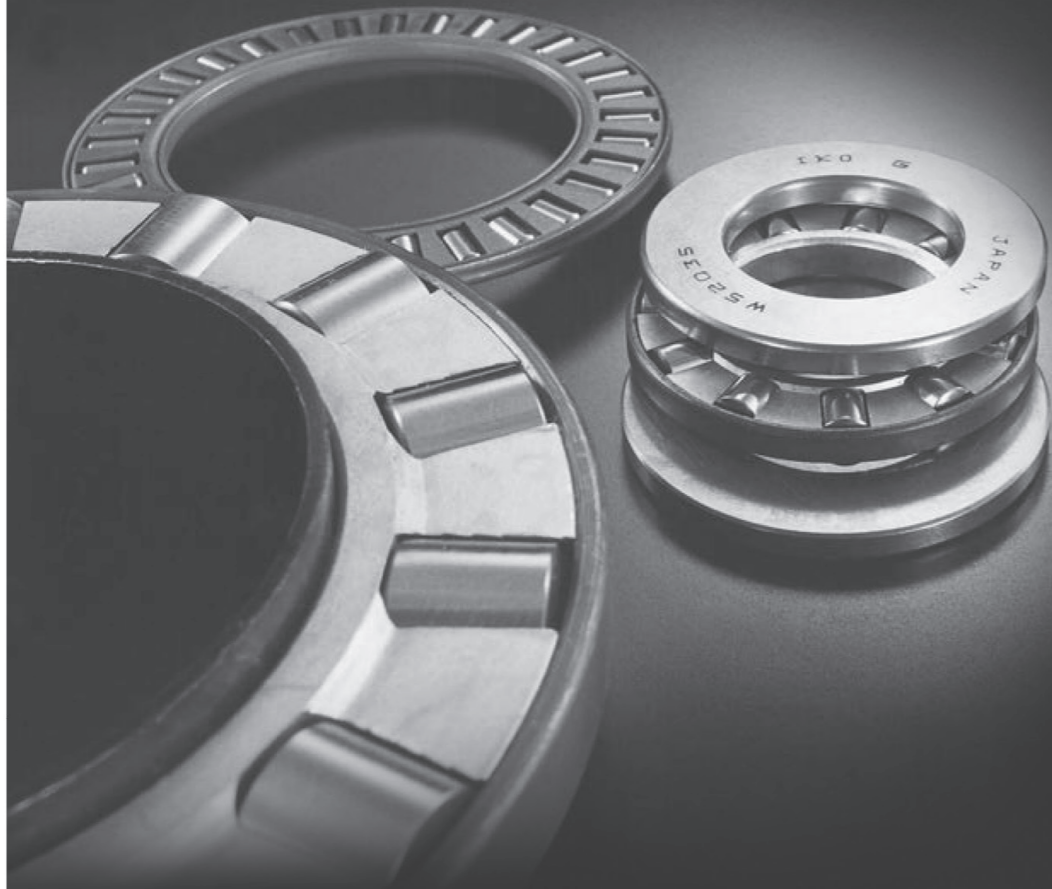


Needle Roller Bearings

Thrust Needle Roller Bearing

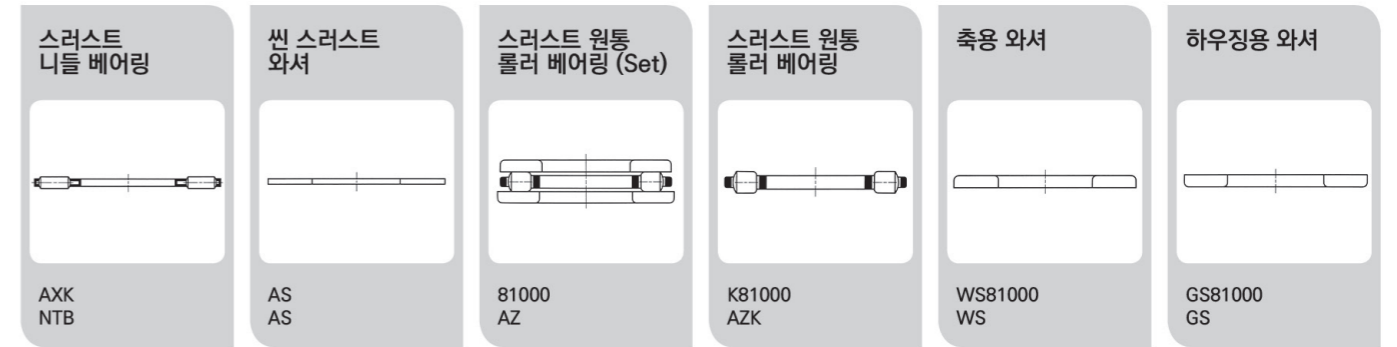


스러스트 베어링은 정밀 가공된 유지기와 롤러를 조합하여 공간을 절약하면서 큰 부하 능력을 갖춘 높은 강성의 베어링입니다. 이 베어링에는 니들 롤러를 사용한 스러스트 니들 베어링과 원통 롤러를 사용한 스러스트 롤러 베어링 및 각종 궤도륜이 있으므로 사용조건에 맞춰 선정할 수 있습니다.

또한 기계의 베어링 설치면이 열처리, 연삭 가공되어 궤도면으로 사용할 수 있는 경우는 궤도륜 없이 사용 가능하므로 한층 더 콤팩트한 설계가 가능합니다. 고속 회전, 변동 중하중에도 적합하므로 자동차의 구동기구, 공작기계, 고압 펌프 등과 같은 높은 정밀도를 요구하는 부분에 최적의 조건을 갖추고 있습니다.

1.5 Thrust Needle Roller Bearing

Needle Roller Bearings



■ 스러스트 니들 롤러 베어링

이 베어링은 강판을 정밀 프레스 가공하여 표면경화시킨 유지기와 직경의 상호차 2 μ m이하의 니들 롤러를 조합하여 강성이 높고 윤활유의 유지 용량이 큰 구조입니다. 스러스트 베어링 중 단면 높이가 가장 낮기 때문에 기존의 스러스트 와셔 대신 사용하면 적은 마찰계수에서 고속 회전을 견딜 수 있게 됩니다.

■ 스러스트 원통 롤러 베어링

이 베어링에는 원통롤러베어링(K81000, AZK)과 축용 와셔(WS), 하우징용 와셔(GS)를 조합한 세트(81000, AZ)로 구성될 수 있습니다. 유지기는 특수한 정밀 구조로 강성이 풍부하고, 원통롤러는 방사상으로 배열되어 유지기에 의해 정확하게 안내되므로 고속 회전에서도 큰 부하를 견딜 수 있습니다. 특히 베어링 높이의 정밀도가 높아서 공작기계, 초고압 펌프 등에 적합합니다.

