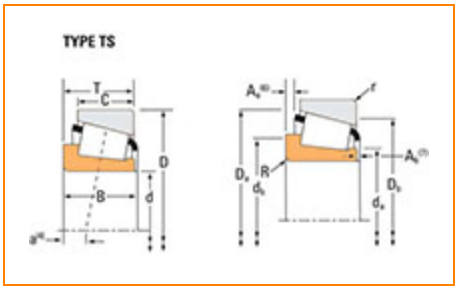
The Timken Company
4500 Mt Pleasant St. NW
N. Canton, OH 44720
Phone: (234) 262-3000
E-Mail: CustomerCAD@timken.com • **Web site:** www.timken.com

Part Number 417, Tapered Roller Bearings - Single Cones - 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

Cone Part Number	417
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)[1]	201000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)[2]	52200 N

Dimensions

d - Cone Bore	34.925 mm

B - Cone Width	29.083 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[3]	0.760 mm
da - Cone Frontface Backing Diameter	42 mm
db - Cone Backface Backing Diameter	42.5 mm
Ab - Cage-Cone Frontface Clearance	1.5 mm
Aa - Cage-Cone Backface Clearance	0.8 mm
a - Effective Center Location[4]	-9.7 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[5]	30000 N
C1 - Dynamic Radial Rating (1 million revolutions)[6]	116000 N
C0 - Static Radial Rating	124000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[7]	13500 N

Factors

K - Factor[8]	2.22

G1 - Heat Generation Factor (Roller-Raceway)	34.4
G2 - Heat Generation Factor (Rib-Roller End)	9.9
Cg - Geometry Factor[9]	0.0731

[1] Based on 1 x 10^6 revolutions L_{10} life, for the ISO life calculation method.

[2] 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.

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

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

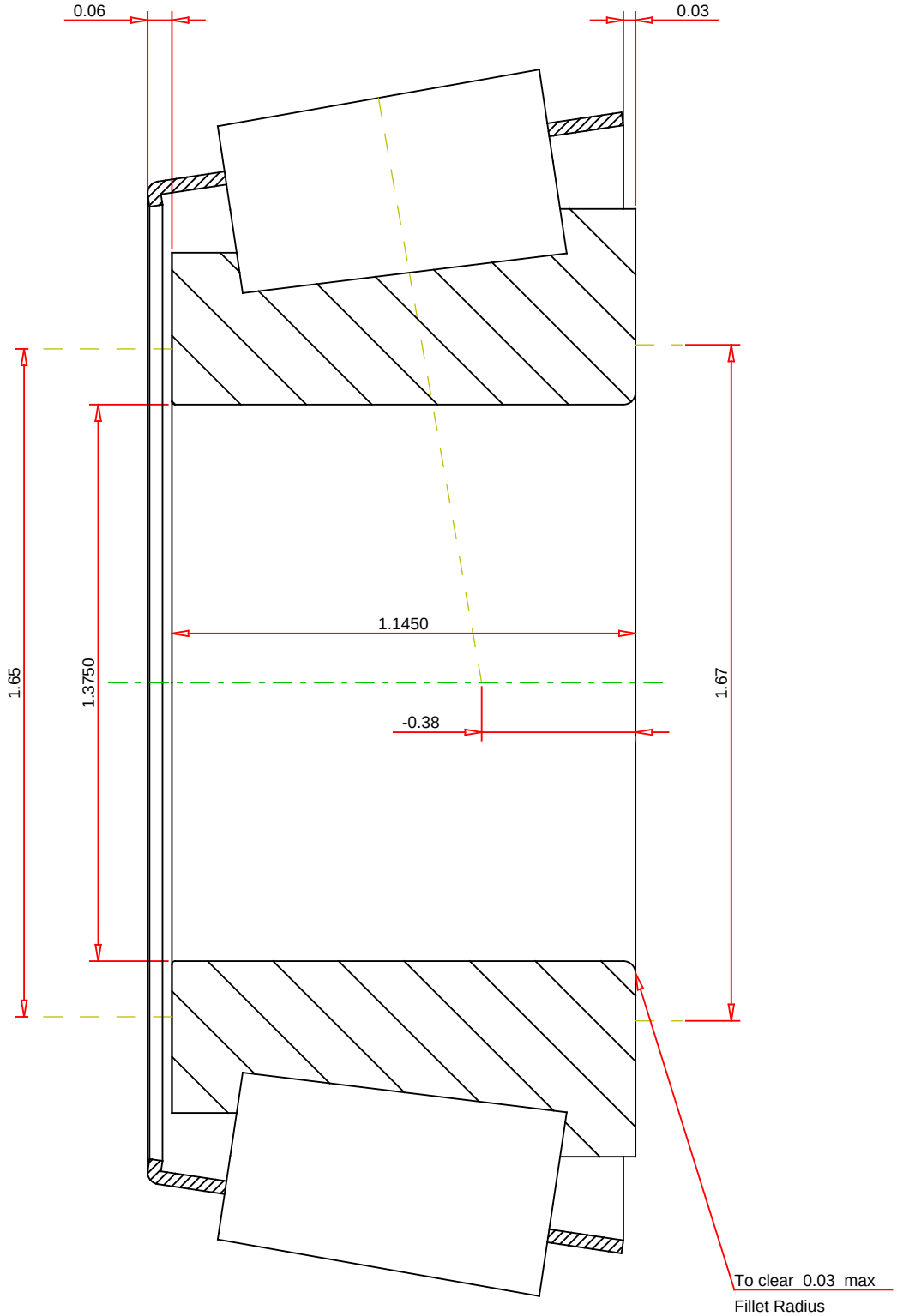
[5] Based on 90 x 10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

[6] Based on 1 x 10^6 revolutions L_{10} life, for the ISO life calculation method.

[7] 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.

[8] These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

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



IMPERIAL UNITS

Number of Rollers Per Row	14

TIMKEN

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

417
Tapered Roller Bearings - Single Cones - Imperial

K Factor	2.22	
Dynamic Radial Rating - C90	6740	lbf
Dynamic Thrust Rating - Ca90	3040	lbf
Dynamic Radial Rating - C1	26000	lbf

FOR DISCUSSION ONLY