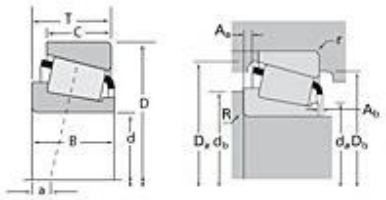
TIMKEN

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Timken Part Number HM88542 - HM88510, 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	HM88500
Cone Part Number	HM88542
Cup Part Number	HM88510
Design Units	Imperial
Bearing Weight	1.30 lb 0.600 Kg
Cage Type	Stamped Steel

Dimensions

d - Bore	1.2500 in 31.750 mm
D - Cup Outer Diameter	2.8750 in 73.025 mm

B - Cone Width	1.0938 in 27.783 mm
C - Cup Width	0.9063 in 23.020 mm
T - Bearing Width	1.1563 in 29.370 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	0.050 in 1.270 mm
r - Cup Backface "To Clear" Radius[2]	0.130 in 3.30 mm
da - Cone Frontface Backing Diameter	1.68 in 42.67 mm
db - Cone Backface Backing Diameter	1.79 in 45.47 mm
Da - Cup Frontface Backing Diameter	2.80 in 71.10 mm
Db - Cup Backface Backing Diameter	2.32 in 58.93 mm
Ab - Cage-Cone Frontface Clearance	0.1 in 2.5 mm
Aa - Cage-Cone Backface Clearance	0.06 in 1.5 mm
a - Effective Center Location[3]	-0.22 in -5.60 mm

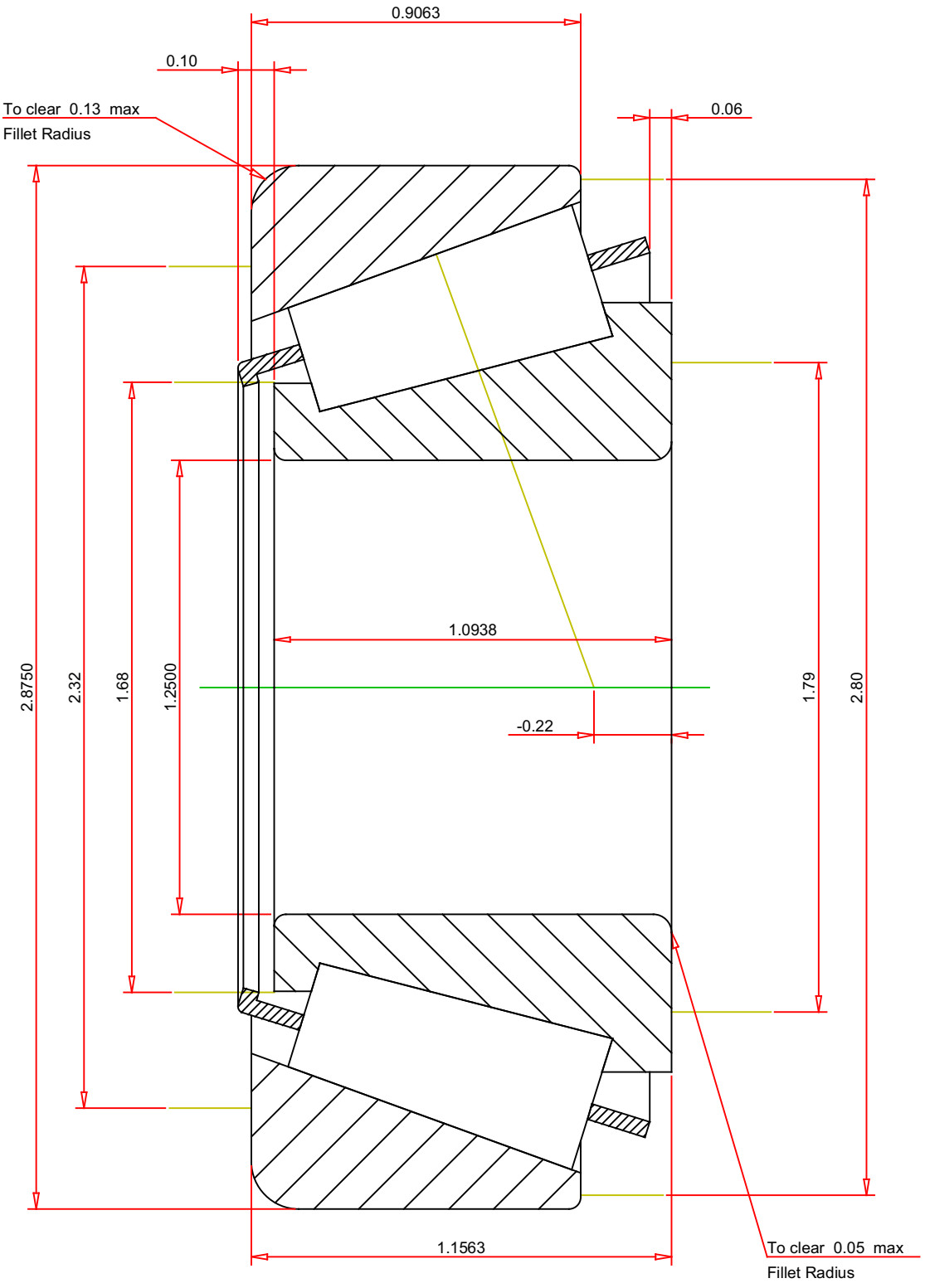
Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[4]	6010 lbf 26700 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	23200 lbf 103000 N
C0 - Static Radial Rating	24900 lbf 111000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	5620 lbf 25000 N

Factors

K - Factor[7]	1.07
e - ISO Factor[8]	0.55
Y - ISO Factor[9]	1.1
G1 - Heat Generation Factor (Roller-Raceway)	26.3
G2 - Heat Generation Factor (Rib-Roller End)	11.7
Cg - Geometry Factor	0.0857

[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	0.55	
ISO Factor - Y	1.1	
Bearing Weight	1.3	lb
Number of Rollers Per Row	18	
Effective Center Location	-0.22	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

HM88542 - HM88510
TS BEARING ASSEMBLY

K Factor	1.07	
Dynamic Radial Rating - C90	6010	lbf
Dynamic Thrust Rating - Ca90	5620	lbf
Static Radial Rating - C0	24900	lbf
Dynamic Radial Rating - C1	23200	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