, 21, 30</td>
<td>32nds, 64ths</td>
</tr>
<tr>
<td>C2504</td>
<td>4, 6, 12, 18, 24</td>
<td>32nds, 64ths</td>
</tr>
<tr>
<td>S2504</td>
<td>12, 18, 24</td>
<td>32nds, 64ths</td>
</tr>
</tbody>
</table>

Chrome Cloid Combination Square Blades Only

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>2504R</td>
<td>4, 6, 9, 12, 15, 21, 30</td>
<td>32nds, 64ths</td>
</tr>
<tr>
<td>C2504R</td>
<td>4, 6, 12, 18, 24</td>
<td>32nds, 64ths</td>
</tr>
<tr>
<td>S2504R</td>
<td>12, 18, 24</td>
<td>32nds, 64ths</td>
</tr>
</tbody>
</table>

Stainless Steel Combination Square Blades

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>2504</td>
<td>4, 6, 9, 12, 15, 21, 30</td>
<td>32nds, 64ths</td>
</tr>
<tr>
<td>C2504</td>
<td>4, 6, 12, 18, 24</td>
<td>32nds, 64ths</td>
</tr>
<tr>
<td>S2504</td>
<td>12, 18, 24</td>
<td>32nds, 64ths</td>
</tr>
</tbody>
</table>

Chrome Cloid Combination Square Blades With Rapid Reading Graduations

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>2504R</td>
<td>4, 6, 9, 12, 15, 21, 30</td>
<td>32nds, 64ths</td>
</tr>
<tr>
<td>C2504R</td>
<td>4, 6, 12, 18, 24</td>
<td>32nds, 64ths</td>
</tr>
<tr>
<td>S2504R</td>
<td>12, 18, 24</td>
<td>32nds, 64ths</td>
</tr>
</tbody>
</table>

Metric, Metric and English Combination Square Blades

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>2500ME</td>
<td>10, 15, 20, 30, 50, 60</td>
<td>15 Mm. and 32nds Inch</td>
</tr>
<tr>
<td>2500MM</td>
<td>10, 15, 20, 30, 50, 60</td>
<td>3 Edges in Mm.</td>
</tr>
</tbody>
</table>

Combination Square Blade Widths

<table>
<thead>
<tr>
<th>Length</th>
<th>Width, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3/4</td>
</tr>
<tr>
<td>6</td>
<td>1/2</td>
</tr>
<tr>
<td>9</td>
<td>1/2</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: For Blades for Nos. 135 and 136C, see page 55.

Packing: Six in a Box.

*Rapid Reading Graduations mean subdivisions are numbered: 32nds every 4th division; 50ths every 5th division; 64ths every 8th division; 100ths every 10th division.

FOR PRICES SEE PRICE LIST
Right Angle Rule Clamps
(Attachment for Combination Square)

Clamp Applied to Rule and Blade of Square

Used with Combination Square Blades and Heads these Rule Clamps afford many valuable applications. These Right Angle Rule Clamps will hold firmly at right angles a Combination Square Blade of 12, 18 or 24-inch length, and any regular steel rule not over 1-inch wide. Can also be applied to Thin Steel Squares, such as our No. 189.

A feature is the clip with prongs at each end. These prongs at all times hold both clamp nuts in place. Interference of the two bolts and nuts is eliminated and operations simplified as illustrated above. Thumb nuts are knurled and of good size.

<table>
<thead>
<tr>
<th>No.</th>
<th>Length of Blade Scale</th>
<th>Body Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>18A</td>
<td>14 1/2 in</td>
<td>11 1/2 in</td>
</tr>
<tr>
<td>18B</td>
<td>21 1/2 in</td>
<td>21 1/2 in</td>
</tr>
</tbody>
</table>

No. 8 Rule Clamps

Used when a measurement greater than the length of any single rule at hand must be accurately taken. This clamp firmly holds two rules end to end, as shown.

As the clamp bolts are independently adjustable by means of knurled thumb nuts, this clamp will join two rules whether they be of same or different width or thickness. The width capacity is 1 1/4 inches. This device is in malleable blue finish. It is popular because tool chests normally will not accommodate longer rules.

No. 8 Rule Clamp.

Packing: Four in a Box.

FOR PRICES SEE PRICE LIST
Drill Grinding Gage
Tempered Blade

An Ideal Drill Grinding Gage for readily and accurately test cutting edges of drills and countersinks for proper angle, and point for proper centering. The extra wide face of head, to which drill is held, 5/4 inch, is a most valuable feature.

The head is that of the 6-inch Double Square. Polished and enameled parts of head are well finished. Slotted blade slides readily in the head and may be securely set by thumb screw.

The bevel of blade at one end is 59 degrees, the cutting angle of drills; and at the other end 41 degrees, the cutting angle of countersinks for machine screws. The bevel ends are graduated in 64ths inch and have Rapid Reading graduations. The graduations measure at right angles to the face of the head which is parallel with the axis of the drill. Thus the center of drill is directly obtained by reading the graduation, the simplest and most accurate method of centering.

No. 260, Drill Grinding Gage Complete.
No. 266, Drill Grinding Blade Only for No. 260.

Note: No. 260D with addition of Standard Blade and Bevel Blade in No. 26C, see page 61.

Packing: One in a Box.

Separate Parts of Double Squares and Drill Graining Gage

Standard (Graduated) 4 Inch (10 Cm.) Blade.
Standard (Graduated) 6 Inch (15 Cm.) Blade.
Drill Grinding Blade for Head of 6-Inch Square.
Bevel Blade for 4-Inch Square.

Bevel Blade for 6-Inch Square.
Head (or Stock) Only for 4-Inch Square.
Head (or Stock) Only for 6-Inch Square.

Double Steel Squares
With Hardened and Ground Head and Blades

Designed especially for the small work of tool and die makers.

Both faces of head (or stock) are square. All blades slide in head, permitting use in places where a square with fixed blade could not be used. Knurled thumb nut with tension spring serves to lock the blades securely.

This Double Steel Square is furnished in various combinations with the following blades:

Standard Blade—Graduated one side only, upper edge 32nds, lower edge 64ths inch. Length, 2½ inches. Approximately 5/4 inch wide.


No. 137A, Square with Standard Blade.
No. 137C, Square Complete, with Standard, Bevel and Narrow Blades.

Packing: One in a Box.
**Diemakers Squares**

With Hardened and Ground Head and Blades

A Tool and Die Makers Square so designed that the blade not only slide in the head (or stock), but can be adjusted and set at angles with the head. This is particularly valuable in determining clearance in dies (see sectional view).

Both faces of the head are square. It has two knurled thumb screws. The larger will securely clamp blades in position, either straight or at an angle. The smaller is for setting any of the blades at an angle. To set blade at an angle, loosen the thumb screw which clamps blade, then turn the smaller thumb screw into the head. This action, as illustrated, adjusts blade to desired angle, which is then held by tightening the clamping screw.

This square is furnished in various combinations with the following blades:

- **Standard Blade**—Graduated one side only, upper edge 32nds, lower edge 64ths inch. Length, 2½ inches. Approximately ½ inch wide.
- **Bevel Blade**—To determine 20' and 45-degree angles. Not graduated. Length, 2½ inches. Approximately ½ inch wide.
- **Narrow Blades**—Graduated one side to 32nds inch. Cut away on one end 3/8-inch back, making blade size ½ inch by ½ inch, for use in very small places. Length, 2½ inches. Approximately ½ inch wide.
- **Offset Blade**—Used in places where it is difficult to sight with the straight blade. The offset end of blade is approximately ½ inch wide and extends from the stock about 1½ inches. Both sides of each edge are beveled, to give a line contact. Not graduated.

No. 138A, Square with Standard Blade.

No. 138C, Square with Standard, Bevel and Narrow Blades.

No. 138CX, Square Complete, with Standard Bevel, Narrow and Offset Blades.

No. 138S, Consists of No. 138CX in Fitted Case.

**Thin Steel Squares**

Used by draftsmen, pattern makers, tool makers, machinists and others for layout work.

Lufkin thin squares are graduated on one inside edge and one outside edge on both sides.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Graduation</th>
<th>Blade Length</th>
<th>Blade Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>139-3</td>
<td>Inch</td>
<td>16ths and 64ths Inch One Side; 32nds and 64ths on Other; Rapid Reading Graduations, 64ths Numbered Every 8th Division</td>
<td>3x2</td>
<td>1/20</td>
</tr>
<tr>
<td>139-4</td>
<td>Inch</td>
<td>16ths and 32nds on Both Sides</td>
<td>4x3</td>
<td>1/16</td>
</tr>
<tr>
<td>139-6</td>
<td>Inch</td>
<td>16ths and 32nds on Both Sides</td>
<td>6x4</td>
<td>1/16</td>
</tr>
</tbody>
</table>

Packing: Three in a Box.

*For Prices See Price List*

ROSE TOOLS, INC.
Hardened Solid Steel Squares

Both blade and beam are lapped for accuracy. Clearance for burrs or dirt is compensated for by a groove at the inner corner of the beam.
Wood cases are available for protecting these precision squares. They are supplied only when specified.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size of Length Blade</th>
<th>Length, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>166-1 1/2 Inch</td>
<td>1 1/4</td>
<td></td>
</tr>
<tr>
<td>166-3 Inch</td>
<td>2 1/2</td>
<td></td>
</tr>
<tr>
<td>166-4 1/2 Inch</td>
<td>3 1/2</td>
<td></td>
</tr>
</tbody>
</table>

Wood Cases

- Hardened Steel Squares should have the protection of a fitted case. A case well built of choice wood with hinged cover and clasp is supplied only when ordered.
- Case for 1 1/4-Inch Square.
- Case for 3-Inch Square.
- Case for 4 1/2-Inch Square.
- Case for 6-Inch Square.
- Case for 12-Inch Square.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Universal Bevels

A very popular tool, necessary in many classes of work. Blade and stock are so slotted and shaped that any angle may be obtained. Spring provides constant tension and blade can be locked firmly at any angle with the knurled thumb nut. Head of clamping bolt sets in a recess, allowing stock to lie flat on the work. Arm of the blade having beveled end is 3 inches long. Stock is 3 inches long, and, while slotted, is solid on one edge for 1 1/4 inches, forming a rest under the blade against which even thin work may be placed and accurately fitted.

No. 66 Universal Bevel.

No. 67 Universal Bevel.

This tool, having both straight and offset slots in blade and long slot in stock, will take adjustments and angles which cannot be obtained with any common bevels. Blade is 6 inches long; stock 3 1/2 inches. Spring provides constant tension and knurled thumb nut locks blade in any desired angle. Head of clamp bolt sets in a recess, allowing stock to lie flat on the work.

No. 67, Universal Bevel.

Note: No. 67 Bevel can be used with No. 890 Protractor, listed on page 69.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST
Steel Protractors
For Machinists, Draftsmen and Other Mechanics
For Setting Bevels, Transferring Angles, Etc.

No. 890

No. 891

The head is graduated in degrees from 0 to 180, and has two rows of figures reading in opposite directions. The indicating arm of the blade has a line graduation for accurately setting and reading the Protractor. The blade is six inches long and has spring giving constant tension. The blade can be securely set by means of the knurled thumb nut.

No. 890 has semi-circular head with back finished flat.
No. 891 is the same as No. 890 except with rectangular head which gives four working faces.

No. 890, Steel Protractor.
No. 891, Steel Protractor.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

No. 892 Steel Protractor and Depth Gage
For Machinists, Draftsmen, Etc.
For Setting Bevels, Transferring Angles and Gaging Depths

No. 892, Protractor and Depth Gage.

The blade of this gage serves as a measuring blade of the depth gage as well as the indicating arm of the protractor. The head is rectangular in shape giving four working faces. Back of head is flat. Head is graduated in degrees from 0 to 180 and has two rows of figures reading in opposite directions. The blade of the Protractor is our regular narrow pattern machine divided scale No. 2310, six inch, graduated one side 64ths, other side 32nds inch. The spring clamping device provides constant tension and the knurled thumb nut secures the blade at any angle or at any extended length.

Note: Blade graduated 64ths and 160ths (No. 2311 Rule) furnished with above when specified, without extra charge.

No. 893 Steel Protractor
For Setting Bevels to Any Desired Angle

It is graduated at the edge in degrees from 0 to 180, and has two rows of figures reading in opposite directions. The back of the tool is flat.

No. 893, Steel Protractor.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST
Universal Dial Test Indicators

Simplified design with minimum number of parts—lighter weight.

One-piece base and shank for greater strength.

All working parts mounted on base.

Hole attachment screwed directly into base—not requiring index plates.

Longer hole attachment reach into deeper holes.

Hole attachment is directly engaged to indicator shaft.

No. 399A has heavy clamp for adjusting tension or locking in position.

Gauges have full 300-inch range, clearly marked, easy to read.

Sensitive plunger, supplied with three contact points.

Jeweled bearing ensures greater accuracy—longer life.

Has a 15/16-inch diameter dial and a contact point attached to a spindle or plunger which extends out of back of base perpendicular to dial. Slightest movement of contact point is indicated on the dial face by the pointer hand.

Entire mechanism is mounted on a bar which forms the base of the indicator and the shank by which it is held. It is jeweled thrust bearing. Simplicity of mechanism includes customary parts of a gear assembly. Outside knurled ring, known as bezel, contains dial and is adjustable so that zero can be set to any position in relation to pointer.

No. 399A reads clockwise from 0 to 50 and from 50 back to zero. The dial has 100 graduations measuring 0.01 inch each, therefore one revolution of the hand represents 1 inch. The indicator has a range or spindle travel of 200 inch or two revolutions of the hand, while the hole attachment has a range of 125 inch. A bezel clamp is provided to readily adjust the tension on the bezel or to firmly lock it in position.

No. 399A is the same as No. 399A except it is not equipped with the bezel clamp and the reading on the dial is 0 to 100 instead of 0-50-0. Attachments are interchangeable for both Nos. 299A and 399A.

<table>
<thead>
<tr>
<th>With 0 to 100</th>
<th>With 50 to 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dial No.</td>
<td>Dial No.</td>
</tr>
<tr>
<td>299A</td>
<td>399A</td>
</tr>
<tr>
<td>299B</td>
<td>399B</td>
</tr>
<tr>
<td>299C</td>
<td>399C</td>
</tr>
<tr>
<td>299D</td>
<td>399D</td>
</tr>
<tr>
<td>299E</td>
<td>399E</td>
</tr>
<tr>
<td>299F</td>
<td>399F</td>
</tr>
<tr>
<td>299G</td>
<td>399G</td>
</tr>
<tr>
<td>299H</td>
<td>399H</td>
</tr>
<tr>
<td>299I</td>
<td>399I</td>
</tr>
<tr>
<td>299J</td>
<td>399J</td>
</tr>
<tr>
<td>299K</td>
<td>399K</td>
</tr>
<tr>
<td>299L</td>
<td>399L</td>
</tr>
<tr>
<td>299M</td>
<td>399M</td>
</tr>
</tbody>
</table>

*Furnished with bezel clamp.

Packing: One in a Fitted Case.
"Miti-Mite" Magnetic Base Tools
Universal Dial Test Indicator

With Magnetic Base Holder

No. 2299 Indicator and Magnetic Holder Set

Now in one complete set—a precision Universal Dial Test Indicator and a Magnetic Base Indicator Holder. A complete range of set-ups for practically every type of indicating can be made from the tools and attachments in this compact, mahogany, fitted case.

THE DIAL INDICATOR may be either the Lufkin No. 259 series with an 0 to 100 dial or the Lufkin No. 359 series with an 0 to 10 dial. The indicator has a range or spindle travel of .001 inch by .001 inch, while the hole attachment has a range of .125 inch. jeweled bearings. Adjustable bezel and dial. No. 2299 has bezel clamp to adjust tension or lock dial in position. Indicator attachments include 3 contact points, an adjustable spindle clamp, and a hole attachment. A hole attachment reversing sleeve is also included with the No. 2299 set.

THE MAGNETIC BASE HOLDER attaches instantly to any round or flat ferrous surface. The post returns in a ball joint and locks securely with a turn of the large, knurled nut. A friction joint in the post increases the range of adjustments. A fine adjustment screw permits final, precise settings. Interchangeable posts and an adaptor are included.

No. 2299 0 to 100 Indicator and Magnetic Holder Set
No. 2299 0-50-0 Indicator and Magnetic Holder Set
Packed: One Set in a Fitted Case

FOR PRICES SEE PRICE LIST
A Few of the Many Uses of This Universal Indicator

Indicating Flange in Lathe

Indicating Hole in Jig Bore, Milling Machine or Drill Press

In Use with Surface Gage

In Use with Height Gage

Universal Indicators
(Patented)

Rotating Head • Positive Lock • Two Reading Faces

Can Be Used and Read in Any Practical Position

No. 199, Zero at Extreme Left

Indicator Full Size
No. 199A, Zero at Center

A valuable exclusive feature of this indicator is the location of reading faces, one being on the flat side, the other on the end or top. This end marking often makes reading easier and makes possible reading without a mirror in jig boring, milling machine, drill press and similar work. Reading at end is the convenient way when using indicator with Surface Gage or Vernier Height Gage. In fact, it is the most natural and handy way in many kinds of work.

The indicator, which is one unit, makes a complete revolution on its own center and also on clamping bolt; all locked in position by one thumb nut. The contact point can be set in any position in a half circle and is frictionally held.

As illustrated, a standard bar for general use and a special attachment are furnished with each indicator. The special attachment is used in drill chuck or with surface gage, and affords many other setups. Using its offset arm, this indicator will enter very small holes, contact point being in line with rotating center. Clamping device is a nut, spring and washer held together as one unit. During setup, it frictionally holds the indicator in position.

Contact point and all working parts are hardened. Housing is of tough, rustproof metal; clamp screw and nut are of steel. Ideal protection for this fine tool is a plush-lined case with spring-chinned cover. Furnished only when ordered.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>199</td>
<td>Indicator: Zero at Extreme Left, Reading Left to Right</td>
</tr>
<tr>
<td>199A</td>
<td>Indicator: Zero Reading at Center, Reading to the Left and to the Right</td>
</tr>
<tr>
<td>500K</td>
<td>Indicator Attachment—Spindle Clamp with 5/8-Inch Hole for Surface Gage Rod</td>
</tr>
<tr>
<td></td>
<td>Special Diameter Contact Points, 3/8, 1/2 or 1/4-Inch (Specify Size)</td>
</tr>
<tr>
<td></td>
<td>Plush-Lined Case for No. 199 or 199A</td>
</tr>
</tbody>
</table>

Packing: One in a Box.

For Prices See Price List
No. 59 Master Precision Levels
Precision Alignment is Essential to Present Day Production

For machine shops, inspection, millwright departments, tool rooms to accurately set, erect, test machinery and surface plates to avoid wear and prolong life of bearings and spindles.

Accurately ground and graduated vial of 10 second accuracy; one division equals 0.0003-inch per foot. An auxiliary level to aid setting true horizontal, showing position laterally. Unusually fine threads on adjusting screws for sensitive, accurate adjustment. Level vials set for maximum protection against breakage; once set, tampering is avoided by waterproof adjustment.

