## Scavenge Inspection Report



This document has been created through an automated process utilizing advanced computer vision and artificial intelligence technology. The images provided by the crew were carefully analyzed using a state-of-the-art AI model that has been specifically trained to identify various types of faults such as Carbon deposits, Excessive oil, Black Oil, Scratches, Collapsed, Micro -Seizure in Piston Ring, Oil Leakage in Crown and Cloverleafing in Liner area.

## Vessel Info

Vessel: Alpha IMO No: string Local End Date: 2024-11-22 18:23:54

General Data					
Total Running Hour:	string	Position:	string		
Cylinder Oil type:	string	ME Cylinder Oil consumption:	string		
Normal service load in % of MCR:	string	Inspected by (Rank):	string		
Scrubber:	string	Fuel Sulphur %:	string		
ME Running Hour Since Last Check:	string				

Possible Recommendation - Crown & Liner						
Cylinder No.	Too much Oil	Black Oil	Carbon	Scratch	Collapsed	Micro - Seizure
			1) Replace or Overhaul fuel			1) Increase the Feed rate
			injector to avoid improper			2) Check correct cylinder oil
			combustion			feed rate.
			2) Adjust fuel			3) Optimize the scavange a
			temperature/viscosity to attain			temperature to avoid moistu
			correct viscosity as per			carry over to cylinder space
			Maker's recommendation			
			3) Check the condition of			
			piston rings free movement			
			(Gas sealing)			
1	*	*	4) Adjust the Cylinder Oil Feed	*	*	
			rate to avoid over lubrication to			
			avoid formation of carbon			
			deposits			

	1) Adjust the Cylinder Oil Feed rate 2) Carry out Drain oil analysis (On board or send ashore) 3) Adjust feed rate to obtain optimum residual BN	Check Fuel injectors for leakage     Check for carbon deposits				
2			*	*	*	*
	1) Adjust the Cylinder Oil Feed rate 2) Carry out Drain oil analysis (On board or send ashore) 3) Adjust feed rate to obtain optimum residual BN					
3		*	*	*	*	*
	1) Adjust the Cylinder Oil Feed rate 2) Carry out Drain oil analysis (On board or send ashore) 3) Adjust feed rate to obtain optimum residual BN	Check Fuel injectors for leakage     Check for carbon deposits				
4			*	*	*	*

	DUPLICATE of	DUPLICATE of	DUPLICATE of	DUPLICATE of	DUPLICATE of	
	cylinder1_Before_cleaning	cylinder1_Before_cleaning	cylinder1_Before_cleaning	cylinder1_Before_cleaning	cylinder1_Before_cleaning	
5						*
6	*	*	1) Replace or Overhaul fuel injector to avoid improper combustion 2) Adjust fuel temperature/viscosity to attain correct viscosity as per Maker's recommendation 3) Check the condition of piston rings free movement (Gas sealing) 4) Adjust the Cylinder Oil Feed rate to avoid over lubrication to avoid formation of carbon deposits	*	*	Erroneous Image
7	*	*	1) Replace or Overhaul fuel injector to avoid improper combustion 2) Adjust fuel temperature/viscosity to attain correct viscosity as per Maker's recommendation 3) Check the condition of piston rings free movement (Gas sealing) 4) Adjust the Cylinder Oil Feed rate to avoid over lubrication to avoid formation of carbon deposits	*	*	Erroneous Image

8	1) Adjust the Cylinder Oil Feed rate 2) Carry out Drain oil analysis (On board or send ashore) 3) Adjust feed rate to obtain optimum residual BN	*	1) Replace or Overhaul fuel injector to avoid improper combustion 2) Adjust fuel temperature/viscosity to attain correct viscosity as per Maker's recommendation 3) Check the condition of piston rings free movement (Gas sealing) 4) Adjust the Cylinder Oil Feed rate to avoid over lubrication to avoid formation of carbon deposits	*	*	Erroneous Image
9	*	*	1) Replace or Overhaul fuel injector to avoid improper combustion 2) Adjust fuel temperature/viscosity to attain correct viscosity as per Maker's recommendation 3) Check the condition of piston rings free movement (Gas sealing) 4) Adjust the Cylinder Oil Feed rate to avoid over lubrication to avoid formation of carbon deposits	*	*	*
10	*	*	1) Replace or Overhaul fuel injector to avoid improper combustion 2) Adjust fuel temperature/viscosity to attain correct viscosity as per Maker's recommendation 3) Check the condition of piston rings free movement (Gas sealing) 4) Adjust the Cylinder Oil Feed rate to avoid over lubrication to avoid formation of carbon deposits	*	*	DUPLICATE of cylinder9_Before_cleaning

