

Ref: RCNECV2354

Scope of Supply

Sl.No	Material	Material Description	Drawing/Rev/No	*Qty (Nos)
10	220734980000	END COVER-5904	4V590404866/01	31000
20	220734960000	END COVER-5902	4V590204866/01	22000
30	964699730000	END CAP FOR M10 GREASE NIPPLE	SPEC/OF/104/00	7500
40	220735000000	END COVER-5907	4V590704866/01	6500
50	220734970000	END COVER-5903	4V590304866/02	5000
60	220734990000	END COVER-5906	4V590604866/01	5000
70	220744600000	TUBE ENDCOVERINT DIA 18 BPS:6119-012-02	BPS:6119-012-02	2000
80	220744640000	TUBE ENDCOVER INT DIA 30BPS:6119-012-028	BPS:6119-012-028	1000
90	964529470000	END COVER 11-5M-4259	3V425907724/01	1000
100	220736460000	TUBE END COVER INT DIA 41- BPS 6119-0120	BPS 6119-0120	1000
110	220744690000	TUBEENDCOVER INT DIA 45 BPS:6119-012-033	BPS:6119-012-033	700
120	220744730000	TUBEENDCOVER INT DIA 57 BPS:6119-012-037	BPS:6119-012-037	700
130	964699690000	END CAP FOR 2-9/16" FLANGE	2V459220264/00	600
140	964529460000	END COVER7-1/16--4109	3V410907724/01	600
150	964523540000	END COVER-5900	4V590004866/01	550
160	964699680000	END CAP FOR 2-1/16" FLANGE	2V412420264/00	500

Sl.No	Material	Material Description	Drawing/Rev/No	*Qty (Nos)
170	220734950000	END COVER-5901	4V590104866/02	500
180	964651780000	END COVER-C764	4VC76426558/00	400
190	964699700000	END CAP FOR 3-1/8" FLANGE	2V413420264/00	400
200	964529480000	END COVER13-5/8-5M-4265	3V426507724/01	400
210	220744580000	TUBEENDCOVER INT DIA 12 BPS:6119-012-022	BPS:6119-012-022	300
220	964529380000	END COVER.21-1/4-4127	3V412707724/01	300
230	964529440000	END COVER.3-1/8--4882	3V488207724/01	250
240	220710690000	END COVER-2214	2V221401767/01	200
250	220710400000	END COVER-1370	2V137001767/01	200
260	964529400000	END COVER13-5/8-3M-4112	3V411207724/01	200
270	220710140000	END COVER-2341	2V234101767/01	200
280	220710550000	END COVER-1381	2V138101767/01	200
290	220710420000	END COVER-1372	2V137201767/01	175
300	220735010000	END COVER-5731	4V573104866/02	100
310	220710530000	END COVER-1379	2V137901767/01	100
320	220710150000	END COVER-2302	2V230201767/01	100
330	220710540000	END COVER-1380	2V138001767/01	100
340	964529500000	END COVER 7-10M-4269	3V426907724/01	100

Sl.No	Material	Material Description	Drawing/Rev/No	*Qty (Nos)
350	964529570000	TUBE END COVER-4171	4V417107575/00	100
360	220710270000	END COVER-0187	2V018701767/01	30
370	220744740000	TUBE ENDCOVERINT DIA 60 BPS:6119-012-038	BPS:6119-012-038	50
380	220710460000	END COVER-1376	2V137601767/01	25
390	220710480000	END COVER-1387	2V138701767/01	25
400	220710300000	END COVER-0191	2V019101767/01	20
410	964690610000	HBD END COVER.3-1/16-4J71	3V488207724/01	20
420	964529510000	END COVER13-10M-4369	3V436907724/01	20
430	964529450000	HBD END COVER4-1/16--4733	3V473307724/01	20
440	220710160000	END COVER-2242	2V224201767/01	20
450	220710560000	END COVER-1382	2V138201767/01	20
460	220710380000	END COVER-2226	2V222601767/01	10
470	220710680000	END COVER-0354	2V035401767/01	10
480	964529410000	END COVER20-3/4-4832	3V483207724/01	10
490	220710800000	END COVER-N988	2VN98801767/01	10

*The quantities mentioned in the enquiry are indicative for the entire Rate contract period

1		2		3		4		5		6		7		8																																																																																																																																																																																								
DRAWING NO. 2-V-0000-20264												ALL DIMENSIONS ARE IN MILLIMETRES. FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP / QP																																																																																																																																																																																										
<table><tr><th rowspan="2">SL No.</th><th rowspan="2">DRAWING NUMBER</th><th rowspan="2">FLANGE RATINGS</th><th rowspan="2">END CAP SIZE (mm)</th><th rowspan="2">MATERIAL SPECIFICATION</th><th rowspan="2">MATERIAL CODE</th><th colspan="5">DIMENSIONS (mm)</th><th rowspan="2">Wt / kg</th><th rowspan="2">REMARKS</th></tr><tr><th>øA</th><th>øB</th><th>øC</th><th>D</th><th></th></tr><tr><td>01</td><td>2-V-4124-20264 /0</td><td>2-1/16" - 2M, 3M, 5M, 10M, 15M</td><td>50</td><td rowspan="5">LINEAR LOW DENSITY POLYETHYLENE (COLOUR : BLUE)</td><td>96 469 968 0000</td><td>122</td><td>56</td><td>43.4</td><td>14</td><td></td><td>0.001</td><td></td></tr><tr><td>02</td><td>2-V-4592-20264 /0</td><td>2-9/16" - 2M, 3M, 5M, 10M, 15M</td><td>65</td><td>96 469 969 0000</td><td>144</td><td>69</td><td>62</td><td>16.3</td><td></td><td>0.002</td><td></td></tr><tr><td>03</td><td>2-V-4134-20264 /0</td><td>3-1/8" - 2M, 3M, 5M, 10M, 15M</td><td>80</td><td>96 469 970 0000</td><td>159</td><td>83</td><td>73</td><td>16.5</td><td></td><td>0.003</td><td></td></tr><tr><td>04</td><td>2-V-4778-20264 /0</td><td>4-1/16" - 2M, 3M, 5M, 10M, 15M</td><td>100</td><td>96 469 971 0000</td><td>192.5</td><td>105</td><td>97.6</td><td>15.3</td><td></td><td>0.005</td><td></td></tr><tr><td>05</td><td>2-V-4L14-20264 /0</td><td>5-1/8" - 2M, 3M, 5M, 10M, 15M</td><td>130</td><td>96 469 972 0000</td><td>260</td><td>156</td><td>135</td><td>16</td><td></td><td>0.007</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												SL No.	DRAWING NUMBER	FLANGE RATINGS	END CAP SIZE (mm)	MATERIAL SPECIFICATION	MATERIAL CODE	DIMENSIONS (mm)					Wt / kg	REMARKS	øA	øB	øC	D		01	2-V-4124-20264 /0	2-1/16" - 2M, 3M, 5M, 10M, 15M	50	LINEAR LOW DENSITY POLYETHYLENE (COLOUR : BLUE)	96 469 968 0000	122	56	43.4	14		0.001		02	2-V-4592-20264 /0	2-9/16" - 2M, 3M, 5M, 10M, 15M	65	96 469 969 0000	144	69	62	16.3		0.002		03	2-V-4134-20264 /0	3-1/8" - 2M, 3M, 5M, 10M, 15M	80	96 469 970 0000	159	83	73	16.5		0.003		04	2-V-4778-20264 /0	4-1/16" - 2M, 3M, 5M, 10M, 15M	100	96 469 971 0000	192.5	105	97.6	15.3		0.005		05	2-V-4L14-20264 /0	5-1/8" - 2M, 3M, 5M, 10M, 15M	130	96 469 972 0000	260	156	135	16		0.007																																																																																																													
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<p>NOTES:</p> <p>* 1. ALL OTHER DIMENSIONS & DETAILS (ie, THICKNESS, FINSHING, DIMN. E & F, RADIUS AND ANGLE) AS PER SUPPLIER'S SCOPE.</p> <p>2. TEST CERTIFICATE FOR END COVERS SHOULD BE PROVIDED.</p>												<p>END CAP ASSY DETAILS</p>																																																																																																																																																																																										
<p>MINIMUM REQUIRED PROPERTIES :</p> <table><tr><th>PROPERTY</th><th>TEST METHOD</th><th>UNIT</th><th>TYPICAL VALUE</th></tr><tr><td>DENSITY (23°C)</td><td>ASTM D 1505</td><td>g/cc</td><td>0.926</td></tr><tr><td>MFI (190ø / 2.19kg)</td><td>ASTM D 1238</td><td>g/10 min</td><td>50</td></tr><tr><td>TENSILE YIELD STRENGTH</td><td>ASTM D 638</td><td>MPa</td><td>11.5</td></tr><tr><td>ELONGATION AT BREAK</td><td>ASTM D 638</td><td>%</td><td>600</td></tr><tr><td>FLEXURAL MODULUS</td><td>ASTM D 790</td><td>MPa</td><td>250</td></tr><tr><td>FLEXURAL MODULUS</td><td>ASTM D 1525</td><td>°C</td><td>97</td></tr></table>												PROPERTY	TEST METHOD	UNIT	TYPICAL VALUE	DENSITY (23°C)	ASTM D 1505	g/cc	0.926	MFI (190ø / 2.19kg)	ASTM D 1238	g/10 min	50	TENSILE YIELD STRENGTH	ASTM D 638	MPa	11.5	ELONGATION AT BREAK	ASTM D 638	%	600	FLEXURAL MODULUS	ASTM D 790	MPa	250	FLEXURAL MODULUS	ASTM D 1525	°C	97																																																																																																																																																															
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<p>APPLICATIONS :</p> <p>END CAPS ARE USED TO PROTECT THE BODY SEALING GROOVE AREA FROM CONTAMINATIONS OF ENVIRONMENT.</p>																																																																																																																																																																																																						
1		2		3		4		5		6		7		8																																																																																																																																																																																								

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

DCP No.	ALTERED	APPD
REV	CHD	DATE
ZONE		

DEPT VL	365-120	OFE	SCALE N T S	WEIGHT (KG).	REFERENCE INFORMATION	NO. OF ITEMS
CODE 340						
TITLE				CARD CODE	DRAWING NO.	REV
FLANGE END CAP (PLASTIC)				U 01	2-V-0000-20264	0

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

FOR OFE FLANGES

BHARAT HEAVY ELECTRICALS LTD.,	DRN	NAME	SIGN	DATE	NO.OF VAR.
UNIT: HIGH PRESSURE BOILER PLANT.	CHD	P.ARUNKUMAR	P.A	20-08-2016	
TIRUCHIRAPALLI -620014.	APPD	R.ELAYARAJA	R.E	20-08-2016	

