

Notification No	/	Report No	/
Date of Notification	26/03/2018	Date of Inspection	08/04/2018

1. Work Order Information

Project Name	/	Insp. Contract No	/
Employer	***	P/ONo.	/
Contractor	***	P/INo.	/
Vendor/Sub Vendor	***	L/C No.	/
Manufacturer	***	Country/City of Insp.	/

2. Place of Inspection

<input checked="" type="checkbox"/> Workshop	<input type="checkbox"/> Warehouse	<input type="checkbox"/> Port	<input type="checkbox"/> Office	<input type="checkbox"/> Laboratory
Address:	***			

3. Scope of Work

<input type="checkbox"/> PIM	<input type="checkbox"/> PSI	<input type="checkbox"/> Raw Material Inspection	<input type="checkbox"/> Sampling for Lab. Test
<input checked="" type="checkbox"/> Quantity Check	<input checked="" type="checkbox"/> Visual Inspection	<input checked="" type="checkbox"/> Dimensional Check	<input checked="" type="checkbox"/> Document Review
<input type="checkbox"/> Pressure Test	<input type="checkbox"/> Functional Test	<input type="checkbox"/> Performance Test	<input type="checkbox"/> Electrical Test
<input checked="" type="checkbox"/> NDT: PT, RTI	<input type="checkbox"/> Coating Check	<input type="checkbox"/> Packing& Marking	<input type="checkbox"/> Loading Inspection
<input type="checkbox"/> Others:			

4. Description of Inspected Goods

Item	Description	Quantity	Unit
1	DISHED HEAD Di 5800mm, Nominal Thk. 36mm / Min. Thk. 31mm, Type 2:1 Semi Ellipse, Material SA516-60(N)	1	No.
2	DISHED HEAD Di 5800mm, Nominal Thk. 25mm / Min. Thk. 20mm, Type 2:1 Semi Ellipse, Material SA516-60(N)	1	No.

5. Inspection Result

<input type="checkbox"/> Without Objection	<input checked="" type="checkbox"/> With Objection (Refer to Section 15)	<input type="checkbox"/> NCR(Refer to Section 16)
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Inspected by: Name/Date/Signature	Approved by: Name/Date/Signature
*** 08.04.2018 ***	

6. Attendees

No.	Name	Position	Company
1	***	TPI Inspector	/

2	***	Sales Manager	***
3	***	Second party inspector	/

7. Inspection Activities according to the ITP No. ***-003 Rev. 01

Item	ITP Activity No.	Activity Description	TPI Involvement
1	3-1	Check Certificate of all raw Materials	W
2	4-2-1	Visual and Dimensional Check	W
3	4-2-2	RT for Head After Welding (Including interpretation of film and report review)	R
4	4-2-3	MT* of Knuckle (*Replaced by PT acc.to the PI of Sub-Vendor - See Note #4)	W
5	7-1	Vendor Final Data Book	Review / Approve

8. Packing Check N/A

Total Gross Weight	-	No. of Packages	-
Total Net Weight	-	Packing List No.	-
Type of Packing	-		

9. Marking Check N/A

-

10. Means of Transport& Type of Shipment N/A

<input type="checkbox"/> Vessel	<input type="checkbox"/> Air	<input type="checkbox"/> Truck	<input type="checkbox"/> Rail
Trans-shipment Allowed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Partial Shipment Allowed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

11. Inspection Description

According to the requirements of Inspection Notification***-001/01 form, the inspector visited the manufacturer shop (***) in order to technical inspection of dished heads as perMFR's documents, Provided ITP and Project's references and also Performa Invoice of the Sub-Vendor company (***). See below details and conclusion of Report:

Notice of Disclaimer / Important Notes:

1. The Inspection Notification and Due date of inspection has been delivered to the inspector, After Complete Fabrication of Dished heads. So any inspection of Raw Material and During manufacturing is not possible in this stage; Such as: "Item No. 3-2: Check Dimensions of Plates before Forming and Rolling by Witness".

