USER MANUAL

HALF PINT EXTENSION KIT

LEADER™
WE HELP YOU GET MAPLE DONE

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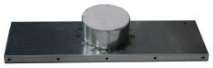
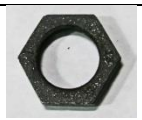
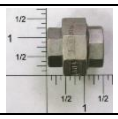
INTRODUCTION:

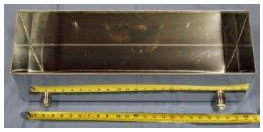
The LEADER Half Pint Extension Kit is designed to allow the hobby maple sugar maker a way of expanding capacity without the need of purchasing a complete new evaporator. The evaporation rate can be increased by up to 65% thereby increasing the amount of sap that can be processed in the same amount of time.

CHECKLIST / PARTS LIST

PART IDENTIFICATION	QUANTITY	DESCRIPTION/PHOTO		PART IDENTIFICATION	QUANTITY	DESCRIPTION/PHOTO	
EA – Lower Panel	1			EB- Belly Pan	1		
EC - Extension Back	1			ED – Belly Brace	1		
EF – Leg	2			EG – Leg Support	2		
68175 – Hex Nut for Leg	2			68160 - Hex Nuts ¼-20	50		
68226 - ¼" Flat Washers	11			68107 - Machine Screws ¼-20 X ¾"	50		
72341 - ½" stainless steel union	1			72116 - ½" stainless steel street elbows	2		
72101 - ½" stainless steel close nipples	2			½" X 30" stainless steel pipe			
65162 –Pan Gasket 4" X 36"	1						

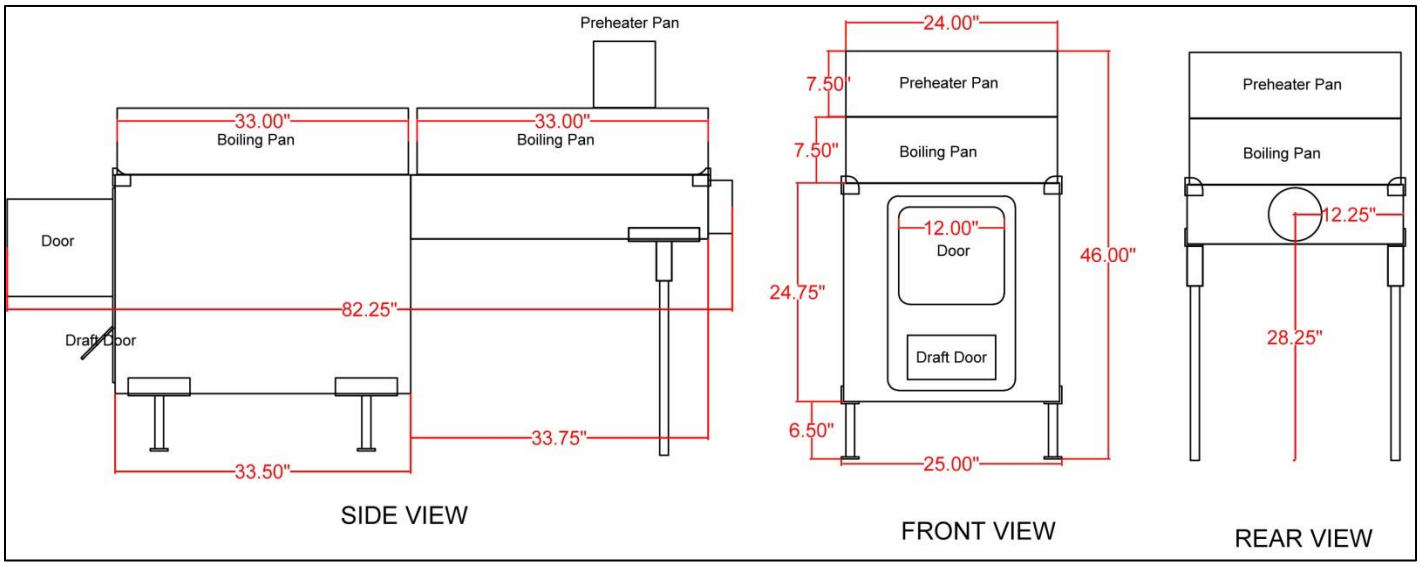
OPTIONAL SETUP PARTS AND SUPPLIES

ITEM DESCRIPTION	LEADER ORDER #	DESCRIPTION/PHOTO		ITEM	LEADER ORDER #	DESCRIPTION/PHOTO
Fire Brick Full (qty.: 10)	65003			Fire Brick Half (qty.: 36)	65006	
Galvanized Elbow 6" 24 Gauge	5200			Galvanized Smoke Stack	52006	

