

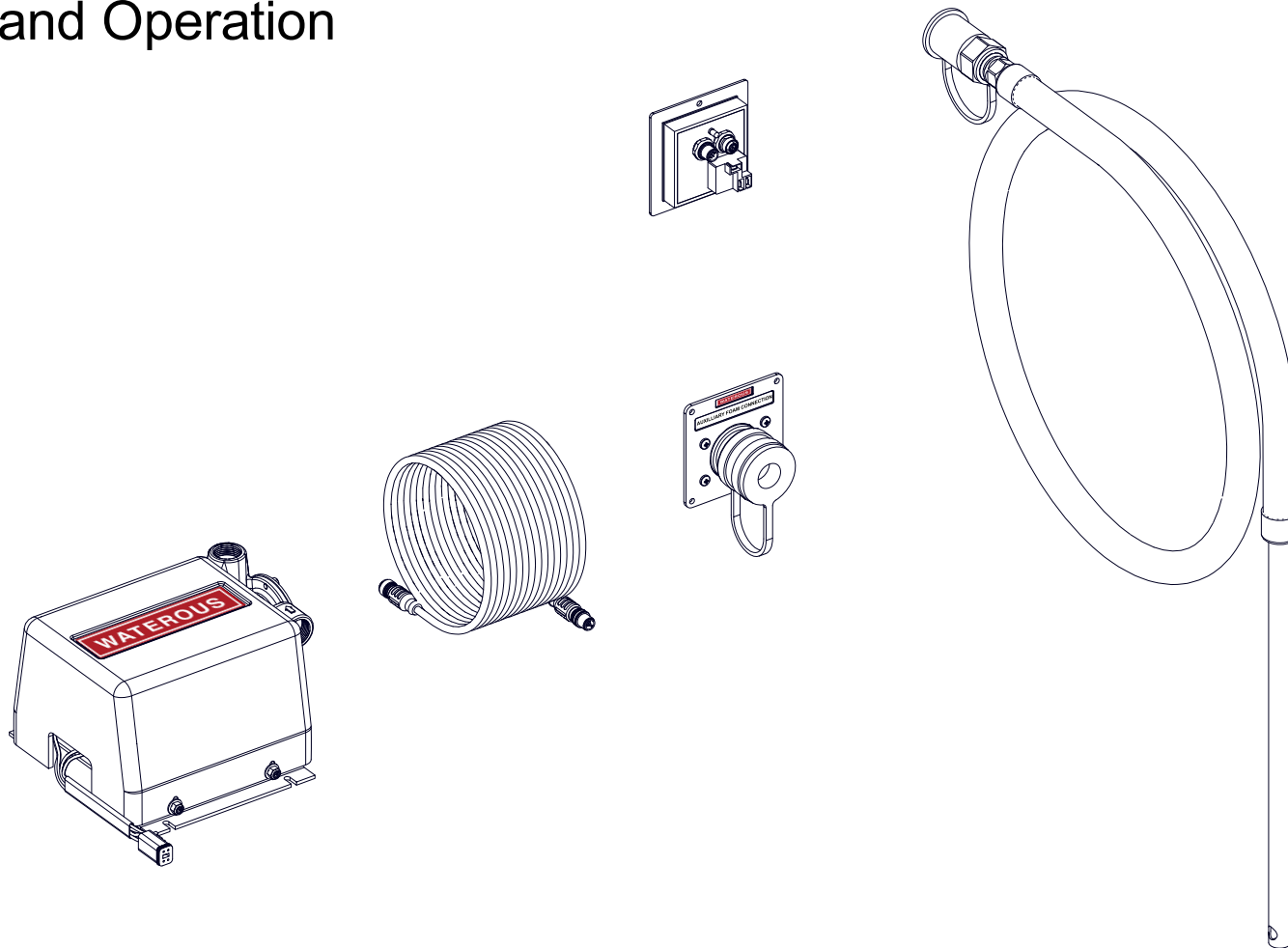
WATEROUS

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Overboard Foam Pick-Up Kit

Installation and Operation



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www.waterousco.com

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Safety Precautions

- Read and understand all the associated documentation before you begin the installation.
- Read and understand all the notices and safety precautions.
- Be aware that these instructions are only guidelines and are not meant to be definitive. Contact Waterous when you have questions about installing, operating, or maintaining the equipment.
- Do not install the equipment if you are not familiar with the tools and skills needed to safely perform the required procedures—proper installation is the responsibility of the purchaser.
- Do not operate the equipment when safety guards are removed.
- Do not modify the equipment.
- Regularly check for leaks, worn, or deteriorated parts.

NOTICE

Before Operation

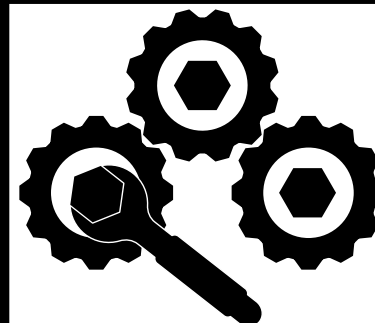
- Read and understand all the instructions provided.
- Check all fluid levels and replenish if necessary.
- Remove all shipping plugs and install the operation plugs or caps.



NOTICE

Modification

- Modifying the equipment can damage components and void your warranty.
- Do not modify the system or any of its components.

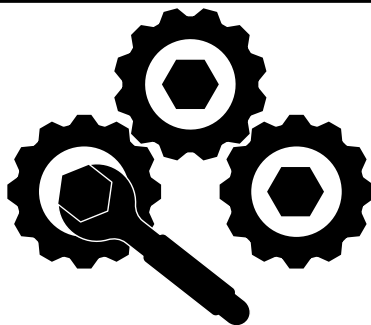


Safety Precautions

NOTICE

Maintenance

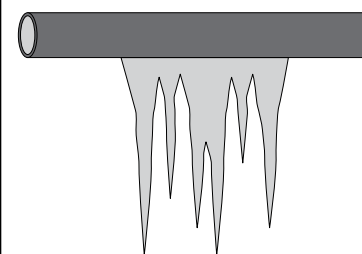
- Not following maintenance procedures can damage your equipment.
- Perform all maintenance procedures as required.



NOTICE

Freeze Damage

- Do not allow fluid in the lines to freeze.
- Remove all freezable fluid from the lines before storing the apparatus.



Use this document to install and operate your Waterous equipment. Understand the following conditions before continuing with the document:

- The instructions may refer to options or equipment that you may not have purchased with your system.
- The illustrations in this document are intended to convey concepts. Do not use the illustrations to determine physical attributes, placement, or proportion.
- Understand that your application may require additional steps, that are not described in the illustrations or instructions, to perform the installation.
- The equipment described in this document is intended to be installed by a person or persons with the necessary skills and knowledge to perform the installation.
- The equipment described in this document is intended to be operated by a person or persons with the basic knowledge of operating similar equipment.

This document is divided into the following sections:

SAFETY

This section describes general precautions and alert symbols that are in this document.

INTRODUCTION

This section is an overview of the document.

PRODUCT OVERVIEW

This section describes the components that make-up the system.

INSTALLATION

This section describes the installation and initial setup procedures.

OPERATION

This section describes the equipment operation.

SERVICE PARTS

This section describes the service parts.

Using this Document

Use the guidelines below when viewing this document.

Viewing the Document Electronically

- View this document in landscape orientation.
- Use the table of contents to navigate directly to that section.
- Text **with this appearance** is linked to a reference.

Printing the Document

- The document is viewed the best when printed in color.
- The *print on both sides* and *flip on long edge* features can provide the best results.
- Use a 3-ring binder to store the document.

Symbols

Here are the symbols found in the document a their definitions.



Section reference—This symbol tells you to refer to the section reference for additional information.



