Cationic Emulsion Notice

Certain Cationic Emulsions are known to be corrosive to carbon steel, aluminum, and even some grades of stainless steel. Hydrochloric acid is often used in cationic emulsions to produce the electronic charge that makes the emulsion cationic. Cationic emulsions may be identified by the “C” at the beginning of the product name or identification number, such as “CRS-2” or “CSS-1”. Cationic emulsions with low amounts of residual asphalt, (below 60%) such as “CSS-1” have been found to cause corrosion to a greater extent than those containing a higher percentage of asphalt.

Tanks used in cationic emulsion service may experience unexpected corrosion inside the tank, piping and spray bar system. This corrosion may be worse if the tank is left loaded with a cationic emulsion containing a low asphalt content, over extended periods of time, or in continuous use. The effects of this corrosion activity may be lessened by alternating cationic emulsions with other products in the tank, such as anionic emulsions, cut backs, or asphalt cements. Take necessary precautions whenever changing types of asphalt to avoid boiling the water from emulsions when loading “HOT” asphalt cement.

Periodic inspection of tank should be performed in the normal course of operation. It becomes even more important in the case of cationic emulsions. Visual inspection of the inside of the tank should be performed regularly. Removal of the spray bar end caps will allow visual inspection of the spray bar. If any corrosion is noted, the tank, piping, and spray bar should be flushed with a cut back asphalt, such as an “MC” grade or with an asphalt cement.

Warning
Fluoroelastomer Handling

Some O-rings and seals used in this vehicle are made from fluoroelastomers. When used under design conditions, fluoroelastomers do not require special handling. However, when fluoroelastomers are heated to temperatures beyond their design temperature (around 600°F Fahrenheit), decomposition may occur with the formation of hydrofluoric acid. Hydrofluoric acid can be extremely corrosive to human tissue if not handled properly.

A degraded seal may appear as a charred or black sticky mass. Do not touch either the seal or the surrounding equipment without wearing neoprene or PVC gloves if degradation is suspected. Wash parts and equipment with 10% lime water (calcium hydroxide solution) to neutralize any hydrofluoric acid.

If contact with the skin occurs, wash the affected areas immediately with water. Then rub a 2.5 calcium gluconate gel into the skin until there is no further irritation, while seeking prompt medical attention.

Note to Physicians: For advice or treatment of HF burns, call the DuPont Medical Emergency number, 1-800-441-3637
The Start Up Factor screen looks like this:

![Start Up Factor 100%](image)

You can get to the start up factor screen by pushing the "change display" button on the control panel and stepping through the GPM/FPM screen, the feet and gallons traveled screen, and the temperature screen. The next screen is the start up factor screen.

Change the start up factor by pushing the application rate switch up to increase or down to decrease.

A higher number will make for a "harder", more aggressive start when the spray bar is first turned on.

A lower number will make for a "softer", more gentle start when the spray bar is first turned on.

You may need to change the start up factor by 25% to 30% to see much change in the spray. That means if you want a harder start, set the start up factor to 125%. If you want a softer start, set the start up factor to 75% as a first try. You may then adjust again up or down as you like.
DC2 Self Diagnostics
The DC2 is equipped with a self diagnostics system that may display messages on the LCD. Some of the more common messages are described below.

Under Application
Indicates that the distributor is applying less than the pre—selected application rate. This could be caused by travelling too fast for the application selected when the hydraulic pump is operating at full stroke.

Over Application
Indicates that the distributor is applying more than the pre—selected application rate. This could be caused by travelling too slowly for the application selected.

No Pump CK PR SW
Indicates that the rear pump override switch is still in the rear position.

Pump Signal at Max
Indicates that the pump is at full stroke.

Pump Signal at Min
Indicates that the pump is not stroking.

Pump Sensor Error
Indicates that the pump sensor is not reading. This could be due to sensor failure or the sensor is positioned too far from the cog gear. Reset or replace sensor.

Radar Speed Error
Indicates that the radar sensor is not working. Replace the sensor.

Pump Control Short
Indicates that the pump stroke wire is loose or shorted to ground. Inspect the cable for proper installation. Replace if necessary.

Low Battery Voltage
Indicates that the truck’s voltage has dropped below 9 VDC. Inspect the truck power supply or the voltage to the DC2 Controller. Make repairs as necessary.

RAM Replace 6702191
Indicates the computer has failed. Consult a factory dealer or the factory for information on computer replacement.

ROM Replace 6702191
Indicates the computer has failed. Consult a factory dealer or the factory for information on computer replacement.

