



Version 1.0
10/15/2020

OWNER'S MANUAL

CDL ULTRASONIC FLOWMETERS



Models : 210100U | 210150U | 210200U | 210300U

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INTRODUCTION

- **Important: This type of flowmeter cannot be used on the outlets of vacuum extractors.**
- Ideally, these flowmeters should be used at the outlet of a vacuumless delivery pump.
- The flowmeter works for positive and negative displacement. **For example, if the pump starts, it will add the amount of water to the positive flow. When the pump stops and the hose drains in the opposite direction, the amount of water returning to the tank will be subtracted from the total previously accumulated by the flowmeter.**
- The flowmeter is sold as a pre-mounted kit and calibrated for a pipe that will meet the minimum distances. **However, you still have to install the device appropriately.** (See the **Installation Diagram** section).
- Please make sure to read these instructions carefully before installing in order to ensure your flowmeter is as accurate as possible. In the **Installation Diagram** section, you will find examples of proper and improper installation.
- The flowmeters come pre-programmed from the company. You do not need to adjust the settings. By default, the display will be in gallons. However, you will be able to see it in litres on your CDL monitoring interface if you wish. See the **CDL Monitoring Interface** section.
- The flowmeter will automatically connect to your CDL monitoring system once you connect it to a power source. See the **CDL Monitoring Interface** section for more details.
- For further information on flowmeter settings or functions, contact CDL Customer Service at **1-800-361-5158**



PRODUCT FEATURES

Power supply: 24V DC

Flowmeter material: PVC

Accuracy: $\pm 1\%$

Maximum pressure: 150 PSI

Maximum temperature: 60 degrees Celsius or 140 degrees Fahrenheit

Protection: IP68

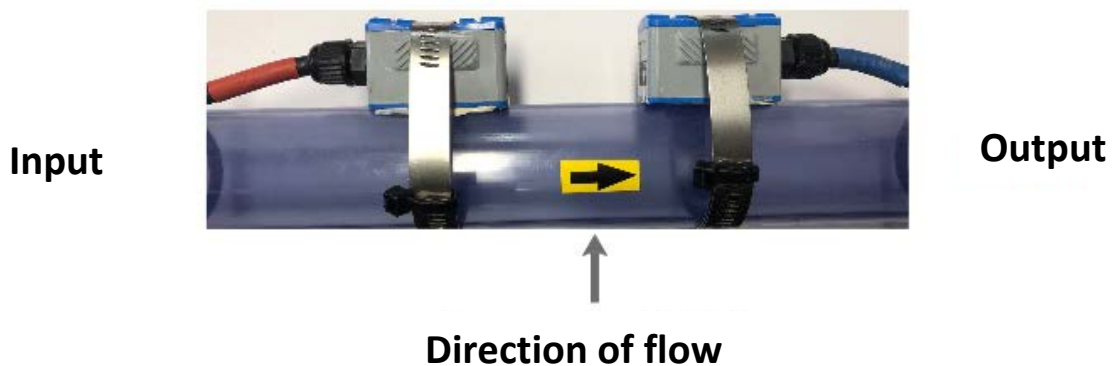


INSTALLATION NOTES

Please read the note below before consulting the Installation Diagram.

1. As a basic principle, the tube should always be full so that the flowmeter can get a proper reading.
2. Reduce turbulence inside the tube as much as possible to ensure accuracy.
3. The controller and Mesh communication module can be screwed into the desired location.

