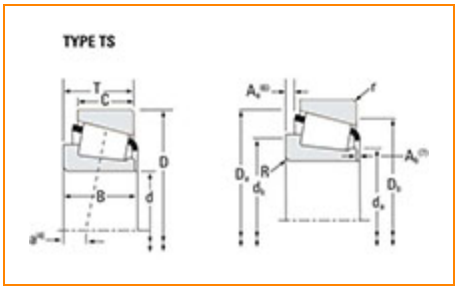
The Timken Company
4500 Mt Pleasant St. NW
N. Canton, OH 44720
Phone: (234) 262-3000
E-Mail: CustomerCAD@timken.com • **Web site:** www.timken.com

Part Number 32224, 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.



Specifications | Dimensions | Abutment and Fillet Dimensions | Basic Load Ratings | Factors

Specifications

Series	32224M
Cone Part Number	X32224M
Cup Part Number	Y32224M
Design Unit	Metric
Cage Material	Stamped Steel

Dimensions

d - Bore	120 mm 4.7244 in
D - Cup Outer Diameter	215 mm 8.4646 in

B - Cone Width	58.000 mm 2.2835 in
C - Cup Width	50.000 mm 1.9685 in
T - Bearing Width	61.500 mm 2.4213 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	3.050 mm 0.12 in
r - Cup Backface "To Clear" Radius[2]	2.54 mm 0.1 in
da - Cone Frontface Backing Diameter	135 mm 5.31 in
db - Cone Backface Backing Diameter	147 mm 5.79 in
Da - Cup Frontface Backing Diameter	204.98 mm 8.07 in
Db - Cup Backface Backing Diameter	191.01 mm 7.52 in
Ab - Cage-Cone Frontface Clearance	5.6 mm 0.22 in
Aa - Cage-Cone Backface Clearance	5.3 mm 0.21 in
a - Effective Center Location[3]	-10.2 mm -0.4 in

Basic Load Ratings

C90 - Dynamic Radial Rating (90	152000 N

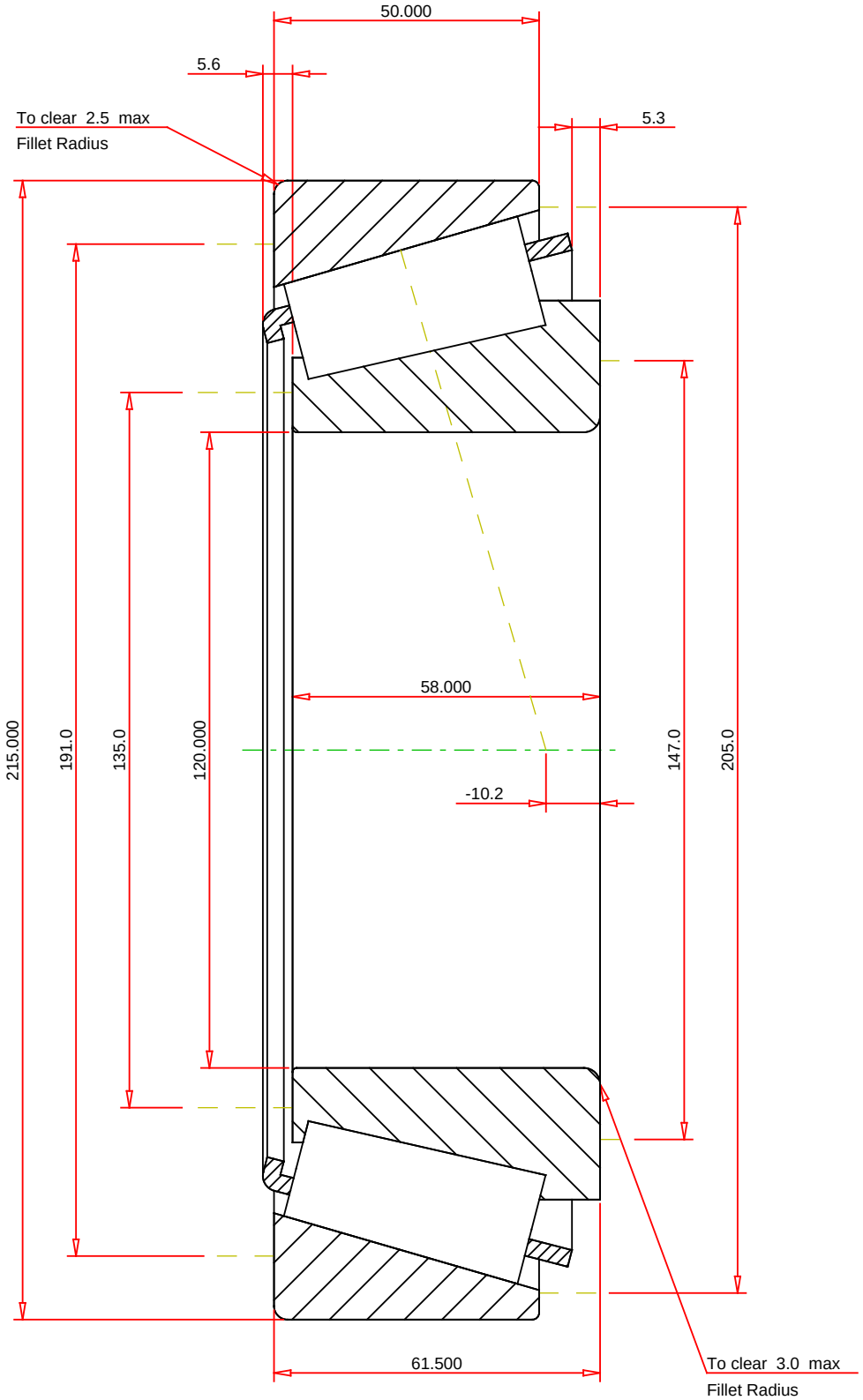
million revolutions)[4]	34100 lbf
C1 - Dynamic Radial Rating (1 million revolutions)[5]	586000 N 132000 lbf
C0 - Static Radial Rating	831000 N 187000 lbf
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	113000 N 25400 lbf

Factors

K - Factor[7]	1.34
e - ISO Factor[8]	0.44
Y - ISO Factor[9]	1.38
G1 - Heat Generation Factor (Roller-Raceway)	352
G2 - Heat Generation Factor (Rib-Roller End)	68.1
Cg - Geometry Factor[10]	0.121

[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	0.44	
ISO Factor - Y	1.38	
Bearing Weight	9.3	kg
Number of Rollers Per Row	20	
Effective Center Location	-10.2	mm

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

X32224M - Y32224M

Tapered Roller Bearings - TS (Tapered Single)
Metric

K Factor	1.34	
Dynamic Radial Rating - C90	152000	N
Dynamic Thrust Rating - Ca90	113000	N
Static Radial Rating - C0	831000	N
Dynamic Radial Rating - C1	586000	N

FOR DISCUSSION ONLY