TIMKEN

The Timken Company
4500 Mt Pleasant St. NW
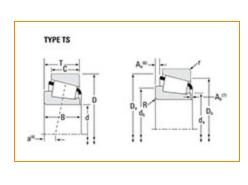N. Canton, OH 44720
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Part Number HM212047 - HM212011, Tapered Roller Bearings - TS (Tapered Single) Imperial

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.

TIMKEN®
REPRESENTATIVE IMAGE

TYPE TS

Specifications | Dimensions | Abutment and Fillet Dimensions | Basic Load Ratings | Factors

Specifications −

Series	HM212000
Cone Part Number	HM212047
Cup Part Number	HM212011
Design Unit	Inch
Cage Material	Stamped Steel

Dimensions −

d - Bore	63.500 mm
- Cup Outer Diameter	122.238 mm

B - Cone Width	38.354 mm
C - Cup Width	29.718 mm
T - Bearing Width	38.100 mm

Abutment and Fillet Dimensions −

R - Cone Backface "To Clear" Radius[1]	7.110 mm
r - Cup Backface "To Clear" Radius[2]	3.3 mm
da - Cone Frontface Backing Diameter	73 mm
db - Cone Backface Backing Diameter	87 mm
Da - Cup Frontface Backing Diameter	116.10 mm
Db - Cup Backface Backing Diameter	107.95 mm
Ab - Cage-Cone Frontface Clearance	3.8 mm
Aa - Cage-Cone Backface Clearance	1.8 mm
a - Effective Center Location[3]	-10.9 mm

Basic Load Ratings −

C90 - Dynamic Radial Rating (90 million revolutions)[4]	69200 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	267000 N

C0 - Static Radial Rating	279000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	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[10]	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 90×10^6 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.
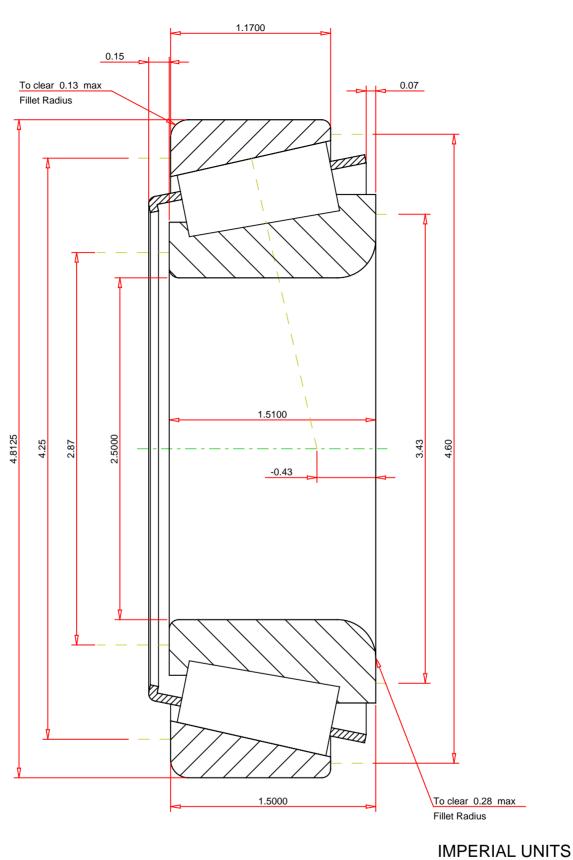
[6] Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values for a single-row, $C_{90(2)}$ is the two-row radial value.

[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 a3l.

1.1700

0.15

To clear 0.13 max
Fillet Radius

0.07

4.8125

4.25

2.87

2.5000

1.5100

3.43

4.60

-0.43

1.5000

To clear 0.28 max
Fillet Radius

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
Tapered Roller Bearings - TS (Tapered Single)
Imperial

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