

J.H. FLETCHER & CO.

THIS BLOCK FOR MSHA USE ONLY
PS# <u>24</u>
REV. LEVEL _____

POWER SYSTEM CHECKLIST

Safety Components System for a Murphy / MWM Model 916-6 Engine.

Listed below are the items and functions that must be maintained in order for the power system to be considered permissible. For a complete equipment permissibility evaluation, this checklist must be used in conjunction with a machine checklist and, if so equipped an electrical system checklist.

ALL INSPECTIONS AND TESTS SHALL BE PERFORMED IN FRESH AIR.

APPLICABLE APPROVAL 31-108-0

Fletcher Drawing No. DM-69
Revision No. NOVEMBER 13, 1997

SHEET 1 OF 15

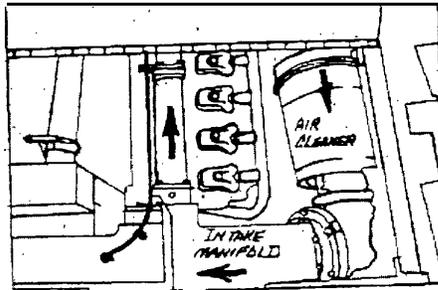
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1. () It has been determined that the area in which the tests are to be performed is fresh air.
2. () This machine utilizes a Murphy / MWM six cylinder Model 916-6 diesel engine.

INTAKE SYSTEM

Sketch 1 depicts the assembled intake system.

- (WEEKLY) 3. () All components appear to be the same as shown in Sketch No. 1.



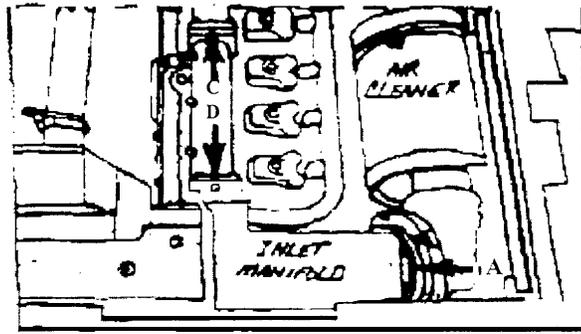
Sketch No. 1: Assembled Intake System

(WEEKLY)- DESIGNATES THOSE INSPECTION CHECKS THAT MUST BE PERFORMED DURING THE WEEKLY MAINTENANCE EXAMINATION IN ACCORDANCE WITH 30 CFR, SECTION 75.1914.

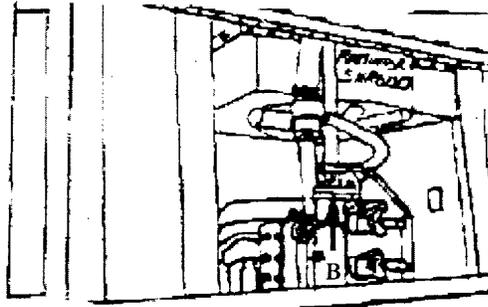
SHEET 2 OF 15

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Copper gaskets are installed between the intake housing system joints identified in Sketch No. 2 and 3 as gaskets A and B. Gasket C is metal clad fiber.



SKETCH NO. 2 INTAKE SYSTEM GASKETS



SKETCH NO. 3 INTAKE SYSTEM GASKETS

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SHEET 3 OF 15

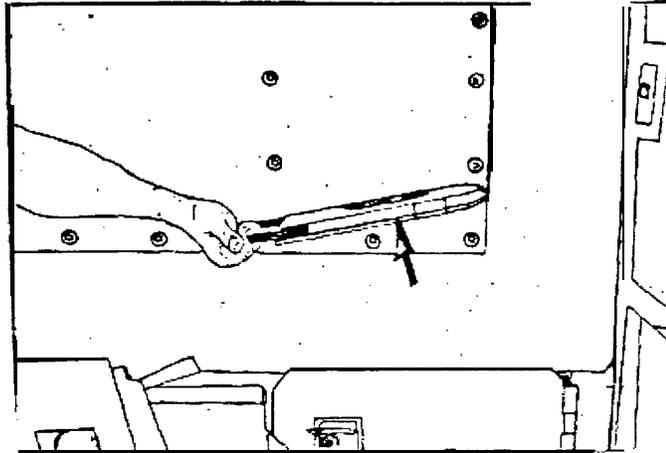
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(WEEKLY) 5. ()

The bolts and / or nuts securing the joints specified in (Sketch No. 4) are in place and tight.

(WEEKLY) 6. ()

Check the gap in the joint between the two sections of the flame arrester housing with the flame arrester installed in the intake system (which bolts tight). The gap does not exceed 0.004 inches. This joint is depicted in Sketch No. 4 on a removed flame arrester.



