



The Timken Company

4500 Mt Pleasant St. NW

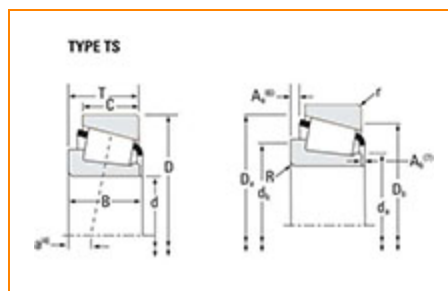
N. Canton, OH 44720

Phone: (234) 262-3000

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

Part Number HM81649 - HM81610, 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	HM81600
Cone Part Number	HM81649
Cup Part Number	HM81610
Design Units	Imperial
Bearing Weight	0.20 Kg 0.4 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	15.987 mm 0.6294 in
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D - Cup Outer Diameter	46.975 mm 1.8494 in
B - Cone Width	21.001 mm 0.8268 in
C - Cup Width	15.999 mm 0.6299 in
T - Bearing Width	21.001 mm 0.8268 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius¹	1.020 mm 0.04 in
r - Cup Backface "To Clear" Radius²	2.03 mm 0.08 in
da - Cone Frontface Backing Diameter	22.86 mm 0.9 in
db - Cone Backface Backing Diameter	27.43 mm 1.08 in
Da - Cup Frontface Backing Diameter	43.43 mm 1.71 in
Db - Cup Backface Backing Diameter	37.59 mm 1.48 in
Ab - Cage-Cone Frontface Clearance	2 mm 0.08 in
Aa - Cage-Cone Backface Clearance	0.8 mm 0.03 in
a - Effective Center Location³	-6.1 mm -0.24 in

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁴	2340 lbf 10400 N
C1 - Dynamic Radial Rating (1 million revolutions)⁵	9020 lbf 40100 N
C0 - Static Radial Rating	8840 lbf 39300 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁶	2190 lbf 9720 N

Factors

K - Factor⁷	1.07
e - ISO Factor⁸	0.55
Y - ISO Factor⁹	1.1
G1 - Heat Generation Factor (Roller-Raceway)	6.1
G2 - Heat Generation Factor (Rib-Roller End)	4.57
Cg - Geometry Factor¹⁰	0.0526

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.

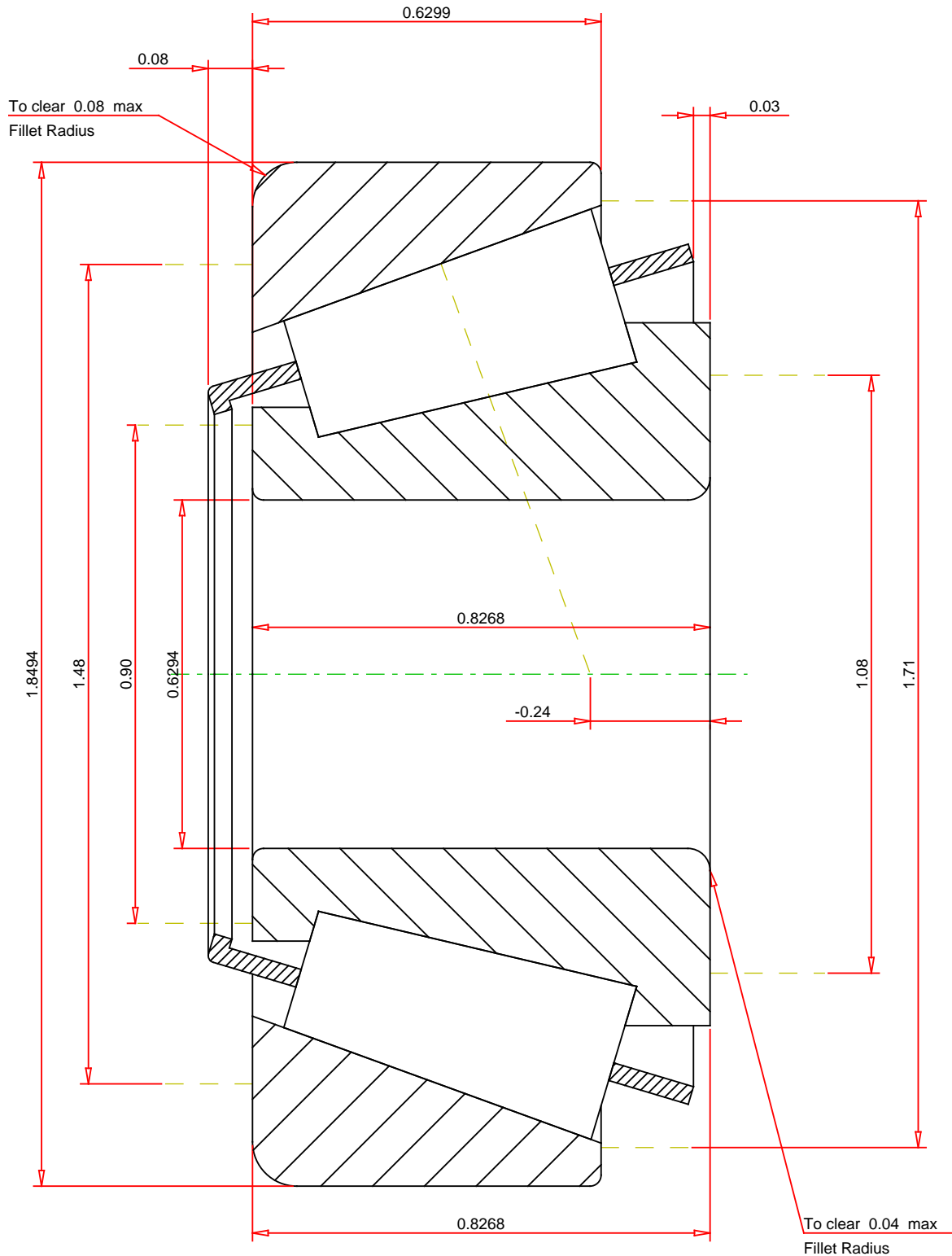
⁶ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values for a single-row, $C_{90(2)}$ is the two-row radial value.

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 0.55
 ISO Factor - Y 1.1
 Bearing Weight 0.4 lb
 Number of Rollers Per Row 12
 Effective Center Location -0.24 inch

TIMKEN®

THE TIMKEN COMPANY
 NORTH CANTON, OHIO USA

HM81649 - HM81610
TS BEARING ASSEMBLY

K Factor 1.07
 Dynamic Radial Rating - C90 2340 lbf
 Dynamic Thrust Rating - Ca90 2190 lbf
 Static Radial Rating - C0 8840 lbf
 Dynamic Radial Rating - C1 9020 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