

# Annexure-7B

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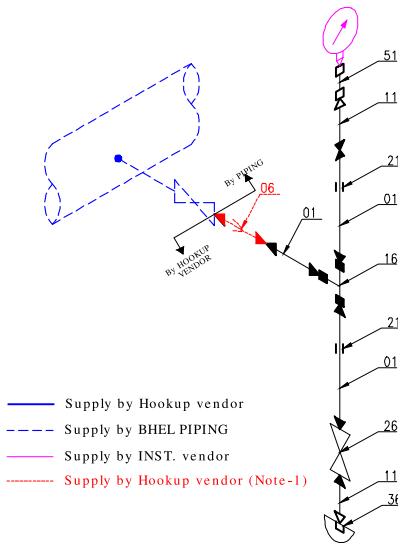
## Instrument Hook up Scheme

**PROJECT:** 1X370 MW YELAHANKA COMBINED CYCLE  
POWER PLANT

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME

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GENERAL DIMENSIONAL LIMITS, FITS &amp; TOLERANCES AS PER HY0230261

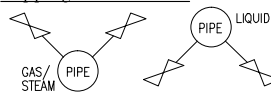


- Supply by Hookup vendor
- Supply by BHEL PIPING
- Supply by INST. vendor
- Supply by Hookup vendor (Note-1)

BOM for Material Code : PY9756132019; [SCHEME : PG-600#-L/G(SS)]

Pos. No.	DESCRIPTION	QTY/SET	UNITS	IBR in IIC	Swagelok/ Parker Make
01	PIPE (SMLS) SS 316L 1/2" SCH 80S	12	Mtrs	Not required	NO
06	REDUCER [NOTE-1] SS 316L 3/4" PL x 1/2" PLXPL, SCH80S	1	No's	Not required	NO
11	NIPPLE SS 316L 1/2" PL x NPT(M), SCH 80S	2	No's	Not required	NO
16	EQUAL TEE SS 316 1/2" SW, CL 3000	1	No's	Not required	NO
21	COUPLING SS 316 1/2" SW, CL 3000	2	No's	Not required	NO
51	COUPLING SS 316 1/2" NPT(F), CL 3000	1	No's	Not required	NO
26	GATE VALVE SS 316 1/2" SW, CL 800	1	No's	Not required	NO
36	CAP SS 316 1/2" NPT(F), CL 3000	1	No's	Not required	NO
86	U-BOLT GALVZD IS 226 1/2"	4	No's	Not required	NO

## Tapping Orientations



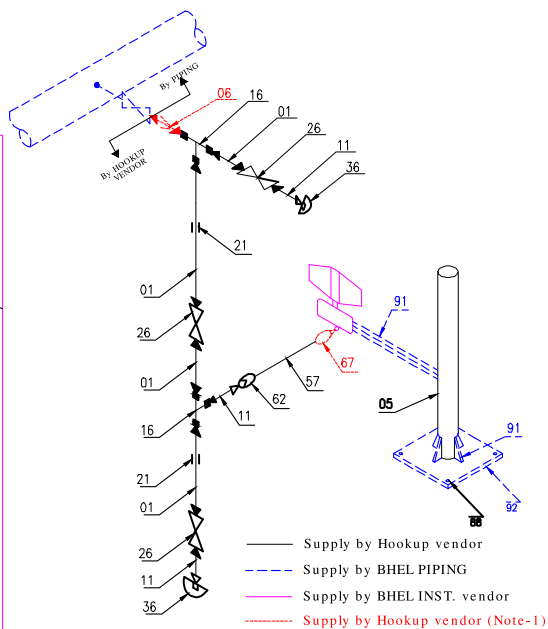
## NOTES ::

- (1) Concentric reducer & male connector requirement is project specific. Requirement of these items shall be separately mentioned in enquiry with separate material code. Site to check the same in supplies and erect as per above scheme.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.