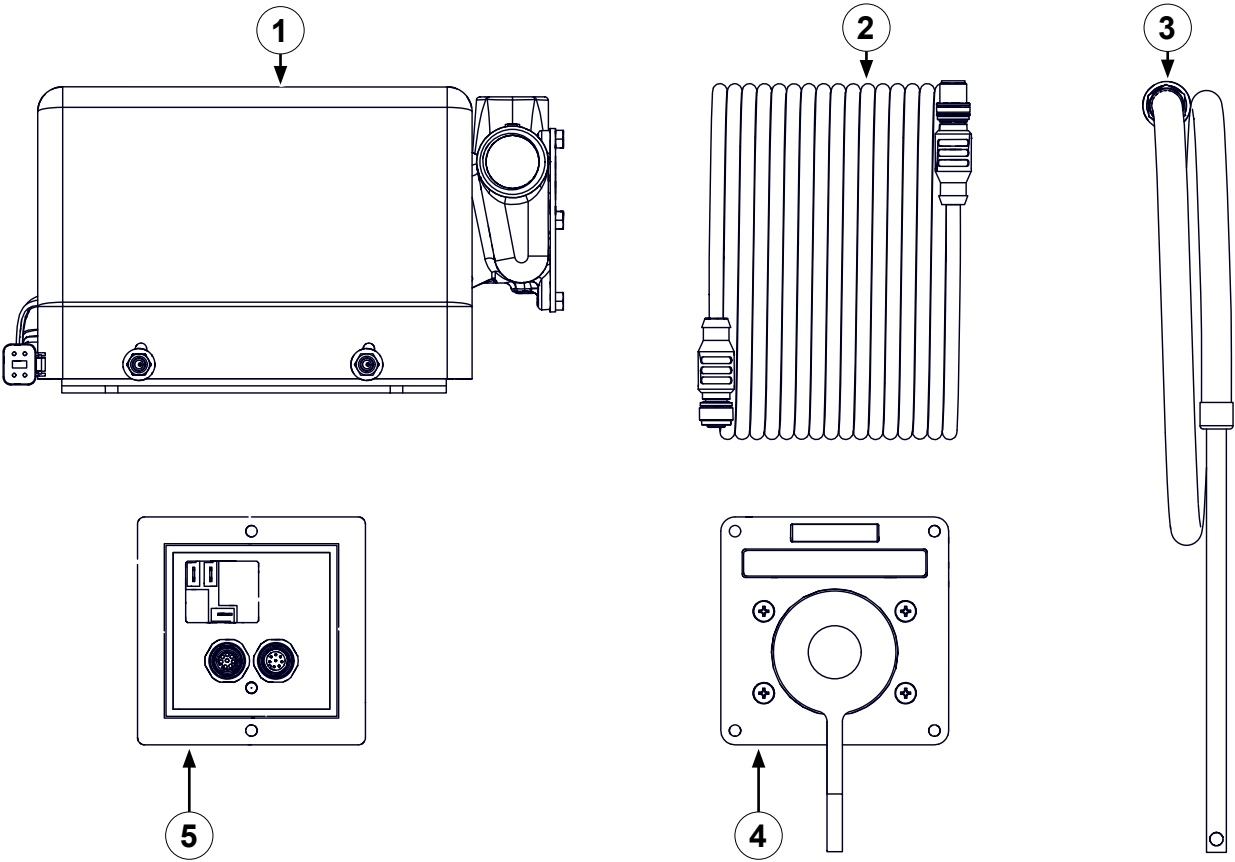
Drill—This symbol tells you to drill the mounting holes in the apparatus.



Jig saw—This symbol tells you to make a cutout in the apparatus.

System Components

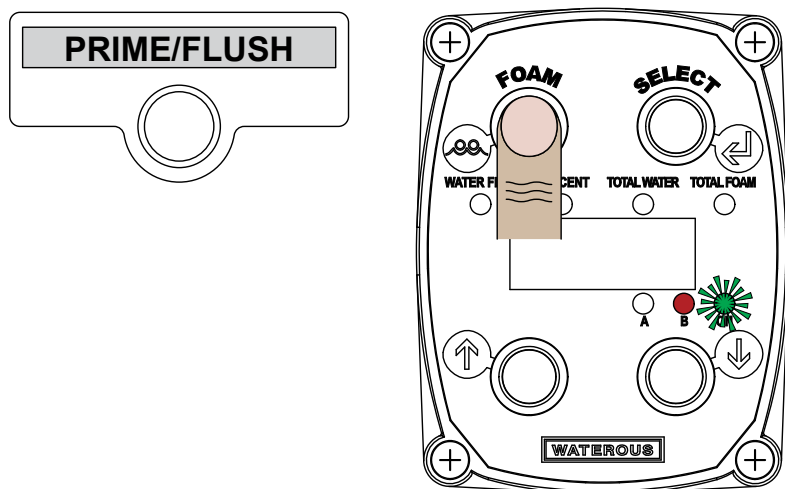
The overboard foam pick-up system includes the illustrated components. Various components are available in 3/4 or 1 inch, in brass or stainless steel, and 12 V or 24 V. Components such as hoses, fittings, sensors, circuit breakers, are sourced by the installer. Installation kits are available, contact Watrous for more information.



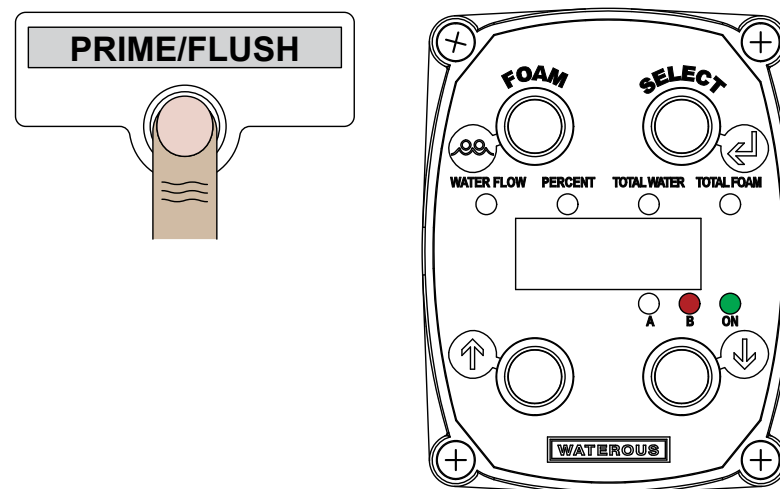
Feature	Description
1 Pick-up pump	This transfers foam concentrate from the supply container to the foam pump via the dual tank selector valve.
2 Cable	This enables the run-logic module to communicate with the foam pump.
3 Pick-up hose with wand	This transfers foam concentrate from the supply container to the system.
4 Quick-connect panel	This connects the pick-up hose to the pick-up pump.
5 Run-logic module	This enables system functions.

System Overview

The overboard pick-up system enables you to source foam concentrate, or clear-water, from an external container. It is integrated into the foam proportioning equipment and is enabled as a tank-B option through the OIT. During operation, the foam concentrate is routed through the electric valve furnished with the dual-tank selector kit. As an option, a momentary switch is wired into the system to manually operate the overboard pick-up pump—enabling you to prime or flush the foam proportioning system as desired.

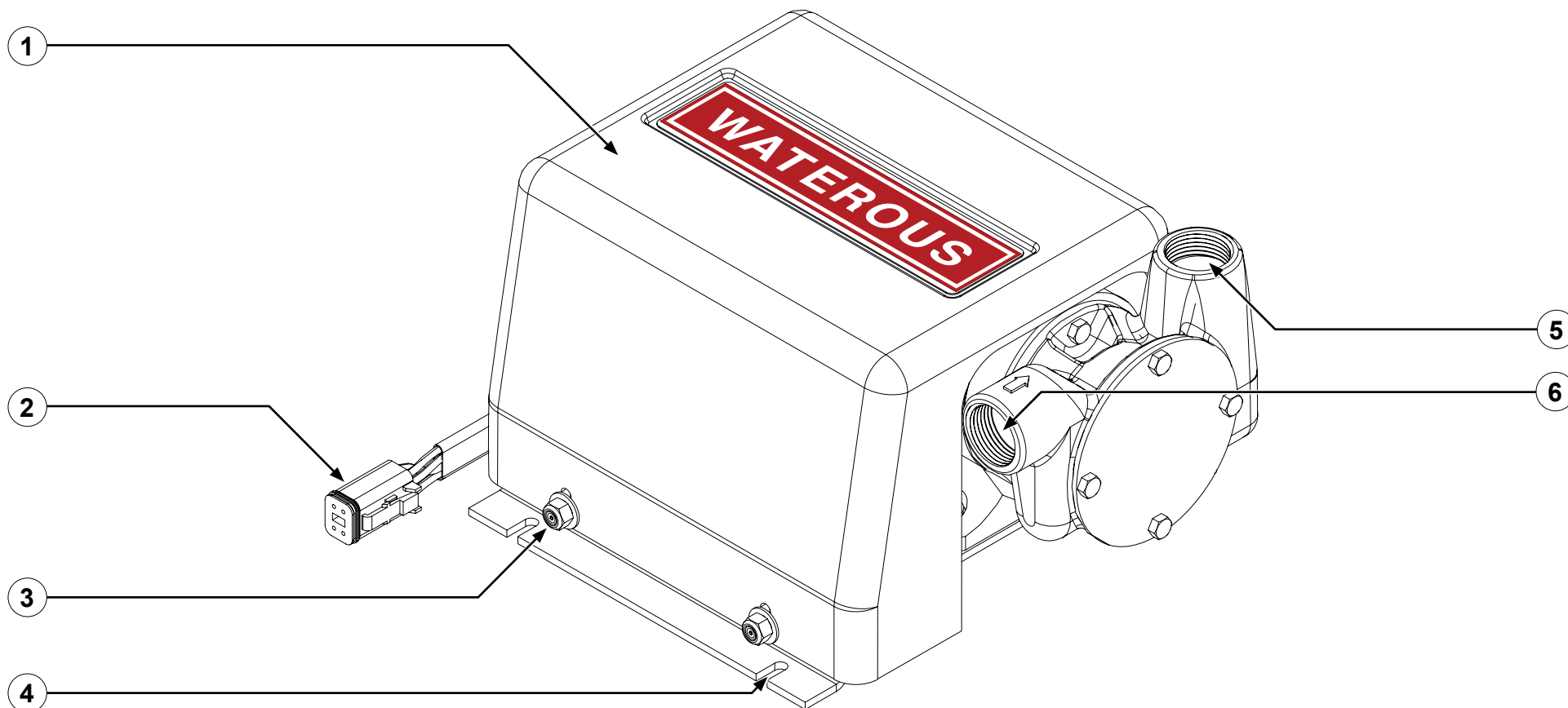


With the system ready for operation and the tank-B option selected, press the foam button to enable the foam proportioning system.