365-120

340

OFE

U 01

2-V-0000-20264

0

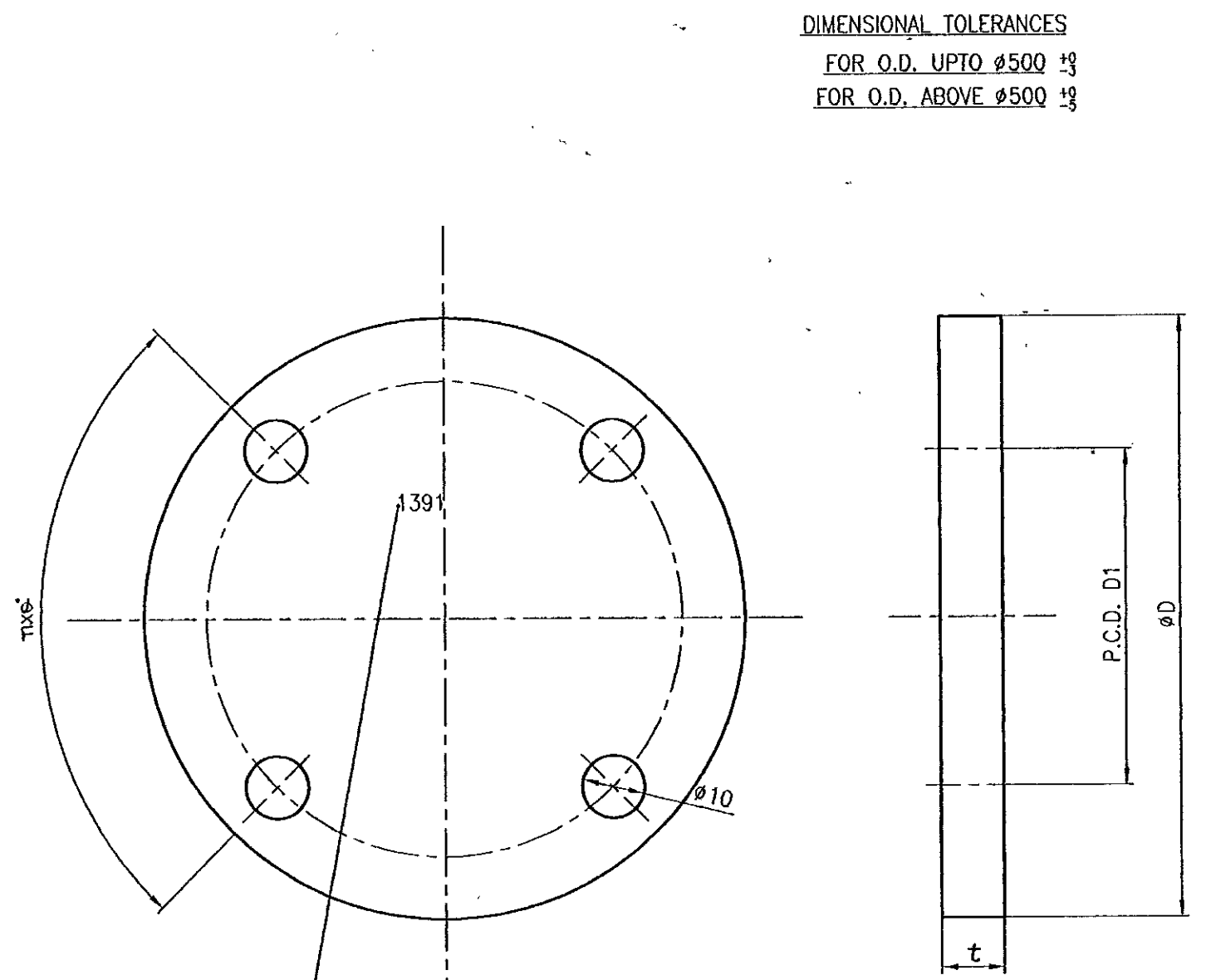
2-V-0000-01767/04

DRAWING NO.

ALL DIMENSIONS ARE IN MILLIMETRES. FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP / QP

SL.No.	NP	NB	DRG.No.	DIMENSIONS					MATL. CODE.
				φ D	D1 PCD	t	TXE	NET WT (kg)	
01	NP:10&16	100	2-V-1391-01767/1	215	180	3	4x90°	0.117	22071005
02		125	2-V-0103-01767/1	245	210	3	4x90°	0.153	22071006
03		150	2-V-1373-01767/1	SAME AS IN SL.No:-56					
04	NP 16	200	2-V-1394-01767/1	335	295	3	6x60°	0.286	22071008
05		250	2-V-1395-01767/1	405	355	3	6x60°	0.420	22071009
06		300	2-V-1317-01767/1	460	410	3	6x60°	0.542	22071010
07		400	2-V-1318-01767/1	580	525	6	8x45°	1.350	22071011
08	NP:10,16&40	600	2-V-1209-01767/1	840	770	6	8x45°	2.850	22071012
09		15	2-V-2301-01767/1	95	65	3	4x90°	0.021	22071013
10		20	2-V-2341-01767/1	105	75	3	4x90°	0.027	22071014
11		25	2-V-2302-01767/1	115	85	3	4x90°	0.032	22071015
12		32	2-V-2242-01767/1	135	100	3	4x90°	0.044	22071016
13		40	2-V-0203-01767/1	145	110	3	4x90°	0.051	22071017
14		50	2-V-0204-01767/1	160	125	3	4x90°	0.063	22071003
15		65	2-V-0205-01767/1	180	145	3	4x90°	0.080	22071018
16	NP 40	80	2-V-1371-01767/1	SAME AS IN SL.No. 54					
17		100	2-V-1372-01767/1	SAME AS IN SL.No:- 55					
18		125	2-V-2226-01767/1	SAME AS IN SL.No:- 41					
19		150	2-V-2411-01767/1	300	250	3	4x90°	0.226	22071021
20		200	2-V-2412-01767/1	375	320	3	6x60°	0.356	22071022
21		250	2-V-0181-01767/1	445	385	3	6x60°	0.503	22071023
22		300	2-V-0183-01767/1	510	450	3	8x45°	1.031	22071024
23		400	2-V-1217-01767/2	635	585	6	8x45°	1.709	22071025
24		500	2-V-1218-01767/1	755	670	6	8x45°	2.279	22071026
25		50	2-V-0187-01767/1	175	135	3	4x90°	0.075	22071027
26	NP 64	65	2-V-0188-01767/1	200	160	3	4x90°	0.100	22071064
27		80	2-V-1378-01767/1	SAME AS IN SL.No:-65					
28		100	2-V-0103-01767/1	SAME AS IN SL.No:-2					
29		150	2-V-0191-01767/1	340	280	3	4x90°	0.290	22071030
30		200	2-V-1395-01767/1	SAME AS IN SL.No:-5					
31		250	2-V-0182-01767/1	470	400	3	6x60°	0.560	22071032
32	NP:64&100	300	2-V-0184-01767/1	530	460	3	8x45°	1.110	22071033
33		15	2-V-2341-01767/1	SAME AS IN SL.No:-10					
34		20	2-V-2214-01767/1	SAME AS IN SL.No:-43					
35		25	2-V-2242-01767/1	SAME AS IN SL.No:-12					
36		32	2-V-1370-01767/1	SAME AS IN SL.No:-53					
37	NP 100	40	2-V-1377-01767/1	SAME AS IN SL.No:-64					
38		50	2-V-1371-01767/1	SAME AS IN SL.No:-54					
39		65	2-V-1391-01767/1	SAME AS IN SL.No:-1					
40	NP 250	80	2-V-1372-01767/1	SAME AS IN SL.No:-55					
41		100	2-V-2226-01767/1	265	210	3	4x90°	0.173	22071038
42		150	2-V-0354-01767/1	350	290	3	6x60°	0.207	22071068
43	NP 250	15	2-V-2214-01767/1	125	90	3	4x90°	0.037	22071069
44		25	2-V-0203-01767/1	SAME AS IN SL.No:-13					
45		40	2-V-0205-01767/1	SAME AS IN SL.No:-15					
46		65	2-V-2225-01767/1	SAME AS IN SL.No:-55					
47		250	2-V-0347-01767/1	585	490	3	8x45°	1.328	22071039

SL.No.	NP	NB	DRG.No.	DIMENSIONS					MATL. CODE.
				φ D	D1 PCD	t	TXE	NET WT (kg)	
48	NP 2.5	800	2-V-0112-01767/1	975	920	6	12x30°	3.864	22071001
49		1200	2-V-0113-01767/1	1375	1320	6	16x22½°	7.800	22071002
50	NP 6	300	2-V-0109-01767/1	435	395	3	6x60°	0.486	22071072
51	NP 25	200	2-V-0126-01767/1	360	310	3	6x60°	0.329	22071073
52		300	2-V-0127-01767/1	485	430	3	8x45°	0.602	22071074
53	150 LBS.	2"	2-V-1370-01767/1	152	121	3	4x90°	0.050	22071040
54		3"	2-V-1371-01767/1	190	152	3	4x90°	0.082	22071041
55		4"	2-V-1372-01767/1	229	190	3	4x90°	0.120	22071042
56		6"	2-V-1373-01767/1	279	241	3	4x90°	0.180	22071043
57		8"	2-V-0191-01767/1	SAME AS IN SL.No:-29					
58		10"	2-V-1395-01767/1	SAME AS IN SL.No:-5					
59	300 LBS.	12"	2-V-1376-01767/1	483	432	3	6x60°	0.544	22071046
60		14"	2-V-1386-01767/1	533	476	6	6x60°	0.654	22071047
61		16"	2-V-1387-01767/1	597	540	6	8x45°	0.824	22071048
62		20"	2-V-1512-01767/1	695	635	6	10x36°	1.200	22071049
63		24"	2-V-1388-01767/1	813	749	6	10x36°	1.534	22071050
64		2"	2-V-1377-01767/1	165	127	3	4x90°	0.061	22071051
65		3"	2-V-1378-01767/1	209	168	3	4x90°	0.098	22071052
66		4"	2-V-1379-01767/1	254	200	3	4x90°	0.147	22071053
67	150 C	6"	2-V-1380-01767/1	317	270	3	6x60°	0.232	22071054
68		8"	2-V-1381-01767/1	381	330	3	6x60°	0.336	22071055
69		10"	2-V-1382-01767/1	444	387	3	8x45°	0.457	22071056
70		12"	2-V-1383-01767/1	521	451	3	8x45°	0.630	22071057
71		14"	2-V-1384-01767/1	584	514	6	10x36°	0.784	22071058
72	NP: 10	1½"	2-V-1370-01767/1	SAME AS IN SL.No:-53					
73		300	2-V-0522-01767/1	440	400	3	6x60°	0.52	22071060
74		400	2-V-0537-01767/1	565	515	6	8x45°	1.31	22071061
75		500	2-V-0538-01767/1	670	620	6	10x36°	1.5	22071062
76		600	2-V-0539-01767/1	780	725	6	10x36°	1.7	22071063
77	150 C	800	2-V-0503-01767/1	1015	950	6	12x30°	2.5	22071075
78		26"	2-V-N834-01767/1	785	745	6	9x40°	1.7	22071076
79		28"	2-V-N847-01767/1	835	795	6	10x36°	1.9	22071077
80		30"	2-V-N848-01767/1	885	845	6	11x32.7°	2.1	22071078
81		32"	2-V-N827-01767/1	940	900	6	12x30°	2.3	22071079
82		36"	2-V-N988-01767/1	1170	1085	6	8x45°	3.5	22071080
83		36"	2-V-N846-01767	1055	1010	6	11x32.7°	2.7	22071081



