



PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 711 11 99

Rev. No. 00

Page 01 of 02

**BOLTS, HEXAGON HEAD, PRODUCT GRADE 'A', COARSE PITCH,
STAINLESS STEEL (Gr A2-70)**

1.0 DESIGNATION:

A product Gr. A hexagon head, stainless steel (gr A2-70) bolt of nominal diameter 10mm, length 60 mm and coarse pitch shall be designated as:

1.1 On drawings:

- i) Material specification column : RU 711 11 99
- ii) Description column: BOLT HEX A M10 X 60 - SS

1.2 On indents:

Bolt Hex A M10 X 60 - SS: RU 711 11 99.

2.0 COMPLIANCE WITH STANDARDS:

2.1 Dimensions, Tolerances & General Requirements:

As per IS:1364, Part 1-2002.

2.2 Mechanical properties:

To conform material properties as specified in Table-4 of IS:1367, Part 14-2002.

2.3 Threads:

Pitch-coarse to IS:4218, Part 2.
Tolerance quality - Medium.
Tolerance class - 6g.

2.4 Identification Marking:

As stated in clause 3 of IS:1367, Part 14.

2.5 Surface Discontinuity:

As per IS:1367, Part.9.

2.6 Finish: Clean and bright.

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Date:	15/06/2015	Vishal Baboo	S.Basu	R.K.Lal



PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 711 11 99

Rev. No. 00

Page 02 of 02

3.0 NOTES:

- 3.1** For length and diameter combination refer Table-1 of IS:1364 Part-1.
- 3.2** For screw threads, general (Metric) refer to BHEL standard AA 023 18 00.
- 3.3** For tolerance grade, position and class refer to BHEL standard AA 023 02 01.
- 3.4** When fasteners are to be tested with in BHEL, the sampling and acceptance plan shall be as per IS:1367, part 17.

4.0 REFERRED STANDARDS (Latest publications including amendment):

- 1) AA 023 18 00
- 2) AA 023 02 01
- 3) IS: 1364 Pt 1
- 4) IS: 1367 Pt 9 & 14
- 5) IS: 4218 Pt 2



PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 712 11 99

Rev. No. 00

Page 01 of 02

**SCREWS, HEXAGON HEAD, PRODUCT GRADE 'A', COARSE PITCH,
STAINLESS STEEL (Gr A2-70)**

1.0 DESIGNATION:

A product Gr. A hexagon head, stainless steel (gr A2-70) screw of nominal diameter 10mm, length 60 mm and coarse pitch shall be designated as:

1.1 On drawings:

- i) Material specification column : RU 712 11 99
- ii) Description column: SCRU HEX A M10 X 60 - SS

1.2 On indents:

Screws Hex A M10 X 60 - SS: RU 712 11 99.

2.0 COMPLIANCE WITH STANDARDS:

2.1 Dimensions, Tolerances & General Requirements:

As per IS:1364, Part 2-2002.

2.2 Mechanical properties:

To conform material properties as specified in Table-4 of IS:1367 Part 14-2002.

2.3 Threads:

Pitch-coarse to IS:4218, Part 2.
Tolerance quality - Medium.
Tolerance class - 6g.

2.4 Identification Marking:

As stated in clause 3 of IS:1367, Part 14.

2.5 Surface Discontinuity:

As per IS:1367, Part.9.

2.6 Finish: Clean and bright.

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PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 712 11 99

Rev. No. 00

Page 02 of 02

3.0 NOTES:

- 3.1 For length and diameter combination refer Table-1 of IS:1364 Part-2.
- 3.2 For screw threads, general (Metric) refer to BHEL standard AA 023 18 00.
- 3.3 For tolerance grade, position and class refer to BHEL standard AA 023 02 01.
- 3.4 When fasteners are to be tested with in BHEL, the sampling and acceptance plan shall be as per IS:1367, part 17.

4.0 REFERRED STANDARDS (Latest publications including amendment):

- 1) AA 023 18 00
- 2) AA 023 02 01
- 3) IS: 1364 Pt 2
- 4) IS: 1367 Pt 9 & 14
- 5) IS: 4218 Pt 2



PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 715 11 99

Rev. No. 00

Page 01 of 02

**NUTS, HEXAGON, PRODUCT GRADE 'A', COARSE PITCH,
STAINLESS STEEL (Gr A2-70)**

1.0 DESIGNATION:

A product Gr. A hexagon, stainless steel (gr A2-70) nut thread M10 and coarse pitch shall be designated as:

1.1 On drawings:

- i) Material specification column : RU 715 11 99
- ii) Description column: NUT HEX A M10 - SS

1.2 On indents:

Nut Hex A M10 - SS: RU 715 11 99.

