

INVENTORY NO. _____ SIGN. AND DATE _____ REF. DRG. NO. _____ THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

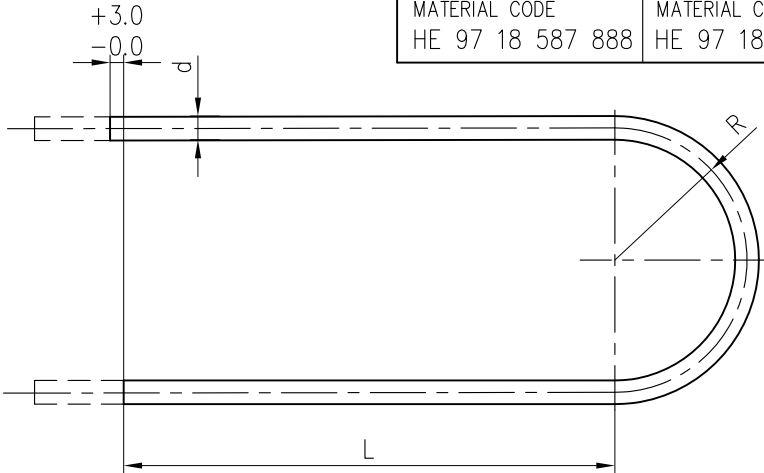
86610-10-21-3.DRG. NO. 3-175-01-01998

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

SL.NO.	RADIUS "R"	LEG LENGTH	H.P.HEATER NO. 6A/6B			H.P.HEATER NO. 7A/7B			H.P.HEATER NO. 8A/8B		
			THK	QTY.	DEV. LENGTH	THK	QTY.	DEV. LENGTH	THK	QTY.	DEV. LENGTH
1	31.7	L	2.77 MIN	56	15500	2.87 MIN	56	22700	2.90 MIN	56	15500
2	49.6	L	2.77 MIN	58	15556	2.87 MIN	58	22756	2.90 MIN	58	15556
3	67.5	L	2.71 MIN	61	15612	2.87 MIN	61	22812	2.90 MIN	61	15612
4	85.4	L	2.71 MIN	60	15668	2.87 MIN	60	22868	2.71 MIN	60	15668
5	103.2	L	2.71 MIN	61	15724	2.65 MIN	61	22924	2.71 MIN	61	15724
6	121.1	L	2.71 MIN	62	15781	2.65 MIN	62	22981	2.71 MIN	62	15781
7	139.0	L	2.50 MIN	59	15837	2.65 MIN	59	23037	2.71 MIN	59	15837
8	156.9	L	2.50 MIN	58	15893	2.65 MIN	58	23093	2.71 MIN	58	15893
9	174.7	L	2.50 MIN	59	15949	2.65 MIN	59	23149	2.71 MIN	59	15949
10	192.6	L	2.50 MIN	60	16005	2.60 MIN	60	23205	2.71 MIN	60	16005
11	210.5	L	2.50 MIN	59	16062	2.60 MIN	59	23262	2.71 MIN	59	16062
12	228.4	L	2.50 MIN	58	16118	2.60 MIN	58	23318	2.71 MIN	58	16118
13	246.2	L	2.50 MIN	59	16174	2.60 MIN	59	23374	2.71 MIN	59	16174
14	264.1	L	2.50 MIN	58	16230	2.60 MIN	58	23430	2.71 MIN	58	16230
15	282.0	L	2.50 MIN	57	16286	2.60 MIN	57	23486	2.60 MIN	57	16286
16	299.9	L	2.50 MIN	56	16343	2.60 MIN	56	23543	2.60 MIN	56	16343
17	317.7	L	2.50 MIN	55	16398	2.60 MIN	55	23598	2.60 MIN	55	16398
18	335.6	L	2.50 MIN	54	16455	2.60 MIN	54	23655	2.60 MIN	54	16455
19	353.5	L	2.50 MIN	53	16511	2.60 MIN	53	23711	2.60 MIN	53	16511
20	371.4	L	2.50 MIN	52	16567	2.60 MIN	52	23767	2.60 MIN	52	16567
21	389.2	L	2.50 MIN	47	16623	2.60 MIN	47	23823	2.60 MIN	47	16623
22	407.1	L	2.46 MIN	48	16679	2.60 MIN	48	23879	2.60 MIN	48	16679
23	425.0	L	2.46 MIN	47	16736	2.60 MIN	47	23936	2.60 MIN	47	16736
24	443.0	L	2.46 MIN	46	16792	2.60 MIN	46	23992	2.60 MIN	46	16792
25	460.7	L	2.46 MIN	45	16848	2.60 MIN	45	24048	2.60 MIN	45	16848
26	478.6	L	2.46 MIN	42	16904	2.60 MIN	42	24104	2.60 MIN	42	16904
27	496.5	L	2.46 MIN	41	16960	2.60 MIN	41	24160	2.60 MIN	41	16960
28	514.4	L+6	2.46 MIN	38	17029	2.60 MIN	38	24229	2.60 MIN	38	17029
29	532.2	L+12	2.46 MIN	35	17097	2.60 MIN	35	24297	2.60 MIN	35	17097
30	550.1	L+18	2.46 MIN	34	17165	2.60 MIN	34	24365	2.60 MIN	34	17165
31	568.0	L+24	2.46 MIN	31	17233	2.60 MIN	31	24433	2.60 MIN	31	17233
32	585.9	L+30	2.46 MIN	26	17301	2.60 MIN	26	24501	2.60 MIN	26	17301
33	603.8	L+36	2.46 MIN	22	17370	2.60 MIN	22	24570	2.60 MIN	22	17370
34	621.7	L+42	2.46 MIN	16	17438	2.60 MIN	16	24638	2.60 MIN	16	17438
TOTAL / HEATER				1673U			1673U			1673U	
TOTAL DEVELOPED LENGTH IN METER FOR TUBE BUNDLE /HEATER			2.77 MIN		1770.25	2.87 MIN		5354.66	2.90 MIN		2722.58
			2.71 MIN		3829.99	2.65 MIN		6887.55	2.71 MIN		10413.24
			2.50 MIN		13687.39	2.60 MIN		27088.43	2.60 MIN		14149.23
			2.46 MIN		7997.41	--		--	--		--
ESTIMATED WEIGHT OF TOTAL NUMBER OF TUBES PER HEATER IN Kgs./HEATER					~24761			~36907			~25430

