



# OWNER'S MANUAL

Version 1.1 | 15/09/2021  
668411-MAN

## CDL VACUUM PROTECTION VALVE



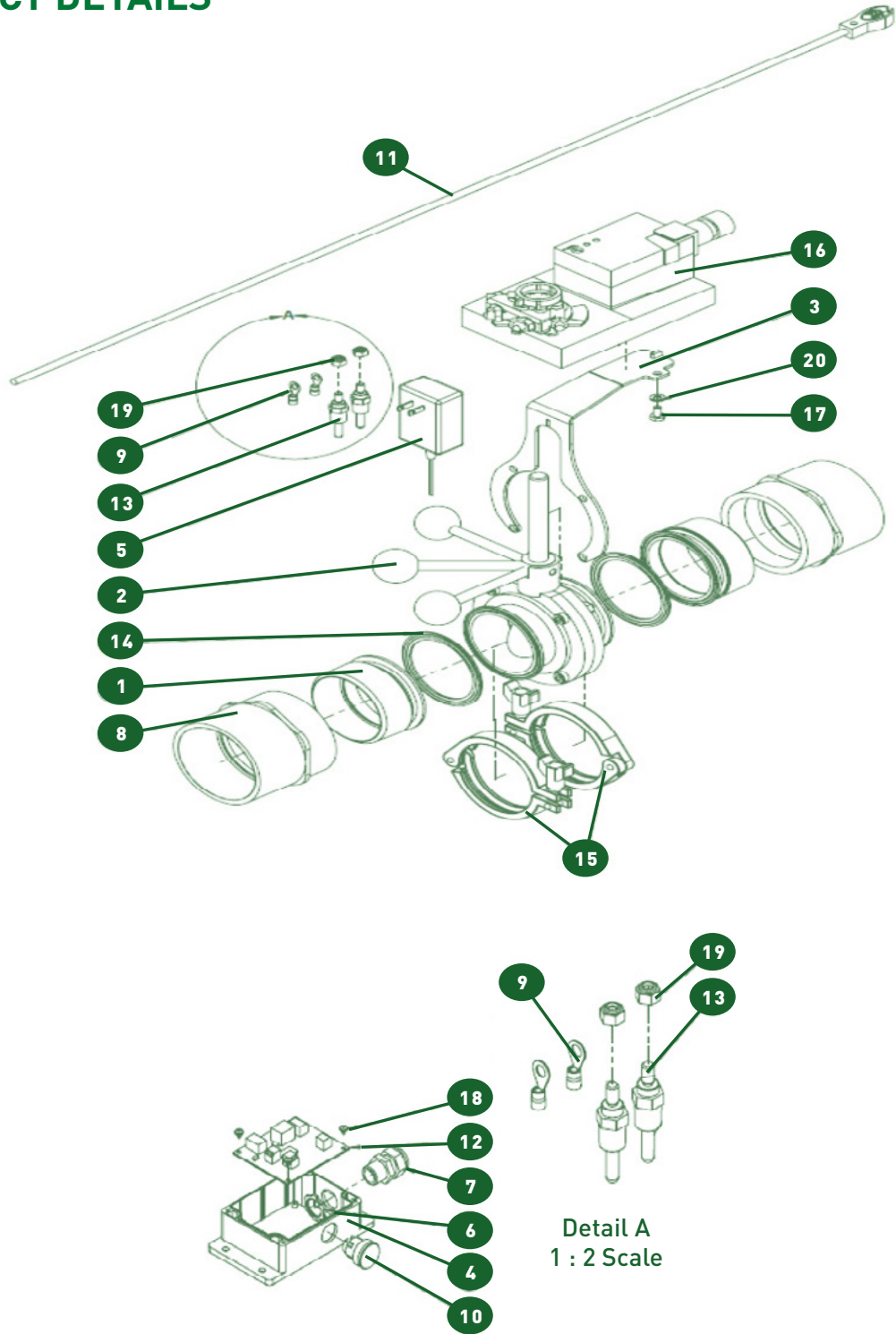


Thank you for purchasing the CDL vacuum protection valve.  
This manual provides complete information to install and use the product properly.