■ 정밀도 및 공차 (표1)

● 허용공차

구분	치수 기호	공차	
스러스트 니들 롤러 베어링	내경 d	E11	
	외경 D	c12	
	폭 D _w	JIS B 1506 Class 2에 따름	
스러스트 원통 롤러 베어링	내경 d _c	표2 참조	
	외경 D _c		
	폭 D _w	1mm ≤ D _w ≤ 10mm	JIS B 1506 Class 2에 따름
		10mm < D _w ≤ 30mm	JIS B 1506 Class 3에 따름
AZ 높이 T	표4 참조		
	WS 내경 d	표5 참조	
축용 와셔	외경 D	b12	
	폭 B	h11	
	GS 내경 d	B12	
하우징용 와셔	외경 D	표5 참조	
	폭 B	h11	
	씌 스러스트 와셔	내경 d	E12
외경 D		e12	
폭 s		±50 μ m	

● 스러스트 원통 롤러 베어링 (AZK)의 허용 공차 (표2) 단위: μ m

내경(mm)		내경공차		외경공차	
초과	이하	상한	하한	상한	하한
-	50	+100	0	0	-300
50	100	+200	0	0	-400
100	200	+300	0	0	-500
200	300	+500	0	0	-700
300	400	+700	0	0	-1000
400	500	-	-	0	-1200

● 축 및 하우징 공차 (표3)

베어링타입	허용 공차 등급	내경(mm)		폭 공차			
		축	하우징	초과	이하	상한	하한
스러스트 니들 롤러 베어링	NTB	h8	-	-	18	0	-75
				18	30	0	-75
스러스트 원통 롤러 베어링	AZK, AZ	h6, H7	-	30	50	0	-100
				50	80	0	-125
축용 와셔	WS	h6	-	80	120	0	-150
				120	180	0	-175
하우징용 와셔	GS	-	H7	180	250	0	-200
				250	315	0	-225
씌 스러스트 와셔	AS	h8	-	315	400	0	-300
				400	500	0	-400

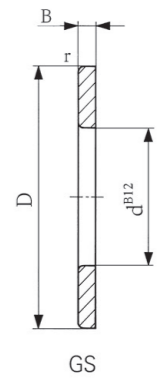
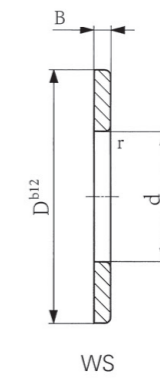
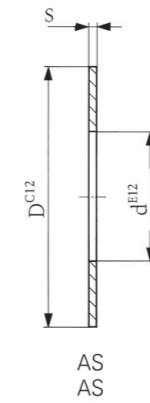
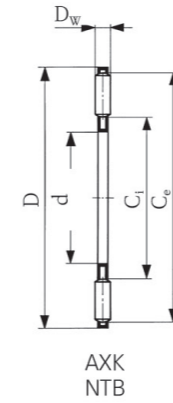
● 축용/하우징용 와셔(WS/GS)의 허용공차 (표5) 단위: μ m

d(WS의 경우) D(GS의 경우) (mm)	축용 와셔 (WS)		하우징용 와셔 (GS)		WS 또는 GS					
	Δ_{dmp} 평면 내 평균 내경의 허용공차	V _{dsp} 평면 내 내경 불일치	Δ_{dmp} 평면 내 평균 외경의 허용공차	V _{dsp} 평면 내 내경 불일치	S _i 또는 S _o 베어링 폭 변동값					
초과	이하	상한	하한	최대	Class0	Class6	Class5			
-	18	0	-8	6	0	-11	8	10	5	3
18	30	0	-10	8	0	-13	10	10	5	3
30	50	0	-12	9	0	-16	12	10	6	3
50	80	0	-15	11	0	-19	14	10	7	4
80	120	0	-20	15	0	-22	17	15	8	4
120	180	0	-25	19	0	-25	19	15	9	5
180	250	0	-30	23	0	-30	23	20	10	5
250	315	0	-35	26	0	-35	26	25	13	7
315	400	0	-40	30	0	-40	30	30	15	7
400	500	0	-45	34	0	-45	34	30	18	9

1.5 Thrust Needle Roller Bearing

Needle Roller Bearings

미리계열



스러스트 니들 롤러 베어링			사양							
내경 d (mm)	외경 D (mm)	폭 D _w (mm)	Koyo		Koyo			IKO		
			AXK	NTB	동정격하중 C N	정정격하중 C ₀ N	허용 회전수 rpm ⁽¹⁾	동정격하중 C N	정정격하중 C ₀ N	허용 회전수 rpm ⁽¹⁾
6	19	2	AXK 0619	-	6,770	15,600	21,000	-	-	-
8	21	2	AXK 0821	-	7,630	19,100	20,000	-	-	-
10	24	2	AXK 1024	NTB 1024	9,090	25,200	17,000	7,820	23,900	15,000
12	26	2	AXK 1226	NTB 1226	9,880	29,000	15,000	8,340	26,900	13,000
15	28	2	AXK 1528	NTB 1528	10,100	31,300	15,000	8,830	29,900	12,000
16	29	2	-	NTB 1629	-	-	-	9,070	31,400	11,000
17	30	2	AXK 1730	NTB 1730	10,800	34,800	14,000	9,320	32,900	11,000
18	31	2	-	NTB 1831	-	-	-	9,550	34,400	10,000
20	35	2	AXK 2035	NTB 2035	13,800	50,300	12,000	11,700	46,500	9,000
25	42	2	AXK 2542	NTB 2542	18,000	75,300	9,700	14,400	64,700	7,500
30	47	2	AXK 3047	NTB 3047	18,600	82,400	8,900	15,400	73,300	6,500
35	52	2	AXK 3552	NTB 3552	21,600	104,000	7,900	16,300	81,900	5,500
40	60	3	AXK 4060	NTB 40603	31,400	132,000	7,100	24,200	108,000	5,000
45	65	3	AXK 4565	NTB 4565	37,800	173,000	6,400	25,900	121,000	4,500
50	70	3	AXK 5070	NTB 5070	37,900	179,000	5,900	27,600	135,000	4,000
55	78	3	AXK 5578	NTB 5578	48,500	254,000	5,300	32,400	171,000	4,000
60	85	3	AXK 6085	NTB 6085	44,500	234,000	4,900	38,200	219,000	3,500
65	90	3	AXK 6590	NTB 6590	46,700	254,000	4,600	40,100	237,000	3,000
70	95	4	AXK 7095	NTB 7095	66,600	333,000	4,400	47,400	244,000	3,000
75	100	4	AXK 75100	NTB 75100	71,600	374,000	4,100	48,400	256,000	3,000
80	105	4	AXK 80105	NTB 80105	71,300	379,000	3,900	49,500	267,000	2,500
85	110	4	AXK 85110	NTB 85110	57,600	291,000	3,800	50,300	279,000	2,500
90	120	4	AXK 90120	NTB 90120	72,900	405,000	3,500	64,500	394,000	2,500
100	135	4	AXK 100135	NTB 100135	90,200	552,000	3,100	80,300	541,000	2,000
110	145	4	AXK 110145	NTB 110145	93,200	591,000	2,800	83,200	578,000	2,000
120	155	4	AXK 120155	NTB 120155	98,500	650,000	2,700	87,900	634,000	1,800
130	170	5	AXK 130170	NTB 130170	132,000	829,000	2,400	120,000	839,000	1,700
140	180	5	AXK 140180	-	136,000	887,000	2,300	-	-	-
150	190	5	AXK 150190	-	141,000	944,000	2,200	-	-	-
160	200	5	AXK 160200	-	146,000	1,000,000	2,100	-	-	-

(1) 오일 주입시 허용회전수입니다.

