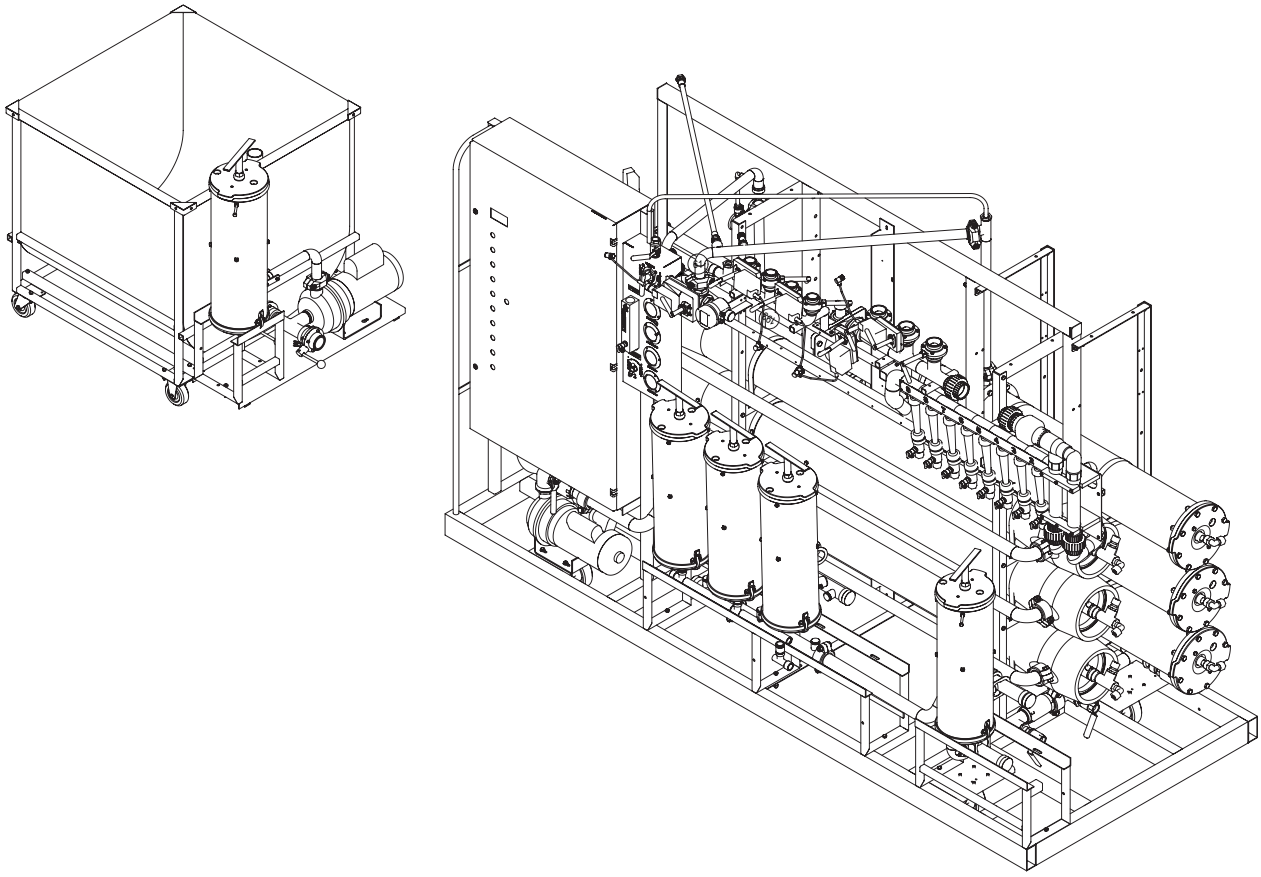
LAPIERRE

naturally innovative

5000 SERIES REVERSE OSMOSIS (R.O.)

PLUMBING: INSTALLATION AND DRAINAGE



USER MANUAL

January **2022**

LAPIERRE

naturally innovative

Naturally innovative

A leader in equipment and products for the maple syrup industry, LAPIERRE EQUIPMENT distinguishes itself by its ability to innovate and develop high-performance solutions. This is what enables it to make significant changes in production techniques and processes in order to increase crop yield of high quality syrup.

LAPIERRE EQUIPMENT has a wealth of experience accumulated over three generations of maple syrup producers. These are also people driven by passion and a deep desire to help the industry evolve with the utmost respect for nature.

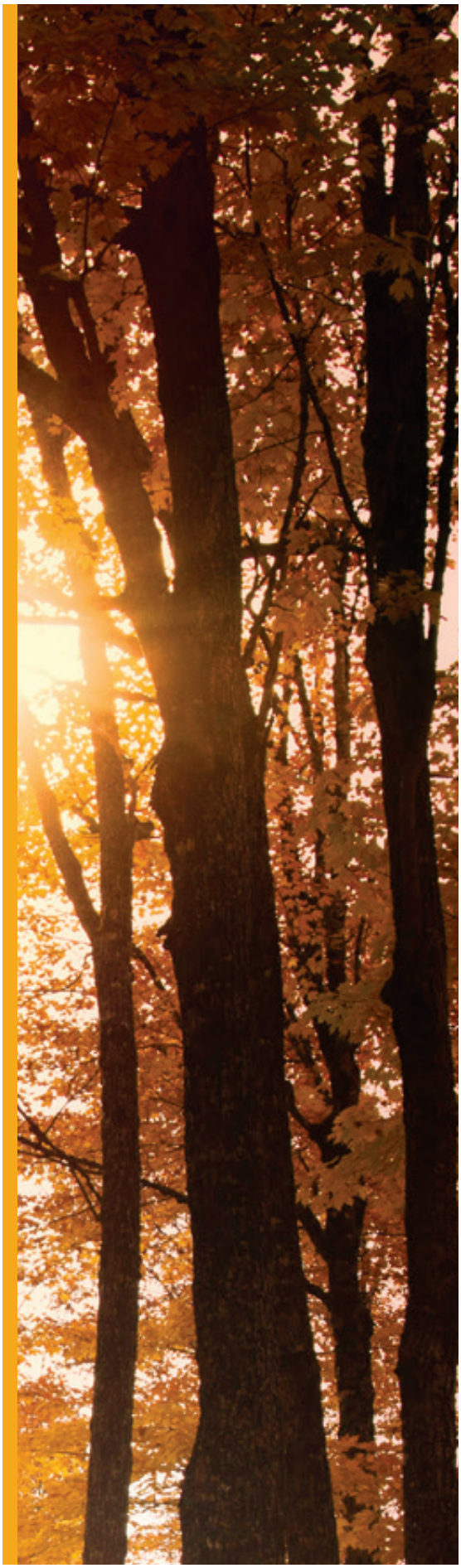
Honoured to serve your customers

LAPIERRE EQUIPMENT is honoured to actively assist maple syrup producers during the sugar season.

Today you have made a wise choice for at least two good reasons: the superior quality of our products and the exceptional quality of all our expert advisers in the region.

We sincerely appreciate your trust. And we will be happy to serve you again in your future equipment purchases, regardless of the size of your sugar bush.

Thank you!



Lapierre Equipment Inc.

