



The Timken Company

4500 Mt Pleasant St. NW

N. Canton, OH 44720

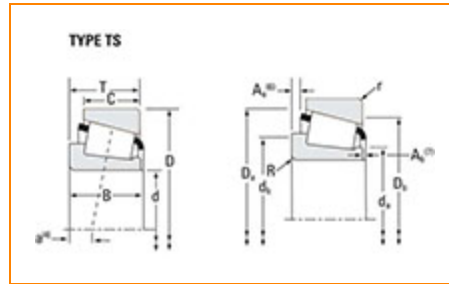
Phone: (234) 262-3000

E-Mail: CustomerCAD@timken.com • **Web site:** www.timken.com

Part Number HM220149 - HM220110, Tapered Roller Bearings - TS (Tapered Single)

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	HM220100
Cone Part Number	HM220149
Cup Part Number	HM220110
Design Unit	Inch
Cage Material	Stamped Steel

Dimensions



d - Bore	3.9360 in 99.974 mm
D - Cup Outer Diameter	6.1801 in 156.975 mm
B - Cone Width	1.6535 in 41.999 mm
C - Cup Width	1.3386 in 34 mm
T - Bearing Width	1.6535 in 41.999 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius¹	0.310 in 7.870 mm
r - Cup Backface "To Clear" Radius²	0.140 in 3.56 mm
da - Cone Frontface Backing Diameter	4.25 in 108 mm
db - Cone Backface Backing Diameter	4.84 in 122.9 mm
Da - Cup Frontface Backing Diameter	5.96 in 151.38 mm
Db - Cup Backface Backing Diameter	5.59 in 141.99 mm
Ab - Cage-Cone Frontface Clearance	0.12 in 3 mm
Aa - Cage-Cone Backface Clearance	0.07 in 1.8 mm
a - Effective Center Location³	-0.34 in -8.6 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁴	17500 lbf 77800 N
C1 - Dynamic Radial Rating (1 million revolutions)⁵	67500 lbf 300000 N
C0 - Static Radial Rating	98500 lbf 438000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁶	9960 lbf 44300 N

Factors

K - Factor⁷	1.76
e - ISO Factor⁸	0.33
Y - ISO Factor⁹	1.8
G1 - Heat Generation Factor (Roller-Raceway)	203.6
G2 - Heat Generation Factor (Rib-Roller End)	45.9
C_g - Geometry Factor¹⁰	0.0981

¹ These maximum fillet radii will be cleared by the bearing corners.

² These maximum fillet radii will be cleared by the bearing corners.

³ Negative value indicates effective center inside cone backface.

⁴ 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.

⁵ Based on 1×10^6 revolutions L_{10} life, for the ISO life calculation method.

⁶ 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.

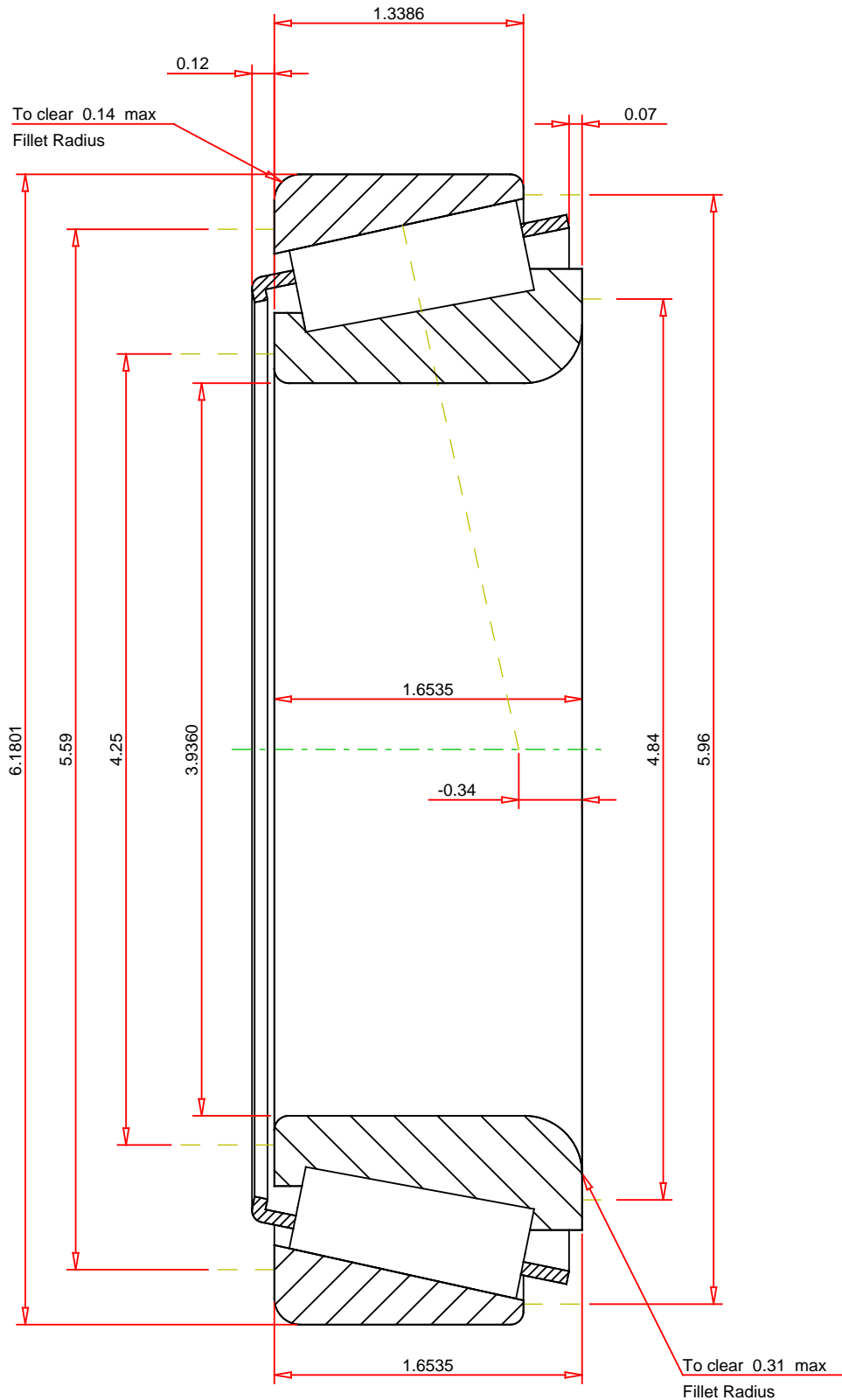
⁷ These factors apply for both inch and metric calculations. Consult your Timken representative for instruction

on use.

⁸ These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

⁹ These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

¹⁰ Geometry constant for Lubrication Life Adjustment Factor a_3 .



IMPERIAL UNITS

ISO Factor - e 0.33
ISO Factor - Y 1.8
Bearing Weight 6.1 lbf
Number of Rollers Per Row 22
Effective Center Location -0.34 inch

TIMKEN®

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NORTH CANTON, OHIO USA

HM220149 - HM220110
Tapered Roller Bearings - TS (Tapered Single)
Imperial

K Factor	1.76
Dynamic Radial Rating - C90	17500 lbf
Dynamic Thrust Rating - Ca90	9960 lbf
Static Radial Rating - C0	98500 lbf
Dynamic Radial Rating - C1	67500 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