REV 04	DATE 19.7.2K	ALTERED R.L. CHD & APPDM.R.K.
ZONE	SL.No.83 INCLUDED. DIMS.CORRECTED FOR SL.No.78 TO 82. DCN NO.HM 0459	

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

MATL SPECN. STANDARD HARD BOARD IS.1658										
No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No	
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT										
RETRACED WITH REV.4 ON 19.7.2000										
BHARAT HEAVY ELECTRICALS LTD.				DRN	NAME N. L. NARAYANAN	SIGN	DATE 19/7/2000	NO. OF VAR.		
UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.				CHD	R.L. NARAYANAN		19/7/2000			
365-120				APPD	M. RAJAKUMAR		19/7/2000			
DEPT V L	SCALE	WEIGHT (KG).	REFERENCE INFORMATION				NO. OF ITEMS			
CODE 320	NTS		CAD REF:- C201767							
TITLE				CARD CODE	DRAWING NO.				REV	
END COVER				U 01	2-V-0000-01767				04	

3-V-0000-07724

DRAWING NO.

ALL DIMENSIONS ARE IN MILLIMETRES. FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP / QP.

SL No.	FLANGE RATINGS	DRAWING NUMBER	MATL. CODE	ø D	PCD	t	NET Wt (Kg)	SUPERSEDED DRG	BHEL PART No.
01	13 5/8" – 2000	SAME AS SERIAL NUMBER 05							
02	21 1/4" – 2000	3-V-4127-07724/01	96 452 938	813	724	6	3.42	VPS-001-9036	4127309
03	3 1/8" – 3000	SAME AS IN SERIAL NUMBER 09							
04	9" – 3000	SAME AS IN SERIAL NUMBER 19							
05	11" – 3000	3-V-4111-07724/01	96 452 939	546	470	6	1.55	VPS-002-9036	4111310
06	13 5/8" – 3000	3-V-4112-07724/01	96 452 940	610	534	6	1.92	VPS-003-9036	4112311
07	20 3/4" – 3000	3-V-4832-07724/01	96 452 941	858	750	6	3.81	VPS-004-9036	4832312
08	2 1/16" – 5000	3-V-4879-07724/01	96 452 942	216	165	3	0.12	VPS-005-9036	4879313
09	2 9/16" – 5000	3-V-4881-07724/01	96 452 943	245	191	3	0.15	VPS-006-9036	4881314
10	3 1/8" – 5000	3-V-4882-07724/01	96 452 944	267	203	3	0.18	VPS-007-9036	4882315
11	4 1/16" – 5000	3-V-4733-07724/01	96 452 945	312	242	3	0.25	VPS-008-9036	4733316
12	7 1/16" – 5000	3-V-4109-07724/01	96 452 946	394	318	6	0.40	VPS-009-9036	4109317
13	11" – 5000	3-V-4259-07724/01	96 452 947	585	483	6	1.77	VPS-010-9036	4259318
14	13 5/8" – 5000	3-V-4265-07724/01	96 452 948	673	591	6	2.35	VPS-011-9036	4265319
15	1 13/16" – 10000	3-V-4178-07724/01	96 452 949	188	146	3	0.09	VPS-012-9036	4178320
16	2 1/16" – 10000	SAME AS IN SERIAL NUMBER 08							
17	2 9/16" – 10000	SAME AS IN SERIAL NUMBER 09							
18	3 1/16" – 10000	SAME AS IN SERIAL NUMBER 10							
19	4 1/16" – 10000	SAME AS IN SERIAL NUMBER 11							
20	7 1/16" – 10000	3-V-4269-07724/01	96 452 950	480	404	6	0.59	VPS-013-9036	4269321
21	11" – 10000	SAME AS IN SERIAL NUMBER 14							
22	13 5/8" – 10000	3-V-4369-07724/01	96 452 951	769	673	6	3.00	VPS-014-9036	4369322
23	3 1/16" – 15000	3-V-4J71-07724/01	96 469 061	290	230	3	0.3	VPS-015-9036	4J71323

ø D

PCD

ø 10

4 x 90°

IDENTIFICATION MARK

TO BE PAINTED ON THE

SMOOTH SURFACE BY

RESPECTIVE-BHEL PART No

SHOWN IN TABULATION

DIMENSIONAL TOLERANCES:–

1. FOR OD UPTO ø 500 $\begin{smallmatrix} 0 \\ -3.0 \end{smallmatrix}$

2. FOR OD ABOVE ø 500 $\begin{smallmatrix} 0 \\ -5.0 \end{smallmatrix}$

CAD REF No. o307724

			STANDARD HARD BORAD IS 1658						
No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No

TYPE OF PRODUCT
OR NAME OF
CUSTOMER/PROJECT

365-121

DEPT VL

CODE 340

TITLE

END COVER

BHARAT HEAVY ELECTRICALS LTD.,

UNIT: HIGH PRESSURE BOILER PLANT.

TIRUCHIRAPALLI-620014.

SCALE

N T S

WEIGHT (KG).

—

CARD CODE

U 01

REFERENCE INFORMATION

DRAWING NO.

3-V-0000-07724

NO. OF
ITEMS

REV

02

365-121

DEPT VL

CODE 340

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WEIGHT (KG).

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ITEMS

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END COVER

BHARAT HEAVY ELECTRICALS LTD.,

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TIRUCHIRAPALLI-620014.

SCALE

N T S

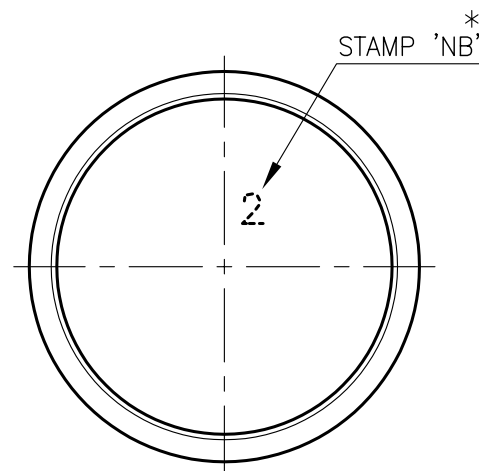
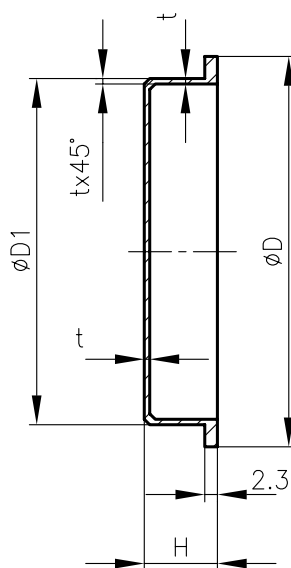
WEIGHT

FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

REV 03	DATE 31.03.08	ALTERED M.SRINIVASAN CHD & APPDP.BOOMINATHAN
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DCP:800814

DRAWING CONVERTED INTO
AUTOCAD**NOTES:**

1. MATERIAL :- POLYETHYLENE-TYPE GCA IS: 3395-1965
2. COLOUR :- YELLOW
- * 3. DOTTED VALUE INDICATED FOR ILLUSTRATION ONLY.
ACTUAL SIZE OF NORMAL BORE SHALL BE STAMPED HERE.

SL. No.	NB *	DRAWING NO.	ØD	ØD1 ^{+0.2} ₀	H	t (MIN)	COMPONENT CODE	Wt. (Gms.)
01	1/4"	4-V-5900-04866/01	20	15.30	6.5	0.65	96 452 354 0000	0.70
02	3/8"	4-V-5901-04866/01	27	18.50	6.5	0.65	22 073 495 0000	1.00
03	1/2"	4-V-5902-04866/01	31	22.80	6.5	0.65	22 073 496 0000	1.53
04	3/4"	4-V-5903-04866/01	37	28.10	11.0	1.00	22 073 497 0000	3.51
05	1"	4-V-5904-04866/01	43	34.80	11.0	1.00	22 073 498 0000	5.00
06	1 1/4"	4-V-5905-04866/01	52	43.60	11.0	1.00	96 452 146 0000	7.48
07	1 1/2"	4-V-5906-04866/01	58	49.60	11.0	1.00	22 073 499 0000	9.00
08	2"	4-V-5907-04866/01	71	62.10	11.0	1.00	22 073 500 0000	14.00
09	10	4-V-5731-04866/01	24	15.60	6.5	0.65	22 073 501 0000	0.8

NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
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365-122

BHARAT HEAVY ELECTRICALS LTD.,

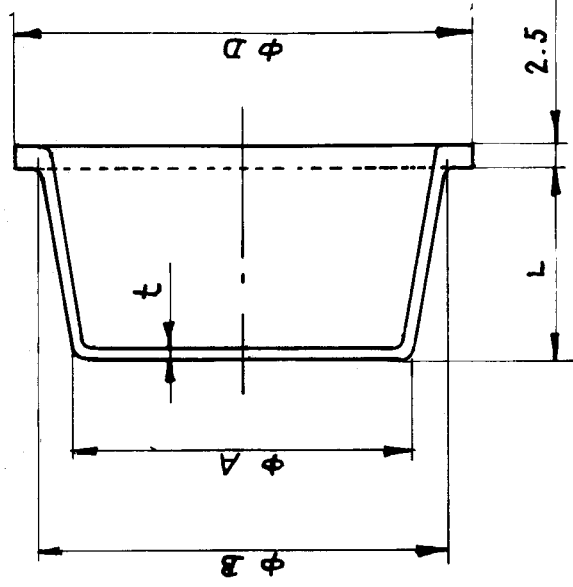
UNIT: HIGH PRESSURE BOILER PLANT.

