

Starrett Indicating Thread Gage Systems

Threaded fasteners are common for millions of different uses and vary in precision, depending on the application. All fasteners, such as screws, bolts, threaded components, etc., need to be measured. The Starrett Thread Gaging Systems listed in this section offer a *fast and accurate* way to control thread quality in a way that other methods cannot.

Starrett Thread Gaging Systems – Our systems are not simple, go/no-go gages. They will show the *variations* in dimensions to indicate exactly where the thread is within the allowable tolerance.

Bench and Portable Frames – Gages are available for bench use such as an inspection station where work is brought to the station, and also portable gages where the gage is brought to the work – whichever is most convenient.

Terminologies and Standards

Thread dimensions – Our standard listed gages measure functional size and pitch diameter, which involve angles, diameters, pitches, roundness, lead and taper. Our systems can also easily handle these and other special gaging applications.

Functional size is the size that includes the cumulative effect of variations in all dimensions. Functional size is the maximum material size that the thread can be in order to properly assemble it to its mating part.

Multi-rib rolls and full-form segments measure functional size. This set-up is the practical one to use when measuring for assembly.

Pitch diameter is defined as the diameter of a cylinder that passes through the thread profile to make the widths of the thread ridge and thread groove equal on both sides of the thread. Pitch diameter is the primary control and reference datum for measuring and manufacturing screw threads.

Single-element rolls (cone and vee) measure pitch diameter as well as out-of-roundness and taper.

An ideal thread is present when the multi-rib roll or full-form segment and the single-element roll provide identical indicator readings.

Thread gaging standards – There are many gaging standards, but the primary ones are:

Unified Inch Screw Threads are denoted by diameter and number of threads per inch. *Example:* .250-20 UNC (normally referred to as 1/4-20)

ISO Metric Screw Threads are denoted by the letter “M” for metric, then the diameter and then the pitch in millimeters. Pitch is the distance from a point on a thread to the corresponding point on the adjacent thread. *Example:* M6 x 1 has a 6 mm diameter and threads which are 1 mm from point to corresponding point. Common practice for quick determination is to measure from crest to adjoining crest.

Compliance – All Starrett Thread Gages adhere to United States military specifications and industrial ANSI and ASME standards. Gaging provides compliance with System, 21, 22 and 23 per U.S. Federal Standard H28/20.

Compatibility – Starrett Thread Gage rolls and segments are compatible with other major suppliers.

Optional Equipment

The following equipment are non-standard accessories that will enhance the use of our gaging systems.

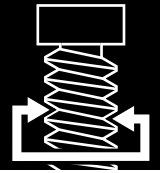
Calibration Accessories

- ◆ **Roll Inspection Arbor** – For inspection of Starrett Nos. 1130, 1131, 1137, 1138 and 1140A Multi-Rib, and Cone and Vee Rolls for wear. Designed to be used in a Starrett optical comparator or equivalent in conjunction with comparator charts
- ◆ **Optical Comparator Charts** – For inspection of multi-rib and cone and vee rolls for wear
- ◆ **Stud Inspection Disk Kit** – For inspection of Nos. 1130, 1131, 1137 and 1138 frame assemblies. Kit aids in the inspection of the roll studs for squareness and diameter wear
- ◆ **Inspection Rings** – For inspection of Nos. 1140, 1141 and 1140A Body Assembly. Rings aid in the inspection of the reference mounting surface for Nos. 1140 and 1141 Segments and No. 1140A Adapter Plate

Thread Specification Disk – Call, write, or fax the Thread Gage Division for your free Unified National Thread Specifications floppy (3 1/2”). The program is written for any IBM personal computer or equivalent. **Tel: (978) 249-3551 ext. 355 Fax: (978) 249-3699**

Optional Accessories

- ◆ **Squareness Aligner** – This attachment is useful in aligning the threads to be checked to the thread gage for accurate engagement. Some aligners lock in position so the length of the thread requirements can be maintained
- ◆ **Mechanical Driven Gage Unit** – This attachment has belt-driven rolls to smoothly turn the product part and eliminate operator influence of size, squareness or concentricity readings that are taken of related surfaces
- ◆ **Ball Slide Units** – These gaging units are specifically designed to inspect various elements that are directly related to the thread, such as squareness and concentricity
- ◆ **2-Piece Indicator Holding Arm No. PT24882** – For use with No. 1141 Thread Gage. Unit attaches to the concentricity ring for checking concentricity or squareness of surfaces related to the thread
- ◆ **Body Extension** – For use with Nos. 1140, 1141 and 1140A Thread Gages. This attachment allows for the use of non-Starrett and non-AGD type indicators in these body assemblies



How to Select a Starrett Thread Gage System

Before following the seven steps below you first need to determine what diameter and TPI (or pitch) that you need to gage. "Step number" notations are also included on specification tables on the following pages.

1. Select the frame or body size for that diameter.
2. Decide on whether you require a single or double base, or a portable gage.
3. Decide on the indicator and the graduation you need. Also consider if you require SPC when gaging. If so, select an electronic digital indicator with output capability.
4. Select the rolls or segments for your thread pitch – cone and vee, multi-rib, or segment. Specify if left-hand thread.
5. Select the roll stud set necessary for your required pitch.
6. Select the template for the diameter of the thread to be checked.
7. Choose the thread master for each thread diameter and pitch (TPI).

Let's assume the use of the No. 1130 Gaging System, but the steps are identical for all systems.

Example: You need a single base functional gaging system for a 1/4 x 20 (.2500-20 UNC) thread. Follow the starred (★) items on the No. 1130 and 1131 specifications table on the next pages as follows:

Step 1 – Choose the .164"-1" range

Step 2 – Choose a **single base** PT24312 and thread gage **bench frame**, Catalog No. 1130-1

Step 3 – You want a .0001" **graduation**, you need Catalog No. 25-111RTG

Step 4 – You want a **multi-rib roll set** for 20 TPI, No. PT24344

Step 5 – You need a **roll stud set** for 20 TPI, No. PT24370

Step 6 – You need a **template** No. PT24381 for 1/4" (.2500) diameter

Step 7 – You need a thread master No. PT23231 for 1/4 x 20 (.2500-20 UNC) threaded plug gage. (See last page of this section.)

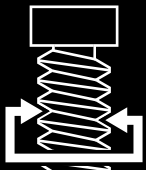
You are now in business!

Service and Expertise

If you have any questions regarding your specific thread gage application, please call, fax, or write to:

The L. S. Starrett Company
Thread Gage Division
121 Crescent Street ♦ Athol, MA 01331 USA
Tel: (978) 249-3551 ♦ Fax: (978) 249-3699

We have some of the most knowledgeable thread gaging specialists in the world who are genuinely interested in helping you solve your thread gaging problems. **You will find our people easy to work with, whether it be for standard or special gaging applications.**



THREAD GAGING



Indicating-Type External Thread Gage Systems with three rolls

No. 1130 Series Bench

No. 1131 Series Portable

Two gaging series are available as follows:

The **No. 1130-0** has one frame with a capacity from #2 (.086" or 2.2 mm) up to 3/8" (9.5 mm).

