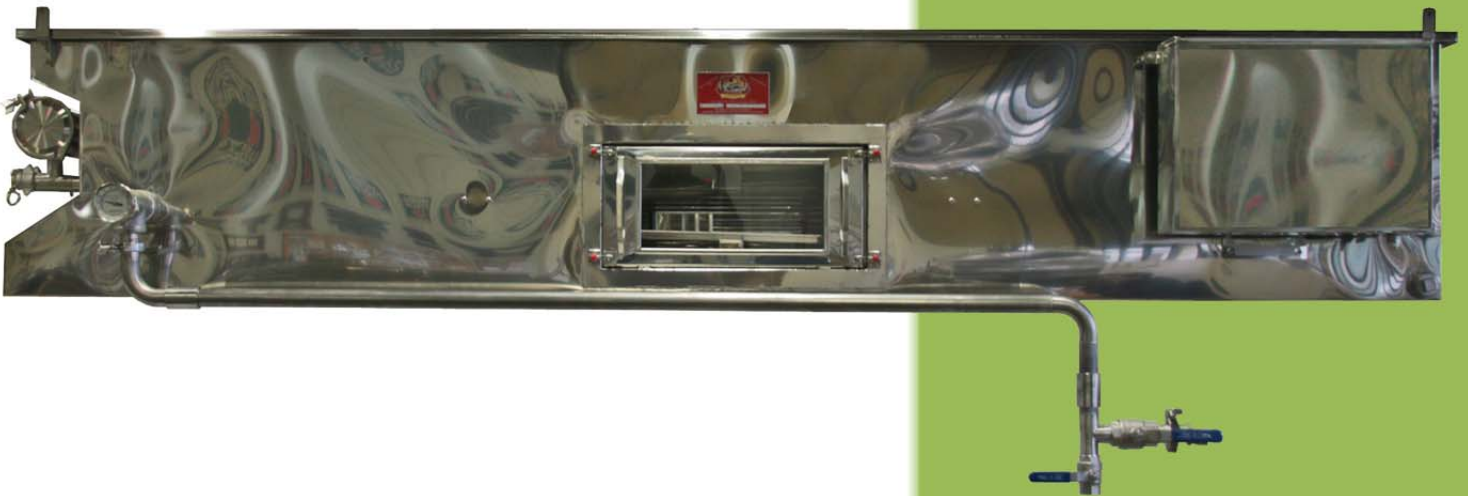




# Steam-Away



Models Year 2017 and After

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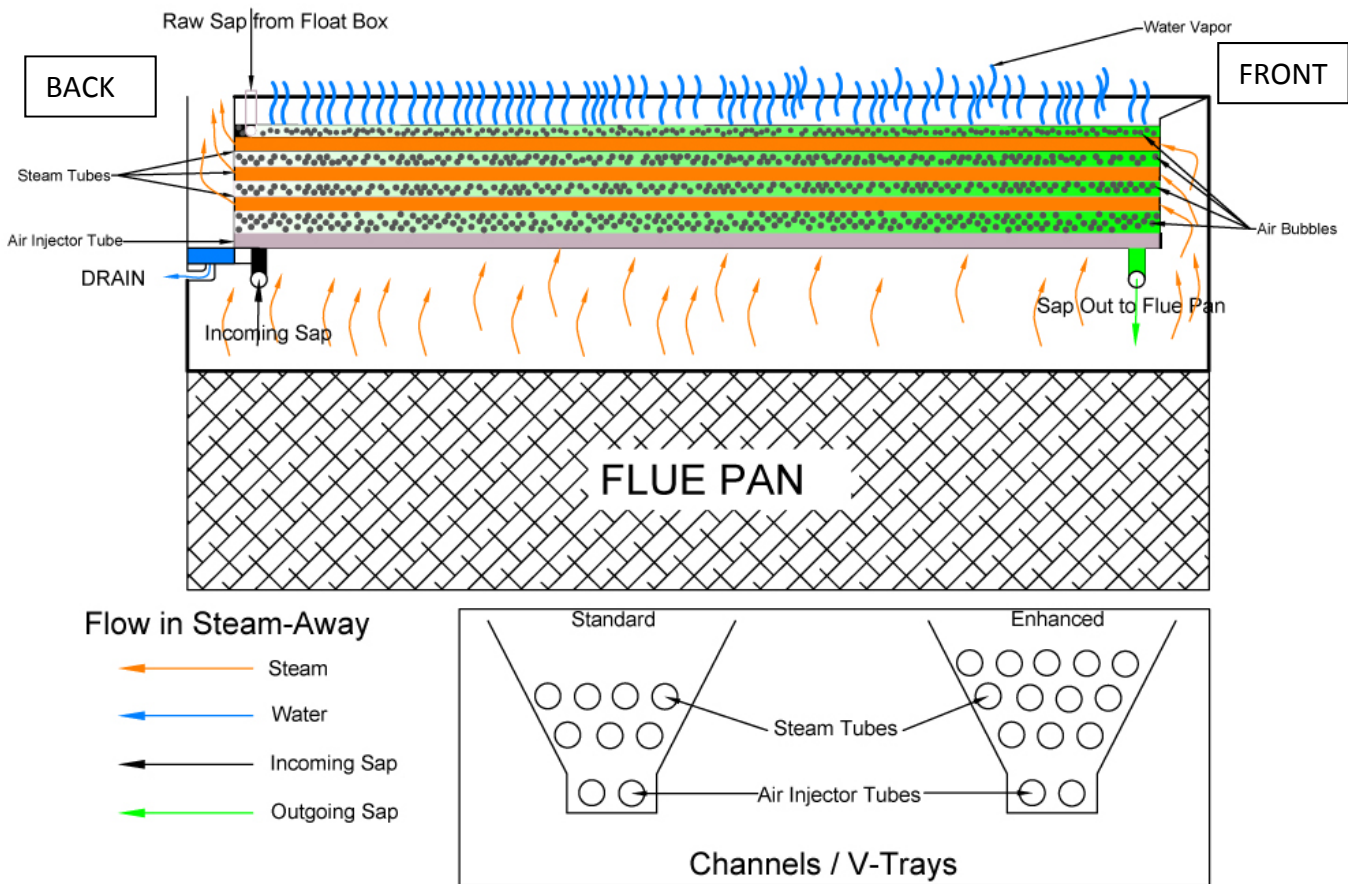
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# INTRODUCTION: THEORY OF OPERATION

The Leader Evaporator Steam-Away is designed to increase the efficiency of the users evaporator by preheating and increasing the concentration of the sugar in the sap prior to its entering the flue pan.

