SCOPE
This procedure describes the steps required to load products at the Gasoline/Diesel Loading Rack.

RESPONSIBILITIES
Lion Oil Pump House personnel are responsible for overseeing the operation and maintenance of the loading rack equipment. The customer and common carriers receiving product over the rack are responsible for providing properly trained drivers and upon request will supply proper documentation that the drivers are prepared to handle loading activities at the rack.
Lion Oil Pump House personnel will assist drivers with any difficulties they may encounter at the rack.

REQUIREMENTS
Upon request proper documentation must be provided to Lion Oil Company by the customer and common carriers verifying that the transporters have trained a driver before loading will be permitted by that individual.
Proper documentation must be provided to Lion Oil Company by customer and common carriers verifying a vapor tightness inspection has been performed on the trailer to be loaded and it is otherwise approved to load prior to loading.
Customer and common carrier’s equipment must meet or exceed EPA 49 CFR & DOT requirements for loading hazardous materials.

RELEVANT DOCUMENTS
MSDS Sheets

MATERIALS/EQUIPMENT
No special materials or equipment is required to perform the duties outlined in this procedure.

PROCESS CONTROL
Deviating from the instructions outlined in this procedure could result in not being able to load products at the rack in a safe and timely manner.

SAFETY AND HEALTH
PPE Requirements: Protective goggles or safety glasses, hard hat, long pants, shirt with long sleeves, shoes or boots of good leather or heavy rubber construction.
Customer and common carriers are to be familiar with the chemical
dayies and hazards of all products loaded at the rack. Consult the
MSDS information available at the rack if it is not available at the
customer or common carriers location.

It is the responsibility of the customer and common carriers to provide the
truck (tractor and trailer) that is in safe working order. The truck must be
equipped with hand brakes or brake locking devices.
Under no circumstances should the driver attempt to start or move the
truck in an emergency situation without the expressed direction of Lion
Oil Company personnel.

QUALITY
Lion Oil Company is responsible for the quality of product being
delivered over the rack. The customer and common carrier are
responsible for product quality after it leaves the loading hose. Prior to
loading it is the customer and common carrier’s responsibility to see that
the transport is free of any product that could cause product
contamination.

ENVIRONMENTAL
Lion Oil Company has provided a vapor recovery system to prevent vapor
releases to the atmosphere. It is the driver’s responsibility to prevent all
surface releases during the loading process.
GENERAL GUIDELINES

1. Turn off all electronic devices (cell phones and CB radios) before entering the terminal entrance.

2. NO SMOKING OR OPEN FLAMES ARE PERMITTED AT THE TERMINAL.

3. Speed Limit is 5 mph.

4. NO SWITCH LOADING ALLOWED.

5. Turn off truck lights and do not sound truck horn when entering the terminal.

6. Leaving vehicle unattended while truck is loading is prohibited.

7. Truck must comply with truck/cargo tank inspection procedure. (See attachment B)

8. DO NOT WORK ON TRUCK WHILE IT IS POSITIONED ON THE RACK.

9. No loading between 11:30 p.m. and 12:15 a.m. each night. Driver must be carded out by 11:30 p.m.

10. Motiva Gasoline loaded in lane 1 and lane 2 only.

11. No manifold loading allowed.

12. Truckers must provide yearly certification of vapor tightness.

PROCEDURE

1.0 Position truck as shown on attachment A.

2.0 Shut off engine, set brakes, set to lowest gear and chock wheels.

3.0 Go to the proper card reader. (See attachment A for location)

    3.1 Place the driver/carrier card in front of the proximity card reader.

    3.2 Enter 4 digit pin number and press “Enter”.

3.3 Enter the trailer number and **press “Enter”**.

3.4 Choose the shipper name by scrolling the pick list. For light oil loading pick “LION Lion Oil Company” not “ASPH Lion Oil Company” (ASPH is for the heavy oil rack loading only) and **press “Enter”**.

3.5 If the account number is known input it now and **press “Enter”** or press enter to scroll lists of accounts.

3.6 When account is found on scroll list **press “Enter”**.

3.7 Check with Pumphouse personnel if the system will not let you load.

3.8 Screen will show “Customer Name”, if correct, press **“Yes”** then press **“Enter”**.

3.9 If customer is cleared to load blended gasoline – Screen will now show list of products available on the gasoline blend meter.

