

 BHEL GOINDWAL	SPECIAL TERMS AND CONDITIONS FOR (Tender Enquiry No. 1819-171E Dated 29.03.2019 Due date 10.04.2019) ITEM: Forgings
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THIS TENDER IS THROUGH E-PROCUREMENT MODE.

Online bids in two parts are invited for the Procurement of Forgings. The relevant documents can be downloaded from <https://bhel.abcprocure.com>.

These special terms and Conditions and GCC collectively are the part of tender terms and conditions.

PROCEDURE FOR DOWNLOADING DOCUMENTS IS EXPLAINED IN GENERAL CONTRACT CONDITIONS

Tender Enquiry No	1819-171E
Enquiry date	29.03.2019
Last time and date of tender submission	15:00 Hrs 10.04.2019
Tender opening time and date	15:30 Hrs 10.04.2019
Quotation Parts	<u>Two-part Bid</u>
Item Description	Forgings
Delivery schedule (In days)	<u>90 Days</u>
Validity of offer (In days)	<u>60 Days</u>
Quantity Variation	+/- 10% of tender quantity
Documents required along with supply of material	Applicable
1. Test Certificate	<u>Required</u>
2. Compliance Certificate	<u>Required</u>

Pre-qualification Criteria

Bidders should primarily be engaged in manufacturing of “Forgings”. BHEL may carry out evaluation of bidder’s capability. BHEL reserves the right to accept / reject any offer based on evaluation of bidder’s capability. For verification of data presented for pre-qualification bid, BHEL may decide to visit the bidder(s) works. Any fact found deviating from bids during evaluation shall make the bidder liable to be dis-qualified.

“Supplier should have successfully supplied forgings material against any customer purchase order/s (for supply of forgings) with minimum cumulative order value of Rs. 15,00,000 (Fifteen Lakh Only). Relevant purchase orders along with tax invoice shall be enclosed as a proof. Purchase Order/s date should be 01.03.2016 or afterwards”.

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Item covered in this tender

Sr. No.	Material Code	Description	Quantity (in nos.)	DRG No/Rev No	TDC No/Rev No
1	922037730000	DISC-10"-C300-RV-F316-U939	2	4VU93926836P/00	TDC:6:399/01
2	922037010000	DISC-SV-8-C300-F316-U932	5	4VU93226070P/00	TDC:6:399/01
3	922035270000	DISK-P639	5	4VP63927343P/00	TDC:0:404/19
4	922031860000	DISC NUT	10	4VNH6027056P/00	TDC:0:404/19
5	922020810000	DISK-P560	100	4VP56026955P/02	TDC:0:404/19
6	922019070000	DISC-10"-C300-RV-F316	10	4VP54526836P/00	TDC:0:404/19
7	922009310000	DISC-SR-8-C300-RV-F316-P338	10	4VP33826070P/02	TDC:0:404/19
8	921532420000	BONNET_SA105_65_1500-G057	50	3VG05721652P/00	TDC:0:404/19
9	921524530000	GL FLANGE_R065_197X117X35	50	3VR06521378F/01	TDC:0:417/00
10	921524480000	GL FLANGE_R001_177X92X29	200	3VR00121378F/01	TDC:0:417/00
11	921524420000	GL FLANGE_G045_182X95X31	200	3VG04521378F/01	TDC:0:417/00
12	921524360000	GL FLANGE_G001_212X114X35	100	3VG00121378F/01	TDC:0:417/00
13	920377780000	BLANK (GEAR)-IS 1875 CL4	1200	42000100812/06	-
14	920337310000	RAMP CAM - BS970 817M40 (EN24)	1500	42000102331/01	-
15	920332420000	VALVE STEM FORGING-SA182 F6A C	1500	42000102464/03	TDC:0:404/19
16	920170750000	GL. FLANGE-10-C150-GV-A105-137	500	3V137503038F/03	TDC:0:404/19
17	920170740000	GL. FLANGE-6-C150-GV-A105-1373	2000	3V137303038F/03	TDC:0:404/19
18	920170730000	GL FLANGE-A105-1372	2000	3V137203038F/03	TDC:0:404/19
19	920170720000	GL FLANGE-A105-1370	2000	3V137003038F/03	TDC:0:404/19
20	922032490000	SPLIT RING-AISI4140-3316	13	3V331624947P/00	TDC:0:417/00
21	922018750000	SEAT RING-F91-3316	30	3V331624490P/00	TDC:0:404/19

Loading cum Counter offer clause:

The counter offer clause is applicable for item sl no. 05,13,14,15,17,18,19 as mentioned in above table.

1. Tender quantity shall be divided in the proportion 60:15:25 (60% for L1, 15% for L2 and 25% for MSE's) in case the L1 vendor is not a MSE subject to following conditions:

- I. L2 acceptance of L1 rates.
- II. In tender, participating Micro and Small Enterprises quoting price within price band of L1+15 per cent shall also be offered 25% quantity of tender quantity at L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise. In case of more than one such Micro and Small Enterprise, the



BHEL GOINDWAL

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(Tender Enquiry No. 1819-171E Dated 29.03.2019 Due date 10.04.2019)

ITEM: Forgings

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supply shall be shared equally. If there are more than one MSE in the price band of L1+ 15% to whom the offer has been sent and some of them reject the offer, then the remaining quantity shall be distributed equally to the MSEs accepting L1 prices.

- III. 25% from the 25% quantity (i.e. 6.25% of the tender quantity) offered to the MSE's shall be reserved for MSE's owned by SC/STs. In event of failure of such Micro and Small Enterprises to participate in tender process or meet tender requirements and L1 price, 6.25 per cent quantity for Micro and Small Enterprises owned by SC/ST entrepreneurs shall be met from other Micro and Small Enterprises. 3% from within the 25% quantity offered to the MSE's will be offered to women owned MSE's. Failure to participate by any MSE owned by women; this 3% quantity shall be offered to other MSEs.
- IV. In case any MSE vendor does not accept the counter offer, the above mentioned 25% quantity shall be offered to L2.
- V. If there is no MSE in the Price band of L1+15% then the 25% quantity shall be offered to L2 vendor.
- VI. If other suppliers (other than L1) are not under MSE then 60% qty shall be given to L1 and 40% qty shall be offered to L2 supplier.

2. In case if the L1 vendor is MSE then quantity shall be provided as 60 % for L1, 30.75% for L2 and 6.25% tender quantity shall be offered to the MSEs owned by SC/ST's in the price band of L1+15%. In event of failure of such Micro and Small Enterprises to participate in tender process or meet tender requirements and L1 price, 3% quantity offered to women owned MSE's. Failure to participate by any MSE owned by women; this 3% quantity shall be met from L2 vendor.

3. In case L1 vendor is MSE owned by SC/ST Women entrepreneur then quantity shall be provided as 60 % to L1 and 40% to L2.

All above offered qty are subject to acceptance of L1 rates.

In case of non- acceptance of counter offer by any vendor after above applicable provisions the whole quantity shall be given to L1 vendor.

This ratio can be altered in case of any failure on part of L1 regarding delivery commitment/quantity/quality of material.

All above mentioned preferences shall be given to MSEs and SC/STs only on the submission of documentary evidence.

BHEL will not give counter offer to highest bidder in any case.

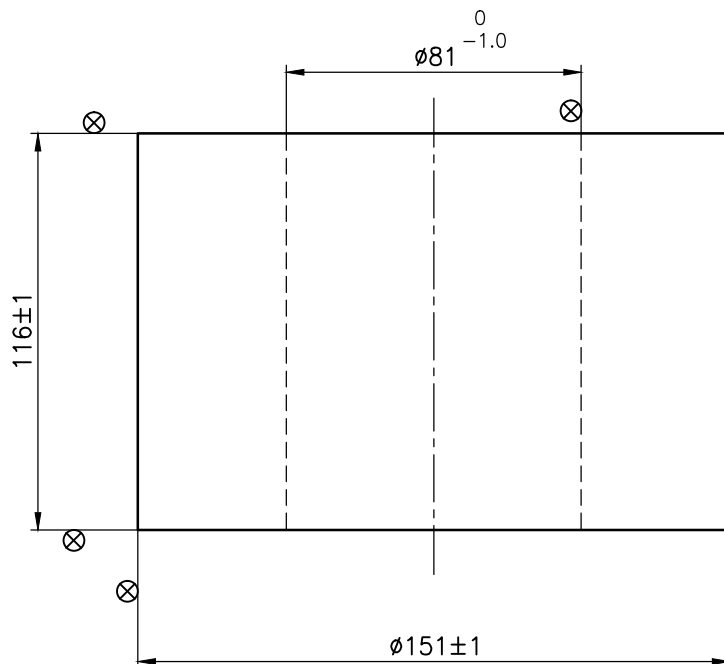
If there are more than one L1 bidders, quantity shall be equally divided, except MSE portion.

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FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

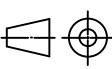
ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

REV	DATE	ALTERED
		CHD & APPD



NOTES:-

1. FORGING SHALL BE MADE IN SUCH A WAY THAT MACHINING CAN BE DONE AS PER DRAWING DIMENSIONS.
2. CHAMFER THE SHARP CORNER TO 1x45°
3. ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER
4. FORGING SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE LATEST TDC

		922031860000	A182 F91 CERTIFY	NT		—	11.4	—	—
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
 365-122	BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.		SCALE N T S	WEIGHT (KG).	DRN	NAME V. BAIRAVAN	SIGN	DATE 06.09.13	NO. OF VAR
					CHD	S. SATHEES		06.09.13	
					APPD	K. RAJASEKARAN		06.09.13	
DEPT VL									
CODE 320									
TITLE DISC NUT					CARD CODE U 01	DRAWING NO. 4-V-NH60-27056P			REV

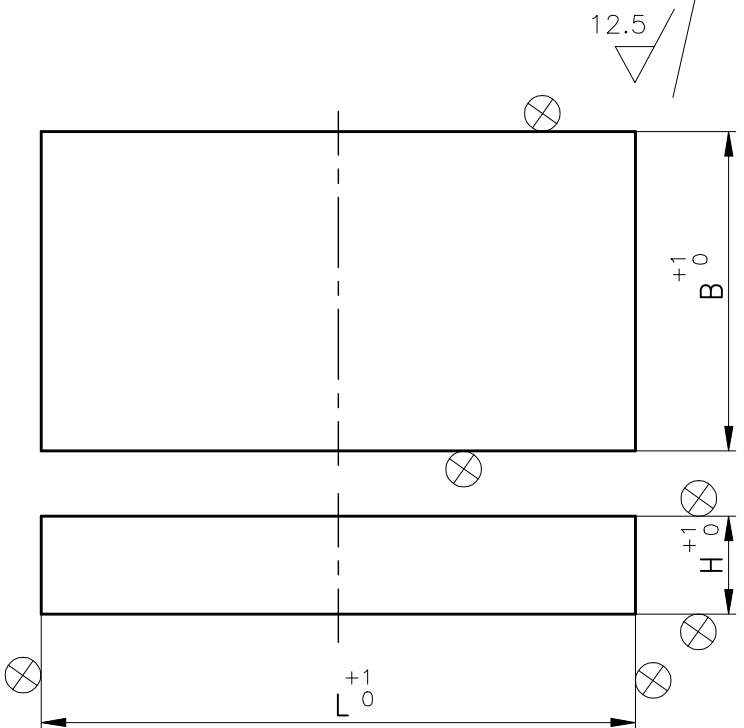
Size A4

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

3-V-0000-21378F/3
DRAWING NO.

SL. No.	DRAWING No.	MATL. CODE	MATL. SPECN.	L	B	H	GROSS WT.(Kg)
01	3-V-G001-21378F/1	921524360000	AISI 4140,QT, CERTIFY	212	114	35	6.64
02	3-V-G002-21378F/1	921524370000		232	157	46	13.15
03	3-V-G003-21378F/1	921524380000		232	137	41	10.2
04	3-V-G004-21378F/1	921524390000		222	92	37	5.93
05	3-V-G033-21378F/1	921524400000		192	109	35	5.75
06	3-V-G041-21378F/1	921524410000		177	90	29	3.62
07	3-V-G045-21378F/1	921524420000		182	95	31	4.2
08	3-V-G137-21378F/1	921524430000		425	235	105	82.32
09	3-V-G145-21378F/1	921524440000		212	120	39	7.78
10	3-V-G193-21378F/1	921524450000		360	135	55	20.98
11	3-V-L073-21378F/1	921524460000		367	212	86	52.52
12	3-V-L081-21378F/1	921524470000		380	225	85	57.0
13	3-V-R001-21378F/1	921524480000		177	92	29	3.7
14	3-V-R025-21378F/1	921524490000		182	82	41	4.8
15	3-V-R041-21378F/1	921524500000		217	92	56	8.7
16	3-V-R053-21378F/1	921524510000		222	100	41	7.14
17	3-V-R057-21378F/1	921524520000		217	107	51	9.3
18	3-V-R065-21378F/1	921524530000		197	117	35	6.3
19	3-V-R081-21378F/1	921524540000		192	109	41	6.7
20	3-V-R113-21378F/1	921524550000		232	137	41	10.2
21	3-V-R129-21378F/1	921524560000		222	107	41	7.6
22	3-V-R141-21378F/1	921524570000		222	114	45	8.9
23	3-V-W001-21378F/1	921524580000		192	98	33	4.8
24	3-V-W002-21378F/1	921524590000		247	114	41	9.0
25	3-V-W003-21378F/1	921524600000		272	157	49	16.4
26	3-V-W004-21378F/1	921524610000		292	177	55	22.3
27	3-V-W005-21378F/1	921524620000		307	197	59	28.0
28	3-V-W006-21378F/1	921524630000		342	217	61	35.5
29	3-V-W049-21378F/1	921524640000		192	86	31	4.0
30	3-V-W053-21378F/1	921524650000		212	100	33	5.4

SL. No.	DRAWING No.	MATL. CODE	MATL. SPECN.	L	B	H	GROSS WT.(Kg)
31	3-V-W057-21378F/1	921524660000	AISI 4140,QT, CERTIFY	212	117	37	7.2
32	3-V-W061-21378F/1	921524670000		287	157	51	18.0
33	3-V-W065-21378F/1	921524680000		302	137	47	15.26
34	3-V-W069-21378F/1	921524690000		362	212	71	42.7
35	3-V-W073-21378F/1	921524700000		392	232	76	54.2
36	3-V-W113-21378F/1	921524710000		222	127	39	8.6
37	3-V-W117-21378F/1	921524720000		292	150	51	17.5
38	3-V-W345-21378F/1	921524730000		222	104	35	6.3
39	3-V-W369-21378F/1	921524740000		227	114	46	9.3
40	3-V-W393-21378F/1	921524750000		292	172	61	24.0
41	3-V-W401-21378F/1	921524760000		272	120	45	11.5
42	3-V-W409-21378F/1	921524770000		292	167	51	19.5
43	3-V-W417-21378F/1	921524780000		377	212	71	44.5
44	3-V-W425-21378F/1	921524790000		207	90	39	5.7
45	3-V-W441-21378F/1	921524800000		247	104	37	7.5
46	3-V-W457-21378F/1	921524810000		347	202	66	36.3
47	3-V-W473-21378F/1	921524820000		292	207	55	26.0
48	3-V-W515-21378F/1	921524830000		352	212	66	38.0
49	3-V-W729-21378F/2	921524840000		300	130	55	14.5
50	3-V-W737-21378F/1	921524850000		360	190	75	40.2
51	3-V-G366-21378F	921531990000		260	135	55	15.15



NOTES:-

- ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER.
- FORGING SHALL BE COMPLY WITH REQUIREMENTS OF THE LATEST APPLICABLE QUALITY WORK INSTRUCTION.

