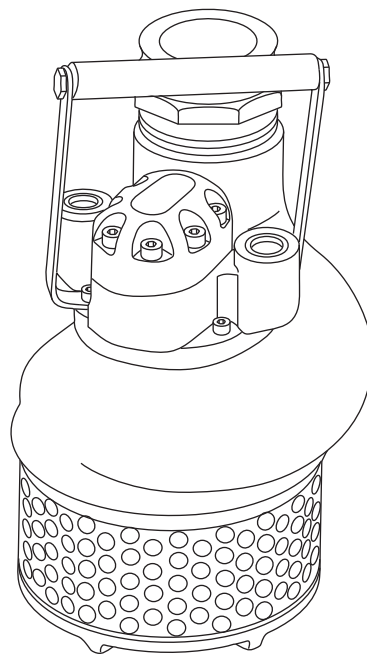


# INSTRUCTION MANUAL



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## **H4665A**

# **Submersible Pump**

**Serial Code FTY**



**Read and understand** all of the instructions and safety information in this manual before operating or servicing this tool.

Register this product at [www.greenlee.com](http://www.greenlee.com)

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## Description

The Greenlee Utility H4665A Submersible Pump is intended for pumping water only in any type of non-explosive environment. This pump operates with either open-center or closed-center hydraulic systems.

The quiet, self-priming pump mechanism operates efficiently and features a rugged, direct-drive, gear-type hydraulic motor. Oil-lubricated seals prevent damage when the pump is unintentionally run dry.

## Safety

Safety is essential in the use and maintenance of Greenlee Utility tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

## Purpose of this Manual

This manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the following Greenlee Utility tool:

H4665A (42191) Submersible Pump  
Serial Code FTY

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge at [www.greenlee.com](http://www.greenlee.com).

## Other Publications

SAE Standard J1273 (Hose and Hose Assemblies):  
Publication 99930323

All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products. Loctite is a registered trademark of Henkel Corp.

# **KEEP THIS MANUAL**

## IMPORTANT SAFETY INFORMATION



### SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

#### ⚠ DANGER

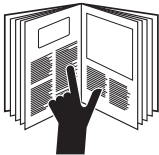
Immediate hazards which, if not avoided, **WILL** result in severe injury or death.

#### ⚠ WARNING

Hazards which, if not avoided, **COULD** result in severe injury or death.

#### ⚠ CAUTION

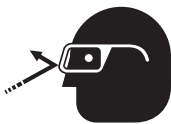
Hazards or unsafe practices which, if not avoided, **MAY** result in injury or property damage.



#### ⚠ WARNING

Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

Failure to observe this warning could result in severe injury or death.



#### ⚠ WARNING

Wear eye protection when operating or servicing this tool.

Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.

#### ⚠ WARNING



Skin injection hazard:

- Do not use hands to check for leaks.
- Do not hold hose or couplers while the hydraulic system is pressurized.
- Depressurize the hydraulic system before servicing.

Oil under pressure easily punctures skin, causing serious injury, gangrene, or death. If you are injured by escaping oil, seek medical attention immediately.

#### ⚠ WARNING

Pump water only.

- Do not use to pump drinking water.
- Do not use to extinguish fires.

Failure to observe these warnings could result in severe injury or death.

#### ⚠ WARNING

Keep away from the pump outlet/discharge hose during operation. Liquid and debris will be thrown by the pump.

Failure to observe this warning could result in severe injury or death.

#### ⚠ WARNING

Do not operate the pump if the impeller blades are exposed. Do not operate the pump without the inlet screen in place.

Failure to observe this warning could result in severe injury or death.

## IMPORTANT SAFETY INFORMATION

### **⚠ WARNING**

Do not exceed the following hydraulic power source maximums:

- Hydraulic flow: 30 l/min (8 gpm)
- Pressure relief: 138 bar (2000 psi)
- Back pressure: 13.8 bar (200 psi)

Failure to observe this warning could result in severe injury or death.

### **⚠ WARNING**

Do not disconnect tool, hoses, or fittings while the power source is running or if the hydraulic fluid is hot. Hot hydraulic fluid can cause serious burns.

### **⚠ WARNING**

Do not reverse hydraulic flow. Operation with hydraulic flow reversed can cause tool malfunction. Connect the pressure (supply) hose and tank (return) hose to the proper ports.

Failure to observe this warning could result in severe injury or death.

### **⚠ WARNING**

Do not change accessories, inspect, adjust, or clean tool when it is connected to a power source. Accidental startup can result in serious injury.

### **⚠ CAUTION**

Hydraulic oil can cause skin irritation.

- Handle the tool and hoses with care to prevent skin contact with hydraulic oil.
- In case of accidental skin contact with hydraulic oil, wash the affected area immediately to remove the oil.

Failure to observe these precautions may result in injury.