적합한 스러스트 와셔							
Koyo		IKO		Koyo		IKO	
스러스트 와셔		축용 와셔		하우징용 와셔		폭 S 또는 B (mm)	
AS 0619	-	-	-	-	-	1	-
AS 0821	-	-	-	-	-	1	-
AS 1024	AS 1024	-	WS 1024	-	GS 1024	1	2.75
AS 1226	AS 1226	-	WS 1226	-	GS 1226	1	2.75
AS 1528	AS 1528	WS. 81102	WS 1528	GS. 81102	GS 1528	1	2.75
-	AS 1629	-	WS 1629	-	GS 1629	1	2.75
AS 1730	AS 1730	WS. 81103	WS 1730	GS. 81103	GS 1730	1	2.75
-	AS 1831	-	WS 1831	-	GS 1831	1	2.75
AS 2035	AS 2035	WS. 81104	WS 2035	GS. 81104	GS 2035	1	2.75
AS 2542	AS 2542	WS. 81105	WS 2542	GS. 81105	GS 2542	1	3
AS 3047	AS 3047	WS. 81106	WS 3047	GS. 81106	GS 3047	1	3
AS 3552	AS 3552	WS. 81107	WS 3552	GS. 81107	GS 3552	1	3.5
AS 4060	AS 4060	WS. 81108	WS 4060	GS. 81108	GS 4060	1	3.5
AS 4565	AS 4565	WS. 81109	WS 4565	GS. 81109	GS 4565	1	4
AS 5070	AS 5070	WS. 81110	WS 5070	GS. 81110	GS 5070	1	4
AS 5578	AS 5578	WS. 81111	WS 5578	GS. 81111	GS 5578	1	5
AS 6085	AS 6085	WS. 81112	WS 6085	GS. 81112	GS 6085	1	4.75
AS 6590	AS 6590	WS. 81113	WS 6590	GS. 81113	GS 6590	1	5.25
AS 7095	AS 7095	WS. 81114	WS 7095	GS. 81114	GS 7095	1	5.25
AS 75100	AS 75100	WS. 81115	WS 75100	GS. 81115	GS 75100	1	5.75
AS 80105	AS 80105	WS. 81116	WS 80105	GS. 81116	GS 80105	1	5.75
AS 85110	AS 85110	WS. 81117	WS 85110	GS. 81117	GS 85110	1	5.75
AS 90120	AS 90120	WS. 81118	WS 90120	GS. 81118	GS 90120	1	6.5
AS 100135	AS 100135	WS. 81120	WS 100135	GS. 81120	GS 100135	1	7
AS 110145	-	WS. 81122	WS 110145	GS. 81122	GS 110145	1	7
AS 120155	-	WS. 81124	WS 120155	GS. 81124	GS 120155	1	7
AS 130170	-	WS. 81126	WS 130170	GS. 81126	GS 130170	1	9
AS 140180	-	WS. 81128	-	GS. 81128	-	1	9.5
AS 150190	-	WS. 81130	-	GS. 81130	-	1	9.5
AS 160200	-	WS. 81132	-	GS. 81132	-	1	9.5

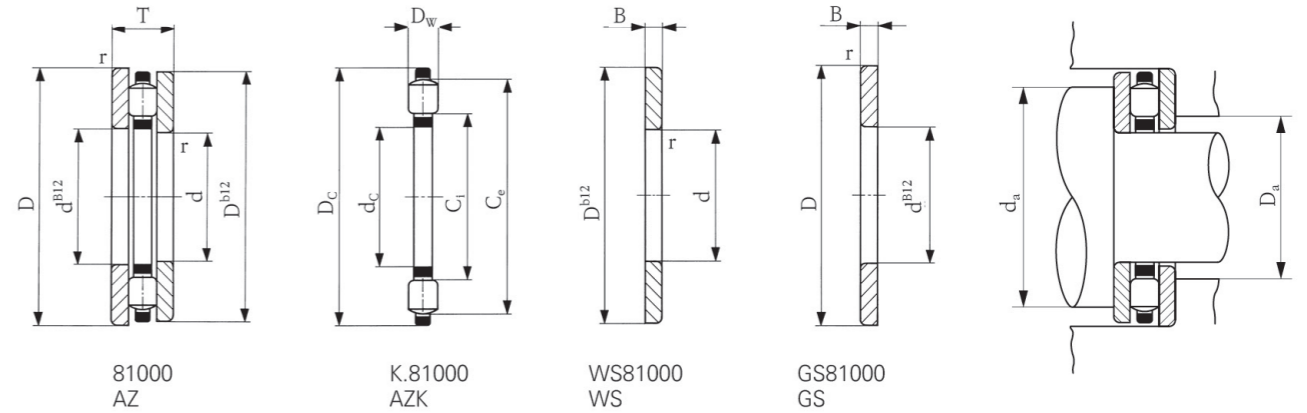
1.5 Thrust Needle Roller Bearing

Needle Roller Bearings

미리계열



Koyo IKO



스러스트 원통 롤러 베어링								
내경 d (mm)	외경 D (mm)	폭(mm)		Koyo	IKO	Koyo	IKO	폭 B (mm)
		Set T	Bearing D _w	Set (Bearing + WS + GS)		Bearing		
10	24	9	3.5	-	AZ 10249	-	AZK 10243.5	
12	26	9	3.5	-	AZ 12269	-	AZK 12263.5	
15	28	9	3.5	81102	AZ 15289	K. 81102TVP	AZK 15283.5	
17	30	9	3.5	81103	AZ 17309	K. 81103TVP	AZK 17303.5	
20	35	10	4.5	81104	AZ 203510	K. 81104TVP	AZK 20354.5	
25	42	11	5	81105	AZ 254211	K. 81105TVP	AZK 25425	
30	47	11	5	81106	AZ 304711	K. 81106TVP	AZK 30475	
	52	16	7.5	81206	AZ 305216	K. 81206TVP	AZK 30527.5	
35	52	12	5	81107	AZ 355212	K. 81107TVP	AZK 35525	
	62	18	7.5	81207	AZ 356218	K. 81207TVP	AZK 35627.5	
40	60	13	6	81108	AZ 406013	K. 81108TVP	AZK 40606	
	68	19	9	81208	AZ 406819	K. 81208TVP	AZK 40689	
45	65	14	6	81109	AZ 456514	K. 81109TVP	AZK 45656	
	73	20	9	81209	AZ 457320	K. 81209TVP	AZK 45739	
50	70	14	6	81110	AZ 507014	K. 81110TVP	AZK 50706	
	78	22	9	81210	-	K. 81210TVP	-	
	78	22	11	-	AZ 507822	-	AZK 507811	
55	78	16	6	81111	AZ 557816	K. 81111TVP	AZK 55786	
	90	25	11	81211	AZ 559025	K. 81211TVP	AZK 559011	
60	85	17	7.5	81112	AZ 608517	K. 81112TVP	AZK 60857.5	
	95	26	11	81212	AZ 609526	K. 81212LPB	AZK 609511	
	130	26	10	-	AZ 6013026	-	AZK 6013010	
65	90	18	7.5	81113	AZ 659018	K. 81113TVP	AZK 65907.5	
	100	27	11	81213	AZ 6510027	K. 81213LPB	AZK 6510011	
70	95	18	7.5	81114	AZ 709518	K. 81114TVP	AZK 70957.5	
	105	27	11	81214	AZ 7010527	K. 81214LPB	AZK 7010511	
	140	26	10	-	AZ 7014026	-	AZK 7014010	

