# Lafferty Equipment Manufacturing, LLC
# Installation & Operation Instructions

## Model # 980007 · 207HC Filling Station

## REQUIREMENTS

**Chemical Concentrate**

**Water**

| | |
|---|---|
| Temperature | up to 160°F |
| Pressure | 40 to 80 PSI |
| Flow | 2 GPM @ 40 PSI |
| Supply Line | 1/2" |
| **Hose** | 3/4" ID x 15' |

## OPTIONS

**Stainless Steel Hose Racks**

| | |
|---|---|
| Small Stainless Steel Hose Rack | # 224145 |

**Stainless Steel Jug Racks**

| | |
|---|---|
| Jug Rack, SS, 1 Gallon, Round/Square | # 224200 |
| Jug Rack, SS, 2 1/2 Gallon | # 224210 |
| Jug Rack, SS, 5 Gallon, Round/Square | # 224215 |

**Safe Flow Lid™ for 1 Gallon Jugs**

| | |
|---|---|
| Lid, Suction Tube, and Strainer | # 709101 |

**Alternate Check Valve - Viton Standard**

| | |
|---|---|
| Check Valve, Chemical, PP, 1/2" HB (EPDM) | # 491403 |

## WEIGHT & DIMENSIONS

**Single Package**

| | |
|---|---|
| Shipping Weight | 10 lbs. |
| Shipping Dimensions | 15" x 15" x 7" |




Lafferty EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

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**WARNING!** READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

## OVERVIEW

The 207HC Filling Station has a water flow rate of 2 GPM @ 40 PSI and is a "high concentrate" chemical proportioner for filling any sized containers with strong solutions using a trigger gun. This venturi injection system uses city water pressure (40 - 80 PSI) to draw and blend a high concentration of chemical into the water stream to create up to 1:1 dilution ratios.

## SAFETY & OPERATIONAL PRECAUTIONS

- **When connecting to a potable water supply follow all local codes for backflow prevention.**
- **WARNING: Severe damage to your facility, or contamination of your potable water supply, can occur without proper backflow prevention.**
- For proper performance do NOT modify, substitute nozzle, hose diameter or length.
- Manufacturer assumes no liability for the use or misuse of this unit.
- Wear protective clothing, gloves and safety goggles when working with chemicals.
- Always direct the discharge away from people and electrical devices.
- For pressures over 100 PSI, remove the discharge valve or lower pressure.
- Never leave inlet ball valves on when unit is not in use.
- Follow the chemical manufacturer's safe handling instructions.
- NEVER mix chemicals without first consulting chemical manufacturer.

## TO INSTALL (REFER TO DIAGRAM ON NEXT PAGE)

**If you are connecting to a potable water supply follow all local codes for backflow prevention.**

1. Mount the unit to a suitable surface above the chemical supply to prevent siphoning.
2. Connect hose(s) as shown in the diagram.
3. Flush any new plumbing of debris before connecting water.
4. Connect water supply. Install a water filter if water piping is older or has known contaminants.

**Set the chemical dilution ratio by threading one of the color coded metering tip or plug in the chemical suction line. See chemical labels for dilution ratio recommendation or consult your chemical supplier.**

- For the strongest dilution ratio do NOT install a metering plug or colored metering tip.
- An inline metering tip holder is provided, along with two plugs for 2:1 or 3:1 ratios.
- The dilution ratios in the metering tip chart are based on water thin chemicals with a viscosity of 1CPS.
- Thicker chemicals will require a larger tip than the ratios shown in the chart.
- Select the tip color that is closest to your desired chemical strength and thread into the tip holder as a starting place. **DO NOT OVER-TIGHTEN.**
- Splice metering tip holder or plug into suction tube, as shown in the diagram, and secure with clamp (certain models only).
- Application results will ultimately determine final tip color or plug size.
- Push the chemical tubes over the suction hose barb and the tip holder, and place the strainer in the chemical concentrate.
- Push the discharge tubes completely over the discharge barb.
- If necessary, cut suction tube(s) to length before attaching suction strainer.

## TO OPERATE

**Always make sure the discharge is pointed in a safe direction before turning inlet valve on. Trigger can be released at any time during operation but should not be left unattended for long periods of time without closing inlet ball valve.**

1. Hold the trigger gun, open the inlet ball valve, place the nozzle in the container to be filled. Pull the trigger and begin.
2. When container is filled to the desired level, release the trigger. Close the inlet ball valve and pull the trigger to relieve pressure in the hose.
3. Make final metering tip adjustments based on application results. Try the next larger or smaller sized metering tip until the results are acceptable.

