# TIMKEN

The Timken Company
4500 Mt Pleasant St. NW
N. Canton, OH 44720
Phone: (234) 262-3000
E-Mail: CustomerCAD@timken.com • **Web site:** www.timken.com

Timken Part Number HM903249 - HM903210, 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.
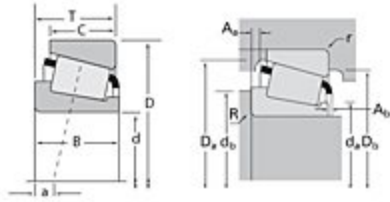
Specifications | Dimensions | Abutment and Fillet Dimensions | Basic Load Ratings | Factors

Specifications

Series	HM903200
Cone Part Number	HM903249
Cup Part Number	HM903210
Design Units	Imperial
Bearing Weight	1.000 Kg 2.20 lb
Cage Type	Stamped Steel

Dimensions

d – Bore	44.450 mm 1.7500 in
D – Cup Outer Diameter	95.250 mm 3.7500 in

B - Cone Width	28.575 mm 1.1250 in
C - Cup Width	22.225 mm 0.8750 in
T - Bearing Width	30.958 mm 1.2188 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]	0.76 mm 0.030 in
da - Cone Frontface Backing Diameter	54.10 mm 2.13 in
db - Cone Backface Backing Diameter	65.02 mm 2.56 in
Da - Cup Frontface Backing Diameter	91.90 mm 3.62 in
Db - Cup Backface Backing Diameter	81.03 mm 3.19 in
Ab - Cage-Cone Frontface Clearance	2.8 mm 0.11 in
Aa - Cage-Cone Backface Clearance	3 mm 0.12 in
a - Effective Center Location[3]	0.50 mm 0.02 in

Basic Load Ratings −

C90 - Dynamic Radial Rating (90 million revolutions)[4]	35400 N 7950 lbf
C1 - Dynamic Radial Rating (1 million revolutions)[5]	136000 N 30700 lbf
C0 - Static Radial Rating	132000 N 29700 lbf
C$_{a90}$ - Dynamic Thrust Rating (90 million revolutions)[6]	44800 N 10100 lbf

Factors

K - Factor[7]	0.79
e - ISO Factor[8]	0.74
Y - ISO Factor[9]	0.81
G1 - Heat Generation Factor (Roller–Raceway)	33.7
G2 - Heat Generation Factor (Rib–Roller End)	9.91
Cg - Geometry Factor	0.101

[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.
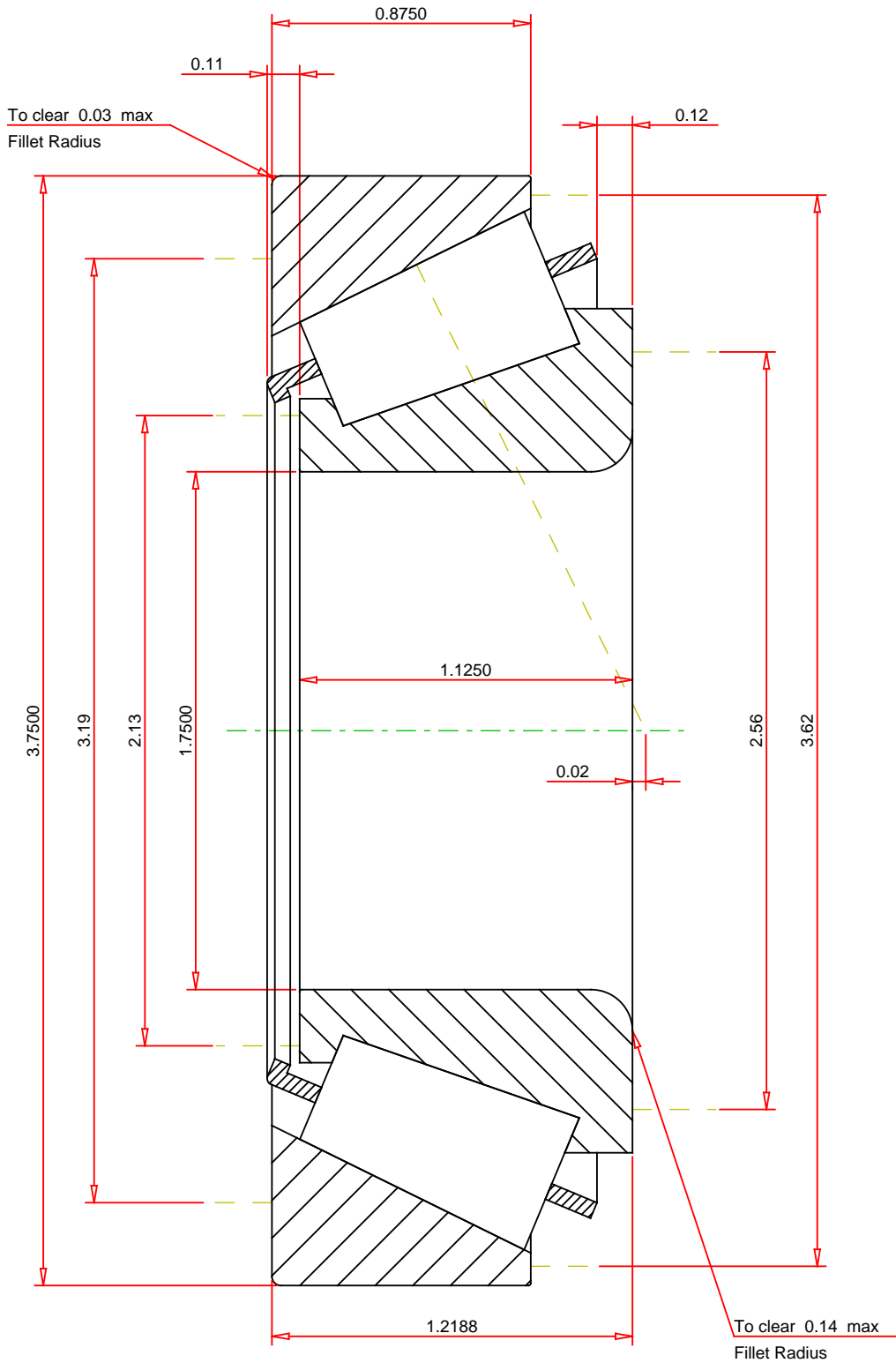
[5] Based on 1×10^6 revolutions L_{10} life, for the ISO life calculation method.

[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.

0.8750

0.11

To clear 0.03 max
Fillet Radius

0.12

3.7500

3.19

2.13

1.7500

1.1250

2.56

3.62

0.02

1.2188

To clear 0.14 max
Fillet Radius

IMPERIAL UNITS

ISO Factor - e	0.74	
ISO Factor - Y	0.81	
Bearing Weight	2.2	lb
Number of Rollers Per Row	16	
Effective Center Location	0.02	inch

TIMKEN ®

HM903249 - HM903210
TS BEARING ASSEMBLY

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

K Factor	0.79	
Dynamic Radial Rating - C90	35400	lbf
Dynamic Thrust Rating - Ca90	44800	lbf
Static Radial Rating - C0	132000	lbf
Dynamic Radial Rating - C1	136000	lbf

FOR DISCUSSION ONLY