


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

Timken Part Number 497A - 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.



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Specifications

Series	495
Cone Part Number	497A
Cup Part Number	493D
Design Units	Imperial
Bearing Weight	7.23 lb 3.281 Kg
Cage Type	Stamped Steel
Ab - Cage-Cone Frontface Clearance	0.12 in 3 mm

Dimensions

d - Bore	3.3750 in 85.725 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	0.25 in 6.400 mm
r - Cup Frontface "To Clear" Radius²	0.03 in 0.8 mm
db - Cone Backface Backing Diameter	4.13 in 104.90 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	9000 lbf 40000 N
C1 - Dynamic Radial Rating (Two-Row, 1 million revolutions)⁴	60500 lbf 269000 N

C₉₀₍₂₎ - Dynamic Radial Rating (Two-Row, 90 million revolutions)⁵	15700 lbf 69700 N
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C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁶	6850 lbf 30500 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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G1 - Heat Generation Factor (Roller-Raceway)¹¹	105
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G2 - Heat Generation Factor (Rib-Roller End)	29.3
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C_g - Geometry Factor¹²	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

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¹⁰ These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

¹¹ These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

¹² Geometry constant for Lubrication Life Adjustment Factor a_3 .

