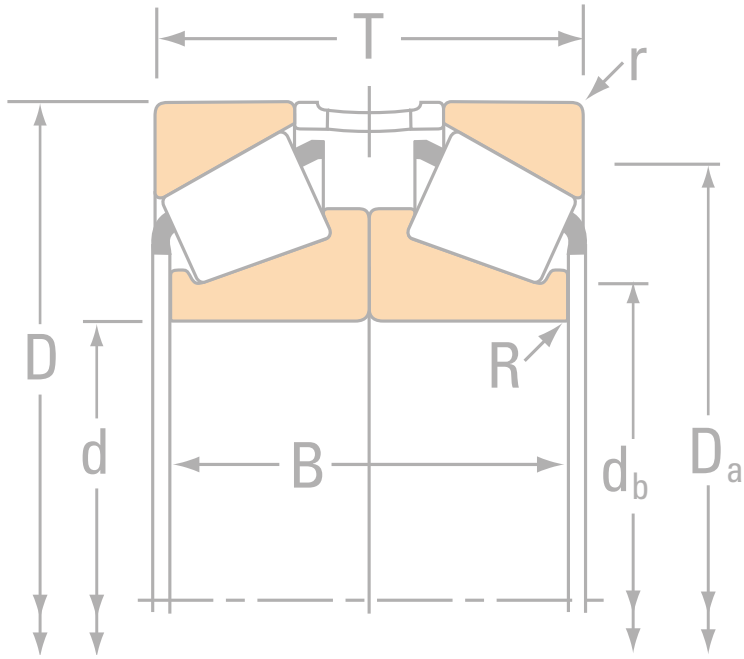


TIMKEN

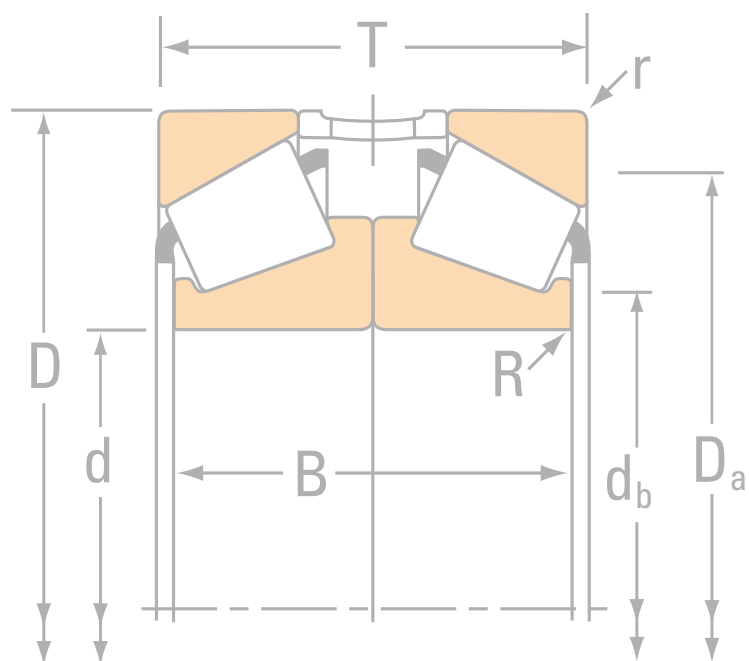


TIMKEN[®] METRIC TAPERED ROLLER BEARINGS
MATCHED BEARING ASSEMBLIES

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TIMKEN MATCHED BEARING ASSEMBLIES

Matched bearing assemblies are used in applications:

- That require higher load carrying capacity than can be achieved with a single-row tapered roller bearing; or
- Where the shaft must be located axially in both directions with a specific axial clearance or preload.

The standard range of assemblies included in the product tables are specified with a market standard axial clearance value that is referred to as Bench End Play (BEP). Application specific axial clearance values are available upon request.

All single-row metric tapered roller bearings are designed according to the ISO 355 standard.

Timken metric tapered roller bearing matched assemblies consist of two single-row bearings (type TS) with individually matched spacers that are set at the factory to pre-determined dimensions and tolerances.

The standard outer ring spacer is designed with lubrication holes to allow for lubricant flow into both bearing rows.

Matched bearing assemblies are supplied ready-to-fit into customer applications, with a unique serial number marked on spacers and bearing components for easy identification.



BENEFITS:

- Pre-set clearance simplifies mounting
- Higher productivity and greater uptime through precise setting
- High axial and radial load carrying capacity
- Axial loads accommodated in both directions

COMMON APPLICATIONS:

Standard matched assemblies are used in gear drives & transmissions, cement pulverizers, coal conveyors, cranes, calendar rolls and many more industrial applications.

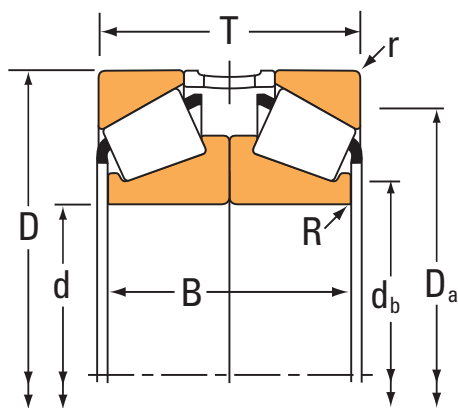
MOUNTING ARRANGEMENTS:

Timken can supply standard matched bearing assemblies in both the direct (DF) and indirect (DB) mounting arrangements to meet the application needs. Both types can accommodate axial loads in both directions.

Direct mounting "DF"
(face-to-face)

This arrangement consists of:

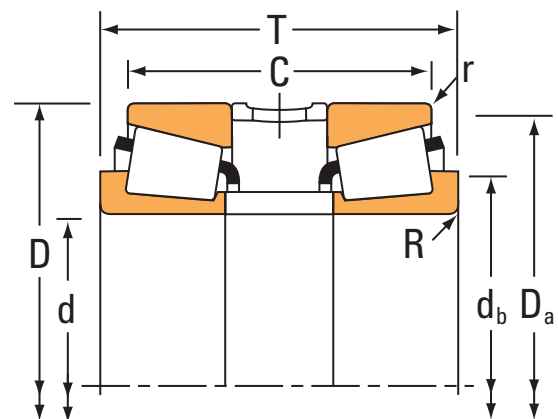
- Two single-row bearings, with abutting back-facing inner-rings
- An outer-ring spacer with lubricating holes



Indirect mounting "DB"
(back-to-back)

This arrangement consists of:

- Two single-row bearings
- An outer-ring spacer with lubricating holes
- A solid inner-ring spacer



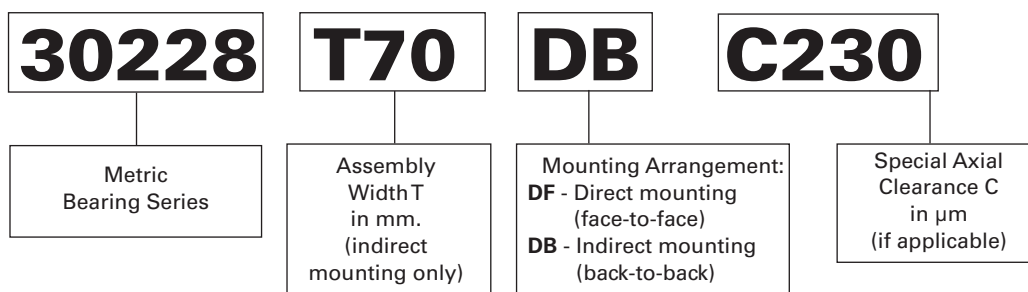
BEARING AXIAL CLEARANCE

The internal axial clearance is factory set for each assembly. The indicated axial clearance values are valid for general application conditions. The mean values (µm) are shown in the bearing table and are manufactured to a tolerance +/- 25 µm.

For example the matched bearing assembly 30228 DF will have a factory set axial clearance with a mean of 270 µm, The actual clearance will therefore lie in the range of 245 µm to 295 µm.

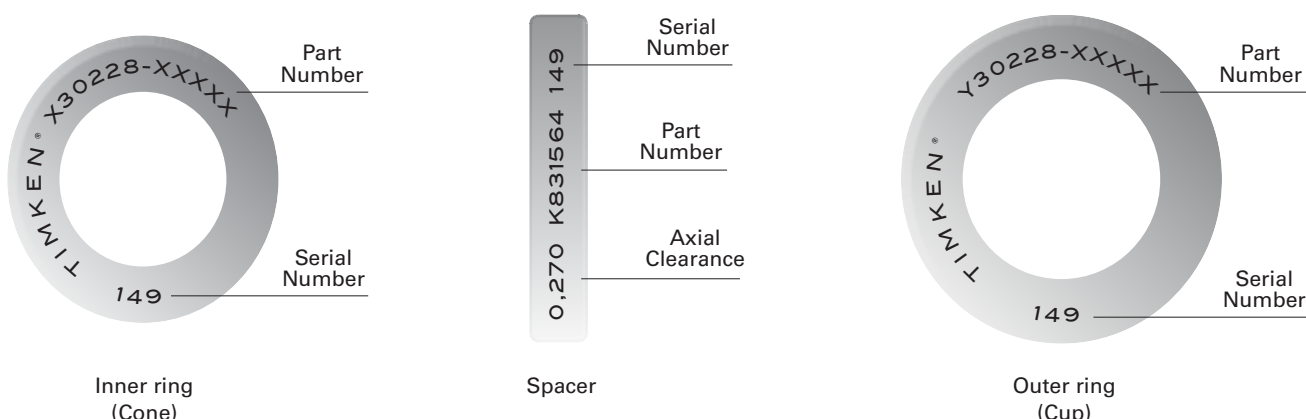
When a non-standard internal axial clearance is required, a "C" designation is used in the part number, along with the actual nominal clearance. For example the matched bearing assembly 30228 DF C230 will have a mean of 230 µm, the actual axial clearance will lie in the range of 205 µm to 255 µm.

BEARING PART NUMBERING SYSTEM



SERIAL NUMBERING

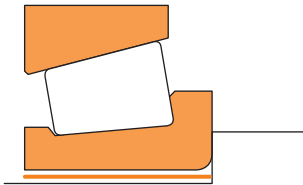
Timken metric matched bearing assemblies are measured and serialized at the factory. The spacer is custom fitted to obtain the specified clearance.



DISCLAIMER

Do not mix components with different serial numbers. This may result in incorrect bearing setting.

**INNER RING –
Industrial Equipment
Classes K and N (Metric)
ISO Bearing Classes P0 and P6**



Deviation from nominal (maximum) bearing bore and resultant fit.

T= Tight
L = Loose

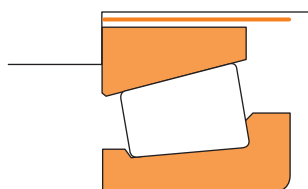
These charts are guidelines for specifying shaft and housing fits related to particular operating conditions.

FITTING PRACTICE.

Standard axial clearances shown in bearing table are appropriate for light duty fitting practice. A special axial clearance value may be needed for applications using Timken preferred, or special fitting practices. Special fitting practices may include applications with tubular shafts, with shaft/housing made of non-ferrous materials, with rotating housing/stationary shaft, with unground bearing seats, or applications running at very high speeds or in heavy operating conditions. Timken preferred fitting practice values are published in Timken Tapered Roller Bearing Catalog or Timken Engineering Manual. For more information consult your Timken engineer.