Casting thoroughly seasoned, working surface machined and scraped with extreme care. Base casting made of special alloy iron which is less affected by temperature changes.

Top plate is made of a special non-conductive insulating material. Non-machined surfaces have durable black crackle finish.

Length, 15 inches. Width, 15½ inches. Height, 3 inches.

Individual boxes in felt cushioned, shock resisting wood box with hinged cover. Weight approximately 6 pounds.

No. 59, Master Precision Level.

Nos. 57 and 58 Machinist Levels

Shallow V in base with clearance cut is preferred by mechanics and machine setters because better surface contact is obtained on various sizes of shafting.

Adjusting level simplified through micrometer type threads (40 threads per inch) on adjusting screw and nuts. Bubble can be positioned gradually for perfect setting.

Main level glass additionally protected by outer metal tube that can be turned to expose level glass or turned to protect it when not in use.

Cross level besides main parallel vial for more accurate reading as level positions true horizontally and parallel. Fine seasoned castings insure strength and rigidity. No. 58 series levels have ground and graduated main vial, 60 second sensitivity with 1/10 inch graduation to read .0035 inches per foot. Ground glass vials are more sensitive and accurate and are used in the finest surveying instruments. No. 57 series levels have plain vials.

Finished wood box with hinged cover and clasp available for level sizes 12 and 18-inch only.

<table>
<thead>
<tr>
<th>Size Inches</th>
<th>No. 57 Level Equipped with</th>
<th>No. 58 Level Equipped with</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Plain Vial and Cross Level</td>
<td>Ground and Graduated Main Vial and Plain Cross Level</td>
</tr>
<tr>
<td>8</td>
<td>Plain Vial and Cross Level</td>
<td>Ground and Graduated Main Vial and Plain Cross Level</td>
</tr>
<tr>
<td>12</td>
<td>Plain Vial, Plumb and Cross Level</td>
<td>Ground and Graduated Main Vial, Plain Cross Level and Plumb</td>
</tr>
<tr>
<td>18</td>
<td>Plain Vial, Double Plumb and Cross Level</td>
<td>Ground and Graduated Main Vial, Plain Cross Level and Double Plumb</td>
</tr>
</tbody>
</table>

Finished wood box only for 12-inch level.

Packing: One in a Carton.

For Prices See Price List

---

No. 915 Adjustable Parallels

These parallels have many applications in layout, gauging, spacing and checking work by toolmakers and mechanics; often used to determine or check width of slots and openings, also as spacers for locating parts for accurate assembly, aid, set to determined size, serve as gages. They are used in a vise for setting work at proper height or angle for milling machine, shaper and planer; also for leveling work on planer, drill press, etc.

In some cases, they take the place of a number of one-piece parallels. Readily adjusted and locked to micrometer measurement. Screw locks firmly.

Offered individually or in sets in durable fitted cases.

---

No. 915L Set

<table>
<thead>
<tr>
<th>Parallel No.</th>
<th>Range Inches</th>
<th>Length Inches</th>
<th>Thickness Inches</th>
<th>No. Lock Screws</th>
<th>Set of Adjustable Parallels in Durable Fitted Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>915A</td>
<td>3½-1½</td>
<td>1½</td>
<td>5½</td>
<td>1</td>
<td>915L 5½-1½</td>
</tr>
<tr>
<td>915B</td>
<td>5½-8½</td>
<td>2½</td>
<td>5½</td>
<td>1</td>
<td>915M 5½-1½ 915A, B, C, D, E, F</td>
</tr>
<tr>
<td>915C</td>
<td>7½-11½</td>
<td>2½</td>
<td>6½</td>
<td>2</td>
<td>915A, B, C, D</td>
</tr>
<tr>
<td>915D</td>
<td>8½-13½</td>
<td>3½</td>
<td>7½</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>915E</td>
<td>10½-15½</td>
<td>4½</td>
<td>7½</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>915F</td>
<td>13½-20½</td>
<td>5½</td>
<td>9½</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Packing: One Parallel or One Set in a Box.

For Prices See Price List
A Few of the Many Uses of
No. 900 Master Planer and Shaper Gage

This is known as a "Master" tool because it is designed and precision built, not only to serve better as a Planer Gage, but to properly handle many jobs for which the ordinary gage is unsuited.

Position for Smallest Setting, 1/4-Inch

Position of Parts to Get Maximum Range, 9 Inches

Slide and base are accurately fitted. Slot in which slide travels is beveled as well as ground, eliminating side play, assuring accuracy. All measuring surfaces are precision ground.

The 3-inch extension regularly supplied with each gage, makes possible tool settings from 1/4 to 9 inches; without extension the range is 1/4 to 6 1/4 inches. A 1-inch extension that is handy for adding an even inch to the gage can be furnished when ordered.

Base and slide are of drop forged steel, hardened. Base is 5/8-inch wide, 5 1/4-inches long and fitted with level. Slide has clamp nut securely locking it in position.

A genuine mahogany case in keeping with this fine tool, and the best protection for it, is supplied when ordered.

No. 900, Master Planer & Shaper Gage (Including 3-Inch Extension)
Mahogany Case for above (Supplied only when ordered),
One-inch extension for No. 900 (Supplied only when ordered).

Packing: One in a Box.

FOR PRICES SEE PRICE LIST
The Lufkin Master Planer Gage is a precision instrument with a full 1" wide base, has greater stability and is easier to work with. In addition to the range of levels, it has a end level for using the gage vertically. Gage can also be used flat on its side, because all nuts and attachments are under O.D. All working surfaces and sides are accurately ground for parallelism and alignment. The step of the slide is a full 1" square, can be used with standard gage blocks. With the offset attachment, this gage can be used down to 5/16" below the base.

The Lufkin Master Planer Gage is 5 3/4" long, with a range from 3/8" to 7 3/4" without attachments. Capacity is increased to 9/4" with the 3" extension and to 10 3/4" with both extensions. "V" ways and flats are accurately machined and precision ground to positively eliminate side play. The base and sides are hardened steel forgings.

The 3" extension is included with each gage. A fitted mahogany case is also furnished unless otherwise specified. Also available are a 1" extension, straight scriber, a combination offset attachment and scriber, and the scriber holder. These attachments may be obtained individually or in sets.

The all new Lufkin, 1" wide, Master Planer Gage is a versatile precision instrument. It may be used as a planer gage, or with the No. 901 Single Scriber and Holder as a surface or height gage. Other uses are for transferring settings with an indicator, as an adjustable parallel, for checking set-ups and layouts, and may be used with gage blocks or a sine bar.

The No. 901A Master Planer Gage has an exclusive rapid adjustment feature that permits quick setting and change of setting with ease. Just loosen the clamping nut, press on the end and move slide to the desired position. A slot in the "V" ways holds slide at the setting when the slight pressure is released. By reheighting the knurled nut, the slide cannot be accidentally moved.

The No. 901A also has a fine adjustment feature permitting final precise settings quickly and without tedious and annoying tapping of the slide. By just turning the knurled fine adjustment nut, the slide will "creep" to the desired position.

These gages are 5 3/4" long with a range from 3/8" to 7 3/4" without attachments. Capacity is increased to 9/4" with the 3" extension and to 10 3/4" with both extensions. Gages can also be used 5/16" below base with the offset attachment. Bases are full 1" wide, have greater stability, are easier to work with. Two accurate levels, the regular base level and an end level for using gage vertically. All nuts and attachments are under O.D. permitting use of gage flat on side. Working surfaces and sides are accurately ground for parallelism and alignment. The step on the slide is 1" square, can be used with standard gage blocks. Machined and ground "V" ways and flats positively eliminate side play. Base and slide are hardened steel forgings.

The 3" extension is included with each gage. A fitted mahogany case is also furnished unless otherwise specified. Also available are a 1" extension, straight scriber, a combination offset attachment and scriber, and the scriber holder. These attachments may be obtained individually or in sets.
Steel Beam Trammels

Correctly Designed for Layout Work, Scribing and Measuring

No. 180A

No. 180D

No. 180E

No. 180H No. 180J No. 180K

Knurled grips on top of each tram are free turning, making tool more convenient for use. Scriber points hardened for longer wear. Top of rigid beam flattened so trams will not turn once set. Trams are held in position by spring friction and will not slide off beam when clamping nuts are loosened.

One tram has fine thread adjusting screw for accurate and fine adjustment of points. Pair of caliper legs furnished with sets A, B and C. Check will accommodate extra attachments listed. Small chuck accommodates pencil leads as well as hardened steel points. Needle point also hardened. A pen attachment is used by engineers and draftsmen.

Lufkin Wood Beam Trammels can be fastened to beams from 3/4 to 1 1/8 inches wide. As no fitting is required, it can be of any thickness. Readily adapted to small or large work in layout, scribing, transfer and measuring. The attachments are easily inserted and firmly held in the tramnel head. The head will accommodate an ordinary lead pencil which can be inserted in place of either of the steel points.

A complete assortment of attachments is available including short and long divider points, small and large caliper legs and a set of 4 ball points with holder. One leg of the large caliper is adjustable giving added utility. The ball points permit scribing a circle from the center of a hole having a diameter of 1 1/2 inches or less. A beam is not furnished with this tramnel as it is common practice for the user to select the length of the beam for his particular use.

No. 179A, Wood Beam Trammels. Includes One Pair of Heads and One Pair of Short Divider Points.
No. 179B, Set of 4 Ball Points and Holder Only.
No. 179C, One Pair of Small Caliper Legs Only.
No. 179D, One Pair of Large Caliper Legs Only.
No. 179E, One Pair of Long 9-Inch Divider Points Only.
No. 179F, Short 6-Inch Divider Point Only.
No. 179H, Tramnel Head (One Only).
No. 179S, Complete Set. Consists of 179A, 179B, 179C, 179D, and 179E.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Toolmakers Spring Dividers and Outside and Inside Spring Calipers
Round Leg Pattern • The Finest Type

Preferred by fine mechanics because of their stability and fine proportions.

All turrets on legs and spring is avoided by mounting the adjustment screw cented in the legs. Legs are of round stock, finely formed, tapered by swaging.

Parts most subject to wear are hardened. Stiff flat bow spring insures reliability and long life. Furnished only with solid nut. Nicely finished and most attractive. No. 140 has thumb attachment.

LUFKIN

The type most widely used. Nicely proportioned and well finished. Parts most subject to wear are hardened. Stiff flat bow spring insures reliability. Spring dividers have thumb attachment. Offered with solid nut or "Quick" Nut. "Quick" Nut for quickly making initial adjustment. The most satisfactory type and entirely different from others. Not spring operated. Measurement not only quickly obtained but positively held. On release of pressure, nut slides freely over the threads; on slightest leg pressure it grips screw firmly. Deservedly popular.

Duplicated Parts of Toolmakers Spring Calipers and Dividers

When Ordering Parts Be Sure to Specify Size and Stock Number of Caliper or Divider

<table>
<thead>
<tr>
<th>Spring Divider</th>
<th>Outside Spring Caliper</th>
<th>Inside Spring Caliper</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 140</td>
<td>2 Inch</td>
<td>141 2 Inch</td>
</tr>
<tr>
<td>No. 141</td>
<td>2 Inch</td>
<td>142 7 Inch</td>
</tr>
<tr>
<td>No. 140</td>
<td>3 Inch</td>
<td>141 3 Inch</td>
</tr>
<tr>
<td>No. 141</td>
<td>3 Inch</td>
<td>142 3 Inch</td>
</tr>
<tr>
<td>No. 140</td>
<td>4 Inch</td>
<td>141 4 Inch</td>
</tr>
<tr>
<td>No. 141</td>
<td>4 Inch</td>
<td>142 4 Inch</td>
</tr>
<tr>
<td>No. 140</td>
<td>5 Inch</td>
<td>141 5 Inch</td>
</tr>
<tr>
<td>No. 141</td>
<td>5 Inch</td>
<td>142 5 Inch</td>
</tr>
<tr>
<td>No. 140</td>
<td>6 Inch</td>
<td>141 6 Inch</td>
</tr>
<tr>
<td>No. 141</td>
<td>6 Inch</td>
<td>142 6 Inch</td>
</tr>
</tbody>
</table>

LUFKIN

"Banner" Spring Dividers and Outside and Inside Spring Calipers

With Solid Nut • With "Quick" Nut

No. 40

"Quick" Nut

No. 41

No. 42

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Firm Joint and Screw Adjusting Firm Joint Outside and Inside Calipers

The distinctive feature of these calipers is the adjustable tension in the joint. This lock screw construction permits the legs to be set and held to any desired tension or friction.

Firm joint is the type of caliper that can be brought to size most quickly.

<table>
<thead>
<tr>
<th>Firm Joint</th>
<th>Screw Adjusting—Firm Joint</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Size</td>
</tr>
<tr>
<td>11</td>
<td>6 Inch</td>
</tr>
<tr>
<td>11</td>
<td>8 Inch</td>
</tr>
<tr>
<td>11</td>
<td>10 Inch</td>
</tr>
<tr>
<td>11</td>
<td>12 Inch</td>
</tr>
<tr>
<td>11</td>
<td>16 Inch</td>
</tr>
<tr>
<td>11</td>
<td>21 Inch</td>
</tr>
<tr>
<td>11</td>
<td>28 Inch</td>
</tr>
<tr>
<td>11</td>
<td>30 Inch</td>
</tr>
</tbody>
</table>
| 11 | 36 Inch | 12 | 36 Inch | 2 | 21 | 24 Inch | 22 | 36 Inch | 2 *

*Furnished in a package.

**NOTE:**
- Screw Adjusting Firm Joint Calipers provide faster setting for finer measurements.
- All sizes listed below are length of legs. Actual capacity is about one-quarter greater than its length.

**Thread Calipers**

Laying out work, locating centers, etc., are the principal uses of Firm Joint Hermaphroditic Calipers. The distinctive features of these Firm Joint Calipers is the adjustable tension in the joint. This lock screw construction permits the legs to be set and held to any desired tension or friction.

Firm Joint is the type of caliper that can be brought to size quickly.

These calipers are of sturdy construction, nicely proportioned, well finished and smoothly operating.

Scales listed below are length of legs. Actual capacity is about one-quarter greater than its length.

**Thread Calipers**

With Solid Nut—With "Quick" Nut

<table>
<thead>
<tr>
<th>No. A17</th>
<th>Type</th>
<th>No. A17</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>4 Inch Plain</td>
<td>17</td>
<td>6 Inch Plain</td>
</tr>
<tr>
<td>17</td>
<td>8 Inch Plain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nos. 44 and 54

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>4 In.</td>
<td>45</td>
<td>6 In.</td>
</tr>
<tr>
<td>44</td>
<td>5 In.</td>
<td>45</td>
<td>6 In.</td>
</tr>
</tbody>
</table>

Nos. 45 and 55

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>4 In.</td>
<td>45</td>
<td>6 In.</td>
</tr>
<tr>
<td>44</td>
<td>5 In.</td>
<td>45</td>
<td>6 In.</td>
</tr>
</tbody>
</table>

**NOTE:**
- Designed for taking measurements of outside and inside screw threads. Points are suitably shaped to work in threads; outside these calipers are same as our general purpose "Banner" line. Parts most subject to wear are hardened.
- Stiff, that the spring moves reliably.
- Nicely proportioned and well finished.
- Offered with Solid Nut or "Quick" Nut.
- "Quick" Nut: Designed for quickly making the initial adjustment. Our "Quick" Nut is by far the most satisfactory one. It is of a type entirely different from others and is not spring loaded. With it, measurement is not only quickly obtained but positively held. On release of pressure this nut slides freely over the threads; on slightest leg pressure it grips the screw firmly. Lufkin "Quick" Nut is deservedly popular.

**Packing:** Three in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Carbon Steel Pocket Slide Calipers

No. 453

No. 453, Reverse Side


For faster and more accurate readings, measurements are read to a line rather than at the face of the jaw. These lines are marked “cent” and “min” to indicate both outside and inside measurements. A lock screw holds the slide securely at any desired point and can be operated by the same hand in which the tool is held. A serrated pad on the slide affords easy opening and closing of the jaws. A stop is provided so that the slide cannot be entirely withdrawn.

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations</th>
<th>Calipers Capacities</th>
</tr>
</thead>
<tbody>
<tr>
<td>453</td>
<td>3 In.</td>
<td>Marked English Only; Slide, 60ths Inch; Stock, 32nds Inch</td>
<td>Outside: 2 1/2 In. Inside: 2 1/2 In.</td>
</tr>
<tr>
<td>455</td>
<td>5 In.</td>
<td>Marked English Only; Slide, One Edge 32nds Inch; One Edge 60ths Inch; Stock, 32nds Inch</td>
<td>Outside: 3 3/8 In. Inside: 4 In.</td>
</tr>
<tr>
<td>456</td>
<td>6 In.</td>
<td>Marked English Only; Slide, One Edge 32nds Inch; One Edge 60ths Inch; Stock, 32nds Inch</td>
<td>Outside: 4 3/4 In. Inside: 5 In.</td>
</tr>
<tr>
<td>453M</td>
<td>7 Cm.</td>
<td>Marked Metric Only; Slide, 3/8 Mm.; Stock Mm.</td>
<td>Outside: 54 Cm. Inside: 57 Mm.</td>
</tr>
<tr>
<td>455M</td>
<td>12 Cm.</td>
<td>Marked Metric Only; Slide, 3/8 Mm.; Stock Mm.</td>
<td>Outside: 97 Cm. Inside: 100 Mm.</td>
</tr>
<tr>
<td>456M</td>
<td>5 In. (12 Cm.)</td>
<td>Marked English and Metric; Slide, One Edge 60ths Inch, One Edge 3/8 Mm.; Stock, 32nds Inch</td>
<td>Outside: 4 1/2 In. Inside: 4 1/2 In.</td>
</tr>
</tbody>
</table>

Stainless Steel Pocket Slide Calipers

No. 5453

No. 5453, Reverse Side

A finely finished tool made of stainless steel. Stainless steel calipers is very valuable in certain industries and under some climatic conditions as it keeps the reading parts free of stain and rust and prolongs the life of the tool.

For faster and more accurate readings, measurements are read to a line rather than at the face of the jaw. These lines are marked “cent” and “min” to indicate both outside and inside measurements. A lock screw holds the slide securely at any desired point and can be operated by the same hand in which the tool is held. A serrated pad on the slide affords easy opening and closing of the jaws. A stop is provided so that the slide cannot be entirely withdrawn.

