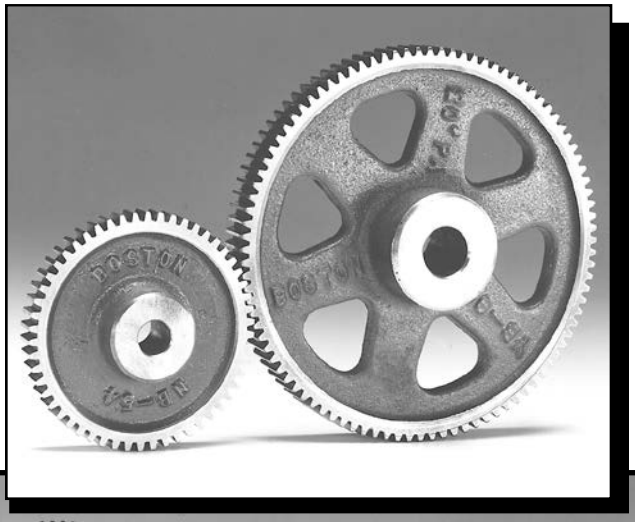
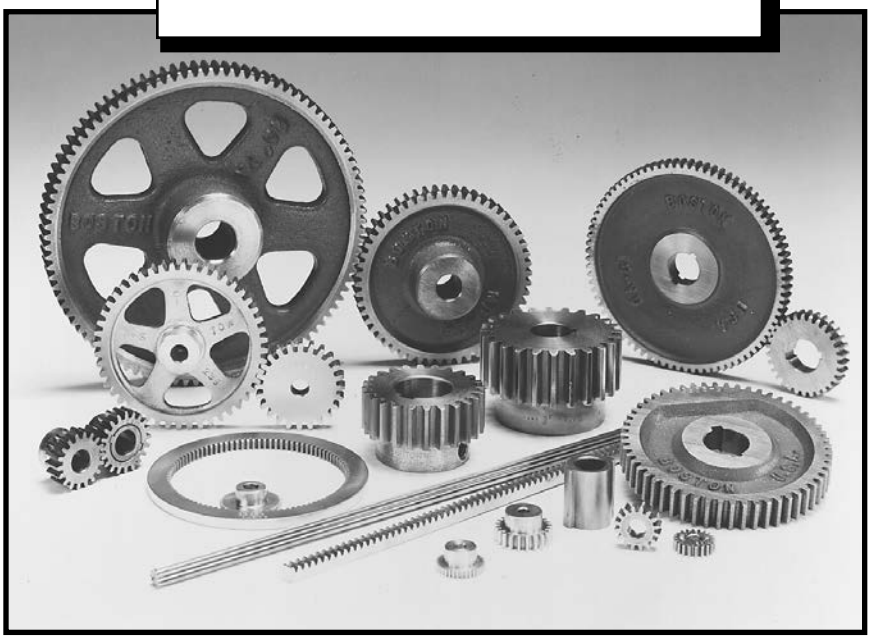
Spur Gears

- Parallel Shaft Applications
- Reliability from Steel, Cast Iron and Brass
- More Cost Effective, Quieter Running and Corrosion-Resistant Operation from Non-Metallic Options
- Higher Load Carrying Capacity with 20° PA (Pressure Angle)
- Higher Contact Ratio for a Smoother, Quieter Operation with 14-1/2° PA





Selections From Stock

- Pinions and Gears (Steel, Cast Iron, Brass, Non-Metallic)
- Change Gears (Steel or Cast Iron)
- Stem Pinions (Steel)
- Drawn Pinion Wire (Brass, Steel)
- Rack (Steel, Nylon)
- Internal (Brass)
- Diametral Pitch 64 DP to 3 DP
- Pitch Diameter .208” to 36.000”
- Diametral Pitch System Standardized on Stock Gears
- 14-1/2° and 20° Pressure Angles

Boston spur gears are designed to transmit motion and power between parallel shafts. Configurations include spur, rack, pinion wire, stem pinions and internal gears; most with a selection of bores, keyways and set screws. Fine-pitch gears are available in plastic, brass, stainless steel and steel. Heavier pitch spurs are available in steel and cast iron. Styles include plain, web, web with lightening holes or spoked. Change gears have consecutive numbers of teeth for a variety of ratios.