REDRAWN WITH REV.1 ON 16.6.04

REV	DATE	ALTERED VB	REV	DATE	ALTERED VB
2	29.12.08	CHD & APPD KRS & MRK	1	16.6.04	CHD & APPD MRK
SL.NO.51 INCLUDED.			PROOF MACHINING CHANGED TO FORGING. NOTES REVISED ACCORDINGLY		
			DCP. No.800327		

REV 3 DATE 20.11.11 ALTERED VB CHD & APPD SSK & KRS IN SL.NO.49 DIMENSION 300 WAS 260 DCP No.801253

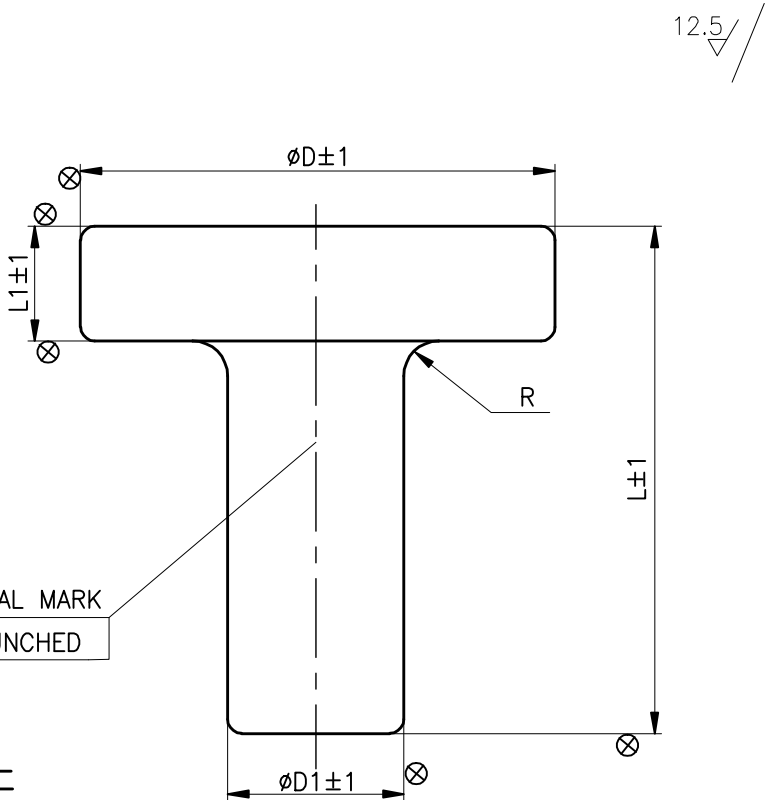
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NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.						DRN	NAME V.BAIRAVAN	SIGN	DATE 16.6.04
						CHD	K.RAJASEKARAN		16.6.04
						APPD	M.RAJAKUMAR.		16.6.04
DEPT VL			SCALE N T S	WEIGHT (KG).	REFERENCE INFORMATION				NO.OF ITEMS
CODE 320									
TITLE GLAND FLANGE						CARD CODE U 01	DRAWING NO. 3-V-0000-21378F		REV 3

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

DRAWING NO.		MATL.SPECN.		MATL.CODE	MATL.MARK TO BE *PUNCHED	WT IN KG	SCRAP SORT	DIMENSIONS					SIZE/RATING
SL. NO.	DRAWING NO.	MATL.SPECN.		MATL.CODE	MATL.MARK TO BE *PUNCHED	WT IN KG	SCRAP SORT	ØD	ØD1	L	L1	R	SIZE/RATING
01	3-V-G057-21652P	A 105,NR		921532420000	A105	7.4	10	106	78	163	40	5	65/1500GNV
02	3-V-G060-21652P	A182 F22 CL.3,NT		921532430000	F22		20						65/1500GLV
03	3-V-G089-21652P	A 105,NR		921532440000	A105	10.4	10	111	86	197	46	5	80/1500GNV,80/1500GLV
04	3-V-G092-21652P	A182 F22 CL.3,NT		921532450000	F22		20						65/2500GLV,65/2500GNV
05	3-V-G145-21652P	A 105,NR		921532460000	A105	16.9	10	121	102	235	68	15	65/1500GV,65/2500GV
06	3-V-G148-21652P	A182 F22 CL.3,NT		921532470000	F22		20						80/2500GV,80/2500GNV
07	3-V-V217-21652P	A 105,NR		921532480000	A105	19.4	10	126	109	235	88	5	80/2500GV
08	3-V-V220-21652P	A182 F22 CL.3,NT		921532490000	F22		20						
09	3-V-V401-21652P	A 105,NR		921532500000	A105	19.0	10	128	93	277	88	5	80/3000GV
10	3-V-V404-21652P	A182 F22 CL.3,NT		921532510000	F22		20						
11	3-V-G003-21652P	A 105,NR		921532520000	A105	16.7	10	131	103	224	50	5	100/1500GNV,100/2500GNV
12	3-V-G013-21652P	A182 F22 CL.3,NT		921532530000	F22		20						100/1500GLV,100/2500GLV
13	3-V-V241-21652P	A 105,NR		921532540000	A105	20.5	10	138	115	214	85	15	80/1500GV
14	3-V-V244-21652P	A182 F22 CL.3,NT		921532550000	F22		20						100/2500GV
15	3-V-WA09-21652P	A 105,NR		921532560000	A105	20.6	10	151	100	250	65	15	100/1500GV
16	3-V-WA12-21652P	A182 F22 CL.3,NT		921532570000	F22		20						
17	3-V-G002-21652P	A 105,NR		921532580000	A105	32.1	10	156	123	301	71	10	150/2500GNV,125/2500GV
18	3-V-G010-21652P	A182 F22 CL.3,NT		921532590000	F22		20						150/2500GLV
19	3-V-W246-21652P	A 105,NR		921532600000	A105	35.5	10	186	118	295	79	30	150/2500GV
20	3-V-W244-21652P	A182 F22 CL.3,NT		921532610000	F22		20						
21	3-V-V065-21652P	A 105,NR		921532620000	A105	35.2	10	198	130	217	91	10	150/1500GV
22	3-V-V068-21652P	A182 F22 CL.3,NT		921532630000	F22		20						
23	3-V-V089-21652P	A 105,NR		921532640000	A105	42.4	10	243	128	171	96	10	200/1500GV
24	3-V-V092-21652P	A182 F22 CL.3,NT		921532650000	F22		20						
25	3-V-V329-21652P	A 105,NR		921532660000	A105	84.9	10	283	128	350	126	10	250/2500GV
26	3-V-V332-21652P	A182 F22 CL.3,NT		921532670000	F22		20						
27	3-V-V129-21652P	A 105,NR		921532680000	A105	72.7	10	298	133	190	111	10	250/1500GV
28	3-V-V132-21652P	A182 F22 CL.3,NT		921532690000	F22		20						
29	3-V-V297-21652P	A 105,NR		921532700000	A105	56.8	10	243	108	310	118	10	200/2500GV
30	3-V-V300-21652P	A182 F22 CL.3,NT		921532710000	F22		20						

PRODUCT ATTEST



NOTES:-

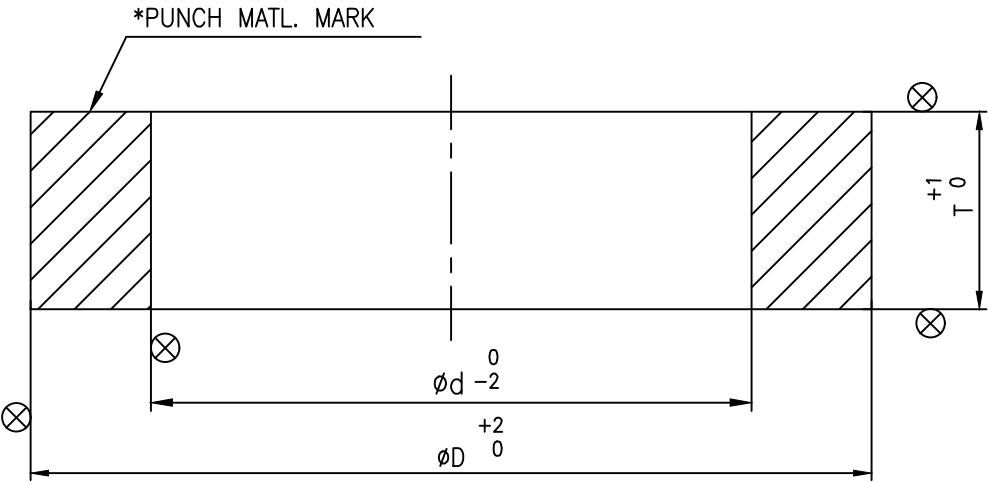
01. FORGING SHALL BE MADE IN SUCH A WAY THAT MACHINING CAN BE DONE IN THE SPECIFIED DIMENSION SHOWN IN TABULAR COLUMN.
02. CHAMFER THE SHARP CORNERS TO 1x45°
03. ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER.
04. FORGING SHALL BE COMPLY WITH REQUIREMENTS OF THE LATEST APPLICABLE QUALITY WORK INSTRUCTIONS.
05. UT SHALL BE CONDUCTED DETAILS AS PER LATEST APPLICATION QUALITY WORK INSTRUCTIONS.

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									
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.						DRN V.BAIRAVAN	SIGN	DATE 09.05.09	NO.OF VAR.
DEPT VL						CHD K.RAJASEKARAN		09.05.09	
CODE 320						APPD M.RAJAKUMAR		09.05.09	
TITLE BONNET (PROOF MACHINING DRG.)				SCALE N T S	WEIGHT (KG).	REFERENCE INFORMATION			NO. OF ITEMS
				CARD CODE U 01	DRAWING NO. 3-V-0000-21652P				REV

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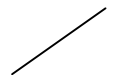
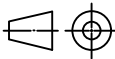
REV	DATE	ALTERED
		CHD & APPD

DRAWING NO. 3-V-0000-24490P									
SL.No.	DRAWING NO.	MATL. SPECN.	PUNCH MATL. MARK	MATERIAL CODE	WT (Kg)	DIMENSIONS			APPLICABLE VALVES
						øD	ød	T	
01	3-V-5171-24490P	ASTM A105 NORMALISED CERTIFY	A105	92 201 623	0.8	106	74	23	3"-C150 & C300 FV
02	3-V-5172-24490P		A105	92 201 624	1.3	135	100	26	4"-C150 - FV 4"-C300 - FV
03	3-V-5170-24490P		A105	92 201 625	3.2	235	201	35	8"-C150 - FV
04	3-V-5175-24490P		A105	92 201 626	0.7	85	50	23	2"-C150 & C300 FV
05	3-V-5173-24490P		A105	92 201 627	2.8	190	145	30	6"-C300 - FV
06	3-V-5174-24490P		A105	92 201 628	4.2	245	201	35	8"-C300 - FV
07	3-V-Z017-24490P		A105	92 201 629	8.3	300	242	43	10"-C300 - FV
08	3-V-Z018-24490P		A105	92 201 630	8.4	340	290	43	12"-C300 - FV
09	3-V-2477-24490P		A105	92 201 631	0.8	85	48	25	2"-C300 - RV
10	3-V-2478-24490P		A105	92 201 632	1.7	98	58	43	3"-C300 - RV
11	3-V-2479-24490P		A105	92 201 633	2.7	133	78	38	4"-C300 - RV
12	3-V-2480-24490P		A105	92 201 634	3.7	176	128	41	6"-C300 - RV
13	3-V-2670-24490P		A105	92 201 635	6.5	232	173	44	8"-C300 - RV
14	3-V-3244-24490P/1	ASTM A182 F91 N&T, CERTIFY	F91	92 201 682	23.5	670	583	35	700MM-C900-RHID
15	3-V-3316-24490P		F91	92 201 875	40.8	760	642	40	750MM-C900-RHID
16	3-V-3319-24490P		F91	92 202 068	68.6	780	640	56	800MM-C1500-RHID
17	3-V-3314-24490P	ASTM A105 NR, CERTIFY	A105	92 202 072	68.6	780	640	56	800MM-C600-RHID
18	3-V-NG86-24490P	ASTM A182 F91 N&T, CERTIFY	F91	92 203 046	9.5	379	314	36	14"-C300-GV
19	3-V-3393-24490P	ASTM A105 NR, CERTIFY	A105	92 203 277	40.8	760	642	40	750MM-C900-RHID
20	3-V-3394-24490P		A105	92 203 407	77	870	730	56	800MM-C600-RHID
21	3-V-3311-24490P	ASTM A182 F92 N&T, CERTIFY	F92	92 203 430	40.8	760	642	40	750MM-C900-RHID
22	3-V-3397-24490P	ASTM A182 F92 N&T, CERTIFY	F92	92 203 558	23.5	670	583	35	700MM-C900-RHID



NOTES:

1. THE FORGING SHALL BE PROOF MACHINED TO THE DIMENSIONS INDICATED IN THE TABULATION
2. CHAMFER THE SHARP CORNERS TO 1x45°
3. ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER
4. FORGINGS SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE.