ITEM DESCRIPTION	LEADER ORDER #	DESCRIPTION/PHOTO		ITEM	LEADER ORDER #	DESCRIPTION/PHOTO
72101 - ½" stainless steel close nipples	2			Ball Valve ½" Stainless Steel (qty.: 2)	60100	
Short Hydrometer Cup	59007			Short Hydrometer	61040	
Thermometer 3" or 5" face, 6" stem Recommended qty.: 2	61022 3" Face/6" Stem 61028 5" Face/6" Stem			Firing Gloves	63123	
Defoamer 4oz	63015			Boiling Pan	372433L	
Reservoir Pan (Order #: 372433R)	372433R			Supreme Boiling Pan	372433S	
Vermiculite	65190			Refractory Cement	65001	

SETUP

DIMENSIONS



PREPARATION OF A PREVIOUSLY USED ARCH

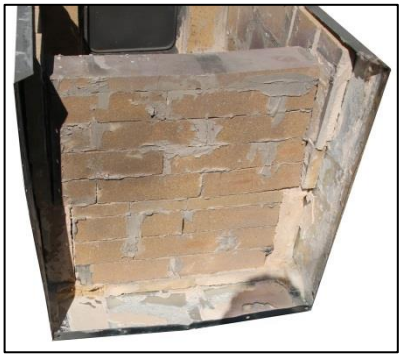
NOTES:

- Not all pictures used in this section are of a previously used arch.
- To ease disassembly, use a battery powered impact driver.
- If the bolts cannot be removed, drill the heads out the center with a ¼" drill bit.

1. Remove the front boiling pan from the arch.
2. Disconnect the stack from the rear of the arch.
3. Place support under the rear arch floor and the sides to prevent them from losing their shape when the back is removed.

4. Remove the bolts holding the corner brackets on the rear of the arch. Save the corner brackets for later installation.

5. Remove the bricks from against the back of the Half Pint arch. Then remove the bolts and nuts securing the arch back to the floor and sides of the arch. Remove the back.

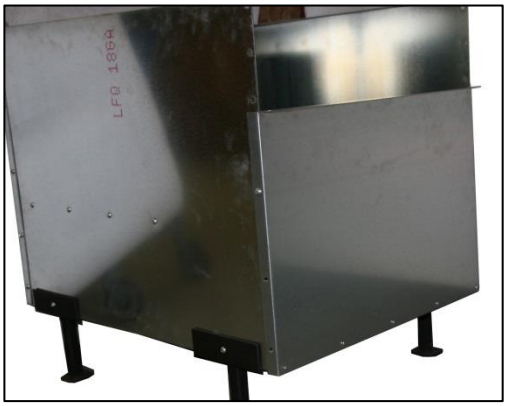


6. In order to ease attaching and assembling the extension kit, remove the row of bricks on the sides and floor behind the firewall of the Half Pint Arch.

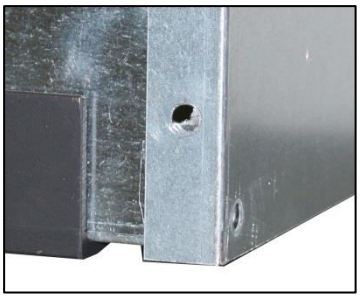
ASSEMBLY

NOTE:

- Assemble the arch at the location where it will be used.
- The following pictures were taken of an already fully assembly ½ pint arch and are used for illustration purposes.
- Bolts should be inserted into arch so the heads are exposed and the threads are inside the arch except for the bolts securing the bottom of the belly brace.
- Finger tighten bolts unless otherwise instructed.
- During assembly to a previously used arch it may be necessary to drill 1/4" to 5/16" holes and use a tool such as a punch to assist in aligning new parts.

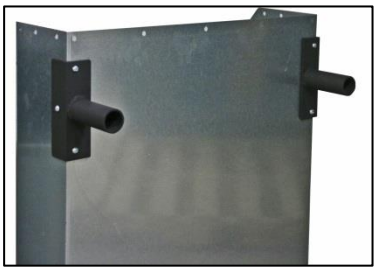


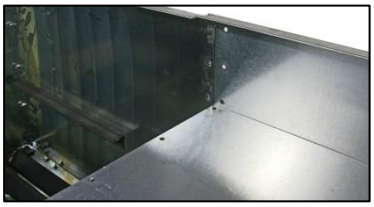
1. Mount the lower panel onto the rear of the arch. The flanges of the lower panel will be on the outside of the floor and side panels of the arch. Secure the back panel with ¼ - 20 X ¾" bolts and matching nuts. Finger tighten the fasteners.