Nos. 1130-1, -2, -3 have three frames, ranging in capacity from #8 (.164" or 4.2 mm) up to 3" (76 mm). They are mounted on a baseplate for bench use, ideal for use at an inspection station. For ease of use, they are activated by lifting the front pivot arm.

No. 1131 Series are fundamentally the same gages, but they are available in three portable frames – ideal for bringing the gage to the work. For ease of use, these gages can be activated by depressing the lever.

- ◆ Gages provide actual measurements – not just go/no-go
- ◆ Gages have three rolls set 120° apart
- ◆ Each roll set can inspect **any screw diameter** with the same pitch
- ◆ Left-hand threads can be inspected using the same rolls by switching roll two with roll three
- ◆ Multi-rib rolls measure functional diameter
- ◆ Spacers and studs are included with the purchase of your thread gage frames when they are used with multi-rib rolls. When ordering replacement rolls, review the spacer and stud chart in the specifications for spacer length requirements
- ◆ Single-element rolls (cone and vee) measure pitch diameter
- ◆ Speedy setting templates allow for quick changeover to another diameter
- ◆ Each thread size requires a thread setting plug gage to set the gage comparator
- ◆ **Readouts** – three mechanical dial indicators with .0001", .00025" and 0.002 mm readouts and one Electronic Digital Indicator with .0001"/0.002 mm resolution are offered as standard. Other indicators may also be specified. See Indicator Section

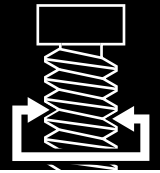


Top: No. 1130 Bench Style (roll gaging with digital electronic indicators); **Left, center:** Cone and Vee Rolls for pitch diameter measurement; **Left, bottom:** Multi-Rib Rolls for functional diameter measurement; **Right:** No. 1131 Portable Style (roll gaging with analog indicators).

- ◆ SPC capability – Storage of gage readout for analysis and documentation is possible when using electronic indicators such as our No. 2600 and No. 2700 Wisdom® Series with data collection devices such as the Starrett No. 772 Advanced Data Collection System or the Starrett No. 702 Computer Workstation.

Right: On-site threading operation convenience is made possible with the three portable No. 1131 models and large "C" frame gages.





External Thread Gage Systems Nos. 1130 and 1131 Series Specifications

Step #1 Frame Assemblies

| Model | Range | | Catalog No. |
|----------|-----------------|----------|-------------|
| | Inch | mm | |
| Bench | #2 (.086")-3/8" | 2-10 mm | 1130-0 |
| | #8 (.164")-1"★ | 4-25 mm | 1130-1 |
| | 1"-2" | 25-50 mm | 1130-2 |
| | 2"-3" | 50-75 mm | 1130-3 |
| Portable | #8 (.164")-1" | 4-25 mm | 1131-1 |
| | 1"-2" | 25-50 mm | 1131-2 |
| | 2"-3" | 50-75 mm | 1131-3 |

Step #2 Base & Hangers

| Description | Part No. |
|--------------|----------|
| Single Base★ | PT24312 |
| Double Base | PT24315 |
| Hanger Stand | PT24305 |

Step #3 Indicators

For Nos. 1130-0, 1, 2, 3 Frames

| Graduation | Catalog No. | Contact No. |
|-----------------|--|--------------------------------------|
| .0001" | 25-111RTG★ | PT06677-C (for No. 1130-0 Only) |
| .00025" | 25-128RTG | |
| 0.002 mm | 25-161RTG | PT06677-D (for Nos. 1130-1, 2, 3) |
| .0001"/0.002 mm | F2710-1 Electronic Digital with Output | |

For Nos. 1131-1, 2, 3 Frames

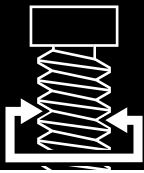
| Graduation | Catalog No. | Contact No. |
|-----------------|--|-------------|
| .0001" | 25-111RTGP | PT06677-B |
| .00025" | 25-128RTGP | |
| 0.002 mm | 25-161RTGP | |
| .0001"/0.002 mm | F2710-1 Electronic Digital with Output | |

Step #4 Rolls

Inch Rolls

| TPI | Cone and Vee Part No. | | Multi-Rib Part Nos. | |
|-----|-----------------------|-------------------------------------|---------------------|-------------------------------------|
| | Fits Frame 1130-0* | Fits Frames 1130-1,2,3 / 1131-1,2,3 | Fits Frame 1130-0* | Fits Frames 1130-1,2,3 / 1131-1,2,3 |
| 8 | | PT24338 | | PT24352 |
| 9 | | PT80431 | | PT80432 |
| 10 | | PT24337 | | PT24351 |
| 11 | | PT24336 | | PT24350 |
| 12 | | PT24335 | | PT24349 |
| 13 | | PT24334 | | PT24348 |
| 14 | | PT24333 | | PT24347 |
| 16 | PT80773 | PT24332 | PT80786 | PT24346 |
| 18 | PT80774 | PT24331 | PT80787 | PT24345 |
| 20 | PT80775 | PT24330 | PT80788 | PT24344★ |
| 24 | PT80776 | PT24329 | PT80789 | PT24343 |
| 28 | PT80778 | PT24328 | PT80791 | PT24342 |
| 32 | PT80779 | PT24327 | PT80792 | PT24341 |
| 36 | PT80780 | | PT80793 | |
| 40 | PT80781 | PT24326 | PT80794 | PT24340 |
| 44 | PT80782 | | PT80795 | |
| 48 | PT80783 | PT24325 | PT80796 | PT24339 |
| 56 | PT80784 | | PT80797 | |
| 64 | PT80785 | | PT80798 | |

Step #4 continued on next page.



THREAD GAGING



External Thread Gage Systems Nos. 1130 and 1131 Series Specifications (continued)

Step #4 (continued) Metric Rolls Nos. 1130-1, 2, 3 / 1131-1, 2, 3 Frames

| Pitch mm | Cone and Vee Part No. | Multi-Rib Part No. |
|----------|-----------------------|--------------------|
| 3.00 mm | PT80800 | PT80810 |
| 2.50 mm | PT80801 | PT80811 |
| 2.00 mm | PT80802 | PT80812 |
| 1.75 mm | PT80803 | PT80813 |
| 1.50 mm | PT80804 | PT80814 |
| 1.25 mm | PT80805 | PT80815 |
| 1.00 mm | PT80806 | PT80816 |
| 0.80 mm | PT80807 | PT80817 |
| 0.75 mm | PT80808 | PT80818 |
| 0.70 mm | PT80809 | PT80819 |

Step #5 Roll Stud Sets

| Fits Catalog No. | TPI/Pitch Range | Approx. Length | | Part No. |
|---|--|----------------|-------|----------|
| | Inch (mm) | Inch | mm | |
| 1130-0 | All Cone & Vee and Multi-Rib Rolls | 1/4" | 6 mm | PT80048 |
| 1130-1/1131-1 1130-2/1131-2 1130-3/1131-3 | All Cone & Vee Rolls and Multi-Rib Rolls 24-80 (1.1-0.2) | 7/16" | 11 mm | PT24369 |

Multi-Rib Rolls Only

| Fits Catalog No. | TPI/Pitch Range | Inch | mm | Part No. |
|------------------|----------------------|--------|-------|----------|
| 1130-1/1131-1 | 16-20 (1.6-1.25 mm)★ | 9/16" | 14 mm | PT24370 |
| 1130-2/1131-2 | 14-15 (1.9-1.7 mm) | 11/16" | 18 mm | PT24371 |
| 1130-3/1131-3 | 8-13 (3-2.0 mm) | 15/16" | 24 mm | PT24372 |

Step #6 Setting Templates For No. 1130-0 Frame

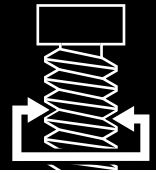
| Thread Size Inch* | Part No. |
|-------------------|----------|
| #2 | PT80311 |
| #3 | PT80312 |
| #4 | PT80313 |
| #5 | PT80314 |
| #6 | PT80315 |
| #8 | PT80316 |
| 3/16" | PT80317 |
| #10 | PT80318 |
| #12 | PT80319 |
| #14 | PT80320 |
| 1/4" | PT80321 |
| 5/16" | PT80322 |
| 3/8" | PT80323 |

*Metric templates quoted on application.