2. The below references has been provided to inspector:

Doc#: ***-01: General Drawing for Splitter V-5207 Naphta Hydrotreater Unit

Doc#: ***-01: Inspection and Test Plan

3. According to the ITP, following references (VPIS) has been not provided to check and use as applicable references. So the Manufacturer documents to be considered as approval rules:

- Packing & Marking procedure
- Non-Destructive Testing Procedures (RT, UT, PT, MT)
- Visual & Dimensional inspection procedure
- Repair Procedure
- Welder's Qualification Test
- WPS, PQR
- Fabrication Procedure
- Weld & NDT Map

4. According to the ITP, The NDT (MT) test of Knuckle is required according to the NDT Map and Procedure. But According to the Proforma Invoice of *** (No. *** rev 3), Note No.12, The PT test is applicable:

12	ALL	We will carry out PT on external Surface of Knuckle area, SF, Bevel edge after forming
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So this discrepancy Shall be clarified and decided by the Client.

9.1. **Check Certificate of all raw Materials:**

The MTC of Raw material (Plate) has been provided to the inspector and reviewed with the required Material "SA516 Grade 60(N)" as per referred into the G.A.D and Proforma Invoice. See following conclusion:

9.1.A. The MTCs are checked and found as below details:

- Heat Number / Plate Identifier: 447403 / 813022 02 > MFR / MTC No.: ***/ 426528-004.
- Heat Number / Plate Identifier: 447403 / 814039 02 > MFR / MTC No.: ***/ 426528-004.
- Heat Number / Plate Identifier: 443710 / 771076 01 > MFR / MTC No.: ***/ 422559-001.
- Heat Number / Plate Identifier: 449265 / 834343 02 > MFR / MTC No.: ***/ 422561-002.
- Size of Plates: 3000x12000x36mm, 2000x12000x36mm, 3000x8000x25mm & 2000x1200x25 mm.
- The Steel Grade and Specification: SA516-60 / ASME-IIA: 2015/NACE MR0175 - ISO 15156-2, NACE MR0103.
- Manufacturer is: ***. Issued date of MTCs are 2017.
- Type of Inspection Certificates are 3.2 As per EN 10204:2004 / ISO 10474:2013.
- Description of Products, Delivery condition (N: Normalized), Manufacturer Trade Mark and approvals, Marking and Result of Mill's testing such as: Tensile test, Hardness test, CVN Impact

test at -46°C, chemical composition (Heat analysis) and Carbon equivalent, Dimensional and Appearance and Non-Destructive testing (UT) as per ASME-SA578 Level C on 100% of Plate surfaces are checked and verified.

- MTCs are sealed as "Certified True Copy".
- All 30 pages of MTC packages are signed off by the inspector as Review.

9.1.B. The Material Traceability Record has been attached on MTC packages and including of Plates specification and information (Part No., Size, Material, Heat and plate Number and MTC Number and the original markings on plates. Situation are reviewed.

9.1.C. The shop traceability between MTC and Final manufactured dishes are conducted by Marking of Plate including of Heat Numbers 447403, 443710 & 449265 (Note: The Witness of Raw materials: Plates before forming and traceability by the inspector was not possible in this visit of inspection).

9.1.D. True copies of MTCs are signed off by the inspector as Review.

9.1.E. Acc. to General Drawing Note No. 18, The below parameters are checked:

- The Maximum carbon content in materials shall be less than 0.25%: **Acceptable.**
- The Material of Head shall be SA-516 Gr. 60N: **Acceptable.**

9.2. **Visual and Dimensional Check**

The Visual check of Fabricated two dished heads are performed by inspector witness and below details are concluded:

9.2.A. The dished heads were cold formed. According to the visual check of final product and documentation, the forming processes meet the requirements of UG-81, UG-70, UCS79(d) of ASME Sec. VIII Div.1 / 2015 edition (Note: The blank of dishes heads and Forming process has been not witnessed by the inspector for verification).

9.2.B. No Visual defects such as Crack, Pitting, Lamination or Deep rust were detected on internal and external surfaces; Especially SF, Bevel edge and Knuckle radius area.

9.2.C. The Type of Dished Heads are 2:1 Semi Ellipsoidal.

9.2.D. Dished heads has been manufactured without Centre dole.

9.2.E. Profile are checked visually and found as per UG32(c) of ASME Sec. VIII Div.1.

