



INCOMING INSPECTION REPORT



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MS6001FA (GE Frame 6FA) 1st Stage Shroud Block Set

Work Order WO-1004061634 / WO-1004061642

Customer	Nghi Son Refinery and Petrochemical LLC	Report Date	19 June 2026
Customer P.O. No.	WO-1004061634 / WO-1004061642	Component	MS6001FA 1st Stage Shroud Block
Engine Type	MS6001FA (GE Frame 6FA)	Qty. Received	24 blocks, 72 inner plates (1 set)
Component Part No.	109E9147G05 (body)	As Received Coating	TBC abradable (inner plate)
Material	SS310 body, Inconel 738 plate	Severity Category	Standard / Medium Refurbishment
Repair Classification	MEDIUM REPAIR, LEVEL 7	Previous Repairs	(Not supplied)
Service History	(Not supplied)	Disposition	Repair and restore, Standard / Medium scope

Report Reviewed and Approved By

Paul McGuire
Engineer Manager



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1. INTRODUCTION

Twenty four (24) shroud block bodies and seventy two (72) inner plates of MS6001FA 1st Stage Shroud Block have been received by UNEW, Inc. and have undergone cleaning, coating removal where required, incoming inspection and metallurgical analysis. The set was received complete, correctly identified and in good packing condition, with no evidence of transit damage. The initial findings and results of the incoming inspection are presented below and are developed in full technical detail in the sections that follow.

The objective of this incoming evaluation is twofold. First, to establish the true as received condition of every component in the set. Second, to determine the most parent metal conservative route by which the full population of twenty four (24) shroud block bodies and seventy two (72) inner plates can be restored to serviceable condition. As recorded throughout this report, the full set has been retained for repair. No component has been consigned to the non repairable category.

Order Information	
Date of report	19 June 2026
Customer P.O. no.	WO-1004061634 / WO-1004061642
Component Details	
Engine type	MS6001FA (GE Frame 6FA)
Component type	1st Stage Shroud Block
Body part number	109E9147G05
Quantity received	24 shroud block bodies, 72 inner plates
Body material	SS310
Inner plate material	Inconel 738
As received coating	TBC abradable (inner plate gas path)
Customer Supplied Component History	
Total fired hours	(No information supplied)
Total starts	(No information supplied)
Number of previous repairs	(No information supplied)
Operational fuel type	(No information supplied)
Mode of operation (base load or peaking)	(No information supplied)
Unloaded Condition	
Incoming packing condition	Good
Signs of transit damage	None

Because no service history was supplied with the set, the repair severity disposition recorded in this report is derived entirely from the measured incoming condition and the restoration scope required, rather than from accumulated operating hours. This is consistent with the principle that the repair level shall be governed by the actual damage condition and the restoration effort required, and not by the process name or the elapsed service life alone.



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2. INSPECTION SUMMARY & REPAIR DISPOSITION

Based on the findings of the incoming inspection process, the results of which are presented in full in the following sections, UNEW Engineering submits the following recommendations for the required repair, the required coatings and the replacement materials needed to restore the set to a serviceable condition. The set requires a large repair, carried out by standard repair methods at medium repair locations, and the disposition returns every block and every inner plate to original design condition.

Repair Requirements

DISPOSITION		QTY	UNIT
Inspect	Incoming inspection	1	Set
Level 7, Medium Repair	Repair, large in extent, standard methods at medium repair locations	1	Set
Required	Fresh TBC abradable coating on inner plate gas path	1	Set

Repair level assigned: Level 7, Medium repair. The repair is medium in character. Almost all of the work is at medium repair locations and uses standard repair methods, which are blend, weld and blend, dimensional restoration, heat treatment and recoating. The set is recorded at Level 7 for the large extent of this work. The body and the inner plates carry large welded areas, large corroded areas and large damaged surfaces across most of the blocks, and the inner plate seating is restored to the design on all 24 assemblies. The repair scope and the repair character are described in Section 3.

Additional Items

DISPOSITION		QTY	UNIT
Required	Replace inner plate side seals, bone type	1	Set
Required	Replace inner plate split line seals, flat type	1	Set
Required	Replace internal retaining rings	72	Piece
Required	Replace tile retention pins where required	31	Piece

Scrap / Non Repairable

None. No component within this set has been assessed as non repairable. The full population of twenty four (24) shroud block bodies and seventy two (72) inner plates has been retained for restoration.

Additional Recommendations

None at this stage. In the event that any individual indication is found, during repair, to extend beyond the allowable limit for its specific location, an addendum will be issued to this report to advise the customer. On the present incoming evidence, no such condition is anticipated.



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3. REPAIR SEVERITY CLASSIFICATION & REPAIR SCOPE

This set is a medium repair, recorded at Level 7 for the large extent of the work. The classification covers the whole set. The repair is medium in character because almost all of the work is at medium repair locations and uses standard repair methods. The set carries a large amount of this work, on large surfaces and across most of the blocks, and the level reflects that large scope. The base material is sound on every part and every block is repairable.

3.1 Repair Character

The affected features on this set are medium repair locations. The block top, aft and side faces, the inner plate side faces, the inner plate back face and the side rails all accept blend, or weld and blend, as a standard repair. The inner plate pressure and side faces accept abrasive blast, blend and a fresh coating as a standard repair. The inner plate seating is restored to the design by dimensional restoration. Each of these is a medium repair method.

No part of the work calls for a method beyond the standard repair scope. The repairs are larger in area and are spread across more of the set than on a medium repair, but the location, the method and the result are the same medium repairs that UNEW performs on these parts in normal service. This is why the set is treated as a medium repair, even though the scope is large.

3.2 Extent of the Work

The repair is large in extent. The facts below record how much of this standard repair work the set carries.

Welding. Weld build and blend is needed on the body of 7 blocks and on the inner plate faces of 16 blocks. The welded areas are large and are spread across most of the set. All of the weld is at medium repair locations.

Corrosion. Corrosion covers the inner plate pressure, side and back faces on the full set of 24 blocks. The corroded areas are large. They are removed by abrasive blast and blend, and the gas path is restored by a fresh coating.

Cracking. Cracking of 2 to 5 mm is present on the inner plate side faces of 16 blocks and on the block top face of 2 blocks. The cracked areas are removed by weld and blend, followed by full vacuum heat treatment and re inspection.

Damage and frettage. Foreign object damage is present on the block side rails of 6 blocks. Frettage covers the block top and aft faces across the set. These damaged surfaces are large and are removed by blend, or by weld and blend where the damage is deeper.

Inner plate seating. The inner plate seating is outside the fixture gap limit on all 24 assemblies, on both Z1 and Z2. The seating on every assembly is restored to the design by dimensional restoration and is re checked in the fixture.

Taken together, the large welded areas, the large corroded areas, the large damaged surfaces and the seating restoration across the full set give this repair a large scope. The work stays a standard medium repair on every feature, and the level of 7 records the large size of the scope.



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3.3 Approach to the Repair

Every block and every inner plate in this set was reviewed to confirm that it can be saved by repair. All 24 blocks and all 72 inner plates are kept and planned for repair, and none are set aside as non repairable. UNEW restores each part by blend, by weld and blend, by dimensional restoration of the inner plate seating, by full heat treatment to suit the base material, and by a fresh TBC abradable coating on the gas path. Each block returns to service with the design profile, the design seating and the design coating in place. This returns the full set to original design condition for NSRP.



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4. SPARE PARTS SCHEDULE (REPAIR / REPLACE)

The parts listed below are needed to complete the repair of the set. The seals and the internal retaining rings are replaced with new parts. The tile retention pins are repaired where possible and replaced where required.

Part	Received	Action	Quantity
Inner plate side seal, long (dog bone)	Received 50 of 70	Supply new	70 each
Inner plate side seal, short upper (dog bone)	Received 53 of 70	Supply new	70 each
Inner plate side seal, short lower (dog bone)	Received 46 of 70	Supply new	70 each
Split line seal, inner plate, long (flat)	Received 2 of 2	Supply new	2 each
Split line seal, inner plate, short upper (flat)	Received 2 of 2	Supply new	2 each
Split line seal, inner plate, short lower (flat)	Received 2 of 2	Supply new	2 each
Internal retaining ring	Received 72 of 72	Replace	72 each
Tile retention pins	Received 72 of 72	Repair 41, replace 31	31 new each

5. SCRAP REPORT

No component in this set has been scrapped. All twenty four (24) shroud block bodies and all seventy two (72) inner plates are within the UNEW repair limits and are retained for restoration. In the event that a defect cannot be removed within the allowed limit for its location during repair, an addendum will be issued to advise NSRP of the affected component.

6. ENGINEERING RECOMMENDATION

All components within the repair limits set by UNEW Engineering will be rejuvenated and repaired in line with the UNEW repair work scope. The method of repair for each component and each defect is shown in the defect map and the findings tables. The method is blend, weld and blend, dimensional restoration, or a combination of these, followed by heat treatment, inspection and coating.