2.0 COMPLIANCE WITH STANDARDS:

2.1 Dimensions, Tolerances & General Requirements:

As per IS:1364, Part 3-2002.

2.2 Mechanical properties:

To conform material properties as specified in Table-4 of IS:1367, Part 14-2002.

2.3 Threads:

Pitch-coarse to IS:4218, Part 2.
Tolerance quality - Medium.
Tolerance class - 6g.

2.4 Identification Marking:

As stated in clause 3 of IS:1367, Part 14.

2.5 Surface Discontinuity:

As per IS:1367, Part.9.

2.6 Finish: Clean and bright.

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PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 715 11 99

Rev. No. 00

Page 02 of 02

3.0 NOTES:

- 3.1 For length and diameter combination refer Table-1 of IS:1364 Part-3.
- 3.2 For screw threads, general (Metric) refer to BHEL standard AA 023 18 00.
- 3.3 For tolerance grade, position and class refer to BHEL standard AA 023 02 01.
- 3.4 When fasteners are to be tested with in BHEL, the sampling and acceptance plan shall be as per IS:1367, part 17.

4.0 REFERRED STANDARDS (Latest publications including amendment):

- 1) AA 023 18 00
- 2) AA 023 02 01
- 3) IS: 1364 Pt 3
- 4) IS: 1367 Pt 9 & 14
- 5) IS: 4218 Pt 2



PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 716 10 99

Rev. No. 00

Page 01 of 02

WASHERS, PUNCHED, TYPE-A, STAINLESS STEEL

1.0 DESIGNATION:

A punched washer type-A of size 6.6mm and made of stainless steel shall be designated as:

1.1 On drawings:

- i) Material specification column: RU 716 10 99.
- ii) Description column : WASHER PNCHD A 6.6 -SS

1.2 On indents:

Washer Punched A 6.6 - Stainless Steel: RU 716 10 99.

2.0 COMPLIANCE WITH STANDARDS:

2.1 Dimensions, Tolerances and General requirements:

As per Table-1 of this standard.

2.2 Material:

Non-magnetic austenitic stainless steel gr. 304 (X04Cr19Ni9), as stated in IS: 1570, part 5-1985.