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Graduations</th>
<th>Calipers Capacities</th>
</tr>
</thead>
<tbody>
<tr>
<td>5453</td>
<td>3</td>
<td>Marked English Only; Slide, 60ths Inch; Stock, 32nds Inch</td>
<td>Outside: 2 1/4 In. Inside: 2 1/4 In.</td>
</tr>
<tr>
<td>5455</td>
<td>5</td>
<td>Marked English Only; Slide, One Edge 32nds Inch, One Edge 60ths Inch; Stock, 32nds Inch</td>
<td>Outside: 3 3/8 In. Inside: 3 3/8 In.</td>
</tr>
<tr>
<td>5456</td>
<td>6</td>
<td>Marked English Only; Slide, One Edge 32nds Inch, One Edge 60ths Inch; Stock, 32nds Inch</td>
<td>Outside: 4 1/4 In. Inside: 5 In.</td>
</tr>
</tbody>
</table>

No. 455P Circumference Gage and Pocket Slide Caliper

A regulation pattern carbon steel Pocket Slide Caliper but with circumference inches to 10ths on upper edge of slide, in addition to standard inches to 32nds on its lower edge. Stock graduated 5 inches to 32nds. Machine divided. Nicely finished.

Applied to diameters, outside or inside, circumference as well as diameter can be read directly. All measurements are read to a line rather than at the face of jaw, an aid to close and quick reading. Lines are clearly marked “cent” and “min.” Will caliper up to 2 1/2-inch diameter, as jaws are 1 3/4 inches deep.

<table>
<thead>
<tr>
<th>No.</th>
<th>Diameter</th>
<th>Calipers Capacities</th>
</tr>
</thead>
<tbody>
<tr>
<td>455P</td>
<td>5-Inch Circumference Gage and Pocket Slide Caliper</td>
<td>Outside: 3 3/8 inches; Inside: 4 inches of diameter.</td>
</tr>
</tbody>
</table>

Plastic Cases for Pocket Slide Calipers in 3, 5, and 6-Inch Sizes; Specify Size.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST
**No. 78 Small Hole Gages**

Ideal for measuring diameter of small hole or width of slot or groove that is below the 8-inch range of Lufkin Telescoping Gages No. 79A.

The radius of the contact end is always less than that of the hole being measured, thereby making only a two-point contact.

Handle is flared at center line, which permits gaging holes and shallow recesses.

Premium also is made whereby travel of expanding cone is stopped at both extreme open and closed limits of gage, preventing breakage.

Mode of special analysis steel with hardened contact faces. Left hand thread.

Size of handles are in proportion to size of gage, affording proper balance essential to accurate measurement.

To operate, simply insert contact end of proper size gage in hole or groove, turn knurled knob until right “feel” is obtained. Then measure over contact faces with an outside micrometer.

Available individually or as complete set in an attractive and durable fitted case.

<table>
<thead>
<tr>
<th>No.</th>
<th>Length, Inches</th>
<th>Diameter Range, Inches</th>
<th>No. 78S Set in Fitted Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>78A</td>
<td>2¾</td>
<td>¾ to ½ 8.9 to 12.7</td>
<td>Nos. 78A, B, C, and D</td>
</tr>
<tr>
<td>78B</td>
<td>3½</td>
<td>¾ to ½ or 1 12.7 to 19.0</td>
<td></td>
</tr>
<tr>
<td>78C</td>
<td>4¼</td>
<td>¾ to ½ or 2 20.0 to 37.0</td>
<td></td>
</tr>
<tr>
<td>78D</td>
<td>4¾</td>
<td>¾ to ½ or 2½ 37.5 to 50.0</td>
<td></td>
</tr>
</tbody>
</table>

**Telescoping Gages**

Handle of Self-Centering Telescoping Gage, pioneered by Lufkin, looks at center of plunger for feel needed for accuracy. Inside size of slots or holes is quickly and accurately obtained; even down to 8-inch smaller opening than obtained by any other gage of this type. Measurement of gage down to one thousandth or less found by outside micrometer. Has handle and two plungers, one telescoping into each; both plungers under constant spring tension and locked by slight turn of knurled screw in end of handle. Ends of plungers hardened and ground to radius, giving clearance to smallest opening gage enter. With these features any measurement within capacity of tool can be taken.

<table>
<thead>
<tr>
<th>Gage No.</th>
<th>Range, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>79A</td>
<td>5½ to 6½</td>
</tr>
<tr>
<td>79B</td>
<td>5½ to 6½</td>
</tr>
<tr>
<td>79C</td>
<td>5½ to 6½</td>
</tr>
<tr>
<td>79D</td>
<td>5½ to 6½</td>
</tr>
<tr>
<td>79E</td>
<td>5½ to 6½</td>
</tr>
<tr>
<td>79F</td>
<td>5½ to 6½</td>
</tr>
</tbody>
</table>

**Method of Use:** Compress plungers; lock by turning handle screw. Insert gage in hole, release lock; plunger expands to exact size of hole or slot with handle remaining in center. Lock plungers, remove gage, measure with outside micrometer.

**Note the Illustration Above, Showing One of the Valuable and Exclusive Features of Lufkin Telescoping Gages.** Even though the gage is not fully extended, handle is at center of tool. Perfect balance and feel are retained for quick, accurate measurements.

<table>
<thead>
<tr>
<th>No. 79L Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>5½ to 6½</td>
</tr>
</tbody>
</table>

**Packing:** One Gage in a Box; 4 in a Carton. No. 78S Set, One in a Box.

**FOR PRICES SEE PRICE LIST**
**No. 77 Radius Gages**

(Formerly)

Finest Radius or Fillet Gage pioneered by Lufkin; for tool, die, pattern makers, template layout men, screw machine operators, and other mechanics.

Outstanding features: Each blade or gage is a separate unit for convenient, accurate use on work; has corresponding external and internal combine, prototypical combination; accurate, smooth edges. Each tool blade or gage marked prominently with its radius; all gages in set in attractive durable red fitted case for proper protection and simple, easy selection of each.

**No. 20 Radius Gage Holders**

Length of 4 inches permits gaging in small and out of way places. Knurled locking nut locks blade securely in holder in 30° or 45° slot at any place on blade.

<table>
<thead>
<tr>
<th>Set No.</th>
<th>No. of Gages</th>
<th>Radii, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>77AX</td>
<td>17</td>
<td>1/2 through 64ths and No. 20 Holder</td>
</tr>
<tr>
<td>77B</td>
<td>8</td>
<td>1/2 through 32nds</td>
</tr>
<tr>
<td>77C</td>
<td>24</td>
<td>1/2 through 64ths; 1/2 through 32nds (Set No. 77A and 77B Combined)</td>
</tr>
<tr>
<td>77CX</td>
<td>25</td>
<td>1/2 through 64ths; 1/2 through 32nds (Set No. 77A and 77B Combined and No. 20 Holder)</td>
</tr>
<tr>
<td>77D</td>
<td>10</td>
<td>1/4 through 16ths</td>
</tr>
<tr>
<td>77E</td>
<td>8</td>
<td>1/4 through 16ths</td>
</tr>
<tr>
<td>77F</td>
<td>8</td>
<td>1/4 through 8ths</td>
</tr>
<tr>
<td>77G</td>
<td>16</td>
<td>1/4 through 8ths</td>
</tr>
</tbody>
</table>

Extra Blades or Gages Only

Available in following sizes: 1/4 through 16ths, 1/4 through 32nds, 1/4 through 2, by 16ths

Packing: One set in a box.

**A Few of the Many Uses of Lufkin Radius Gages**

- View No. 1: Gage determining radius of inside corners or fillets for 1/4 or less of a circle. Straight side at 90° for checking location of radius.
- View No. 2: Gage determining radius of outside corners. Also shows whether sides are at 90° and tangent to circle.
- View No. 3: Work being checked on a piece of glass; checks any other convex parts, where radius is 1/4 or more of circle, that have projections which will not permit the use of gage as in Views 2 and 5.
- View No. 4: Gage used on concave cutter of 1/4 or less of circle, usable for checking radius in View No. 1, but will not show relation of radius to sides.
- View No. 5: Checks 1/4 of a circumference.

FOR PRICES SEE PRICE LIST

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**No. 277 Radius Gage**

A companion tool to our popular No. 77 series, the No. 277 Radius Gage. This gage contains leaves adapted for convex and concave gaging. A very useful tool for pattern makers, die makers, layout men and mechanics. The leaves of Lufkin Radius Gages are correctly designed to give the full and true radius. Each gage is prominently marked with its radius. The case is of ample size to give the leaves full protection. Lufkin Radius Gages are equipped with a lock which will firmly lock any one leaf in position or all the leaves in the case.

<table>
<thead>
<tr>
<th>No.</th>
<th>No. of Leaves</th>
<th>Radii, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>277</td>
<td>17</td>
<td>3/4 through 16ths by 64ths</td>
</tr>
<tr>
<td>277A</td>
<td>8</td>
<td>1/2 through 16ths by 64ths</td>
</tr>
<tr>
<td>277B</td>
<td>8</td>
<td>1/2 through 16ths by 32nds</td>
</tr>
</tbody>
</table>

Packing: One in a box, three in a carton.

FOR PRICES SEE PRICE LIST

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ROSE TOOLS, INC.
Center gages are used in grinding and setting screw cutting tools. The graduations on them are most commonly required in determining the number of threads per inch or per centimeter. Lufkin center gages are made of tempered steel approximately 2½ inches long and 1¼ inch wide. Internal angles are slotted for clearance.

Nos. 36 and 37 carry table of double-depth figures. This is valuable to determine tap drill size for sharp 60 and 55 degree "V" threads. Allowance must be made for the extent to which thread is flattened, it being impractical to tap a perfectly sharp thread.

Nos. 136 and 136½ are heavy Center Gages, (¾ inch thick) especially suitable for accurately checking heavy threads. They are hardened and ground. The added thickness gives greater contact surface, so that alignment can readily be found. These tools are practical and sturdy. No. 136½ Center Gage is used extensively in the oil industry.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Markings</th>
<th>Thickness</th>
<th>Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>Center Gage</td>
<td>14ths, 20ths, 24ths and 32nds Inch</td>
<td>1/25</td>
<td>60</td>
</tr>
<tr>
<td>37</td>
<td>Whitworth Standard Center Gage</td>
<td>14ths, 20ths, 24ths and 32nds Inch</td>
<td>1/25</td>
<td>55</td>
</tr>
<tr>
<td>36M</td>
<td>Metric Gage</td>
<td>2 Edges Millimeters: 2 Edges 1¼ Mm.</td>
<td>1/25</td>
<td>60</td>
</tr>
<tr>
<td>136</td>
<td>Heavy Center Gage</td>
<td>Not Graduated</td>
<td>¾</td>
<td>60</td>
</tr>
<tr>
<td>136½</td>
<td>Heavy Center Gage</td>
<td>Not Graduated</td>
<td>¾</td>
<td>60</td>
</tr>
</tbody>
</table>

*Has American National Form of thread.

Packing: Six in a Box.

FOR PRICES SEE PRICE LIST

A Screw Pitch Gage is used to determine the pitch or number of threads per inch. The blades are cut deeply with the tops of the teeth flattened. Lufkin Screw Pitch Gages can be used on V and American National or U.S. Standard threads. The blades are correctly designed permitting them to be inserted into a nut as well as obtaining pitches on outside threads on bolts, screws, etc. Each blade is marked with its pitch. Blades fold into compact case. The case is marked to show the double depth of American National or U.S. Standard thread. To obtain double depth of sharp V threads, for the same pitch, add ½ to the double depth given for American National or U.S. Standard.

Lufkin Screw Pitch Gages are furnished with a lock nut. Using the lock nut permits blades to be locked in desired position as well as locking blades in case. This feature eliminates chances of error and is especially desirable when one pitch is used repeatedly.

**Formula for V thread**

\[
d = D - \frac{1.732}{N}
\]

**Formula for American National or U.S. Standard thread**

\[
d = D - \frac{1.299}{N}
\]

<table>
<thead>
<tr>
<th>No.</th>
<th>No. of Teeth</th>
<th>Pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>74A</td>
<td>22</td>
<td>8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 27, 28, 30, 32, 36, 38, 40, 44, 48, 52, 56, 60, 64, 72, 80</td>
</tr>
<tr>
<td>74B</td>
<td>21</td>
<td>4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 27, 28, 30, 32, 36, 38</td>
</tr>
<tr>
<td>74C</td>
<td>28</td>
<td>8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 27, 28, 30, 32, 36, 38</td>
</tr>
<tr>
<td>74D</td>
<td>28</td>
<td>3, 3½, 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 27, 28, 30, 32, 36, 38</td>
</tr>
</tbody>
</table>

Packing: Three to a Carton.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Thickness Gages (Feeler Gages) are used by toolmakers, machinists and others in jig and fixture work, in making gages, in experimental work and in the manufacturing and servicing of automobiles.

Thickness Gages with tapered leaves are made the same as Thickness Gages with straight leaves, see description on page 95.

Tapered leaves will enter narrower openings. Leaves are 3 in. long, 3/4 in. wide, tapered to 3/4 in. width at point.

<table>
<thead>
<tr>
<th>No.</th>
<th>No. of Leaves</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>126T</td>
<td>20</td>
<td>0.015, 0.02, 0.025, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.11, 0.12, 0.13, 0.14, 0.15, 0.16, 0.17, 0.18, 0.19, 0.20, 0.21, 0.22, 0.23, 0.24, 0.25 In.</td>
</tr>
<tr>
<td>110T</td>
<td>10</td>
<td>0.015, 0.02, 0.025, 0.03, 0.04, 0.05, 0.06, 0.08, 0.10, 0.12, 0.15 In.</td>
</tr>
<tr>
<td>109T</td>
<td>9</td>
<td>0.015, 0.02, 0.03, 0.04, 0.05, 0.06, 0.08, 0.10, 0.12, 0.15 In.</td>
</tr>
<tr>
<td>109T1M</td>
<td>9</td>
<td>0.015, 0.02, 0.03, 0.04, 0.05, 0.06, 0.08, 0.10, 0.12, 0.20, 0.25 Mm.</td>
</tr>
</tbody>
</table>

*Combined thickness, 1 mm. Leaves approximately 71/2 cm. long, tapered to 5/16 mm.

With Long Tapered Leaves

Thickness Gages (Feeler Gages) with long leaves are desirable in automotive work for finding clearance between piston and cylinder walls. Also used for other work where a longer gage is necessary.

The leaves are made of tempered steel, ground to thickness. Each leaf is individually tested and clearly marked with its thickness. Leaves fold readily into a protective case; can be replaced easily. Tapered leaves are more desirable because they will enter narrower openings.

The lock nut is another outstanding feature. One or more leaves can be locked firmly in any position permitting easier insertions in openings and reducing chances of error. Facilitates the gage to full extended length. No. 208T with leaf extended and locked in line with case gives an overall length of 6 in. Leaves are 9 in. long, 0.0015, 0.002, 0.003, 0.004, 0.005, 0.006, 0.007, 0.008, 0.009, 0.010, 0.011, 0.012, 0.013, 0.014, 0.015, 0.016, 0.017, 0.018, 0.019, 0.020, 0.021, 0.022, 0.023, 0.024, 0.025 In.

No. 208T, Thickened Gage with Eight Leaves 4½ Inch Long.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST ROSE TOOLS, INC.
No. 10 "Universal" Feeler Stock
In 1-Foot Pieces • Clean Stock

This Feeler or Thickness Gage Stock is used extensively in automobile and other motor work, both manufacturing and servicing. It is employed in determining clearance of tappets, gear play, ring-groove clearance, fitting pistons, adjusting spark gap, etc. Used in experimental work by toolmakers and machinists.

Each piece is marked with its thickness and has ends rounded. This stock is 3/4-inch wide and each 1-foot piece is in individual envelope, flat and ready to hand out. This prevents the waste due to rust and stain from handling and breaking from a coil. When ordering, specify thickness.

No. 10, "Universal" Feeler Stock.

<table>
<thead>
<tr>
<th>Available Thicknesses, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>.001</td>
</tr>
<tr>
<td>.0015</td>
</tr>
<tr>
<td>.002</td>
</tr>
<tr>
<td>.0025</td>
</tr>
<tr>
<td>.004</td>
</tr>
</tbody>
</table>

Packing: Twelve 1-Foot Pieces of One Thickness in a Box, Each Piece in Individual Envelope.

No. 10 Assortment of Feeler Stock
Includes twelve 1-foot pieces of the nine following thicknesses: .0015, .002, .003, .004, .006, .008, .010, .012, and .015 inch.

Packing: Twelve Pieces in a Box; Nine Boxes in an Open End Carton as Illustrated.

Ground Thickness Gage Stock
This is offered to meet the demand for Ground Thickness Gage Stock only, in long pieces. This stock we supply in any of our standard thicknesses, 3/4-inch wide, and in lengths listed below. Each of these pieces is marked with its thickness. Always specify ground stock and state thickness and length.

6-Inch Pieces, 12-Inch Pieces, 18-Inch Pieces.

FOR PRICES SEE PRICE LIST

No. 110 "Universal" Feeler Stock
25-Foot Roll in Metal Case • Clean Stock

This stock is used by automobile mechanics in fitting pistons, setting tappets, adjusting spark gap, gear play, etc., and in experimental work by toolmakers and machinists.

Smooth-edged Thickness Gage or Feeler Stock, 3/4-inch wide, 25-foot roll, in metal case. This Feeler Stock carries Lufkin name and cutting line each foot, and is prominently marked with its thickness every 6 inches.

The improved metal case protects the stock and is convenient to handle. The thickness is clearly marked on each metal case. Size of case makes it easy to handle and to keep the stock in proper condition. The stock is easily withdrawn and cut to any desired length; the revolving core makes it simple to record any unused portion.

When ordering specify thickness.

No. 110, "Universal" Feeler Stock.

<table>
<thead>
<tr>
<th>Available Thicknesses, Inches</th>
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<tbody>
<tr>
<td>.001</td>
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<tr>
<td>.0015</td>
</tr>
<tr>
<td>.002</td>
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<tr>
<td>.0025</td>
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<tr>
<td>.004</td>
</tr>
</tbody>
</table>

Packing: 25-Foot Roll in Case in a Box.

FOR PRICES SEE PRICE LIST
Universal Surface Gages

No. 520C

These superior type standard size Surface Gages have hardened bases.
The spindle is made of hollow steel tubing, light and rigid and will not tip the base when used with
attachments. The sleeves on scribing clamp and spindle clamp are keyed so that holes for scribing and
spindle are always in alignment. The fine adjustment permits greater range of adjustment than any
similar gage. The base has four pins, for use as guides on linear work.
Base is finished in mottled blue, with all measuring faces ground and polished. The bottom and one end
are grooved. Spindle can be set upright, at any angle, or so that scribing can be used below the base.
For small work the spindle may be removed and scribing inserted through small hole in the rotating
head. After spindle has been clamped in approximate position, the fine adjustment is made with the
adjusting screw on rocker arm. This screw works against a stiff spring at the other end.

Bases are 3/4 inches long and 2 1/2 inches wide.
Length of spindle, as listed, does not include the base.