The sap enters the Steam-Away through the regulator float box. The sap travels into channels called v-trays running back to front in the Steam-Away. Each channel consists of the sap area, two air injector tubes and steam tubes (7 for a standard Steam-Away and 12 for an Enhanced Steam-Away). As the sap travels through the channel, it is heated by the steam (from the flue pan) passing through the steam tubes. The water in the sap being heated has an increased evaporation rate. Additionally as the sap is inside the channel, air is bubbled through it increasing the surface area. As the bubbles break at the surface of the sap more water vapor is released.

The following diagram illustrates how the Steam-Away processes sap. Raw sap enters the Steam-Away at the end toward the back of the flue pan. The evaporation occurs as the sap flows through the channels. The concentrated sap is fed into the regulator box at the end toward the front of the flue pan. Steam from the flue pan enters the Steam-Away from the front of the flue pan, travels through the steam tubes and exits the Steam-Away at the back end of the flue pan.



| WIDTH OF STEAM-AWAY (Inches) | NUMBER OF V-TRAYS |
|------------------------------|-------------------|
| 24                           | 2                 |
| 30                           | 2                 |
| 36                           | 3                 |
| 40                           | 3                 |
| 48                           | 4                 |
| 60                           | 5                 |
| 72                           | 6                 |











# EQUIPMENT DESCRIPTION

NOTE: Pictures, sketches and drawings presented in this document are not to scale.



A right feed Steam-Away is defined as the regulator float box assembly being on the right side of the Steam-Away when standing facing the front of the evaporator. A left feed Steam-Away is defined, as the regulator float box assembly being on the left side of the Steam-Away when standing facing the front of the evaporator. With minor changes (purchasing and fitting of a new regulator float box) the fittings on the Steam-Away allow for setting up to feed from either side and to connect to the flue pan from either side.

The Leader Evaporator Steam-Away consists of the following parts:

## INCLUDED PARTS


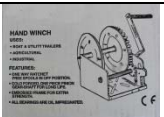







| ITEM  | LEADER ORDER #                             | DESCRIPTION/PHOTO   | ITEM                                 | LEADER ORDER #   | DESCRIPTION/PHOTO   |
|---|--|---|--------------------------------------|--|---|
| Steam-Away  | Available for evaporators from 2X6 to 6X16 |    | Hangers (Qty.: 4 – 2 Sets of 2 each) |  |    |
| Regulator Float Box (available in Left or Right)  |  |    | Float                                | 59025  |    |
| ¼" X 3" Stove Bolts (Qty.: 2)   | 72454                                      |   | ¼" X ¾" Stove Bolts (Qty.: 8)        | 72442  |   |
| ¼" Hex Nuts (Qty.: 14)  | 72551                                      |  | 1 Blower (Motor and Blower Kit)      | Standard Steam-Away 2X6 – 1/3 Hp.<br>Standard Steam-Away Larger then 2X6 – 1 Hp.<br>Enhanced Steam-Away Less than 5 Foot in Width – 1 Hp.<br>Enhanced Steam-Away More Than 4 Foot in Width – 3 Hp. - |  |
| 3MM Allan Wrench (Butterfly Valve)  | 60140                                      |  |                                      |  |   |
| Steam-Away Gasket Rubber Bulb Seal (Length equal to 2 sides and ends of the Steam-Away) | 42998                                      |  | Adhesive Transfer Tape ½"            | 72999  |   |

| ITEM  | LEADER ORDER #   | DESCRIPTION/PHOTO   | ITEM   | LEADER ORDER #  | DESCRIPTION/PHOTO   |
|---|--|---|--|---|---|
| Heavy Duty 2" Clamp (Qty: 2, 1 installed)   | 72246  |    | Teflon Gasket 2" (Qty: 2, 1 installed)                                 | 65620   |    |
| Square to Round Adapter (1/2 HP)  | NOTE:<br>When Ordering Adapters specify the horsepower of the blower.              |   | Square to Round Adapter (3 HP Blower)                                  | NOTE:<br>When Ordering Adapters specify the horsepower of the blower. |    |
| Square to Round Adapter (1 HP Blower)<br><br>NOTE: When Ordering Adapters specify the horsepower of the blower. | 43002<br><br>NOTE:<br>When Ordering Adapters specify the horsepower of the blower. |    | Aluminum Airtight Tape   | 43006   |   |
| Stainless Steel Cap 2" (Installed)  | 72249  |   | 2" Modified Stainless Steel Outgoing Tee                               |   |   |
| Stainless Steel 1/4" Square Head Plug (Installed in Reducing bushing)   | 72166  |  | Stainless Steel 2" X 1/4" Reducing Bushing (Installed in outgoing tee) | 72319   |  |
| Stainless Steel 2" Close Nipple (Installed in outgoing tee)   | 72170  |  | Stainless Steel 2" Plug (Will Already be Installed)                    | 72167   |  |
| Heavy Duty 1 – 1/2" Clamps (Qty.: 2)  | 72245  |  | Teflon Gasket 1 – 1/2" (Qty.: 2)                                       | 65621   |  |
| Flue Pan Connection Pipe  |  |  | Flue Pan Regulator Box Adapter   |   |  |
| Regulator Box Connection Assembly   |  |  | Instructions   |   |  |
| 4" Heavy Duty Stainless Steel Clamp (Qty: 2)  | 72288  |  | 4" Stainless Steel End Cap   | 72286   |  |




| ITEM                         | LEADER ORDER # | DESCRIPTION/PHOTO   | ITEM                                      | LEADER ORDER # | DESCRIPTION/PHOTO   |
|------------------------------|----------------|---|---|----------------|---|
| 4" Teflon Gasket<br>(Qty: 2) | 72287          |  | Blower Pipe Adapter/Connector<br>4" to 6" |                |  |

## OPTIONAL SETUP PARTS, REPLACEMENT PARTS AND SUPPLIES

NOTE: Dependent on the Evaporator package purchased, some of the following items may be included.

