MTO

Project No.

: 120800-803

: Dangote Oil Refining Company

Ref.

: 120800-803/MTO/SRN-01

Client

: EIL

Rev. . 1

Consultant Egpt. No.

: 133-RB-1001 A/B

: 11-04-2017 Date

For Dimensions, refer sketch "120800-803-SRN01"

Notes:

- 1 Material: SA-105
- 2 The material shall meet all the requirements of ASME Section II Part A Edition 2015.
- 3 The forgings shall be supplied in normalized condition.
- 4 The forgings shall be fully deoxisidized (killed) & fine grained.
- 5 The material shall meet the chemical requirements as per ASME Section II Part A Edition 2015 with following additional requirements:

Carbon Equivalent (CE)= C+(Mn/6)+ (Cr+Mo+V)/5 + (Ni+Cu)/15 \leq 0.45,

Vanadium (V) = 0.02 wt % max, Niobium (Nb)=0.02 max and V+Nb = 0.03 wt % max

Boron shall not be added intentionally.

6 Simulation heat treatment of test coupons of the forging shall be carried out according to the cycle given below:

Rate of Heating:

56°C/hr (maximum) above 300°C

Temperature:

Holding Time:

610 ± 10 deg. C

1.Min PWHT:

135 minutes

2.Max PWHT:

405 minutes

Rate of Cooling:

56°C/hr (maximum) upto 300°C

- 7 All the mechanical tests shall be carried out and reported for the following.
 - 1) As Supplied
 - 2) As Supplied + Minimum PWHT Condition
 - 3) As Supplied + Maximum PWHT Condition
- 8 All forgings shall be impact tested at 0 °C in accordance with ASME Sec VIII Div 1 [Edition 2015]. Acceptance criteria for energy absorption shall be 24 J minimum average for three specimens and the minimum impact energy for one specimen shall not be less than 16 J.
 - Test specimens shall be prepared in accordance with ASME Sec II A SA-350/SA-350M.
- 9 All forgings shall be ultrasonically examined with 100% scanning in accordance with clause 3.3.4 of ASME Sec VIII Div 2 [Edition 2015].
- 10 Maximum hardness of the forgings shall not exceed 180 BHN
- 11 Entire surfaces of forgings including welding edges shall be magnetic particle examined in accordance with para 7.5.6 of ASME Sec VIII Div 2 [Edition 2015] after finish machining.
- **12** Repair by welding is not permitted.
- 13 Forging shall be supplied in fully machined condition. Vendor shall submit forging sketches for Godrej approval. Manufacturing activities should start only after approval of sketches by Godrej.
- 14 Forgings shall be legibly stamped or stenciled showing grade no. and item no. with "low stress stamp". Certification and Marking shall be in accordance with SA-105 of ASME Section II Part A Edition 2015
- 15 Inspection: Material shall be certified in accordance with EN 10204 3.2. [BV, Lloyds (LRS), TUV Nord]

Rev 1: Sketch Revised

MASTER COPY

ASME

Made By: MK

Page no. 1 of 1

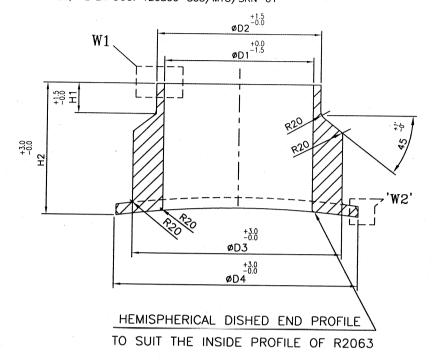
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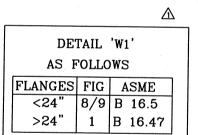
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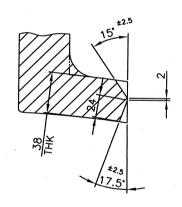
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NOTES: -

- 1) ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
- 2) FOR GENERAL NOTES, REFER DOC. 120800-803/MTO/SRN-01







DETAIL 'W2'

3	N4A/B	193.7	219.1	314	414	50	215	SRN03R1	4
2	M1	838	906	1278	1378	50	467	SRN02R1	2
1	N2	283.85	324	584	684	50	321	SRN01R1	2
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Godrej & Boyce Mfg. Co. Ltd.
Process Equipment Division

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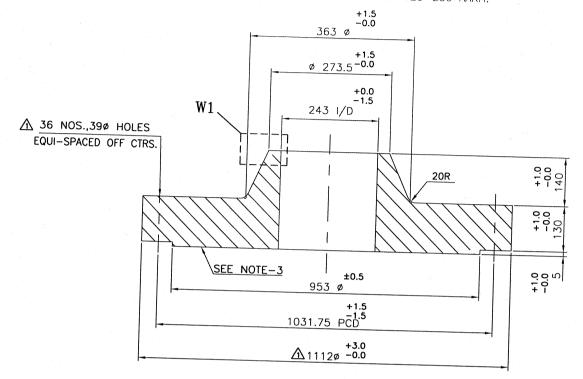
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1) ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED. NOTES:

2) FOR GENERAL NOTES, REFER 120800-803/MTO/SRN-01.

