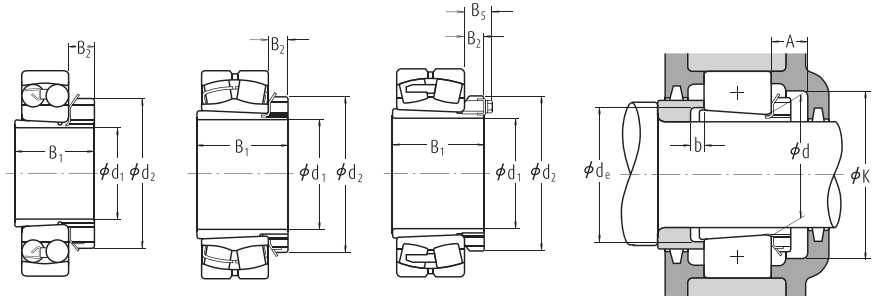


Adapters for Rolling Bearings

Shaft Diameter 17 – 40 mm

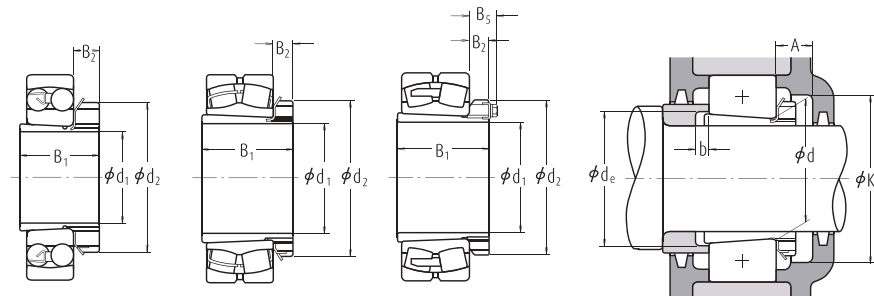


Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Dimensions (mm)				Adapter Sleeve Numbers	Abutment Dimensions (mm)				Mass (kg)
		Applicable Bearings	B ₁	d ₂	B ₂	B ₅		A min.	K min.	d _e min.	b min.	approx.
17	20	1204K + H204X	24	32	7	—	A204X	14	39	23	5	0.045
	20	2204K + H304X	28	32	7	—	A304X	14	39	24	5	0.045
	20	1304K + H304X	28	32	7	—	A304X	14	39	24	8	0.045
20	20	2304K + H2304X	31	32	7	—	A2304X	14	39	24	5	0.050
	25	1205K + H205X	26	38	8	—	A205X	15	45	28	5	0.065
	25	2205K + H305X	29	38	8	—	A305X	15	45	29	5	0.075
	25	1305K + H305X	29	38	8	—	A305X	15	45	29	6	0.075
	25	21305C DKE4 + H305X	29	38	8	—	A305X	15	45	29	6	0.075
	25	2305K + H2305X	35	38	8	—	A2305X	15	45	29	5	0.090
25	30	1206K + H206X	27	45	8	—	A206X	15	50	33	5	0.10
	30	2206K + H306X	31	45	8	—	A306X	15	50	34	5	0.11
	30	1306K + H306X	31	45	8	—	A306X	15	50	34	6	0.11
	30	21306C DKE4 + H306X	31	45	8	—	A306X	15	50	34	6	0.11
	30	2306K + H2306X	38	45	8	—	A2306X	15	50	35	5	0.125
	35	1207K + H207X	29	52	9	—	A207X	17	58	38	5	0.125
30	35	2207K + H307X	35	52	9	—	A307X	17	58	39	5	0.145
	35	1307K + H307X	35	52	9	—	A307X	17	58	39	7	0.145
	35	21307C DKE4 + H307X	35	52	9	—	A307X	17	58	39	7	0.145
	35	2307K + H2307X	43	52	9	—	A2307X	17	58	40	5	0.16
	40	1208K + H208X	31	58	10	—	A208X	17	65	44	5	0.175
	40	2208K + H308X	36	58	10	—	A308X	17	65	44	5	0.19
35	40	1308K + H308X	36	58	10	—	A308X	17	65	44	5	0.19
	40	21308E AKE4 + H308X	36	58	10	—	A308X	17	65	44	5	0.19
	40	2308K + H2308X	46	58	10	—	A2308X	17	65	45	5	0.225
	40	22308E AKE4 + H2308X	46	58	10	—	A2308X	17	65	45	5	0.225
	45	1209K + H209X	33	65	11	—	A209X	17	72	49	5	0.225
	45	2209K + H309X	39	65	11	—	A309X	17	72	49	8	0.26
40	45	1309K + H309X	39	65	11	—	A309X	17	72	49	5	0.26
	45	21309E AKE4 + H309X	39	65	11	—	A309X	17	72	49	5	0.26
	45	2309K + H2309X	50	65	11	—	A2309X	17	72	50	5	0.30
	45	22309E AKE4 + H2309X	50	65	11	—	A2309X	17	72	50	5	0.30

Remark

The suffix X represents adapter sleeves having narrow slits, for which washers with straight tabs should be used.

Shaft Diameter 45 – 60 mm



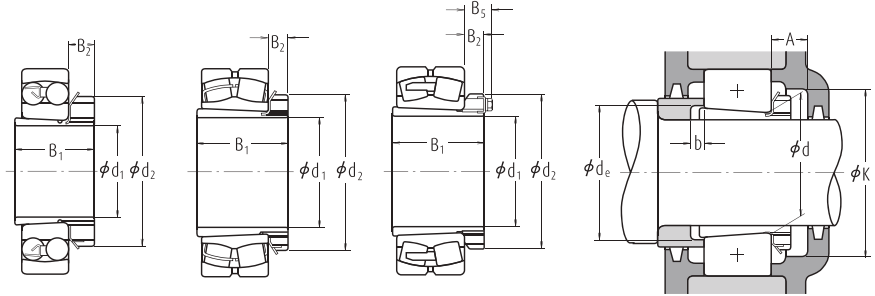
Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Dimensions (mm)				Adapter Sleeve Numbers	Abutment Dimensions (mm)				Mass (kg)
		Applicable Bearings	B ₁	d ₂	B ₂	B ₅		A min.	K min.	d _e min.	b min.	
45	50	1210K + H210X	35	70	12	—	A210X	19	76	53	5	0.275
	50	2210K + H310X	42	70	12	—	A310X	19	76	54	10	0.30
	50	1310K + H310X	42	70	12	—	A310X	19	76	54	5	0.30
	50	21310E AKE4 + H310X	42	70	12	—	A310X	19	76	54	5	0.30
	50	2310K + H2310X	55	70	12	—	A2310X	19	76	56	5	0.35
	50	22310E AKE4 + H2310X	55	70	12	—	A2310X	19	76	56	5	0.35
50	55	1211K + H211X	37	75	12	—	A211X	19	85	60	6	0.305
	55	2211K + H311X	45	75	12	—	A311X	19	85	60	11	0.35
	55	22211E AKE4 + H311X	45	75	12	—	A311X	19	85	60	11	0.35
	55	1311K + H311X	45	75	12	—	A311X	19	85	60	6	0.35
	55	21311E AKE4 + H311X	45	75	12	—	A311X	19	85	60	6	0.35
	55	2311K + H2311X	59	75	12	—	A2311X	19	85	61	6	0.40
55	55	22311E AKE4 + H2311X	59	75	12	—	A2311X	19	85	61	6	0.40
	60	1212K + H212X	38	80	13	—	A212X	20	90	64	5	0.365
	60	2212K + H312X	47	80	13	—	A312X	20	90	65	9	0.40
	60	22212E AKE4 + H312X	47	80	13	—	A312X	20	90	65	9	0.40
	60	1312K + H312X	47	80	13	—	A312X	20	90	65	5	0.40
	60	21312E AKE4 + H312X	47	80	13	—	A312X	20	90	65	5	0.40
60	60	2312K + H2312X	62	80	13	—	A2312X	20	90	66	5	0.45
	60	22312E AKE4 + H2312X	62	80	13	—	A2312X	20	90	66	5	0.45
	65	1213K + H213X	40	85	14	—	A213X	21	96	70	5	0.40
	65	2213K + H313X	50	85	14	—	A313X	21	96	70	8	0.45
	65	22213E AKE4 + H313X	50	85	14	—	A313X	21	96	70	8	0.45
	65	1313K + H313X	50	85	14	—	A313X	21	96	70	5	0.45
65	65	21313E AKE4 + H313X	50	85	14	—	A313X	21	96	70	5	0.45
	65	2313K + H2313X	65	85	14	—	A2313X	21	96	72	5	0.55
	65	22313E AKE4 + H2313X	65	85	14	—	A2313X	21	96	72	5	0.55
	70	22214E AKE4 + H314X	52	92	14	—	A314X	21	96	70	8	0.65
	70	21314E AKE4 + H314X	52	92	14	—	A314X	21	96	70	5	0.65
	70	22314E AKE4 + H2314X	68	92	14	—	A2314X	21	96	72	5	0.80

Remark The suffix X represents adapter sleeves having narrow slits, for which washers with straight tabs should be used.