| ITEM                                    | LEADER ORDER # | DESCRIPTION/PHOTO  | ITEM                                   | LEADER ORDER # | DESCRIPTION/PHOTO   |
|---|----------------|--|--|----------------|---|
| Hood Sized to Fit Steam-Away            |                |  | Rubber Coupler<br>6"X6"                | 64426          |    |
| STEAM-AWAY SUPPORT KIT                  | 43001          | Kit consists of the parts listed and in the quantities below. Each item is available individually for order. |  |                |   |
| Hand Winch<br>(Steam-Away)<br>(qty.: 2) | 43013          |                             | 1/8"X100' Cable                        | 43011          |   |
| Double Pulley 2"<br>(Qty.: 4)           | 43009          |                            | Single Pulley 2"<br>(Qty.: 2)          | 43010          |   |
| Cable Clamp<br>(Qty.: 12)               | 43012          |                           | Turnbuckle for Steam-Away<br>(Qty.: 4) | 43014          |  |
| END OF STEAM-AWAY KIT LISTING           |                |  |  |                |   |
| Steam-Away Flex Duct                    | 43005          |                           | Steam-Away 100W Bulb (4 Pk.)           | 43007          |   |
| Steam-Away Light                        | 43000          |  | Aluminum Airtight Tape                 | 43006          |   |
| Blower Motor Only 1/2 Hp.               | 68293          |  | Blower Only for 1/2Hp.                 | 68294          |   |
| Blower Motor for 1 Hp..                 | 68301          |  | Blower Only for 1 Hp.                  | 68299          |   |
| Blower Motor for 3 Hp.                  | 68290          |  | Blower Only for 3 Hp.                  | 68291          |   |
| Stainless Steel 1/2" Ball Valve         | 60100          |                           | Stainless Steel 1/2" X 4" Nipple       | 72168          |  |

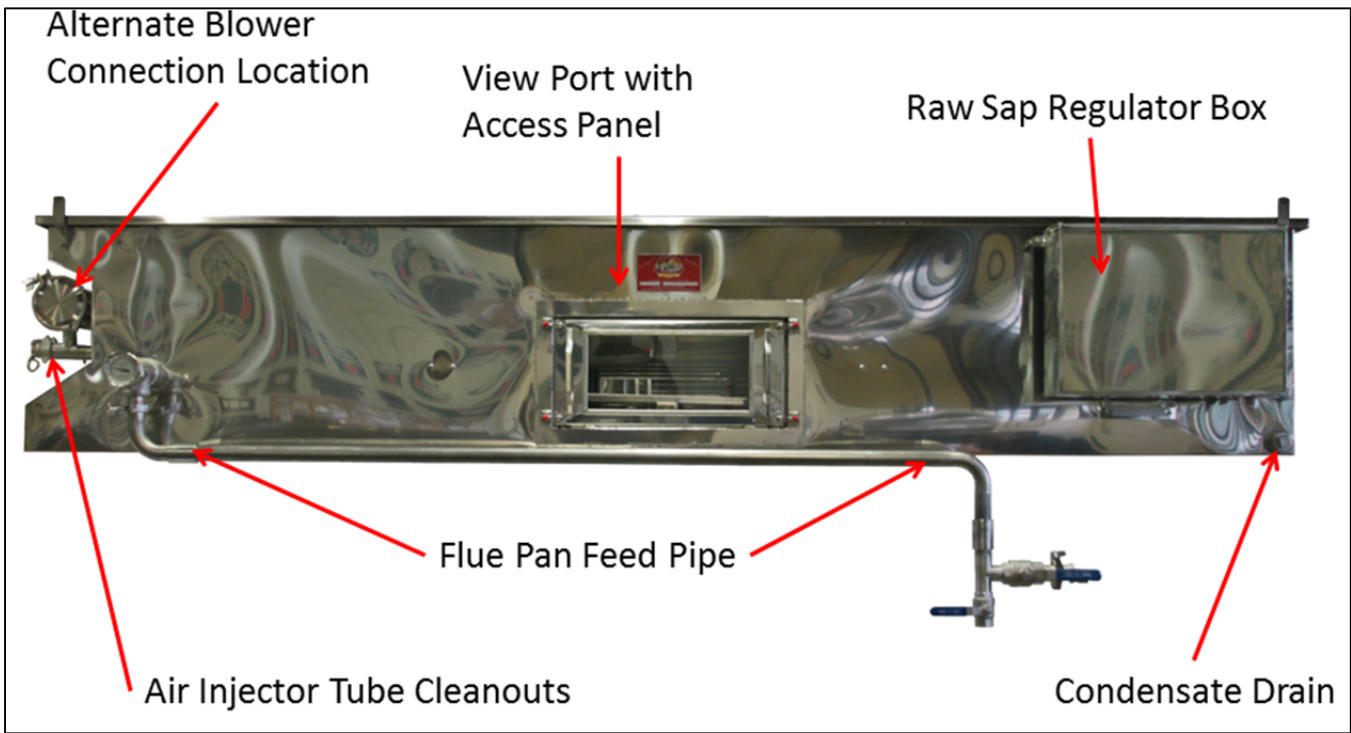


| ITEM                            | LEADER ORDER # | DESCRIPTION/PHOTO   | ITEM                          | LEADER ORDER # | DESCRIPTION/PHOTO   |
|---------------------------------|----------------|---|-------------------------------|----------------|---|
| Stainless Steel ½" Street Elbow | 72116          |  | Braided Hose ¾" (By the Foot) | 70287          |   |
| Thermometer, 0 - 250°F          | 61019          |  | Food Grade Lubricant          | 64436          |  |

## DIAGRAM OF THE STEAM-AWAY

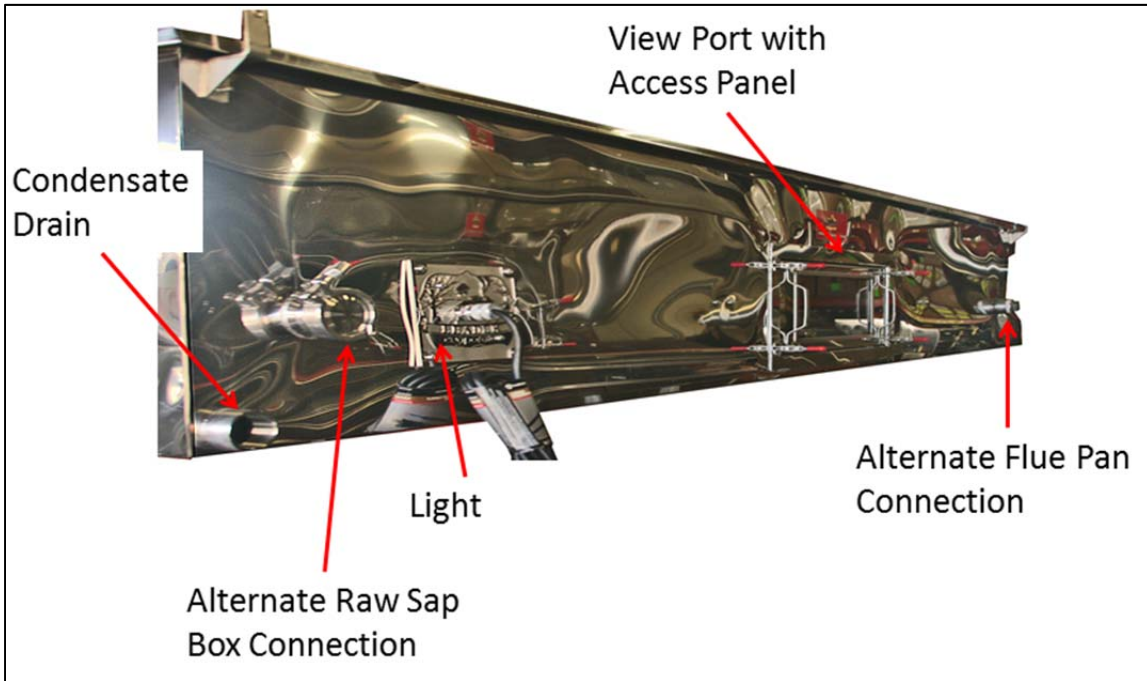
NOTE: Depending on the evaporator package purchased, some features may or may not be installed.