-	-	-	-	-	-	-	-	-	-	
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										
REDRAN WITH REV.08 ON 09.01.18										
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME A.S.PANDY	SIGN	DATE 01.11.06	NO.OF VAR.	
					CHD	T.R.RAMAMURTHY		01.11.06	-	
					APPD	P.BOOMINATHAN		01.11.06	-	
DEPT VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATIONS				NO. OF ITEMS	
CODE 320			NTS.	-	CAD:C324490P				-	
TITLE					CARD CODE	DRAWING NO.				REV
SEAT RING (PROOF MACHINED)					U 01	3-V-0000-24490P				09

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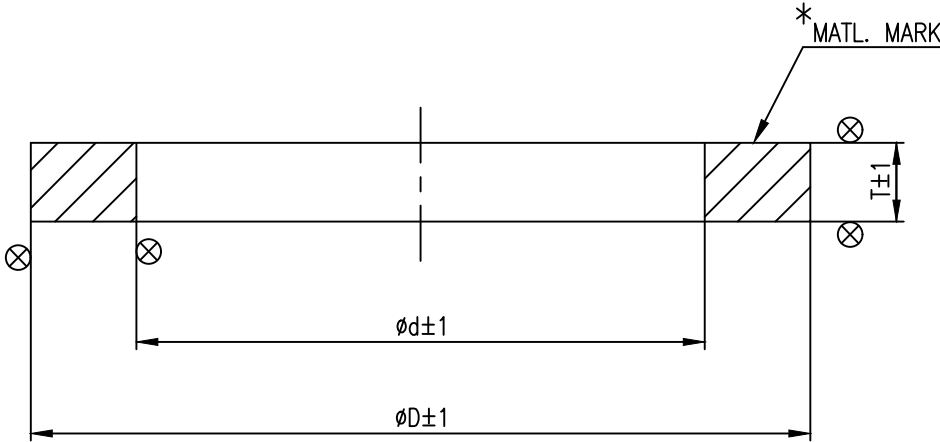
REV	DATE	ALTERED	R.P.SINGH	REV	DATE	ALTERED	R.P.SINGH
09	20.04.18	CHD & APPD	SSK & KRS	08	09.01.18	CHD & APPD	SSK & KRS
	SL. NO. 22 INCLUDED			SL. No. 21 INCLUDED.			

DRAWING NO. 3-V-0000-24947P

SL No.	DRAWING NUMBER	MATL. SPECN.	MATERIAL CODE	WT IN (KG)	DIMENSIONS			* MATL. MARK	SIZE-RATING
					ØD	Ød	T		
01	3-V-3200-24947P	ASTM A105, NR, CERTIFY	92 202 029 0000	12.3	523	440	25	A105	450-C500
02	3-V-3203-24947P	ASTM A105, NR, CERTIFY	92 202 030 0000	14.8	523	440	30	A105	500-C500
03	3-V-3201-24947P	ASTM A182 F22 CL3, NT, CERTIFY	92 202 031 0000	14.8	523	440	30	F22	500-C900
04	3-V-3208-24947P	ASTM A182 F22 CL3, NT, CERTIFY	92 202 032 0000	31.3	610	522	51	F22	550-C900
05	3-V-3204-24947P	ASTM A105, NR, CERTIFY	92 202 033 0000	63.1	796	688	64	A105	700-C500
06	3-V-3205-24947P	ASTM A182 F22 CL3, NT, CERTIFY	92 202 034 0000	63.1	796	688	64	F22	700-C900
07	3-V-3245-24947P	ASTM A182 F22 CL3, NT, CERTIFY	92 202 035 0000	88.5	894	776	73	F22	750-C900
08	3-V-3244-24947P	AISI 4140 QT, CERTIFY	92 202 036 0000	63.1	796	688	64	AISI 4140	700-C900 (C12A)
09	3-V-3319-24947P	AISI 4140 QT, CERTIFY	92 202 074 0000	174.2	981	821	98	AISI 4140	800-C1500
10	3-V-3314-24947P	ASTM A105 NR, CERTIFY	92 202 075 0000	174.2	981	821	98	A105	800-C600
11	3-V-LS01-24947P	AISI 4140 QT, CERTIFY	92 203 137 0000	14.1	403	294	30	AISI 4140	SLBV - 660MW
12	3-V-3316-24947P	AISI 4140 QT, CERTIFY	92 203 249 0000	88.5	894	776	73	AISI 4140	750-C900
13	3-V-3390-24947P	AISI 4140 QT, CERTIFY	92 203 477 0000	31.3	610	522	51	AISI 4140	550-C900
14	3-V-3394-24947P	ASTM A105 NR, CERTIFY	92 203 377 0000	96.5	1018	894	66	A105	800-C600
15	3-V-3311-24947P	ASTM A182 F91 NT, CERTIFY	92 203 433 0000	88.5	894	776	73	F91	750-C900
16	3-V-3397-24947P	ASTM A182 F91 NT, CERTIFY	92 203 561 0000	63.1	796	688	64	F91	700-C900

NOTES:

1. FORGING SHALL BE MADE IN SUCH A WAY THAT MACHINING CAN BE DONE IN THE SPECIFIED DIMENSION SHOWN IN TABULAR COLUMN.
2. ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER.
3. FORGING SHALL BE COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY WORK INSTRUCTIONS.



REV	DATE	ALTERED	R.P.SINGH	REV	DATE	ALTERED R.P.SINGH
06	20.04.18	CHD & APPD	SSK & KRS	05	09.01.18	CHD & APPDSSK & KRS
	SL. NO. 16 INCLUDED				SL. NO. 15 INCLUDED.	

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-	-	-	-	-	-	-	-	-	-
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									
REDRAN WITH REV.05 ON 09.01.18									
 BHARAT HEAVY ELECTRICALS LTD. UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.				DRN	NAME S.KOMALA		SIGN	DATE 27.07.10	NO.OF VAR.
				CHD	GANESH BARLA			27.07.10	
				APPD	M.RAJAKUMAR			27.07.10	
DEPT VL			SCALE N T S	WEIGHT (KG).		REFERENCE INFORMATION			
CODE 320				REF. TABLE					
TITLE SPLIT RING (PROOF MACHINED FORGING)						CARD CODE U 01	DRAWING NO. 3-V-0000-24947P		REV 06

3-V-0000-03038F/07

DRAWING NO

SL.NO.	DRG.NO.	IDENTIFICATION SYMBOL	RAW MATL. DETAILS				DIMENSIONS						SCRAP SORT	APPLICABLE TDC NO.	REMARKS
			MATL.SPECN.	HEATTREATMENT	MATL. CODE	Wt.(Kg)	L	L1	ØD	T	T1	W			
01	3-V-1423-03038F/3	A	SA 105 (CERTIFY)	NORMALISED	92 017 088	0.129	66	30	30	8	12	20	10		
02	3-V-2465-03038F/2	F	SA 182 F316 (CERTIFY)	SOLUTION HEAT TREATED	92 017 090	0.129	66	30	30	8	12	20	40		
03	3-V-1370-03038F/3	B	SA 105 (CERTIFY)	NORMALISED	92 017 072	0.610	115	60	50	13	16	30	10		
04	3-V-1372-03038F/3	C	SA 105 (CERTIFY)	NORMALISED	92 017 073	1.050	135	75	65	17	20	35	10		
05	3-V-1373-03038F/3	D	SA 105 (CERTIFY)	NORMALISED	92 017 074	1.700	155	85	75	20	25	40	10		
06	3-V-1375-03038F/3	E	SA 105 (CERTIFY)	NORMALISED	92 017 075	2.150	180	90	80	22	26	40	10		
07	3-V-2454-03038F/1	G	SA 105 (CERTIFY)	NORMALISED	92 017 126	0.289	95	50	36	9	12	26	10		
08	3-V-2467-03038F	H	SA182-F6a cl.3 (CERTIFY)	HARDENED & TEMPERED	92 017 127	0.289	95	50	36	9	12	26	40		
09	3-V-M357-03038F	I	SA 350 LF2	NORMALISED & TEMPERED	92 200 199	1.050	135	75	65	17	20	35	10		
10	3-V-M358-03038F	J	SA 350 LF2	NORMALISED & TEMPERED	92 200 200	1.700	155	85	75	20	25	40	10		
11	3-V-N081-03038F	K	SA182-F316 (CERTIFY)	SOLUTION HEAT TREATED	92 200 487	0.610	115	60	50	13	16	30	40		
12	3-V-N001-03038F	L	SA182-F316 (CERTIFY)	SOLUTION HEAT TREATED	92 200 488	1.700	155	85	75	20	25	40	40		
13	3-V-N057-03038F	N	SA182-F316 (CERTIFY)	SOLUTION HEAT TREATED	92 200 489	2.150	180	90	80	22	26	40	40		

NOTES:-

- EXTERNAL DRAFT 5° MAX.
- UNSPECIFIED RADII 1.5.
- FORGINGS ARE TO BE CLEANED FREE OF SCALES & COATED WITH RUST PREVENTIVE OIL BEFORE DESPATCH.

DRG. RETRACED ON 27.12.95 WITH 06 REVISION.

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								
BHARAT HEAVY ELECTRICALS LTD.		DRN	NAME	SIGN	DATE	NO.OF VAR.			
UNIT: HIGH PRESSURE BOILER PLANT.		CHD	N.DHANAPAL	M. GR. H.	24/12/95				
TIRUCHIRAPALLI 620014.		APPD	A.VISWANATHAN		27/12/95				
DEPT VL	SCALE	WEIGHT (KG).	REFERENCE INFORMATION			NO. OF ITEMS			
CODE 320	NTS	REF. TABLE	CAD:0303038F						
TITLE		CARD CODE	DRAWING NO.			REV			
GLAND FLANGE		U 01	3-V-0000-03038F			07			

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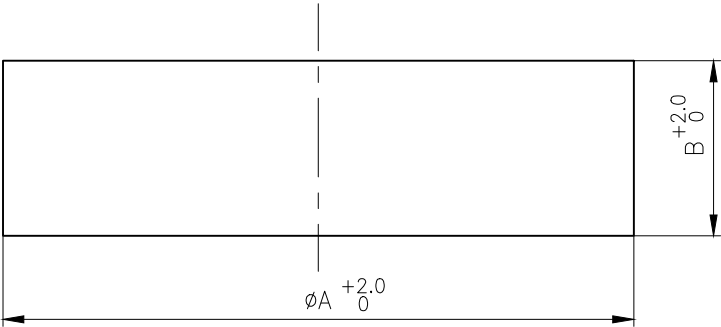
REV C	DATE	ALTERED	REV O	DATE	ALTERED	REV C	DATE	ALTERED
		CHD & APPD			CHD & APPD	07	27.12.95	CHD & APPD
1. SL.NO. 11 TO 13 ARE INCLUDED.								

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FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

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

REV	DATE	ALTERED	J.S.
06	23.10.10	CHD & APPD	K.S.
IN TABLE B WAS ØB ONLY.			
DCN:SB:801023/5011214			



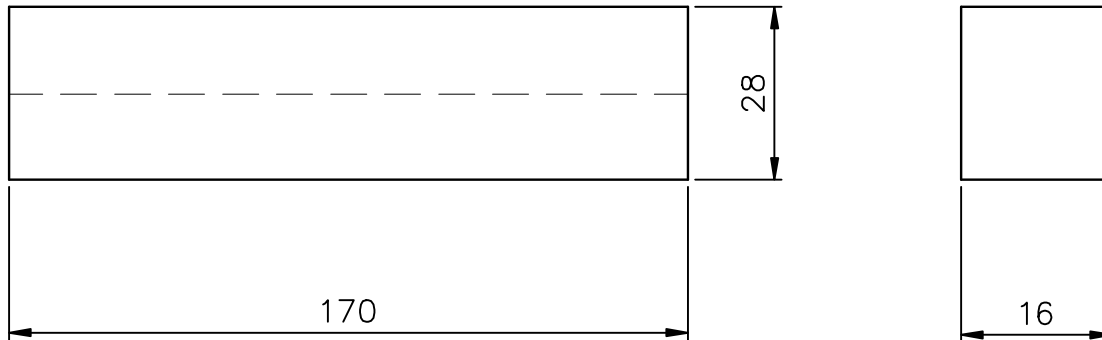
07	300	60	IS 1875 CL IV	33.33
			920370490000	1
06	90	25	IS 1875 CL IV	1.247
			920377780000	1
05	125	40	IS 1875 CL IV	3.850
			920377680000	1
04	175	45	IS 1875 CL IV	8.500
			920375000000	1
03	110	36	IS 1875 CL IV	2.690
			920370480000	1
02	175	40	IS 1875 CL IV	7.550
			920370470000	1
01	150	40	IS 1875 CL IV	5.550
			920370460000	1
VAR. No.	ø A ^{+2.0} / ₀	B ^{+2.0} / ₀	MATL.CODE	UNIT WT
	VARIABLE DIMENSIONS		MATL.SPECN	QTY

	FORGING	—	IS 1875 CL IV	NORMALISED	—	—	—	—	—
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
365-127 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME J.SANKAR	SIGN J.S.	DATE 23.09.10	NO.OF VAR
					CHD	K.SRIDHARAN	K.S	23.09.10	
					APPD	K.SRIDHARAN	K.S.	23.09.10	
DEPT SB			SCALE	WEIGHT (KG). —	REFERENCE INFORMATIONS				NO. OF ITEMS
CODE 330			NTS						
TITLE BLANK (FORGING)				CARD CODE U 01	DRAWING NO. 4-20-001-00812				REV 06

ALL DIMENSIONS ARE IN MILLIMETRES.