2.3 Finish: Clean and bright.

3.0 NOTES:

3.1 Surfaces should be perfectly flat and free from defects.

3.2 For general requirements of washers, refer BHEL standard AA 023 04 08.

3.3 Weights given in this standard are for general reference only and are not meant for commercial transactions.

3.4 When fasteners are to be tested with in BHEL, the sampling and acceptance plan shall be as per IS:1367, part 17.

4.0 REFERRED STANDARDS (Latest publications including amendment):

- i) IS:1570, part 5
- ii) IS:1367, part 17
- iii) IS:2016
- iv) AA 023 04 08

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RU 716 10 99

Rev. No. 00

Page 02 of 02

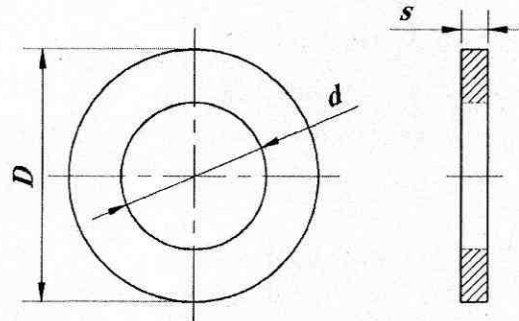


TABLE-1
 DIMENSIONS FOR WASHER, PUNCHED, TYPE A, STAINLESS STEEL

Size 'd' Nom	Out Side Dia 'D' Nom		Thickness 's' Nom		Suitable for Bolt /Screw Size	Sub- Code	Weight Kg /1000 Nos.
	Basic	Tol	Basic	Tol			
1.8	4.0	+0 -0.3	0.40	±0.1	M 1.6	013	0.128
2.4	5.0	+0 -0.3	0.40	±0.1	M 2	021	0.193
2.9	6.5	+0 -0.3	0.40	±0.1	M 2.5	030	0.340
3.4	7.0	+0 -0.3	0.50	±0.1	M 3	048	0.470
4.5	9.0	+0 -0.3	0.80	±0.1	M 4	056	1.221
5.5	10.0	+0 -0.3	1.00	±0.1	M 5	064	1.753
6.6	12.5	+0 -0.4	1.60	±0.2	M 6	072	4.531
9.0	17.0	+0 -0.4	1.60	±0.2	M 8	080	8.363
11.0	21.0	+0 -0.5	2.00	±0.2	M 10	099	16.083
14.0	24.0	+0 -0.5	2.50	±0.3	M 12	102	23.873
18.0	30.0	+0 -0.5	3.15	±0.3	M 16	110	45.595
22.0	37.0	+0 -0.8	3.15	±0.3	M 20	129	70.055
26.0	44.0	+0 -0.8	4.00	±0.3	M 24	137	126.653
30.0	50.0	+0 -0.8	4.00	±0.3	M 27	145	160.829
33.0	56.0	+0 -1.0	4.00	±0.3	M 30	153	205.761
36.0	60.0	+0 -1.0	5.00	±0.6	M 33	161	289.493
39.0	66.0	+0 -1.0	5.00	±1.0	M 36	170	356.212
42.0	72.0	+0 -1.0	6.00	±1.0	M 39	188	515.659
45.0	78.0	+0 -1.0	6.00	±1.0	M 42	196	612.006
52.0	92.0	+0 -1.5	8.00	±1.0	M 48	200	1157.972



PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 716 40 98

Rev. No. 00

Page 01 of 02

**WASHERS, SPRING LOCK, SINGLE COIL, RECTANGULAR SECTION
TYPE-B (WITH FLAT ENDS), STAINLESS STEEL**

1.0 DESIGNATION:

A single coil, rectangular section, spring lock washer, type-B (with bent ends) for right hand threads, of nominal size 5 mm and made of stainless steel shall be designated as:

1.1 On drawings:

- i) Material specification column: RU 716 40 98.
- ii) Description column : WASHER SPRING LOCK SC B 5 -SS

1.2 On indents:

Washer Spring Lock Single Coil B 5 : RU 716 40 98.

2.0 COMPLIANCE WITH STANDARDS:

2.1 Dimensions, Tolerances and General requirements:

Dimensions per Table-1 of this standard and general requirement as per IS:3063.

2.2 Material:

Non-magnetic austenitic stainless steel gr. 304 (X04Cr19Ni9), as stated in IS: 1570, part 5-1985.

2.3 Finish: Clean and bright.

3.0 NOTES:

- 3.1 For washer spring lock (Type-A) refer plant standard RU 716 40 99.
- 3.2 Weights given in this standard are for general reference only and are not meant for commercial transactions.
- 3.3 When fasteners are to be tested with in BHEL, the following sampling plan shall be followed for physical properties.

Lot Size	Sample Size	Acceptance No.
Upto 1000	5	0
1001-3000	8	0
3001-10000	13	0
10000-35000	20	0
Over 35000	32	1