### **⚠ CAUTION**

- Inspect tool before use. Replace any worn or damaged parts. A damaged or improperly assembled tool can malfunction, injuring nearby personnel.
- Inspect the hydraulic hoses and couplings every operating day. Repair or replace if leakage, cracking, wear, or damage is evident. Damaged hoses or couplings can fail, resulting in injury or property damage.
- Use this tool for manufacturer's intended use only. Use other than that which is described in this manual could result in injury or property damage.
- Make sure all bystanders are clear of the work area when handling, starting, and operating the tool. Nearby personnel can be injured by flying debris or by flying parts in the event of a tool malfunction.

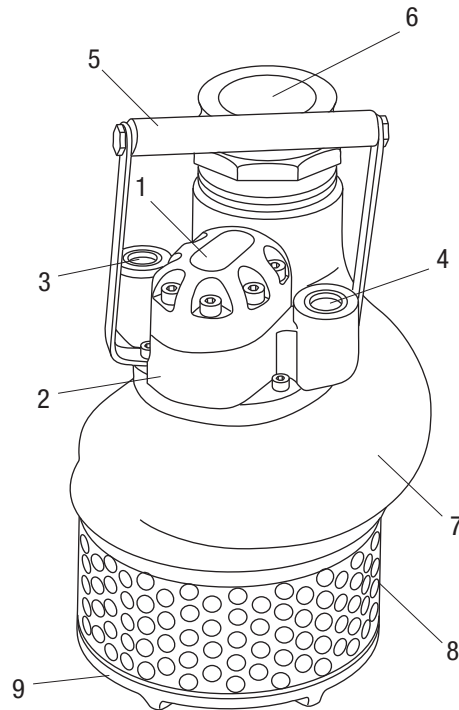
### **IMPORTANT**

Procedure for connecting or disconnecting hydraulic hoses, fittings, or components:

1. Move the flow lever on the hydraulic power source to the OFF position.
2. Stop the hydraulic power source.
3. Follow the sequence under "Hose Connections" to prevent pressure buildup. In case some pressure has built up, loosen hoses, fittings, or components slowly.

*Note: Keep all decals clean and legible, and replace when necessary.*

**Identification**



**H4665A Submersible Pump**

- |   |                   |
|---|-------------------|
| 1. Serial Number Tag                    | 6. Discharge Port |
| 2. Hydraulic Motor                      | 7. Housing        |
| 3. Hydraulic Tank Port "T" (return)     | 8. Inlet Screen   |
| 4. Hydraulic Pressure Port "P" (supply) | 9. Base Plate     |
| 5. Handle                               |                   |

## Specifications

### H4665A

Type of Hydraulic System: Open-center or closed-center

Hydraulic Ports:

- Pressure (supply): 9/16–18 female SAE
- Tank (return): 3/4–16 female SAE

Output: Refer to the “Performance Chart” below

Mass/Weight: 4.54 kg (10 lb)

Width (diameter): 178 mm (7")

Height (with handle): 318 mm (12.5")

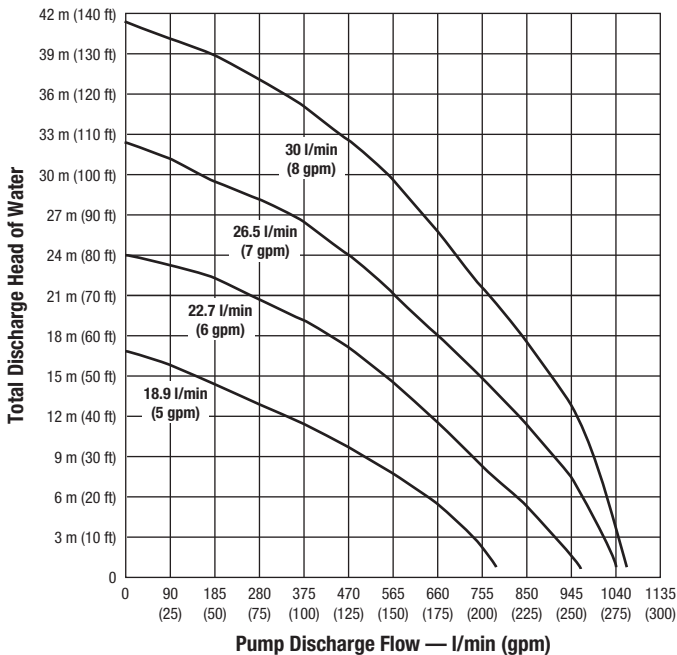
Inlet Screen (strainer):

- Height: 66.7 mm (2.625")
- Diameter: 143 mm (5.625")
- Openings: 9.53 mm (0.375")

Pump Inlet Port: 49.2 mm (1.9375")

Pump Discharge Port: 2" female NPT

### Performance Chart



### Hydraulic Power Source

#### ⚠ WARNING

Do not exceed the following hydraulic power source maximums:

- Hydraulic flow: 30 l/min (8 gpm)
- Pressure relief: 138 bar (2000 psi)
- Back pressure: 13.8 bar (200 psi)

Failure to observe this warning could result in severe injury or death.