사양						스러스트 와셔					
동정격하중 C N		정정격하중 C ₀ N	허용 회전수 rpm ⁽¹⁾	동정격하중 C N		정정격하중 C ₀ N	축용 와셔		하우징용 와셔		폭 B (mm)
-	-	-	8,990	19,100	18,000	-	WS 1024	-	GS 1024	2.75	
-	-	-	10,400	23,900	16,000	-	WS 1226	-	GS 1226	2.75	
12,800	28,600	12,000	10,200	23,900	14,000	WS. 81102	WS 1528	GS. 81102	GS 1528	2.75	
14,200	33,400	11,000	11,400	28,600	13,000	WS. 81103	WS 1730	GS. 81103	GS 1730	2.75	
23,600	56,800	9,500	19,000	48,700	11,000	WS. 81104	WS 2035	GS. 81104	GS 2035	2.75	
31,200	81,000	8,000	22,700	60,700	9,000	WS. 81105	WS 2542	GS. 81105	GS 2542	3	
33,000	91,100	6,700	27,400	81,000	8,000	WS. 81106	WS 3047	GS. 81106	GS 3047	3	
56,900	141,000	6,300	38,400	95,700	7,500	WS. 81206	WS 3052	GS. 81206	GS 3052	4.25	
34,800	101,000	6,000	29,100	91,100	7,000	WS. 81107	WS 3552	GS. 81107	GS 3552	3.5	
61,600	164,000	5,300	47,900	135,000	6,500	WS. 81207	WS 3562	GS. 81207	GS 3562	5.25	
49,800	148,000	5,300	41,700	133,000	6,000	WS. 81108	WS 4060	GS. 81108	GS 4060	3.5	
86,800	233,000	4,800	68,700	195,000	5,500	WS. 81208	WS 4068	GS. 81208	GS 4068	5	
52,300	163,000	4,800	40,800	133,000	5,500	WS. 81109	WS 4565	GS. 81109	GS 4565	4	
94,200	266,000	4,500	75,700	227,000	5,000	WS. 81209	WS 4573	GS. 81209	GS 4573	5.5	
54,800	177,000	4,300	43,300	148,000	5,000	WS. 81110	WS 5070	GS. 81110	GS 5070	4	
101,000	299,000	4,000	-	-	-	WS. 81210	-	GS. 81210	-	6.5	
-	-	-	84,300	232,000	4,500	-	WS 5078	-	GS 5078	5.5	
60,300	207,000	4,000	51,700	192,000	4,500	WS. 81111	WS 5578	GS. 81111	GS 5578	5	
138,000	403,000	3,600	108,000	332,000	4,000	WS. 81211	WS 5590	GS. 81211	GS 5590	7	
84,400	281,000	3,600	64,600	224,000	4,000	WS. 81112	WS 6085	GS. 81112	GS 6085	4.75	
129,000	378,000	3,400	106,000	332,000	4,000	WS. 81212	WS 6095	GS. 81212	GS 6095	7.5	
-	-	-	158,000	634,000	3,000	-	WS 60130	-	GS 60130	8	
88,300	305,000	3,400	68,300	247,000	4,000	WS. 81113	WS 6590	GS. 81113	GS 6590	5.25	
134,000	403,000	3,200	116,000	379,000	3,500	WS. 81213	WS 65100	GS. 81213	GS 65100	8	
92,100	328,000	3,200	72,000	269,000	3,500	WS. 81114	WS 7095	GS. 81114	GS 7095	5.25	
138,000	428,000	3,000	114,000	379,000	3,500	WS. 81214	WS 70105	GS. 81214	GS 70105	8	
-	-	-	169,000	713,000	3,000	-	WS 70140	-	GS 70140	8	

(1) 오일 주입시 허용회전수입니다.

