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# Timken Part Number 644 - 632-B, Tapered Roller Bearings - TSF (Tapered Single with Flange) Imperial

Like the TS bearing design, the TSF design consists of two main separable parts: the cone (inner ring) assembly and the cup (outer ring). It is typically mounted in opposing pairs on a shaft. TSF bearings have flanged cups to facilitate axial location and accurately align seals in through-bored housings.

Specifications | Dimensions | Abutment and Fillet Dimensions | Basic Load Ratings | Factors

## Specifications

| | |
|---|---|
| **Series** | 635 |
| **Cone Part Number** | 644 |
| **Cup Part Number** | 632-B |
| **Design Units** | Imperial |
| **Bearing Weight** | 5.80 lb<br>2.600 Kg |
| **Cage Type** | Stamped Steel |

## Dimensions

| | |
|---|---|
| **d - Bore** | 2.8125 in<br>71.438 mm |
| **D - Cup Outer Diameter** | 5.3750 in<br>136.525 mm |
| **D1 - Flange Outer Diameter** | 5.6520 in<br>143.561 mm |
| **B - Cone Width** | 1.6250 in<br>41.275 mm |
| **C - Cup Width** | 1.2500 in<br>31.750 mm |
| **C1 - Cup Flange Width** | 0.2810 in<br>7.137 mm |
| **T1 - Bearing Width** | 1.6251 in<br>41.278 mm |
| **T - Bearing Width to Flange** | 0.6560 in<br>16.662 mm |

## Abutment and Fillet Dimensions

| | |
|---|---|
| **R - Cone Backface "To Clear" Radius[1]** | 0.14 in<br>3.600 mm |
| **r - Cup Backface "To Clear" Radius[2]** | 0.130 in<br>3.30 mm |
| **da - Cone Frontface Backing Diameter** | 3.19 in<br>81.00 mm |
| **db - Cone Backface Backing Diameter** | 3.43 in<br>87.10 mm |
| **Da - Cup Frontface Backing Diameter** | 4.96 in<br>125.98 mm |
| **Ab - Cage-Cone Frontface Clearance** | 0.1 in<br>2.5 mm |

| | |
|---|---|
| **Aa - Cage-Cone Backface Clearance** | 0.15 in<br>3.8 mm |
| **a - Effective Center Location[3]** | -0.44 in<br>-11.20 mm |

## Basic Load Ratings

| | |
|---|---|
| **C90 - Dynamic Radial Rating (90 million revolutions)[4]** | 16100 lbf<br>71600 N |
| **C1 - Dynamic Radial Rating (1 million revolutions)[5]** | 62100 lbf<br>276000 N |
| **C0 - Static Radial Rating** | 67000 lbf<br>298000 N |
| **$C_{a90}$ - Dynamic Thrust Rating (90 million revolutions)[6]** | 9980 lbf<br>44400 N |

## Factors

| | |
|---|---|
| **K - Factor[7]** | 1.61 |
| **e - ISO Factor[8]** | 0.36 |
| **Y - ISO Factor[9]** | 1.66 |
| **G1 - Heat Generation Factor (Roller-Raceway)[10]** | 106 |
| **G2 - Heat Generation Factor (Rib-Roller End)** | 21 |
| **Cg - Geometry Factor[11]** | 0.0814 |

[1] These maximum fillet radii will be cleared by the bearing corners.
[2] These maximum fillet radii will be cleared by the bearing corners.
[3] Negative value indicates effective center inside cone backface.
[4] Based on 90 x $10^6$ revolutions $L_{10}$ life, for The Timken Company life calculation method. $C_{90}$ and $C_{a90}$ are

radial and thrust values.

[5] Based on 1 x $10^6$ revolutions $L_{10}$ life, for the ISO life calculation method.

[6] Based on 90 x $10^6$ revolutions $L_{10}$ life, for The Timken Company life calculation method. $C_{90}$ and $C_{a90}$ are radial and thrust values for a single-row, $C_{90(2)}$ is the two-row radial value.

