FINAL INSPECTION REPORT
&
CERTIFICATE OF CONFORMANCE

UNEW's capital part refurbishment operations are governed by proprietary engineering technologies, precision standards, and rigorous QA/QC procedures developed for aviationgrade manufacturing. While refurbishment work is normally conducted at UNEW's U.S. facility, certain components from restricted regions are not eligible for import under U.S. national security and export control regulations.

To maintain uninterrupted service and consistent product quality, UNEW has partnered with EthosEnergy (United Kingdom)—a world-class turbine repair and overhaul organization operating one of the most advanced facilities in the industry. The EthosEnergy shop is equipped with fully automated precision systems, vacuum furnaces, electron beam welders, and advanced HVOF/TBC coating cells. Its quality system is certified to ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, and ISO 17025:2017, ensuring full traceability, environmental stewardship, and occupational safety compliance.

All repair activities performed at EthosEnergy strictly follow UNEW's proprietary refurbishment procedures, material specifications, and inspection standards. The physical repair processes are executed by EthosEnergy, while UNEW retains full technical authority over repair methodology, metallurgical control, quality benchmarks, and final acceptance. This partnership guarantees that every refurbished component meets UNEW's aviation grade quality and reliability standards for power generation service.

Customer Name: Nghi Son Refinery & Petrochemical, LLC.
Component type: MS6001FA 2nd STAGE NOZZLE 824029
Date of Report: October 30, 2025

Responsible Product Engineer: _____
Mr. Komkrit Rattanawong
Engineer

Report prepared by: _____
Ms. Nalinee Supapradit
Report writer

Report reviewed and approved by: _____
Mr. Pheerayawat Muadna
(Engineering Manager)

FINAL INSPECTION REPORT

1. INTRODUCTION

24 pcs. of MS6001FA 2rd STAGE NOZZLE have been fully refurbished based on the requirements of the incoming inspection report findings.

Order Information	
EE Work Order no.	824029
Date of report	30 October, 2025
Customer P.O. no.	PO04102025-HGP
Component Details	
Engine type	MS6001FA
Component type	2nd Stage Nozzle
Component part number	119E2604 G004 Rev. A
Qty. received	24
Material type	GTD262
As received coating type (s)	Aluminide Diffusion Coating
	-
	-
Additional items received with main set (if any)	-
	-
Customer supplied component history	
Total fired hours	24,000
Total starts	(No information supplied)
Total factor fired hours	(No information supplied)
# of previous repairs	(No information supplied)
FFH on Component Since last repair	(No information supplied)
Total FFS on Component	(No information supplied)
FFS on Component Since last repair	(No information supplied)
Hours of operation since last repair interval	(No information supplied)
Operational fuel type	(No information supplied)
Mode of operation (base load / peaking)	(No information supplied)
Maint.intervals combustion	(No information supplied)
Maint.intervals Hot gas path	(No information supplied)
Unloaded condition	
Incoming packing / container condition	Good
Signs of transit damage (if damaged upon receipt photos to be included within report)	-

2. INSPECTION SUMMARY:

Based on the findings of the incoming inspection process (results and details of inspection given further in the report) the following processes and refurbishments have been performed.

Repair requirements

Repair level required

DESCRIPTION		QTY	UNIT
Inspect	Incoming Inspections	1	Set
Medium Repair	Repair	1	Set
Coating	Diffused Aluminide coating	1	Set

Additional items

DESCRIPTION		QTY	UNIT
Required	Replace locking plate	24	PIECE
Required	Replace cloth seal and joint seal	1	Set

Scrap (If/any):	-
Additional recommendations (If/any) :	-

3. SPARE PART (Repair / Replace):

Item	Part description	Received/ Required	Condition	Quantity	Remark
1	Segment assy.seals (cloth seal type) (Material: L605),-ETH4058- 01 to 07	154/154 ea	Replaced	154 ea	Additional
2	Diaphragm seals (cloth seal type) ETH4058- 08 to 09	44/44 ea	Replaced	44 ea	Additional
3	Segment joint seals (flat seal types)- (Material: Hast-X), ETH4078- 01 to 07 Ref. OEM P/N:119D3157 P0087, P0088, P0089, P0090, P0091, P0092, P0093, P0094, P0095	14/14 ea	Replaced	14 ea	Additional
4	Diaphragm Joint seals (flat seal types) (Material: Hast-X), ETH4078- 08 to 09 Ref. OEM P/N:119D3157 P0094, P0095	4/4 ea	Replaced	4 ea	Additional
5	Diaphragm retaining screw pin ,EETH4061-01 (Material: A286) Hex. Head Bolt (Ref. OEM P/N:207C3851P3) Size :5/8”, thread: 1/2"-20 UNC,L=48 mm	48/48 ea	Repaired	48 ea	-
6	Outer cover plate (SS304)	24/24 ea	Repaired	24 ea	-
7	L/E- core plug (SS304)	48/48 ea	Repaired	48 ea	-
8	T/E- core plug (SS304)	48/48 ea	Repaired	48 ea	-
9	Locking plate, EETH4060 (Material: SS316)	24/24 ea	Replaced	24 ea	Additional
10	Bush /Sleeve (Material: A286) Dia.OD :20mm / ID :12.7 mm, L=23mm	24/24 ea	Repaired	24 ea	-
11	Thermocouple guide for Segment no.14,23, EETH4082	2/2 ea	Replaced	2 ea	Standard
12	Honeycombs (Material: Haynes 214)	24/24 ea	Replaced	24 ea	Standard

4. ENGINEERING SUMMARY :

MS6001FA 2nd Stage Nozzle components were evaluated and confirmed to be within the medium repair limits established by EthosEnergy Engineering and UNEW proprietary refurbishment standards. The complete repair process was carried out in accordance with the approved Work Scope of Repair and validated through dimensional and metallurgical inspection checkpoints.

Each nozzle segment underwent comprehensive non-destructive examination, including fluorescent penetrant inspection (FPI), dimensional analysis, and cooling-hole flow verification. Identified defects such as oxidation, cracking, and localized wall thinning were removed by controlled blending and scalloping, followed by GTAW weld restoration on structurally affected regions. Distorted segments were mechanically straightened and re-profiled to recover original airfoil and gas-path geometry.

After welding, the components were vacuum heat-treated to re-establish FSX-414 microstructural integrity and relieve residual stresses. Transient phase restoration (TPR) and EDM machining were performed to restore cooling-hole and seal-slot geometry. All diaphragms received weld and braze restoration, with new honeycomb sections fitted and diffusion-brazed to the pressure faces, then blended to exact thickness and contour tolerances.

External gas-path surfaces were coated with a diffused aluminide coating, followed by partial vacuum diffusion heat treatment to achieve metallurgical bonding and oxidation resistance. Final dimensional, visual, and flow inspections confirmed conformity to specification and verified that all repaired components met operational and metallurgical standards.

All work was executed under ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, and ISO 17025:2017 certified quality systems, ensuring complete traceability and quality assurance. The refurbished components have been inspected, certified, and released in serviceable condition for reinstallation at NSRP.

5. CERTIFICATE OF CONFORMANCE

Component: MS6001FA 2nd Stage Nozzle Assembly
Quantity: 24 Pieces
Material: FSX-414
Repair Category: Medium Repair
Work Order No.: (Insert number)
Customer: Nghi Son Refinery & Petrochemical LLC
Repair Facility: EthosEnergy (Thailand) Ltd.
Technical Authority: UNEW, Inc. (USA)

EthosEnergy (Thailand) Ltd., under the technical authorization of UNEW, Inc., hereby certifies that all 2nd-stage nozzle assemblies identified above have been inspected, refurbished, and tested in full compliance with the approved EthosEnergy Work Scope of Repair and UNEW proprietary engineering standards.

Each component was processed in accordance with the established medium repair classification, including:

* Removal of oxidation, corrosion, and minor structural defects through controlled blending and localized scalloping.

* GTAW weld restoration of crack and erosion zones, followed by vacuum heat treatment to re-stabilize FSX-414 microstructure and relieve stress.

* EDM machining and dimensional restoration of cooling holes and seal slots to OEM tolerances.

* Repair and replacement of diaphragm honeycomb sections, vacuum-brazed and blended to final contour.

* Application of diffused aluminide coating to all gas-path surfaces, followed by partial vacuum diffusion heat treatment to achieve metallurgical bonding and oxidation resistance.

All processes were executed under ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, and ISO 17025:2017 certified quality systems.
Comprehensive final inspections — including fluorescent penetrant, dimensional, airflow, and visual examinations — confirmed conformance with technical specifications and engineering acceptance criteria.