### METERING TIP SELECTION

| METERING TIP COLOR | OZ/MIN | DILUTION RATIO @ 40 PSI |
|---|---|---|
| Brown | 0.56 | 457:1 |
| Clear | 0.88 | 291:1 |
| Bright Purple | 1.38 | 186:1 |
| White | 2.15 | 119:1 |
| Pink | 2.93 | 87:1 |
| Corn Yellow | 3.84 | 67:1 |
| Dark Green | 4.88 | 52:1 |
| Orange | 5.77 | 44:1 |
| Gray | 6.01 | 43:1 |
| Light Green | 7.01 | 37:1 |
| Med. Green | 8.06 | 32:1 |
| Clear Pink | 9.43 | 27:1 |
| Yellow Green | 11.50 | 22:1 |
| Burgundy | 11.93 | 21:1 |
| Pale Pink | 13.87 | 18:1 |
| Light Blue | 15.14 | 17:1 |
| Dark Purple | 17.88 | 14:1 |
| Navy Blue | 25.36 | 10:1 |
| Clear Aqua | 28.60 | 9:1 |
| Black | 50.00 | 5:1 |
| No Tip Ratio Up To: | | 1.1:1 |

The dilution ratios above are approximate values. Due to chemical viscosity, actual dilution ratios may vary.

