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Westfield Fasteners Product Specification:

ISO 7090 - Plain Washers, Chamfered Normal Series

This product guide contains the specification for metric normal sized chamfered flat washers, available from Westfield Fasteners. The basis of this specification is the ISO standard ISO 7090.

Product Description

A flat washer of normal size and function with a chamfered edge. Manufactured to ISO 7090, a standard that replaces type B from the DIN standard 125. These washers have a choice of hardness class. Either 200 HV or 300 HV.

The 200 HV are suitable for hex head bolts, screws and nuts in property classes up to and including grade 8.8. They are also suitable for case-hardened thread rolling screws.

The 300 HV are suitable for hex head bolts, screws and nuts in property classes up to and including grade 10.9. They are also appropriate for through hardened socket head cap screws, bolts and nut.

Washers are used in nut and bolt assemblies to improve stress distribution on the bearing surface and span large clearance holes.

Scope of the ISO standard.

ISO 7090 specifies the characteristics for normal series plain washers with a chamfered outside edge, in 200 HV and 300 HV and for sizes ranging from M5 to M64 inclusively.

Class 200 HV: HV 200 - 300 (Rockwell B 91.5 - C 29.8)

Class 300 HV: HV 300 - 400 (Rockwell C 29.8 - 40.8)

In this standard 200HV and 300HV hardness classes apply to carbon steel (i.e. non stainless) washers; stainless steel washers to ISO 7090 are specified to 200HV only.

Table 1 below defines the dimensions and tolerances for these normal series washers. Please note that nominal sizes in brackets are non preferred sizes.

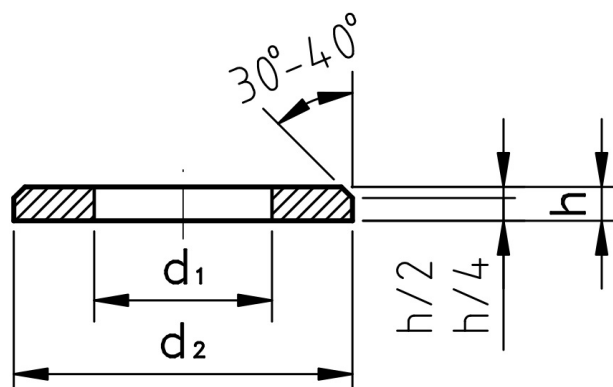


Figure 1: Plain Washer - Normal Series with Chamfer

Table 1: Dimensions & Tolerances according to ISO 7090

Nominal Size, d	Clearance Hole, d ₁		Outside Diameter, d ₂		Thickness, h		
	nom/min	max	nom/max	min	nom	max	min
5	5.30	5.48	10.00	9.64	1	1.1	0.9
6	6.40	6.62	12.00	11.57	1.6	1.8	1.4
8	8.40	8.62	16.00	15.57	1.6	1.8	1.4
10	10.50	10.77	21.00	19.48	2	2.2	1.8
12	13.00	13.27	24.00	23.48	2.5	2.7	2.3
(14)	15.00	15.27	28.00	27.48	2.5	2.7	2.3
16	17.00	17.27	30.00	29.48	3	3.3	2.7
(18)	19.00	19.33	34.00	33.38	3	3.3	2.7
20	21.00	21.33	37.00	36.38	3	3.3	2.7
(22)	23.00	23.33	39.00	38.38	3	3.3	2.7
24	25.00	25.33	44.00	43.38	4	4.3	3.7
(27)	28.00	28.33	50.00	49.38	4	4.3	3.7
30	31.00	31.39	56.00	55.26	4	4.3	3.7
(33)	34.00	34.62	60.00	58.8	5	5.6	4.4
36	37.00	37.62	64.80	64.80	5	5.6	4.4
(39)	42.00	42.62	72.00	70.80	6	6.6	5.4
42	45.00	45.62	78.00	76.80	8	9	7
(45)	48.00	48.62	85.00	83.60	8	9	7
48	52.00	52.74	92.00	90.60	8	9	7
(52)	56.00	56.74	98.00	96.60	8	9	7
56	62.00	62.74	105.00	103.60	10	11	9
(60)	66.00	66.74	110.00	108.60	10	11	9
64	70.00	70.74	115.00	113.60	10	11	9

For further details, please refer to the original ISO/DIN standard document for this item.