



CORPORATE STANDARD

AA 716 40 12

Rev. No. 03

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WASHERS -DISC SPRING, STEEL, SERIES - A

1.0 DESIGNATION:

A disc spring washer made of steel series A having outside diameter $D_e=40\text{mm}$ shall be designated as:

1.1 On drawings:

- i) Material specification column : AA 716 40 12.
- ii) Description column : WASHER DISC SPRING A 40.

1.2 On indents:

Washer Disc Spring A 40-AA 716 40 12.

1.3 For issuing enquiries and on purchase orders:

While issuing enquiries and purchase orders, delete BHEL standard number from the above description and add the information given under clause 2.0.

2.0 COMPLIANCE WITH STANDARDS:

2.1 Dimensions, Tolerances and General requirements:

As per DIN 2093-1992, Series A.

2.2 Material:

Cold rolled steel strips:

For group-1 washers : To IS:2507, Gr:98C6-1975 /DIN 17222, Gr:CK101

For group-2 & 3 washers : To IS:2507, Gr:50Cr4V2/DIN 17222, Gr:50CrV4

2.3 Heat Treatment and Hardness:

These washers shall be suitably heat treated, so as to result in the finished washer having a hardness in the range of 415-545 HV for group-1 and 42-52 HRC for group-2&3 washers.

2.4 Finish: Plated as specified in BHEL order.

Revisions :

Cl. 24.8.50 of MOM of WG-F

APPROVED :

INTERPLANT
STANDARDIZATION COMMITTEE (WG-F)

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CORPORATE STANDARD**3.0 NOTE:**

- 3.1** Washers to this standard would be unplated. Divisions wishing to have plated washers would have to get them plated.
- 3.2** Weights given in this standard are for general reference only and are not meant for commercial transactions.
- 3.3** For disc spring washers, steel series-B, refer BHEL standard AA 716 40 13.
- 3.4** When fasteners are to be tested with in BHEL, the following sampling plan based on IS:6821 (Table-1) shall be followed for physical properties.

LOT SIZE	SAMPLE SIZE	ACCEPTANCE No
Upto 1000	5	0
1001 - 3000	8	0
3001 - 10000	13	0
10001 - 35000	20	0
Over 35000	32	1

4.0 REFERRED STANDARDS (Latest publications including amendment):

- | | | |
|--------------|-----------------|-------------|
| 1) IS:2507 | 2) IS: 6821 | 3) DIN 2093 |
| 4) DIN 17222 | 5) AA 716 40 13 | |

EXPLANATORY NOTE:

The following changes have been made in this revision:

- In Cl.2.2 and 2.3, group 3 washers are included.
- In Table -1 of page 3 of 3, two rows of group 3 added at the end.
- Cl 2.4 is modified.
- Four page made into three pages.



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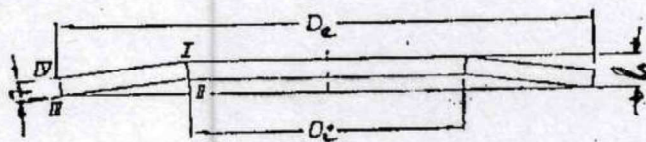


FIG. 1

h_0 = Initial cone height of spring without ground ends.

s = Deflection of single Disc.

Note : 1. Corporate sub-code numbers only are given in Table 1.

2. Weights have been shown in kg. per 1000 No.

TABLE 1

All dimensions are in 'mm'

Group	D_e h_{12}	D_i H_{12}	t	h_0 $(l_0 - t)$	l_0	F SPRING FORCE (N)	$0.75h_0$ SPRING DEFL. s	$l_0 - s$ $0.75 h_0$	Design stress N/mm ²	Sub- code	Weight
1	12.5	6.2	0.7	0.3	1	673	0.23	0.77	1420	016	0.50
1	16	8.2	0.9	0.35	1.25	1000	0.26	0.99	1290	083	1.5
1	20	10.2	1.1	0.45	1.55	1530	0.34	1.21	1300	040	2.0
2	25	12.2	1.5	0.55	2.05	2910	0.41	1.64	1410	059	4.4
2	28	14.2	1.5	0.65	2.15	2850	0.49	1.66	1280	024	5.4
2	31.5	16.3	1.75	0.7	2.45	3900	0.53	1.92	1310	067	7.9
2	35.5	18.3	2	0.8	2.8	5190	0.6	2.2	1330		11.4
2	40	20.4	2.25	0.9	3.15	6540	0.68	2.47	1340	032	16.4
2	50	25.4	3	1.1	4.1	12000	0.83	3.27	1430	075	34.3
2	56	28.5	3	1.3	4.3	11400	0.98	3.32	1280		43.0
2	71	36	4	1.6	5.6	20500	1.2	4.4	1330		92.3
2	80	41	5	1.7	6.7	33700	1.28	5.42	1460		145.5
3	125	64	8	2.6	10.6	85900	1.95	8.65	1330		101
3	160	82	10	3.5	13.5	139000	2.63	10.87	1340		108