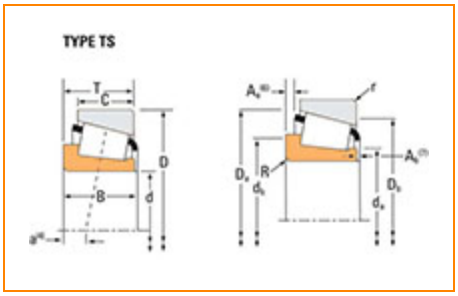
The Timken Company
4500 Mt Pleasant St. NW
N. Canton, OH 44720
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E-Mail: CustomerCAD@timken.com • **Web site:** www.timken.com

Part Number M224749, 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	M224700
Cone Part Number	M224749
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)[1]	95700 lbf 426000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)[2]	24800 lbf 110000 N

Dimensions

d - Bore	4.7500 in 120.650 mm
B - Cone Width	1.4375 in 36.513 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[3]	0.14 in 3.600 mm
da - Cone Frontface Backing Diameter	5.08 in 129 mm
db - Cone Backface Backing Diameter	5.31 in 135 mm
Ab - Cage-Cone Frontface Clearance	0.04 in 1 mm
Aa - Cage-Cone Backface Clearance	0.14 in 3.6 mm
a - Effective Center Location[4]	-0.14 in -3.6 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[5]	14200 lbf 63400 N
C1 - Dynamic Radial Rating (1 million revolutions)[6]	54900 lbf 244000 N
C0 - Static Radial Rating	94900 lbf 422000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[7]	8110 lbf 36100 N

Factors

K - Factor[8]	1.76
G1 - Heat Generation Factor (Roller-Raceway)	279.1
G2 - Heat Generation Factor (Rib-Roller End)	86.6
Cg - Geometry Factor[9]	0.158

[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.

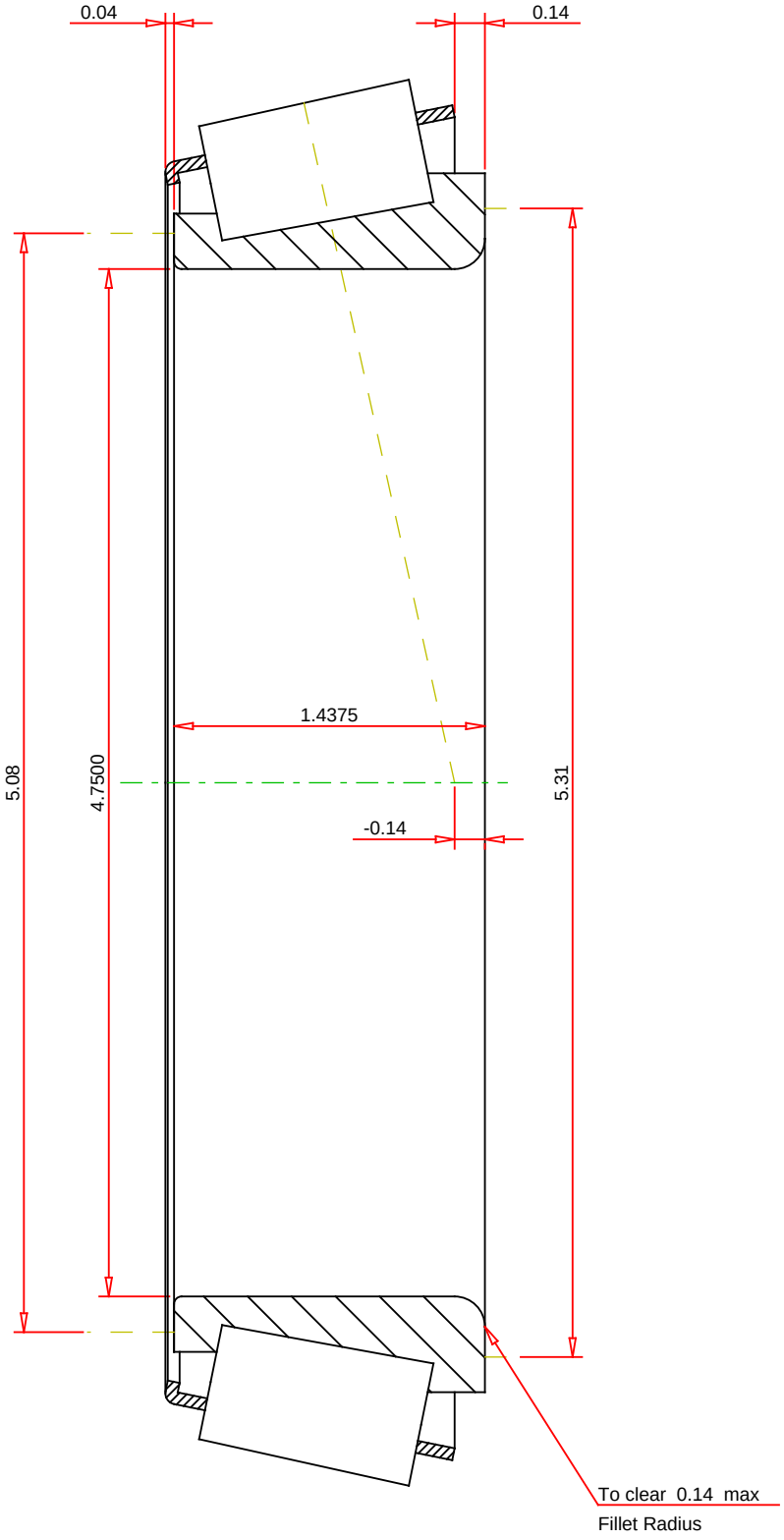
[5] Based on 90 x 10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

[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	33

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

M224749
SINGLE TAPERED CONE

K Factor	1.76	
Dynamic Radial Rating - C90	14200	lbf
Dynamic Thrust Rating - Ca90	8110	lbf
Dynamic Radial Rating - C1	54900	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.

FOR DISCUSSION ONLY