### RIGHT SIDE

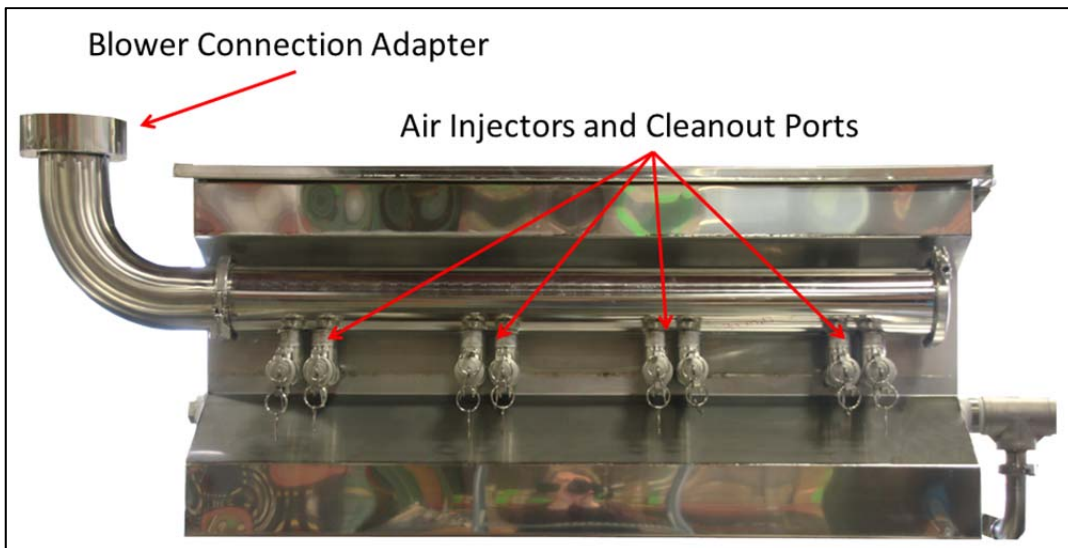


LEFT SIDE

ACCESS PANEL is optional depending on the evaporator package purchased.



FRONT





## SETUP OF THE LEADER STEAM-AWAY

*NOTE: The following information pertaining to setup of the Steam-Away is to be considered one suggested method. Installations should meet all applicable governmental regulations and standards.*

### RECEIVING YOUR STEAM-AWAY:

Upon receipt of the Steam-Away, it is recommended the following tasks be performed:

1. Protect all incoming materials from damage and the environment. If possible place the Steam-Away at the location where it will be setup.
2. Unpack all materials and check the received materials against the Equipment Description list provided above.
3. Immediately notify Leader Evaporator or your local dealer if there are questions on the received equipment.

### SUGAR HOUSE AND EVAPORATOR CONSIDERATIONS:

A Steam-Away will add height and weight to the evaporator. A number of items must be considered:

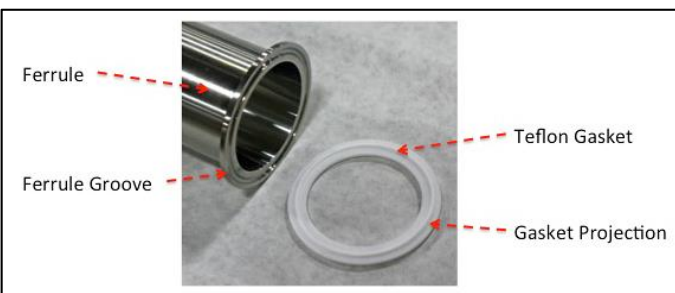
1. The sap feed tank will need to be raised approximately 22 inches in order to be above the top of the Steam-Away regulator box.
2. A steam hood for over the Steam-Away is recommended.
3. The clearance above the evaporator will change for the equipment added.
4. Ensure there is proper support for the steam stack as the height changes.
5. The blower for the Steam-Away should be mounted so there is easy access to power and to the air injector connector on the Steam-Away.
6. Condensate at 190°F to 200°F will be produced. It can be collected from the condensate drain for further use ex. for cleaning. Caution: hot water produced can collapse PVC (Schedule 40) plumbing, fittings and floor drains.
7. The Steam-Away will require additional support. A Steam-Away Support Kit can be supplied (Leader Evaporator Order # 43001) to aid with providing the necessary support.
8. Any connections to the Steam-Away must be done in a manner allowing the Steam-Away to be lifted for cleaning purposes.

**CAUTION: ALWAYS DRAIN ALL LIQUID FROM THE STEAM-AWAY PRIOR TO LIFTING OR MOVING.**

## INSTALLING THE STEAM-AWAY

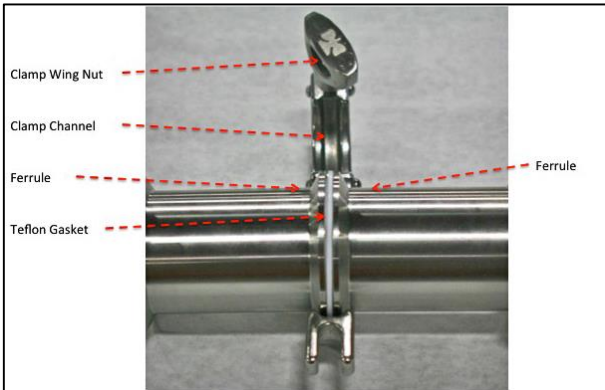
### USE OF CLAMPS WITH TEFLON SEALS

This section describes the use of Teflon gaskets, clamps and ferrules to make connections. The ferrules are welded in place to the items being connected. The Teflon gaskets and clamps are used as follows to complete the connections:



- a. Match the groove in the ferrule to the projection on the Teflon gasket.