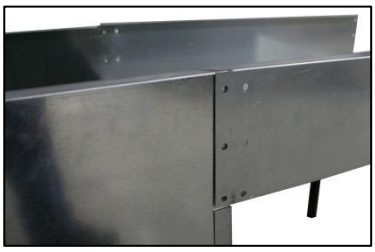
BACK PANEL PLACEMENT

2. Thread a hex nut approximately half way down each leg. Place the legs within reach of where the back of the extension will be located.



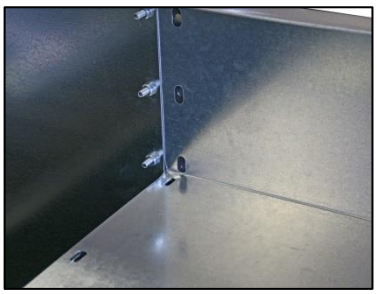


3. Secure one leg support to each side of the belly pan. The provided holes are located at the rear of the belly pan. Use ¼ X 20 X ¾" bolts and nuts. Tighten the fasteners.

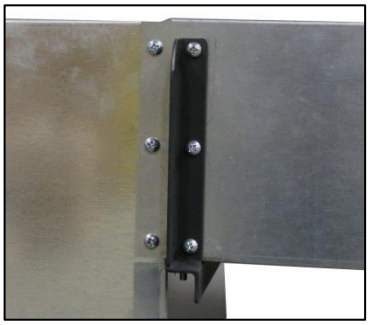


4. Preliminarily align the belly pan with the arch by placing the floor of the belly pan over the flange of the lower panel and the side of the belly pan over the sides of the arch.

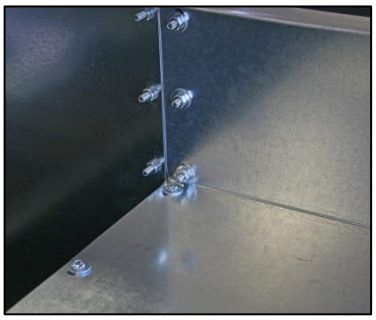
5. Place the legs into the leg supports to hold the back of the belly pan in position.



6. Place a ¼ - 20 X ¾" bolt through each hole (3 total per side) to fasten the side of the belly pan to the side of the arch. Screw on the matching nuts then hand tighten.

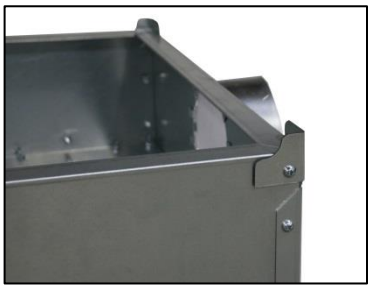


7. Place the belly brace around the belly pan with the flanges of the sides of the brace face toward the front of the arch.



8. Secure the belly brace:
    a. Insert three ¼ - 20 X ¾" bolts through each side, place a ¼" flat washer on each bolt and hand tighten the matching nuts to the bolts
    b. Insert five ¼ - 20 X ¾" bolts through ¼" washers from the floor of the belly pan through the belly brace and hand tighten the matching nuts to the bolts. NOTE: Do not reverse the bolts as it will be more difficult to insulate the arch.

9. Place the extension back onto the rear of the belly pan. The flanges of the extension back fit outside the belly pan.



10. Mount a corner bracket to each side of the arch. The curve of the corner bracket will face forward. Secure the corner brackets using ¼ - 20 X ¾" bolts and matching nuts. Hand tighten the fasteners.

11. Square the corners of the arch and arch extension then tighten all the fasteners.
12. Ensure all the arch is on a stable surface. Use a 4 foot level and level the arch front to back and side to side. Shim the legs in the front of the arch as necessary using metal shims. Shims are not included. Adjust the rear of the arch by raising or lowering the hex nuts on the arch legs. *NOTE: Ensure all 6 legs are supported to the floor.*

