The Timken Company
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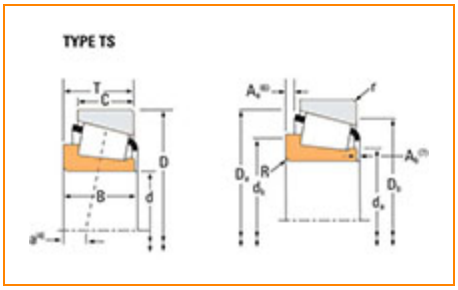
Part Number 593, Tapered Roller Bearings - Single Cones - Imperial

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	595
Cone Part Number	593
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)[1]	84600 lbf 376000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)[2]	21900 lbf 97500 N

Dimensions

d - Cone Bore	3 1/2 in 88.9 mm
B - Cone Width	1.4300 in 36.322 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[3]	0.140 in 3.6 mm
da - Cone Frontface Backing Diameter	3.86 in 98 mm
db - Cone Backface Backing Diameter	4.09 in 104 mm
Ab - Cage-Cone Frontface Clearance	0.09 in 2.3 mm
Aa - Cage-Cone Backface Clearance	0.15 in 3.8 mm
a - Effective Center Location[4]	-0.1 in -2.5 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[5]	12600 lbf 56000 N
C1 - Dynamic Radial Rating (1 million revolutions)[6]	48600 lbf 216000 N
C0 - Static Radial Rating	71600 lbf 319000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[7]	9530 lbf 42400 N

Factors

K - Factor[8]	1.32
G1 - Heat Generation Factor (Roller-Raceway)	151
G2 - Heat Generation Factor (Rib-Roller End)	36.8
Cg - Geometry Factor[9]	0.142

[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.

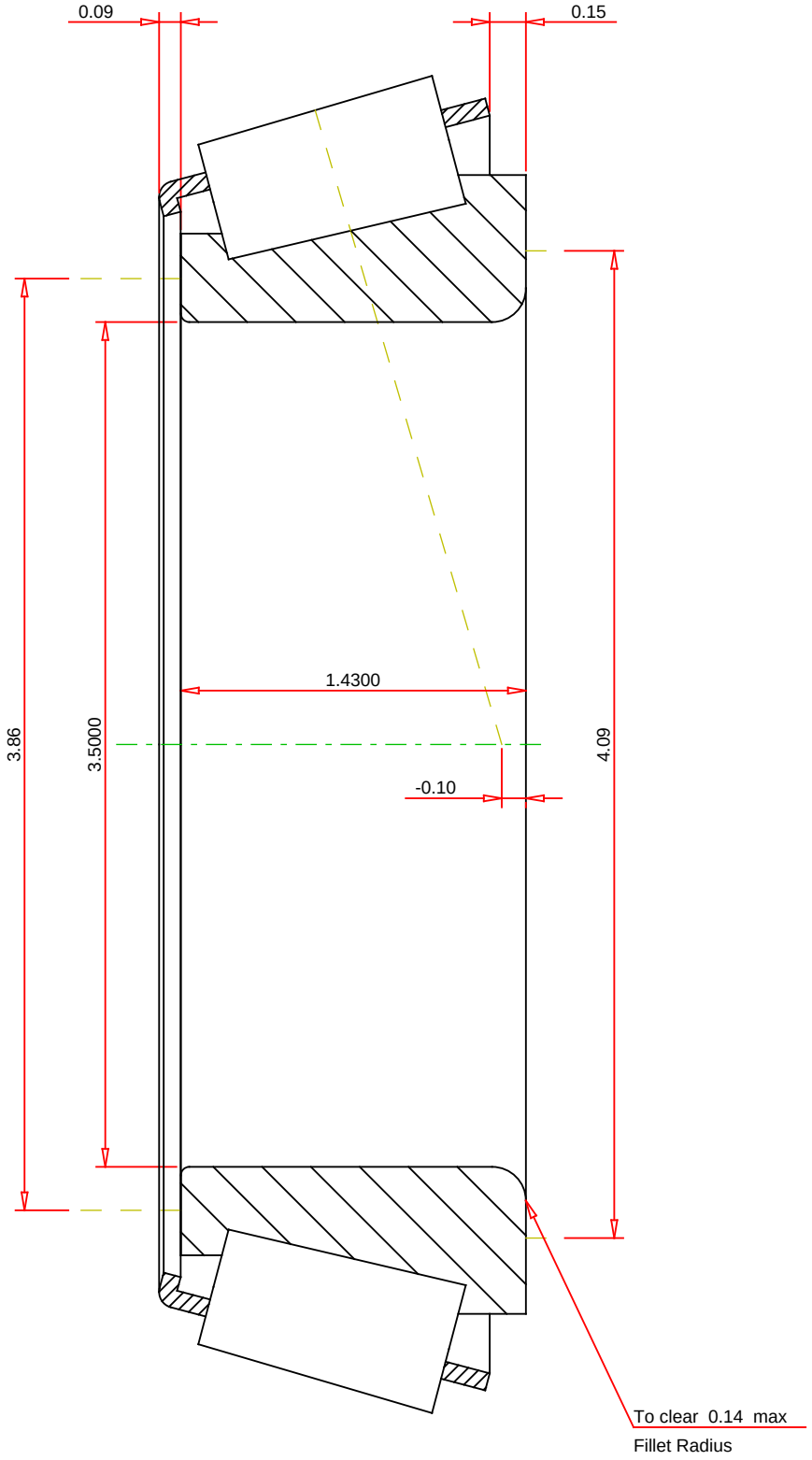
[5] Based on 90 x 10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

[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	24

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

593
Tapered Roller Bearings - Single Cones - Imperial

K Factor	1.32	
Dynamic Radial Rating - C90	12600	lbf
Dynamic Thrust Rating - Ca90	9530	lbf
Dynamic Radial Rating - C1	48600	lbf

FOR DISCUSSION ONLY