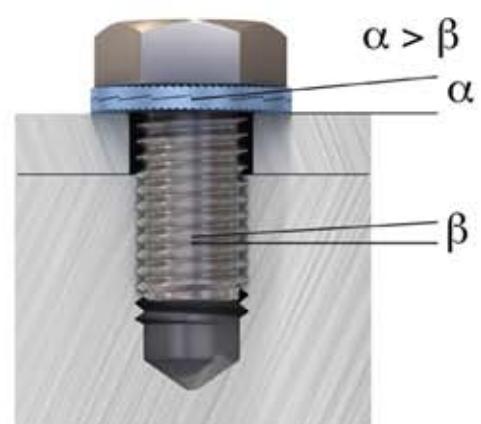


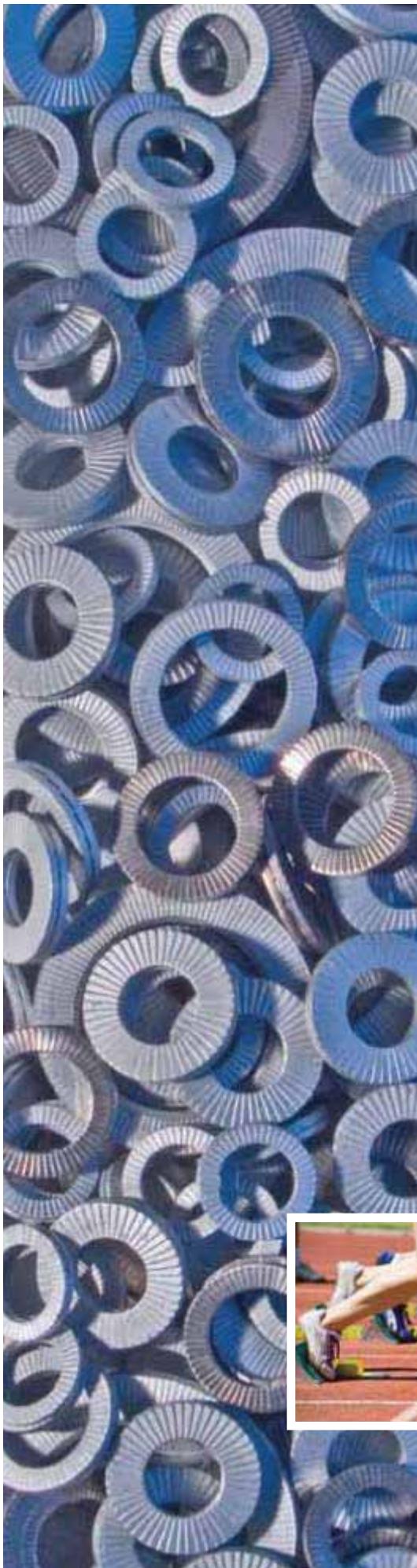
NORD-LOCK®



KATALOG

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Simplest assembly

Maximum safety against loosening

Tried and trusted worldwide



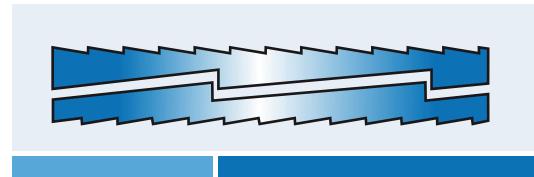
The correctly-adjusted, wedge-shaped accessory to the starting engine is the secret of a sure, optimal start. Thanks to the wedge-shaped components, perfectly matched to one another, the Nord-Lock paired lock washers guarantee optimum security for a screw connection

Nord-Lock – Wedge security for maximum requirements

Unsurpassed safety

The Nord-Lock paired lock washers are a purely mechanical machine element which secures via a locking principle instead of via friction and is thereby superior to conventional screw security methods. Nord-Lock provides reliable screw security of this kind even under conditions of

extreme vibration or dynamic stress. Because of the extreme hardness of the washers it is possible to utilize the washer with a screw in a property class up to 12.9.

