F-LF AND F-PF SERIES
FULLY JACKETED DIRECT STEAM STATIONARY KETTLES
INSTALLATION  -  OPERATION  -  MAINTENANCE

TRI-LEG MODELS
- F-20LF
- F-30LF
- F-40LF
- F-60LF
- F-80LF

PEDESTAL MODELS
- F-20PF
- F-30PF
- F-40PF
- F-60PF
- F-80PF

Market Forge

Telephone: (802) 658-6600 Fax: (802) 864-0183
www.marketforge.com

© 2018 - Market Forge

PN 14-0346 Rev C (10/18)
TABLE OF CONTENTS

INSTALLATION
Introduction .............................................................. 2
Service Connections .................................................... 3
Installation Instructions ................................................ 7

OPERATION
Operating Instructions .................................................. 8

MAINTENANCE
Cleaning ................................................................. 9

ERRORS: Descriptive, typographic or pictorial errors are subject to correction. Specifications are subject to change without notice.

IMPORTANT
WARNING: Improper installation, adjustment, alternation, service or maintenance can cause property damage, injury or death. Read the installation, operation and maintenance instructions thoroughly before installing or servicing this equipment.

FOR YOUR SAFETY
Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

The information contained in this manual is important for the proper installation, use, and maintenance of this kettle. Adherence to these procedures and instructions will result in satisfactory baking results and long, trouble free service. Please read this manual carefully and retain it for future reference.

ERRORS: Descriptive, typographic or pictorial errors are subject to correction. Specifications are subject to change without notice.
**Introduction**

All F-PF and F-LF direct connected steam jacketed kettles are direct steam operated pressure vessels of a double-wall stainless steel construction forming a steam chamber (jacket) enveloping the kettle bowl surface. All kettles are stationary, floor mounted in fixed positions either on legs with adjustable flanged feet (LF models) or pedestal (PF models).

**CAPACITIES**

- F-20LF and F-20PF - 20 gallons (76 liters)
- F-30LF and F-30PF - 30 gallons (114 liters)
- F-40LF and F-40PF - 40 gallons (152 liters)
- F-60LF and F-60PF - 60 gallons (227 liters)
- F-80LF and F80PF - 80 gallons (303 liters)

**FUNCTIONING MODE**

Direct connected steam jacketed kettles consist of a stainless steel bowl and a stainless steel jacket which envelops the surface of the bowl, thus forming a sealed pressure vessel (chamber) into which steam is introduced by means of a manual control valve.

The kettle bowl is the container for the food product which ideally should be of a liquid or semi-liquid consistency to achieve complete contact with the bowl surface and thus fully absorb the heat transmitted through that surface.

The temperatures required for the cooking process to function adequately must be greater than the boiling point of the liquid food product. Further, the greater the steam pressure used, the higher the temperature and consequently the quicker the cooking process. For example, steam pressurized at 30 p.s.i. attains a temperature of 274 degrees Fahrenheit (135 degrees Celsius).
## Service Connections