For Nos. 1130-1 / 1131-1 Frames

| Inch | | Metric | |
|-------------|----------|-------------|----------|
| Thread Size | Part No. | Thread Size | Part No. |
| #8 | PT24378 | 4 mm | PT80330 |
| #10 | PT24379 | 5 mm | PT80331 |
| #12 | PT24380 | 6 mm | PT80332 |
| #14 | PT80237 | 7 mm | PT80333 |
| 3/16" | PT80238 | 8 mm | PT80334 |
| 1/4"★ | PT24381 | 9 mm | PT80335 |
| 5/16" | PT24382 | 10 mm | PT80336 |
| 3/8" | PT24383 | 11 mm | PT80337 |
| 7/16" | PT24384 | 12 mm | PT80338 |
| 1/2" | PT24385 | 14 mm | PT80339 |
| 9/16" | PT24386 | 15 mm | PT80340 |
| 5/8" | PT24387 | 16 mm | PT80341 |
| 11/16" | PT80239 | 17 mm | PT80342 |
| 3/4" | PT24388 | 18 mm | PT80343 |
| 13/16" | PT24404 | 20 mm | PT80344 |
| 7/8" | PT24389 | 22 mm | PT80345 |
| 15/16" | PT24398 | 24 mm | PT80346 |
| 1" | PT24390 | 25 mm | PT80347 |

Step #6 continued on next page.



Step #6 (continued)

For Nos. 1130-2 / 1131-2 Frames

| Thread Size | Part No. |
|-------------|----------|
| 1" | PT24390 |
| 1 1/16" | PT24399 |
| 1 1/8" | PT24391 |
| 1 3/16" | PT80240 |
| 1 1/4" | PT24395 |
| 1 5/16" | PT24405 |
| 1 3/8" | PT24396 |
| 1 7/16" | PT80241 |
| 1 1/2" | PT24397 |
| 1 9/16" | PT80242 |
| 1 5/8" | PT80243 |
| 1 11/16" | PT80244 |
| 1 3/4" | PT24392 |
| 1 13/16" | PT80245 |
| 1 7/8" | PT24400 |
| 1 15/16" | PT80246 |
| 2" | PT80247 |

For Nos. 1130-3 / 1131-3 Frames

| Thread Size | Part No. |
|-------------|----------|
| 2" | PT80247 |
| 2 1/16" | PT80249 |
| 2 1/8" | PT24393 |
| 2 3/16" | PT24402 |
| 2 1/4" | PT80349 |
| 2 5/16" | PT80348 |
| 2 3/8" | PT24403 |
| 2 7/16" | PT80329 |
| 2 1/2" | PT24401 |
| 2 9/16" | PT80328 |
| 2 5/8" | PT80327 |
| 2 11/16" | PT80326 |
| 2 3/4" | PT24394 |
| 2 13/16" | PT80325 |
| 2 7/8" | PT80324 |
| 2 15/16" | PT80305 |
| 3" | PT80306 |

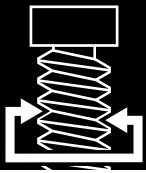
Step #7 – See Class W Threaded Plug Gages on last page of this section.

Replacement Spacer Lengths for Nos. 1130 and 1131 Multi-Rib Rolls

NOTE: You must measure the stud length on your gage frame before selecting the proper spacer. All spacers for Nos. 1130 and 1131 Gages are furnished in sets of three. These spacers allow thread rolls of different lengths to be adapted to a common roll stud.

| Approx. Gage Frame Stud Length | | Multi-Rib Roll | | | | Approx. Required Spacer Length | | Part No. (Set of 3) |
|--------------------------------|-------|----------------|-------------|----------------|-------|--------------------------------|-------|---------------------|
| | | TPI | Pitch (mm) | Approx. Length | | | | |
| Inch | mm | | | Inch | mm | Inch | mm | |
| 15/16"* | 24 mm | 8-13 | 3-2 mm | 15/16" | 24 mm | No Spacers Needed | | |
| | | 14-15 | 1.9-1.7 mm | 11/16" | 18 mm | 1/4" | 6 mm | PT99471 |
| | | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | 3/8" | 10 mm | PT99472 |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/2"* | 13 mm | PT99473 |
| 11/16" | 18 mm | 14-15 | 1.9-1.7 mm | 11/16" | 18 mm | No Spacers Needed | | |
| | | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | 1/8" | 3 mm | PT99474 |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/4" | 6 mm | PT99471 |
| 9/16" | 14 mm | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | No Spacers Needed | | |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/8" | 3 mm | PT99474 |
| 7/16" | 11 mm | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | No Spacers Needed | | |

*Cone and Vee Rolls – All cone and vee rolls are 7/16" long. If you have a gage with 15/16" studs and have been using this with multi-rib rolls, you can still use a cone and vee roll by adding a 1/2" spacer.



THREAD GAGING

Large Indicating-Type External Thread Gage Systems with three rolls

No. 1137 “C” Line
Bench Series

No. 1138 “C” Line
Portable Series

These gages are similar to our Nos. 1130 and 1131 Series, except that they span larger diameters.

They are three-roll gages that can be ordered with multi-rib or cone and vee rolls for both functional and pitch diameter readings.

The No. 1137 Series is a bench gage ranging in capacity from 3” (76 mm) and larger.

The No. 1138 Gages are basically the same but are on portable frames.

- ◆ Gages have two gaging rolls 180° apart and one stabilizing roll between them
- ◆ Speedy setting templates allow for quick changeover to another diameter
- ◆ Roll spacers are offered to match available stud lengths. See specifications
- ◆ Each thread size requires a setting plug gage to set the gage comparator
- ◆ Gages are offered with mechanical dial indicators and electronic indicators with SPC capability



Left, No. 1138 Portable Style. Right, No. 1137 Bench Style. Both roll gaging with thread axis alignment.