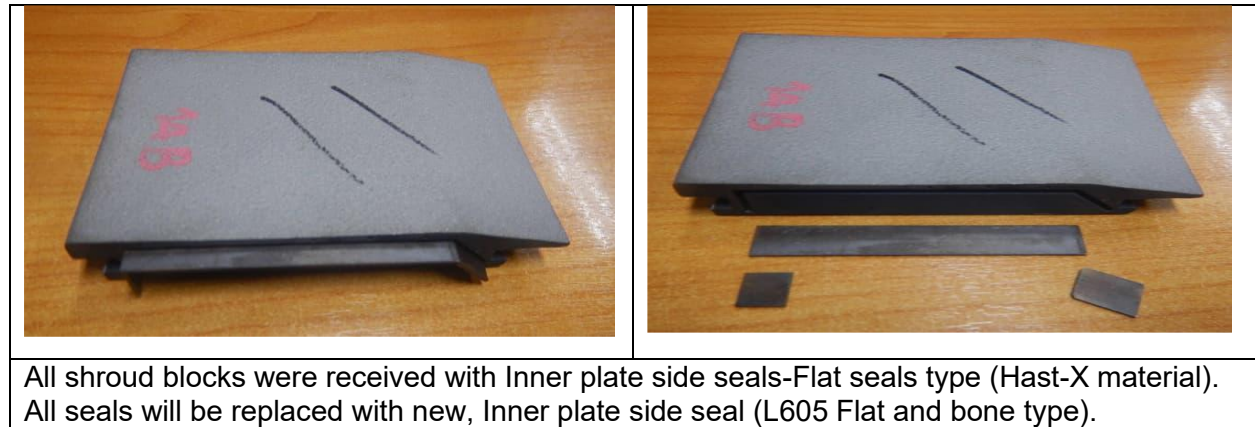
All components that show defects in areas where weld repair is not allowed, due to the high stress nature of the location, will be repaired by the maximum allowed blend. For any component where a defect cannot be removed within the allowed limit, an addendum will be issued to this report to notify NSRP of the resulting non repairable component. On this set no part was found non repairable at incoming inspection.

All base materials will be fully heat treated during the repair process, set by the base material composition, the condition of the material, and the results of the incoming metallurgical sampling. The inner plate gas path will receive a fresh TBC abradable coating.



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UNEW values the long term partnership with NSRP and remains focused on saving the parts, on improving part life and operating cost over each cycle of the agreement, and on returning every component to original design condition.



All shroud blocks were received with Inner plate side seals-Flat seals type (Hast-X material). All seals will be replaced with new, Inner plate side seal (L605 Flat and bone type).

7. PACKING LIST FROM CUSTOMER

The set was received complete and correctly identified. The table below records the items received with the set. The inner plate side seals were received short of a full complement and are replaced with new seals as recorded in Section 4.

Item received	Type	Quantity	Condition on receipt
Shroud block body	109E9147G05	24	Received complete
Inner plate (tip shoe)	Inconel 738	72	Received complete
Inner plate side seal, long (bone)	Seal	50 of 70	Received short
Inner plate side seal, short upper (bone)	Seal	53 of 70	Received short
Inner plate side seal, short lower (bone)	Seal	46 of 70	Received short
Inner plate split line seal (flat)	Seal	6 of 6	Received complete
Internal retaining ring	Ring	72 of 72	Received complete
Tile retention pin	Pin	72 of 72	Received complete



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Shroud stage #1			
NO	S/N	Set Shroud	Part number
1	M2677	POT-2304-01	109E9147G05
2	M2662	POT-2304-02	109E9147G05
3	M2686	POT-2304-03	109E9147G05
4	M2696	POT-2304-04	109E9147G05
5	M2676	POT-2304-05	109E9147G05
6	M2689	POT-2304-06	109E9147G05
7	M2680	POT-2304-07	109E9147G05
8	M2678	POT-2304-08	109E9147G05
9	M2693	POT-2304-09	109E9147G05
10	M2670	POT-2304-10	109E9147G05
11	M2683	POT-2304-11	109E9147G05
12	M2685	POT-2304-12	109E9147G05
13	M2684	POT-2304-13	109E9147G05
14	M2679	POT-2304-14	109E9147G05
15	M2694	POT-2304-15	109E9147G05
16	M2673	POT-2304-16	109E9147G05
17	M2695	POT-2304-17	109E9147G05
18	M2691	POT-2304-18	109E9147G05
19	M2687	POT-2304-19	109E9147G05
20	M2692	POT-2304-20	109E9147G05
21	M2674	POT-2304-21	109E9147G05
22	M2661	POT-2304-22	109E9147G05
23	M2690	POT-2304-23	109E9147G05
24	M2688	POT-2304-24	109E9147G05



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8. COMPONENT CORRELATION

The shroud block bodies are correlated below to the set positions and serial numbers. Each inspection item is matched to its set position and body serial number. The body part number is 109E9147G05 and the body material is SS310.

Item	Set Position	Body Serial	Part Number	Material
1	POT-2304-24	M2688	109E9147G05	SS310
2	POT-2304-01	M2677	109E9147G05	SS310
3	POT-2304-02	M2662	109E9147G05	SS310
4	POT-2304-03	M2686	109E9147G05	SS310
5	POT-2304-04	M2696	109E9147G05	SS310
6	POT-2304-05	M2676	109E9147G05	SS310
7	POT-2304-06	M2689	109E9147G05	SS310
8	POT-2304-07	M2680	109E9147G05	SS310
9	POT-2304-08	M2678	109E9147G05	SS310
10	POT-2304-09	M2693	109E9147G05	SS310
11	POT-2304-10	M2670	109E9147G05	SS310
12	POT-2304-11	M2683	109E9147G05	SS310
13	POT-2304-12	M2685	109E9147G05	SS310
14	POT-2304-13	M2684	109E9147G05	SS310
15	POT-2304-14	M2679	109E9147G05	SS310
16	POT-2304-15	M2694	109E9147G05	SS310
17	POT-2304-16	M2673	109E9147G05	SS310
18	POT-2304-17	M2695	109E9147G05	SS310
19	POT-2304-18	M2691	109E9147G05	SS310
20	POT-2304-19	M2687	109E9147G05	SS310
21	POT-2304-20	M2692	109E9147G05	SS310
22	POT-2304-21	M2674	109E9147G05	SS310
23	POT-2304-22	M2661	109E9147G05	SS310
24	POT-2304-23	M2690	109E9147G05	SS310

Each shroud block carries three inner plates, positions A, B and C, cast in Inconel 738. The set holds 72 inner plates in total, correlated to the 24 block bodies. The full inner plate correlation is held on file and is available to NSRP on request.



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CORRELATION SHEET (Tip shoes or Inner plate)							
Item	Part number	Serial number	Material	Item	Part number	Serial number	Material
1A	ETSCG 32191 ZU699/5	POT - 2304 - 24A	Inconel 738	17A	ETSCG 32191 ZU704/10	POT - 2304 - 16A	Inconel 738
1B	ETSCG 32191 ZU704/7	POT - 2304 - 24B	Inconel 738	17B	ETSCG 32191 ZU702/3	POT - 2304 - 16B	Inconel 738
1C	ETSCG 32191 ZU703/6	POT - 2304 - 24C	Inconel 738	17C	ETSCG 32191 ZU701/6	POT - 2304 - 16C	Inconel 738
2A	ETSCG 32191 XB837/2	POT - 2304 - 01A	Inconel 738	18A	ETSCG 32191 XB839/1	POT - 2304 - 17A	Inconel 738
2B	ETSCG 32191 ZU703/7	POT - 2304 - 1B	Inconel 738	18B	ETSCG 32191 ZU703/2	POT - 2304 - 17B	Inconel 738
2C	ETSCG 32191 ZU704/1	POT - 2304 - 01C	Inconel 738	18C	ETSCG 32191 XB838/9	POT - 2304 - 17C	Inconel 738
3A	ETSCG 32191 ZU704/6	POT - 2304 - 02A	Inconel 738	19A	ETSCG 32191 ZU699/7	POT - 2304 - 18A	Inconel 738
3B	ETSCG 32191 ZU703/9	POT - 2304 - 2B	Inconel 738	19B	ETSCG 32191 XB839/6	POT - 2304 - 18B	Inconel 738
3C	ETSCG 32191 ZU700/10	POT - 2304 - 02C	Inconel 738	19C	ETSCG 32191 XB839/3	POT - 2304 - 18C	Inconel 738
4A	ETSCG 32191 XB837/4	POT - 2304 - 03C	Inconel 738	20A	ETSCG 32191 XB838/4	POT - 2304 - 19A	Inconel 738
4B	ETSCG 32191 XB838/7	POT - 2304 - 3BV	Inconel 738	20B	ETSCG 32191 XB838/8	POT - 2304 - 19B	Inconel 738
4C	ETSCG 32191 ZU699/8	POT - 2304 - 03A	Inconel 738	20C	ETSCG 32191 XB839/10	POT - 2304 - 19C	Inconel 738
5A	ETSCG 32191 ZU699/1	POT - 2304 - 04C	Inconel 738	21A	ETSCG 32191 ZU702/8	POT - 2304 - 20A	Inconel 738
5B	ETSCG 32191 ZU703/10	POT - 2304 - 4B	Inconel 738	21B	ETSCG 32191 XB837/7	POT - 2304 - 20B	Inconel 738
5C	ETSCG 32191 XB839/9	POT - 2304 - 04A	Inconel 738	21C	ETSCG 32191 ZU703/8	POT - 2304 - 20C	Inconel 738
6A	ETSCG 32191 XB837/5	POT - 2304 - 05C	Inconel 738	22A	ETSCG 32191 XB837/1	POT - 2304 - 21A	Inconel 738
6B	ETSCG 32191 XB839/7	POT - 2304 - 5B	Inconel 738	22B	ETSCG 32191 XB837/9	POT - 2304 - 21B	Inconel 738
6C	ETSCG 32191 ZU702/4	POT - 2304 - 05A	Inconel 738	22C	ETSCG 32191 ZU700/6	POT - 2304 - 21C	Inconel 738
7A	ETSCG 32191 ZU701/2	POT - 2304 - 06A	Inconel 738	23A	ETSCG 32191 ZU704/5	POT - 2304 - 22A	Inconel 738
7B	ETSCG 32191 ZU702/9	POT - 2304 - 6B	Inconel 738	23B	ETSCG 32191 ZU700/8	POT - 2304 - 22B	Inconel 738
7C	ETSCG 32191 ZU699/4	POT - 2304 - 06C	Inconel 738	23C	ETSCG 32191 ZU701/7	POT - 2304 - 22C	Inconel 738
8A	ETSCG 32191 XB838/5	POT - 2304 - 07A	Inconel 738	24A	ETSCG 32191 ZU700/5	POT - 2304 - 23A	Inconel 738
8B	ETSCG 32191 ZU703/3	POT - 2304 - 07B	Inconel 738	24B	ETSCG 32191 ZU704/3	POT - 2304 - 23B	Inconel 738
8C	ETSCG 32191 ZU700/4	POT - 2304 - 07C	Inconel 738	24C	ETSCG 32191 ZU704/9	POT - 2304 - 23C	Inconel 738
9A	ETSCG 32191 XB839/5	POT - 2304 - 08A	Inconel 738				



