

# FR100 SERIES ROTARY HAND PUMP

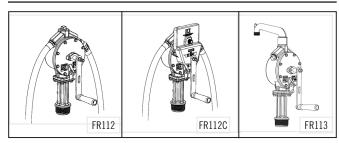
FR110, FR112, FR112C, FR113
Installation and Operation Manual







# FR110, FR112, FR112C, FR112CL & FR113 Pumps





The FR100 Series hand pump shall not be used to pump fuel into any type of aircraft!



The FR100 Series hand pump is not suitable to pump fluids for human consumption, or fluids containing water.

Fluid Compatibility		
Compatible Fluids (Okay to pump)	Gasoline, Diesel, Heptane, Kerosene, Stoddard Solvents, Light Oils, Mineral Spirits	
Non-Compatible Fluids (DO NOT pump)	Water, Sulfuric Acid, Naptha, Methanol, Methyl Ethyl Ketone (MEK), Acetone, Ammonia, Benzene, Bleach, Chlorine	

# Safety Instructions

To ensure safe and efficient operation, it is essential to read and follow each of these warnings and precautions:

- 1. Improper use or installation of this product can cause serious bodily injury or death.
- 2. Do NOT smoke near pump or use pump near an open flame when pumping flammable fluids. Fire could result.
- 3. A Fill-Rite filter should be used on pump outlet to ensure that no foreign material is transferred to fuel tank.
- 4. Use gasoline and oil resistant thread sealant or sealant tape on all threaded joints to protect against leakage.
- 5. Storage tank or barrel should be anchored to prevent tipping in both the full and empty conditions.
- 6. To minimize static electricity build-up, keep nozzle in contact with container
- 7. Regardless of mounting style, all tanks must be properly vented.

# Thank You!

Thank you for purchasing the FR100 Series Rotary Hand Pump! Your Fill-Rite® product comes with over 55 years of pump manufacturing experience behind it, providing you the value that comes with superior performance, user-friendly design, outstanding durability, and solid, simple engineering.



# **Pump Installation**

# NOTICE

All pipe threads must have a sealant to protect against leaks. Use sealant tape provided with this pump, or use a gasoline and oil resistant pipe sealant.

- 1. Screw suction pipe into pump inlet flange and tighten.
- 2. Extend suction pipe into tank or barrel opening to within 3" of bottom of tank or barrel. Do not rest suction pipe on bottom.
- 3. Screw inlet flange of pump completely and securely into undamaged tank or barrel bung.

### **Pumps with Hoses and Nozzles**

4. Screw one end of hose into pump discharge opening and the nozzle to the other end of hose.

#### **Pumps with Discharge Spouts**

4. Screw discharge spout assembly into top of pump.

## Pumps with Meter, Hose, and Nozzle

4. Screw street elbow into top of pump, nipple into street elbow, meter onto nipple.

**NOTE:** Position the meter to the right of the handle facing operator for ease of operator viewing. Screw one end of hose into meter outlet and the nozzle to the other end of hose.

#### Installation of Counter

- 1. Remove crank from shaft.
- 2. Remove two screws directly above horizontal centerline of pump. Push drive gear onto shaft with flat in gear hole located on longer flat of shaft.
- 3. Position counter on pump and attach with two screws and two washers.
- 4. Reattach crank.

#### Troubleshooting

If Pump Fails to Prime: Check suction line for leaks or obstructions. Check vanes and slots for nicks, burrs, or wear. Check rotor for excessive wear or damage.

Low Pumping Capacity: Remove and clean screen. Check for leaks in suction line. Check rotor and vanes for excessive wear and damage. Check for dirty filter on outlet side.

Pump Fluid Leakage: Clean O-ring seal and seat area. Replace seal. Replace vacuum breaker. Tighten covers and joints. Check for dirty filter on outlet side.

# Safety Certification



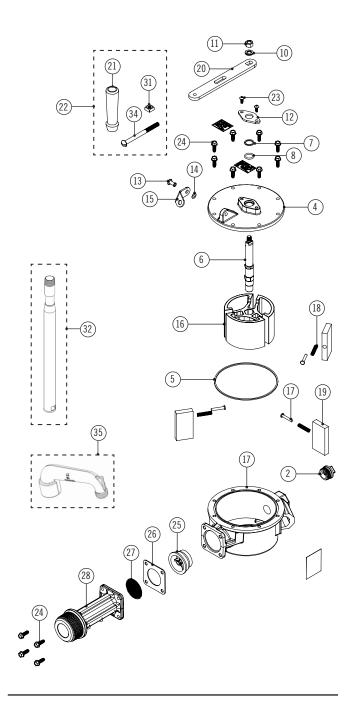


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# FR100 Series Pump Parts and Kits

