TIMKEN

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Part Number X30314, Tapered Roller Bearings - Single Cones - Metric

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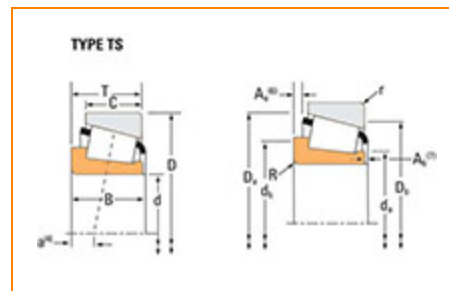
Specifications | Dimensions | Abutment and Fillet Dimensions | Basic Load Ratings | Factors

Specifications —

Series	30314
Cone Part Number	X30314
Design Units	METRIC
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)[1]	91100 lbf 405000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)[2]	23600 lbf 105000 N

Dimensions —

d - Bore	70 mm 2.7559 in
B - Cone Width	35.000 mm 1.3780 in
WPD	137.6 mm 5.42 in
DD	126.5 mm 4.98 in

Abutment and Fillet Dimensions　　　　　　　　　　　　　—

R - Cone Backface "To Clear" Radius[3]	3.050 mm 0.12 in
da - Cone Frontface Backing Diameter	80 mm 3.15 in
db - Cone Backface Backing Diameter	85 mm 3.35 in
Ab - Cage-Cone Frontface Clearance	4.83 mm 0.19 in
Aa - Cage-Cone Backface Clearance	3.05 mm 0.12 in
a - Effective Center Location[4]	-8.1 mm -0.32 in

Basic Load Ratings　　　　　　　　　　　　　—

C90 - Dynamic Radial Rating (90 million revolutions)[5]	60300 N 13600 lbf
C1 - Dynamic Radial Rating (1 million revolutions)[6]	233000 N 52300 lbf
C0 - Static Radial Rating	276000 N 62000 lbf

C_{a90} - Dynamic Thrust Rating (90 million revolutions)[7]	35600 N 8010 lbf

Factors

K - Factor[8]	1.69
G1 - Heat Generation Factor (Roller-Raceway)	102.4
G2 - Heat Generation Factor (Rib-Roller End)	27.4
Cg - Geometry Factor[9]	0.0783

[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 a3l.

4.8   3.0

80.0   70.000   35.000   85.0

-8.1

To clear 3.0 max
Fillet Radius
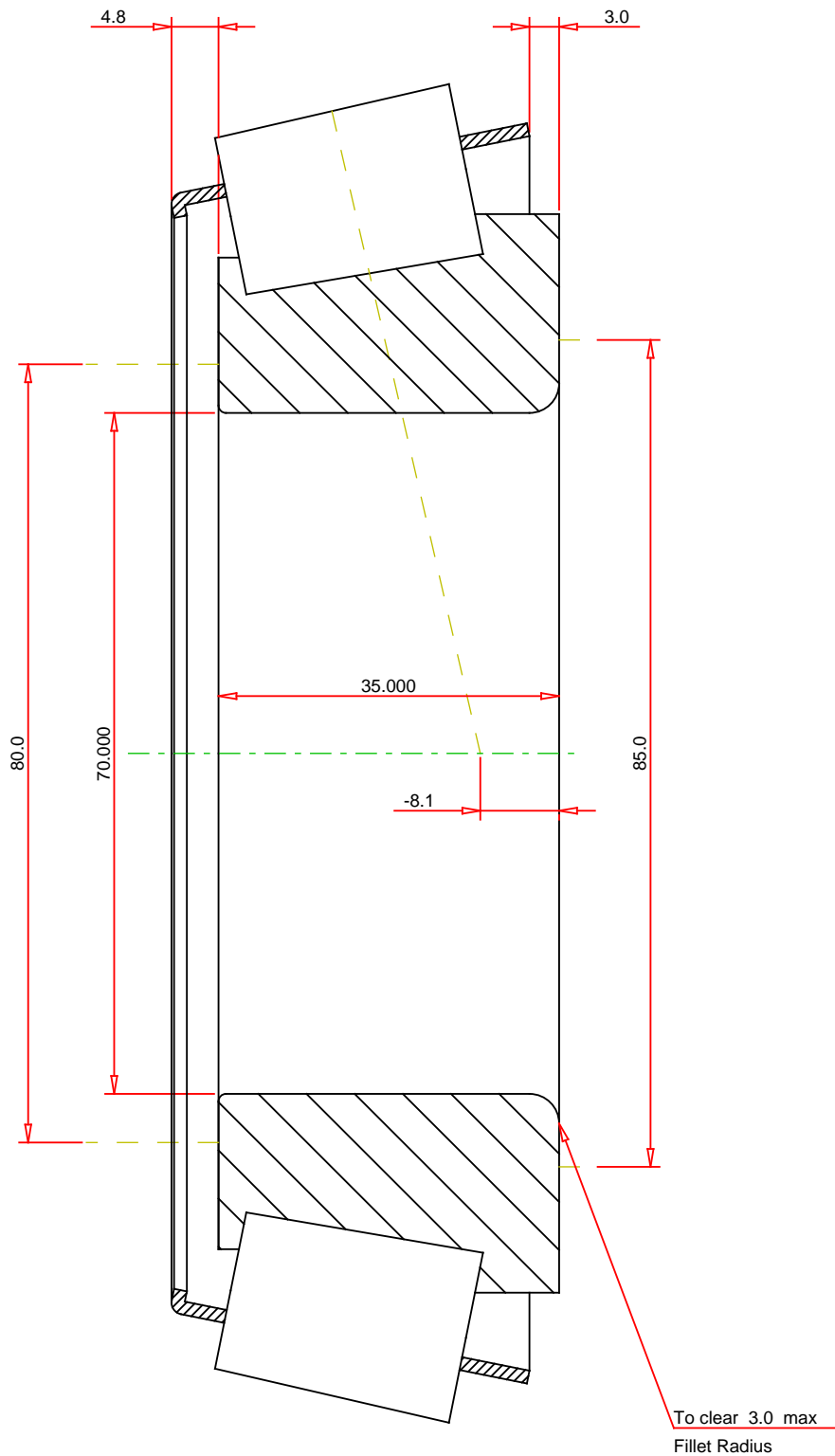
METRIC UNITS

Number of Rollers Per Row	15

TIMKEN ®

X30314
SINGLE TAPERED CONE

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

K Factor	1.69	
Dynamic Radial Rating - C90	60300	N
Dynamic Thrust Rating - Ca90	35600	N
Dynamic Radial Rating - C1	233000	N

FOR DISCUSSION ONLY