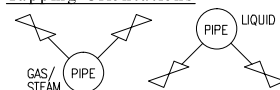
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		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

DEPT. CODE	UNTO. DMS. OR -G/AMF-	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITDS
450		NTS	N/A	-N/A-	-N/A-	-N/A-
TITLE			DRAWING NO.		REV.	
INSTALLATION DRAWING for PRESSURE GAUGE (Liquid/Gas)			PG-600# -L/G		00	
SHT. No			01		NO. OF SHT. 01	

GENERAL DIMENSIONAL LIMITS, FITS &amp; TOLERANCES AS PER HY0230261

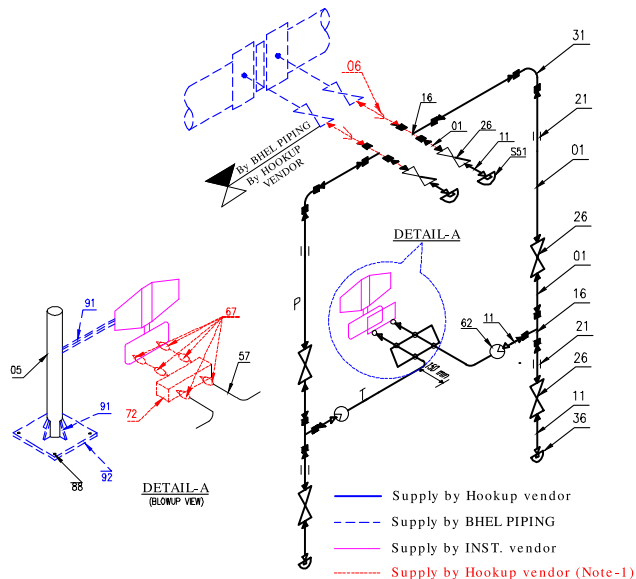
**NOTES ::**

- (1) Concentric reducer & male connector requirement is project specific. Requirement of these items shall be separately mentioned in enquiry with separate material code. Site to check the same in supplies and erect as per above scheme.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.

**Tapping Orientations****BOM for Material Code : PY9756132230; [SCHEM E : PT/PS-600#-L/G(SS) without SWAGelok].**

Pos No.	DESCRIPTION	QTY/SET	UNITS	IBR in IIC	Swagelok/ Parker Make
01	PIPE(SMLS) SS316L 1/2" SCH 80S	12	Mtrs	Not required	NO
11	NIFFLE SS316L 1/2" PLxNPT(M). SCH 80S	3	No's	Not required	NO
16	EQUALTEE SS316 1/2" SW CL 3000	2	No's	Not required	NO
21	COUPLING SS316 1/2" SW CL 3000	2	No's	Not required	NO
26	GATE VALVE SS316 1/2" SW CL 800	3	No's	Not required	NO
36	CAP SS316 1/2" NPT(F) CL 3000	2	No's	Not required	NO
57	TUBE(SMLS) SS316L 1/2" OD X 2.1 mm	3	Mtrs	Not required	NO
62	FEMALE CONNECTOR SS316 1/2" NPT(F) x 1/2" OD TUBE CL 8000	1	No's	Not required	NO
05	PIPE(SMLS) SA 106 Gr. B 2" SCH 40	1.5	Mtrs	Not required	NO
86	U-BOLT GALVZD IS 226 1/2"	4	No's	Not required	NO
88	ANCHOR BOLT Chro coated MS M10x160mm	4	No's	Not required	NO
67	MALE CONNECTOR [NOTE-1] SS316 1/2" NPT(M) x 1/2" OD TUBE CL 8000	1	No's	Not required	NO
06	REDUCER [NOTE-1] SS316L 3/4" PLx 1/2" PLXPL. SCH 80S (NOTE-1)	1	No's	Not required	NO
91	STAINLESS STEEL MS ANGLE (50x50x6) (BY BHEL PIPING)	2.7012	KGS	Not required	NO
92	STAINLESS STEEL 6 mm PLATE (BY BHEL PIPING)	23.55	KGS	Not required	NO

BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		NAME	SUNIL	SIGN.	03.08.15	NO. OF
CHD.	SUJATHA	03.08.15	—N.A.—			
APPD.	KAMAL	03.08.15	—N.A.—			
DEPT. CODE	450	UNTO. DMS. OR -N/A-	SCALE	NTS	WEIGHT (KG)	REF. TO ASSY. DRG.
TITLE	INSTALLATION DRAWING for PRESSURE TRANSMITTER	CARD CODE	N.A.	DRAWING NO.	PT/PS-600#-L/G (SS)	REV.
		SHT. No	01	NO. OF SHT.	01	



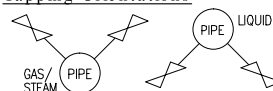
## NOTES ::

- (1) Concentric reducer & male connector requirement is project specific. Requirement of these items shall be separately mentioned in enquiry with separate material code. Site to check the same in supplies and erect as per above scheme.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.

