

COMPANY STANDARDS

AMENDMENT NO.: 01

TITLE :

WASHER, SPRING

DATE : 2004-08-23

STD NO.: CFW01

AMENDMENT SHEET – 1 / 1

ISSUE NO.: 01

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I. In page 1 of 4, Table-1 shall be read as follows instead of the existing :

TABLE-1

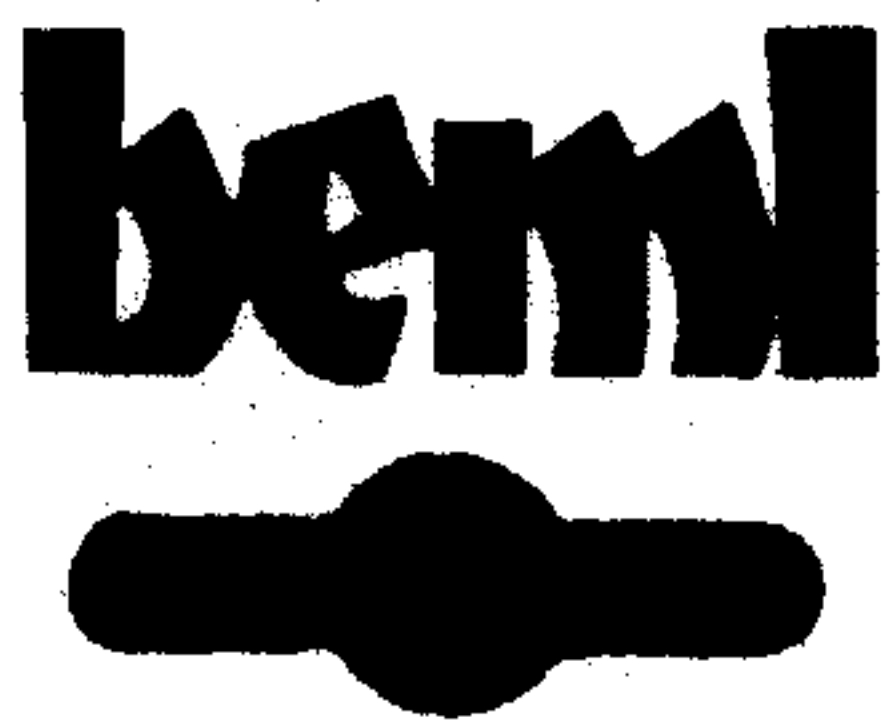
MATERIAL CODE	1
MATERIAL	SAE 1075 / 55 Si 7 IS: 4072 latest issuance
Q & T HARDNESS	42 to 50 HRC
SURFACE TREATMENT	Rust preventive oil coating as per Company standard C6001-10.

---II---

(Reason : Updation of Indian Standard)

APPROVED BY :

GE
411010



COMPANY STANDARDS

CFW01

TITLE :

WASHER, SPRING

PAGE NO1 OF 4

DATE :