Inner Ring Bore		Tolerance	Rotating Inner Ring		
Range			Ground Seat		
Over	Incl.		Inner Ring Seat Deviation	Resultant Fit	Symbol
mm in.	mm in.	mm in.	mm in.	mm in.	
10	18	-0.012 0.000	+0.015 +0.007	0.027T 0.007T	m5
0.3937	0.7087	-0.0005 0.0000	+0.0006 +0.0003	+0.0011T +0.0003T	
18	30	-0.012 0.000	+0.017 +0.008	0.029T 0.008T	m5
0.7087	1.1811	-0.0005 0.0000	+0.0007 +0.0003	+0.0012T +0.0003T	
30	50	-0.012 0.000	+0.020 +0.009	0.032T 0.009T	m5
1.1811	1.9685	-0.0005 0.0000	+0.0008 +0.0004	+0.0013T +0.0004T	
50	80	-0.015 0.000	+0.024 +0.011	0.039T 0.011T	m5
1.9685	3.1496	-0.0006 0.0000	+0.0009 +0.0004	+0.0015T +0.0004T	
80	120	-0.020 0.000	+0.028 +0.013	0.039T 0.011T	m5
3.1496	4.7244	-0.0008 0.0000	+0.0011 +0.0005	+0.0019T +0.0005T	
120	140	-0.025 0.000	+0.033 +0.015	0.059T 0.015T	m5
4.7244	5.5118	-0.0010 0.0000	+0.0013 +0.0006	+0.0023T +0.0006T	
140	180	-0.025 0.000	+0.052 +0.027	0.077T 0.027T	n6
5.5118	7.0866	-0.0010 0.0000	+0.0020 +0.0011	+0.0030T +0.0011T	
180	200	-0.030 0.000	+0.060 +0.031	0.090T 0.031T	n6
7.0866	7.8740	-0.0012 0.0000	+0.0024 +0.0012	+0.0035T +0.0012T	
200	225	-0.030 0.000	+0.079 +0.050	0.109T 0.050T	p6
7.8740	8.8583	-0.0012 0.0000	+0.0031 +0.0020	+0.0043T +0.0020T	
225	250	-0.030 0.000	+0.079 +0.050	0.109T 0.050T	p6
8.8583	9.8425	-0.0012 0.0000	+0.0031 +0.0020	+0.0043T +0.0020T	
250	280	-0.035 0.000	+0.088 +0.056	0.123T 0.056T	p6
9.8425	11.0236	-0.0014 0.0000	+0.0035 +0.0022	+0.0048T +0.0022T	
280	315	-0.035 0.000	+0.088 +0.056	0.123T 0.056T	p6
11.0236	12.4016	-0.0014 0.0000	+0.0035 +0.0022	+0.0048T +0.0022T	
315	355	-0.040 0.000	+0.098 +0.062	0.138T 0.062T	p6
12.4016	13.9764	-0.0016 0.0000	+0.0039 +0.0024	+0.0054T +0.0024T	
355	400	-0.040 0.000	+0.098 +0.062	0.138T 0.062T	p6
13.9764	15.7480	-0.0016 0.0000	+0.0039 +0.0024	+0.0054T +0.0024T	

**OUTER RING –
Industrial Equipment
Classes K and N (Metric)
ISO Bearing Classes P0 and P6**



Deviation from nominal (maximum) bearing O.D. and resultant fit.

T= Tight
L = Loose

These charts are guidelines for specifying shaft and housing fits related to particular operating conditions.

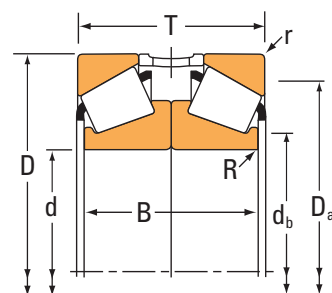
Outer Ring O.D.		Tolerance	Stationary Outer Ring					
Range			Clamped			Adjustable		
Over	Incl.		Outer Ring Seat Deviation	Resultant Fit	Symbol	Outer Ring Seat Deviation	Resultant Fit	Symbol
mm in.	mm in.	mm in.	mm in.	mm in.		mm in.	mm in.	
18 0.7087	30 1.1811	-0.012 0.000 -0.0005 0.0000	+0.021 0.000 +0.0008 +0.0000	0.000 0.033L 0.0000 0.0013L	H7	+0.008 -0.005 +0.0003 -0.0002	0.005T 0.020L 0.0002T 0.0008L	J6
30 1.1811	50 1.9685	-0.014 0.000 -0.0006 0.0000	+0.025 0.000 +0.0010 +0.0000	0.000 0.039L 0.0000 0.0016L	H7	+0.010 -0.006 +0.0004 -0.0002	0.006T 0.024L 0.0002T 0.0008L	J6
50 1.9685	80 3.1496	-0.014 0.000 -0.0006 0.0000	+0.030 0.000 +0.0012 +0.0000	0.000 0.044L 0.0000 0.0018L	H7	+0.013 -0.006 +0.0005 -0.0002	0.006T 0.027L 0.0002T 0.0011L	J6
80 3.1496	120 4.7244	-0.018 0.000 -0.0007 0.0000	+0.035 0.000 +0.0014 +0.0000	0.000 0.053L 0.0000 0.0018L	H7	+0.016 -0.006 +0.0006 -0.0002	0.006T 0.034L 0.0002T 0.0013L	J6
120 4.7244	150 5.9055	-0.020 0.000 -0.0008 0.0000	+0.040 0.000 +0.0016 +0.0000	0.000 0.060L 0.0000 0.0024L	H7	+0.018 -0.007 +0.0007 -0.0003	0.007T 0.038L 0.0003T 0.0015L	J6
150 5.9055	180 7.0866	-0.025 0.000 -0.0010 0.0000	+0.040 0.000 +0.0016 +0.0000	0.000 0.065L 0.0000 0.0026L	H7	+0.018 -0.007 +0.0007 -0.0003	0.007T 0.043L 0.0003T 0.0017L	J6
180 7.0866	250 9.8425	-0.030 0.000 -0.0012 0.0000	+0.046 0.000 +0.0018 +0.0000	0.000 0.076L 0.0000 0.0030L	H7	+0.022 -0.007 +0.0009 -0.0003	0.007T 0.052L 0.0003T 0.0020L	J6
250 9.8425	315 12.4016	-0.035 0.000 -0.0014 0.0000	+0.052 0.000 +0.0020 +0.0000	0.000 0.087L 0.0000 0.0034L	H7	+0.025 -0.007 +0.0010 -0.0003	0.007T 0.060L 0.0003T 0.0024L	J6
315 12.4016	400 15.7480	-0.040 0.000 -0.0016 0.0000	+0.057 0.000 +0.0022 +0.0000	0.000 0.097L 0.0000 0.0038L	H7	+0.029 -0.007 +0.0011 -0.0003	0.007T 0.069L 0.0003T 0.0027L	J6
400 15.7480	500 19.6850	-0.045 0.000 -0.0018 0.0000	+0.063 0.000 +0.0025 +0.0000	0.000 0.108L 0.0000 0.0043L	H7	+0.033 -0.007 +0.0013 -0.0003	0.007T 0.078L 0.0003T 0.0031L	J6