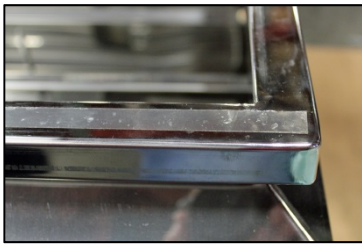
NOTE: The clamp does not rotate easily once placed over the ferrules. It is recommended you position the wing nut so it will be easy to access and will not be in a place where normal work is done.



- b. Place the clamp channel over the assembled ferrules and Teflon gasket. Ensure the gasket is properly seated in the ferrule prior to placing the clamp.
- c. Close the bolt of the clamp and tighten the wing nut.

## PREPARE THE FLUE PAN

1. If present, remove the flue pan steam hood and set aside. NOTE: Depending on when the flue pan hood was built it may not fit the Steam-Away. Please contact your dealer or your Leader Evaporator representative.

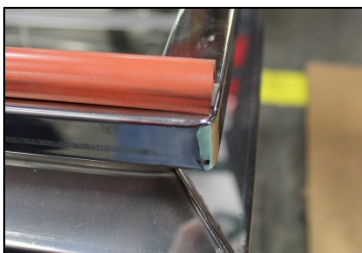


2. Cut 4 lengths of the supplied adhesive transfer tape; two of length for the right and left sides of the flue pan and two for the length of the front and back of the flue pan. Ensure all the top of the lip of the flue pan will be covered by the adhesive tape.



3. Install the tape by peeling the backer off one side of the tape and pressing the exposed side to the top lip of the flue pan.

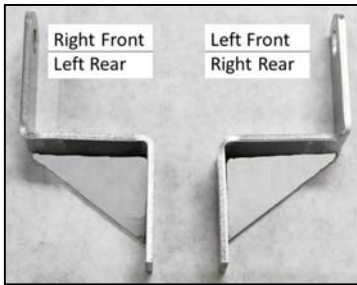
4. Cut 4 lengths of the supplied gasket rubber bulb seal; two of length for the right and left sides of the flue pan and two for the length of the front and back of the flue pan. Ensure all the top of the lip of the flue pan will be covered by the gasket.



5. Remove the top backer of the adhesive seal and press the rubber gasket into place on the adhesive.

## INSTALL THE STEAM-AWAY

1. Install a light bulb into the water tight light.
2. Attach the hangers to the Steam-Away. The attachment points are two holes located at the top on the long sides of the Steam-Away.



- a. Two sets of hangers are supplied. Separate them by the welded triangular support piece.
  - i. Right Front and Left Rear brackets
  - ii. Left Front and Right Rear brackets



- b. Use two  $\frac{1}{4}$ " X  $\frac{3}{4}$ " stove bolts and  $\frac{1}{4}$ " hex nuts for each hanger, attach to the Steam-Away. The bracket should point up vertically. Tighten securely.

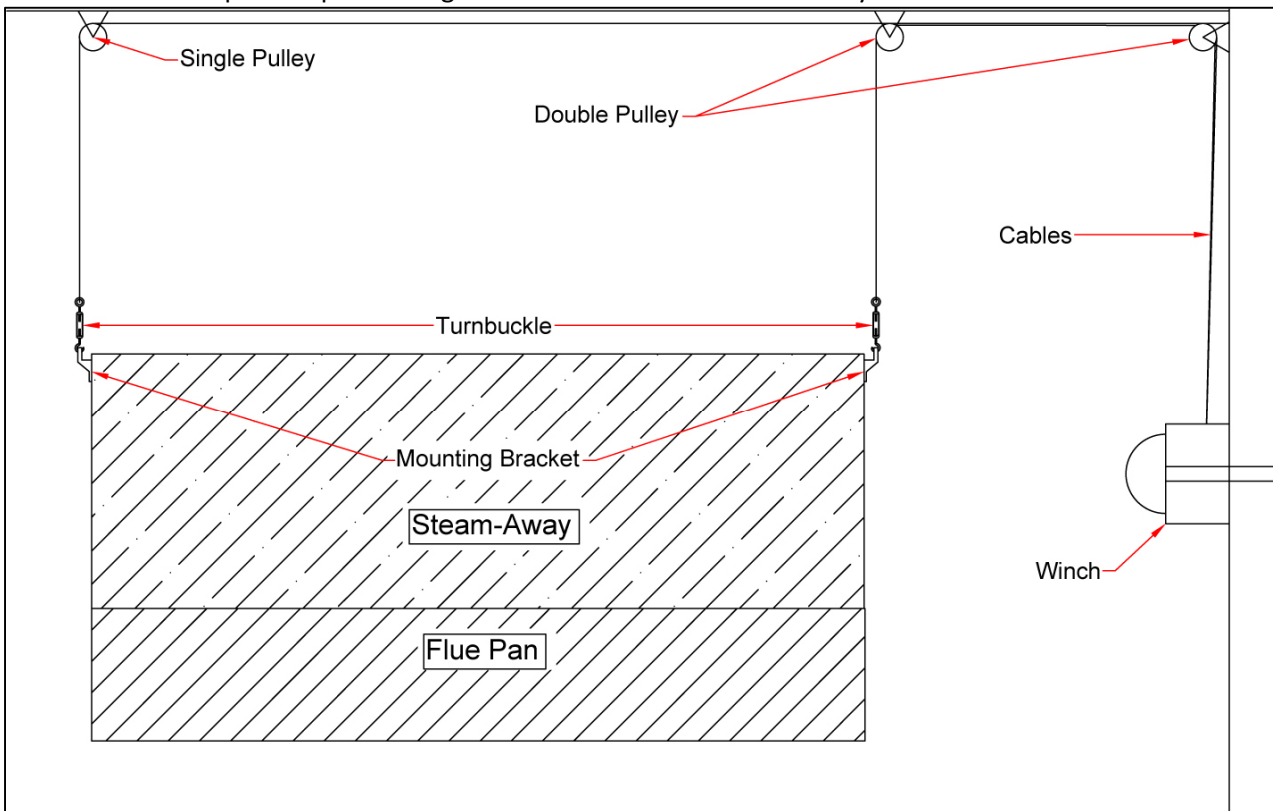
3. Place the Steam-Away on the flue pan. The front of the Steam-Away is to be placed on the front of the flue pan.
  - a. The ferrules for the sap regulator box are located at the right and left rear sides of the Steam-Away
  - b. The air injector connector and air injector cleanouts are located in the front of the Steam-Away.

4. The following section details one recommended method for installing the Steam-Away Support Kit:

NOTE: Always verify the support attachment points used in the building can handle the load.