INSULATING THE HALF PINT EXTENSION KIT

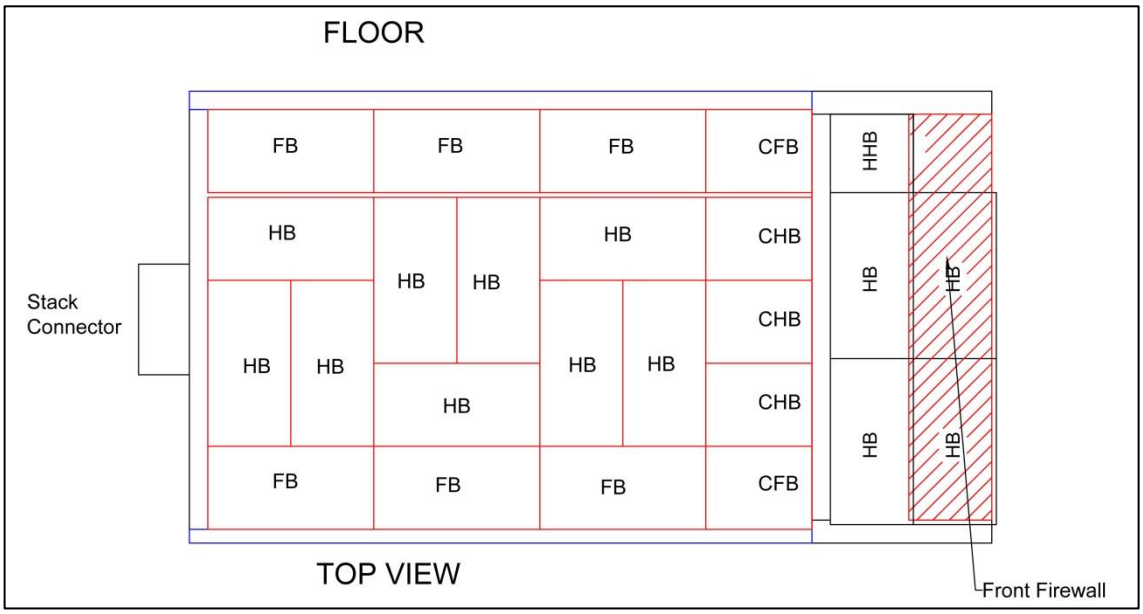
BRICKING

NOTES:

- Fire bricks and cement used should be rated for 3000°F
- To apply cement, completely skim coat the metal of the arch where the brick is to be installed. Put about 1/8" on each edge of the brick to be installed and a skim coat on the side facing the metal.
- As you install the bricks, smooth the cement that will be forced from between the bricks.

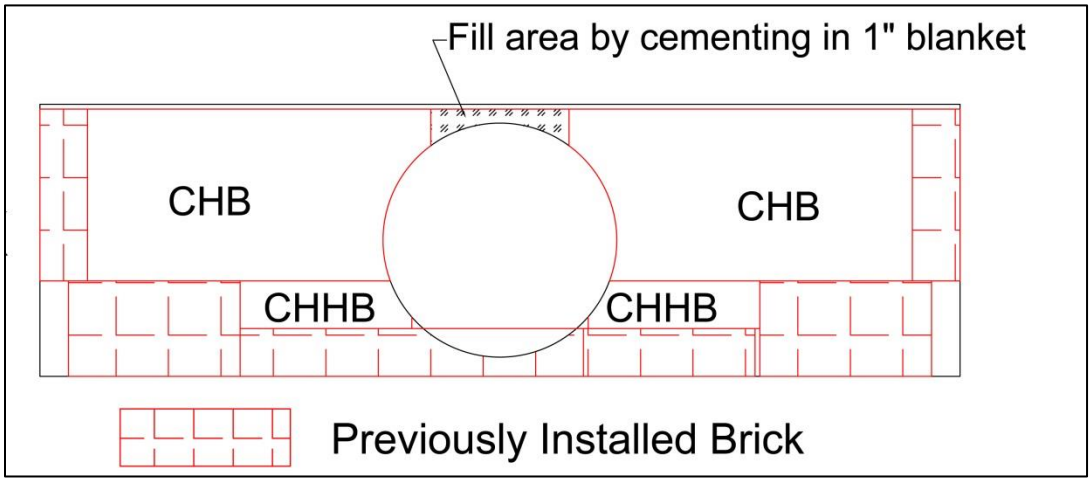
- After completing the bricking, allow the cement to dry at least 36 hours at room temperature (approximately 65°F).
- Measurements in these drawings will vary depending on the technique used in bricking. Always "dry fit" the bricks first to ensure a good fit.