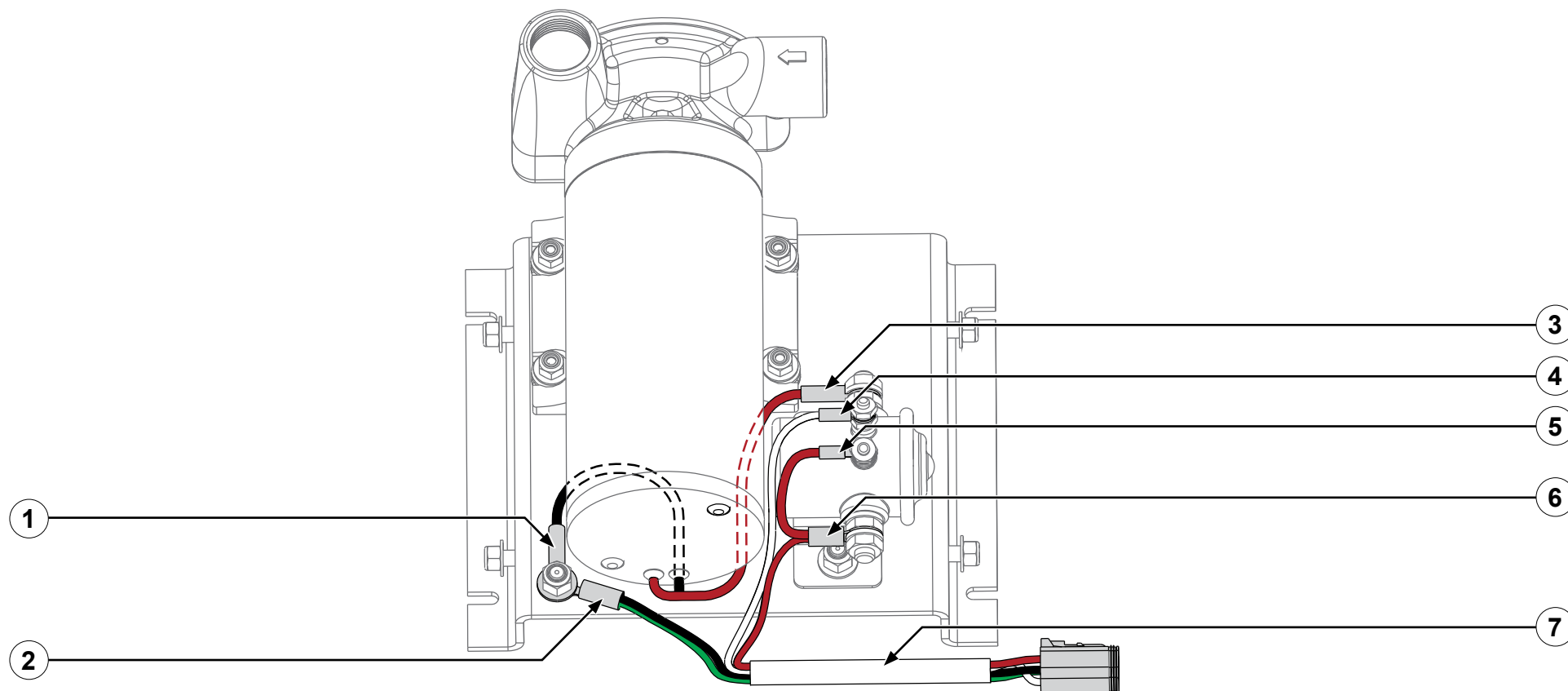
Typical applications incorporate an optional momentary switch that enables you to manually operate the overboard pick-up to prime or flush the foam proportioning system as required. Priming the system prepares the apparatus for on-site operation and flushing the system prepares the system for storage.

Pick-Up Pump



Feature	Description
1 Cover	This protects the internal components.
2 Pick-up pump connector	This is not used in this application.
3 Cover nut	This secures the cover to the assembly.
4 Base mount	This secures the pick-up pump to the apparatus.
5 Discharge port	This is the pick-up pump discharge.
6 Inlet port	This is the pick-up pump inlet.

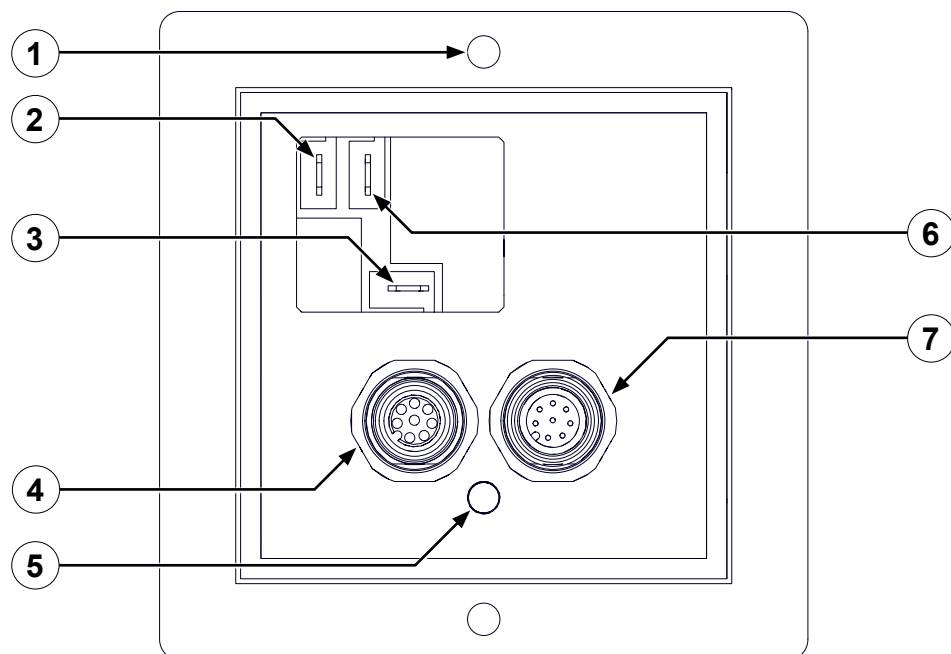
Pick-Up Pump—Wire Connections



Description

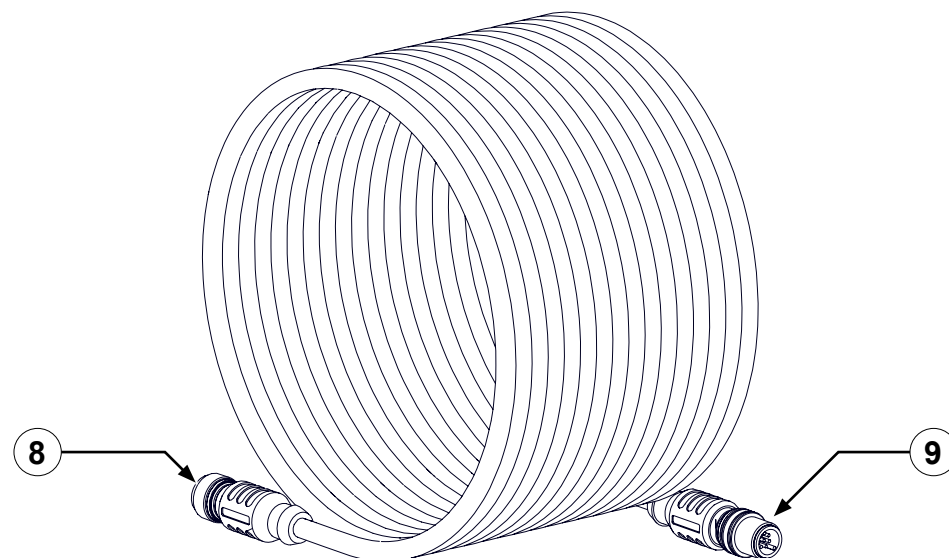
- | | |
|---|---|
| 1 | This is the black wire from the motor. |
| 2 | This is the black and green wire from the wire harness. |
| 3 | This is the red wire from the motor. |
| 4 | This is the white wire from the wire harness. |
| 5 | This is the red wire from the wire harness—small post. |
| 6 | This is the red wire from the wire harness—large post. |
| 7 | This is the pick-up pump wire harness. |