## BOM for Material Code : PY9756132590; [SCHEME : FT/DPT-600#-L/G(SS) without SWAGelok]

Pos. No.	DESCRIPTION	QTY/SET [A]	UNITS	IBR in IIIC	Swagelok/ Parker Make
01	PIPE (SMLS) SS 316L 1/2" SCH 80S	24	Mtrs	Not required	NO
11	NIPPLE SS 316L 1/2" PL x NPT(M), SCH 80S	8	No's	Not required	NO
16	EQUAL TEE SS 316 1/2" SW, CL 3000	4	No's	Not required	NO
26	GATE VALVE SS 316 1/2" SW, CL 800	6	No's	Not required	NO
36	CAP SS 316 1/2" NPT(F), CL 3000	4	No's	Not required	NO
21	COUPLING SS 316 1/2" SW, CL 3000	4	No's	Not required	NO
31	ELBOW SS 316 1/2" SW, CL 3000	2	No's	Not required	NO
57	TUBE (SMLS) SS 316L 1/2" OD X 2.1 mm	6	Mtrs	Not required	NO
62	FEMALE CONNECTOR SS 316 1/2" NPT(F) x 1/2" OD TUBE, CL 8000	2	No's	Not required	NO
72	5 WAY MANIFOLD [NOTE-1] SS 316 1/2" NPT(F), CL 6000	1	No's	Not required	NO
05	PIPE (SMLS) SA 106 Gr. B 2" SCH 40	1.5	Mtrs	Not required	NO
86	U-BOLT GALVZD IS 228 1/2"	4	No's	Not required	NO
88	ANCHOR BOLT Chro coated MS M10x160mm	4	No's	Not required	NO
67	MALE CONNECTOR [NOTE-1] SS 316 1/2" NPT(M) x 1/2" OD TUBE, CL 6000	6	No's	Not required	NO
06	REDUCER [NOTE-1] SS 316L 3/4" PL x 1/2" PLXPL, SCH 80S	2	No's	Not required	NO
91	STR STEEL MS ANGLE (50x50x6) (BY BHEL PIPING)	2.7012	KG's	Not required	NO
92	STR STEEL 6 mm PLATE (BY BHEL PIPING)	23.55	KG's	Not required	NO

## Tapping Orientations



REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		NAME	SUNIL	SIGN.	DATE	NO. OF
		DRN.	SUNIL		03.08.15	VAR.
		APPD.	KAMAL		03.08.15	
DEPT. 11-230	UNTO. DMS. OR 6MM	SCALE	NTS	WEIGHT (KG)	N/A	ITEM NO. OF
CODE 450						ITDS
TITLE		DRAWING NO.		REV.		
INSTALLATION DRAWING for FLOW AND DIFFERENTIAL PRESSURE TR.		FT/DPT-600#-L/G(SS)		00		
SHT. No 01		NO. OF SHT. 01				

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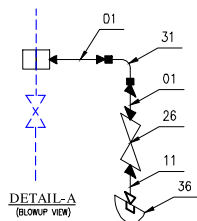
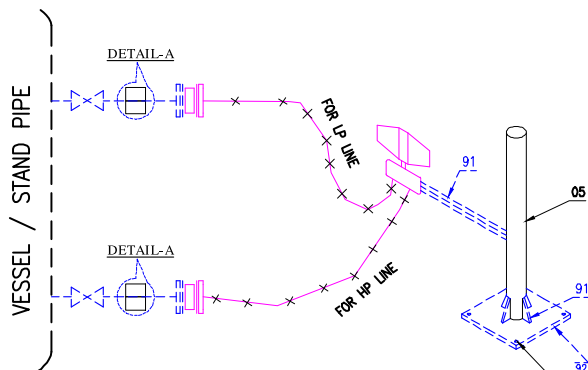
SIGN. AND DATE

REF. DRG. NO.