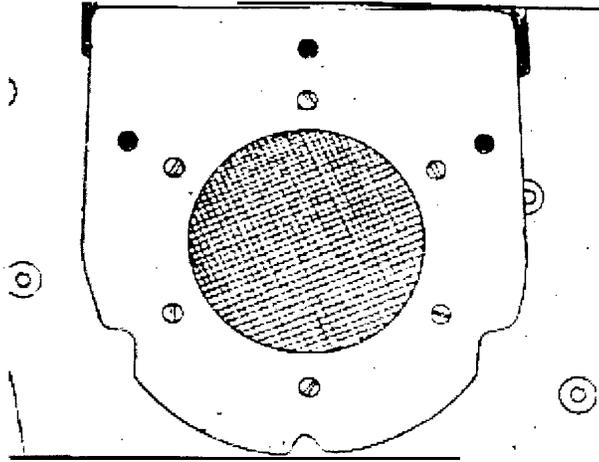
Sketch No.4: Joint in the Intake Flame Arrester Housing.

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7. Remove the intake flame arrester (Sketch 85)
- () a. The flame arrester core is clean and has no apparent damage.
 - () b. The six slotted screws on the flame arrester are in place and tight.
 - () c. The gap between the core and the housing does not exceed 0.004 inches.

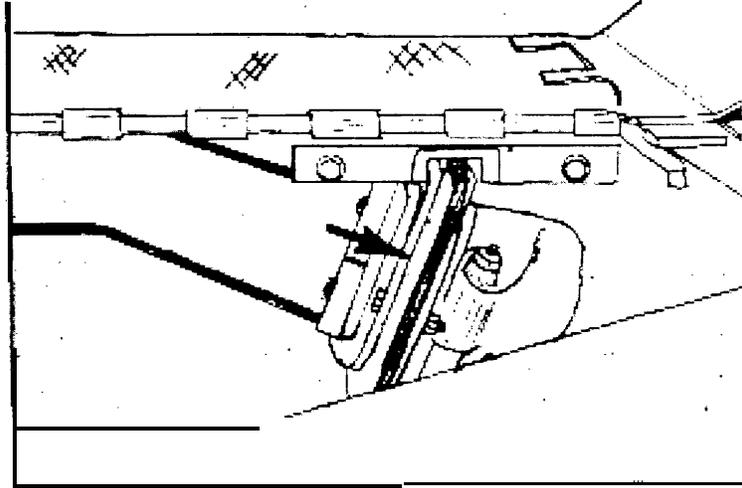


Sketch No. 5: Intake Flame Arrester

8. () Reinstall the flame arrester. The six bolts securing the assembly together are all in place and tight.

(WEEKLY) 9. ()

The gap in the joint identified by the arrow in Sketch No. 6 does not exceed 0.004 inches.



SKETCH NO. 6: CHECKING GAP OF INTAKE SYSTEM JOINT

(WEEKLY) 10. ()

The nuts securing the intake manifold to the engine head are in place and tight.

(WEEKLY) 11. ()

The complete intake system shows no evidence of damage. There are no loose connection (s), cracks, or missing port plugs (or caps).

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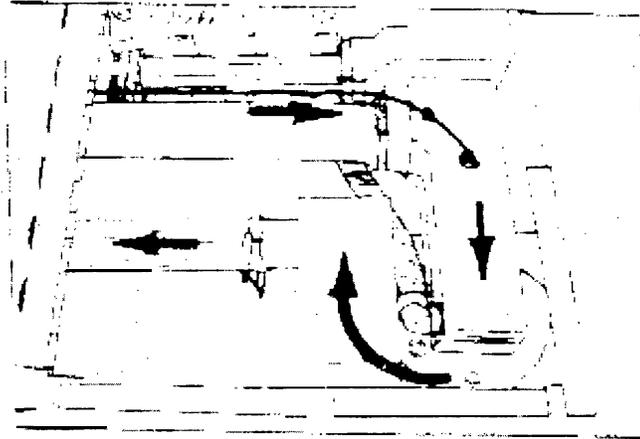
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EXHAUST SYSTEM

The exhaust system of the engine includes a water-cooled exhaust manifold, water cooled exhaust pipe, and a water bath exhaust conditioner (scrubber).

Sketch No. 7 depicts this system.

- (WEEKLY) 12. () The nuts securing the exhaust manifold to the engine head are in place and tight.



Sketch No. 7: Exhaust System

- (WEEKLY) 13. () A gasket (fiber) is installed between the flange of the exhaust manifold and flange of the exhaust pipe.
- (WEEKLY) 14. () The bolts securing the exhaust manifold to the exhaust pipe are in place and tight.

