The Timken Company
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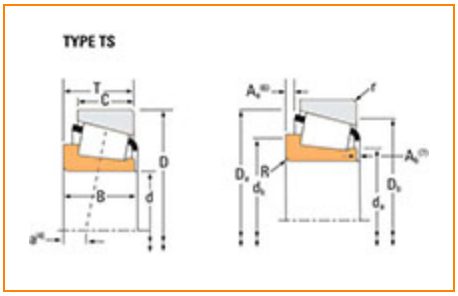
Part Number 97493, Tapered Roller Bearings - Single Cones - Imperial

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.



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

Specifications

Series	97000
Cone Part Number	97493
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)[1]	147000 lbf 655000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)[2]	38200 lbf 170000 N

Dimensions

d - Bore	4.9330 in 125.298 mm
B - Cone Width	1.9460 in 49.428 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[3]	0.14 in 3.600 mm
da - Cone Frontface Backing Diameter	5.65 in 143.5 mm
db - Cone Backface Backing Diameter	5.87 in 149 mm
Ab - Cage-Cone Frontface Clearance	0.21 in 5.3 mm
Aa - Cage-Cone Backface Clearance	0.28 in 7.1 mm
a - Effective Center Location[4]	0.52 in 13.2 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[5]	21900 lbf 97500 N
C1 - Dynamic Radial Rating (1 million revolutions)[6]	84500 lbf 376000 N
C0 - Static Radial Rating	109000 lbf 486000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[7]	27600 lbf 123000 N

Factors

K - Factor[8]	0.79
G1 - Heat Generation Factor (Roller-Raceway)	237.1
G2 - Heat Generation Factor (Rib-Roller End)	44.6
Cg - Geometry Factor[9]	0.131

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

[2] 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.

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

[4] Negative value indicates effective center inside cone backface.

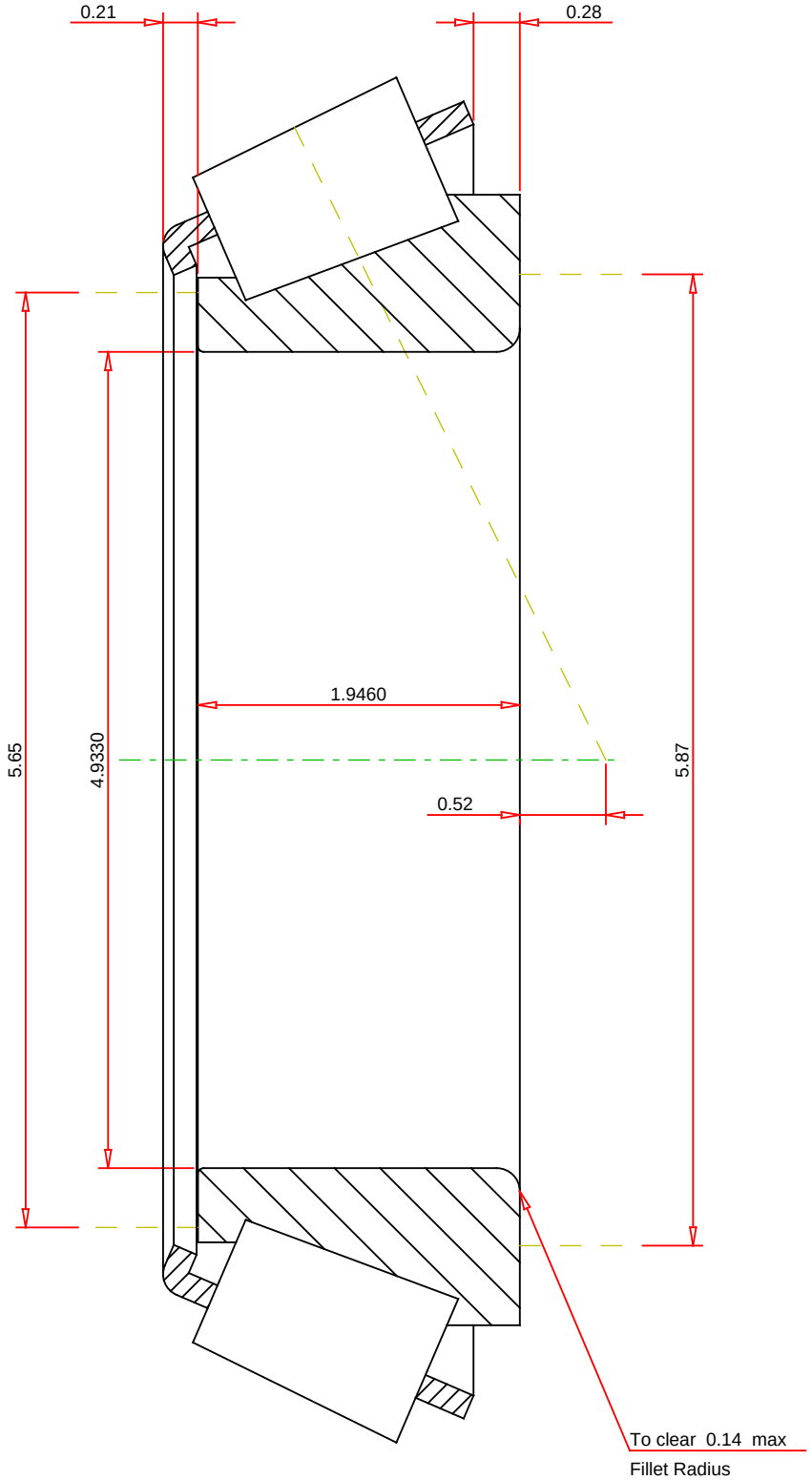
[5] Based on 90 x 10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

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

[7] 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.

[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 a3l.



IMPERIAL UNITS

Number of Rollers Per Row	17

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

97493
SINGLE TAPERED CONE

K Factor	0.79	
Dynamic Radial Rating - C90	21900	lbf
Dynamic Thrust Rating - Ca90	27600	lbf
Dynamic Radial Rating - C1	84500	lbf

FOR DISCUSSION ONLY