

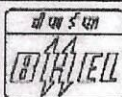
CIRCLIP FOR SHAFT, NORMAL TYPE, STEEL

IT.NO.	SHAFT DIA NOM. SIZE	MATERIAL SPEC/CODE	CORE CODE	ST. NO. REMARK
1	28 X 1.5	AA 716 70 01 058		
2	70 X 2.5	AA 716 70 01 198		
3	75 X 2.5	AA 716 70 01 333		
4	80 X 2.5	AA 716 70 01		
5	85 X 3.0	AA 716 70 01 260		
6	90 X 3.0	AA 716 70 01 279		
7	95 X 3.0	AA 716 70 01 341		
8	100 X 3.0	AA 716 70 01		
9	110 X 4.0	AA 716 70 01 350	40588949	
10	120 X 4.0	AA 716 70 01 368		
11	130 X 4.0	AA 716 70 01 376		
12	140 X 4.0	AA 716 70 01 384		BP9013026303
13	150 X 4.0	AA 716 70 01 309		BP9013026311
14	160 X 4.0	AA 716 70 01 392		BP9013026320
15	170 X 4.0	AA 716 70 01 406		BP9013026338
16	180 X 4.0	AA 716 70 01		BP9013026346
17	240 X 5.0	IS : 3075 PART-1		BP9013035159
18	190 X 4.0	AA 716 70 01		BP9013026354
19	200 X 4.0	AA 716 70 01		BP9013026834
20	220 X 5.0	IS : 3075 PART-1		BP9013034942
21	260 X 5.0	IS : 3075 PART-1		BP9013035167

CAUTION:- THIS IS ONLY A DOCUMENT FOR CORE CODE DIRECTORY OF CIRCLIPS. THIS SHOULD NOT BE USED FOR ANY OTHER PURPOSE SUCH AS INDENTING ETC. BY IMM/LEM.

SIEMENS REF. DYN 78402 HGW 684		REV	DATE	ALT	REV	DATE	ALT	REV	DATE	ALT.	TITLE <u>CIRCLIP FOR SHAFT</u>			
				CHD.			CHD.			CHD.				
REVISIONS	REV	DATE	ALT	REV	DATE	ALT	REV	DATE	ALT.	DISTRIBUTION AME-1 IMM-3 TEX(IMM)-1 PLW-3				
			CHD.			CHD.	03	5.10.06	CHD.					
							DRG. REDRAWN IT. 21 ADDED.							
											NAME	SIGN	DATE	
											DRN.	PS	Sd-	09.01.98
											CKD.	VRG	Sd-	
											APPD.	VRG	Sd-	14.01.98

S15-1-1



PRODUCT STANDARD

AME BHOPAL

AM 54016 REV 16
PAGE 1 OF 2
S15-1-1

SHAFT SEALS

ALL DIMENSIONS ARE IN mm.

REF:-SN63256
MATL:- AA59804

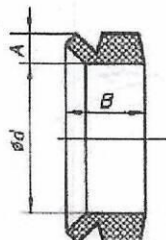
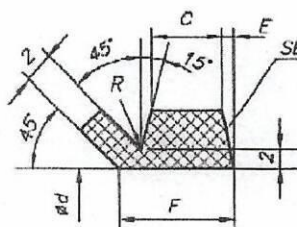


FIG-1



ENLARGED VIEW

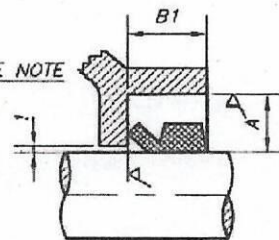
FIXING ARRGT.
OF SHAFT SEAL

TABLE OF DIMENSIONS

ITEM NO.	BRG. SIZE	SUITABLE FOR SHAFT FROM TO	d	A	B	C	E	F	R	DIMN. ON ASSY. B1 a	Pm *	RPM **	STYLE NO.
1	85	83 88	77									3150	BP9094321890
2	90	88 93	81	6	15.5	5	3.5	11.5	1.5	13.5	9	±1.2	2970 -
3	95	93 98	85									2810	BP9094320592
4	100	98 105	90									2670	BP9094322684
5	110	105 115	99									2430	BP9094320061
6	120	115 125	108									2230	BP9094320606
7	130	125 135	117	7	18	6	4	13	1.5	15.5	10.5	±1.5	2060 BP9094320053
8	140	135 145	126									1910	BP9094320614
9	150	145 155	135									1780	BP9094320622
10	160	155 165	144									1670	BP9094320630
11	170	165 175	153	8	20.5	6.5	4.5	14	1.5	18	12	±1.8	1570 BP9094320620
12	180	175 185	162									1490	BP9094320638
13	190	185 195	171									1410	BP9094320646

NOTE:-

RING DESIGNATION TO BE EMBOSSED BY RAISED LETTER SIZE 2.5 TO AA0621403 SUCH THAT IT IS CLEARLY VISIBLE AND READABLE. DESIGNATION SHALL BE THE SIZE SPECIFIED IN COL.2 OF TABLE PREFIXED WITH LETTER 'V' eg; RING DESIGNATION FOR ITEM 01 SHALL BE "V85" AND FOR ITEM 09 SHALL BE "V150".

