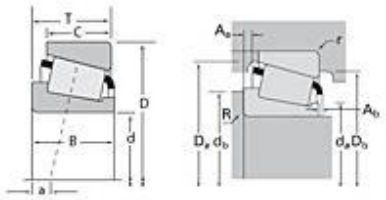
TIMKEN

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Timken Part Number HM212047 - HM212011, 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	HM212000
Cone Part Number	HM212047
Cup Part Number	HM212011
Design Units	Imperial
Bearing Weight	4.30 lb 1.900 Kg
Cage Type	Stamped Steel

Dimensions

d - Bore	2.5000 in 63.500 mm
D - Cup Outer Diameter	4.8125 in 122.238 mm

B - Cone Width	1.5100 in 38.354 mm
C - Cup Width	1.1700 in 29.718 mm
T - Bearing Width	1.5000 in 38.100 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	0.280 in 7.110 mm
r - Cup Backface "To Clear" Radius[2]	0.130 in 3.30 mm
da - Cone Frontface Backing Diameter	3.52 in 72.90 mm
db - Cone Backface Backing Diameter	3.43 in 87.12 mm
Da - Cup Frontface Backing Diameter	4.60 in 116.10 mm
Db - Cup Backface Backing Diameter	4.25 in 107.95 mm
Ab - Cage-Cone Frontface Clearance	0.15 in 3.8 mm
Aa - Cage-Cone Backface Clearance	0.07 in 1.8 mm
a - Effective Center Location[3]	-0.43 in -10.90 mm

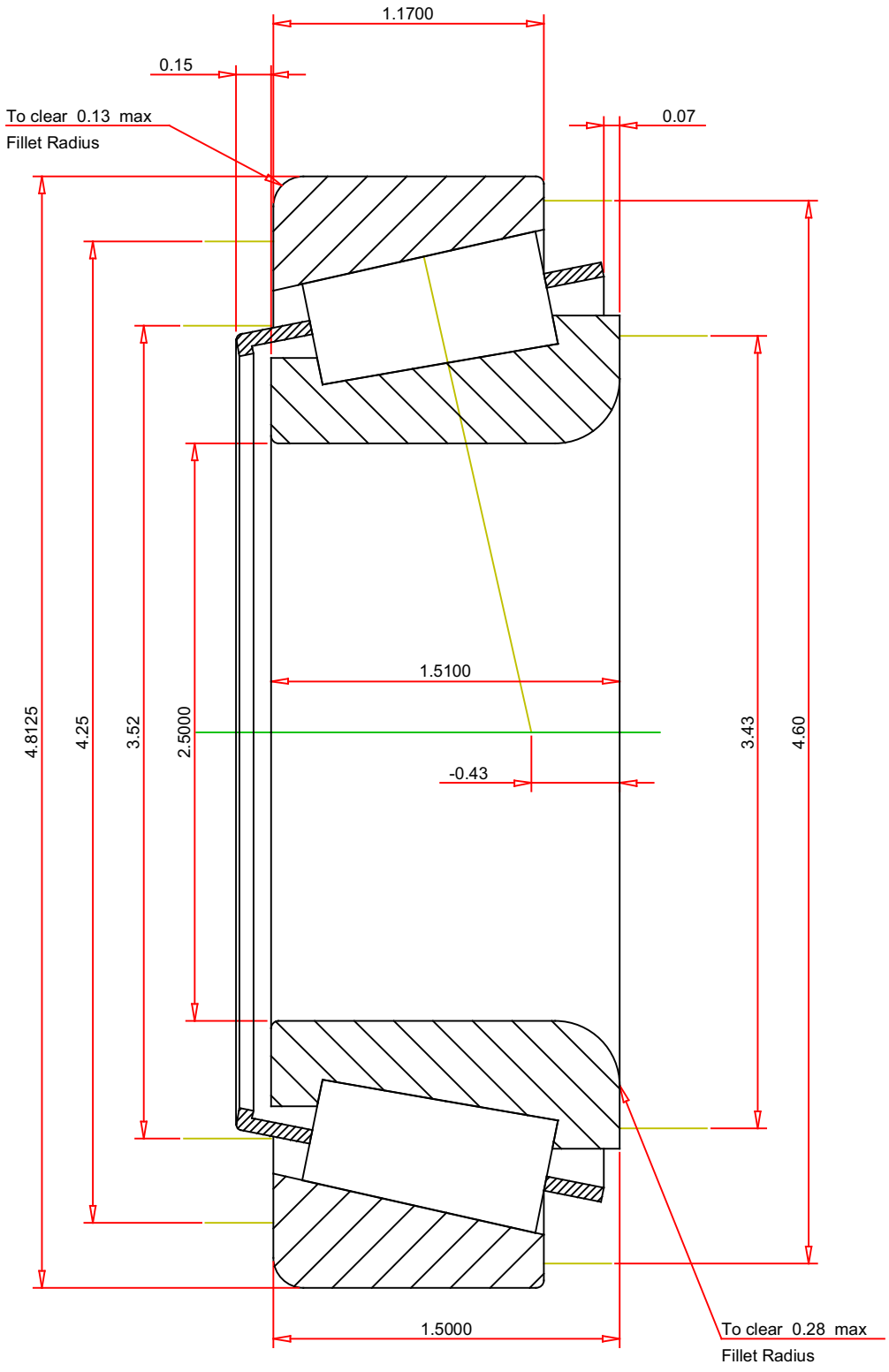
Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[4]	15600 lbf 69200 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	60000 lbf 267000 N
C0 - Static Radial Rating	62700 lbf 279000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	8990 lbf 40000 N

Factors

K - Factor[7]	1.73
e - ISO Factor[8]	0.34
Y - ISO Factor[9]	1.78
G1 - Heat Generation Factor (Roller-Raceway)	92.2
G2 - Heat Generation Factor (Rib-Roller End)	18.1
Cg - Geometry Factor	0.0759

[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	0.34	
ISO Factor - Y	1.78	
Bearing Weight	4.3	lb
Number of Rollers Per Row	17	
Effective Center Location	-0.43	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

HM212047 - HM212011
TS BEARING ASSEMBLY

K Factor	1.73	
Dynamic Radial Rating - C90	15600	lbf
Dynamic Thrust Rating - Ca90	8990	lbf
Static Radial Rating - C0	62700	lbf
Dynamic Radial Rating - C1	60000	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