FLOOR



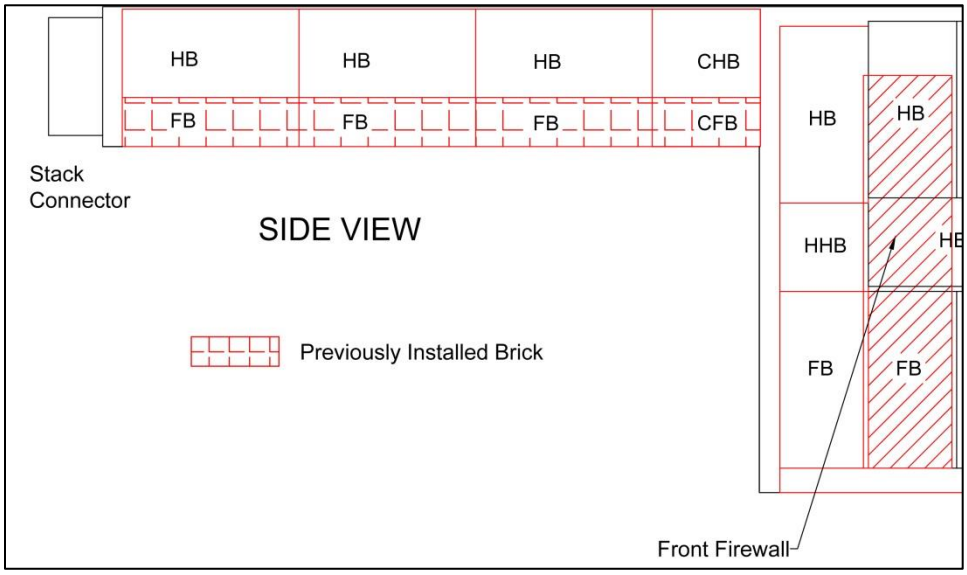
1. You will need 15 half bricks and 8 full bricks
2. Place the bricks into the arch as illustrated. The spacing between the outside panels of the arch and the brick is approximately 1".
3. There are 2 and ½ half bricks placed between the firewall in the front part of the arch and the rear section of the front part of the arch.
4. The bricks prefixed with a C (CFB and CHB) will need to be cut to match the edge of the floor where it ends.
5. Remove the bricks.
6. Coat the floor with refractory cement Remember to coat the edges of the bricks with approximately 1/8" of refractory cement. Place the bricks into the arch as they were previously fit.

EXTENSION BACK



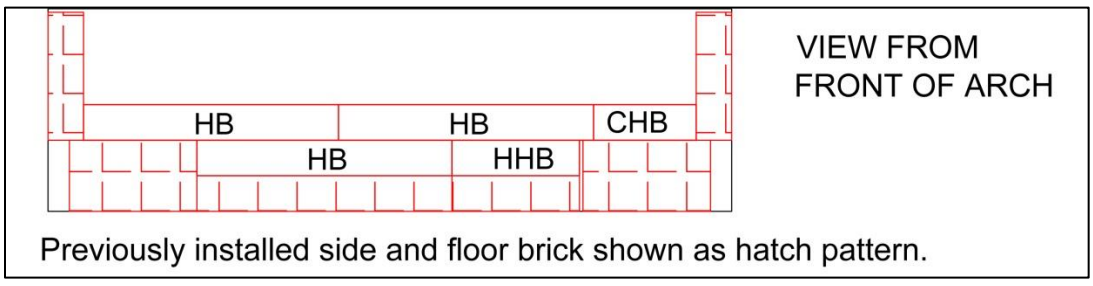
1. You will need 4 half bricks
2. Place a half thickness brick on each side of the stack connector. Lay them lengthwise against the back wall. Mark the bricks where they protrude into the stack connector. Remove the bricks then trim at the marks. Place the bricks back into the arch.
3. Place two ½ thickness bricks as illustrated onto the bricks cut in the previous step. Mark the bricks where they protrude into the stack connector. Remove the bricks then trim at the marks.
4. Coat the back wall and the floor bricks with a layer of cement.
5. Place the bricks into the arch as illustrated. Remember to coat the edges of the bricks with approximately 1/8" of refractory cement.
6. Cover the area above the stack cover by cementing a piece of 1" blanket in place.
7. Fill the gaps between the smoke stack elbow and the brick with refractory cement.

