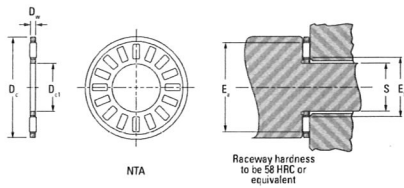


THRUST NEEDLE ROLLER AND CAGE ASSEMBLIES, THRUST WASHERS

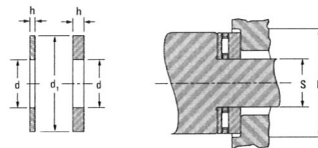
INCH SERIES

- 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 at least one-quarter of bore area (remainder is rough breakaway finish).
- O.D. finish of washers will be as blanked.



Shift Dia.	Assembly Dimensions						Assembly Designation	Load Ratings		Fatigue Load Limit	Speed Rating ¹
	B ₁	D ₁	D ₂	D ₃	D ₄	D ₅		C	C ₀		
in	mm	in	mm	in	mm	in		lbf	N	lbf	mm/s
1/4	6.25 0.250	17.45 0.687	1.964 0.078	8.626 0.340	14.732 0.580		NTA-411	5.12 1100	18.76 2400	1.05	26000
3/8	7.82 0.312	19.05 0.75	1.964 0.078	10.16 0.400	16.256 0.640		NTA-512	5.83 1310	13.12 2960	1.30	24000
1/2	9.53 0.375	20.625 0.812	1.964 0.078	11.68 0.460	18.004 0.710		NTA-613	6.06 1360	14.32 3220	1.40	22000
5/8	12.70 0.500	23.80 0.937	1.964 0.078	14.99 0.590	21.08 0.830		NTA-815	7.16 1610	15.13 4300	1.85	18000
3/4	14.275 0.562	25.40 1.000	1.964 0.078	16.51 0.650	22.606 0.890		NTA-916	7.70 1720	21.53 4840	2.10	18000
1	15.88 0.625	28.575 1.125	1.964 0.078	18.03 0.710	25.908 1.020		NTA-1018	9.79 2200	20.38 8830	2.85	15000

¹Speed ratings listed are based on adequate lubrication. See page B-6-37 for lubrication information. Suggestions for an application requiring O.D. piloting should be determined in consultation with your representative.



Approx. Vt.	Thrust Washer Designation	Washer Dimensions						Piloting Dimensions		Dia. to Clear O.D.	Washer Vt.	Shift Dia.
		d	d1	d2	d3	d4	d5	S	S1			
kg	lbf	mm	in	mm	in	mm	in	mm	in	mm	lbf	in
0.001	0.002	TRA-411	6.25 0.250	17.45 0.687	8.61 0.339	8.76 0.345	8.76 0.345	6.25 0.250	6.27 0.247	18.26 0.719	0.001	1/4
		TRB-411	6.25 0.250	17.45 0.687	1.60 0.063	1.52 0.060	6.25 0.250	6.27 0.247	18.26 0.719	0.002		
		TRC-411	6.25 0.250	17.45 0.687	2.41 0.095	2.34 0.092	6.25 0.250	6.27 0.247	18.26 0.719	0.004		
0.002	0.004	TRA-512	7.82 0.312	19.05 0.750	8.61 0.339	8.76 0.345	7.82 0.312	7.85 0.309	19.84 0.781	0.002		3/8
		TRB-512	7.82 0.312	19.05 0.750	1.60 0.063	1.52 0.060	7.82 0.312	7.85 0.309	19.84 0.781	0.003		
		TRC-512	7.82 0.312	19.05 0.750	2.41 0.095	2.34 0.092	7.82 0.312	7.85 0.309	19.84 0.781	0.004		
0.003	0.006	TRA-613	9.53 0.375	20.62 0.812	8.61 0.339	8.76 0.345	9.53 0.375	9.45 0.372	21.44 0.844	0.001		1/2
		TRB-613	9.53 0.375	20.62 0.812	1.60 0.063	1.52 0.060	9.53 0.375	9.45 0.372	21.44 0.844	0.003		
		TRC-613	9.53 0.375	20.62 0.812	2.41 0.095	2.34 0.092	9.53 0.375	9.45 0.372	21.44 0.844	0.004		
0.004	0.008	TRA-815	12.70 0.500	23.80 0.937	8.61 0.339	8.76 0.345	12.70 0.500	12.62 0.497	24.61 0.969	0.002		5/8
		TRB-815	12.70 0.500	23.80 0.937	1.60 0.063	1.52 0.060	12.70 0.500	12.62 0.497	24.61 0.969	0.004		
		TRC-815	12.70 0.500	23.80 0.937	2.41 0.095	2.34 0.092	12.70 0.500	12.62 0.497	24.61 0.969	0.005		
0.005	0.010	TRA-916	14.27 0.562	25.40 1.000	8.61 0.339	8.76 0.345	14.27 0.562	14.20 0.559	26.19 1.031	0.002		3/4
		TRB-916	14.27 0.562	25.40 1.000	1.60 0.063	1.52 0.060	14.27 0.562	14.20 0.559	26.19 1.031	0.004		
		TRC-916	14.27 0.562	25.40 1.000	2.41 0.095	2.34 0.092	14.27 0.562	14.20 0.559	26.19 1.031	0.006		
0.007	0.014	TRA-1018	15.88 0.625	28.58 1.125	8.61 0.339	8.76 0.345	15.88 0.625	15.80 0.622	29.36 1.158	0.003		1
		TRB-1018	15.88 0.625	28.58 1.125	1.60 0.063	1.52 0.060	15.88 0.625	15.80 0.622	29.36 1.158	0.005		
		TRC-1018	15.88 0.625	28.58 1.125	2.41 0.095	2.34 0.092	15.88 0.625	15.80 0.622	29.36 1.158	0.008		
		TRD-1018	15.88 0.625	28.58 1.125	3.20 0.125	3.12 0.123	15.88 0.625	15.80 0.622	29.36 1.158	0.011		
		TRF-1018	15.88 0.625	28.58 1.125	3.91 0.154	3.83 0.150	15.88 0.625	15.80 0.622	29.36 1.158	0.013		

Continued on next page.

¹Between 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.