

ANNEXURE - I

PR.No.	130463352
PRDATE	07.02.2022
PRDELYDATE	07.02.2022
MATLGRP	PFPHB

PR Item.	Mat. code	Mat. Description	WEIGHT (MT)	PR Qty
00020	413010003600	NUT -M36x3 -CL6-IS1364P3 Applicable Spec - IS1364P3 Applicable BPS - 41301	1.080	3,000.000
00030	413040005600	BL HEX NUT M 56 X 4 P CL.4 GR C STEEL Applicable BPS - 41304	6.775	5,000.000
00040	413043003600	HEX NUT M36X3-4 IS:1363(P-3) BPS 41304, Applicable Spec - IS1363P3 Applicable BPS - 41304	1.782	4,500.000
00050	413043004800	HEX NUT M48X3-14H IS:3138, Applicable Spec - IS3138 Applicable BPS - 41304	8.352	9,000.000
00060	413044005600	HEX NUT M56X4-14H IS:3138/LATEST, Applicable Spec - IS3138 Applicable BPS - 41304	4.065	3,000.000
00070	414080001600	PUN WASHER-M16 -IS2016-A, Applicable Spec - IS2016 Applicable BPS - 41408	1.500	1,50,000.000
00080	414080003000	PUNCHED WASHER A 33 IS:2016/LATEST, Applicable Spec - IS2016 Applicable BPS - 41408	0.100	2,000.000
00090	414080003600	PUNCHED WASHER A 39(ID) IS:2016, Applicable Spec - IS2016 Applicable BPS - 41408	0.522	6,000.000
00100	414080004800	PUNCHED WASHER A 52(ID)- IS:2016, Applicable Spec - IS2016 Applicable BPS - 41408	1.136	4,000.000
00110	414080005600	PUNCHED WASHER A 61(ID)- IS:2016, Applicable Spec - IS2016 Applicable BPS - 41408	1.620	4,000.000
			26.932	1,90,500.000



PLANT STANDARD

HPBP TIRUCHIRAPPALLI

BPS 41301

Rev. No. 02

PAGE 1 OF 2

HEXAGON NUTS, PRODUCT GRADE 'B'

(Property Class 6 & 22H)

1.0 SCOPE

Covers the requirements of hexagon nuts in the size range M27, M33 and above.

2.0 SPECIFICATION AND REFERENCE STANDARDS

Dimensions and preferred sizes	Fig. 1 & Table 1 of this standard	
Tolerance	Product grade	B
	Indian Standard	IS 1367 (Part 2)
Thread	Pitch	Table 1 of this standard
	Tolerance	6H
	Indian Standard	IS 4218 (Part 3, 5 & 6)
Material	Steel	
Mechanical Properties	<u>Property class</u> 6 H for nuts with $d \leq M39 \times 3$ 22H for nuts with $d > M39 \times 3$	
	<u>Indian Standard</u> IS: 1367 (Part 6) for nuts with $d \leq M39 \times 3$ IS: 1367 (Part 7) for nuts with $d > M39 \times 3$	
	Indian Standard	IS: 1367 Part 17)
Sampling and Acceptability	Indian Standard	IS: 1367 Part 17)
General requirements	Nuts shall comply with IS: 1364 (Part 3) in respect of requirements not covered in this standard.	

2.1 Referred standards (Only current versions are applicable)

IS 1364 Part 3	Specification for Hexagon head bolts & nuts of product grade A&B Part 3 Hexagon nuts.
IS 1367 Part 2,6,7 & 17	Technical supply conditions for threaded steel fasteners
IS 4218 Part 3,5 & 6	ISO metric screw threads
IS 3138	Hexagonal bolts and nuts

3.0 DESIGNATION

A Grade 'B' hexagon nut to this standard of thread size M36x3 shall be designated as :

3.1 On Drawings

i) Material Specification column	-----
ii) Description Column	HEX NUT M36x3-6
iii) Drawing Number Column	BPS 41301
iv) Material Code column:	4130100036

Revisions

Brought upto date

Approved

STANDARDS SECTION
CONTRACT ENGINEERING AND CO-ORDINATION
HPBP, TIRUCHIRAPPALLI

Rev. No. 02

Amd. No.

Reaffirmed

Prepared

Issued

Dt of 1st Issue

Dt. JUN. 1997

Dt.