Adapters for Rolling Bearings

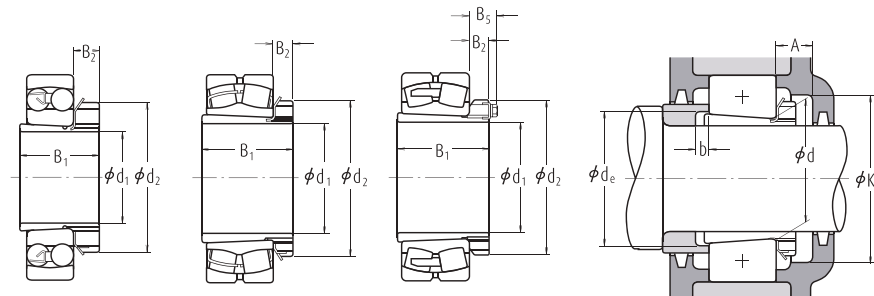
Shaft Diameter 65 – 80 mm



Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers Applicable Bearings	Dimensions (mm)				Adapter Sleeve Numbers	Abutment Dimensions (mm)				Mass (kg)
			B ₁	d ₂	B ₂	B ₅		A min.	K min.	d _e min.	b min.	approx.
65	75	1215K + H215X	43	98	15	—	A215X	23	110	80	5	0.70
	75	2215K + H315X	55	98	15	—	A315X	23	110	80	12	0.85
	75	22215E AKE4 + H315X	55	98	15	—	A315X	23	110	80	12	0.85
	75	1315K + H315X	55	98	15	—	A315X	23	110	80	5	0.85
	75	21315E AKE4 + H315X	55	98	15	—	A315X	23	110	80	5	0.85
	75	2315K + H2315X	73	98	15	—	A2315X	23	110	82	5	1.05
70	75	22315E AKE4 + H2315X	73	98	15	—	A2315X	23	110	82	5	1.05
	80	1216K + H216X	46	105	17	—	A216X	25	120	85	5	0.85
	80	2216K + H316X	59	105	17	—	A316X	25	120	86	12	1.05
	80	22216E AKE4 + H316X	59	105	17	—	A316X	25	120	86	12	1.05
	80	1316K + H316X	59	105	17	—	A316X	25	120	86	5	1.05
	80	21316E AKE4 + H316X	59	105	17	—	A316X	25	120	86	5	1.05
75	80	2316K + H2316X	78	105	17	—	A2316X	25	120	87	5	1.3
	80	22316E AKE4 + H2316X	78	105	17	—	A2316X	25	120	87	5	1.3
	85	1217K + H217X	50	110	18	—	A217X	27	128	90	6	1.0
	85	2217K + H317X	63	110	18	—	A317X	27	128	91	12	1.2
	85	22217E AKE4 + H317X	63	110	18	—	A317X	27	128	91	12	1.2
	85	1317K + H317X	63	110	18	—	A317X	27	128	91	6	1.2
80	85	21317E AKE4 + H317X	63	110	18	—	A317X	27	128	91	6	1.2
	85	2317K + H2317X	82	110	18	—	A2317X	27	128	94	6	1.45
	85	22317E AKE4 + H2317X	82	110	18	—	A2317X	27	128	94	6	1.45
	90	1218K + H218X	52	120	18	—	A218X	28	139	95	6	1.15
	90	2218K + H318X	65	120	18	—	A318X	28	139	96	10	1.4
	90	22218E AKE4 + H318X	65	120	18	—	A318X	28	139	96	10	1.4
80	90	1318K + H318X	65	120	18	—	A318X	28	139	96	6	1.4
	90	21318E AKE4 + H318X	65	120	18	—	A318X	28	139	96	6	1.4
	90	2318K + H2318X	86	120	18	—	A2318X	28	139	99	6	1.7
	90	23218C KE4 + H2318X	86	120	18	—	A2318X	28	139	99	6	1.7
	90	22318E AKE4 + H2318X	86	120	18	—	A2318X	28	139	99	6	1.7

Remark The suffix X represents adapter sleeves having narrow slits, for which washers with straight tabs should be used.

Shaft Diameter 85 – 115 mm



Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Dimensions (mm)				Adapter Sleeve Numbers	Abutment Dimensions (mm)				Mass (kg)
			B ₁	d ₂	B ₂	B ₅		A min.	K min.	d _e min.	b min.	
85	95	1219K + H219X	55	125	19	—	A219X	29	145	101	7	1.35
	95	2219K + H319X	68	125	19	—	A319X	29	145	102	9	1.55
	95	22219E AKE4 + H319X	68	125	19	—	A319X	29	145	102	9	1.55
	95	1319K + H319X	68	125	19	—	A319X	29	145	102	7	1.55
	95	21319C KE4 + H319X	68	125	19	—	A319X	29	145	102	7	1.55
	95	2319K + H2319X	90	125	19	—	A2319X	29	145	105	7	1.9
90	95	22319E AKE4 + H2319X	90	125	19	—	A2319X	29	145	105	7	1.9
	100	1220K + H220X	58	130	20	—	A220X	30	150	106	7	1.45
	100	2220K + H320X	71	130	20	—	A320X	30	150	107	8	1.7
	100	22220E AKE4 + H320X	71	130	20	—	A320X	30	150	107	8	1.7
	100	1320K + H320X	71	130	20	—	A320X	30	150	107	7	1.7
	100	21320C KE4 + H320X	71	130	20	—	A320X	30	150	107	7	1.7
	100	2320K + H320X	97	130	20	—	A2320X	30	150	110	7	2.15
	100	23220C KE4 + H320X	97	130	20	—	A2320X	30	150	110	7	2.15
	100	22320E AKE4 + H320X	97	130	20	—	A2320X	30	150	110	7	2.15
	110	23122C KE4 + H3122X	81	145	21	—	A3122X	32	170	117	7	2.25
100	110	1222K + H222X	63	145	21	—	A222X	32	170	116	7	1.95
	110	2222K + H322X	77	145	21	—	A322X	32	170	117	6	2.3
	110	22222E AKE4 + H322X	77	145	21	—	A322X	32	170	117	6	2.3
	110	1322K + H322X	77	145	21	—	A322X	32	170	117	9	2.3
	110	2322K + H322X	105	145	21	—	A2322X	32	170	121	7	2.75
	110	23222C KE4 + H3222X	105	145	21	—	A2322X	32	170	121	17	2.75
	110	22322E AKE4 + H3222X	105	145	21	—	A2322X	32	170	121	7	2.75
	120	23024C DKE4 + H3024	72	145	22	—	A3024	33	180	127	7	1.95
	120	23124C KE4 + H3124	88	155	22	—	A3124	33	180	128	7	2.65
	120	22224E AKE4 + H3124	88	155	22	—	A3124	33	180	128	11	2.65
110	120	23224C KE4 + H3234	112	155	22	—	A2324	33	180	131	17	3.2
	120	22324E AKE4 + H2324	112	155	22	—	A2324	33	180	131	7	3.2
	130	23026C DKE4 + H3026	80	165	23	—	A3026	34	190	137	8	2.85
	130	23126C KE4 + H3126	92	165	23	—	A3126	34	190	138	8	3.65
	130	22226E AKE4 + H3126	92	165	23	—	A3126	34	190	138	8	3.65
	130	23226C KE4 + H3236	121	165	23	—	A2326	34	190	142	21	4.6
115	130	22326C KE4 + H2326	121	165	23	—	A2326	34	190	142	8	4.6

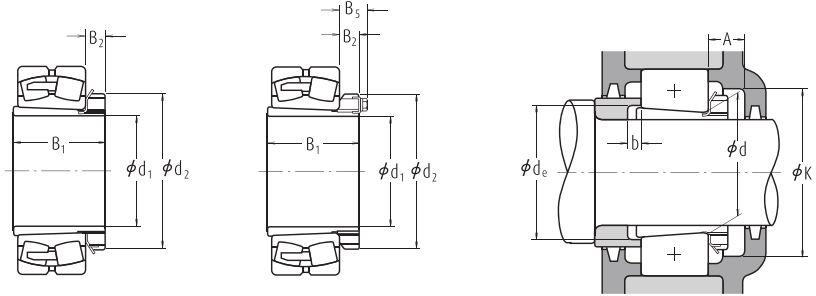
Sleeves

Remark

The suffix X represents adapter sleeves having narrow slits, for which washers with straight tabs should be used.

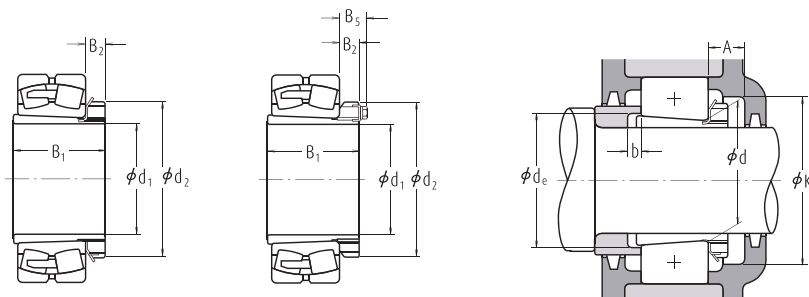
Adapters for Rolling Bearings

Shaft Diameter 125 – 170 mm



Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Dimensions (mm)				Adapter Sleeve Numbers	Abutment Dimensions (mm)				Mass (kg)
		Applicable Bearings	B_1	d_2	B_2	B_5		A min.	K min.	d_e min.	b min.	
125	140	23028C DKE4 + H3028	82	165	24	—	A3028	36	205	147	8	3.15
	140	23128C KE4 + H3128	97	180	24	—	A3128	36	205	149	8	4.35
	140	22228C DKE4 + H3128	97	180	24	—	A3128	36	205	149	8	4.35
	140	23228C KE4 + H2328	131	180	24	—	A2328	36	205	152	22	5.55
135	140	22328C KE4 + H2328	131	180	24	—	A2328	36	205	152	8	5.55
	150	23030C DKE4 + H3030	87	180	26	—	A3030	37	220	158	8	3.9
	150	23130C KE4 + H3130	111	195	26	—	A3130	37	220	160	8	5.5
	150	22230C DKE4 + H3130	111	195	26	—	A3130	37	220	160	15	5.5
140	150	23230C KE4 + H2330	139	195	26	—	A2330	37	220	163	20	6.6
	150	2330C AKE4 + H2330	139	195	26	—	A2330	37	220	163	8	6.6
	160	23932C AKE4 + H3932	78	190	28	—	A3932	39	205	168	8	4.64
	160	23032C DKE4 + H3032	93	190	28	—	A3032	39	230	168	8	5.2
140	160	23132C KE4 + H3132	119	210	28	—	A3132	39	230	170	8	7.65
	160	22232C DKE4 + H3132	119	210	28	—	A3132	39	230	170	14	7.65
	160	23232C KE4 + H2332	147	210	28	—	A2332	39	230	174	18	9.15
	160	22332C AKE4 + H2332	147	210	28	—	A2332	39	230	174	8	9.15
150	170	23934B CAKE4 + H3934	79	200	29	—	A3934	40	215	179	8	5.07
	170	23034C DKE4 + H3034	101	200	29	—	A3034	40	250	179	8	6.0
	170	23134C KE4 + H3134	122	220	29	—	A3134	40	250	180	8	8.4
	170	22234C DKE4 + H3134	122	220	29	—	A3134	40	250	180	10	8.4
150	170	23234C KE4 + H2334	154	220	29	—	A2334	40	250	185	18	10
	170	22334C AKE4 + H2334	154	220	29	—	A2334	40	250	185	8	10
160	180	23936C AKE4 + H3936	87	210	30	—	A3936	41	230	189	8	5.87
	180	23036C DKE4 + H3036	109	210	30	—	A3036	41	260	189	8	6.85
	180	23136C KE4 + H3136	131	230	30	—	A3136	41	260	191	8	9.5
	180	22236C DKE4 + H3136	131	230	30	—	A3136	41	260	191	18	9.5
160	180	23236C KE4 + H2336	161	230	30	—	A2336	41	260	195	22	11.5
	180	22336C AKE4 + H2336	161	230	30	—	A2336	41	260	195	8	11.5
170	190	23938C AKE4 + H3938	89	220	31	—	A3938	43	240	199	9	6.35
	190	23038C AKE4 + H3038	112	220	31	—	A3038	43	270	199	9	7.45
	190	23138C KE4 + H3138	141	240	31	—	A3138	43	270	202	9	11
	190	22238C AKE4 + H3138	141	240	31	—	A3138	43	270	202	21	11
170	190	23238C KE4 + H2338	169	240	31	—	A2338	43	270	206	21	12.5
	190	22338C AKE4 + H2338	169	240	31	—	A2338	43	270	206	9	12.5