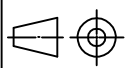
FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP/QP

REV 01	DATE 03.03.11	ALTERED CHD & APPD	J.S K.S
DRAWING CONVERTED AS CAD. DIMENSIONS 28 & 16 WERE 35 & 20 RESPECTIVELY.			
DCN: SB : 801133/5012916			



NOTE:—

1. FOR MACHINING REFER DRG. No : 32020100137.
2. TO BE NORMALISED AND TEMPERED.

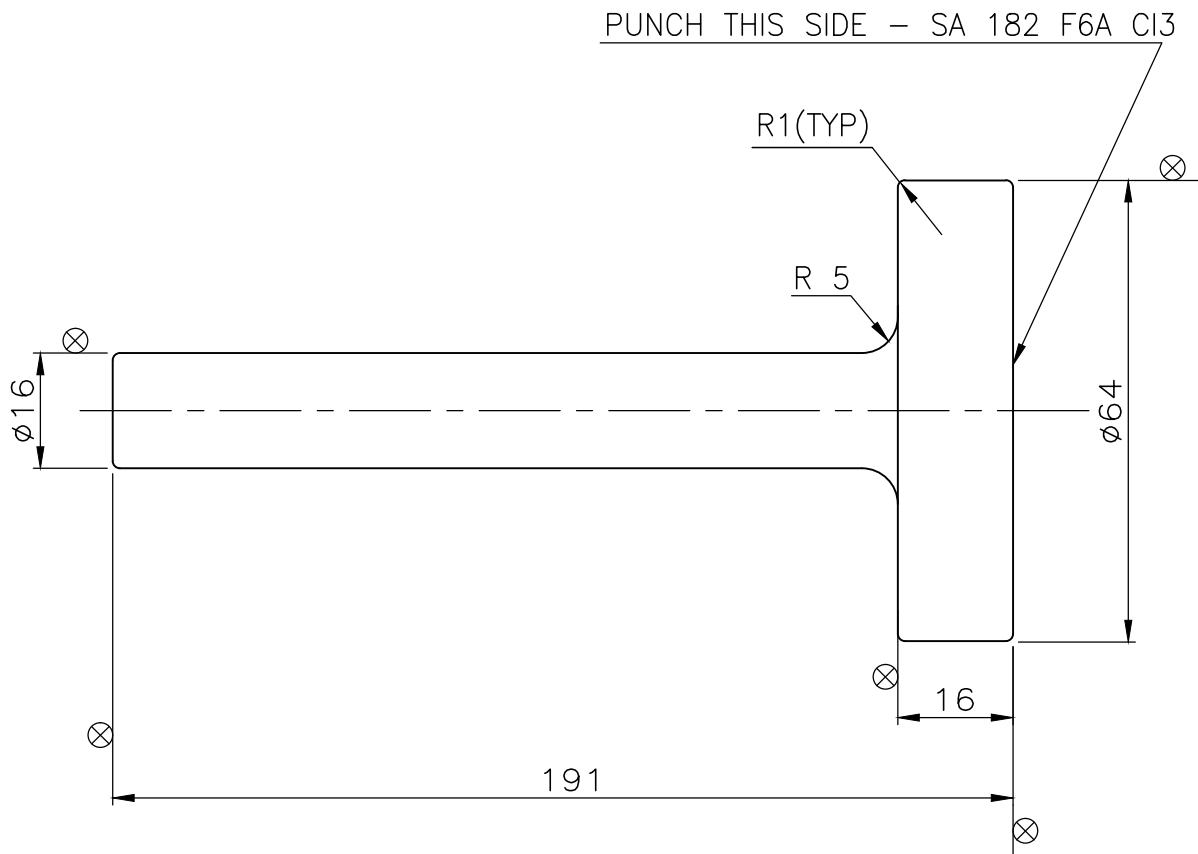
01	FORGING	920337310000	BS970 817M40 (EN24)				0.770		1
ITEM No	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	NO OFF
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.				DRN	NAME J.SANKAR		SIGN J.S	DATE 03.03.2011	NO.OF VAR
				CHD	K.SRIDHARAN		K.S	03.03.2011	
				APPD	K.SRIDHARAN		K.S	03.03.2011	
DEPT SB	/		SCALE	WEIGHT (KG).		REFERENCE INFORMATION			NO. OF ITEMS
CODE 330			NTS						
TITLE RAMP CAM				CARD CODE U 01	DRAWING NO. 4-20-001-02331				REV 01

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FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

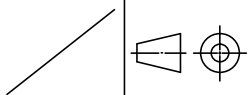
ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

REV	DATE	ALTERED	J.S.
03	04.09.12	CHD & APPD	K.S.
NOTE 2 ADDED. MATERIAL SPECIFICATION CHANGED FROM AISI 410 TO A182F6A CL3.			
DCN:SB: 801294 / 5014784			

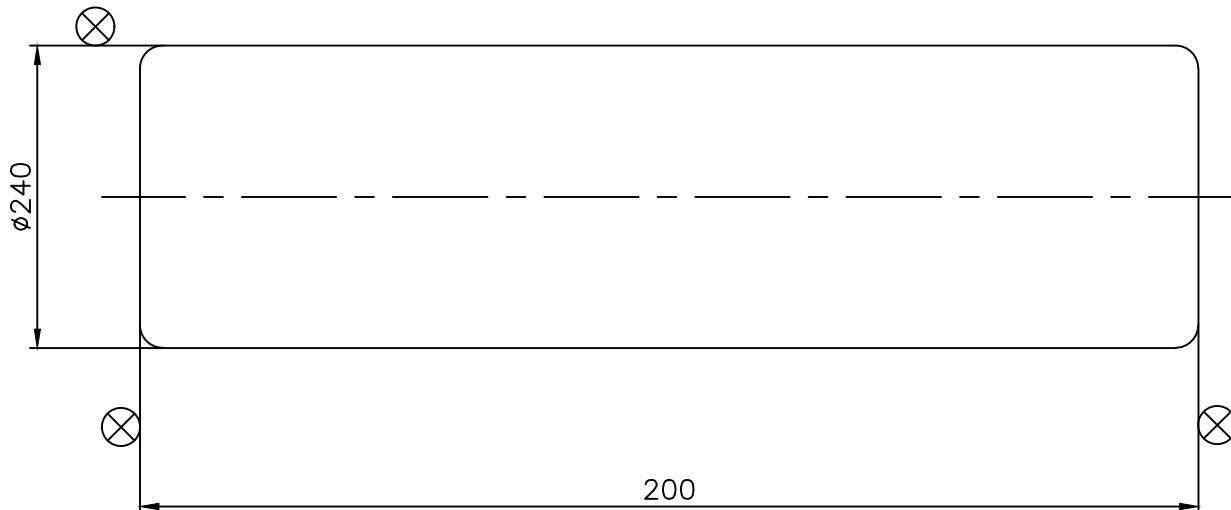


NOTES:-

- FOR QUALITY REQUIREMENTS REFER APPLICABLE LATEST QUALITY PROCEDURES.
- HEAT TREAT TO 34 - 38 HRc.
- ⊗ - FURTHER MACHINING.

01	FORGING	920332420000	A182 F6ACL3			0.800			
ITEM No	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	NO OFF
 365-127 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME J.SANKAR	SIGN J.S.	DATE 04.09.12	NO.OF VAR
					CHD	K.SRIDHARAN	K.S.	04.09.12	
					APPD	K.SRIDHARAN	K.S.	04.09.12	
					REFERENCE INFORMATION				
DEPT SB		SCALE NTS	WEIGHT (KG). —						NO. OF ITEMS
CODE 330				—					
TITLE VALVE STEM (FORGED)				CARD CODE U 01	DRAWING NO. 4-20-001-02464				REV 03

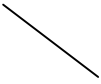
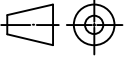
REV	DATE	ALTERED R.P.SINGH
03	17.12.18	CHD & APPD SSK & KRS
SL.No. 02 to 04 INCLUDED NOTE No. 4 INCLUDED		



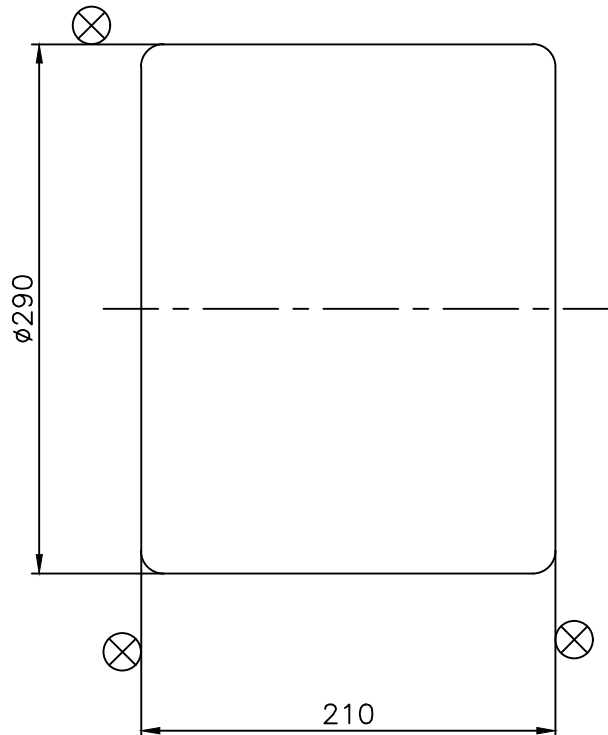
NOTE:—

1. UNSPECIFIED RADIUS R3.
2. ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER.
3. FORGING SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE.
4. # MARKED ITEMS IGC TEST SHALL BE CONDUCTED.

#	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
#04	—	92 203 701	SA182-F316 CERTIFY	SH	—	91.27	—	4-V-U932-26070P	—
03	—	92 203 649	SA182-F60 CERTIFY	SH	—	91.27	—	4-V-P727-26070P	—
02	—	92 203 006	SA182-F22 CERTIFY	NT	—	91.27	—	4-V-P569-26070P	—
01	—	92 200 931	SA182-F316 CERTIFY	SH	—	91.27	—	4-V-P338-26070P/2	—

भारत भार BHEL 365-122		BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.		DRN	NAME R.T.GNANAM	SIGN	DATE 23.07.97	NO.OF VAR
				CHD	N.DHANAPAL		23.07.97	
				APPD	A.VISWANATHAN		23.07.97	
DEPT VL			SCALE	WEIGHT (KG). —	REFERENCE INFORMATION			NO. OF ITEMS
CODE 320			NTS		DWG. REDRAWN WITH REV. 03 ON 17.12.18			
TITLE DISC FORGING				CARD CODE U 01	DRAWING NO. 4-V-0000-26070P			REV 03

REV	DATE	ALTERED	R.P.SINGH	REV	DATE	ALTERED	R.P.SINGH
01	19.02.19	CHD & APPD	SSK & KRS	02	13.09.19	CHD & APPD	SSK & KRS
DRAWING TABULATED. SL. No. 02 INCLUDED. NOTES No. 4 INCLUDED.				SL. No. 3 INCLUDED.			

NOTE:-

1. UNSPECIFIED RADIUS R3.
2. ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER.
3. FORGING SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE.
4. # MARKED ITEMS IGC TEST SHALL BE CONDUCTED.

03	-	92 203 595	SA182-F60 CERTIFY	SH	46	108.8	-	4-V-P728-26836P	-
# 02	-	92 203 773	SA182-F316 CERTIFY	SH	46	108.8	-	4-V-U939-26836P	-
01	-	92 201 907	SA182-F316 CERTIFY	SH	46	108.8	-	4-V-P545-26836P	-
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No



365-122

BHARAT HEAVY ELECTRICALS LTD.,UNIT: HIGH PRESSURE BOILER PLANT.
TIRUCHIRAPALLI 620014.

DRN	NAME	SIGN	DATE	NO.OF VAR
CHD	T.R.RAMAMURTHY		03.12.09	
CHD	S.SATHEES		03.12.09	
APPD	M.RAJA KUMAR		03.12.09	

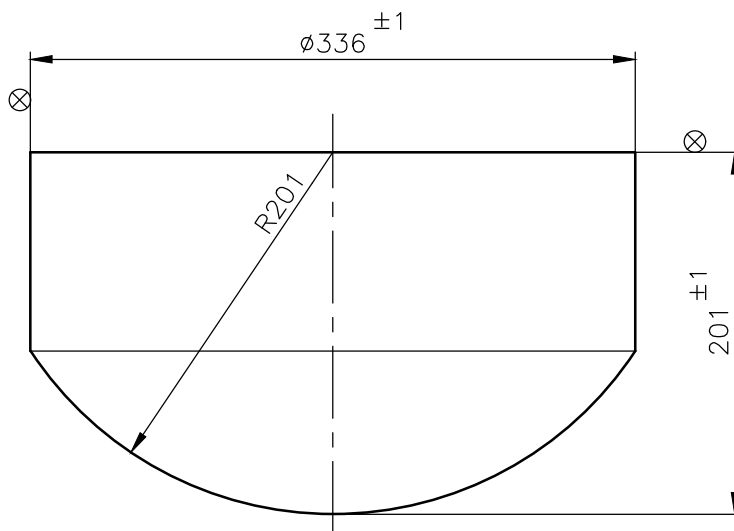
DEPT VL	CODE 320	SCALE NTS	WEIGHT (KG). —	REFERENCE INFORMATION	NO. OF ITEMS
TITLE DISC FORGING				CARD CODE U 01	DRAWING NO. 4-V-0000-26836P
					REV 02

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FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

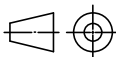
ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

REV 01	DATE 27.03.13	ALTERED GANESH CHD & APPD M.RAJAKUMAR	REV 02	DATE 03.10.15	ALTERED M.SELVAM CHD & APPD MS & SSK
DIMENSION $\phi 320$ & 202 WERE $\phi 323$ & 230 RESPECTIVELY DCP : 801491			DIMENSION 201 WAS 226 DIMENSION R201 INCLUDED SL. No.02 INCLUDED		



NOTE

01. FORGING SHALL BE MADE IN SUCH A WAY THAT MACHINING CAN BE DONE IN THE SPECIFIED DIMENSION.
02. CHAMFER THE SHARP CORNERS TO 1 X 45°
03. $\otimes$ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER.
04. FORGING SHALL COMPLY WITH THE REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE.