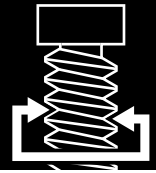
Step #1 Frame Assemblies

| Model | Range | | Catalog No. |
|----------|--------|--------------|---------------|
| | Inch | mm | |
| Bench | 3-6" | 75-150 mm | 1137-1 |
| | 6-9" | 150-300 mm | 1137-2 |
| | 9-12" | 300-600 mm | 1137-3 |
| | 12-15" | 600-1200 mm | 1137-4 |
| | 15-18" | 1200-2400 mm | 1137-5 |
| Portable | 3-6" | 75-150 mm | 1138-1 |
| | 6-9" | 150-300 mm | 1138-2 |
| | 9-12" | 300-600 mm | 1138-3 |
| | 12-15" | 600-1200 mm | 1138-4 |
| | 15-18" | 1200-2400 mm | 1138-5 |

Step #2 Base & Hangers

| Description | Part No. |
|--------------|-----------------|
| Single Base | PT80056 |
| | PT80057 |
| | PT80058 |
| * | * |
| * | * |
| Hanger Stand | PT80072 |
| | PT80073 |
| | PT80074* |
| * | * |
| * | * |

*NOTE: Nos. 1137 and 1138 Single and Double Bases and Hangers are available – quoted on application.



External Thread Gage Systems Nos. 1137 and 1138 Specifications (continued)

Step #3 Indicators

For Nos. 1137-1, 2, 3, 4, 5 Frames

| Graduation | Catalog No. | Contact No. |
|-----------------|--|-------------|
| .0001" | 25-111TG | PT06677-B |
| .00025" | 25-128TG | |
| 0.002 mm | 25-161TG | |
| .0001"/0.002 mm | F2710-1 Electronic Digital with Output | |
| .0001" | 81-111TG | |
| .00025" | 81-128TG | |
| 0.002 mm | 81-161TG | |

For Nos. 1138-1, 2, 3, 4, 5 Frames

| Graduation | Catalog No. | Contact No. |
|-----------------|--|-------------|
| .0001" | 25-111TGP | PT06677-B |
| .00025" | 25-128TGP | |
| 0.002 mm | 25-161TGP | |
| .0001"/0.002 mm | F2710-1 Electronic Digital with Output | |
| .0001" | 81-111TGP | |
| .00025" | 81-128TGP | |
| 0.002 mm | 81-161TGP | |

Step #4 Rolls

Inch Rolls for All Frames

| TPI | Cone and Vee Part Nos. | Multi-Rib Part Nos. |
|-----|------------------------|---------------------|
| 4 | PT80450 | PT80452 |
| 6 | PT80451 | PT80453 |
| 8 | PT80100 | PT80114 |
| 12 | PT80103 | PT80117 |
| 16 | PT80106 | PT80120 |
| 20 | PT80108 | PT80122 |

Metric Rolls for All Frames

| Pitch | Cone and Vee Part No. | Multi-Rib Part No. |
|---------|-----------------------|--------------------|
| 2.50 mm | PT80417 | PT80421 |
| 1.75 mm | PT80418 | PT80422 |
| 1.00 mm | PT80419 | PT80423 |
| 0.70 mm | PT80420 | PT80424 |

NOTE: All other pitch rolls quoted on application.
The above roll sets are **not** interchangeable with Catalog Nos. 1130/1131 Roll Sets.

Step #5 Roll Stud Sets

All Cone and Vee Rolls

| Fits Frame No. | TPI/Pitch Range | Approx. Length | | Part No. |
|-----------------------------------|----------------------|----------------|-------|----------|
| | Inch (mm) | Inch | mm | |
| All Nos. 1137, 1138 listed frames | 24-64 (1.00-0.40 mm) | 7/16" | 11 mm | PT24369 |

All Multi-Rib Rolls

| All Nos. 1137, 1138 listed frames | 16-20 (1.60-1.25 mm) | 9/16" | 14 mm | PT24370 |
|-----------------------------------|----------------------|---------|-------|---------|
| | 14-15 (1.80-1.70 mm) | 11/16" | 18 mm | PT24371 |
| | 8-13 (3.00-2.00 mm) | 15/16" | 24 mm | PT24372 |
| | 4-7 (6.00-3.50 mm) | 1-3/16" | 26 mm | PT24373 |

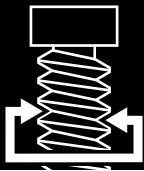
Step #6 Setting Templates

Order by request as follows:

- ◆ Templates from 3-6" available in 1/8" increments
- ◆ Templates from 6-12" available in 1/4" increments
- ◆ Templates over 12" and metric quoted on application

Step #7 Master Setting Plug – English & Metric

Quoted on application.



THREAD GAGING



Indicating-Type External Thread Gage Systems with two contacts

No. 1135 Series
Full-Form Bench

No. 1136 Series
Full-Form Portable

The **No. 1135** models consist of two frames ranging in capacity from #2 (.086" or 2.2 mm) up to 3" (76 mm).

No. 1136 Gages are fundamentally the same, but are available in two portable frames.

- ◆ Gages provide actual measurements – not just go/no-go
- ◆ Gages have two full-form contacts 180° apart
- ◆ Full-form gaging segments provide peripheral contact along and around the thread axis. This is similar to a go/no-go gage, but it does more by quickly and easily showing the actual deviation from your target dimension. This advantage will tell you whether or not the part can be assembled properly
- ◆ This gaging is commonly used as functional size gaging, but can be easily combined with a No. 1130 Cone and Vee Roll Pitch Diameter Gage for 180°/120° System 22 gaging.
- ◆ Cone and vee segments are also available for 180°/180° System 22 gaging



- ◆ Ideal for any screw thread having more than one lead or a fast advance
- ◆ Each thread size requires a thread setting plug gage to set the gage comparator
- ◆ **Readouts** – three mechanical dial indicators with .0001", .00025" and 0.002 mm readouts and one electronic indicator with .0001"/0.02 mm resolution are offered as standard. Other indicators may also be specified – see Indicator Section
- ◆ **SPC Capability** – Storage of gage readout for analysis and documentation is possible when using electronic indicators such as our No. 2600 and No. 2700 Series with data collection devices like the Starrett No. 772 Advanced Data Collection System or the No. 702 Computer Workstation

Left, Full-Form Segments for functional diameter measurement. Right, No. 1135 Bench Style (segment gaging with digital electronic indicator).

- ◆ Spacers and studs are included with the purchase of thread gage frames. When ordering replacement segments, please review the spacer and stud chart in the specifications for spacer length requirements.