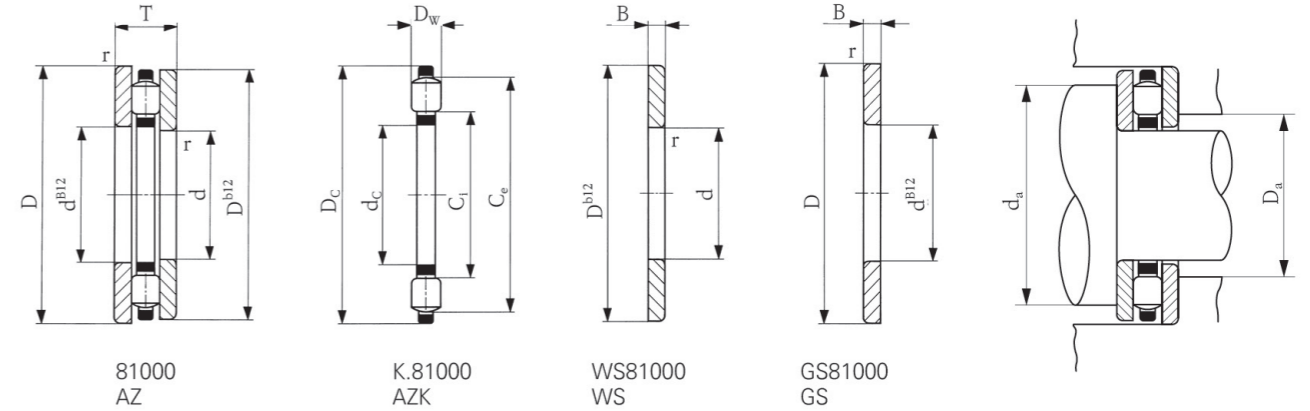
1.5 Thrust Needle Roller Bearing

Needle Roller Bearings

미리계열



Koyo IKO



스러스트 원통 롤러 베어링							
내경 d (mm)	외경 D (mm)	폭(mm)		Koyo	IKO	Koyo	IKO
		Set T	Bearing D _w	Set (Bearing + WS + GS)		Bearing	
75	100	19	7.5	81115	AZ 7510019	K. 81115LPB	AZK 751007.5
	110	27	11	81215	AZ 7511027	K. 81215LPB	AZK 7511011
80	105	19	7.5	81116	AZ 8010519	K. 81116LPB	AZK 801057.5
	115	28	11	81216	AZ 8011528	K. 81216LPB	AZK 8011511
	150	26	10	-	AZ 8015026	-	AZK 8015010
85	110	19	7.5	81117	AZ 8511019	K. 81117LPB	AZK 851107.5
	125	31	12	81217	AZ 8512531	K. 81217LPB	AZK 8512512
90	120	22	9	81118	AZ 9012022	K. 81118LPB	AZK 901209
	135	35	14	81218	AZ 9013535	K. 81218LPB	AZK 9013514
	160	26	10	-	AZ 9016026	-	AZK 9016010
100	135	25	11	-	AZ 10013525	-	AZK 10013511
	150	38	15	-	AZ 10015038	-	AZK 10015015
	190	39	15	-	AZ 10019039	-	AZK 10019015
110	145	25	11	-	AZ 11014525	-	AZK 11014511
	160	40	17	-	AZ 11016040	-	AZK 11016017
	200	39	15	-	AZ 11020039	-	AZK 11020015
120	155	25	11	-	AZ 12015525	-	AZK 12015511
	175	42	18	-	AZ 12017542	-	AZK 12017518
	220	39	15	-	AZ 12022039	-	AZK 12022015
130	170	30	12	-	AZ 13017030	-	AZK 13017012
	185	42	18	-	AZ 13018542	-	AZK 13018518
	230	39	15	-	AZ 13023039	-	AZK 13023015
140	180	31	12	-	AZ 14018031	-	AZK 14018012
	195	42	18	-	AZ 14019542	-	AZK 14019518
	240	39	15	-	AZ 14024039	-	AZK 14024015
150	190	31	12	-	AZ 15019031	-	AZK 15019012
	205	42	18	-	AZ 15020542	-	AZK 15020518
	250	39	15	-	AZ 15025039	-	AZK 15025015

사양						스러스트 와셔				
Koyo		허용 회전수 rpm ⁽¹⁾	IKO		허용 회전수 rpm ⁽¹⁾	축용 와셔		하우징용 와셔		폭 B (mm)
동정격하중 C N	정정격하중 C ₀ N		동정격하중 C N	정정격하중 C ₀ N		Koyo	IKO	Koyo	IKO	
86,100	305,000	3,000	71,100	269,000	3,500	WS. 81115	WS 75100	GS. 81115	GS 75100	5.75
143,000	453,000	2,800	123,000	427,000	3,000	WS. 81215	WS 75110	GS. 81215	GS 75110	8
87,500	316,000	2,800	74,500	292,000	3,000	WS. 81116	WS 80105	GS. 81116	GS 80105	5.75
147,000	478,000	2,600	122,000	427,000	3,000	WS. 81216	WS 80115	GS. 81216	GS 80115	8.5
-	-	-	180,000	792,000	2,500	-	WS 80150	-	GS 80150	8
88,900	328,000	2,600	77,800	314,000	3,000	WS. 81117	WS 85110	GS. 81117	GS 85110	5.75
174,000	572,000	2,400	145,000	513,000	3,000	WS. 81217	WS 85125	GS. 81217	GS 85125	9.5
119,000	432,000	2,400	99,700	390,000	3,000	WS. 81118	WS 90120	GS. 81118	GS 90120	6.5
215,000	691,000	2,400	181,000	626,000	2,500	WS. 81218	WS 90135	GS. 81218	GS 90135	10.5
-	-	-	189,000	871,000	2,500	-	WS 90160	-	GS 90160	8
-	-	-	136,000	522,000	2,500	-	WS 100135	-	GS 100135	7
-	-	-	219,000	796,000	2,500	-	WS 100150	-	GS 100150	11.5
-	-	-	333,000	1,420,000	2,000	-	WS 100190	-	GS 100190	12
-	-	-	142,000	569,000	2,500	-	WS 110145	-	GS 110145	7
-	-	-	282,000	1,030,000	2,000	-	WS 110160	-	GS 110160	11.5
-	-	-	388,000	1,770,000	2,000	-	WS 110200	-	GS 110200	12
-	-	-	149,000	617,000	2,000	-	WS 120155	-	GS 120155	7
-	-	-	313,000	1,160,000	2,000	-	WS 120175	-	GS 120175	12
-	-	-	415,000	1,980,000	1,800	-	WS 120220	-	GS 120220	12
-	-	-	176,000	741,000	2,000	-	WS 130170	-	GS 130170	9
-	-	-	333,000	1,290,000	1,900	-	WS 130185	-	GS 130185	12
-	-	-	440,000	2,180,000	1,700	-	WS 130230	-	GS 130230	12
-	-	-	184,000	798,000	1,900	-	WS 140180	-	GS 140180	9.5
-	-	-	353,000	1,420,000	1,800	-	WS 140195	-	GS 140195	12
-	-	-	435,000	2,180,000	1,600	-	WS 140240	-	GS 140240	12
-	-	-	181,000	798,000	1,800	-	WS 150190	-	GS 150190	9.5
-	-	-	349,000	1,420,000	1,700	-	WS 150205	-	GS 150205	12
-	-	-	459,000	2,380,000	1,500	-	WS 150250	-	GS 150250	12

(1) 오일 주입시 허용회전수입니다.

