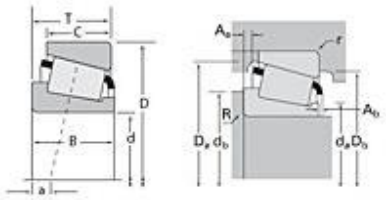
TIMKEN

The Timken Company
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Timken Part Number 529 - 522, Tapered Roller Bearings - TS (Tapered Single) Imperial

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	525
Cone Part Number	529
Cup Part Number	522
Design Units	Imperial
Bearing Weight	2.70 lb 1.200 Kg
Cage Type	Stamped Steel

Dimensions

d - Bore	2 in 50.8 mm
D - Cup Outer Diameter	4.0000 in 101.600 mm

B - Cone Width	1.4200 in 36.068 mm
C - Cup Width	1.0625 in 26.988 mm
T - Bearing Width	1.3750 in 34.925 mm

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	0.03 in 0.760 mm
r - Cup Backface "To Clear" Radius[2]	0.130 in 3.30 mm
da - Cone Frontface Backing Diameter	2.36 in 59.94 mm
db - Cone Backface Backing Diameter	2.40 in 60.96 mm
Da - Cup Frontface Backing Diameter	3.76 in 95.5 mm
Db - Cup Backface Backing Diameter	3.50 in 88.90 mm
Ab - Cage-Cone Frontface Clearance	0.1 in 2.5 mm
Aa - Cage-Cone Backface Clearance	0.09 in 2.3 mm
a - Effective Center Location[3]	-0.50 in -12.70 mm

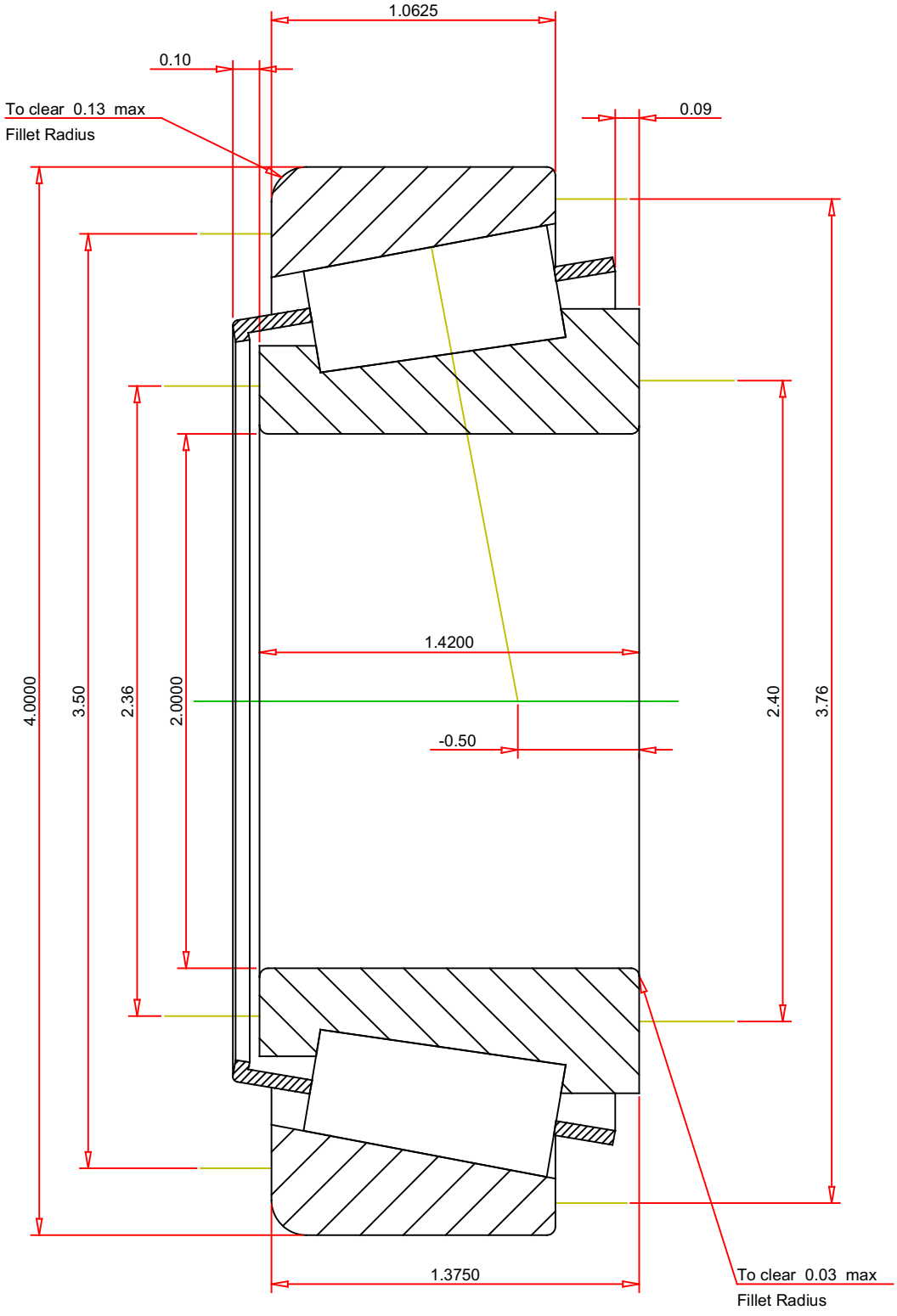
Basic Load Ratings

C90 - Dynamic Radial Rating (90 million revolutions)[4]	9600 lbf 42700 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	37000 lbf 165000 N
C0 - Static Radial Rating	43000 lbf 191000 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	4690 lbf 20800 N

Factors

K - Factor[7]	2.05
e - ISO Factor[8]	0.29
Y - ISO Factor[9]	2.1
G1 - Heat Generation Factor (Roller-Raceway)	57.9
G2 - Heat Generation Factor (Rib-Roller End)	13.4
Cg - Geometry Factor	0.0894

[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 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.



IMPERIAL UNITS

ISO Factor - e	0.29	
ISO Factor - Y	2.1	
Bearing Weight	2.7	lb
Number of Rollers Per Row	15	
Effective Center Location	-0.5	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

529 - 522
TS BEARING ASSEMBLY

K Factor	2.05	
Dynamic Radial Rating - C90	9600	lbf
Dynamic Thrust Rating - Ca90	4690	lbf
Static Radial Rating - C0	43000	lbf
Dynamic Radial Rating - C1	37000	lbf

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