3.10 Select the blend by moving arrow up or down on list to desired product then press **“Enter”**.

3.11 Products cleared to load will be displayed on the card reader

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**BLENDED GASOLINE LOADING OPTIONS**

<table>
<thead>
<tr>
<th>Lane #1 (Loading Arm #13), Lane #2 (Loading Arm #23), and Lane #3 (Loading Arm #33)</th>
<th>will show:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cardreader will offer:</strong></td>
<td></td>
</tr>
<tr>
<td>- No Choice, 89 octane conventional gasoline, 92 octane conventional gasoline, 93 octane conventional gasoline, 87 octane conventional gasoline, 89 oct conv gasoline w/ 10% eth, 92 oct conv gasoline w/ 10% eth, 93 oct conv gasoline w/ 10% eth. If product is authorized.</td>
<td></td>
</tr>
<tr>
<td>- After making choice on Cardreader: Acculoads for Loading Arms 13, 23, and 33 will show: 87 CLEAR, 89 CLEAR, 92 CLEAR, 93 CLEAR, 89E10, 92E10, OR 93E10.</td>
<td></td>
</tr>
<tr>
<td>- These products will load on the blue Loading Arms.</td>
<td></td>
</tr>
</tbody>
</table>
Lane #1 (Loading Arms #11 and #12), Lane #2 (Loading Arms #21 and #22) and Lane #3 (Loading Arms #31 and #32) will show:
AccuLoad will show:
• 87E 10 [if product is authorized].
• These products will load on the white Loading Arms.

Lane #1 (Loading Arm #14), Lane #2 (Loading Arm #24), Lane #3 (Loading Arm #34) will show:
AccuLoad will show:
ETHANOL if product is authorized.
This product will load on the bronze Loading Arms.

### DIESEL LOADING OPTIONS

Cardreader:
Lane #1 will display: **Meter 15**: No Choice
- Diesel Fuel 15 MV #2D
- B-5, #2 ULSD

**Meter 16**: No Choice
- Diesel Fuel 15 MV #2D
- B-5, #2 ULSD
- Dyed Diesel 15NRLM #2D
- B-5, #2 ULSD, Dyed

Cardreader:
Lane #2 will display: **Meter 25**: No Choice
- Diesel Fuel 15 MV #2D
- B-5, #2 ULSD

**Meter 26**: No Choice
- Diesel Fuel 15 MV #2D
- B-5, #2 ULSD
- Dyed Diesel 15NRLM #2D
- B-5, #2 ULSD, Dyed
Cardreader:
Lane #3 will display: **Meter 35**: No Choice
   Diesel Fuel 15 MV #2D
   B-5, #2 ULSD

   **Meter 36**: No Choice
   Diesel Fuel 15 MV #2D
   B-5, #2 ULSD
   Dyed Diesel 15NRLM #2D
   B-5, #2 ULSD, Dyed

**NOTE:** **GREEN Loading Arms = CLS** > clear on road diesel—This is Loading Arms 15, 25, 35, 16, 26, and 36.

   **ORANGE Loading Arms = DLS** > dyed off road diesel—This is Loading Arms 17, 27, and 37.

   **Check on Accuload; you’ll see:** **CLEAR** or **REDDIESEL**

4.0 Insert the grounding plug into the proper receptacle.

**NOTE**

The green “Ground ok” light will come on. The red light will go out. The yellow beacon will start flashing. Check with the Pumphouse personnel if the proper lighting sequence does not happen. **DO NOT** attempt to adjust, damage, or work on the rack equipment. All actions in the loading facility are fully monitored for your protection.

5.0 Attach the vapor hose.

**NOTE**

Failure to connect the vapor hose will shut the rack down in 20 seconds and the yellow **VAPOR FAILURE** light will come on.

6.0 Reset the system if the vapor failure light comes on.

   6.1 Unplug the ground cord.
   6.2 Replug the ground cord into the truck.
   6.3 Hook up the vapor hose.
CAUTION
Do not dump products onto the concrete.

7.0 Verify the trailer compartments are empty.
   7.1 Open belly valves on the trailer.
   7.2 Use the 2 inch hose to drain trailer compartments.
   7.3 Check trailer piping for leaks.
   7.4 Reattach the drain hose to the stored position.