Year

STANDARDS

STANDARDS

DEC 1986

COPYRIGHT AND CONFIDENTIAL
The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED. It must not be used directly or indirectly in any way detrimental to the interest of the company.



PLANT STANDARD

HPBP TIRUCHIRAPPALLI

BPS 41301

Rev. No. 02

PAGE 2 OF 2

3.2 Ordering Description

For placing indents, issuing enquiries and on purchase order, Ordering Description given below shall be followed. (Typical examples)

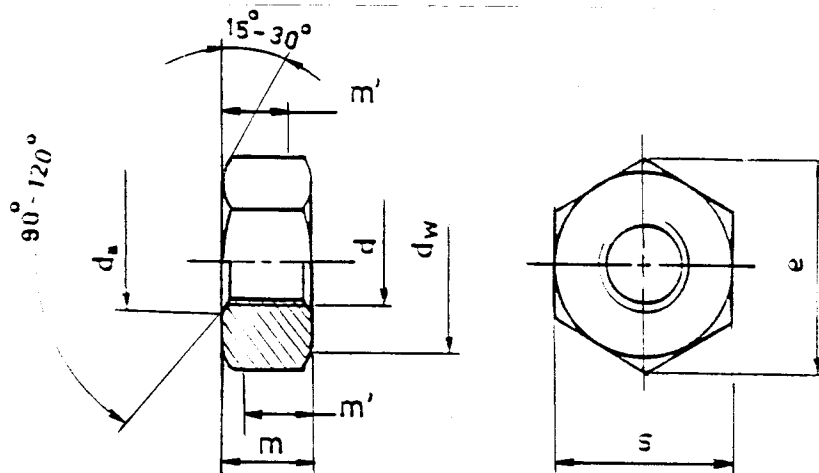
Hex Nut M27 to BPS : 41301 (for nuts with d=M27 & M33)
 Hex Nut M36x3 to BPS : 41301 (for nuts with d=M36x3 & M39x3)
 Hex Nut M42x3 to BPS : 41301 (for nuts with d=M42x3 & M48x3)

4.0 ADDITIONAL INFORMATION

- 4.1 The hardness values in Table 4 of IS: 1367 Part 6 (for coarse pitch series) shall be applicable for thread sizes M36x3 and M39x3 also.
- 4.2 The overall dimensions for thread sizes M42x3 and above are based on IS: 3138.
- 4.3 Copies of this standard shall be enclosed along with the purchase order.

FIG.1, DIMENSIONS FOR HEXAGON NUTS

(All dimensions are in millimetres)



'm' = Effective gauging height

TABLE 1

(All dimensions are in millimetres)

Thread Size d	da		dw	e			m		m'	s		Weight
	Min	Max		Min	Max	Min	Max	Min		Max	Min	
(M27)					45.20	22.0	20.7		41	40.0	166	
(M33)					55.37	26.0	24.74		50	49.0	299	
M36x3	36	38.9	51.1		60.79	31.0	29.4	23.52	55	53.8	364	
(M39x3)					66.44	31.0	29.4		60	58.8	485	
M42x3				75		34.0	33.0		65	63.8	569	
M48x3				86.5		38.0	37.0		75	73.8	935	

Note:

1. Sizes in brackets are non-preferred
2. Weights are given in Kg per 1000 numbers only



PLANT STANDARD

HPBP TIRUCHIRAPPALLI

BPS 41304

Rev. No. 02

PAGE 1 OF 2

HEXAGON NUTS, PRODUCTS GRADES 'B' & 'C'

(Property Class 4 & 14H)

1.0 SCOPE

Covers the requirements of hexagon nuts in the size range M27, M33 and above

2.0 SPECIFICATION AND REFERENCE STANDARDS

Dimensions and preferred sizes	Fig 1 & Table 1 of this standard	
Tolerance	Product grade	C for nuts with $d \leq M64$ B for nuts with $d > M64$
	Indian Standard	IS 1367 (Part 2) for nuts with $d \leq M39 \times 3$ IS: 3138 for nuts with $d \geq m42 \times 3$
Thread	Pitch	Table 1 of this standard
	Tolerance	7H for nuts with $d \leq M39 \times 3$ 6H for nuts with $d \Rightarrow M42 \times 3$
	Indian Standard	IS 4218 (Part 3, 5 & 6)
Material	Steel	
Mechanical properties	Property class	4 for nuts with $d \leq M39 \times 3$ 14H for nuts with $d \Rightarrow M42 \times 3$
	Indian standard	IS: 1367 (Part 6&7)
Sampling and Acceptability	Indian Standard	IS: 1367 (Part 17)
General requirements	Nuts shall comply with IS: 1363 part 3 and IS: 3138 in respect of requirements not covered in this standard	