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9B	ETSCG 32191 ZU702/1	POT - 2304 - 8B	Inconel 738
9C	ETSCG 32191 ZU701/1	POT - 2304 - 08C	Inconel 738
10A	ETSCG 32191 ZU700/8	POT - 2304 - 09A	Inconel 738
10B	ETSCG 32191 ZU700/2	POT - 2304 - 9B	Inconel 738
10C	ETSCG 32191 ZU701/3	POT - 2304 - 09C	Inconel 738
11A	ETSCG 32191 ZU703/5	POT - 2304 - 10A	Inconel 738
11B	ETSCG 32191 ZU704/4	POT - 2304 - 10B	Inconel 738
11C	ETSCG 32191 ZU699/6	POT - 2304 - 10C	Inconel 738
12A	ETSCG 32191 ZU699/2	POT - 2304 - 11A	Inconel 738
12B	ETSCG 32191 ZU701/10	POT - 2304 - 11B	Inconel 738
12C	ETSCG 32191 XB839/4	POT - 2304 - 11C	Inconel 738
13A	ETSCG 32191 ZU701/9	POT - 2304 - 12A	Inconel 738
13B	ETSCG 32191 ZU702/10	POT - 2304 - 12B	Inconel 738
13C	ETSCG 32191 ZU704/8	POT - 2304 - 12C	Inconel 738
14A	ETSCG 32191 ZU699/3	POT - 2304 - 13A	Inconel 738
14B	ETSCG 32191 XB839/8	POT - 2304 - 13B	Inconel 738
14C	ETSCG 32191 XB838/10	POT - 2304 - 13C	Inconel 738
15A	ETSCG 32191 XB838/1	POT - 2304 - 14A	Inconel 738
15B	ETSCG 32191 ZU699/10	POT - 2304 - 14B	Inconel 738
15C	ETSCG 32191 XB838/6	POT - 2304 - 14C	Inconel 738
16A	ETSCG 32191 ZU699/9	POT - 2304 - 15A	Inconel 738
16B	ETSCG 32191 ZU702/7	POT - 2304 - 15B	Inconel 738
16C	ETSCG 32191 ZU702/2	POT - 2304 - 15C	Inconel 738



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9. SCOPE OF WORK

The full scope of work for the set is listed below in three phases, inspection, repair and coating. The weld operations in the repair phase, together with the dimensional restoration of the inner plate seating, are standard repair operations and are carried out at medium repair locations on this set.

No.	Operation	Phase
1	Perform receipt inspection and record serial numbers	Inspection
2	Degrease components	Inspection
3	Perform metallurgical evaluation of base material and coating type, report on condition	Inspection
4	Disassemble inner plate from shroud body, record the block each plate is removed from	Inspection
5	Abrasive blast to remove coating and to clean, blow out with dry compressed air to remove all media	Inspection
6	Perform visual inspection and segregate any non repairable components	Inspection
7	Perform incoming solution heat treatment in partial pressure vacuum environment, shroud face only	Inspection
8	Mask non coated surfaces and chemical strip to remove coating	Inspection
9	Perform fluorescent penetrant inspection and record all defects	Inspection
10	Perform dimensional inspection, report all non conformities	Inspection
11	Compile incoming inspection report and forward to customer	Inspection
12	Blend to remove oxidation product on pressure face surface	Repair
13	Scallop and route to remove defective material in pressure face and location rails, prepare for weld repair	Repair
14	Perform local penetrant inspection	Repair
15	Perform weld repairs to the slot, pressure face and location rails	Repair
16	Blend all repaired areas to restore component profile	Repair
17	Perform fluorescent penetrant inspection	Repair
18	Perform post weld heat treatment in full vacuum environment	Repair
19	Perform fluorescent penetrant inspection	Repair
20	Perform visual inspection	Repair
21	Perform dimensional inspection	Repair
22	Mask off non coated areas in preparation for abrasive blast	Coating
23	Abrasive blast gas path surfaces to receive coating	Coating
24	Blow out with clean dry compressed air to ensure no media entrapment	Coating
25	Apply TBC abradable coating to gas path areas	Coating
26	Perform coating heat treatment in furnace	Coating
27	Perform dimensional inspection	Coating
28	Perform final visual inspection of plates and blocks	Coating
29	Final assemble shroud plates to blocks	Coating
30	Compile final report, pack and ship with all documentation listed in the purchase order	Coating

Required materials: new inner plate side seals, flat and bone type, one set; new internal retaining ring, 72 each; new tile retention pins, 31 each; TBC abradable ceramic.

10. MATERIAL & METALLURGICAL EVALUATION

Material verification was performed directly on representative material taken from the actual components received for refurbishment. The purpose of this verification was to confirm the alloy identity, microstructure, and repair suitability of the body and inner plate materials before repair work proceeds. The results confirm that the inspected materials are consistent with the required base alloys and are suitable for repair under the defined repair scope.

10.1 Body, SS310

Material verification was performed directly on the shroud body material from the actual component received for refurbishment. The hot gas path surface was uncoated and showed service-related surface condition consistent with operation. Chemical composition and microstructure were checked to confirm the alloy and repair suitability. The base material was confirmed as SS310 alloy, with fine grain-boundary carbide and a gamma matrix containing primary carbide and dispersed secondary carbide. Based on the inspection result, the body material is suitable for repair after removal of surface oxidation and service deposits by controlled grit blasting and cleaning.

Element	Cr	Ni	Fe
Nominal, %	24 to 26	19 to 22	Balance
Result, %	23.8	20.4	54.0

Nearest alloy: SS310. **Coating:** None on body.

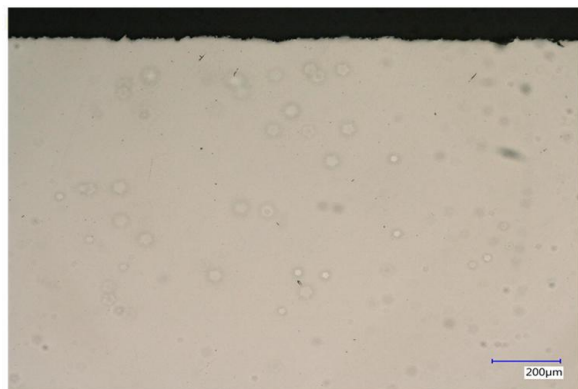


Fig. 1 Body SS310, gas path surface condition, etched.

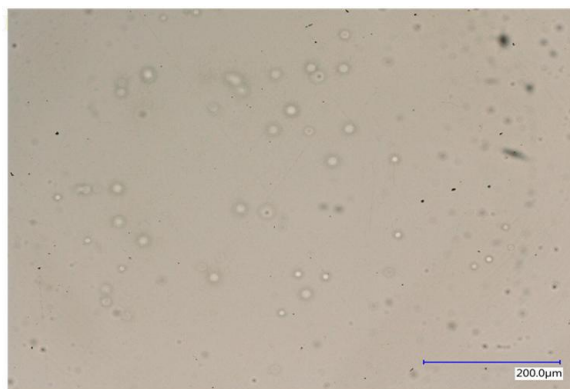


Fig. 2 Body SS310, typical microstructure at higher magnification, etched.

Body SS310, gas path surface and microstructure, etched.