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# PRODUCT DETAILS



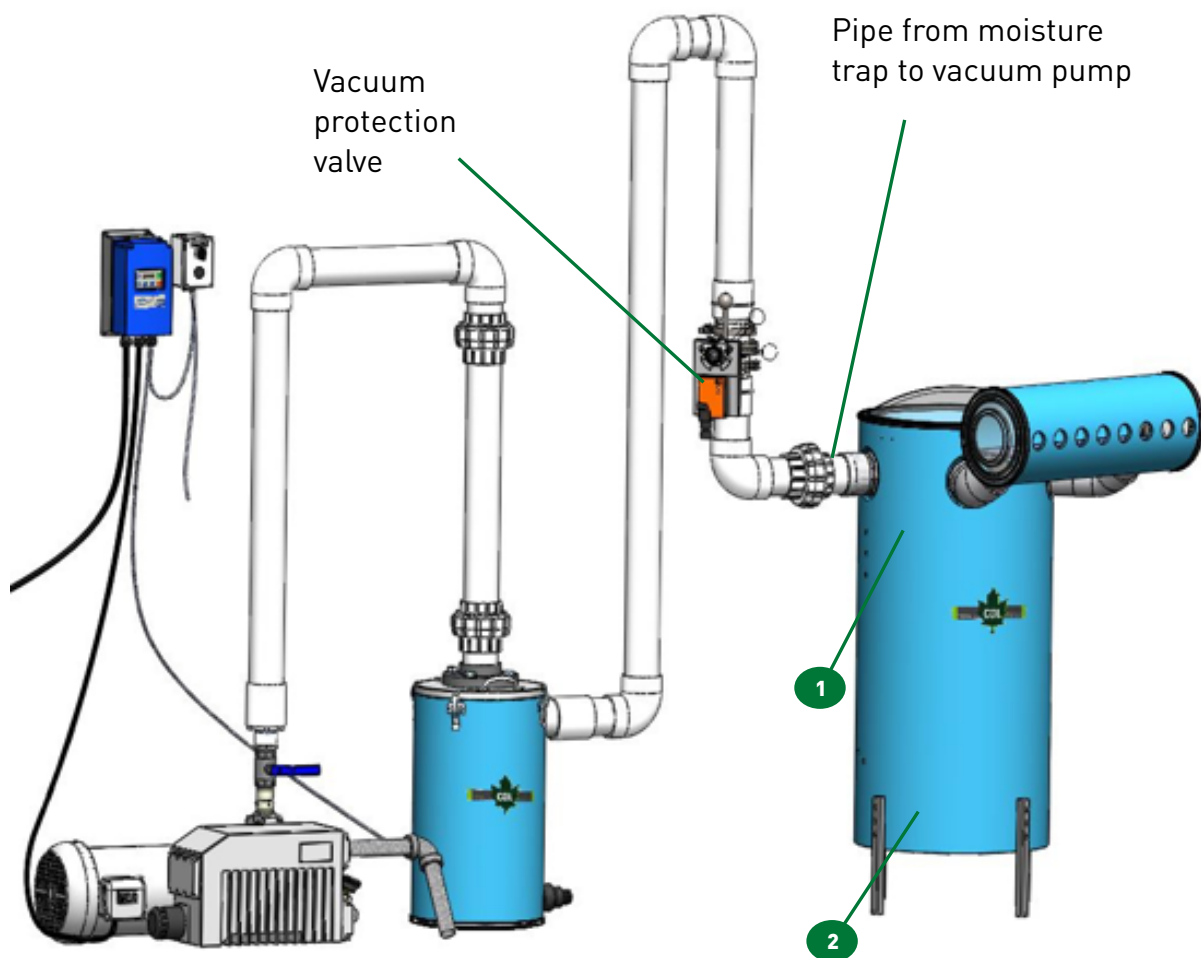
## PARTS LIST

#	Qty	Description	Code
1	2	SS FERRULE 3" X 3" CLIPS-MIPT	770100
2	1	SS BUTTERFLY VALVE 3" (WELDED) ROD 4.5"	60T300S
3	1	REINFORCEMENT 3" BUTTERFLY VALVE - BEL. AMQB24-1	CDLSTD-A00010
4	1	BEIGE BOX 3.5 X 4.5 X 2.15 DRILED	CDLSTD-A00011
5	1	TRANSFO. AC/DC ADAPT. 24V/18W	21081
6	1	NUT 1/2" ELECTRIC.LOCK	52004
7	1	ELECTRIC CONNECTOR 1/2" 16-3	52030
8	1	NO CONTACT TELEM. ZBE 101	52107
9	2	TERMINAL 1/4" RING WIRE 22-18	52141
10	1	PUSH BUTTON GREEN 1NO	521932
11	1	BOX FIXATION ELASTIC CORD	214060
12	1	CELECTRONIC BOARD FOR SAFETY VALVE VACUUM PUMP	521126
13	2	PROBE SUBMERSIBLE SAP EXTRACTOR	60BS14512M
14	2	O-RING FERRULE 3"	60GASKET3
15	2	SS CLIPS 3" BUTTERFLY SCREW	60R13HC3
16	1	BELIMO MOTOR ELECT. VALVE	66AQMB24
17	1	SS BOLT 1/4" X 1/2" FT	60BS1412FT
18	4	SS SCREW #8 1/4" ROUND	664029
19	2	SS 1/4" NYLON LOCK NUT	60NS14HEXNYL
20	1	SS LOCK WASHER 1/4" DIAMETER	RL0I-T0250