2.1 Referred standards (only current versions are applicable)

IS: 1367 (Part 2, 6, 7 & 17)

IS: 3138

IS: 4218 (Part 3, 5 & 6)

Technical supply conditions for threaded steel fasteners

Specification for hexagon bolts and nuts

ISO Metric screw threads

3.0 DESIGNATION

A Grade 'C' hexagon nut to this standard of thread size M36x3 shall be designated as :

3.1 On Drawings

i) Material Specification column

ii) Description Column

iii) Drawing Number Column

iv) Material Code column:

HEX NUT GR C M36x3-4

BPS 41304

4130400036

Revisions

Brought up to date

Approved

STANDARDS SECTION
CONTRACT ENGINEERING AND CO-ORDINATION
HPBP, TIRUCHIRAPPALLI

Rev. No. 02

Amd. No.

Reaffirmed

Prepared

Issued

Dt of 1st Issue

Dt. JUN 1997

Dt.

Year

STANDARDS

STANDARDS

DEC 1986

3.2 Ordering Description

For placing indents, issuing enquires and on purchase order, ordering description given below shall be followed. (Typical examples)

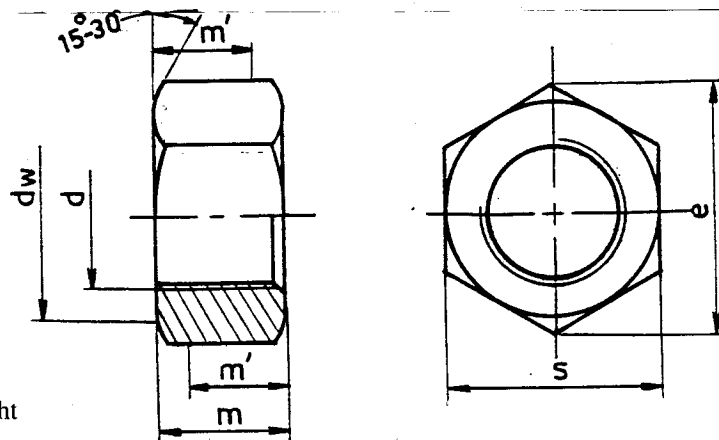
- i) HEXAGON NUT M33 TO BPS:41304 for nuts with $d=M27$ & M33
- II) HEXAGON NUT M36x3 TO BPS:41304 for nuts with $d \geq M36X3$

4.0 ADDITIONAL INFORMATION

Copies of this standard shall be enclosed alongwith the purchase order for thread sizes M27, M33 and above.

FIG. 1 DIMENSIONS FOR HEXAGON NUTS

(All dimensions are in millimetres)



'm' = Effective gauging height

TABLE 1

(All dimensions are in millimetres)

Thread Size d	d _w Min	m		m' Min	s		e		Weight
		Max	Min		Max	Min	Min	Max	
(M27)		22.65	21.35		41	40.0	45.20		166
(M33)		26.65	25.35		50	49.0	55.37		299
M36x3	51.1	31.5	29.4	23.5	55	53.8	60.79		364
(M39x3)		31.8	30.2		60	58.8	66.44		485
(M45x3)		36.0	35.0		70	68.8		80.8	750
M48x3		38.0	37.0		75	73.8		86.5	935
M56x4		45.0	44.0		85	83.6		98	1355
(M60x4)		48.0	47.0		90	88.6		104	1625
M72x4		58.0	56.8		105	103.6		121	2430
M80x4		64.0	62.8		115	113.6		133	3190

NOTE :

1. Sizes in brackets are non-preferred.
2. Weights are given in Kg per 1000 numbers only.



PLANT STANDARD

HPBP TIRUCHIRAPPALLI

BPS 41408

Rev. No. 02

PAGE 1 OF 2

PUNCHED WASHERS - TYPE A

1.0 SCOPE

Covers the requirements for punched washers Type A in the size range 61 to 78 mm.

