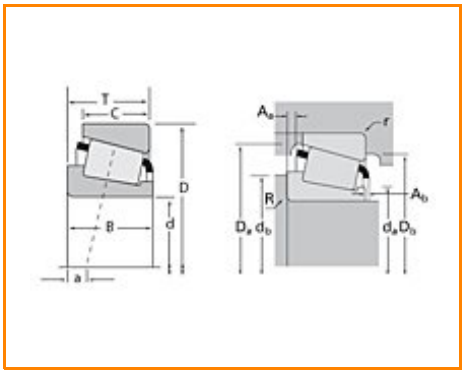
The Timken Company
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Timken Part Number M231649 - M231610, Tapered Roller Bearings - TS (Tapered Single) Imperial

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	M231600
Cone Part Number	M231649
Cup Part Number	M231610
Design Units	Imperial
Bearing Weight	5.70 Kg 12.600 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	152.400 mm 6.0000 in
D - Cup Outer Diameter	222.250 mm 8.7500 in
B - Cone Width	46.83 mm 1.8437 in
C - Cup Width	34.925 mm 1.3750 in
T - Bearing Width	46.830 mm 1.8437 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	3.560 mm 0.14 in
r - Cup Backface "To Clear" Radius[2]	1.52 mm 0.06 in
da - Cone Frontface Backing Diameter	163.07 mm 7.32 in
db - Cone Backface Backing Diameter	168.91 mm 6.65 in
Da - Cup Frontface Backing Diameter	214.10 mm 8.43 in
Db - Cup Backface Backing Diameter	207.01 mm 8.15 in
Ab - Cage-Cone Frontface Clearance	2.3 mm 0.09 in
Aa - Cage-Cone Backface Clearance	5.3 mm 0.21 in
a - Effective Center Location[3]	-6.10 mm -0.24 in

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[4]	90400 N 20300 lbf
C1 - Dynamic Radial Rating (1 million revolutions)[5]	349000 N 78400 lbf
C0 - Static Radial Rating	668000 N 150000 lbf
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	51500 N 11600 lbf

Factors

K - Factor[7]	1.76
e - ISO Factor[8]	0.33
Y - ISO Factor[9]	1.8
G1 - Heat Generation Factor (Roller-Raceway)	486
G2 - Heat Generation Factor (Rib-Roller End)	120.1
Cg - Geometry Factor	0.13

[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 x 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 x 10^6 revolutions L_{10} life, for the ISO life calculation method.

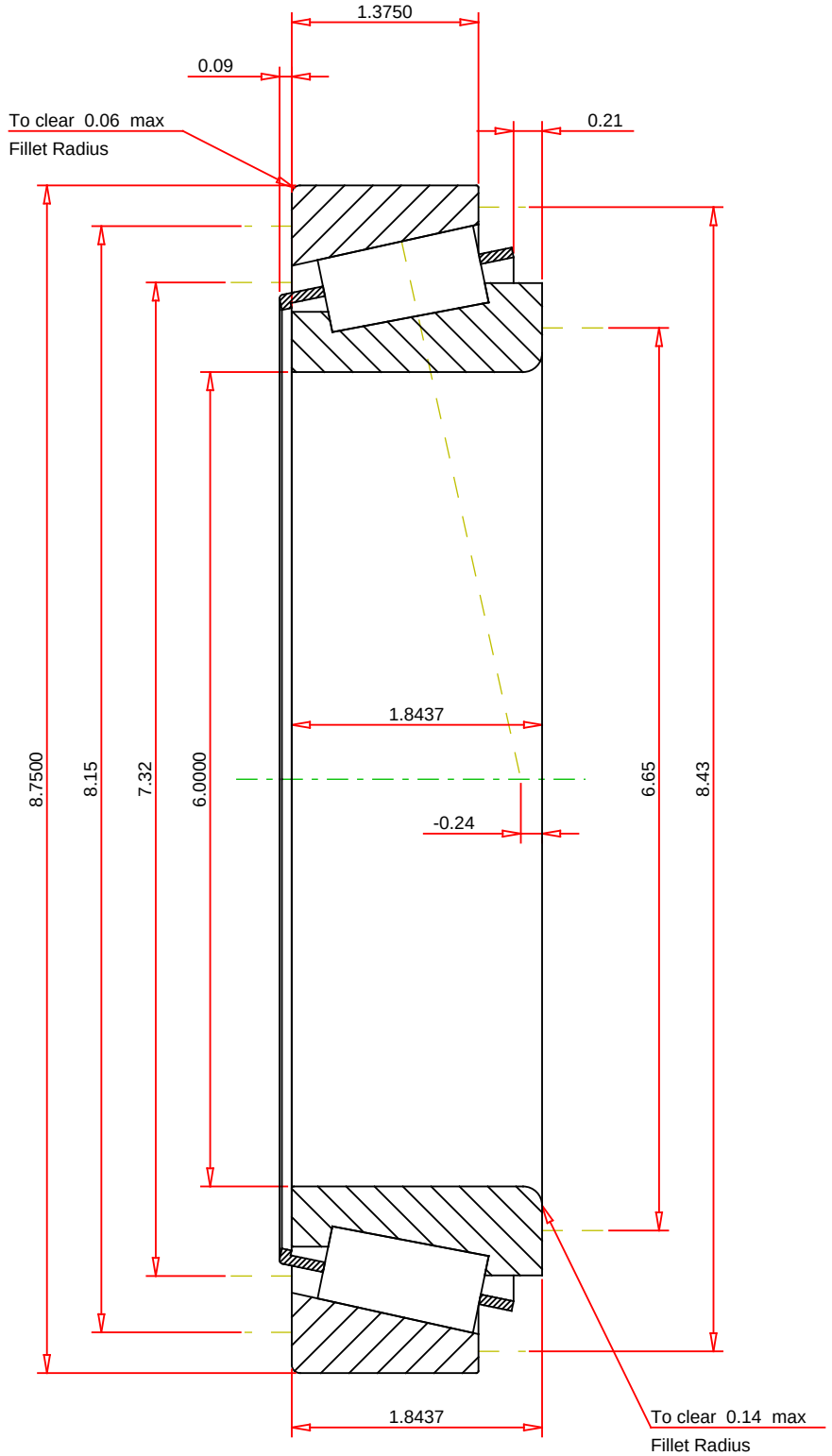
[6] Based on 90 x 10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values for a single-row, $C_{90(2)}$ is the two-row radial value.

[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.



IMPERIAL UNITS

ISO Factor - e	0.33	
ISO Factor - Y	1.8	
Bearing Weight	12.6	lb
Number of Rollers Per Row	32	
Effective Center Location	-0.24	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

M231649 - M231610
TS BEARING ASSEMBLY

K Factor	1.76	
Dynamic Radial Rating - C90	90400	lbf
Dynamic Thrust Rating - Ca90	51500	lbf
Static Radial Rating - C0	668000	lbf
Dynamic Radial Rating - C1	349000	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