



The Timken Company

4500 Mt Pleasant St. NW

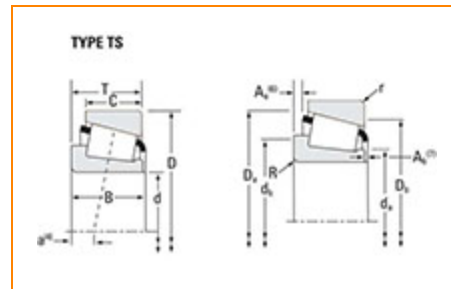
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Part Number 33010, Tapered Roller Bearings - TS (Tapered Single) Metric

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	33010
Cone Part Number	X33010
Cup Part Number	Y33010
Design Units	METRIC
Bearing Weight	0.5 Kg 1 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	50.000 mm 1.9685 in
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D - Cup Outer Diameter	80 mm 3.1496 in
B - Cone Width	24.000 mm 0.9449 in
C - Cup Width	19.000 mm 0.7480 in
T - Bearing Width	24.000 mm 0.9449 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius¹	1.020 mm 0.04 in
r - Cup Backface "To Clear" Radius²	1.02 mm 0.04 in
da - Cone Frontface Backing Diameter	55.12 mm 2.17 in
db - Cone Backface Backing Diameter	56.90 mm 2.24 in
Da - Cup Frontface Backing Diameter	77.00 mm 3.05 in
Db - Cup Backface Backing Diameter	72.90 mm 2.87 in
Ab - Cage-Cone Frontface Clearance	2.5 mm 0.1 in
Aa - Cage-Cone Backface Clearance	0.8 mm 0.03 in
a - Effective Center Location³	-6.6 mm -0.26 in

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁴	24800 N 5570 lbf
C1 - Dynamic Radial Rating (1 million revolutions)⁵	95500 N 21500 lbf
C0 - Static Radial Rating	112000 N 25300 lbf
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁶	13400 N 3020 lbf

Factors

K - Factor⁷	1.85
e - ISO Factor⁸	0.32
Y - ISO Factor⁹	1.9
G1 - Heat Generation Factor (Roller-Raceway)	42.3
G2 - Heat Generation Factor (Rib-Roller End)	28
C_g - Geometry Factor¹⁰	0.0836

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.

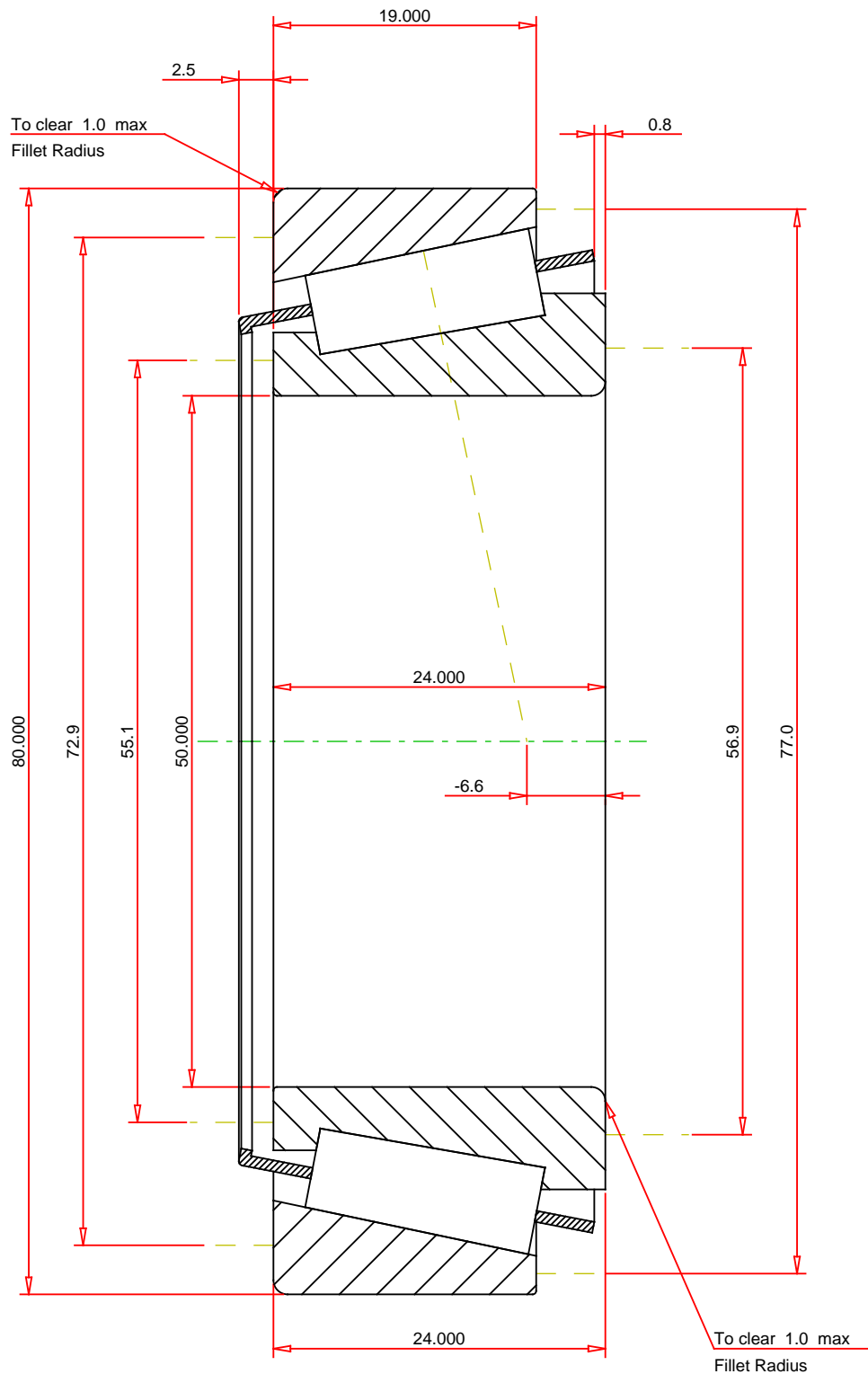
⁶ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values for a single-row, $C_{90(2)}$ is the two-row radial value.

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.



METRIC UNITS

ISO Factor - e	0.32
ISO Factor - Y	1.9
Bearing Weight	0.5 kg
Number of Rollers Per Row	23
Effective Center Location	-6.6 mm



**X33010 - Y33010
TS BEARING ASSEMBLY**

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

K Factor	1.85	
Dynamic Radial Rating - C90	24800	N
Dynamic Thrust Rating - Ca90	13400	N
Static Radial Rating - C0	112000	N
Dynamic Radial Rating - C1	95500	N

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