Shaft Diameter 180 – 260 mm

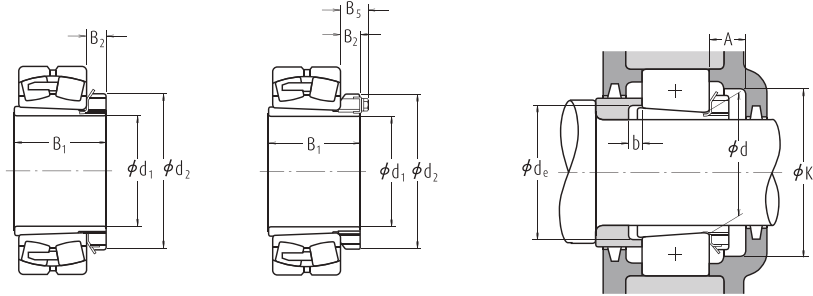


Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Dimensions (mm)				Adapter Sleeve Numbers	Abutment Dimensions (mm)				Mass (kg)
		Applicable Bearings	B ₁	d ₂	B ₂	B ₅		A min.	K min.	d _e min.	b min.	
180	200	23940C AKE4 + H3940	98	240	32	—	A3940	46	260	210	10	8.0
	200	23040C AKE4 + H3040	120	240	32	—	A3040	46	280	210	10	9.2
	200	23140C KE4 + H3140	150	250	32	—	A3140	46	280	212	10	12
	200	22240C AKE4 + H3140	150	250	32	—	A3140	46	280	212	24	12
	200	23240C KE4 + H2340	176	250	32	—	A2340	46	280	216	20	14
	200	22340C AKE4 + H2340	176	250	32	—	A2340	46	280	216	10	14
200	220	23944C AKE4 + H3944	96	260	30	41	A3944	55	280	231	10	8.32
	220	23044C AKE4 + H3044	128	260	30	41	A3044	55	320	231	12	10.5
	220	23144C KE4 + H3144	158	280	32	44	A3144	55	320	233	10	14.5
	220	22244C AKE4 + H3144	158	280	32	44	A3144	55	320	233	22	14.5
	220	23244C KE4 + H2344	183	280	32	44	A2344	55	320	236	11	16.5
	220	22344C AKE4 + H2344	183	280	32	44	A2344	55	320	236	10	16.5
220	240	23948C AKE4 + H3948	101	290	34	46	A3948	60	300	251	11	11.2
	240	23048C AKE4 + H3048	133	290	34	46	A3048	60	340	251	11	13
	240	23148C KE4 + H3148	169	300	34	46	A3148	60	340	254	11	17.5
	240	22248C AKE4 + H3148	169	300	34	46	A3148	60	340	254	19	17.5
	240	23248C KE4 + H2348	196	300	34	46	A2348	60	340	257	6	19.5
	240	22348C AKE4 + H2348	196	300	34	46	A2348	60	340	257	11	19.5
240	260	23952C AKE4 + H3952	116	310	34	46	A3952	60	330	272	11	13.4
	260	23052C AKE4 + H3052	147	310	34	46	A3052	60	370	272	13	15.5
	260	23152C AKE4 + H3152	187	330	36	49	A3152	60	370	276	11	22
	260	22252C AKE4 + H3152	187	330	36	49	A3152	60	370	276	25	22
	260	23252C AKE4 + H2352	208	330	36	49	A2352	60	370	278	2	24
	260	22352C AKE4 + H2352	208	330	36	49	A2352	60	370	278	11	24
260	280	23956C AKE4 + H3956	121	330	38	50	A3956	65	350	292	12	15.5
	280	23056C AKE4 + H3056	152	330	38	50	A3056	65	390	292	12	17.5
	280	23156C AKE4 + H3156	192	350	38	51	A3156	65	390	296	12	24.5
	280	22256C AKE4 + H3156	192	350	38	51	A3156	65	390	296	28	24.5
	280	23256C AKE4 + H2356	221	350	38	51	A2356	65	390	299	11	28
	280	22356C AKE4 + H2356	221	350	38	51	A2356	65	390	299	12	28

Sleeves

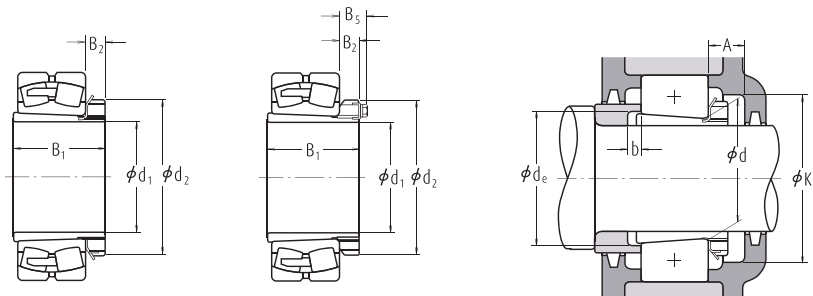
Adapters for Rolling Bearings

Shaft Diameter 280 – 410 mm



Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Dimensions (mm)				Adapter Sleeve Numbers	Abutment Dimensions (mm)				Mass (kg)
		Applicable Bearings	B_1	d_2	B_2	B_5		A min.	K min.	d_e min.	b min.	
280	300	23960C AKE4 + H3960	140	360	42	54	A3960	69	380	313	12	20.7
	300	23060C AKE4 + H3060	168	360	42	54	A3060	69	430	313	12	23
	300	23160C AKE4 + H3160	208	380	40	53	A3160	69	430	317	12	30
	300	22260C AKE4 + H3160	208	380	40	53	A3160	69	430	317	32	30
300	300	23260C AKE4 + H3260	240	380	40	53	A3260	69	430	321	12	34
	320	23964C AKE4 + H3964	140	380	42	55	A3964	72	400	334	13	21.8
	320	23064C AKE4 + H3064	171	380	42	55	A3064	72	450	334	13	24.5
	320	23164C AKE4 + H3164	226	400	42	56	A3164	72	450	339	13	35
320	320	22264C AKE4 + H3164	226	400	42	56	A3164	72	450	339	39	35
	320	23264C AKE4 + H3264	258	400	42	56	A3264	72	450	343	13	39.5
	340	23968C AKE4 + H3968	144	400	45	58	A3968	75	430	354	14	24.6
	340	23068C AKE4 + H3068	187	400	45	58	A3068	75	490	355	14	28.5
340	340	23168C AKE4 + H3168	254	440	55	72	A3168	75	490	360	14	49.5
	340	23268C AKE4 + H3268	288	440	55	72	A3268	75	490	364	14	54.5
	360	23972C AKE4 + H3972	144	420	45	58	A3972	75	450	374	14	25.7
	360	23072C AKE4 + H3072	188	420	45	58	A3072	75	510	375	14	30.5
360	360	23172C AKE4 + H3172	259	460	58	75	A3172	75	510	380	14	54
	360	23272C AKE4 + H3272	299	460	58	75	A3272	75	510	385	14	60.5
	380	23976C AKE4 + H3976	164	450	48	62	A3976	82	480	396	15	31.9
	380	23076C AKE4 + H3076	193	450	48	62	A3076	82	540	396	15	36
380	380	23176C AKE4 + H3176	264	490	60	77	A3176	82	540	401	15	61.5
	380	23276C AKE4 + H3276	310	490	60	77	A3276	82	540	405	15	69.5
	400	23980C AKE4 + H3980	168	470	52	66	A3980	86	500	417	15	35.2
	400	23080C AKE4 + H3080	210	470	52	66	A3080	86	580	417	15	41.5
400	400	23180C AKE4 + H3180	272	520	62	82	A3180	86	580	421	15	70.5
	400	23280C AKE4 + H3280	328	520	62	82	A3280	86	580	427	15	81
	420	23984C AKE4 + H3984	168	490	52	66	A3984	86	520	437	16	36.6
	420	23084C AKE4 + H3084	212	490	52	66	A3084	86	600	437	16	43.5
410	420	23184C AKE4 + H3184	304	540	70	90	A3184	86	600	443	16	84
	420	23284C AKE4 + H3284	352	540	70	90	A3284	86	600	448	16	94
	440	23988C AKE4 + H3988	189	520	60	77	A3988	99	550	458	17	58.6
	440	23088C AKE4 + H3088	228	520	60	77	A3088	99	620	458	17	65
410	440	23188C AKE4 + H3188	307	560	70	90	A3188	99	620	464	17	104
	440	23288C AKE4 + H3288	361	560	70	90	A3288	99	620	469	17	118

