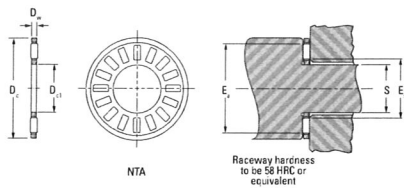


# NEEDLE ROLLER BEARINGS

## THRUST NEEDLE ROLLER AND CAGE ASSEMBLIES, THRUST WASHERS

### INCH SERIES

- Dimensions for bore and O.D. of thrust assemblies and washers are nominal.
- See page B-6-36 for details on piloting and backup surfaces.
- Thrust washers burnished to least one-quarter of bore area (remainder is rough breakaway finish).
- O.D. finish of washers will be as blanked.



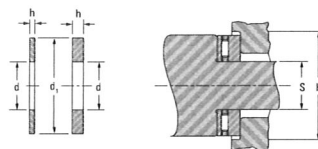
NTA

Rollway hardness to be 58 HRC or equivalent

Shaft Dia. in	Assembly Dimensions						Assembly Designation	Load Ratings		Fatigue Load Limit C <sub>10</sub>	Speed Rating <sup>1</sup> min/r
	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	D <sub>6</sub>		Dynamic C	Static C <sub>0</sub>		
	mm	mm	mm	mm	mm	mm		kN	lbf	kN	
1 1/4	31.75 1.250	49.20 1.937	1.984 0.0781	34.04 1.340	46.228 1.820		NTA-2031	20.15 4550	55.41 12500	9.55	8800
1 3/4	34.93 1.375	52.375 2.062	1.984 0.0781	37.08 1.460	49.53 1.950		NTA-2233	21.35 4800	103.28 23300	10.5	8000
1 7/8	38.10 1.500	55.55 2.187	1.984 0.0781	40.29 1.586	52.518 2.071		NTA-2425	23.22 5200	117.88 26500	12.0	7800
2	44.45 1.750	63.50 2.500	1.984 0.0781	46.14 1.810	58.328 2.300		NTA-2640	25.21 5680	137.45 30800	14.0	6800

<sup>1</sup> Speed ratings listed are based on adequate lubrication. See page B-6-33 for lubrication information. Suggestions for an application requiring D.D. piloting should be determined in consultation with your representative.

# Needle Roller Thrust Bearings, Assemblies, Washers



Approx. Wt. kg	Thrust Washer Designation	Washer Dimensions						Piloting Dimensions		Dia. To Clear D.D. H (mm)	Washer Wt. kg	Shaft Dia. in
		d	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	d <sub>7</sub>			
		mm	mm	mm	mm	mm	mm	mm	mm			
0.010 0.021	TRD-1028	28.58 1.125	44.45 1.750	3.20 0.125	3.12 0.125	28.50 1.125	45.24 1.781	0.022 0.048	0.007 0.015	1 1/4		
0.010 0.021	TRA-2031	31.75 1.250	49.20 1.937	0.051 0.002	0.051 0.002	31.75 1.250	50.01 1.969	0.014 0.000	0.007 0.000	1 1/4		
0.010 0.021	TRB-3031	31.75 1.250	49.20 1.937	1.60 0.063	1.52 0.060	31.75 1.250	50.01 1.969	0.014 0.000	0.007 0.000	1 1/4		
0.010 0.021	TRC-3031	31.75 1.250	49.20 1.937	2.41 0.095	2.34 0.092	31.75 1.250	50.01 1.969	0.014 0.000	0.007 0.000	1 1/4		
0.010 0.021	TRD-3031	31.75 1.250	49.20 1.937	3.20 0.125	3.12 0.125	31.75 1.250	50.01 1.969	0.026 0.008	0.007 0.000	1 1/4		
0.010 0.021	TRF-3031	31.75 1.250	49.20 1.937	4.78 0.188	4.70 0.185	31.75 1.250	50.01 1.969	0.041 0.016	0.007 0.000	1 1/4		
0.010 0.021	TRA-2233	34.93 1.375	52.375 2.062	0.051 0.002	0.051 0.002	34.93 1.375	53.19 2.094	0.015 0.000	0.007 0.000	1 3/4		
0.010 0.021	TRB-2233	34.93 1.375	52.375 2.062	1.60 0.063	1.52 0.060	34.93 1.375	53.19 2.094	0.015 0.000	0.007 0.000	1 3/4		
0.010 0.021	TRC-2233	34.93 1.375	52.375 2.062	2.41 0.095	2.34 0.092	34.93 1.375	53.19 2.094	0.015 0.000	0.007 0.000	1 3/4		
0.010 0.021	TRD-2233	34.93 1.375	52.375 2.062	3.20 0.125	3.12 0.125	34.93 1.375	53.19 2.094	0.029 0.008	0.007 0.000	1 3/4		
0.010 0.021	TRF-2233	34.93 1.375	52.375 2.062	4.78 0.188	4.70 0.185	34.93 1.375	53.19 2.094	0.044 0.016	0.007 0.000	1 3/4		
0.011 0.025	TRA-2425	38.10 1.500	55.55 2.187	0.051 0.002	0.051 0.002	38.10 1.500	56.36 2.219	0.015 0.000	0.007 0.000	1 7/8		
0.011 0.025	TRB-2425	38.10 1.500	55.55 2.187	1.60 0.063	1.52 0.060	38.10 1.500	56.36 2.219	0.015 0.000	0.007 0.000	1 7/8		
0.011 0.025	TRC-2425	38.10 1.500	55.55 2.187	2.41 0.095	2.34 0.092	38.10 1.500	56.36 2.219	0.015 0.000	0.007 0.000	1 7/8		
0.011 0.025	TRD-2425	38.10 1.500	55.55 2.187	3.20 0.125	3.12 0.125	38.10 1.500	56.36 2.219	0.030 0.009	0.007 0.000	1 7/8		
0.011 0.025	TRF-2425	38.10 1.500	55.55 2.187	4.78 0.188	4.70 0.185	38.10 1.500	56.36 2.219	0.045 0.016	0.007 0.000	1 7/8		
0.014 0.031	TRA-2640	44.45 1.750	63.50 2.500	0.051 0.002	0.051 0.002	44.45 1.750	64.29 2.531	0.019 0.001	0.007 0.000	2		
0.014 0.031	TRB-2640	44.45 1.750	63.50 2.500	1.60 0.063	1.52 0.060	44.45 1.750	64.29 2.531	0.019 0.001	0.007 0.000	2		

<sup>1</sup> If the shaft and the housing adjacent to the bearing O.D. are not concentric, the TIR between the shaft and housing should be added to this dimension.

Continued on next page