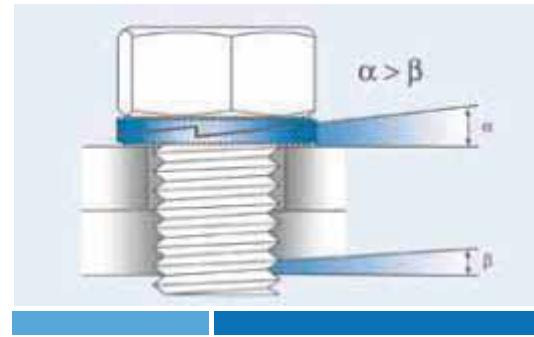


The Nord-Lock wedge lock washer is a purely mechanical machine element

The principle

The wedge-shaped lock washers have wedge surfaces on the inside and radial ribs on the outside. The shape of the wedge is selected so that the angle of the wedge surfaces is always greater than the thread angle. When the screw or the nut is being tightened the radial ribs of the Nord-Lock lock washers embed themselves in a blocking fashion into the mating surface. The paired washers are firmly embedded in their position and

movement is now only possible between the wedge surfaces. Even the smallest turn of the screw during vibration causes an increase in the pre-load force due to the wedge effect - the screw locks itself.



The shape of the wedge surfaces is selected such that the angle « α » is always larger than the thread pitch « β ». The pre-assembled washers are installed in pairs, cam face to cam face

Advantages

- Maximum safety up to and including screw quality 12.9
- Simple assembly and dismantling
- Reliable security against loosening
- Same temperature deployment as the screw
- Re-usable
- Surface-friendly
- Reliable screw locking even under conditions of extreme vibration and dynamic stress

Application examples

- General engineering
- Steel construction
- Agricultural and forestry machines
- Automobile manufacture
- Windpower machines
- Mining
- Rail vehicles
- Traffic management systems



Whether for heavy construction machines or in the mining industry. Nord-Lock is the reliable lock washer



Nord-Lock – Instructions for use

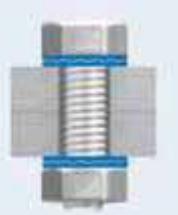
Stud bolts

Assembly takes place without additional flat washers.



Through holes

The usage of two paired wedge lock washers is necessary.



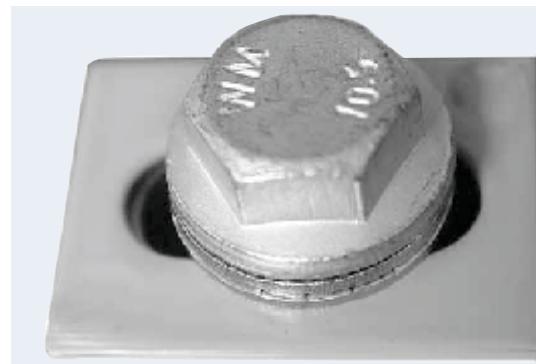
Counter holes

The locking of the nut takes place without gluing in the bolt.



Larger outside diameter for soft surfaces or slot holes

Nord-Lock with increased outside diameter (sp and spss) and flange screw.



For slotted holes or on soft material, use a flanged nut/bolt in combination with Nord-Lock «sp and spss» (enlarged outer diameter) washers. This combination will provide the most positive locking effect, while covering as much of the mating surfaces as possible

No flat washers

Nord-Lock must not be used on top of additional washers.



Remarks:

All Nord-Lock washers comply with ELV-RoHS and REACH regulations. Nord-Lock washers are available in special steel alloys for highly corrosive or acid environments as well as for high temperature resistance. (254SMO, Inconel® 718, Hastelloy® C-276).