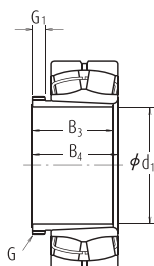
Shaft Diameter 430 – 470 mm



Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers Applicable Bearings	Dimensions (mm)				Adapter Sleeve Numbers	Abutment Dimensions (mm)				Mass (kg)
			B ₁	d ₂	B ₂	B ₅		A min.	K min.	d _e min.	b min.	
430	460	23992C AKE4 + H3992	189	540	60	77	A3992	99	570	478	17	62
	460	23092C AKE4 + H3092	234	540	60	77	A3092	99	650	478	17	69.5
	460	23192C AKE4 + H3192	326	580	75	95	A3192	99	650	485	17	116
450	460	23292C AKE4 + H3292	382	580	75	95	A3292	99	650	491	17	132
	480	23996C AKE4 + H3996	200	560	60	77	A3996	99	600	499	18	67.5
	480	23096C AKE4 + H3096	237	560	60	77	A3096	99	690	499	18	73.5
	480	23196C AKE4 + H3196	335	620	75	95	A3196	99	690	505	18	133
	480	23296C AKE4 + H3296	397	620	75	95	A3296	99	690	512	18	152
470	500	239/500C AKE4 + H39/500	208	580	68	85	A39/500	109	620	519	18	74.6
	500	230/500C AKE4 + H30/500	247	580	68	85	A30/500	109	700	519	18	82
	500	231/500C AKE4 + H31/500	356	630	80	100	A31/500	109	700	527	18	143
	500	232/500C AKE4 + H32/500	428	630	80	100	A32/500	109	700	534	18	166

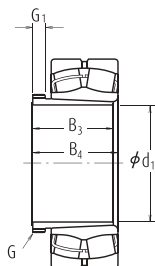
Withdrawal Sleeves for Rolling Bearings

Shaft Diameter 35 – 85 mm



Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Screw Thread	Dimensions (mm)			Mass (kg)
		Applicable Bearings	G	B ₃	G ₁	B ₄	approx.
35	40	21308EAKE4 + AH308	M 45 × 1.5	29	6	32	0.09
	40	22308EAKE4 + AH2308	M 45 × 1.5	40	7	43	0.13
40	45	21309EAKE4 + AH309	M 50 × 1.5	31	6	34	0.11
	45	22309EAKE4 + AH2309	M 50 × 1.5	44	7	47	0.165
45	50	21310EAKE4 + AHX310	M 55 × 2	35	7	38	0.16
	50	22310EAKE4 + AHX2310	M 55 × 2	50	9	53	0.235
50	55	22211EAKE4 + AHX311	M 60 × 2	37	7	40	0.19
	55	21311EAKE4 + AHX311	M 60 × 2	37	7	40	0.19
	55	22311EAKE4 + AHX2311	M 60 × 2	54	10	57	0.285
55	60	22212EAKE4 + AHX312	M 65 × 2	40	8	43	0.215
	60	21312EAKE4 + AHX312	M 65 × 2	40	8	43	0.215
	60	22312EAKE4 + AHX2312	M 65 × 2	58	11	61	0.34
60	65	22213EAKE4 + AH313	M 75 × 2	42	8	45	0.255
	65	21313EAKE4 + AH313	M 75 × 2	42	8	45	0.255
	65	22313EAKE4 + AH2313	M 75 × 2	61	12	64	0.395
65	70	22214EAKE4 + AH314	M 80 × 2	43	8	47	0.28
	70	21314EAKE4 + AH314	M 80 × 2	43	8	47	0.28
	70	22314EAKE4 + AHX2314	M 80 × 2	64	12	68	0.53
70	75	22215EAKE4 + AH315	M 85 × 2	45	8	49	0.315
	75	21315EAKE4 + AH315	M 85 × 2	45	8	49	0.315
	75	22315EAKE4 + AHX2315	M 85 × 2	68	12	72	0.605
75	80	22216EAKE4 + AH316	M 90 × 2	48	8	52	0.365
	80	21316EAKE4 + AH316	M 90 × 2	48	8	52	0.365
	80	22316EAKE4 + AHX2316	M 90 × 2	71	12	75	0.665
80	85	22217EAKE4 + AHX317	M 95 × 2	52	9	56	0.48
	85	21317EAKE4 + AHX317	M 95 × 2	52	9	56	0.48
	85	22317EAKE4 + AHX2317	M 95 × 2	74	13	78	0.745
85	90	22218EAKE4 + AHX318	M 100 × 2	53	9	57	0.52
	90	21318EAKE4 + AHX318	M 100 × 2	53	9	57	0.52
	90	23218CKE4 + AHX2318	M 100 × 2	63	10	67	0.58
	90	22318EAKE4 + AHX2318	M 100 × 2	79	14	83	0.845

Shaft Diameter 90 – 135 mm

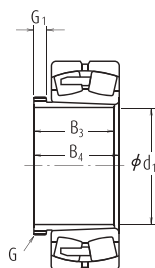


Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Screw Thread	Dimensions (mm)			Mass (kg)
d ₁	d	Applicable Bearings	G	B ₃	G ₁	B ₄	approx.
90	95	22219EAKE4 + AHX319	M 105 × 2	57	10	61	0.595
	95	21319CKE4 + AHX319	M 105 × 2	57	10	61	0.595
	95	22319EAKE4 + AHX2319	M 105 × 2	85	16	89	0.89
95	100	21320CKE4 + AHX3120	M 110 × 2	64	11	68	0.70
	100	22220EAKE4 + AHX320	M 110 × 2	59	10	63	0.66
	100	21320CKE4 + AHX320	M 110 × 2	59	10	63	0.66
100	100	23220CKE4 + AHX3220	M 110 × 2	73	11	77	0.77
	100	22320EAKE4 + AHX2320	M 110 × 2	90	16	94	1.0
105	110	23122CKE4 + AHX3122	M 120 × 2	68	11	72	0.76
	110	22222EAKE4 + AHX3122	M 120 × 2	68	11	72	0.76
	110	24122CK30E4 + AH24122	M 115 × 2	82	13	91	0.73
110	110	23222CKE4 + AHX3222	M 125 × 2	82	11	86	1.04
	110	22322EAKE4 + AHX2322	M 125 × 2	98	16	102	1.35
115	120	23024CDKE4 + AHX3024	M 130 × 2	60	13	64	0.75
	120	24024CK30E4 + AH24024	M 125 × 2	73	13	82	0.70
120	120	23124CKE4 + AHX3124	M 130 × 2	75	12	79	0.95
	120	22224EAKE4 + AHX3124	M 130 × 2	75	12	79	0.95
	120	24124CK30E4 + AH24124	M 130 × 2	93	13	102	1.02
120	120	23224CKE4 + AHX3224	M 135 × 2	90	13	94	1.3
	120	22324EAKE4 + AHX2324	M 135 × 2	105	17	109	1.6
125	130	23026CDKE4 + AHX3026	M 140 × 2	67	14	71	0.95
	130	24026CK30E4 + AH24026	M 135 × 2	83	14	93	0.89
	130	23126CKE4 + AHX3126	M 140 × 2	78	12	82	1.08
130	130	22226EAKE4 + AHX3126	M 140 × 2	78	12	82	1.08
	130	24126CK30E4 + AH24126	M 140 × 2	94	14	104	1.14
	130	23226CKE4 + AHX3226	M 145 × 2	98	15	102	1.58
130	130	22326EAKE4 + AHX2326	M 145 × 2	115	19	119	1.97
	140	23028CDKE4 + AHX3028	M 150 × 2	68	14	73	1.01
	140	24028CK30E4 + AH24028	M 145 × 2	83	14	93	0.96
140	140	23128CKE4 + AHX3128	M 150 × 2	83	14	88	1.28
	140	22228CDKE4 + AHX3128	M 150 × 2	83	14	88	1.28
	140	24128CK30E4 + AH24128	M 150 × 2	99	14	109	1.3
140	140	23228CKE4 + AHX3228	M 155 × 3	104	15	109	1.84
	140	22328CKE4 + AHX2328	M 155 × 3	125	20	130	2.33

Sleeves

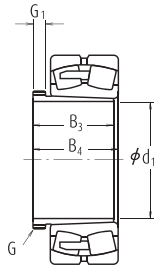
Withdrawal Sleeves for Rolling Bearings

Shaft Diameter 145 – 180 mm



Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Screw Thread	Dimensions (mm)			Mass (kg)
d ₁	d	Applicable Bearings	G	B ₃	G ₁	B ₄	approx.
145	150	23030CDKE4 + AHX3030	M 160 × 3	72	15	77	1.15
	150	24030CK30E4 + AH24030	M 155 × 3	90	15	101	1.11
	150	23130CKE4 + AHX3130	M 165 × 3	96	15	101	1.79
	150	22230CDKE4 + AHX3130	M 165 × 3	96	15	101	1.79
	150	24130CK30E4 + AH24130	M 160 × 3	115	15	126	1.63
	150	23230CKE4 + AHX3230	M 165 × 3	114	17	119	2.22
150	150	22330CAKE4 + AHX2330	M 165 × 3	135	24	140	2.82
	160	23032CDKE4 + AH3032	M 170 × 3	77	16	82	2.05
	160	24032CK30E4 + AH24032	M 170 × 3	95	15	106	2.28
	160	23132CKE4 + AH3132	M 180 × 3	103	16	108	3.2
	160	22232CDKE4 + AH3132	M 180 × 3	103	16	108	3.2
	160	24132CK30E4 + AH24132	M 170 × 3	124	15	135	3.03
160	160	23232CKE4 + AH3232	M 180 × 3	124	20	130	4.1
	160	22332CAKE4 + AH2332	M 180 × 3	140	24	146	4.7
	170	23034CDKE4 + AH3034	M 180 × 3	85	17	90	2.45
	170	24034CK30E4 + AH24034	M 180 × 3	106	16	117	2.74
	170	23134CKE4 + AH3134	M 190 × 3	104	16	109	3.4
	170	22234CDKE4 + AH3134	M 190 × 3	104	16	109	3.4
170	170	24134CK30E4 + AH24134	M 180 × 3	125	16	136	3.26
	170	23234CKE4 + AH3234	M 190 × 3	134	24	140	4.8
	170	22334CAKE4 + AH2334	M 190 × 3	146	24	152	5.25
	180	23036CDKE4 + AH3036	M 190 × 3	92	17	98	2.8
	180	24036CK30E4 + AH24036	M 190 × 3	116	16	127	3.19
	180	23136CKE4 + AH3136	M 200 × 3	116	19	122	4.2
180	180	24136CK30E4 + AH24136	M 190 × 3	134	16	145	3.74
	180	22236CDKE4 + AH2236	M 200 × 3	105	17	110	3.75
	180	23236CKE4 + AH3236	M 200 × 3	140	24	146	5.3
	180	22336CAKE4 + AH2336	M 200 × 3	154	26	160	5.85
	190	23038CAKE4 + AH3038	Tr 205 × 4	96	18	102	3.35
	190	24038CK30E4 + AH24038	M 200 × 3	118	18	131	3.47
190	190	23138CKE4 + AH3138	Tr 210 × 4	125	20	131	4.9
	190	24138CK30E4 + AH24138	M 200 × 3	146	18	159	4.38
	190	22238CAKE4 + AH2238	Tr 210 × 4	112	18	117	4.25
	190	23238CKE4 + AH3238	Tr 210 × 4	145	25	152	5.9
	190	22338CAKE4 + AH2338	Tr 210 × 4	160	26	167	6.65