1997-12-31

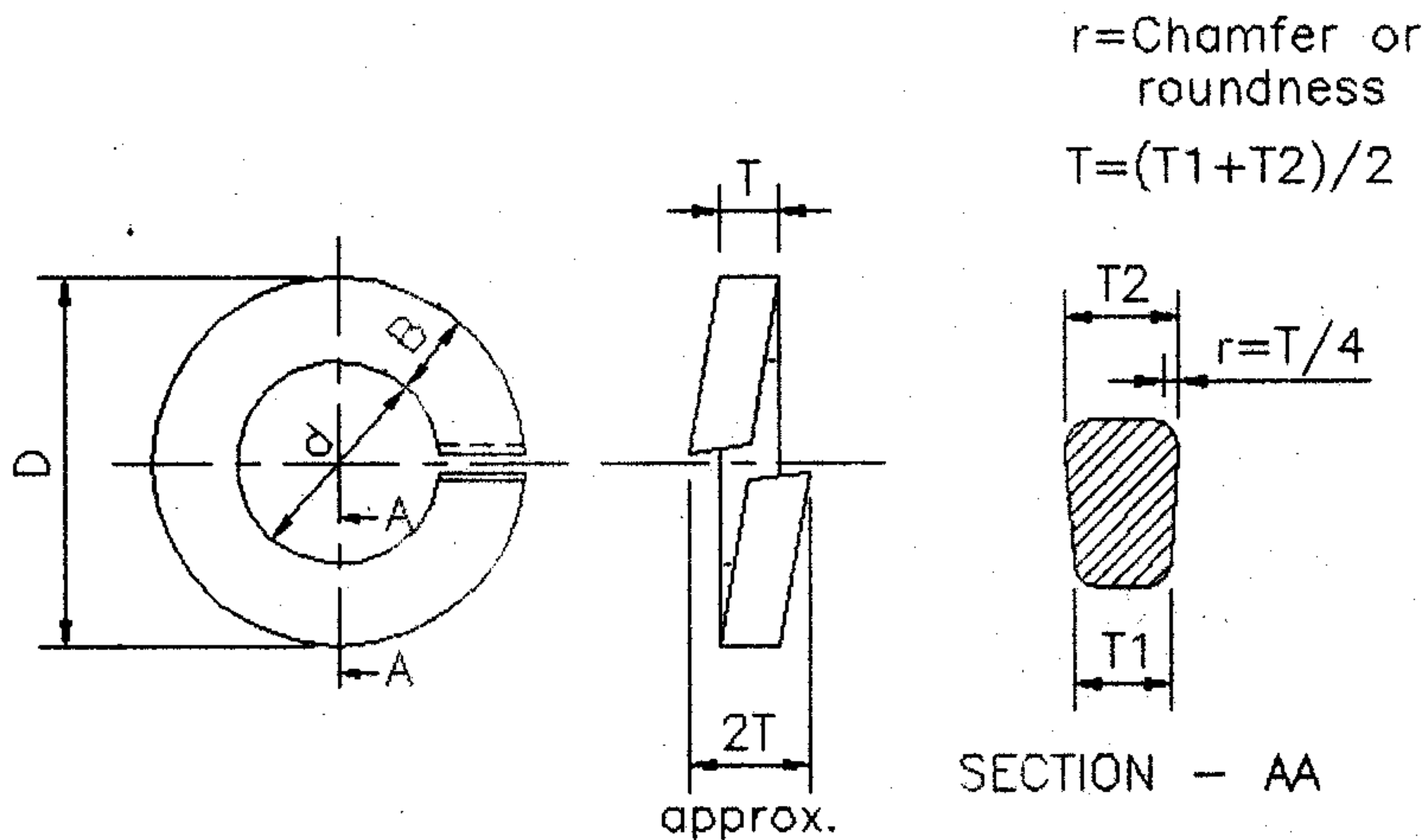


TABLE-1 MATERIAL

Material Code	1
Material	SAE 1075/55Si7 IS:4072
Q & T Hardness	42 to 50 HRC
Surface Treatment	Rust preventive oil coating as per Co. std.C6001-10/IS:1674

$T_2 - T_1$ Shall not exceed 0.064 times the minimum value of 'B'.

FIGURE-1

TABLE-2 DIMENSIONS (REFER FIG-1 & FIG-2) Unit : mm

Nom. Size	Adaptable Bolts / Screws		Size Code	ϕd		ϕD Max.	Sectional Dimension (Min)		Unit Wt.: Gram
	Metric Series	UN Series		Nom.	Tol.		B	T	
02	M2	No.2 0.086"	0206	2.7	+0.3 0	5.3	1.0	0.6	0.5
03	M3	No.5 0.125"	0307	3.1		5.9	1.1	0.7	
04	M4	No.8 0.164"	0410	4.1	+0.4 0	7.6	1.4	1.0	
05	M5	No.10 0.190"	0513	5.1		9.2	1.7	1.3	
06	M6	--	0619	6.1		12.2	2.7	1.9	2.5
07	--	1/4"	0720	6.5	+0.5 0	12.8	2.8	2.0	
08	M8	5/16"	0825	8.2		15.6	3.3	2.5	4
09	--	3/8"	0929	9.8		18.0	3.7	2.9	
10	M10	--	1030	10.2		18.8	3.9	3.0	