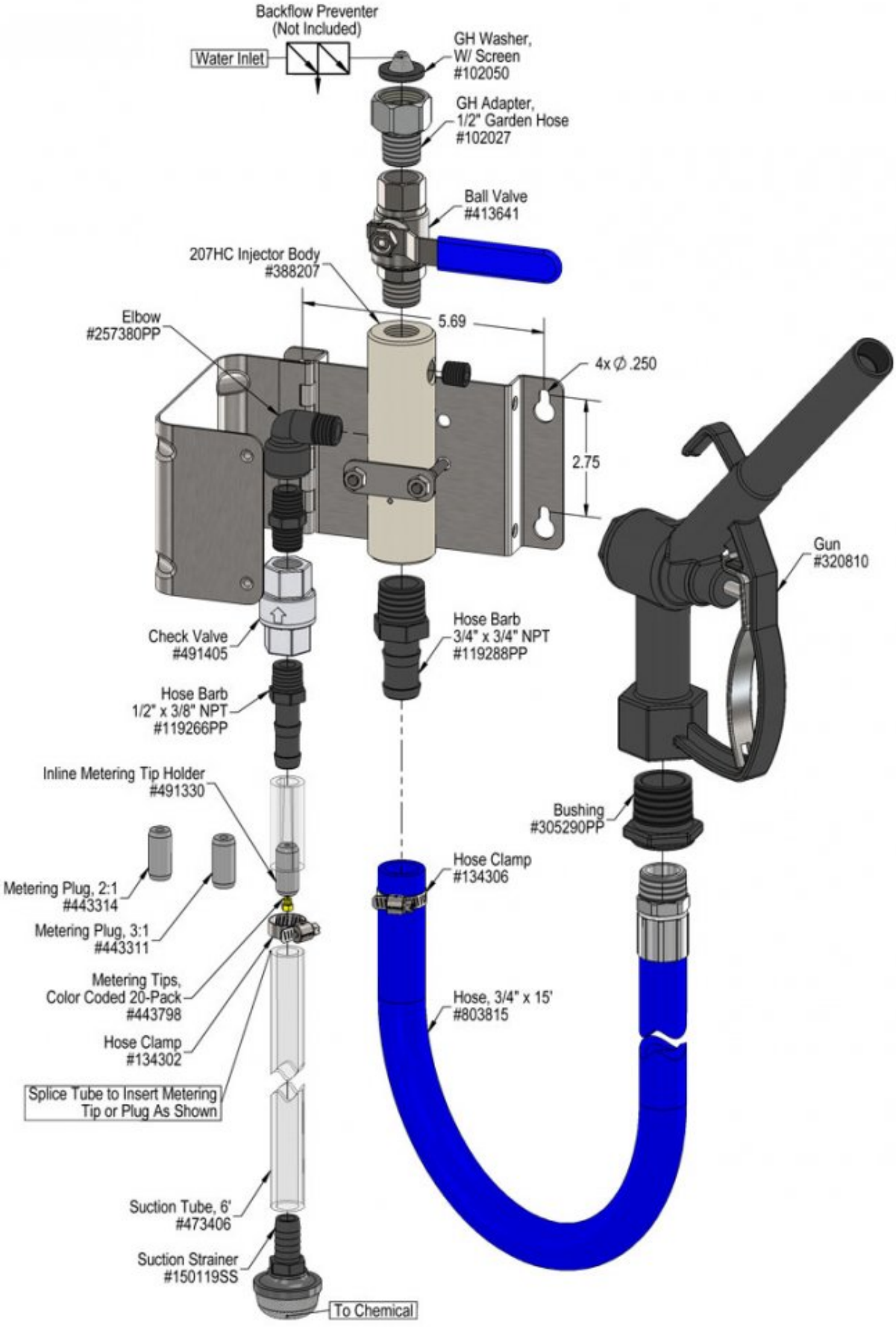
### FORMULA

**GPM × 128 ÷ Desired Dilution Ratio = oz/min**

- *See Unit Flow Rates chart for GPM*
- *Use 20 for 20:1 dilution ratio, 30 for 30:1, etc.*
- *Match calculated ounces per minute (oz/min) to nearest oz/min in Metering Tip Selection chart.*

### UNIT FLOW RATES

| PSI | GPM |
|---|---|
| 40 | 2.00 |
| 50 | 2.24 |
| 60 | 2.45 |
| 70 | 2.65 |
| 80 | 2.83 |


Backflow Preventer
(Not Included)
Water Inlet
GH Washer,
W/ Screen
#102050
GH Adapter,
1/2" Garden Hose
#102027
Ball Valve
#413641
207HC Injector Body
#388207
5.69
Elbow
#257380PP
4x Ø .250
2.75
Gun
#320810
Check Valve
#491405
Hose Barb
3/4" x 3/4" NPT
#119288PP
Hose Barb
1/2" x 3/8" NPT
#119266PP
Inline Metering Tip Holder
#491330
Bushing
#305290PP
Hose Clamp
#134306
Metering Plug, 2:1
#443314
Metering Plug, 3:1
#443311
Metering Tips,
Color Coded 20-Pack
#443798
Hose, 3/4" x 15'
#803815
Hose Clamp
#134302
Splice Tube to Insert Metering
Tip or Plug As Shown
Suction Tube, 6'
#473406
Suction Strainer
#150119SS
To Chemical

# Troubleshooting Guide

| Problem | Possible Cause / Solution | |
|---|---|---|
| | Startup | Maintenance |
| A) Unit will not draw chemical. | 1, 2, 3, 6 | 7, 8, 9, 10, 11, 12 |
| B) Dilution too weak. | 4 | 11 |
| C) Dilution too strong | 5 | |
| D) Water backing up into chemical container. | | 8 |

## Possible Cause / Solution

### Startup

1. **Water pressure or volume too low**
   - See requirements.
2. **Ball valve not completely open**
   - Completely open the ball valve.
3. **Chemical tube not immersed in chemical or chemical depleted**
   - Immerse tube or replenish.
4. **Metering plug too small**
   - Install larger metering plug.
5. **No metering plug installed or metering plug too large**
   - Install smaller metering plug.
6. **Discharge hose kinked or wrong size**
   - Straighten hose / See requirements

### Maintenance

7. **Chemical strainer or metering tip partially blocked**
   - Clean or replace chemical strainer and/or metering tip.
8. **Chemical valve stuck or failed**
   - Clean or replace.
9. **Vacuum leak in chemical pick-up connections**
   - Tighten the connection.
10. **Chemical tube stretched out where tube slides over metering tip holder or pin hole/cut in chemical tube (sucking air in)**
    - Cut off end of tube or replace tube.
11. **Hard water scale or chemical build-up may have formed in the body causing poor or no chemical pick-up**
    - Follow Preventive Maintenance instructions below, using hot water and/or descaling acid. When there is no draw at all carefully remove fittings and soak entire body in descaling acid.
12. **Optional discharge ball valve or trigger gun not completely open**
    - Completely open / depress trigger

PREVENTIVE MAINTENANCE: When the unit will be out of service for extended periods, place chemical tube(s) in water and flush the chemical out of the unit to help prevent chemical from drying out and causing build-up. Periodically check and clean chemical strainer and replace if missing.