### Dimensions

<table>
<thead>
<tr>
<th>MODEL</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-20LF</td>
<td>26</td>
<td>15.75</td>
<td>30.25</td>
<td>30.75</td>
<td>12.5</td>
<td>16.13</td>
<td>21</td>
<td>22.5</td>
<td>23.75</td>
<td>11.5</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>[660]</td>
<td>[400]</td>
<td>[768]</td>
<td>[781]</td>
<td>[318]</td>
<td>[410]</td>
<td>[533]</td>
<td>[572]</td>
<td>[603]</td>
<td>[292]</td>
<td>[1473]</td>
</tr>
<tr>
<td>F-30LF</td>
<td>29.5</td>
<td>17.5</td>
<td>32</td>
<td>34.13</td>
<td>12.38</td>
<td>17.63</td>
<td>18.13</td>
<td>25.75</td>
<td>24.63</td>
<td>11.5</td>
<td>62.88</td>
</tr>
<tr>
<td></td>
<td>[749]</td>
<td>[445]</td>
<td>[813]</td>
<td>[867]</td>
<td>[314]</td>
<td>[448]</td>
<td>[460]</td>
<td>[654]</td>
<td>[625]</td>
<td>[292]</td>
<td>[1597]</td>
</tr>
<tr>
<td>F-40LF</td>
<td>33</td>
<td>19.25</td>
<td>33.75</td>
<td>37.63</td>
<td>12.38</td>
<td>19.38</td>
<td>19.88</td>
<td>29.25</td>
<td>25.75</td>
<td>11.5</td>
<td>67.88</td>
</tr>
<tr>
<td></td>
<td>[838]</td>
<td>[489]</td>
<td>[857]</td>
<td>[956]</td>
<td>[314]</td>
<td>[492]</td>
<td>[505]</td>
<td>[743]</td>
<td>[654]</td>
<td>[292]</td>
<td>[1724]</td>
</tr>
<tr>
<td>F-60LF</td>
<td>35.5</td>
<td>20.5</td>
<td>35</td>
<td>40</td>
<td>12.38</td>
<td>20.13</td>
<td>21.13</td>
<td>31.75</td>
<td>26.5</td>
<td>11.5</td>
<td>71.63</td>
</tr>
<tr>
<td></td>
<td>[902]</td>
<td>[521]</td>
<td>[889]</td>
<td>[1016]</td>
<td>[314]</td>
<td>[511]</td>
<td>[511]</td>
<td>[806]</td>
<td>[673]</td>
<td>[292]</td>
<td>[1819]</td>
</tr>
</tbody>
</table>

### Service Connections

- **S**: Steam Supply - 3/4" (19mm) NPT, 5-35 PSI (0.3-2.5 kg/cm²). Optional 5-50 PSI (0.3-3.5 kg/cm²)
- **CR**: Condensate Return - 1/2" (13mm) NPT

Pressure reducing valve is required if incoming pressure exceeds 50 PSI (345 kPa).

---

**NOTE: DIMENSIONS E AND F ARE BASED ON Ø2" DRAW-OFF VALVE**

**SAFETY VALVE**

Closed 5.13 [130] Opened 6.88 [175]

**Optional Faucet Allow Dimension “D” Additional 3.5 [89]**

**DIMENSIONS ARE IN INCHES [MM]**

**Figure 1**
Service Connections

80 GALLON LEG BASE KETTLES

DIMENSIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-80LF</td>
<td>42</td>
<td>23.75</td>
<td>40.5</td>
<td>43.88</td>
<td>14.13</td>
<td>22</td>
<td>27.5</td>
<td>36.13</td>
<td>35.5</td>
<td>14</td>
<td>82.88</td>
</tr>
</tbody>
</table>

SERVICE CONNECTIONS

<table>
<thead>
<tr>
<th>S</th>
<th>Steam Supply - 3/4&quot; (19mm) NPT, 5-35 PSI (0.3-2.5 kg/cm²). Optional 5-50 PSI (0.3-3.5kg/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Cold Water - 3/8&quot; O.D. tubing to kettle fill faucet (optional)</td>
</tr>
<tr>
<td>R</td>
<td>Condensate Return - 1/2&quot; (13mm) NPT</td>
</tr>
</tbody>
</table>

DIMENSIONS ARE IN INCHES [MM]

NOTE: DIMENSIONS E AND F ARE BASED ON Ø2" DRAW-OFF VALVE

FLANGED FOOT DETAIL

Figure 2
20-60 GALLON PEDESTAL BASE KETTLES

DIMENSIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
</table>

SERVICE CONNECTIONS

| S  | Steam Supply - 3/4” (19mm) NPT, 5-35 PSI (0.3-2.5 kg/cm²). Optional 5-50 PSI (0.3-3.5kg/cm²) |
| CR | Condensate Return - 1/2” (13mm) NPT |

Pressure reducing valve is required if incoming pressure exceeds 50 PSI (345 kPa).
80 GALLON PEDESTAL BASE KETTLES

DIMENSIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-80PF</td>
<td>42</td>
<td>23.75</td>
<td>40.5</td>
<td>43.88</td>
<td>14.13</td>
<td>22</td>
<td>27.5</td>
<td>35.5</td>
<td>14</td>
<td>82.88</td>
</tr>
</tbody>
</table>

DIMENSIONS ARE IN INCHES [MM]

