



The Timken Company

4500 Mt Pleasant St. NW

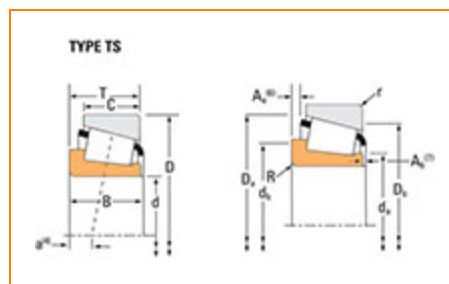
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Part Number 477, Tapered Roller Bearings - Single Cones - Imperial

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

Series	475
Cone Part Number	477
Design Units	Imperial
Cage Type	Stamped Steel
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)¹	56100 lbf 250000 N
C90(2) - Dynamic Radial Rating (Two-Row, 90 million revolutions)²	14600 lbf 64700 N



Dimensions

d - Cone Bore	2 1/2 in 63.5 mm
B - Cone Width	1.1420 in 29.007 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius³	0.03 in 0.8 mm
da - Cone Frontface Backing Diameter	2.83 in 72 mm
db - Cone Backface Backing Diameter	2.87 in 73 mm
Ab - Cage-Cone Frontface Clearance	0.12 in 3 mm
Aa - Cage-Cone Backface Clearance	0.04 in 1 mm
a - Effective Center Location⁴	-0.16 in -4.1 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁵	8360 lbf 37200 N
C1 - Dynamic Radial Rating (1 million revolutions)⁶	32200 lbf 143000 N
C0 - Static Radial Rating	41900 lbf 186000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁷	5500 lbf 24500 N

Factors

K - Factor⁸	1.52
G1 - Heat Generation Factor (Roller-Raceway)	77.2
G2 - Heat Generation Factor (Rib-Roller End)	23
Cg - Geometry Factor⁹	0.108

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

² 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.

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

⁴ Negative value indicates effective center inside cone backface.

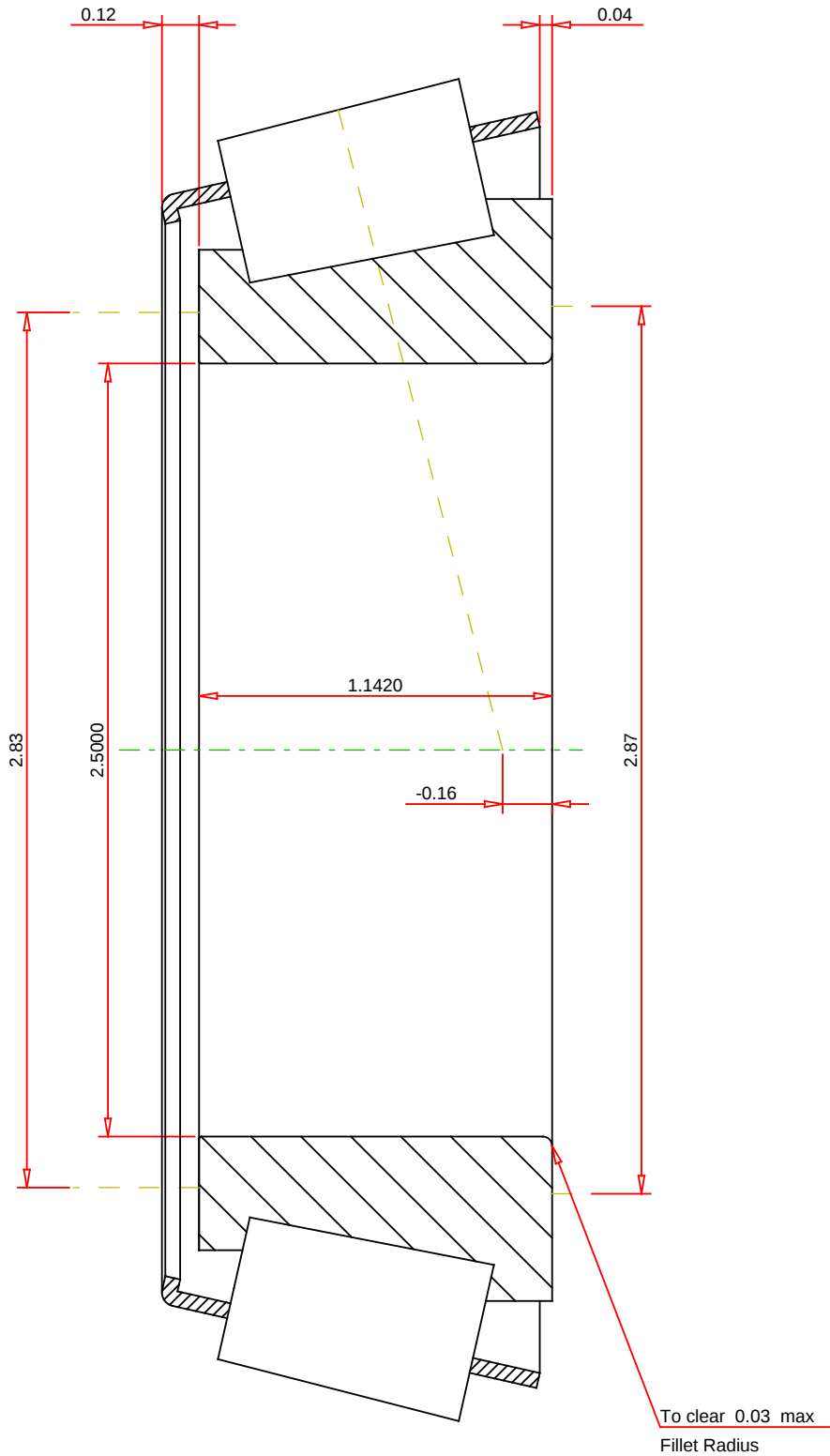
⁵ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values.

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

⁷ 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.

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 a_3 .



IMPERIAL UNITS

Number of Rollers Per Row

20

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

477

Tapered Roller Bearings - Single Cones - Imperial

K Factor	1.52	
Dynamic Radial Rating - C90	8360	lbf
Dynamic Thrust Rating - Ca90	5500	lbf
Dynamic Radial Rating - C1	32200	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.

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