9.2.F. The Surface finish of Bevel edge has been checked and found Satisfactory. Weld seams also prepared by grinding method to smooth surface finish.

9.2.G. Each dishes heads are including of two weld seams.

The Dimensional check of Fabricated two dished heads are performed by inspector witness and below details are concluded:

- 9.2.H. The Calibration of dimensional tools and also ultrasonic thickness meter are checked and verified.
- 9.2.I. The Details of Dished heads and tolerances is according to the Manufacturer Sketch Number *** Rev.0 and *** Rev. 1 (Note: The client reference or approval did not exist to check and verify).
- 9.2.J. The dished head parameters: ID (5800 mm), H (1450mm), L (1570mm), SF (120mm) are checked and results found without deviation.
- 9.2.K. The parameters of Crown and Knuckle Radiuses (ICR 5246 mm and IKR 1002mm) are checked with Templates and results found without deviation.
- 9.2.L. The Thicknesses of dished heads have been checked and found in the Ranges between Nominal thickness 36 mm to Min. thickness 31 mm for Head No.1; And between Nominal thickness 25 mm to Min. thickness 20 mm for Head No.2 for various places.
- 9.2.M. Dimensional of Bevel Edges are performed as MFR's details and found compliance.
- 9.2.N. The Location of weld seams from center line of blanks and Details of weld seam's Root face cannot be checked due to Final product is only accessible to check.
- 9.2.O. The Markings are available on External surface of Dished heads as Die stamped - See below details:

A01 D-22300 DE-2
SA516 GR60 MTLTV
HT-443710 PL-771075 01

A01 D-22300 DE-2
SA516 GR60 MTLTV
HT-449265 PL-834343 02

A01 D-22300 DE-1
SA516 GR60 MTLTV
HT-447403 PL-814039 02

A01 D-22300 DE-1
SA516 GR60 MTLTV
HT-447403 PL-813022 02

EQ-1799

EQ-1800

EQ-2903

9.3. RT For Head After Welding

The Review of NDT (RT) of 100% weld seams including of interpretation of film and report review on Fabricated two dished heads are performed by inspector and below details are concluded:

9.3.A. The Radiographic Testing Reports have been provided by manufacturer, Checked and found as below details:

Issuer:***

Report Nos.: *** (For Head with THK. 36mm), *** & *** (For Head with THK. 25mm) - Totally 8 Pages - Date: 29 March 2018

The Client, Project, Item. Drawing, RT procedure and parameters are checked and reviewed.

The Table of Sr. no., Welder ID, Location, Observation are checked and found in Accepted Results.

The test was performed by Level II Technician qualified (as per reports).

Reports are checked and found without objection. All pages are signed off by the inspector as review.

9.3.B. The Original Films of RT are checked by the inspector via Viewer device and found compliance with report. No Repeatable defects found as per ASME Sec. VIII criteria on Films.

9.4. PT For Knuckle area

The Witness of NDT (PT) of 100% of Knuckle area on Fabricated two dished heads are performed in the presence of inspector and below details are concluded:

9.4.A. The Consumable materials (Spray) expire date and Type / manufacturer are checked and found acceptable.

9.4.B. The Surface cleaning of test are performed. Then Penetrant are applied partially on the all of external surface of knuckle area. After 10 minutes of Dwell time, The Excess penetrant materials are cleaned and Developer are applied partially on all target surfaces. After 10 minutes of developing time, The Observation and Evaluation as per ASME Sec. VII div. 1 Edition 2015 (Appendix 8) are performed and found without any relevant indication.

9.4.C. Test is performed by Qualified Level II Technician.

9.4.D. The Liquid Penetrant Examination Reports have been provided by manufacturer, Checked and found as below details:

Issuer:***

Report No.*** - Totally 1 Page - Date: 04 March 2018

The Client, Project, Item, Surface condition, PT Procedure, Test Method, Material, Consumable materials and other parameters are checked and reviewed.

- The Table of inspected materials are checked and verified.
- The 100% DP test was carried out on the outside surface of Knuckle, SF and Bevel Edges of dished heads and Result found acceptable.
- The Report is signed off by the inspector as review.