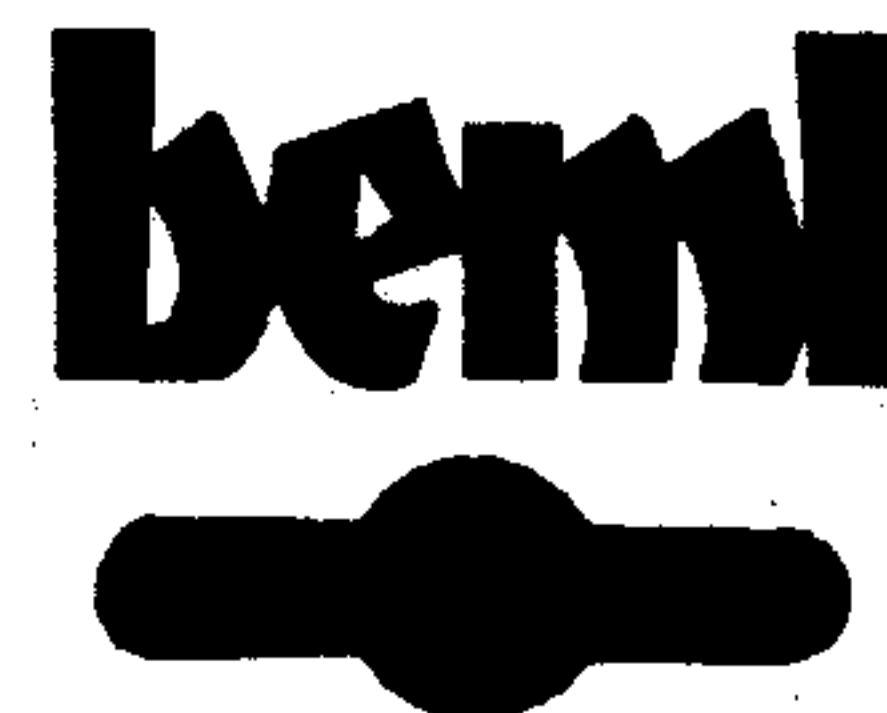
PREPARED BY :
CSDISSUE NO:
1(one)

REPLACEMENT FOR:

REFERENCE:

APPROVED BY :

ED(G)
D(G)
D(P)

TABLE-2- DIMENSIONS (Contd..)
(REFER FIG-1 & FIG-2)