3) GASKET CONTACT SURFACE SHALL HAVE A FINISH OF 125-250 AARH.



DETAIL OF NOZZLE M1 REDUCING FLANGE

DETAIL 'W1' SHALL BE AS PER FIG 8/9 OF ASME 16.5

SR NO.: 04 ITEM CODE: SRN04R1 TITLE: DETAILS OF REDUCING FLANGE SCALE: MATERIAL QUANTITY NTS EQUPIMENT NO: 133-RB-1001 A/B SA105 02 CLIENT: DANGOTE OIL REFINING COMPANY PROJECT NO.: 120800-801 DRAWN WECKED DATE DATE APPROVED DATE MK 06/03/17 PPK 06/03/17 06/03/17

Godrej & Boyce Mfg. Co. Ltd. Process Equipment Division

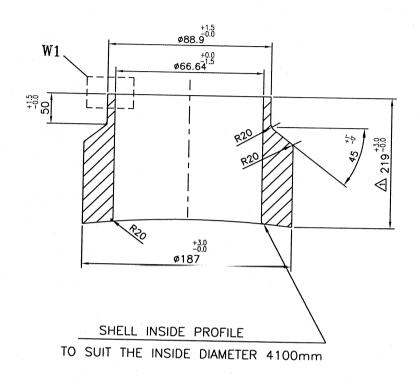
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NOTES:-

- 1) ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
- 2) FOR GENERAL NOTES, REFER DOC. 120800-803/MTO/SRN-01



DETAIL OF NOZZLES N6A/B

DETAIL 'W1' SHALL BE AS PER FIG 8/9 OF ASME 16.5

> ITEM CODE: SRN05R1 MATERIAL QUANTITY SA105

SR. NO.: 05

SCALE: TITLE: DETAILS OF SRN NTS EQUPIMENT NO: 133-RB-1001 A/B

DRAWN CHECKED DATE MK 06/03/17 PPK 06/03/17

PROJECT NO.: 120800-801 DATE APPROVED DATE 06/03/17

Process Equipment Division

DRG. NO.: 120800-803-SRN01 SHT. 3 OF 5

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CLIENT: DANGOTE OIL REFINING COMPANY

Godrej & Boyce Mfg. Co. Ltd.

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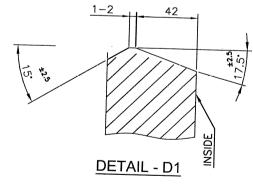
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DESCRIPTION

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SHALL BE AS PER FIG 8/9 OF ASME 16.5



SR NO.: 06 ITEM CODE: SRNO6R1 SCALE: TITLE: DETAILS OF SRN MATERIAL QUANTITY EQUPIMENT NO: 133-RB-1001 A/B NTS SA105 04 CLIENT: DANGOTE OIL REFINING COMPANY

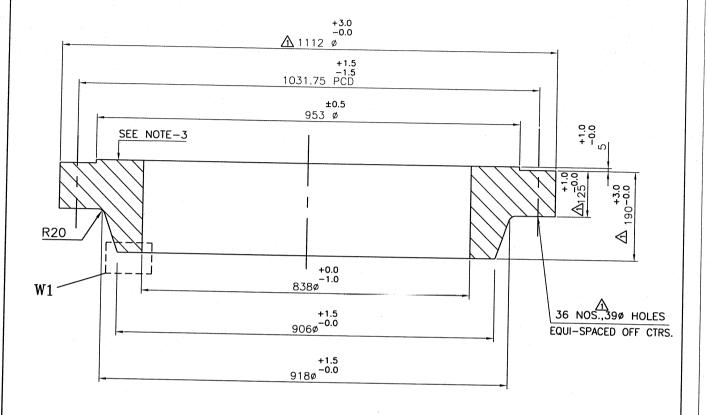
Godrej & Boyce Mfg. Co. Ltd. **Process Equipment Division**

PROJECT NO.: 120800-801 MECKED DRAWN DATE DATE APPROVED DATE 06/03/17 PPK 06/03/17 06/03/17 DRG. NO.: 120800-803-SRN01 SHT. 4 OF 5 REV.1

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NOTES:-

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- 2) FOR GENERAL NOTES, REFER DOC. 120800-803/MTO/SRN-01
- 3) GASKET CONTACT SURFACE SHALL HAVE A FINISH OF 125-250 AARH.



DETAIL OF NOZZLES M1

DETAIL 'W1'
SHALL BE AS PER
FIG 8/9 OF ASME 16.5

SR NO. : 07

ITEM CODE: SRN07R1

SCALE: TITLE: DETAILS OF SRN
NTS EQUPIMENT NO: 133-RB-1001 A/B

MATERIAL SA105

QUANTITY SO

06/03/17

CLIENT: DANGOTE OIL REFINING COMPANY

Godrej

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Process Equipment Division

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