11	*	*	*	*	*	*
12	Erroneous Image	Erroneous Image	Erroneous Image	Erroneous Image	Erroneous Image	*
13	*	1) Check Fuel injectors for leakage 2) Check for carbon deposits	1) Replace or Overhaul fuel injector to avoid improper combustion 2) Adjust fuel temperature/viscosity to attain correct viscosity as per Maker's recommendation 3) Check the condition of piston rings free movement (Gas sealing) 4) Adjust the Cylinder Oil Feed rate to avoid over lubrication to avoid formation of carbon deposits	*	*	*

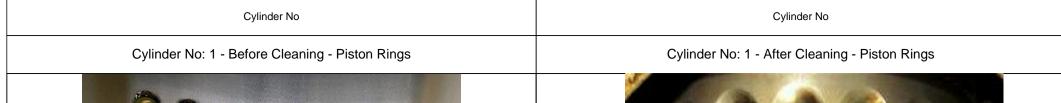
	DUPLICATE of	DUPLICATE of	DUPLICATE of	DUPLICATE of	DUPLICATE of	
	cylinder11_After_cleaning	cylinder11_After_cleaning	cylinder11_After_cleaning	cylinder11_After_cleaning	cylinder11_After_cleaning	
14						*
15	*	*	1) Replace or Overhaul fuel injector to avoid improper combustion 2) Adjust fuel temperature/viscosity to attain correct viscosity as per Maker's recommendation 3) Check the condition of piston rings free movement (Gas sealing) 4) Adjust the Cylinder Oil Feed rate to avoid over lubrication to avoid formation of carbon deposits	*	1) Replace Piston Rings 2) Check for Carbon deposits in the ring groove 3) Check vertical ring clearance 4) Check for Partial sticking 5) Check for Poor sealing between the ring and the ring groove floor. 6) Check for Clover-leafing 7) Check for Ring end chamfers. 8) Check for too large ring-edge radii. 9) Check for Continual striking against wear ridges, or other irregularities in the cylinder wall.	DUPLICATE of cylinder11_Before_cleaning

	Possible Recommendation - Crown & Liner					
Cylinder No.	Crown	Liner				
1	1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from the exhaust valve. 4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate 3) Check for moisture content leading to oil film breakage				
2	<ol> <li>Check if the leakage is fuel oil, lube oil or water</li> <li>If fuel oil: check for leakage from fuel valve</li> <li>If Lube oil: check for leakage from the exhaust valve.</li> <li>If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.</li> </ol>	1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate 3) Check for moisture content leading to oil film breakage				

		1) Check for even supply of Cylinder oil from all the quills
		2) Check correct cylinder oil feed rate
		Check for moisture content leading to oil film breakage
3	Erroneous Image	
	Check if the leakage is fuel oil, lube oil or water	Check for even supply of Cylinder oil from all the quills
	2) If fuel oil: check for leakage from fuel valve	2) Check correct cylinder oil feed rate
	3) If Lube oil: check for leakage from the exhaust valve.	Check for moisture content leading to oil film breakage
		3) Check for moisture content reading to oil film breakage
4	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	
	Liner.	
	1) Check if the leakage is fuel oil, lube oil or water	
	2) If fuel oil: check for leakage from fuel valve	
	3) If Lube oil: check for leakage from the exhaust valve.	
5	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	*
	Liner.	
	1) Check if the leakage is fuel oil, lube oil or water	Check for even supply of Cylinder oil from all the quills
	2) If fuel oil: check for leakage from fuel valve	Check correct cylinder oil feed rate
	2) If fuel oil. official for loakage from fuel valve	2) Greek Greek Gymaer Gm reed rate
	2) If Lube oil shock for lookage from the exhaust valve	2) Check for mainture content leading to all film breakage
	3) If Lube oil: check for leakage from the exhaust valve.	3) Check for moisture content leading to oil film breakage
6	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage
6		3) Check for moisture content leading to oil film breakage
6	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage
6	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage
6	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage
6	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	3) Check for moisture content leading to oil film breakage
6	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water	3) Check for moisture content leading to oil film breakage
6	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve	3) Check for moisture content leading to oil film breakage
6	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.	3) Check for moisture content leading to oil film breakage
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage  *
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.	3) Check for moisture content leading to oil film breakage  *
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage  *
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage  *
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	3) Check for moisture content leading to oil film breakage  *  1) Check for even supply of Cylinder oil from all the quills
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	1) Check for even supply of Cylinder oil from all the quills
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve	1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.	1) Check for even supply of Cylinder oil from all the quills
8	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from the exhaust valve, Injector pockets, crack in 4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water  2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.	1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from the exhaust valve, Injector pockets, crack in 4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from the exhaust valve, Injector pockets, crack in 4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate
7	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  1) Check if the leakage is fuel oil, lube oil or water 2) If fuel oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from fuel valve 3) If Lube oil: check for leakage from the exhaust valve, Injector pockets, crack in 4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate

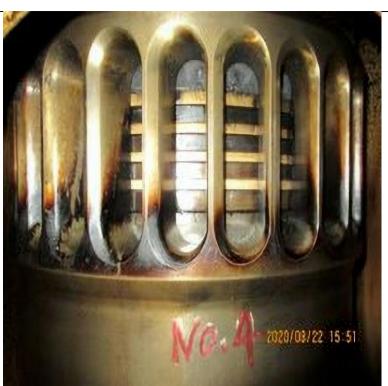
	T	
	1) Check if the leakage is fuel oil, lube oil or water	
	2) If fuel oil: check for leakage from fuel valve	
	3) If Lube oil: check for leakage from the exhaust valve.	
	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	
9		*
	Liner.	
	Check if the leakage is fuel oil, lube oil or water	Check for even supply of Cylinder oil from all the quills
	2) If fuel oil: check for leakage from fuel valve	2) Check correct cylinder oil feed rate
	3) If Lube oil: check for leakage from the exhaust valve.	Check for moisture content leading to oil film breakage
10	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	
10	Liner.	
	1) Check if the leakage is fuel oil, lube oil or water	
	2) If fuel oil: check for leakage from fuel valve	
	3) If Lube oil: check for leakage from the exhaust valve.	
	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	
11	Liner.	*
	1) Check if the leakage is fuel oil, lube oil or water	1) Check for even supply of Cylinder oil from all the quills
	Check if the leakage is fuel oil, lube oil or water     If fuel oil: check for leakage from fuel valve	Check for even supply of Cylinder oil from all the quills     Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve	2) Check correct cylinder oil feed rate
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li></ul>	2) Check correct cylinder oil feed rate
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li><li>4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in</li></ul>	2) Check correct cylinder oil feed rate
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li><li>4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in</li></ul>	2) Check correct cylinder oil feed rate
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li><li>4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in</li></ul>	2) Check correct cylinder oil feed rate
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li><li>4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in</li></ul>	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li><li>4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in</li></ul>	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li><li>4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in</li></ul>	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li><li>4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in</li></ul>	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
12	<ul><li>2) If fuel oil: check for leakage from fuel valve</li><li>3) If Lube oil: check for leakage from the exhaust valve.</li><li>4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in</li></ul>	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  Erroneous Image	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.	2) Check correct cylinder oil feed rate  3) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills  2) Check correct cylinder oil feed rate
13	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  Erroneous Image	2) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate 3) Check for moisture content leading to oil film breakage
13	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  Erroneous Image	2) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate 3) Check for moisture content leading to oil film breakage
13	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  Erroneous Image	2) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate 3) Check for moisture content leading to oil film breakage
13	2) If fuel oil: check for leakage from fuel valve  3) If Lube oil: check for leakage from the exhaust valve.  4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in Liner.  Erroneous Image	2) Check for moisture content leading to oil film breakage  1) Check for even supply of Cylinder oil from all the quills 2) Check correct cylinder oil feed rate 3) Check for moisture content leading to oil film breakage

	1) Check if the leakage is fuel oil, lube oil or water	1) Check for even supply of Cylinder oil from all the quills
	2) If fuel oil: check for leakage from fuel valve	2) Check correct cylinder oil feed rate
	3) If Lube oil: check for leakage from the exhaust valve.	3) Check for moisture content leading to oil film breakage
	4) If water: check for leakage from Cylinder head, Exhaust valve, Injector pockets, crack in	
15	Liner.	