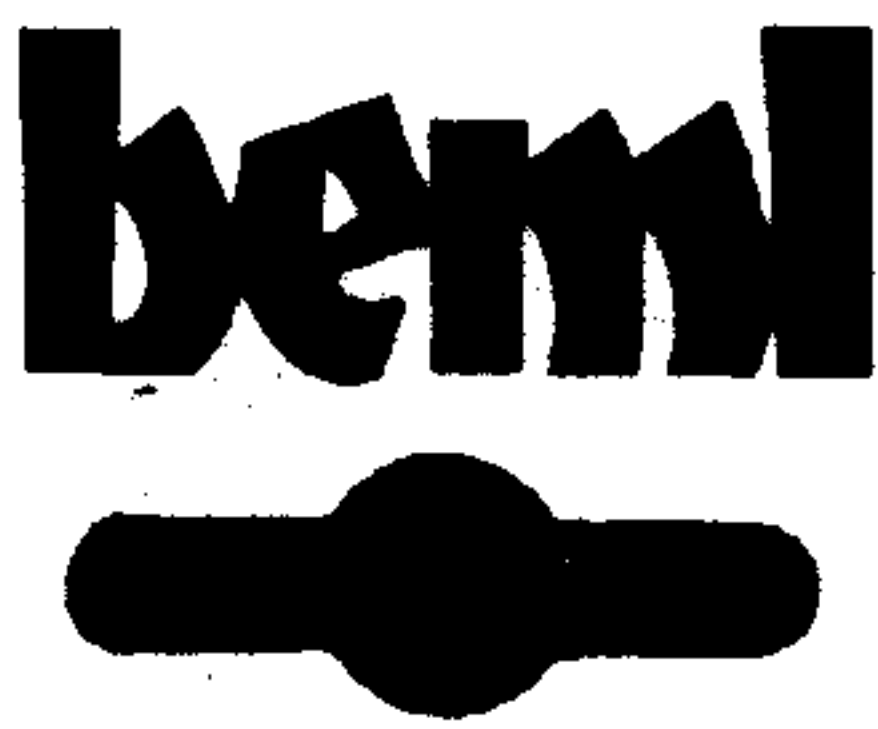
Unit:mm

Nom No.	Adaptable Bolts / Screws		Size Code	ϕ d		ϕ D Max.	Sectional Dimension (Min)		Unit Wt.: Gram
	Metric Series	UN Series		Max.	Tol.		B	T	
11	--	7/16"	1134	11.4	+0.6 0	20.4	4.1	3.4	5
12	M12	--	1236	12.2		21.9	4.4	3.6	6
13	--	1/2"	1338	13.0		22.9	4.5	3.8	8
14	M14	--	1442	14.2		24.7	4.8	4.2	10
15	--	9/16"	1543	14.5		25.2	4.9	4.3	12
16	M16	5/8"	1648	16.2	+0.8 0	28.2	5.3	4.8	14
18	M18	--	1854	18.2		31.4	5.9	5.4	20
19	--	3/4"	1957	19.5		33.3	6.2	5.7	22
20	M20	--	2060	20.2		34.4	6.4	6.0	26
22	M22	7/8"	2268	22.5	+1.0 0	38.3	7.1	6.8	36
24	M24	--	2472	24.5		41.3	7.6	7.2	44
25	--	1.0"	2578	26.0		44.0	8.1	7.8	53
27	M27	1 1/16	2783	27.5	+1.2 0	46.7	8.6	8.3	64
28	--	1 1/8"	2871	29.3		47.9	8.3	7.1	70
30	M30	--	3075	30.5		49.9	8.7	7.5	88
31	--	1 1/4"	3179	32.5		52.7	9.1	7.9	93
33	M33	--	3382	33.5	+1.4 0	54.2	9.5	8.2	108
34	--	1 3/8"	3487	35.8		57.8	9.9	8.7	111
36	M36	--	3690	36.5		59.1	10.2	9.0	121
39	M39	1 1/2"	3995	39.5		63.1	10.7	9.5	156

1. DESIGNATION :

Part no. & description shall be as shown below.
The first five digits appear on the document.

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COMPANY STANDARDS

CFW01

TITLE :

WASHER, SPRING

PAGE NO.3 OF 4

DATE :
1997-12-31

A	AA	NN
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Washer, Spring (01)
Fastener, Washer (FW)
Company Standard (C)

N	NN	NN
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Size Code
(Table-2)

Thickness X 10
Nominal Size
Material Code
(Table-1)

Example: a) For a Washer - Spring of nominal size 12 & thickness 3.6, Part no. shall be CFW01 11236.

Description : Washer - Spring, M12 x 3.6.

b) For a washer - Spring of Nominal size 13 & thickness 3.8, Part no. shall be CFW01 11338.

Description : Washer - Spring, 1/2" x 3.8.

2. DIMENSIONS :

Dimensions & tolerances shall be as per Table-2.

3. MATERIAL :

Material, hardness & surface treatment shall be as per Table-1.

4. SURFACE FINISH :

Washer shall be free from scales & burrs and shall be flat type as shown in Fig-1. The outer edges of washers should be rounded/chamfered. The ends of washers shall not abut, when the washers are compressed. The ends shall be so severed as to prevent tangling.

5. HARDNESS :

The finished washer shall have hardness in the range of 42 to 50 HRC. The hardness shall be measured at the centre position of face of washer.

6. DECARBURISATION :

The complete depth of decarburisation (total+ partial) shall be 0.2 mm or 1/6th thickness (T), whichever is less.

7. COMPRESSION SET TEST :

The washers shall be compressed with appropriate load till it gets flat & the load shall be retained for 2 minutes. Then the load shall be released & free height shall be measured. This procedure shall be repeated thrice. The permanent set if any shall not exceed 20% of free height.

8. TWIST TEST :

A portion of the washer shall be gripped in Vice jaws and then equal portion shall be gripped in Wrench jaws as shown in Fig-2. Edges of the Wrench jaws shall be sharp and parallel to Vice jaws. The wrench shall then be rotated in a direction that increases the free height of the Spring Washer, till the Washer is twisted through an angle of 90° the Washer shall show no sign of fracture.