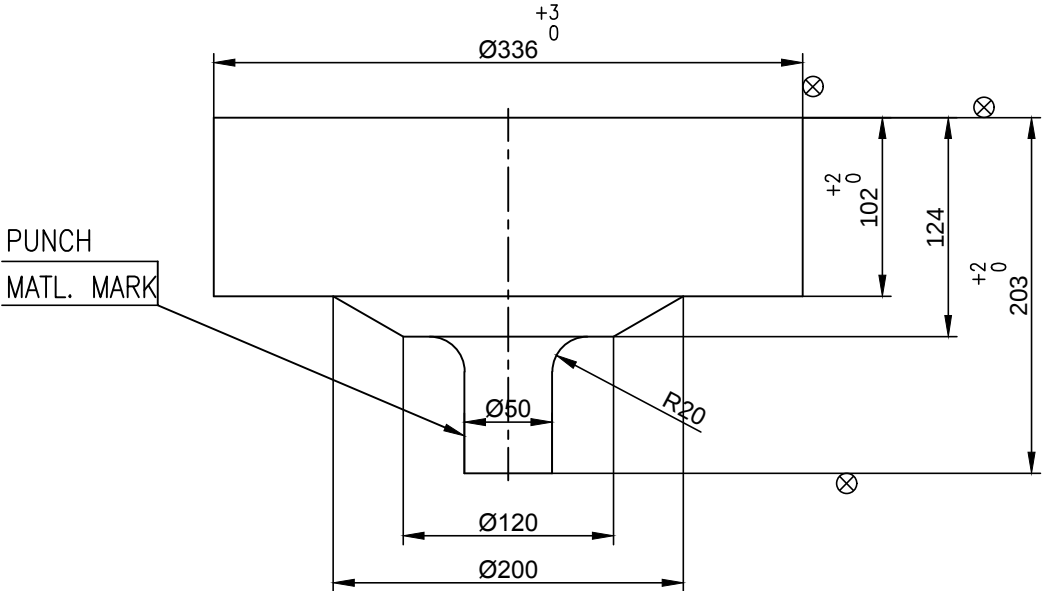
02	PROOF MACHINED FORGING	—	ASTM A182 F316,CERTIFY	SOLUTION ANNEALED	—	112.0	—	4.V.P582.26955P 92 203 252 0000	—	
01	PROOF MACHINED FORGING	—	ASTM A105 CERTIFY	NORMALISED	—	112.0	—	4.V.P560.26955P/2 92 202 081 0000	—	
SL. NO.	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No COMPONENT CODE	ITEM No	
 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014. 365—122					DRN	NAME EDWIN	SIGN	DATE 31.01.11	NO.OF VAR	
					CHD	GANESH		31.01.11		
					APPD	M. RAJAKUMAR		31.01.11		
DEPT VL	/		SCALE	WEIGHT (KG).		REFERENCE INFORMATIONS				NO. OF ITEMS
CODE 320			NTS	REF.TABLE		CAD : C426955P				
TITLE DISK					CARD CODE U 01	DRAWING NO. 4—V—0000—26955P				REV 02

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FOR TOLERANCES OF UNTOLERANCED DIMENSIONS

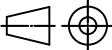
ALL DIMENSIONS ARE IN MILLIMETRES.
DURING MANUFACTURE REFER RELEVANT QCP/QP

REV	DATE	ALTERED
		CHD & APPD



NOTES:

- FORGING SHALL BE MADE IN SUCH A WAY THAT MACHINING CAN BE DONE IN THE SPECIFIED DIMENSION SHOWN IN TABULAR COLOUMN.
- CHAMFER THE SHARP CORNERS TO 1X45°
- ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER
- FORGING SHALL COMPLY WITH THE REQUIREMENTS OF LATEST APPLICABLE QUALITY WORK INSTRUCTIONS.
- UT SHALL BE CONDUCTED, DETAILS AS PER THE LATEST APPLICABLE QUALITY WORK INSTRUCTIONS.

01	FORGING	—	A182 F316 CERTIFY	SH	—	76.0	—	4.V.P639.27343P	003	
								92 203 527 0000		
SL. NO.	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No	
								COMPONENT CODE		
 365-122 BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.					DRN	NAME	SIGN	DATE	NO.OF VAR	
					CHD	R.P.SINGH		03.02.18		
						S.SATHEES		03.02.18		
					APPD	K.RAJASEKARAN		03.02.18		
DEPT VL		SCALE	WEIGHT (KG).	REFERENCE INFORMATIONS					NO. OF ITEMS	
CODE 320		NTS	REF. TABLE							
TITLE				CARD CODE	DRAWING NO.					REV
DISK FORGING (12"—300C—SV)				U 01	4—V—0000—27343P					

Size A4



Product: Carbon, Alloy & Stainless Steel Forgings (Boilers And Valves)

Revisions Record:

Rev 09: New materials F23, F91 & F92 requirements added in Cl.1.0, Cl.2.0, and Cl.4.0 to Cl.6.0. CE marking certification clarity included in Cl.10.

Rev 10: Cl 1:F6a Class 2 added, Code case corrected. Cl 2: Steel makers names removed and requirement for creep testing added as per IBR Reg 4, Cl 4: Tempering temperature and soaking time modified for SA 182 F91, F92 & F23. Cl 4 & 10: Photomicrograph requirement added for F91 & F92 forgings, Cl 2, 6 & 10: modified for SS, Cl 5: Bend test Clarified, Cl 6: Wet MPI added.

Rev 11: Cl 2 Pt 3, 4, 5 modified. Cl 6 – Wet MPI for CS, AS added, Cl 10.1 – IBR Forms indicated

Rev 12: Cl 1, 2, 4, 6 and 7 – requirements for grades SA 182 F1, SA 336 F1, F12, F22 Cl 3 and F91 added (for Neyveli Project). Creep test criteria in-line with BHEL R&D included. Cl 2 Pt 8 modified. Cl 6 Pt 1 – SA388 changed to ASTM A 388 based on ASME Sec II Ed 2013.

Rev 13: Dt: 17/11/2014: Cl 2 Cl 4 Cl 10 Cl 12 modified.

Rev 14: Dt: 06/10/2015: Cl.4.3, 5.2, 5.8, 10.1.b.9 added; Cl 1.0, 2.1, 2.2, 2.3, 4.1, 4.2, 5.3, 6.2, 9.0, 10 modified.

Rev 15: Dt: 23/12/2015: Cl 1, 2, 3, 5, 6, 7, 10, 11 & 12 modified.

Rev 16: Dt: 06/02/2017: Cl 1 changed to indicate the use of latest revisions of referred codes, standards, specifications, drawings, procedures, etc; Tempering temperature added for F12 material in Cl 4, Requirements of API 6D removed from Cl 1, 2, 4, 5, 10, 12 since the API 6D certificate license was not applied for; Definitions for relevant, linear and rounded indications provided in Cl 6; Type 3.2 certification changed as per BS EN 10204-2004 in Cl 10.2.

Rev 17: Dt: 27/11/2017: Cl 1, 4 modified to include SA 266 & SA 336 F92 materials; Cl 5 modified to include 100% hardness testing & Creep testing requirements; Cl 6 changed to include UT for forgings above 40 mm; Cl 10 modified suitably.

Rev 18: Dt: 21/02/2018 – Material SA182 F51 added in Cl 1 based on Engineering/Valves input and minor corrections made in Cl 4 & 5.

Rev 19: Dt: 05/12/2018 – Material SA182 F11 Class 3 & SA182 F60 added in Cl 1 based on Engineering/Valves input, Tolerance in Cl 3 modified based on guidance from corporate standard AA 102 08 Rev07, Cl 4 modified to include F11.

1. MATERIAL SPECIFICATIONS:

All the codes, standards, specifications, drawings & procedures, etc., referred in this TDC shall be of latest revision as on the date of Enquiry/Purchase Order, whichever is earlier, unless specified otherwise.

Carbon Steel (CS) : SA 105, SA 266, SA 350 LF 2

Alloy Steel (AS) : SA 182 F12 Class 2, F22 Class 3, SA 182 F23 (Code case: 2199), *SA182 F11 Class 3*
SA 182 F91 & SA182 F92 (Code Case: 2179), SA 182 F1, SA 336 F1, SA 336 F12,
SA 336 F22 Cl 3, SA 336 F91, SA 336 F92 (Code Case: 2179)

Stainless Steel (SS) : SA 182 F6a Class 2, F6a Class 3, SA 182 Gr. F 304, 304L, 316, 316L, 316H, 321, 321H,
347 & 347H; F51; *F60*
AISI 410 for TOA Gland and bushings.

Additional Requirement : As listed below (Supplementary to above material specifications)

Size and Quantity : As per Purchase order & Drawing.

2. CHEMICAL COMPOSITION & PROCESS

1) Melting: fully killed.

Product analysis per heat: CS: C ≤ 0.25% , AS: SA182 F23: Si: 0.25-0.50% & Cu: 0.25max

SA182 F92: Si: 0.10-0.50%, Ni: 0.30 max & Cu: 0.25% max

2) Raw material Steel for IBR forging items to be inspected at Mill & test certificate countersigned by IBR approved inspecting authority, if the mill is not approved under IBR as well known steel maker.

3) Forging: Hot working to ensure uniformity of structure & strength with reduction ratio in area 4:1 min from ingot to final forging, close to final size & shape. Flow lines to be parallel to axis of openings. Forged Items ordered to this TDC shall be forged to the nearest shape before machining to final dimensions as per respective drawing.

4) Blooms / Billets used for forgings (Side Length or Dia ≥ 50mm) shall be UT tested. For Acceptance criteria refer Cl.6.0. For finished bars, this can be done at final stage.

5) SS: All raw materials used in steel making including incoming scrap shall be checked by supplier to ensure freedom from radioactivity.

6) Tolerance for chemistry shall be as per the applicable material specifications/standards specified in Cl 1.

3. DIMENSIONS AND TOLERANCES

Dimensions & their tolerances shall be as per drawing.

For untoleranced dimensions: **CS & AS:** as per SA 29 for diameters upto 114.3mm. For diameters above 114.3mm and upto 300mm, tolerances shall be minus 0 plus 8 mm; **SS:** as per SA 484

4. HEAT TREATMENT(HT)

1) Heat treatment shall be as per applicable drawing. Unless otherwise specified, the following heat treatment shall be following:

CS: SA 105: Normalised; SA 266: As per material specification;

SA 350 LF 2: Normalised at 880-900°C & Tempered at 620-640°C.

AS: Normalised and Tempered. For *F11*, F12: Tempering at 650°C (min).

For SA 182 F91, F92 & F23, SA336 F91, SA 336 F92: Normalising at 1050-1080°C & Tempering at 750-780°C.

SS: As per applicable material specification & grade.



Product: Carbon, Alloy & Stainless Steel Forgings (Boilers And Valves)

AISI 410: Supply in Quenched & Tempered condition as below.

Quenching at 955-1010°C in air or water or oil or Polymer. Soaking 30 mts/inch maximum thk. Tempering at 663°C.min. Soaking :60 mts/inch maximum thickness and air cool.

- 2) Photomicrograph test for F91 & F92 forgings - one per heat treatment lot per size and shall be reported in test certificate. Acceptance – The material shall be free from any micro fissures. Microstructure shall show lathe tempered martensite and also to be examined for grain growth. Photomicrograph with 400x (Min) magnification along with Photomicrograph report to be provided. The actual magnification and result of actual microstructure shall be certified/indicated.

5. MECHANICAL TESTS

- 1) Extent of test: One Specimen for each size/heat/HT batch from sample product or identical test coupon.
- 2) **Tensile test:** The test specimens shall be removed from a test coupon (TC) after the final heat-treatment cycle. Perform tensile tests at room temperature in accordance with the procedures specified in ASTM A370. Perform a minimum of one tensile test. All yield strengths shall be determined using 0.2 % offset method of ASTM A370. The results of the tensile test(s) shall satisfy the applicable material specification requirements.

If the results of the tensile test(s) do not satisfy the applicable requirements, two additional tests on two additional test specimens (removed from the same TC with no additional heat treatment) may be performed in an effort to qualify the material. The results of each of these tests shall satisfy the applicable requirements.

- 3) **Additional requirements for SA182 F23, F91 & F92:**
F91: Yield: (0.2% offset): Min 450 MPa; Tensile: Min 630 MPa, Max 850 MPa; Hardness (HBW): Min 195, Max 248.
F92: Tensile: Min 630 MPa, Max 850 MPa; Hardness (HBW): Min 191, Max 269
F23: Tensile: Min 510 MPa, Max 730 MPa; Hardness (HBW): Min 150, Max 220
Hardness testing shall be **100%** as per ASTM E10 or E18.
- 4) AISI 410: Hardness (**100%** testing shall be as per ASTM E10 or E18): 197-235 HBW. No other mechanical test required.