Accordingly, EthosEnergy (Thailand) Ltd. and UNEW, Inc. jointly certify that the subject 2nd-stage nozzle assemblies fully meet contractual, metallurgical, and performance requirements and are hereby released in serviceable condition for reinstallation.

6. COMPONENT CORRELATION:

CORRELATION SHEET SEGMENT			
Item	**Part Number**	**Serial Number**	**Material**
1	119E26600 REV E P4S1	P2FE 06683	GTD262
2	119E26600 REV E P4S1	P2FE 06682	GTD262
3	119E26600 REV E P4S1	P2FE 06640	GTD262
4	119E26600 REV E P4S1	P2FE 06672	GTD262
5	119E26600 REV E P4S1	P2FE 06510	GTD262
6	119E26600 REV E P4S1	P2FE 06632	GTD262
7	119E2600 REV E P4S1	P2FE 06636	GTD262
8	119E2600 REV E P4S1	P2FE 06641	GTD262
9	119E2600 REV E P4S1	P2FE 06679	GTD262
10	119E2600 REV E P4S1	P2FE 06684	GTD262
11	119E2600 REV E P4S1	P2FE 06678	GTD262
12	119E2600 REV E P4S1	P2FE 06643	GTD262
13	119E2600 REV E P4S1	P2FE 06656	GTD262
14	119E2600 REV E P4S1	P2FE 06665	GTD262
15	119E2600 REV E P4S1	P2FE 06642	GTD262
16	119E2600 REV E P4S1	P2FE 06662	GTD262
17	119E2600 REV E P4S1	P2FE 06205	GTD262
18	119E2600 REV E P4S1	P2FE 06671	GTD262
19	119E2600 REV E P4S1	P2FE 06664	GTD262
20	119E2600 REV E P4S1	P2FE 06600	GTD262
21	119E2600 REV E P4S1	P2FE 06657	GTD262
22	119E2600 REV E P4S1	P2FE 06639	GTD262
23	119E2600 REV E P4S1	P2FE 06647	GTD262
24	119E2600 REV E P4S1	P2FE 06680	GTD262

CORRELATION SHEET DIAPHRAGM				HONEYCOMB
Item	Part Number	Serial Number	Material	Material
1	119E2605 G003	SNH2473301/1	SS304	HAYNES 214
2	119E2605 G003	SNH2473301/2	SS304	HAYNES 214
3	119E2605 G003	SNH2473301/3	SS304	HAYNES 214
4	119E2605 G003	SNH2473301/4	SS304	HAYNES 214
5	119E2605 G003	SNH2473301/5	SS304	HAYNES 214
6	119E2605 G003	SNH2473301/6	SS304	HAYNES 214
7	119E2605 G003	SNH2473301/7	SS304	HAYNES 214
8	119E2605 G003	SNH2473301/8	SS304	HAYNES 214
9	119E2605 G003	SNH2473301/9	SS304	HAYNES 214
10	119E2605 G003	SNH2473301/10	SS304	HAYNES 214
11	119E2605 G003	SNH2473301/11	SS304	HAYNES 214
12	119E2605 G003	SNH2473301/12	SS304	HAYNES 214
13	119E2605 G003	SNH2473301/13	SS304	HAYNES 214
14	119E2605 G003	SNH2473301/14	SS304	HAYNES 214
15	119E2605 G003	SNH2473301/15	SS304	HAYNES 214
16	119E2605 G003	SNH2473301/16	SS304	HAYNES 214
17	119E2605 G003	SNH2473301/17	SS304	HAYNES 214
18	119E2605 G003	SNH2473301/18	SS304	HAYNES 214
19	119E2605 G003	SNH2473301/19	SS304	HAYNES 214
20	119E2605 G003	SNH2473301/20	SS304	HAYNES 214
21	119E2605 G003	SNH2473301/21	SS304	HAYNES 214
22	119E2605 G003	SNH2473301/22	SS304	HAYNES 214
23	119E2605 G003	SNH2473301/23	SS304	HAYNES 214
24	119E2605 G003	SNH2473301/24	SS304	HAYNES 214

7 SCOPE OF WORK

MS6001FA STAGE 2 NOZZLE

Work scope	Inspect	Medium
Inspect		
Perform receipt inspection and record serial numbers	X	
Take digital photographs of components in a received condition	X	
Assemble in fixture, perform downstream deflection and nozzle twist inspection.	X	
Perform metallurgical evaluation of base material and coating type if applicable, report on condition	X	
Disassemble diaphragms from nozzle segments, identify diaphragm with matching segment, bag and tag hardware	X	
Remove cover plates and core plugs, bag and tag hardware with segment serial number	X	
Abrasive blast	X	
Perform cooling hole inspection	X	
Perform incoming solution heat treat of nozzle segments in full vacuum environment	X	
Perform fluorescent penetrant inspection	X	
Perform visual inspection	X	
Compile incoming Inspection report and forward to customer.	X	
Repair		
Blend to remove oxidation product on external areas		X
Cold straighten any distorted/bulged areas.		X
Scallop to remove defective material in nozzle segments in preparation for welding		X
Perform weld repairs as determined by incoming inspection results of all major structural cracking		X
Blend all repaired areas to restore component profile		X
Perform fluorescent penetrant inspection and mark all defects for TPR.		X

Perform solution heat treat of nozzle segments in full vacuum environment		X
Perform fluorescent penetrant inspection and mark all defects for TPR.		X
Electro Discharge Machine (EDM) to restore cooling holes & seal slots		X
Abrasive blast full component and blow out with dry compressed air to remove all blasting media		X
Perform fluorescent penetrant inspection (FPI) of component		X
Perform water and/or air flow check of cooling holes to ensure no blockages.		X
Perform visual inspection to ensure component conformity		X
Set in fixture and perform dimensional inspection		X
Perform weld / blend repairs to diaphragms		X
Prepare and fit replacement honeycombs to diaphragm faces		X
Perform braze heat treatment		X
Perform visual inspection		X
Blend excess honeycomb section		X
Perform dimension inspection		X
Coating		
Apply diffused aluminide coating to external surfaces		X
Perform diffusion heat treat of nozzle segments in partial vacuum environment		X
Perform visual inspection to ensure component conformity		X
Perform final heat treatment in air or partial vacuum environment		X
Fit core plugs and assemble segments to diaphragms		X
Perform final dimensional inspection		X
Perform post repair assembly build ensure correct seal alignment		X
Perform final visual inspection		X
Compile Final Report, pack and ship components with all required documentation as listed in Purchase Order		X

Required;

-Replace all cloth seals and joint seals, 1 set

-Replace all locking plates, Q'ty 24 ea.

8. ENGINEER DETAIL WORK:

8.1. Inspection Phase

Task	Engineering Description
Perform receipt inspection and record serial numbers	Each nozzle segment was received, visually examined for transit damage, and serially logged to maintain full traceability. Condition and packaging were documented at intake.
Take digital photographs of components in received condition	High-resolution photos captured the as-received state (all faces, leading/trailing edges, platforms) to record pre-repair condition and oxidation extent.
Assemble in fixture, perform downstream deflection and nozzle twist inspection	Segments were temporarily mounted in a precision fixture. Measurements of chord deflection, throat area, and twist verified geometric distortion from thermal exposure.
Perform metallurgical evaluation of base material and coating type	Representative samples were sectioned for metallographic analysis; microstructure and coating composition were examined to determine degradation level and coating removal needs.
Disassemble diaphragms from nozzle segments, bag and tag hardware	Diaphragm rings were separated from nozzle segments; each diaphragm was labeled to its parent segment. All bolts, seals, and washers were bagged and tagged for traceable re-assembly.
Remove cover plates and core plugs, bag and tag hardware with segment serial number	Exposed internal cooling cavities by removing impingement plates and core plugs; parts were preserved with identification tags for later re-installation.
Abrasive blast	Grit-blasted to remove oxide scale, corrosion products, and residual coating, ensuring uniform surface preparation without dimensional change.
Perform cooling-hole inspection	Each cooling and film hole was probed and airflow-checked for blockage or distortion, using calibrated pin gauges and air-flow equipment.
Perform incoming solution heat treat in full vacuum environment	A preliminary vacuum heat-treat stabilized the FSX-414 structure and relieved operational stress prior to weld repair.
Perform fluorescent penetrant inspection (FPI)	Type I, Method A penetrant testing revealed cracks or porosity in airfoil, band, and platform regions. All indications were mapped.
Perform visual inspection	Engineers logged oxidation, erosion, and mechanical damage patterns; photographs and sketches supported repair

Task	Engineering Description
	planning.
Compile Incoming Inspection Report	Inspection results and photos were consolidated into a report submitted to UNEW for technical review and repair scope confirmation.