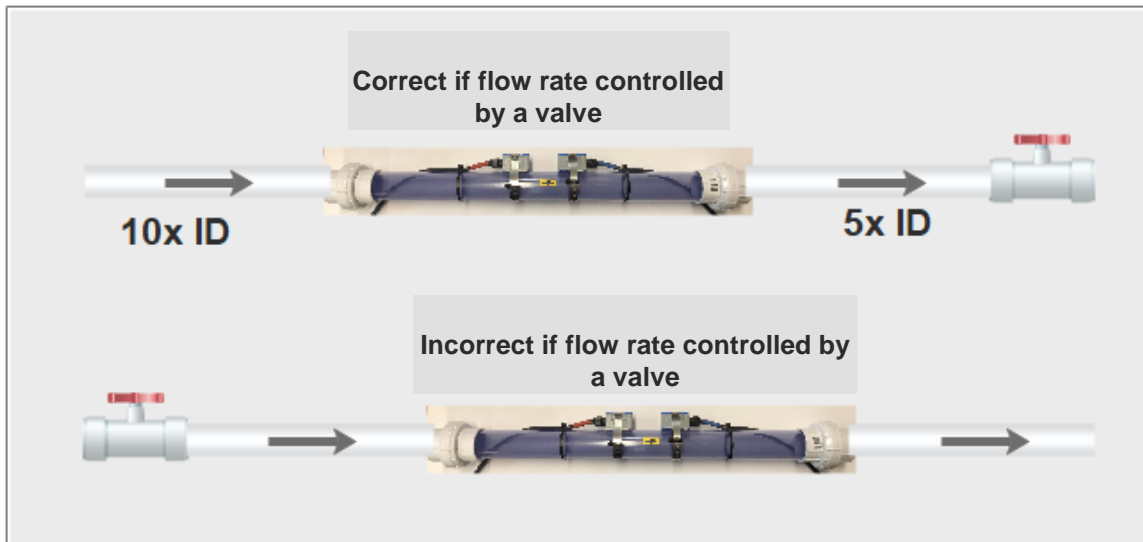
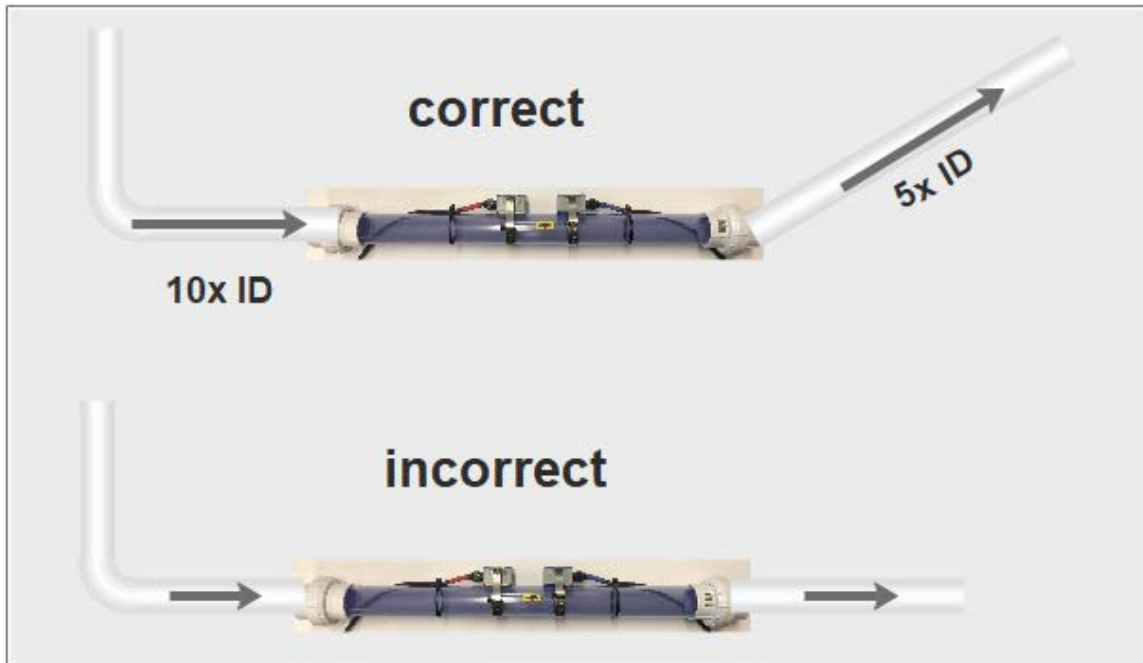
INSTALLATION DIAGRAM