No. 520A, Universal Surface Gage with 9-Inch Tubular Spindle.
No. 520B, Universal Surface Gage with 9 and 12-Inch Tubular Spindles.
No. 520C, Universal Surface Gage with 12-Inch Tubular Spindle.
No. 520K, Indicator Attachment for Any of above (A Spindle Clamps with
Hole for Holding Indicator).
18-Inch Tubular Spindle for Any of above.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Universal Surface Gages

No. 522C

This series of Surface Gages is the same size and range as the 520 series. They also embody
many design and construction improvements. The base has a wrinkle finish, with measuring faces
ground and polished. The bottom and one end are grooved, making the gage suitable for use on cylin-
drical as well as flat surfaces. Base has two gage pins for use as guides on linear work. Spindle can be set
upright, at any angle, or so that scribing can be used below the base. For small work the spindle may be
removed and scribing inserted through the small hole in the rotating head.
After the spindle has been clamped in approximate position, the fine adjustment is made with the adjusting
screw on the rocker arm. This screw works against a stiff spring and permits a greater range of
adjustment than any similar gage.
Bases are 3 1/2 inches long and 2 1/2 inches wide.
Length of spindle, as listed, does not include the base.

No. 522A, Universal Surface Gage with 9-Inch Spindle.
No. 522B, Universal Surface Gage with 9 and 12-Inch Spindles.
No. 522C, Universal Surface Gage with 12-Inch Spindle.
No. 520K, Indicator Attachment for Any above (A Spindle Clamps with
Hole for Holding Indicator).
18-Inch Spindle for Any of above.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST
### Toolmakers Universal Surface Gages

**Hardened Base**

These Surface Gages are precisely proportioned, well built and suitable for small work.

The base is hardened and has all measuring faces ground and polished. Spindles and scriber holes are keyed, preventing them from constant alignment. The base is milled for accurate work and has two gauge pins for use as guides on linear work. The bottom and one end are ground for cylindrical work. Spindle can be set upright, at any angle or so that scriber can be used below the base.

For small work spindle may be removed and scriber inserted through the small hole in the rotating head. After the spindle has been clamped in approximate position, the fine adjustment is made with the adjusting screw on the rocker arm. This screw works against a stiff spring and permits a greater range of adjustment than any similar gage.

Length of spindle, as listed, does not include the base. Bases are 2-1/4 inches long and 1-3/8 inches wide.

- **No. 521A**, Toolmakers Surface Gage with 4-Inch Spindle.
- **No. 521B**, Toolmakers Surface Gage with 4 and 7-Inch Spindles.
- **No. 521C**, Toolmakers Surface Gage with 7-Inch Spindle.

Packing: One in a Box.

### Hold Downs

Lufkin Hold Downs are made of tool steel, hardened and ground. They are designed to securely hold work flat and without distortion in a vise or on a machine bed. Hold downs are used where other methods of clamping are inconvenient and are especially adaptable for holding thin work.

An outstanding feature of Lufkin Hold Downs is that they are not only clamped the work securely but constantly force it downward against the machine bed, because both contact edges are properly tapered and there is a clearance gap along entire length of front of the under side. Lufkin Hold Downs are made in five lengths, all are of the same width and thickness, so any of the lengths can be used together on long work.

- **No. 902A**, Hold Downs, 2 Inches Long.
- **No. 902B**, Hold Downs, 3 Inches Long.
- **No. 902C**, Hold Downs, 4 Inches Long.
- **No. 902D**, Hold Downs, 5 Inches Long.
- **No. 902E**, Hold Downs, 6 Inches Long.

Packing: One Pair in a Box.

---

### No. 905 V Blocks and Clamps

**Hardened and Ground**

Made in pairs and sold in sets for use where an extremely accurate setting is required; holding work for drilling, milling, grinding and other operations, and in layout and connection with surface or angle iron.

A valuable feature is tapped hole through sides; useful particularly when working on an angle plate or lathe plate, and in connection with surface or angle iron. Using 4-40 screw, the block can be fastened securely to angle plates at any angle without using other clamps or tools that would interfere with work in layout, milling, drilling, grinding, etc.

Made of tool steel, hardened and ground.

- Approximately 1-1/4 inches long, 1-1/4 inches square; clamping capacity 1-inch diameter.
- V's ground central, parallel and square with ends and sides. Blocks made and numbered in pairs so V grooves in each pair always are in alignment.
- Strong clamps of drop forged steel. Extra clamps only for V blocks available.

- **No. 905**, V Blocks and Clamps (Set of 2).

Packing: One Set in a Box.

---

### Toolmakers Parallel Clamps Case-Hardened Steel

For holding small work together in drilling, tapping, etc.; Designed to be strong and rigid and to ensure positive hold. Jaws end-rounded to permit clamping under shoulders or in recesses.

One handy feature is clip attachment which prevents sliding of loose jaw on screw. Clip is flat, flush with jaw back, eliminating interference with fingers when opening and closing clamp.

Furnished in pairs.

<table>
<thead>
<tr>
<th>Clamps</th>
<th>Length</th>
<th>Jaw Capacity</th>
<th>Length of Jaw Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>910A</td>
<td>3/4</td>
<td>1-1/4</td>
<td>23/4</td>
</tr>
<tr>
<td>910B</td>
<td>1-1/2</td>
<td>2</td>
<td>23/4</td>
</tr>
<tr>
<td>910C</td>
<td>13/4</td>
<td>2-3/4</td>
<td>23/4</td>
</tr>
</tbody>
</table>

When ordering extra parts, specify stock number and “full threaded” or “smooth end”; jaws, specify “with tapped holes” or “without tapped holes”, as well as stock number; clips, with clip screw, specify stock number.

Packing: One Pair (2 Clamps) in a Box.

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*FOR PRICES SEE PRICE LIST*
ROSE TOOLS, INC.

"Miti-Mite" Magnetic Base Tools

Lufkin Magnetic Base Tools were designed to provide on-the-job convenience. The powerfulpermanent magnets readily attach themselves to either round or flat steel and iron surfaces. Haphazard clamping is eliminated. Bases have magnetic pull of 50 and 100 pounds. Tool makers, die makers, inspectors, machinists, maintenance and repair men and homecraftsmen will find many applications for these tools.

No. 100 Magnetic Base Indicator Holder

This is a precision built unit for holding indicators and other tools. The base is completely shielded and is 1½ inches square. Included with this unit are: one long post, one short post and one adaptor.

Permanent magnet with 50-pound pull.
Ball-and-socket action for positioning.
Accurate; eliminates haphazard clamping.
Magnetic holding is safe, sturdy.
Saves time and effort.

No. 100, Magnetic Base Indicator Holder with Attachments.

No. 101 Magnetic Base Indicator Holder with Fine Adjustment

Same as above except for extra fine adjustment which allows closer setting of dial indicators. Attaches instantly to either round or flat surfaces. Attachments included with this unit: one long post, one short post and one adaptor.

No. 101, Magnetic Base Indicator Holder with Fine Adjustment and Attachments.

Note: For attachments, see page 106.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

Lufkin

"Miti-Mite" Magnetic Base Tools

No. 150 Heavy Duty Magnetic Base Indicator Holder

This precision built unit is designed for heavyduty work. It can be used with most indicators including the big bock type. The base is 4-inchlong. 1½ inches wide and 1½ inches high: shielded with non-breakable molded plastic. Attachments included with this unit are: two long posts, one short post and one adaptor.

Permanent magnet with 100-pound pull.
Ball-and-socket action for positioning.
Accurate; eliminates haphazard clamping.
Magnetic holding is safe, sturdy.
Saves time and effort.

Fingertip control magnetic release for repositioning or removing without jarring indicator.

This Magnetic Base Indicator Holder can be quickly converted to a surface gage by mounting a

No. 150 shoe as shown below. Allows use on iron or steel surface plates as well as on glass or marble.

No. 150, Heavy Duty Magnetic Base Indicator Holder with Attachments.

No. 151, Combination of Heavy Duty Magnetic Base Indicator and No. 155 Shoe.

No. 155, Surface Gage Shoe Only.

Note: For attachments see page 106.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
"Miti-Mite" Magnetic Base Tools

No. 150A Heavy Duty Magnetic Base Indicator Holder with Fine Adjustment

This unit is precision built, designed for heavy work. Attaches instantly to either round or flat iron and steel surfaces.

The base is 4 inches long, 1½ inches wide and 1½ inches high. It is completely shielded with non-ferrous molded plastic. Attachments included with this unit are: two long posts, one short post and one adaptor.

Fine adjustment for finer settings.
Permanent magnet with 100-pound pull.
Ball-and-socket for positioning.
Accurate eliminates haphazard clamping.

Magnetic holding is safe, sturdy.
Saves time and effort.
Fingertip control magnetic release for repositioning or removing without jarring indicator.

No. 150A, Heavy Duty Magnetic Indicator Holder with Fine Adjustment and Attachments.

Note: For attachments see page 106.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST
Ideal for industrial laboratories, tool rooms, die shops, bench inspection, surface grinding, precision lathe work, etc.

High intensity lighting (500 foot candles at 3" working distance) coupled with a 4-power magnifier. Unit operates at about body temperature, eliminating danger of burns. The two fluorescent lamps, 5" long, are protected by a plastic chip shield. Lights immediately with improved instant-starter switch. The magnifier is securely attached to the lamp and has a friction adjustment for selective positioning.

The heavy duty gage head is flexible—may be adjusted to desired position. Magnetic base has two heavy duty permanent magnets arranged to attach firmly to both round and flat ferrous surfaces. A fingertip control magnetic release permits changing positions easily. UL approved cord.

350X-4X With 4 Power Magnifier
350X-6X With 6 Power Magnifier
350X-8X With 8 Power Magnifier

No. 350X
with 4X Magnifier

Rugged, rockers arm and large diameter fine adjustment screw permit final, precise adjustments. Base is 2½" wide, 3¼" long. Set includes both 9" and 12" spindles, swivel indicator attachment, indicator holding rod, and scriber with reversible carbide tip. 18" spindle is also available.

No. 3018 Heavy Duty Surface Gage
(Includes 9" & 12" spindles, indicator holding rod, reversible carbide tip scriber)

Spindle Clamp
No. 301-023A

Champ Rod Assembly
No. 301-024A

Spindle, 9"
No. 301-9

Spindle, 12"
No. 301-12

Spindle, 18"
No. 301-18

Scriber, with reversible carbide tip
No. 301-030A

Carbide Scriber Point Only
No. 301-031A1

A new, large, ruggedly constructed surface gage and indicator holder that has greater range and capacity. Increased base size prevents rocking...larger, stronger magnets permit use with lug back and other heavy indicators and attachments.

The base is machined from a solid block of polished aluminum, with horizontal grooves along each side for easy grip. The two heavy duty magnets recessed into the base are completely isolated from the spindle and other parts to avoid transmission of the magnetic pull to them. Polarity of the magnets is controlled by a large ON-OFF switch that turns the magnetic pull to full on...full off...or to any intermediate point to make minor adjustments in position. The contact faces of the base are ground and lapped, and have a V-groove down the center, adapting it for use on cylindrical as well as flat surfaces.

A new scriber on this surface gage has a removable, long wearing carbide tip. The scriber rod has shock end that releases the tip for replacement or for reversing and re-entering to protect the tip from damage when not in use.
"Miti-Mite" Magnetic Base Tools

No. 903D Magnetic Hold Downs

A new idea in hold downs—faster, easier, more convenient for you to use—a real time saver. Lufkin Magnetic Hold Downs attach instantly to vise jaws in either a horizontal position or at an angle. Once placed in the desired position to hold the work, there is no necessity to hold them further with the hands, shims, blocks, or parallels.

The clamping edge is less than 3/32"—will hold very thin work. The back of each Hold Down has a slight taper, which causes the clamping edge to force the work downward as the vise jaws close. A spring beneath each Hold Down keeps it in a horizontal position until this pressure is applied. The downward pressure assures the work will be firmly based when machining surfaces with a planer, shaper, milling machine, etc.

Made of hardened tool steel, Lufkin Magnetic Hold Downs are 5 inches long, swivel mounted in a polished aluminum plate 6 inches long. The plate contains two permanent magnets spaced 3/4 inches apart. Each magnet has sufficient magnetic pull to keep the Hold Down in position, even if only one magnet should contact the vise jaw. Can be used in all size vises including small toolmakers clamps.

903D "Miti-Mite" Magnetic Hold Downs

Packing: One pair in a box.

"Miti-Mite" Magnetic Base Tools

No. 120 Magnetic Base Four Power Magnifier

An indispensable tool for inspection, precision drilling, assembly, reading fine graduations, etc. The magnetic base readily attaches itself to flat or curved steel and iron surfaces, leaving both hands free to work. The Magnifier has a four-power double lens designed to eliminate distortion.

Magnifier only can be used with No. 100 and No. 101 bases.

Permanent magnet with 50-pound pull.
Bell-and-socket action for positioning.
Eliminates hazardous clamping.
Saves time and money.

No. 120, Four Power Magnifier (Complete Unit).
No. 125, Magnifier Only.

Packing: One in a Box.
**Miti-Mite** Magnetic Base Tools

No. 250 Heavy Duty Magnetic Base Portable "Handi-Lite"

Convenient and handy. Used by mechanics, machinists, repairmen, engravers, maintenance men, hobbyists and others. It can also be used as an auxiliary light in the shop and for many repair operations.

Readily attaches itself to flat or curved steel and iron surfaces. The light can be adjusted to any desired angle. The lamp shield is rayon flocked, coated to resist heat and glare.

This unit is equipped with 8 feet of oil resisting, UL approved索赔 cord and molded plug.

Operates on 110 volts.

- **Permanent magnet** with 100-pound pull.
- **Ball-and-socket action** for positioning.
- **Eliminates** hazardous clamping.
- **Magnetic holding is safe, sturdy.**
- **Saves** time and effort.
- **Standard bulbs** up to 100 watts can be used.
- **Fingertip control magnetic release** for positioning or removing without jarring indicator.
- **Portable and convenient to use.**

No. 250, Heavy Duty Portable "Handi-Lite".

Packing: One in a Box.

---

A very handy portable light used by mechanics, machinists, repairmen, engravers, maintenance men, refrigerator and radio mechanics, hobbyists and others.

Readily attaches itself to flat or curved steel and iron surfaces. The light can be adjusted to any desired angle. The lamp shield is rayon flocked, coated to resist heat and glare.

Comes equipped with a 6-foot UL approved oil resisting cord. Furnished with two 25-watt bulbs.

Operates on 110 Volts.

- **Permanent magnet** with 50-pound pull.
- **Ball-and-socket action** for positioning.
- **Eliminates** hazardous clamping.
- **Saves** time and effort.

No. 200, Portable "Handi-Lite" with Bulbs.
No. 200-13, 25-Watt Lamps (Carton of 6).

Packing: One in a Box.

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FOR PRICES SEE PRICE LIST

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ROSE TOOLS, INC.
**Tool Set No. 1**

For Students, Apprentices and Mechanics

This set includes only those tools that are indispensable to the student or beginner. The set contains only standard tools. It is furnished in a compact folding case convenient to carry to classes or shop.

The tools are identical to those listed in this catalog and the same as those sold to fine mechanics for their regular work. These precision tools may then become a part of the more complete kit or chest of tools which the mechanic will require in his shop work to follow.

The tools are nicely arranged and held in the fitted case, which folds to size 7 by 5 x 1-inch. Set complete with case weights 1/2 pounds.

### Contents of Set No. 1

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Illustrated on Page</th>
</tr>
</thead>
</table>
| 25C | 6-Inch Combination Square  
(Blade with Square and Center Heads) | 52 |
| 2110R | 6-Inch Flexible Steel Rule, w/Cases  
4-Inch "Banner" Spring Divider  
4-Inch "Banner" Outside Spring Caliper | 81, 118, 83 |
| 40 | 4-Inch "Banner" Inside Spring Caliper | 83 |
| 41 | 4-Inch "Banner" Inside Spring Caliper | 115 |

### Note:

Other complete tool sets for students, see pages 108-109.

Packing: One Set in a Box.
ROSE TOOLS, INC.

Tool Set No. 2
For Students, Apprentice Toolmakers and Mechanics

Differ from Set No. 1 as follows: a micrometer is included; combination square is 9 inches instead of 6 inches; calipers and dividers are toolmakers pattern; hermaphrodite calipers have adjustable point.

This set includes only those tools that are indispensable to the student or beginner. The set contains only standard tools. It is furnished in a compact, folding case, convenient to carry to classes or shop.

The tools in this set are identical to those listed in this catalog and are the same as those sold to fine mechanics for their regular work. These precision tools then may become a part of the more complete kit or chest of tools which the mechanic will require in his shop work to follow.

The tools are nicely arranged and held in the fitted case which folds to size 10½ x 6½ x 1-inch. Set complete with case weighs 2 pounds.

---

Tool Set No. 3
For Students, Apprentice Toolmakers and Machinists

No. 3 is the most complete set.
No. 3 Tool Set differs from No. 1. Set as follows: A micrometer is included; combination square is 12 inches; the sine most used in shops; calipers and dividers are toolmakers pattern; hermaphrodite calipers have adjustable point; the case is of heavier and more durable materials.

No. 3 Tool Set differs from No. 2. Set as follows: No. 3 Tool Set has a 12-inch instead of 9-inch combination square; the case is of heavier and more durable material.

This set includes only those tools that are indispensable to the student or beginner. The set contains only standard tools. It is furnished in a compact folding case, convenient to carry to classes or shop.

The tools in this set are identical to those listed in this catalog and are the same as those sold to fine mechanics for their regular work. These precision tools then may become a part of the more complete kit or chest of tools which the mechanic will require in his shop work to follow.

The tools are nicely arranged and held in the fitted case which folds to size 12½ x 6½ x 1½ inches.

Set complete with case weighs 2½ pounds.

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Contents of Set No. 2. One Each of the Following

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Illustrated on Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911</td>
<td>1-Inch Chrome Clad Micrometer</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>9-Inch Combination Square</td>
<td>52</td>
</tr>
<tr>
<td>2110R</td>
<td>6-Inch Flexible Steel Rule, w/Case</td>
<td>118</td>
</tr>
<tr>
<td>140</td>
<td>4-Inch Toolmaker's Spring</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Divider</td>
<td>71D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

Packing: One Set in a Box.

FOR PRICES SEE PRICE LIST

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Contents of Set No. 3. One Each of the Following

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Illustrated on Page</th>
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</thead>
<tbody>
<tr>
<td>1911</td>
<td>1-Inch Chrome Clad Micrometer</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>9-Inch Combination Square</td>
<td>52</td>
</tr>
<tr>
<td>2110R</td>
<td>6-Inch Flexible Steel Rule, w/Case</td>
<td>118</td>
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<tr>
<td>140</td>
<td>4-Inch Toolmaker's Spring</td>
<td>80</td>
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<tr>
<td></td>
<td>Divider</td>
<td>71D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

Packing: One Set in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Pin Vises

Lufkin Pin Vises are designed for holding small stock, drills, taps, scribers and small files.

Dull nickel plated finish prevents glare.

The chuck is beveled both front and back. This feature gives a longer bearing surface, a firmer grip, better centering and eliminates wobbling. A smooth bearing surface is provided at the chuck end to insure true running when used in a collet or chuck. Jaws are hardened. The hole runs through the entire length of the vise permitting use of long rods and chucking at any desired point.