8.0 Hook up the loading arms to the trailer.

NOTE
Any arm may be moved into position without disturbing others. It is not necessary to move any arm to get to a taller arm. You may elect to load more than one compartment at a time. It is suggested to hook up compartments starting with the rear of the trailer and work to the front.

8.1 Remove the proper load arm from the stored position by pulling down on the steel hose until the rod on the shot bucket clears the bracket on the riser.
8.2 Swing the arm into position at the trailer?
8.3 Remove the dust cover from the trailer adapter.
8.4 Grab the handle on the back of the swivel on the load arm with your right hand.
8.5 Grab the knob on the dry break coupler with your left hand.
8.6 Push the coupler on the load arm onto the trailer adapter and push the sleeve forward.
8.7 Turn the handle to open the adapter. This action locks the arm into the adapters on the trailer.

9.0 Go to the proper Accuload and push “set” put in number of gallons and push “Start”.

10.0 Position yourself between the truck/trailer and meters with access to the J Box while the meter is running. DO NOT LEAVE TRUCK/TRAILER UNATTENDED WHILE LOADING.
10.1 Monitor the sight glasses on loading spills for diesel to ensure proper red dye injection.

11.0 Disconnect the trailer when finished loading.

11.1 Disconnect the loading arms returning them to the stored position.
11.2 Disconnect the vapor hose returning to the stored position.
11.3 Disconnect the grounding plug.
11.4 Return to the Proximity card reader and card out.

NOTE

The horn will sound if the arms are not stored properly, the ground plug disconnected or the vapor hose stored. NEVER MOVE THE TRUCK/TRAILER WITH THE BEACON FLASHING OR THE HORN SOUNDING.

12.0 Make a walk around inspection of the tanker as a final check for spills, leaks or damage.

13.0 Pull the truck from under the rack toward the exit.

14.0 Stop the truck, kill the engine, set brakes and set to lowest gear.

15.0 Enter the building.

16.0 Single load:

16.1 Hold the driver card in front of the Proximity Reader at the Signature Capture pad. It will be located next to the Bill of Lading printer.
16.2 View the load summary. If correct, press “Accept” on the touch pad with the electronic pen.
16.3 Sign the electronic signature pad using the electronic pen.
16.4 Press “Done” on the touch pad using the electronic pen.
16.5 Bill of Lading will print with the electronic signature on it.
16.6 Take all copies of the Bill of Lading from the printer.

17.0 Split load

17.1 Hold the driver card in front of the Proximity Reader at the Signature Capture pad. It will be located next to the Bill of Lading printer.
17.2 Use the electronic pen to press the line item for the first load desired then press the “Select” tab.
17.3 View the load summary. If correct, press “Accept” on the touch pad with the electronic pen.
17.4 Sign the electronic signature pad using the electronic pen then press “Done”.
17.5 After the first Bill of Lading has printed do steps 16.1 thru 16.6 as shown above for the last load.

BE CAREFUL AS YOU ENTER THE LINE OF TRAFFIC WHEN LEAVING THE RACK.
Attachment “A”
Attachment “B”

PRELOADING REQUIREMENTS

The following is the preloading requirements before loading petroleum products at the Lion Oil El Dorado, AR. Gasoline/Diesel Loading Rack.

ITEMS TO BE CHECKED

The sequence indicated below is optimum to accomplish inspection in shortest period of time.

1. Bottom loading adapters
2. Vapor recovery adapters
3. Vapor recovery vents and piping
4. Anti—static bonding cable
5. Anti-splash loading
6. Hi—level shutdown
7. Dome cover gaskets

DETAILED DESCRIPTION OF COMPANY PRELOADING REQUIREMENTS

1. **Bottom Loading Adaptors**

   Bottom loading adapters, Emco Wheaton Model #F552 are to conform to the standards as set forth in API Recommended Practice No. 1004 titled “Tank Vehicle Bottom Loading and Unloading”, and commonly known as the “API Adapter”. Spacing of multiple adapters should be 13” minimum such that the loading coupler can conveniently be connected without interference from other adapters. When multiple adapters are installed, the overall horizontal spacing should not exceed 6’, center to center of the two adapters farthest apart. Vertical location of the centerline of all loading adapters will not be more
than 3’ above grade when tank is empty and not less than 24” when fully loaded. Adapter seals must be in good order with no evidence of leakage. Each compartment shall have its own API coupler and delivery piping. Manifolding will not be permitted.