CONT. ON SHI-2

* PERMISSIBLE AXIAL
MOVEMENT OF SHAFT
** MAX. PERMISSIBLE SPEED

AM 54016

REVISIONS

NO.	DATE	DESCRIPTION	DISTRIBUTION NO.	AME	IMM	TEX (IMM)	PLM	TEX (PLM)	NAME	SIGN	DATE
16	27-10-84	STYLE NO. ADDED FOR IT-18.	1		3	1	3	1	J C GUPTA	Sd	15.1.84
15	21-12-84	REDRAWN AND REARRANGED.			3	3	3	1			
									PB	Sd	15.1.84

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AM 54016	REV 15
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5	REV 15
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SHAFT SEALS

ALL DIMENSIONS ARE IN mm.

REF:-SN63256
MATL:-AA59804

TABLE OF DIMENSIONS

[illegible]

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AM 54015

DRG. NO. 3 402 10 42070

REF:-SN63256

MATL:- AA59804

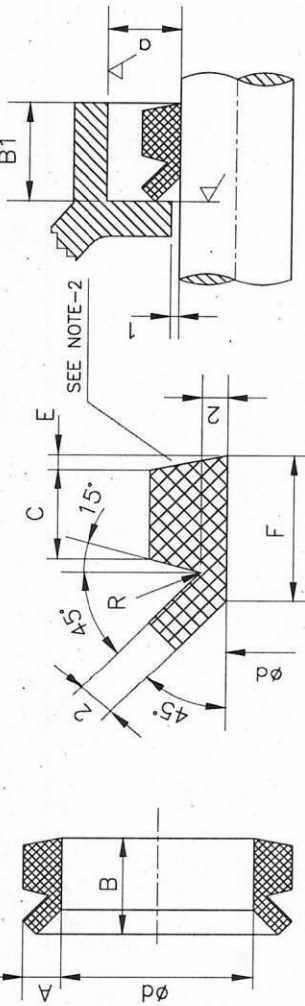


FIG-1

ENLARGED VIEW

FIXING ARRGT.
OF SHAFT SEAL

NOTE:-

1. ALL DIMENSION ARE IN mm
2. RING DESIGNATION TO BE EMBOSSED BY RAISED LETTER SIZE 2.5 TO AA0621403 SUCH THAT IT IS CLEARLY VISIBLE AND READABLE. DESIGNATION SHALL BE THE SIZE SPECIFIED IN COL.2 OF TABLE PREFIXED WITH LETTER 'V' eg: RING DESIGNATION FOR ITEM 01 SHALL BE "V320"

TABLE OF DIMENSIONS

ITEM NO.	BRG SIZE FOR SHAFT ϕ	SUITABLE FOR SHAFT ϕ FROM TO	d	A	B	C	E	F	R	B1	a	Pm	RPM	STYLE NO.
01	320	240	260	228	15	25	14	0.0	18	1.5	20	22.5	± 4	1210

3 402 89 46001

REF. DRG. NO.

SIGN & DATE

INVENTORY NO.

ADDITIONAL INFORMATION
W.O. 44036 A 423-16/61/71/81/91

STATUS OF DRAWING

DISTRIBUTION OF PRINTS
AME -1 TEX-3TYPE OF PRODUCT
OR

NAME OF CUSTOMER/PROJECT

1TC4940

M/S. M & P FOR NPCIL KAPP 3 & 4

DEPT. AME

UN. TOL.

CODE 404 DIM. C/M/F

GRADE OF

SCALE

WEIGHT (Kg)

NAME

RV

SIGN.

DATE

27.07.15

DRN

CHD.

APPD

AK

DATE

27.07.15

REF. TO ASSY. DRG.

ITEM NO.

75 77

NO. OF ITEMS

28 23 24

DRAWING NO.

3 402 10 42070

REV

00

TITLE

SHAFT SEALS

CARD CODE

1

SHEET NO.

01

NO. OF SHEETS

01

**CORPORATE PURCHASING SPECIFICATION**

AA 598 04

Rev. No. 04

PAGE 1 OF 4

**NITRILE RUBBER SHEETS, GASKETS AND MOULDINGS
60 IRHD****1.0 GENERAL :**

This specification governs the quality requirements of Nitrile Rubber Sheets, Gaskets and Mouldings having a hardness of 60 IRHD.

2.0 APPLICATION:

Used as gaskets and mouldings in transformer, AC machines, traction machines, etc.

3.0 COMPLIANCES WITH NATIONAL STANDARDS:

The material shall comply, in general, with the requirements of the following national standard and also meet the requirements of this specification.

BS : 2751 - 2001, Gr.: BA 60 : General Purpose Acrylonitrile-Butadiene Rubber Components.

And also shall meet the additional requirement of clause 10.5 of this specification.