Run-Logic Module



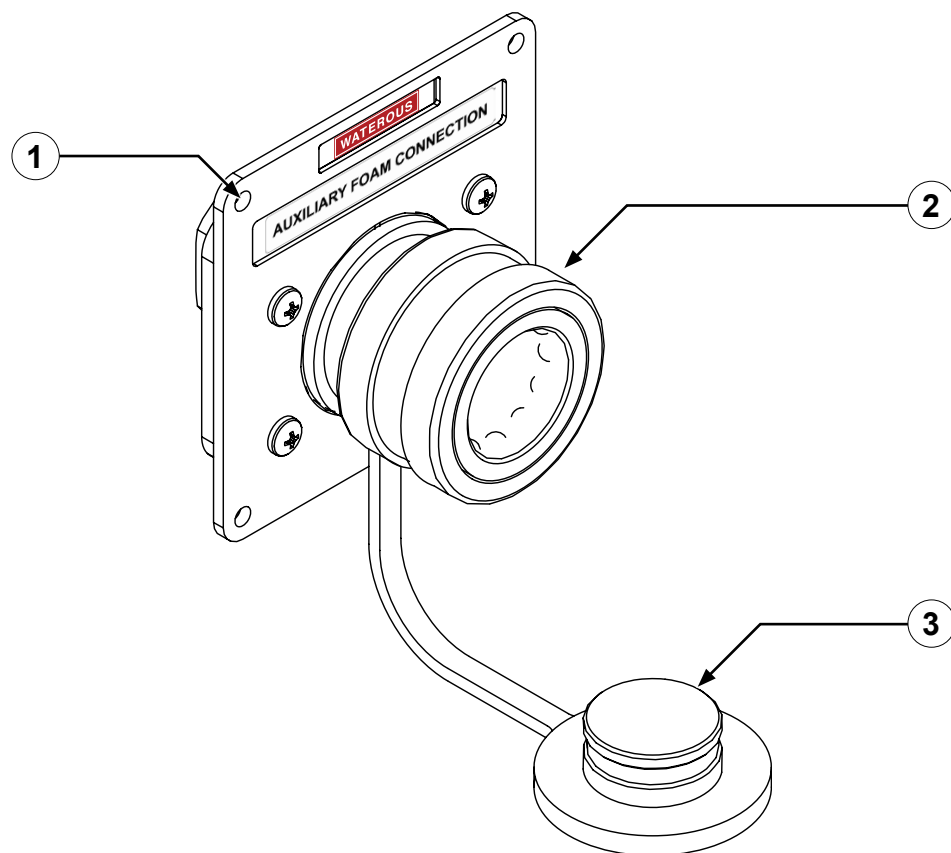
Feature	Description
1 Mounting hole	This secures the module to the apparatus.
2 N/C connector	This is the normally-closed solenoid connector.
3 Ground connector	This connects to apparatus ground.
4 Male Connector	This connects to the foam pump.
5 LED	This LED indicates operation.
6 N/O Connector	This is the normally-open solenoid connector.
7 Female Connector	This connects to the OIT.

Cable



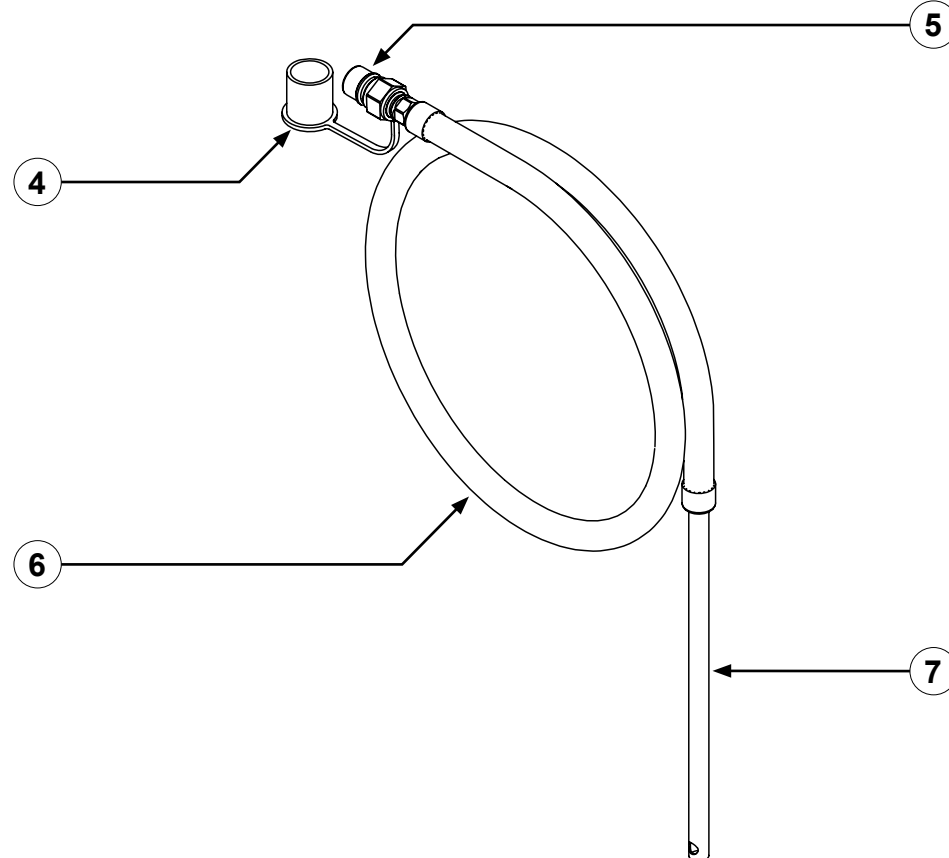
Feature	Description
8 Female Connector	This connects to the run-logic module—8-pin.
9 Male Connector	This connects to the foam pump—8-pin.

Quick-Connect Panel



Feature	Description
1 Mounting hole	This secures the assembly to the apparatus.
2 Panel-quick connect	This couples to the pick-up hose assembly.
3 Quick-connect cap	This protects the connector when not in use.

Pick-Up Hose



Feature	Description
4 Quick-connect cap	This protects the connector when not in use.
5 Hose-quick connect	This couples the panel-quick connect.
6 Hose	This transfers foam concentrate or clear-water to the auxiliary foam connection. It is available in 2 lengths: • For bucket style container—6 ft (2 m), included. • For drum style container—10 ft (3 m), available.
7 Wand	This is inserted into the supply container.

Installation Overview

This equipment is intended to be installed by a person or persons with the basic knowledge of installing similar equipment. Contact Waterous with questions about installing the equipment. The installation may require the following tasks and abilities:

- Locating, drilling, and cutting features into the apparatus.
- Connecting the hoses and fittings.
- Routing and securing the hoses.
- Routing and securing the wiring.
- Final testing.

Preparing for the Installation

Read and understand all the installation instructions before installing the equipment. Prepare a suitable, well-lit area, and gather all the necessary tools before you begin the installation.

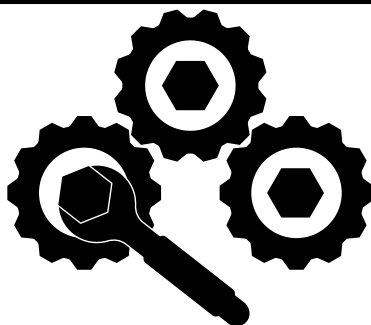
Modifying the Equipment

This equipment is intended to operate as designed. Do not remove, modify, or change the components in the system. Doing so will void the warranty. Contact Waterous for more information.

NOTICE

Modification

- Modifying the equipment can damage components and void your warranty.
- Do not modify the system or any of its components.



Do not modify the system or any components. Doing so will void your warranty.

Determining the Pick-Up Pump Location

Use the following guidelines to determine a location to mount the pick-up pump:

- Consider the hose and cable routing.
- Mount the pick-up pump where it has minimal exposure to excessive dirt, road debris, and heat buildup.
- Mount the pick-up pump in a location and orientation that enables you to access it for maintenance.

Determining the Component Locations

Use the following guidelines to determine a location to mount the run-logic module, pick-up pump, and quick-connect panel location:

- Consider the wire harness and hose routing.
- Consider accessibility during operation and maintenance.
- Install instruction plates near their applicable operator panels.

Determining Hose Routing

Use the following guidelines when routing the hoses:

- Route the hose in a straight line whenever possible.
- Do not pinch or kink the hose.
- Do not secure the hose to moving parts.
- Do not secure the hose near excessive heat.