Boston Gear manufactures both 14-1/2° and 20°PA, involute, full depth system gears. While 20°PA is generally recognized as having higher load carrying capacity, 14-1/2°PA gears have extensive use. The lower Pressure Angle results in less change in backlash due to center distance variation and concentricity errors. It also provides a higher contact ratio and is consequently a smoother, quieter operation provided that the undercut of the teeth is not present.

Helical Gears

- Parallel and 90° Non-Intersecting Shaft Applications
- Improved Tooth Strength
- Greater Load Carrying Capacity
- Increased Contact Ratio
- Smoother Operating Characteristics

Selections From Stock

- Helicals, 45° Helix Angle
- Transverse Diametral Pitch (TDP) System
- Hardened Steel (24 TDP – 6 TDP)
- Bronze (8 TDP – 6 TDP)
- Pitch Diameter .333" to 6.000"
- 14-1/2° Pressure Angle

Boston helical gears are stocked both right and left hand, made with a 45° helix angle. They are designed to transmit motion and power between non-intersecting shafts which are positioned either parallel (opposing hand) or at 90° to each other (same hand). Because these gears are top-hobbed, there is extremely close concentricity between the pitch diameter and the outside diameter.

Helical gears offer additional benefits relative to Spur Gears, those being:

- *Improved tooth strength due to the elongated helical wrap-around.*
- *Increased contact ratio due to the axial tooth overlap.*
- *Helical Gears tend to have greater load carrying capacity than Spur Gears of similar size.*
- *Because of the above, smoother operating characteristics are apparent.*

All Boston Helicals are cut to the Transverse Diametral Pitch System, resulting in a higher Normal Diametral Pitch Number.

Miter and Bevel Gears

- 90° Intersecting Shaft Applications
- Coniflex® Tooth Form for Increased Life and Smoother, Quieter Operation
- Spiral Miter and Bevel for Higher Speed, Greater Torque Load, and Quieter Operating Applications
- Miter Gears for 1:1 Ratio Applications
- Bevel Gears for 1.5:1 to 6:1 Ratio Applications
- Soft Bores for Customized Alterations

Selections from Stock

- Straight Miter Gears
  - Nylon (48 DP – 16 DP)
  - Brass (48 DP – 24 DP)
  - Steel (48 DP – 4 DP)
  - Iron (8 DP – 4 DP)
- Spiral Miter Gears (35° Spiral Angle)
  - Steel (18 DP – 5 DP)
- Straight Bevel Gears
  - Brass (48 DP – 24 DP)
  - Steel (20 DP – 6 DP)
  - Iron (16 DP – 4 DP)
- Spiral Bevel Gears (35° Spiral Angle)
  - Steel (30 DP – 8 DP)
- Diametral Pitch – 48 DP to 4 DP
- Pitch Diameter – 0.250" to 9.000"
- 20° Pressure Angle
- Hardened or Unhardened Teeth (Steel)
- Made in Accordance with AGMA Specifications for the Basic Tooth Form