10.2 Inner Plate, Inconel 738

Material verification was performed directly on the inner plate material from the actual component received for refurbishment. The hot gas path surface was protected by TBC abrasion coating and showed service-related coating condition consistent with operation. Chemical composition and microstructure were checked to confirm the alloy and repair suitability. The base material was confirmed as Inconel 738 alloy, with fine grain-boundary carbide and a gamma matrix containing fine gamma prime, primary carbide, and dispersed secondary carbide. Based on the inspection result, the inner plate material is suitable for repair after full removal of the existing coating, surface oxidation, and affected service deposits by controlled grit blasting and cleaning.

Element	Co	Cr	Ni	Ti	W	Mo	Al
Nominal, %	8.5	16.0	61.5	3.4	2.6	1.8	3.4
Result, %	8.4	15.0	62.5	3.2	2.7	1.9	3.4

Nearest alloy: Inconel 738. **Coating:** TBC abrasion.



Fig. 3 Inner plate Inconel 738, coating and substrate condition, etched.



Fig. 4 Inner plate Inconel 738, typical microstructure at higher magnification, etched.

Inner plate Inconel 738, coating, substrate and microstructure, etched.

11. COMPONENT CONDITION & PHOTOGRAPHIC FINDINGS

The photographs below record the as received condition of the shroud block bodies and the inner plate hardware. They show the large welded, corroded and damaged areas that the set carries, and the consistent pattern on which the repair rests. The structural hardware is sound and retainable. The welded, cracked, corroded and fretted areas are at medium repair locations and are restored by standard repair, while the worn seals and seating hardware are replaced as standard consumables.

11.1 As Received Condition



Fig. 5 Set as received, full pallet.



Fig. 6 Set as received.



Fig. 7 Set as received.



Fig. 8 Set as received, shroud block body.

Set as received, shroud block bodies and pallet.

11.2 Typical Condition, Body and Inner Plate



Fig. 9 Shroud block body, typical condition.



Fig. 10 Shroud block body, typical condition.

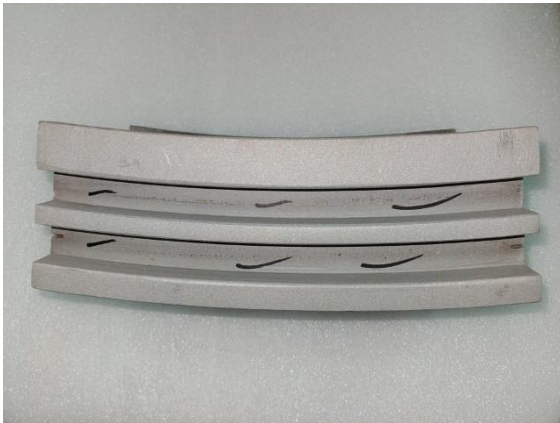


Fig. 11 Shroud block body, typical condition.

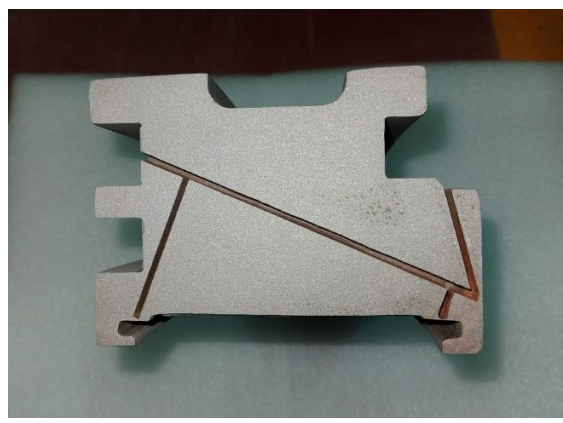


Fig. 12 Shroud block body, back view.



Fig. 13 Shroud block body, back view.

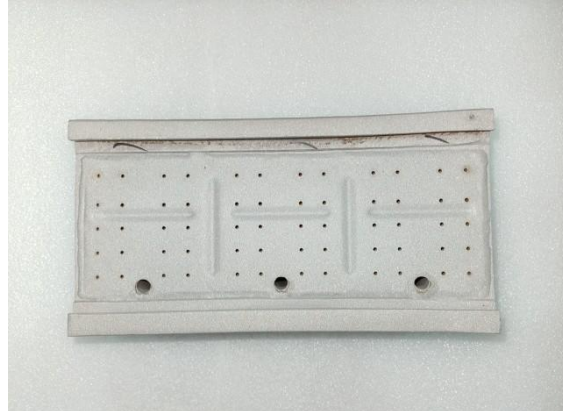


Fig. 14 Shroud block body, pressure face.



Fig. 15 Inner plate (tip shoe), seal face.



Fig. 16 Inner plate (tip shoe), edge view.

Typical as received condition of shroud block body and inner plate.

11.3 Cracking



Fig. 17 Cracking on inner plate.



Fig. 18 Inner plate, edge view.

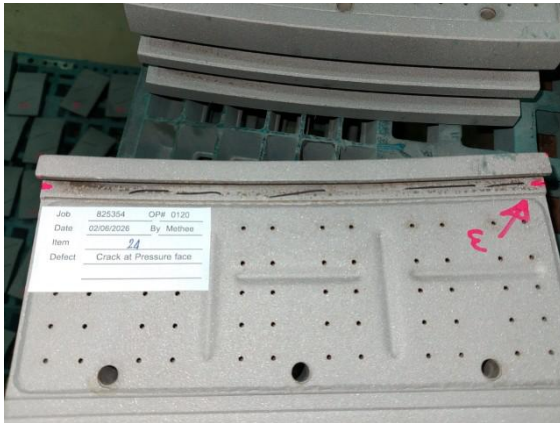


Fig. 19 Crack on pressure face.

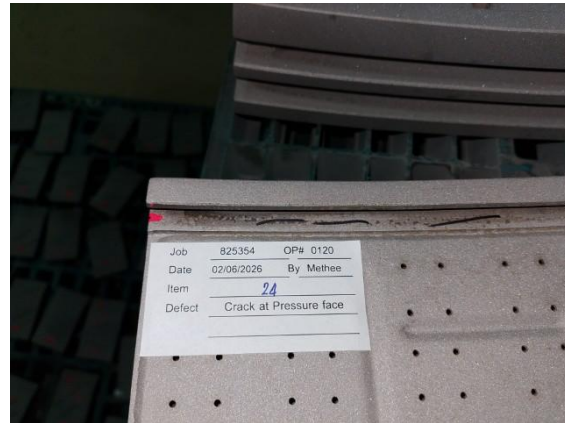


Fig. 20 Crack on pressure face.

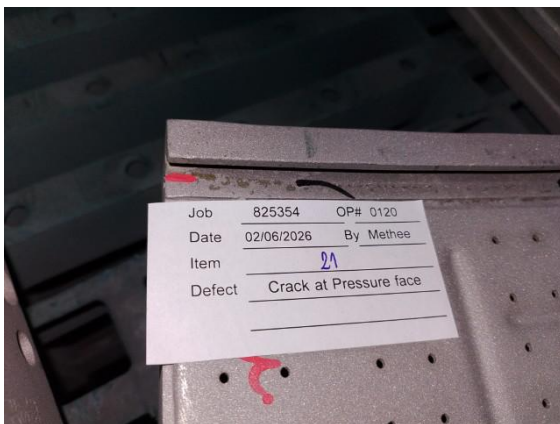


Fig. 21 Crack on pressure face.



Fig. 22 Crack on left side.



Fig. 23 Crack on left side.



Fig. 24 Crack on left side.



Fig. 25 Crack on right side.

Cracking on inner plate side faces and pressure face, removed by weld and blend.

11.4 Foreign Object Damage and Frettage



Fig. 26 Fretage on pressure face.



Fig. 27 FOD on right side.



Fig. 28 FOD on left side.



Fig. 29 FOD on left side.



Fig. 30 Fretage on aft side.



Fig. 31 FOD on right side.

Foreign object damage and fretage on block faces and side rails, removed by blend or weld and blend.

11.5 Corrosion



Fig. 32 Corrosion on right side.



Fig. 33 Corrosion on right side.



Fig. 34 Corrosion on right side.



Fig. 35 Corrosion on side face.

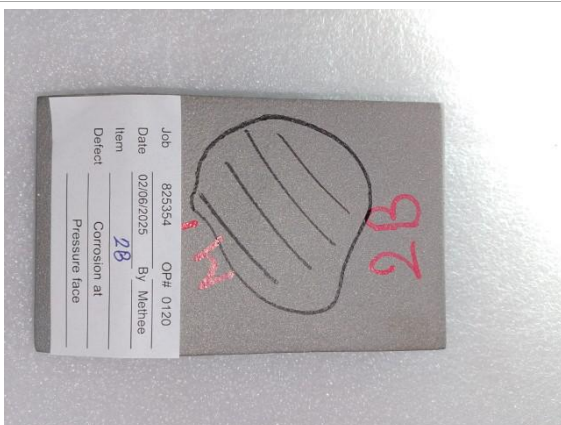


Fig. 36 Corrosion on pressure face.



Fig. 37 Corrosion on left side.



Fig. 38 Corrosion on left side.



Fig. 39 Corrosion on pressure face.



Fig. 40 Corrosion on back side.

Surface corrosion on inner plate pressure, side and back faces, removed by blast and blend and recoated.

11.6 Parts to Be Replaced



Fig. 41 Inner plate side seals as received, to be replaced with new.