## REQUIRED FOR INSTALLATION

- 7/16" key
- 7/16" drill bit
- 1/4" 18 NPT pipe tap
- Lineman's pliers (to squeeze connectors)
- Electric drill
- Adjustable wrench
- Teflon tape

### EXAMPLE #1: INSTALLATION ON CDL VERTICAL SUBMERSIBLE EXTRACTOR

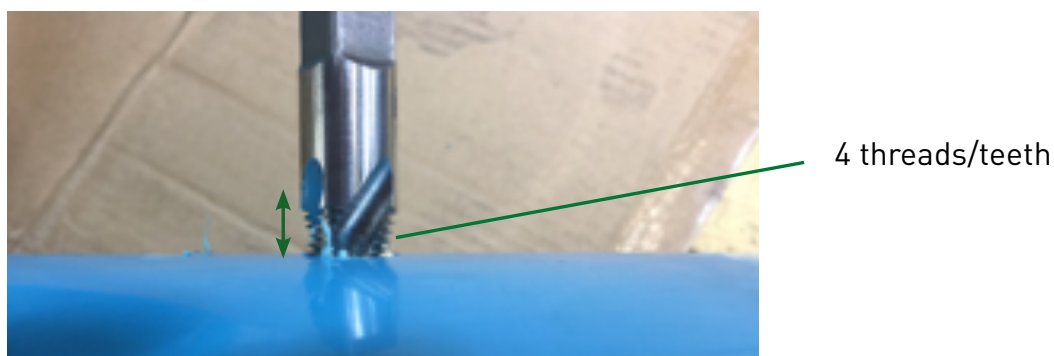


**Install the motorized valve as close as possible to the extractor on the pipe to your moisture trap. This is to prevent sap from accumulating in the pipe between the moisture trap and vacuum pump.**

- 1) In Example 1, the ideal height for installing the upper sensor (see part **no. 14** in the exploded view) is about an inch below the pipe to the moisture trap (**see no. 1 in Example 1**). This will bring the valve into contact with the sap and allow it close one inch before the sap reaches the pipe to the moisture trap and vacuum pump. Make sure the wire used is the one identified as (**HIGH**).

Note: Always choose the location with the least possible turbulence, to create the best contact possible between the sap and the sensor.

- 2) The ideal height for the second sensor is about four inches from the bottom. This sensor must be submerged as much as possible when the extractor is in operation (**see no. 2 in Example 1**). Make sure the wire used is the one identified as (**LOW**).
- 3) Once you have determined where to begin installation in steps 1 and 2, drill two holes in the extractor wall using an electric drill with a 7/16" drill bit.
- 4) Using a 1/4" 18 NPT pipe tap, tap the two drilled holes. Be careful not to tap too deeply. In general four teeth should remain visible. **See picture below.**



- 5) Wrap Teflon tape three to four times around the threads of the two **no. 14** sensors provided with the vacuum protection valve. Screw them into the two holes you prepared until tight and sealed.

**Example of rubber band mounting:**

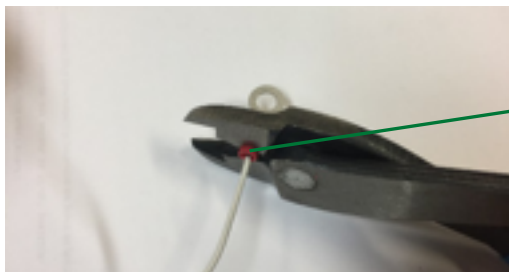
- 6)** Using the rubber band (**no. 12**), mount the control box on a pipe in your pump station. Install it so that the wires can reach the sensors on the extractor.