99 Rue de l'Escale, Saint-Ludger (QC) Canada G0M 1W0

819 548.5454 | 1 833 548.5454 | info@elapierre.com

www.elapierre.com

5000 SERIES REVERSE OSMOSIS (R.O.)
PLUMBING: INSTALLATION AND DRAINAGE

LAPIERRE naturally innovative

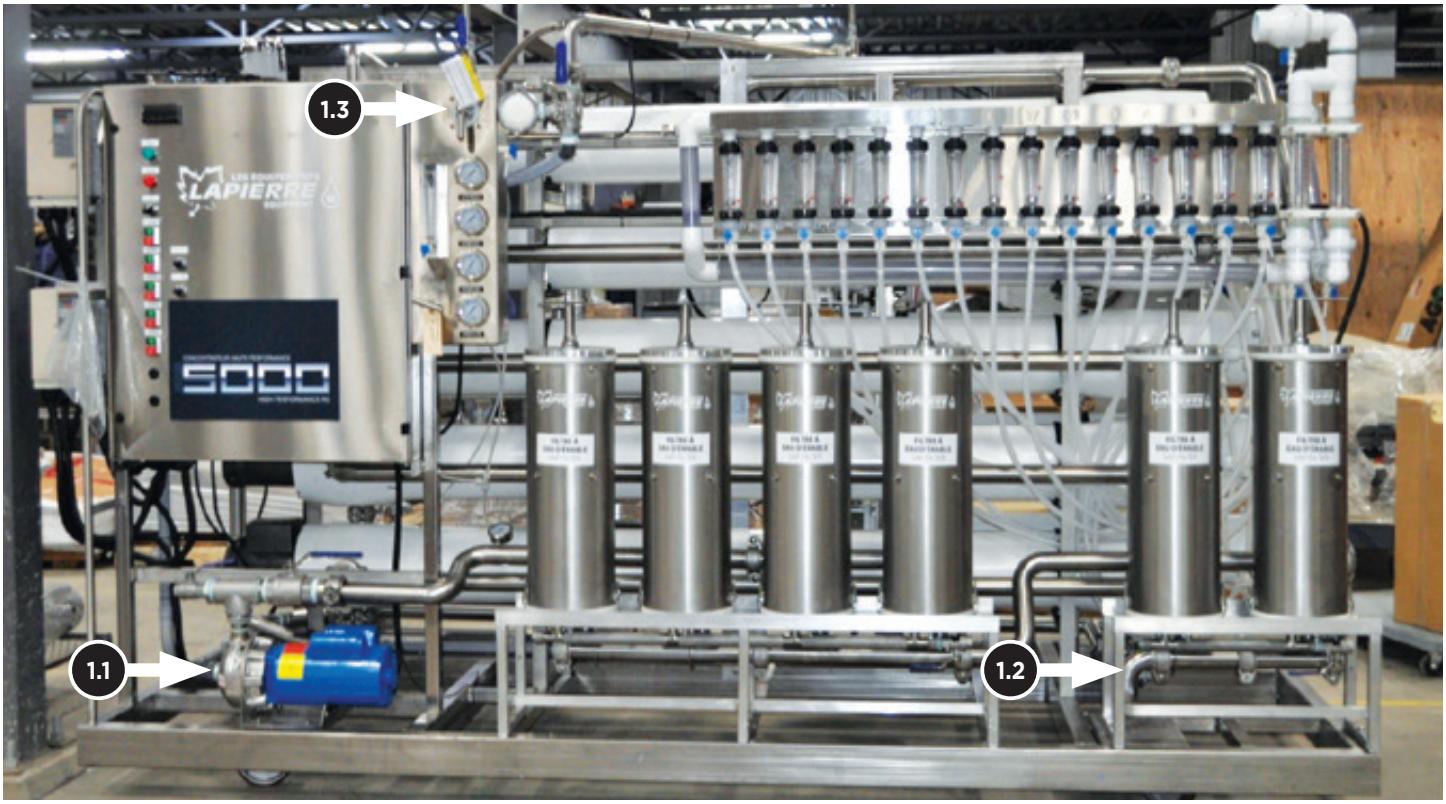
LATEST VERSION OF THIS USER'S MANUAL: Please refer to our website for the latest version of this user's manual.

TABLE OF CONTENTS

MAINTENANCE LEGEND

SECTION 1 **FRONT VIEW OF THE 5000 SERIES R.O.**

This section refers to the following components:



1.1 Feed pump.

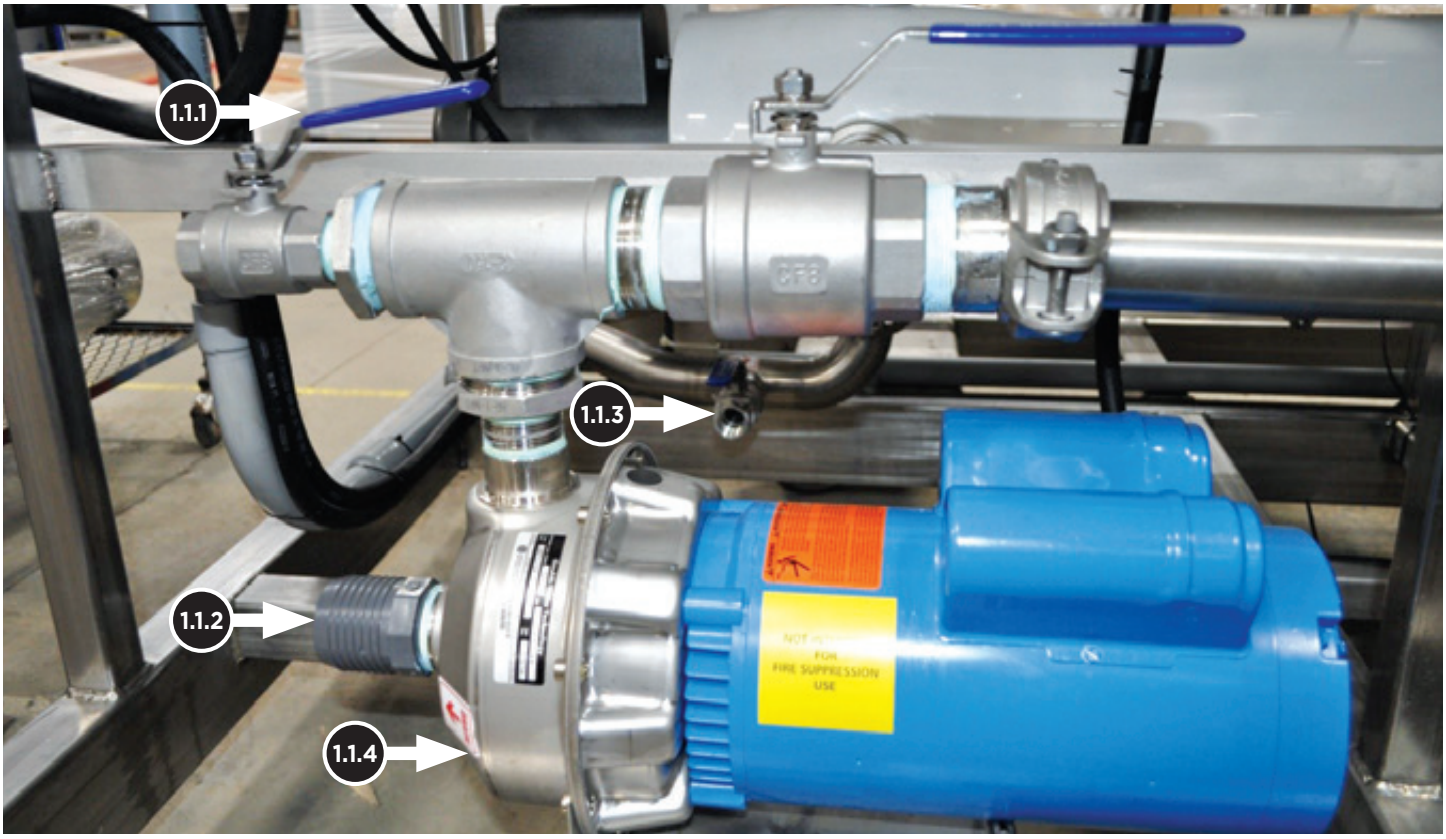
1.2 Sap filter draining valves.

