STRAIGHT THREAD INSPECTION- Internal Pitch Diameter

GAGEMAKER®

THREAD CHECK INC.

Pitch Diameter Gages- PD-6000 Series

Pitch Diameter:

Pitch diameter is the distance from the pitch line on one side of a thread to the pitch line 180° opposite. The pitch line lies exactly at the midpoint between the non-truncated root and crests of the thread. It is also located where the distance across the tooth is identical to the distance across the groove. The sum of both is a distance of one pitch. Lead error and flank angle deviation do not affect pitch diameter. Pitch diameter is the basic feature for separating thread elements such as form, size, and lead.

Purpose:

Inspect pitch diameter size to verify a thread is within tolerance. Acceptable pitch diameter alone does not guarantee that mating parts will screw together. To ensure proper fit, inspect both functional size and pitch diameter. For maximum accuracy, our PD-6000 gages seat interchangeable contact points in the thread at the pitch line.

PD-6000

Inspecting a part on a machine

Contact Points

Internal Thread Inspection with PD-6000 Series

Thread Disk™ Software

1. Start the TDWIN™ program.

2. Select the Thread Type and Thread Class.

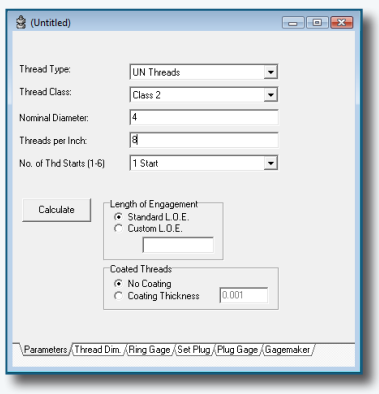
3. Type the Nominal Diameter and Threads Per Inch (TPI).

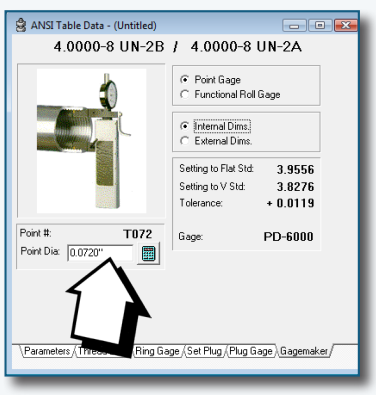
4. Select the Number of Thread Starts.

5. Click the Calculate button.

6. Click the Gagemaker tab.

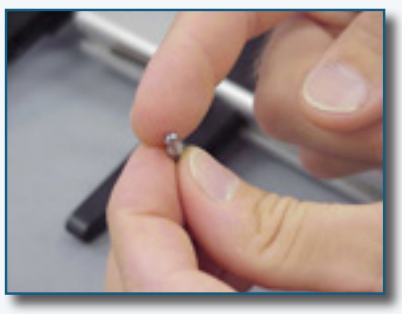
7. Based on the Point# displayed in the window, select the proper contact point.



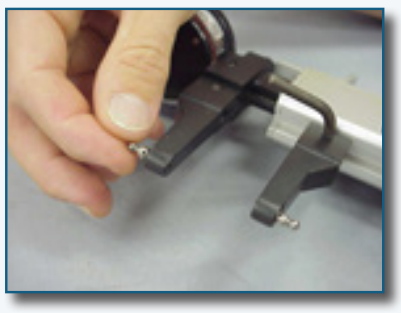


Gage Setup

1. Inspect the contact points to ensure that they are not damaged or worn.

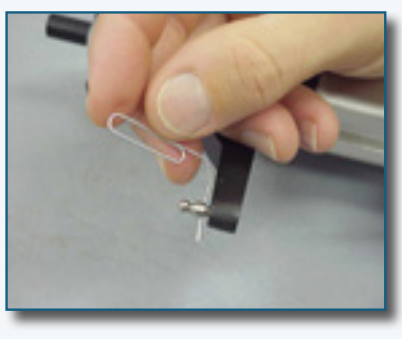


2. Using your fingers, screw the contact points into the threaded holes in the upper and lower arm assemblies. Be sure that the contact points are fully seated.



3. To secure the contact point, open a paper clip and insert it into the hole in the contact point's shaft. Rotate using moderate pressure to tighten the contact point.

DO <u>NOT</u> use pliers to tighten the contact points, as damage may result.

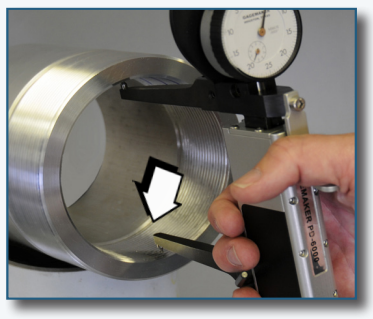


Gage Operation

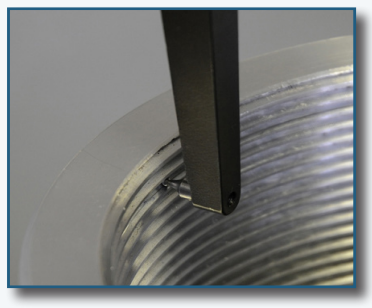
1. Inspecting parts using the PD-6000 involves placing the gage on a part in order to compare the nominal pitch diameter of the gage to the actual pitch diameter of the part.

2. After zeroing the PD-6000 gage with a setting standard or MIC TRAC™, pull the retraction lever and position the upper contact point in the second thread on the lower half of the part so that the indicator is pointed downward.

3. Trace the uppercontact point around the thread 180 degrees.



4. Release the lever to place the lower contact point in the second thread. This practice ensures that both contact points are positioned correctly.



5. Ensure that the contact points on the PD-6000 fully engage with the threads in the part.

6. Sweep the PD-6000 gage to locate the largest indicator reading on the part. Use the gauging tolerances, previously printed from the Gagemaker screen in the TDWIN™ software, to determine the accuracy of the diameter.

<u>Note</u>: Be sure that the small revolution counter on the indicator is pointing to the same number as when the gage was zeroed.

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