



The Timken Company

4500 Mt Pleasant St. NW

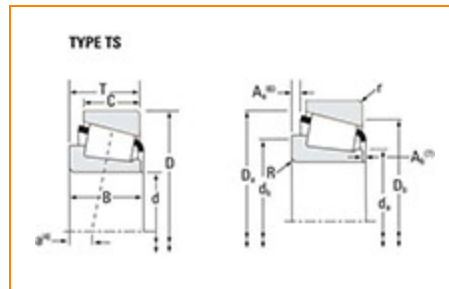
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Part Number 13889 - 13830, Tapered Roller Bearings - TS (Tapered Single) Imperial

This is the most basic and most widely used type of tapered roller bearing. It 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.



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Specifications

Series	13800
Cone Part Number	13889
Cup Part Number	13830
Design Units	Imperial
Bearing Weight	0.10 Kg 0.3 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	38.1 mm 1.5 in
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D - Cup Outer Diameter	63.500 mm 2.5000 in
B - Cone Width	11.908 mm 0.4688 in
C - Cup Width	9.525 mm 0.3750 in
T - Bearing Width	12.700 mm 0.5000 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius¹	1.520 mm 0.06 in
r - Cup Backface "To Clear" Radius²	0.76 mm 0.03 in
da - Cone Frontface Backing Diameter	42.42 mm 1.67 in
db - Cone Backface Backing Diameter	44.96 mm 1.77 in
Da - Cup Frontface Backing Diameter	60.96 mm 2.40 in
Db - Cup Backface Backing Diameter	58.93 mm 2.32 in
Ab - Cage-Cone Frontface Clearance	2 mm 0.08 in
Aa - Cage-Cone Backface Clearance	-0.3 mm -0.01 in
a - Effective Center Location³	-0.8 mm -0.03 in

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁴	1580 lbf 7040 N
C1 - Dynamic Radial Rating (1 million revolutions)⁵	6100 lbf 27200 N
C0 - Static Radial Rating	7430 lbf 33000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁶	938 lbf 4170 N

Factors

K - Factor⁷	1.69
e - ISO Factor⁸	0.35
Y - ISO Factor⁹	1.73
G1 - Heat Generation Factor (Roller-Raceway)	14.8
G2 - Heat Generation Factor (Rib-Roller End)	23.3
Cg - Geometry Factor¹⁰	0.0601

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 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

⁵ Based on 1×10^6 revolutions L_{10} life, for the ISO life calculation method.

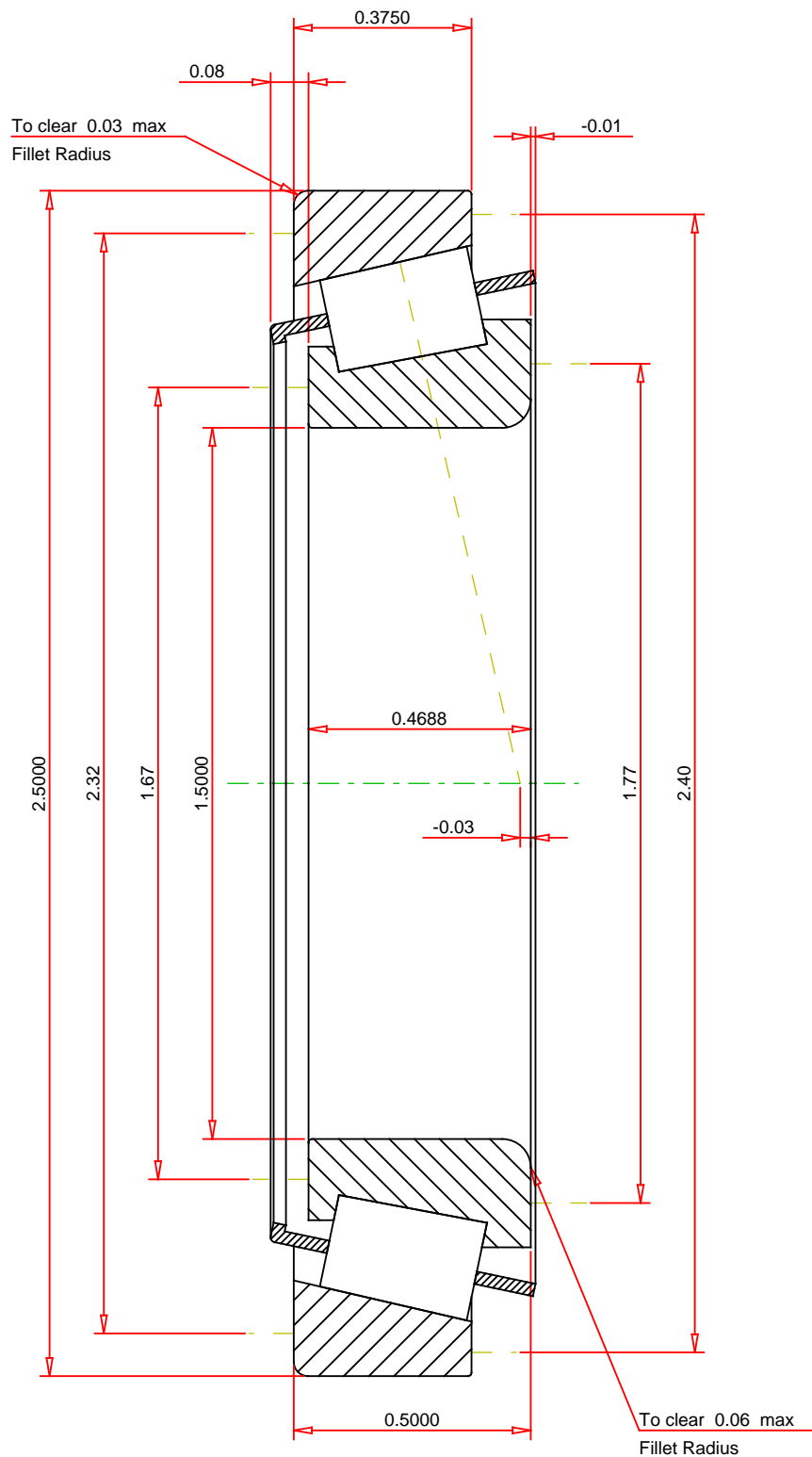
⁶ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values for a single-row, $C_{90(2)}$ is the two-row radial value.

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 Geometry constant for Lubrication Life Adjustment Factor a_3 .



IMPERIAL UNITS

ISO Factor - e 0.35
 ISO Factor - Y 1.73
 Bearing Weight 0.3 lb
 Number of Rollers Per Row 24
 Effective Center Location -0.03 inch

TIMKEN®

THE TIMKEN COMPANY
 NORTH CANTON, OHIO USA

13889 - 13830
TS BEARING ASSEMBLY

K Factor 1.69
 Dynamic Radial Rating - C90 1580 lbf
 Dynamic Thrust Rating - Ca90 938 lbf
 Static Radial Rating - C0 7430 lbf
 Dynamic Radial Rating - C1 6100 lbf

Every reasonable effort has been made to ensure the accuracy of the information contained in this writing, but no liability is accepted for errors, omissions or for any other reason.

FOR DISCUSSION ONLY