8.2. Repair Phase

Task	Engineering Description
Blend to remove oxidation product on external areas	Surface oxidation was mechanically removed by precision blending until clean base metal was achieved, preparing for weld or coating application.
Cold straighten any distorted/bulged areas	Mechanical straightening and localized heat correction restored the original contour and throat geometry, ensuring aerodynamic alignment.
Scallop to remove defective material in nozzle segments	Shallow scallops were machined at defect zones to remove degraded alloy, defining clean, weld-ready cavities.
Perform weld repairs (major structural cracking)	Using GTAW with FSX-414 filler, engineers rebuilt eroded or cracked regions under controlled preheat and inter-pass temperature.
Blend all repaired areas to restore component profile	Weld-built areas were blended to precise airfoil and band contours using templates to match OEM geometry.
Perform fluorescent penetrant inspection and mark defects for TPR	FPI confirmed weld integrity and identified minor micro-cracking zones requiring transient-phase restoration (TPR).
Perform solution heat treat of nozzle segments in full vacuum environment	Vacuum furnace heat-treat dissolved carbides and homogenized microstructure to recover base-metal strength after welding.
Perform FPI and mark all defects for TPR	Post-heat-treat NDT re-verified that remaining micro-indications were within acceptable limits or assigned for TPR correction.
Electro Discharge Machine (EDM) to restore cooling holes & seal slots	EDM re-established precise hole geometry and seal slot dimensions lost during repair.
Abrasive blast full component and blow out with dry compressed air	Removed oxides and residual blasting media from internal passages to ensure coating adhesion and cleanliness.
Perform FPI of component	Full-surface penetrant inspection confirmed no new cracks after mechanical processes.
Perform water/air flow check of	Each cooling path was verified open by differential-

Task	Engineering Description
cooling holes	pressure airflow and/or water-flow testing.
Perform visual inspection	Surface condition, geometry, and repair workmanship were verified against drawings.
Set in fixture and perform dimensional inspection	Checked radial height, throat area, and bolt-hole spacing using calibrated gauges; recorded results met tolerance.
Perform weld/blend repairs to diaphragms	Cracked or eroded diaphragm areas were GTAW-welded, blended, and inspected.
Prepare and fit replacement honeycombs to diaphragm faces	New honeycomb segments were cut to size, fitted, and tack-welded to pressure faces in preparation for brazing.
Perform braze heat treatment	Vacuum brazing bonded honeycomb to diaphragm faces using high-temperature Ni-based braze alloy.
Perform visual inspection	Verified full braze wetting and uniform honeycomb attachment.
Blend excess honeycomb section	Trimmed and blended honeycomb to precise platform thickness and flatness.
Perform dimension inspection	Re-measured to ensure diaphragm and nozzle assembly dimensions conformed to specification.

8.3. Coating and Final Assembly Phase

Task	Engineering Description
Apply diffused aluminide coating to external surfaces	External gas-path surfaces were coated by pack-cementation or vapor-phase aluminizing to form a diffusion-bonded protective aluminide layer for oxidation resistance.
Perform diffusion heat treat in partial vacuum environment	Controlled heat treatment activated coating diffusion into FSX-414 substrate, ensuring metallurgical bonding and correct coating thickness.
Perform visual inspection	Checked coating color, coverage, and uniformity; confirmed absence of flaking or uncoated areas.
Perform final heat treatment in air or partial vacuum environment	Conducted stabilization cycle to relieve coating stress and finalize microstructure.
Fit core plugs and assemble segments to diaphragms	Re-installed cleaned core plugs and assembled nozzles to their diaphragms per serial correlation.
Perform final dimensional inspection	Verified assembly clearances, throat area, and seal alignment.
Perform post-repair	Checked interface of honeycomb and seal faces for

Task	Engineering Description
assembly build ensure correct seal alignment	concentricity and gas-path fit.
Perform final visual inspection	Comprehensive inspection under magnification confirmed coating, weld, and assembly quality.
Compile Final Report, pack and ship components	Completed documentation (inspection reports, heat-treat charts, braze logs, coating certificates) and securely packed the fully serviceable components for return to NSRP.

Result

All 2nd-stage nozzle components were refurbished in accordance with **UNEW proprietary engineering standards** and **EthosEnergy ISO-certified quality system**.
The repaired assemblies were verified by FPI, dimensional, and flow tests, coated with **diffused aluminide**, and certified **serviceable for reinstallation**.

9. MATERIAL EVALUATION

Report No.	L11053	Job order no.	824029
Serial no.(or ID)	Item# 14	Cutting location	Leading Edge
Received status	☑ As-Received ☐ Pre-Weld HT ☐ Post-Weld HT ☐ Other		

Analysis Result

Main composition,%										Hardness Test	-
Element	Co	Cr	Ni	Ti	W	Ta	Mo	Fe	Al	Grain size	-
Nominal	19.0	22.5	Bal	2.2	2.0	0.0-1.1	-	-	1.7	Coating Type	Al diffusion coating
Result	19.3	21.0	51.7	2.6	2.1	0.4	-	-	1.7	Nearest Alloy	GTD262

Microstructure

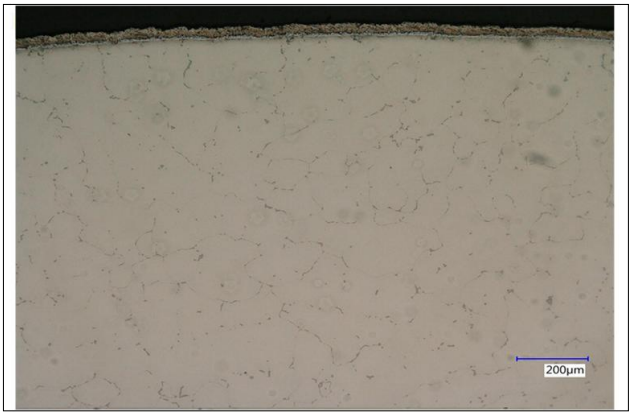


Fig.1 Showing the hot gas path coating and substrate condition.(Etched)

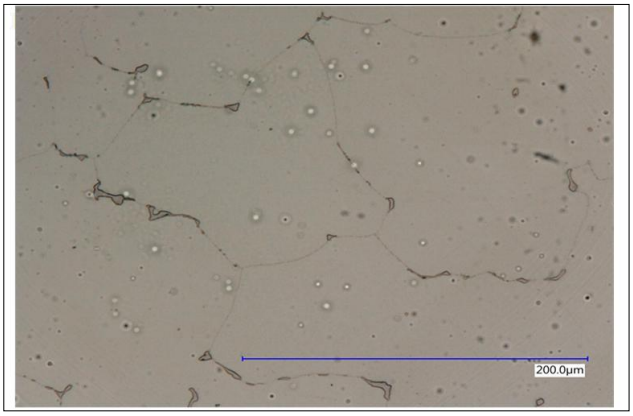


Fig.2 Showing the typical microstructure at higher magnification.(Etched)

The sample was mounted in L11053 to assess if the material would be acceptable for repair. The following was observed. Hot gas path was protected by Al diffusion coating, refer to Fig.1. Base material was confirmed as GTD262 alloy, comprising of fine grain boundary carbide and a gamma matrix with fine gamma prime, primary carbide and dispersed secondary carbide, Fig.2.

Recommendation

Based on the finding above, the base material was considered suitable for repair following coating removal by acid stripping.

Report No.	L11053-1	Job order no.	824029
Serial no.(or ID)	Item# 17	Cutting location	Leading edge
Received status	☐ As-Received ☑ Pre-Weld HT ☐ Post-Weld HT ☐ Other		

Analysis Result

Main composition,%										Hardness Test	37.6 HRC
Element	**Co**	**Cr**	**Ni**	**Ti**	**W**	**Ta**	**Mo**	**Fe**	**Al**	Grain size	-
Nominal	*(Refer to As-received analysis result)*									Coating Type	*(Refer to As-received analysis result)*
Result	*(Refer to As-received analysis result)*									Nearest Alloy	*(Refer to As-received analysis result)*

Microstructure

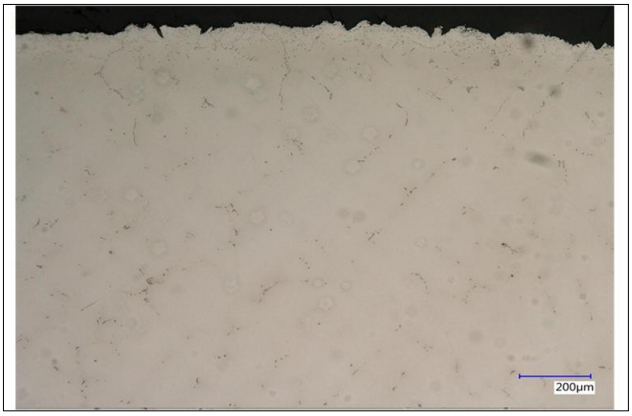


Fig.1 Showing heat treated material condition. (Etched)