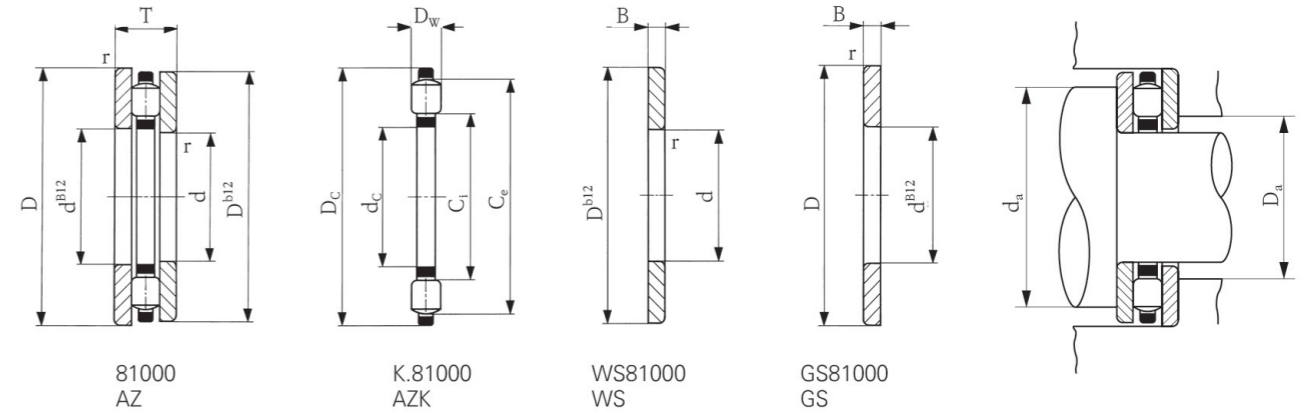
1.5 Thrust Needle Roller Bearing

Needle Roller Bearings

미리계열



Koyo IKO



스러스트 원통 롤러 베어링							
내경 d (mm)	외경 D (mm)	폭(mm)		Koyo	IKO	Koyo	IKO
		Set T	Bearing D _w	Set (Bearing + WS + GS)		Bearing	
160	200	31	12	-	AZ 16020031	-	AZK 16020012
	270	39	15	-	AZ 16027039	-	AZK 16027015
170	230	45	19	-	AZ 17023045	-	AZK 17023019
	280	39	15	-	AZ 17028039	-	AZK 17028015
180	240	45	19	-	AZ 18024045	-	AZK 18024019
	310	39	15	-	AZ 18031039	-	AZK 18031015
190	255	48	20	-	AZ 19025548	-	AZK 19025520
	320	39	15	-	AZ 19032039	-	AZK 19032015
200	265	48	20	-	AZ 20026548	-	AZK 20026520
	340	39	15	-	AZ 20034039	-	AZK 20034015
220	290	50	22	-	AZ 22029050	-	AZK 22029022
	360	52	20	-	AZ 22036052	-	AZK 22036020
240	315	54	24	-	AZ 24031554	-	AZK 24031524
	380	52	20	-	AZ 24038052	-	AZK 24038020
260	340	55	25	-	AZ 26034055	-	AZK 26034025
	420	80	30	-	AZ 26042080	-	AZK 26042030
280	440	80	30	-	AZ 28044080	-	AZK 28044030

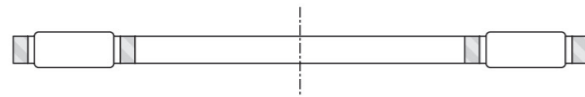
사양						스러스트 와셔				
동정격하중 C N	정정격하중 C ₀ N	허용 회전수 rpm ⁽¹⁾	동정격하중 C N	정정격하중 C ₀ N	허용 회전수 rpm ⁽¹⁾	축용 와셔		하우징용 와셔		폭 B (mm)
						Koyo	IKO	Koyo	IKO	
-	-	-	189,000	855,000	1,700	-	WS 160200	-	GS 160200	9.5
-	-	-	519,000	2,850,000	1,400	-	WS 160270	-	GS 160270	12
-	-	-	406,000	1,730,000	1,500	-	WS 170230	-	GS 170230	13
-	-	-	543,000	3,070,000	1,300	-	WS 170280	-	GS 170280	12
-	-	-	426,000	1,870,000	1,400	-	WS 180240	-	GS 180240	13
-	-	-	619,000	3,710,000	1,200	-	WS 180310	-	GS 180310	12
-	-	-	470,000	2,080,000	1,300	-	WS 190255	-	GS 190255	14
-	-	-	647,000	3,980,000	1,200	-	WS 190320	-	GS 190320	12
-	-	-	465,000	2,080,000	1,300	-	WS 200265	-	GS 200265	14
-	-	-	710,000	4,580,000	1,100	-	WS 200340	-	GS 200340	12
-	-	-	557,000	2,530,000	1,300	-	WS 220290	-	GS 220290	14
-	-	-	943,000	5,520,000	1,000	-	WS 220360	-	GS 220360	16
-	-	-	695,000	3,250,000	1,100	-	WS 240315	-	GS 240315	15
-	-	-	977,000	5,910,000	1,000	-	WS 240380	-	GS 240380	16
-	-	-	739,000	3,510,000	1,000	-	WS 260340	-	GS 260340	15
-	-	-	1,430,000	7,490,000	900	-	WS 260420	-	GS 260420	25
-	-	-	1,420,000	7,490,000	800	-	WS 280440	-	GS 280440	25

(1) 오일 주입시 허용회전수입니다.

1.5 Thrust Needle Roller Bearing

Needle Roller Bearings

인치계열



NTA



TRA...TRD

스러스트 원통 롤러 베어링				사양		
내경 mm (inch)	외경 mm (inch)	폭 mm (inch)	Koyo	동정격하중 C lbf	정정격하중 C ₀ lbf	허용 회전수 rpm ⁽¹⁾
6.35 (0.250)	17.45 (0.687)	1.984 (0.0781)	NTA- 411	1,150	2,420	26,000
7.92 (0.312)	19.05 (0.75)	1.984 (0.0781)	NTA- 512	1,310	2,960	24,000
9.53 (0.375)	20.625 (0.812)	1.984 (0.0781)	NTA- 613	1,360	3,220	22,000
12.70 (0.500)	23.80 (0.937)	1.984 (0.0781)	NTA- 815	1,610	4,300	19,000
14.275 (0.562)	25.40 (1.000)	1.984 (0.0781)	NTA- 916	1,730	4,840	18,000
15.88 (0.625)	28.575 (1.125)	1.984 (0.0781)	NTA-1018	2,200	6,830	15,000
19.05 (0.750)	31.75 (1.25)	1.984 (0.0781)	NTA-1220	2,450	8,200	14,000
22.23 (0.875)	36.50 (1.437)	1.984 (0.0781)	NTA-1423	3,020	11,200	12,000
22.23 (0.875)	42.85 (1.687)	1.984 (0.0781)	NTC-1427	4,150	17,600	9,800