1.3 5-way valve: control panel.

1.4 5-way valve: identifying the backflow paths (see photo page 6, *Section 1.4*).

1.5 Sampling and draining valves (see photo page 7, *Section 1.5*).

1.1 FEED PUMP



1.1.1 Valve through which air is bled to allow the feed pump to prime.

- Open the valve, insert a flexible hose into it and direct it into the drain, then turn on the sap supply.
- When the pump is loaded with sap, close the valve.

1.1.2 Hose (barbed) connection to receive maple sap and permeate.

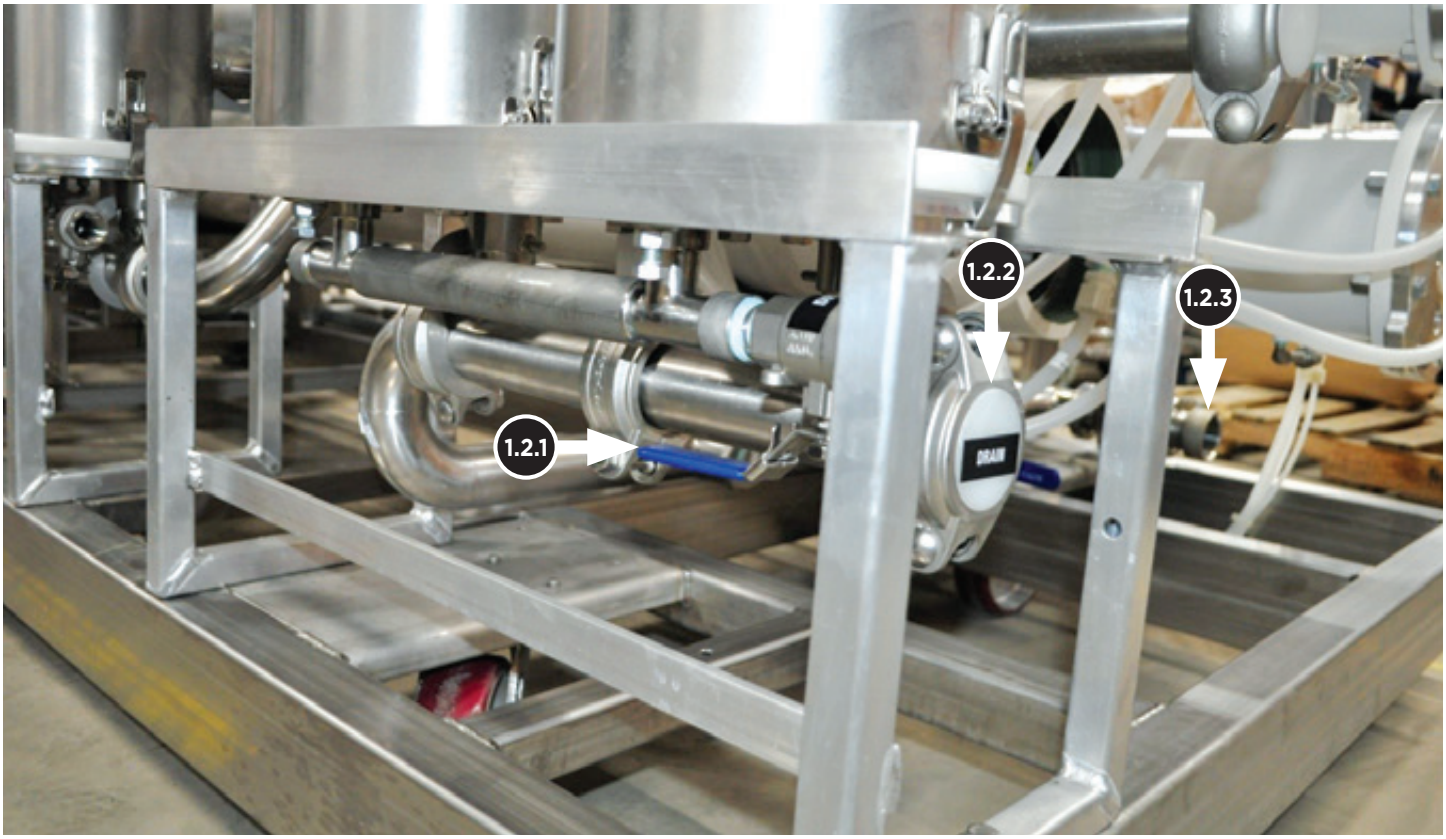
- Depending on the cycle, the inlet of the feed pump should be connected to one of the following two tanks:
  - During the concentration cycle, to the maple sap tank.
  - During the rinsing and desugaring cycles, to the permeate tank.
- This maintenance operation, i.e. rinsing and desugaring, must be performed at the end of each day of the feed pump's operation.

1.1.3 Draining valve for the double pressure vessels.

1.1.4 Feed pump head drain plug.

- Remove this plug to drain the feed pump.
- This maintenance is to be performed at the end of the season.

1.2 SAP FILTER DRAINING VALVES



1.2.1 Draining valve for pre-filtration units.

- Opening this valve allows draining of the cylinders before changing the filters.
- Sap filters can be cloth and/or cartridge filters.

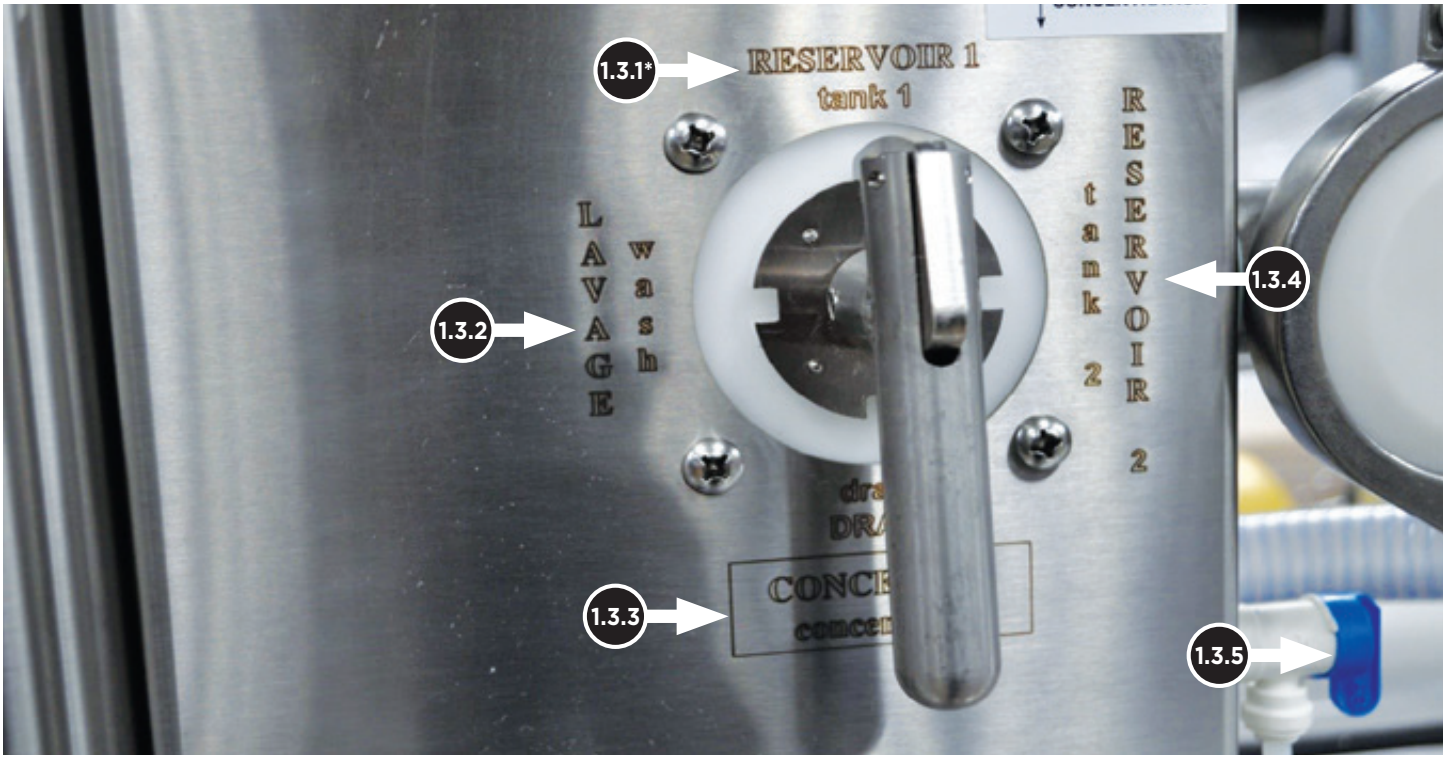
1.2.2 Outlet cap for sap filter draining.