Additional requirements of tests: (Other than AISI 410 Only)

- 5) **Bend test: Acceptance as per IBR**
CS: Sample 19mm.Thick(t) x 25.4mm width to be bent 180 deg. around mandrel of radius 6.35 mm.
AS, SS: Sample 19mm.Thick(t) x 25.4mm width to be bent 180 deg. Around mandrel of radius =1.5 x t.
- 6) **Impact test for QCNR Valves & CRHNR Valves:** CS, AS and SS: 1 / HT batch. As per ASTM A370, 2mm Charpy-U notch, at Room temperature. Acceptance: Avg of 3 specimens: 36 Joules, Min Single value: 24 Joules
- 7) **For PED 2014/68/EU (CE-marking) items:** Charpy- V impact test at 20°C as per ASTM A370, Acceptance: Avg of 3 specimens: 40 Joules, Min. single value: 27 Joules.
- 8) Creep testing & reporting shall be carried out as per SIP:RM:01 (latest revision) whenever indicated in the Enquiry/Purchase Order/Engineering Drawing.

6. NON DESTRUCTIVE TEST

- 1) Extent of test: for each product. Stage of test : After heat treatment.
- 2) **Volumetric NDE - UT:** As per ASTM A388. All finished forgings of dia/wall thickness **> 40 mm**; All Body & yoke of special class valves & all forgings of SA 182 F91, F92 & F23, SA 336 F91.
Acceptance: ASME Sec.VIII Div. 2 Cl.3.3.4.
- 3) **Surface NDT -**
 - a) **Relevant indication:** Surface-rupture NDE indication with major dimensions > 1.6 mm (1/16 in).
 - b) **Linear indication:** Surface NDE indication whose length is $\geq$ three times its width.
 - c) **Rounded indication:** Surface NDE indication whose length is < three times its width.
 - d) **MPI for CS & AS :** 100% : As per ASTM A275.
Dry MPI: CS, AS (other than SA 182 F91, F92, F23, SA 336 F91) : all sizes.
Wet MPI : SA 182 F91, F92, F23; SA 336 F91: all sizes.
Acceptance: ASME B16.34 Appendix II. Linear Indications like cracks, folds & other injurious defects are unacceptable.
 - e) **LPI for SS:** 100%: ASTM E165. **Acceptance:** No linear indications acceptable.
- 4) **SS:** Finished forgings shall be checked for radioactive contamination and reported. Survey meter shall be used to measure at 5 cm near the surface. Acceptance limits: Shall be less than 0.1 milli Rontgen (MR) per hr or 1 micro Sievert per hr.

7. WORKMANSHIP AND FINISH

Forged items to spec SA336 shall be machined in the inside surface as it is meant for steam application. Items to be proof machined as per drawing or shot blasted for CS/AS; Pickled & passivated as per ASTM A380 for SS, & be free from scales & defects like laps, seams, folds, cracks, etc. Machined items (except SS) to be coated with a layer of transparent rust preventive before despatch.

	BHEL – Tiruchirappalli - 620014, India. Quality Assurance Department TECHNICAL DELIVERY CONDITIONS	DOC No: TDC:0:404 Rev: 19 Effective Date: 05/12/2018 Page: 3 of 3
Product: Carbon, Alloy & Stainless Steel Forgings (Boilers And Valves)		

8. REPAIR

Repairs by fusion welding are prohibited. Surface defects can be removed by mechanical means and defective areas smoothly dressed up with the adjacent surface. Minimum thickness after repair to meet drawing / Specification.

9. MARKING AND PACKING

Details of stamping on each item with low stress stamps: Heat/melt number; material specification, grade & class; Code case number (for Gr 92 & 23); Maker's emblem/code & Inspection Authority's seal. Forgings to be properly packed and dispatched to avoid damage during transit.

10. INSPECTION AND CERTIFICATION

10.1 For IBR Items:

- Products shall be inspected at supplier's works/mill and the applicable IBR Form must be countersigned by the Inspecting Authority as indicated below in case the supplier's works/mill is not recognised as a "Well known Forger/Steel maker" under IBR:
 - ☐ **Imported Items:** Inspecting Authority approved by IBR for the Country of origin.
 - ☐ **Indigenously Supplied items:** Director of Boilers/Chief Inspector of Boilers/Inspecting Authority approved by IBR, for the respective state in India.
- Certification in IBR Form III-G for IBR items from "IBR-Well Known Forger" or "Inspecting Authority", as applicable, to be submitted. IBR Form III-G and a separate **manufacturer** Test certificate in English language with following details, shall accompany the product (including proof machined):
 - Purchase Order No.(BHEL), TDC No & its revision no, Test certificate no & date.
 - Specification, Grade & Class with applicable year of code, Code case number (for Gr 92 & 23), Heat Number, Drawing No., Quantity & Size.
 - Supplier of the steel used in making the finished product (well known and others in IBR Form IV).
 - Melting & forging process, Chemistry with incidental elements-Heat wise, Product analysis, Carbon Equivalent (CE).
 - Heat treatment details of the material and test bars. For F91, F92 supplies – Photomicrograph at 400x resolution.
 - Mechanical test results- Tensile (UTS, YTS (0.2% offset), % elongation, % reduction in area), Bend, Impact, Hardness and NDE test results with reference & acceptance standards.
- Repair details if any, Certified copy of TC for starting material.
- For SS:** Measured Radioactivity levels shall be reported in the Mill Test Certificate (not to be recorded in IBR Form).
- Creep test report as per SIP:RM:01 (latest revision) whenever indicated in the Enquiry/Purchase Order/Engineering Drawing.

10.2 For PED 2014/68/EU (CE-marking) items, the test certificates with details specified in Cl 10 (b) shall be submitted as per BS EN 10204.

- For pressure parts**, test certificates of type 3.1 or 3.2 are acceptable.
Type 3.1 – Suppliers shall have ISO 9001-2008/2015 certification certified by Notified Body recognized by European Community and test certificate certified by supplier's authorized inspection representative.
Type 3.2 – Components inspected and test certificates certified by both the supplier's authorized inspection representative and Notified Body recognized by European Community.
- For non-pressure parts**, test certificates of type 2.2 are acceptable.
Type 2.2 – suppliers test certificates signed by suppliers authorized inspection representative with test results as required by this TDC.

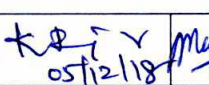
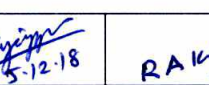
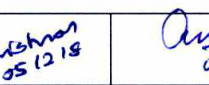
11. AUDIT CHECKS AT BHEL

BHEL reserves the right to carry out audit checks for chemistry, HT condition, mechanical test and NDT on representative test bars or job. Supplies found defective during check or subsequent processing at BHEL will be rejected.

12. END USE

Valve bodies, bonnets, discs, socket ends, body guides, etc., Pressure part fittings in boilers & low, high temperature service like discs, socket weld tees, elbows, weld neck flanges & stubs (except drum nozzles) meeting IBR, ASME Section I, ASME B16.34 and PED 2014/68/EU.

Non pressure part items in boilers and valves: For these, requirements on starting material, bend test and inspection by IBR are not required.

						
Abdur Rahman	G. Panneer Selvam	S. Anand Kumar	K. Rajasekaran	R. Rajappan	R. Ananthakrishnan	Amit Roy
Sr.Engineer/ QA	DGM/QA	SDGM/PE/ FB	DGM/Valves/ Engg	SDGM/MM	AGM/Valves/ Purchase	AGM/QA& BE
Prepared By			Reviewed By			Approved By

BHEL, Tiruchirappalli – 620014.	Quality Assurance	Technical Delivery Conditions
Product: ALLOY STEEL FORGINGS TO SPEC. AISI 4140 FOR USE IN HIGH PRESSURE VALVES		
Document No.: TDC:0:417	Rev. No.: 00	Effective date: 01/08/1994 Page 1 of 2

1.0 SCOPE

This Technical Delivery Condition specifies the additional requirements for the delivery of alloy steel to specification AISI 4140 for use in high pressure valves components such as Gland flanges, Support ring, Split ring etc.

This TDC is supplementary to the mandatory requirements covered in the specification.

The size and quantity shall be as specified in the purchase order.

2.0 CHEMICAL COMPOSITION AND PROCESS

The steel shall be manufactured by electric furnace or any other approved process.

The chemical composition of the steel shall be tested for each melt and shall conform to the requirements given below in weight percentage:

Element	Percentage
C	0.38 - 0.43
Mn	0.75 - 1.00
Si	0.20 - 0.35
P	0.04 max.
S	0.04 max.
Cr	0.80 - 1.10
Mo	0.15 - 0.25

Forging practice: Open die forging.

The rough forgings must be as close as possible to the final shape and size.

Minimum forging reduction in area shall be 1:4 from ingot to finished forging.

The flow lines shall be parallel to the axial length of the part.

3.0 DIMENSIONAL TOLERANCES

The forgings shall conform to the dimensional tolerances as specified in the drawing.

4.0 HEAT TREATMENT

The forgings shall be supplied in quenched and tempered condition as given below to get the required mechanical properties:

Heat to 855 +/- 15 degC and quench in oil.

Temper at 540 degC minimum with a soaking of 1 hour per inch of thickness.

5.0 MECHANICAL TESTING

The testing for mechanical properties shall be conducted as per ASTM A370 at room temperature from finished heat treated material or identical specimen which has undergone the same amount of working, for each size/melt/Heat treatment batch. Test specimen shall be taken from a location which represents the midwall of the heaviest section. The test results shall meet the requirements as given below:

Tensile strength : 97 Kg/sq.mm min.

Yield strength : 85 Kg/sq.mm min.

% Elongation : 18 min.

Hardness : 285 - 320 BHN (minimum 3 values)

Charpy impact test } Average of 3 values 8 Kgm/sq.cm minimum
(on 2 mm "U" notch) } and single minimum value 6 Kgm/sq.cm.

6.0 NON DESTRUCTIVE TESTING

Ultrasonic test shall be conducted on all forgings according to SA 388 and the acceptance standard shall be as per AM 203.2 of ASME Section VIII Division 2.

7.0 WORKMANSHIP AND FINISH

BHEL, Tiruchirappalli – 620014.	Quality Assurance	Technical Delivery Conditions
Product: ALLOY STEEL FORGINGS TO SPEC.AISI 4140 FOR USE IN HIGH PRESSURE VALVES		
Document No.: TDC:0:417	Rev. No.: 00	Effective date: 01/08/1994 Page 2 of 2

The forgings shall be supplied in proof machined or shot blasted condition, if specified in the drawing/PO.

The forgings shall be examined visually and shall be free from scales, laps, seams, folds, cracks or other injurious defects and shall have a workman like finish.

All forgings shall be coated with a protective layer of transparent rust preventive before despatch.

8.0 **REPAIR**

Repairs involving fusion welding are prohibited.

Surface defects can be removed by mechanical means and the defective areas shall be smoothly dressed up with the adjacent surface. The minimum thickness after repair shall meet the drawing requirements.

9.0 **MARKING AND PACKING**

The following details shall be legibly marked on each forging by hard stamping with low stress stamps.

1. Specification and grade
2. Part identification
3. Melt number
4. Maker's emblem
5. Inspecting authority's seal

The forgings shall be properly packed and despatched to avoid any damage during transit.

10.0 **INSPECTION AND CERTIFICATION**

All the tests specified here shall be carried out at works and the test results shall be furnished in the test certificates.

The test certificate shall contain the following details in English language only.

1. Purchase Order Number.
2. Test Certificate Number.
3. TDC Number.
4. Quantity and Size.
5. Steel making process.
6. Specification, Grade and Melt Number.
7. Chemistry - Meltwise.
8. Heat treatment details like Temperature, soaking time, cooling medium etc.
9. Mechanical test results - Tensile, Hardness and Impact.
10. NDT results with reference and acceptance standards.

In addition, mill test certificate for raw material shall be enclosed.

- 11.0 **END USE** These forgings are intended for use in high pressure valves for components like gland flanges.

S.Selvrajan Prepared	R.Sasikumar (QA) Reveiwed	M.Rajakumar (Engg)	K.Rengachari Approved
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Product: Rolled Bars and Forgings (for Valves)-IOCL & BPCL Projects

Revisions Record:

Rev 00: Dt: 16/05/2018 – Fresh issue

1. MATERIAL SPECIFICATIONS:

All the codes, standards, specifications, drawings & procedures, etc., referred in this TDC shall be of latest revision as on the date of Enquiry/Purchase Order, whichever is earlier, unless specified otherwise.

Stainless Steel (SS) : SA 182 F304, 316
Additional Requirement : As listed below (Supplementary to above material specifications)
Size and Quantity : As per Purchase order & Drawing.

2. CHEMICAL COMPOSITION & PROCESS

- 1) Melting: fully killed.
- 2) Raw material Steel for IBR forging items to be inspected at Mill & test certificate countersigned by IBR approved inspecting authority, if the mill is not approved under IBR as well known steel maker.
- 3) Forging: Hot working to ensure uniformity of structure & strength with reduction ratio in area 4:1 min from ingot to final forging, close to final size & shape. Flow lines to be parallel to axis of openings. Forged Items ordered to this TDC shall be forged to the nearest shape before machining to final dimensions as per respective drawing.
- 4) Blooms / Billets used for forgings (Side Length or Dia $\geq$ 50mm) shall be UT tested. For Acceptance criteria refer Cl.6.0. For finished bars, this can be done at final stage.
- 5) SS: All raw materials used in steel making including incoming scrap shall be checked by supplier to ensure freedom from radioactivity.

3. DIMENSIONS AND TOLERANCES

Dimensions & their tolerances shall be as per drawing. For untoleranced dimensions: SS: as per SA 484.

4. HEAT TREATMENT(HT)

- 1) Heat treatment shall be as per applicable drawing. Unless otherwise specified, the following heat treatment shall be following:
SS: As per applicable material specification & grade.

5. MECHANICAL TESTS

- 1) Extent of test: One Specimen for each size/heat/HT batch from sample product or identical test coupon.
- 2) **Tensile test:** The test specimens shall be removed from a test coupon (TC) after the final heat-treatment cycle. Perform tensile tests at room temperature in accordance with the procedures specified in ASTM A370. Perform a minimum of one tensile test. All yield strengths shall be determined using 0.2 % offset method of ASTM A370. The results of the tensile test(s) shall satisfy the applicable material specification requirements.