### Hydraulic Power Source (cont'd)

Type of Hydraulic System: Open-center or closed-center

Flow:

- Minimum: 19 l/min (5 gpm)
- Recommended: 19 to 30 l/min (5 to 8 gpm)
- Maximum: 30 l/min (8 gpm)

Filtration: 10 micron (nominal)

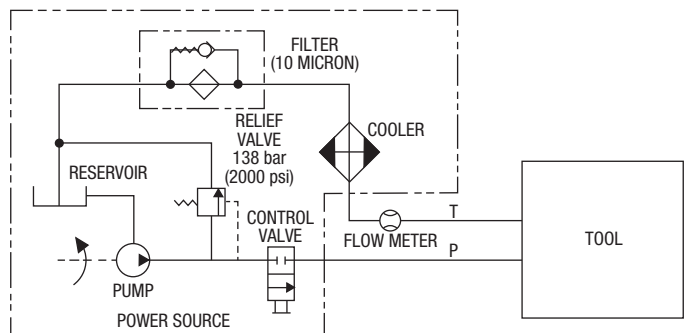
Pressure Relief Setting: 138 bar (2000 psi)

Back Pressure (maximum\*): 13.8 bar (200 psi)

\* 13.8 bar (200 psi) is the maximum agreed standard back pressure for the HTMA (Hydraulic Tool Manufacturers Association). Greenlee Utility tools will operate satisfactorily at this standard.

- Maximum hydraulic fluid temperature must not exceed 60 °C (140 °F). A sufficient oil cooling capacity is needed to limit the hydraulic fluid temperature.
- Hydraulic flow must not exceed 30 l/min (8 gpm). Install a flow meter in the return line to measure the rate of hydraulic flow before using the tool.
- Pressure relief valve setting must not exceed 138 bar (2000 psi) at your tool's maximum flow. Locate the pressure relief valve in the supply circuit to limit excessive hydraulic pressure to the tool.

### Hydraulic Schematic



### Recommended Hydraulic Fluids

Use any nondetergent, petroleum-based hydraulic fluid which meets the following specifications or HTMA specifications.

S.U.S. @:

38 °C (100 °F): 140 to 225

99 °C (210 °F): 40 minimum

Flash Point: 170 °C (340 °F) minimum

Pour Point: -34 °C (-30 °F) minimum

## Hoses and Fittings

### Installation and Maintenance

Refer to publication 99930323, SAE J1273 (Hose and Hose Assemblies).

### Replacement

Refer to a Greenlee Utility catalog or publication 99910322, Low Pressure Quick Couplers, Adapters, and Hoses.

## ⚠ WARNING

Do not disconnect tool, hoses, or fittings while the power source is running or if the hydraulic fluid is hot. Hot hydraulic fluid can cause serious burns.

## Hose Connections

### Tool Port Identification

Three methods are used to identify the pressure (supply) and tank (return) ports of Greenlee Utility tools. Match the markings on your tool to this table.

Pressure Port (supply)	Tank Port (return)
P	T
or	
In	Out
or	
9/16–18 O-ring Boss (smaller port)	3/4–16 O-ring Boss (larger port)