No. 197A, Pin Vise, Capacity, 0 to .055 Inch.
No. 197B, Pin Vise, Capacity, .025 to .175 Inch.
No. 197C, Pin Vise, Capacity, .045 to .135 Inch.
No. 197D, Pin Vise, Capacity, .110 to .300 Inch.
No. 197E, Set of Four Pin Vises in Red Fitted Case as Illustrated.

Contains One Each of Nos. 197A, B, C, and D.

Packings: Nos. 197A, B, C and D Six in a Box. Set No. 1978 One in a Box.

FOR PRICES SEE PRICE LIST

Wigglers

With Point, Ball Contact and Disc Contact

No. 89

No. 189 Wiggle with Spring Tension Snap-out Check

Wigglers or Center Finders are essential for all kinds of jig and tool work on jig boring, milling and boring machines and locating working points.

Tension on ball is maintained by a spring. The tension can be varied by an adjusting screw in end of shank. The point can be reversed and inserted in the handle to give the point protection when not in use. Available for use with the above are a ball contact, disc contact.

The ball contact is useful in locating work in holes, slots, shoulders, etc. It is used by bringing the contact ball against the work and then indexing the work to desired position in alignment with spindle.

Ball diameter, 250 inch. The diameter of the disc contact is 100 inch and is used in smaller openings.

Series 189 has a spring tension snap-out check. Accessories are easily inserted into the adjustable tension chuck. This chuck permits use of offset holder which is used in conjunction with a dial indicator for checking surfaces, sweeping holes, checking run-out, alignments and many other jobs in contact machining, layout and other operations.

All attachments are held securely in shank by ball swivel joint that permits adjustment to any desired angle or true center. Shank length, 2¾ inches, diameter, ¾ inch.

Series 189 Wigglers

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>Wiggle Complete with Point, Ball and Disc Contact</td>
</tr>
<tr>
<td>89A</td>
<td>Wiggle with Point Only</td>
</tr>
<tr>
<td>89B</td>
<td>Ball Contact Only</td>
</tr>
<tr>
<td>89C</td>
<td>Disc Contact Only</td>
</tr>
<tr>
<td></td>
<td>Extra Points Only</td>
</tr>
</tbody>
</table>

Series 189 Wigglers

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>189</td>
<td>Complete with Combination Ball and Point, Disc Contact, Indicator Holder</td>
</tr>
<tr>
<td></td>
<td>Wiggle with Combination Ball and Point</td>
</tr>
<tr>
<td>189A</td>
<td>Ball Contact Only</td>
</tr>
<tr>
<td>189B</td>
<td>Disc Contact Only</td>
</tr>
<tr>
<td>189C</td>
<td>Offset Indicator Holder Only</td>
</tr>
<tr>
<td>189D</td>
<td>Extra Combination Ball and Point Only</td>
</tr>
</tbody>
</table>

Packing: One in a Box; Three in a Carton.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Pocket Scribers

A very handy and convenient tool for all mechanics. Handle is made of steel tubing, nickel plated. Tip is knurled, affording a good grip. Point reversed, inserted, and locked into handle to make of high grade steel, properly tempered for long wear. Point is held rigid and firm in the handle by a knurled chuck. Hexagon head prevents rolling.

No. 87A, Pocket Scriber; Diameter Handle, 1/4 Inch; Length Point, 2 5/8 Inches.
No. 87B, Pocket Scriber; Diameter Handle, 5/8 Inch; Length Point, 2 5/8 Inches.
Points Only for above Scribers (Specify A or B).

Note: Blades of Screw Drivers Nos. 187A and 187B, listed page 113, will fit handles of Pocket Scribers Nos. 87A and 87B. On such Screw Driver Blades only, specify “A” or “B”.

Scribers

A high quality scriber made of fine quality steel, properly tempered for long wear. Portions of point and stock are knurled for firm grip. Stock is ample size so that it can be held easily. Points have threaded ends and can be engaged in either end of stock. Long bent point is designed for reaching through holes. Length of scriber: with short bent point, 5 inches; with long bent point, 12 inches.

No. 88A, Scriber with Three Points (One Straight, One Long and One Short Bent).
No. 88B, Scriber with Two Points (One Straight and One Short Bent).
Extra Points Available for above Scriber:

Straight Point.
Short Bent Point.
Long Bent Point.

Packing: Six in a Box.

FOR PRICES SEE PRICE LIST

Pocket Screw Drivers

A quality, compact Screw Driver. Handle is made of steel tubing, nickel plated. It is knurled, affording a good grip. Blade is made of high quality steel, properly shaped and tempered. The blade is firmly locked in the handle by a knurled chuck. Hexagon head prevents rolling.

No. 187 A, Screw Driver; Diameter Handle, 1/4 Inch; Length Blade, 2 5/8 Inches.
No. 187 B, Screw Driver; Diameter Handle, 5/8 Inch; Length Blade, 3 Inches.
Blades Only for above Screw Drivers. (Specify A or B).

Note: Points of Scribers Nos. 87A and 87B, listed page 112, will fit handles of Screw Drivers Nos. 187 A and 187 B. On such Scriber Points Only, Specify “A” or “B”.

Jewelers Screw Drivers

Lufkin Jewelers Screw Drivers are designed for use by jewelers, opticians, watch repairmen, in electronic and other fine work.

They are well made of high quality steel tubing, nickel plated 5/8 inch in diameter. Body and chuck are knurled. The head of the screw driver is a hexagonal shape to prevent rolling. The blades are securely held in a positive action chuck. All blades are interchangeable. Sizes of blades are designated by grooves at lower end of chuck. Five rings indicate approximate blade width of 0.025 inch, four rings, 0.040 inch, three rings, 0.055 inch, two rings, 0.070 inch, one ring, 0.085 inch, largest size. 0.10 inch is plain.

Available in open cases and in sets.

No. 188 AA, Jewelers Screw Driver; Approximate Width of Blade, 0.025 Inch.
No. 188 A, Jewelers Screw Driver; Approximate Width of Blade, 0.055 Inch.
No. 188 B, Jewelers Screw Driver; Approximate Width of Blade, 0.060 Inch.
No. 188 C, Jewelers Screw Driver; Approximate Width of Blade, 0.065 Inch.
No. 188 D, Jewelers Screw Driver; Approximate Width of Blade, 0.070 Inch.
No. 188 E, Jewelers Screw Driver; Approximate Width of Blade, 0.085 Inch.
No. 188 AA, Jewelers Screw Driver; Approximate Width of Blade, 0.100 Inch.
No. 188 F, Jewelers Screw Driver; Approximate Width of Blade, 0.110 Inch.
No. 188 G, Jewelers Screw Driver; Approximate Width of Blade, 0.125 Inch.
No. 188 H, Jewelers Screw Driver; Approximate Width of Blade, 0.140 Inch.
Extra Blades Only for above Are Available; Specify Size.

Packing: Six in a Box.
Sets: One in Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Drive Pin PUNCHES

No. 72


<table>
<thead>
<tr>
<th>No.</th>
<th>Point Diameter</th>
<th>Punch Length</th>
<th>No. in Box</th>
<th>No.</th>
<th>Point Diameter</th>
<th>Punch Length</th>
<th>No. in Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>72A</td>
<td>3/4</td>
<td>3 1/2</td>
<td>12</td>
<td>72E</td>
<td>3/4</td>
<td>4 1/2</td>
<td>12</td>
</tr>
<tr>
<td>72B</td>
<td>3/8</td>
<td>3 1/2</td>
<td>12</td>
<td>72F</td>
<td>3/8</td>
<td>4 1/2</td>
<td>12</td>
</tr>
<tr>
<td>72C</td>
<td>3/8</td>
<td>4 1/2</td>
<td>12</td>
<td>72G</td>
<td>3/8</td>
<td>4 1/2</td>
<td>12</td>
</tr>
<tr>
<td>72D</td>
<td>3/8</td>
<td>4 1/2</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>72S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Set of 8 Drive Pin Punches in Fitted Case

Extra Long Drive Pin PUNCHES

No. 172D

Lufkin Extra Long Drive Pin PUNCHES are made of high grade tool steel, hardened and ground. The body is knurled giving good finger grip. These punches are 8 inches long permitting them to be used on work inaccessible by other types of pin punches. Actual size of punch head is approximately .005 inch undersize to permit points to enter openings of their indicated size. The knurled portion is 4 1/2 inches long. The drive pin portion is 3 1/2 inches long. The diameter of the knurled portion is as follows: No. 172D, 3/16 inch; Nos. 172B, 172C and 172D, 5/32 inch; No. 172E, 5/32 inch.

<table>
<thead>
<tr>
<th>No.</th>
<th>Point Diameter</th>
<th>Punch Length</th>
<th>No. in Box</th>
<th>No.</th>
<th>Point Diameter</th>
<th>Punch Length</th>
<th>No. in Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>71AA</td>
<td>1/8</td>
<td>3 1/2</td>
<td>12</td>
<td>71A</td>
<td>7/32</td>
<td>4 1/2</td>
<td>12</td>
</tr>
<tr>
<td>71B</td>
<td>7/32</td>
<td>4 1/2</td>
<td>12</td>
<td>71C</td>
<td>7/32</td>
<td>4 1/2</td>
<td>12</td>
</tr>
<tr>
<td>71D</td>
<td>7/32</td>
<td>4 1/2</td>
<td>12</td>
<td>71E</td>
<td>7/32</td>
<td>4 1/2</td>
<td>12</td>
</tr>
<tr>
<td>71S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Set of 6 Punches in Fitted Case

Center PUNCHES

No. 71E

These Center PUNCHES are made of fine quality tool steel. They are shaped properly and points carefully ground.

These punches are hardened and polished and have body knurled to afford good finger grip.

Available individually or in sets of six in durable fitted case.

Extra Long Drive Pin PUNCHES

No. 172S, Set

No. 1725, Set

AN Automatic Center Punch

No. 1671A Automatic Center Punches

With Adjustable Stroke

An automatic center punch is almost indispensable for fine work and handy for all marking because it assures speed as well as accuracy. Use of a hammer is entirely eliminated as this tool is operated with only one hand.

Incorporated in this Center Punch is a mechanism which automatically strikes a uniform blow. More accurate, controlled and uniform impressions are obtained using this punch than by using the hand punch and hammer method.

Marring of the work, slipping and other chances of error are avoided. The Lufkin Center Punch has an unusually wide range of adjustment, ideal for controlling the blow for various metals or other materials.

Force of the blow is regulated by screwing the knurled cap. Turning the cap down, the blow is the heaviest. As it is turned upward, the blow decreases. The striking block is released automatically by downward pressure on the cap. The tension of the spring is constant and when the punch is set at any one point, it will give impressions of uniform depth.

Punch is 5 inches long when set for medium stroke and 4 1/2 inches in diameter. The body is knurled and grooved affording a firm hold. All working parts are hardened properly. The point is removed easily for grinding or replacement.

No. 1671A, Automatic Center Punches.
Extra Points only for above.
Packing: One in a box.

FOR PRICES SEE PRICE LIST
Graduations of Steel Rules

English (Inch) Measure

Below is a detailed listing of combinations of markings which are known by graduation numbers. These graduation numbers are used in conjunction with scales, rules or combination square blades illustrated throughout the catalog.

Rules graduated in Metric and Metric and English are regularly furnished. We also can furnish scales, rules and combination square blades in various other graduations on special orders.

No. 1 Graduation
One Edge: 10-20-50-100ths
One Edge: 12-24-48ths
One Edge: 16-32-64ths
One Edge: 14-28ths

No. 2 Graduation
One Edge: 10-20-30-100ths
One Edge: 12-24-48ths
One Edge: 16-32-64ths
One Edge: 18ths

No. 3 Graduation
One Edge: 32nds
One Edge: 64ths
One Edge: 10ths
One Edge: 50ths

No. 4 Graduation
One Edge: 64ths
One Edge: 128ths
One Edge: 16ths
One Edge: 32nds

No. 5 Graduation
One Edge: 32nds
One Edge: 64ths
One Edge: 10ths
One Edge: 100ths

No. 6 Graduation
One Edge: 10ths
Other Edge: 50ths
Both Sides of Rule

No. 7 Graduation
One Edge: 64ths
One Edge: 32nds
One Edge: 16ths
One Edge: 100ths

No. 10 Graduation
One Edge: 32nds
One Edge: 64ths
One Edge: 100ths

No. 11 Graduation
One Edge: 64ths
One Edge: 100ths

No. 12 Graduation
One Edge: 32nds
One Edge: 64ths
One Edge: 50ths
One Edge: 100ths

No. 16 Graduation
One Edge: 32nds
One Edge: 64ths
One Edge: 10ths
One Edge: 100ths

Rules that have catalog numbers with suffix “R” have “Rapid Reading” graduations. This means that each inch subdivision is numbered as follows: 32nds every 5th division; 64ths every 10th division. The Rapid Reading feature is available on rules with the following graduation numbers, 3, 4, 5, 6, 7, 10, 11 and 16.

These thin, tempered steel machine divided rules are carefully ground and well finished.

Length of holder permits gauging in small and out of the way places.

Blade securely locks in holder in 30° or 45° slot at any place by means of knurled locking nut.

The fitted case containing set No. 205 is 2.44 x 5.5 x 10.5 inches. Ideal for preventing loss or misplacement of these very small rules and for protecting rules and holder.

Useful in general tool and die work wherever measuring must be done in grooves, on narrow shoulders, in recesses, keyways and in places too small for an ordinary rule to enter.

No. 205 Set of Tempered Steel Rules

With Holder

Packing: One Set in a Box.
Full Flexible Steel Rules
Approximate Thickness, 1/64th Inch
Machine Divided

No. 2110

Thin and very flexible, spring tempered. Surfaces, edges and ends are ground. Dark markings are easy to read.
Rapid reading graduations mean inch subdivisions numbered as follows: 32nds every 4th division; 64ths every 8th division; 100ths every 10th division. Staggered figures are faster and easier to locate.

<table>
<thead>
<tr>
<th>No.</th>
<th>Graduations Inches</th>
<th>Length Inches</th>
<th>Approx. Width Inches</th>
<th>Markings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2103R</td>
<td>No. 3 (32nds, 64ths, 100ths, 50ths) Rapid Reading</td>
<td>6</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
<tr>
<td>2105R</td>
<td>No. 5 (32nds, 64ths, 100ths) All Lengths Rapid Reading</td>
<td>6, 12</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
<tr>
<td>2106R</td>
<td>No. 6 (100ths, 50ths) All Lengths Rapid Reading</td>
<td>6, 12</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
<tr>
<td>2110R</td>
<td>No. 10 (32nds, 64ths) All Lengths, Rapid Reading; Marked One Side Only</td>
<td>2, 3, 4, 6, 12</td>
<td>½</td>
<td>Double Row of Inch Figures</td>
</tr>
<tr>
<td>2110R</td>
<td>64ths One Side; 32nds Other Side</td>
<td>6</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
<tr>
<td>2111R</td>
<td>No. 11 (64ths, 100ths) All Lengths, Rapid Reading; Marked One Side Only</td>
<td>6, 12</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
<tr>
<td>2112R</td>
<td>No. 12 (32nds, 64ths, 60ths, 100ths) Rapid Reading</td>
<td>6, 12</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
<tr>
<td>2119R</td>
<td>50ths One Side; 25ths Other Side</td>
<td>6, 12</td>
<td>½</td>
<td>Double Row of Inch Figures</td>
</tr>
</tbody>
</table>

Chrome Clad Full Flexible Steel Rules
Approximate Thickness, 1/64th Inch
Machine Divided

No. C2105R, Front Side
No. C2105R, Back Side

These rules have a one-piece Chrome Clad finish. Jet black figures and machine divided graduations stand out sharp and clear against the chrome white background. The Lufkin Chrome Clad finish consists of multiple electroplatings that protect and preserve the figures. A hard finish that resists oil, abrasion, and graduations. It is a hard finish that resists stain. The graduations are “Rapid Reading” figures, not marked every 4th division; 64ths marked every 8th division. Each rule is marked with both sides, the most frequently used graduations on the bottom edge for convenience.

<table>
<thead>
<tr>
<th>No.</th>
<th>Graduations Inches</th>
<th>Length Inches</th>
<th>Approx. Width Inches</th>
<th>Markings</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2105R</td>
<td>No. 3 (32nds, 64ths, 100ths) Rapid Reading</td>
<td>6</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
<tr>
<td>C2105R</td>
<td>No. 5 (32nds, 64ths, 100ths, 100ths) Rapid Reading</td>
<td>6, 12</td>
<td>½</td>
<td>Double Row of Inch Figures</td>
</tr>
<tr>
<td>C2106R</td>
<td>No. 6 (100ths, 50ths) Grad. One Side only, Rapid Reading</td>
<td>6, 12</td>
<td>½</td>
<td>Double Row of Inch Figures</td>
</tr>
<tr>
<td>C2110R</td>
<td>No. 10 (32nds, 64ths, 100ths) Grad. One Side only, Rapid Reading</td>
<td>6, 12</td>
<td>½</td>
<td>Double Row of Inch Figures</td>
</tr>
<tr>
<td>C2110R</td>
<td>No. 10 (32nds, 64ths, 30ths, 100ths) Rapid Reading</td>
<td>6, 12</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
<tr>
<td>C2110R</td>
<td>64ths One Side; 32nds Other Side</td>
<td>6, 12</td>
<td>½</td>
<td>Double Row of Inch Figures</td>
</tr>
<tr>
<td>C2116R</td>
<td>No. 16 (32nds, 64ths, 30ths, 100ths) Rapid Reading</td>
<td>6, 12</td>
<td>½</td>
<td>Single Row of Inch Figures</td>
</tr>
</tbody>
</table>

No. S2110R Flexible Stainless Steel Rules
Machine Divided – Approximate Thickness, 1/64th Inch

Front Side
Genuine stainless steel, rust and stain proof. These rules are thin, very flexible and spring tempered. Surfaces, edges and ends are ground.
Rapid reading graduations mean inch subdivisions numbered as follows: 32nds every 4th division; 64ths every 8th division. Staggered figures are faster and easier to locate.