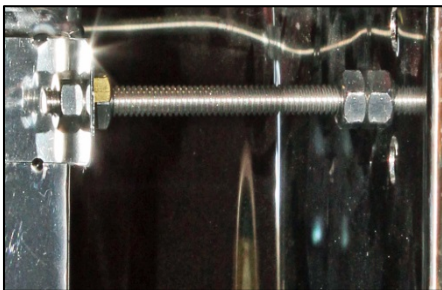
- a. Locate a rafter in line with the front hangers of the Steam-Away.
- b. Mount one of the supplied winches on the wall below the rafter selected. When mounting, take into account the rotation requirements for the handle of the winch.
- c. Mount a double pulley, with the pulley wheels straight up and down, on the wall in line with the winch. The pulley should be as high up the wall as possible while still allowing space for the cables to be passed through.
- d. Mount a double pulley, with the pulley wheels parallel to the short side of Steam-Away, to the rafter over the Steam-Away bracket closest to the wall with the winch. The mounting width required will be approximately 3".
- e. Mount a single pulley over the Steam-Away bracket on the opposite side of the Steam-Away. The mounting width will require approximately 2".
- f. Two lengths of cable will need to be cut from the supplied coil of cable. Estimate the lengths as described below add a few feet to each length then cut the cable.
  - i. One length will go from the winch through the two double pulleys down to the bracket on the side of the Steam-Away closest to the winch.
  - ii. One length will go from the winch through the two double pulleys to the single pulley down to the bracket on the opposite side of the Steam-Away.
- g. Secure one end of each cable to the winch.

- h. Run both cables through the double pulley mounted above the winch (one cable through each pulley) then through the double pulley over the bracket of the Steam-Away.
- i. Continue to run one of the cables through the single pulley at the far side of the Steam-Away.
- j. Run each cable down to the brackets at the side of the Steam-Away.
- k. Prepare the turn buckles by turning the ends so each side is approximately threaded halfway.
- l. Loop the cable through the closed hole of the supplied turn buckle. Secure the loop using a cable clamp.
- m. Hook the open end of each turn buckle into the hole in the bracket mounted to the side of the Steam-Away.
- n. Crank the winch until one of the cables is tight. Adjust the turn buckle on the other side of the Steam-Away until the cable on that side is equally tight. Ensure the cables pull equally after adjustment.
- o. Repeat steps a through n for the rear of the Steam-Away.

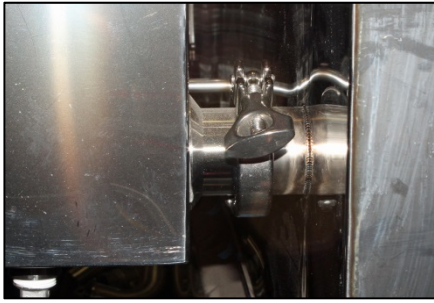


5. Install the sap regulator float box.

- a. Locate the mounting holes in the Steam-Away. If a left feed was ordered, the holes will be toward the top of the Steam-Away, on the rear left side in front of the support bracket. If a right feed was ordered, the holes will be toward the top of the Steam-Away, on the rear right side in front of the support bracket.



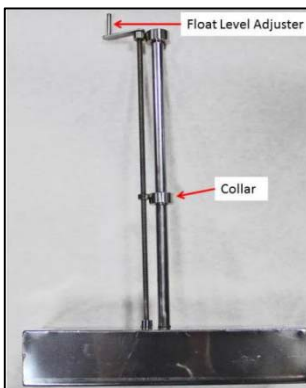
- b. Thread a  $\frac{1}{4}$ " X 3" stove bolt through each hole then thread a  $\frac{1}{4}$ " hex nut onto each of the bolts. Thread the nuts down to the Steam-Away and tighten.
- c. Thread a second hex nut onto the bolts about  $\frac{1}{4}$  way.
- d. Align the mounting holes of the regulator box to the exposed ends of the bolts then slide the box onto the bolts.
- e. Thread a nut onto each bolt and loosely tighten against the nut in the middle of the bolt.
- f. Level the float box side to side by adjusting the two outer nuts. When the box is level tighten the nuts one against the other.



- g. Connect the regulator float box to the Steam-Away using a Teflon gasket and 2" heavy duty clamp to secure the ferrules together.

- 6. Insert the regulator float into the regulator float box. Do not force the regulator arm. The following is one method of inserting the float:

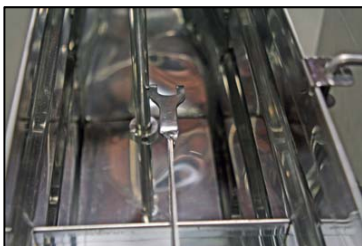
NOTE: The float should always be positioned so the stem is facing the fork of the regulator arm and the threaded adjustment rod is at the open end of the fork. When the float stem has been positioned under the regulator fork, ensure the adjustment collar is under the fork and the threaded rod is seated in the bracket on the float.



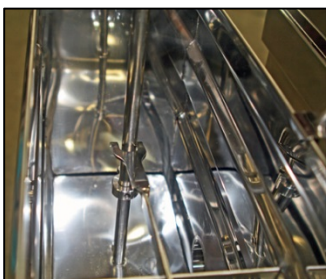
- a. Turn the float level adjuster until the collar is about halfway on the rod.



- b. Begin inserting the float into the float box while holding up the regulator arm. The float should be angled slightly toward the outside of the float box (away from the flue pan) and lengthwise on end to be able to slide under the regulator arm. The regulator arm will be on the flue pan side of the float stem.



- c. Continue to rotate the float downward and under the regulator arm until the float is resting on the bottom of the float box. The regulator arm will be on the side of the float stem.



- d. Rotate the float toward the rear of the float box until the regulator fork will slide around the float stem over the adjustment ring. Lower the float back to the bottom of the float box.





7. Install the flue pan Sap Regulator Float Box adapter into the side of the flue pan regulator box. Tape the threads and securely tighten into the threads in the side of the regulator box.



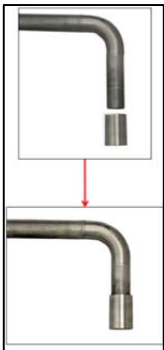
8. Install the flue pan regulator box assembly to the flue pan regulator box. The assembly is clamped to the float box adapter installed in the previous step. The assembly should be positioned vertically with the drain oriented down.



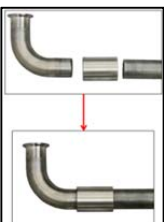
9. TEFLON tape the threads of the nipple installed in the outgoing tee then thread the outgoing tee into the side of the Steam-Away. Tighten with the clampable end vertically down. Note: Depending on the installation it may be necessary to remove the 2" plug from the coupler. If this is done, ensure there is a plug in the coupler located on the other side of the Steam-Away.