Shaft Diameter 190 – 260 mm



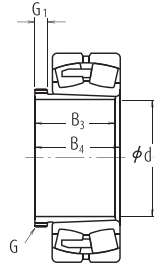
Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers		Screw Thread	Dimensions (mm)			Mass (kg)
d ₁	d	Applicable Bearings		G	B ₃	G ₁	B ₄	approx.
190	200	23040CAKE4	+ AH3040	Tr 215 × 4	102	19	108	3.8
	200	24040CK30E4	+ AH24040	Tr 210 × 4	127	18	140	3.92
	200	23140CKE4	+ AH3140	Tr 220 × 4	134	21	140	5.5
	200	24140CK30E4	+ AH24140	Tr 210 × 4	158	18	171	5.0
	200	22240CAKE4	+ AH2240	Tr 220 × 4	118	19	123	4.7
	200	23240CKE4	+ AH3240	Tr 220 × 4	153	25	160	6.7
200	200	22340CAKE4	+ AH2340	Tr 220 × 4	170	30	177	7.55
	220	23044CAKE4	+ AH3044	Tr 235 × 4	111	20	117	7.4
	220	24044CK30E4	+ AH24044	Tr 230 × 4	138	20	152	8.23
	220	23144CKE4	+ AH3144	Tr 240 × 4	145	23	151	10.5
	220	24144CK30E4	+ AH24144	Tr 230 × 4	170	20	184	10.3
	220	22244CAKE4	+ AH2244	Tr 240 × 4	130	20	136	9.1
220	220	23244CKE4	+ AH2344	Tr 240 × 4	181	30	189	13.5
	220	22344CAKE4	+ AH2344	Tr 240 × 4	181	30	189	13.5
	240	23048CAKE4	+ AH3048	Tr 260 × 4	116	21	123	8.75
	240	24048CK30E4	+ AH24048	Tr 250 × 4	138	20	153	9.0
	240	23148CKE4	+ AH3148	Tr 260 × 4	154	25	161	12
	240	24148CK30E4	+ AH24148	Tr 260 × 4	180	20	195	12.6
240	240	22248CAKE4	+ AH2248	Tr 260 × 4	144	21	150	11
	240	23248CAKE4	+ AH2348	Tr 260 × 4	189	30	197	15.5
	240	22348CAKE4	+ AH2348	Tr 260 × 4	189	30	197	15.5
	260	23052CAKE4	+ AH3052	Tr 280 × 4	128	23	135	10.5
	260	24052CAK30E4	+ AH24052	Tr 270 × 4	162	22	178	11.7
	260	23152CAKE4	+ AH3152	Tr 290 × 4	172	26	179	16
260	260	24152CAK30E4	+ AH24152	Tr 280 × 4	202	22	218	15.5
	260	22252CAKE4	+ AH2252	Tr 290 × 4	155	23	161	14
	260	23252CAKE4	+ AH2352	Tr 290 × 4	205	30	213	19.5
	260	22352CAKE4	+ AH2352	Tr 290 × 4	205	30	213	19.5
	280	23056CAKE4	+ AH3056	Tr 300 × 4	131	24	139	12
	280	24056CAK30E4	+ AH24056	Tr 290 × 4	162	22	179	12.6
280	280	23156CAKE4	+ AH3156	Tr 310 × 5	175	28	183	17.5
	280	24156CAK30E4	+ AH24156	Tr 300 × 4	202	22	219	16.8
	280	22256CAKE4	+ AH2256	Tr 310 × 5	155	24	163	15
	280	23256CAKE4	+ AH2356	Tr 310 × 5	212	30	220	21.5
	280	22356CAKE4	+ AH2356	Tr 310 × 5	212	30	220	21.5



Sleeves

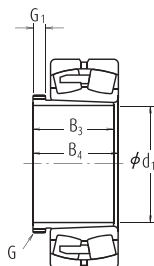
Withdrawal Sleeves for Rolling Bearings

Shaft Diameter 280 – 380 mm



Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Screw Thread	Dimensions (mm)			Mass (kg)
d ₁	d	Applicable Bearings	G	B ₃	G ₁	B ₄	approx.
280	300	23060CAKE4 + AH3060	Tr 320 × 5	145	26	153	14.5
	300	24060CAK30E4 + AH24060	Tr 310 × 5	184	24	202	15.5
	300	23160CAKE4 + AH3160	Tr 330 × 5	192	30	200	21
	300	24160CAK30E4 + AH24160	Tr 320 × 5	224	24	242	20.3
	300	22260CAKE4 + AH2260	Tr 330 × 5	170	26	178	18
300	300	23260CAKE4 + AH3260	Tr 330 × 5	228	34	236	20
	320	23064CAKE4 + AH3064	Tr 345 × 5	149	27	157	16
	320	24064CAK30E4 + AH24064	Tr 330 × 5	184	24	202	16.4
	320	23164CAKE4 + AH3164	Tr 350 × 5	209	31	217	24.5
	320	24164CAK30E4 + AH24164	Tr 340 × 5	242	24	260	23.5
320	320	23264CAKE4 + AH3264	Tr 350 × 5	246	36	254	25
	340	23068CAKE4 + AH3068	Tr 365 × 5	162	28	171	19.5
	340	24068CAK30E4 + AH24068	Tr 360 × 5	206	26	225	21.2
	340	23168CAKE4 + AH3168	Tr 370 × 5	225	33	234	29
	340	24168CAK30E4 + AH24168	Tr 360 × 5	269	26	288	28.3
340	340	23268CAKE4 + AH3268	Tr 370 × 5	264	38	273	35.5
	360	23072CAKE4 + AH3072	Tr 385 × 5	167	30	176	21
	360	24072CAK30E4 + AH24072	Tr 380 × 5	206	26	226	22.5
	360	23172CAKE4 + AH3172	Tr 400 × 5	229	35	238	33
	360	24172CAK30E4 + AH24172	Tr 380 × 5	269	26	289	30
360	360	23272CAKE4 + AH3272	Tr 400 × 5	274	40	283	41.5
	380	23076CAKE4 + AH3076	Tr 410 × 5	170	31	180	23.5
	380	24076CAK30E4 + AH24076	Tr 400 × 5	208	28	228	24.1
	380	23176CAKE4 + AH3176	Tr 420 × 5	232	36	242	35.5
	380	24176CAK30E4 + AH24176	Tr 400 × 5	271	28	291	32.1
380	380	23276CAKE4 + AH3276	Tr 420 × 5	284	42	294	45.5
	400	23080CAKE4 + AH3080	Tr 430 × 5	183	33	193	27.5
	400	24080CAK30E4 + AH24080	Tr 420 × 5	228	28	248	28
	400	23180CAKE4 + AH3180	Tr 440 × 5	240	38	250	39.5
	400	24180CAK30E4 + AH24180	Tr 420 × 5	278	28	298	34.8
	400	23280CAKE4 + AH3280	Tr 440 × 5	302	44	312	51.5

Shaft Diameter 400 – 480 mm

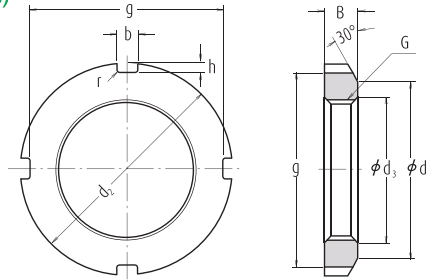


Shaft Diameter (mm)	Nominal Bearing Bore Dia. (mm)	Nominal Numbers	Screw Thread	Dimensions (mm)			Mass (kg)
d_1	d	Applicable Bearings	G	B_3	G_1	B_4	approx.
400	420	23084CAKE4 + AH3084	Tr 450 × 5	186	34	196	29
	420	24084CAK30E4 + AH24084	Tr 440 × 5	230	30	252	29.8
	420	23184CAKE4 + AH3184	Tr 460 × 5	266	40	276	46.5
	420	24184CAK30E4 + AH24184	Tr 440 × 5	310	30	332	41.4
420	420	23284CAKE4 + AH3284	Tr 460 × 5	321	46	331	59
	440	23088CAKE4 + AHX3088	Tr 470 × 5	194	35	205	42
	440	24088CAK30E4 + AH24088	Tr 460 × 5	242	30	264	33
	440	23188CAKE4 + AHX3188	Tr 480 × 5	270	42	281	50
440	440	24188CAK30E4 + AH24188	Tr 460 × 5	310	30	332	43.5
	440	23288CAKE4 + AHX3288	Tr 480 × 5	330	48	341	64
	460	23092CAKE4 + AHX3092	Tr 490 × 5	202	37	213	46
	460	24092CAK30E4 + AH24092	Tr 480 × 5	250	32	273	35.9
460	460	23192CAKE4 + AHX3192	Tr 510 × 6	285	43	296	58
	460	24192CAK30E4 + AH24192	Tr 480 × 5	332	32	355	49.7
	460	23292CAKE4 + AHX3292	Tr 510 × 6	349	50	360	74.5
	480	23096CAKE4 + AHX3096	Tr 520 × 6	205	38	217	51
480	480	24096CAK30E4 + AH24096	Tr 500 × 5	250	32	273	37.5
	480	23196CAKE4 + AHX3196	Tr 530 × 6	295	45	307	63
	480	24196CAK30E4 + AH24196	Tr 500 × 5	340	32	363	53
	480	23296CAKE4 + AHX3296	Tr 530 × 6	364	52	376	82
480	500	230/500CAKE4 + AHX30/500	Tr 540 × 6	209	40	221	54.5
	500	240/500CAK30E4 + AH240/500	Tr 530 × 6	253	35	276	41.9
	500	231/500CAKE4 + AHX31/500	Tr 550 × 6	313	47	325	71
	500	241/500CAK30E4 + AH241/500	Tr 530 × 6	360	35	383	61.2
	500	232/500CAKE4 + AHX32/500	Tr 550 × 6	393	54	405	94.5