Step #1 Frame Assemblies

| Model | Range | | Catalog No. |
|----------|-------------------|------------|---------------|
| | Inch | mm | |
| Bench | #2 (.086")-1 1/2" | 2-38 mm | 1135-1 |
| | 1 1/2"-3" | 38-76 mm | 1135-2 |
| Portable | #8 (.164")-1 1/2" | 4-38 mm | 1136-1 |
| | 1 1/2"-3" | 38-76 mm | 1136-2 |
| | 3"-6" | 76-152 mm | 1136-3 |
| | 6"-9" | 152-228 mm | 1136-4 |

Step #2 Base & Hangers

| Description | Part No. |
|--------------|----------------|
| Single Base | PT24312 |
| Double Base | PT24315 |
| Hanger Stand | PT24305 |

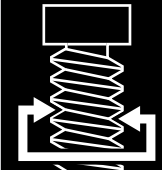
Step #3 Indicators

For Nos. 1135-1, 2 Frames

| Graduation | Catalog No. | Contact No. |
|-----------------|---|------------------|
| .0001" | 25-111TG | PT06677-C |
| .00025" | 25-128TG | |
| 0.002 mm | 25-161TG | |
| .0001"/0.002 mm | F2710-1 Electronic Digital with Output | |

For Nos. 1136-1, 2 Frames

| Graduation | Catalog No. | Contact No. |
|-----------------|---|------------------|
| .0001" | 25-111RTGP | PT06677-B |
| .00025" | 25-128RTGP | |
| 0.002 mm | 25-161RTGP | |
| .0001"/0.002 mm | F2710-1 Electronic Digital with Output | |



External Thread Gage Systems Nos. 1135 and 1136 Specifications (continued)

Step #4 Full-Form and Cone and Vee Segments Inch Segments – For Frames Nos. 1135-1/1136-1

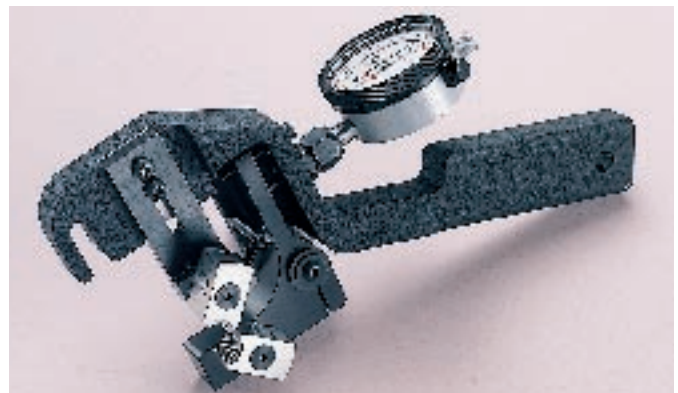
| Thread Size | Full-Form Part No. | Cone & Vee* Part No. |
|---------------|--------------------|----------------------|
| .1640-32 UNC | PT80374 | PT80700 |
| .1640-36 UNF | PT80375 | PT80701 |
| .1900-24 UNC | PT80376 | PT80702 |
| .1900-32 UNF | PT80377 | PT80703 |
| .2160-24 UNC | PT80378 | PT80704 |
| .2160-28 UNF | PT80379 | PT80705 |
| .2500-20 UNC | PT26171 | PT80706 |
| .2500-28 UNF | PT26172 | PT80707 |
| .3125-18 UNC | PT26173 | PT80708 |
| .3125-24 UNF | PT80380 | PT80709 |
| .3750-16 UNC | PT26174 | PT80710 |
| .3750-24 UNF | PT80381 | PT80711 |
| .4375-14 UNC | PT26175 | PT80712 |
| .4375-20 UNF | PT80382 | PT80713 |
| .4375-28 UNEF | PT80926 | PT80933 |
| .5000-13 UNC | PT26176 | PT80714 |
| .5000-20 UNF | PT26177 | PT80715 |
| .5000-28 UNEF | PT80927 | PT80934 |
| .5625-12 UNC | PT80383 | PT80716 |
| .5625-18 UNF | PT80384 | PT80717 |
| .5625-24 UNEF | PT80928 | PT80935 |
| .6250-11 UNC | PT26178 | PT80718 |
| .6250-18 UNF | PT26179 | PT80719 |
| .6250-24 UNEF | PT80929 | PT80936 |
| .6875-24 UNEF | PT80930 | PT80937 |
| .7500-10 UNC | PT26180 | PT80720 |
| .7500-16 UNF | PT80385 | PT80721 |
| .7500-20 UNEF | PT80931 | PT80938 |
| .8125-20 UNEF | PT80932 | PT80939 |
| .8750-9 UNC | PT80372 | PT80722 |
| .8750-14 UNF | PT80386 | PT80723 |
| 1.0000-8 UNC | PT80387 | PT80724 |
| 1.0000-12 UNF | PT80388 | PT80725 |
| 1.1250-7 UNC | PT80389 | PT80726 |
| 1.1250-12 UNF | PT80390 | PT80727 |
| 1.2500-7 UNC | PT80391 | PT80728 |
| 1.2500-12 UNF | PT80392 | PT80729 |
| 1.3750-6 UNC | PT80393 | PT80730 |
| 1.3750-12 UNF | PT80394 | PT80731 |
| 1.5000-6 UNC | PT80395 | PT80732 |
| 1.5000-12 UNF | PT80396 | PT80733 |

NOTE: Nos. 1137-1 Segments 2 through 6 quoted on application.
Nos. 1135-2 and 1136-2, 3, 4 Segments 1 1/2" through 9"
quoted on application.

Metric Segments – For Frames Nos. 1135-1/1136-1

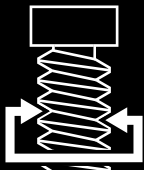
| Thread Size | Full-Form Part No. | Cone & Vee* Part No. |
|-------------|--------------------|----------------------|
| M5 x 0.8 | PT80734 | PT80748 |
| M6 x 1.0 | PT80367 | PT80749 |
| M8 x 1.0 | PT80366 | PT80750 |
| M8 x 1.25 | PT26182 | PT80751 |
| M10 x 0.75 | PT80735 | PT80752 |
| M10 x 1.25 | PT80368 | PT80753 |
| M10 x 1.5 | PT80369 | PT80754 |
| M12 x 1.0 | PT80370 | PT80755 |
| M12 x 1.25 | PT26184 | PT80756 |
| M12 x 1.75 | PT26183 | PT80757 |
| M14 x 1.5 | PT80736 | PT80758 |
| M14 x 2.0 | PT80737 | PT80759 |
| M16 x 1.5 | PT80738 | PT80760 |
| M16 x 2.0 | PT80739 | PT80761 |
| M18 x 1.5 | PT80740 | PT80762 |
| M20 x 1.0 | PT80741 | PT80763 |
| M20 x 1.5 | PT80742 | PT80764 |
| M20 x 2.5 | PT80743 | PT80765 |
| M22 x 1.5 | PT80744 | PT80766 |
| M22 x 2.5 | PT80745 | PT80767 |
| M24 x 2.0 | PT80746 | PT80768 |
| M25 x 1.5 | PT80747 | PT80769 |

NOTE: Nos. 1135-1 and 1136-1 Segments 2-4 mm and 26-38 mm
quoted on application.
Nos. 1135-2 and 1136-2, 3, 4 Segments 38 mm-228 mm quoted
on application.



Full-form segments measure functional diameter size. No. 1136 portable style allows the gage to be brought to the part.

*By special order only.



THREAD GAGING



External Thread Gage Systems Nos. 1135 and 1136 Specifications (continued)

Step #5 Segment Stud Sets

| TPI/Pitch Range | | Approx. Length | | Part No. |
|-----------------|--------------|----------------|-------|----------|
| Inch | mm | Inch | mm | |
| 24-64 | 1.00-0.40 mm | 7/16" | 11 mm | PT80186 |
| 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | PT80187 |
| 14-15 | 1.8-1.7 mm | 11/16" | 18 mm | PT80188 |
| 9-13 | 2.8-2 mm | 15/16" | 24 mm | PT80189 |
| 4-8 | 6-3 mm | 1 3/16" | 26 mm | PT80190 |

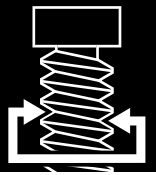
Step #6 Setting Templates (Does not apply to these gages.)