**NOTES:**

- When assembling slip fittings, lubricate the O-rings with food grade grease such as LEADER Order # 64436.
- When using slide fittings, ensure the pipes are slid into the fitting past the seals to prevent leakage.



10. Install the slip fitting onto the welded elbow end of the connection pipe. Note – this will be the end joined to the flue pan regulator box assembly.



11. Install the slip fitting between the straight open end of the connection pipe and the elbow section. Note – this will be the end joined to the outgoing tee.





12. Connect the connection pipe to the flue pan regulator box assembly by sliding the slide fitting over the exposed end of the assembly.



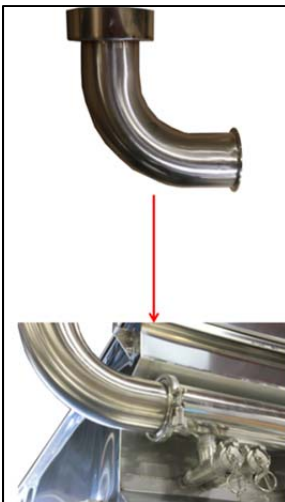
13. Connect the flanged end of the connection pipe to the flange of the outgoing tee assembly using a clamp and Teflon gasket.

14. Mount the blower securely in a location accessible to the air injector connector at the front of the Steam-Away. It is recommended it be outside the boiling room and under cover. It is recommended an ON / OFF switch for the blower be installed near the evaporator.

- a. 4.8 amps / 110V for 1/3 HP blower
- b. 12 amps / 110V for a 1 HP blower
- c. 25 amps / 240V for a 3 HP blower

15. Install the square to round adapter to the blower.

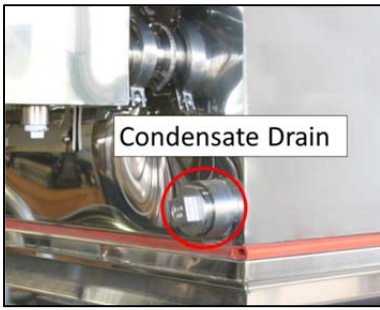
- a. Mark the supplied adapter with the corresponding hole locations in the blower housing.
- b. Drill the holes in the adapter so screws can be threaded into the blower housing.
- c. Insert screws through the adapter and tighten into the blower housing.



16. Using the 4" clamp and 4" TEFLON gasket, install the air injector adapter onto the Steam Away. It can be installed on either side depending on which side is best suited for connection to the blower. NOTE – install the 4" cap on the side opposite the side the adapter installed.

17. Insert a flexible, extendible aluminum pipe over the square to round adapter and stretch to connect to the air injector connector on the Steam-Away.

18. Using aluminum airtight tape, seal and secure all forced air connections. As an alternative to flex pipe for longer runs use 6" PVC with a Fernco type connector.



19. Using 1 – ½” fittings (not supplied), connect to the condensate drain. It is best to use stainless steel or copper plumbing and fittings. The condensate can either be sent to drain or collected for use in the sugar house. The drain end must be open at all times. Do NOT submerge the end of the drain or allow the drain pipe to sag and fill with condensate.



20. Connect the sap source to the sap regulator float box. Ensure you have a shut off valve between the sap source and the float box. The following is a recommended method of attaching the sap source to the regulator box. The items for this connection as shown are not included with the evaporator.



- a. Teflon tape:
  - i. two 1 ¼” stainless steel close nipples
  - ii. ½” stainless steel close nipple
  - iii. 1 ¼” to ½” stainless steel reducing bushing threads



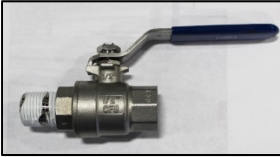
- b. Thread one end of a 1 ¼” close nipple into the threaded coupler on the end of the regulator box.



- c. Thread the 1 ¼” stainless steel “tee” onto the stainless steel nipple and tighten until the open ends are straight up and down.



- d. Thread a 1 ¼" to ½" stainless steel reducing bushing into the bottom of the tee.



- e. Thread the ½" stainless steel close nipple into the ½" stainless steel ball valve.



- f. Thread the ½" stainless steel ball valve and nipple assembly into the adapter in the bottom of the tee and tighten all parts into the tee (adapter, nipple and ball valve). . Make sure the handle of the ball valve can operate without interference.



- g. Thread a Teflon taped 1 ¼" stainless steel close nipple into the 1 ¼" stainless steel ball valve.



- h. Thread the taped end of the 1 ¼" stainless steel nipple (on the stainless steel ball valve) into the top of the stainless steel tee.  
NOTE: The half nipple mounted to the top stainless steel ball valve is optional.
- i. Tighten the parts (ball valve, close nipple) into the tee. Make sure the handle of the ball valve can operate without interference.



21. If not included in the evaporator package the temperature of the sap exiting the Steam-Away can be monitored with a thermometer. To install the thermometer, remove the ¼” stainless steel plug from the stainless steel tee connected to the Steam-Away. Wrap the threads, with Teflon tape, of a thermometer (Leader Order #: 61019) and thread and tighten into the tee.

NOTE: Monitoring the temperature of the sap exiting the Steam-Away is used to determine when the Steam-Away should be cleaned. Record the temperature of the sap exiting the Steam-Away when it is new (or freshly cleaned). When the temperature of the sap exiting the Steam-Away drops 5°F or more, clean the Steam-Away. Refer to the Section labelled Periodic Maintenance.

## FINAL STEPS

Check to ensure the following connections are properly installed and tightened:

1. Sap regulator float box to the sap source
2. Sap regulator float box to Steam-Away
3. Steam-Away to flue pan connection piping
4. Condensate drain
5. Air injector box drain

## PREPARING THE STEAM-AWAY FOR USE

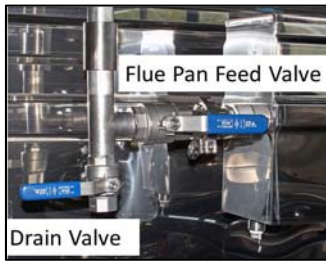
Prior to using the Steam-Away it should be cleaned as follows:

1. Make sure the air blower is OFF.
2. Close the Steam-Away drain valve.
3. Close the air injector box drain.
4. Open the feed valve between the Steam-Away and the flue pan.
5. Prepare a cleaning solution mixed one pound of baking soda to 200 gallons of unsoftened, non-chlorinated well or spring water. Enough volume of this solution will be needed to fill the flue pan and syrup pan to a depth of 2” to 3” and to fill the Steam-Away until the steam pipes are covered.

NOTE: Have a volume of unsoftened, non-chlorinated well or spring water available to replenish the volume of solution.