2.0 SPECIFICATION AND REFERENCE STANDARDS

<i>Dimensions and tolerances</i>	Figure 1 and Table 1 of this standard	
<i>Material</i>	Suitable steel	
<i>Finish</i>	Natural finish	
<i>Sampling and acceptability</i>	Indian Standard	IS 6821 and IS 5369
<i>General Requirements</i>	Washers shall comply with IS 2016 in respect of requirements not covered in this standard.	

2.1 Referred Standards (Only current versions are applicable)

IS 2016	Specification for plain washers.
IS 5369	General requirements for plain washers and lock washers.
IS 6821	Methods for sampling non-threaded fasteners.

3.0 DESIGNATION

A punched washer of size 61 to this standard for bolt/screw size M56 shall be designated as :

3.1 On Drawings

i) Material Specification column	:
ii) Description column	:	PUNCHED WASHER A 61
iii) Drawing Number column	:	BPS 41408
iv) Material Code column	:	4140800056

3.2 Ordering Description

For placing indents, issuing enquiries and on purchase order, ordering description given below shall be followed (typical examples).

Punched Washer A61 to BPS 41408

Revisions 02
Brought upto date *

Approved
STANDARDS SECTION
CONTRACT ENGINEERING AND CO-ORDINATION
HPBP, TIRUCHIRAPPALLI

Rev. No. 02	Amd. No.	Reaffirmed	Prepared	Issued	Dt of 1st Issue
Dt. JUNE 1997	Dt.	Year	STANDARDS	STANDARDS	DEC 1986

4.0 ADDITIONAL INFORMATION

- 4.1 These washers can be used with Product Grade C general purpose bolts and screws.
- 4.2 Copies of this standard shall be enclosed alongwith the purchase order.

Figure - 1

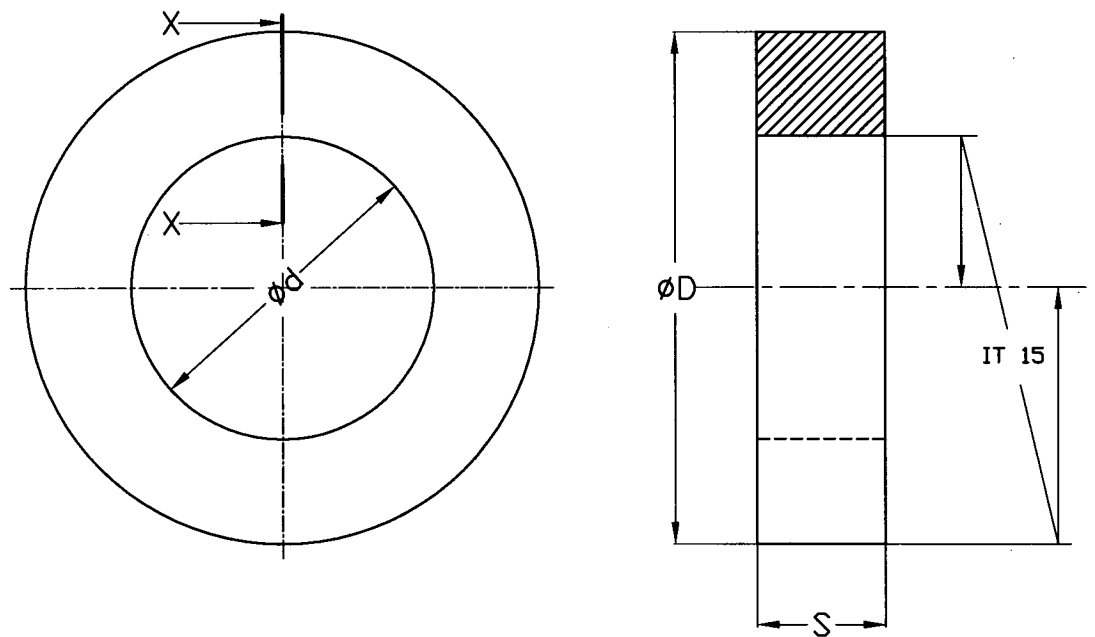


Table - 1

(All dimensions are in millimetres)

Size ϕd	ϕD Nom	s Nom	For bolt/screw size	Weight
61	105	9.0	M56	405.0
78	122	10.0	M72	543.0

NOTE:

1. Weights are given in Kg per 1000 numbers.