INVENTORY NO

COMPUTER FILE NAME

GENERAL DIMENSIONAL LIMITS, FITS &amp; TOLERANCES AS PER HY0230261



- Supply by Hookup vendor
- Supply by BHEL PIPING
- Supply by INST. vendor

BOM for Material Code : PY9756132817 ; [SCHEME : LT-2D-600#-L(SS) W/O SWAGelok]

Pos. No.	DESCRIPTION			QTY/SET [A]	UNITS	IBR in IIC	Swagelok/ Parker Make
01	PIPE (SMLS)	SS 316L	1/2" SCH 80S	6	Mtrs	Not required	NO
11	NIPPLE	SS 316L	1/2" PL x NPT(M), SCH 80S	2	No's	Not required	NO
31	ELBOW	SS 316	1/2" SW. CL 3000	2	No's	Not required	NO
26	GATE VALVE	SS 316	1/2" SW. CL 800	2	No's	Not required	NO
36	CAP	SS 316	1/2" NPT(F), CL 3000	2	No's	Not required	NO
05	PIPE (SMLS)	SA 106 Gr. B	2" SCH 40	1.5	Mtrs	Not required	NO
86	U-BOLT GALVZD	IS 228	1/2"	4	No's	Not required	NO
88	ANCHOR BOLT	Chro coated MS	M10x160mm	4	No's	Not required	NO
91	STR STEEL MS ANGLE(50x50x6) (BY BHEL PIPING)			2.7012	KG's	Not required	NO
92	STR STEEL 6 mm PLATE (BY BHEL PIPING)			23.55	KG's	Not required	NO

## NOTES ::

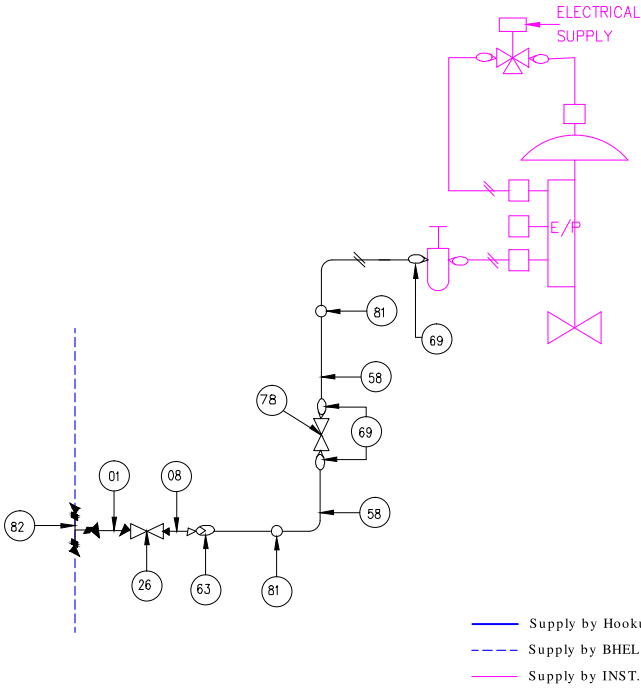
- (1) Materials shown in "DETAIL-A" are required only if drip ring is not supplied along with instrument. Requirement of these item shall be separately mentioned in enquiry with separate material code.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

DEPT. LT-2D	UNTO. DMS. 0/0MM	SCALE NTS	WEIGHT (KG) N/A	REF. TO ASSY. DRG. -N/A-	ITEM NO. -N/A-	NO. OF ITDS -N/A-
TITLE INSTALLATION DRAWING for LEVEL TRANSMITTER (DIA-SEALED)	CARD CODE N/A	DRAWING NO. LT-2D-600# -L	SHT. No 01	NO. OF SHT. 01	REV. 00	