- This maintenance is to be performed at the end of the season.

1.2.3 Inlet for receiving cleaning sap.

- This sap comes from the outlet from the wash tank filter (see page 18, *Section 4: item 4.2.1*).

1.3 5-WAY VALVE: CONTROL PANEL



1.3.1 Flow path to Concentrated Sap Tank No. 1.

*** Function shown in the photo. Note the position of the handle**.

1.3.2 Sap flow path to the wash tank.

1.3.3 Sap flow path to the drain.

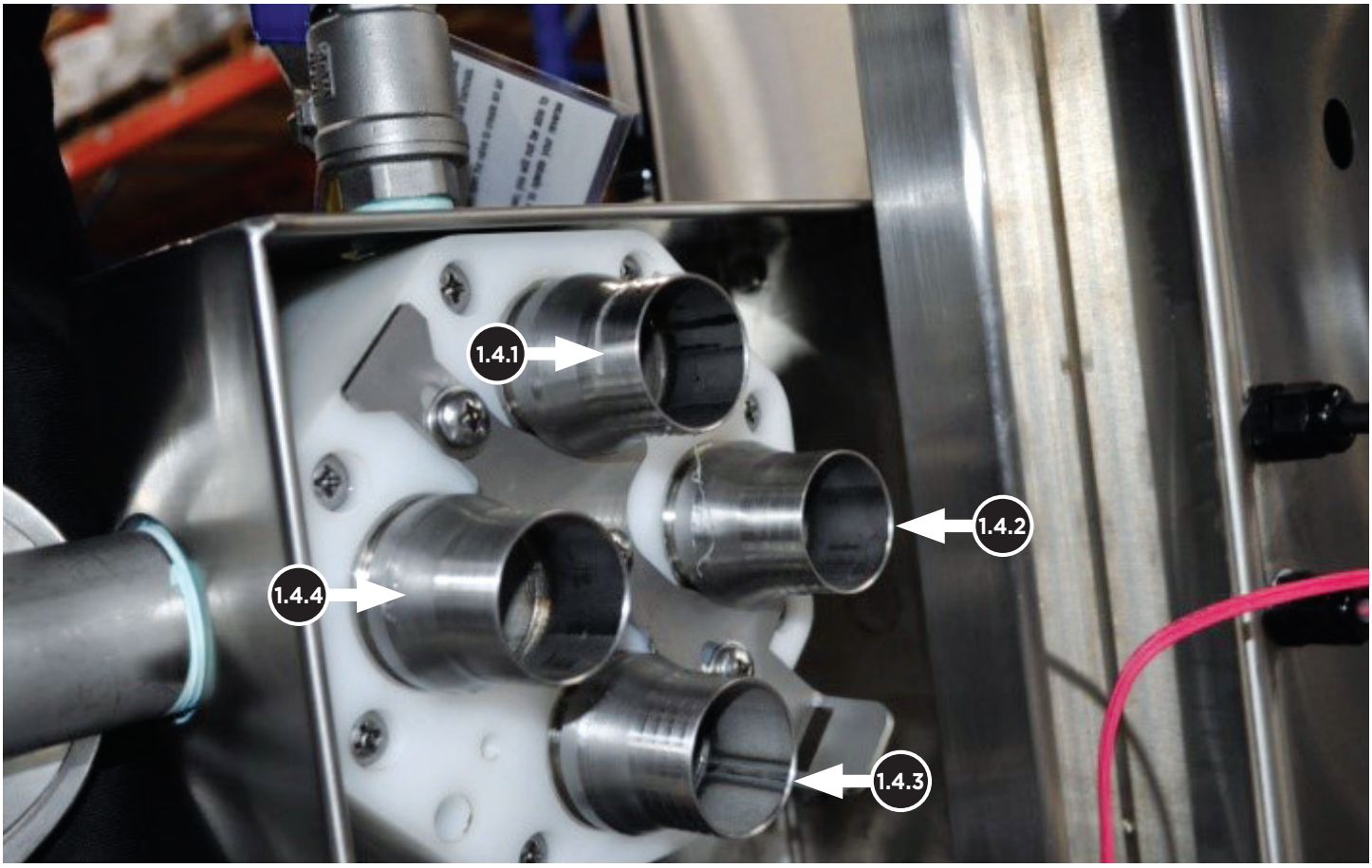
1.3.4 Maple sap flow path to its tank of origin.

- Bring the lever to this position at the beginning of the concentration cycle.
- Leave in position until the desired Brix level is reached.
- Then move the lever to position 1.3.1 which delivers the maple sap at the desired Brix level to Concentrated Maple Sap Tank No. 1.
- The lever position can be changed while the equipment is running.

1.3.5 Drain valve of the 5-way valve.

- This valve allows the draining of the valve head.
  - To drain fluid from the rear flow paths, leave this valve open and turn the lever to each position on the control panel. Note that the lines must run upward to perform this draining.
- This maintenance is to be performed at the end of the season.

1.4 5-WAY VALVE: IDENTIFYING THE BACKFLOW PATHS



1.4.1 Flow path to Concentrated Tank No. 1.

1.4.2 Water flow path to the wash tank.

1.4.3 Flow path to the drain.

1.4.4 Maple sap flow path to its tank of origin.

1.5 SAMPLING AND DRAINING VALVES

Sampling valves for collecting concentrated sap to evaluate the Brix degree (1.5.3 and 4) as well as draining valves (1.5.1, 2 and 3).

1.5.1 Draining valve for the 5-way valve (see page 5, *Section 1: item 1.3.5*).

1.5.2 Valve attached to the check valve allowing the draining of the permeate located downstream of this check valve.

1.5.3 Two (2) valves for sampling the permeate and draining the flowmeters. The two valves allow these two functions.

1.5.4 Concentrate sampling valve.

Valves 1.5.1, 2 and 3 are also used as draining valves at the end of the season.