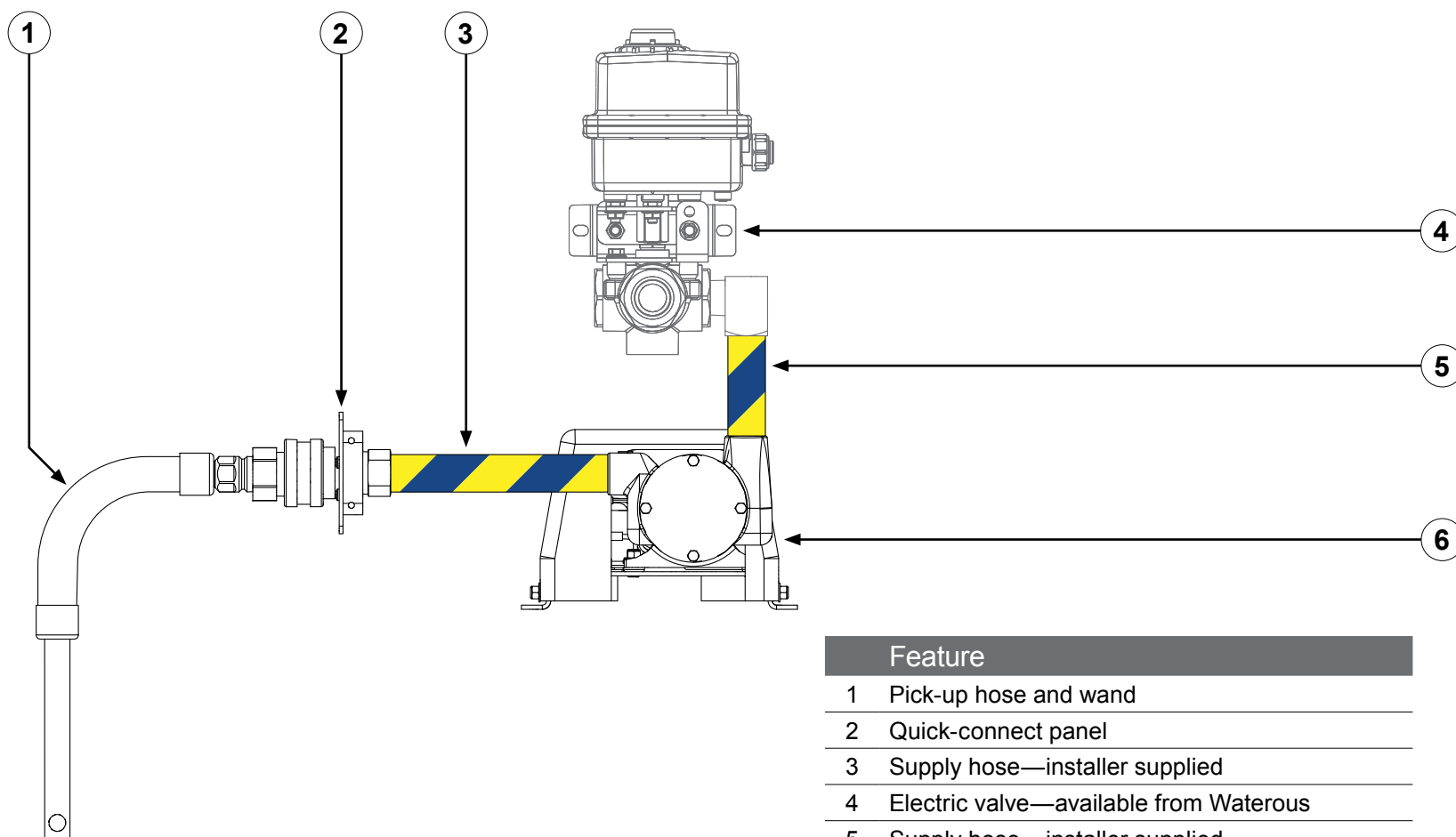
Determining Cable and Wire Routing

Use the *Wiring Best Practices* document, available at www.waterousco.com, as a guide to select and route wiring for your application.

Hose Connections Overview

The illustration shows the pick-up pump connected to an electric valve that selects between different foam concentrate sources. Locally source hoses and fittings that are compatible with the foam concentrate and operating pressure or obtain a hose and fitting kit from Waterous. Use industry-best practices to connect the system components. Contact Waterous for more information. Make sure that you meet the following hose specifications:

- Use a hose with minimum 3/4 inch inner diameter, reinforced clear wall.
- Use a hose with a minimum vacuum rating of 23 inHg (0.78 bar).
- Use a hose with a minimum pressure rating of 50 psi (3.45 bar).

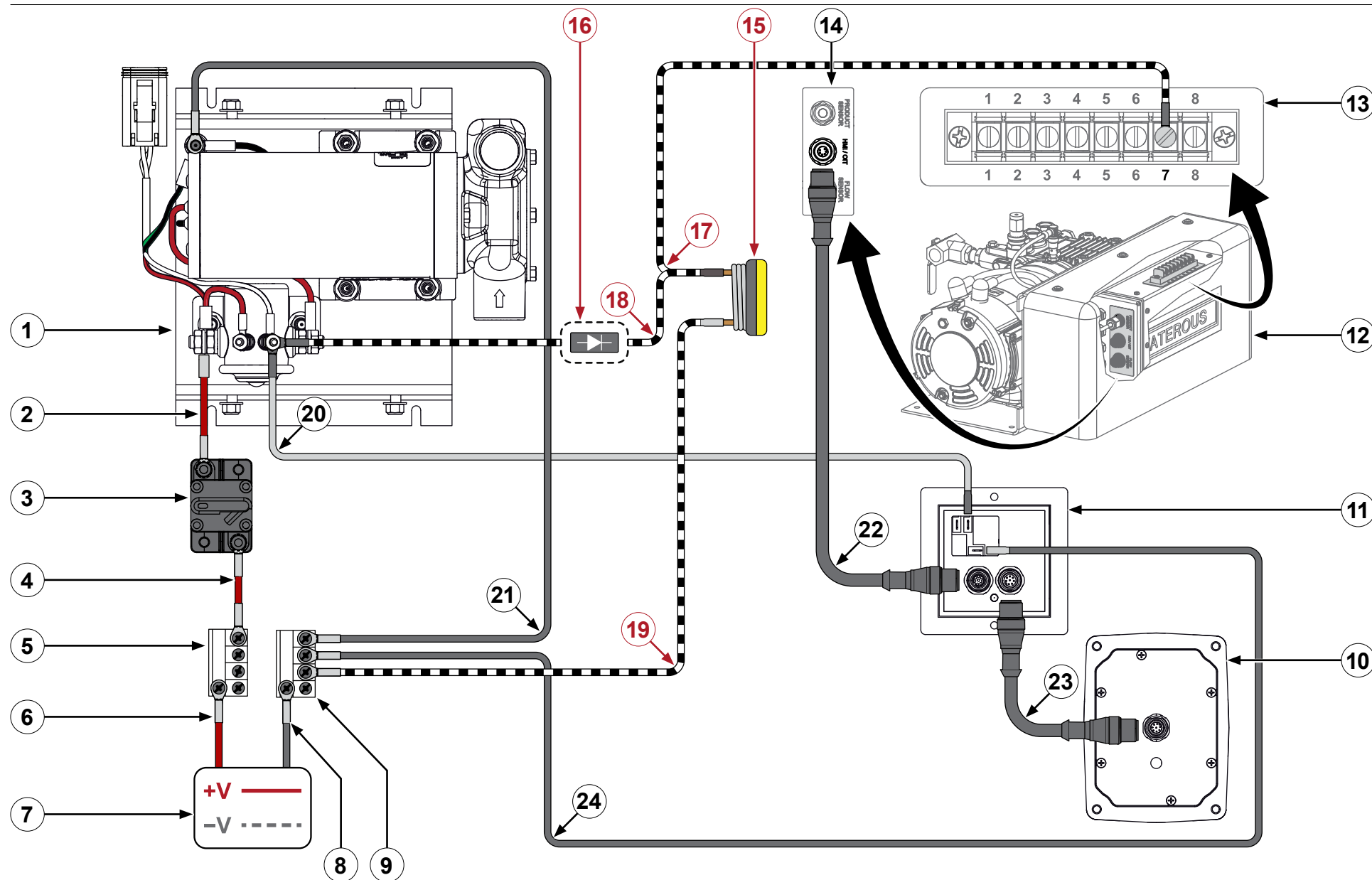


Feature

- | | |
|---|--|
| 1 | Pick-up hose and wand |
| 2 | Quick-connect panel |
| 3 | Supply hose—installer supplied |
| 4 | Electric valve—available from Waterous |
| 5 | Supply hose—installer supplied |
| 6 | Pick-up pump |