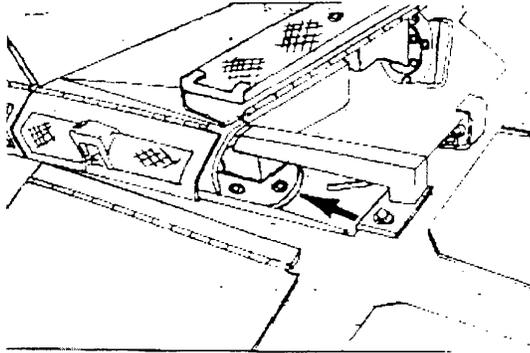
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(WEEKLY) 15. ()

There is a copper gasket between the flange of the exhaust pipe and the flange of the scrubber as shown in Sketch No. 8.



Sketch No. 8: Exhaust Pipe to Scrubber Gasket Location

(WEEKLY) 16. ()

The bolts securing the exhaust pipe flange to the scrubber are all in place and tight.

(WEEKLY) 17. ()

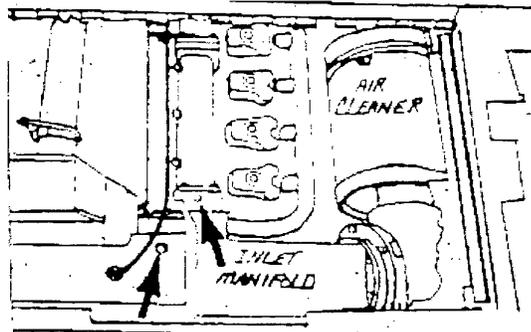
The scrubber is in good condition with no open holes or cracks due to corrosion, accidents, missing plugs, etc.

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18. () Connect a manometer or magnehelic to the intake vacuum port shown in Sketch No. 9. Run the engine at full throttle with no load. The intake vacuum does not exceed 20 inches of water.
- (WEEKLY) 19. () Engine shuts down when the “push to stop” button located on the instrument panel is held in.
20. () Remove the manometer or magnehelic. The plug sealing the intake vacuum port is securely reinstalled.
21. () Connect a manometer or magnehelic to the exhaust backpressure port shown in Sketch No. 9. Run the engine at full throttle with no load. The back pressure does not exceed 40 inches of water.



Sketch No. 9: Intake Vacuum and Exhaust Backpressure Port Location.

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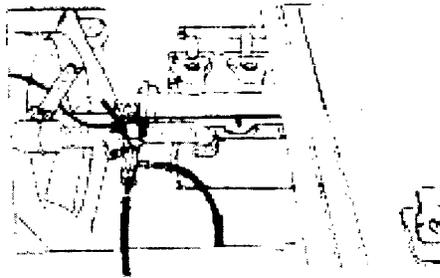
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22. () Remove the manometer or magnehelic. The plug sealing the exhaust backpressure port is securely reinstalled.
23. () Coolant temperature sensor shuts engine down at correct temperature. Test the temperature sensor valve that is installed in the engine water outlet. Sketch No. 10 shows the location of this sensor. One test method is offered for information.

CAUTION: ENGINE COOLANT MAY BE HOT!

Method 1:

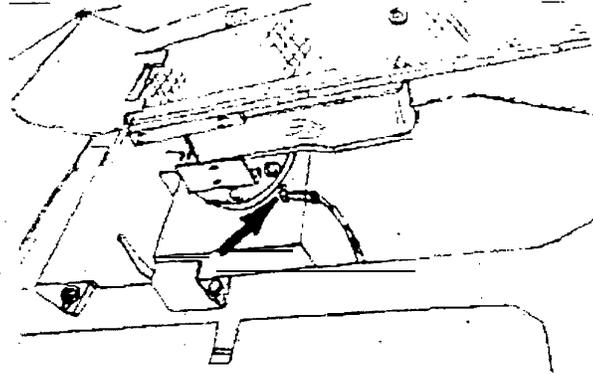
To test the temperature sensor valve, unscrew the sensor valve from the engine water outlet and install a pipe plug in its place. Reattach the safety system hoses to the sensor. Start the engine and immerse the end of the temperature sensor valve into a heated and agitated water/antifreeze mixture. The sensor must open and exhaust the safety system air pressure and shutdown the engine before the temperature exceeds 201° F.



Sketch No. 10: Location of High Coolant Temperature Shutdown Sensor.

24. () The temperature sensor valve is reinstalled and the air hoses are attached.

(WEEKLY) 25. () Test for proper scrubber operating water level. After the engine has been operated for at least 5 minutes, shut the engine down and remove the scrubber dipstick port plug (see Sketch No. 11). Insert a long rod through this port and check the water level. The level should be 11 to 12 inches.



