


The Timken Company

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Timken Part Number 496P - 493D, Tapered Roller Bearings - TDO (Tapered Double Outer)

Imperial

The configuration of the TDO provides a wide effective bearing spread, making it ideal for applications in which overturning moments are a significant load component. TDO bearings can be used in fixed positions or allowed to float in the housing bore.



[Specifications](#) | [Dimensions](#) | [Abutment and Fillet Dimensions](#) | [Basic Load Ratings](#) | [Factors](#)

Specifications

Series	495
Cone Part Number	496P
Cup Part Number	493D
Design Units	Imperial
Bearing Weight	8.01 lb 3.635 Kg
Cage Type	Stamped Steel
Ab - Cage-Cone Frontface Clearance	0.12 in 3 mm

Dimensions

d - Bore	3.1875 in 80.963 mm
D - Cup Outer Diameter	5.3750 in 136.525 mm
B - Cone Width	1.1720 in 29.769 mm
C - Double Cup Width	2.125 in 53.975 mm
T - Bearing Width across Cones	2.7500 in 69.850 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius¹	0.14 in 3.600 mm
r - Cup Frontface "To Clear" Radius²	0.03 in 0.8 mm
db - Cone Backface Backing Diameter	3.74 in 95.00 mm
Da - Cup Frontface Backing Diameter	5.16 in 130.05 mm
Aa - Cage-Cone Backface Clearance	0.07 in 1.8 mm

Basic Load Ratings

C90 - Dynamic Radial Rating (One-Row, 90 million revolutions)³	10700 lbf 47500 N
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)⁴	71600 lbf 319000 N

C₉₀₍₂₎ - Dynamic Radial Rating (Two-Row, 90 million revolutions)⁵	18600 lbf 82600 N
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C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁶	8120 lbf 36100 N
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Factors

K - Factor⁷	1.31
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e - ISO Factor⁸	0.97
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Y1 - ISO Factor⁹	0.69 1.03
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Y2 - ISO Factor¹⁰	1.03
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C_g - Geometry Factor¹¹	0.125
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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 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.

⁴ Based on 1×10^6 revolutions L_{10} life, for the ISO life calculation method.

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 for a single-row, $C_{90(2)}$ is the two-row radial value.

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.

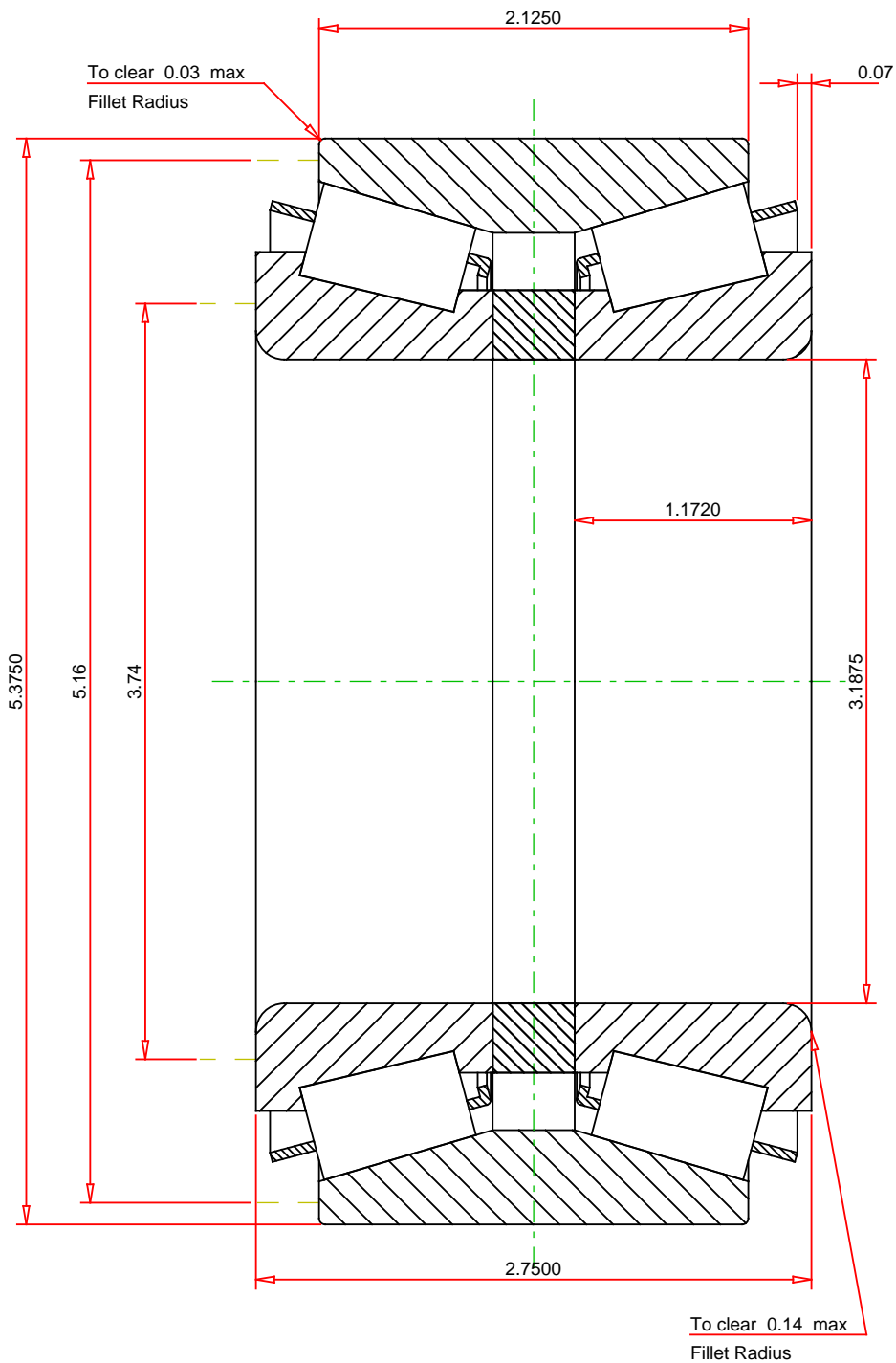
⁷ These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

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

¹¹ Geometry constant for Lubrication Life Adjustment Factor a_{3l} .



IMPERIAL UNITS

ISO Factor - e
ISO Factor - Y1
ISO Factor - Y2
Bearing Weight
Number of Rollers Per Row

0.97
0.69
1.03
8.01 lb
23

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

496P - 493D TDO BEARING ASSEMBLY

K Factor	1.31	
Dynamic Radial Rating - C90	10700	lbf
Dynamic Thrust Rating - Ca90	8120	lbf
Dynamic Radial Rating - C90(2)	18600	lbf
Radial Rating - C1	71600	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.

FOR DISCUSSION ONLY