

# Chapter 8

## Screw Threads

### SUMMARY

The change to the metric system in screw threads gives us a unique opportunity to rationalize the screw thread and fastener sizes. For example, the **six first choice thread sizes** shown in Table 8-1 are recommended to replace the **61 other thread sizes** listed. The first choice sizes are according to the R5' series of preferred sizes shown in Table 4-1. Less savings will be achieved if you select the twelve **ISO** (green) first choice sizes shown or the 14 **ANSI** (bold) first choice sizes. The cost reduction becomes substantial when you figure thousands of dollars savings for each unique fastener size that can be eliminated from the product design.

**TABLE 8-1 PREFERRED THREAD SIZES**

| ISO 262 Metric (mm) |            |                |          | Unified Inch |         |          |
|---------------------|------------|----------------|----------|--------------|---------|----------|
| Coarse              | (1)        | Coarse         | Fine     |              | Coarse  | Fine     |
| R5'                 | R10'       | R20'           |          | mm           | Inch    |          |
| <b>M2.5</b>         |            |                |          | 2.51         | #3-48   | #3-56    |
|                     |            |                |          | 2.8          | #4-40   | #4-48    |
| <b>M4</b>           |            |                |          | 3.2          | #5-40   | #5-44    |
|                     |            |                |          | 3.5          | #6-32   | #6-40    |
|                     |            |                | M3.5 (2) | 4.2          | #8-32   | #8-36    |
|                     |            |                |          | 4.8          | #10-24  | #10-32   |
|                     |            |                | M4.5 (3) | 5.5          | #12-24  | #12-28   |
| <b>M6</b>           | <b>M5</b>  |                |          | 6.3          | 1/4-20  | 1/4-28   |
| <b>M10</b>          | <b>M8</b>  |                | M8x1     | 7.9          | 5/16-18 | 5/16-24  |
|                     |            |                | M10x1.25 | 9.5          | 3/8-16  | 3/8-24   |
| <b>M16</b>          |            |                |          | 10.9         | 7/16-14 | 7/16-20  |
|                     |            | <b>M12</b>     | M12x1.25 | 12.7         | 1/2-13  | 1/2-20   |
|                     |            |                |          | 14.3         | 9/16-12 | 9/16-18  |
|                     |            |                | M14 (2)  | 15.9         | 5/8-11  | 5/8-18   |
|                     |            |                | M16x1.5  |              |         |          |
| <b>M24</b>          |            | M18 (3)        | M18x1.5  | 19.1         | 3/4-10  | 3/4-16   |
|                     |            |                |          | 22.2         | 7/8-9   | 7/8-14   |
|                     |            | <b>M20</b>     | M20x1.5  | 25.4         | 1-8     | 1-12     |
|                     |            | M22 (3)        | M22x1.5  | 28.6         | 1 1/8-7 | 1 1/8-12 |
|                     |            |                | M24x2    | 31.8         | 1 1/4-7 | 1 1/4-12 |
|                     | <b>M30</b> | M27 (3)        | M27x2    |              |         |          |
|                     |            |                | M30x2    |              |         |          |
| <b>GO</b>           |            | <b>CAUTION</b> |          | <b>STOP</b>  |         |          |

**NOTES:**

1. The Metric Coarse Thread designation shown in this table is according to ISO. ANSI standards may specify the thread pitch for both coarse and fine thread pitches.
2. ANSI B1.13M shows the ISO preference rating.
3. Not recommended to be used in the USA.

The metric coarse thread pitch is slightly smaller (finer) compared to the customary unified coarse thread pitch. For example; the metric coarse thread M8 has the thread pitch 1.25 mm and the inch thread 5/16-18 has the thread pitch 1.41 mm.