TIMKEN® METRIC TAPERED ROLLER BEARINGS - MATCHED BEARING ASSEMBLIES

DIRECT MOUNTING

Bore	Part Number	BEP axial clearance	Bearing Dimensions				Load Ratings				
			Bore	O.D.	Width	Width	Factors			Dynamic Radial ⁽¹⁾	
			d	D	T	B	e	Y ₁	Y ₂	K	C ₁₍₂₎
		mm	mm	mm	mm	mm				N	
30	32206DF	0.120	30.000	62.000	42.500	40.000	0.37	1.80	2.69	1.56	112000
35	31307DF	0.090	35.000	80.000	45.500	42.000	0.83	0.82	1.22	0.71	127000
40	31308DF	0.090	40.000	90.000	50.500	46.000	0.83	0.82	1.22	0.71	149000
45	31309DF	0.100	45.000	100.000	54.500	50.000	0.83	0.82	1.22	0.71	184000
	31309DFC25	0.025	45.000	100.000	54.500	50.000	0.83	0.82	1.22	0.71	184000
50	30210DF	0.160	50.000	90.000	43.500	40.000	0.42	1.61	2.30	1.39	150000
	30210DFC120	0.120	50.000	90.000	43.500	40.000	0.42	1.61	2.30	1.39	150000
	31310DF	0.100	50.000	110.000	58.500	54.000	0.83	0.82	1.22	0.71	217000
55	31311DF	0.120	55.000	120.000	63.000	58.000	0.83	0.82	1.22	0.71	253000
	32011XDF	0.160	55.000	90.000	46.000	46.000	0.41	1.67	2.48	1.44	165000
	33011DFC170	0.170	55.000	90.000	54.000	54.000	0.31	2.16	3.30	1.87	173000
	33111DF	0.180	55.000	95.000	60.000	60.000	0.37	1.80	2.69	1.56	232000
60	30212DF	0.180	60.000	110.000	47.500	44.000	0.40	1.67	2.48	1.44	186000
	31312DF	0.120	60.000	130.000	67.000	62.000	0.83	0.82	1.22	0.71	298000
	32012XDFC250	0.250	60.000	95.000	46.000	46.000	0.43	1.57	2.34	1.36	168000
	32212DFC290	0.290	60.000	110.000	59.500	56.000	0.40	1.67	2.48	1.44	239000
65	30213DF	0.180	65.000	120.000	49.500	46.000	0.40	1.67	2.48	1.44	241000
	31313DF	0.120	65.000	140.000	72.000	66.000	0.83	0.82	1.22	0.71	341000
	31313DFC25	0.025	65.000	140.000	72.000	66.000	0.83	0.82	1.22	0.71	341000
	32013XDF	0.160	65.000	100.000	46.000	46.000	0.46	1.47	2.19	1.27	171000
70	31314DF	0.140	70.000	150.000	76.000	70.000	0.83	0.82	1.22	0.71	371000
	31314DF120	0.120	70.000	150.000	76.000	70.000	0.83	0.82	1.22	0.71	371000
	32014XDF	0.180	70.000	110.000	50.000	50.000	0.43	1.55	2.31	1.34	196000
	33014DF	0.270	70.000	110.000	62.000	62.000	0.28	2.37	3.60	2.05	267000
75	30215DF	0.200	75.000	130.000	54.500	50.000	0.44	1.55	2.31	1.34	275000
	31315DF	0.140	75.000	160.000	80.000	74.000	0.83	0.82	1.22	0.71	432000
	32215DF	0.200	75.000	130.000	66.500	62.000	0.44	1.55	2.31	1.34	320000
	33015DF	0.270	75.000	115.000	62.000	62.000	0.30	2.27	3.38	1.96	274000
	33015DFC155	0.155	75.000	115.000	62.000	62.000	0.30	2.27	3.38	1.96	274000
	33115DFC150	0.150	75.000	125.000	74.000	74.000	0.40	1.70	2.53	1.47	356000
80	31316DF	0.140	80.000	170.000	85.000	78.000	0.83	0.82	1.22	0.71	471000
	32016XDF	0.180	80.000	125.000	58.000	58.000	0.42	1.60	2.30	1.38	289000
	32216DF	0.200	80.000	140.000	70.500	66.000	0.42	1.61	2.30	1.39	358000
85	30217DF	0.240	85.000	150.000	61.000	56.000	0.42	1.61	2.30	1.39	347000
	30217DFC70	0.070	85.000	150.000	61.000	56.000	0.42	1.61	2.30	1.39	347000
	31317DF	0.140	85.000	180.000	89.000	82.000	0.83	0.82	1.22	0.71	495000
	32017XDF	0.210	85.000	130.000	58.000	58.000	0.44	1.53	2.27	1.32	283000
	32217DF	0.240	85.000	150.000	77.000	72.000	0.42	1.61	2.30	1.39	427000
	33017DFC240	0.240	85.000	130.000	72.000	72.000	0.29	2.31	3.44	2.00	383000
	33217DF	0.250	85.000	150.000	98.000	98.000	0.42	1.62	2.41	1.40	611000
90	30218DF	0.240	90.000	160.000	65.000	60.000	0.42	1.61	2.30	1.39	419000
	31318DF	0.140	90.000	190.000	93.000	86.000	0.83	0.82	1.22	0.71	564000
	31318DFC70	0.070	90.000	190.000	93.000	86.000	0.83	0.82	1.22	0.71	564000
	32018XDF	0.210	90.000	140.000	64.000	64.000	0.42	1.60	2.30	1.38	319000
	32218DF	0.240	90.000	160.000	85.000	80.000	0.42	1.61	2.30	1.39	544000
	33018DF	0.370	90.000	140.000	78.000	78.000	0.27	2.51	3.74	2.17	430000
	33018DFC150	0.150	90.000	140.000	78.000	78.000	0.27	2.51	3.74	2.17	430000

