



PRODUCT STANDARD TURBINES & COMPRESSORS

TC – 5 – 6213

REV NO: 04

SHEET 1 OF 7

VERTICAL INSERT **(SW)**

1. SCOPE:

This standard covers requirement of vertical insert for turbine and compressors projects. These are welded on to the pipelines for providing tapping connections for instruments, bypass lines, drains and vents.

2. MATERIAL SPECIFICATION

The raw material specification shall be as per enquiry, which can be any of the following.

2.1 ASTM A105 (CS) (Carbon shall be restricted to 0.25% Max.)

2.2 ASTM A 182 F11 (AS)

2.3 ASTM A 182 F321 (SS)

2.4 ASTM A 182 F22 (AS)

3. SIZES AND DIMENSIONS

As indicated in the drawing below.

4. PROCESS

These items shall be forged to shape. Machining from rounds is not permissible.

5. TESTS AND HEAT TREATMENT

Tests and heat treatment shall be as per relevant material standards. Acceptance to any deviations / options shall be obtained from purchaser.

6. SPECIAL REQUIREMENT

6.1 All fittings shall be supplied strictly as per BHEL technical delivery conditions for pipefittings "HY0851495".

6.2 IBR attestation shall be furnished in form III-C for all the fittings.

6.3 PMI shall be conducted for all the stainless steel and alloy steel fittings.

7. TEST CERTIFICATES

Test certificates shall be supplied along with supplies in triplicate with one reproducible copy with M/s IBR attestations.

8. DESIGNATION

Name of the part shall be as below.

8.1 CS Vertical Insert, 1 1/2", SW, 3000#

8.2 Material specification shall be as below
TC 5 6213 Var No.05.

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SBB	RBC	RBC	02.10.1992
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VERTICAL INSERT **(SW)**

9. **MARKING**

Each item shall be marked (by punch marking) giving the following details.

- 9.1 Manufacturer's trade mark
- 9.2 TITLE as "VERTICAL INSERT (SW)"
- 9.3 Size X X
- 9.4 Rating XXXX
- 9.5 TC 5 6213
- 9.6 VAR NO. XX
- 9.7 Material specification
- 9.8 Component code
- 9.9 Inspection authority marking

10. **PROTECTION**

Items shall be protected from rust preferably treated with plastic coating peel-off type.

11. **PACKING AND DISPATCH**

All items shall be packed properly to protect from mechanical damage during transport and storage.

12. **REFERENCE DRAWINGS**

- 12.1 4C-47-9130
- 12.2 4C-47-9131
- 12.3 ITN 82082/1

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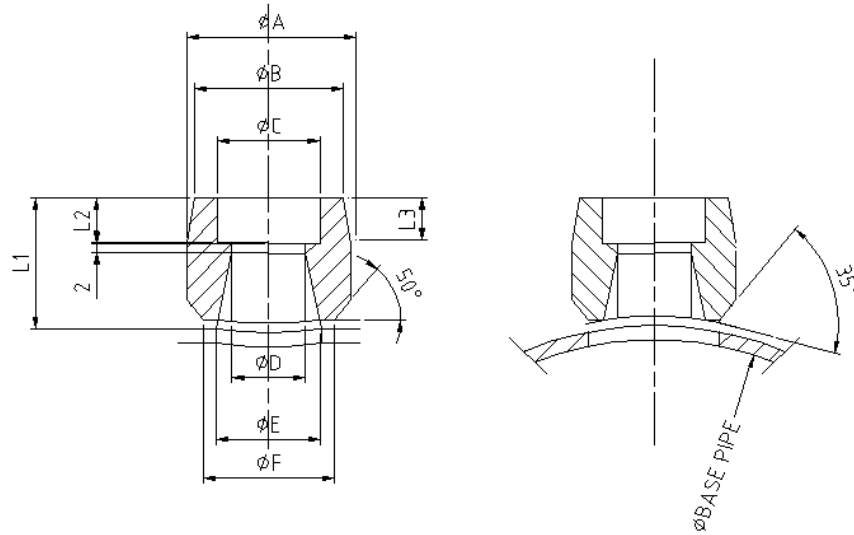
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SHEET 3 OF 7



NOTE:
VERTICAL INSERTS SHALL HAVE PROVISION TO USE IT
ON A BASE PIPE DIA. FROM 2" TO 32".