9.5. Vendor Final Data Book

The original documents as below details have been provided to inspector, checked and approved as Review. Issuer of all documents except MTCs of raw materials are: ***.

- Material Traceability Record with True Copies of Plate MTCs: 31 Pages / PDF.
- Detailed Drawing and Remarks of Dished Head: 1 Page / PDF.
- Inspection Reports of Dished Head: 2 Pages / PDF.
- Liquid Penetrant Examination Report: 1 Page / PDF.
- Radiographic Testing Reports: 8 Pages / PDF.

> End of Inspection Description <

12. Referenced Documents/Procedures/Standards

No.	Document Title	Document No. and Revision	Document Status
1	Inspection Notification Form	***-01	-
2	General Drawing for Splitter V-5207	***-01	No Status
3	Inspection and Test Plan	***-01	Commented
4	Sub-Vendor PI	*** Rev. 3	Signed&Sealed

13. Instruments/Tools Used

No.	Instrument Name	Serial No./Tag No.	Calibration No.	Expire Date
1	Measurement Tapes	---	---	Valid
2	Ultrasonic Thickness Meter	0068L0	DXB 102/17	24.07.2018
3	Radiographic Film Viewer	---	---	---

14. Documents Reviewed

No.	Document Title	Document No. and Revision	Remarks
1	Material Traceability Record with True Copies of Plate MTCs	As per Attached	Issued by ***
2	Detailed Drawing and Remarks of Dished Head	As per Attached	Issued by ***
3	Inspection Reports of Dished Head	As per Attached	Issued by ***
4	Liquid Penetrant Examination Report	***	Issued by ***
5	Radiographic Testing Reports	*** *** *** ***	Issued by ***

15. Objections

- 1- According to the ITP, following references (VPIS) has been not provided to check and use as applicable references. So the Manufacturer documents to be considered as approval rules:
 - Non-Destructive Testing Procedures (RT, UT, PT, MT)
 - Visual & Dimensional inspection procedure
 - Welder's Qualification Test
 - WPS,PQR
 - Fabrication Procedure
 - Weld & NDT Map
- 2- According to the ITP, The NDT (MT) test of Knuckle is required according to the NDT Map and Procedure. But According to the Performa Invoice of *** (No. ***rev 3), Note No.12, The PT test is applicable:
- 3- The Details of Dished heads and tolerances are according to the Manufacturer Sketch Number ***Rev.0 and *** Rev. 1 (Note: The client reference or approval did not exist to check and verify).
- 4- The Location of weld seams from center line of blanks and Details of weld seam's Root face cannot be checked due to Final product is only accessible to check.

16. Non-Conformities

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17. Attachments

No.	Document Title	Document No. and Revision	No. of Pages
1	Material Traceability Record with True Copies of Plate MTCs	As per Attached	31 Pages
2	Detailed Drawing and Remarks of Dished Head	As per Attached	1 Page
3	Inspection Reports of Dished Head	As per Attached	2 Pages
4	Liquid Penetrant Examination Report	***	1 Page
5	Radiographic Testing Reports	*** *** *** ***	8 Pages

18. Inspection Time and Mileage

Inspection Time	8:00 Hours	Mileage (Km)	100 Km
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19. Photos