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RU 716 40 98

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Page 02 of 02

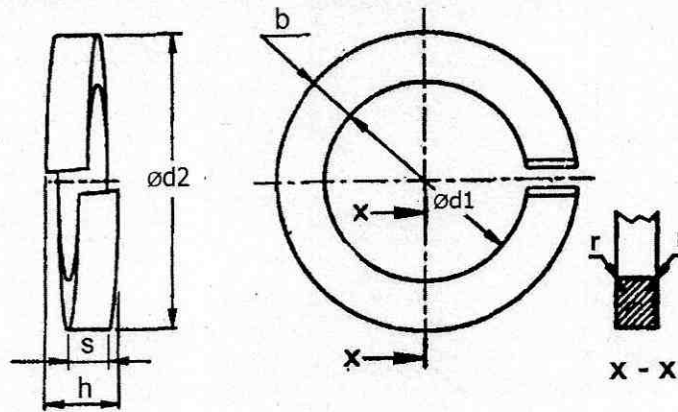


TABLE-1

Nom. Size	Internal Dia. d1		Out-side Dia. d2	Width b		Thickness s		Radius r Nom.	For Bolt Nut or Screw Size	Sub-code	Wt Kg Per 1000 Nos.
	Basic	Tol+		Basic	Tol+	Basic	Tol+				
	2.0	2.1		0.3	4.4	0.9	0.10				
2.2	2.3	0.3	4.8	1.0	0.10	0.6	0.10	0.1	M2.2	026	0.054
2.5	2.6	0.3	5.1	1.0	0.10	0.6	0.10	0.1	M2.5	034	0.059
3.0	3.1	0.3	6.2	1.3	0.10	0.8	0.10	0.2	M3	042	0.123
4.0	4.1	0.3	7.6	1.5	0.10	0.9	0.10	0.2	M4	050	0.200
5.0	5.1	0.3	9.2	1.8	0.10	1.2	0.10	0.2	M5	069	0.391
6.0	6.1	0.4	11.8	2.5	0.15	1.6	0.10	0.3	M6	077	0.905
8.0	8.1	0.4	14.8	3.0	0.20	2.0	0.10	0.5	M8	085	1.734
10.0	10.2	0.5	18.1	3.5	0.20	2.2	0.15	0.5	M10	093	2.748
12.0	12.2	0.5	21.1	4.0	0.20	2.5	0.15	1.0	M12	107	4.197
16.0	16.2	0.8	27.4	5.0	0.20	3.5	0.2	1.0	M16	115	9.676
20.0	20.2	1.0	33.6	6.0	0.25	4.0	0.2	1.0	M20	123	16.407
24.0	24.5	1.0	40.0	7.0	0.25	5.0	0.2	1.6	M24	131	28.588
30.0	30.5	1.2	48.2	8.0	0.25	6.0	0.2	1.6	M30	140	47.893
36.0	36.5	1.2	58.2	10.0	0.25	6.0	0.2	1.6	M36	158	71.930
42.0	42.5	1.2	68.2	12.0	0.25	7.0	0.25	2.0	M42	166	117.591
48.0	49.0	1.5	75.0	14.0	0.25	8.0	0.25	2.0	M48	174	181.559
52.0	53.0	1.5	83.0	14.0	0.25	8.0	0.25	2.0	M52	182	192.818
56.0	57.0	1.5	87.0	14.0	0.25	8.0	0.25	2.0	M56	190	204.078
60.0	61.0	1.5	91.0	14.0	0.25	8.0	0.25	2.0	M60	204	215.337
64.0	65.0	1.5	95.0	14.0	0.25	8.0	0.25	2.0	M64	212	226.597

All dimensions are in millimetres.



PLANT STANDARD
COMPONENT FABRICATION PLANT
RUDRAPUR

RU 716 40 99

Rev. No. 00

Page 01 of 02

**WASHERS, SPRING LOCK, SINGLE COIL, RECTANGULAR SECTION
TYPE-A (WITH BENT ENDS), STAINLESS STEEL**

1.0 DESIGNATION:

A single coil, rectangular section, spring lock washer, type-A (with bent ends) for right hand threads, of nominal size 5 mm and made of stainless steel shall be designated as:

1.1 On drawings:

- i) Material specification column: RU 716 40 99.
- ii) Description column : WASHER SPRING LOCK SC A 5 -SS

1.2 On indents:

Washer Spring Lock Single Coil A 5 : RU 716 40 99.

2.0 COMPLIANCE WITH STANDARDS:

2.1 Dimensions, Tolerances and General requirements:

Dimensions per Table-1 of this standard and general requirement as per IS:3063.

2.2 Material:

Non-magnetic austenitic stainless steel gr. 304 (X04Cr19Ni9), as stated in IS: 1570, part 5-1985.

2.3 Finish: Clean and bright.

3.0 NOTES:

- 3.1 For washer spring lock (Type-B) refer plant standard RU 716 40 98.
- 3.2 Weights given in this standard are for general reference only and are not meant for commercial transactions.
- 3.3 When fasteners are to be tested with in BHEL, the following sampling plan shall be followed for physical properties.

