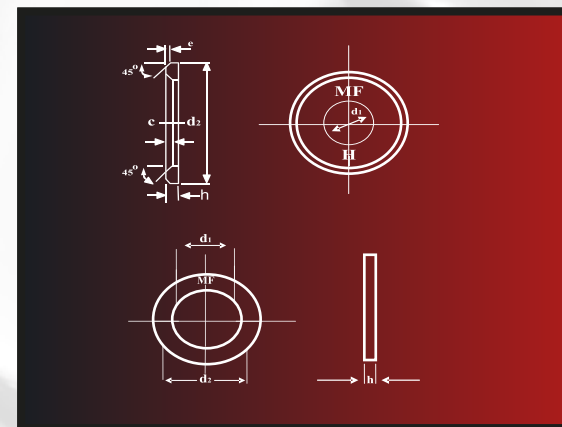


Pre - Load Hardened Washer HR BS EN 14399-5/6

Pre - Load Hardend Washer

Drwaing

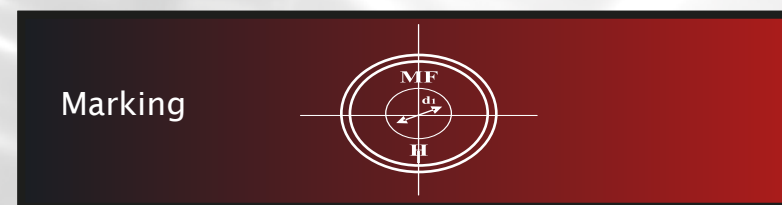
BS EN 14399-5 Washer Dimensions (Hardened)						
Nominal Size of bolt or screw	BS EN 14399 Part 5					
	Inside diameter d_1		Outside diameter d_2		Thickness h	
	max	min	max	min	max	min
M12	13.27	13.00	24.00	23.48	3.3	2.7
M14	15.27	15.00	28.00	27.48	3.3	2.7
M16	17.27	17.00	30.00	29.48	4.3	3.7
M18	19.33	19.00	34.00	33.38	4.3	3.7
M20	21.33	21.00	37.00	36.38	4.3	3.7
M22	23.33	23.00	39.00	38.38	4.3	3.7
M24	25.00	25.00	44.00	43.38	4.3	4.4
M27	28.52	28.00	5.00	49.00	5.6	4.4
M30	31.62	31.00	56.00	54.80	5.6	4.4
M36	37.62	37.00	66.00	64.80	6.6	5.4



BS EN 14399-6 Chamfered Washer Dimensions (Hardened)										
Nominal Size of bolt or screw	BS EN 14399 Part 5									
	Inside diameter d_1		Outside diameter d_2		Thickness h		External chamfer e		Internal chamfer c	
	max	min	max	min	max	min	max	min	max	min
M12	13.27	13.00	24.00	23.48	3.3	2.7	1.00	0.50	1.9	1.6
M14	15.27	15.00	28.00	27.48	3.3	2.7	1.00	0.50	1.9	1.6
M16	17.27	17.00	30.00	29.48	4.3	3.7	1.50	0.75	1.9	1.6
M18	19.33	19.00	34.00	33.38	4.3	3.7	1.50	0.75	2.5	2.0
M20	21.33	21.00	37.00	36.38	4.3	3.7	1.50	0.75	2.5	2.0
M22	23.33	23.00	39.00	38.38	4.3	3.7	1.50	0.75	2.5	2.0
M24	25.00	25.00	44.00	43.38	4.3	4.4	1.50	0.75	2.5	2.0
M27	28.52	28.00	5.00	49.00	5.6	4.4	2.00	1.00	3.0	2.5
M30	31.62	31.00	56.00	54.80	5.6	4.4	2.00	1.00	3.0	2.5
M36	37.62	37.00	66.00	64.80	6.6	5.4	2.50	1.25	3.0	2.5

Product Characteristic	Standard	
General requirements	BS EN 14399-1	
Finish/ coating	Self colour /black	BS EN 14399-5 & 6
	Zinc electroplated	BS 7371-3 OR BS EN ISO 4042
	Hot dip galvanized	BS 7371-6 OR BS EN ISO 10684
Mechanical Properties	BS EN 14399-5 & 6	
Dimension & tolerances	BS EN 14399-5 & 6	
Product marking	BS EN 14399-5 & 6	

BS EN 14399 -5 & 6 Washer mechanical properties		
Nominal size	Vickers hardness (HV)	
	min	max
M16 TO M36 inclusive	300	370



Marking