If the results of the tensile test(s) do not satisfy the applicable requirements, two additional tests on two additional test specimens (removed from the same TC with no additional heat treatment) may be performed in an effort to qualify the material. The results of each of these tests shall satisfy the applicable requirements.

- 3) Inter Granular Corrosion (IGC) test shall be conducted for all austenitic stainless steel as follows:
ASTM A262 Practice 'E' with acceptance criteria of 'no cracks as observed from 20X magnification' for all materials other than castings. 'Microscopic structure to be observed from 250 X magnification' in addition.
For the IGC test as described above, two sets of samples to be drawn from each solution annealing lot. One set shall correspond to the highest Carbon content and the other to the highest pressure rating. Photograph of the microscopic structure shall be submitted for record.

Additional requirements of tests:

- 4) **Bend test: Acceptance as per IBR**
SS: Sample 19mm.Thick(t) x 25.4mm width to be bent 180 deg. Around mandrel of radius =1.5 x t.

6. NON DESTRUCTIVE TEST

- 1) Extent of test: for each product. Stage of test : After heat treatment.
- 2) **Volumetric NDE - UT:** As per ASTM A388. All finished forgings of dia/wall thickness > 40 mm;
Acceptance: ASME Sec.VIII Div. 2 Cl.3.3.4.
- 3) **Surface NDT -**
 - a) **Relevant indication:** Surface-rupture NDE indication with major dimensions > 1.6 mm (1/16 in).
 - b) **Linear indication:** Surface NDE indication whose length is $\geq$ three times its width.
 - c) **Rounded indication:** Surface NDE indication whose length is < three times its width.
 - d) **LPI for SS:** 100%: ASTM E165. **Acceptance:** No linear indications acceptable.
- 4) **SS:** Finished forgings shall be checked for radioactive contamination and reported. Survey meter shall be used to measure at 5 cm near the surface. Acceptance limits: Shall be less than 0.1 milli Rontgen (MR) per hr or 1 micro Sievert per hr.



Product: Rolled Bars and Forgings (for Valves)-IOCL & BPCL Projects

7. WORKMANSHIP AND FINISH

Items to be Pickled & passivated as per ASTM A380 for SS, & be free from scales & defects like laps, seams, folds, cracks, etc.

8. REPAIR

Repairs by fusion welding are prohibited. Surface defects can be removed by mechanical means and defective areas smoothly dressed up with the adjacent surface. Minimum thickness after repair to meet drawing / Specification.

9. MARKING AND PACKING

Details of stamping on each item with low stress stamps: Heat/melt number; material specification, grade & class; Maker's emblem/code & Inspection Authority's seal. Forgings to be properly packed and dispatched to avoid damage during transit.

10. INSPECTION AND CERTIFICATION

10.1 For IBR Items:

- a) Products shall be inspected at supplier's works/mill and the applicable IBR Form must be countersigned by the Inspecting Authority as indicated below in case the supplier's works/mill is not recognised as a "Well known Forger/Steel maker" under IBR:

- ☐ **Imported Items:** Inspecting Authority approved by IBR for the Country of origin.
☐ **Indigenously Supplied items:** Director of Boilers/Chief Inspector of Boilers/Inspecting Authority approved by IBR, for the respective state in India.

- b) Certification in IBR Form III-G for IBR items from "IBR-Well Known Forger" or "Inspecting Authority", as applicable, to be submitted. IBR Form III-G and a separate **manufacturer** Test certificate in English language with following details, shall accompany the product (including proof machined):

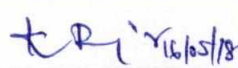
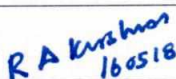
1. Purchase Order No.(BHEL), TDC No & its revision no, Test certificate no & date.
2. Specification, Grade & Class with applicable year of code, Heat Number, Drawing No., Quantity & Size.
3. Supplier of the steel used in making the finished product (well known and others in IBR Form IV).
4. Melting & forging process, Chemistry with incidental elements-Heat wise, Product analysis, Carbon Equivalent (CE).
5. Heat treatment details of the material and test bars.
6. Mechanical test results- Tensile (UTS, YTS (0.2% offset), % elongation, % reduction in area), Bend, Impact, Hardness and NDE test results with reference & acceptance standards.
7. Results of Inter Granular Corrosion (IGC) test along with photograph as detailed in Clause 5 (3).
8. Repair details if any, Certified copy of TC for starting material.
9. **For SS:** Measured Radioactivity levels shall be reported in the Mill Test Certificate (not to be recorded in IBR Form).

11. AUDIT CHECKS AT BHEL

BHEL reserves the right to carry out audit checks for chemistry, HT condition, mechanical test and NDT on representative test bars or job. Supplies found defective during check or subsequent processing at BHEL will be rejected.

12. END USE

These rolled bars and forgings are intended for use in IOCL and BPCL projects.

 16/05/18	 16/05/18	 16/05/18	 16/05/18	 16/05/18
Abdur Rahman Sultan	G. Panneer Selvam	K. Rajasekaran	R. Ananthakrishnan	Amit Roy
Sr.Engineer/ QA	DGM/QA	SM/Valves/Engg	AGM/Valves/Purchase	AGM/QA& BE
Prepared By	Reviewed By			Approved By

Documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder.

G1. INSTRUCTION TO BIDDER

Quotations shall be submitted before due date and time. Late offers are liable to be rejected, so please ensure to submit bid well within due date and time. Techno-commercial part will be opened on due date.

Based on evaluation of techno-commercial offers, Price bids of bidders who qualify from techno-commercial evaluation shall be opened. BHEL may decide to open the Price bid same day at 1700 hrs. If not opened on the same day, all qualifying bidders shall be notified for date of opening of Price bids by email/fax/post/courier/E-procurement system generated email.

G1.1 INSTRUCTION TO BIDDER (In case of Non-E-Procurement / Paper/ Manual/ Hard Copy based tenders)

Sealed Tenders can be dropped in the tender box labeled as 'Tender box for MM contracts'. This tender box is located at the entrance of Admin block BHEL Goindwal. Fax (01859-222061) / E-Mail (tendermm_ivp@bhel.in) offers received in time shall be considered only when such offers are complete in all respects. In case of bulky tender please handover quotation to Sh Rakesh Kumar/ SDGM/Head-MM or Sh Gurcharan Singh / AGM-Operations & MM. [Contact: 01859 224 615/631]. Bid can be send to following address:

**BHEL, Industrial Valve Plant,
#433, Industrial Complex,
Goindwal Sahib, Distt. Tarn Taran,
Punjab-143422.**

G1.2 INSTRUCTION TO BIDDER (In case of E-Procurement)

Interested bidders/Suppliers shall submit their offer through e-Procurement mode at <https://bhel.abcpurchase.com>. **Offers in any other mode will not be accepted.**

For Enterprise Procurement System (EPS) Bidders/Suppliers are requested to follow these steps:

a. Requirements

1. Computer with good Internet Connection.
2. Operating System should be Windows Vista / Windows 7 and above.
3. Web Browsers: Internet Explorer 9.0 (32-bit Browser only) & above

b. Mandatory Requirements:

Suppliers interested for registration for BHEL Open Tenders should have a valid DSC (Digital Signature Certificate) before Proceeding forward for Registration. Herein a Valid DSC refers to a Class-II/III Digital Signature Certificate (DSC) for Signing & Encryption (Required both digital signature certificate: Signing & Encryption) of bids issued by any of the valid Certifying Authorities (approved by Controller of Certifying Authorities) in India. Valid Digital Signature Certificate (DSC) must be installed in a computer system from where you want to access the website.

For Unregistered Suppliers in EPS:

Procedure for Online Registration in EPS for Open Tender Suppliers for BHEL. Please follow the below steps for registration: -

1. Click Register Button (Top of the Screen).


05/01/19



General Contract Conditions (GCC) of MM Tenders

[Address: BHEL Industrial Valve Plant: 433, Industrial Complex, Goindwal Sahib, Distt Tarn Taran, Punjab-143422]

2. Please input your organization PAN No (in case of Indian supplier) or select your "country" in case you are an overseas Supplier.
3. Select Units to participate in.
4. Fill up Company details.
4. Key in your desired login id If you have registered by keying in PAN No. then your desired login id will be prefixed by "OTI", In case of overseas suppliers it will be also prefixed with "OTI".
5. Fill in the Captcha code & agree to the terms & conditions and privacy policy of this website and click SUBMIT.

Once the above steps are completed, contact to M/s eProcurement Technologies Limited for ID Activation. M/s e Procurement Technologies limited, Ahmedabad will activate your ID within 2 business hours. After registering, follow the steps provided in "For Registered Supplier" to view RFQ.

NB: - 1 BHEL Administrator or user will have no role for approving Registration and Open Tenders and DSC for any supplier who has registered himself from the front END which is in case of OT.

For Registered Supplier in EPS:

1. Supplier visits EPS home page
2. Supplier Login in with their user id and password
3. Search the RFQ ID and views it.
4. Attaches themselves to the RFQ by clicking the "I/We wish to participate".
5. Supplier fills the bid template and makes necessary attachments
6. Supplier submits their bid by clicking Sign, Encryption & Save button.

In any problem is faced by supplier while login/registration in EPS (<https://bhel.abcprocure.com>) and any other assistance, please contact the support team of M/s e Procurement Technologies limited, Ahmedabad as per details mentioned in table below: -

Name	Contact Nos.	e-mail ID	Role	Location
Mukunthan	+91 6353215001	Trichy.bhel@eptl.in	Support Executive	Trichy
Swapnil Hamilton	+91 7940270549	swapnil.h@eptl.in	Support Executive	HO – Ahmedabad
Hardik Oza	+91 7940270560	Hardik.oza@eptl.in	Support Executive	HO – Ahmedabad
Ankur Bhatt	+91 7940270590	ankur.bhatt@eptl.in	Support Executive	HO – Ahmedabad
Prashant Rajyaguru	+91 7940270545	prashant@eptl.in	Asst. Manager – Implementation & Support	HO – Ahmedabad
Dharam Rathod	+91 7940270596	dharam@eptl.in	Manager – Implementation & Support	HO – Ahmedabad
Pradip Parmar	+91 7940270532	pradip@eptl.in	Sr Mgr – Implementation & Support	HO – Ahmedabad
Devang Patel	+91 7940270576	devang@eptl.in	Sr Manager – Implementation & Support	HO – Ahmedabad

G2 OTHER IMPORTANT INFORMATION RELATED TO E-PROCUREMENT TENDERS

1. The bidder has to keep track of any changes by viewing the addendum / Corrigendum's issued by the Purchaser on time-to- time basis in the E-Procurement platform. The Company calling for tenders shall not be responsible for any claims/problems arising out of this.
2. The user should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the processes and steps. BHEL and M/s e Procurement Technologies limited will not be responsible for incomplete bid submission by users. Users may also note that the incomplete bids will not be saved by the system and are not available for the Purchaser for processing.
3. Before uploading scanned documents if any, the bidders shall sign on all the statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity.
4. On the due date of tender opening, only technical bids will be opened. The opened technical bids will be evaluated by us and clarifications required, if any, will be called for from the bidders on technical and commercial points. If no reply is received from the vendor for the clarification raised by BHEL with in the final cut-off date, those vendors offer will be processed with the documents available / submitted against this tender. Offers not meeting the required specification and technical condition will be summarily rejected. The price bids of technically suitable bidders will be opened on a later date with prior intimation to techno-commercially suitable bidders.
5. Ranking L-1, L-2 etc. shall be done for individual item for the techno-commercially acceptable offers on landed cost to BHEL, IVP Goindwal basis and BHEL reserves the right to place order for individual items with different vendors. In the event of more than one vendor becoming L1 for the item, the enquiry quantity will be shared equally among all the L1 vendors.
6. BHEL reserves the right to negotiate with L1 vendor or re-float the tender for items where, L1 price is not the lowest acceptable price; BHEL reserves the right to increase or decrease the tender quantity.
7. **If supplier is mentioning delivery destination within state/ outside state depending upon his location of factory, Free On Road etc these are assumed as on FOR Goindwal. If supplier is wishing to give delivery on Ex works basis, then he has to clearly mention about it.**

G3 PRICE BASIS

- a. Order of enquiry item sl. No. shall be maintained in the quotation.
- b. The rates quoted shall be firm and fixed. No price variation is proposed and allowed.
- c. Rates quoted should be F.O.R Goindwal basis. If bidder has quoted Ex Works, loading shall be done as per BHEL discretion for tender evaluation.

Variation in GST or any other statutory levies during contractual delivery period shall be to BHEL's account

G4 VALIDITY OF OFFERS:

The offers shall be kept open for acceptance 'for number of days mentioned in special terms and conditions' from the date of opening of the tender. In case of extension of tender opening date, the validity shall be suitably revised.

G5 SCOPE OF SUPPLY

Material shall be supplied as per the applicable latest Technical Delivery Conditions (TDC)/ Material Standard requirements/BPS/Drawing and other requirement as given in the Tender

GCC: REV:08

General Contract Conditions (GCC) of MM Tenders

[Address: BHEL Industrial Valve Plant: 433, Industrial Complex, Goindwal Sahib, Distt Tarn Taran, Punjab-143422]

Enquiry. National & International material Standards shall have to be arranged by vendors themselves.

G6 REPLACEMENT OF REJECTION

If the material is rejected due to defective workmanship during inspection or at the time of actual use, within the guarantee period (i.e. as per clause 13), the rejected material shall be replaced by the supplier. Corresponding quantity shall be treated as unsupplied against respective purchase order till replacement is received at BHEL. If the material is found defective and rejected during use for which payment has already been released the rejected quantity shall be supplied free of cost by the vendor within a month of intimation of the rejection by BHEL.

Lifting of rejected material is under Supplier's scope. BHEL will inform related invoice, qty etc to supplier. Supplier is expected to give the plan to lift and advance intimation when visiting to lift the material. Material should be lifted within one month from date of intimation. After one month BHEL will not be responsible for rejected material. BHEL may decide to send the rejected material on to Pay basis to supplier. Any leniency/ unresponsiveness/delay on part of supplier may lead to appropriate action by BHEL. Any request to postpone in written may be considered but replacement should not be linked with lifting of material.