Sketch No. 11: Scrubber Dipstick Port

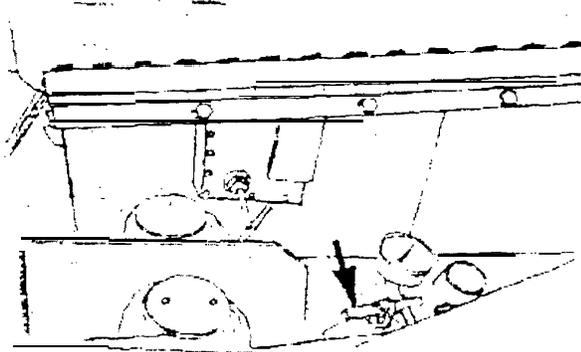
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PROCEDURE

- (a) Close makeup water tank air supply valve. The location of the valve is shown in Sketch No. 12.



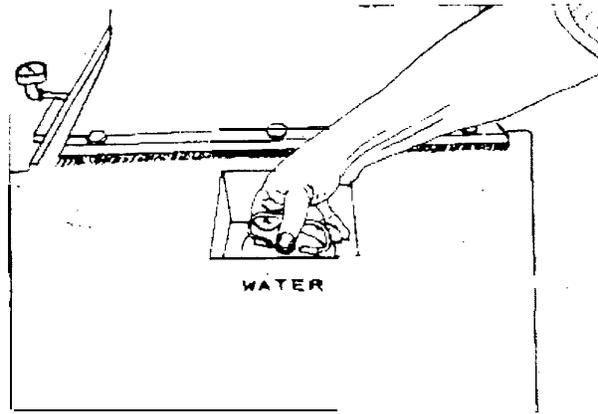
Sketch No. 12: Makeup Water Tank Air Supply Valve.

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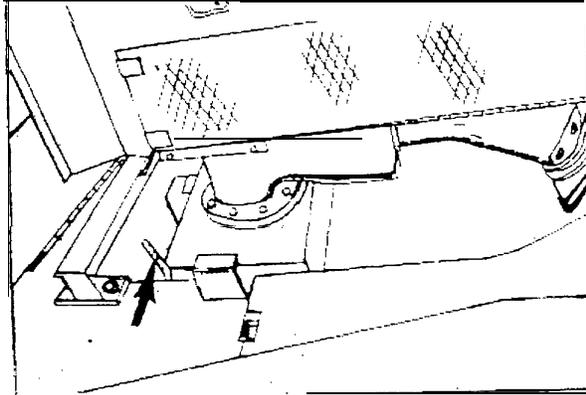
(b) Vent air from the makeup water tank filler cap and remove cap see Sketch No. 13.



CAUTION : TANK UNDER PRESSURE!

Sketch No. 13: Makeup Water Tank Filler Cap.

(c) Start the engine and run at low idle. Open the scrubber drain valve and slowly drain scrubber water (NOTE: scrubber drain valve handle shown in Sketch No. 14). Immediately after the engine automatically shuts down, close the scrubber drain valve and check the scrubber water level. This level should be at least 7-3/4 inches.



Sketch No. 14: Scrubber Drain Valve Handle.

(WEEKLY) 27. () The scrubber dipstick port plug and the makeup water tank filler tip are installed The makeup water tank air supply valve is reopened.

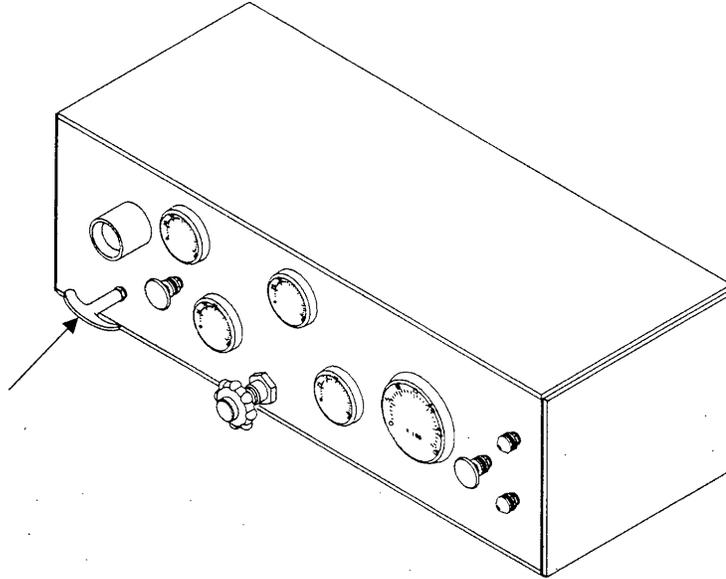
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(WEEKLY) 28. ()

Start the engine and operate it at medium speed. Engage the emergency intake air shutoff valve handle in the operator's compartment (see Sketch No. 1.5). The engine must shutdown immediately.



Sketch No. 15: Emergency Stop Valve.

(WEEKLY) 28. ()

Reset emergency intake air shutoff valve.

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