Cylinder No: 1 - Crown - Crown



Cylinder No: 1 - Liner - Liner



Cylinder No: 2 - Before Cleaning - Piston Rings

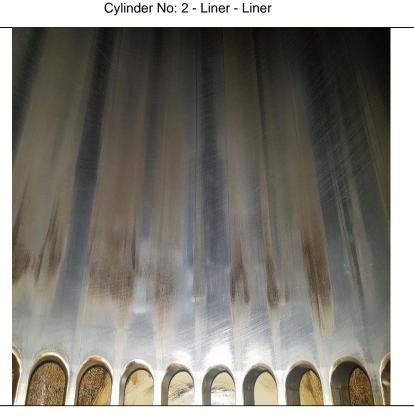


Cylinder No: 2 - After Cleaning - Piston Rings





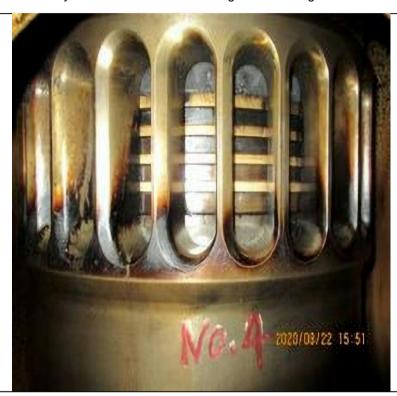




Cylinder No: 3 - After Cleaning - Piston Rings



Cylinder No: 3 - Crown - Crown



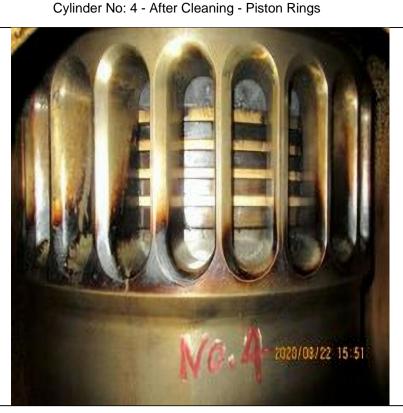
Cylinder No: 3 - Liner - Liner







Cylinder No: 4 - Before Cleaning - Piston Rings



Cylinder No: 4 - Liner - Liner



Cylinder No: 5 - Before Cleaning - Piston Rings



Cylinder No: 5 - After Cleaning - Piston Rings





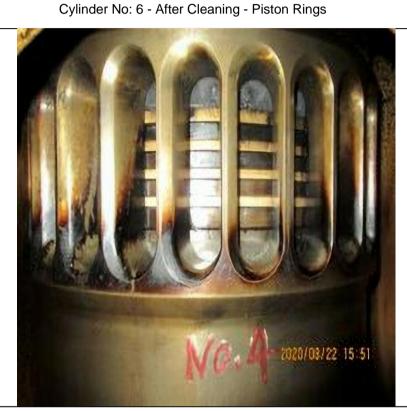


Lo: 6. Refere Cleaning, Ricton Rings

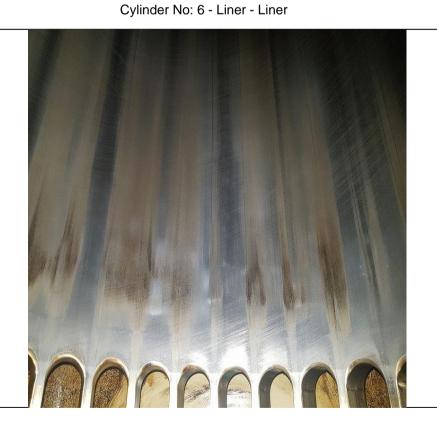


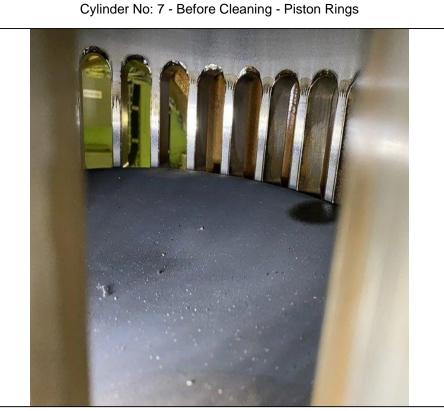


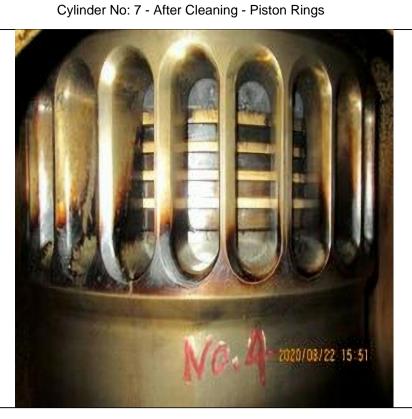




