The Timken Company
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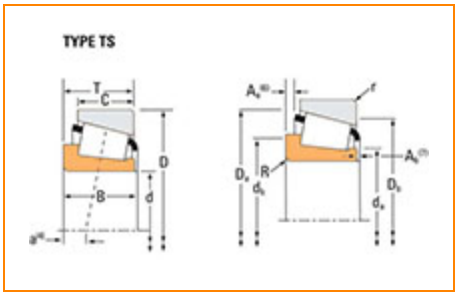
Part Number 3781, Tapered Roller Bearings - Single Cones - Imperial

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	3700
Cone Part Number	3781
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)[1]	47800 lbf 213000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)[2]	12400 lbf 55100 N

Dimensions

d - Bore	1.9375 in 49.213 mm
B - Cone Width	1.1930 in 30.302 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[3]	0.14 in 3.600 mm
da - Cone Frontface Backing Diameter	2.2 in 56 mm
db - Cone Backface Backing Diameter	2.44 in 62 mm
Ab - Cage-Cone Frontface Clearance	0.06 in 1.5 mm
Aa - Cage-Cone Backface Clearance	0.06 in 1.5 mm
a - Effective Center Location[4]	-0.32 in -8.1 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[5]	7120 lbf 31700 N
C1 - Dynamic Radial Rating (1 million revolutions)[6]	27500 lbf 122000 N
C0 - Static Radial Rating	34300 lbf 153000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[7]	4120 lbf 18300 N

Factors

K - Factor[8]	1.73
G1 - Heat Generation Factor (Roller-Raceway)	49.9
G2 - Heat Generation Factor (Rib-Roller End)	14.5
Cg - Geometry Factor[9]	0.0903

[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.

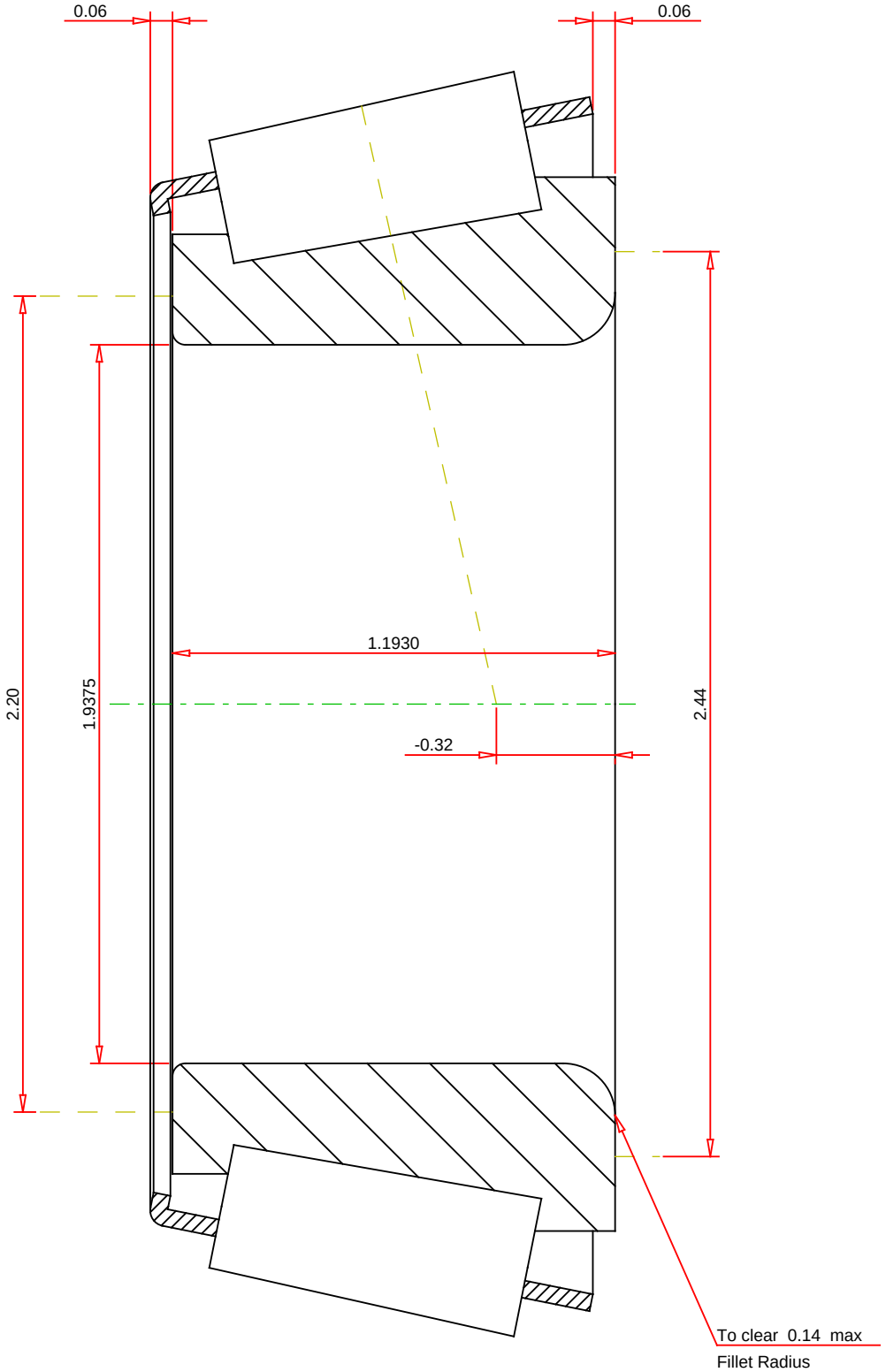
[5] Based on 90 x 10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

[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	18

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

3781
SINGLE TAPERED CONE

K Factor	1.73	
Dynamic Radial Rating - C90	7120	lbf
Dynamic Thrust Rating - Ca90	4120	lbf
Dynamic Radial Rating - C1	27500	lbf

FOR DISCUSSION ONLY