Step #7 See last page for Class W Threaded Plug Gages.

Replacement Spacer Lengths for Nos. 1135 and 1136 Full-Form Segments

NOTE: You must measure the stud length on your gage frame before selecting the proper spacer. All spacers for Nos. 1135 and 1136 Gages are furnished in sets of two. These spacers allow segments of different lengths to be adapted to a common stud.

| Approx. Gage Frame Stud Length | | Full-Form Segment | | | | Approx. Required Spacer Length | | Part No. (Set of 2) |
|--------------------------------|-------|-------------------|-------------|----------------|-------|--------------------------------|-------|---------------------|
| | | TPI | Pitch (mm) | Approx. Length | | | | |
| Inch | mm | | | | | Inch | mm | |
| 15/16" | 24 mm | 9-13 | 2.8-2 mm | 15/16" | 24 mm | No Spacers Needed | | |
| | | 14-15 | 1.9-1.7 mm | 11/16" | 18 mm | 1/4" | 6 mm | PT99477 |
| | | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | 3/8" | 10 mm | PT99478 |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/2" | 13 mm | PT99479 |
| 11/16" | 18 mm | 14-15 | 1.9-1.7 mm | 11/16" | 18 mm | No Spacers Needed | | |
| | | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | 1/8" | 3 mm | PT99476 |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/4" | 6 mm | PT99477 |
| 9/16" | 14 mm | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | No Spacers Needed | | |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/8" | 3 mm | PT99476 |
| 7/16" | 11 mm | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | No Spacers Needed | | |



Indicating-Type Internal Thread Gage Systems

No. 1140 Segment Gage

No. 1140A Roll Gage

No. 1141 with concentricity/squareness ring

These Internal Thread Gaging Systems are versatile, easy-to-use and accurate. The Nos. 1140 and 1141 bodies have a capacity from #10 (.190" or 4.8 mm) up to 3" (76 mm). They can be mounted on base plates for bench use or used as hand-held portable gages. The No. 1140A combined with an adapter plate will handle diameters over 3" (76 mm).

- ◆ **No. 1140** is a 2-contact, full-form functional segment gaging system. It can also measure pitch diameter with a single element cone and vee segment below 3" (76 mm) in diameter.
 - ◆ The **No. 1140A Gage** requires internal rolls for sizes over 3" (76 mm) diameters. These rolls are not interchangeable with external roll gaging systems. It uses single-element cone and vee rolls or multi-rib functional rolls for over 3" (76 mm) diameters
 - ◆ The **No. 1141** has a body with a concentricity/squareness ring and has a range from #10 (.190" or 4.8 mm) up to 3" (76 mm). The ring checks internal threads for concentricity with external and internal diameters. It also checks internal threads for squareness with a chosen surface.
- Test indicators are available for this application. Our Nos. 708 and 709 Series Test Indicators are the standard offering, but the .250" (6.35 mm) post will also accept our No. 711 Test Indicators (using Snug No. PT07097) and our No. 811 Test Indicators (using Snug No. PT22428)
- ◆ Gages are offered using elements to measure any thread profile of 60°, 55°, Acme or Buttress



- ◆ Each thread size requires a ring gage to set the gage comparator
- ◆ **Readout** – Three Mechanical Dial Indicators with .0001", .00025" and 0.002 mm readouts and an electronic indicator with a .0001"/0.002 mm resolution are offered as standard. Other indicators may also be specified – see Indicator Section
- ◆ **SPC Capability** – Storage of gage readout for analysis and documentation is possible when using Electronic Indicators such as our No. 2600 and No. 2700 Series with data collection devices like the Starrett No. 772 Advanced Data Collection System or the No. 702 Computer Workstation
- ◆ Spacers and studs are included with the purchase of No. 1140A body. When purchasing replacement rolls, review the spacer and stud specifications for spacer length requirements



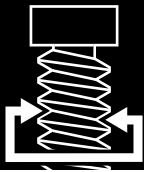
Top, No. 1140 Bench Style (segment gaging with digital electronic indicators). Bottom, No. 1140A Portable Style (roll gaging with analog indicators).

Checking squareness (L) and external concentricity (R) using the No. 1141 Gage with Starrett No. 709 Test Indicator and attachments.



NOTE: Certificate of calibration available upon request at additional charge.

See specifications on next page.



THREAD GAGING



Internal Thread Gage Series Nos. 1140 and 1141 Specifications

Step #1 Body Assemblies

| Range | | Catalog No. |
|----------------|------------|--------------|
| Inch | mm | |
| #10 (.190")-3" | 4.80-75 mm | 1140 1141 |

Step #2 Bases

| Description | Part No. |
|-------------|----------|
| Single Base | PT24837 |
| Double Base | PT24626 |

Step #3 Indicators Fits No. 1140, 1140A, 1141 Frames

| Graduation | Catalog No. | Contact No. |
|-----------------|--|-------------|
| .0001" | 81-111TG | PT07215 |
| .00025" | 81-128TG | |
| 0.002 mm | 81-161TG | |
| .0001"/0.002 mm | F2710-1 Electronic Digital with Output | PT06632-9 |

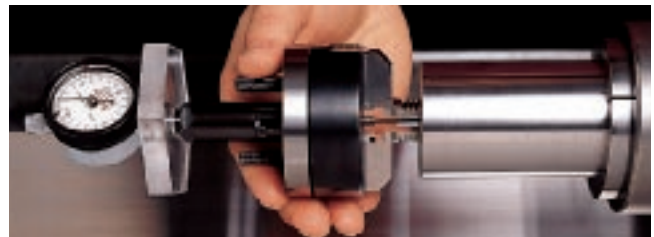
Step #4 Full-Form and Cone and Vee Segments

Inch Segments – For 1140/1141 Gages

| Thread Size | Full-Form Part No. | Cone & Vee Part No. |
|---------------|--------------------|---------------------|
| .1900-24 UNC | PT80500 | PT80529 |
| .1900-32 UNF | PT80501 | PT80530 |
| .2160-24 UNC | PT80502 | PT80531 |
| .2160-28 UNF | PT80503 | PT80532 |
| .2500-20 UNC | PT80505 | PT80535 |
| .2500-28 UNF | PT80506 | PT80536 |
| .3125-18 UNC | PT80509 | PT80538 |
| .3125-24 UNF | PT80511 | PT80540 |
| .3750-16 UNC | PT80514 | PT80543 |
| .3750-24 UNF | PT80516 | PT80545 |
| .4375-14 UNC | PT80519 | PT80548 |
| .4375-20 UNF | PT80521 | PT80550 |
| .4375-28 UNEF | PT80522 | PT80551 |
| .5000-13 UNC | PT80524 | PT80553 |
| .5000-20 UNF | PT80526 | PT80555 |
| .5000-28 UNEF | PT80527 | PT80556 |
| .5625-12 UNC | PT80582 | PT80558 |
| .5625-18 UNF | PT80583 | PT80559 |
| .5625-24 UNEF | PT80616 | PT80621 |
| .6250-11 UNC | PT80584 | PT80560 |
| .6250-18 UNF | PT80585 | PT80561 |
| .6250-24 UNEF | PT80617 | PT80622 |
| .6875-24 UNEF | PT80618 | PT80623 |
| .7500-10 UNC | PT80586 | PT80562 |
| .7500-16 UNF | PT80587 | PT80563 |
| .7500-20 UNEF | PT80619 | PT80624 |
| .8125-20 UNEF | PT80620 | PT80625 |
| .8750-9 UNC | PT80588 | PT80564 |
| .8750-14 UNF | PT80589 | PT80565 |
| 1.0000-8 UNC | PT80590 | PT80566 |
| 1.0000-12 UNF | PT80591 | PT80567 |
| 1.1250-7 UNC | PT80592 | PT80568 |
| 1.1250-12 UNF | PT80593 | PT80569 |
| 1.2500-7 UNC | PT80594 | PT80570 |
| 1.2500-12 UNF | PT80595 | PT80571 |
| 1.3750-6 UNC | PT80596 | PT80572 |
| 1.3750-12 UNF | PT80597 | PT80573 |
| 1.5000-6 UNC | PT80598 | PT80574 |
| 1.5000-12 UNF | PT80599 | PT80575 |