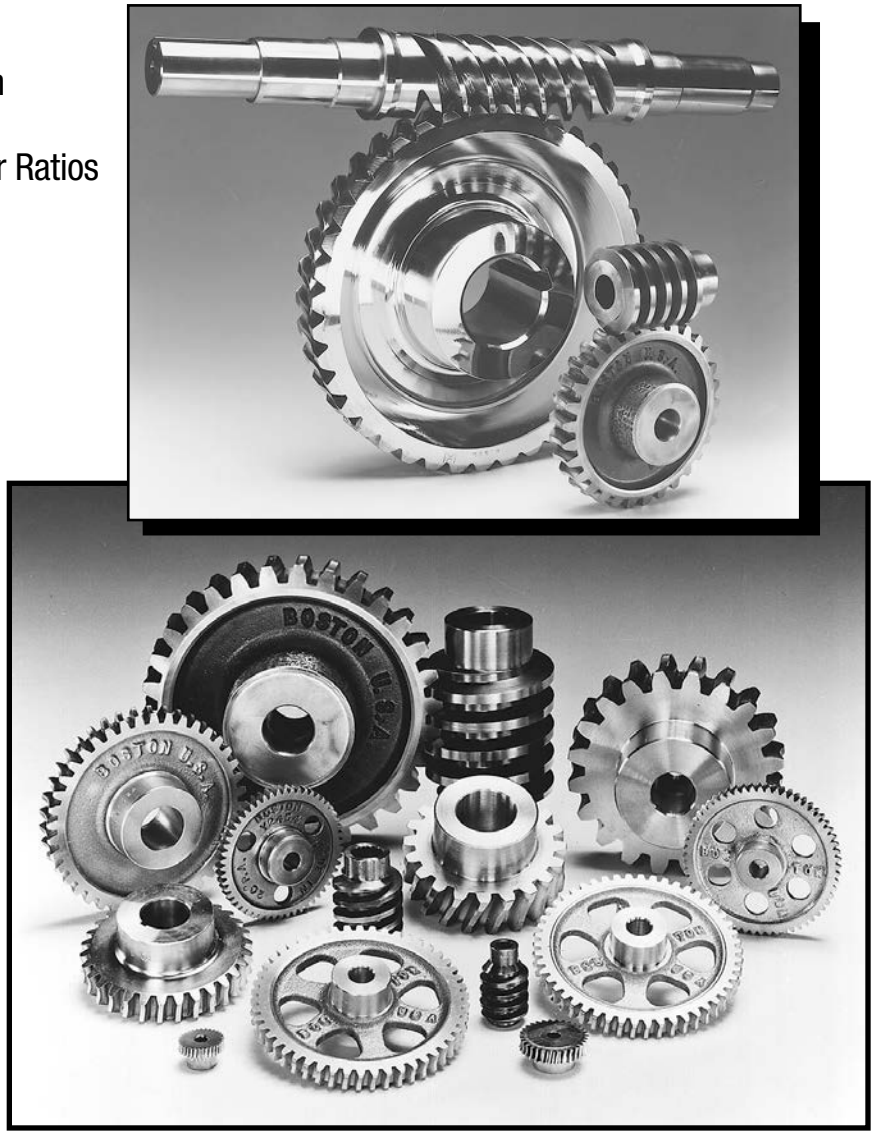
Boston miter and bevel gears are designed for transmission of motion and power between intersecting shafts positioned at a right angle. Straight tooth miter and bevel gears are cut with a generated tooth form having a localized lengthwise tooth bearings known as the "Coniflex"® tooth form. The superiority of these gears over straight bevels with full length tooth bearing lies in the control of tooth contact. The localization of contact permits minor adjustment of the gears in assembly and allows for some displacement due to deflection under operating loads, without concentration of the load on the end of the tooth. This results in increased life and quieter operation.

Spiral tooth form miter and bevel gears are suited for higher speed and larger torque applications.

®Registered trademark of The Gleason Works.

Worms and Worm Gears

- 90° Non-Intersecting Shaft Applications
- Smoothest, Quietest Form of Gearing
- High Ratio Speed Reduction
- Minimal Space Requirements
- Resistance to Back Driving with Some Ratios
- Increased Efficiency with Lower Ratios



Selections from Stock

- Worms
  - Acetal (48 DP – 24 DP)
  - Steel (48 DP – 3 DP)
- Worm Gears
  - Acetal (48 DP – 24 DP)
  - Bronze (48 DP – 4 DP)
  - Cast Iron (16 DP – 3 DP)
- Pressure Angle
  - 14-1/2°, 20°, 25°
- Thread
  - Single, Double, Quadruple
- Diametral Pitch – 48 DP to 3 DP
- Center Distances – 0.375" to 11.000"

⚠ **California Proposition 65 Warning:** The Bronze worm gearing contains lead, a chemical known to the state of California to cause cancer, birth defects or other reproductive harm.

Boston Gear worms and worm gears provide an effective answer for such power transmission applications as high-ratio speed reduction, limited space, right-angle shafts and non-intersecting shafts. When properly applied, they are the smoothest and quietest form of gearing. Steel worms and cast iron or bronze worm gears having throated teeth are available in single or multiple threads, 48 to 3 diametral pitch or up to 85" pitch diameter. Acetal worms and worm gears are available in 48, 32 and 24 diametral pitches.

The efficiency of a worm gear drive depends on the lead angle and number of starts on the worm. The angle generally decreases with increasing ratio and worm pitch diameter. For increased efficiency the ratio should be kept low.