Shaft Dimensions		Housing Dimensions		Bearing Assembly Weight kg
Max. Shaft Fillet Radius	Backing Shoulder Dia.	Max. housing Fillet Radius	Max. Backing Shoulder Dia.	
$R^{(2)}$	d_b	$r^{(2)}$	D_a	
mm	mm	mm	mm	
0.3	37.0	1.0	54.0	0.61
0.3	45.0	1.5	68.0	1.14
0.4	52.0	1.5	76.0	1.48
0.5	56.0	1.5	85.0	1.95
0.5	56.0	1.5	85.0	1.95
0.7	58.0	1.5	81.0	1.15
0.7	58.0	1.5	81.0	1.15
0.3	63.0	2.0	93.0	2.56
0.3	68.0	2.0	103.0	3.27
0.3	61.0	1.5	82.0	1.14
0.3	61.0	1.5	82.0	1.36
0.3	61.0	1.5	85.0	1.73
0.5	68.0	1.5	99.0	1.84
1.0	74.0	2.5	111.0	3.95
0.4	66.0	1.5	86.0	1.23
0.3	67.0	1.5	98.0	2.35
0.5	74.0	1.5	110.0	2.28
0.5	80.0	2.5	120.0	5.04
0.5	80.0	2.5	120.0	5.04
0.3	71.0	1.5	91.0	1.31
1.0	85.0	2.5	128.0	5.85
1.0	85.0	2.5	128.0	5.85
0.3	76.0	1.5	100.0	1.79
0.6	77.0	1.5	101.0	2.16
0.5	85.0	1.5	120.0	2.85
1.0	91.0	2.5	138.0	7.28
0.3	84.0	1.5	117.0	3.47
0.3	83.0	1.5	104.0	2.34
0.3	83.0	1.5	104.0	2.34
0.3	88.0	1.5	112.0	3.61
0.5	97.0	2.5	146.0	8.62
0.3	87.0	1.5	114.0	5.48
0.5	91.0	2.0	128.0	4.26
0.5	93.0	2.0	137.0	4.33
0.5	93.0	2.0	137.0	4.33
0.5	110.0	3.0	154.0	10.5
0.3	92.0	1.5	119.0	2.74
0.5	97.0	2.0	135.0	5.22
0.3	93.0	1.5	120.0	3.50
0.3	94.0	2.0	134.0	7.40
0.6	102.0	2.0	146.0	5.47
1.0	117.0	3.0	164.0	12.5
1.0	117.0	3.0	164.0	12.5
0.3	99.0	1.5	128.0	3.50
0.6	101.0	2.0	145.0	7.15
0.3	98.0	1.5	131.0	4.50
0.3	98.0	1.5	131.0	4.50



⁽¹⁾ Based on 1×10^6 revolutions L_{10} life, for the ISO life-calculation method. $C_{1(2)}$ is the double-row radial value.

⁽²⁾ These maximum fillet radii will be cleared by the bearing corners.

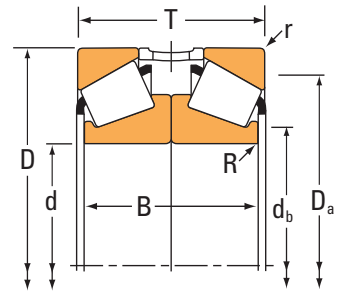
Additional series may exist. If you do not see the assembly you are looking for, consult your Timken engineer for more information.

TIMKEN® METRIC TAPERED ROLLER BEARINGS - MATCHED BEARING ASSEMBLIES

DIRECT MOUNTING

Bore	Part Number	BEP axial clearance	Bearing Dimensions				Load Ratings				
			Bore	O.D.	Width	Width	Factors			Dynamic Radial ⁽¹⁾	
			d	D	T	B	e	Y ₁	Y ₂	K	C ₁₍₂₎
		mm	mm	mm	mm	mm				N	
95	30219DFC110	0.110	95.000	170.000	69.000	64.000	0.42	1.60	2.30	1.39	460000
	32219DF	0.240	95.000	170.000	91.000	86.000	0.42	1.61	2.30	1.39	551000
	33019DF	0.370	95.000	140.000	78.000	78.000	0.28	2.43	3.62	2.10	429000
100	30220DF	0.240	100.000	180.000	74.000	68.000	0.42	1.60	2.30	1.39	524000
	30320DFC400	0.400	100.000	215.000	103.000	92.000	0.35	1.90	2.90	1.69	779520
	31320XDF	0.140	100.000	215.000	113.000	102.000	0.83	0.80	1.20	0.71	725000
	32020XDF	0.210	100.000	150.000	64.000	64.000	0.46	1.50	1.20	1.27	339000
	32220DF	0.240	100.000	180.000	98.000	92.000	0.42	1.60	2.30	1.39	685000
	32320DF	0.270	100.000	215.000	155.000	146.000	0.35	1.90	2.90	1.69	1020000
	33020DF	0.370	100.000	150.000	78.000	78.000	0.29	2.30	3.50	2.03	436000
105	32021XDF	0.250	105.000	160.000	70.000	70.000	0.44	1.50	2.50	1.31	395000
	32021XDFC150	0.150	105.000	160.000	70.000	70.000	0.44	1.50	2.50	1.31	395000
	32221DF	0.250	105.000	190.000	106.000	100.000	0.42	1.60	2.40	1.39	694000
	33021DF	0.380	105.000	160.000	86.000	86.000	0.28	2.40	3.50	2.07	506000
110	30222DF	0.250	110.000	200.000	82.000	76.000	0.42	1.60	2.30	1.39	651000
	31322DF	0.160	110.000	240.000	126.000	114.000	0.83	0.81	1.20	0.71	910000
	32022XDF	0.250	110.000	170.000	76.000	76.000	0.43	1.60	2.30	1.36	490680
	32022XDFC200	0.200	110.000	170.000	76.000	76.000	0.43	1.60	2.30	1.36	490680
	32222DF	0.250	110.000	200.000	112.000	106.000	0.42	1.60	2.30	1.39	858000
	32322DF	0.310	110.000	240.000	169.000	160.000	0.35	1.90	2.90	1.69	1320000
	33122DF	0.250	110.000	180.000	112.000	112.000	0.42	1.60	2.30	1.40	718000
33122DFC120	0.120	110.000	180.000	112.000	112.000	0.42	1.60	2.30	1.40	718000	
120	30224DF	0.250	120.000	215.000	87.000	80.000	0.44	1.60	2.30	1.34	652000
	30324DFC600	0.600	120.000	260.000	119.000	110.000	0.35	1.90	2.90	1.69	1090000
	31324XDF	0.160	120.000	260.000	136.000	124.000	0.83	0.81	1.20	0.71	1060000
	32024XDF	0.250	120.000	180.000	76.000	76.000	0.46	1.50	2.20	1.27	509000
	32224DF	0.250	120.000	215.000	123.000	116.000	0.44	1.60	2.30	1.34	963000
	32324DF	0.300	120.000	260.000	181.000	172.000	0.35	1.90	2.90	1.69	1580000
	33024DF	0.380	120.000	180.000	96.000	96.000	0.31	2.30	3.40	1.91	612480
33024DFC250	0.250	120.000	180.000	96.000	96.000	0.31	2.30	3.40	1.91	612480	
130	30226DF	0.270	130.000	230.000	87.500	80.000	0.44	1.60	2.30	1.34	708000
	31326DF	0.190	130.000	280.000	144.000	132.000	0.83	0.81	1.20	0.71	1200000
	32026XDF	0.270	130.000	200.000	90.000	90.000	0.43	1.60	2.30	1.34	673000
	32226DF	0.270	130.000	230.000	135.500	128.000	0.44	1.60	2.30	1.34	1120000
	32326DF	0.350	130.000	280.000	197.500	186.000	0.35	1.90	2.90	1.69	1950000
140	30228DF	0.270	140.000	250.000	91.500	84.000	0.44	1.60	2.30	1.34	825000
	30228DFC100	0.100	140.000	250.000	91.500	84.000	0.44	1.60	2.30	1.34	825000
	32028XDF	0.270	140.000	210.000	90.000	90.000	0.46	1.50	2.20	1.27	685000
	32228DF	0.270	140.000	250.000	143.500	136.000	0.44	1.60	2.30	1.34	1230000
	32928DF	0.340	140.000	190.000	64.000	64.000	0.36	1.80	2.80	1.62	390000
150	30230DF	0.300	150.000	270.000	98.000	90.000	0.44	1.60	2.30	1.34	928000
	30230DFC350	0.350	150.000	270.000	98.000	90.000	0.44	1.60	2.30	1.34	928000
	30230DFC475	0.475	150.000	270.000	98.000	90.000	0.44	1.60	2.30	1.34	928000
	31330DF	0.210	150.000	320.000	164.000	150.000	0.83	0.81	1.20	0.71	1500000
	32030XDF	0.300	150.000	225.000	96.000	96.000	0.46	1.50	2.20	1.27	728000
	32030XDFC145	0.145	150.000	225.000	96.000	96.000	0.46	1.50	2.20	1.27	728000
	32230DF	0.300	150.000	270.000	154.000	146.000	0.44	1.60	2.30	1.34	1480000
32230DFC360	0.360	150.000	270.000	154.000	146.000	0.44	1.60	2.30	1.34	1480000	