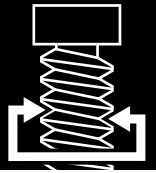
Metric Segments

| Thread Size | Full-Form Part No. | Cone & Vee Part No. |
|-------------|--------------------|---------------------|
| M5 x 0.8 | PT80652 | PT80630 |
| M6 x 1.0 | PT80653 | PT80631 |
| M8 x 1.0 | PT80654 | PT80632 |
| M8 x 1.25 | PT80655 | PT80633 |
| M10 x 0.75 | PT80656 | PT80634 |
| M10 x 1.25 | PT80657 | PT80635 |
| M10 x 1.5 | PT80658 | PT80636 |
| M12 x 1.0 | PT80659 | PT80637 |
| M12 x 1.25 | PT80660 | PT80638 |
| M12 x 1.75 | PT80661 | PT80639 |
| M14 x 1.5 | PT80662 | PT80640 |
| M14 x 2.0 | PT80663 | PT80641 |
| M16 x 1.5 | PT80664 | PT80642 |
| M16 x 2.0 | PT80665 | PT80643 |
| M18 x 1.5 | PT80666 | PT80644 |
| M20 x 1.0 | PT80667 | PT80645 |
| M20 x 1.5 | PT80668 | PT80646 |
| M20 x 2.5 | PT80669 | PT80647 |
| M22 x 1.5 | PT80670 | PT80648 |
| M22 x 2.5 | PT80671 | PT80649 |
| M24 x 2.0 | PT80672 | PT80650 |
| M25 x 1.5 | PT80673 | PT80651 |



Portable gaging convenience for on-site applications.

NOTE: All other segments within the listed range are available – quoted on application.



Internal Thread Gage Series Nos. 1140 and 1141 Specifications (continued)

Step #5 Roll Stud Set Does not apply

Step #6 Setting Templates Does not apply

Step #7 Master Setting Rings
Inch Rings – For 1140/1141 Gages

| Thread Size | Part No. |
|------------------|----------|
| .1900-24 UNC 3B | PT26509 |
| .1900-32 UNF 3B | PT26510 |
| .2160-24 UNC 3B | PT26511 |
| .2160-28 UNF 3B | PT26512 |
| .2500-20 UNC 3B | PT26061 |
| .2500-28 UNF 3B | PT26062 |
| .3125-18 UNC 3B | PT26063 |
| .3125-24 UNF 3B | PT26513 |
| .3750-16 UNC 3B | PT26064 |
| .3750-24 UNF 3B | PT26514 |
| .4375-14 UNC 3B | PT26065 |
| .4375-20 UNF 3B | PT26515 |
| .4375-28 UNEF 3B | PT80954 |
| .5000-13 UNC 3B | PT26066 |
| .5000-20 UNF 3B | PT26067 |
| .5000-28 UNEF 3B | PT80955 |
| .5625-12 UNC 3B | PT26516 |
| .5625-18 UNF 3B | PT26517 |
| .5625-24 UNEF 3B | PT80956 |
| .6250-11 UNC 3B | PT26068 |
| .6250-18 UNF 3B | PT26069 |
| .6250-24 UNEF 3B | PT80957 |
| .6875-24 UNEF 3B | PT80958 |
| .7500-10 UNC 3B | PT26070 |
| .7500-16 UNF 3B | PT26518 |
| .7500-20 UNEF 3B | PT80959 |
| .8125-20 UNEF 3B | PT80960 |
| .8750-9 UNC 3B | PT26519 |
| .8750-14 UNF 3B | PT26520 |
| 1.0000-8 UNC 3B | PT26521 |
| 1.0000-12 UNF 3B | PT26522 |
| 1.1250-7 UNC 3B | PT26523 |
| 1.1250-12 UNF 3B | PT26524 |
| 1.2500-7 UNC 3B | PT26525 |
| 1.2500-12 UNF 3B | PT26526 |
| 1.3750-6 UNC 3B | PT26527 |
| 1.3750-12 UNF 3B | PT26528 |
| 1.5000-6 UNC 3B | PT26529 |
| 1.5000-12 UNF 3B | PT26530 |

NOTE: 1 5/8" through 3" Masters quoted on application.

NOTE: Certificate of calibration available upon request at additional charge.

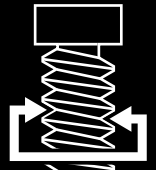
Metric Rings – For 1140/1141 Gages

| Thread Size | Part No. |
|---------------|----------|
| M5 x 0.8-6H | PT26485 |
| M6 x 1.0-6H | PT26486 |
| M8 x 1.0-6H | PT26487 |
| M8 x 1.25-6H | PT26488 |
| M10 x 0.75-6H | PT26489 |
| M10 x 1.25-6H | PT26490 |
| M10 x 1.5-6H | PT26491 |
| M12 x 1.0-6H | PT26492 |
| M12 x 1.25-6H | PT26493 |
| M12 x 1.75-6H | PT26494 |
| M14 x 1.5-6H | PT26495 |
| M14 x 2.0-6H | PT26496 |
| M16 x 1.5-6H | PT26497 |
| M16 x 2.0-6H | PT26498 |
| M18 x 1.5-6H | PT26499 |
| M20 x 1.0-6H | PT26500 |
| M20 x 1.5-6H | PT26501 |
| M20 x 2.5-6H | PT26502 |
| M22 x 1.5-6H | PT26503 |
| M22 x 2.5-6H | PT26504 |
| M24 x 2.0-6H | PT26505 |
| M25 x 1.5-6H | PT26506 |

NOTE: M26 through M75 Masters quoted on application.



Adjustable Thread Axis Aligner No. PT80228 for 1140/1141/1140A.



