# TIMKEN

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Part Number 07097 - 07196, 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.
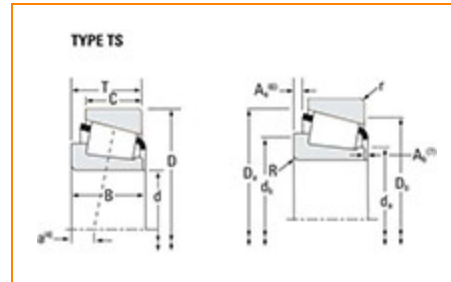
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Specifications −

Series	07000
Cone Part Number	07097
Cup Part Number	07196
Design Unit	Inch
Bearing Weight	0.3 lb 0.1 Kg
Cage Material	Stamped Steel

Dimensions −

Bore	0.9843 in 25.001 mm

D - Cup Outer Diameter	1.9687 in 50.005 mm
B - Cone Width	0.5614 in 14.260 mm
C - Cup Width	0.3750 in 9.525 mm
T - Bearing Width	0.5313 in 13.495 mm

Abutment and Fillet Dimensions   −

R - Cone Backface "To Clear" Radius[1]	0.06 in 1.5 mm
r - Cup Backface "To Clear" Radius[2]	0.04 in 1.02 mm
da - Cone Frontface Backing Diameter	1.14 in 29 mm
db - Cone Backface Backing Diameter	1.22 in 31 mm
Da - Cup Frontface Backing Diameter	1.87 in 47.50 mm
Db - Cup Backface Backing Diameter	1.75 in 44.45 mm
Ab - Cage-Cone Frontface Clearance	0.08 in 2 mm
Aa - Cage-Cone Backface Clearance	0 in 0 mm
a - Effective Center Location[3]	-0.11 in -2.8 mm

Basic Load Ratings   −

C90 - Dynamic Radial Rating (90 million revolutions)[4]	1700 lbf 7550 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	6540 lbf 29100 N
C0 - Static Radial Rating	6650 lbf 29600 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	1170 lbf 5190 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)	7.6
G2 - Heat Generation Factor (Rib-Roller End)	7.1
Cg - Geometry Factor[10]	0.0509

[1] These maximum fillet radii will be cleared by the bearing corners.

[2] These maximum fillet radii will be cleared by the bearing corners.

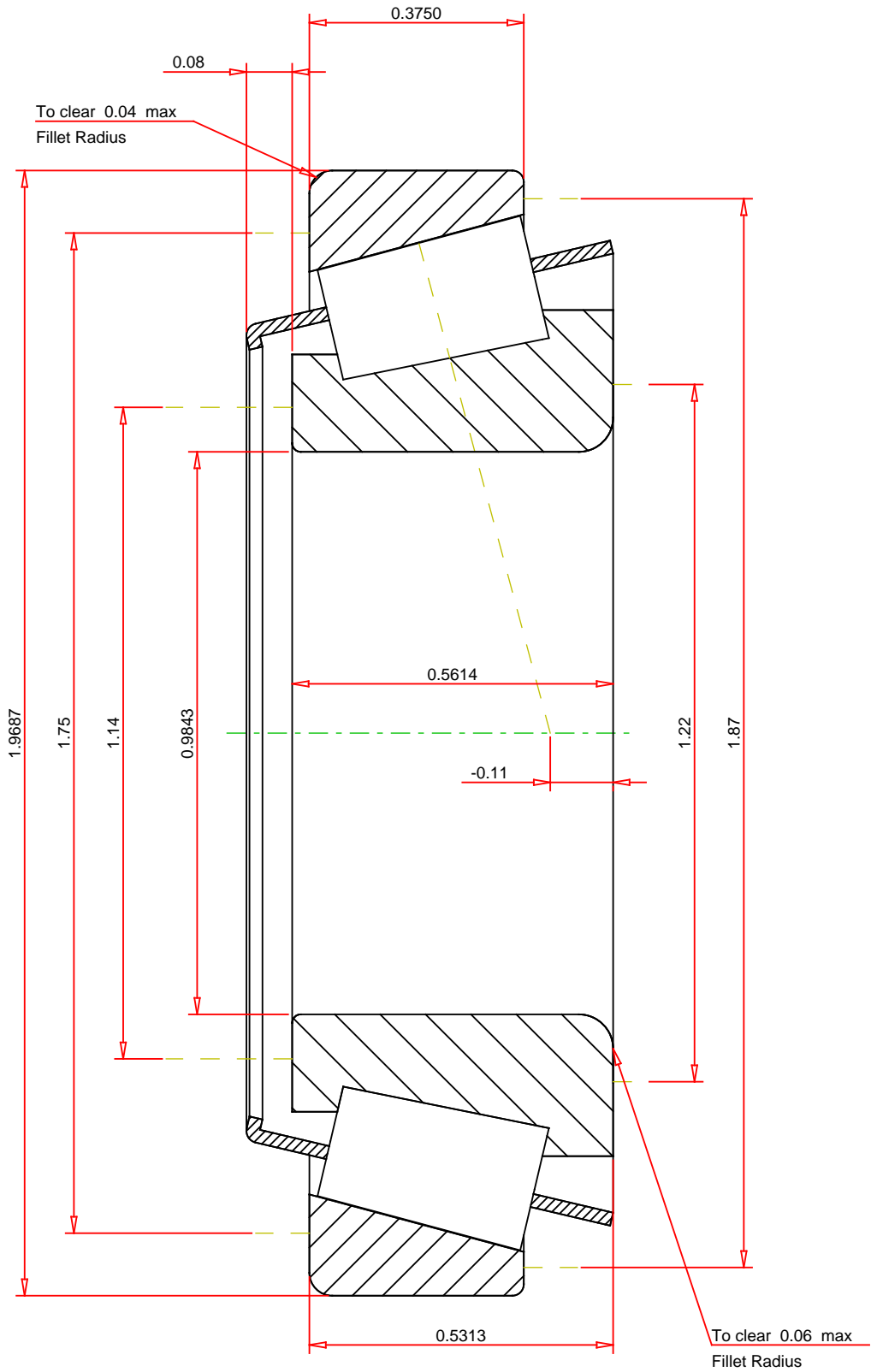[3] Negative value indicates effective center inside cone backface.

[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.

0.3750

0.08

To clear 0.04 max
Fillet Radius

1.9687

1.75

1.14

0.9843

0.5614

-0.11

1.22

1.87

0.5313

To clear 0.06 max
Fillet Radius

IMPERIAL UNITS

ISO Factor - e	0.4	
ISO Factor - Y	1.49	
Bearing Weight	0.3	lb
Number of Rollers Per Row	16	
Effective Center Location	-0.11	inch

TIMKEN ®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

07097 - 07196
Tapered Roller Bearings - TS (Tapered Single)
Imperial

K Factor	1.45	
Dynamic Radial Rating - C90	1700	lbf
Dynamic Thrust Rating - Ca90	1170	lbf
Static Radial Rating - C0	6650	lbf
Dynamic Radial Rating - C1	6540	lbf

FOR DISCUSSION ONLY