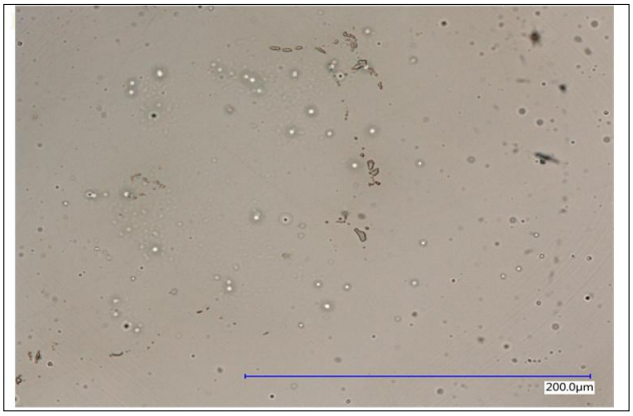


Fig.2 Showing the typical microstructure at higher magnification.(Etched)

The sample was mounted in L11053-1 to assess the material microstructure in pre-weld solution heat treated condition. Examination revealed that the base material has been significantly improved. The grain boundaries carbide and detrimental phase was satisfyingly refined (compare with the as-received microstructure in the report no.L11053). (Fig.1 and 2)

Recommendation

The base material was satisfyingly recovered by the used solution heat treatment program.

10. PHOTOGRAPHS:

Fig.1 Final inspection.

Fig.2 Final inspection.

Fig.3 Final inspection.

Fig.4 Final inspection.

Fig.5 Final inspection.

Fig.6 Final inspection.

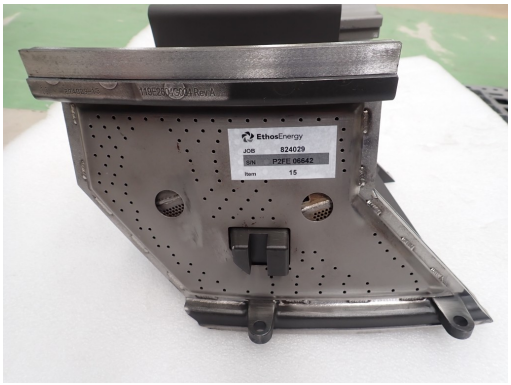


Fig.7 Final inspection.

Fig.8 Final inspection.

Fig.9 Final inspection.

Fig.10 Final inspection.

Fig.11 Final inspection.

Fig.12 Final inspection.

Fig.13 Final inspection.

Fig.14 Final inspection.

Fig.15 Final inspection.

Fig.16 Final inspection.

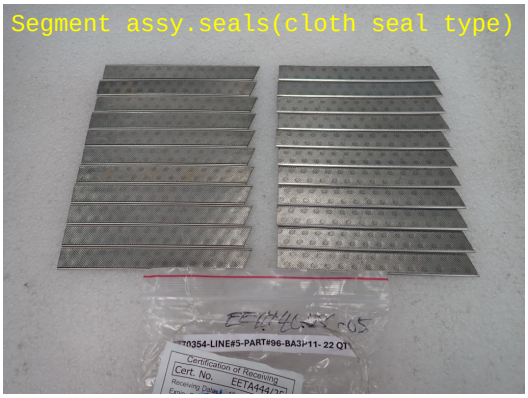


Fig.17 Final inspection.

Fig.18 Final inspection.

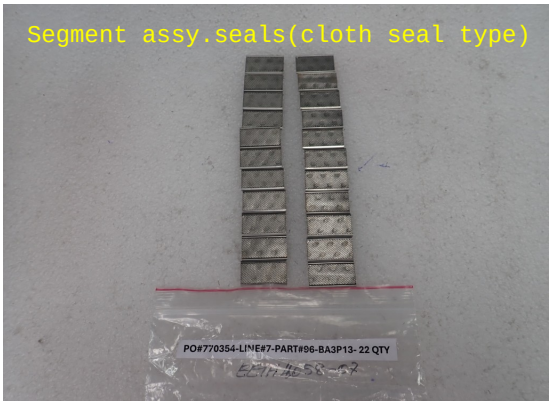


Fig.19 Final inspection.

Fig.20 Final inspection.

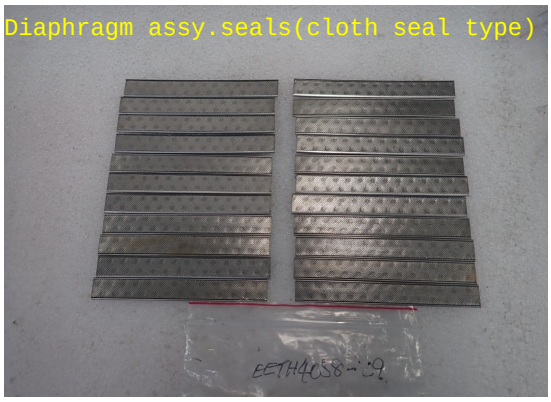
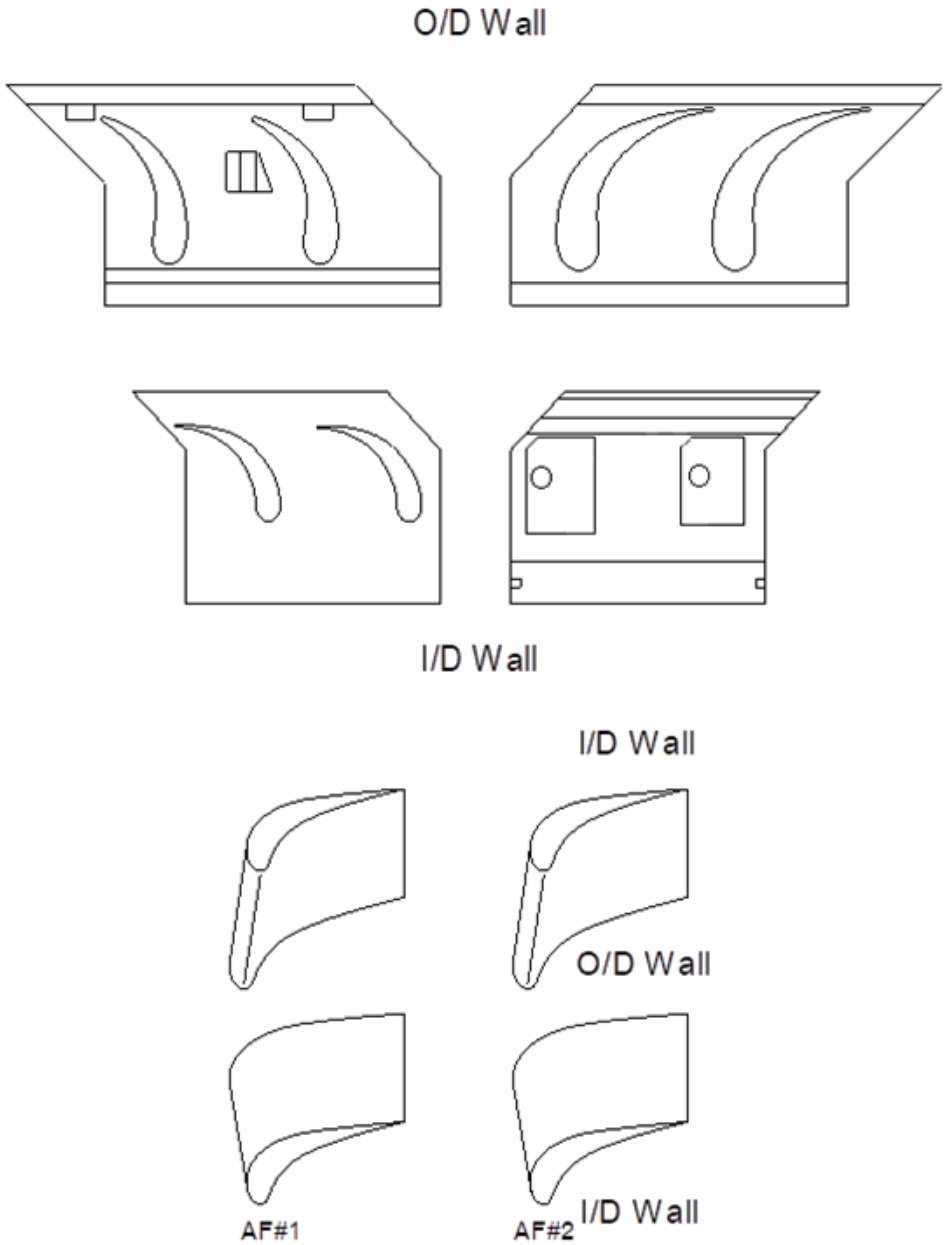


Fig.21 Final inspection.

