

Nord-Lock stainless steel washers

EN 1.4404 (AISI 316L) or equivalent, surface hardened

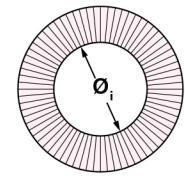
EN 1.4404 is an austenitic chromium-nickel stainless steel containing molybdenum. This stainless steel also has extra low carbon content in order to reduce the risk of chromium-carbide precipitation. EN 1.4404 is one of the most commonly used stainless steel grades and Nord-Lock washers made of EN 1.4404 are suitable for most applications where no chlorides or acids are present.

Dimension chart

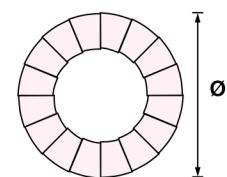
Washer size	Bolt size		ϕ_i [inch]	ϕ_o [inch]	Thickness T [inch]	Min. package [pairs]	Approx. weight lbs / 100 pairs
	UNC	Metric					
NL3ss	#5	M3	0.13	0.28	0.09	200	0.09
NL3.5ss	#6	M3.5	0.15	0.30	0.09	200	0.09
NL3.5pss	#6	M3.5	0.15	0.35	0.09	200	0.15
NL4ss	#8	M4	0.17	0.30	0.09	200	0.09
NL4spss	#8	M4	0.17	0.35	0.09	200	0.15
NL5ss	#10	M5	0.21	0.35	0.09	200	0.13
NL5pss	#10	M5	0.21	0.43	0.09	200	0.24
NL6ss		M6	0.26	0.43	0.09	200	0.20
NL6spss		M6	0.26	0.53	0.08	200	0.35
NL1/4"ss	1/4"		0.28	0.45	0.09	200	0.20
NL1/4"pss	1/4"		0.28	0.53	0.09	200	0.33
NL8ss	5/16"	M8	0.34	0.53	0.08	200	0.26
NL8pss	5/16"	M8	0.34	0.65	0.08	200	0.51
NL3/8"ss	3/8"		0.41	0.65	0.08	200	0.42
NL3/8"pss	3/8"		0.41	0.83	0.08	200	0.84
NL10ss		M10	0.42	0.65	0.08	200	0.40
NL10spss		M10	0.42	0.83	0.08	200	0.82
NL11ss	7/16"	M11	0.45	0.73	0.09	200	0.57
NL12ss		M12	0.51	0.77	0.08	200	0.51
NL12spss		M12	0.51	1.00	0.12	100	1.81
NL1/2"ss	1/2"		0.53	0.77	0.08	200	0.49
NL1/2"pss	1/2"		0.53	1.00	0.13	100	1.77
NL14ss	9/16"	M14	0.60	0.91	0.12	100	1.08
NL14pss	9/16"	M14	0.60	1.21	0.13	100	2.89
NL16ss	5/8"	M16	0.67	1.00	0.12	100	1.30
NL16pss	5/8"	M16	0.67	1.21	0.13	100	2.49
NL18ss		M18	0.77	1.14	0.13	100	1.76
NL18pss		M18	0.77	1.36	0.13	100	3.44
NL3/4"ss	3/4"		0.79	1.21	0.13	100	2.12
NL3/4"pss	3/4"		0.79	1.54	0.13	100	4.63
NL20ss		M20	0.84	1.21	0.12	100	1.81
NL20pss		M20	0.84	1.54	0.13	100	4.54
NL22ss	7/8"	M22	0.92	1.36	0.13	100	2.71
NL22pss	7/8"	M22	0.92	1.65	0.13	50	4.92
NL24ss		M24	1.00	1.54	0.13	100	3.51
NL24pss		M24	1.00	1.91	0.13	50	7.72
NL1"ss	1"		1.10	1.54	0.13	100	3.13
NL1"pss	1"		1.10	1.91	0.13	50	6.15
NL27ss		M27	1.12	1.65	0.27	50	7.61
NL27pss		M27	1.12	1.91	0.27	25	11.77
NL30ss	1 1/8"	M30	1.24	1.85	0.27	50	9.90
NL30pss	1 1/8"	M30	1.24	2.30	0.27	25	20.20
NL33ss	1 1/4"	M33	1.35	1.91	0.27	25	9.43
NL36ss	1 3/8"	M36	1.47	2.17	0.27	25	13.14
NL39ss	1 1/2"	M39	1.59	2.30	0.27	25	14.86
NL42ss		M42	1.70	2.48	0.27	25	16.50
NL45ss	1 3/4"	M45	1.82	2.76	0.27	25	22.49
NL48ss		M48	1.95	2.95	0.27	25	26.46
NL52ss	2"	M52	2.11	3.15	0.35	1	39.77
NL56ss	2 1/4"	M56	2.33	3.35	0.35	1	46.96
NL60ss		M60	2.48	3.54	0.35	1	51.81
NL64ss	2 1/2"	M64	2.64	3.74	0.35	1	56.88
NL68ss		M68	2.80	3.94	0.35	1	62.17
NL72ss		M72	2.96	4.13	0.35	1	67.68
NL76ss	3"	M76	3.11	4.33	0.35	1	73.41
NL80ss	3 1/8"	M80	3.27	4.53	0.35	1	79.37

