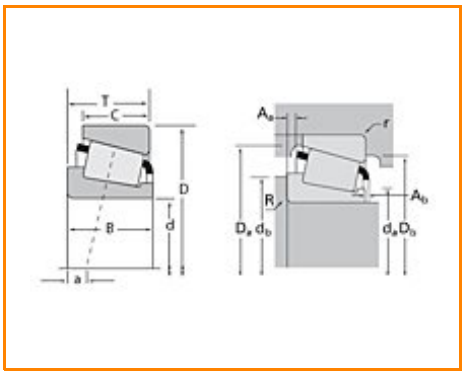
The Timken Company
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N. Canton, OH 44720
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E-Mail: CustomerCAD@timken.com • **Web site:** www.timken.com

Timken Part Number 13687 - 13620, 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	13600
Cone Part Number	13687
Cup Part Number	13620
Design Units	Imperial
Bearing Weight	0.300 Kg 0.60 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	38.1 mm 1.5 in

D - Cup Outer Diameter	69.012 mm 2.7170 in
B - Cone Width	19.050 mm 0.7500 in
C - Cup Width	15.083 mm 0.5938 in
T - Bearing Width	19.050 mm 0.7500 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	2.030 mm 0.080 in
r - Cup Backface "To Clear" Radius[2]	0.76 mm 0.030 in
da - Cone Frontface Backing Diameter	42.93 mm 1.69 in
db - Cone Backface Backing Diameter	46.48 mm 1.83 in
Da - Cup Frontface Backing Diameter	66.00 mm 2.60 in
Db - Cup Backface Backing Diameter	61.98 mm 2.44 in
Ab - Cage-Cone Frontface Clearance	1.3 mm 0.05 in
Aa - Cage-Cone Backface Clearance	0.5 mm 0.02 in
a - Effective Center Location[3]	-3 mm -0.12 in

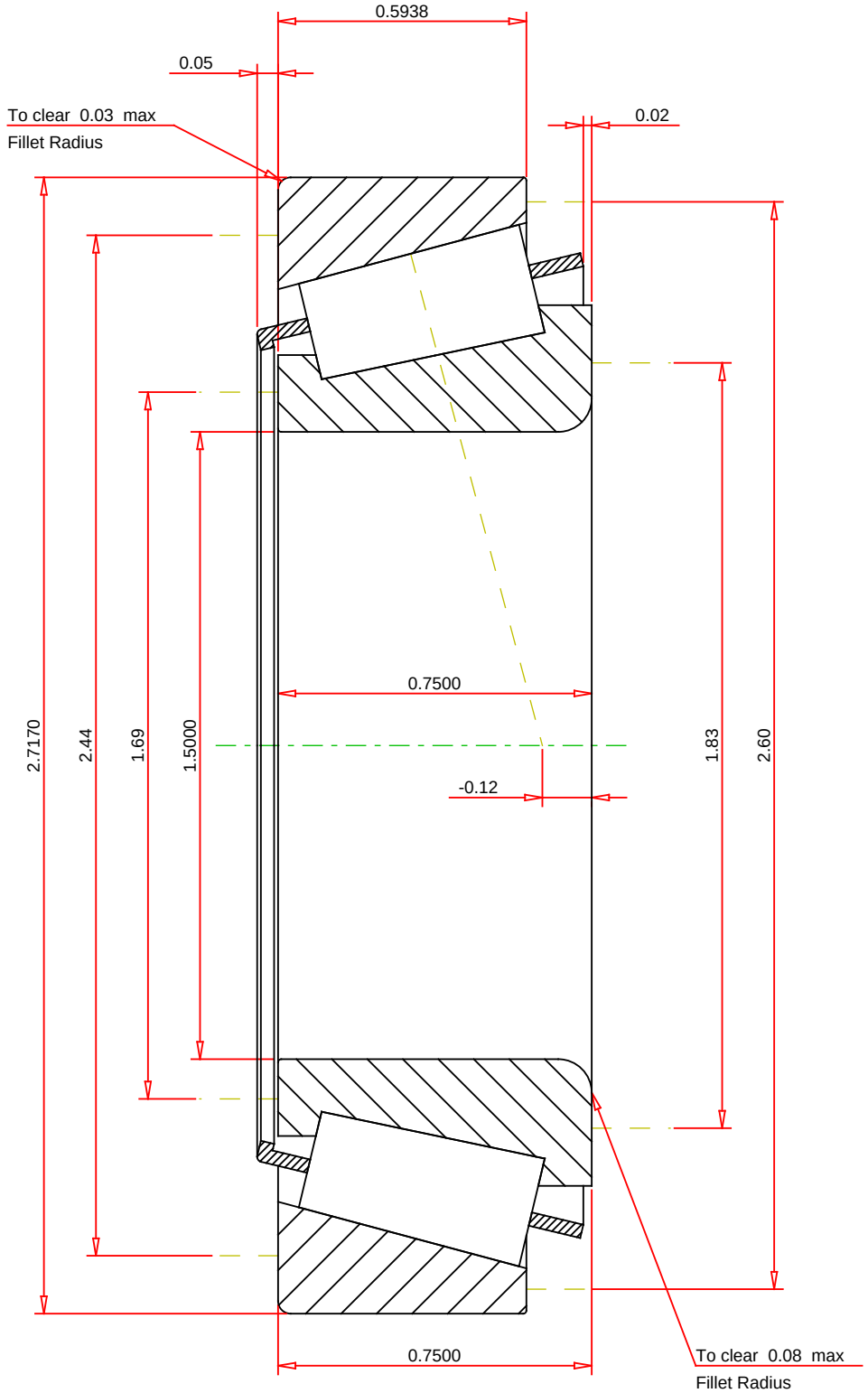
Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[4]	17400 N 3920 lbf
C1 - Dynamic Radial Rating (1 million revolutions)[5]	67200 N 15100 lbf
C0 - Static Radial Rating	67900 N 15300 lbf
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	12000 N 2700 lbf

Factors

K - Factor[7]	1.45
e - ISO Factor[8]	0.40
Y - ISO Factor[9]	1.49
G1 - Heat Generation Factor (Roller-Raceway)	20.7
G2 - Heat Generation Factor (Rib-Roller End)	10.9
Cg - Geometry Factor	0.0713

[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	0.4	
ISO Factor - Y	1.49	
Bearing Weight	0.6	lb
Number of Rollers Per Row	20	
Effective Center Location	-0.12	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

13687 - 13620
TS BEARING ASSEMBLY

K Factor	1.45	
Dynamic Radial Rating - C90	17400	lbf
Dynamic Thrust Rating - Ca90	12000	lbf
Static Radial Rating - C0	67900	lbf
Dynamic Radial Rating - C1	67200	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