TIRUCHIRAPALLI 620014.

DRN	NAME	SIGN	DATE	NO. OF VAR
CHD	S.V.NATHAN		05.09.85	
APPD	G.V.RAMANI		10.09.85	
	G.V.RAMANI		10.09.85	

DEPT VL	SCALE	WEIGHT (KG).	REFERENCE INFORMATION	NO. OF ITEMS
CODE 320	NTS	REF. TABLE	CAD:F404866	
TITLE	END COVER		DRAWING NO.	REV
			4-V-0000-04866	03
			CARD CODE U 01	






(NOT - 2)

NOTE. SIZE AS SHOWN IN
TABULATION (NOTE-2)



2. MANUFACTURE AND WORKMANSHIP, DESIGNATION AND MARKING & ADDITIONAL INFORMATION FOR PURCHASE SHALL BE ACCORDING TO BPS : 517501 - 7301.

NO. OF PIECES	NAME - DIMENSIONS	SEMI - PRODUCT	FINAL MATERIAL	NOTE - 1				INITIAL MATERIAL	SCRAP SORT WT (kg)	NET WT (kg)	GROSS WT (kg)	DRAWING NO.	ITEM NO.
TOTAL NET WT (kg)													
DRAWN				ALTERATIONS				DATE		SIGNA- TURE		ALTERA- TION INDEX	
CHECKED													
APPROVED													
STDS. OFFICER				TRANS. COPY NO.									
DATE													
TYPE				GROUP				OLD DRG.		NEW DRG.			
TITLE				DRAWING NO.									
TUBE END COVER				4 - V - 0000 - 07575									

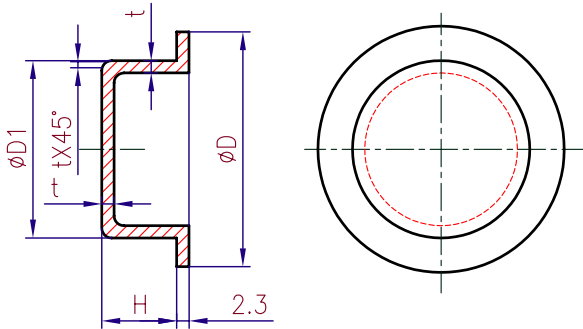


33-116

4 - V - 0000 - 07575



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

REV	DATE	ALTERED																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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NOTES:

01. MATERIAL:--POLYETHYLENE--TYPE GCA IS:3395--1965
02. COLOUR:--YELLOW

01	4-V-C764-26558	ø27	18.7 ^{+0.2} ₀	6.5	0.65	96 465 178		0.01		
SL NO.	DRAWING NO.	øD	øD1	H	t (min)	COMP.CODE		Wt (Kg)		
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No	
<div></div> <div>BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.</div>					DRN	NAME V.BAIRAVAN		SIGN	DATE 16.03.05	NO.OF VAR
					CHD	R.L.N			16.03.05	
					APPD	M.RAJAKUMAR			16.03.05	
DEPT VL			SCALE	WEIGHT (KG).		REFERENCE INFORMATIONS				NO. OF ITEMS
CODE 320			N T S	0.01		CAD REFER:C426558				
TITLE					CARD CODE U 01	DRAWING NO.				REV
END COVER						4-V-0000-26558				





365-147/B
31.08.16

BHEL - Tiruchirappalli - 620014, India

Valves Engineering and R&D

PURCHASE SPECIFICATION

DOC No: **SPEC:OF:104** Rev: **00**

Effective Date: **07/10/2016**

Page: **1** of **2**

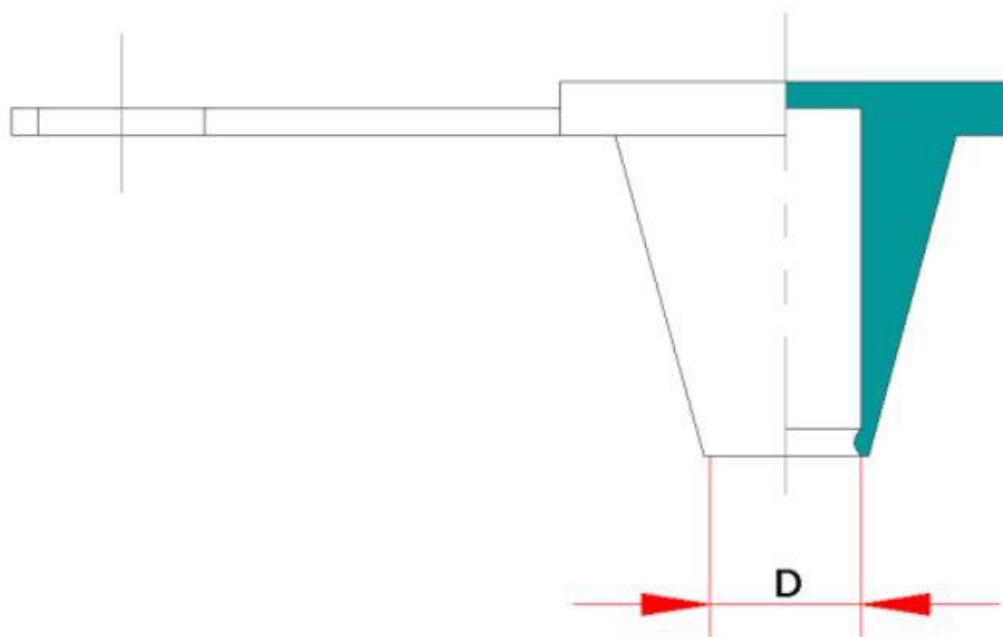
Product: Plastic End Cap for Grease Nipple M10

Revision Record:

Rev. No	Date	Details of Revision
00	07 October 2016	Original Creation

Specification - Plastic End Cap to fit on the head of Grease Nipple M10. (As per the Fig A)

Dia D shall be designed to meet the Cap shall be designed to meet the dimensional requirements of Grease Nipple as per IS 4009-2 Type A M10 x 1.



(Fig A)

Material – Low Density Polyethylene

Colour – Red

Service Condition – Suitable for Sour Service conditions in Offshore Oil Field Equipments.



365-147/B
31.08.16

BHEL - Tiruchirappalli - 620014, India

Valves Engineering and R&D

PURCHASE SPECIFICATION

DOC No: **SPEC:OF:104** Rev: **00**

Effective Date: **07/10/2016**

Page: **2** of **2**

Product: Plastic End Cap for Grease Nipple M10

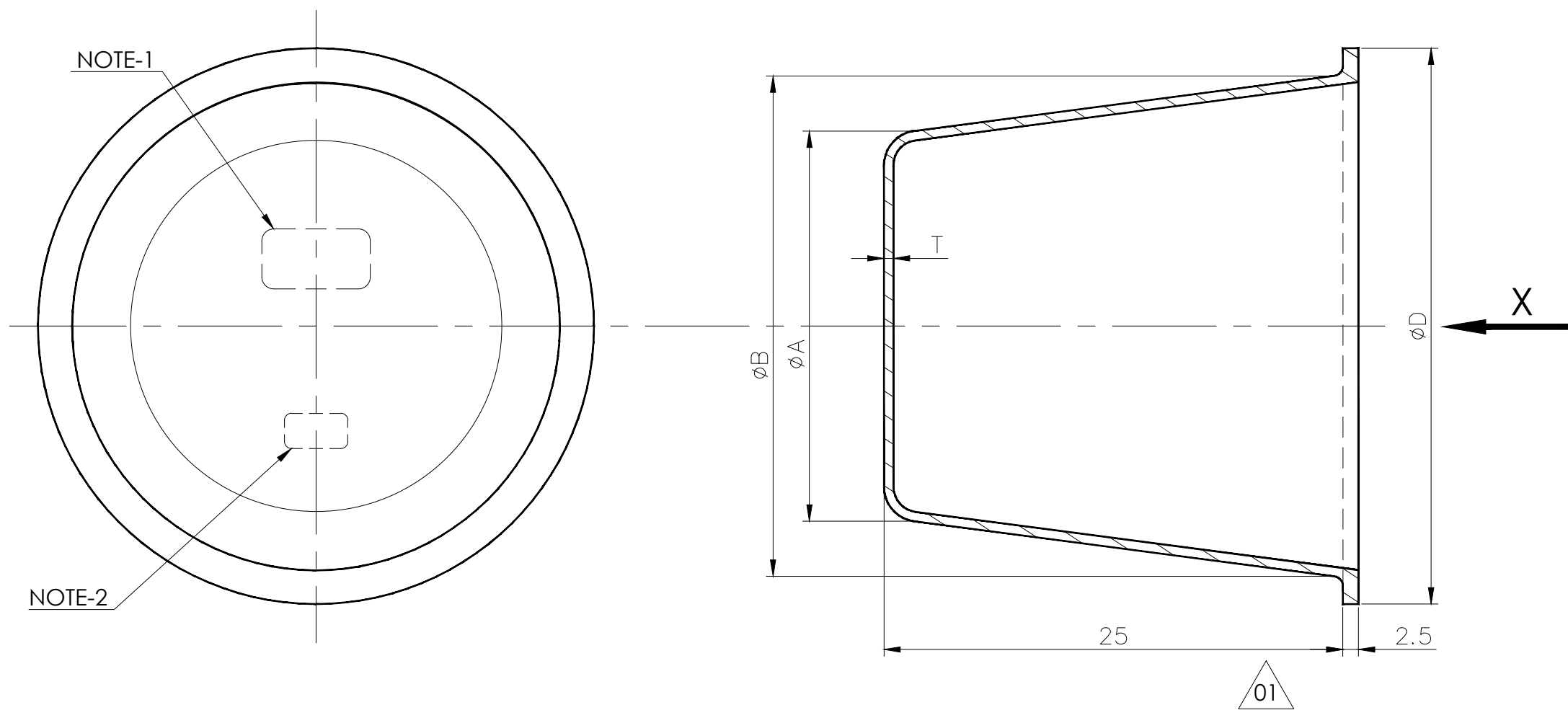
For better understanding of the requirement. 3D and usage images are shown below



Other Requirements -

- ◆ Guarantee certificate and compliance to be provided along with supply.
- ◆ Supplier to quote Part number of offered item and Detailed Technical Specification of the item.