2         KIT152VBP         Vacuum Breaker         1           3         N/A         Pump Body         1           4         N/A         Cover         1           5         N/A         0-Ring (-159)         1           6         N/A         Shaft         1           7         KIT100WHP         Seal Washer         1           8         University         Washer         1           9         N/A         Washer         1           10         N/A         Washer         1           11         N/A         3/8 Lockwasher         1           11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 x 5/8 Rivet         1           15         N/A         Locking Link         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring	ITEM NO.	PART NO.	DESCRIPTION	QTY.
N/A	1	H058G9054	8' Hose - UL Listed	Opt.
4         N/A         Cover         1           5         N/A         0-Ring (-159)         1           6         N/A         Shaft         1           7         KIT100WHP         Seal Washer         1           9         N/A         Washer         1           10         N/A         Washer         1           11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane Spring         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A	2	KIT152VBP	Vacuum Breaker	1
5         N/A         0-Ring (-159)         1           6         N/A         Shaft         1           7         KIT100WHP         Seal Washer         1           9         N/A         Washer         1           10         N/A         Washer         1           11         N/A         3/8 Lockwasher         1           11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane Spring         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A	3	N/A	Pump Body	1
6         N/A         Shaft         1           7         KIT100WHP         Seal Washer         1           8         N/A         O-Ring (-114) Washer         1           9         N/A         Washer         1           10         N/A         3/8 Lockwasher         1           11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane Spring         3           19         N/A         Vane Spring         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23 <td< td=""><td>4</td><td>N/A</td><td>Cover</td><td>1</td></td<>	4	N/A	Cover	1
7         KIT100WHP         Seal Washer         1           8         N/A         Washer         1           9         N/A         Washer         1           10         N/A         3/8 Lockwasher         1           11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane Spring         3           19         N/A         Vane Spring         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         <	5	N/A	0-Ring (-159)	1
8         KIT100WHP         0-Ring (-114) Washer         1           9         N/A         Washer         1           10         N/A         3/8 Lockwasher         1           11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1 <tr< td=""><td>6</td><td>N/A</td><td>Shaft</td><td>1</td></tr<>	6	N/A	Shaft	1
8         0-Ring (-114) Washer         1           9         N/A         Washer         1           10         N/A         3/8 Lockwasher         1           11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane Spring         3           19         N/A         Vane Spring         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25	7	KIT100WHP	Seal Washer	1
10         N/A         3/8 Lockwasher         1           11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane Spring         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1	8		O-Ring (-114) Washer	1
11         N/A         3/8-16 Hex Nut         1           12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1	9	N/A	Washer	1
12         N/A         Bearing Plate         1           13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt	10	N/A	3/8 Lockwasher	1
13         N/A         1/4 x 5/8 Rivet         1           14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1 <t< td=""><td>11</td><td>N/A</td><td>3/8-16 Hex Nut</td><td>1</td></t<>	11	N/A	3/8-16 Hex Nut	1
14         N/A         1/4 Spring Washer         1           15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	12	N/A	Bearing Plate	1
15         N/A         Locking Link         1           16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	13	N/A	1/4 x 5/8 Rivet	1
16         N/A         Rotor         1           17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	14	N/A	1/4 Spring Washer	1
17         N/A         Vane Pin (Rivet, Flat Head)         3           18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	15	N/A	Locking Link	1
18         N/A         Vane Spring         3           19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	16	N/A	Rotor	1
19         N/A         Vane         3           20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	17	N/A	Vane Pin (Rivet, Flat Head)	3
20         30F4541         Crank         1           21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	18	N/A	Vane Spring	3
21         N/A         Wood Grip         1           22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	19	N/A	Vane	3
22         100F1086         Grip Assembly (Includes items 21, 31, 34)         1           23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	20	30F4541	Crank	1
23         N/A         #10-24 x 1/2 TORX PH         2           24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	21	N/A	Wood Grip	1
24         N/A         1/4-20 x 3/4 HWHTRS         12           25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	22	100F1086	Grip Assembly (Includes items 21, 31, 34)	1
25         100F0741         Check Valve Assembly         1           26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	23	N/A	#10-24 x 1/2 TORX PH	2
26         KIT120SG         Inlet Gasket         1           27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	24	N/A	1/4-20 x 3/4 HWHTRS	12
27         100F0760         Screen         1           28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	25	100F0741	Check Valve Assembly	1
28         N/A         Inlet Flange         1           29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	26	KIT120SG	Inlet Gasket	1
29         5200F1790         Nozzle         Opt           31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	27	100F0760	Screen	1
31         N/A         5/16-18 Square Nut         1           32         1200KTG9099         Suction Pipe         Opt	28	N/A	Inlet Flange	1
32 1200KTG9099 Suction Pipe Opt	29	5200F1790	Nozzle	Opt.
	31	N/A	5/16-18 Square Nut	1
34 N/A 5/16-18 x 4 RHMS 1	32	1200KTG9099	Suction Pipe	Opt.
	34	N/A	5/16-18 x 4 RHMS	1
35 5200F1619 Discharge Spout Assembly Opt	35	5200F1619	Discharge Spout Assembly	Opt.

Repair and Accessory Kits		
100KTF1214	Rebuild Kit (includes #2, 5, 8, 17, 18, 26 & 27)	
807CMK	Gallon Meter Kit	
807CLMK	Liter Meter Kit	
100ACC111	Gallon Counter Kit	
100ACC111L	Liter Counter Kit	
F1810PM0	Particulate Filter	
F1810HM0	Hydrosorb® Filter	
1200KTG9075	Filter Head	





# Fill-Rite Company

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