H.P.HEATER-6A/6B	H.P.HEATER-7A/7B	H.P.HEATER-8A/8B
L = 7700	L = 11300	L = 7700
d = 15.875	d = 15.875	d = 15.875
MATERIAL CODE HE 97 18 587 888	MATERIAL CODE HE 97 18 587 896	MATERIAL CODE HE 97 18 587 900




- NOTES:-
- MATERIAL SA 688 TP 304 WITH CARBON MAX. 0.05% AS PER ASME SEC - II PART - A, YEAR OF EDITION AND ADDENDA AS PER P.O/ INDENT.
 - TECHINICAL REQUIREMENTS AS PER PRODUCT STANDARD
HE 5 1103 REVISION LATEST AS PER P.O/INDENT AND AS PER MATL. SPECIFICATION.
 - QUALITY REQUIREMENTS INSPECTION & CERTIFICATION AS PER
QUAILTY PLAN :- HY/ HE/ 004/U-TUBES REVISION LATEST AS PER P.O/INDENT.
 - INSPECTION :- M/S LLOYD'S .& CIB. (NO CIB IF IMPORTED)
 - HYDRO TEST PRESSURE ON EACH TUBE = 545 Kg/sq.cm (g)
 - a) MINIMUM WALL THICKNESS = +20% .
-0%
 - a) MAXIMUM WORKING PRESSURE (DESIGN PRESSURE) : 360 Kg/sq.cm (g)
b) MAXIMUM WORKING TEMP. (DESIGN TEMP.) : 330 °C
c) OPERATING MEDIUM : SHELL SIDE - STEAM & DRAIN.
TUBE SIDE - FEED WATER.

TYPE OF PRODUCT
OR
NAME OF CUSTOMER/PROJECT
700 MW.

	BHARAT HEAVY ELECTRICALS LTD.				DRN.	NAME	SIGN.	DATE	NO.OF VAR.
	HYDERABAD				CHD.	RAJESH M	M RAJESH	09.12.11.	
					APPD.	A K SAHOO	AKS	09.12.11.	
						K.KIRAN KUMAR		09.12.11.	NA

REV.	DATE	ALTERED	CHECKED	APPD	REV.	DATE	ALTERED	CHECKED	APPD	REV.	DATE	ALTERED	CHECKED	APPD
					ZONE					ZONE				

DEPT. HEE	GRADE OF TOL.DIM. C/M/F		SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO.OF ITEMS
CODE 405			NTS	NA	NA	NA	NA
TITLE U – TUBE FOR H.P HEATER – 6A/6B,7A/7B&8A/8B				CARD CODE	DRAWING NO. 3–175–01–01998		REV. 00
					SHEET No. 1		NO OF SHEETS 1