**INSPECT FOR PROPER “API” LOADING ADAPTER, LOCATION, AND GENERAL CONDITION.**

2. **Vapor Recovery Adapter**

The vapor recovery adapter shall be a 4” male adapter of the conventional cam and groove type. OPW-633-A, Emco Wheaton J3472 or equal. This adapter should not be more than 5’ above grade, nor less than 2 ½’ above grade. This connector shall be located to the rear of the bottom loading adapters, preferably at rear of the truck.

**INSPECT FOR PROPER ADAPTER, LOCATION AND GENERAL CONDITIONS.**

3. **Vapor Recovery Vent and Piping**

Make general inspection of vapor recovery vent, emergency vent, vent hood, piping, and overturn rail to determine that there is no apparent damage and appears to be leak proof. Check to see that the actuating push rod from the internal valve is in good condition and that vent opens when internal valve is opened. Emergency vents should be checked for any apparent damage. Proper operation of the vent system is necessary for trouble free loading and to insure proper recovery of vapor being displaced.

4. **Anti—Static Bonding Cable**

Each compartment is to contain an Anti—Static Bonding Cable between the bottom of the marker rod and the bottom of the tank compartment. This bonding cable should be of braided stainless steel and securely fastened at each end so as to make an electrical bond.
The bottom end may be attached to the internal valve for convenience, or to a slip welded to the tank bottom.

The purpose of this Anti—Static Bonding Cable is to effectively bleed off any static electricity charge that may accumulate on the surface of the product being loaded. Should a static charge of sufficient electrical potential build—up, and is not bled off as indicated above, a spark could occur between the surface of the product and the bottom of the marker rod.

To check, prepare truck for loading, climb to top of tank, and open dome cover of compartment to be loaded.

**INSPECT FOR PRESENCE OF THE BONDING CABLE, SECURE CONNECTION TOP AND BOTTOM AND GENERAL CONDITION.**

5. **Anti-Splash Loading**

Design of the internal valve installation must be such that during the filling of the compartment, excessive turbulence and/or spraying of product into the compartment is prevented. An even flow must be attained. The design of some internal valves is such that they are installed in a sump in the bottom of the compartment, which fills with product quickly and submerges the internal valve. Other designs incorporate a deflector plate above the internal valve. The purpose of the deflector plate is to prevent product spraying upward in the compartment.

To check, after inspecting for anti-static bonding cable, advise driver to proceed with loading. The slow start-up feature of the set-stop valves on the loading rack should insure that internal valve is submerged before full flow begins. Nevertheless, the initial flow of product in each compartment must be observed. When making such observation, stand erect and to one side of the dome cover, such that the internal valve is just barely visible. This will minimize the possibility of product splashing from the dome opening onto your
body. **Do not squat down and look directly into the dome opening.**

**INSPECT FOR EXCESSIVE TURBULENCE AND/OR SPRAYING OF PRODUCT. IF THIS IS NOTED, IT MUST BE CORRECTED.**

6. **Hi—Level Shutdown**

All tank compartments are to be equipped with an approved electrical device to prevent overflowing of the compartment. Scully Typo SP probes are approved. The switch must be completely liquid proof, vapor proof and the electrical characteristics must be intrinsically safe. Wiring must be in accordance with manufacturers requirements such that all compartments are protected at all times from overflowing.

To check the Hi—Level Shutdown Switch, manually activate the probe portion of the switch after product flow into compartment has reached normal flow rate. Flow of product must immediately cease. Release probe and product flow should resume. Close dome cover and proceed to next compartment after first compartment has filled. Only the dome cover of the compartment being checked will be open.

**INSPECT FOR PROPER OPERATION. THIS CAN BE CHECKED AFTER CHECKING FOR ANTI—SPLASH FEATURE.**

7. **Dome Cover Gaskets**

Air pollution control regulations require vapor tight dome covers on all tank trucks transporting high vapor pressure (over 1.5 PSIA) petroleum products. If vapors are escaping around the dome cover when loading is taking place, the regulations are being violated.

When the above three checks (4, 5, and 6) have been made, and while the compartment is filling, after closing and securing the dome cover, observe any vapors that may be visible
or listen carefully for vapors that may be escaping. If dome covers are not vapor tight, gaskets must be replaced or dome cover otherwise be made vapor tight before approval can be given.