6. Set the floats in the Steam-Away and the evaporator pans to maintain the liquid level.
7. Check all connections for leaks – repair if necessary.
8. Fire the evaporator sufficiently to build steam in the flue pan.
9. Start the Steam-Away air blower.
10. Continue heating for 30 minutes.
11. Shut down the heat and the blower.
12. Allow the arch and solution to cool then drain the solution from the Steam-Away and the evaporator pans.
13. Refill the evaporator pans and the Steam-Away to the levels as previously used, with unsoftened, non-chlorinated well or spring water.
14. Repeat the boiling process as stated in Steps 6 to 11.

## USING THE STEAM-AWAY



1. Close the Steam-Away drain valve and open the feed valve for the flue pan.

2. Open the condensate drain.
3. Close the air injector box drain.
4. Open the sap feed to the regulator float box.
5. Adjust the Steam-Away float so the steam pipes are covered in the front of the Steam-Away and the level is approximately  $\frac{3}{4}$  up on the steam pipes at the front with the blowers running. Adjust the depth up or down in small increments and monitor the outgoing sap temperature. Temperatures should be 190°F to 200°F. Allow 15 to 20 minutes between level adjustments before making further corrections.
6. The sap from the Steam-Away will be more concentrated than originally fed to the evaporator. It is recommended the evaporator liquid depth be run deeper until familiar with the operation.
7. Start the Steam-Away blower.
8. Fire the evaporator.
9. Add defoamer to the Steam-Away body as would be added normally to the evaporator. Defoamer is normally added to the evaporator every time it is fired or every 5 to 10 minutes. Do NOT add the defoamer to the float box of the Steam-Away. The estimated usage is as follows: NOTE: This is based on the use of ATMOS 300 Defoamer

| Pan Set Width (Inches) | Drops of Defoamer |
|------------------------|-------------------|
| 24                     | 3                 |
| 30                     | 4                 |
| 36                     | 4 to 5            |
| 40                     | 5 to 6            |
| 48                     | 6 to 8            |
| 60                     | 7 to 9            |
| 72                     | 8 to 11           |

If additional defoamer is needed add it to the flue pan and if necessary a drop into the syrup pan.

## DAILY SHUT DOWN

The Steam-Away should be drained daily when it is to be shut down. Drain by allowing all liquid to flow into the flue pan. The procedure for draining the Steam-Away can be found in step 2 of the Cleaning Procedure on page 20.

## MAINTENANCE

### PERIODIC

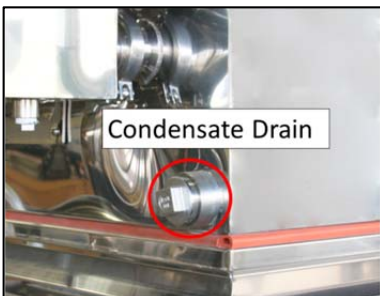
When the temperature of the sap exiting the Steam-Away is 5°F or less than when the Steam-Away was new or freshly cleaned, clean the Steam-Away.

### *Cleaning Procedure*

1. Close the valve to the flue pan sap feed box.
2. Drain the Steam-Away as follows:



- a. Drain the Steam-Away body. The sap from the Steam-Away can be collected and used to refill the Steam-Away.



- b. Ensure the condensate drain is flowing. Note installation of a 1 - ½" nipple and ball valve prior to use will aid in draining the condensate.



- c. Drain the regulator float box.

3. Follow the instructions on the cleaning acid (pan cleaner) and mix a solution in the Steam-Away. The directions are as follows:
  - a. Add unsoftened, non-chlorinated well or spring water until the coating to be removed is covered with water.
  - b. Start the Steam-Away blower.



- c. Carefully add 1 quart of concentrated pan cleaner for each 40 gallons of water in the Steam-Away to the front of the Steam-Away.
- d. Run the blower overnight. NOTE: Do not use heat unless the entire evaporator is being cleaned.
- e. Drain off the solution by opening the drain valve. Drain the regulator and injector boxes. Follow all precautionary instructions when handling the liquids. Shut off the Steam-Away blower.
- f. Close the drains and fill the Steam-Away (back steam pipes submerged, front steam pipes  $\frac{3}{4}$  submerged) with clean unsoftened, non-chlorinated well or spring water. Add 2 pounds of baking soda per 200 gallons of clean water. Start the Steam-Away blower and run for 30 minutes.
- g. Drain off the solution by opening the drain valve. Drain the regulator and injector boxes. Follow all precautionary instructions when handling the liquids. Shut off the Steam-Away blower.
- h. Ensure all solution is rinsed from the Steam-Away using unsoftened, non-chlorinated well or spring water. The rinse does not need to be heated. Drain the Steam-Away and regulator and air injector boxes.
- i. Close all drains.

## END OF SEASON

### NOTES:

- Do not allow sap or acid solutions to soak in the Steam-Away for more than 24 hours.
  - Use ONLY cleaners stated to be for maple syrup equipment.
1. Follow the Cleaning Procedure stated above to clean the Steam-Away.  
Disassemble the Steam-Away to Flue Pan connection piping. Lubricate the internal O-rings with food grade grease such as LEADER Order # 64436.
  2. Disconnect the sap source from the regulator float box.
  3. Disconnect any drain lines that could prevent the Steam-Away from being moved or will break when the Steam-Away is moved.
  4. Lift the Steam-Away and support the flue pan for storage as stated in the document for the flue pan.
  5. The Steam-Away can then be either;
    - a. Lowered back to the top of the flue pan with tension being maintained on the cables to help support the weight
    - OR
    - b. If space permits, place a wooden frame, the size of the top of the flue pan, on saw horses and lower the Steam-Away onto the frame.
  6. Cover the Steam-Away (and pans) with plastic or a tarp to keep out dirt and small animals.

## BEGINNING OF SEASON STARTUP

1. Remove the covers from the Steam-Away (and pans).
2. Raise the Steam-Away off the flue pan.
3. Inspect the rubber seal on the top of the flue pan. Replace it if it is damaged.
4. Put the flue pan in place as stated in the instructions for the pan set.
5. Lower the Steam-Away onto the flue pan as described in the Setup section of this document.  
Reassemble the Steam-Away to Flue Pan connection pipe. Lubricate the internal O-rings with food grade grease such as LEADER Order # 64436.
6. Connect any drains.
7. Attach the sap feed to the regulator float box.
8. Follow the final rinse step (Step i) of the Cleaning Procedure.
9. When filling the Steam-Away for the first time check all fittings for leakage and repair if necessary.

## **FEEDBACK**

Please use the following e-mail address ([feedback@leaderevaporator.com](mailto:feedback@leaderevaporator.com)) to suggest improvements or enter comments on this document. Reference the document title in your note. You may also contact LEADER Customer Service.