Shaft Dimensions		Housing Dimensions		Bearing Assembly Weight kg
Max. Shaft Fillet Radius	Backing Shoulder Dia.	Max. housing Fillet Radius	Max. Backing Shoulder Dia.	
$R^{(2)}$	d_b	$r^{(2)}$	D_a	
mm	mm	mm	mm	
0.5	104.0	2.5	155.0	6.50
0.5	106.0	2.5	152.0	8.30
0.3	102.0	1.5	133.0	4.60
1.0	115.0	2.5	163.0	7.80
1.3	118.0	3.0	197.0	17.6
0.8	123.0	3.0	184.0	18.0
0.3	108.0	1.5	137.0	3.90
1.0	114.0	2.5	168.0	10.0
1.3	124.0	3.0	193.0	26.9
0.3	107.0	1.5	139.0	4.85
0.3	113.0	2.0	146.0	5.00
0.3	113.0	2.0	146.0	5.00
0.5	120.0	2.5	171.0	12.2
0.3	113.0	2.0	147.0	6.00
1.0	126.0	2.5	181.0	10.9
1.8	135.0	3.0	206.0	26.0
0.5	119.0	2.0	156.0	6.30
0.5	119.0	2.0	156.0	6.30
1.0	125.0	2.5	179.0	15.0
0.8	136.0	3.0	215.0	35.4
0.5	121.0	2.0	162.0	11.0
0.5	121.0	2.0	162.0	11.0
1.0	136.0	2.5	195.0	13.0
1.8	142.0	3.0	238.0	29.8
0.8	147.0	3.0	223.0	38.0
0.3	130.0	2.0	165.0	6.70
1.0	135.0	2.5	191.0	19.0
1.8	149.0	3.0	233.0	43.0
0.5	130.0	2.0	166.0	8.70
0.5	130.0	2.0	166.0	8.70
1.0	146.0	3.0	210.0	14.5
0.8	163.0	4.0	238.0	41.0
0.6	142.0	2.0	184.0	10.0
1.0	145.0	3.0	206.0	23.4
0.8	156.0	5.0	251.0	56.0
1.0	157.0	3.0	227.0	18.0
1.0	157.0	3.0	227.0	18.0
0.6	151.0	2.0	193.0	10.9
1.0	159.0	3.0	223.0	29.5
0.6	148.0	1.5	179.0	5.20
1.0	168.0	3.0	245.0	23.1
1.0	168.0	3.0	245.0	23.1
1.0	168.0	3.0	245.0	23.1
2.0	187.0	4.0	276.0	60.2
0.6	163.0	2.5	206.0	13.2
0.6	163.0	2.5	206.0	13.2
1.5	170.0	3.0	244.0	36.7
1.5	170.0	3.0	244.0	36.7



⁽¹⁾ Based on 1×10^6 revolutions L_{10} life, for the ISO life-calculation method. $C_{1(2)}$ is the double-row radial value.

⁽²⁾ These maximum fillet radii will be cleared by the bearing corners.

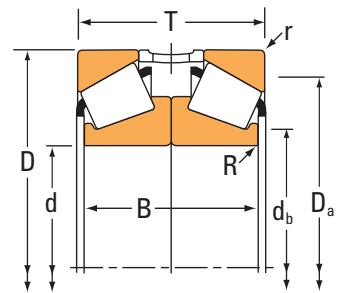
Additional series may exist. If you do not see the assembly you are looking for, consult your Timken engineer for more information.

