

The Timken Company

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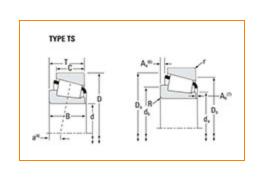
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Part Number 33012, Tapered Roller Bearings - TS (Tapered Single) Metric

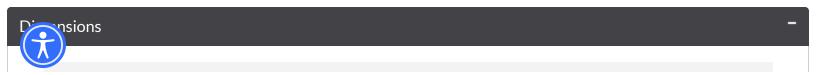
This is the most basic and most widely used type of tapered roller bearing. It consists of two main separable parts: the cone (inner ring) assembly and the cup (outer ring). It is typically mounted in opposing pairs on a shaft.





<u>Specifications</u> | <u>Dimensions</u> | <u>Abutment and Fillet Dimensions</u> | <u>Basic Load Ratings</u> | <u>Factors</u>

Specifications –		
	Series	33012M
	Cone Part Number	X33012M
	Cup Part Number	Y33012M
	Design Unit	Metric
	Bearing Weight	0.70 Kg 1.5 lb
	Cage Material	Stamped Steel
	Full Timken Part Number	33012



d - Bore	60 mm 2.3622 in
D - Cup Outer Diameter	95 mm 3.7402 in
B - Cone Width	27.000 mm 1.0630 in
C - Cup Width	21.000 mm 0.8268 in
T - Bearing Width	27.000 mm 1.0630 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear"	1.520 mm
Radius ¹	0.060 in
r - Cup Backface "To Clear"	1.52 mm
Radius ²	0.06 in
da - Cone Frontface Backing	66 mm
Diameter	2.6 in
db - Cone Backface Backing	69 mm
Diameter	2.72 in
Da - Cup Frontface Backing	91.90 mm
Diameter	3.62 in
Db - Cup Backface Backing	86.11 mm
Diameter	3.39 in
Ab - Cage-Cone Frontface	2.5 mm
Clearance	0.1 in
Aa - Cage-Cone Backface	1.8 mm
Clearance	0.07 in
a - Effective Center Location ³	-7.1 mm -0.28 in

Basic Load Ratings -				
	C90 - Dynamic Radial Rating (90 million revolutions) ⁴	31500 N 7090 lbf		
	C1 - Dynamic Radial Rating (1 million revolutions) ⁵	122000 N 27400 lbf		
	CO - Static Radial Rating	150000 N 33600 lbf		
	C _{a90} - Dynamic Thrust Rating (90 million revolutions) ⁶	17700 N 3980 lbf		

Factors -			
I	K - Factor ⁷	1.78	
	e - ISO Factor ⁸	0.33	
,	Y - ISO Factor ⁹	1.83	
	G1 - Heat Generation Factor (Roller-Raceway)	63	
	G2 - Heat Generation Factor (Rib-Roller End)	31.1	
	Cg - Geometry Factor ¹⁰	0.0964	

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 x 10 6 revolutions L $_{10}$ life, for The Timken Company life calculation method. C $_{90}$ and C $_{a90}$ are radial and thrust values.

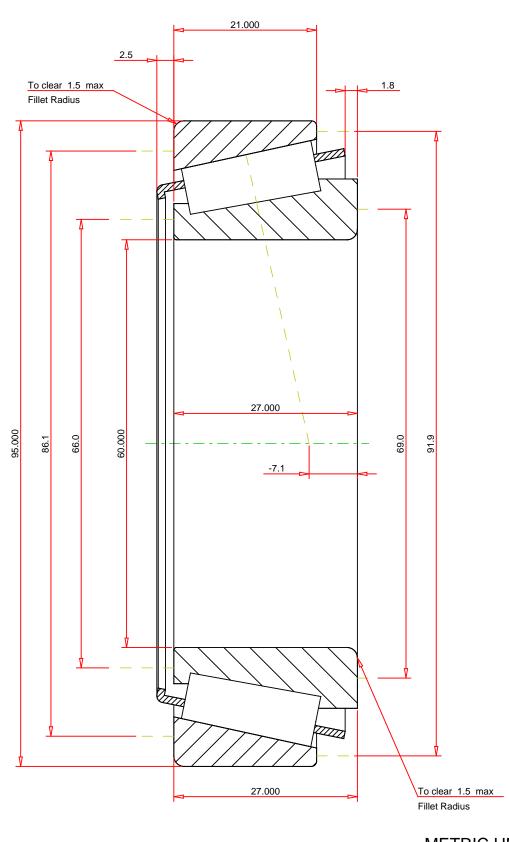
 $^{^{5}}$ Based on 1 x 10 6 revolutions $\rm L_{10}$ life, for the ISO life calculation method.

 $^{^6}$ 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.

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

X33012M - Y33012M
Tapered Roller Bearings - TS (Tapered Single)
Metric

THE TIMKEN COMPANY NORTH CANTON, OHIO USA

 K Factor
 1.78

 Dynamic Radial Rating - C90
 31500
 N

 Dynamic Thrust Rating - Ca90
 17700
 N

 Static Radial Rating - C0
 150000
 N

 Dynamic Radial Rating - C1
 122000
 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