**INSPECT FOR VAPOR TIGHTNESS.**

After the above items have been inspected and found to be in satisfactory condition, a required annual certification of cargo tanker “Determination of Vapor Tightness” by the Environmental Protection Agency 40 CFR 63.425 (e) Method 27 or equal on file at the Lion Oil Company, El Dorado, Arkansas, S&D office.
1.0 General

1.1 Equipment Description

Equipment scope consist of

1.1.1 Two (2) Electric Heater Bundle 50KW, 480V, 3P with one duplex RTD (1 active / 1 spare) temperature sensor attached to heater sheath.

   a TE-1/2 is utilized for heater element over temperature protection.

1.1.2 One (1) Heater shell design for -7.5/200 psig at -10/250 deg F with customer supplied outlet temperature sensor/transmitter.

1.1.3 One (1) Two section Nema 4x rated Control Panel for non hazardous area.

   a The Control panel is equipped with a Temperature Indicating Controller (TIC) which accepts a 4-20mA input signal from customer’s temperature transmitter. The TIC is equipped with Low and High outlet alarm. The temperature controller performs On/Off control of the heater outlet temperature.

   b High element temperature shutdown is provided by OTC-1 controller.

   c The heater is provided with 24VDC remote on/off, XS-1/2.

   d Heater common alarm output XA-1/2 will be de-energized to indicate

       - Low heater outlet temperature
       - High heater outlet temperature
       - Heater tripped due to high element temperature (OTC-1).

   Heater low or high outlet temperature alarm is field adjustable.

   e Note - Refer to section 3.3 for more information.
3.3.8 Ensure that all equipment grounding is installed.

3.3.9 Verify that all electrical connections are tight. Terminals are located in places such as
   a Control panel and Junction Box.
   b Inside heater terminal box.
   c Instrument housing, etc

3.3.10 Verify that all sensors, instruments are calibrated and functioning.

3.3.11 Verify all adjustable breakers setting are correct.

3.3.12 Process controller
   a A process temperature indication controller (TIC) is required to control the process temperature (outlet and cascade) of the heater.
   b Based on the load required, the TIC will send a signal to the power contactor (CC1) to switch on power to the heater.
   c Common Alarm – The common alarm would be activated if the outlet temperature of the heater is above the A2HI set point or below the A2LO set point. The TIC display will indicate the alarm type and the ‘Common Alarm’ light will be illuminated. In addition, the ‘common alarm’ dry contact will be de-energized indicating an alarm condition. This output can be used to indicate that the gas temperature is not within the required outlet temperature.
   d If the control panel is provided with a TIC, it will be preprogrammed at the factory. A copy of the program parameters will be included in this manual.
   e (TIC), Series SD6 Controller
     • Use the Up/Dn key located on the face of the controller to change the process set point. Set point will be displayed on the lower display where the process temperature is shown on the upper display.

     • Once the system is up and running; performs PID tuning of the process controller. Refer to chapter 12 of the ‘Series SD User’s Manual’, included in the component manual section of this manual for tuning instructions.

     • A blinking or solid ‘1’ led would indicate that the controller is calling for heat.
3.3.13 High Limit Controller (OTC), L Series

a The High Limit Controller (OTC) shuts down the heater when the actual temperature exceeds the set point. The controller accomplishes this by de-energizing the safety contactor (SC). Note – more than one OTC may be present in a particular control panel. In addition, the OTC will illuminate the corresponding illuminate reset button on the front of the control panel.

b The OTC received the temperature signal from the temperature sensor that is wired to it. Therefore, it is imperative that the correct sensor is wired to the controller.

c The upper display of the OTC shows the temperature set point as indicated on the electrical schematic.

d If set point adjustment is required, press and hold the ‘Set’ button while pressing the corresponding ‘Up Arrow’ or ‘Down Arrow’ key.

Warning – Heater sheath set-point should not exceed maximum allowable process temperature.

e Once the OTC has tripped, a manual reset is required by depressing the illuminated reset button of the corresponding OTC on the front of the control panel. Note- the heater will power up again unless the remote off/on has been disabled.

CAUTION - INVESTIGATE AND CLEAR THE CAUSE OF TRIP. ENSURE THAT IT IS SAFE TO RESET THE HEATER.

f Note – A verification of the OTC and sensor can be performed by lowering the set point below the sensing temperature. Once the set point is a few degrees below actual temperature, the controller will trip.

g Refer to the Series LV User’s Manual for further programming information.