Notes

Electrical Connections Overview

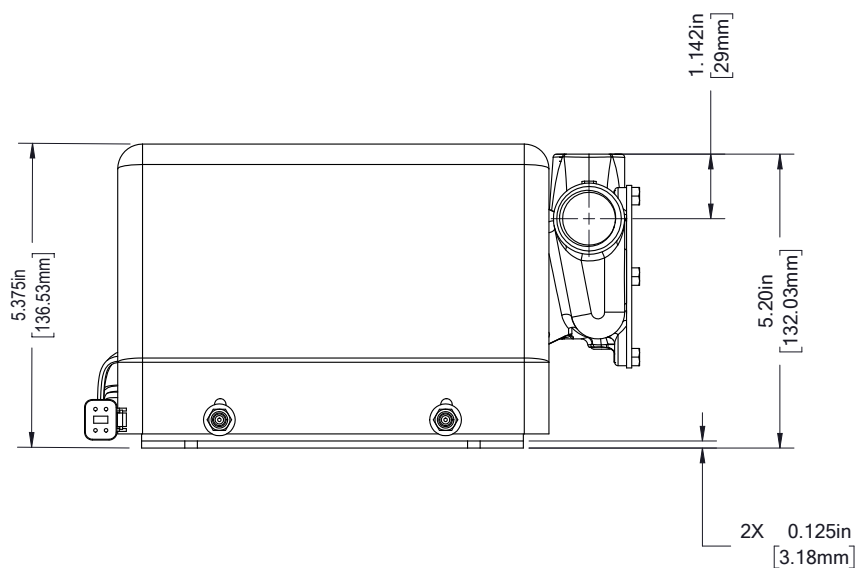
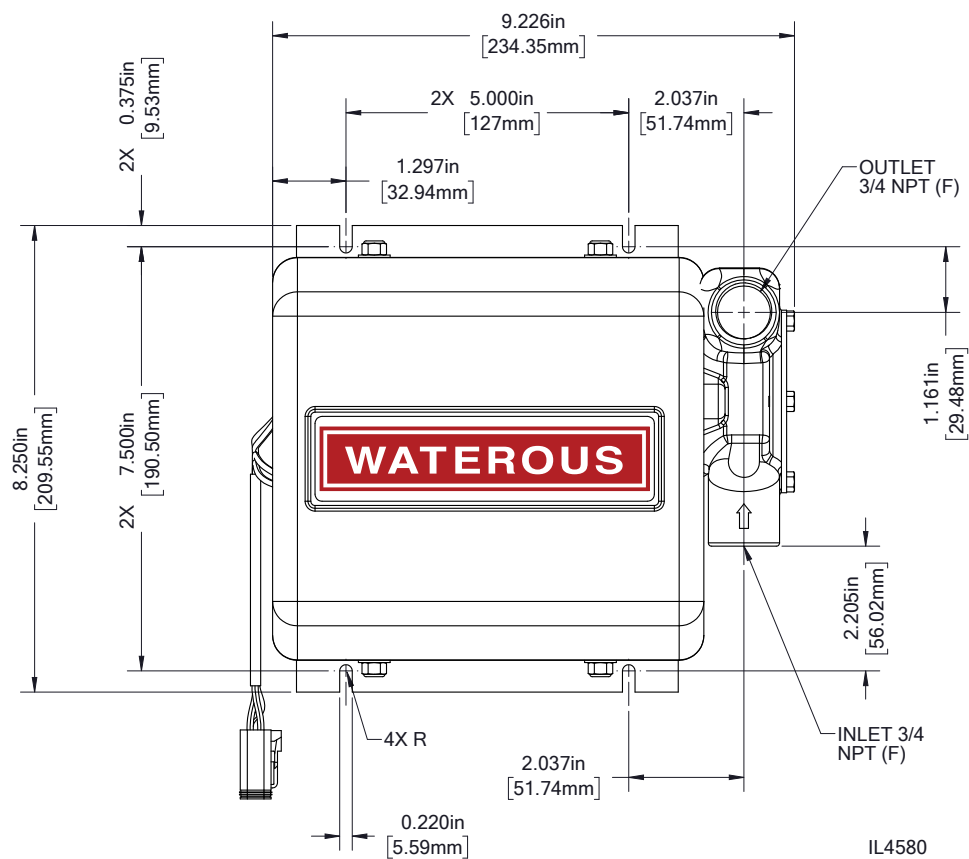


Electrical Connections Overview

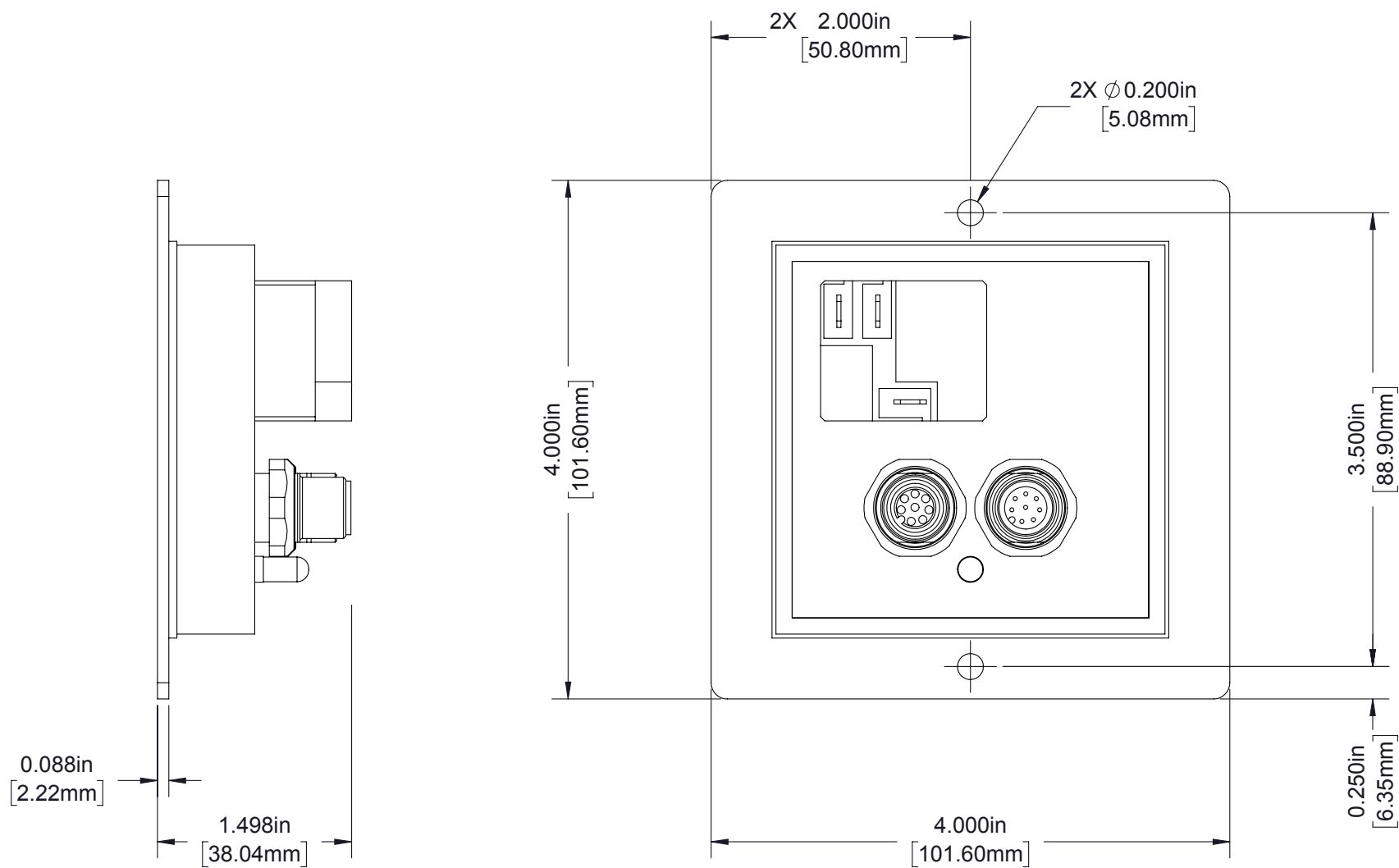
Feature
1 Pick-up pump
2 Positive (+) wire—installer supplied
3 Circuit breaker—installer supplied
4 Positive (+) wire—installer supplied
5 Terminal block—installer supplied
6 Positive (+) wire—installer supplied
7 Power source—apparatus power rail
8 Ground (–) wire—installer supplied
9 Terminal block—installer supplied
10 OIT
11 Run-logic module
12 Foam pump

Feature
13 Foam pump control box terminal strip
14 Foam pump control box connectors
Note: The following components are for the optional prime/flush momentary switch.
15 Momentary switch—installer supplied, SPST
16 Diode—installer supplied, Deutsch DT04-2P-RT01 or similar.
17 Connecting wire—installer supplied
18 Connecting wire—installer supplied
19 Ground (–) wire—installer supplied
20 Connecting wire—installer supplied
21 Ground (–) wire—installer supplied
22 Cable—supplied with system
23 Cable—supplied with foam pump
24 Ground (–) wire—installer supplied