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VERTICAL INSERT (SW)

ALL DIMENSIONS ARE IN mm
WT IN KGS

VAR NO	SIZE NPT	RATING	A	B	C	D	E	F	L1	L2	L3	MATL SPN	Wt / Pc	COMPONENT CODE
01	1/2"	3000	35	31.8	21.8	15.8	23.8	28	26	9.5	10	A105	0.1	TC 9756 213 019
02	3/4"	3000	45	36.5	27.2	20.9	30.2	34	27	12.7	10	A105	0.3	TC 9756 213 027
03	1"	3000	54	46.0	33.9	26.6	38.6	40.5	34	12.7	12	A105	0.4	TC 9756 213 035
04	1 1/4"	3000												
05	1 1/2"	3000	73	60.3	48.8	40.9	50.8	54.8	35	12.7	13	A105	0.5	TC 9756 213 051
06	1/2"	6000	45	39.7	21.8	11.8	19.1	23.0	32	9.5	10	A105	0.1	TC 9756 213 060
07	3/4"	6000	51	45.2	27.2	15.6	25.4	29.4	37	12.7	10	A105	0.3	TC 9756 213 078
08	1"	6000	62	57.2	33.9	20.7	33.3	37.3	40	12.7	12	A105	0.4	TC 9756 213 086
09	1 1/4"	6000												
10	1 1/2"	6000	83	76.2	48.8	42.9	49.2	53.2	43	12.7	13	A105	0.8	TC 9756 213 108
11	1/2"	3000	35	31.8	21.8	15.8	23.8	28	26	9.5	10	A182F11	0.1	TC 9756 213 116
12	3/4"	3000	45	36.5	27.2	20.9	30.2	34	27	12.7	10	A182F11	0.3	TC 9756 213 124
13	1"	3000	54	46.0	33.9	26.6	36.5	40.5	34	12.7	12	A182F11	0.4	TC 9756 213 132
14	1 1/4"	3000												
15	1 1/2"	3000	73	60.3	48.8	40.9	50.8	54.8	35	12.7	13	A182F11	0.5	TC 9756 213 159
16	1/2"	6000	45	39.7	21.8	11.8	19.1	23.0	32	9.5	10	A182F11	0.1	TC 9756 213 167
17	3/4"	6000	51	45.2	27.2	15.6	25.4	29.4	37	12.7	10	A182F11	0.3	TC 9756 213 175
18	1"	6000	62	57.2	33.9	20.7	33.3	37.3	40	12.7	12	A182F11	0.4	TC 9756 213 183
19	1 1/4"	6000												

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VERTICAL INSERT
(SW)

ALL DIMENSIONS ARE IN mm
WT IN KGS

VAR NO	SIZE NPT	RATING	A	B	C	D	E	F	L1	L2	L3	MATL SPN	Wt / Pc	COMPONENT CODE
20	1 1/2"	6000	83	76.2	48.8	42.9	49.2	53.2	43	12.7	13	A182F11	0.89	TC 9756 213 205
21	1/2"	3000	35	31.8	21.8	15.8	23.8	28	26	9.5	10	A182F321	0.11	TC 9756 213 213
22	3/4"	3000	45	36.5	27.2	20.9	30.2	34	27	12.7	10	A182F321	0.3	TC 9756 213 221
23	1"	3000	54	46.0	33.9	26.6	36.5	40.5	34	12.7	12	A182F321	0.4	TC 9756 213 230
24	1 1/4"	3000												
25	1 1/2"	3000	73	60.3	48.8	40.9	50.8	54.8	35	12.7	13	A182F321	0.56	TC 9756 213 256
26	1/2"	6000	45	39.7	21.8	11.8	19.1	23.0	32	9.5	10	A182F321	0.12	TC 9756 213 264
27	3/4"	6000	51	45.2	27.2	15.6	25.4	29.4	37	12.7	10	A182F321	0.34	TC 9756 213 272
28	1"	6000	62	57.2	33.9	20.7	33.3	37.3	40	12.7	12	A182F321	0.45	TC 9756 213 280
29	1 1/4"	6000												
30	1 1/2"	6000	83	76.2	48.8	42.9	49.2	53.2	43	12.7	13	A182F321	0.89	TC 9756 213 302
31														
32	2"	6000	100	82	61.2	48.5	60	63	45	13	15	A105	3.8	TC 9756 213 329
33	2"	3000	90	74	61.2	52.5	65	68	38	13	15	A105	1.0	TC 9756 213 337
34	2"	3000	90	74	61.2	52.5	65	68	38	13	15	A182F11	1.0	TC 9756 213 345
35	2"	3000	90	74	61.2	52.5	65	68	38	13	15	A182F321	1.0	TC 9756 213 353
36	3"	3000	115	103	90.5	79.5	94	97	48	13	15	A105	0.6	TC 9756 213 361
37	3"	3000	115	103	90.5	79.5	94	97	48	13	15	A182F321	0.6	TC 9756 213 370
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