GN 6339

Heavy duty washers

Low type, High type

GN 6339

SPECIFICATION

Steel, 1.7227 (42 CrMoS 4 V)

tempered to tensile strength
Rm = 1220 ... 1400 N/mm²
fine turned and slide ground

blackened **BT**

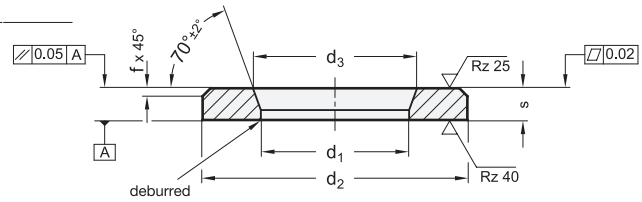
GEOMET 500-treated **GO**

INFORMATION

The influence of a washer on the quality of the screwed connection is very often underestimated. With washers GN 6339, high quality preloaded screwed connections can be established.
A high static clamping force can be reached avoiding loss of tension. At a specified preloaded clamping force it is often possible to use thinner bolts. This can result in a better ratio between clamping distance and bolt diameter to minimise the danger of failure.
The case hardened smooth bolt head/screw contact face leads to a lower and more constant friction co-efficient even when continuous clamping and releasing operations are required.
Washers GN 6339 are only suitable for machine construction bolts of classes 8.8 / 10.9 / 12.9, and not for steel bolts DIN 6914.

TECHNICAL INFORMATION

- ISO-Fundamental Tolerances (see page A21)



*Complete with finish index of the Heavy duty washer

BT	GO
Blackened	Geomet 500-treaded

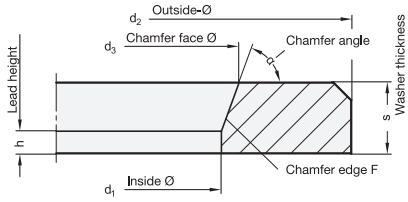
GN 6339

Description	d1 H13	d2 h13 Low type	d2 h13 High type	s Low type	s High type	d3 H13	f Low type	f High type	For threaded bolts	⚖
GN 6339-6,3-12-2,5-*	6.3	12	-	2.5	-	7	0.6	-	M 6	2
GN 6339-6,3-17-3-*	6.3	-	17	-	3	7	-	1	M 6	2
GN 6339-8,4-16-2,5-*	8.4	16	-	2.5	-	9.5	0.75	-	M 8	2
GN 6339-8,4-21-4-*	8.4	-	21	-	4	9.5	-	1.5	M 8	8
GN 6339-10,4-20-3-*	10.4	20	-	3	-	11.5	0.75	-	M 10	5
GN 6339-10,4-25-4-*	10.4	-	25	-	4	11.5	-	1.5	M 10	12
GN 6339-12,5-24-3,5-*	12.5	24	-	3.5	-	14	1	-	M 12	19
GN 6339-12,5-30-6-*	12.5	-	30	-	6	14	-	2	M 12	26
GN 6339-14,5-28-3,5-*	14.5	28	-	3.5	-	16	1	-	M 14	12
GN 6339-14,5-36-6-*	14.5	-	36	-	6	16	-	2	M 14	38
GN 6339-16,5-30-4-*	16.5	30	-	4	-	18	1	-	M 16	15
GN 6339-16,5-40-6-*	16.5	-	40	-	6	18	-	2	M 16	47
GN 6339-18,5-34-5-*	18.5	34	-	5	-	21	1.5	-	M 18	23
GN 6339-18,5-44-8-*	18.5	-	44	-	8	21	-	2.5	M 18	74
GN 6339-20,5-37-5-*	20.5	37	-	5	-	23	1.5	-	M 20	78
GN 6339-20,5-44-8-*	20.5	-	44	-	8	23	-	2.5	M 20	71
GN 6339-22,5-40-5-*	22.5	40	-	5	-	25	1.5	-	M 22	82
GN 6339-22,5-50-8-*	22.5	-	50	-	8	25	-	2.5	M 22	93
GN 6339-24,5-44-5-*	24.5	44	-	5	-	27	1.5	-	M 24	99
GN 6339-24,5-50-10-*	24.5	-	50	-	10	27	-	3.5	M 24	100
GN 6339-28-50-6-*	28	50	-	6	-	31	1.5	-	M 27	150
GN 6339-28-60-10-*	28	-	60	-	10	31	-	3.5	M 27	161
GN 6339-31-56-6-*	31	56	-	6	-	34	1.5	-	M 30	190
GN 6339-31-68-10-*	31	-	68	-	10	34	-	3.5	M 30	212
GN 6339-37-66-7-*	37	66	-	7	-	40	2	-	M 36	122

Weight type BT

TECHNICAL INFORMATION

GN 6339



Outside diameter d_2

The outside diameter d_2 of the lower type refers to washers DIN 125 / ISO 7089, and the higher type to washers DIN 7349.

Chamfer face diameter d_3

This dimension is, together with the chamfer angle α 70° and the inside diameter d_1, the most important dimension of these heavy duty washers. Diameter d_3 is actually, even in the lower tolerance range, larger than the max. contact under head diameter on a bolt. This will ensure that the chamfer of d_3 of the hardened washer will not be pressed into the underhead radius causing an indentation on the bolt which would damage the bolt.

Inside diameter d_1

The inside diameter d_1 is kept as small as possible ensuring that the bolt is inserted centrically into the washer. The choice of a matching pair of bolt and washer with least radial clearance is important in order to avoid a mismatch between chamfer diameter d_3 and the max. contact area diameter of the bolt head.

Chamfer angle α = 70° ± 2°

This relatively large angle is necessary when using hexagon headed bolts to avoid interference with the chamfer face diameter d_3 of the washer.

Chamfer edge F

The extended chamfer edge F, as seen from d_3, and d_1 create an edge that provides the smallest radial clearance towards the transition from bolt shank to head. Even with the minimum chamfer angle of α = 68° and the smallest dimensions for d_1 and d_3, this radial clearance is sufficient for all bolts according to DIN EN.

Lead height h

This is the height of the cylindrical part of the internal diameter d_1, h should be as high as possible in relation to the pitch of the thread of the bolt.

Washer thickness s

Washers GN 6339 are higher when compared with DIN washers (exception: DIN 7439 which is equal to the high type).A larger thickness leads to a stronger washer. As a result, bearing in mind the chamfer d_3, a minimum height is established which ensures that the bolt thread will not be damaged when the bolt is tightened.