Fig. 42 Inner plate side seals as received, to be replaced with new.



Fig. 43 Spare parts as received.



Fig. 44 Tile retention pins, to be replaced with new where required.



Fig. 45 Inner plate side seals, to be replaced with new.

Side seals and tile retention hardware, replaced with new as recorded in Section 4.

12. DEFECT DISPOSITION LEGEND & INSPECTION FINDINGS

The defects are mapped below by face of the shroud block, then recorded item by item with the repair method that applies. The forward, pressure, left, right, aft and back faces are listed with the defects found and the items affected. The inner plate seating result is listed at the end of the map.

Face	Defects observed and items affected
Forward side	No defects recorded.
Pressure face	Corrosion across the set. Fretage. Cracking 2 to 5 mm on items 21 and 24. Weld and blend on items 21 and 24.
Left side	Cracking 2 to 5 mm on items 1, 3, 7, 8, 10, 11, 12, 13, 15 and 16. FOD on items 1, 15 and 23. Corrosion on inner plate side faces.
Right side	Cracking 2 to 5 mm on items 8 and 16. FOD on items 14, 17 and 24. Corrosion on inner plate side faces.
Aft side	Fretage across the set.
Back side	Corrosion across the set on the inner plate back face. Weld and blend on items 2, 8 and 24.
Inner plate seating (fixture)	Z1 and Z2 gap reject on all 24 inner plate assemblies.

12.1 Findings by Item

The findings are recorded below for each block and its inner plates. The table records the defect type and the location for each item. The repair method follows in the next table. The fixture result for the inner plate seating is shown in the dimensional section.

Item	Set Position	Body, defects observed	Inner plate, defects observed
1	POT-2304-24	Fretage on top and aft faces, FOD on side	Corrosion on pressure, side and back faces, cracking on side faces
2	POT-2304-01	Fretage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
3	POT-2304-02	Fretage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
4	POT-2304-03	Fretage on top and aft faces	Corrosion on pressure, side and back faces
5	POT-2304-04	Fretage on top and aft faces	Corrosion on pressure, side and back faces
6	POT-2304-05	Fretage on top and aft faces	Corrosion on pressure, side and back faces
7	POT-2304-06	Fretage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
8	POT-2304-07	Fretage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
9	POT-2304-08	Fretage on top and aft faces	Corrosion on pressure, side and back faces
10	POT-2304-09	Fretage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
11	POT-2304-10	Fretage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
12	POT-2304-11	Fretage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
13	POT-2304-12	Fretage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
14	POT-2304-13	Fretage on top and aft faces, FOD on side	Corrosion on pressure, side and back faces

INCOMING INSPECTION REPORT

Item	Set Position	Body, defects observed	Inner plate, defects observed
15	POT-2304-14	Frettage on top and aft faces, FOD on side	Corrosion on pressure, side and back faces, cracking on side faces
16	POT-2304-15	Frettage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
17	POT-2304-16	Frettage on top and aft faces, FOD on side	Corrosion on pressure, side and back faces, cracking on side faces
18	POT-2304-17	Frettage on top and aft faces	Corrosion on pressure, side and back faces
19	POT-2304-18	Frettage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
20	POT-2304-19	Frettage on top and aft faces	Corrosion on pressure, side and back faces
21	POT-2304-20	Frettage on top and aft faces, cracking on top face	Corrosion on pressure, side and back faces
22	POT-2304-21	Frettage on top and aft faces	Corrosion on pressure, side and back faces, cracking on side faces
23	POT-2304-22	Frettage on top and aft faces, FOD on side	Corrosion on pressure, side and back faces, cracking on side faces
24	POT-2304-23	Frettage on top and aft faces, cracking on top face, FOD on side	Corrosion on pressure, side and back faces, cracking on side faces

12.2 Repair Method by Item

The repair method for each item is recorded below. The inner plate seating on every block is restored to the design by dimensional restoration. The fixture readings are given in the dimensional section.

Item	Body method	Inner plate method	Inner plate seating
1	Blend, weld and blend	Blend, weld and blend	Dimensional restoration
2	Blend	Blend, weld and blend	Dimensional restoration
3	Blend	Blend, weld and blend	Dimensional restoration
4	Blend	Blend	Dimensional restoration
5	Blend	Blend	Dimensional restoration
6	Blend	Blend	Dimensional restoration
7	Blend	Blend, weld and blend	Dimensional restoration
8	Blend	Blend, weld and blend	Dimensional restoration
9	Blend	Blend	Dimensional restoration
10	Blend	Blend, weld and blend	Dimensional restoration
11	Blend	Blend, weld and blend	Dimensional restoration
12	Blend	Blend, weld and blend	Dimensional restoration
13	Blend	Blend, weld and blend	Dimensional restoration
14	Blend, weld and blend	Blend	Dimensional restoration
15	Blend, weld and blend	Blend, weld and blend	Dimensional restoration
16	Blend	Blend, weld and blend	Dimensional restoration
17	Blend, weld and blend	Blend, weld and blend	Dimensional restoration
18	Blend	Blend	Dimensional restoration
19	Blend	Blend, weld and blend	Dimensional restoration
20	Blend	Blend	Dimensional restoration
21	Blend, weld and blend	Blend	Dimensional restoration
22	Blend	Blend, weld and blend	Dimensional restoration
23	Blend, weld and blend	Blend, weld and blend	Dimensional restoration
24	Blend, weld and blend	Blend, weld and blend	Dimensional restoration

13. DIMENSIONAL INSPECTION & 360° ASSEMBLY VERIFICATION

The shroud block bodies and the inner plate assemblies were measured. The body dimensions establish the as received geometry and are within the recorded band on all 24 blocks. The inner plate seating was then checked in the fixture for the controlled gap dimensions Z1 and Z2, which is the 360 degree assembly verification for the set. The fixture data confirm that the dimensional restoration required is confined to the inner plate seating and does not extend to the body, which is within band on every block.

13.1 Body Dimensions, A to K

All values in millimeters.

Item	A	B	C	D	E	F	G	H	I	J	K
1	97.37	70.66	15.09	89.48	89.49	112.15	16.07	14.21	17.65	15.71	3.97
2	97.4	70.64	14.98	89.45	89.47	112.26	16.03	14.25	17.61	15.67	4.07
3	97.42	70.63	16.07	89.47	89.46	112.18	16.04	14.16	17.63	15.69	3.99
4	97.4	70.69	15.1	89.45	89.48	112.22	16.09	14.19	17.7	15.68	3.97
5	97.42	70.66	15.06	89.48	89.47	112.24	16.04	14.17	17.64	15.65	4.04
6	97.43	70.82	15.02	89.59	89.15	112.37	16.08	14.19	17.61	15.73	4.01
7	97.4	70.7	14.97	89.43	89.51	112.19	16.13	14.15	17.68	15.72	3.94
8	97.38	70.65	15.15	89.45	89.45	112.27	16.06	14.18	17.67	15.69	4.03
9	97.37	70.63	15.02	89.19	89.91	112.08	16.07	14.01	17.71	15.61	4.07
10	97.2	70.74	14.91	89.34	89.78	112.24	16.04	14.19	17.6	15.82	4.01
11	97.39	70.62	14.99	89.45	89.45	112.23	16.05	14.18	17.64	15.7	3.99
12	97.4	70.63	15.04	89.47	89.44	112.21	16.06	14.21	17.63	15.71	4.04
13	97.43	70.68	15.04	89.47	89.49	112.24	16.06	14.24	17.65	15.67	4.03
14	97.42	70.69	15.21	89.49	89.51	112.21	16.09	14.21	17.6	15.69	3.98
15	97.37	70.67	15.13	89.44	89.48	112.29	16.07	14.25	17.65	15.66	4.01
16	97.38	70.68	15.01	89.47	89.47	112.19	16.08	14.19	17.68	15.67	3.97
17	97.35	70.67	15.06	89.45	89.48	112.15	16.1	14.16	17.65	15.71	3.98
18	97.41	70.63	15.23	89.48	89.44	112.14	16.07	14.14	17.68	15.69	3.94
19	97.27	70.56	15.13	89.77	89.42	111.89	16.08	14.21	17.62	15.7	4.14
20	97.37	70.71	15.05	89.49	89.45	112.11	16.07	14.23	17.67	15.68	3.98
21	97.18	70.71	14.73	89.25	89.69	111.92	16.07	14.03	17.88	16.09	4.01
22	97.41	70.68	14.95	89.44	89.51	112.17	16.09	14.17	17.65	15.72	4.08
23	97.47	70.6	15.11	89.2	89.26	112.07	16.1	14.1	17.76	15.83	4.07
24	97.43	70.74	15.17	89.54	89.93	111.94	16.06	14.23	17.56	15.74	3.99

13.2 Body Dimensions, L, M and S1 to S8

All values in millimeters.