Signature			
Name	P.Arunkumar	R.Elayaraja	C.Kathirvelu
Designation	Sr.Engineer	Manager	AGM
Date	07 October 2016	07 October 2016	07 October 2016
Action	Prepared By	Checked & Reviewed By	Approved By



NOTES:-

1. STAMP THE EMBLEM ACCORDING TO AA 040 11 21 IN THE DIRECTION 'X'.
2. STAMP THE APPROPRIATE NOM. SIZE IN THE DIRECTION 'X'.

03

3. **MATERIAL:** UREA FORMALDEHYDE CONFIRMING TO IS:3389 (OR) POLY VINYL CHLORIDE (PVC) (OR) HIGH DENSITY POLY ETHELYNE (HDPE).

4. THE TUBE END COVERS SHALL BE FLEXIBLE TO FIT SNUGLY IN TO THE TUBE AND WITHSTAND SHOCK DURING TRANSIT OF THE TUBES.

03

02

5. **COLOUR:** THE TUBE END COVERS SHALL BE OF WHITE IN COLOUR OF VIRGIN QUALITY MATERIAL.

6. THE CORNERS SHALL BE SUITABLY RADIUSED.


03

7. SPECIFICATION SHALL BE EMBOSSED ON INNER SURFACE OF THE END CAP AND NEAR TO SIZE OF THE CAPS AS FOLLOWS:
FOR SPECIFICATION:

i) UREA FORMALDEHYDE CONFIRMING TO IS:3389 ----- EMBOSSED AS "UF".

ii) POLY VINYL CHLORIDE ----- EMBOSSED AS "PVC".

iii) HIGH DENSITY POLY ETHELYNE ----- EMBOSSED AS "HDP".

REV 03	DATE 26.04.16	ALTERED : GULSHAN CHD & APPD : N.K	REV 02	DATE 01.07.93	ALTERED : G.D.N CHD & APPD : T.K	REV 01	DATE 31.03.83	ALTERED : G.D.N CHD & APPD : T.K
ZONE	NOTE NO. 3 & 5 ALTERED NOTE NO. 7 ADDED. CONVERTED TO AUTOCAD DWG.		ZONE	NOTE 5 ALTERED. LETTER REF NO. MM: MPL:BPS:0764 DATED 18.06.93 		ZONE	EMBLEM SIZE 15 WAS 25 WIDTH SIZES REINTRODUCED.	

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TYPE OF PRODUCT
OR NAME OF
CUSTOMER/PROJECT

बिप्लव
355-054

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

DRN
CHD
APPD

NAME
G.D.M
T.K
S.K

SIGNATURE

--Sd--

--Sd--

--Sd--

DATE
01.09.1982
01.09.1982
01.09.1982

DEPT 3

CODE 8

ALL DIMENSIONS
ARE IN MM

PROJECTION

SCALE

NTS	WEIGHT (Kg) REFER UNIT W
-----	-----------------------------

REF TO ASSY / OLD DWG

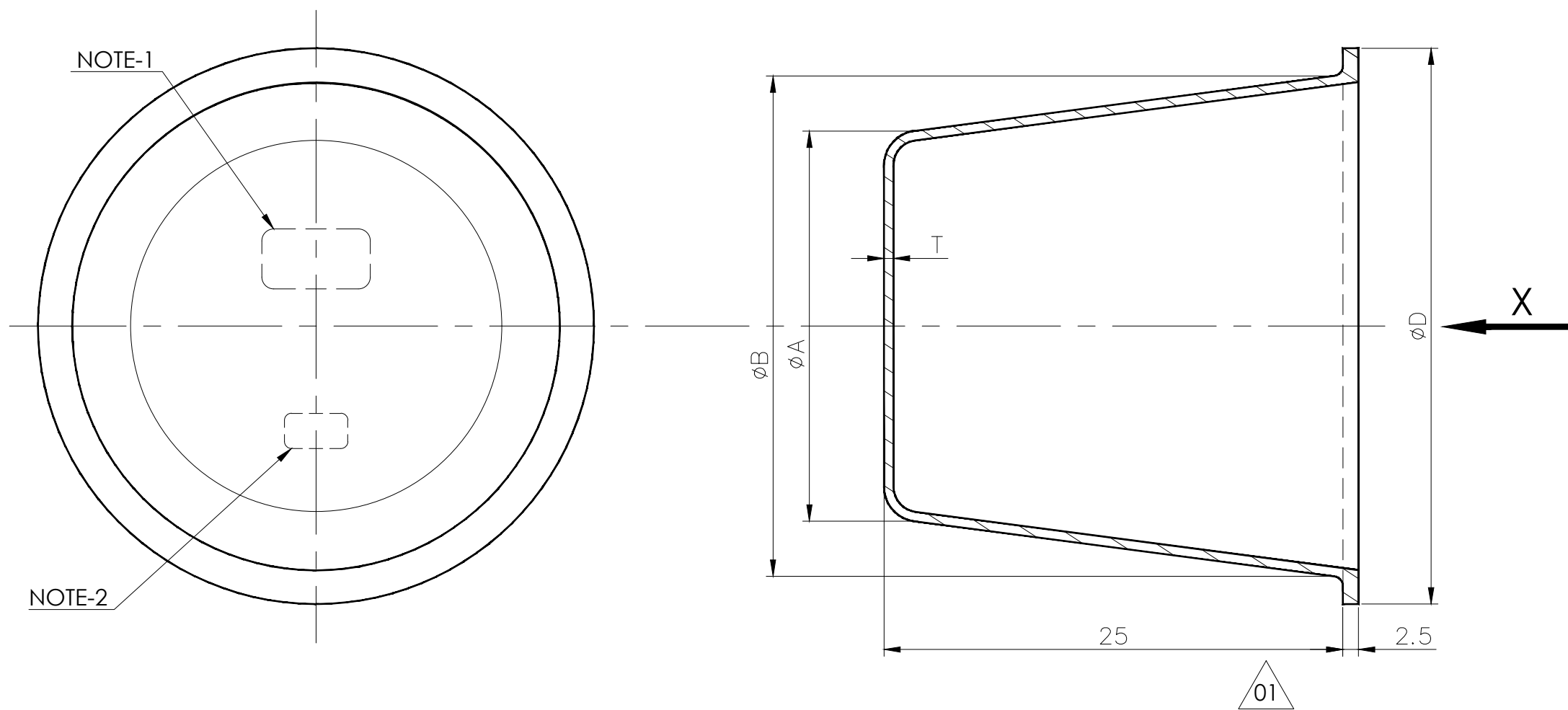
BPS 517501

TUBE END COVER
(INTERNAL TYPE)

DRAWING NO :

6119-0120

REV
03



NOTES:-

1. STAMP THE EMBLEM ACCORDING TO AA 040 11 21 IN THE DIRECTION 'X'.
2. STAMP THE APPROPRIATE NOM. SIZE IN THE DIRECTION 'X'.

03

3. **MATERIAL:** UREA FORMALDEHYDE CONFIRMING TO IS:3389 (OR) POLY VINYL CHLORIDE (PVC) (OR) HIGH DENSITY POLY ETHELYNE (HDPE).

4. THE TUBE END COVERS SHALL BE FLEXIBLE TO FIT SNUGLY IN TO THE TUBE AND WITHSTAND SHOCK DURING TRANSIT OF THE TUBES.

03

02

5. **COLOUR:** THE TUBE END COVERS SHALL BE OF WHITE IN COLOUR OF VIRGIN QUALITY MATERIAL.

6. THE CORNERS SHALL BE SUITABLY RADIUSED.


03

7. SPECIFICATION SHALL BE EMBOSSED ON INNER SURFACE OF THE END CAP AND NEAR TO SIZE OF THE CAPS AS FOLLOWS:
FOR SPECIFICATION:

i) UREA FORMALDEHYDE CONFIRMING TO IS:3389 ----- EMBOSSED AS "UF".

ii) POLY VINYL CHLORIDE ----- EMBOSSED AS "PVC".

iii) HIGH DENSITY POLY ETHELYNE ----- EMBOSSED AS "HDP".

REV 03	DATE 26.04.16	ALTERED : GULSHAN CHD & APPD : N.K	REV 02	DATE 01.07.93	ALTERED : G.D.N CHD & APPD : T.K	REV 01	DATE 31.03.83	ALTERED : G.D.N CHD & APPD : T.K
ZONE	NOTE NO. 3 & 5 ALTERED NOTE NO. 7 ADDED. CONVERTED TO AUTOCAD DWG.		ZONE	NOTE 5 ALTERED. LETTER REF NO. MM: MPL:BPS:0764 DATED 18.06.93 		ZONE	EMBLEM SIZE 15 WAS 25 WIDTH SIZES REINTRODUCED.	

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TYPE OF PRODUCT
OR NAME OF
CUSTOMER/PROJECT

बिप्लव
355-054

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

DRN
CHD
APPD

NAME
G.D.M
T.K
S.K

SIGNATURE

--Sd--

--Sd--

--Sd--

DATE
01.09.1982
01.09.1982
01.09.1982

DEPT 3

CODE 8

ALL DIMENSIONS
ARE IN MM

PROJECTION

SCALE

NTS	REFER UNIT WT.
-----	----------------

REF TO ASSY / OLD DWG

BPS 517501

DRAWING NO :

6119-0120

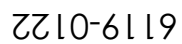
REV
03

TUBE END COVER (INTERNAL TYPE)

6

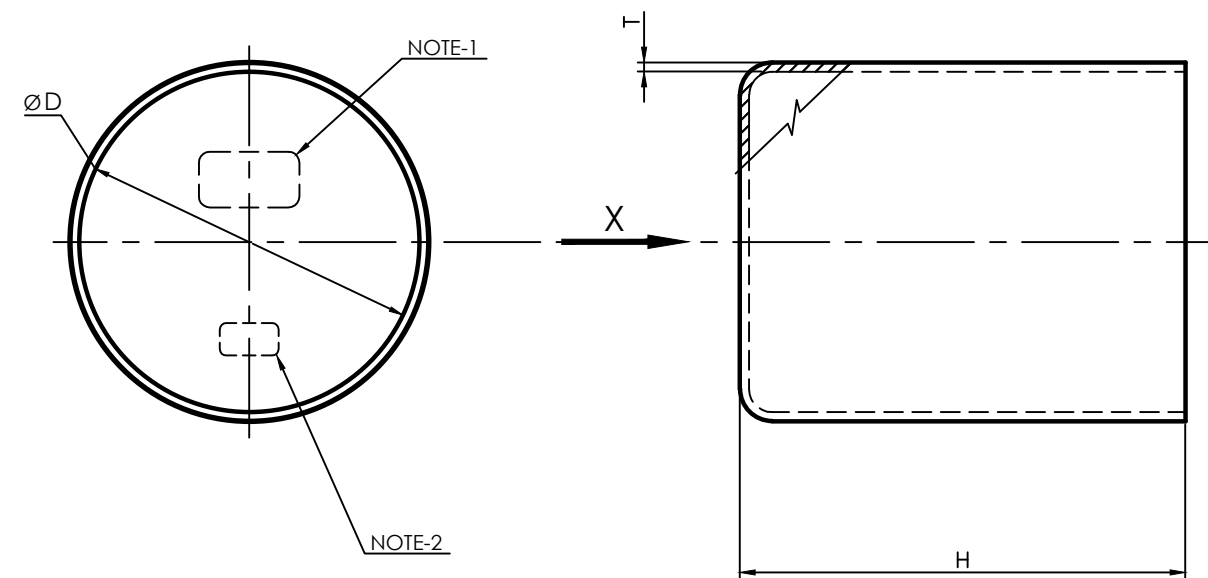
7

8



DRAWING NO:

FOR TOLERANCES OF UNTOLERANCED
DIMENSIONS DURING MANUFACTURE
REFER PLANT STD. NO TP 023 0299



NOTES:-

1. STAMP THE EMBLEM ACCORDING TO AA 0401121 IN THE DIRECTION 'X'.
2. STAMP THE APPROPRIATE NOM. SIZE IN THE DIRECTION 'X'.