PROM Replace 6702191
Indicates the computer has failed. Consult a factory dealer or the factory for information on computer replacement.
Checking:  DC-2 Computer EDC Threshold

Threshold is determined by how many milliamps it takes to put the hydraulic pump on stroke.

a) Disconnect red wire from center terminal post of front / rear asphalt pump control switch (located in rear control panel).

b) Attach multi-meter leads (in series) to read DC milliamps.

c) Turn asphalt pump control switch to rear.

d) Adjust pump control pot (CW) until asphalt pump shaft just starts to turn. The reading on the meter is what threshold should be set at.

Normally 16 to 19 milliamps.

e) Reconnect red wire to center terminal post of front / rear asphalt pump control switch.

f) Check and adjust the EDC Threshold in computer set-up if needed.
Front / Rear Control Switch Wiring
Shooter

Front / Rear Control Switch Wiring

Front Box

Front Box

B/W

W

R

RB

To Pump

To Pump

Existing Switches

12V

1k Pot.

3

1

2

To Frt/Rear Control
Gather together some slack from the magnetic pick up cable. Unfold the filter case and wrap the slack cable through the filter forming five loops. Close the filter case and tie it shut with a wire or tape.
For LEFT Hand Rotation

Part Number 6603364
Shooter Hydraulic Pump

(LH PUMP)

Main Pump
Low Pressure
"B" Port

Main Pump
High Pressure
"A" Port

Suction for
Auxiliary Pump

Remove Relief Valve from Port "B"
and install Relief Valve #7050223
(1500 P.S.I.), 100 Bar.

Note: Existing spring should be reinstalled
when installing new relief valve.

Low Pressure relief valve (1500 P.S.I.)
is stamped "100".
High Pressure relief valve (4000 P.S.I.)
is stamped "280".
Relief valve stamped "345" is for
Centennial (5000 P.S.I.).
For RIGHT Hand Rotation

Part Number 6603363
Shooter Hydraulic Pump

(LH PUMP)

Main Pump High Pressure "B" Port
Main Pump Low Pressure "A" Port
Suction for Auxiliary Pump
Remove Relief Valve from Port "A" and install Relief Valve #7050223 (1500 P.S.I.), 100 Bar.
Note: Existing spring should be reinstalled when installing new relief valve.
Low Pressure relief valve (1500 P.S.I.) is stamped "100".
High Pressure relief valve (4000 P.S.I.) is stamped "280".
Relief valve stamped "345" is for Centennial (5000 P.S.I.).
Circulate In Tank

Master Spray OFF
Circulate In Bar

Master Spray OFF

Tank

Suction Box

Pump

Tank Valve

Roll Pin

Roll Pin

Roll Pin

Spring

Spring and 2" Spacer

Nut

Ball Valve Closed

Discharge

To Spray Bars

Ball Valve Closed

To Tank

From Spray Bars

Hand Spray

Return To Tank
Spray

Master Spray ON

- Tank
- Suction Box
- Pump
- Tank Valve
- Roll Pin
- Nut
- Spring
- Spring and 2" Spacer
- Roll Pin
- Return To Tank
- Spray Bars
- Hand Spray
- Out Of Bar On To Road
- Ball Valve Closed
- Discharge

For details, see page 14.
Hand Spray

Master Spray OFF
Discharge

Tank

Suction Box

Pump

Tank Valve

Spring

and

2" Spacer

Roll Pin

Nut

Spring

Roll Pin

Ball Valve
Open

Discharge

Cap Off

To Bars

Ball Valve
Closed

From Spray
Bars

Hand Spray

Return To Tank

From
Spray
Bars

Ball Valve
Open

return To Tank

To Bars

Hand Spray

Cap Off

Discharge

Roll Pin

Spring

and

2" Spacer

Roll Pin

Nut

Spring

Roll Pin

Ball Valve
Open

Discharge

Cap Off

To Bars

Ball Valve
Closed

From Spray
Bars

Hand Spray

Return To Tank

From
Spray
Bars

Ball Valve
Open

return To Tank

To Bars

Hand Spray

Cap Off

Discharge
Suck Back Fill Line
(Discharge/Transfer)

Pump turning in Reverse
Tank Valve Open
Master Spray OFF

Tank
Suction Box
Roll Pin
4-Way Valve
Return To Tank
To Spray Bars
Ball Valve Open
Discharge
Nut
Spring
2" Spacer
Roll Pin
Hand Spray
Ball Valve Closed
From Spray Bars
To Spray Bars
Suck Back Return Line
(Circulate in Tank)