Item	L	M	S1	S2	S3	S4	S5	S6	S7	S8
1	4.11	11.21	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
2	4.14	11.27	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
3	4.13	11.25	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
4	4.22	11.16	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
5	4.11	11.16	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8

INCOMING INSPECTION REPORT

Item	L	M	S1	S2	S3	S4	S5	S6	S7	S8
6	4.13	11.22	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
7	4.09	11.27	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
8	4.16	11.22	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8
9	4.11	11.16	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
10	4.15	11.23	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
11	4.19	11.22	1.8	1.8	1.8	1.7	1.8	1.8	1.9	1.9
12	4.17	11.17	1.8	1.8	1.8	1.7	1.9	1.9	1.7	1.7
13	4.13	11.22	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7
14	4.15	11.21	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9
15	4.19	11.26	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
16	4.18	11.22	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
17	4.15	11.24	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7
18	4.15	11.22	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9
19	4.16	11.21	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9
20	4.14	11.25	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
21	4.19	11.27	1.8	1.8	2	1.8	1.8	1.8	1.8	1.8
22	4.15	11.17	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
23	4.15	11.22	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
24	4.13	11.21	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8

13.3 Inner Plate Seating, Fixture Gap Check

The inner plate assembly was mounted in the fixture and the controlled gap dimensions Z1 and Z2 were checked against the acceptance limit. The A reading is recorded in millimetres. The Z1 and Z2 result is pass or fail. On this set all 24 inner plate assemblies are outside the gap limit on both Z1 and Z2. The seating on every assembly is restored to the design by dimensional restoration and is then re checked in the fixture, which is a standard repair for this feature.

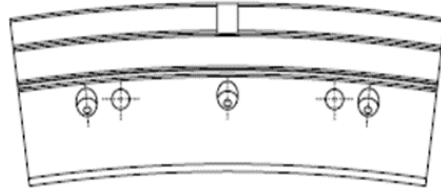
Item	A reading, mm	Z1 gap	Z2 gap
1	209.20	Reject	Reject
2	208.70	Reject	Reject
3	209.02	Reject	Reject
4	208.86	Reject	Reject
5	208.89	Reject	Reject
6	209.05	Reject	Reject
7	209.05	Reject	Reject
8	209.60	Reject	Reject
9	209.05	Reject	Reject
10	209.00	Reject	Reject
11	209.09	Reject	Reject
12	208.96	Reject	Reject
13	209.07	Reject	Reject
14	209.91	Reject	Reject
15	208.88	Reject	Reject
16	209.15	Reject	Reject
17	208.79	Reject	Reject
18	209.01	Reject	Reject
19	208.94	Reject	Reject

INCOMING INSPECTION REPORT

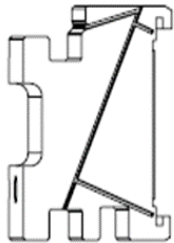
Item	A reading, mm	Z1 gap	Z2 gap
20	208.90	Reject	Reject
21	208.81	Reject	Reject
22	209.02	Reject	Reject
23	208.97	Reject	Reject
24	209.02	Reject	Reject

Result: 24 of 24 inner plate assemblies rejected on Z1 and Z2.

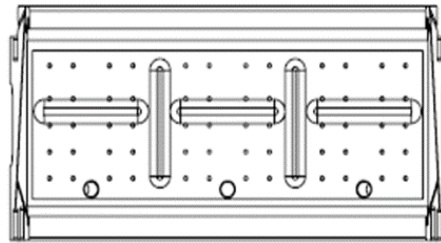
11. DEFECT LEGEND TABLE:



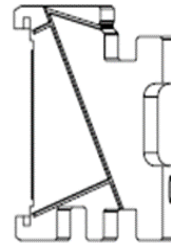
FWD SIDE



LEFT SIDE



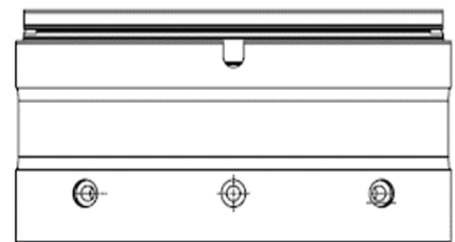
PRESSURE FACE



RIGHT SIDE



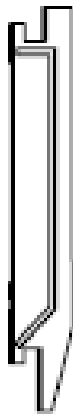
AFT SIDE



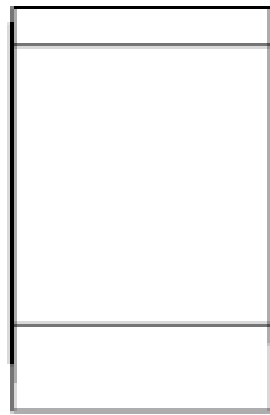
BACK SIDE



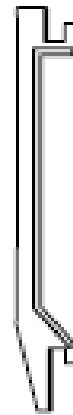
FWD SIDE



LEFT SIDE



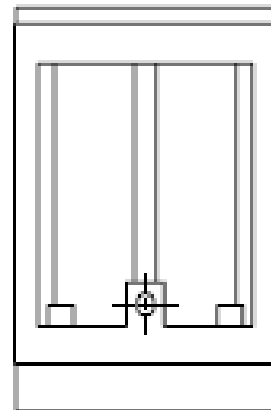
PRESSURE FACE



RIGHT SIDE

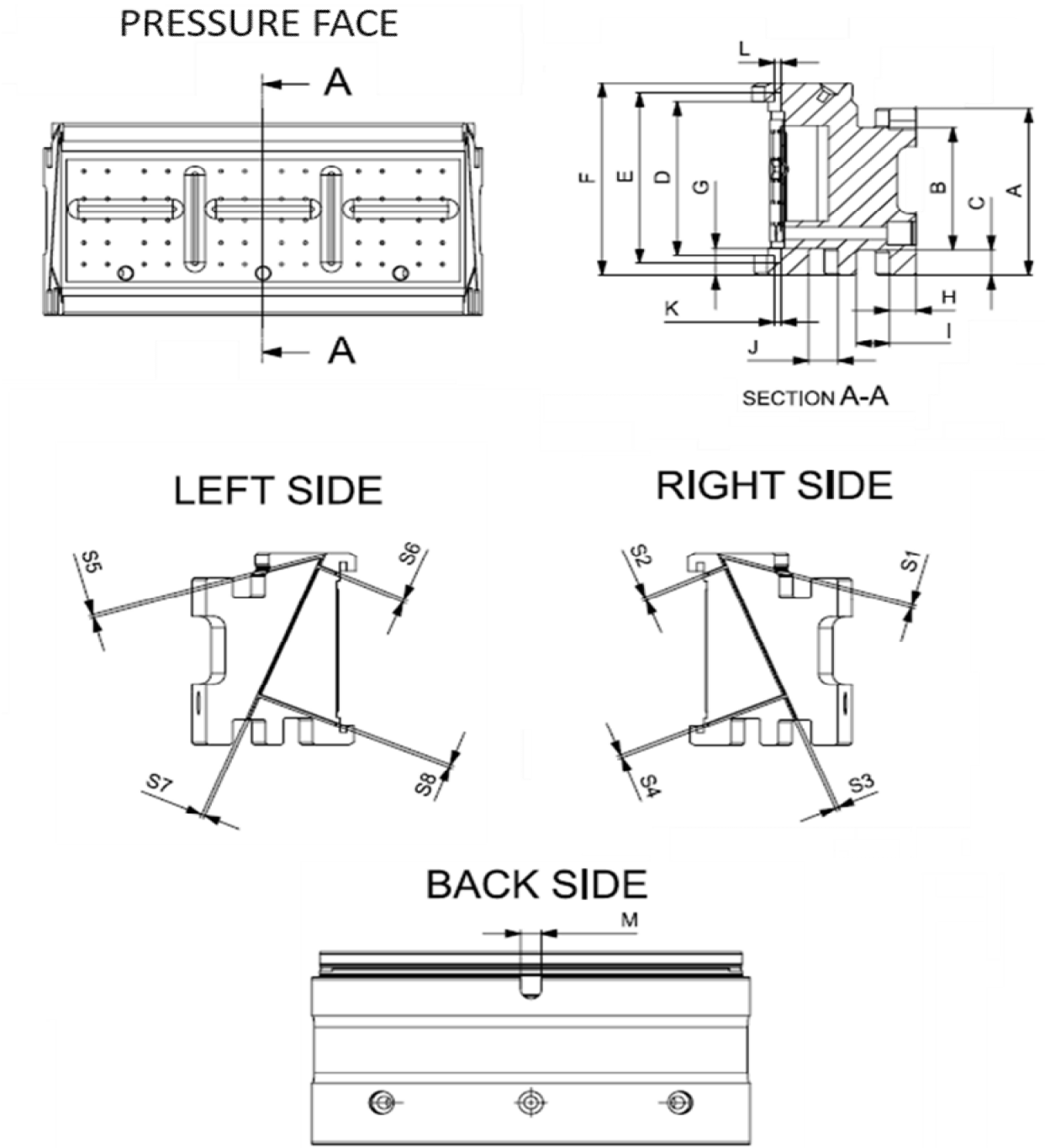


AFT SIDE

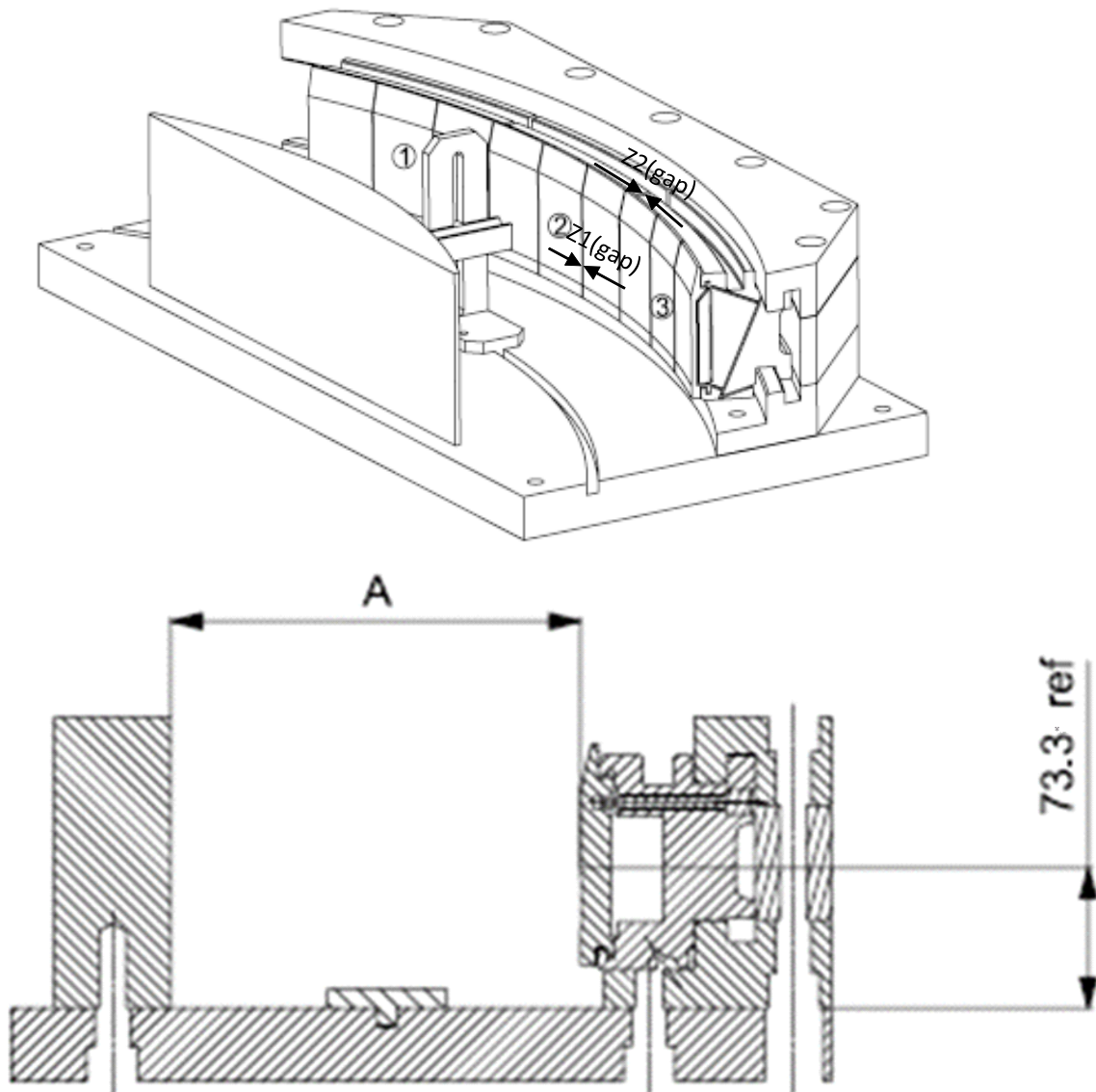


BACK SIDE

12. DIMENSION INSPECTION:



Fixture inspection:

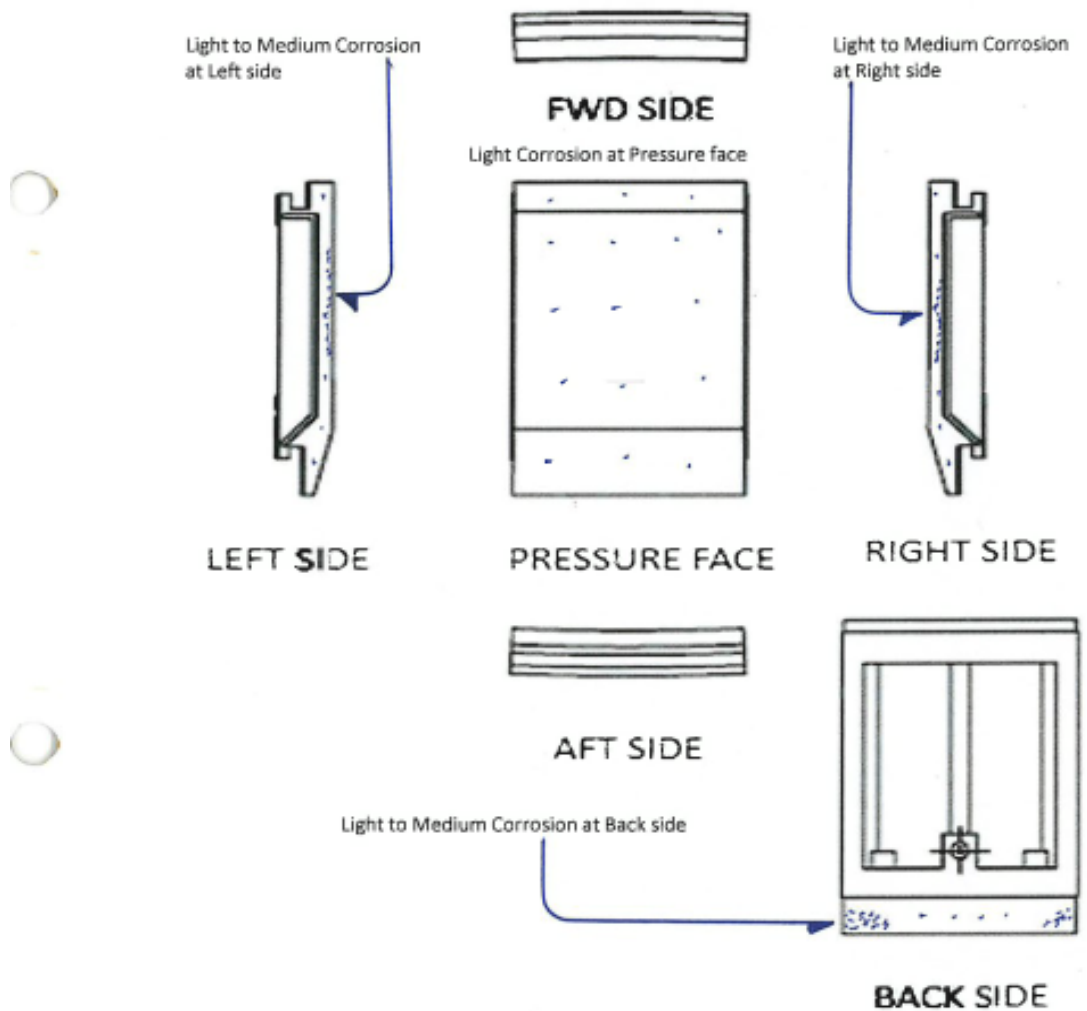


13. DEFECT MAP:

INSPECTION AND PROCESS RECORD SHEET	MS6001FA STAGE 1 SHROUD BLOCK	IPRS NO.	3068-40
	PART NUMBER : GESB01M6FA	REV.	00
CUSTOMER :	Nghi Son Refinery &	CUSTOMER PO :	WO-1004061634-100406
JOB NUMBER :	825354	OP.	0120
INSPECTED BY :	Methee	DATE :	02/06/2026