Note: The control box can also be wall mounted with two screws if desired.



- 7)** Using pliers (preferably lineman's pliers), squeeze the **no. 10** connectors at the ends of the wires preconnected to the control box once you have determined the length of wire required. Be sure the stripped part of the wires are inserted into the connectors.

**See picture below.**

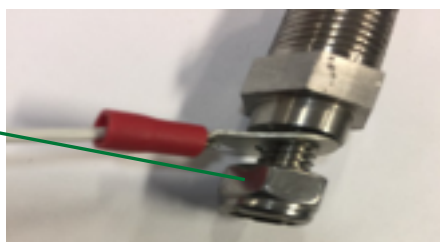


Squeeze hard with pliers.

Test joint stability by pulling on the wires and connectors.

- 8)** Secure the wires with the two electrical connectors you installed on each of the **no. 14** sensors by tightening clamp nut **no. 21** on each connector. Make sure the nuts are properly tightened to ensure there is good contact between the sensors and the wires. **See image.**

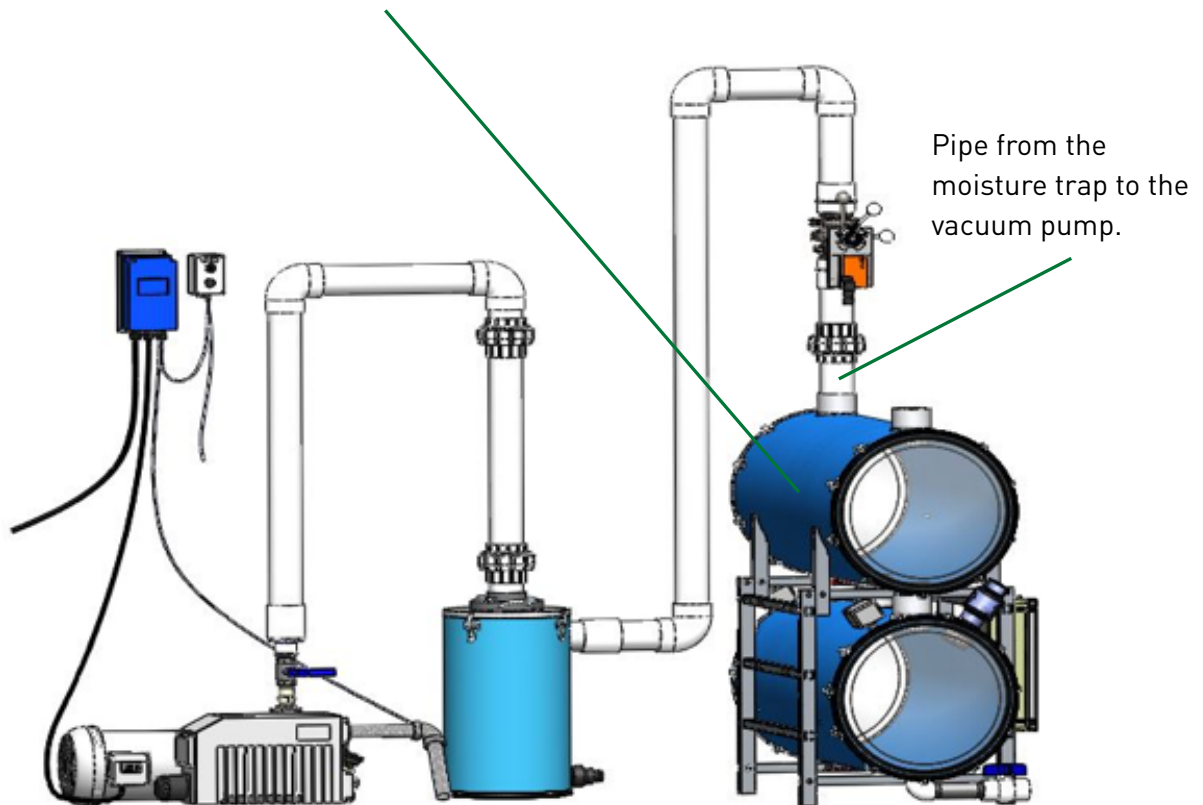
Tighten clamp nut securely with a 7/16" key.