Fig.22 Final inspection.

11. DEFECT LEGEND TABLE:

FOR SEGMENTS



FINAL INSPECTION REPORT

Information		NOZZLE SEGMENT INSPECTION FINDINGS																																			
		Airfoil												Gas path Inner & Outer shrouds												Non- Gas path Inner & Outer shrouds												Core plug Cavity			
Segment No.	S/N	Corr / Erosion		Cracks		FOD		Deform.		Missing material		Bowing Airfoil		Corr / Erosion		Cracks		FOD		Deform.		Missing material		Frettage		Corr / Erosion		Cracks		FOD		Deform.		Missing material		Frettage		Cracks		Typical flake	
		C.C - A/F	C.V - A/F	C.C - A/F	C.V - A/F	C.C - A/F	C.V - A/F	C.C - A/F	C.V - A/F	C.C - A/F	C.V - A/F	C.C - A/F	C.V - A/F	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner	Outer	A/F #1	A/F #2	A/F #1	A/F #2
1	P2FE 06683	B	B	WB	WB																					WB															
2	P2FE 06682	B	B	WB	WB																					WB															
3	P2FE 06640	B	B	WB	WB																					WB															
4	P2FE 06672	B	B	WB	WB																					WB															
5	P2FE 06510	B	B	WB	WB																					WB															
6	P2FE 06632	B	B	WB	WB																					WB															
7	P2FE 06636	B	B	WB	WB																					WB															
8	P2FE 06641	B	B	WB	WB																					WB															
9	P2FE 06679	B	B	WB	WB																					WB															
10	P2FE 06684	B	B	WB	WB																					WB															
11	P2FE 06678	B	B	WB	WB																					WB															
12	P2FE 06643	B	B	WB	WB																					WB															
13	P2FE 06656	B	B	WB	WB																					WB															
14	P2FE 06665	B	B	WB	WB																					WB															
15	P2FE 06642	B	B	WB	WB																					WB															
16	P2FE 06662	B	B	WB	WB																					WB															
17	P2FE 06205	B	B	WB	WB																					WB															
18	P2FE 06671	B	B	WB	WB																					WB															
19	P2FE 06664	B	B	WB	WB																					WB															
20	P2FE 06600	B	B	WB	WB																					WB															
21	P2FE 06657	B	B	WB	WB																					WB															
22	P2FE 06639	B	B	WB	WB																					WB															
23	P2FE 06647	B	B	WB	WB																					WB															
24	P2FE 06680	B	B	WB	WB																					WB															

B = Blend repair to be performed in accordance with the location blend limits.

JK = jacking and contouring to be performed based on the deformation and distortion detected.

WB = Weld and Blend to be performed based on the area limits and defects detected.

WM = Weld and Machining to be performed to build material dimensions and restore original dimensions and contours.

WE = Welding and Electric discharge machining (EDM) to be performed to build material dimensions and restore original dimensions.

TPR = Transient Phase Restoration to be performed based on the defects detected.

R = Replace with new.

ACC = Acceptable as is.

Rej = Dimension unacceptable and will require repair or cause of scrap.

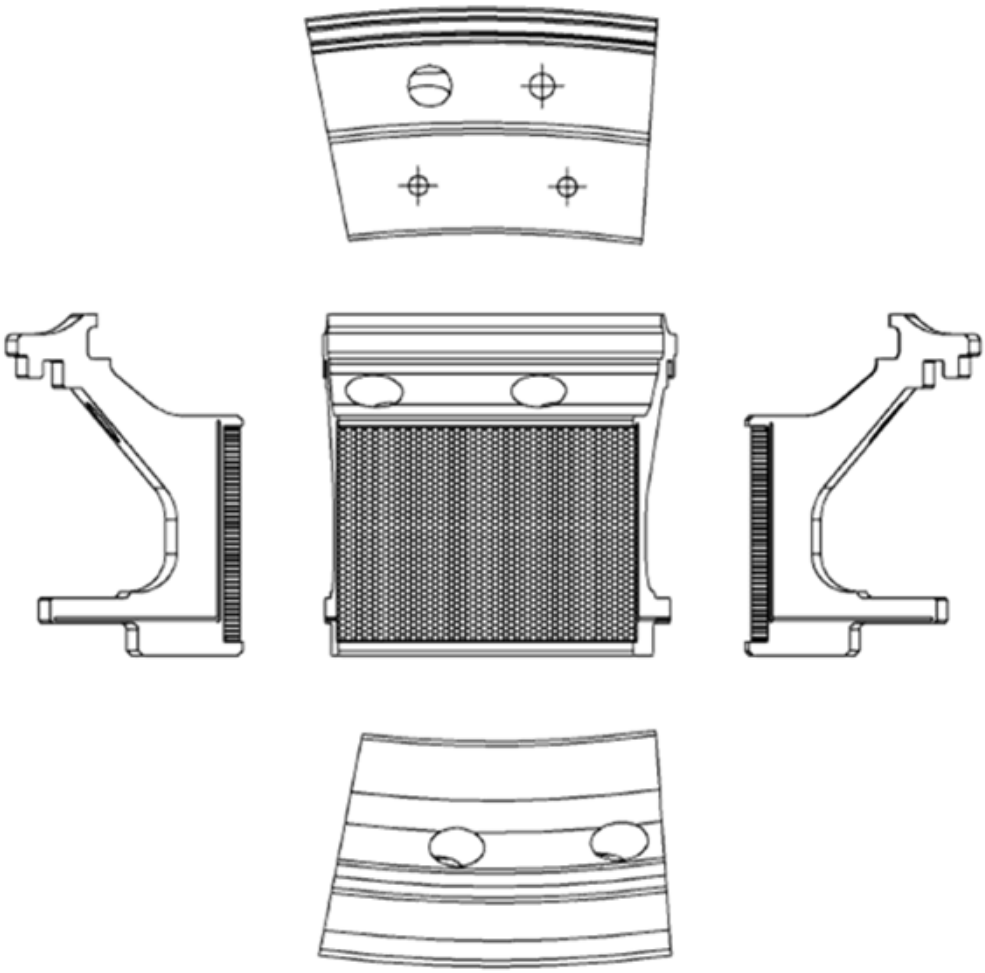
S = Non-repairable / Scrap

L = Light repair category

M = Medium repair category

H = Heavy repair category

FOR DIAPHRAGMS



FINAL INSPECTION REPORT

Information		INSPECTION FINDINGS											
		Honeycombs						Body					
Segment No.	S/N	Corr. / Erosion	Cracks	FOD	Deform.	Missing material	Frettage	Corr.	Cracks	FOD	Deform.	Missing material	Frettage
1	SNH2473301/1						R	WB					
2	SNH2473301/2						R	WB					
3	SNH2473301/3						R	WB					
4	SNH2473301/4						R	WB					
5	SNH2473301/5						R	WB					
6	SNH2473301/6						R	WB					
7	SNH2473301/7						R	WB					
8	SNH2473301/8						R	WB					
9	SNH2473301/9						R	WB					
10	SNH2473301/10						R	WB					
11	SNH2473301/11						R	WB					
12	SNH2473301/12						R	WB					
13	SNH2473301/13						R	WB					
14	SNH2473301/14						R	WB					
15	SNH2473301/15						R	WB					
16	SNH2473301/16						R	WB					
17	SNH2473301/17						R	WB					
18	SNH2473301/18						R	WB					
19	SNH2473301/19						R	WB					
20	SNH2473301/20						R	WB					
21	SNH2473301/21						R	WB					
22	SNH2473301/22						R	WB					
23	SNH2473301/23						R	WB					
24	SNH2473301/24						R	WB					

B = Blend repair to be performed in accordance with the location blend limits.

JK = jacking and contouring to be performed based on the deformation and distortion detected.

WB = Weld and Blend to be performed based on the area limits and defects detected.

WM = Weld and Machining to be performed to build material dimensions and restore original dimensions and contours.

WE = Welding and Electric discharge machining (EDM) to be performed to build material dimensions and restore original dimensions.

TPR = Transient Phase Restoration to be performed based on the defects detected.

R = Replace with new.

ACC = Acceptable as is.

Rej = Dimension unacceptable and will require repair or cause of scrap.

