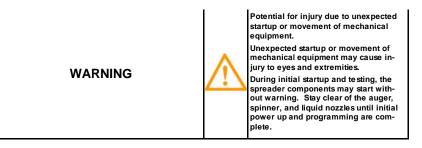
Cirus ONTROLS	TECH NOTE: TITLE:	11-003 Hydraulic Open Loop Pre-Wet Liquid System Trimming
	DATE: REVISION:	02-7-11 1.0

Description: this procedure describes the process used to properly trim the hydraulic valve control for an open loop prewet pump system (PPM-HO) and then to validate that calibration to achieve consistent results.

Background: hydraulic motors and liquid pumps must not be operated above their rated maximum continuous duty RPM. In an open loop system, there is no flow meter to control the trimming process, so a tachometer must be used to determine maximum trim so as not to exceed the motor rpm rating.



VERIFY THAT FLUID IS PRESENT IN TANKS B/4 BEGINNING OPERATION

Enter the configuration menu by pressing Menu and hold auger & pre-wet paddles down together. Enter 9000 for the password. Using the spinner switch, select trim/cal and select pre-wet, use anti-ice toggle to change settings.



	rims/Calibration	Prewet Setup	Pa9e 1/2	Prewet Setup	Pa9e 2/2
Auger Spinner → Prewet Anti-Ice	Speedo MDM Module	Prewet Present: Sensor Present: → Minimum Trim: Maximum Trim:	Yes No 64000 64000	Pulses Per GAL: Pump max. GAL/min: → Prewet Units:	585 300.0 GAL/TON
<pre><blast>=done</blast></pre>	<pre></pre>	<pre><spin+ -="">=se1 <ice+ -="">=adj</ice+></spin+></pre>	<blast>=done</blast>	<pre><spin+ -="">=sel <ice+ -="">=adj</ice+></spin+></pre>	<blast>=done</blast>

- a. <u>Prewet Present</u>: default is yes;
- b. Sensor Present: choose No for this open loop system.
- c. Minimum Trim: do not adjust yet;
- d. Maximum Trim: do not adjust yet;
- e. <u>Pulses per Gallon</u>: do not enter data here no flow meter;
- f. <u>Pump max. Gal/minute</u>: enter value determined below
- g. Prewet Units: choose between gallons/ton (default setting) and gallons/mile
- 1) Press the spinner + control until the minimum trim setting is selected.
- 2) Press pass to enter trim calibration. Choose manual calibration.
- 3) Set up a second person with the hand held tachometer capable of reading at least 2000 rpm and have him monitor the shaft speed of the hydraulic motor.

Manual Pre-Wet Pump Trimming and Max Flow Setting

In manual trimming, you must manually raise the hydraulic level using the pre-wet switch and visually observe fluid being dispensed and measure the motor RPM with the tachometer.

7165 Boone Ave. N, Suite 190, Brooklyn Park, MN 55428 Tel: 763-493-9380 Fax: 763-493-9340 www.ciruscontrols.com

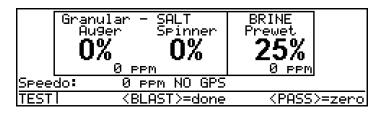
- 1) Raise the hydraulic level (pre-wet toggle) until the pre-wet pump is <u>barely</u> pumping.
- 2) Press pass to accept minimum trim level.
- 3) Increase the hydraulic level until 1550 Motor RPMs are achieved.
- 4) Press pass again to accept the maximum trim levels.
- 5) Once the maximum trim level is accepted, the user is asked to "accept calibration". Select "Y" using the spinner control, and then press pass.

Confirm your Calibration: to validate the maximum amount of fluid from your liquid system, use the following method:

- a) Plumb your liquid system to allow you to catch and measure an amount of fluid from a single port (10-15 gallons or 25+ liters). Add enough fluid to do the calibration;
- b) From the menu screen, select Test mode, enter the password;

Menu v4.15 Rx	Test Mode
Automatic Mode <u>H</u> elp	Enter Password:
Manual Mode → Test Mode No Speedo Mode Material Chan9e Unload Mode Fill Tanks	[*000]
Storm/Season Tot. Diagnostics	<spinner +="" -=""> to change</spinner>
<pre><spinner +="" -="">=select <pass>=accept</pass></spinner></pre>	<pre><blast>=back <pass>=next/done</pass></blast></pre>

c) Ramp up the output on liquid slowly up to 100%: Liquid will be flowing



- d) Collect fluid for exactly one minute. The volume of fluid collected is equal to the volume flowing in one minute. The amount of fluid you collect will tell you the maximum gallons per minute the system can supply at the new maximum trim setting.
- e) Test is complete. Press Blast to return to menu.
- f) Return to the Trim/Cal Pre-Wet menu and enter the value for Pump max. Gal/minute (that you just determined) into that line on the menu and blast back out till you get confirmation that value is saved.
 - a. Entering the field determined value, allows the SpreadSmart to deliver consistent fluid volumes within the capacity of the system.

For identical trucks, these two new values (maximum trim for pre-wet and pump max gal/minute) can be entered manually without re-running field calibration procedure above. Small differences in accuracy will occur between trucks using this method, but those variations will be within normal expectations for an open loop system.