Koyo	내경 mm (inch)	외경 mm (inch)	폭	
			Max	Min
			mm (inch)	mm (inch)
TRA- 411	6.35 (0.250)	17.45 (0.687)	0.81 (0.032)	0.76 (0.030)
TRB- 411	6.35 (0.250)	17.45 (0.687)	1.60 (0.063)	1.52 (0.060)
TRC- 411	6.35 (0.250)	17.45 (0.687)	2.41 (0.095)	2.34 (0.092)
TRA- 512	7.92 (0.312)	19.05 (0.75)	0.81 (0.032)	0.76 (0.030)
TRB- 512	7.92 (0.312)	19.05 (0.75)	1.60 (0.063)	1.52 (0.060)
TRA- 613	9.53 (0.375)	20.625 (0.812)	0.81 (0.032)	0.76 (0.030)
TRB- 613	9.53 (0.375)	20.625 (0.812)	1.60 (0.063)	1.52 (0.060)
TRC- 613	9.53 (0.375)	20.625 (0.812)	2.41 (0.095)	2.34 (0.092)
TRA- 815	12.70 (0.500)	23.80 (0.937)	0.81 (0.032)	0.76 (0.030)
TRB- 815	12.70 (0.500)	23.80 (0.937)	1.60 (0.063)	1.52 (0.060)
TRC- 815	12.70 (0.500)	23.80 (0.937)	2.41 (0.095)	2.34 (0.092)
TRA- 916	14.275 (0.562)	25.40 (1.000)	0.81 (0.032)	0.76 (0.030)
TRB- 916	14.275 (0.562)	25.40 (1.000)	1.60 (0.063)	1.52 (0.060)
TRC- 916	14.275 (0.562)	25.40 (1.000)	2.41 (0.095)	2.34 (0.092)
TRA-1018	15.88 (0.625)	28.575 (1.125)	0.81 (0.032)	0.76 (0.030)
TRB-1018	15.88 (0.625)	28.575 (1.125)	1.60 (0.063)	1.52 (0.060)
TRC-1018	15.88 (0.625)	28.575 (1.125)	2.41 (0.095)	2.34 (0.092)
TRD-1018	15.88 (0.625)	28.575 (1.125)	3.20 (0.126)	3.12 (0.123)
TRE-1018	15.88 (0.625)	28.575 (1.125)	3.99 (0.157)	3.91 (0.154)
TRA-1220	19.05 (0.750)	31.75 (1.250)	0.81 (0.032)	0.76 (0.030)
TRB-1220	19.05 (0.750)	31.75 (1.250)	1.60 (0.063)	1.52 (0.060)
TRC-1220	19.05 (0.750)	31.75 (1.250)	2.41 (0.095)	2.34 (0.092)
TRD-1220	19.05 (0.750)	31.75 (1.250)	3.20 (0.126)	3.12 (0.123)
TRE-1220	19.05 (0.750)	31.75 (1.250)	3.99 (0.157)	3.91 (0.154)
TRA-1423	22.23 (0.875)	36.50 (1.437)	0.81 (0.032)	0.76 (0.030)
TRB-1423	22.23 (0.875)	36.50 (1.437)	1.60 (0.063)	1.52 (0.060)
TRC-1423	22.23 (0.875)	36.50 (1.437)	2.41 (0.095)	2.34 (0.092)
TRD-1423	22.23 (0.875)	36.50 (1.437)	3.20 (0.126)	3.12 (0.123)
TRB-1427	22.23 (0.875)	42.85 (1.687)	1.60 (0.063)	1.52 (0.060)
TRC-1427	22.23 (0.875)	42.85 (1.687)	2.41 (0.095)	2.34 (0.092)
TRD-1427	22.23 (0.875)	42.85 (1.687)	3.20 (0.126)	3.12 (0.123)

(1) 오일 주입시 허용회전수입니다.

1.5 Thrust Needle Roller Bearing

Needle Roller Bearings

인치계열



NTA



TRA...TRD

스러스트 원통 롤러 베어링				사양		
내경 mm (inch)	외경 mm (inch)	폭 mm (inch)	Koyo	동정격하중 C lbf	정정격하중 C ₀ lbf	허용 회전수 rpm ⁽¹⁾
25.40 (1.000)	39.675 (1.562)	1.984 (0.0781)	NTA-1625	3,110	12,100	11,000
28.58 (1.125)	44.45 (1.75)	1.984 (0.0781)	NTA-1828	3,750	16,000	9,600
31.75 (1.250)	49.200 (1.937)	1.984 (0.0781)	NTA-2031	4,530	21,000	8,600
34.93 (1.375)	52.375 (2.062)	1.984 (0.0781)	NTA-2233	4,800	23,200	8,000
38.10 (1.500)	55.55 (2.187)	1.984 (0.0781)	NTA-2435	5,220	26,500	7,600
44.45 (1.750)	63.50 (2.500)	1.984 (0.0781)	NTA-2840	5,690	30,900	6,800

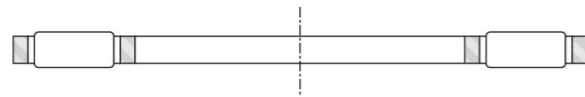
Koyo	내경 mm (inch)	외경 mm (inch)	폭	
			Max	Min
			mm (inch)	mm (inch)
TRA-1625	25.40 (1.000)	39.675 (1.562)	0.81 (0.032)	0.76 (0.030)
TRB-1625	25.40 (1.000)	39.675 (1.562)	1.60 (0.063)	1.52 (0.060)
TRD-1625	25.40 (1.000)	39.675 (1.562)	3.20 (0.126)	3.12 (0.123)
TRE-1625	25.40 (1.000)	39.675 (1.562)	3.99 (0.157)	3.91 (0.154)
TRA-1828	28.58 (1.125)	44.45 (1.75)	0.81 (0.032)	0.76 (0.030)
TRB-1828	28.58 (1.125)	44.45 (1.75)	1.60 (0.063)	1.52 (0.060)
TRC-1828	28.58 (1.125)	44.45 (1.75)	2.41 (0.095)	2.34 (0.092)
TRD-1828	28.58 (1.125)	44.45 (1.75)	3.20 (0.126)	3.12 (0.123)
TRA-2031	31.75 (1.250)	49.20 (1.937)	0.81 (0.032)	0.76 (0.030)
TRB-2031	31.75 (1.250)	49.20 (1.937)	1.60 (0.063)	1.52 (0.060)
TRC-2031	31.75 (1.250)	49.20 (1.937)	2.41 (0.095)	2.34 (0.092)
TRD-2031	31.75 (1.250)	49.20 (1.937)	3.20 (0.126)	3.12 (0.123)
TRF-2031	31.75 (1.250)	49.20 (1.937)	4.78 (0.188)	4.70 (0.185)
TRA-2233	34.93 (1.375)	52.375 (2.062)	0.81 (0.032)	0.76 (0.030)
TRB-2233	34.93 (1.375)	52.375 (2.062)	1.60 (0.063)	1.52 (0.060)
TRC-2233	34.93 (1.375)	52.375 (2.062)	2.41 (0.095)	2.34 (0.092)
TRD-2233	34.93 (1.375)	52.375 (2.062)	3.20 (0.126)	3.12 (0.123)
TRE-2233	34.93 (1.375)	52.375 (2.062)	3.99 (0.157)	3.91 (0.154)
TRF-2233	34.93 (1.375)	52.375 (2.062)	4.78 (0.188)	4.70 (0.185)
TRA-2435	38.10 (1.500)	55.55 (2.187)	0.81 (0.032)	0.76 (0.030)
TRB-2435	38.10 (1.500)	55.55 (2.187)	1.60 (0.063)	1.52 (0.060)
TRC-2435	38.10 (1.500)	55.55 (2.187)	2.41 (0.095)	2.34 (0.092)
TRD-2435	38.10 (1.500)	55.55 (2.187)	3.20 (0.126)	3.12 (0.123)
TRF-2435	38.10 (1.500)	55.55 (2.187)	4.78 (0.188)	4.70 (0.185)
TRA-2840	44.45 (1.750)	63.50 (2.500)	0.81 (0.032)	0.76 (0.030)
TRB-2840	44.45 (1.750)	63.50 (2.500)	1.60 (0.063)	1.52 (0.060)
TRC-2840	44.45 (1.750)	63.50 (2.500)	2.41 (0.095)	2.34 (0.092)
TRD-2840	44.45 (1.750)	63.50 (2.500)	3.20 (0.126)	3.12 (0.123)
TRF-2840	44.45 (1.750)	63.50 (2.500)	4.78 (0.188)	4.70 (0.185)

(1) 오일 주입시 허용회전수입니다.