05 3. **MATERIAL:** UREA FORMALDEHYDE CONFIRMING TO IS:3389 (OR) POLY VINYL CHLORIDE (PVC) (OR) HIGH DENSITY POLY ETHELYNE (HDPE).

4. THE END COVERS SHALL BE FLEXIBLE TO FIT TIGHTLY OVER THE TUBE AND WITHSTAND SHOCK DURING HANDLING AND TRANSIT OF THE TUBES.

05. **COLOUR:** THE END COVERS SHALL BE OF WHITE IN COLOUR OF VIRGIN QUALITY MATERIAL.



06 6. SPECIFICATION SHALL BE EMBOSSED ON OUTER SURFACE OF THE END CAP AND NEAR TO SIZE OF THE CAPS AS FOLLOWS:
FOR SPECIFICATION:

- i) UREA FORMALDEHYDE CONFIRMING TO IS:3389 ----- EMBOSSED AS "UF".
ii) POLY VINYL CHLORIDE ----- EMBOSSED AS "PVC".
iii) HIGH DENSITY POLY ETHELYNE ----- EMBOSSED AS "HDP".

48.3	0 -0.2	48.3	40	1	15		19	TUBE END COVER EXT FOR OD 48.3	6119 0122 39		22 074 586			0.012		B	
33.4	0 -0.2	33.4	40	1	15		18	TUBE END COVER EXT FOR OD 33.4	6119 0122 38		22 074 585			0.005			
26.7	0 -0.2	26.7	40	1	15		17	TUBE END COVER EXT FOR OD 26.7	6119 0122 37		22 074 584			0.004			
60.3	0 -0.2	60.3	40	1	15		16	TUBE END COVER EXT FOR OD 60.3	6119 0122 36		22 074 579			0.021		C	
73	0 -0.2	73	40	1	15		15	TUBE END COVER EXT FOR OD 73	6119 0122 35		22 074 581			0.031			
42.4	0 -0.2	42.4	50	1.5	15		14	TUBE END COVER EXT FOR OD 42.4	6119 0122 34		22 073 758			0.009			
88.9	0 -1.0	88.9	60	2	40		13	TUBE END COVER EXT FOR OD 88.9	6119 0122 33		22 074 583			0.054		D	
76.1	0 -0.5	76.1	60	1.5	25		12	TUBE END COVER EXT FOR OD 76.1	6119 0122 32		22 074 582			0.033			
70	0 -0.5	70	60	1.5	25		11	TUBE END COVER EXT FOR OD 70	6119 0122 31		22 074 581			0.031			
63.5	0 -0.5	63.5	50	1.5	25		10	TUBE END COVER EXT FOR OD 63.5	6119 0122 30		22 074 580			0.021		E	
57	0 -0.5	57	50	1.5	25		09	TUBE END COVER EXT FOR OD 57	6119 0122 29		22 074 578			0.019			
54	0 -0.5	54	50	1.5	25		08	TUBE END COVER EXT FOR OD 54	6119 0122 28		22 074 577			0.017			
51	0 -0.5	51	50	1.5	25		07	TUBE END COVER EXT FOR OD 51	6119 0122 27		22 074 576			0.015		F	
47.63	0 -0.5	47.63	50	1.5	15		06	TUBE END COVER EXT FOR OD 47.63	6119 0122 26		22 074 575			0.012			
44.5	0 -0.2	44.5	50	1.5	15		05	TUBE END COVER EXT FOR OD 44.5	6119 0122 25		22 074 574			0.010			
38	0 -0.2	38	50	1.5	15		04	TUBE END COVER EXT FOR OD 38	6119 0122 24		22 074 573			0.008		G	
31.8	0 -0.2	31.8	40	1	15		03	TUBE END COVER EXT FOR OD 31.8	6119 0122 23		22 074 572			0.005			
21.3	0 -0.2	21.3	40	1	15		02	TUBE END COVER EXT FOR OD 21.3	6119 0122 22		22 074 571			0.004			
14	0 -0.2	14	30	1	15		01	TUBE END COVER EXT FOR OD 14	6119 0122 21		22 074 570			0.002		H	
BASIC	TOL	PIPE	H	T	EMBLEM	VARIANT	ITEM	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT	GS	ZONE
NOMINAL	SIZE D	OD			SIZE	NUMBER	NUMBER				VAR NO	MATERIAL SPECN	DI	QUANTITY			

REV 05	DATE 18.03.16	ALTERED : GULSHAN CHD & APPD : N.K	REV 04	DATE 11.03.98	ALTERED : V.R CHD & APPD : K.R.S	REV 03	DATE 01.07.93	ALTERED : G.D.N CHD & APPD : T.K	REV 02	DATE 02.05.91	ALTERED : N.K CHD & APPD : G.R	REV 01	DATE 23.03.87	ALTERED : G.D.N CHD & APPD : T.K
ZONE	NOTE NO. 3 & 5 ALTERED COVERED TO AUTOCAD DWG.		ZONE	EMBLEM LOCATION ALTERED IN THE DWG.		ZONE	NOTE NO. 5 ALTERED LETTER REFERENCE NO. MM:MPL BPS:0764 DATED 18.06.93		ZONE	VARIANT NO. 14 ADDED		ZONE	DESCRIPTION CHANGED	

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

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
		Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014			DRN G.D.N	SIGNATURE --Sd--	DATE 01.09.1982		
355-054					CHD T.K	--Sd--	01.09.1982		
					APPD S.K	--Sd--	01.09.1982		
DEPT SS	ALL DIMENSIONS ARE IN MM		SCALE NTS	WEIGHT (kg)	REF TO ASSY / OLD DWG				
CODE 850				REFER UNIT WT.	BPS 517503				
TITLE TUBE END COVER (EXTERNAL TYPE)					DRAWING NO : 6119-0122		REV 08		



BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

Trichy - 620 014. India

CONFIRMATION TO TERMS AND CONDITIONS

Enquiry Reference: **RCNECV2354**

<u>TERMS & CONDITION</u>	<u>VENDOR CONFIRMATION</u>
a. Vendor Quotation Ref No and Date	
b. Pre-Qualification Requirement Vendor to furnish records of previous supplies of same or similar category items to any Central / State Govt Organization / PSU / Public Listed Company.	
c. Rate Contract: This is an enquiry for the finalization of a Rate Contract (RC) for a period as mentioned in 'Validity of offer' below The quantities mentioned in the enquiry are indicative for the entire RC period. Purchase Orders will NOT be issued for the entire quantum in one lot, whereas POs will be released on a time to time basis during the RC period, based on actual requirement.	
d. Vendor should give confirmation to BHEL's Technical Specification. To fulfil this criteria vendor shall submit the specification duly sealed and signed. Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation" .	
e. The offer has to be submitted as a Two-part bid (Techno-commercial & Price bid)	
f. The tender will be finalized on item wise basis	
g. Terms of Payment: <u>Indigenous Supplier (Non-MSE):</u> 100% direct EFT Payment after 60 days from the date of receipt and acceptance of materials at BHEL stores / against site acknowledgement. <u>Indigenous Supplier (MSE):</u> Payment will be as per MSMED Act, 2006. (Udyam Registration Certificate to be enclosed along with the offer)	
h. Liquidated Damage: Liquidated damages shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.	
i. Delivery Terms: Prices shall be quoted on "FIRM PRICE" basis only. <u>For Indigenous Supplies:</u> FOR BHEL Trichy	
j. Validity of Offer: Prices should be valid for 9 months from the date of finalisation of the rate contract or 12 months from the date of part-1 bid opening , whichever is earlier.	



BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

Trichy - 620 014. India

CONFIRMATION TO TERMS AND CONDITIONS

Enquiry Reference: **RCNECV2354**

<u>TERMS & CONDITION</u>	<u>VENDOR CONFIRMATION</u>
k. Delivery period: Delivery period should be 6 weeks from the date of purchase order. If supplier offers more than the required delivery period BHEL will operate 0.5% loading factor for evaluation of their offer for every week delay subject to a maximum of 2% . Any other delivery period after loading to maximum will be rejected.	
l. Risk Purchase: Risk purchase penalties as per clause 5 of general terms and conditions is applicable for this enquiry. Non acceptance to risk purchase clause the offer is liable for rejection.	
m. Guarantee Clause: The vendor shall give a guarantee for the performance of his supplies for a period of eighteen months from the date of dispatch or twelve months from the date of commissioning whichever is earlier. Any warranty replacement during warranty period shall be supplied free of charge on FOR Site basis/destination specified by BHEL	
n. Performance Bank Guarantee: Performance Bank Guarantee is not applicable for this enquiry	
o. Counter-offering Counter-offering is not applicable for this enquiry	
p. Integrity Pact Integrity pact is not applicable for this enquiry	



BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

Trichy - 620 014, India

GENERAL TERMS AND CONDITIONS

Enquiry Reference: **RCNECV2354**

1. QUOTATIONS:

- a. **BID system:** The no. of bids to be submitted is mentioned in "Confirmation to the Terms and Conditions" attached.
 - i. **Two part bid:** The offers are invited in Two part bid system (Part I will be Techno-commercial bid and part II will be Price Bid). Techno-commercially suitable vendors alone will be intimated for price bid opening.
- b. **Submission of offer:**
 - i. **Offer called through e-Procurement mode:** The bidder shall submit the bid online in BHEL e-Procurement portal at <https://eprocurebhel.co.in/>

The bidder would be required to register on the above e-procurement portal for submitting their bids. Offers through email and hardcopy are not acceptable.