<table>
<thead>
<tr>
<th>No.</th>
<th>Graduations Inches</th>
<th>Length Inches</th>
<th>Approx. Width Inches</th>
<th>Markings</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2110R</td>
<td>(64ths on Lower Edge One Side)</td>
<td>6</td>
<td>½</td>
<td>Single Row of Inch Figures on Both Sides</td>
</tr>
</tbody>
</table>

Packing: Rules 12 inches or less, six in a box; larger sizes one in a package.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
<table>
<thead>
<tr>
<th>No.</th>
<th>6 Sides (12, 18, 24, 36, 48, 60)</th>
<th>9 Sides (18, 27, 36, 45, 54, 63)</th>
<th>12 Sides (24, 36, 48, 60, 72, 84)</th>
<th>18 Sides (36, 54, 72, 84, 108, 126)</th>
<th>24 Sides (48, 72, 96, 120, 144, 168)</th>
<th>36 Sides (72, 108, 144, 180, 216, 252)</th>
<th>48 Sides (144, 216, 252, 312, 360, 408)</th>
<th>72 Sides (216, 312, 360, 432, 480, 528)</th>
<th>84 Sides (312, 432, 480, 576, 624, 696)</th>
</tr>
</thead>
</table>

### Beveled Steel Rules

**Machine Divided • Approximate Thickness: 3/16ths Inch**

<table>
<thead>
<tr>
<th>No.</th>
<th>6 Sides (12, 18, 24, 36, 48, 60)</th>
<th>9 Sides (18, 27, 36, 45, 54, 63)</th>
<th>12 Sides (24, 36, 48, 60, 72, 84)</th>
<th>18 Sides (36, 54, 72, 84, 108, 126)</th>
<th>24 Sides (48, 72, 96, 120, 144, 168)</th>
<th>36 Sides (72, 108, 144, 180, 216, 252)</th>
<th>48 Sides (144, 216, 252, 312, 360, 408)</th>
<th>72 Sides (216, 312, 360, 432, 480, 528)</th>
<th>84 Sides (312, 432, 480, 576, 624, 696)</th>
</tr>
</thead>
</table>

### Chrome Clad Spring Tempered Steel Rule

**Machine Divided • Approximate Thickness: 3/16ths Inch**

<table>
<thead>
<tr>
<th>No.</th>
<th>6 Sides (12, 18, 24, 36, 48, 60)</th>
<th>9 Sides (18, 27, 36, 45, 54, 63)</th>
<th>12 Sides (24, 36, 48, 60, 72, 84)</th>
<th>18 Sides (36, 54, 72, 84, 108, 126)</th>
<th>24 Sides (48, 72, 96, 120, 144, 168)</th>
<th>36 Sides (72, 108, 144, 180, 216, 252)</th>
<th>48 Sides (144, 216, 252, 312, 360, 408)</th>
<th>72 Sides (216, 312, 360, 432, 480, 528)</th>
<th>84 Sides (312, 432, 480, 576, 624, 696)</th>
</tr>
</thead>
</table>
Narrow Steel Rules

Machine Divided • Approximate Thickness, 3/64ths Inch

These narrow stiff rules are spring tempered, ¾ inch wide and can be readily inserted in small openings. Edges surface and end ground. Accurately graduated on one edge of each side. Clear, dark lines and figures. These rules are used as blades in some styles of depth gages.

No. Graduations Inches Length Inches Approx. Width Inches Markings - Edges Read from Same End
2306 No. 6 (50ths) 6, 12 ½ Single Row of Inch Figures
2310 No. 10 (32nds and 64ths) 4, 8, 9, 12 ½ Single Row of Inch Figures
2311 No. 11 (64ths and 100ths Inch) 4, 8, 9, 12 ½ Single Row of Inch Figures

Chrome Clad Narrow Pattern Steel Rule

No. Graduations Inches Length Inches Approx. Width Inches Markings - Edges Read from Same End
C2306 No. 6 (50ths) 6, 12 ½ Single Row of Inch Figures
C2310 No. 10 (32nds, 64ths) 6 ½ Single Row of Inch Figures
Packing: 6 in a Box

Narrow Hook Rule with Removable and Reversible Hook

No. Graduations Inches Length Inches Approx. Width Inches Approx. Thick Inches Markings - Edges Read from Same End
H2310 No. 10 (32nds and 64ths) 4, 6, 9, 12 ½ ½ Single Row of Inch Figures
Chrome Clad Narrow Hook Rule

Packing: 3 in a Box.

Hook Rule with Reversible Hook

Approximate Thickness, 3/64ths Inch

The hook can be readily reversed by loosening the thumb screw until the hook slot clears the rule. This feature permits the hook to be turned to either edge of the rule without removing any parts. Rapid reading graduations throughout; 64ths every 8th division; 32nds every 4th division. Staggered figures are faster and easier to locate.

No. Graduations Inches Length Inches Approx. Width Inches Markings - Opposite Edges Read from Same End
H224 No. 4 (8ths, 16ths, 32nds, 64ths) All Lengths Rapid Reading 6 ½ Single Row of Inch Figures

Chrome Clad Hook Rule

Packing: 3 in a Box.

“Allen” Improved Semi-Flexible Steel Rules

Easiest to Read • Machine Divided • Approximate Thickness, 1/50th Inch

The numbering and marking of this rule is unique, making it easy to read to 64ths of an inch. One edge is marked with the odd 64ths every fourth 64th commencing with number 1 and ending 1, 2, 3, 4, etc. The other edge carries the remaining odd 64ths commencing with 3, 7, 11, 15, etc. Each 64th graduation is numbered for fast and accurate reading. The other edge in 32nds for measuring the even 64ths.

Packing: Six in a Box.

FOR PRICES SEE PRICE LIST.

ROSE TOOLS, INC.
Heavy Spring Tempered Steel Rules

Machine Divided • Approx. Thickness, 1/10th Inch

A wide, stiff rule, popular in many industries where longer measurements must be precisely taken. Accurately and clearly marked on both edges of both sides. Prominent figures are easy to read. Surfaces, ends and edges are ground.

No. 2404R, without Hook

No. 2404R, with Hook

Semi-Flexible Steel Rules

Machine Divided • Approximate Thickness, 1/50th Inch

Chrome Clad Heavy Spring Tempered Steel Rules

With Chrome Clad Finish

Chrome Clad Semi-Flexible Steel Rules

Packing: One in a Package.
Note: Longer Lengths Available on Special Order.

For prices see price list.

ROSE TOOLS, INC.
Steel Shrink Rules

Machine Divided • Approximate Thickness 3/64ths Inch

Graduation No. 4: 8ths, 16ths, 32nds, 64ths shrunk edge from same end; the 12-inch and longer rules have double row of inch figures, opposite edges from opposite ends.
Approximate width: 6-inch rule, 3/4 inch; 12-inch rule, 1/4 inch; 24-inch rule, 1/4 inches. Always specify length as well as No.

<table>
<thead>
<tr>
<th>No.</th>
<th>Shrink per Foot</th>
<th>No.</th>
<th>Shrink per Foot</th>
<th>No.</th>
<th>Shrink per Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>83E</td>
<td>1/32</td>
<td>83G</td>
<td>1/32</td>
<td>83R</td>
<td>1/32</td>
</tr>
<tr>
<td>83E</td>
<td>1/32</td>
<td>83H</td>
<td>1/32</td>
<td>83S</td>
<td>1/32</td>
</tr>
<tr>
<td>83E</td>
<td>1/32</td>
<td>83J</td>
<td>1/32</td>
<td>83T</td>
<td>1/32</td>
</tr>
<tr>
<td>83E</td>
<td>1/32</td>
<td>83K</td>
<td>1/32</td>
<td>83W</td>
<td>1/32</td>
</tr>
<tr>
<td>83E</td>
<td>1/32</td>
<td>83L</td>
<td>1/32</td>
<td>83Y</td>
<td>1/32</td>
</tr>
<tr>
<td>83E</td>
<td>1/32</td>
<td>83P</td>
<td>1/32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Steel Shrink Rules

Decimal Graduations • Machine Divided

These rules are the same as the No. 83 Series except with decimal graduations. Rapid reading graduations throughout; 50ths numbered every 5th division; 10ths every division.
Graduation No. 6: 10ths (.10). Both edges of one side, 50ths (.02) both edges of other side.
Always specify length as well as No.

<table>
<thead>
<tr>
<th>No.</th>
<th>Shrink per Foot</th>
<th>No.</th>
<th>Shrink per Foot</th>
<th>No.</th>
<th>Shrink per Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>84A</td>
<td>1/64</td>
<td>84G</td>
<td>1/64</td>
<td>84R</td>
<td>1/64</td>
</tr>
<tr>
<td>84B</td>
<td>1/64</td>
<td>84H</td>
<td>1/64</td>
<td>84S</td>
<td>1/64</td>
</tr>
<tr>
<td>84C</td>
<td>1/64</td>
<td>84J</td>
<td>1/64</td>
<td>84T</td>
<td>1/64</td>
</tr>
<tr>
<td>84D</td>
<td>1/64</td>
<td>84K</td>
<td>1/64</td>
<td>84W</td>
<td>1/64</td>
</tr>
<tr>
<td>84E</td>
<td>1/64</td>
<td>84L</td>
<td>1/64</td>
<td>84Y</td>
<td>1/64</td>
</tr>
<tr>
<td>84F</td>
<td>1/64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Packing: 6 and 12-Inch Rules Six in a Box.
24-Inch Rules One in a Package.

FOR PRICES SEE PRICE LIST

Chrome Clad Steel Shrink Rules

Decimal Graduations • Machine Divided

These rules are the same as the No. 83 Series except with decimal graduations. Rapid reading graduations throughout; 50ths numbered every 5th division; 10ths every division.
Graduation No. 6: 10ths (.10) both edges of one side; 50ths (.02) both edges of other side.
Always specify length as well as No.

<table>
<thead>
<tr>
<th>No.</th>
<th>Shrink per Foot</th>
<th>No.</th>
<th>Shrink per Foot</th>
<th>No.</th>
<th>Shrink per Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB3A</td>
<td>1/64</td>
<td>CB3G</td>
<td>1/64</td>
<td>CB3R</td>
<td>1/64</td>
</tr>
<tr>
<td>CB3B</td>
<td>1/64</td>
<td>CB3H</td>
<td>1/64</td>
<td>CB3S</td>
<td>1/64</td>
</tr>
<tr>
<td>CB3C</td>
<td>1/64</td>
<td>CB3J</td>
<td>1/64</td>
<td>CB3T</td>
<td>1/64</td>
</tr>
<tr>
<td>CB3D</td>
<td>1/64</td>
<td>CB3K</td>
<td>1/64</td>
<td>CB3W</td>
<td>1/64</td>
</tr>
<tr>
<td>CB3E</td>
<td>1/64</td>
<td>CB3L</td>
<td>1/64</td>
<td>CB3Y</td>
<td>1/64</td>
</tr>
<tr>
<td>CB3F</td>
<td>1/64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Packing: 6 and 12-Inch Rules Six in a Box.
24-Inch Rules One in a Package.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Flexible Steel Shrink Rules

Machine Divided • Approximate Thickness, 1/64th Inch

Graduation No. 10; 32nds and 64ths shrinkage
inch. Graduated one side only, lower edge 64ths,
upper edge 32nds.

No. 2183E, Flexible Steel Shrink Rule; 32nd Shrink per Foot.
No. 2183S, Flexible Steel Shrink Rule; 64th Shrink per Foot.

Steel Metric Shrink Rules

Graduated three edges in millimeters; one edge
3/2 millimeters.

No. 83M, Steel Metric Shrink Rule; Shrinkage of 1 to 100 Mm.
No. 83MM, Steel Metric Shrink Rule; Shrinkage of 2 to 100 Mm.

Steel Metric Shrinkage of Castings

Table gives the standard shrinkage of different
metals, but some consideration must be given to the
size and shape of the casting. Thick castings will
shrink less under the same conditions, and thinner
castings more than standard. The quality of the
material and the manner of moulding and cooling will
also make a difference in shrinkages.

No. 99 Decimeter Rule

A Key to the Metric System

Gives a most comprehensive, visual demonstration
of metric lengths.
Made of tempered steel, carefully ground. Accurately
machine divided one edge, one side in centimeters and millimeters. Carried on both sides in

No. 99, Decimeter Rule with Case.

Packing: Six in a Box.

FOR PRICES SEE PRICE LIST

Metric and English Steel Rules

Machine Divided

Made of high grade, spring tempered steel. They are accurately machine divided and have
clear, dark, sunken graduation lines and figures, easy to read. They are edge, surface and end
ground.

Stiff Spring Tempered Rules

<table>
<thead>
<tr>
<th>No.</th>
<th>Graduations</th>
<th>Length</th>
<th>Approx.</th>
<th>Width</th>
<th>Approx.</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>2100M</td>
<td>Marked Both Sides, Three Edges in Mm.; One Edge in 1/2 Mm.</td>
<td>5 Cm.</td>
<td>12</td>
<td>1 (5/8ths Inch)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 Cm.</td>
<td>15</td>
<td>1 (5/8ths Inch)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 Cm.</td>
<td>18</td>
<td>1 (5/8ths Inch)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 Cm.</td>
<td>21</td>
<td>1 (5/8ths Inch)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>25 Cm.</td>
<td>24</td>
<td>1 (5/8ths Inch)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 Cm.</td>
<td>30</td>
<td>1 (5/8ths Inch)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Narrow Spring Tempered Rules

<table>
<thead>
<tr>
<th>No.</th>
<th>Graduations</th>
<th>Length</th>
<th>Approx.</th>
<th>Width</th>
<th>Approx.</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>2300M</td>
<td>Marked Both Sides, One Edge in Mm.; Other Side 3/4 Mm.</td>
<td>10 Cm.</td>
<td>15</td>
<td>1 (5/8ths Inch)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Packing: 5, 10, 15, 20 and 30-Cm. Rules Six in a Box.
50 Cm. and 1-Meter Rules One in a Package.

No. 3227 English-Metric Spring Tempered Steel Rules

Machine Divided • Approximate Thickness, 3/64ths Inch

Marked: One side 10ths, 32nds, 64ths; 10ths,
20ths, 50ths, 100ths inch. Other side, one edge
millimeters; other edge 3/64ths millimeters.

Packing: Six in a Box.
FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
These tables are handy for machinists, tool and die makers, in fact anyone making frequent reference to decimal equivalents, tap and drill sizes or wire gages. They are durable and retain their legibility permanently. Can be used as a rule.

Made of semi-flexible, spring tempered steel, 0.0035 inches, with hole for hanging. Accurately ground and graduated with clear dark figures and lines, easy to read. Rapid reading graduations: 64ths numbered every 8th division; 50ths every 4th division.

**No. 97 1/2.** One side marked with table of U.S., A.S.M.E., S.A.E., and Briggs Pipe Standard machine screw tap and drill sizes, including fractional and numbered sizes. A 6-inch rule graduated to 50ths inch. Other side marked with decimal equivalents of fractions from 1/32 to 1/64. A 6-inch rule graduated to 64ths inch.

**No. 98.** One side marked with decimal equivalents of fractions from 1/32 to 1/64. A 6-inch rule graduated to 64ths inch. Other side marked with decimal equivalents of wire gages. A 6-inch rule graduated to 32nds inch.

Note: Leather cases furnished at small extra charge.

**FOR PRICES SEE PRICE LIST**

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**GENERAL CATALOG No. 14**

Illustrated and described on the following pages are several types of Lufkin Tape-Rules, Steel Tapes and Rules. For information on the complete line of Lufkin Measuring Tapes, Rules, etc., refer to Catalog No. 14, which includes the following and related items:

- **STEEL MEASURING TAPES**
- **WOVEN MEASURING TAPES**
- **STEEL TAPE RULES**
- **SPRING JOINT WOOD RULES**
- **FOLDING ALUMINUM RULES**
- **BOXWOOD RULES**
- **MISC. RULES, WOOD, STEEL AND BRASS**
- **GLASS BOARDS, RULES AND SQUARES**
- **TAILORS' SQUARES AND RULES**
- **LUMBER RULES**
- **BOOT CALKS**

Catalog No. 14 also covers the Precision Tools illustrated in this catalog No. 8 and will gladly be sent upon request to those interested in both Precision Tools and Measuring Tapes and Rules.
**Chrome Clad Mezurall Tape-Rules**

Manually Operated • ⅜-Inch Wide Blade

- **Easy to read.** Jet black markings against Chrome White background. Durable markings are bonded to the steel and recessed below the hard chrome surface.
- **Surface of line will not chip, peel or crack.** Rust resistant.
- **Self-adjusting and hook** assures accurate butt end and hook over measurements as the hook slides to compensate for its thickness.
- **Attractive case** is made of steel, heavily plated. Steel case wears longer and is not easily damaged or broken. Has glass red, flush inset sideplates.

Blade is stiffened by reverse forming and will project unsupported. Blade is manually operated and runs smoothly in and out of case. Balanced construction prevents blade creeping into case when blade is withdrawn. Blade is held in case by a stop catch guarding against breakage when not in use. Blade is replaceable; no tools necessary.

To take an inside measurement: butt square back edge of case against one side of opening being measured; extend the blade to the other limit; the sliding action of the patented hook assures accurate measurement; add 2 inches to the reading at case opening, case being 2 inches wide.

<table>
<thead>
<tr>
<th>Length</th>
<th>Both Edges, Consecutive Inches to 12th Feet Graduated to 32nds</th>
<th>Millimeters on Upper Edge, Inches to 16th on Lower Edge</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>C926</td>
<td>RC6</td>
</tr>
<tr>
<td>8</td>
<td>C928</td>
<td>RC8</td>
</tr>
<tr>
<td>10</td>
<td>C9210</td>
<td>RC10</td>
</tr>
<tr>
<td>12</td>
<td>C9212</td>
<td>RC12</td>
</tr>
</tbody>
</table>

**Weight per Carton:** 6- ft. 15 ½ lb.; 8- ft. 18 lb.; 10- ft. 15 ½ lb.; 12- ft. 15 ½ lb.

**Packing:** One in a Durable Plastic Utility Box; Six in a Carton.

---

**Chrome Clad Super Mezurall Tape-Rules**

Manually Operated • Heavy Duty ⅜-Inch Wide Blade

- **Easy to read.** Jet black markings against Chrome White background. Durable markings are bonded to the steel and recessed below the hard chrome surface.
- **Surface of line will not chip, peel or crack.** Rust resistant.
- **Self-adjusting and hook** assures accurate butt end and hook over measurements as the hook slides to compensate for its thickness.
- **Attractive case** is made of steel, heavily plated. Steel case wears longer and is not easily damaged or broken. Has glass red, flush inset sideplates.

Blade is stiffened by reverse forming and will project unsupported. Blade is manually operated and runs smoothly in and out of case. Balanced construction prevents blade creeping into case when blade is withdrawn. Blade is held in case by a stop catch guarding against breakage when not in use. Blade is replaceable; no tools necessary.

To take an inside measurement: butt square back edge of case against one side of opening being measured; extend the blade to the other limit; the sliding action of the patented hook assures accurate measurement; add 2 inches to the reading at case opening, case being 2 inches wide.

<table>
<thead>
<tr>
<th>Length</th>
<th>Both Edges, Consecutive Inches to 12th Feet Graduated to 32nds</th>
<th>Millimeters on Upper Edge, Inches to 16th on Lower Edge</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>C9310</td>
<td>RC310</td>
</tr>
<tr>
<td>12</td>
<td>C9312</td>
<td>RC312</td>
</tr>
</tbody>
</table>

**Weight per Carton:** 10- ft. 24 lb.; 12- ft. 24 lb.

**Packing:** One in a Durable Plastic Utility Box; Six in a Display Carton.

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**FOR PRICES SEE PRICE LIST**

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**ROSE TOOLS, INC.**
A practical all purpose Tape-Rule for construction and home use.