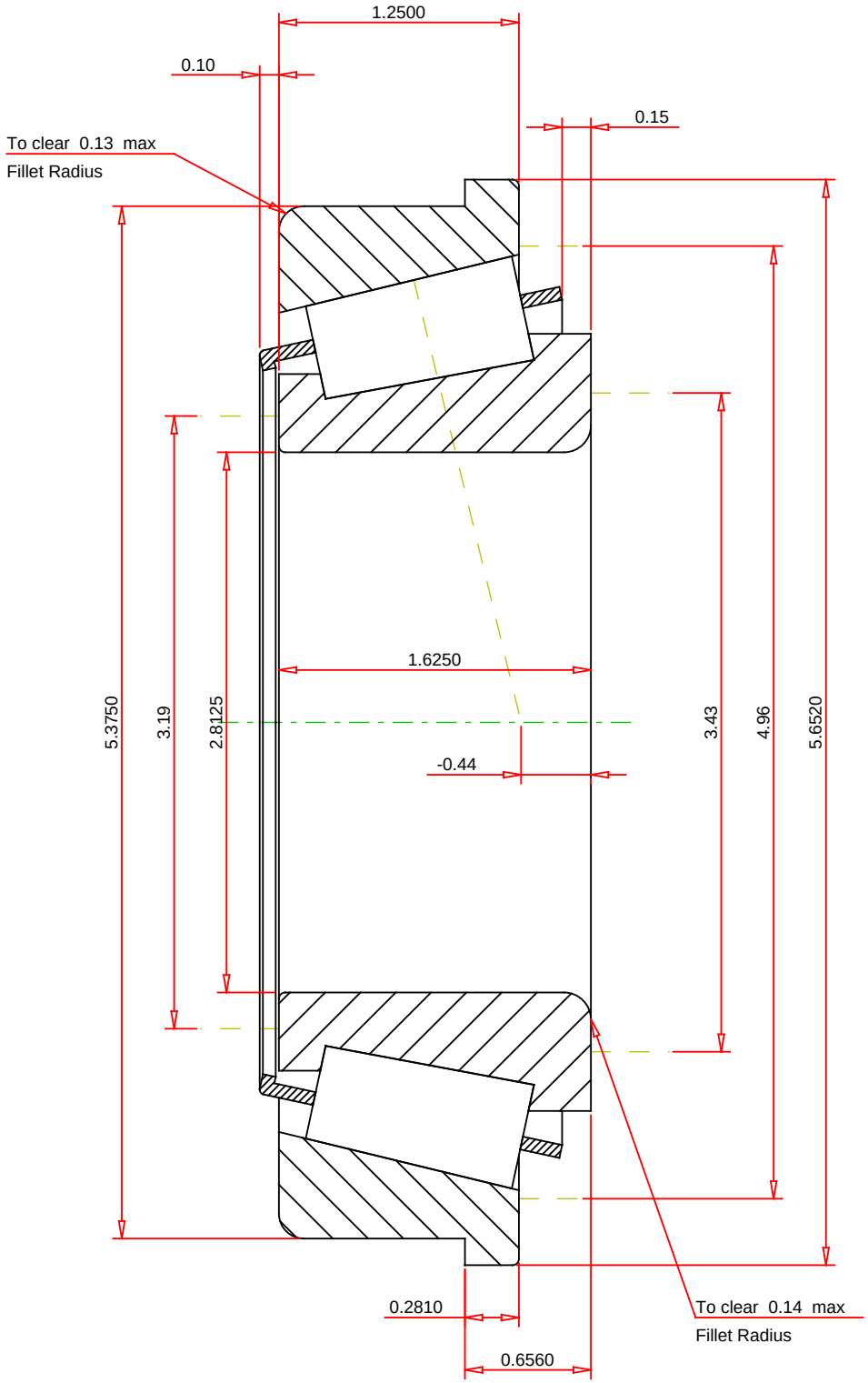
[7] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

[8] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

[9] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

[10] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

[11] Geometry constant for Lubrication Life Adjustment Factor a3l.




IMPERIAL UNITS

| | | |
|---|---|---|
| ISO Factor - e | 0.36 | |
| ISO Factor - Y | 1.66 | |
| Bearing Weight | 5.8 | lb |
| Number of Rollers Per Row | 18 | |
| Effective Center Location | -0.44 | inch |

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

644 - 632-B
TSF BEARING ASSEMBLY

| | | |
|---|---|---|
| K Factor | 1.61 | |
| Dynamic Radial Rating - C90 | 16100 | lbf |
| Dynamic Thrust Rating - Ca90 | 9980 | lbf |
| Static Radial Rating - C0 | 67000 | lbf |
| Dynamic Radial Rating - C1 | 62100 | lbf |



FOR DISCUSSION ONLY