- c. **Regulations:** Offers should be free from correction and erasures. Corrections if any must be attested. All amounts shall be indicated both in words as well as figures. In case of a difference between the amount quoted in words and figures, the amount quoted in words shall prevail.
- d. **PVC:** Price Variation clause not acceptable. Prices should be firm.
- e. **Catalogue:** Manufacturer's name, Trade Mark or Patent No. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation.
- f. **Samples:** Samples should be submitted separately, if specially requested in tender, before the due date of the enquiry. They should be clearly marked with the enquiry reference and date on the enclosing cover to facilitate identification.
- g. **GST Number:** GST registration number, HSN number (Item wise) with applicable taxes should be mentioned in the offer. If the vendor is not GST registered the offer is liable for rejection.
- h. **Deviation.** Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation, vendor should indicate "No Deviation" in the offer.
- i. **Confirmation:** Confirmation for compliance is to be given in the offer for all the techno commercial conditions specified in the tender.

2. COMMERCIAL TERMS & CONDITIONS:

a. Terms of Payment:

For Indigenous Suppliers:

If the materials are receivable at BHEL Stores, Trichy:

Payment term is 100% direct Payment after 60 days from the date of receipt and acceptance of materials. (if PBG is not applicable)

(or)

Payment term is 100% direct payment after 60 days from the date of receipt and acceptance of materials and against 10% PBG valid for the warranty period. (if PBG is applicable)

If the materials are receivable at site:

Payment term is 100% direct payment after 60 days from the date of dispatch against site acknowledgement (if PBG is applicable)

(or)

Payment term is 100% direct payment after 60 days from the date of dispatch against site acknowledgement and against 10% PBG valid for the warranty period (if PBG is applicable)

Any deviation in the above payment terms, any other conditions in payment terms or any other payment terms will not be accepted and offers will not be considered.

For New Suppliers: For new suppliers not registered with BHEL, Trichy for the product, payment shall be made 60 days after receipt and acceptance of materials.

- b. **Liquidated Damage:** Liquidated damages shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.



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- c. Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value)

Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers. Hence applicable GST shall also be recoverable from suppliers on LD amount. Debit note will be issued by BHEL for this amount, indicating the respective supply invoice number.

d. Delivery Terms:

For Indigenous Suppliers: FOR BHEL Trichy inclusive of freight and insurance

For Foreign Suppliers: CFR/CIF Chennai seaport as per Incoterms 2010.

- e. **Validity of Offer:** Prices should be fixed and should be valid for period as mentioned in the "Confirmation to the Terms and Conditions" attached.
- f. **Delivery period:** Delivery schedule will be as mentioned in the "Confirmation to the Terms and Conditions" attached.
- g. **Guarantee period:** The vendor shall give a guarantee for the performance of his supplies for a period of **eighteen months** from the date of dispatch or **twelve months** from the date of commissioning whichever is earlier.
- h. **Miscellaneous:** Any conditions which might have been quoted by the seller and are in contravention to the terms of PO and which have not been specifically accepted by Purchaser will not be applicable to the contract/PO.
- i. **Performance Bank Guarantee:** If tender calls for Performance Bank Guarantee, vendor should provide a performance bank guarantee (PBG) in BHEL format for 10% of the total Purchase order value valid for warranty/guarantee period with an additional claim period of 2 months. PBG should be issued from list of consortium banks.

3. COMPLIANCE / ACCEPTANCE REQUIRED FOR FOLLOWING POINTS TO ENSURE INPUT TAX CREDIT

- a. Response to Tenders for Indigenous supplier/Vendor will be entertained only if the vendor has a valid GST registration No (GSTIN) which should be clearly mentioned in the offer. If the Vendor is exempted from GST registration, a declaration with due supporting documents need to be furnished for considering the offer. Vendor under composition scheme should declare that he is a composition Vendor supported by the screen shot taken from GST portal. The dealer has to submit necessary documents if there is any change in status under GST.
- b. Supplier shall mention their GSTIN in all their invoices (incl. credit Notes, Debit Notes) and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No. which is linked/uploaded in GSTN network shall be clearly indicated), Billed to party (with GSTIN) & Shipped to party details, item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, Place of Supply etc.
- c. Invoices will be processed only upon completion of statutory requirement and further subject to following:
- Vendor declaring such invoice in Form GST ANX-1
 - Receipt of Goods or Services and Tax invoice by BHEL
- d. All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).
- e. As the continuous uploading of tax invoices in GSTN portal (in GST ANX-1) is available for all (i.e. both Small & Large) tax payers under proposed new GST Return System, all invoice raised on BHEL may be uploaded immediately in GST portal on despatch of material /rendering of services. The supplier shall ensure availability of Invoice in GST portal before submission of invoice to BHEL. Invoices will be admitted by BHEL only if the invoices are available in GSTN portal (in BHEL's GST ANX-2).
- f. A declaration to the effect that all invoice particulars are/were uploaded in the GSTN network/ portal & all tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If not mentioned in the invoice, a separate declaration shall be submitted as per the requirement of BHEL.
- g. All documents like Test Certificate, LR copy, any other document mentioned in PO, shall be sent along with the vehicle/consignment. For all consignments received within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle. In case of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the material, in such case availing of tax credit will be deferred to next month or so.
- h. In case of discrepancy in the data uploaded by the supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify



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the data discrepancy in the GSTN portal or issue credit note or debit note (details also to be uploaded in GSTN portal) for the shortages or rejections in the supplies or additional claims, within the calendar month informed by BHEL.

- i. In cases where invoice details have been uploaded by the vendor but failed to remit the GST amount to GST Department (Form PMT-08 or Form GST RET-01 to be submitted) within stipulated time, then GST paid on the invoices pertaining to the month for which GST return not filed by the vendor will be recovered from the vendor along with the applicable interest (currently 24% p.a) and all subsequent bills of the vendor will not be processed till filing of the GST return by the vendor.
- j. Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contractors. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this, debit note will be issued by BHEL indicating the respective supply invoice number.
- k. In case any changes in taxes and duties as per Gov. Notification (including GST), the same shall be applicable from time to time.
- l. Duplicate copy of the Invoice meant for the transporter should accompany the material as stipulated under CE Rules 52A and 172C OR 57CE.
- m. TDS on GST shall be applicable as per the GST Act.
- n. In case GST credit is denied to BHEL due to non-receipt or delayed receipt of goods and/ or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount claimed in the invoice shall be disallowed to the vendor.
- o. Where any GST liability arising on BHEL under Reverse Charge (RCM), the vendor has to submit the invoices to BHEL well within the timeline prescribed in GST Law, to enable BHEL to discharge the GST liability. If there is a delay in submission of invoice by the vendor resulting in delayed payment of GST by BHEL along with Interest, then such Interest payable or paid shall be recovered from the vendor.
- p. GST TDS will be deducted as per Section 51 of CGST Act 2017 and in line with Notification 50/2018 – Central Tax dated 13.09.2018. GST TDS certificate which will be generated in GST portal subsequent to vendor accepting the TDS deduction in the GST portal, will be issued to the vendor.

4. SPECIAL PROVISIONS FOR MICRO AND SMALL ENTERPRISES (MSE):

- a. 25% of the tendered quantity is earmarked for MSE suppliers in this tender.
- b. If L1 vendor (or) Counter offer accepted vendor/s is from a Micro / Small enterprise which put together covers 25% of the total tendered quantum, the 25% earmarking provision is not applicable.
- c. Out of the 25% tendered quantity reserved for MSE suppliers, 6.25% shall be earmarked for procurement from MSE owned by SC / ST entrepreneurs. In the event of failure of such Micro and Small enterprises to participate in the tender process or meet the tender requirements and the L1 price, the 6.25% sub-target for procurement ear-marked MSE owned by SC / ST entrepreneurs shall be met with other MSE enterprise/s.
- d. 3% reservation for women owned MSEs within the above mentioned 25% reservation. In the event of failure of such Micro and Small enterprises to participate in the tender process or meet the tender requirements and the L1 price, the 3% sub-target for procurement ear-marked MSE owned by women entrepreneurs shall be met with other MSE enterprise/s. The definition for MSEs owned by Women Entrepreneurs is clarified as:
 - i. In case of proprietary MSE, proprietor shall be woman.
 - ii. In case of partnership MSE, the women partners shall be holding at least 51% share in the unit.
 - iii. In case of private limited companies, at least 51% share shall be held by the women promoters.
- e. In case MSE vendor participating in the tender quotes within the price band of L1 +15%, they will be allowed to supply the portion of the requirement subject to acceptance of L1 price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately, provided the available quantum can be split.
- f. In a tender where both MSE and Non-MSE Vendors have participated and non-MSE Vendor has become the lowest bidder and the quantum envisaged in the tender cannot be split, then the MSE vendor will be given preference for ordering the available quantum provided the MSE vendor quoted price is within L1 + 15%, and if the MSE vendor accepts the L1 rate.
- g. MSE suppliers can avail the intended benefits only if,
The vendor submits along with offer, a copy of the Udhog Aadhar and a certificate, as per the format in Annexure-A, issued by a chartered accountant during the financial year of the date of part-1 bid opening, certifying that the quantum of investment in plant and machinery is within the permissible limit as per the act for relevant status (Micro or small).

(or)



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The vendor submits along with offer, a copy of the Udyam Registration Certificate.

(or)

The vendor has already submitted the above documents for the financial year of the date of part-1 bid opening and the MSE status has been updated in BHEL Trichy's records.

Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.

h. Definitions of MSEs owned by SC/ST is under:

- i. In case of proprietorship firm, proprietor must be SC/ST.
- ii. In case of partnership firm, the SC/ST partners must be holding at least 51% shares in the unit.
- iii. In case of private limited companies, at least 51% share must be held by SC/ST promoters.
- iv. The caste/Tribe/Community certificate issued by the following authorities in the prescribed form for SCs/STs can be considered.

i. Authorized to Issue SC/ST certificate:

- i. District Magistrate/Additional District Magistrate/Collector/Deputy commissioner/Additional Deputy Commissioner/Deputy collector/1st class stipendiary magistrate/Sub divisional Magistrate/Taluka Magistrate/Executive magistrate/Extra Assistant commissioner.
- ii. Chief Presidency magistrate/Additional chief presidency magistrate/Presidency magistrate.
- iii. Revenue Officer not below the rank of tehsildar.
- iv. Sub-Divisional officer of the area where the individual and / or his family normally resides.

j. To avail the benefits of MSE under SC/ST category, the related documents as stated above should be submitted along with tender documents.

k. Payment for MSE vendors will be as per MSMED Act, 2006.