**Easy to read.** Jet black markings against snow white background. Most durable white finish over borderized tempered steel blade.

**Self-adjusting end hook** assures accurate butt end and hook over measurements as the hook slides to compensate for its thickness.

**Attractive case** is made of precision die cast lightweight alloy metal. Has green inset sideplate.

Blade is stiffened by conceive forming and will project unaltered. Blade is manually operated and runs smoothly in and out of case. The blade will not creep or move when blade is withdrawn. Blade is replaceable; no tools necessary.

To take an inside measurement: Butt square edge of case against one side of opening being measured; extend the blade to the other limit; the sliding action of the patented hook assures accurate measuring; add 2 inches to the reading at case opening, case being 2 inches wide.

### Markings, One Side Only

<table>
<thead>
<tr>
<th>Length (Feet)</th>
<th>Tape-Rule No.</th>
<th>Replacement Blade No.</th>
<th>Tape-Rule No.</th>
<th>Replacement Blade No.</th>
<th>Millimeters on Upper Edge</th>
<th>Inches on Lower Edge</th>
<th>Meters</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>W26</td>
<td>RW6</td>
<td>2</td>
<td>W26D</td>
<td>RW6D</td>
<td>78.1</td>
<td>2</td>
<td>30.4</td>
</tr>
<tr>
<td>8</td>
<td>W28</td>
<td>RW8</td>
<td>2</td>
<td>W28D</td>
<td>RW8D</td>
<td>78.1</td>
<td>2</td>
<td>30.4</td>
</tr>
<tr>
<td>10</td>
<td>W9210</td>
<td>RW10</td>
<td>2</td>
<td>W9210D</td>
<td>RW10D</td>
<td>78.1</td>
<td>2</td>
<td>30.4</td>
</tr>
<tr>
<td>12</td>
<td>W9212</td>
<td>RW12</td>
<td>2</td>
<td>W9212D</td>
<td>RW12D</td>
<td>78.1</td>
<td>2</td>
<td>30.4</td>
</tr>
</tbody>
</table>

**Weight per Carton:** 6-ft., 15 lb.; 8-ft., 15 lb.; 10-ft., 15 lb.; 12-ft., 19 lb.

**Packing:** One in a Durable Plastic Utility Box; Six in a Display Carton.

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### White Clad Super Mezurall Tape-Rules

Manually Operated • Heavy Duty ¾-Inch Wide Blade

---

The ¾-inch wide rigid blade was developed primarily for extended overhead measurements and difficult reach-in measurements. It will extend further horizontally and vertically and is handy for taking overhead measurements.

This tape has a diamond indicating mark at each 1-inch interval to assist those in the building trades in spacing of rafters, studs, etc., on 16-inch centers.

**Easy to read.** Jet black markings against Snow White background. Durable white finish over borderized tempered steel blade.

**Heavy duty self-adjusting end hook** assures accurate butt end and hook over measurements as the hook slides to compensate for its thickness. End hook is long with serrated face, assuring a good grip on hooked over measurements.

**Attractive case** is made of precision die cast alloy metal. They are much stronger, more durable and lighter in weight than many other types of die castings. Has green inset sideplates.

Blade is replaceable; no tools necessary.

To take an inside measurement: Butt square back edge of case against one side of opening being measured; extend the blade to the other limit; the sliding action of the patented hook assures accurate measuring; add 2 inches to the reading at case opening, case being 2 inches wide.

<table>
<thead>
<tr>
<th>Length (Feet)</th>
<th>Tape-Rule No.</th>
<th>Replacement Blade No.</th>
<th>Weight per Carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>W9310</td>
<td>RW9310</td>
<td>25 g</td>
</tr>
<tr>
<td>12</td>
<td>W9312</td>
<td>RW9312</td>
<td>25 g</td>
</tr>
</tbody>
</table>

**Packing:** One in a Durable Plastic Utility Box; Six in a Display Carton.

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FOR PRICES SEE PRICE LIST

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ROSE TOOLS, INC.
Chrome Clad Tape Rules

Decimal Graduated Tape Rules
10ths and 50ths of an inch

Many industries such as automotive, aircraft, electronics, etc. are standardizing on decimal measuring. In addition to the regular machine divided steel rules (No. 6 graduation), Lufkin now offers a Chrome Clad Mezurall tape rule with decimal graduations. The top edge of the blade is graduated in 10ths (.10) of an inch. The first foot of the lower edge of the blade is graduated in 50ths (.02) of an inch. Balance of lower edge is graduated in 10ths. The 50ths graduations are Rapid Reading; each fifth division is numbered for faster and easier reading. Made in accordance with approved American Standard specifications.

Easy to read. Jet black markings against Chrome White background. Durable markings are bonded to the steel and recessed below the hard chrome surface.

Surface of line will not chip, peel or crack. Rust resistant.

Self-adjusting end hook assures accurate butt end and hook over measurements as the hook slides to compensate for its thickness.

Attractive case is made of steel, heavily plated. Steel case wears longer and is not easily damaged or broken. Has gloss red, flush insert sideplates.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
"Anchor" Chrome Clad Steel Tapes

**DECIMAL GRADUATED**

Line ¾-Inch Wide • The Ideal Tape for General Use
Markings Jet Black • Surface Satin Chrome-White • Leather Case

**EASY TO READ.** Large figures, prominent graduations extending to the very edge; both in sharp color contrast to glare-free satin Chrome Clad surface. An accurate steel tape with "Instantaneous" readings.

**Permanent markings.** Resistant abrasion, heat, etc.

**Rust and corrosion-resistant, sturdy line.** Heavily chrome plated.

**Surface of line will not chip, peel or crack.** Metal throughout.

**Case is durable, practical and attractive.** Finest genuine leather, mahogany color, closely hand-stitched over sturdy rust-resistant metal liner. Smoothly operating recessed winding drum with folding flush handle opened by push pin.

Another valuable feature of this tape is the ease of line replacement. The line has a patented rivet and slot fastener that affords a secure and positive fitting. A new line is installed easily in just a few seconds.

**EASY TO READ MARKINGS THAT ARE DURABLE.**

---

### Refills for Tapes (Line Only: with Ring)

<table>
<thead>
<tr>
<th>Length</th>
<th>Feet, Inches and 16ths Tape No.</th>
<th>Feet, Inches and 16ths Tape No.</th>
<th>Feet, Inches and 16ths Tape No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>OC1210</td>
<td>OC1210</td>
<td>OC1210</td>
</tr>
<tr>
<td>33</td>
<td>OC1213</td>
<td>OC1213</td>
<td>OC1213</td>
</tr>
<tr>
<td>50</td>
<td>OC1215</td>
<td>OC1215</td>
<td>OC1215</td>
</tr>
<tr>
<td>75</td>
<td>OC1216</td>
<td>OC1216</td>
<td>OC1216</td>
</tr>
<tr>
<td>100</td>
<td>OC1217</td>
<td>OC1217</td>
<td>OC1217</td>
</tr>
</tbody>
</table>

**Approx. wt.** 25-ft. 3½ lb.; 33-ft. 5½ lb.; 50-ft. 11½ lb.; 75-ft. 1½ lb.; 100-ft. 1½ lb.

**Notes:** "Anchor" Tapes can be furnished marked consecutive inches to 16ths.

"Anchor" Chrome Clad Tapes ¾-inch wide are available.

Packing: One in a Box.
"Leader" Chrome Clad Steel Tapes

3/4-Inch Wide • The Popular Priced Chrome Clad Tape for General Use
Markings Jet Black • Surface Satin Chrome-White
Durable Maroon Vinyl Covered Case • Replaceable Line

Hook Ring

In the "Leader," at its moderate price, we bring within the reach of every tape user the superior features of Chrome Tapes Measuring Tapes.

The tape is of standard weight.

Easy to read. Accurate, Serviceable. Attractive. "Instantaneous" readings. Large figures. prominent graduations extending to the very edge; both in sharp color contrast to the glare-free surface.

Permanent markings. Strongly resist abrasion, heat, etc.

Rust and corrosion-resistant, sturdy line. Heavily chrome plated.

Surface of line will not chip, peel or crack. Metal throughout.

Case is durable and attractive. Metal lined and covered with maroon-vinyl. Narrow, flat, flush, stainless steel edge band. Liner is of welded steel, rust-resistant coated. Smoothly operating recessed winding drum with folding flush handle opened by pull pin.

Another valuable feature of this tape is the ease of line replacement. The line has a patented rivet and slot fastener that affords a secure and positive fit. A new line is installed easily in just a few seconds.

Hook Ring: Enables one to measure unassisted; tape suitable also for butt end measuring. Attached, sturdy, 2-pronged, metal hook folds flush against ring. Friction holds it open or closed. Spares take form hold under tension and are easily released.

"Banner" White Clad Steel Tapes

Line 3/4-Inch Wide • Markings Jet Black • Surface Snow White • Vinyl Case

The ideal general purpose tape for use where severe abrasion is not a problem.

Easy to read. Jet black figures and graduations on snow white surface.

Durable rust-resistant line. Triple baked white modern synthetic finish on hard-bonded tape steel. The hard smooth surface is easy to keep clean.

Case is durable and attractive. Vinyl covered over rust-resistant coated steel liner. Folding flush handle is opened by push pin. Plateled fittings.

Another valuable feature of this tape is the ease of line replacement. The line has a patented rivet and slot fastener that affords a secure and positive fit. A new line is installed easily in just a few seconds.

<table>
<thead>
<tr>
<th>Marked One Side Only</th>
<th>Marking</th>
<th>Marked One Side Only</th>
<th>Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length Feet</td>
<td>Feet, Inches and Siis</td>
<td>Feet, Inches and Sis</td>
<td>Feet, Inches and Sis</td>
</tr>
<tr>
<td>25</td>
<td>C350</td>
<td>O350</td>
<td>H350</td>
</tr>
<tr>
<td>35</td>
<td>C351</td>
<td>O351</td>
<td>H351</td>
</tr>
<tr>
<td>45</td>
<td>C352</td>
<td>O352</td>
<td>H352</td>
</tr>
<tr>
<td>50</td>
<td>C353</td>
<td>O353</td>
<td>H353</td>
</tr>
<tr>
<td>60</td>
<td>C354</td>
<td>O354</td>
<td>H354</td>
</tr>
<tr>
<td>75</td>
<td>C355</td>
<td>O355</td>
<td>H355</td>
</tr>
<tr>
<td>100</td>
<td>C356</td>
<td>O356</td>
<td>H356</td>
</tr>
</tbody>
</table>

Approximate weight: 25'-ft., 5 lb.; 50'-ft., 15 lb.; 66'-ft., 15 lb.; 75'-ft., 15 lb.; 100'-ft., 19 lb.

*Lines only, with standard ring. **Lines only, with hook ring.

Packing: One in a Practical Plastic Box in Individual Display Carton.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
"Royal" Ni-Clad Steel Tapes

Line 3/8-Inch Wide - A Low Priced Accurate, Dependable Steel Tape
Markings Jet Black - Surface Nickel-White - Durable Dark Green Vinyl Covered Case

The popular priced "Royal" Ni-Clad has brought within the reach of all a steel tape that is accurate and dependable. Nickel plated line, long wearing, rust and corrosion resistant. The durable and easy to read black figures and graduations stand out clearly on the nickel-white background. "Instantaneous" readings.

The case is covered with attractive and durable dark green vinyl and has a narrow, flat and flush stainless steel edge band. Welded metal case liner is rust resistant coated. Smoothly operating recessed drum with folding flush handle opened by push pin.

Another valuable feature of this tape is the ease of line replacement. The line has a patented rivet and slot fastener that affords a secure and positive fitting. A new line is installed easily in just a few seconds.

This tape is furnished with hook ring or regular ring. The hook-ring enables one to measure unassisted. Attached, sturdily, 2-pronged metal hook folds flush against ring. Friction holds it open or closed. Spurs take firm hold, grip under tension and are released easily. Tape also is suitable for both end measuring.

"Challenge" Nubian (Black) Finish Steel Tapes

Line 3/8-Inch Wide
A Standard, High Grade General Purpose Tape • Raised Markings • Leather Case

With Standard Ring

Raised markings in natural steel over black background, with clear plastic coating. "Instantaneous" readings.

Case of brown, genuine leather, closely hand-stitched over sturdy rust-resistant metal liner.

Smoothly operating recessed winding drum with folding flush handle opened by push pin.

Another valuable feature of this tape is the ease of line replacement. The line has a patented rivet and slot fastener that affords a secure and positive fitting. A new line is installed easily in just a few seconds.

Hook-Ring: Enables one to measure unassisted; tape suitable also for butt end measuring. Sturdily, 2-pronged metal hook folds flush against ring. Friction holds it open or closed. Spurs take firm hold under tension and are easily released.

"Universal" Nubian (Black) Finish Steel Tapes

Line 3/8-Inch Wide
A Favorite of Many Mechanics in the Building Trades • Raised Markings • Durable Maroon Vinyl Covered Case

With Standard Ring

The line has raised markings in natural steel over black background. "Instantaneous" readings.

Durable and attractive case of maroon vinyl with a flat, flush stainless steel edge band. Case liner is welded steel, rust-resistant coated. Recessed drum with folding flush handle opened by push pin.

Another valuable feature of this tape is the ease of line replacement. The line has a patented rivet and slot fastener that affords a secure and positive fitting. A new line is installed easily in just a few seconds.

Hook-Ring: Enables one to measure unassisted; tape suitable also for butt end measuring. Sturdily, 2-pronged, metal hook folds flush against ring. Friction holds it open or closed. Spurs take firm hold, grip under tension and are easily released.

Approximate weight: 25-ft., 3/4-lb.; 50-ft., 1 1/2 lb.; 75-ft., 1 1/2 lb.; 100-ft., 1 3/4 lb.

*Lines only, with standard ring. **Lines only, with hook-ring.

Blue side fast decimeter in mm., balance in cm.; other side feet, inches and 'ths.

Note: "Royal" Ni-Clad Tapes can be supplied marked Metric only.

Packing: One in a Box.

FOR PRICES SEE PRICE LIST

ROSE TOOLS, INC.
Aluminum Rules

6-Inch Folds • 9/16-Inch Wide

Sections are constructed of durable, lightweight special analysis aluminum alloy. Black filled sundial graduations and large figures are in contrast with natural aluminum surface; easy to read.

Solid brass lock joints.

Joints have a rivet headed over flush embedded washers, securely holding rule to length.

Metal folding hook is compact and sturdy.

No. 1206 with Outside Markings

<table>
<thead>
<tr>
<th>Rule No.</th>
<th>Length Feet</th>
<th>Markings</th>
<th>Wt., Lb. per Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>1204</td>
<td>4</td>
<td>15/8</td>
<td>9/8</td>
</tr>
<tr>
<td>1206</td>
<td>6</td>
<td>10ths, Both Sides</td>
<td>15/8</td>
</tr>
<tr>
<td>*H1206</td>
<td>6</td>
<td>Measurement Lies Close to Work Even When Rule is Partly Open</td>
<td></td>
</tr>
</tbody>
</table>

Mechanics Folding Steel Rules

Heavy duty, accurate, Folding Rules are made of fine tempered steel, 5/16g inch.

Lock joints. Each joint has two durable stops or snap sockets and a strong rivet with both ends headed over a washer. Each joint is held to length and sections are held rigidly in alignment when open or closed.

The deeply etched markings are in sharp contrast to the polished steel, easy to read and permanent.

No. 62 One-Piece Long Steel Rules

Substantial tempered steel rules with hole in one end for hanging. Large figures and lines. Heavier than on machine divided rules.

Deeply etched and filled in black. Permanent and easy to read.

Specify stock number and length when ordering.

For Prices See Price List

"Red End" Highest Quality Spring Joint Rules

"Red End" is the name and color recognized as the Mark of Superior Wood Rules

6-Inch Folds • 5/8-Inch Wide

No. 066 with Outside Markings — Numbering Begins on Outside of Rule

<table>
<thead>
<tr>
<th>Rule No.</th>
<th>Length Feet</th>
<th>Markings</th>
<th>Weight Pounds per Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>066</td>
<td>6</td>
<td>10ths, Both Sides</td>
<td>11/4</td>
</tr>
<tr>
<td>068</td>
<td>8</td>
<td>Both Edges to Both Sides</td>
<td>21/4</td>
</tr>
</tbody>
</table>

Note: Rules with Folding Hook are available. Specify by prefixing "H" to Catalog Number.

Packing: Six in a Box.

For Prices See Price List

ROSE TOOLS, INC.
"Red End" Rules

"Red End" is the Name and Color Recognized as the Mark of Superior Wood Rules
6-Inch Folds • ⅜-Inch Wide

No. X46 "Red End" Heavy Duty Extension Rule

No. 966 "Two Way—Red End" Spring Joint Rule

Finest hardwood, straight grained and tough.
Bold face figures and graduations are embedded in the wood and are easy to read.
Double graduations, both edges of both sides are graduated inches to 16ths.
Clear plastic coating is abrasion and wear resistant; most durable.
Strain-plates of solid brass.
Ends are in bright gloss red, attractive, protective and easy to locate.

No X46 "Red End" Heavy Duty Extension Rule

For inside measuring of openings and for all regular measuring.

Boxwood finish.
Joints are extra heavy brass plated.
Potent double locking joints prevent end play.
Heavy duty spring joints are extra length.
End caps are brass, flush inset and graduated.
Graduated 6-inch brass slide with graduations and figures black filled for easy reading.

No. X46, "Red End" Heavy Duty Extension Rule.
No. HX46, "Red End" Heavy Duty Extension Rule with Folding Hook.

Packing: Six in a Box. Wt. per Box, 2½ Lb.

FOR PRICES SEE PRICE LIST

LUFKIN

Surveyors or Land Measure

1. Mile = 5,280 rods = 8,046.7 feet.
2. Rod = 16 rods = 320.0 feet.
3. Link = 0.66 rod = 13.2 feet.
4. Foot = 40 rods = 10 chains = 1 mile.