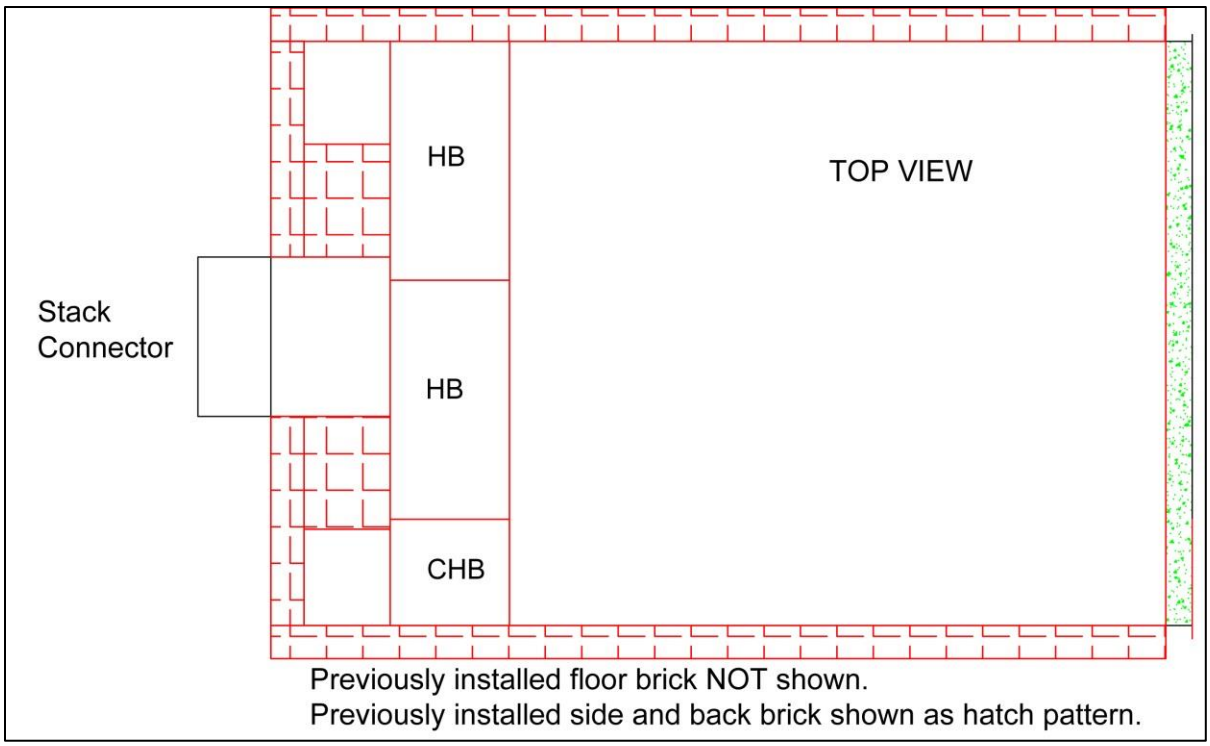
SIDES



1. Both sides are laid out the same. Mirror the above diagram for the right side of the arch.
2. To brick both sides you will need; 11 half thickness bricks and 2 full thickness bricks.
3. Cut one half brick in half (result is 2 pcs 4 ½" x 4 ½") (HHB). Use one ½ brick on each side.
4. The bricks prefixed with a C (CHB) will need to be cut to match the ends of the bricks on the floor.
5. Apply a coat of cement to the side to be bricked. Remember to coat the edges of the bricks with approximately 1/8" of refractory cement.
6. Place the bricks into the arch as illustrated. Note the upright bricks (FB, HHB, HB) are placed between the rear of the front arch firewall and the back panel of the front part of the arch.
7. The bricks should be placed against the sides of the arch.
8. The area between the rear of the arch baffle and the new back wall can be filled with Vermiculite, sand, or ceramic blanket to the level of the bricks on the floor of the extension.

BAFFLE





1. You will need 4 half bricks
2. Cut one of the half bricks in half (result is 2 pcs 4 ½" x 4 ½") (HHB)
3. Lay a half thickness brick into the space between the full bricks on the floor. Complete the row by placing a half of a half thickness brick into the space to the fill brick on the other side of the arch back.
4. Lay a half thickness brick over the full brick at the side of the arch. Add a second half thickness brick as shown.
5. Cut the half thickness brick (CHB) from the half of a half thickness brick.
6. Remove the bricks to be installed from the arch.
7. Apply a coat of approximately 1/8" to the sides and bottom of the bricks to be installed.
8. Place bricks in the arch as illustrated.
9. Fill in all edges and gaps with cement.