SECTION 2 **RIGHT SIDE VIEW OF THE 5000 SERIES R.O.**

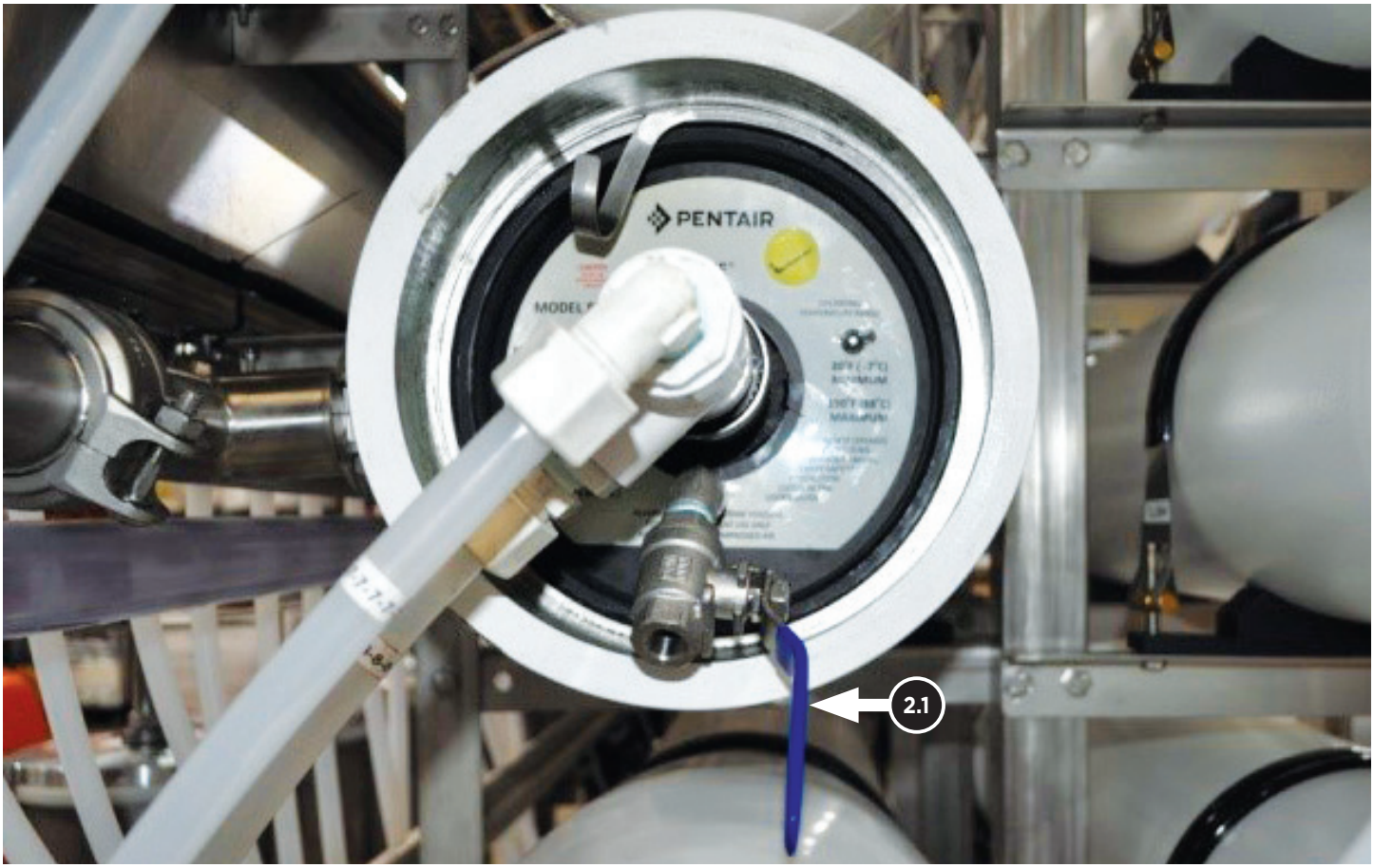
This section refers to the following components:

2.1 Draining valve for the pressure vessel and its upper pressure vessels.

2.2 System plumbing drain plug.

2.3 System plumbing draining valve.

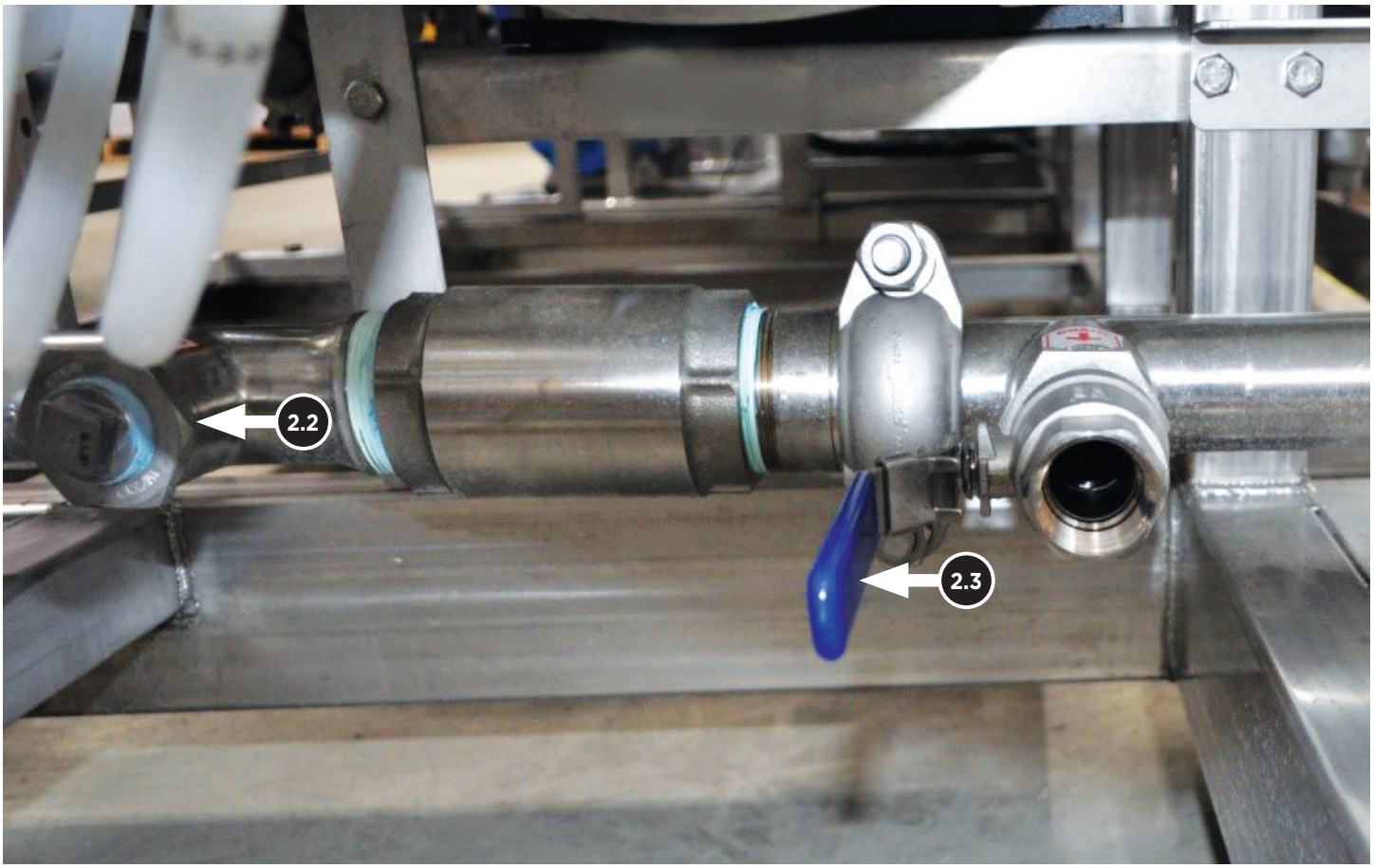
2.1 DRAINING VALVE FOR THE PRESSURE VESSEL AND ITS UPPER PRESSURE VESSELS



2.1 Draining valve for the pressure vessel and its upper pressure vessels.
This valve is used to drain the pressure vessel identified in the image and those above it.