Nord-Lock washers made of stainless steel are standard stock items, yet subject to prior sale.

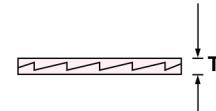
NL3ss – NL8ss
 $\emptyset_i \pm 0.004$ inch
NL10ss – NL42ss
 $\emptyset_i \pm 0.008$ inch
NL45ss – NL80ss
 $\emptyset_i +0/-0.02$ inch



NL3ss – NL24ss (NL1"ss)
 $\emptyset_o \pm 0.008$ inch



NL3ss – NL24ss (NL1"ss)
 $T \pm 0.01$ inch



- Please consult our website for current dimensions and 2D / 3D CAD models: www.nord-lock.com/cad
- Information regarding changes in materials and dimensions are available through www.nord-lock.com/pcn

Torque guidelines

Nord-Lock stainless steel washers with stainless steel bolt, lubricated with copper/graphite paste (Molykote® 1000).

Washer size	Bolt size	Pitch [TPI]	316ss, $G_f=65\%$ $\mu_h=0.12$, $\mu_n=0.13$		304ss, $G_f=65\%$ $\mu_h=0.14$, $\mu_n=0.13$	
			Torque [ftlb]	Clamp load [lb]	Torque [ftlb]	Clamp load [lb]
NL3ss	#5	40	0.6	342	0.7	342
NL3.5ss	#6	32	0.8	392	0.9	392
NL4ss	#8	32	1.4	602	1.5	602
NL5ss	#10	24	2.1	756	2.3	756
NL1/4"ss	1/4"	20	5.1	1,368	5.3	1,368
NL8ss	5/16"	18	10	2,249	11	2,249
NL3/8"ss	3/8"	16	18	3,320	19	3,320
NL11ss	7/16"	14	28	4,553	30	4,553
NL1/2"ss	1/2"	13	43	6,072	46	6,072
NL14ss	9/16"	12	62	7,781	66	7,781
NL16ss	5/8"	11	85	9,663	90	9,663
NL22ss	7/8"	9	165	13,637	176	13,637
NL1"ss	1	8	250	17,886	266	17,886
NL30ss	1 1/8"	7	355	22,542	377	22,542
NL36ss	1 3/8"	6	649	34,089	691	34,089

Cu/C paste = Copper/graphite paste (Molykote® 1000)

G_f = ratio of yield point. When tightening according to guidelines and with no deviation, this is the pre-stress achieved expressed as % of yield point.

μ_{th} = thread friction coefficient

μ_h = under head friction coefficient

1 lbf = 4.448 N

1 ft-lb = 1.356 Nm

Thread friction coefficients have theoretical values but are verified through testing. Under head friction coefficients have been established by tests. Torque guidelines for other bolt grades are available through your local Nord-Lock representative.