Nuts for Rolling Bearings

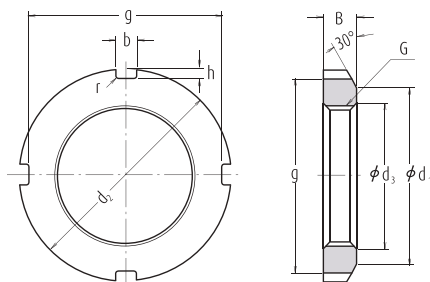
(For Adapters and Shafts)



Nut with Washer

Units : mm

Nominal Numbers	Nut Series AN										Reference		
	Screw Threads	Basic Dimensions								Mass (kg)	Adapter (1) Sleeve Bore Dia. Numbers	Washer Numbers	Shaft Dia.
	G	d ₂	d ₁	g	b	h	d ₃	B	r max.	approx.			
AN 02	M 15×1	25	21	21	4	2	15.5	5	0.4	0.010	—	AW 02 X	15
AN 03	M 17×1	28	24	24	4	2	17.5	5	0.4	0.013	—	AW 03 X	17
AN 04	M 20×1	32	26	28	4	2	20.5	6	0.4	0.019	04	AW 04 X	20
AN 05	M 25×1.5	38	32	34	5	2	25.8	7	0.4	0.025	05	AW 05 X	25
AN 06	M 30×1.5	45	38	41	5	2	30.8	7	0.4	0.043	06	AW 06 X	30
AN 07	M 35×1.5	52	44	48	5	2	35.8	8	0.4	0.053	07	AW 07 X	35
AN 08	M 40×1.5	58	50	53	6	2.5	40.8	9	0.5	0.085	08	AW 08 X	40
AN 09	M 45×1.5	65	56	60	6	2.5	45.8	10	0.5	0.119	09	AW 09 X	45
AN 10	M 50×1.5	70	61	65	6	2.5	50.8	11	0.5	0.148	10	AW 10 X	50
AN 11	M 55×2	75	67	69	7	3	56	11	0.5	0.158	11	AW 11 X	55
AN 12	M 60×2	80	73	74	7	3	61	11	0.5	0.174	12	AW 12 X	60
AN 13	M 65×2	85	79	79	7	3	66	12	0.5	0.203	13	AW 13 X	65
AN 14	M 70×2	92	85	85	8	3.5	71	12	0.5	0.242	14	AW 14 X	70
AN 15	M 75×2	98	90	91	8	3.5	76	13	0.5	0.287	15	AW 15 X	75
AN 16	M 80×2	105	95	98	8	3.5	81	15	0.6	0.395	16	AW 16 X	80
AN 17	M 85×2	110	102	103	8	3.5	86	16	0.6	0.45	17	AW 17 X	85
AN 18	M 90×2	120	108	112	10	4	91	16	0.6	0.555	18	AW 18 X	90
AN 19	M 95×2	125	113	117	10	4	96	17	0.6	0.66	19	AW 19 X	95
AN 20	M 100×2	130	120	122	10	4	101	18	0.6	0.70	20	AW 20 X	100
AN 21	M 105×2	140	126	130	12	5	106	18	0.7	0.845	21	AW 21 X	105
AN 22	M 110×2	145	133	135	12	5	111	19	0.7	0.965	22	AW 22 X	110
AN 23	M 115×2	150	137	140	12	5	116	19	0.7	1.01	—	AW 23	115
AN 24	M 120×2	155	138	145	12	5	121	20	0.7	1.08	24	AW 24	120
AN 25	M 125×2	160	148	150	12	5	126	21	0.7	1.19	—	AW 25	125



Nut with Washer

Units : mm

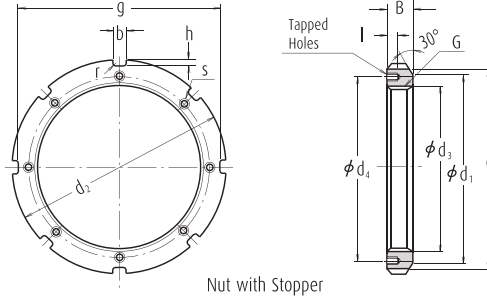
Nominal Numbers	Nut Series AN										Reference		
	Screw Threads	Basic Dimensions								Mass (kg)	Adapter (*) Sleeve Bore Dia. Numbers	Washer Numbers	Shaft Dia.
	G	d ₂	d ₁	g	b	h	d ₃	B	r max.	approx.			
AN 26	M 130×2	165	149	155	12	5	131	21	0.7	1.25	26	AW 26	130
AN 27	M 135×2	175	160	163	14	6	136	22	0.7	1.55	—	AW 27	135
AN 28	M 140×2	180	160	168	14	6	141	22	0.7	1.56	28	AW 28	140
AN 29	M 145×2	190	172	178	14	6	146	24	0.7	2.0	—	AW 29	145
AN 30	M 150×2	195	171	183	14	6	151	24	0.7	2.03	30	AW 30	150
AN 31	M 155×3	200	182	186	16	7	156.5	25	0.7	2.21	—	—	—
AN 32	M 160×3	210	182	196	16	7	161.5	25	0.7	2.59	32	AW 32	160
AN 33	M 165×3	210	193	196	16	7	166.5	26	0.7	2.43	—	—	—
AN 34	M 170×3	220	193	206	16	7	171.5	26	0.7	2.8	34	AW 34	170
AN 36	M 180×3	230	203	214	18	8	181.5	27	0.7	3.05	36	AW 36	180
AN 38	M 190×3	240	214	224	18	8	191.5	28	0.7	3.4	38	AW 38	190
AN 40	M 200×3	250	226	234	18	8	201.5	29	0.7	3.7	40	AW 40	200
Nut Series ANL													
ANL 24	M 120×2	145	133	135	12	5	121	20	0.7	0.78	24	AWL 24	120
ANL 26	M 130×2	155	143	145	12	5	131	21	0.7	0.88	26	AWL 26	130
ANL 28	M 140×2	165	151	153	14	6	141	22	0.7	0.99	28	AWL 28	140
ANL 30	M 150×2	180	164	168	14	6	151	24	0.7	1.38	30	AWL 30	150
ANL 32	M 160×3	190	174	176	16	7	161.5	25	0.7	1.56	32	AWL 32	160
ANL 34	M 170×3	200	184	186	16	7	171.5	26	0.7	1.72	34	AWL 34	170
ANL 36	M 180×3	210	192	194	18	8	181.5	27	0.7	1.95	36	AWL 36	180
ANL 38	M 190×3	220	202	204	18	8	191.5	28	0.7	2.08	38	AWL 38	190
ANL 40	M 200×3	240	218	224	18	8	201.5	29	0.7	2.98	40	AWL 40	200

Sleeves



Nuts for Rolling Bearings

(For Adapters and Shafts)

