

JFTOT Analysis

MURPHY	Area	Unit	Operating Procedure #	Certified by	Revision #	Date	Page
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Job Hazards	Yes	Job Hazards	Yes
Access and Egress		Moving Parts	
Activities of Others		Noise	
Adverse Weather		Rail Movement	
Chemical Exposure		Sharp Edges	
Electricity		Slips, Trips, and Falls	
Fatigue		Static Electricity	
Fire and Explosion		Trip Injuries	
Ground Contamination		Trapped Pressure	
Manual Handling		Working at Height	
Other:			

References / Documents

ASTM D3241

Special Instructions

Any problems, notify Shift Supervisor or Duane Chaisson.

Environmental

N/A

Quality Assurance

N/A

PPE

Standard (SSP-0011)	Use
Full Face Shield / Goggles	Y
Hood	
Clothing—Chemical Protection	
Gloves—Chemical	
Personal Fall Protection	
Respirator / Filter Mask	
Supplied Air	

WARNING

CAUTION

JFTOT Analysis

1 Preparation for test:
1. Inspect all O-Rings for degradation/cuts.

Assembly of Heater Tube Test Section:

1. Always use new tubes, o-rings, and filter.
2. Holding the heater tube at one end, insert it into tube housing with the open end UP (never touch center portion of tube).
3. Sequentially install the tapered Ferrule/insulator (wide end out), an o-ring, the stepped Ferrule/insulator (large end first), and the Hex Nut to both ends.
4. Lightly tighten Hex nuts. Adjust test tube so that the shoulder of the tube is in the center of the discharge hole. Hand tighten hex nuts and double check shoulder in discharge opening.
5. Using tweezers, place the filter in the discharge opening with the red side out. Place an O-ring over the filter and press in place.
6. Connect fuel outlet tubing to housing and finger tighten lightly.
7. Place the housing (with tube) in position on the heater busses. Lightly tighten screws with Allen wrench. Raise bus to the top position with the bottom of the test tubing (the solid end) at the bottom of the bus. The top of the test tubing (the end with the hole) should be flush with the top of the top bus. Lift lower bus up so that it is flush with bracket. Tighten firmly with Allen wrench.
8. Insert the thermocouple into the upper end, and lower until the top of the bracket is at 39mm.

Pre-Filter Assembly:

1. Insert screen into filter housing recess.
2. Place new filter (NOTE: Filter is white) on top of screen.
3. Install o-ring on other half of filter housing.
4. Carefully align housing halves, insert the three screws and tighten.
5. Connect filter housing to Fuel Reservoir cover and tighten snugly.

Assembly of Water Reservoir:

1. Release water reservoir from quick connect fitting by sliding collar of quick connect downward.
2. Completely fill the Water Reservoir with de-ionized water.
3. Place the o-ring in groove on lid.
4. Carefully align lid and reservoir making sure o-ring stays in place and not pinched.
5. Tighten lid with screws and washers evenly all around with hex wrench.
6. Place reservoir over quick connect and push down till it snaps in place.
7. Connect inlet and vent lines. Finger tighten snugly.

Procedure Completed

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Date: _____

Approved By: _____

JFTOT Analysis (continued)

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Assembly of Air Trap:

- 5 1. Fill glass jar with DI water and screw into place. (Water level should not be higher than grooves on jar.)
2. Place plastic beaker under drip line.

Preparation of Test Fuel:

1. Turn Power on and press F1 (Run D3241 Test).
2. Press F5 to confirm drive pump is at bottom. Lubricate teflon piston with sample fuel and place in center of fuel reservoir stand.
3. Press reservoir over piston and press down firmly taking care not to damage piston.
- 6 4. Wet o-ring with sample and place in top reservoir groove.
5. Measure 600 mls of fuel, attach funnel and pour through fluted filter into reservoir. (Sample fuel level should be even with bottom of holes in funnel.)
6. Place the aeration tube into reservoir and press F1 (Aeration: On).
7. Adjust air flow if necessary (ball on rotometer should be in green range).
8. When finished, remove tubing and press Enter to flush out tubing. Press any key when finished
9. Remove Funnel and screw on lid taking care o-ring is not pinched.

Assembly:

- 7 1. Screw reservoir onto drive being careful not to cross thread – do not over tighten.
2. Attach outlet line to top of pre-filter assembly on reservoir cover and finger tighten snugly.
3. Attach line to heater tube housing inlet and tighten.

Test Procedure:

1. Check that Flow Control Selector is pointing to Vent.
2. Use F8 to adjust Setpoint to 275 C.
3. Press F3 to start Drive pump and drive air from assembly.
- 8 4. Watch air trap. Air bubbles will flow first followed by sample.
5. After it is confirmed that fuel is coming over (no more air bubbles), press "Enter" to start test.
6. Turn the Flow Control Selector to RUN.
7. Check that the pressure comes up to 500 psi and adjust pressure regulator if needed.
8. Adjust coolant flow so that ball is in center of green range.

Shutdown:

- 9 1. At test end press any key to display test info.
2. Slowly turn the Flow Control Selector to the Vent position.
3. Press F3 for the View Test History and record Max DP.

Test End & Disassembly:

1. Disconnect and remove the tubing/lines. Rinse with Hexane solvent.
2. Loosen the heater buses and remove tube housing. Remove o-ring and red filter with tweezers. All o-rings and filter are to be discarded.
3. Remove hex nuts, o-ring and insulators being careful not to touch the inner/test part of the tubing.
- 10 4. Rinse test tubing with solvent and set aside on dry clean towel to dry.
5. Remove Fuel Reservoir and set in pan. Remove lid and clean with Hexane solvent.
6. Push the piston out with the piston remover.
7. Snap loose the Water Reservoir, remove lid and empty. Wash all components with solvent and dry.
8. Remove the air trap jar, empty, rinse, and dry.
9. Examine test section closely. If any discoloration at all appears, place the heater tube on the adapter/holder and rate the tube using the Light box.



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