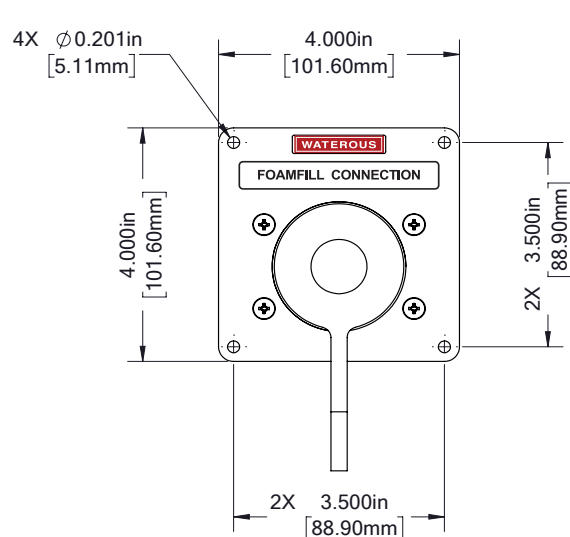
Dimensions—Pick-Up Pump



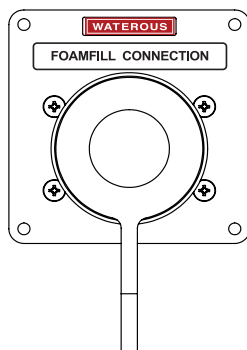
Dimensions—Run-Logic Module



Dimensions—Quick-Connect Panel

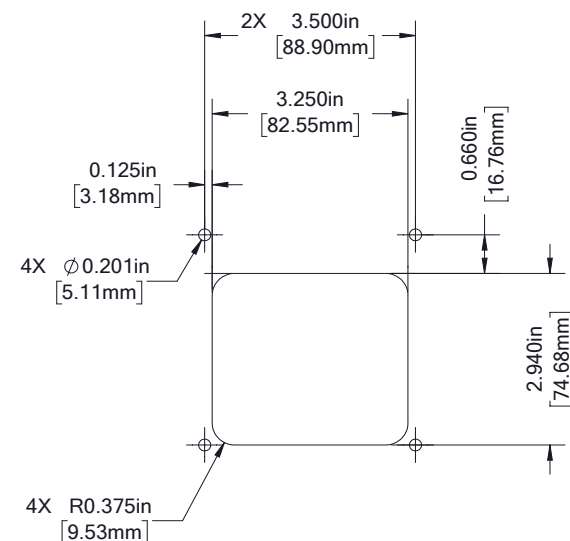
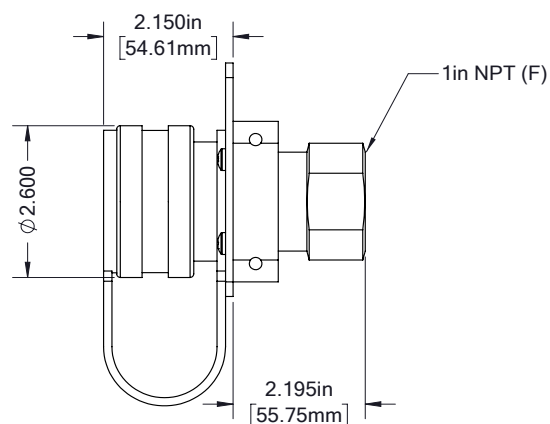
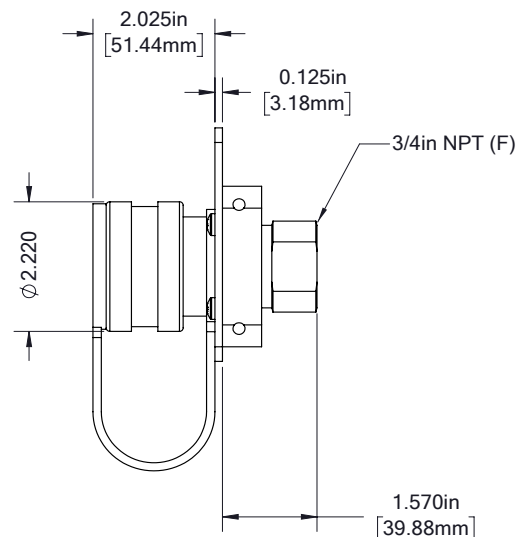


3/4 inch Quick-connect panel



1 inch Quick-Connect Panel

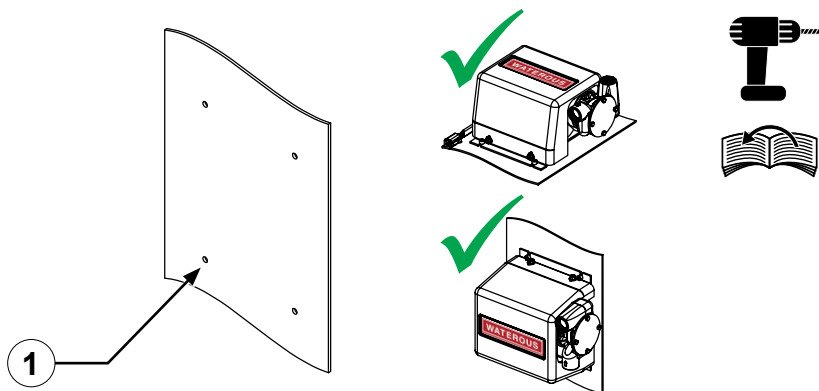
Refer to 3/4 panel dimensions for shared dimensions



Quick-connect panel cutout dimensions

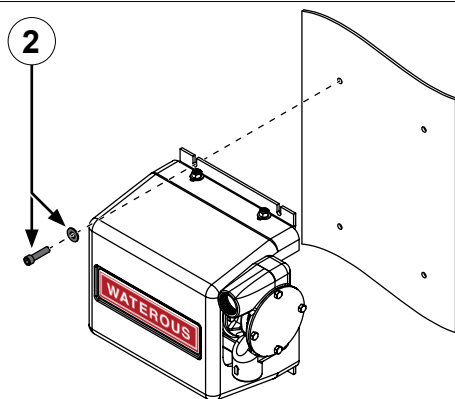
IL4585

Installing the Pick-Up Pump Assembly

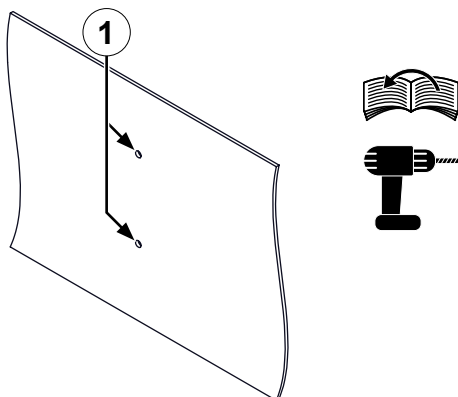


Use the illustrations and instructions to install the pick-up pump to the apparatus. Refer to:
"Determining the Pick-Up Pump Location" on page 13

- 1 Locate and drill the mounting holes. Refer to:
"Dimensions—Pick-Up Pump" on page 18
- 2 Use locally sourced hardware to secure the component to the apparatus.



Installing the Run-Logic Module

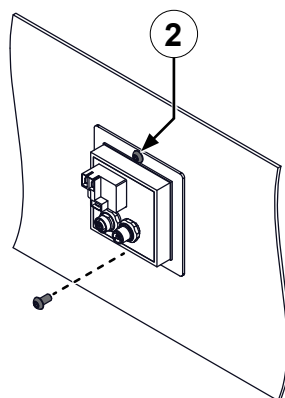


Use the illustrations and instructions to install the run-logic module to the apparatus. Refer to: **"Determining the Component Locations" on page 13**

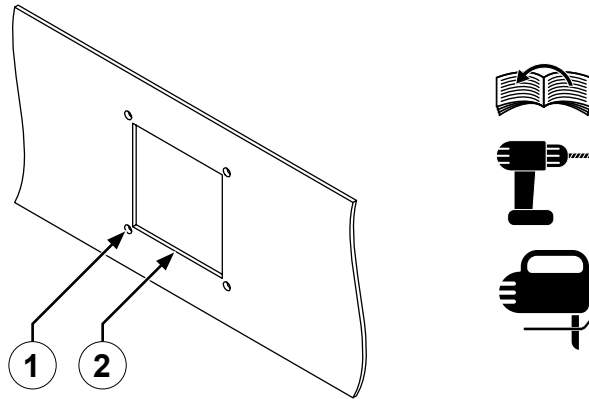
- 1 Locate and drill the mounting holes. Refer to: **"Dimensions—Run-Logic Module" on page 19**

Note: You can install the run-logic module in any orientation.

- 2 Use locally sourced hardware to secure the component to the apparatus.

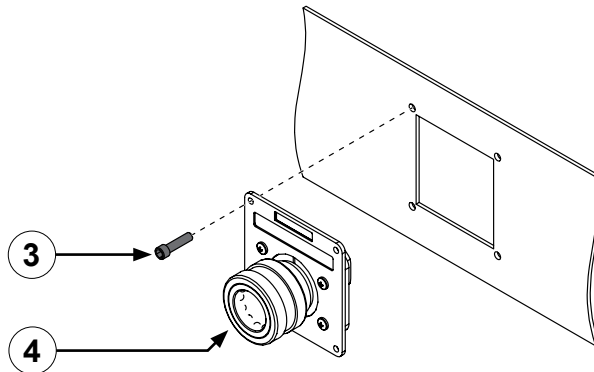


Installing the Quick-Connect Panel



Use the illustrations and instructions to install the quick connect panel to the apparatus. Refer to: **"Dimensions—Quick-Connect Panel" on page 20**

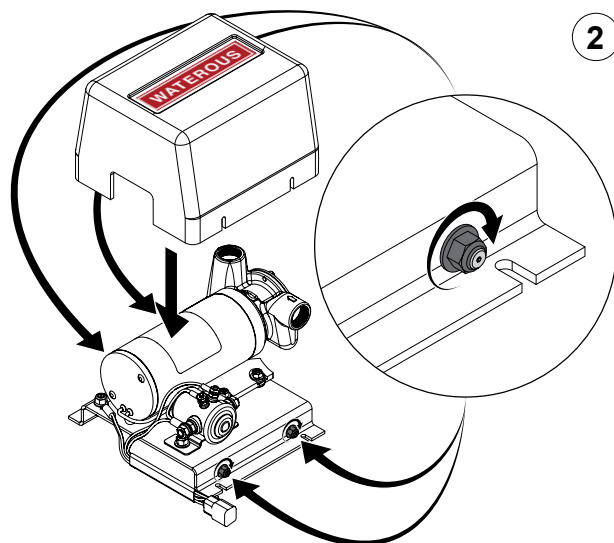
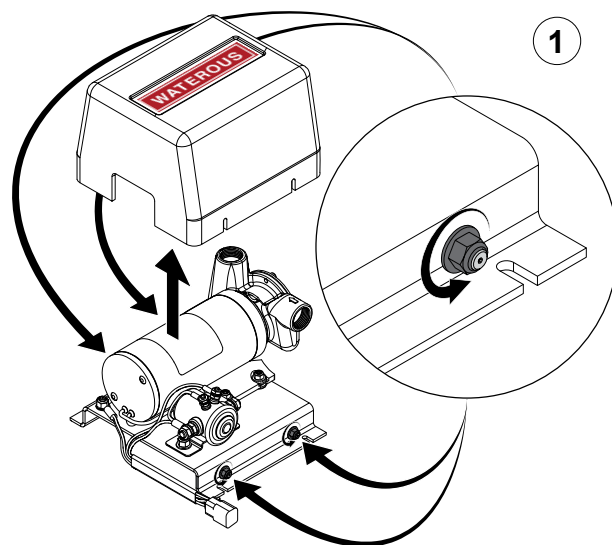
- 1 Locate and drill the mounting holes. Refer to: **"Dimensions—Quick-Connect Panel" on page 20**
- 2 Locate and cut the cutout. Refer to: **"Dimensions—Quick-Connect Panel" on page 20**
- 3 Use locally sourced hardware to secure the component to the apparatus.
- 4 Quick-connect panel



