

HOW TO USE THE THREAD IDENTIFICATION CHART - Part 1

(Chart is on pages 1012 and 1013)

The task of establishing origin, designation and size of an unknown thread can be a complicated experience, even if you have all the necessary tools at hand. To make it easier, we have prepared a Thread Identification Chart (T.I.C.) where the three most common threads: American, British and Metric are listed. Just follow these three basic steps: 1. *Measure Major Diameter of your thread.* 2. *Count number of threads per one inch length.* 3. *Locate your finding in our T.I.C.*

Before going further in this detailed instruction here is a general introduction to Metric and British thread designations. For comparison, the American Standard is included.

AMERICAN: 1/2-20 UNF
1/2 = Nominal Diameter
20 = Number of Threads Per Inch
UNF = Thread Designation

METRIC: M 12 x 1.5
M = Thread Designation
12 = Nominal Diameter
1.5 = Pitch (For Coarse Series, Pitch may be omitted)

BRITISH: 1/2 BSF
1/2 = Nominal Diameter
BSF = Thread Designation

Designation examples of the various thread series:

ORIGIN	COARSE THREAD	FINE THREAD	EXTRA FINE THREAD	MINIATURE THREAD	PIPE-TAPERED
AMERICAN	1/4-20 UNC	1/4-28 UNF	1/4-32 UNEF	1.40 UNM	1/4-18NPT
METRIC	M 6	M 6 x 0.75	M 6 x 0.5	M 1.4	M 12 x 1.5 Taper
BRITISH	1/4 BSW	1/4 BSF	None	12 BA	1/4 BSPT

From the above table several designation differences are apparent:

- Metric designation uses pitch instead of number of threads per inch. Pitch is the distance from any one point on a thread to corresponding point on the next thread, measured parallel to the axis.
- Metric coarse thread does not indicate pitch. The absence of pitch means coarse thread series.
- Nominal diameter of Metric pipe threads (straight and tapered) corresponds to the actual measurement of the thread major diameter. This is contrary to American and British designations where nominal diameter of the pipe thread indicates approximate inside diameter of the tube. In the T.I.C., threads are listed in order in increasing size of the major diameter. Due to this, American and British pipe threads are in the chart among larger size thread diameters.
- A point of interest is the most European countries still use the inch measuring system in connection with pipe threads. It is actually British BSP and BSPT, but the local designation may be different.
- In the British system there is no need to indicate the number of threads per inch. All British thread series have only one number of threads per inch allocated to its diameter and series.
- American Miniature thread (UNM) is interchangeable with corresponding sizes of ISO Metric Standardization.

For a chosen thread size, we follow as our example a metric thread nominal diameter 6mm with 25 1/2 Threads per inch, which is approx. 1 mm pitch. Correct designation is M 6. This thread is close to the following threads: M 6 x 0.5, M 6 x 0.75, 1/4-20 UNC, 1/4-28 UNF, 1/4-32 UNEF, 7/32 BSF, 0 BS, 1/4 BSW and 1/4 BSF.

HOW TO USE THE THREAD IDENTIFICATION CHART - Part 2

(Chart is on pages 1012 and 1013)

The following are step by step instructions on using the T.I.C.:

- Use a micrometer or caliper to measure Major Diameter (actual outside diameter) of the screw thread. It can be measured in decimal inches or millimeters. Note that the thread major diameter is often undersized for clearance.
Example in measurement: Approx. .230 inches or 5.9 mm

- Use a ruler, caliper or micrometer to count the number of threads per inch. Example in counting: Approx. 25 Threads per inch.

Since the Metric System does not use Threads per inch for identification, use the pitch conversion Table to convert the counted 25 Threads per inch to the exact number of 25 1/2 Threads per inch as equal to Pitch 1 (Pitch Conversion Table is located on the T.I.C.). Locate the decimal inch diameter. Once established, move horizontally to find a match in Thread per inch or Pitch.

Example: Major Diameter measured .230 is actually .2362 Inches or 6 mm in Basic Major Diameter column. Moving Horizontally, to the right, are listed two threads: Metric M 6 and British 0 BA (In Nominal Diameter column)

Should there be only one thread in this line, the task would be accomplished. Since there is more than one possibility, we have to go back to the example and check its thread angle for final breakdown. Using metric Screw Pitch Gage, we can safely distinguish 60° of metric thread against 47 1/2° of British BA thread angle. Example in measurement: Metric 60° thread angle.
Example in origin and size: Metric Screw M 6