TIMKEN® METRIC TAPERED ROLLER BEARINGS - MATCHED BEARING ASSEMBLIES

DIRECT MOUNTING

Bore	Part Number	BEP axial clearance	Bearing Dimensions				Load Ratings				
			Bore	O.D.	Width	Width	Factors			Dynamic Radial ⁽¹⁾	
			d	D	T	B	e	Y ₁	Y ₂	K	C ₁₍₂₎
		mm	mm	mm	mm	mm				N	
160	32032XDF	0.300	160.000	240.000	102.000	102.000	0.46	1.50	2.20	1.27	836000
	32232DF	0.300	160.000	290.000	168.000	160.000	0.44	1.60	2.30	1.34	1770000
170	32034XDF	0.340	170.000	260.000	114.000	114.000	0.44	1.50	2.30	1.31	1000000
	32034XDFC545	0.545	170.000	260.000	114.000	114.000	0.44	1.50	2.30	1.31	1000000
	32234DF	0.340	170.000	310.000	182.000	172.000	0.44	1.60	2.30	1.34	1940000
	32234DFC480	0.480	170.000	310.000	182.000	172.000	0.44	1.60	2.30	1.34	1940000
	32934DF	0.400	170.000	230.000	76.000	76.000	0.38	1.70	2.80	1.52	584000
	32934DFC225	0.225	170.000	230.000	76.000	76.000	0.38	1.70	2.80	1.52	584000
180	30236DF	0.340	180.000	320.000	114.000	104.000	0.45	1.50	2.30	1.30	1200000
	32036XDF	0.340	180.000	280.000	128.000	128.000	0.42	1.60	2.30	1.38	1230000
	32236DF	0.340	180.000	320.000	182.000	172.000	0.45	1.50	2.30	1.30	1980000
	32236DFC455	0.455	180.000	320.000	182.000	172.000	0.45	1.50	2.30	1.30	1980000
	32936DF	0.400	180.000	250.000	90.000	90.000	0.48	1.40	2.10	1.22	702000
190	30238DF	0.270	190.000	340.000	120.000	110.000	0.44	1.60	2.30	1.34	1460000
	32038XDF	0.370	190.000	290.000	128.000	128.000	0.44	1.50	2.30	1.32	1250000
	32238DF	0.380	190.000	340.000	194.000	184.000	0.44	1.60	2.30	1.34	2370000
	32938DF	0.400	190.000	260.000	90.000	90.000	0.48	1.40	2.10	1.22	693000
200	30240DF	0.380	200.000	360.000	128.000	116.000	0.44	1.60	2.30	1.34	1550000
	30240DFC570	0.570	200.000	360.000	128.000	116.000	0.44	1.60	2.30	1.34	1550000
	32040XDF	0.370	200.000	310.000	140.000	140.000	0.43	1.60	2.30	1.36	1480000
	32240DF	0.370	200.000	360.000	208.000	196.000	0.41	1.70	2.50	1.44	2420000
	32240DFC425	0.425	200.000	360.000	208.000	196.000	0.41	1.70	2.50	1.44	2420000
	32940DF	0.420	200.000	280.000	102.000	102.000	0.39	1.70	2.50	1.48	922000
220	30244DF	0.250	220.000	400.000	144.000	130.000	0.42	1.60	2.30	1.39	1910000
	32044XDF	0.420	220.000	340.000	152.000	152.000	0.43	1.60	2.30	1.36	1730000
	32044XDFC325	0.325	220.000	340.000	152.000	152.000	0.43	1.60	2.30	1.36	1730000
	32244DF	0.420	220.000	400.000	228.000	216.000	0.44	1.60	2.30	1.34	3220000
	32944DF	0.470	220.000	300.000	102.000	102.000	0.43	1.60	2.30	1.37	977000
	32944DFC300	0.300	220.000	300.000	102.000	102.000	0.43	1.60	2.30	1.37	977000
240	32048XDF	0.470	240.000	360.000	152.000	152.000	0.46	1.50	2.20	1.27	1790000
	32948DF	0.470	240.000	320.000	102.000	102.000	0.46	1.50	2.20	1.27	994000
260	32052XDF	0.520	260.000	400.000	174.000	174.000	0.43	1.60	2.30	1.34	2300000
	32252DF	0.510	260.000	480.000	274.000	260.000	0.43	1.60	2.30	1.36	4340000
280	32056XDF	0.520	280.000	420.000	174.000	174.000	0.46	1.50	2.20	1.27	2400000
	32056XDFC575	0.575	280.000	420.000	174.000	174.000	0.46	1.50	2.20	1.27	2400000
	32956DF	0.560	280.000	380.000	127.000	127.000	0.43	1.60	2.30	1.35	1480000
	32956DFC645	0.645	280.000	380.000	127.000	127.000	0.43	1.60	2.30	1.35	1480000
300	32960DF	0.670	300.000	420.000	152.000	152.000	0.39	1.70	2.50	1.48	2050000
	32960DFC575	0.575	300.000	420.000	152.000	152.000	0.39	1.70	2.50	1.48	2050000
	32960DFC585	0.585	300.000	420.000	152.000	152.000	0.39	1.70	2.50	1.48	2050000
320	32064XDF	0.620	320.000	480.000	200.000	200.000	0.46	1.50	2.20	1.27	3140000
	32064XDFC675	0.675	320.000	480.000	200.000	200.000	0.46	1.50	2.20	1.27	3140000
340	32968DF	0.610	340.000	460.000	152.000	152.000	0.44	1.60	2.30	1.34	2120000
	32968DFC225	0.225	340.000	460.000	152.000	152.000	0.44	1.60	2.30	1.34	2120000
	32968DFC270	0.270	340.000	460.000	152.000	152.000	0.44	1.60	2.30	1.34	2120000
	32968DFC575	0.575	340.000	460.000	152.000	152.000	0.44	1.60	2.30	1.34	2120000
360	32972DFC225	0.225	360.000	480.000	152.000	152.000	0.46	1.50	2.20	1.27	2170000
	32972DFC425	0.425	360.000	480.000	152.000	152.000	0.46	1.50	2.20	1.27	2170000

Shaft Dimensions		Housing Dimensions		Bearing Assembly Weight kg
Max. Shaft Fillet Radius	Backing Shoulder Dia.	Max. housing Fillet Radius	Max. Backing Shoulder Dia.	
$R^{(2)}$	d_b	$r^{(2)}$	D_a	
mm	mm	mm	mm	
1.0	174.0	2.5	221.0	16.3
1.8	185.0	3.0	261.0	47.0
1.0	187.0	2.5	238.0	21.8
1.0	187.0	2.5	238.0	21.8
0.8	198.0	4.0	279.0	58.6
0.8	198.0	4.0	279.0	58.6
0.6	179.0	2.0	215.0	9.10
0.6	179.0	2.0	215.0	9.10
0.8	200.0	4.0	294.0	38.0
1.0	197.0	2.5	256.0	29.0
0.8	210.0	4.0	288.0	62.5
0.8	210.0	4.0	288.0	62.5
0.6	192.0	2.0	231.0	13.4
1.5	215.0	4.0	310.0	47.0
1.0	207.0	2.5	267.0	30.2
1.5	219.0	4.0	305.0	75.0
1.0	202.0	2.0	242.0	14.3
3.3	227.0	4.0	331.0	53.8
3.3	227.0	4.0	331.0	53.8
1.5	220.0	2.5	284.0	38.7
1.5	229.0	4.0	326.0	87.8
1.5	229.0	4.0	326.0	87.8
1.0	213.0	2.5	262.0	19.5
1.5	245.0	4.0	364.0	74.4
1.5	241.0	3.0	312.0	49.6
1.5	241.0	3.0	312.0	49.6
0.8	251.0	4.0	362.0	122.6
1.0	232.0	2.5	281.0	20.5
1.0	232.0	2.5	281.0	20.5
2.0	259.0	3.0	331.0	53.3
1.0	251.0	2.5	300.0	21.3
1.5	284.0	4.0	367.0	78.7
1.5	306.0	5.0	432.0	215.0
1.5	302.0	4.0	388.0	83.8
1.5	302.0	4.0	388.0	83.8
1.0	296.0	2.5	356.0	41.0
1.0	296.0	2.5	356.0	41.0
0.8	318.0	3.0	393.0	64.5
0.8	318.0	3.0	393.0	64.5
0.8	318.0	3.0	393.0	64.5
1.5	343.0	4.0	442.0	124.0
1.5	343.0	4.0	442.0	124.0
1.5	359.0	3.0	432.0	71.2
1.5	359.0	3.0	432.0	71.2
1.5	359.0	3.0	432.0	71.2
1.5	359.0	3.0	432.0	71.2
1.5	378.0	3.0	451.0	92.8
1.5	378.0	3.0	451.0	92.8