Cylinder No: 5 - Liner - Liner







Cylinder No: 7 - Liner - Liner



Cylinder No: 8 - Before Cleaning - Piston Rings



Cylinder No: 8 - After Cleaning - Piston Rings

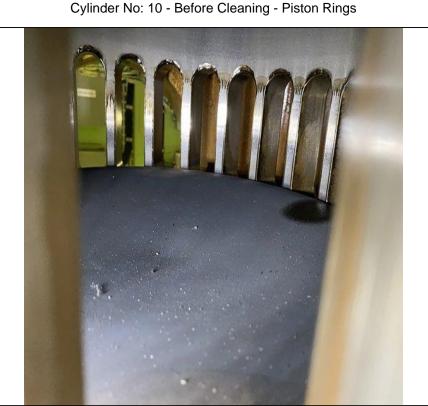




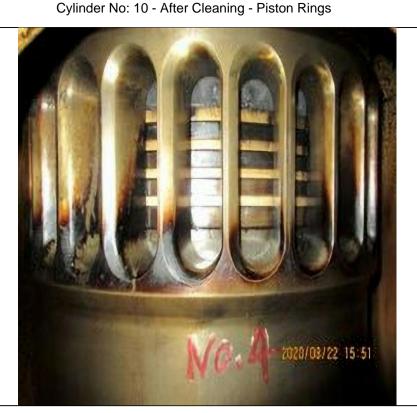








Cylinder No: 10 - Crown - Crown



Cylinder No: 10 - Liner - Liner



Cylinder No: 11 - Before Cleaning - Piston Rings



Cylinder No: 11 - After Cleaning - Piston Rings

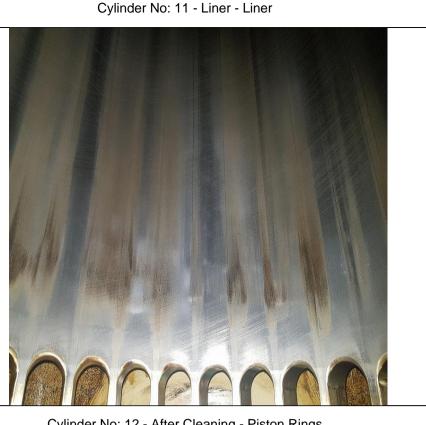










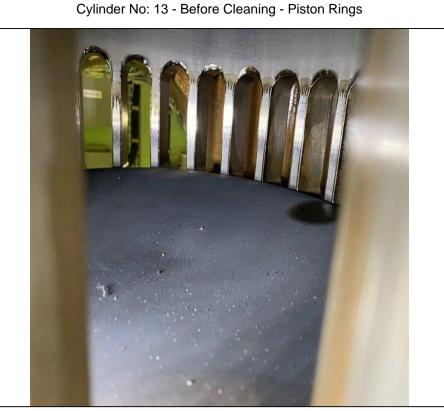


Cylinder No: 12 - After Cleaning - Piston Rings

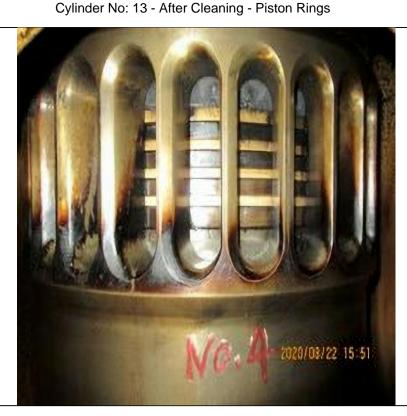


Cylinder No: 12 - Liner - Liner





Cylinder No: 13 - Crown - Crown



Cylinder No: 13 - Liner - Liner



Cylinder No: 14 - Before Cleaning - Piston Rings



Cylinder No: 14 - After Cleaning - Piston Rings







