The Timken Company
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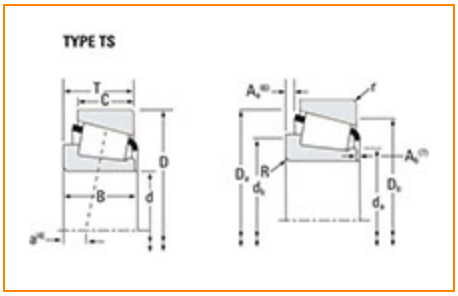
Part Number 31594 - 31520, Tapered Roller Bearings - TS (Tapered Single) Imperial

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	31500
Cone Part Number	31594
Cup Part Number	31520
Design Units	Imperial
Bearing Weight	0.6 Kg 1.400 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	34.925 mm 1.3750 in

D - Cup Outer Diameter	76.2 mm 3 in
B - Cone Width	28.575 mm 1.1250 in
C - Cup Width	23.813 mm 0.9375 in
T - Bearing Width	29.370 mm 1.1563 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	1.520 mm 0.06 in
r - Cup Backface "To Clear" Radius[2]	3.3 mm 0.130 in
da - Cone Frontface Backing Diameter	43.43 mm 1.71 in
db - Cone Backface Backing Diameter	45.97 mm 1.81 in
Da - Cup Frontface Backing Diameter	71.90 mm 2.87 in
Db - Cup Backface Backing Diameter	64.01 mm 2.52 in
Ab - Cage-Cone Frontface Clearance	2 mm 0.08 in
Aa - Cage-Cone Backface Clearance	1 mm 0.04 in
a - Effective Center Location[3]	-7.6 mm -0.3 in

Basic Load Ratings

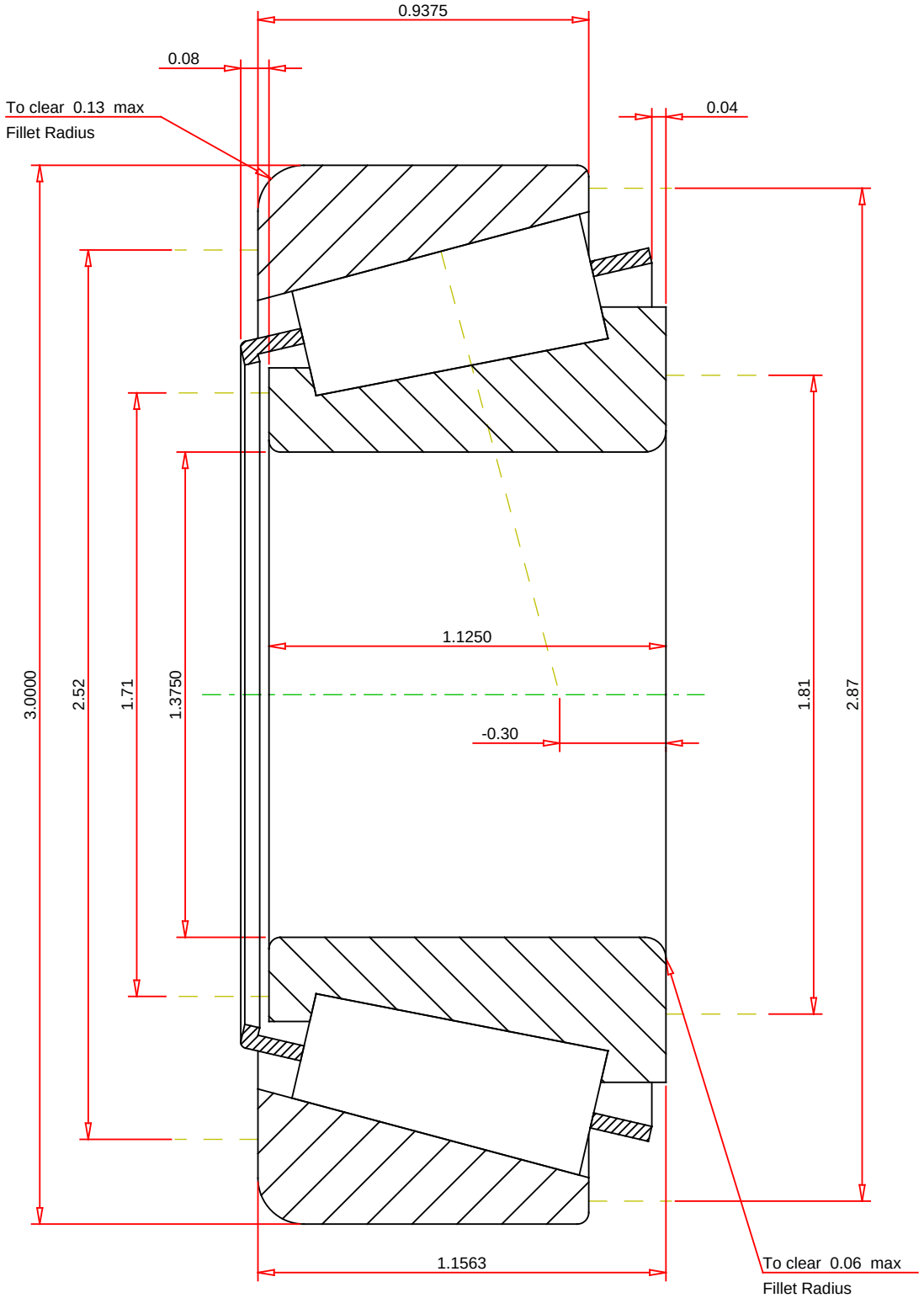
C90 - Dynamic Radial Rating (90 million revolutions)[4]	5520 lbf 24600 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	21300 lbf 94700 N
C0 - Static Radial Rating	24100 lbf 107000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	3800 lbf 16900 N

Factors

K - Factor[7]	1.45
e - ISO Factor[8]	0.4
Y - ISO Factor[9]	1.49
G1 - Heat Generation Factor (Roller-Raceway)	26.3
G2 - Heat Generation Factor (Rib-Roller End)	9.08
Cg - Geometry Factor[10]	0.0773

[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.

[10] Geometry constant for Lubrication Life Adjustment Factor a3l.



IMPERIAL UNITS

ISO Factor - e	0.4	
ISO Factor - Y	1.49	
Bearing Weight	1.4	lb
Number of Rollers Per Row	15	
Effective Center Location	-0.3	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

31594 - 31520
TS BEARING ASSEMBLY

K Factor	1.45	
Dynamic Radial Rating - C90	5520	lbf
Dynamic Thrust Rating - Ca90	3800	lbf
Static Radial Rating - C0	24100	lbf
Dynamic Radial Rating - C1	21300	lbf

FOR DISCUSSION ONLY