Internal Thread Gage Series No. 1140A Specifications

Step #1 Body Assemblies

| Range | | Catalog No. |
|--------|-----------|-------------|
| Inch | mm | |
| 3"-30" | 75-760 mm | 1140A |

Step #2 Bases

| Description | Part No. |
|-------------|----------|
| Single Base | PT24837 |
| Double Base | PT24626 |

Step #3 Indicators

Fits No.1140A Frames

| Graduation | Catalog No. | Contact No. |
|-----------------|--|-------------|
| .0001" | 81-111TG | PT07215 |
| .00025" | 81-128TG | |
| 0.002 mm | 81-161TG | PT06632-9 |
| .0001"/0.002 mm | F2710-1 Electronic Digital with Output | |

Step #4 Rolls

Inch Segments

| TPI | Cone and Vee Part No. | Multi-Rib Part No. |
|-----|-----------------------|--------------------|
| 8 | PT80842 | PT80846 |
| 12 | PT80843 | PT80847 |
| 16 | PT80844 | PT80848 |
| 20 | PT80845 | PT80849 |

NOTES: All other TPI Rolls within the listed range are available – quoted on application.

Metric Pitch Rolls within the listed range are available – quoted on application.

Step #5 Roll Stud Sets

All Cone & Vee Rolls

| Fits Frame No. | TPI/Pitch Range | | Approx. Length | | Part No. |
|----------------|-----------------|------------|----------------|-------|----------|
| | Inch | mm | Inch | mm | |
| 1140A | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | PT24369 |

All Multi-Rib Rolls

| 1140A | TPI | Pitch (mm) | Inch | mm | Part No. |
|-------|-------|-------------|--------|-------|----------|
| | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | PT24370 |
| | 14-15 | 1.9-1.7 mm | 11/16" | 18 mm | PT24371 |
| | 8-13 | 3-2.0 mm | 15/16" | 24 mm | PT24372 |

Step #6 Adapter Plates for Specified Sizes

Quoted on application.

Step #7 Master Setting Ring – English & Metric

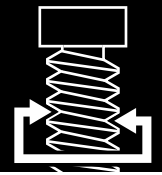
Quoted on application.

Replacement Spacer Lengths for No. 1140A Multi-Rib Rolls

NOTE: You must measure the stud length on your gage arm before selecting the proper spacer. All spacers for No. 1140A are furnished in sets of three. These spacers allow thread rolls of different lengths to be adapted to a common roll stud.

| Approx. Gage Frame Stud Length | | Multi-Rib Roll | | | | Approx. Required Spacer Length | | Part No. (Set of 3) |
|--------------------------------|-------|----------------|-------------|----------------|-------|--------------------------------|-------|---------------------|
| | | TPI | Pitch (mm) | Approx. Length | | | | |
| Inch | mm | | | Inch | mm | Inch | mm | |
| 15/16"* | 24 mm | 8-13 | 3-2 mm | 15/16" | 24 mm | No Spacers Needed | | |
| | | 14-15 | 1.9-1.7 mm | 11/16" | 18 mm | 1/4" | 6 mm | PT99471 |
| | | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | 3/8" | 10 mm | PT99472 |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/2"* | 13 mm | PT99473 |
| 11/16" | 18 mm | 14-15 | 1.9-1.7 mm | 11/16" | 18 mm | No Spacers Needed | | |
| | | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | 1/8" | 3 mm | PT99474 |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/4" | 6 mm | PT99471 |
| 9/16" | 14 mm | 16-20 | 1.6-1.25 mm | 9/16" | 14 mm | No Spacers Needed | | |
| | | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | 1/8" | 3 mm | PT99474 |
| 7/16" | 11 mm | 24-80 | 1.1-0.2 mm | 7/16" | 11 mm | No Spacers Needed | | |

* Cone and Vee Rolls – All cone and vee rolls are 7/16" long. If you have a gage with 15/16" studs and have been using this with multi-rib rolls, you can still use a cone and vee roll by adding a 1/2" spacer.



External Class W Threaded Gages with handle

Step #7 Master Truncated Setting Plug Gages

Inch Plug Gages – For 1130/1131/1135 Gages

| Thread Size | Part No. |
|------------------|----------|
| .1640-32 UNC 3A | PT23226 |
| .1640-36 UNF 3A | PT26452 |
| .1900-24 UNC 3A | PT23227 |
| .1900-32 UNF 3A | PT23228 |
| .2160-24 UNC 3A | PT23229 |
| .2160-28 UNF 3A | PT23230 |
| .2500-20 UNC 3A | PT23231★ |
| .2500-28 UNF 3A | PT23232 |
| .3125-18 UNC 3A | PT23233 |
| .3125-24 UNF 3A | PT23234 |
| .3750-16 UNC 3A | PT23235 |
| .3750-24 UNF 3A | PT23236 |
| .4375-14 UNC 3A | PT23237 |
| .4375-20 UNF 3A | PT23238 |
| .4375-28 UNEF 3A | PT80919 |
| .5000-13 UNC 3A | PT23239 |
| .5000-20 UNF 3A | PT23240 |
| .5000-28 UNEF 3A | PT80920 |
| .5625-12 UNC 3A | PT23241 |
| .5625-18 UNF 3A | PT23242 |
| .5625-24 UNEF 3A | PT80921 |
| .6250-11 UNC 3A | PT23243 |
| .6250-18 UNF 3A | PT23244 |
| .6250-24 UNEF 3A | PT80922 |
| .6875-24 UNEF 3A | PT80923 |
| .7500-10 UNC 3A | PT23245 |
| .7500-16 UNF 3A | PT23246 |
| .7500-20 UNEF 3A | PT80924 |
| .8125-20 UNEF 3A | PT80925 |
| .8750-9 UNC 3A | PT26453 |
| .8750-14 UNF 3A | PT24411 |
| 1.0000-8 UNC 3A | PT24412 |
| 1.0000-12 UNF 3A | PT26454 |
| 1.1250-7 UNC 3A | PT26455 |
| 1.1250-12 UNF 3A | PT26456 |
| 1.2500-7 UNC 3A | PT26457 |
| 1.2500-12 UNF 3A | PT26458 |
| 1.3750-6 UNC 3A | PT26459 |
| 1.3750-12 UNF 3A | PT26460 |
| 1.5000-6 UNC 3A | PT26461 |
| 1.5000-12 UNF 3A | PT26462 |

Metric Plug Gages – For 1130/1131/1135 Gages

| Thread Size | Part No. |
|---------------|----------|
| M5 x 0.8 6g | PT26463 |
| M6 x 1.0 6g | PT26464 |
| M8 x 1.0 6g | PT26465 |
| M8 x 1.25 6g | PT26466 |
| M10 x 0.75 6g | PT26467 |
| M10 x 1.25 6g | PT26468 |
| M10 x 1.5 6g | PT26469 |
| M12 x 1.0 6g | PT26470 |
| M12 x 1.25 6g | PT26471 |
| M12 x 1.75 6g | PT26472 |
| M14 x 1.5 6g | PT26473 |
| M14 x 2.0 6g | PT26474 |
| M16 x 1.5 6g | PT26475 |
| M16 x 2.0 6g | PT26476 |
| M18 x 1.5 6g | PT26477 |
| M20 x 1.0 6g | PT26478 |
| M20 x 1.5 6g | PT26479 |
| M20 x 2.5 6g | PT26480 |
| M22 x 1.5 6g | PT26481 |
| M22 x 2.5 6g | PT26482 |
| M24 x 2.0 6g | PT26483 |
| M25 x 1.5 6g | PT26484 |

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