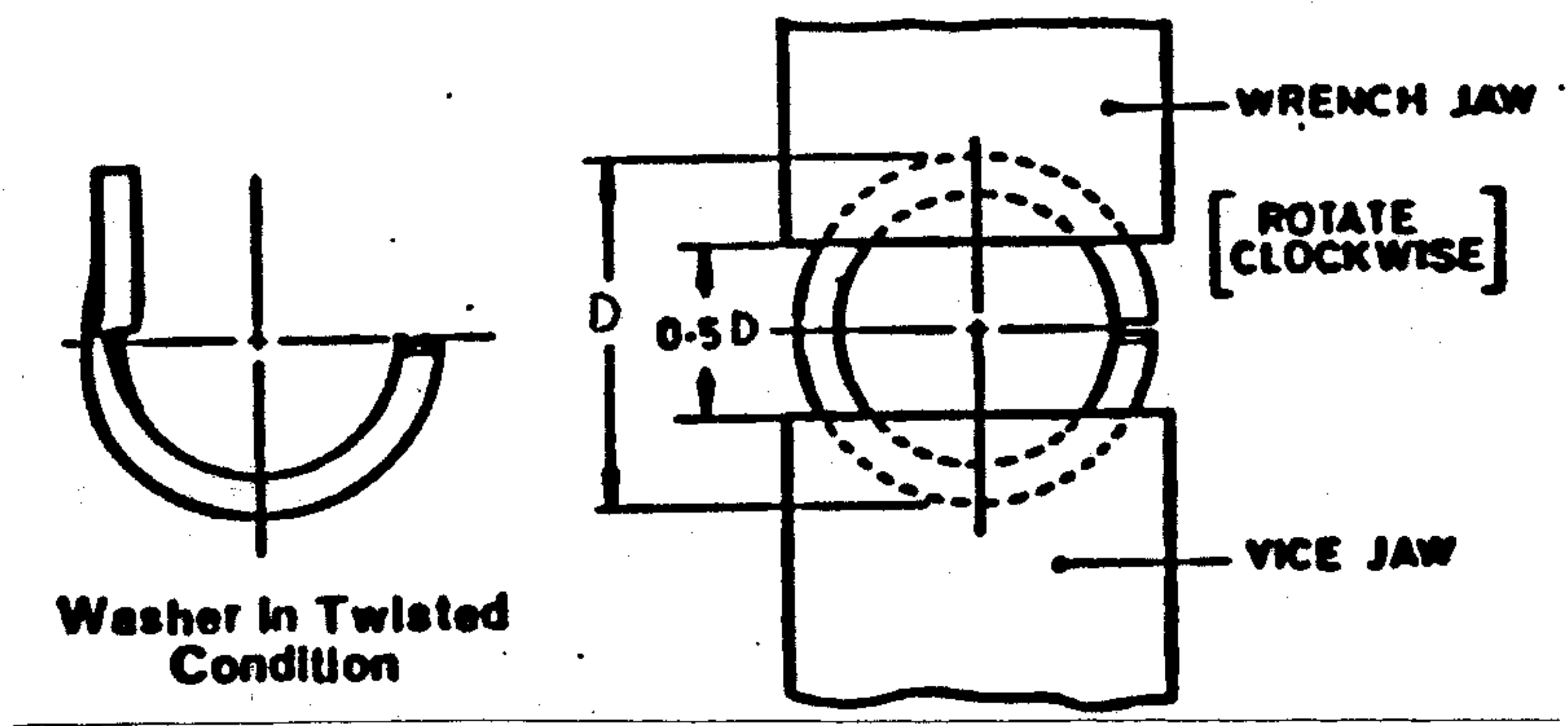


FIGURE - 2

9. INSPECTION :

Sampling and acceptance criteria shall be as per Company standard QS1001-C.

10. PACKAGING :

The washers shall be packed in high density polyethylene bags with quantities specified in Table-3. These polyethylene bags containing the washers shall in turn be packed in cartons/boxes. Only one size of washers shall be packed in one carton.

TABLE-3

Nominal size	Qty.in each bag (max.)
02 to M10	1000 Nos.
M12 to M20	500 Nos.
M22 to M30	200 Nos.
M31 to M39	100 Nos.

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