Washers in comparison

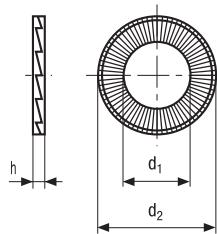
Property class	Flat washer	Rip-Lock®	Contact washer	Ripped lock washer	Nord-Lock
12.9					Steel BN 65212
10.9	Steel 300HV BN 20368, 20369	Spring steel BN 13291, 13292	Spring steel BN 20192	Spring steel BN 791, 792, 14083	Steel BN 65212
8.8	Steel 200HV BN 342, 343, 5282	Spring steel BN 13291, 13292	Spring steel BN 20192	Spring steel BN 791, 792, 14083	Steel BN 65212
Stainless steel	A2 / A4, 140HV BN 6, 670, 671, 1414	A2 BN 2332	Not available	A2 BN 20041	A4 BN 20141
Suitability for dynamic stress	-	+	++	++	+++

Nord-Lock for standard assemblies

Nord-Lock washers adhered in pairs

BN 65212

Steel through-hardened
zinc flake coated



NORD-LOCK®



Standard model



Model with large
outside diameter (sp)

M	Description	d ₁	d ₂	h	
M3	NL3	3,4	7	1,8	□
M3,5	NL3,5	3,9	7,6	1,8	□
M3,5	NL3,5sp	3,9	9	1,8	□
M4	NL4	4,4	7,6	1,8	□
M4	NL4sp	4,4	9	1,8	□
M5	NL5	5,4	9	1,8	□
M5	NL5sp	5,4	10,8	1,8	□
M6	NL6	6,5	10,8	1,8	□
M6	NL6sp	6,5	13,5	2,5	□
M8	NL8	8,7	13,5	2,5	□
M8	NL8sp	8,7	16,6	2,5	□
M10	NL10	10,7	16,6	2,5	□
M10	NL10sp	10,7	21	2,5	□
M11	NL11	11,4	18,5	2,5	□
M12	NL12	13	19,5	2,5	□
M12	NL12sp	13	25,4	3,4	□
M14	NL14	15,2	23	3,4	□
M14	NL14sp	15,2	30,7	3,4	□
M16	NL16	17	25,4	3,4	□
M16	NL16sp	17	30,7	3,4	□
M18	NL18	19,5	29	3,4	□
M18	NL18sp	19,5	34,5	3,4	□
M20	NL20	21,4	30,7	3,4	□
M20	NL20sp	21,4	39	3,4	□
M22	NL22	23,4	34,5	3,4	□
M22	NL22sp	23,4	42	4,6	□
M24	NL24	25,3	39	3,4	□
M24	NL24sp	25,3	48,5	4,6	□
M27	NL27	28,4	42	6,6	□
M27	NL27sp	28,4	48,5	6,6	□
M30	NL30	31,4	47	5,8	□
M30	NL30sp	31,4	58,5	6,6	□
M33	NL33	34,4	48,5	6,6	□
M33	NL33sp	34,4	58,5	6,6	□
M36	NL36	37,4	55	6,6	□
M36	NL36sp	37,4	63	6,6	□
M39	NL39	40,4	58,5	6,6	□
M42	NL42	43,2	63	6,6	□

Nord-Lock with large outside diameter (sp) for long slots and soft materials. Combination with flange nuts and/or flange screws recommended.

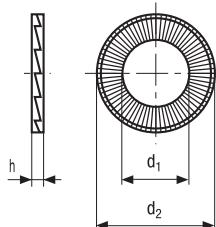
The standard assortment is for right-hand-thread.