1 - Inspection Place



2 - Inspection Place



3 - Dished Head No.1



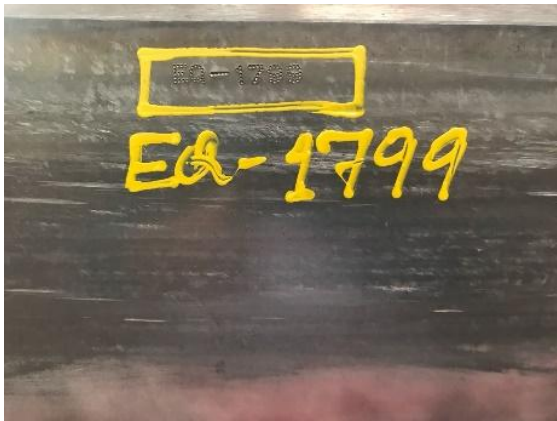
4 - Dished Head No.2



5 - Marking Check



6 - Marking Check



7 - Marking Check



8 - Marking Check



9 - Marking Check



10 - Marking Check



11 - Marking Check



12 - Marking Check



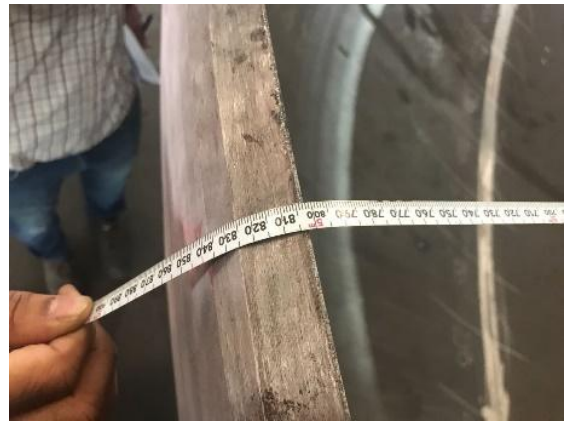
13 - Visual Check



14 - Visual Check



15 - Dimensional Check



16 - Dimensional Check



17- ICR& IKR Check by Templates



18 - ICR & IKR Check by Templates



19 - Calibration Label Check of Device



20 - Thickness Measurement



21 - Thickness Measurement



22 - Thickness Measurement



23- Consumable Material Check of PT



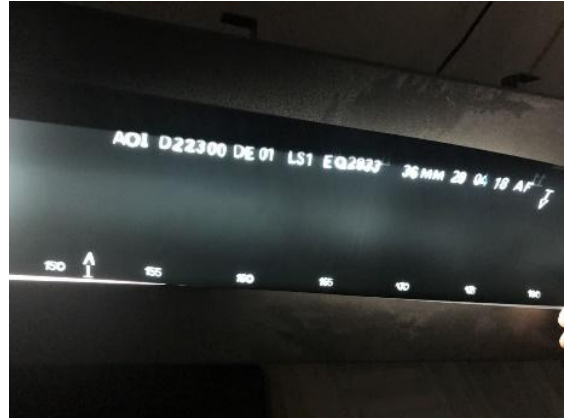
24- Consumable Material Check of PT



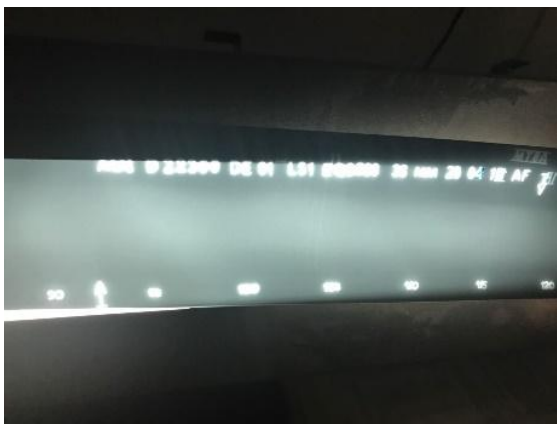
25- Applying Penetrant / Witness the PT



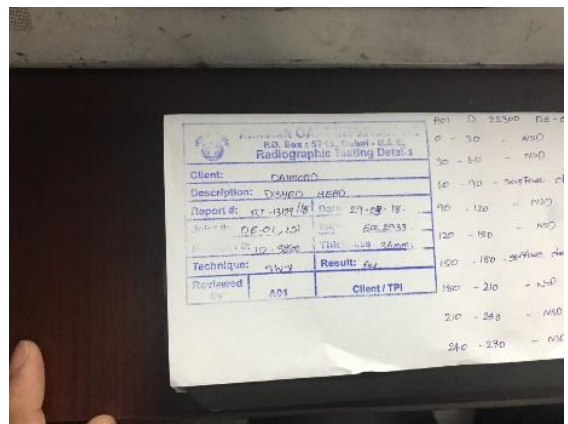
26 -Applying the Developer / Witness the PT



27 -Interpretation of RT films



28 -Interpretation of RT films



29 -Interpretation of RT films

30-Interpretation of RT films