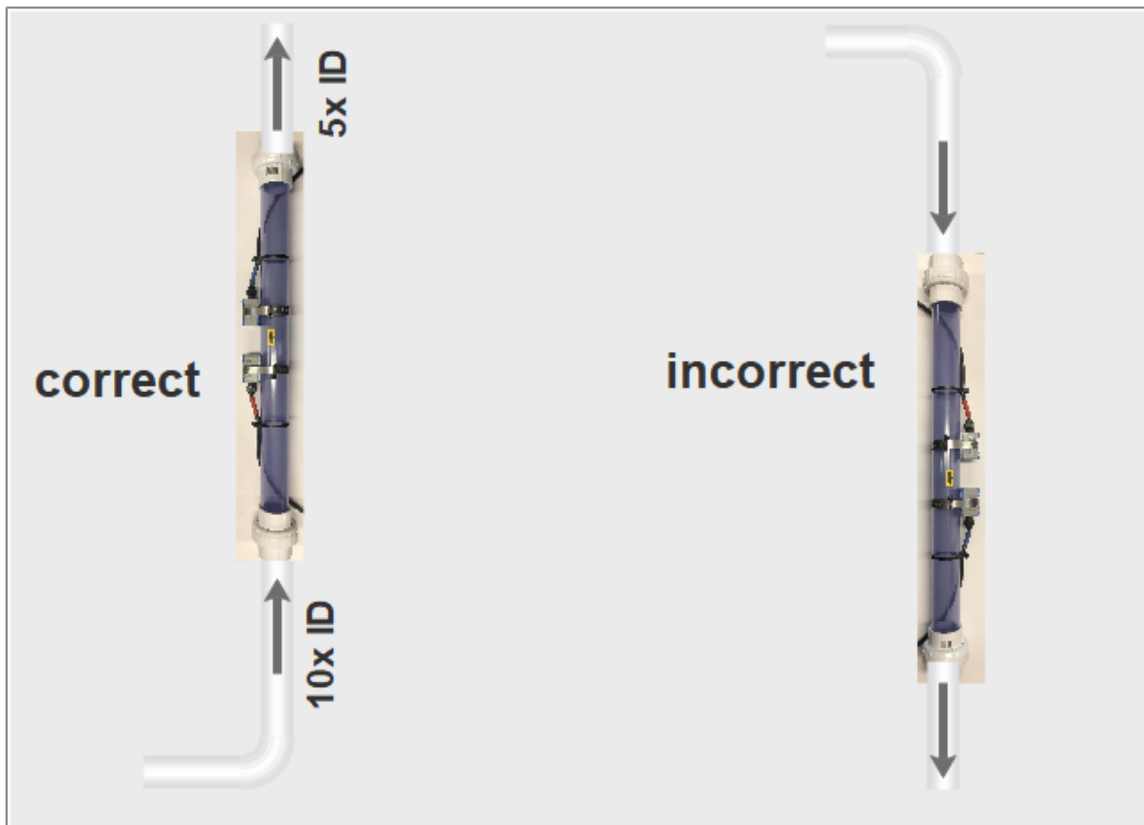
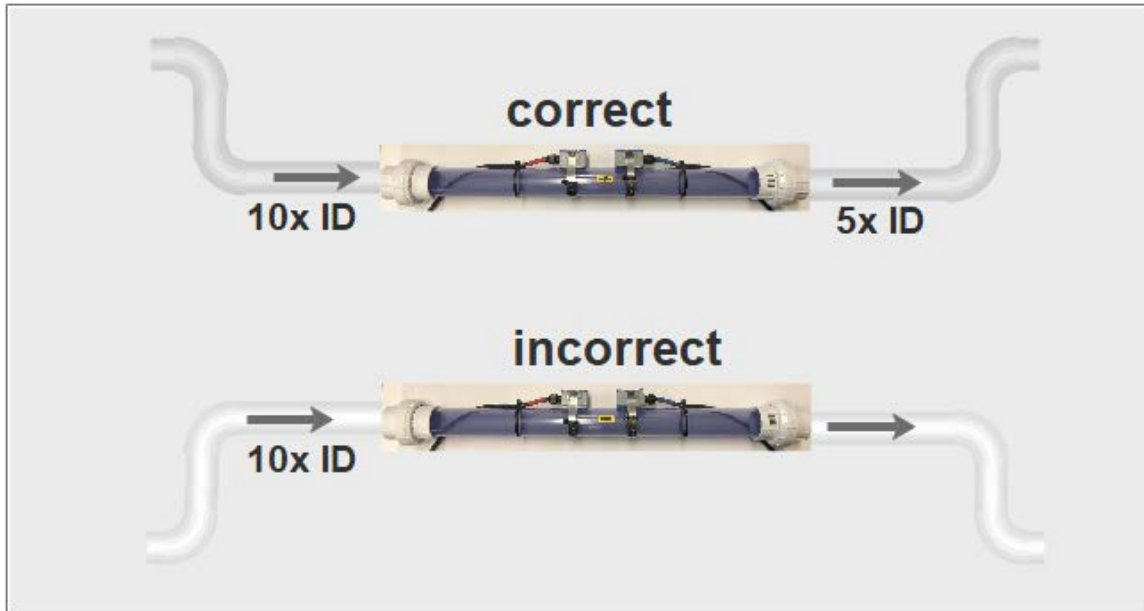
Note: The * ID *** is inner diameter**