The Metric System

MEASURES OF LENGTH

10 millimeters = 1 centimeter
100 millimeters = 1 decimeter
1,000 millimeters = 1 meter
10 meters = 1 dekameter
100 meters = 1 hectometer
1,000 meters = 1 kilometer

1 foot = 0.3048 meter
1 inch = 2.54 centimeters
1 kilometer = 0.62137 mile
1 mile = 1.6093 kilometers

MEASURES OF SURFACE

1 square meter = 10.764 square feet
1 square decimeter = 155 square inches
1 square centimeter = 0.155 square inch
1 square millimeter = 0.000155 square inch

1 square yard = 0.836 square meter
1 square foot = 0.0929 square meter
1 square inch = 0.0006455 square meter

MEASURES OF VOLUME AND CAPACITY

1 cubic meter = 35.314 cubic feet
1 cubic yard = 1.307 cubic yards
1 cubic foot = 28.317 cubic decimeters
1 cubic centimeter = 0.061 cubic inch
1 cubic decimeter = 61.024 cubic inches
1 cubic meter = 35.314 cubic inches
1 liter = 1.057 quarts (U. S.)
1 cubic foot = 28.317 gallons (U. S.)
1 cubic yard = 26.328 cubic feet

MEASURES OF WEIGHT

1 gram = 16.0235 grains
1 kilogram = 2.2046 pounds
1 metric ton = 2,204.62 pounds

Miscellaneous

1 kilogram per meter = 0.6726 pounds per foot
1 kilogram per square meter = 0.1458 pounds per square foot
1 kilogram per cubic meter = 0.0001458 pounds per cubic foot
1 degree Celsius = 1.8 degrees Fahrenheit
1 pound per foot = 1,940 kilograms per meter
1 pound per square foot = 0.885 kilograms per square meter
1 pound per cubic foot = 0.062 kilograms per cubic meter
1 degree Fahrenheit = 555.6 degrees Celsius
1 calorie (French Thermal Unit) = 3.968 B. T. U. (British Thermal Unit)
1 Horse Power = 254.47 pounds per minute
1 Kilowatt (Unit of Electrical Power) = 3412.22 foot pounds per minute
1 Kilowatt = 1341 Horse Power
1 Horse Power = 3300 watts
1 Kilowatt = 3280.8 foot pounds per minute

ROSE TOOLS, INC.
### Table for Solving Right Angled Triangles

<table>
<thead>
<tr>
<th>Parts Given</th>
<th>Parts to Be Found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypotenuse &amp; Adjacent</td>
<td>Hypotenuse, Adjacent, Opposite, Angle</td>
</tr>
<tr>
<td>Hypotenuse &amp; Opposite</td>
<td>Hypotenuse, Opposite, Angle</td>
</tr>
<tr>
<td>Hypotenuse &amp; Angle</td>
<td>Hypotenuse, Adj. Angles</td>
</tr>
<tr>
<td>Adjacent &amp; Opposite</td>
<td>Opposite, Adj. Angles, Angle</td>
</tr>
<tr>
<td>Adjacent &amp; Angle</td>
<td>Adj., Angle</td>
</tr>
<tr>
<td>Opposite &amp; Angle</td>
<td>Opposite, Angle</td>
</tr>
</tbody>
</table>

#### Useful Rules
- **To Find Circumference**: Multiply Diameter by 3.1416 or Divide Circumference by 0.3183.
- **To Find Diameter**: Multiply Circumference by 0.3183 or Divide Circumference by 3.1416.
- **To Find Side of an Inscribed Square**: Multiply Diameter by 0.7071 or Divide Circumference by 0.7071.
- **To Find an Equal Square**: Multiply Diameter by 1.1547 or Divide Circumference by 1.1547.
- **To Find Area of a Circle**: Multiply Diameter by 0.7854 or Divide Circumference by 0.7854.
- **To Find Surface of a Sphere**: Multiply Diameter by 2.3456 or Divide Circumference by 2.3456.
- **To Find Cubic Inches (Volume)**: Multiply Diameter by 0.5236.

### Decimal Equivalents of 8ths, 16ths, 32nds and 64ths of an inch

<table>
<thead>
<tr>
<th>Decimals</th>
<th>32nds</th>
<th>64ths</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0625</td>
<td>1/32</td>
<td>1/64</td>
</tr>
<tr>
<td>0.125</td>
<td>1/16</td>
<td>1/32</td>
</tr>
<tr>
<td>0.25</td>
<td>1/8</td>
<td>1/16</td>
</tr>
<tr>
<td>0.5</td>
<td>1/4</td>
<td>1/8</td>
</tr>
<tr>
<td>0.75</td>
<td>3/8</td>
<td>15/32</td>
</tr>
<tr>
<td>1</td>
<td>1/1</td>
<td>1/2</td>
</tr>
</tbody>
</table>

### Decimal Equivalents of Millimeters

<table>
<thead>
<tr>
<th>Metric</th>
<th>Decimal</th>
<th>Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01</td>
<td>0.005</td>
<td>0.3937</td>
</tr>
<tr>
<td>0.02</td>
<td>0.01</td>
<td>0.7874</td>
</tr>
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<td>0.03</td>
<td>0.015</td>
<td>1.1811</td>
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<td>0.04</td>
<td>0.02</td>
<td>1.5748</td>
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<td>0.05</td>
<td>0.025</td>
<td>1.9685</td>
</tr>
<tr>
<td>0.06</td>
<td>0.03</td>
<td>2.3622</td>
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### Decimal Equivalents of Number Size Drills

<table>
<thead>
<tr>
<th>Size of Drill Inch</th>
<th>No. of Drill Inch</th>
<th>Size of Drill Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0260</td>
<td>12</td>
<td>0.25</td>
</tr>
<tr>
<td>0.0390</td>
<td>18</td>
<td>0.26</td>
</tr>
<tr>
<td>0.0600</td>
<td>20</td>
<td>0.30</td>
</tr>
</tbody>
</table>

### Decimal Equivalents of Letter Size Drills

<table>
<thead>
<tr>
<th>Letter</th>
<th>Size of Drill Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>0.045</td>
</tr>
<tr>
<td>X</td>
<td>0.063</td>
</tr>
</tbody>
</table>

---

ROSE TOOLS, INC.
## Tapers Per Foot and Corresponding Angles

<table>
<thead>
<tr>
<th>Taper Per Foot</th>
<th>Included Angle with Center Line</th>
<th>Taper Per Foot</th>
<th>Included Angle with Center Line</th>
<th>Taper Per Foot</th>
<th>Included Angle with Center Line</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Standard Lumber Measurement Table

<table>
<thead>
<tr>
<th>Size Inch</th>
<th>Length in Feet of Joists, Scantlings and Timber</th>
<th>Size Inch</th>
<th>Length in Feet of Joists, Scantlings and Timber</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Weights of Lumber

<table>
<thead>
<tr>
<th>Type</th>
<th>Pounds per 100 Lineal Feet</th>
<th>Type</th>
<th>Pounds per 100 Lineal Feet</th>
<th>Type</th>
<th>Pounds per 100 Lineal Feet</th>
<th>Type</th>
<th>Pounds per 100 Lineal Feet</th>
<th>Type</th>
<th>Pounds per 100 Lineal Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walnut, Dry</td>
<td></td>
<td>Walnut, Green</td>
<td></td>
<td>Cherry, Dry</td>
<td></td>
<td>Cherry, Green</td>
<td></td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Ash, Dry</td>
<td></td>
<td>Ash, Green</td>
<td></td>
<td>Hickory, Dry</td>
<td></td>
<td>Hickory, Green</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hickory, Dry</td>
<td></td>
<td>Hickory, Green</td>
<td></td>
<td>Cypress, Dry</td>
<td></td>
<td>Cypress, Green</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Oak, Dry</td>
<td></td>
<td>White Oak, Green</td>
<td></td>
<td>Chestnut, Dry</td>
<td></td>
<td>Chestnut, Green</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maple, Dry</td>
<td></td>
<td>Maple, Green</td>
<td></td>
<td>Butternut, Dry</td>
<td></td>
<td>Butternut, Green</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hickory, Red</td>
<td></td>
<td>Hickory, Red</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Tapers

<table>
<thead>
<tr>
<th>Length, Fractional Inch</th>
<th>(\frac{1}{8})</th>
<th>(\frac{1}{4})</th>
<th>(\frac{1}{2})</th>
<th>(\frac{3}{4})</th>
<th>(1)</th>
<th>(1\frac{1}{4})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taper Per Foot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ROSE TOOLS, INC.
### Comparison of Log Scale Values

This table gives based foot content of a 14-foot log of diameters 8 to 40 inches, in the four most extensively used log scales, i.e., Doyle, Scriber, Combination Doyle-Scriber and Decimal C. Decimal C values shown must be multiplied by ten to give footage.

#### Log of 16 Feet

<table>
<thead>
<tr>
<th>Diameter in Inches</th>
<th>Doyle</th>
<th>Scribe</th>
<th>Combination</th>
<th>Decimal C</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>200</td>
<td>0.018</td>
<td>0.019</td>
<td>0.019</td>
</tr>
<tr>
<td>9</td>
<td>114</td>
<td>0.043</td>
<td>0.047</td>
<td>0.043</td>
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<tr>
<td>10</td>
<td>65</td>
<td>0.086</td>
<td>0.098</td>
<td>0.089</td>
</tr>
<tr>
<td>11</td>
<td>38</td>
<td>0.133</td>
<td>0.153</td>
<td>0.139</td>
</tr>
<tr>
<td>12</td>
<td>22</td>
<td>0.196</td>
<td>0.220</td>
<td>0.202</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>0.277</td>
<td>0.308</td>
<td>0.274</td>
</tr>
<tr>
<td>14</td>
<td>9</td>
<td>0.422</td>
<td>0.455</td>
<td>0.402</td>
</tr>
<tr>
<td>15</td>
<td>6</td>
<td>0.654</td>
<td>0.712</td>
<td>0.625</td>
</tr>
<tr>
<td>16</td>
<td>4</td>
<td>0.946</td>
<td>1.020</td>
<td>0.904</td>
</tr>
<tr>
<td>17</td>
<td>3</td>
<td>1.316</td>
<td>1.404</td>
<td>1.282</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>1.847</td>
<td>2.019</td>
<td>1.797</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>2.605</td>
<td>2.808</td>
<td>2.471</td>
</tr>
<tr>
<td>20</td>
<td>0.5</td>
<td>3.587</td>
<td>3.800</td>
<td>3.302</td>
</tr>
<tr>
<td>22</td>
<td>0.27</td>
<td>5.300</td>
<td>5.608</td>
<td>4.622</td>
</tr>
<tr>
<td>24</td>
<td>0.15</td>
<td>7.386</td>
<td>7.718</td>
<td>6.363</td>
</tr>
<tr>
<td>26</td>
<td>0.09</td>
<td>10.466</td>
<td>10.854</td>
<td>9.112</td>
</tr>
<tr>
<td>28</td>
<td>0.06</td>
<td>14.456</td>
<td>14.879</td>
<td>12.262</td>
</tr>
<tr>
<td>30</td>
<td>0.04</td>
<td>20.091</td>
<td>20.582</td>
<td>17.977</td>
</tr>
<tr>
<td>32</td>
<td>0.03</td>
<td>27.682</td>
<td>28.209</td>
<td>24.215</td>
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<tr>
<td>34</td>
<td>0.02</td>
<td>37.547</td>
<td>38.207</td>
<td>32.425</td>
</tr>
<tr>
<td>36</td>
<td>0.02</td>
<td>50.324</td>
<td>51.099</td>
<td>43.337</td>
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<tr>
<td>38</td>
<td>0.01</td>
<td>66.274</td>
<td>67.137</td>
<td>56.338</td>
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<tr>
<td>40</td>
<td>0.01</td>
<td>86.570</td>
<td>87.524</td>
<td>75.329</td>
</tr>
</tbody>
</table>

*Regular Doyle values. Regular Scriber values.

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### To Set Out a Right Angle with a Chain

Take 50 links for the base, 20 links for the perpendicular and 30 for the hypotenuse.

### Useful Numbers in Surveying

#### For Converting

<table>
<thead>
<tr>
<th>Feet into Links</th>
<th>1.515</th>
<th>4.545</th>
<th>10.025</th>
<th>20.056</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yards into Links</td>
<td>0.01</td>
<td>0.04</td>
<td>0.08</td>
<td>0.16</td>
</tr>
<tr>
<td>Square Feet into Acres</td>
<td>0.000203</td>
<td>0.00468</td>
<td>0.01205</td>
<td>0.02410</td>
</tr>
<tr>
<td>Square Yards into Acres</td>
<td>0.000104</td>
<td>0.00051</td>
<td>0.00121</td>
<td>0.00242</td>
</tr>
</tbody>
</table>

#### For Converting

<table>
<thead>
<tr>
<th>Feet into Mils</th>
<th>0.00375</th>
<th>0.00076</th>
<th>0.00015</th>
<th>0.00030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yards into Mils</td>
<td>0.00012</td>
<td>0.00025</td>
<td>0.00005</td>
<td>0.00010</td>
</tr>
<tr>
<td>Chain into Mils</td>
<td>0.00001</td>
<td>0.00002</td>
<td>0.00001</td>
<td>0.00002</td>
</tr>
<tr>
<td>Square Feet into Mils</td>
<td>0.000003</td>
<td>0.000001</td>
<td>0.000003</td>
<td>0.000004</td>
</tr>
<tr>
<td>Square Yards into Mils</td>
<td>0.000001</td>
<td>0.000000</td>
<td>0.000001</td>
<td>0.000001</td>
</tr>
</tbody>
</table>

#### Chaining on Slopes

A = Angle of slope with horizon.  
I = Length of line reduced to the horizontal.  
L = Length of line chained on the slope.

#### Table Showing Values of K

<table>
<thead>
<tr>
<th>A</th>
<th>K</th>
<th>A</th>
<th>K</th>
<th>A</th>
<th>K</th>
<th>A</th>
<th>K</th>
<th>A</th>
<th>K</th>
<th>A</th>
<th>K</th>
<th>A</th>
<th>K</th>
<th>A</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.98</td>
<td>3</td>
<td>0.99</td>
<td>5</td>
<td>0.99</td>
<td>10</td>
<td>0.99</td>
<td>20</td>
<td>0.99</td>
<td>30</td>
<td>0.99</td>
<td>50</td>
<td>0.99</td>
<td>100</td>
<td>0.99</td>
</tr>
</tbody>
</table>

### Reduction of Base Lines to Level of Sea

L = Length of base line measured in feet.

### To find the capacity of tanks larger than given in the table, set table for tank one-half of the given size, and multiply its capacity by 4, or one of the third its size and multiply by 9, etc.

---

### Number of U.S. Gallons in Round Tank for One Foot in Depth

#### Diameter of Tank

| Capacity U.S. Gallons | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
|-----------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Cubic Feet and Area  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| Square Feet           | 440| 880| 1320| 1760| 2200| 2640| 3080| 3520| 3960| 4400| 4840| 5280| 5720| 6160| 6600| 7040| 7480| 7920| 8360| 8800| 9240| 9680| 10120|

---

### To find the capacity of a square tank, find the capacity of a round tank with diameter same as length of side, and divide by 454. A 10-foot diameter round tank 1 foot high holds 567.32 gallons. A square tank 10x10 feet by 1 foot high equals 567.32 divided by 454 square feet equals 1284 gallons.

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ROSE TOOLS, INC.
Three-Wire Measurement of Pitch Diameter of Screw Threads

Strict methods of measuring the pitch diameter of a thread, such as thread micrometers, ball point micrometers, and with three wires, are commonly employed. Of the various methods which have been tried, the three-wire method has been found to be the most accurate and satisfactory when properly carried out.

Following are the formulas for use with Screw Thread Micrometer Calipers and the Three-Wire System

For 60° Sharp V and American National Forms

\[
\begin{align*}
D &= \text{Outside Diameter of Screw} \\
N &= \text{Number of Threads per Inch} \\
P &= \text{Pitch of Thread} \\
S &= \text{Single Depth of U. S. Std. Thread} \\
SD &= \text{Pitch Diameter of Thread} \\
WD &= \text{Wire Diameter} \\
WDO &= \text{Diameter Over Wire}
\end{align*}
\]

When selecting Wire other than correct one touching on pitch line, it should be the nearest wire larger, using the following formula:

\[
WD = \left(\frac{D}{2} + P \times \frac{N}{2}\right) \times D
\]

### Table of Pitch Diameters

For Metric Standard of Screw Threads

<table>
<thead>
<tr>
<th>Size mm</th>
<th>Pitch</th>
<th>Int. Std.</th>
<th>Metric Std.</th>
<th>Pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>32</td>
<td>32</td>
<td>1.25</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

### Double Depth of Threads

<table>
<thead>
<tr>
<th>Threads per Inch</th>
<th>Double Depth of Standard V Thread</th>
<th>Double Depth of Whitworth Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>256</td>
<td>0.0712</td>
<td>0.0888</td>
</tr>
<tr>
<td>512</td>
<td>0.1424</td>
<td>0.1776</td>
</tr>
<tr>
<td>1024</td>
<td>0.2848</td>
<td>0.3552</td>
</tr>
<tr>
<td>2048</td>
<td>0.5696</td>
<td>0.7104</td>
</tr>
</tbody>
</table>

### Weight of Square and Round Bars of Steel

**In Pounds Per Lineal Foot**

**Based on 489.6 Lbs. Per Cubic Foot**

<table>
<thead>
<tr>
<th>Thickness or Diameter, Inch</th>
<th>Weight of Round Bar</th>
<th>Weight of Round Bar</th>
<th>Weight of Round Bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>0.2</td>
<td>56</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>0.3</td>
<td>84</td>
<td>84</td>
<td>84</td>
</tr>
<tr>
<td>0.4</td>
<td>112</td>
<td>112</td>
<td>112</td>
</tr>
<tr>
<td>0.5</td>
<td>140</td>
<td>140</td>
<td>140</td>
</tr>
</tbody>
</table>

### Weight of Iron and Steel Sheets

**Thickness by Birmingham Gage**

<table>
<thead>
<tr>
<th>Thickness, Inch</th>
<th>Weight per Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>0.001</td>
<td>0.002</td>
</tr>
<tr>
<td>0.002</td>
<td>0.003</td>
</tr>
<tr>
<td>0.003</td>
<td>0.004</td>
</tr>
<tr>
<td>0.004</td>
<td>0.005</td>
</tr>
<tr>
<td>0.005</td>
<td>0.006</td>
</tr>
<tr>
<td>0.006</td>
<td>0.007</td>
</tr>
<tr>
<td>0.007</td>
<td>0.008</td>
</tr>
<tr>
<td>0.008</td>
<td>0.009</td>
</tr>
</tbody>
</table>

**Weight of Iron and Steel Sheets**

**Thickness by American (or B. & S.) Gage**

<table>
<thead>
<tr>
<th>Thickness, Inch</th>
<th>Weight per Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>0.001</td>
<td>0.002</td>
</tr>
<tr>
<td>0.002</td>
<td>0.003</td>
</tr>
<tr>
<td>0.003</td>
<td>0.004</td>
</tr>
<tr>
<td>0.004</td>
<td>0.005</td>
</tr>
<tr>
<td>0.005</td>
<td>0.006</td>
</tr>
<tr>
<td>0.006</td>
<td>0.007</td>
</tr>
<tr>
<td>0.007</td>
<td>0.008</td>
</tr>
<tr>
<td>0.008</td>
<td>0.009</td>
</tr>
</tbody>
</table>

**Specific gravity of Iron = 7.7**

**Weight of Iron: Compute the Weight Of Sheet Steel**

Example: A piece of Sheet Steel in .006 inches thick, its weight is .060 x .004 x 200 lin. per square foot.

**To Compute The Weight Of Sheet Iron**

Multiply the thickness by .060; the result is the weight in pounds per square foot.

Example: A piece of Sheet Iron in .006 inches thick, its weight is .060 x .004 x 200 lin. per square foot.