



**The Timken Company**

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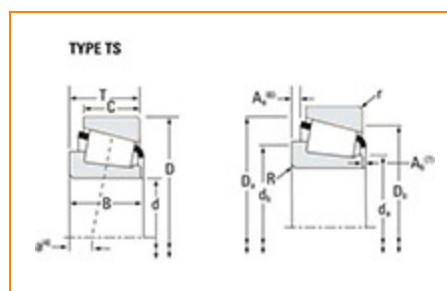
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## Timken Part Number 39578 - 39520, Tapered Roller Bearings - TS (Tapered Single) Imperial

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	39500
Cone Part Number	39578
Cup Part Number	39520
Design Units	Imperial
Bearing Weight	1.4 Kg 3.2 lb
Cage Type	Stamped Steel

### Dimensions

d - Bore	53.975 mm 2.1250 in
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<b>D - Cup Outer Diameter</b>	112.713 mm 4.4375 in
<b>B - Cone Width</b>	30.163 mm 1.1875 in
<b>C - Cup Width</b>	23.813 mm 0.9375 in
<b>T - Bearing Width</b>	30.163 mm 1.1875 in

## Abutment and Fillet Dimensions

<b>R - Cone Backface "To Clear" Radius<sup>1</sup></b>	3.560 mm 0.14 in
<b>r - Cup Backface "To Clear" Radius<sup>2</sup></b>	3.3 mm 0.130 in
<b>da - Cone Frontface Backing Diameter</b>	64.01 mm 2.52 in
<b>db - Cone Backface Backing Diameter</b>	70.1 mm 2.76 in
<b>Da - Cup Frontface Backing Diameter</b>	107.95 mm 4.25 in
<b>Db - Cup Backface Backing Diameter</b>	101.09 mm 3.98 in
<b>Ab - Cage-Cone Frontface Clearance</b>	3.3 mm 0.13 in
<b>Aa - Cage-Cone Backface Clearance</b>	1.3 mm 0.05 in
<b>a - Effective Center Location<sup>3</sup></b>	-6.6 mm -0.26 in

## Basic Load Ratings

<b>C90 - Dynamic Radial Rating (90 million revolutions)<sup>4</sup></b>	9730 lbf 43300 N
<b>C1 - Dynamic Radial Rating (1 million revolutions)<sup>5</sup></b>	37500 lbf 167000 N
<b>C0 - Static Radial Rating</b>	50300 lbf 224000 N
<b>C<sub>a90</sub> - Dynamic Thrust Rating (90 million revolutions)<sup>6</sup></b>	5650 lbf 25100 N

## Factors

<b>K - Factor<sup>7</sup></b>	1.72
<b>e - ISO Factor<sup>8</sup></b>	0.34
<b>Y - ISO Factor<sup>9</sup></b>	1.77
<b>G1 - Heat Generation Factor (Roller-Raceway)</b>	84.3
<b>G2 - Heat Generation Factor (Rib-Roller End)</b>	23.7
<b>Cg - Geometry Factor<sup>10</sup></b>	0.107

<sup>1</sup> These maximum fillet radii will be cleared by the bearing corners.

<sup>2</sup> These maximum fillet radii will be cleared by the bearing corners.

<sup>3</sup> Negative value indicates effective center inside cone backface.

<sup>4</sup> Based on  $90 \times 10^6$  revolutions  $L_{10}$  life, for The Timken Company life calculation method.  $C_{90}$  and  $C_{a90}$  are radial and thrust values.

<sup>5</sup> Based on  $1 \times 10^6$  revolutions  $L_{10}$  life, for the ISO life calculation method.