Pump turning in Reverse
Tank Valve Open
Master Spray OFF

Tank Valve

Suction Box

2" Spacer

Roll Pin

4-Way Valve

Roll Pin

Spring

Nut

Ball Valve Closed

Discharge

To Spray Bars

Suction Box

Return To Tank

Ball Valve Closed

From Spray Bars

Hand Spray
Suck Back Spraybar
(Circulate in Bar)

Pump turning in Reverse
Tank Valve Open
Master Spray OFF

Tank Valve
PUMP

Spring and 2” Spacer
Roll Pin
Roll Pin
Nut

Spring Box

4-Way Valve

Ball Valve Closed
Discharge

To Spray Bars
Hand Spray

From Spray Bars
Ball Valve Closed
Return To Tank

To Spray Bars

Hand Spray

From Spray Bars
Ball Valve Closed

Spring Box

Pump turning in Reverse
Tank Valve Open
Master Spray OFF

Tank Valve
PUMP
Suck Back Handspray
(Discharge/Transfer)

Pump turning in Reverse
Tank Valve Open
Master Spray OFF
Clean Out
(Circulate in Tank)

Pump turning in Reverse
Tank Valve Open
Clean Out Switch being held

Tank

Suction Box

Roll Pin

4-Way Valve

2" Spacer

Roll Pin

Spring

Nut

Tank Valve

PUMP

From Spray Bars

To Spray Bars

Ball Valve Closed

Return To Tank

Hand Spray

Ball Valve Closed

Discharge
# Etnyre Spraybar Nozzles

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Part No.</th>
<th>Description</th>
<th>Application Gallons Per Square Yard</th>
<th>Application (Metric) Liters Per Square Meter</th>
<th>Flow Gallons Per Minute Per Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3353788</td>
<td>V Slot Tack Nozzle</td>
<td>.05 – .20</td>
<td>.19 – .75</td>
<td>3.0 to 4.5</td>
</tr>
<tr>
<td>2</td>
<td>3351008</td>
<td>S36-4 V Slot</td>
<td>.10 – .35</td>
<td>.38 – 1.30</td>
<td>4.0 to 7.5</td>
</tr>
<tr>
<td>3</td>
<td>3351009</td>
<td>S36-5 V Slot</td>
<td>.18 – .45</td>
<td></td>
<td>7.0 to 10.0</td>
</tr>
<tr>
<td>4</td>
<td>3352368</td>
<td>Multi-Material V Slot</td>
<td>.15 – .40</td>
<td>.57 – 1.50</td>
<td>6.0 to 9.0</td>
</tr>
<tr>
<td>5</td>
<td>3351015</td>
<td>3/32” Coin Slot</td>
<td>.15 – .40</td>
<td>.57 – 1.50</td>
<td>6.0 to 9.0</td>
</tr>
<tr>
<td>6</td>
<td>3352204*</td>
<td>Multi-Material V Slot</td>
<td>.35 – .95</td>
<td>1.30 – 3.60</td>
<td>12.0 to 21.0</td>
</tr>
<tr>
<td>7</td>
<td>3352205*</td>
<td>Multi-Material V Slot</td>
<td>.20 – .55</td>
<td>.75 – 2.08</td>
<td>7.5 to 12.0</td>
</tr>
<tr>
<td>8</td>
<td>3352210</td>
<td>End Nozzle (3352205)</td>
<td>.20 – .55</td>
<td>.75 – 2.08</td>
<td>7.5 to 12.0</td>
</tr>
<tr>
<td>9</td>
<td>3351014</td>
<td>3/16” Coin Slot</td>
<td>.35 – .95</td>
<td>1.30 – 3.60</td>
<td>12.0 to 21.0</td>
</tr>
<tr>
<td>10</td>
<td>3351010</td>
<td>1/4” Coin Slot</td>
<td>.40 – 1.10</td>
<td>1.50 – 4.16</td>
<td>15.0 to 24.0</td>
</tr>
</tbody>
</table>

* Recommended nozzles for seal and chip with emulsified asphalts.
WARNING
To prevent possible burns from hot asphalt spray: Do not stand, or allow anyone to stand, where accidental opening of a valve may cause contact with hot asphalt.

Spray bar nozzles have a limited flow range at which optimal performance will be achieved. Flow rates greater than this optimal range will cause excessive fogging. Rates that are too low will cause the fan to sag and cause heavy edges. Refer to the nozzle selection chart in the operator’s manual to select the nozzles appropriate for your conditions.

Adjusting the Spray Bar Nozzle Angle

Adjust the nozzles to obtain an angle of approximately 30 degrees with the spraybar centerline. Every nozzle should be at the same angle. A nozzle adjustment wrench is supplied with each new unit.

Figure 6. Adjusting the Spray Bar Nozzles