INSTALLATION DIAGRAM



INSTALLATION DIAGRAM

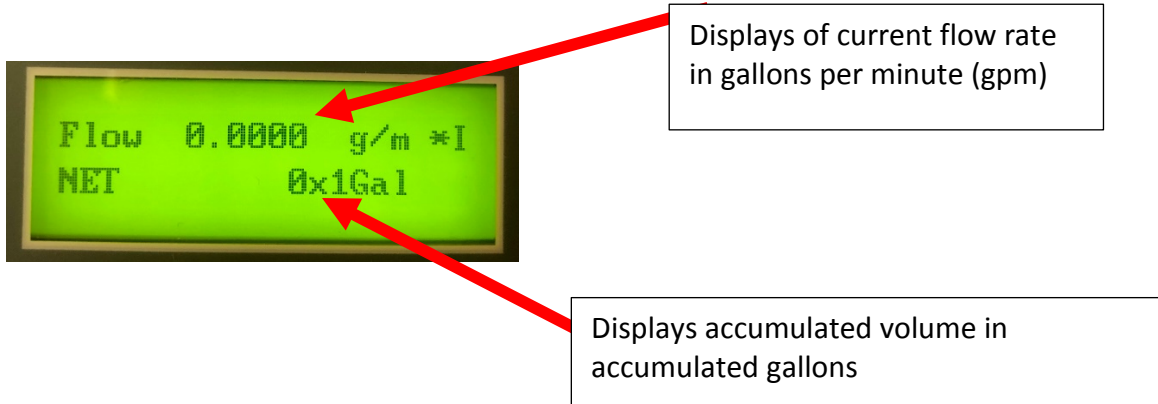


SUMMARY BY MODEL

| |
|---|
| <p style="text-align: center;">1 " Model 210100U</p> <p>10x ID = Straight line (no elbows) of 10'' minimum before the flowmeter's inlet 5x x ID = Straight line (no elbows) of 5'' minimum before the flowmeter's inlet</p> |
| <p style="text-align: center;">1 ½ " Model 210150U</p> <p>10x ID = Straight line (no elbows) of 15'' minimum before the flowmeter's inlet 5x x ID = Straight line (no elbows) of 7 ½'' minimum before the flowmeter's inlet</p> |
| <p style="text-align: center;">2 " Model 210200U</p> <p>10x ID = Straight line (no elbows) of 20'' minimum before the flowmeter's inlet 5x x ID = Straight line (no elbows) of 10'' minimum before the flowmeter's inlet</p> |
| <p style="text-align: center;">3 " Model 210300U</p> <p>10x ID = Straight line (no elbows) of 30'' minimum before the flowmeter's inlet 5x x ID = Straight line (no elbows) of 15'' minimum before the flowmeter's inlet</p> |

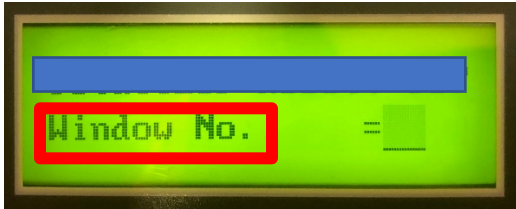


DISPLAY OF CURRENT FLOW AND ACCUMULATED VOLUME



If the display does not show the current flow rate and accumulated volume, follow the steps below.

Step 1: Press  to see "Window No." on the screen, as below.





Step 2: Press: 


Step 3: Press: 

RESETTING VOLUMES TO ZERO


Step 1: Press  to get "Window No." on the screen, as below.




Step 2: Enter the number 37 using the keypad by pressing  followed by .

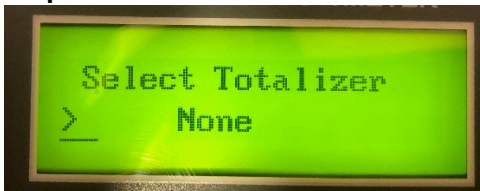
Step 3: Press . The screen should display this:



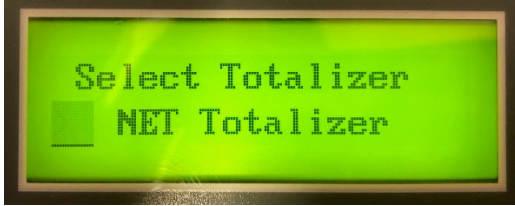
Step 4: Press  once to select YES. The screen should display this:




Step 5: Press . The screen should display this:



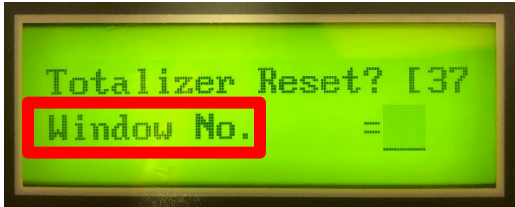
Step 6: Press  once to show **NET TOTALIZER**. The screen should display this:

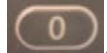



Step 7: Press . The screen will briefly show this:

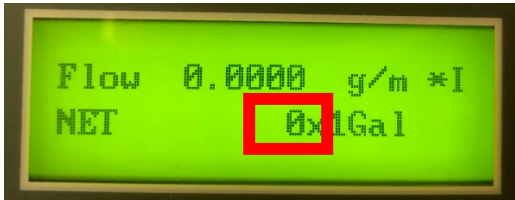


Step 8: Press  to see "Window No." on the screen, as below.



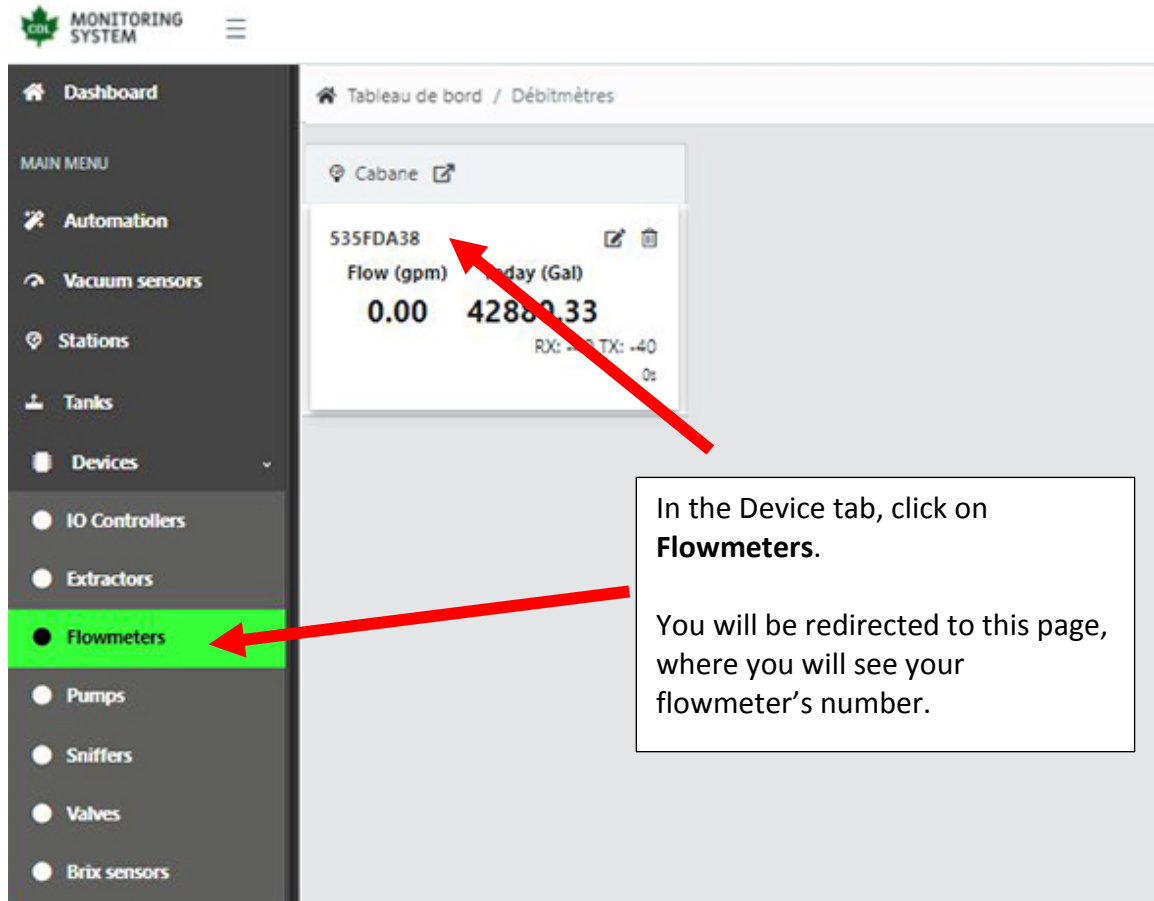
Step 9: Press , and after 

Step 10: Make sure the value displayed is zero, as shown below.