4.0 DIMENSIONS AND TOLERANCES:**4.1 Sizes:**

Length x Width x Thickness of the sheet shall be stated in BHEL order.

Gaskets and mouldings shall be supplied as per BHEL drawings.

Preferred thickness for sheets and gaskets are 2, 3, 4, 5, 6, 7, 10, 11, 12 and 16 mm.

4.2 Tolerances:

Unless otherwise stated in the order / drawing, tolerances on length, width and thickness shall be as follows:

4.2.1 On Length and Width: ± 3 mm

4.2.2 On Thickness:

<u>Nominal thickness, mm</u>		<u>Tolerance, $\pm$ mm</u>
Over	up to & incld.	

--	2	0.25
2	8	0.40
8	12	0.60
12	16	0.80

Revisions :

Cl 34.11.53 & 34.6 of MOM of MRC-CPO

APPROVED :

INTERPLANT MATERIAL
RATIONALISATION COMMITTEE-MRC (CPO)

Rev. No. 04	Amd.No.	Reaffirmed	Prepared	Issued	Dt. of 1st Issue
Dt.:15.11.2005	Dt :	Year :	BHOPAL	Corp. R&D	JULY, 1980

AA 598 04	CORPORATE PURCHASING SPECIFICATION	
Rev. No. 04		
PAGE 2 OF 4		

5.0 **FINISH:**
Material shall have a smooth finish.

6.0 **FREEDOM FROM DEFECTS:**
All ingredients of the mix shall be free from grit and extraneous matter. The selection and processing of the ingredients shall be such that the vulcanizate is free from surface imperfections, blisters, porosity, voids, inclusions, flow marks, inadequate joint of moulding blank and other defects which would impair satisfactory performance.
The material shall not develop excessive bloom on storage under normal temperature conditions.

7.0 **CHEMICAL COMPOSITION:**
Sheets, gaskets and moulding shall be made out of vulcanizates based on Butadiene acrylonitrile copolymer reinforced only carbon black, vulcanized with sulphur/organic accelerator activated with stearic acid and rubber containing at least 4 parts per hundred of zinc oxide and 2 parts per hundred of a suitable antioxidant.
No factice or other extender, reclaimed or ground vulcanized rubber shall be used.

8.0 **IDENTIFICATION:**
The material, when identified by infra-red spectra photometer or by any other convenient method shall be of butadiene acrylonitrile copolymer.

9.0 **TEST SAMPLES:**
Three samples of sheets of the following sizes prepared from the same batch and vulcanized to the same degree as the consignment concerned shall be submitted for testing.
150 x 150 x 2 ± 0.15 mm thickness : two sheets
150 x 150 x 6.3 ± 0.15 mm thickness : one sheets

10.0 **PROPERTIES:**
When tested in accordance with the Indian standards / British standards shown against each, the test samples shall show the following properties:

10.1 **Hardness (BS 903: Part A 26: Method N, 2 Plies, 6.3 mm + 2mm with the thicker ply on top):**
 60 ± 5 , IRHD

10.2 **Tensile strength (IS:3400, Part I, Dumb-bell):**
 8.5 N/mm^2 , minimum

10.3 **Elongation at Break (IS:3400, Part I, Dumb-bell):**
400 % , minimum

**10.4 Compression set at 70⁰ C (IS: 3400, Part X):**

For 72 hours + 0, - 2, hours: 20%, maximum.

11.0 TYPE TESTS:

Whenever specified, the following type tests shall be conducted as per the test method specified against each and the norms of acceptance shall be as specified below:

11.1 Volume Change (BS 903: Part A 16: Volumetric Method, Liquid B, 22 Hours At 40⁰C):

- 0, + 25%.

11.2 Adhesion To And Corrosion Of Metals (BS 2751, Appendix A):

There shall be no corrosion or pitting of the metals and the material shall not adhere to the metal surface or show any sign of liquid exudation. Discolouration of the metal surfaces shall not be considered to be objectionable.

11.3 Accelerated Ageing (IS: 3400, Part IV):**11.3.1 Ageing in Air:**

Four test specimens (where possible 25mm wide of suitable length) shall be cut from each sheet in the sample from widely separated positions. The specimens shall be aged in air for 168 hours at 110 ± 5⁰C.

After ageing in air, when tested in accordance with the method specified at clause 10.1 above, the change in hardness shall not be more than 10 IRHD over the values obtained at clause 10.1.

11.3.2 Ageing in Oil:

Two test specimens each of 25 mm wide and of suitable length shall be cut from each sheet in the sample from widely separated positions. The specimens shall be aged in insulating oil conforming to IS: 335 for 168 hours at 100⁰C.

After the oil is wiped by bottling paper, the specimens shall show the following properties.

11.3.2.1 Change in Volume: 10%, maximum**11.3.2.2 Oil Absorption (Calculated on the Original Weight of the Specimen):**

15%, maximum

12.0 TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied giving the following information:

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents for quick clearance of the material.