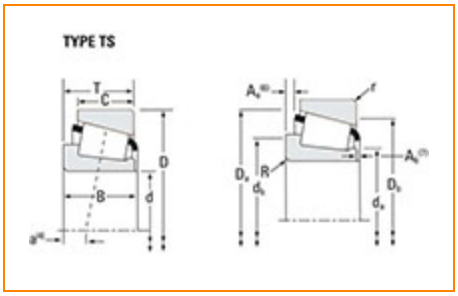
The Timken Company
4500 Mt Pleasant St. NW
N. Canton, OH 44720
Phone: (234) 262-3000
E-Mail: CustomerCAD@timken.com • **Web site:** www.timken.com

Part Number 02878 - 02820, 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	02800
Cone Part Number	02878
Cup Part Number	02820
Design Units	Imperial
Bearing Weight	0.4 Kg 0.9 lb
Cage Type	Stamped Steel

Dimensions

d - Bore	34.925 mm 1.3750 in

D - Cup Outer Diameter	73.025 mm 2.8750 in
B - Cone Width	22.225 mm 0.8750 in
C - Cup Width	17.463 mm 0.6875 in
T - Bearing Width	22.225 mm 0.8750 in

Abutment and Fillet Dimensions

R - Cone Backface "To Clear" Radius[1]	0.760 mm 0.03 in
r - Cup Backface "To Clear" Radius[2]	3.3 mm 0.130 in
da - Cone Frontface Backing Diameter	41.91 mm 1.65 in
db - Cone Backface Backing Diameter	42.42 mm 1.67 in
Da - Cup Frontface Backing Diameter	68.10 mm 2.72 in
Db - Cup Backface Backing Diameter	61.98 mm 2.44 in
Ab - Cage-Cone Frontface Clearance	3.1 mm 0.12 in
Aa - Cage-Cone Backface Clearance	0.8 mm 0.03 in
a - Effective Center Location[3]	-3.8 mm -0.15 in

Basic Load Ratings

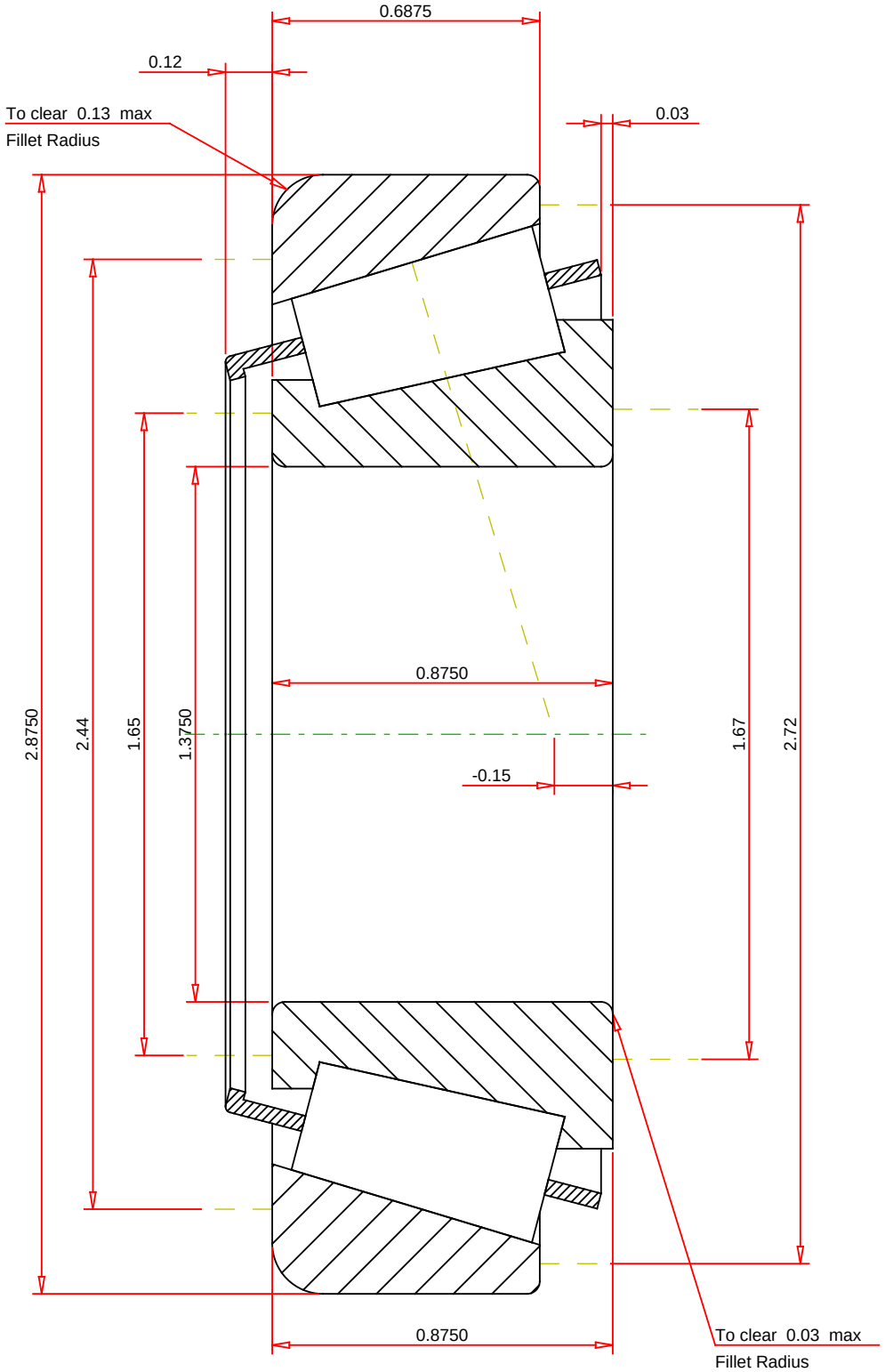
C90 - Dynamic Radial Rating (90 million revolutions)[4]	3830 lbf 17000 N
C1 - Dynamic Radial Rating (1 million revolutions)[5]	14800 lbf 65700 N
C0 - Static Radial Rating	16800 lbf 74900 N
C_{a90} - Dynamic Thrust Rating (90 million revolutions)[6]	2980 lbf 13200 N

Factors

K - Factor[7]	1.29
e - ISO Factor[8]	0.45
Y - ISO Factor[9]	1.32
G1 - Heat Generation Factor (Roller-Raceway)	20.6
G2 - Heat Generation Factor (Rib-Roller End)	10.1
Cg - Geometry Factor[10]	0.074

[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.

[10] Geometry constant for Lubrication Life Adjustment Factor a3l.



IMPERIAL UNITS

ISO Factor - e	0.45	
ISO Factor - Y	1.32	
Bearing Weight	0.9	lb
Number of Rollers Per Row	17	
Effective Center Location	-0.15	inch

TIMKEN®

THE TIMKEN COMPANY
NORTH CANTON, OHIO USA

02878 - 02820
TS BEARING ASSEMBLY

K Factor	1.29	
Dynamic Radial Rating - C90	3830	lbf
Dynamic Thrust Rating - Ca90	2980	lbf
Static Radial Rating - C0	16800	lbf
Dynamic Radial Rating - C1	14800	lbf

FOR DISCUSSION ONLY