5. RISK PURCHASE PENALTIES

- a. In case of delay in delivery beyond PO delivery /mutually agreed delivery, or vendor fails /refuses to complete the PO as per terms, or insufficient facilities at vendor's works to execute a PO, BHEL has the right to get the items ordered elsewhere at the risk and cost of the vendor with notice to the vendor and the additional expenditure / difference in cost, if any, including consequential cost shall be recovered from the defaulted vendor. Also, in such case of withdrawal of orders, BHEL shall recover the additional expenditure / difference from vendor by adjusting against amount due to vendor and/or by invoking the BG and/or by any other suitable means as decided by BHEL. In addition, BHEL may recover from the defaulter vendor any loss to BHEL arising due to withdrawal of orders in such case, and action shall be taken as per latest revision of BHEL Guidelines for Suspension of Business dealings with Suppliers / Contractors.
- b. BHEL has the right to divert/cancel the order if the vendor has not procured minimum 50% of the quantity of raw materials within 60 days from PO date. Purchase order placed on steel mills and with proper payment voucher/proof will be considered for not cancelling the PO by BHEL. The submission of data by vendor for DB clearance by BHEL/QC shall be the proof of procurement. This is to avoid delay in project schedule due to delay in raw material procurement by vendors. In case the vendor fails to procure at least 50% of the quantity of raw materials within 60 days from PO date, BHEL has the right to get the items ordered elsewhere at the risk and cost of the defaulting Vendor and the additional expenditure / difference in cost, if any, including consequential cost shall be recovered from the defaulting Vendor and action shall be taken as per latest revision of BHEL Guidelines for Suspension of Business dealings with Suppliers / Contractors and SEARP.
- c. The defaulted vendor shall be liable for any loss, which BHEL may sustain by reason of such risk purchases in addition to liquidated damages as mentioned under LD clause.
- d. Vendors pending payments shall be withheld to cover the liabilities of BHEL towards risk purchase, if any.
- e. Reasons like power cut, labour issues, machine break down, etc. which are controllable by the sub-contractor shall not be accepted as reason for delay for delivery extension purposes.
- f. If PO delivery needs to be extended for reason attributable to BHEL, vendor may request BHEL in writing for delivery extension with justifications within 15 days from date of PO closure and before invoice.
- g. Process of calculating the risk and cost amount is as follows:

$$\text{Risk \& Cost Amount} = [(A-B) + (A \times H/100)]$$

Where,

A= Value of Balance scope of Work/ Supply (*) as per rates of new contract



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B= Value of Balance scope of Work/ Supply (*) as per rates of old contract being paid to the contractor/ supplier at the time of termination of contract i.e. inclusive of PVC & ORC, if any.

H = Overhead Factor to be taken as 5

In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).

*(Balance scope of work/ supply)

Difference of Contract Quantities and Executed Quantities as on the date of issue of Letter for 'Termination of Contract', shall be taken as balance scope of Work/ Supply for calculating risk & cost amount. Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract Quantities. Items for which total quantities to be executed have exceeded the Contract Quantities based on drawings issued to contractor from time to time till issue of Termination letter, then for these items total Quantities as per issued drawings would be deemed to be contract quantities. Substitute/ extra items whose rates have already been approved would form part of contract quantities for this purpose. Substitute/ extra items which have been executed but rates have not been approved, would also form part of contract quantities for this purpose and rates of such items shall be determined in line with contractual provisions. In-case portion of work is being withdrawn, contract quantities pertaining to portion of work withdrawn shall be considered as 'Balance scope of work/supply' for calculating Risk & Cost amount.

- h. Vendors are cautioned that, withdrawal after price bid opening or after contract signing or PO/LOI acceptance will be construed as tampering with BHEL's tender process. Suitable action for suspension of further business with the vendor may be taken as per BHEL corporate procedures.
- i. Abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' has now been uploaded on www.bhel.com on "supplier registration page" at the following link: http://www.bhel.com/vender_registration/vender.php (Guidelines for suspension of business dealings with suppliers/ contractors).

6. GENERAL CONDITIONS

- a. The manner of finalization will be as mentioned in the "Confirmation to the Terms and Conditions" attached. Separate orders will be released for each project and documents should be supplied for each order separately.
- b. BHEL reserves the right to reduce the tender quantity and to NOT to order for some or all material based on the changes in project.
- c. BHEL shall have the right to visit vendor works during the execution of contract along with end customer for verifying status, inspection and testing of the material.
- d. BHEL reserves the right to negotiate or re-float the tender in case the quoted prices are not acceptable.
- e. Supplier shall arrange packing to avoid lose or damages during Road Transport, Site handling & Storage.
- f. BHEL reserves the right to reject the offer of a particular bidder due to unsatisfactory past performance in the execution of a contract at any of BHEL projects / units.
- g. The Drawings and Technical documents given in this enquiry are the sole property of BHEL. This should not be misused in any form.
- h. Purchase Order, PO Item serial number, Material code, Quantity should be clearly marked on the packing
- i. Confirmation for compliance is to be given in the offer for all the conditions specified above and to the respective Purchase Specification.
- j. The bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL fraud prevention policy (refer www.bhel.com) and shall immediately bring to the notice of the BHEL management about any fraud or suspected fraud as soon as it comes to their notice.
- k. For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT. In the event of any Nodal Ministry prescribing higher or lower percentage of preference and/or local content in respect of this procurement, the same shall be applicable.

7. DOCUMENTATION:

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- a. **With Consignment:** Duplicate for transporter copy, Original Invoice, Packing List, Delivery Challan, O&M manual (if applicable) Material Test Certificate, Test Certificates, Compliance Certificate, Guarantee/Warranty Certificate and other documents mentioned in PO/TDC/Drawing.
- b. **To Purchase:**
 - i. **FOR BHEL TRICHY case-** Original Invoice, Duplicate for transporter copy, Packing list, LWB and Delivery challan, GST declaration as mentioned in point 3c.
 - ii. **FOR Site case-** Original Invoice, Original LWB, Original Packing List, Original IBR documents, Original despatch clearance Certificate and Inspection report, Test certificates as per PO, Original Site Acknowledgment etc.
- c. **Identification:** Material code, Purchase Order, PO item serial number, Unique serial number if any should be provided in all despatch documents, materials and packing clearly.

8. TENDER EVALUATION:

- a. **Techno-commercial Bid.**
 - i. All vendors should submit General arrangement drawing, datasheet and C&I diagram (if any) of the offered product
 - ii. Point by point technical confirmation of all pages of our technical specifications and commercial conditions are required with your sign and seal along with techno commercial offer.
 - iii. Offers from supplier not having technical capability or not agreed for commercial terms, will be rejected.
- b. **Price Bid.**
 - i. Bidders qualified for part I will be intimated for participating in priced bid opening.
 - ii. L1 bidder will be decided based on landed cost for the equipment to BHEL.

Indigenous Vendors

Total Landed cost/rate for each item = FOR Rate in INR (A) + Applicable Taxes (B) + Loading non-acceptance of commercial terms (C) – Applicable input tax credit (D)

A - Indigenous vendors submit offers on Free on Road (FOR), Stores, HPBP BHEL Trichy in INR.

B - Applicable GST and any other charges quoted by indigenous vendors will be added to the base price.

C - Loading for non-acceptance of payment terms, delivery schedule & liquidated damages (LD) will be added to the F.O.R. value for arriving the landed rate.

D - However, input tax credit shall be availed for GST, hence the same is excluded for arriving at the landed cost.

Foreign Vendors

Total Landed cost = CFR Rate in INR (A) + Applicable Duties (B) + Incidental Charges (C) + Loading for Container Shipment (D) + Loading for non-acceptance of commercial terms (E)

A - Foreign vendors to submit offers on CFR (Cost & Freight), Chennai port (LIFO – Liner In; Liner Out) basis per item wise in foreign currency, which will be converted to INR by multiplying with the Exchange rate (SBI TT Selling rate) as on the technical bid opening date. If the date of opening happens to be a bank holiday, then the forex rate as on previous bank (SBI) working day shall be taken.

B - Customs duty, Safe guard duty (as per the notification No 02/2014-Customs (SG) dated 13th August 2014) and antidumping duty (as per the notification No 18/2016-Customs (ADD) dated 17.05.2016) as if applicable will be added to the INR price.

C - Incidental charges will be added to the CFR Value. The incidental charge is inclusive of port handling charges, & freight charges for movement from Chennai port to BHEL, Trichy.

D - In case of shipment through containers, if 14 free days for Container detention is not provided in the offer, a loading of 22% on the freight rate per MT shall be considered by BHEL for arriving at the Total Landed Cost.

E - Loading for non-acceptance of payment terms, delivery schedule & Liquidated Damages (LD) will be added to the CFR value for arriving at the landed cost.

- iii. In case of tie for the L1 positions,
 - a. In the course of evaluation, if more than one bidder happens to occupy L1 status, effective L1 will be decided by soliciting discounts from respective L1 bidders.
 - b. In case more than one bidder happens to occupy the L1 status even after soliciting discounts, the L1 bidder shall be decided by a toss/draw of lots, in the presence of the respective L1 bidders(s) or their representative(s).
 - c. Ranking will be done accordingly, BHEL's decision in such situation shall be final and binding.



Maharatna Company

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Note:

All clarifications / issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are provided below

(1)

S Suresh

Deputy Manager

Valves Purchase

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(2)

Ajay Kumar Gupta

AGM

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Declaration

In line with Government Public Procurement Order No. P-45021/2/2017-PP (BE-II) dated 28.05.2018, we hereby certify that we, (supplier name) are local supplier meeting requirement of minimum local content (---%) defined in as above orders for the following Enquiry SI Nos of BHEL Enquiry No **RCNECV2354**

- Mention Enquiry SI Nos –

Details of location at which local value addition will be made is as follows:

.....

.....

By issuing this declaration, we understand and are in acceptance to the following-

- False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.
- In case of debarment by any procuring entity for violation of the provisions of the Public Procurement (Preference to Make in India), Order 2017 we shall not be eligible for preference for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities, the debarment takes effect prospectively from the date of uploading on the website(s) of The Department of Expenditure, GOI in such a manner that ongoing procurements are not disrupted.
- We undertake the onus of responsibility of submission of appropriately certified documents. We understand that BHEL is not at liability to verify the contents and will not be responsible for the declaration made by us. However, in case BHEL has any reason to doubt the authenticity of the local content, BHEL reserves the right to obtain the complete back up calculations before award of contract and we are liable to submit the same if requested by BHEL. We also understand that our bid is liable for rejection in case we fail to submit the details as requested by BHEL.