G7 SUPPLIED MATERIAL ADJUSTMENT

Item/s pending in previous PO has to be billed in previous PO only. Otherwise BHEL will be free to adjust the supplies in previous PO. Any implication of tax will be on supplier's account. For this it is desirable to reconcile the pending PO statement every month/frequently. BHEL will give pending PO statement every month. This can also be viewed at Portal (<http://vis.bheltry.co.in/mm/index.jsp>).

G8 DELIVERY SCHEDULE

Supplies shall be affected and completed as per schedule mentioned in special terms and conditions. **Further, BHEL may release delivery schedule from time to time based upon our requirement with mutual understanding.** Vendor shall be required to complete the order as per the BHEL schedule requested.

G9 ACCESS TO MANUFACTURING PREMISES:

While Purchase Orders placed on the vendor are under execution, authorized representatives of BHEL shall be allowed free access to the manufacturing facilities for the purpose of inspection or monitoring the progress of purchase orders. This access will also be extended to representatives of BHEL's customers accompanying the authorized representative/s of BHEL (which shall be intimated in advance), if our contractual requirements with our customers call for the same.

G10 TERMS OF PAYMENT:

- a. Due payment against supplies received shall be due after 30 days of receipt and acceptance of material and shall be paid within next 15 days' period. In case of any deviation from standard payment term mentioned, BHEL at its discretion may load on the item price at "Base rate of SBI (as applicable on the date of bid opening; Techno-commercial bid opening) + 6% shall be considered for loading for the period of relaxation sought by bidders.
- b. Documents to be submitted (if applicable)
 - i. Tax invoice (Invoice shall be GST compliant and should contain all the required information such as GST No, HSN code etc.)
 - ii. Transporter copy along with material/consignment.
 - iii. Material Test Certificates (MTC) and
 - iv. Compliance Certificate.
- c. GST registration number is to be submitted by qualified vendor as per GST law.
- d. It is mandatory to mention proper material codes in the invoices and separate invoices to be raised for different POs.

e. BHEL releases payment through EFT mode ONLY. Necessary details may please be submitted by filling required format before release of payment.

f. Conditions relating to release of GST portion:

Payment of GST portion will be released to vendor only upon completion of statutory requirement and further subject to following:

The reimbursement of GST portion of invoice shall be released only upon: -

1. vendor declaring such invoice in his GSTR-1 and
 2. receipt of goods and Tax invoice by BHEL and
 3. Confirmation of payment of GST thereon by vendor on GSTN portal.
 4. Above is subject to receipt of goods/service and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.
- In case GST credit is delayed/denied to BHEL due to non/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 shall be recoverable from vendor along with interest levied / leviable on BHEL.
 - In case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest levied / leviable on BHEL.

G11 AVAILING INPUT TAX CREDIT (ITC) BY BHEL:

1. Since ITC can be availed only when BHEL is in possession of GST Tax invoice and after receipt of goods. Thus, vendor to ensure timely dispatch of goods and Tax invoice. It may be noted that in case of any delay in receipt of Tax Invoice and/or receipt of goods, the ITC availment by BHEL will get delayed thus entailing additional cash outflow & may even get denied if ITC availment timelines are breached.
2. Further ITC can be availed only when vendor has declared such invoice in his outward supply Return GSTR-1 and after GST thereon has been paid by him at the time of filing of monthly Return.
3. If GST credit is delayed/denied to BHEL due to non/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 shall be recoverable from vendor along with interest levied/leviable on BHEL.
4. Further, in case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest levied/leviable on BHEL.

G12 LIABILITY UNDER REVERSE CHARGE (RCM)

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Any GST liability arising on BHEL under Reverse Charge (RCM) before actual receipt of goods and/ or Invoice thereof would be subject to recovery of Interest leviable for the period between the date of such liability and actual date of eligibility of ITC based on receipt of goods, receipt of Invoices and other conditions specified in GST Law as applicable.

G13 INSPECTION

- a. All required tests as called in referred material standard/BHEL/TDC/drawing etc shall be carried out by vendor at no extra cost. **BHEL may decide to inspect itself/arrange third party at vendors' works itself as and when necessary with prior intimation to the vendor.** No additional charges shall be claimed for such inspections.
- b. Third party inspection charges will be borne by BHEL. Moreover, all required infrastructure (testing, tools etc) have to be arranged by supplier.
- c. **Vendor will give inspection call sufficiently in advance considering the delivery period stipulated in the purchase order.**
- d. Material Test Certificates (MTC), Inspection reports and Compliance/Guarantee Certificate are to be provided along with the supplies.
- e. Latest applicable revisions of standards/procedures to be referred. International/National standards are to be arranged by vendor.
- f. Any inspection carried out before supply by vendor/incoming stage at BHEL notwithstanding, if any defect/non-conformity is noted during processing, the same shall be attended/replaced by vendor at no extra cost.
- g. Necessary tooling including thread gauges etc. have to be arranged by vendor. Only in exceptional cases, based on BHEL discretions item/nature, BHEL may consider request to provide gauges if available with BHEL. But in no case this shall be linked with delivery of material.
- h. BHEL representative from unit or CQ is authorized to carry out audits along with TPIA at vendor's works before clearing the items for dispatch.

G14 PREFERENCES FOR MSE's

Preferences as mentioned in "Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012" & "Public Procurement Policy for Micro and Small Enterprises (MSEs) Amendment Order, 2018", shall be given to Micro and Small enterprises.

Main points which are mentioned in the above orders are as follows:

- 25% Procurement of the tender value shall be made from MSE (Micro, Small Enterprises) firms.
- 25% of the 25% quantity (i.e. 6.25% of the tender quantity) offered to the MSE's shall be reserved for MSE's owned by SC/STs. Failure to participate by any MSE owned by SC/ST's; this 6.25% quantity shall be procured from other MSEs.
- 3% from within the 25% quantity offered to the MSE's shall be reserved for women owned MSE's. Failure to participate by any MSE owned by women; this 3% quantity shall be procured from other MSEs.
- EMD shall be exempted for MSE's. All these benefits are subject to production of all statutory documents
- In tender, participating Micro and Small Enterprises quoting price within price band of L1+15 per cent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be allowed to supply up to 25 per cent of total tendered

value. In case of more than one such Micro and Small Enterprise, the supply shall be shared proportionately (to tendered quantity).

“MSE suppliers can avail the intended benefits only if they submit along with the offer UAM (Udyog Aadhaar Memorandum), attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at Annexure -1 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer.

G15 GUARANTEE/WARRANTEE

Vendor shall give a guarantee of 18 months from the date of dispatch or 12 months from date of receipt, against manufacturing defects, whichever is earlier. In case of non-acceptance of this term bid will be rejected.

G16 PENALTY FOR LATE DELIVERY

‘Time is the essence of the contract’. As such, delivery of goods specified in the Purchase Orders released under the scope of this contract shall be made within the time limit prescribed therein. Penalty for late delivery will be applicable @ 0.5% per week or part thereof subject to a maximum of 10.0 %.

If any vendor does not accept LD ½% of the supply for each week of delay subject to a maximum of 5%, their offer is likely to be rejected by BHEL and the price bid shall not be opened. Bidders accepting for 10% LD shall not be loaded on account of LD. However, bidders who offer any other % LD [between 5% to 10%] shall be loaded @ % deviation from 10% and their accepted %. e.g. If a bidder accepts for a max of 7% LD only, their offer would be loaded @ 3% (10 – 7 = 3).

BHEL reserves the right to receive or not receive the material after the due date of PO. Applicable GST shall also be recovered from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.

G17 RISK PURCHASE

BHEL shall be entitled to terminate the contract/pending POs at any stage and to purchase elsewhere at the risk and cost of the vendor, either the whole of the goods or any part thereof which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid. Vendor shall be liable for the losses, which BHEL may sustain by way of such risk purchase.

G18 SUB-CONTRACT

The purchase order or any part thereof shall not be sub-contracted, assigned or otherwise transferred without previously obtaining the BHEL's consent in writing.



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G19 FORCE MAJEURE

If at any time during the continuance of the contract, the performance in which or in any part by either party of any obligations under the contract are prevented or delayed by reason of any war, hostilities, acts of public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine restrictions, or acts of God (hereinafter referred to "an events" then provided the notice of happening of any such event is given by either party to the other within 21 days of the occurrence thereof, neither party shall by reason of such event be entitled to terminate the contract nor shall either party have any claim for damages against the other in respect of such non-performance and delay in performance and delivery under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist. If the performance in whole or part of any obligation under the contract is prevented or delayed by reason of any such event, claims of extension of time shall be granted for periods considered reasonable by BHEL subject to prior notification by the vendor to BHEL of the particulars of the event and supply to BHEL, if required, of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed a waiver of time in respect of remaining deliveries.

G20 DISPUTES

In the event of any dispute and/or difference arising between the Vendor and BHEL as to interpretation and/or execution of the contract and/or the respective rights and liabilities of the parties, such disputes and/or differences shall be referred to the sole arbitrator nominated by BHEL. The provisions of the Indian Arbitration Act and the rules there under shall apply to such arbitration. The award passed by the arbitrator shall be final and conclusively binding on all the parties.

G21 JURISDICTION

The court of the place from where the purchase order is issued during the contractual period shall alone have jurisdiction to decide any dispute arising out of or in connection with the purchase order.

G22 CLARIFICATIONS

The correspondence exchanged against the tender from both tenderer and BHEL through email/e-procurement are considered as valid document legally though it is not signed. It is treated as valid confirmations made on behalf of the respective company and very much comes under the legal ambit of the business transaction and hence it is binding on both the parties to the business. Any transaction pertaining to the tender from both the parties of business done round the clock irrespective of the office or business hours of the companies, are valid legally and binding on both the parties. This applies to the extent only in such cases where deadline time for transaction is not specifically declared by either or both the parties to the business.

G23 LOI (Letter of Intent)

BHEL may issue LOI prior to the PO for any reason whatsoever. The LOI in such cases is to be treated as PO for all practical purposes and all the Terms & Conditions of the tender shall be applicable from the date of issue of LOI.

G24 WORDS AND FIGURES

- a. If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity}, the unit price shall prevail and the total price

corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.

- b. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- c. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.
- d. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.
- e. Bids should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else shall be liable for rejection.
- f. All overwriting/cutting, etc will be numbered by bid opening officials and announced during bid opening.

G25 GENERAL

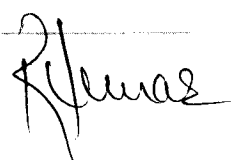
- a. BHEL will not be bound by any power of attorney granted by the vendors or by changes in the composition of the firm made subsequent to the execution of the contract. They may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the vendor concerned.
- b. BHEL reserves the right to extend the due date of opening, which shall be informed. Validity of offer shall be deemed to be revised accordingly.
- c. BHEL reserves the right to accept or reject any part or whole of the tender of a bidder by assigning a valid reason thereof. BHEL reserves the right to cancel the tender without assigning any reason thereof and without any obligation before any commitment.
- d. If possible, please submit soft copy of price quotation [copied on a blank CD of standard make] put in the sealed offer.
- e. Acceptance of all terms and conditions, in the form of signed copy of T&C or confirmation separately written, shall be submitted along with quotation. If nothing is mentioned, it shall be concluded that terms and conditions are acceptable.
- f. BHEL may increase/decrease item/s based on BHEL requirement before price bid opening. Suitable price implication may be asked from suppliers.
- g. BHEL may drop item/items from tender at any stage of tender before placing PO. BHEL may also delete PO with consent with supplier within delivery date of PO.
- h. After releasing PO, it is assumed that supplier has accepted PO if we do not receive acknowledgement from supplier within 5 days of date of PO.
- i. Any term is special tender terms and conditions will supersede the GCC.
- j. BHEL reserves the right to negotiate with L1 bidder/s.

G26 BANNED FIRMS

The offers of the bidders who are on the banned list as also the offer of the bidders, who engage in the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.

G27 DISCLAIMER CLAUSE: (Only for E procurement)

Neither the Organization (Bharat Heavy Electricals Ltd.) nor the service provider (M/s e Procurement Technologies limited) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.





General Contract Conditions (GCC) of MM Tenders

[Address: BHEL Industrial Valve Plant: 433, Industrial Complex, Goindwal Sahib, Distt Tarn Taran, Punjab-143422]

G28 FRAUD PREVENTION POLICY

The Bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

G29 REVERSE AUCTION

BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

G30 SUSPENSION OF BUSINESS DEALINGS WITH DEFAULTERS

The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com.

1.0 Integrity commitment, performance of the contract and punitive action thereof:

1.1. Commitment by BHEL:

BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.

1.2. Commitment by Bidder/ Supplier/ Contractor:

1.2.1. The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence

punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.

1.2.2. The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.

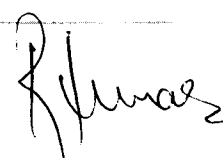
1.2.3. The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on [www. bhel.com](http://www.bhel.com) and/or under applicable legal provisions

G31 PREFERENCE TO MAKE IN INDIA

For the procurement, Public Procurement (Preference to make in India), order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by respective Nodal Ministry shall be applicable even if issued after issue of this NIT before finalisation of contract/PO/WO against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and / or local content in respect of this procurement, same shall be applicable.



Certificate by Chartered Accountant on letter head

This is to Certify that M/S ,
(hereinafter referred to as 'company') having its registered office at
is registered under MSMED Act 2006, (Entrepreneur
Memorandum No (Part-11) dtd:.....,
Category:..... (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722(E) dated October 5, 2006 :
Rs.....Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
Rs.....Lacs

(Strike off whichever is not applicable)

The above investment of Rs.....Lacs is within permissible limit of Rs.....Lacs forMicro / Small (Strike off which is not applicable) Category under MSMED Act 2006.

Or

The company has been graduated from its original category {Micro/ Small} (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No.3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name-

Membership number-

Seal of Chartered Accountant