## EXAMPLE 2: INSTALLATION ON CDL SUBMERSIBLE HORIZONTAL EXTRACTOR

The upper drilling position must be one inch above the sensor that activates the pump. It is also best for the holes in the pipes carrying sap to be above the upper vacuum protection valve sensor. This is to increase the sap's stability and ensure the best contact possible with the sensor. Make sure the wire used is the one identified as **(HIGH)**.



The lower position is approximately six inches from the bottom.  
Make sure the wire used is the one identified as **(LOW)**.

For the CDL submersible horizontal extractor,  
follow steps 3 to 8 using the sensor positions in this diagram.

## OPERATION

Plug the small 24V transformer that comes with the valve into a standard **120V** outlet.

Operation is really quite simple. When the two sensors touch the sap at the same time, the valve closes.

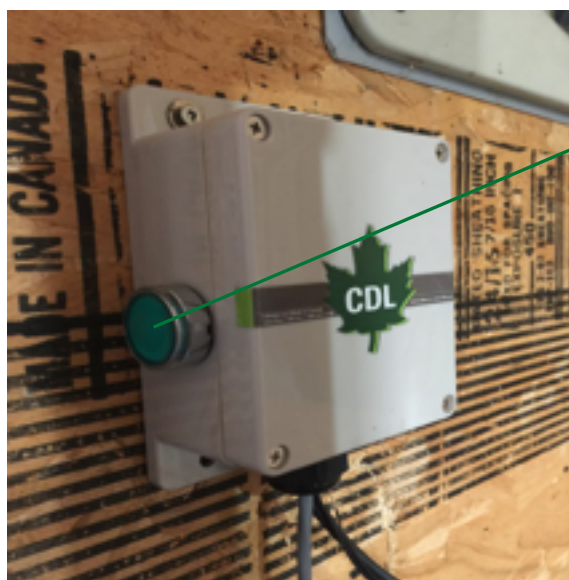
In general, an electric extractor can operate normally all day, but sometimes the pump(s) can't keep up when the tubing network thaws quickly. The valve is very handy in such situations because it prevents ice and sap from plugging the pipes between the moisture trap and vacuum pump.

The same principle applies to a mechanical extractor if it can't keep up or breaks down. The valve prevents ice and sap from plugging the pipes between the moisture trap and vacuum pump.

Once the extractor regains control of the situation and the upper sensor is no longer touching the sap, the protection valve reopens to reactivate the vacuum in your extractor and tubing.

You can test valve operation by pressing the green button on the control box. The valve will close when you hold down the button, and reopen about seven seconds after you release it.

**See picture.**



Test button

**Note :**  
You are recommended to test operation once a day using the green button when you inspect your pump station.

**Note: Upon initial use and at the start of each season, test first using water to simulate sap. The valve must close when the two sensors come into contact with the water once the extractor is full.**

**If there is a problem with the valve:**

- 1) Unplug it from the 120V outlet.**
- 2) Open or close the valve manually by pressing the black button on the motor, as illustrated below.**

Black button



## **MAINTENANCE AND STORAGE**

It is important to keep the sensors clean to ensure proper operation. Clean when there is buildup of organic matter.

The gasket inside the valve must be lubricated with food grade grease no. 66535 (sold in our stores) when the season is over.

## WARRANTY

The CDL vacuum protection valve comes with a one-year warranty covering breakage and manufacturing defects and including parts and labor at a service center. The valve must be subject to normal use for coverage to apply. Production loss is not covered. The user is responsible for performing regular inspections to ensure the vacuum protection valve is functioning properly.

## EXCLUSIONS

This warranty does not cover:

- 1) Products whose original serial numbers have been removed or changed or are illegible.
- 2) Equipment that has changed owners or is located outside North America.
- 3) Cases where the maintenance procedure has not been followed.
- 4) Production downtime due to any problems with the CDL vacuum protection valve.
- 5) Lost income due to any problems with the CDL vacuum protection valve.
- 6) Service calls that do not concern a product malfunction, manufacturing defect, or defective material, or products that have not been used in accordance with the instructions provided.
- 7) Service calls to check installation or obtain instructions on how to use the equipment.
- 8) Service calls after one year.
- 9) Damage caused by repairs made by unauthorized technicians, use of parts other than genuine CDL parts or parts not obtained through an authorized technician, and external causes such as abuse, misuse, accidents, fire, or natural disasters.
- 10) Damage to the vacuum protection valve due to misuse, negligence, modifications made by the customer, or electrical problems.
- 11) Damage caused through use of products not intended to be used with this equipment or due to improper use of cleaning products or lubricants.