



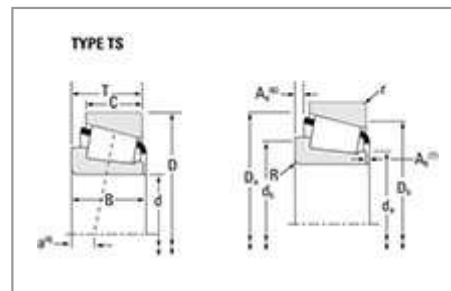
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Part Number 30220, Tapered Roller Bearings - TS (Tapered Single) Metric

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	30220
Cone Part Number	X30220M
Cup Part Number	Y30220M
Design Units	METRIC
Bearing Weight	3.8 Kg 8.3 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	100 mm 3.937 in
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D - Cup Outer Diameter	180 mm 7.0866 in
B - Cone Width	34.000 mm 1.3386 in
C - Cup Width	29.000 mm 1.1417 in
T - Bearing Width	37.000 mm 1.4567 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius¹	3.050 mm 0.12 in
r - Cup Backface "To Clear" Radius²	2.54 mm 0.1 in
da - Cone Frontface Backing Diameter	115.06 mm 4.53 in
db - Cone Backface Backing Diameter	119.13 mm 4.69 in
Da - Cup Frontface Backing Diameter	169.93 mm 6.69 in
Db - Cup Backface Backing Diameter	163.07 mm 6.42 in
Ab - Cage-Cone Frontface Clearance	5.3 mm 0.21 in
Aa - Cage-Cone Backface Clearance	1.5 mm 0.06 in
a - Effective Center Location³	-0.8 mm -0.03 in

Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)⁴	78000 N 17500 lbf
C1 - Dynamic Radial Rating (1 million revolutions)⁵	301000 N 67600 lbf
C0 - Static Radial Rating	375000 N 84300 lbf
C_{a90} - Dynamic Thrust Rating (90 million revolutions)⁶	56100 N 12600 lbf

Factors

K - Factor⁷	1.39
e - ISO Factor⁸	0.42
Y - ISO Factor⁹	1.43
G1 - Heat Generation Factor (Roller-Raceway)	167.3
G2 - Heat Generation Factor (Rib-Roller End)	38.7
C_g - Geometry Factor¹⁰	0.0927

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.

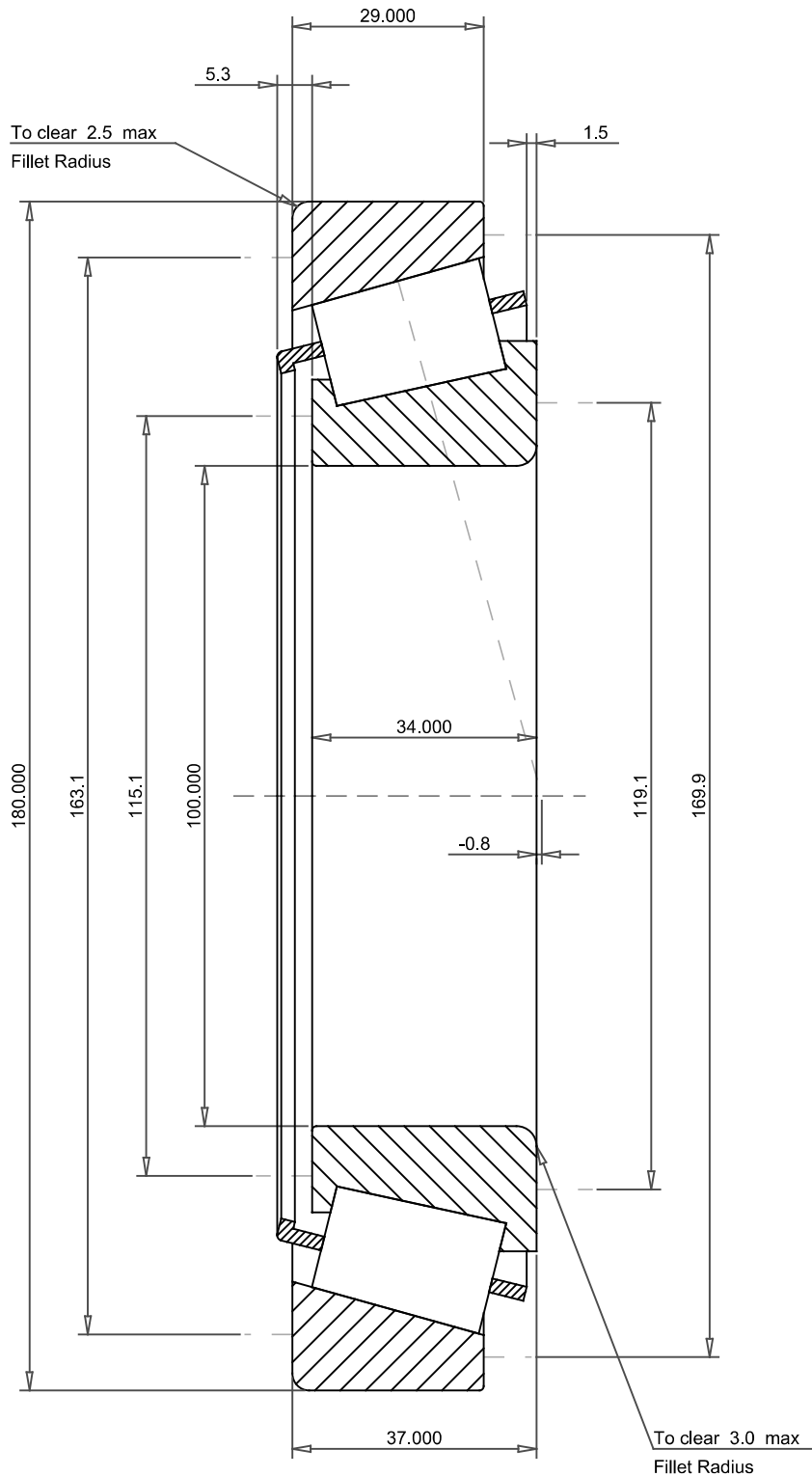
⁶ Based on 90×10^6 revolutions L_{10} life, for The Timken Company life calculation method. C_{90} and C_{a90} are radial and thrust values for a single-row, $C_{90(2)}$ is the two-row radial value.

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	0.42
ISO Factor - Y	1.43
Bearing Weight	3.8 kg
Number of Rollers Per Row	20
Effective Center Location	-0.8 mm

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

X30220M - Y30220M
TS BEARING ASSEMBLY

K Factor	1.39
Dynamic Radial Rating - C90	78000 N
Dynamic Thrust Rating - Ca90	56100 N
Static Radial Rating - C0	375000 N
Dynamic Radial Rating - C1	301000 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.

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