



The Timken Company

4500 Mt Pleasant St. NW

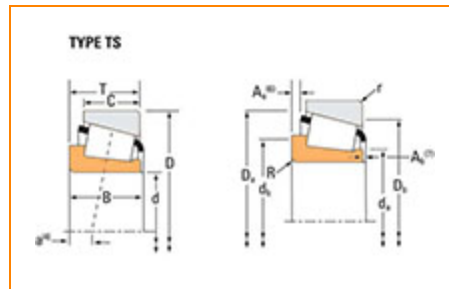
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Part Number 3981, Tapered Roller Bearings - Single Cones - Imperial

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	3900
Cone Part Number	3981
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)¹	54300 lbf 242000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)²	14100 lbf 62700 N

Dimensions

d - Bore	2.3125 in 58.738 mm
B - Cone Width	1.1830 in 30.048 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius³	0.14 in 3.600 mm
da - Cone Frontface Backing Diameter	2.64 in 67 mm
db - Cone Backface Backing Diameter	2.87 in 73 mm
Ab - Cage-Cone Frontface Clearance	0.08 in 2 mm
Aa - Cage-Cone Backface Clearance	0.06 in 1.5 mm
a - Effective Center Location⁴	-0.18 in -4.6 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁵	8090 lbf 36000 N
C1 - Dynamic Radial Rating (1 million revolutions)⁶	31200 lbf 139000 N
C0 - Static Radial Rating	43000 lbf 191000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁷	5570 lbf 24800 N

Factors

K - Factor⁸	1.45
G1 - Heat Generation Factor (Roller-Raceway)	75.2
G2 - Heat Generation Factor (Rib-Roller End)	21.3
Cg - Geometry Factor⁹	0.109

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

² 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.

³ These maximum fillet radii will be cleared by the bearing corners.

⁴ Negative value indicates effective center inside cone backface.

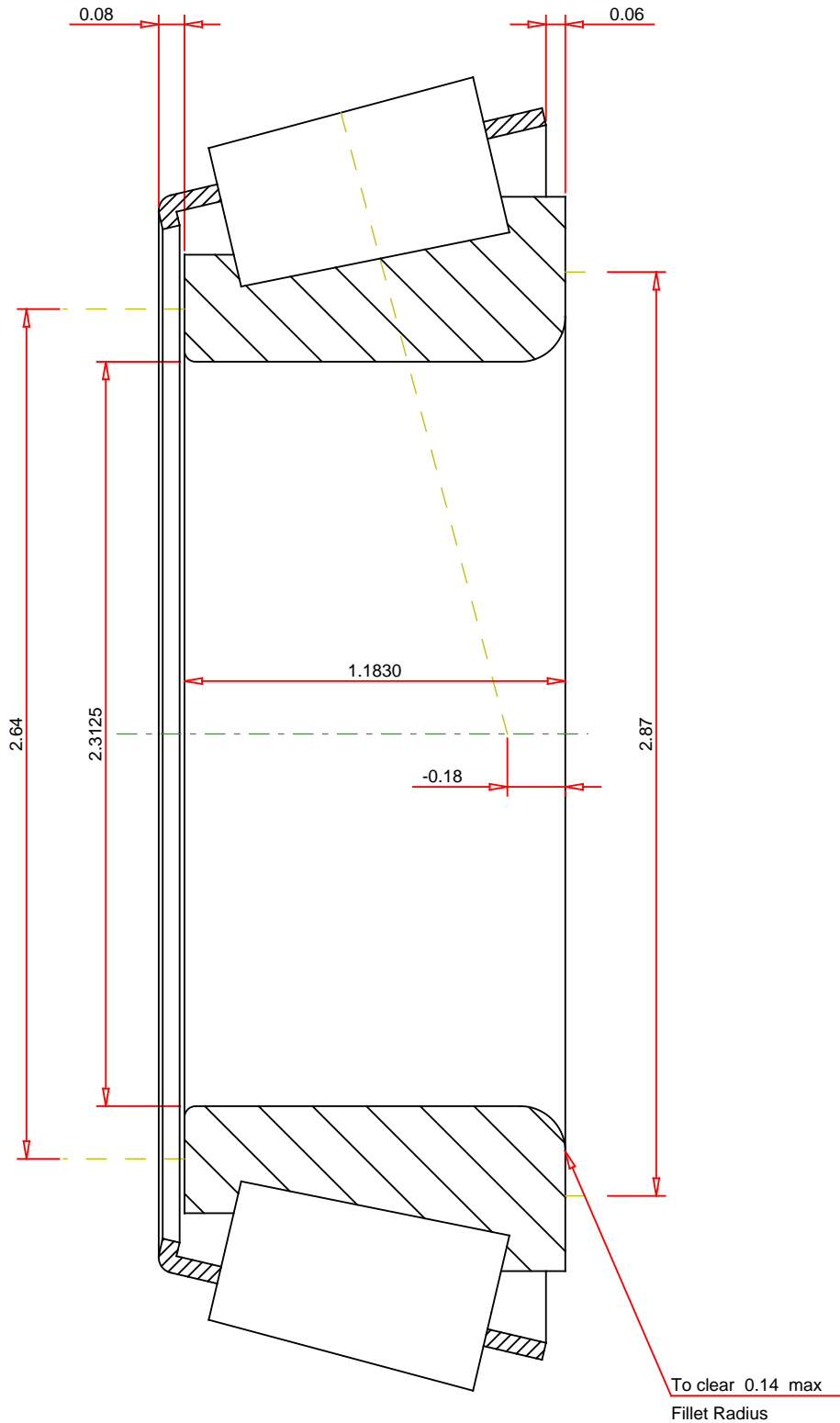
⁵ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

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

⁷ 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.

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

⁹ Geometry constant for Lubrication Life Adjustment Factor a_3 .



IMPERIAL UNITS

Number of Rollers Per Row22	TIMIKEN®	3981 SINGLE TAPERED CONE	
	THE TIMKEN COMPANY NORTH CANTON, OHIO USA	K Factor	1.45
		Dynamic Radial Rating - C90	8090 lbf
		Dynamic Thrust Rating - Ca90	5570 lbf
		Dynamic Radial Rating - C1	31200 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.

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