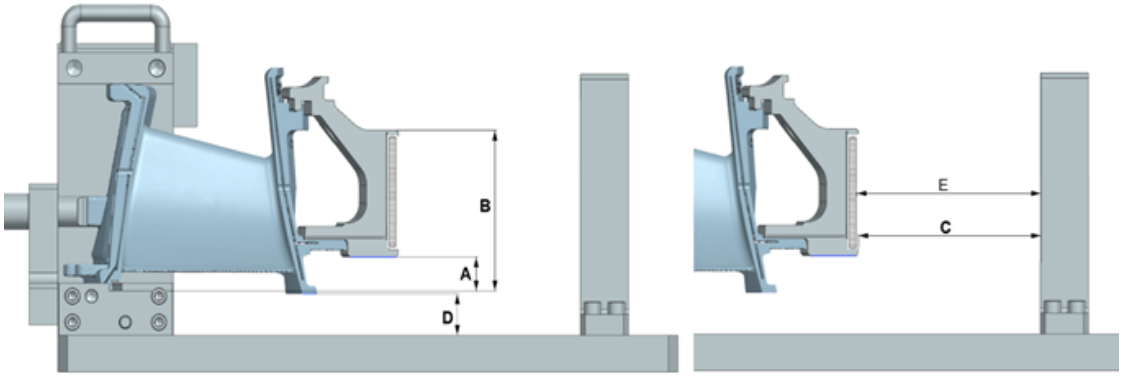
S = Non-repairable / Scrap

L = Light repair category

M = Medium repair category

H = Heavy repair category

DOWNSTREAM CHECKING WITH DIAPHRAGM



* L (Left side) & R (Right side) are measured at 1" from side edge of diaphragm.

Location	A		B		C	D	E	Result
Segment no.	L	R	L	R	Diaphragm radius	Base plate to	Honeycomb	
1	32.80	32.89	153.39	153.79	200.71	39.96	202.32	ACC
2	32.66	32.74	154.13	154.15	200.52	40.20	202.46	ACC
3	32.13	32.27	153.57	153.70	200.76	39.93	202.40	ACC
4	32.57	32.57	153.90	153.95	200.59	40.22	202.33	ACC
5	32.45	32.55	153.78	153.86	200.64	40.22	202.33	ACC
6	32.78	32.82	153.44	154.01	200.74	40.03	202.39	ACC
7	32.48	32.33	153.94	153.72	200.43	40.21	202.69	ACC
8	32.79	32.75	153.86	153.92	200.60	40.16	202.45	ACC
9	32.74	32.79	153.78	153.87	200.70	40.07	202.44	ACC
10	32.48	32.70	154.01	154.14	200.49	40.17	202.59	ACC
11	32.87	32.88	153.67	153.68	200.70	39.85	202.40	ACC
12	32.85	32.89	153.67	153.68	200.70	39.85	202.40	ACC
13	32.87	32.88	153.31	153.78	200.73	40.03	202.38	ACC
14	32.85	32.88	154.11	154.17	200.66	40.17	202.56	ACC
15	32.84	32.81	153.65	153.72	200.68	39.96	202.38	ACC
16	32.38	32.48	153.81	153.82	200.60	40.08	202.61	ACC
17	32.49	32.74	153.85	154.00	200.72	40.08	202.75	ACC
18	32.34	32.49	153.84	153.94	200.48	39.97	202.66	ACC
19	32.36	32.39	153.80	153.79	200.70	40.00	202.78	ACC
20	32.44	32.34	153.84	153.75	200.76	40.21	202.70	ACC
21	32.64	32.60	154.10	154.00	200.40	40.22	202.79	ACC
22	32.72	32.77	153.89	154.16	200.67	40.13	202.57	ACC
23	32.75	32.72	153.65	153.71	200.70	39.91	202.43	ACC
24	32.28	32.22	153.77	153.62	200.88	40.07	202.66	ACC

Unit : mm.

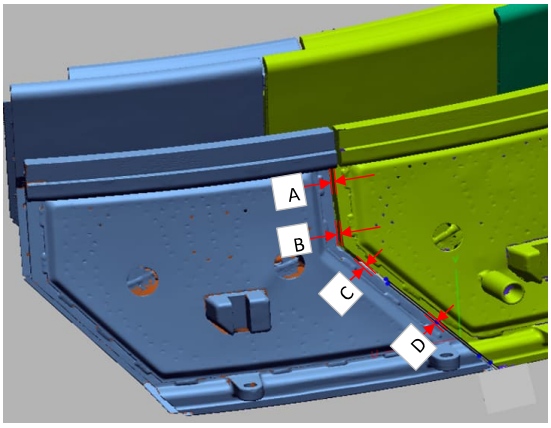
12. PCS ASSEMBLY CHECKS

1. Segment position

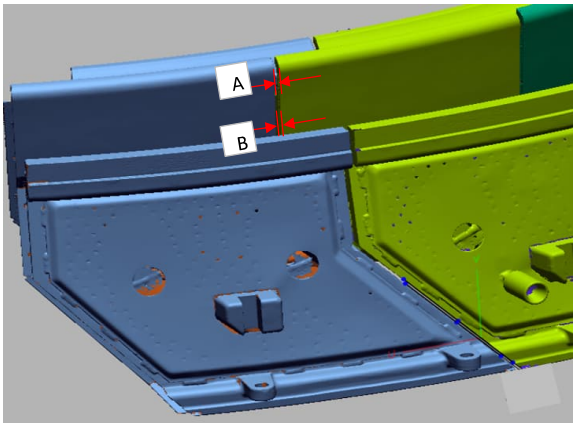
Segments No.	1	2	3	4	5	6	7	8
Position (Acc / Rej)	Acc	Acc	Acc	Acc	Acc	Acc	Acc	Acc
Segments No.	9	10	11	12	13	14	15	16
Position (Acc / Rej)	Acc	Acc	Acc	Acc	Acc	Acc	Acc	Acc
Segments No.	17	18	19	20	21	22	23	24
Position (Acc / Rej)	Acc	Acc	Acc	Acc	Acc	Acc	Acc	Acc

2. Outer wall/Inner wall abutment face gaps

Outer platform of Nozzle



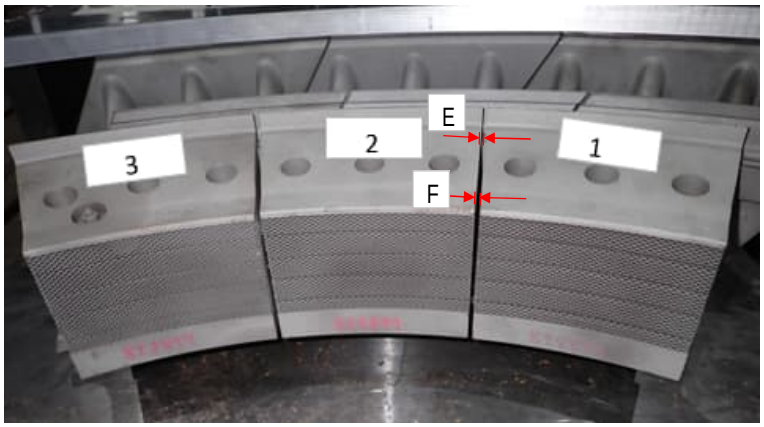
Inner platform of Nozzle



Segment	A (Outer)	A (Inner)	B (Outer)	B (Inner)	C (Outer)	C (Inner)	D (Outer)	D (Inner)	Result
1-2	2.60	3.10	2.77	3.03	2.42	2.18	2.21	2.11	ACC
2-3	2.79	2.93	3.06	3.15	2.48	1.95	2.51	2.01	ACC
3-4	2.70	2.85	2.90	3.24	2.49	1.97	2.56	2.15	ACC
4-5	2.57	2.40	2.98	2.76	2.28	1.75	2.30	1.78	ACC
5-6	2.94	3.22	2.95	3.02	2.78	2.30	2.70	2.28	ACC
6-7	2.55	2.67	2.75	2.80	2.64	1.99	2.71	2.12	ACC
7-8	2.32	2.37	2.55	2.42	2.26	1.62	2.29	1.69	ACC
8-9	2.96	3.00	3.12	3.20	2.59	2.23	2.63	2.28	ACC
9-10	2.85	3.12	3.09	3.23	2.41	1.98	2.28	2.59	ACC
10-11	2.74	2.96	2.87	2.99	2.53	2.14	2.36	2.43	ACC
11-12	2.42	2.61	2.62	2.83	2.47	2.16	2.50	2.19	ACC
12-13	3.07	3.25	2.86	3.07	2.83	2.08	2.94	2.10	ACC
13-14	2.60	2.50	3.15	2.64	2.50	2.10	2.64	2.08	ACC
14-15	2.71	3.35	3.12	3.15	2.90	2.12	2.91	2.17	ACC
15-16	2.81	3.04	2.98	3.11	2.67	2.45	2.60	2.49	ACC
16-17	2.61	2.58	2.81	2.74	2.30	1.89	2.18	1.97	ACC
17-18	3.18	3.05	3.19	2.76	2.67	1.91	2.52	1.72	ACC
18-19	2.50	2.82	2.77	3.40	2.53	2.60	2.65	2.74	ACC
19-20	2.92	2.94	3.07	3.05	2.88	2.02	2.97	2.05	ACC
20-21	2.60	2.85	2.76	2.99	2.46	1.96	2.63	2.09	ACC
21-22	2.43	2.64	2.38	2.49	2.36	1.77	2.30	1.86	ACC
22-23	3.26	3.27	3.44	3.38	2.89	2.19	2.95	2.25	ACC
23-24	2.92	3.18	2.88	3.15	2.60	2.42	2.59	2.48	ACC
24-1	3.28	3.11	3.22	3.07	2.71	2.25	2.66	2.20	ACC

Unit : mm.