2.2 SYSTEM PLUMBING DRAIN PLUG

2.3 SYSTEM PLUMBING DRAINING VALVE



2.2 System plumbing drain plug.

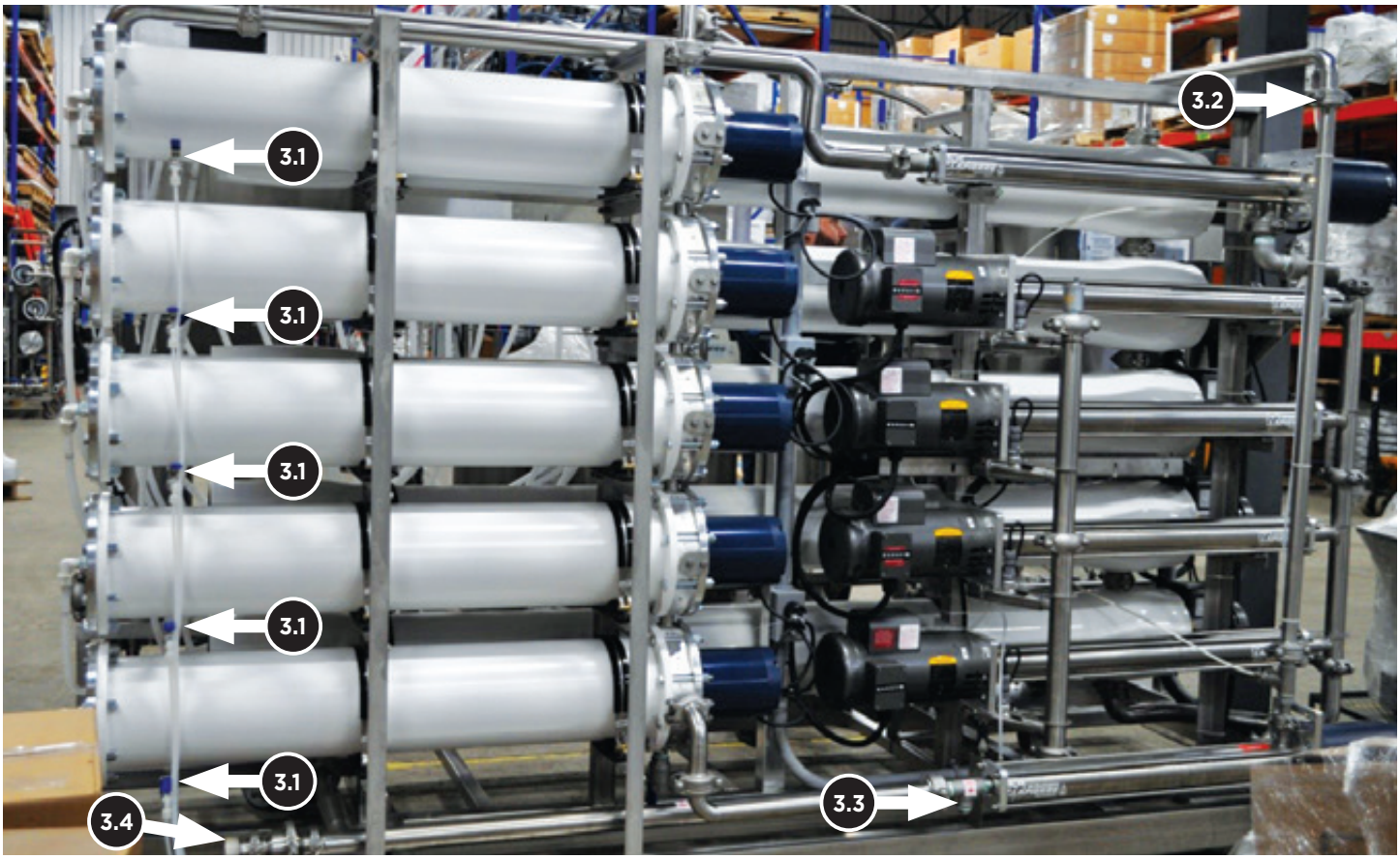
- At the end of the season, unscrew completely to drain the check valve. Then, screw it back in when the draining is completed.
- This maintenance is to be performed at the end of the season.

2.3 System plumbing draining valve.

- Draining valve for the line coming from the system, the line going to the high pressure pumps and the pumps themselves.
- This maintenance is to be performed at the end of the season.

SECTION 3 **REAR VIEW OF THE 5000 SERIES R.O.**

This section refers to the following components:



3.1 Draining valves, one for each pressure vessel. The model shown has five (5).

3.2 Air intake and draining valve for the sap supply to the booster pump.

3.3 Booster pump drain plug.

3.4 Water inlet from the wash tank.

3.1 DRAINING VALVES, ONE FOR EACH PRESSURE VESSEL

3.1 Pressure vessel draining valve.

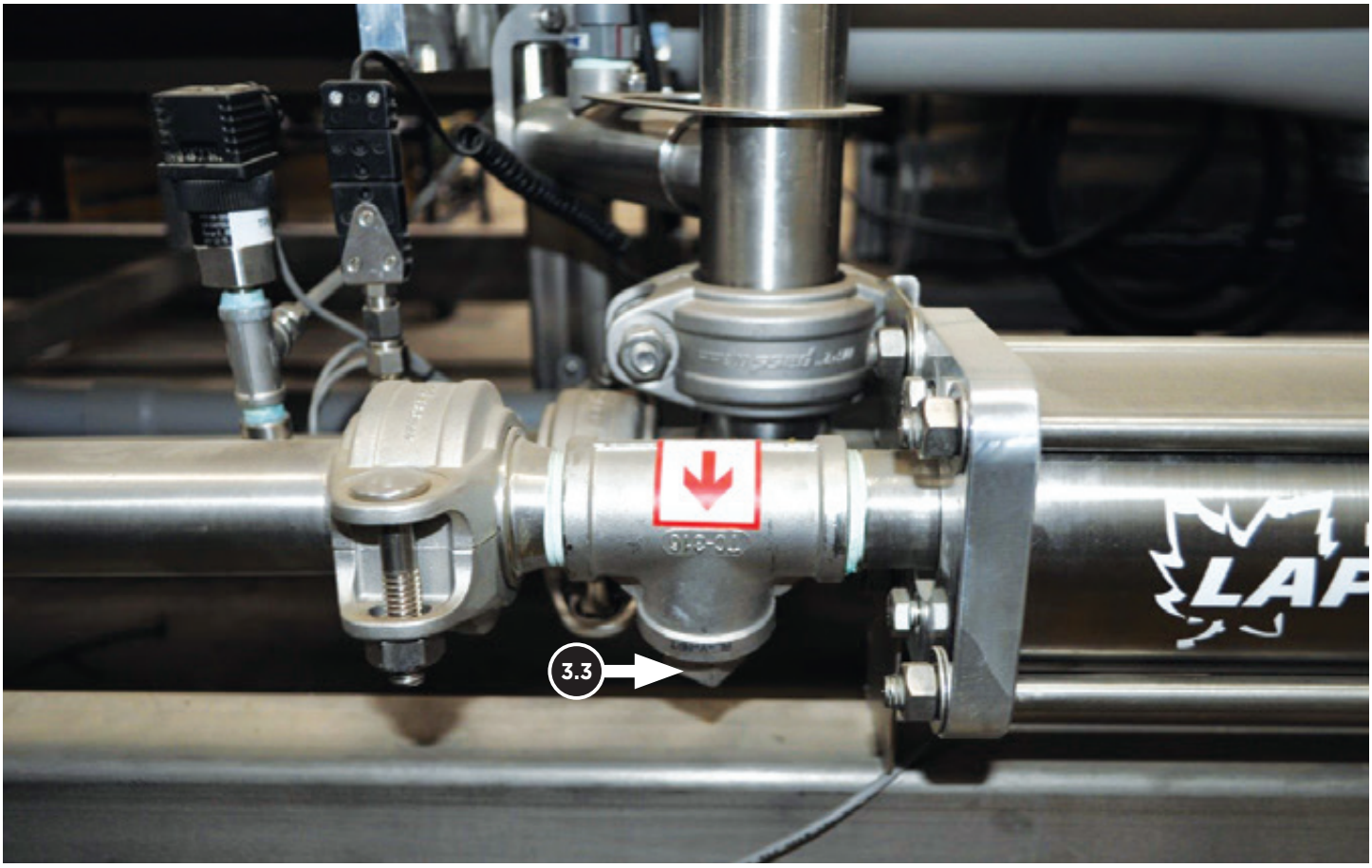
- Each pressure vessel is equipped with its own valve.
- Each pressure vessel must be drained before opening the cover.
- The pressure vessels must also be drained at the end of the season.

