

# Precision Gear Manufacturing Capabilities\*

| Description                       | Pitch Diameter |            | Pitch Diameter |             | Diametral Pitch |            | Diametral Pitch |            | Module    | Module    | Quality | AGMA | DIN |
|-----------------------------------|----------------|------------|----------------|-------------|-----------------|------------|-----------------|------------|-----------|-----------|---------|------|-----|
|                                   | Maximum        | Minimum    | Maximum        | Minimum     | Maximum         | Minimum    | Maximum         | Minimum    |           |           |         |      |     |
| <b>Gear Hobbing &amp; Shaping</b> | in.            | mm         | in.            | mm          |                 |            |                 |            |           |           |         |      |     |
| Spur Gears                        | 48             | 1220       | 0.25           | 6           | 1.5             | 120        | 16.9            | .21        | Q11       | 7         |         |      |     |
| Helicalgears                      | 48             | 1220       | 0.25           | 6           | 1.5             | 120        | 16.9            | .21        | Q11       | 7         |         |      |     |
| Internalgears                     | 20             | 508        | .5             | 12.7        | 3.1             | 120        | 8.0             | .21        | Q12       | 6         |         |      |     |
| Worm Gears                        | 18             | 450        | 1.0            | 25.4        | 5.0             | 32         | 5.08            | .8         | Q12       | 6         |         |      |     |
| Worms                             | 6              | 152        | 6.25           | 15.8        | 5.0             | 32         | 5.08            | .8         | Q12       | 6         |         |      |     |
| <b>External Gear Grinding</b>     |                |            |                |             |                 |            |                 |            |           |           |         |      |     |
| Spur & Helical                    | 55             | 1400       | 0.25           | 6.3         | 0.75            | 120        | 34              | .21        | Q15       | 2         |         |      |     |
| <b>Internal Gear Grinding</b>     |                |            |                |             |                 |            |                 |            |           |           |         |      |     |
| Spur & Helical                    | 42             | 1070       | 3              | 76.2        | 0.75            | 32         | 34              | .8         | Q15       | 2         |         |      |     |
| Hirth Coupling Grinding           | 27             | 686        |                |             |                 |            |                 |            |           |           |         |      |     |
| <b>Gear Inspection</b>            |                |            |                |             |                 |            |                 |            |           |           |         |      |     |
| Lead                              | 64             | 1600       | .100           | 2.54        | .75             | 32         | 34              | .8         | **        | **        |         |      |     |
| Involute                          | 64             | 1600       | .100           | 2.54        | .75             | 32         | 34              | .8         | **        | **        |         |      |     |
| Pitch Error                       | 64             | 1600       | .100           | 2.54        | .75             | 32         | 34              | .8         | **        | **        |         |      |     |
| Accum Pitch Error                 | 64             | 1600       | .100           | 2.54        | .75             | 32         | 34              | .8         | **        | **        |         |      |     |
| Pitch Line Runnout                | 64             | 1600       | .100           | 2.54        | .75             | 32         | 34              | .8         | **        | **        |         |      |     |
| Topography                        | 15             | 381        | .100           | 2.54        | .75             | 32         | 34              | .8         | **        | **        |         |      |     |
| <b>TOTAL COMPOSITE ERROR</b>      | <b>30</b>      | <b>762</b> | <b>.100</b>    | <b>2.54</b> | <b>4.0</b>      | <b>120</b> | <b>6.35</b>     | <b>.21</b> | <b>**</b> | <b>**</b> |         |      |     |

\* Two metrology labs equipped with CNC M&M, Klingelberg and Maag Gear Inspection Machines. Temperature, humidity and dust controlled, shock proof structure  
All equipment calibrated per ISO-17025. Documentation/traceability to Mil-I-45208 and/or ISO 9001 specifications.

\*\* Inspection equipment is capable of certifying to AGMA CLASS Q15 (DIN 2) tolerances and traceable to National Institute of Science and Technology (N.I.S.T.)