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7555773

Lot Size	Sample Size	Acceptance No.
Upto 1000	5	0
1001-3000	8	0
3001-10000	13	0
10000-35000	20	0
Over 35000	32	1

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RU 716 40 99

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Page 02 of 02

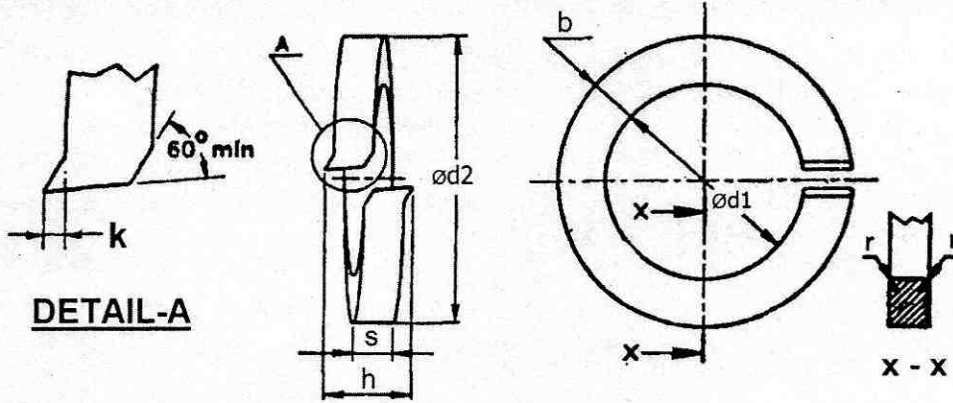


TABLE-1

Nom. Size	Internal Dia.		Out-side Dia. d2	Width		Thickness		Radius r	Bend End k*	For Bolt Nut or Screw Size	Sub-code	Wt Kg Per 1000 Nos.
	d1			b		s						
	Basic	Tol+		Basic	Tol+	Basic	Tol+					
2.0	2.1	0.3	4.4	0.9	0.10	0.5	0.10	0.1	-	M2	014	0.037
2.2	2.3	0.3	4.8	1.0	0.10	0.6	0.10	0.1	-	M2.2	022	0.054
2.5	2.6	0.3	5.1	1.0	0.10	0.6	0.10	0.1	-	M2.5	030	0.059
3.0	3.1	0.3	6.2	1.3	0.10	0.8	0.10	0.2	0.15	M3	049	0.123
4.0	4.1	0.3	7.6	1.5	0.10	0.9	0.10	0.2	0.15	M4	057	0.200
5.0	5.1	0.3	9.2	1.8	0.10	1.2	0.10	0.2	0.15	M5	065	0.391
6.0	6.1	0.4	11.8	2.5	0.15	1.6	0.10	0.3	0.20	M6	073	0.905
8.0	8.1	0.4	14.8	3.0	0.20	2.0	0.10	0.5	0.30	M8	081	1.734
10.0	10.2	0.5	18.1	3.5	0.20	2.2	0.15	0.5	0.30	M10	090	2.748
12.0	12.2	0.5	21.1	4.0	0.20	2.5	0.15	1.0	0.40	M12	103	4.197
16.0	16.2	0.8	27.4	5.0	0.20	3.5	0.2	1.0	0.40	M16	111	9.676
20.0	20.2	1.0	33.6	6.0	0.25	4.0	0.2	1.0	0.40	M20	120	16.407
24.0	24.5	1.0	40.0	7.0	0.25	5.0	0.2	1.6	0.50	M24	138	28.588
30.0	30.5	1.2	48.2	8.0	0.25	6.0	0.2	1.6	0.80	M30	146	47.893
36.0	36.5	1.2	58.2	10.0	0.25	6.0	0.2	1.6	0.80	M36	154	71.930
42.0	42.5	1.2	68.2	12.0	0.25	7.0	0.25	2.0	0.80	M42	162	117.591
48.0	49.0	1.5	75.0	14.0	0.25	8.0	0.25	2.0	0.80	M48	170	181.559
52.0	53.0	1.5	83.0	14.0	0.25	8.0	0.25	2.0	1.00	M52	189	192.818
56.0	57.0	1.5	87.0	14.0	0.25	8.0	0.25	2.0	1.00	M56	197	204.078
60.0	61.0	1.5	91.0	14.0	0.25	8.0	0.25	2.0	1.00	M60	200	215.337
64.0	65.0	1.5	95.0	14.0	0.25	8.0	0.25	2.0	1.00	M64	219	226.597

All dimensions are in millimetres.

* The bend k shall be made on the last tenth of the washer circumference without any sharp edge