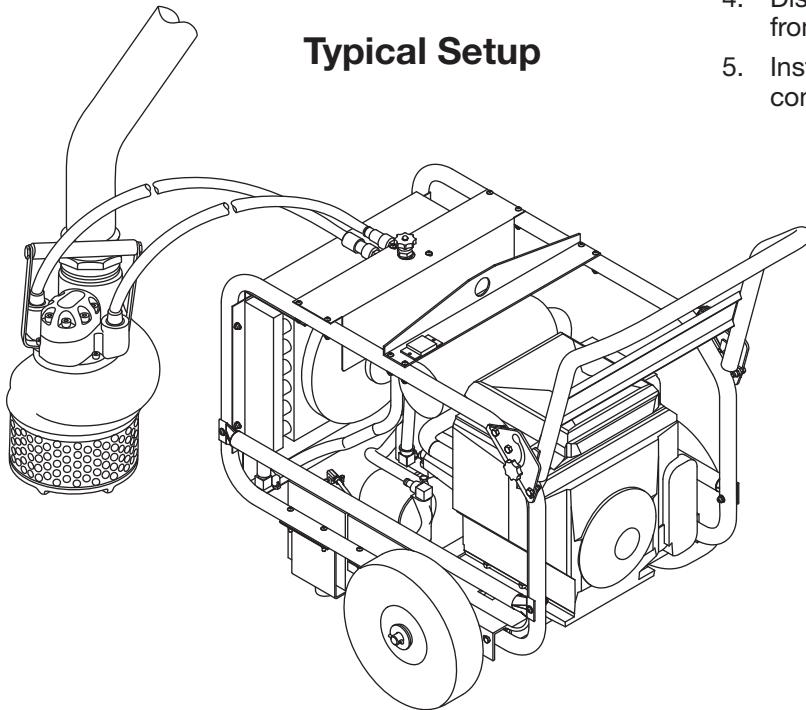
### Connecting Hoses

1. Move the flow lever on the hydraulic power source to the OFF position.
2. Stop the hydraulic power source.
3. Connect the tank hose to the tank (return) port on the hydraulic power source, and then to the tank port on the tool.
4. Connect the pressure hose to the pressure port on the tool, and then to the pressure (supply) port on the hydraulic power source.

### Disconnecting Hoses

1. Move the flow lever on the hydraulic power source to the OFF position.
2. Stop the hydraulic power source.
3. Disconnect the pressure hose from the hydraulic power source, and then from the tool.
4. Disconnect the tank hose from the tool, and then from the hydraulic power source.
5. Install dust caps over the ports to prevent contamination.

## Typical Setup



## Operation

### ⚠ WARNING

Keep away from the pump outlet/discharge hose during operation. Liquid and debris will be thrown by the pump.

Failure to observe this warning could result in severe injury or death.

### ⚠ WARNING

Do not change accessories, inspect, adjust, or clean tool when it is connected to a power source. Accidental startup can result in serious injury.



### ⚠ WARNING

Wear eye protection when operating or servicing this tool.

Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.



### ⚠ WARNING

Skin injection hazard:

- Do not use hands to check for leaks.
- Do not hold hose or couplers while the hydraulic system is pressurized.
- Depressurize the hydraulic system before servicing.

Oil under pressure easily punctures skin, causing serious injury, gangrene, or death. If you are injured by escaping oil, seek medical attention immediately.

1. Connect the discharge hose to the discharge port.
2. Start the hydraulic power source.

*Note: Allow the power source to run for a few minutes to warm the hydraulic fluid.*

### ⚠ CAUTION

Do not use the hydraulic hoses to lower or lift the pump. This will weaken or damage the hoses or fittings, and could cause a hydraulic fluid leak.

Failure to observe this precaution may result in property damage.

3. Attach a rope or other device to the handle of the pump. Lower the pump into the material to be pumped.
4. Actuate the control valve of the power source to start the flow of hydraulic fluid.
5. When finished pumping, actuate the control valve to stop the flow of hydraulic fluid.

## Maintenance

Use this maintenance schedule to maximize the tool's service life.

*Note: Keep all decals clean and legible, and replace when necessary.*

### Daily

1. Wipe all tool surfaces clean.
2. Inspect the hydraulic hoses and fittings for signs of leaks, cracks, wear, or damage. Replace if necessary.
3. Install dust caps over the hydraulic ports when the tool is disconnected.

### Monthly

Perform a thorough inspection of the hydraulic hoses and fittings as described in publication 99930323, SAE J1273 (Hose and Hose Assemblies).



## Troubleshooting

Before troubleshooting, determine whether the problem is in the tool, the hoses, or the power source. Substitute a tool, hoses, or power source known to be in good working order to identify the item that is not operating.

If the problem is in the tool, refer to the troubleshooting table below. If the problem is in the power source, refer to the troubleshooting section of the power source instruction manual.

<b>Problem</b>	<b>Probable Cause</b>	<b>Probable Remedy</b>
Tool does not operate.	Improper power source.	Verify that the power source meets the specifications. Refer to the "Specifications" section of this manual.
	Hydraulic fluid level low.	Check the fluid level. Check system for leaks.
	Incorrect hydraulic fluid viscosity.	Use hydraulic fluid with the correct viscosity. Refer to the "Specifications" section of this manual.
Tool operates slowly or erratically.	Hydraulic fluid cold.	Allow fluid to warm to the operating temperature. Actuate the tool intermittently to reduce the warming time.
	Power source not adjusted correctly.	Refer to the power source operator's manual. Set the flow and pressure to correspond with the tool.
	Hydraulic fluid level low.	Check the fluid level. Check system for leaks.
	Air in the hydraulic system.	Refer to the power source manufacturer's instructions for removing air from the system.
	Incorrect hydraulic fluid viscosity.	Use hydraulic fluid with the correct viscosity. Refer to the "Specifications" section of this manual.
Tool operates backwards.	Hose connections at tool reversed.	Depressure the hydraulic system. Switch the hose connections.
Tool operates, but discharge is low.	Inlet screen plugged with debris.	Remove debris from inlet screen.
	Discharge hose plugged.	Remove and clean hose.