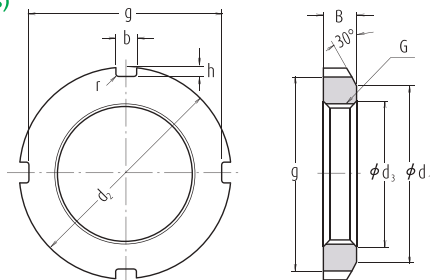


Nut with Stopper

Units : mm

Nominal Numbers	Nut Series AN													Reference		
	Screw Threads	Basic Dimensions								Tapped Holes			Mass (kg)	Adapter (") Sleeve Bore Dia. Numbers	Stopper Numbers	Shaft Dia.
		G	d ₂	d ₁	g	b	h	d ₃	B	r max.	l	Screw Threads (S)	d ₄			
AN 44	Tr 220×4	280	250	260	20	10	222	32	0.8	15	M 8×1.25	238	5.2	44	AL 44	220
AN 48	Tr 240×4	300	270	280	20	10	242	34	0.8	15	M 8×1.25	258	5.95	48	AL 44	240
AN 52	Tr 260×4	330	300	306	24	12	262	36	0.8	18	M 10×1.5	281	8.05	52	AL 52	260
AN 56	Tr 280×4	350	320	326	24	12	282	38	0.8	18	M 10×1.5	301	9.05	56	AL 52	280
AN 60	Tr 300×4	380	340	356	24	12	302	40	0.8	18	M 10×1.5	326	11.8	60	AL 60	300
AN 64	Tr 320×5	400	360	376	24	12	322.5	42	0.8	18	M 10×1.5	345	13.1	64	AL 64	320
AN 68	Tr 340×5	440	400	410	28	15	342.5	55	1	21	M 12×1.75	372	23.1	68	AL 68	340
AN 72	Tr 360×5	460	420	430	28	15	362.5	58	1	21	M 12×1.75	392	25.1	72	AL 68	360
AN 76	Tr 380×5	490	450	454	32	18	382.5	60	1	21	M 12×1.75	414	31	76	AL 76	380
AN 80	Tr 400×5	520	470	484	32	18	402.5	62	1	27	M 16×2	439	37	80	AL 80	400
AN 84	Tr 420×5	540	490	504	32	18	422.5	70	1	27	M 16×2	459	43.5	84	AL 80	420
AN 88	Tr 440×5	560	510	520	36	20	442.5	70	1	27	M 16×2	477	45	88	AL 88	440
AN 92	Tr 460×5	580	540	540	36	20	462.5	75	1	27	M 16×2	497	50.5	92	AL 88	460
AN 96	Tr 480×5	620	560	580	36	20	482.5	75	1	27	M 16×2	527	62	96	AL 96	480
AN 100	Tr 500×5	630	580	584	40	23	502.5	80	1	27	M 16×2	539	63.5	/500	AL 100	500
Nut Series ANL																
ANL 44	Tr 220×4	260	242	242	20	9	222	30	0.8	12	M 6×1	229	3.1	44	ALL 44	220
ANL 48	Tr 240×4	290	270	270	20	10	242	34	0.8	15	M 8×1.25	253	5.15	48	ALL 48	240
ANL 52	Tr 260×4	310	290	290	20	10	262	34	0.8	15	M 8×1.25	273	5.65	52	ALL 48	260
ANL 56	Tr 280×4	330	310	310	24	10	282	38	0.8	15	M 8×1.25	293	6.8	56	ALL 56	280
ANL 60	Tr 300×4	360	336	336	24	12	302	42	0.8	15	M 8×1.25	316	9.6	60	ALL 60	300
ANL 64	Tr 320×5	380	356	356	24	12	322.5	42	0.8	15	M 8×1.25	335	9.95	64	ALL 64	320
ANL 68	Tr 340×5	400	376	376	24	12	342.5	45	1	15	M 8×1.25	355	11.7	68	ALL 64	340
ANL 72	Tr 360×5	420	394	394	28	13	362.5	45	1	15	M 8×1.25	374	12	72	ALL 72	360
ANL 76	Tr 380×5	450	422	422	28	14	382.5	48	1	18	M 10×1.5	398	14.9	76	ALL 76	380
ANL 80	Tr 400×5	470	442	442	28	14	402.5	52	1	18	M 10×1.5	418	16.9	80	ALL 76	400
ANL 84	Tr 420×5	490	462	462	32	14	422.5	52	1	18	M 10×1.5	438	17.4	84	ALL 84	420
ANL 88	Tr 440×5	520	490	490	32	15	442.5	60	1	21	M 12×1.75	462	26.2	88	ALL 88	440
ANL 92	Tr 460×5	540	510	510	32	15	462.5	60	1	21	M 12×1.75	482	28	92	ALL 88	460
ANL 96	Tr 480×5	560	530	530	36	15	482.5	60	1	21	M 12×1.75	502	29.5	96	ALL 96	480
ANL 100	Tr 500×5	580	550	550	36	15	502.5	68	1	21	M 12×1.75	522	33.5	/500	ALL 96	500

(For Withdrawal Sleeves)



Units : mm

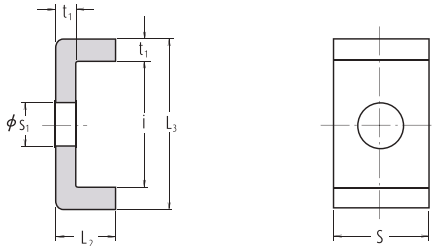
Nominal Numbers	Nut Series HN										Reference			
	Screw Threads	Basic Dimensions								Mass (kg) approx.	Withdrawal Sleeve Numbers			
		G	d ₂	d ₁	g	b	h	d ₃	B	r max.	AH 31	AH 22	AH 32	AH 23
HN 42	Tr 210×4	270	238	250	20	10	212	30	0.8	4.75	AH 3138	AH 2238	AH 3238	AH 2338
HN 44	Tr 220×4	280	250	260	20	10	222	32	0.8	5.35	AH 3140	AH 2240	AH 3240	AH 2340
HN 48	Tr 240×4	300	270	280	20	10	242	34	0.8	6.2	AH 3144	AH 2244	—	AH 2344
HN 52	Tr 260×4	330	300	306	24	12	262	36	0.8	8.55	AH 3148	AH 2248	—	AH 2348
HN 58	Tr 290×4	370	330	346	24	12	292	40	0.8	11.8	AH 3152	AH 2252	—	AH 2352
HN 62	Tr 310×5	390	350	366	24	12	312.5	42	0.8	13.4	AH 3156	AH 2256	—	AH 2356
HN 66	Tr 330×5	420	380	390	28	15	332.5	52	1	20.4	AH 3160	AH 2260	AH 3260	—
HN 70	Tr 350×5	450	410	420	28	15	352.5	55	1	25.2	AH 3164	AH 2264	AH 3264	—
HN 74	Tr 370×5	470	430	440	28	15	372.5	58	1	28.2	AH 3168	—	AH 3268	—
HN 80	Tr 400×5	520	470	484	32	18	402.5	62	1	40	AH 3172	—	AH 3272	—
HN 84	Tr 420×5	540	490	504	32	18	422.5	70	1	46.9	AH 3176	—	AH 3276	—
HN 88	Tr 440×5	560	510	520	36	20	442.5	70	1	48.5	AH 3180	—	AH 3280	—
HN 92	Tr 460×5	580	540	540	36	20	462.5	75	1	55	AH 3184	—	AH 3284	—
HN 96	Tr 480×5	620	560	580	36	20	482.5	75	1	67	AHX 3188	—	AHX 3288	—
HN 102	Tr 510×6	650	590	604	40	23	513	80	1	75	AHX 3192	—	AHX 3292	—
HN 106	Tr 530×6	670	610	624	40	23	533	80	1	78	AHX 3196	—	AHX 3296	—
HN 110	Tr 550×6	700	640	654	40	23	553	80	1	92.5	AHX 31/500	—	AHX 32/500	—
Nut Series HNL											AH 30	AH 2		
HNL 41	Tr 205×4	250	232	234	18	8	207	30	0.8	3.45	AH 3038	AH 238		
HNL 43	Tr 215×4	260	242	242	20	9	217	30	0.8	3.7	AH 3040	AH 240		
HNL 47	Tr 235×4	280	262	262	20	9	237	34	0.8	4.6	AH 3044	AH 244		
HNL 52	Tr 260×4	310	290	290	20	10	262	34	0.8	5.8	AH 3048	AH 248		
HNL 56	Tr 280×4	330	310	310	24	10	282	38	0.8	6.7	AH 3052	AH 252		
HNL 60	Tr 300×4	360	336	336	24	12	302	42	0.8	9.6	AH 3056	AH 256		
HNL 64	Tr 320×5	380	356	356	24	12	322.5	42	1	10.3	AH 3060	—		
HNL 69	Tr 345×5	410	384	384	28	13	347.5	45	1	11.5	AH 3064	—		
HNL 73	Tr 365×5	430	404	404	28	13	367.5	48	1	14.2	AH 3068	—		
HNL 77	Tr 385×5	450	422	422	28	14	387.5	48	1	15	AH 3072	—		
HNL 82	Tr 410×5	480	452	452	32	14	412.5	52	1	19	AH 3076	—		
HNL 86	Tr 430×5	500	472	472	32	14	432.5	52	1	19.8	AH 3080	—		
HNL 90	Tr 450×5	520	490	490	32	15	452.5	60	1	23.8	AH 3084	—		
HNL 94	Tr 470×5	540	510	510	32	15	472.5	60	1	25	AHX 3088	—		
HNL 98	Tr 490×5	580	550	550	36	15	492.5	60	1	34	AHX 3092	—		
HNL 104	Tr 520×6	600	570	570	36	15	523	68	1	37	AHX 3096	—		
HNL 108	Tr 540×6	630	590	590	40	20	543	68	1	43.5	AHX 30/500	—		



Nuts for Rolling Bearings

(Combination of Withdrawal Sleeves and Nuts)

Nominal Numbers	Reference						
	Withdrawal Sleeve Numbers						
	AH 30	AH 31	AH 2	AH 22	AH 32	AH 3	AH 23
AN 09	—	—	AH 208	—	—	AH 308	AH 2308
AN 10	—	—	AH 209	—	—	AH 309	AH 2309
AN 11	—	—	AH 210	—	—	AHX 310	AHX 2310
AN 12	—	—	AH 211	—	—	AHX 311	AHX 2311
AN 13	—	—	AH 212	—	—	AHX 312	AHX 2312
AN 14	—	—	—	—	—	—	—
AN 15	—	—	AH 213	—	—	AH 313	AH 2313
AN 16	—	—	AH 214	—	—	AH 314	AHX 2314
AN 17	—	—	AH 215	—	—	AH 315	AHX 2315
AN 18	—	—	AH 216	—	—	AH 316	AHX 2316
AN 19	—	—	AH 217	—	—	AHX 317	AHX 2317
AN 20	—	—	AH 218	—	AHX 3218	AHX 318	AHX 2318
AN 21	—	—	AH 219	—	—	AHX 319	AHX 2319
AN 22	—	—	AH 220	—	AHX 3220	AHX 320	AHX 2320
AN 23	—	—	AH 221	—	—	AHX 321	—
AN 24	—	AHX 3122	AH 222	—	—	AHX 322	—
AN 25	—	—	—	—	AHX 3222	—	AHX 2322
AN 26	AHX 3024	AHX 3124	AH 224	—	—	AHX 324	—
AN 27	—	—	—	—	AHX 3224	—	AHX 2324
AN 28	AHX 3026	AHX 3126	AH 226	—	—	AHX 326	—
AN 29	—	—	—	—	AHX 3226	—	AHX 2326
AN 30	AHX 3028	AHX 3128	AH 228	—	—	AHX 328	—
AN 31	—	—	—	—	AHX 3228	—	AHX 2328
AN 32	AHX 3030	—	AH 230	—	—	—	—
AN 33	—	AHX 3130	—	—	AHX 3230	AHX 330	AHX 2330
AN 34	AH 3032	—	AH 232	—	—	—	—
AN 36	AH 3034	AH 3132	AH 234	—	AH 3232	AH 332	AH 2332
AN 38	AH 3036	AH 3134	AH 236	—	AH 3234	AH 334	AH 2334
AN 40	—	AH 3136	—	AH 2236	AH 3236	—	AH 2336