Nord-Lock® for standard assemblies

Nord-Lock washers adhered in pairs

BN 65212

Steel through-hardened
zinc flake coated



NORD-LOCK®

■	Description	d ₁	d ₂	h	Supplied on request
M45	NL45	46,2	70	7	
M48	NL48	49,6	75	7	
M52	NL52	53,6	80	7	
M56	NL56	59,1	85	7	
M60	NL60	63,1	90	7	
M64	NL64	67,1	95	7	
M68	NL68	71,1	100	9,5	
M72	NL72	75,1	105	9,5	
M76	NL76	79,1	110	9,5	
M80	NL80	83,1	115	9,5	
M85	NL85	88,1	120	9,5	
M90	NL90	92,4	130	9,5	
M95	NL95	97,4	135	9,5	
M100	NL100	103,4	145	9,5	
M105	NL105	108,4	150	9,5	
M110	NL110	113,4	155	9,5	
M115	NL115	118,4	165	9,5	
M120	NL120	123,4	170	9,5	
M125	NL125	128,4	173	9,5	
M130	NL130	133,4	178	9,5	

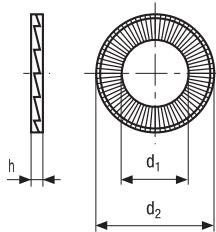
Nord-Lock with large outside diameter (sp) for long slots and soft materials. Combination with flange nuts and/or flange screws recommended.

The standard assortment is for right-hand-thread.

Nord-Lock® for corrosion-resistant assemblies

Nord-Lock washers adhered in pairs

● BN 20141
Stainless steel



NORD-LOCK®



Standard model (ss)



Model with large
outside diameter (spss)

■	Description	d ₁	d ₂	h	
M3	NL3ss	3,4	7	2,2	●
M3,5	NL3,5ss	3,9	7,6	2,2	●
M3,5	NL3,5spss	3,9	9	2,2	●
M4	NL4ss	4,4	7,6	2,2	●
M4	NL4spss	4,4	9	2,2	●
M5	NL5ss	5,4	9	2,2	●
M5	NL5spss	5,4	10,8	2,2	●
M6	NL6ss	6,5	10,8	2,2	●
M6	NL6spss	6,5	13,5	2,2	●
M8	NL8ss	8,7	13,5	2,2	●
M8	NL8spss	8,7	16,6	2,2	●
M10	NL10ss	10,7	16,6	2,2	●
M10	NL10spss	10,7	21	2,2	●
M11	NL11ss	11,4	18,5	2,2	●
M12	NL12ss	13	19,5	3,2	●
M12	NL12spss	13	25,4	3,2	●
M14	NL14ss	15,2	23	3,2	●
M14	NL14spss	15,2	30,7	3,2	●
M16	NL16ss	17	25,4	3,2	●
M16	NL16spss	17	30,7	3,2	●
M18	NL18ss	19,5	29	3,2	●
M18	NL18spss	19,5	34,5	3,2	●
M20	NL20ss	21,4	30,7	3,2	●
M20	NL20spss	21,4	39	3,2	●
M22	NL22ss	23,4	34,5	3,2	●
M22	NL22spss	23,4	42	3,2	●
M24	NL24ss	25,3	39	3,2	●
M24	NL24spss	25,3	48,5	3,2	●
M27	NL27ss	28,4	42	6,8	●
M27	NL27spss	28,4	48,5	6,8	●
M30	NL30ss	31,4	47	6,8	●
M30	NL30spss	31,4	58,5	6,8	●
M33	NL33ss	34,4	48,5	6,8	●
M36	NL36ss	37,4	55	6,8	●
M39	NL39ss	40,4	58,5	6,8	●
M42	NL42ss	43,2	63	6,8	●
M45	NL45ss	46,2	70	6,8	Supplied on request
M48	NL48ss	49,6	75	6,8	
M52	NL52ss	53,6	80	9	
M56	NL56ss	59,1	85	9	
M60	NL60ss	63,1	90	9	
M64	NL64ss	67,1	95	9	
M68	NL68ss	71,1	100	9	
M72	NL72ss	75,1	105	9	
M76	NL76ss	79,1	110	9	
M80	NL80ss	83,1	115	9	

Nord-Lock with large outside diameter (spss) for long slots and soft materials. Combination with flange nuts and/or flange screws recommended.

The standard assortment is for right-hand-thread.

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