CDL MONITORING INTERFACE

Step 1: Find your flowmeter, which is connected to the CDL monitoring system, in the interface.



Step 2: Rename your flowmeter as desired.

The image shows two parts of a software interface. The top part is a data card for a flowmeter with ID '535FDA38'. It displays 'Flow (gpm)' as 0.00 and 'Today (Gal)' as 42880.33. Below this, it shows 'RX: -40 TX: -40' and '0s'. There are edit and delete icons in the top right. A red arrow points from a box labeled 'Click here' to the edit icon. The bottom part is an 'Edit flowmeter' form. It has a title bar with a radio button and the text 'Edit flowmeter'. Below is a note: 'Fields marked with * are required.' There are two input fields: 'Name *' with the text 'Flometer name' and 'Station *' with the text 'Cabane'. At the bottom are 'Save' and 'Cancel' buttons. A red arrow points from a box labeled 'Enter the desired name here and save.' to the 'Name' input field.

To view a flowmeter's data, simply click on its tab.

The image shows a data card for a flowmeter. The name 'Flowmeter #1' is highlighted in yellow. It displays 'Flow (gpm)' as 0.00 and 'Today (Gal)' as 42880.33. Below this, it shows 'RX: -40 TX: -40' and '0s'. There are edit and delete icons in the top right. A red arrow points from a box labeled 'Click here' to the name 'Flowmeter #1'.



This will give you access to specific, advanced information for your flowmeter such as:

- Flowmeter name
- Station name
- Last communication with CDL monitoring system
- Communication delay with CDL monitoring system
- Current flow rate
- Total accumulated for the day
- Total accumulated
- Signal strength
- Software versions
- Volume graph by day
- Volume graph by period (week, month or year according to your choice)

MAINTENANCE

- **IMPORTANT!** Rinse well with **unsweetened water (or plain water)** at the end of the season.
- Turn off the power supply if the device is not going to be used for a long period of time. (Note: The flowmeter will remember the data that was displayed when the power was turned off).
- When you restart the flowmeter each year, use your interface to make sure that the device is communicating properly with the monitoring system. Make sure the communication intervals are good.



WARRANTY

Your flowmeter is covered by a one-year limited warranty. For one year from the date of original purchase, CDL Maple Sugaring Equipment Inc. will repair or replace parts of this flowmeter that are defective in material or workmanship provided that the flowmeter is installed, operated, and maintained according to the instructions provided.

Exclusions

This warranty does not cover:

1. Products whose original serial number has been removed or modified or is not easily readable.
2. Equipment that has changed owners or is located outside of North America.
3. Breakage caused by poor drainage if the system has been stored below freezing.
4. Failure to follow CDL's maintenance procedure.
5. Production losses caused by problems with the flowmeter.
6. Loss of income caused by the quality of the syrup.
7. Service calls that do not involve malfunctions, manufacturing or material defects, or products that were not used according to the instructions provided.
8. Service calls to check installation or receive instruction on using the flowmeter.
9. Service calls after one year.
10. Damage caused by: repairs made by unauthorized technicians; use of parts other than original CDL parts or parts that were not obtained from an authorized technician; or external causes like abuse, misuse, accidents, fires, or natural disasters.
11. Damage caused by misuse, negligence, modifications made by the customer, or electrical problems.
12. Damage caused by the use of products not intended for use with the flowmeter or misuse of cleaning products.



Disclaimer of Warranties; Limitation of Remedies

The customer's sole remedy under this limited warranty is the repair or replacement of the product as described above. Claims based on warranties, including warranties of merchantability or fitness for a particular purpose, are limited to two years or the shortest period permitted by law, which shall not be less than two years. CDL Maple Sugaring Equipment Inc. shall not be held responsible for incidental or indirect damages or for material and implicit damages. Some states and provinces do not allow limitations or exemptions on incidental or indirect damages or limitations on warranties. In this case, these restrictions or exemptions may not be applicable. This written warranty gives you specific legal rights. Depending on the state or province, you may have other rights.

If you need to call the repair service

Keep your receipt, delivery note, or other valid proof of payment to establish the warranty period in case you need to call for repairs. If a repair is made, it is in your best interest to obtain and keep all receipts. The service to which you are entitled under this warranty must be obtained by contacting CDL at the addresses or telephone numbers below.

Your flowmeter will be serviced by CDL in Canada. Any features and specifications described or illustrated are subject to change without notice.

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