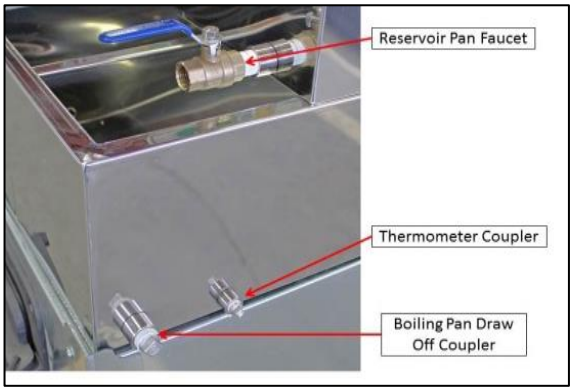
NOTE: When the bricking of the extension is complete, check the main part of the arch for any bricks and/or cement that should be replaced.

SETTING THE PANS

1. Place the front boiling pan on the arch so the pan coupler rests behind the corner bracket at the front of the arch.
2. Place the rear boiling pan on the arch so the pan coupler is in front of the corner bracket at the rear of the arch.
3. Place the reservoir pan on the rear boiling pan with the connectors towards the rear of the arch.

NOTE: If you are adding a Half Pint Extension Kit to an existing Half Pint please ensure your reservoir pan is setup as described in the following steps.

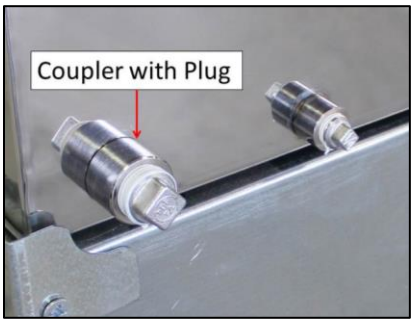
4. Wrap both ends of the ½" stainless steel nipple (supplied with a Half Pint Evaporator) with Teflon tape.
5. Screw the brass lead free ball valve (supplied with a Half Pint Evaporator) onto one end of the stainless steel nipple. The assembly is referred to as the reservoir pan faucet.



6. Locate the front draw off of the boiling pan.
7. Connect the reservoir pan faucet to the connector on the reservoir pan that is on the same side as the front draw off of the boiling pan. As you face the rear of the arch, the reservoir pan faucet will be installed into the right connector of the reservoir pan.
8. Place the reservoir pan 6" from the back of the rear boiling pan.
9. You will need to add a draw off valve to the boiling pan draw off coupler (1 needed). Contact LEADER EVAPORATOR Customer Service or your local dealer for options and costs.

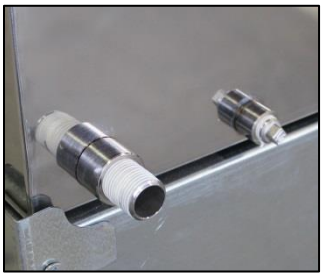
INSTALLING THE DRAW OFF VALVES

It is recommended a ½" stainless steel ball valve (LEADER Order # 60100) and a ½" stainless steel close nipple (LEADER Order # 72101) be installed. Other options are available. Contact LEADER Customer Service or your local dealer.

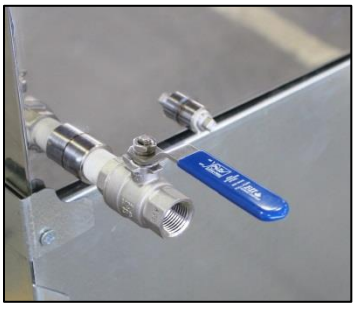


1. Remove the threaded plug from the coupler located on the draw off side (front) of the front boiling pan. If using a standard Half Pint pan as a front pan the coupler will be either on the right or on the left. If using a Supreme pan as a front pan the coupler will be on the left.

2. Wrap Teflon tape around each end of the stainless steel close nipple.



3. Thread a stainless steel nipple into the coupler on the boiling pan.



4. Thread a stainless steel ball valve onto the installed nipple.
5. Tighten so the handle of the ball valves is on top.

6. Install a thermometer (not supplied) on the draw off side of the front boiling pan. The thermometer is mounted in ¼" threaded fitting near the draw off valve coupler. Remove the plug from the fitting in the pan. Teflon tape the threads on the thermometer and thread into the fitting. Tighten and rotate the "7" so it is straight down for easier viewing standing next to the evaporator.

CONNECTIING THE HALF PINT BOILING PANS

The Half Pint Extension Kit is supplied with the fittings necessary to connect a Supreme pan as the rear pan and a Half Pint or a Supreme boiling pan as the front pan. The fittings supplied are;

- ½" stainless steel 90° street elbows (quantity: 2)
- ½" stainless steel close nipple (quantity: 2)
- ½" stainless steel union
- ½" x 30" stainless steel pipe threaded on both ends – to be used to connect two Supreme pans or a supreme pan with left feed ½ pint boiling pan.