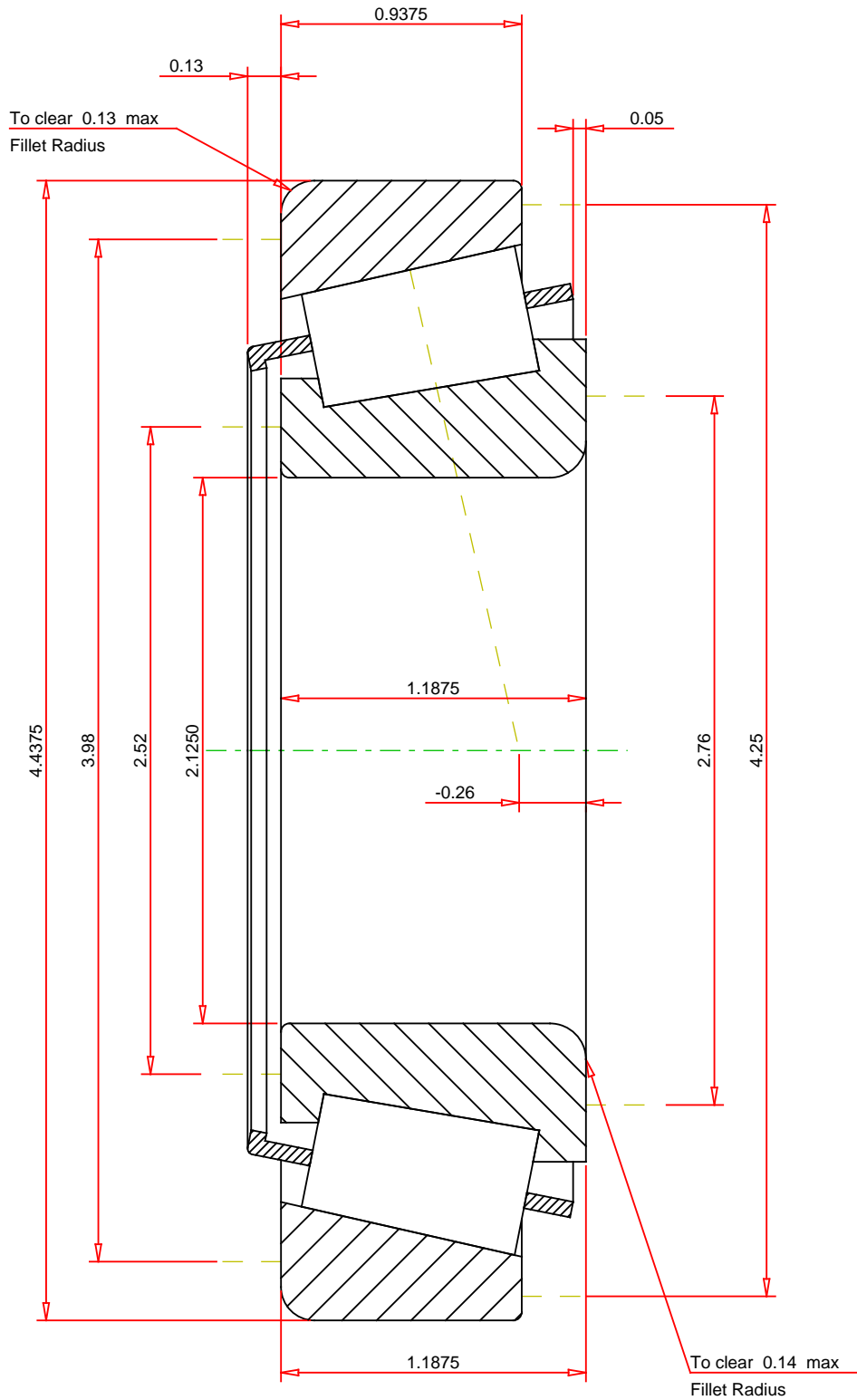
<sup>6</sup> Based on  $90 \times 10^6$  revolutions  $L_{10}$  life, for The Timken Company life calculation method.  $C_{90}$  and  $C_{a90}$  are radial and thrust values for a single-row,  $C_{90(2)}$  is the two-row radial value.

<sup>7</sup> These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

<sup>8</sup> These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

<sup>9</sup> These factors apply for both inch and metric calculations. Consult your Timken representative for instruction on use.

<sup>10</sup> Geometry constant for Lubrication Life Adjustment Factor  $a_3$ .



## IMPERIAL UNITS

ISO Factor - e 0.34  
ISO Factor - Y 1.77  
Bearing Weight 3.2 lb  
Number of Rollers Per Row 21  
Effective Center Location -0.26 inch

**TIMKEN**®

**THE TIMKEN COMPANY**  
NORTH CANTON, OHIO USA

**39578 - 39520**  
**TS BEARING ASSEMBLY**

K Factor	1.72	
Dynamic Radial Rating - C90	9730	lbf
Dynamic Thrust Rating - Ca90	5650	lbf
Static Radial Rating - C0	50300	lbf
Dynamic Radial Rating - C1	37500	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**