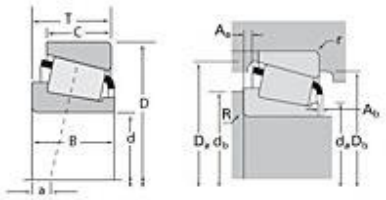
TIMKEN

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 27690 - 27620, 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	27600
Cone Part Number	27690
Cup Part Number	27620
Design Units	Imperial
Bearing Weight	2.30 lb 1.000 Kg
Cage Type	Stamped Steel

Dimensions

d - Bore	3.2813 in 83.345 mm
D - Cup Outer Diameter	4.9375 in 125.413 mm

B - Cone Width	1.0000 in 25.400 mm
C - Cup Width	0.7813 in 19.845 mm
T - Bearing Width	1.0000 in 25.400 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]	0.060 in 1.52 mm
da - Cone Frontface Backing Diameter	4.29 in 88.90 mm
db - Cone Backface Backing Diameter	3.78 in 96.01 mm
Da - Cup Frontface Backing Diameter	4.75 in 119.90 mm
Db - Cup Backface Backing Diameter	4.53 in 115.06 mm
Ab - Cage-Cone Frontface Clearance	0.09 in 2.3 mm
Aa - Cage-Cone Backface Clearance	0.05 in 1.3 mm
a - Effective Center Location[3]	0.02 in 0.50 mm

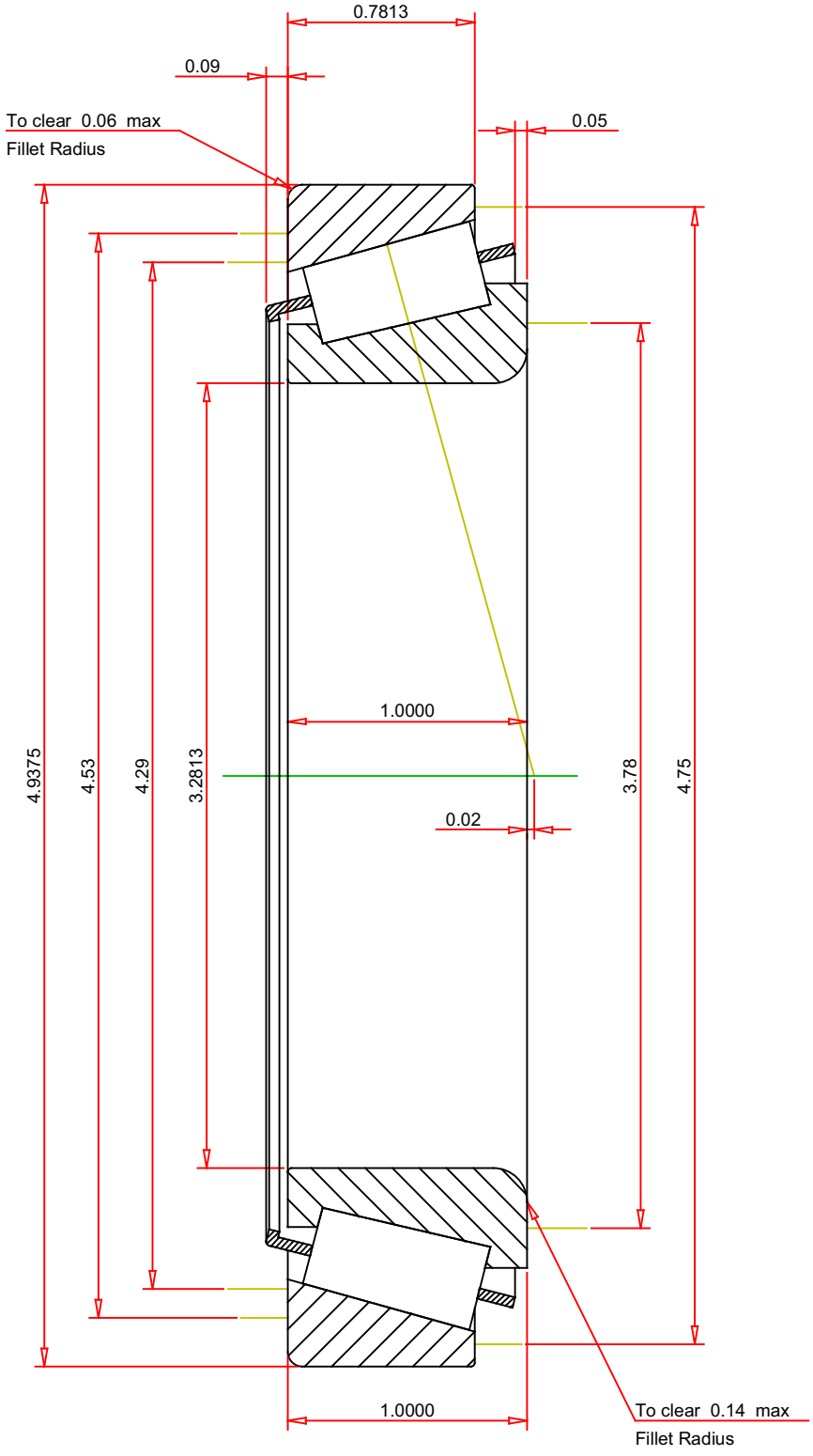
Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[4]	6830 lbf 30400 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	26300 lbf 117000 N
C0 - Static Radial Rating	39900 lbf 178000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	4860 lbf 21600 N

Factors

K - Factor[7]	1.4
e - ISO Factor[8]	0.42
Y - ISO Factor[9]	1.44
G1 - Heat Generation Factor (Roller-Raceway)	98.2
G2 - Heat Generation Factor (Rib-Roller End)	41.8
Cg - Geometry Factor	0.12

[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	0.42	
ISO Factor - Y	1.44	
Bearing Weight	2.3	lb
Number of Rollers Per Row	27	
Effective Center Location	0.02	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

27690 - 27620
TS BEARING ASSEMBLY

K Factor	1.4	
Dynamic Radial Rating - C90	6830	lbf
Dynamic Thrust Rating - Ca90	4860	lbf
Static Radial Rating - C0	39900	lbf
Dynamic Radial Rating - C1	26300	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