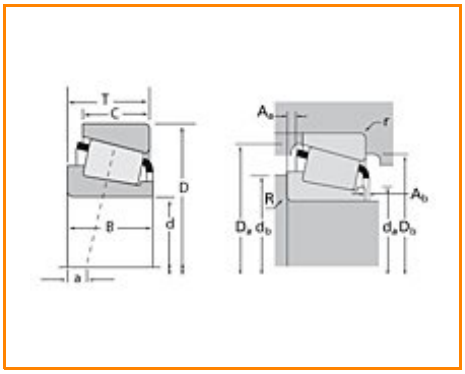
The Timken Company
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Timken Part Number M12649 - M12610, Tapered Roller Bearings - TS (Tapered Single) Imperial

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	M12600
Cone Part Number	M12649
Cup Part Number	M12610
Design Units	Imperial
Bearing Weight	0.200 Kg 0.4 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	21.430 mm 0.8437 in
D - Cup Outer Diameter	50.005 mm 1.9687 in
B - Cone Width	18.288 mm 0.7200 in
C - Cup Width	13.970 mm 0.5500 in
T - Bearing Width	17.526 mm 0.6900 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	1.270 mm 0.050 in
r - Cup Backface "To Clear" Radius[2]	1.27 mm 0.050 in
da - Cone Frontface Backing Diameter	27.43 mm 1.08 in
db - Cone Backface Backing Diameter	29.46 mm 1.16 in
Da - Cup Frontface Backing Diameter	46.48 mm 1.83 in
Db - Cup Backface Backing Diameter	43.94 mm 1.73 in
Ab - Cage-Cone Frontface Clearance	1.8 mm 0.07 in
Aa - Cage-Cone Backface Clearance	-0.3 mm -0.01 in
a - Effective Center Location[3]	-6.4 mm -0.25 in

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[4]	13500 N 3040 lbf
C1 - Dynamic Radial Rating (1 million revolutions)[5]	52200 N 11700 lbf
C0 - Static Radial Rating	43500 N 9780 lbf
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	6440 N 1450 lbf

Factors

K - Factor[7]	2.1
e - ISO Factor[8]	0.28
Y - ISO Factor[9]	2.16
G1 - Heat Generation Factor (Roller-Raceway)	9.1
G2 - Heat Generation Factor (Rib-Roller End)	5.63
Cg - Geometry Factor	0.0479

[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.

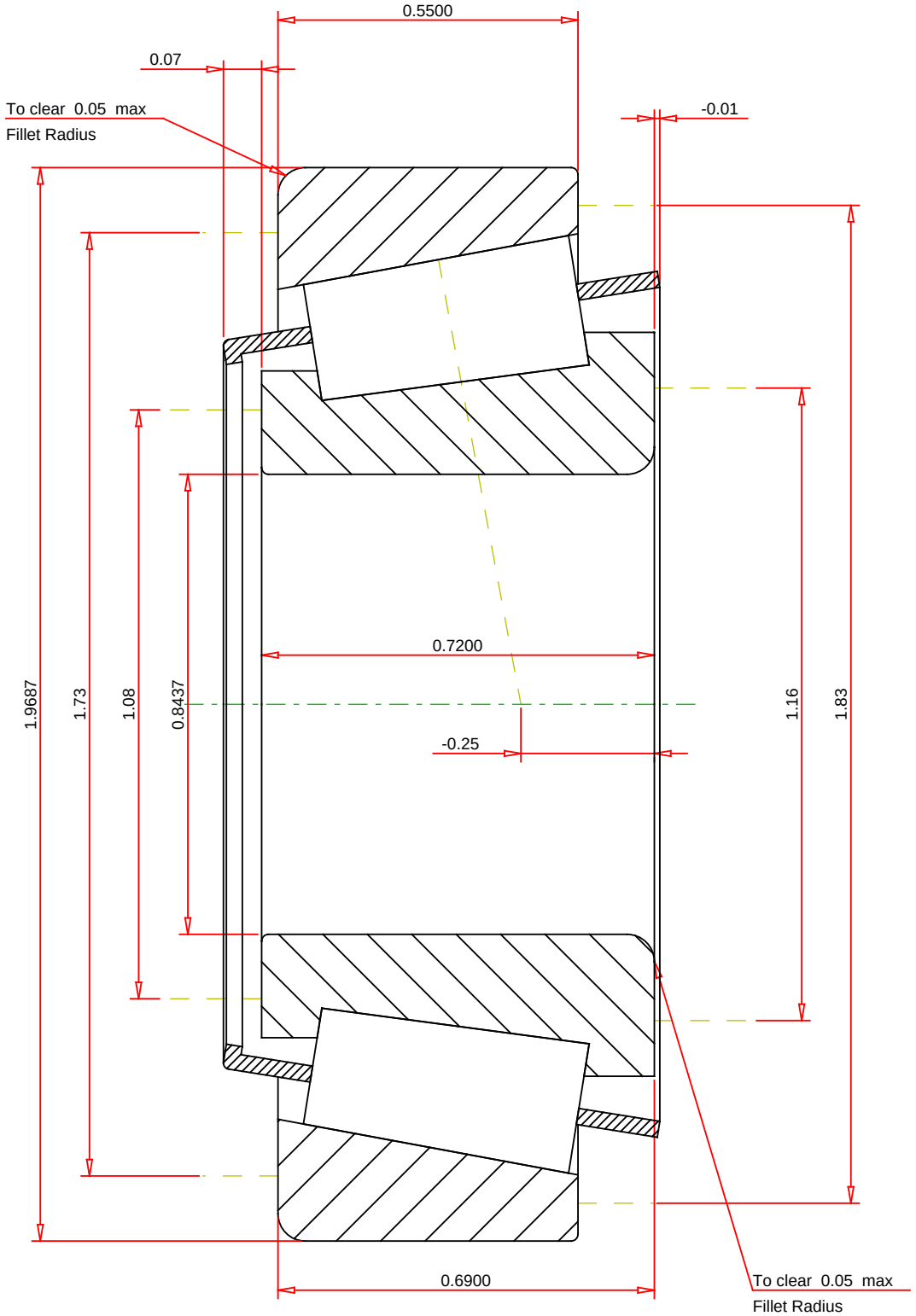
[6] Based on 90 x 10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values for a single-row, $C_{90(2)}$ is the two-row radial value.

[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	0.28	
ISO Factor - Y	2.16	
Bearing Weight	0.4	lb
Number of Rollers Per Row	14	
Effective Center Location	-0.25	inch

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

M12649 - M12610
TS BEARING ASSEMBLY

K Factor	2.1	
Dynamic Radial Rating - C90	13500	lbf
Dynamic Thrust Rating - Ca90	6440	lbf
Static Radial Rating - C0	43500	lbf
Dynamic Radial Rating - C1	52200	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