⁽¹⁾ Based on 1×10^6 revolutions L_{10} life, for the ISO life-calculation method. $C_{1(2)}$ is the double-row radial value.

⁽²⁾ These maximum fillet radii will be cleared by the bearing corners.

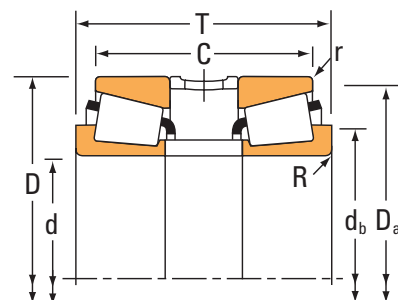
Additional series may exist. If you do not see the assembly you are looking for, consult your Timken engineer for more information.

TIMKEN® METRIC TAPERED ROLLER BEARINGS - MATCHED BEARING ASSEMBLIES

INDIRECT MOUNTING

Bore	Part Number	BEP	Bearing Dimensions				Load Ratings				
			Bore	O.D.	Width	Width	Factors				Dynamic Radial ⁽¹⁾
			d	D	T	C	e	Y ₁	Y ₂	K	C ₁₍₂₎
		mm	mm	mm	mm	mm					N
75	30215T70DBC270	0.270	75.000	130.000	70.000	59.500	0.44	1.55	2.31	1.34	275000
	32215T80DB	0.200	75.000	130.000	80.000	67.500	0.44	1.55	2.31	1.34	320000
80	32216T78DBC110	0.110	80.000	140.000	78.000	63.500	0.42	1.60	2.30	1.39	358000
85	30217T71DB	0.240	85.000	150.000	71.000	58.000	0.42	1.61	2.30	1.39	347000
95	32019XT73DBC100	0.100	95.000	145.000	73.000	57.000	0.44	1.53	2.27	1.32	324000
100	32220T108DB	0.240	100.000	180.000	108.000	88.000	0.42	1.60	2.30	1.39	640000
110	32022XT84DBC200	0.200	110.000	170.000	84.000	66.000	0.43	1.60	2.30	1.36	963000
120	32024XT84DBC200	0.200	120.000	180.000	84.000	66.000	0.46	1.50	2.20	1.27	509000
130	30226T97.5DB	0.270	130.000	230.000	97.500	78.000	0.44	1.60	2.30	1.34	708000
140	30228T106DB	0.280	140.000	250.000	106.000	86.500	0.44	1.60	2.30	1.34	825000
	32028XT130DB	0.270	140.000	210.000	130.000	108.000	0.46	1.50	2.20	1.27	685000
	32228T158DB	0.270	140.000	250.000	158.000	130.500	0.44	1.60	2.30	1.34	1230000
150	31330T179DB	0.200	150.000	320.000	179.000	115.000	0.83	0.81	1.20	0.71	1500000
	32230T168DB	0.360	150.000	270.000	168.000	134.000	0.44	1.60	2.30	1.34	140000
180	32036XT150DB	0.340	180.000	280.000	150.000	118.000	0.42	1.60	2.30	1.38	1230000
	32936T135DBC260	0.260	180.000	250.000	135.000	113.000	0.48	1.40	2.10	1.22	702000
190	32038XT146DBC220	0.220	190.000	290.000	146.000	114.000	0.44	1.50	2.30	1.32	1250000
220	32044XT165DBC340	0.340	220.000	340.000	165.000	127.000	0.43	1.60	2.30	1.36	1730000
	32044XT168DB	0.420	220.000	340.000	168.000	130.000	0.43	1.60	2.30	1.36	1730000
240	32048XT172DB	0.470	240.000	360.000	172.000	134.000	0.46	1.50	2.20	1.27	1790000
260	32052XT189DBC280	0.280	260.000	400.000	189.000	145.000	0.43	1.60	2.30	1.34	2300000
	32052XT194DB	0.520	260.000	400.000	194.000	150.000	0.43	1.60	2.30	1.34	2300000

Shaft Dimensions		Housing Dimensions		Bearing Assembly Weight kg
Max. Shaft Fillet Radius $R^{(2)}$	Backing Shoulder Dia. d_b	Max. housing Fillet Radius $r^{(2)}$	Max. Backing Shoulder Dia. D_a	
mm	mm	mm	mm	
2.0	88.0	0.8	124.0	3.25
2.0	88.0	0.8	125.0	3.80
2.5	96.0	1.0	134.0	4.45
2.5	97.0	1.0	142.0	4.00
2.0	107.0	0.8	139.0	4.10
3.0	117.0	1.3	170.0	10.5
2.5	124.0	0.8	164.0	6.60
2.5	134.0	0.8	174.0	7.30
4.0	152.0	1.0	217.0	15.0
4.0	164.0	1.0	234.0	19.5
2.5	158.0	0.6	203.0	12.8
4.0	171.0	1.0	239.0	30.2
5.0	210.0	3.3	300.0	58.5
4.0	183	2.3	254.0	38.0
3.0	203.0	1.0	270.0	30.0
2.5	195.0	0.6	243.0	14.5
3.0	214.0	1.0	281.0	31.2
4.0	248.0	1.5	325.0	50.0
4.0	248.0	1.5	325.0	52.0
4.0	268.0	2.0	346.0	56.0
5.0	293.0	1.5	382.0	80.5
5.0	293.0	1.5	382.0	81.0



⁽¹⁾ Based on 1×10^6 revolutions L_{10} life, for the ISO life-calculation method. $C_{1(2)}$ is the double-row radial value.

⁽²⁾ These maximum fillet radii will be cleared by the bearing corners.

Additional series may exist. If you do not see the assembly you are looking for, consult your Timken engineer for more information.

TIMKEN

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