

# NPTF Thread Gages

Willrich Precision



## Class 1 Threads

Gaging of NPTF class 1 threads is identical to that of NPT threads with the use of the L<sub>1</sub> plug or L<sub>1</sub> ring. In addition, the use of an L<sub>3</sub> plug or L<sub>2</sub> ring is necessary for a functional check of taper deviations and continuation of thread beyond the L<sub>1</sub> length of engagement.

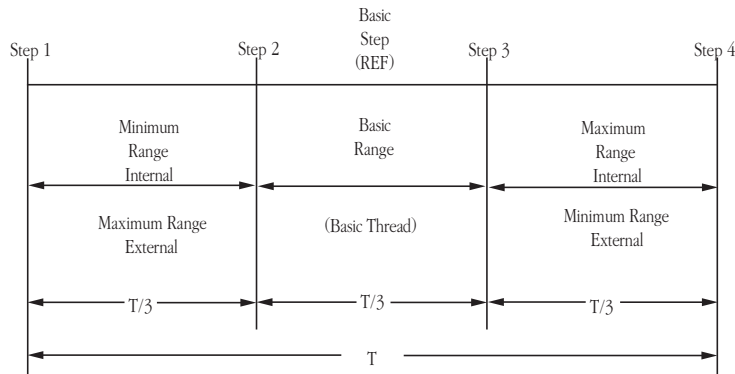
The L<sub>3</sub> plug or L<sub>2</sub> ring may not vary from the relative position established by the L<sub>1</sub> plug or ring by more than  $\pm 1/2$  turn. Crest and root truncations are generally considered adequately controlled by the tooling used to produce the product threads in NPTF class 1 threads.

3 Step gages have steps at Step 1 (Min), Basic length (L1) and Step 4 (Max) dimensions. (see table on following page)

## Class 2 Threads

Gaging of NPTF class 2 threads is identical to that of NPTF class 1 threads with the use of L<sub>1</sub> and L<sub>3</sub> plugs or L<sub>1</sub> and L<sub>2</sub> rings. The L<sub>1</sub> plug or L<sub>1</sub> ring is also used to classify the thread as being "maximum", "basic" or "minimum". (see diagram) Note: Basic range is  $\pm 1/3$  turn from basic step. The use of 4-Step L<sub>1</sub> gages facilitates classification of product threads. They offer 2 steps for each classification range rather than estimating the range by turning the gage from the basic step and are highly recommended.

NPTF class 2 threads also require the measurement or gaging of the crests and roots of the threads. While direct measurements or optical projection is more accurate and should be considered the final method in the event of a dispute, 6-Step crest and root truncation gages offer fast, simplified and acceptable method of checking crests and roots. The 6-Step gages consist of 3 pairs of steps, each pair corresponding to the classification of the thread established by the L<sub>1</sub> plug or ring as "maximum", "basic", or "minimum." Specifications for all Class 2 NPTF threads are shown for the recommended 4-Step Gage design on the following page.



Note: For NPTF threads: T=2 Turns  
 For PTF-SAE Short, NPSF and NPSI threads: T=1.5 Turns  
 Classification of Product Thread Size Using 4-Step Gages.

The Steps of the crest check or root check are marked and correspond to the following:

MN Minimum thread with minimum truncation. MNT Minimum thread with maximum truncation.

B Basic thread with minimum truncation. BT Basic thread with maximum truncation.

MX Maximum thread with minimum truncation. MXT Maximum thread with maximum truncation.

## When Ordering Please Specify:

1. Quantity
2. Nominal Size & Threads Per Inch.
3. Basic, 3-Step, or 4-Step design on L1, L3 plugs & L1, L2 Rings. (Basic unless otherwise specified.)
4. Single or Double Ended plug gages.
5. Short or Long Form Certification if required.

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