A roll of Teflon tape (Leader Order #: 66106) will also be needed.

A Supreme pan will always have a left draw off. A left draw off pan will have the draw off connections on the left front of the pan.

The standard half pint boiling pan will be either;

- A right draw off with the draw off connections on the right front of the pan

  OR
- A left draw off with the draw off connections on the left front of the pan

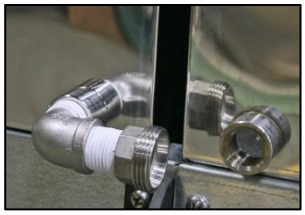
Connecting a Supreme Pan (rear pan) to a Right Draw Off Half Pint Boiling Pan (front pan)

1. Wrap the threaded ends of the following supplied stainless steel fittings with Teflon tape:
   a. 2 – ½" stainless steel close nipples
   b. 2 – ½: stainless steel 90° street elbows

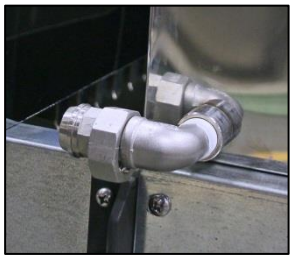
2. Thread a ½" stainless steel close nipple into each of the ½" stainless steel street elbows.

3. Thread the female side of the ½" stainless steel union onto one of the ½" stainless steel street elbow assemblies.

4. Thread the male side of the ½" stainless steel union onto the other ½" stainless steel street elbow assembly.



5. Thread the stainless steel assembly with the female union end onto the rear pan. Tighten so the union end points toward the front pan and the assembly is parallel to the bottom of the pan. NOTE: If the assembly cannot be tightened in this position, remove it and change the amount of Teflon tape wrapped around the threads.



6. Thread the stainless steel assembly with the male union end onto the front pan. Tighten so the union end points toward the rear pan and the assembly is parallel to the bottom of the pan. It will be necessary to separate the two pans in order to turn the assembly. NOTE: If the assembly cannot be tightened in the position required, remove it and change the amount of Teflon tape wrapped around the threads.

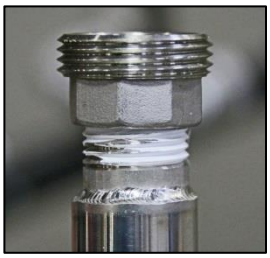
7. Cut a pan gasket 4" X 36" (LEADER Order #: 65162) to fit between the front and rear pans. Line up the female and male parts of the union and tighten together.

Connecting Two Supreme Pans OR a Supreme Pan to a Left Draw Off Standard Boiling Pan

1. Wrap the threaded ends of the following stainless steel fittings with Teflon tape
    a. ½" X 30" stainless steel pipe
    b. 2 – ½" stainless steel close nipples
    c. 2 – ½" stainless steel street elbows

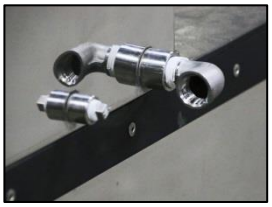
2. Thread a ½" stainless steel close nipple into one of the ½" stainless steel street elbows.

3. Thread the female side of the ½" stainless steel union onto the ½" stainless steel street elbow assembly with the inserted close nipple.

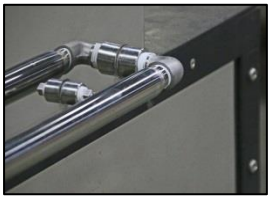


4. Thread the male side of the ½" stainless steel union onto one end of the ½" X 30" stainless steel pipe.

5. Thread the female stainless steel union assembly onto the coupler of the front pan. Tighten so the union end points toward the rear pan and the assembly is parallel to the bottom of the pan.



6. Thread the other ½" stainless steel street elbow into the coupler on the rear pan and tighten so the elbow is parallel to the bottom of the pan.



7. Thread the exposed threaded end of the ½" X 30" stainless steel pipe into the rear stainless steel street elbow. NOTE: the two pans may need to be separated slightly in order to do this step.

8. Line up the two union halves (one on the front pan and the other on the pipe from the rear pan) and tighten. NOTE: the pans may need to be moved slightly to line up the union halves.

Completed Connections

OPERATIONS

Reference the Instructions for the Half Pint Evaporator for preparing and making syrup with the completed evaporator.

FEEDBACK

Please use the following e-mail address (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.

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