3.2 AIR INTAKE AND DRAINING VALVE FOR THE SAP SUPPLY TO THE BOOSTER PUMP

3.2 Air intake and draining valve for the sap supply to the booster pump.

- Open this valve to allow the entire system to drain.
- This maintenance is to be performed at the end of the season.

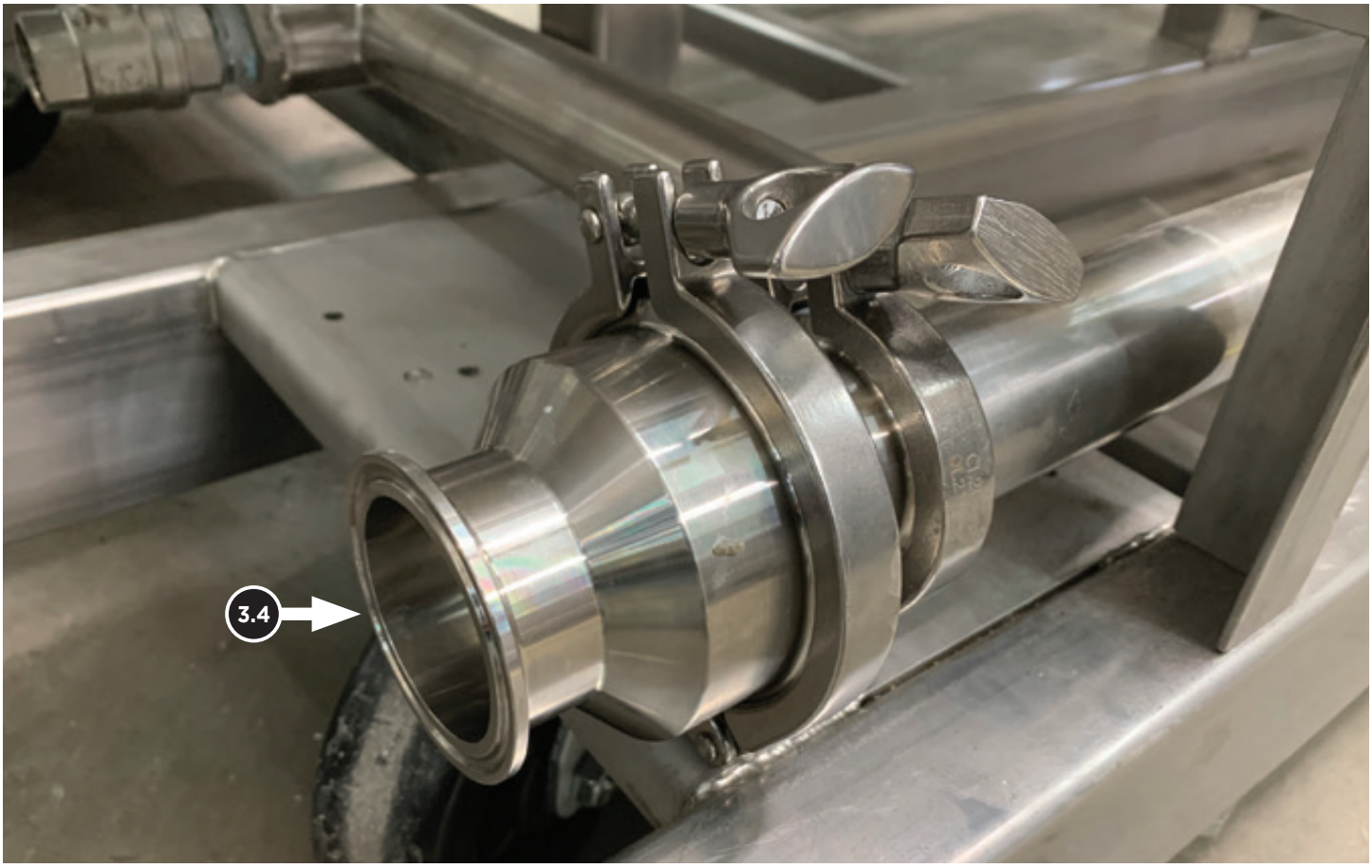
3.3 BOOSTER PUMP DRAIN PLUG



3.3 Drain plug for the booster pump. This pump is located on the right side of the photo.

- Unscrew the booster pump drain plug. Then screw it back on when the draining is complete.
- This maintenance is to be performed at the end of the season.

3.4 WATER INLET FROM THE WASH TANK



Refer to the photo on page 11 to locate the water inlet from the wash tank.

