ANGULAR CONTACT THRUST BALL BEARINGS for BALL SCREW SUPPORT

4. ANGULAR CONTACT THRUST BALL BEARINGS for BALL SCREW SUPPORT

**Machine Tool Applications**
- TAC B Series

**Electric Injection Molding Machines**
- TAC 02 and 03 Series

Angular Contact Thrust Ball Bearings for Ball Screw Support

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- Numbering System
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- Machine Tool Applications
  - TAC B Series
  - Electric Injection Molding Machines
    - TAC02 and 03 Series
4. ANGULAR CONTACT THRUST BALL BEARINGS for BALL SCREW SUPPORT

Features
High precision angular contact thrust ball bearings to support precision ball screws, have better performance than earlier combinations of angular contact ball bearings or combinations using thrust bearings. They are especially suitable for high precision machine-tool feeding mechanisms and similar applications.

TAC B Series
The axial rigidity is high because of a large number of balls and a contact angle of 60˚. Compared with tapered roller bearings of cylindrical roller bearings, this type has lower starting torque; so smoother rotation is possible with less driving force.

TAC B series bearings incorporate NSK’s recently developed molded polyamide resin cage. In addition, using extra-pure (EP) steel for the inner and outer rings has further enhanced service life. Our EP steel is manufactured by controlling the amount of harmful oxide-based non-metallic inclusions, which eliminates large size inclusions and enjoys higher purity than vacuum arc remelted (VAR) steel. This series with “DG” seal, low torque contact seal, with “WPHT” grease, an waterproof grease, increase the reliability and provide for easy handling.

TAC 02 & 03 Series
TAC 02 & 03 series are angular contact ball bearings that provide support for large size ball screws operating under a heavy load from the driving mechanism of electric injection molding machines. Low torque is achieved by optimum design of the ball bearings. Users can significantly reduce bearing torque by replacing their roller bearings with these series.

TAC B and TAC 02, 03 Differences
Electric injection molding machines produce a heavier load on ball screw support bearings than that of machine tools. TAC 02 and 03 bearings are designed to operate under such heavy load conditions. Conversely, TAC B bearings are designed for increased permissible load by increasing the number of balls and bearing width.

Numbering System of Angular Contact Thrust Ball Bearings for Ball Screw Support (Machine Tool Applications)

(Bearing number example) 30 TAC 62 B DF C10 PN7A Accuracy symbol
Nominal bore diameter
Bearing type symbol
Nominal outer diameter
Internal design symbol
Cage symbol

Numbering System of Angular Contact Thrust Ball Bearings for Ball Screw Support (Electric Injection Molding Machines)

(Bearing number example) 30 TAC 02 A T85 SU C8 PN5D Accuracy symbol
Nominal bore diameter
Bearing type symbol
Dimension series symbol
Internal design symbol
Cage symbol

Seal
No symbol: open type DDG: contact rubber seal (1)

Preload
C10: standard preload C9: light preload (low torque specification)

Accuracy
PN7A: standard accuracy (Equivalent to ISO Class 4)
PN7A special accuracy (Bore diameter and outside diameter are exclusive to NSK, Equivalent to ISO Class 4. For SU arrangement only.)

Reference pages
100-101
26, 98
100-101
26
130-133
134-137, 150
165
# Part 4

## For Machine Tool Applications

### 4. ANGULAR CONTACT THRUST BALL BEARINGS for BALL SCREW SUPPORT

**TAC B Series**  
Bore Diameter 15-60 mm

<table>
<thead>
<tr>
<th>Bearing Numbers</th>
<th>Boundary Dimensions (mm)</th>
<th>Reference Dimensions (mm)</th>
<th>Recommended Grease Quantities (cc)</th>
<th>Limiting Speeds (1) (min⁻¹)</th>
<th>Mass (approx)</th>
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<td>D</td>
<td>B</td>
<td>r (min)</td>
<td>r1 (min)</td>
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</table>

### Notes:
- Bearing type TAC B: nominal contact angle 60°
- Limiting speeds are based on C10 preload. In case of C9 preload, the figures become 1.3 times of the figures listed above.
4. ANGULAR CONTACT THRUST BALL BEARINGS for BALL SCREW SUPPORT

For Electric Injection Molding Machines

TAC 02 and 03 Series
Bore Diameter 15-120 mm

<table>
<thead>
<tr>
<th>Bearing Numbers</th>
<th>Boundary Dimensions (mm)</th>
<th>Reference Dimensions (mm)</th>
<th>Limiting Speeds (1) (min⁻¹)</th>
<th>Dynamic Axial Load Rating Cφ</th>
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(1) Limiting speeds listed on this page are based on a standard preload (C8)