1.5 Thrust Needle Roller Bearing

Needle Roller Bearings

인치계열



NTA



TRA...TRD

스러스트 원통 롤러 베어링				사양		
내경 mm (inch)	외경 mm (inch)	폭 mm (inch)	Koyo	동정격하중 C lbf	정정격하중 C ₀ lbf	허용 회전수 rpm ⁽¹⁾
50.80 (2.000)	69.85 (2.750)	1.984 (0.0781)	NTA-3244	5,400	29,800	6,100
53.98 (2.125)	73.025 (2.875)	1.984 (0.0781)	NTA-3446	5,490	30,900	5,800
57.15 (2.250)	76.20 (3.000)	1.984 (0.0781)	NTA-3648	5,570	32,000	5,600
57.15 (2.250)	79.375 (3.125)	3.175 (0.1250)	NTA-3650	8,470	39,800	5,300
63.50 (2.500)	82.55 (3.250)	1.984 (0.0781)	NTA-4052	5,740	34,200	5,100
69.85 (2.750)	92.075 (3.625)	3.175 (0.1250)	NTA-4458	10,700	57,500	4,600
76.2 (3.000)	95.25 (3.750)	1.984 (0.0781)	NTA-4860	6,060	38,700	4,400
82.55 (3.250)	104.78 (4.125)	3.175 (0.1250)	NTA-5266	11,600	66,300	4,000

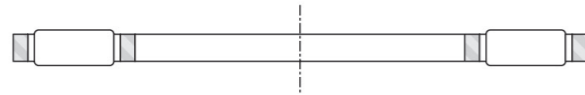
Koyo	내경 mm (inch)	외경 mm (inch)	폭	
			Max	Min
			mm (inch)	mm (inch)
TRA-3244	50.80 (2.000)	69.85 (2.750)	0.81 (0.032)	0.76 (0.030)
TRB-3244	50.80 (2.000)	69.85 (2.750)	1.60 (0.063)	1.52 (0.060)
TRC-3244	50.80 (2.000)	69.85 (2.750)	2.41 (0.095)	2.34 (0.092)
TRD-3244	50.80 (2.000)	69.85 (2.750)	3.20 (0.126)	3.12 (0.123)
TRF-3244	50.80 (2.000)	69.85 (2.750)	4.78 (0.188)	4.70 (0.185)
TRA-3446	53.98 (2.125)	73.025 (2.875)	0.81 (0.032)	0.76 (0.030)
TRB-3446	53.98 (2.125)	73.025 (2.875)	1.60 (0.063)	1.52 (0.060)
TRC-3446	53.98 (2.125)	73.025 (2.875)	2.41 (0.095)	2.34 (0.092)
TRD-3446	53.98 (2.125)	73.025 (2.875)	3.20 (0.126)	3.12 (0.123)
TRA-3648	57.15 (2.250)	76.20 (3.000)	0.81 (0.032)	0.76 (0.030)
TRB-3648	57.15 (2.250)	76.20 (3.000)	1.60 (0.063)	1.52 (0.060)
TRC-3648	57.15 (2.250)	76.20 (3.000)	2.41 (0.095)	2.34 (0.092)
TRD-3648	57.15 (2.250)	76.20 (3.000)	3.20 (0.126)	3.12 (0.123)
TRF-3648	57.15 (2.250)	76.20 (3.000)	4.78 (0.188)	4.70 (0.185)
-	-	-	-	-
TRA-4052	63.50 (2.500)	82.55 (3.250)	0.81 (0.032)	0.76 (0.030)
TRB-4052	63.50 (2.500)	82.55 (3.250)	1.60 (0.063)	1.52 (0.060)
TRC-4052	63.50 (2.500)	82.55 (3.250)	2.41 (0.095)	2.34 (0.092)
TRD-4052	63.50 (2.500)	82.55 (3.250)	3.20 (0.126)	3.12 (0.123)
TRA-4458	69.85 (2.750)	92.075 (3.625)	0.81 (0.032)	0.76 (0.030)
TRB-4458	69.85 (2.750)	92.075 (3.625)	1.60 (0.063)	1.52 (0.060)
TRC-4458	69.85 (2.750)	92.075 (3.625)	2.41 (0.095)	2.34 (0.092)
TRD-4458	69.85 (2.750)	92.075 (3.625)	3.20 (0.126)	3.12 (0.123)
TRF-4458	69.85 (2.750)	92.075 (3.625)	4.78 (0.188)	4.70 (0.185)
TRA-4860	76.2 (3.000)	95.25 (3.750)	0.81 (0.032)	0.76 (0.030)
TRB-4860	76.2 (3.000)	95.25 (3.750)	1.60 (0.063)	1.52 (0.060)
TRD-4860	76.2 (3.000)	95.25 (3.750)	3.20 (0.126)	3.12 (0.123)
TRA-5266	82.55 (3.250)	104.78 (4.125)	0.81 (0.032)	0.76 (0.030)
TRD-5266	82.55 (3.250)	104.78 (4.125)	3.20 (0.126)	3.12 (0.123)

(1) 오일 주입시 허용회전수입니다.

1.5 Thrust Needle Roller Bearing

Needle Roller Bearings

인치계열



NTA



TRA...TRD

스러스트 원통 롤러 베어링				사양		
내경 mm (inch)	외경 mm (inch)	폭 mm (inch)	Koyo	동정격하중 C lbf	정정격하중 C ₀ lbf	허용 회전수 rpm ⁽¹⁾
95.25 (3.750)	117.48 (4.625)	3.175 (0.1250)	NTA-6074	12,600	77,400	3,500
104.78 (4.125)	128.57 (5.062)	3.175 (0.1250)	NTA-6681	14,300	93,200	3,200

Koyo	내경 mm (inch)	외경 mm (inch)	폭	
			Max	Min
			mm (inch)	mm (inch)
TRA-6074	95.25 (3.750)	117.48 (4.625)	0.81 (0.032)	0.76 (0.030)
TRB-6074	95.25 (3.750)	117.48 (4.625)	1.60 (0.063)	1.52 (0.060)
TRC-6074	95.25 (3.750)	117.48 (4.625)	2.41 (0.095)	2.34 (0.092)
TRD-6074	95.25 (3.750)	117.48 (4.625)	3.20 (0.126)	3.12 (0.123)
TRA-6681	104.78 (4.125)	128.57 (5.062)	0.81 (0.032)	0.76 (0.030)
TRC-6681	104.78 (4.125)	128.57 (5.062)	2.41 (0.095)	2.34 (0.092)
TRD-6681	104.78 (4.125)	128.57 (5.062)	3.20 (0.126)	3.12 (0.123)
TRF-6681	104.78 (4.125)	128.57 (5.062)	4.78 (0.188)	4.70 (0.185)

(1) 오일 주입시 허용회전수입니다.