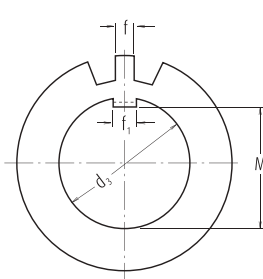


Units : mm

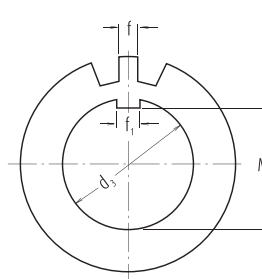
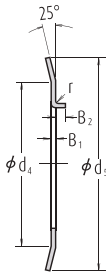
Nominal Numbers	Stopper Series AL							Reference
	Basic Dimensions						Mass (kg) per 100 pcs	Nut Numbers
	t ₁	S	L ₂	s ₁	i	L ₃	approx.	
AL 44	4	20	12	9	22.5	30.5	2.6	AN 44, AN 48
AL 52	4	24	12	12	25.5	33.5	3.4	AN 52, AN 56
AL 60	4	24	12	12	30.5	38.5	3.8	AN 60
AL 64	5	24	15	12	31	41	5.35	AN 64
AL 68	5	28	15	14	38	48	6.65	AN 68, AN 72
AL 76	5	32	15	14	40	50	7.95	AN 76
AL 80	5	32	15	18	45	55	8.2	AN 80, AN 84
AL 88	5	36	15	18	43	53	9.0	AN 88, AN 92
AL 96	5	36	15	18	53	63	10.4	AN 96
AL 100	5	40	15	18	45	55	10.5	AN 100
Stopper Series ALL								
ALL 44	4	20	12	7	13.5	21.5	2.12	ANL 44
ALL 48	4	20	12	9	17.5	25.5	2.29	ANL 48, ANL 52
ALL 56	4	24	12	9	17.5	25.5	2.92	ANL 56
ALL 60	4	24	12	9	20.5	28.5	3.15	ANL 60
ALL 64	5	24	15	9	21	31	4.55	ANL 64, ANL 68
ALL 72	5	28	15	9	20	30	5.05	ANL 72
ALL 76	5	28	15	12	24	34	5.3	ANL 76, ANL 80
ALL 84	5	32	15	12	24	34	6.1	ANL 84
ALL 88	5	32	15	14	28	38	6.45	ANL 88, ANL 92
ALL 96	5	36	15	14	28	38	7.3	ANL 96, ANL 100



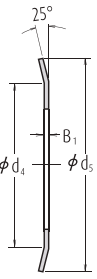
Lock-Washers for Rolling Bearings



Bent-Tab



Straight-Tab

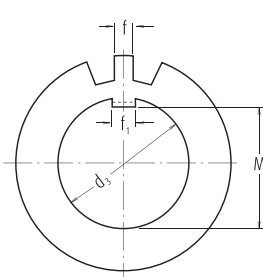


Units : mm

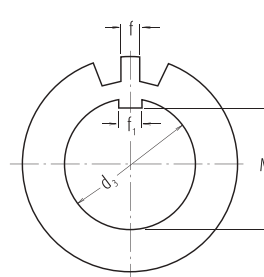
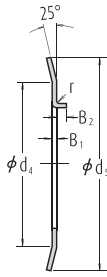
Nominal Numbers		Lock-washer Series AW											Reference		
		Basic Dimensions									No. of Teeth	Mass (kg) per 100 pcs approx.	Adapter (¹) Sleeve Bore Dia. Numbers	Nut Numbers	Shaft Dia.
Bent-Tab	Straight-Tab	d ₃	M	f ₁	B ₁	f	d ₄	d ₅	Bent-Tab r	B ₂					
AW 02	AW 02 X	15	13.5	4	1	4	21	28	1	2.5	13	0.253	—	AN 02	15
AW 03	AW 03 X	17	15.5	4	1	4	24	32	1	2.5	13	0.315	—	AN 03	17
AW 04	AW 04 X	20	18.5	4	1	4	26	36	1	2.5	13	0.35	04	AN 04	20
AW 05	AW 05 X	25	23	5	1.2	5	32	42	1	2.5	13	0.64	05	AN 05	25
AW 06	AW 06 X	30	27.5	5	1.2	5	38	49	1	2.5	13	0.78	06	AN 06	30
AW 07	AW 07 X	35	32.5	6	1.2	5	44	57	1	2.5	15	1.04	07	AN 07	35
AW 08	AW 08 X	40	37.5	6	1.2	6	50	62	1	2.5	15	1.23	08	AN 08	40
AW 09	AW 09 X	45	42.5	6	1.2	6	56	69	1	2.5	17	1.52	09	AN 09	45
AW 10	AW 10 X	50	47.5	6	1.2	6	61	74	1	2.5	17	1.6	10	AN 10	50
AW 11	AW 11 X	55	52.5	8	1.2	7	67	81	1	4	17	1.96	11	AN 11	55
AW 12	AW 12 X	60	57.5	8	1.5	7	73	86	1.2	4	17	2.53	12	AN 12	60
AW 13	AW 13 X	65	62.5	8	1.5	7	79	92	1.2	4	19	2.9	13	AN 13	65
AW 14	AW 14 X	70	66.5	8	1.5	8	85	98	1.2	4	19	3.35	14	AN 14	70
AW 15	AW 15 X	75	71.5	8	1.5	8	90	104	1.2	4	19	3.55	15	AN 15	75
AW 16	AW 16 X	80	76.5	10	1.8	8	95	112	1.2	4	19	4.65	16	AN 16	80
AW 17	AW 17 X	85	81.5	10	1.8	8	102	119	1.2	4	19	5.25	17	AN 17	85
AW 18	AW 18 X	90	86.5	10	1.8	10	108	126	1.2	4	19	6.25	18	AN 18	90
AW 19	AW 19 X	95	91.5	10	1.8	10	113	133	1.2	4	19	6.7	19	AN 19	95
AW 20	AW 20 X	100	96.5	12	1.8	10	120	142	1.2	6	19	7.65	20	AN 20	100
AW 21	AW 21 X	105	100.5	12	1.8	12	126	145	1.2	6	19	8.25	21	AN 21	105
AW 22	AW 22 X	110	105.5	12	1.8	12	133	154	1.2	6	19	9.4	22	AN 22	110
AW 23	AW 23 X	115	110.5	12	2	12	137	159	1.5	6	19	10.8	—	AN 23	115
AW 24	AW 24 X	120	115	14	2	12	138	164	1.5	6	19	10.5	24	AN 24	120
AW 25	AW 25 X	125	120	14	2	12	148	170	1.5	6	19	11.8	—	AN 25	125

Note (1) Applicable to adapter sleeve Series A31, A2, A3, and A23.

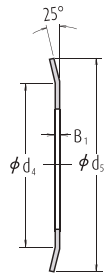
Remark Lock-washers with straight tabs shall be used with adapter sleeves having narrow slits. For adapter sleeves having wide slits, either type of lock-washer may be used.



Bent-Tab



Straight-Tab



Units : mm

Nominal Numbers		Lock-washer Series AW										Reference				
		Basic Dimensions										No. of Teeth	Mass (kg) per 100 pcs approx.	Adapter (1) Sleeve Bore Dia. Numbers	Nut Numbers	Shaft Dia.
Bent-Tab	Straight-Tab	d ₃	M	f ₁	B ₁	f	d ₄	d ₅	Bent-Tab r	B ₂						
AW 26	AW 26 X	130	125	14	2	12	149	175	1.5	6	19	11.3	26	AN 26	130	
AW 27	AW 27 X	135	130	14	2	14	160	185	1.5	6	19	14.4	—	AN 27	135	
AW 28	AW 28 X	140	135	16	2	14	160	192	1.5	8	19	14.2	28	AN 28	140	
AW 29	AW 29 X	145	140	16	2	14	172	202	1.5	8	19	16.8	—	AN 29	145	
AW 30	AW 30 X	150	145	16	2	14	171	205	1.5	8	19	15.9	30	AN 30	150	
AW 31	AW 31 X	155	147.5	16	2.5	16	182	212	1.5	8	19	20.9	—	AN 31	155	
AW 32	AW 32 X	160	154	18	2.5	16	182	217	1.5	8	19	22.2	32	AN 32	160	
AW 33	AW 33 X	165	157.5	18	2.5	16	193	222	1.5	8	19	24.1	—	AN 33	165	
AW 34	AW 34 X	170	164	18	2.5	16	193	232	1.5	8	19	24.7	34	AN 34	170	
AW 36	AW 36 X	180	174	20	2.5	18	203	242	1.5	8	19	26.8	36	AN 36	180	
AW 38	AW 38 X	190	184	20	2.5	18	214	252	1.5	8	19	27.8	38	AN 38	190	
AW 40	AW 40 X	200	194	20	2.5	18	226	262	1.5	8	19	29.3	40	AN 40	200	
Washer Series AWL																
AWL 24	AWL 24 X	120	115	14	2	12	133	155	1.5	6	19	7.7	24	ANL 24	120	
AWL 26	AWL 26 X	130	125	14	2	12	143	165	1.5	6	19	8.7	26	ANL 26	130	
AWL 28	AWL 28 X	140	135	16	2	14	151	175	1.5	8	19	10.9	28	ANL 28	140	
AWL 30	AWL 30 X	150	145	16	2	14	164	190	1.5	8	19	11.3	30	ANL 30	150	
AWL 32	AWL 32 X	160	154	18	2.5	16	174	200	1.5	8	19	16.2	32	ANL 32	160	
AWL 34	AWL 34 X	170	164	18	2.5	16	184	210	1.5	8	19	19	34	ANL 34	170	
AWL 36	AWL 36 X	180	174	20	2.5	18	192	220	1.5	8	19	18	36	ANL 36	180	
AWL 38	AWL 38 X	190	184	20	2.5	18	202	230	1.5	8	19	20.5	38	ANL 38	190	
AWL 40	AWL 40 X	200	194	20	2.5	18	218	250	1.5	8	19	21.4	40	ANL 40	200	

Note (1) Series AW is applicable to adapter sleeve Series A31 and A23.
Series AWL is applicable to adapter sleeve Series A30.

Remark Lock-washers with straight tabs shall be used with adapter sleeves having narrow slits. For adapter sleeves having wide slits, either type of lock-washer may be used.