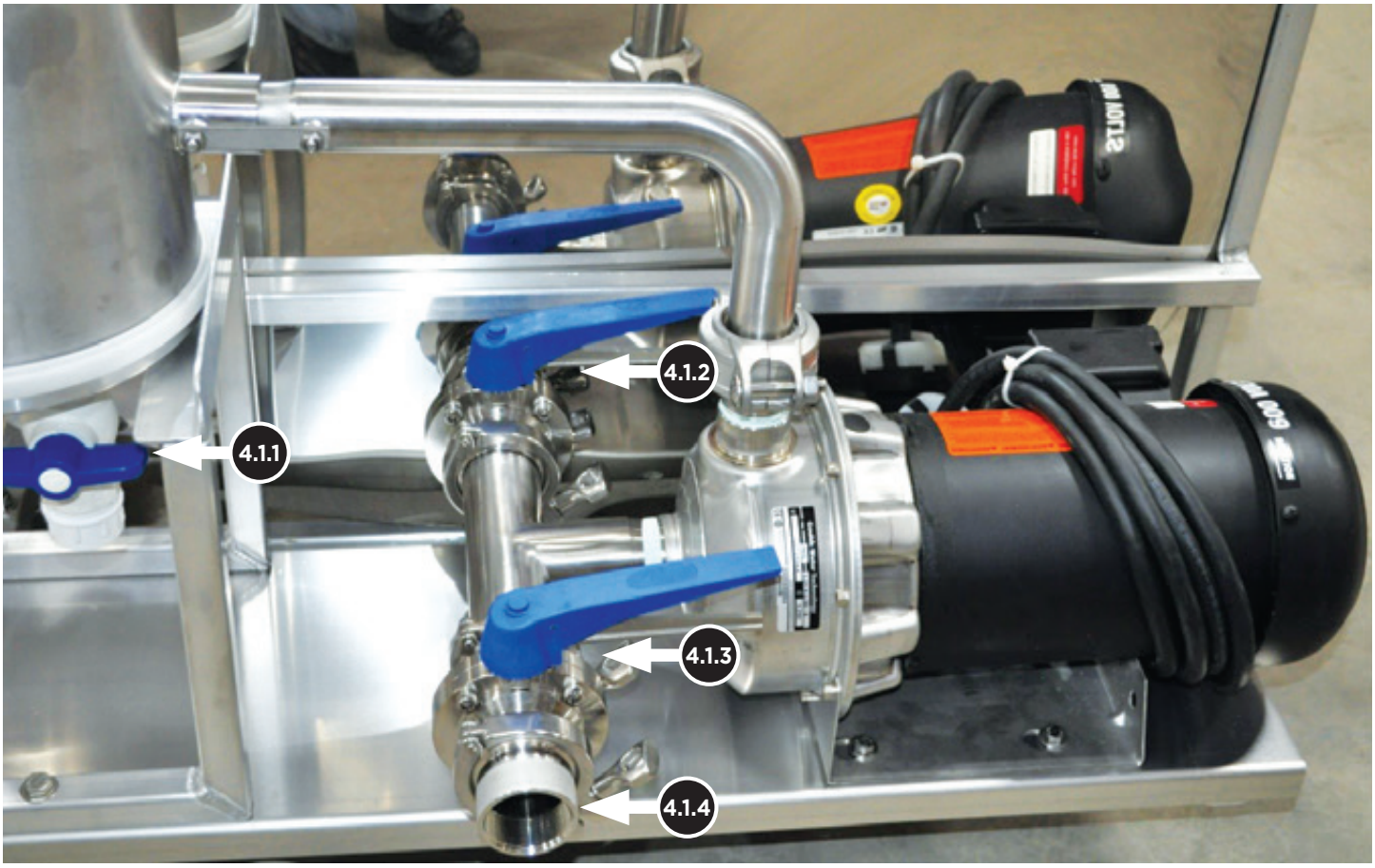
SECTION 4 **WASH TANK**

This section refers to the wash tank installation:

4.1 Wash pump: identifying the inlet and the valves (see photo page 17, *Section 4.1*).

4.2 Filter outlet to the R.O.

4.1 WASH PUMP: IDENTIFYING THE INLET AND THE VALVES



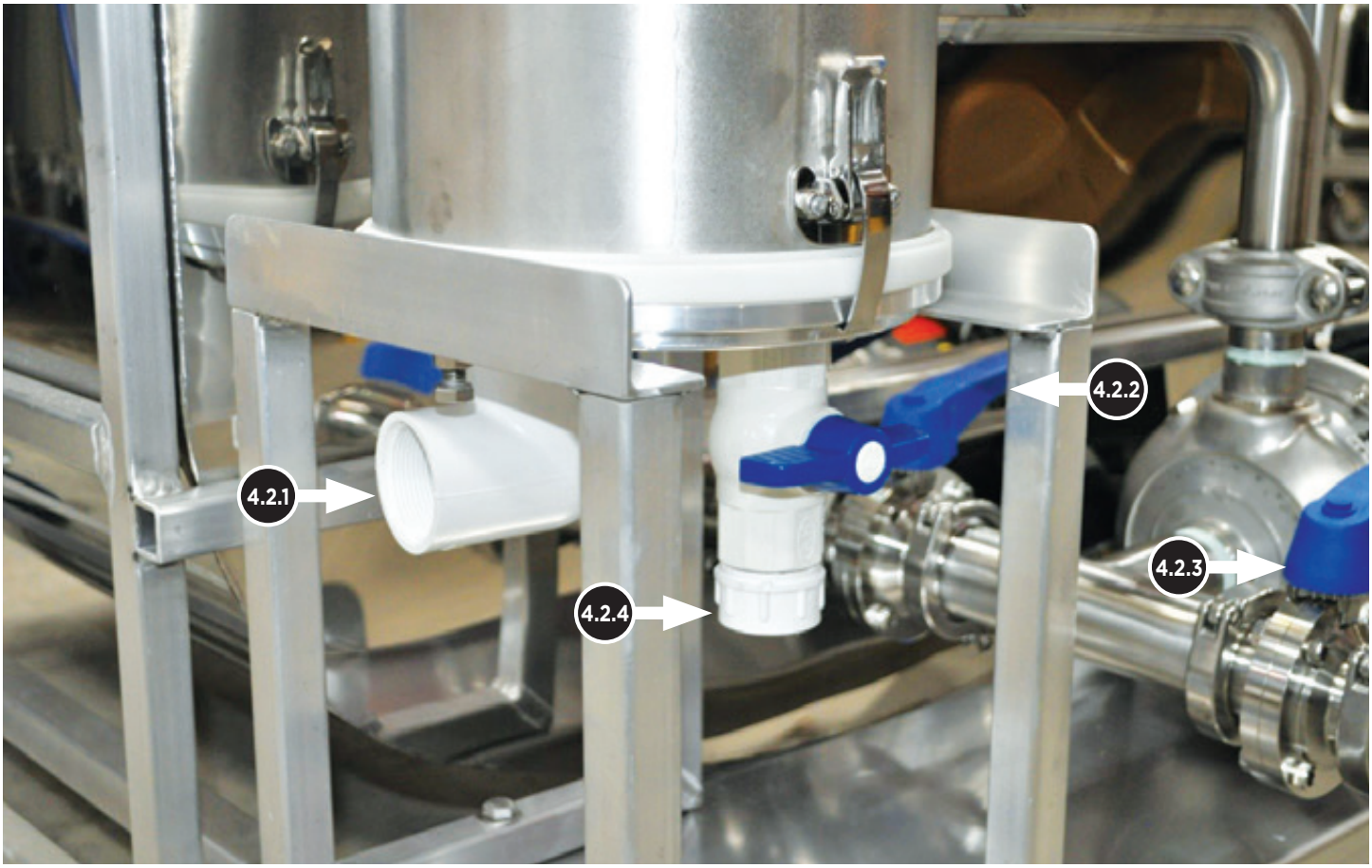
4.1.1 Draining valve from the wash filter.

4.1.2 Feed valve to the wash tank.

4.1.3 Feed valve for permeate.

4.1.4 Inlet (threaded end) to receive the permeate.

4.2 FILTER OUTLET TO THE R.O.



4.2.1 Outlet from the wash tank filter (see page 4, *Section 1: point 1.2.3*) to the water inlet of the R.O.

4.2.2 Feed valve to the wash tank.

4.2.3 Feed valve for permeate.

4.2.4 Draining valve from the wash filter.

SECTION 5 **PARTS AND CONSUMABLES**

Plumbing parts for your 5000 SERIES Reverse Osmosis (R.O.) or parts for any other equipment manufactured by LAPIERRE EQUIPMENT are available at our main plant in Saint-Ludger, Québec, Canada and at our service centers in Waterloo, Québec, Canada and Swanton, Vermont, USA. However, do not hesitate to contact us to locate the distributor nearest you.

HEAD OFFICE and MAIN PLANT
Lapierre Equipment Inc.
99 Rue de l'Escale
Saint-Ludger (QC)
G0M 1W0

Toll Free 1 833 548-5454
Telephone 819 548-5454
Fax 819 548-5460
info@elapierre.com

SERVICE CENTER and PRODUCTION PLANT
Lapierre-Waterloo-Small Inc.
201 Rue Western
Waterloo (QC)
J0E 2N0

Toll Free 1 833 548-5454
Telephone 450 539-3663
Fax 450 539-2660
info.lws@elapierre.com

SERVICE and DISTRIBUTION CENTER
Lapierre USA Swanton
102 Airport Access Road
Swanton, VT
05488

Telephone 802 868-2328
Fax 802 868-9281
info.usa@elapierre.com

www.elapierre.com

NOTES

NOTES

LAPIERRE
naturally innovative

We sincerely appreciate your trust.

Thank you!

99 Rue de l'Escale, Saint-Ludger (QC) Canada G0M 1W0

819 548.5454 | 1 833 548.5454 | info@elapierre.com | www.elapierre.com