TIMKEN

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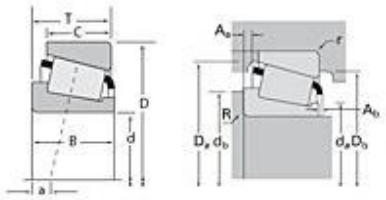
Timken Part Number 24780 - 24720, Tapered Roller Bearings - TS (Tapered Single) Imperial

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.





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Specifications

Series	24700
Cone Part Number	24780
Cup Part Number	24720
Design Units	Imperial
Bearing Weight	0.90 lb 0.400 Kg
Cage Type	Stamped Steel

Dimensions

d - Bore	1.6250 in 41.275 mm
D - Cup Outer Diameter	3 in 76.2 mm

B - Cone Width	0.9063 in 23.020 mm
C - Cup Width	0.6875 in 17.463 mm
T - Bearing Width	0.8750 in 22.225 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	0.14 in 3.560 mm
r - Cup Backface "To Clear" Radius[2]	0.030 in 0.76 mm
da - Cone Frontface Backing Diameter	1.85 in 46.99 mm
db - Cone Backface Backing Diameter	2.13 in 54.10 mm
Da - Cup Frontface Backing Diameter	2.87 in 71.90 mm
Db - Cup Backface Backing Diameter	2.68 in 68.07 mm
Ab - Cage-Cone Frontface Clearance	0.07 in 1.8 mm
Aa - Cage-Cone Backface Clearance	0.03 in 0.8 mm
a - Effective Center Location[3]	-0.19 in -4.80 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[4]	4400 lbf 19600 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	17000 lbf 75500 N
C0 - Static Radial Rating	20100 lbf 89200 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	2960 lbf 13200 N

Factors

K - Factor[7]	1.49
e - ISO Factor[8]	0.39
Y - ISO Factor[9]	1.53
G1 - Heat Generation Factor (Roller-Raceway)	26.4
G2 - Heat Generation Factor (Rib-Roller End)	12.5
Cg - Geometry Factor	0.0767

[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.
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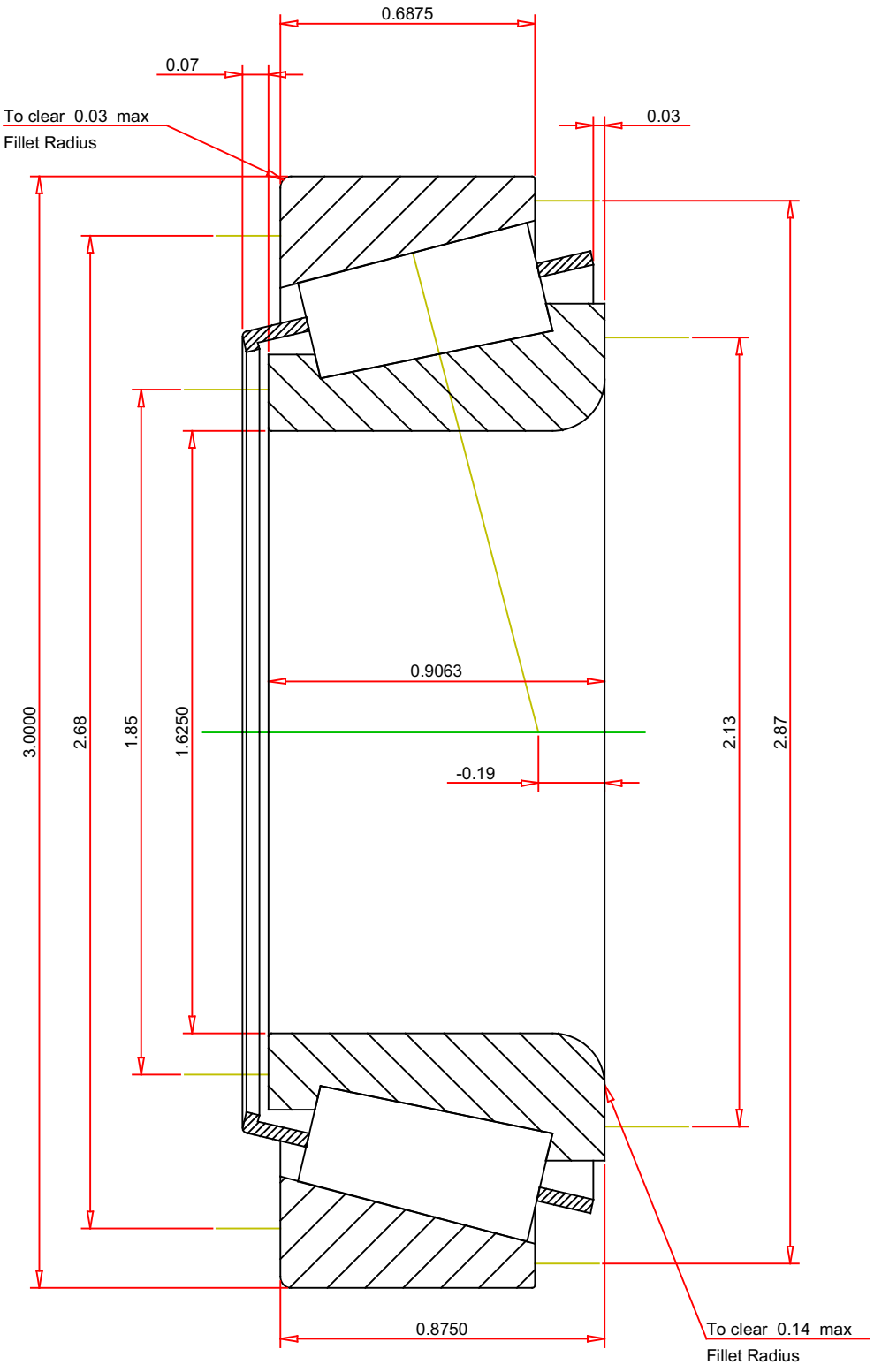

IMPERIAL UNITS

ISO Factor - e	0.39	
ISO Factor - Y	1.53	
Bearing Weight	0.9	lb
Number of Rollers Per Row	18	
Effective Center Location	-0.19	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

24780 - 24720
TS BEARING ASSEMBLY

K Factor	1.49	
Dynamic Radial Rating - C90	4400	lbf
Dynamic Thrust Rating - Ca90	2960	lbf
Static Radial Rating - C0	20100	lbf
Dynamic Radial Rating - C1	17000	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