Mapping of FPI and Visual Inspection

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



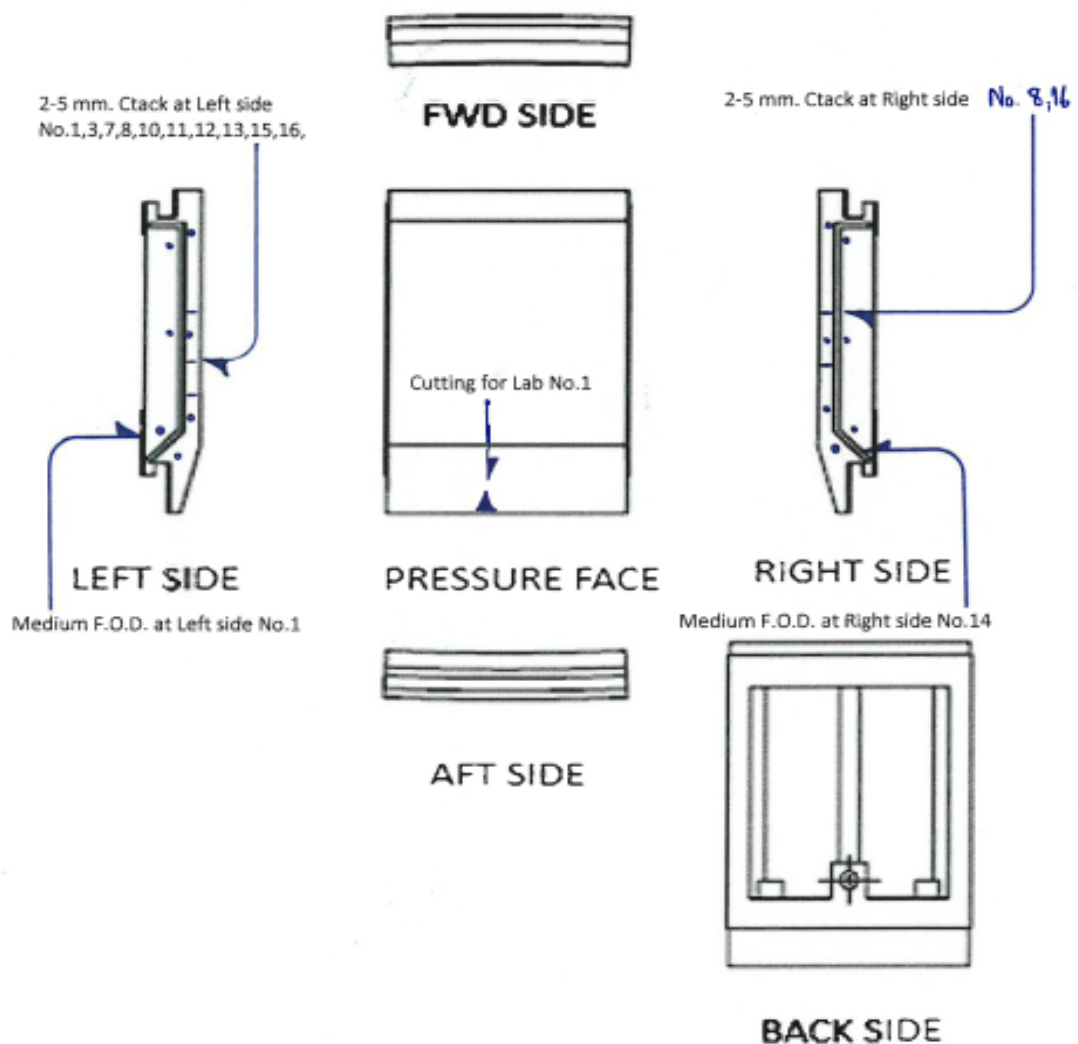
TYPICAL DEFECT

Unit: mm

INCOMING INSPECTION REPORT

INSPECTION AND PROCESS RECORD SHEET			
MS6001FA STAGE 1 SHROUD BLOCK		IPRS NO.	3068-40
PART NUMBER : GESB01M6FA		REV.	00
CUSTOMER :	Nghi Son Refinery &	CUSTOMER PO :	WO-1004061634-100406
JOB NUMBER :	825354	OP.	0120
INSPECTED BY :	Methee	DATE :	02/06/2026
Mapping of FPI and Visual Inspection			

 Crack (mm)
  Foreign Object Damage (L/M/R)
  Fitting (L/M/R)
  Deformation area (mm²)
  Corrosion (L/M/R)
  Missing Material (mm²)



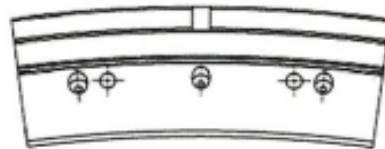
NON TYPICAL DEFECT

Unit: mm

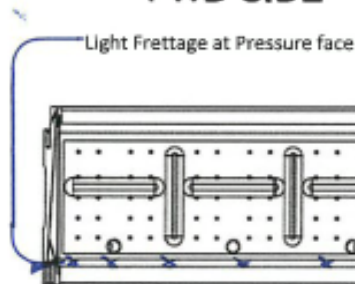
INCOMING INSPECTION REPORT

INSPECTION AND PROCESS RECORD SHEET			
MS6001FA STAGE 1 SHROUD BLOCK		IPRS NO.	3068-40
PART NUMBER : GESB01M6FA		REV.	00
CUSTOMER :	Nghi Son Refinery &	CUSTOMER PO :	WO-1004061634-100406
JOB NUMBER :	825354	OP.	0120
INSPECTED BY :	Methee	DATE :	03/06/2026

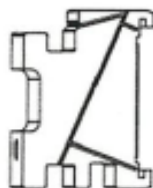
Mapping of FPI and Visual Inspection



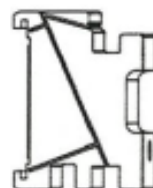
FWD SIDE



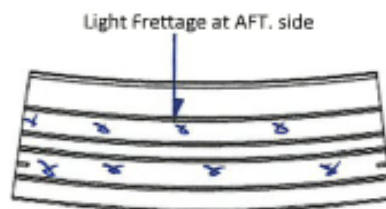
PRESSURE FACE



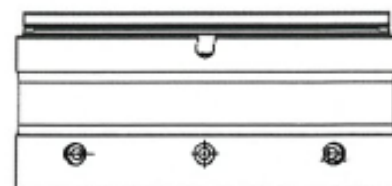
LEFT SIDE



RIGHT SIDE



AFT SIDE



BACK SIDE

TYPICAL DEFECT

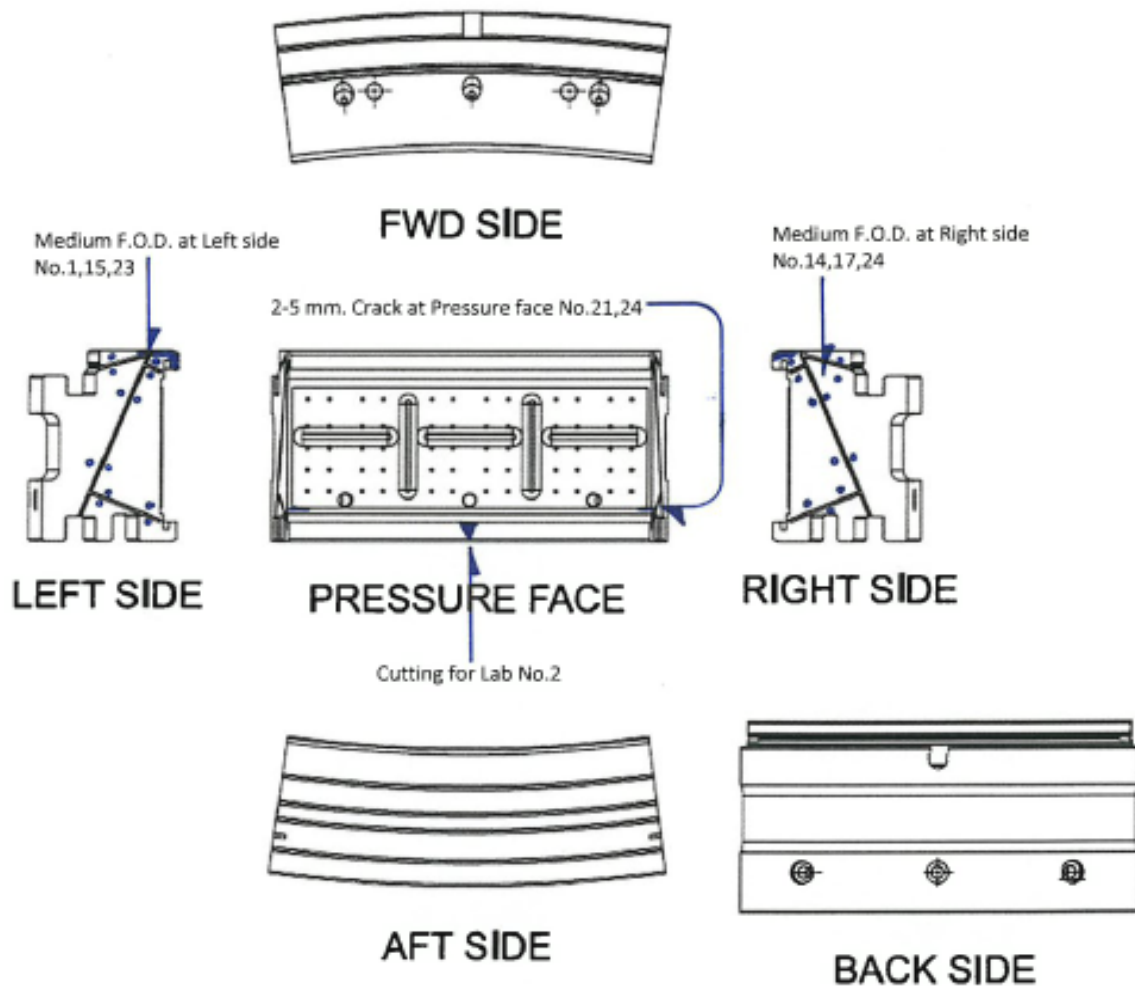
Unit: mm

INCOMING INSPECTION REPORT

INSPECTION AND PROCESS RECORD SHEET	MS6001FA STAGE 1 SHROUD BLOCK	IPRS NO.	3068-40
	PART NUMBER : GESB01M6FA	REV.	00
CUSTOMER :	Nghi Son Refinery &	CUSTOMER PO :	WO-1004061634-100406
JOB NUMBER :	825354	OP.	0120
INSPECTED BY :	Methee	DATE :	03/06/2026

Mapping of FPI and Visual Inspection

 Crack (mm)
  Foreign Object Damage (L/M/H)
  Fretting (L/M/H)
  Deformation (mm/cm²)
  Corrosion (L/M/H)
  Missing Material (mm²)



NON TYPICAL DEFECT

Unit: mm