INVENTORY NO. \_\_\_\_\_ SIGN. AND DATE \_\_\_\_\_ REF. DRG. NO. \_\_\_\_\_ COMPUTER FILE NAME \_\_\_\_\_

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261



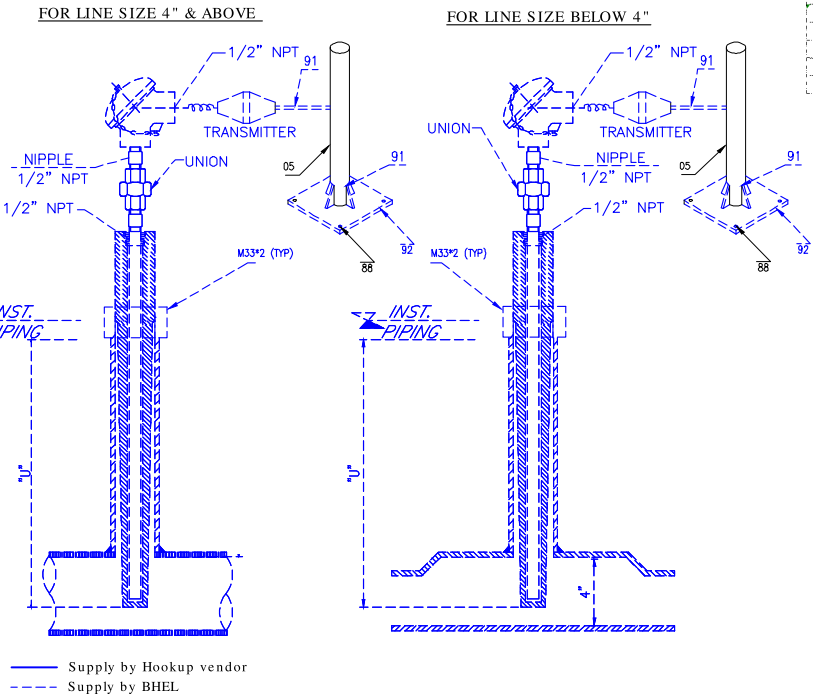
BOM for Material Code : PY9756132841 : [SCHEME : CV-600#(SS) without SWAGELOK]									
Pos. No.	DESCRIPTION				QTY/SET [A]	UNITS	IBR in IIC	Swagelok/ Parker Make	
58	TUBE (SMLS)	SS 316L	6 x 1mm		12	Mtrs	Not required	NO	
69	MALE CONNECTOR	SS 316	1/4" NPT(F) x 6mm OD TUBE, CL6000		3	No's	Not required	NO	
63	FEMALE CONNECTOR	SS 316	1/4" NPT(F) x 6mm OD TUBE, CL6000		1	No's	Not required	NO	
81	TUBE UNION	SS 316	6mm OD, CL3000		2	No's	Not required	NO	
78	NEEDLE VALVE	SS 316	1/2" NPT(F), CL 800		1	No's	Not required	NO	
82	UNEQUAL TEE	SS 316	1" x 1" x 1/2" SW, CL 3000		1	No's	Not required	NO	
08	REDUCER	SS 316	1/2" SW x 1/4" NPT(M), SCH 80S		1	No's	Not required	NO	
26	GATE VALVE	SS 316	1/2" SW, CL 800		1	No's	Not required	NO	
01	PIPE (SMLS)	SS 316L	1/2" SCH 80S		3	Mtrs	Not required	NO	
86	U-BOLT GALVZD	S 226	1/2"		2	No's	Not required	NO	
83	SHELL TYPE PIPE CLAMP	MS	1/4"		4	No's	Not required	NO	

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

 BHARAT HEAVY ELECTRICALS LTD. HYDERABAD				NAME	SUNIL	SIGN.	DATE	NO. OF
DEPT.	INTOL. DIMS. OR	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.				VAR.
CODE	450	NTS	N/A					
TITLE				DRAWING NO.		REV.		
INSTALLATION DRAWING for CONTROL VALVE				CV-600# (SS)		00		
				SHT. No	01	NO. OF SHT.	01	

INVENTORY NO. \_\_\_\_\_ SIGN. AND DATE \_\_\_\_\_ REF. DRG. NO. \_\_\_\_\_ COMPUTER FILE NAME \_\_\_\_\_

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261



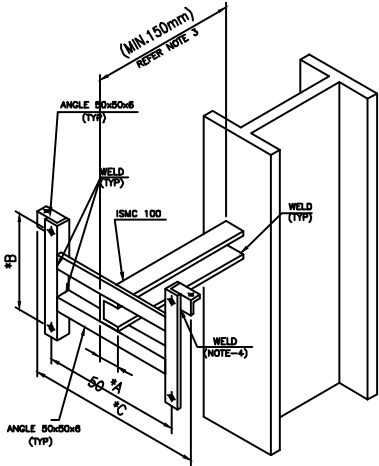
**NOTES:**  
1) IN CASE OF DUPLEX RTD / THERMOCOUPLE, TWO INDEPENDENT ELECTRICAL ENTRIES WILL BE PROVIDED.