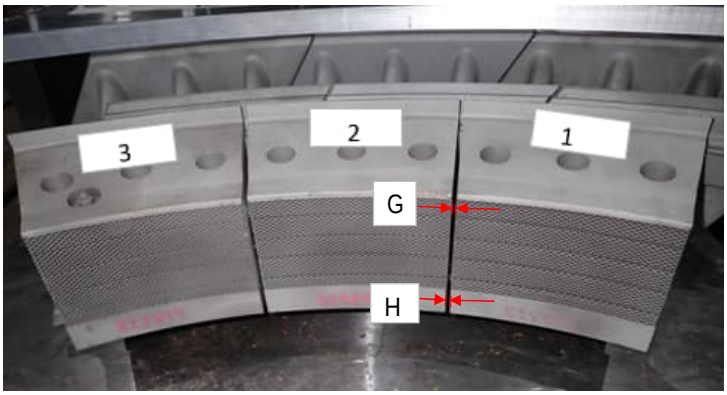
3. Diaphragm top face abutment face gaps



Segment	E	F	Result
1-2	3.61	3.68	ACC
2-3	3.53	3.65	ACC
3-4	2.79	3.07	ACC
4-5	2.96	3.05	ACC
5-6	3.28	3.17	ACC
6-7	2.98	3.19	ACC
7-8	2.86	2.89	ACC
8-9	3.32	3.31	ACC
9-10	2.86	2.97	ACC
10-11	3.22	3.38	ACC
11-12	3.24	3.49	ACC
12-13	3.15	3.14	ACC
13-14	3.20	3.18	ACC
14-15	3.44	3.30	ACC
15-16	3.31	3.36	ACC
16-17	2.84	3.18	ACC
17-18	3.32	2.86	ACC
18-19	3.02	3.59	ACC
19-20	2.88	2.93	ACC
20-21	3.35	3.42	ACC
21-22	3.12	3.16	ACC
22-23	3.18	3.07	ACC
23-24	3.51	3.63	ACC
24-1	3.05	2.86	ACC

Unit : mm.

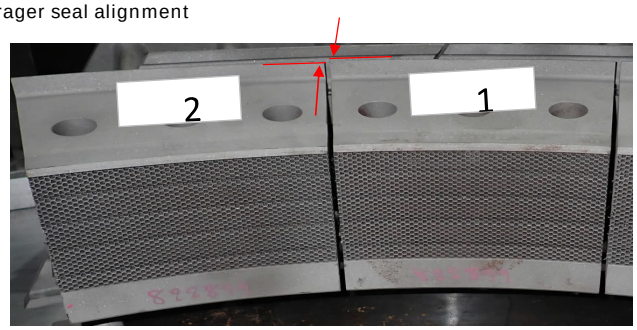
4. Diaphragm front face abutment face gaps



Segment	G	H	Result
1-2	3.64	3.71	ACC
2-3	3.45	3.76	ACC
3-4	3.04	3.58	ACC
4-5	2.90	3.72	ACC
5-6	3.13	2.90	ACC
6-7	3.26	3.30	ACC
7-8	2.95	3.06	ACC
8-9	3.49	3.45	ACC
9-10	3.18	3.25	ACC
10-11	3.31	3.44	ACC
11-12	3.50	3.64	ACC
12-13	3.11	3.30	ACC
13-14	2.99	2.94	ACC
14-15	3.11	3.35	ACC
15-16	3.40	3.41	ACC
16-17	3.19	3.31	ACC
17-18	2.87	2.26	ACC
18-19	3.39	3.65	ACC
19-20	2.90	3.01	ACC
20-21	3.36	3.44	ACC
21-22	3.11	3.40	ACC
22-23	3.06	2.79	ACC
23-24	3.74	3.67	ACC
24-1	2.73	2.65	ACC

Unit : mm.

5. Diaphragm discourager seal alignment



Segment	Seal alignment	Result
1-2	0.13	ACC
2-3	0.09	ACC
3-4	0.10	ACC
4-5	0.28	ACC
5-6	0.12	ACC
6-7	0.17	ACC
7-8	0.19	ACC
8-9	0.23	ACC
9-10	0.22	ACC
10-11	0.18	ACC
11-12	0.13	ACC
12-13	0.15	ACC
13-14	0.08	ACC
14-15	0.19	ACC
15-16	0.08	ACC
16-17	0.10	ACC
17-18	0.23	ACC
18-19	0.28	ACC
19-20	0.14	ACC
20-21	0.25	ACC
21-22	0.16	ACC
22-23	0.07	ACC
23-24	0.15	ACC
24-1	0.21	ACC

Unit : mm.

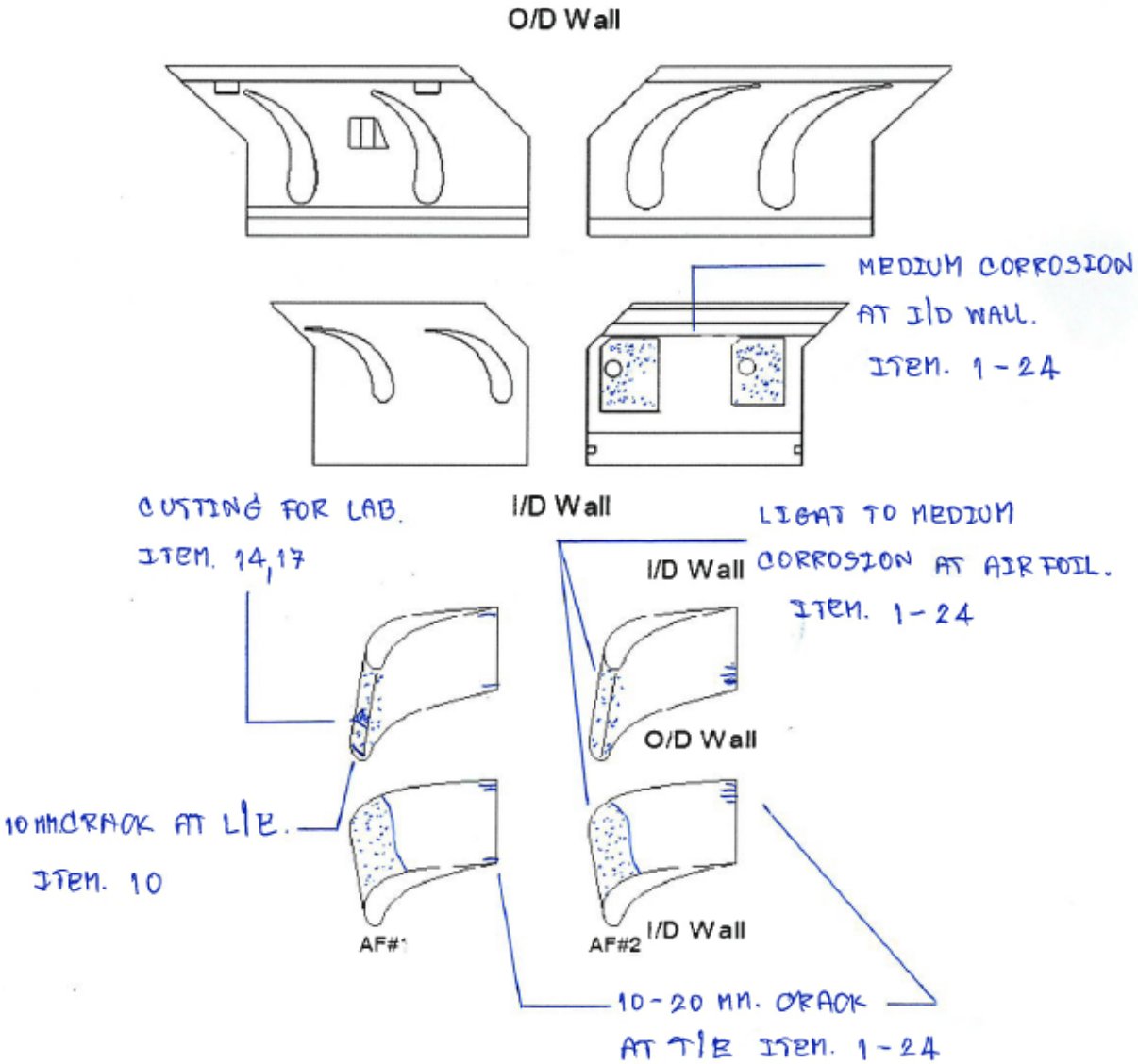
13. DEFECT MAP:

EthosEnergy			
INSPECTION AND PROCESS RECORD SHEET	MS6001FA 2nd STAGE NOZZLE	IPRS NO.	3063-70
	PART NUMBER : GENZ02M6FA	REV.	00
CUSTOMER :	Nghi Son Refinery &	CUSTOMER PO :	PO04102025-HGP
JOB NUMBER :	824029	OP.	0260
INSPECTED BY :		DATE :	07 JUL 2025

Crack (mm) | Foreign Object Damage (L/M/H) | Fretage (L/M/H) | Deformation area(mm²) | Corrosion (L/M/H) | Missing Material (mm²)

*Bowing Airfoil indicate in Light (L), Medium (M), Heavy (H)

(Incoming condition)

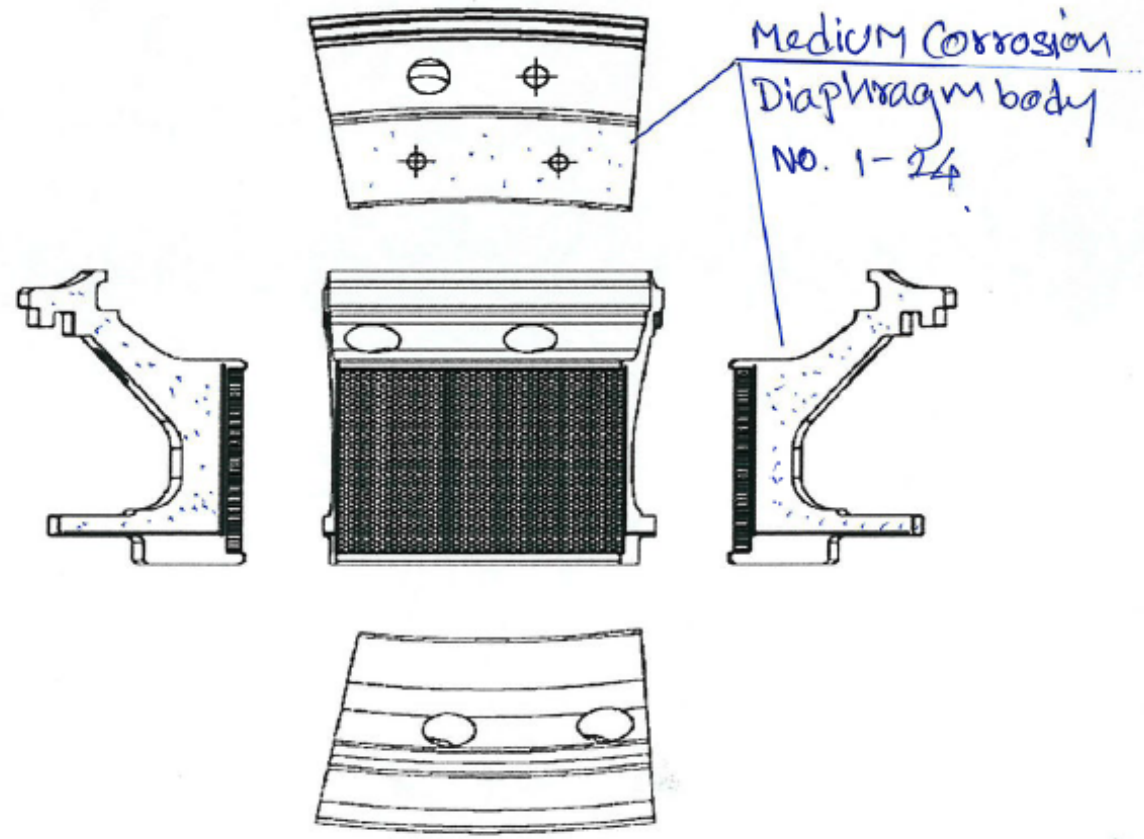


EthosEnergy

INSPECTION AND PROCESS RECORD SHEET	MS6001FA 2nd STAGE NOZZLE	IPRS NO.	3063-70
	PART NUMBER : GENZ02M6FA	REV.	00
CUSTOMER :	Nghi Son Refinery &	CUSTOMER PO :	PO04102025-HGP
JOB NUMBER :	824029	OP.	0260
INSPECTED BY :	QC	DATE :	12/07/25

Crack (mm) | Foreign Object Damage (L/M/H) | Fretage (L/M/H) | Deformation area(mm²) | Corrosion (L/M/H) | Missing Material (mm²)

(Incoming condition)

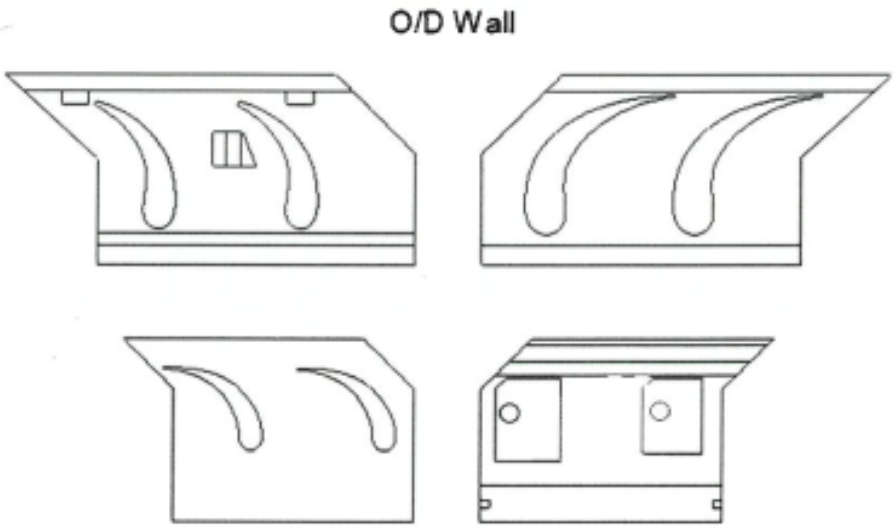


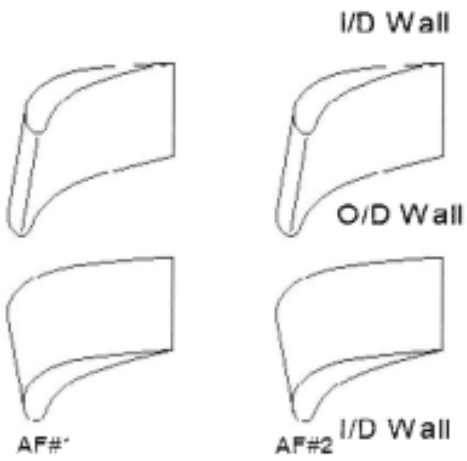
EthosEnergy

INSPECTION AND PROCESS RECORD SHEET	MS6001FA 2nd STAGE NOZZLE	IPRS NO.	3063-70
	PART NUMBER : GENZ02M6FA	REV.	00
CUSTOMER :	Nghi Son Refinery &	CUSTOMER PO :	PO04102025-HGP
JOB NUMBER :	824029	OP.	FINAL
INSPECTED BY :		DATE :	11 OCT 2025

Crack (mm) Foreign Object Damage (L/M/H) Fretage (L/M/H) Deformation (mm²) Corrosion (L/M/H) Missing Material (mm²)

*Bowing Airfoil indicate in Light (L), Medium (M), Heavy (H)





EthosEnergy

INSPECTION AND PROCESS RECORD SHEET	MS6001FA 2nd STAGE NOZZLE	IPRS NO.	3063-70
	PART NUMBER : GENZ02M6FA	REV.	00
CUSTOMER :	Nghi Son Refinery &	CUSTOMER PO :	PO04102025-HGP
JOB NUMBER :	824029	OP.	FINAL
INSPECTED BY :		DATE :	11 OCT 2025

Crack (mm) Foreign Object Damage (L/M/H) Fretage (L/M/H) Deformation (mm²) Corrosion (L/M/H) Missing Material (mm²)