SERVICE CONNECTIONS

<p>| | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Steam Supply - 3/4&quot; (19mm) NPT, 5-35 PSI (0.3-2.5 kg/cm²). Optional 5-50 PSI (0.3-3.5kg/cm²)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Cold Water - 3/8&quot; O.D. tubing to kettle fill faucet (optional)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>Condensate Return - 1/2&quot; (13mm) NPT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: DIMENSIONS E AND F ARE BASED ON Ø2" DRAW-OFF VALVE

SAFETY VALVE

2" VALVE
CLOSED 5.13 [130]
OPENED 6.88 [175]

PEDESTAL DETAIL
4 EQUALLY SPACED
ON 19.625 [498] B.C.

OPTIONAL
FAUCET ALLOW
DIMENSION "D"
ADDITIONAL 3.5 [89]

Figure 4
1. Select a location to provide drainage directly below the tangent draw-off valve.

2. Mark hole locations through flanged adjustable feet on F-LF models and through pedestal base on F-PF models. Remove kettle.

3. On hole locations marked, drill holes and insert expansion shields to accommodate 5/16" size lag bolts.

4. Reposition kettle. On F-LF models level kettle by making necessary adjustment on flanged foot.

5. Bolt down kettle and seal with Silastic or other equivalent sealing compound. Sealant must be applied not only to bolt heads but also around flanges or pedestal base making contact with floor surface to fulfill NSF requirements.

6. Install a steam control valve at a convenient location near kettle on the incoming steam line (3/4" size pipe).

7. Connect steam line to the kettle, making sure there is a steam control valve strainer fairly convenient to the kettle.

8. Connect kettle condensate return line to a drain or to a boiler return line. Each kettle return line must have a suitable steam trap. Boiler return lines must have a check valve.

9. Safety relief valve on kettle must not be plugged as it is set to relieve excess pressure in the kettle.

10. If incoming steam pressure is greater than kettle maximum operating pressure then a pressure reducing valve must be installed in the line.

11. If large amounts of water accumulate in the steam line it will be necessary to install one or more ball float traps in the line to eliminate the water.

12. A steam line pressure gauge is also recommended to determine the actual amount of steam coming to the kettle.

13. Check for proper operation.
Operating Instructions

⚠️ CAUTION

The appliance and its parts are hot. Use care when operating, cleaning and servicing the appliance.

1. Ensure that draw-off valve is closed.
2. Fill kettle with product to desired level.
3. Slowly turn the steam control valve ON to full open position (counter clockwise).
4. The water or food should boil 2 - 3 gallons per minute. If it does not then incoming pressure and piping should be checked to determine that it is adequate to operate the kettle efficiently.
5. Regulate steam control valve depending on type of food being prepared.
6. When food is cooked, turn off steam, remove food and clean kettle immediately to prevent residue from drying on kettle bowl surface.
Your kettle should be cleaned immediately after each use.

1. Ensure that steam supply is OFF.

2. Pre-rinse inside of kettle thoroughly and drain to remove any food particles.

3. Using a nylon brush, clean kettle with a mild detergent and warm water rinse. Never use steel wool or scouring powder as it will scratch stainless steel.

4. Open the tangent draw-off valve to allow soap and water solution to drain. Rinse with clean water.

⚠️ **WARNING**

If you are cleaning a valve that is assembled to a kettle be sure the kettle is completely empty of any product.

5. By hand, turn the large hex nut counterclockwise on draw off valve until it is completely disengaged from thread. Grasp knob to valve and slowly pull out valve stem and disc. Do not allow disc to come in contact with hard surfaces since damage to disc may occur and result in valve leakage. Wash the valve stem, disc and handle. Insert nylon brush with detergent into interior of valve body and tangent draw-off tube and brush vigorously.

6. Replace valve stem assembly and engage hex nut fully by hand. Flush kettle with clean warm water.

7. Leave valve open when kettle is not in use.

⚠️ **CAUTION**

Do not use cleaning agents that are corrosive.

Use of cleaning agents that contain chloride, acids or salts are corrosive and may cause pitting and corrosion when used over a period of time; this will reduce the life of the appliance.

Pitting or corrosion are not covered by warranty.

Follow the recommended cleaning instructions. Use a mild detergent, warm water and rinse thoroughly.