BOM for Material Code : PY9766132868 : [SCHEME : TE/TT without SWAGELOK]						
Pos. No.	DESCRIPTION		QTY/SET (A)	UNITS	ISR in IIC	Swagelok Parker Make
05	PIPE (SMLS)	ISA 108 Gr. B	2' SCH 40	1.5	Mtrs	Not require
06	UBOLT GALVZD	IS 228	1/2"	4	Nbs	Not require
08	ANCHOR BOL	Chro coated MS	M 12x100mm	4	Nbs	Not require
91	STR STEEL MS ANCH F(6x50x8) (BY BHEL PIPING)			2.7012	KG's	Not require
92	STR STEEL 6 mm PLATE (BY BHEL PIPING)			23.55	KG's	Not require

	BHARAT HEAVY ELECTRICALS LTD. HYDERABAD				NAME	SUNIL	SIGN.	DATE	NO. OF
	DEPT.	UNTO. DMS. OR -N/A-	SCALE	NTS	WEIGHT (KG)	REF. TO ASSY. DRG.	-N/A-	-N/A-	NO. OF
	CODE	450							ITDS
	TITLE	INSTALLATION DRAWING for RTD/TC WITH THERMOWELL			CARD CODE	N.A.	DRAWING NO.	TE/TT	REV.
		SHT. No	01	NO. OF SHT.	01				00

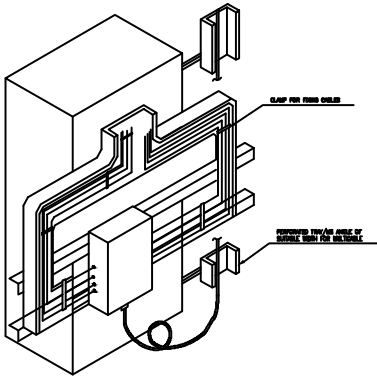
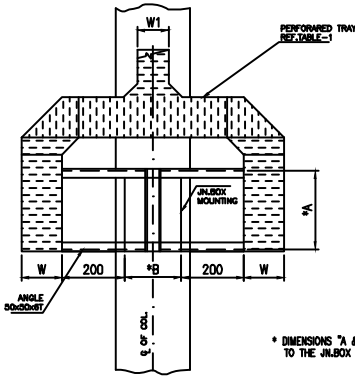
INVENTORY NO. \_\_\_\_\_ SIGN. AND DATE \_\_\_\_\_ REF. DRG. NO. \_\_\_\_\_ COMPUTER FILE NAME \_\_\_\_\_  
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GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261



TABLES-1 (TYP)












JN.BOX	W1	W
12PWR	300	150
8PWR	300	150
6PWR	200	100
4PWR	150	100



BOM for Material Code : PY9756132876 ; [SCHEME : JB without SWAGelok]

Pos. No.	DESCRIPTION			QTY/SET (A)	UNITS	IBR in IIIC	Swagelok/ Parker Make
93	SCRU HEX	M10X50 P8-8		6	No's	Not required	NO
94	NUT HEX P	M10-8		6	No's	Not required	NO
95	WASHER MCD	10.5-ST		12	No's	Not required	NO
88	ANCHOR BOLT	Chro coated MS	M10x160mm	4	No's	Not required	NO

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

			BHARAT HEAVY ELECTRICALS LTD. HYDERABAD			<table><tr><td>DRN.</td><td>NAME</td><td>SIGN.</td><td>DATE</td><td>NO. OF VARS.</td></tr><tr><td></td><td>SUNIL</td><td></td><td>03.08.15</td><td></td></tr><tr><td>CHD.</td><td>SUJATHA</td><td></td><td>03.08.15</td><td>-N/A-</td></tr><tr><td>APPD.</td><td>KAMAL</td><td></td><td>03.08.15</td><td></td></tr></table>		DRN.	NAME	SIGN.	DATE	NO. OF VARS.		SUNIL		03.08.15		CHD.	SUJATHA		03.08.15	-N/A-	APPD.	KAMAL		03.08.15	
DRN.	NAME	SIGN.	DATE	NO. OF VARS.																							
	SUNIL		03.08.15																								
CHD.	SUJATHA		03.08.15	-N/A-																							
APPD.	KAMAL		03.08.15																								
DEPT.	UNTO. DIMS.		SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITDS																				
CODE -450	OR -6MM-	NTS	N/A	N/A	-N/A-	-N/A-	-N/A-																				
TITLE				CARD CODE	DRAWING NO.		REV.																				
INSTALLATION DRAWING for JUNCTION BOX				N/A	JB without SWAGelok		00																				
				N/A	SHT. No. 01		NO. OF SHT. 01																				