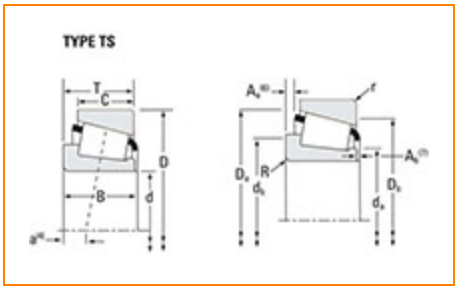
The Timken Company
4500 Mt Pleasant St. NW
N. Canton, OH 44720
Phone: (234) 262-3000
E-Mail: CustomerCAD@timken.com • **Web site:** www.timken.com

Part Number 52400 - 52618, 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	52000
Cone Part Number	52400
Cup Part Number	52618
Design Unit	Inch
Cage Material	Stamped Steel
Related Assembly Number(s)	52400-90051

Dimensions

d - Bore	4 in 101.600 mm

D - Cup Outer Diameter	6.1875 in 157.163 mm
B - Cone Width	1.4219 in 36.116 mm
C - Cup Width	1.0313 in 26.195 mm
T - Bearing Width	1.4375 in 36.513 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	0.14 in 3.600 mm
r - Cup Backface "To Clear" Radius[2]	0.130 in 3.30 mm
da - Cone Frontface Backing Diameter	4.37 in 111 mm
db - Cone Backface Backing Diameter	4.61 in 117 mm
Da - Cup Frontface Backing Diameter	6.00 in 151.90 mm
Db - Cup Backface Backing Diameter	5.59 in 141.99 mm
Ab - Cage-Cone Frontface Clearance	0.12 in 3 mm
Aa - Cage-Cone Backface Clearance	0.16 in 4.1 mm
a - Effective Center Location[3]	-0.02 in -0.5 mm

Basic Load Ratings

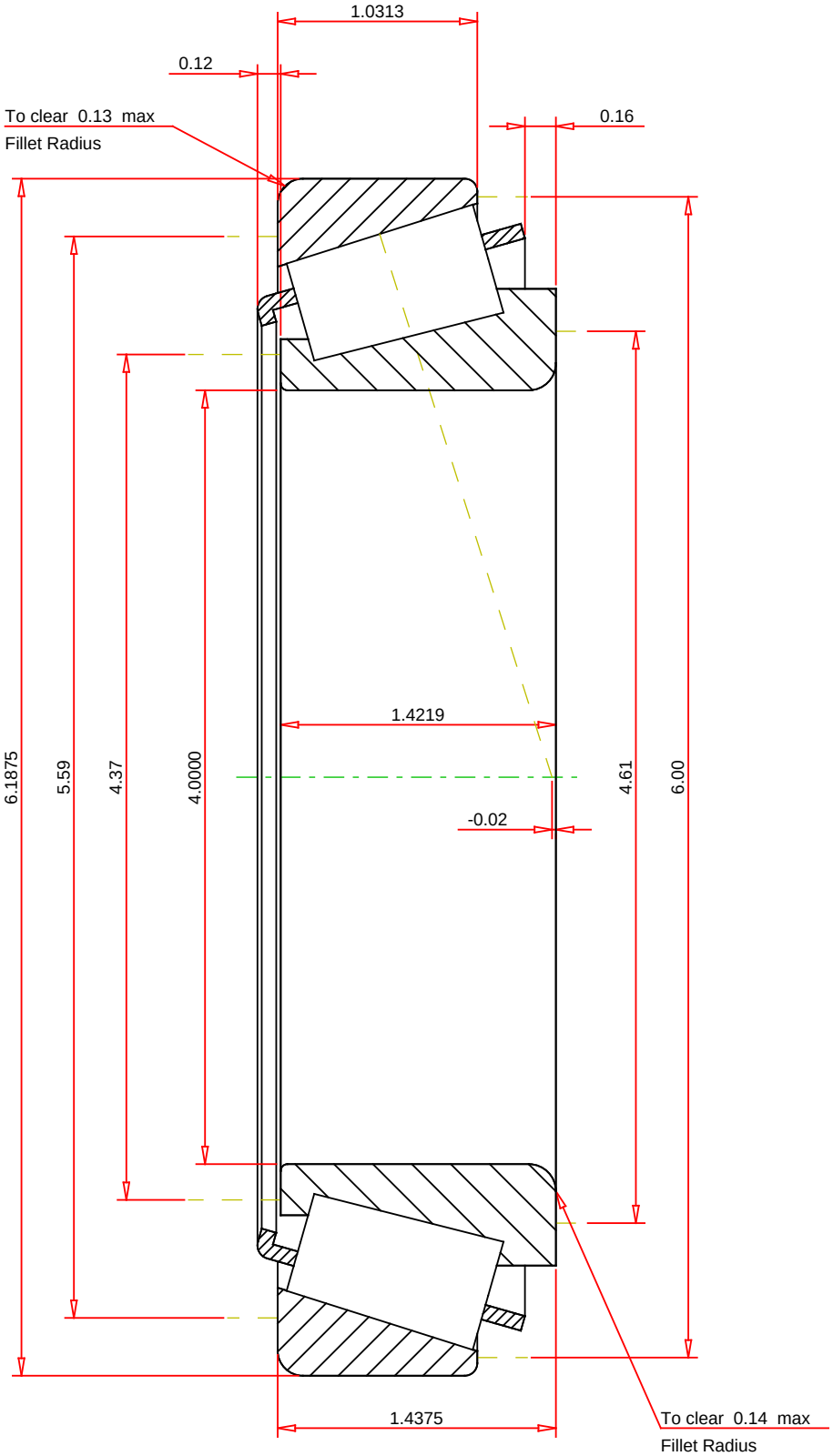
C90 - Dynamic Radial Rating (90 million revolutions)[4]	13000 lbf 57900 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	50200 lbf 223000 N
C0 - Static Radial Rating	77000 lbf 343000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	10600 lbf 47100 N

Factors

K - Factor[7]	1.23
e - ISO Factor[8]	0.47
Y - ISO Factor[9]	1.26
G1 - Heat Generation Factor (Roller-Raceway)	175.4
G2 - Heat Generation Factor (Rib-Roller End)	41.7
Cg - Geometry Factor[10]	0.152

[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.



IMPERIAL UNITS

ISO Factor - e	0.47	
ISO Factor - Y	1.26	
Bearing Weight	5.3	lb
Number of Rollers Per Row	26	
Effective Center Location	-0.02	inch

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

52400 - 52618
Tapered Roller Bearings - TS (Tapered Single)
Imperial

K Factor	1.23	
Dynamic Radial Rating - C90	13000	lbf
Dynamic Thrust Rating - Ca90	10600	lbf
Static Radial Rating - C0	77000	lbf
Dynamic Radial Rating - C1	50200	lbf

FOR DISCUSSION ONLY