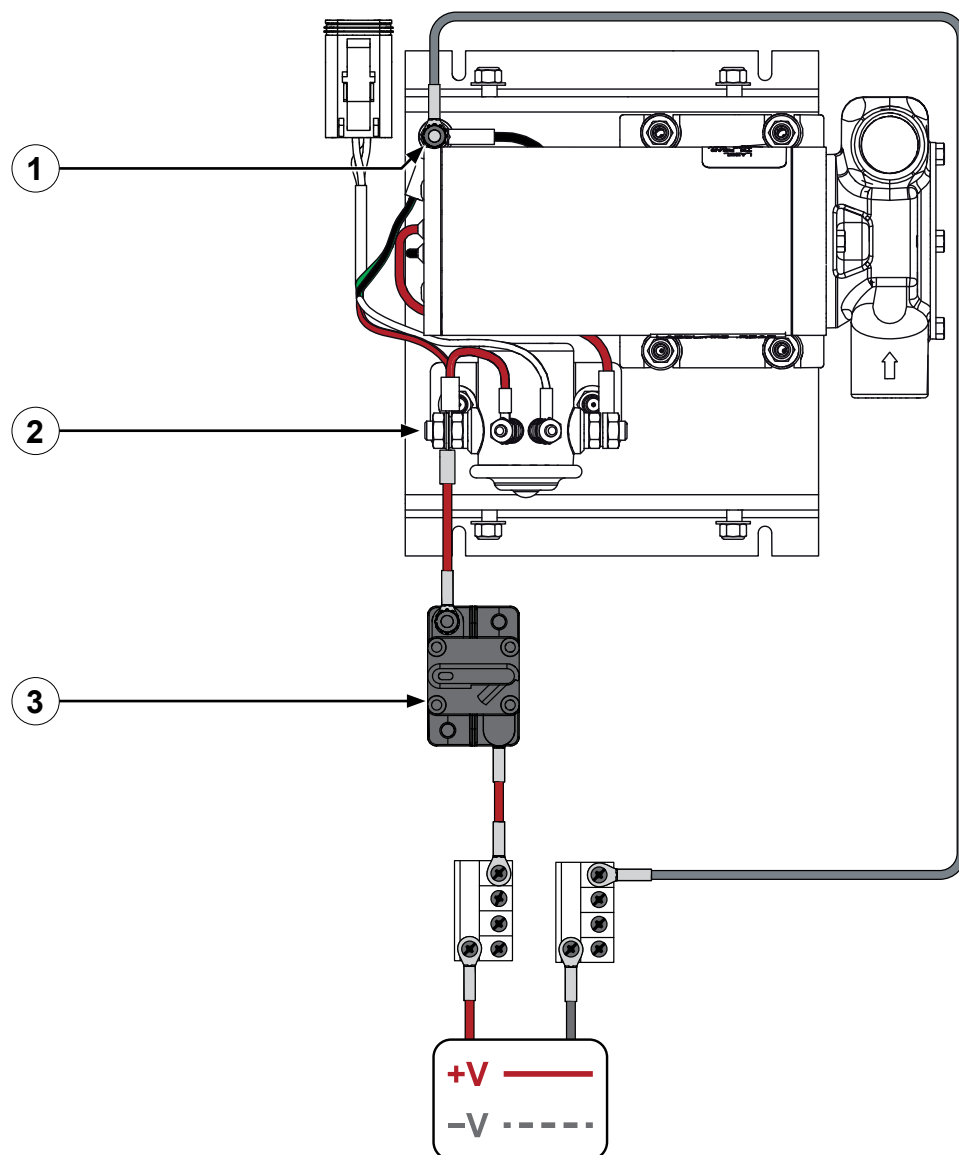
Removing and Installing the Cover

Use the illustrations and instructions to remove and install the cover on the pick-up pump.

- 1 Loosen the hardware that secures the cover to the pick-up pump base and remove the cover.
- 2 Install the cover onto the pick-up pump base and secure it by tightening the hardware.



Connecting Power to the Pick-Up Pump



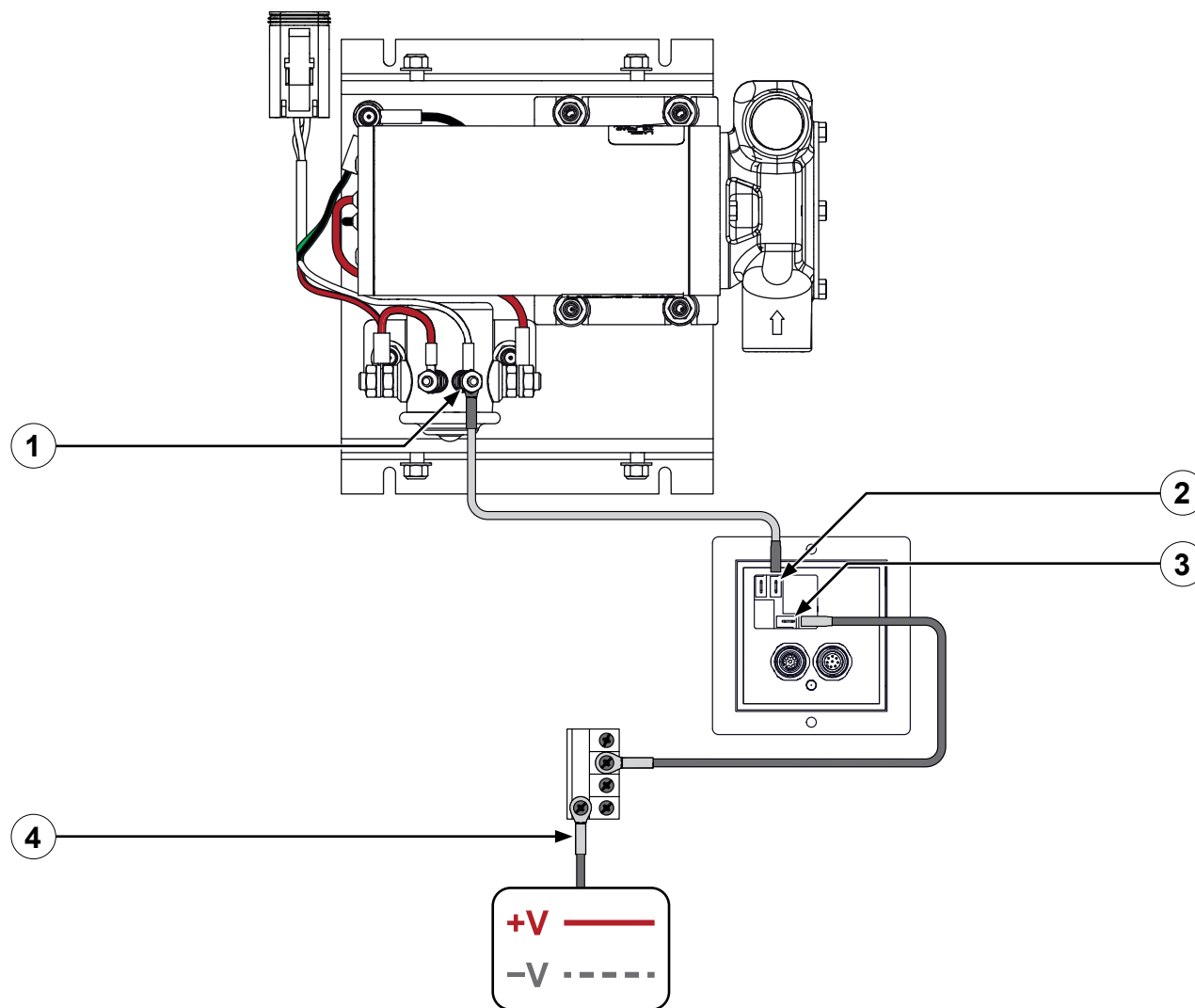
Use the illustration and instructions to connect power to the pick-up pump.

Note: Proper wire selection and circuit protection is the responsibility of the installer. Contact your wire supplier for more information.

- 1 Install the ground (-) wire to the ground post on the pick-up pump.
- 2 Connect the positive (+) wire to the positive post on the solenoid.
- 3 Install a circuit breaker between the power source and pick-up pump.
 - 12 V fill pump—30 A
 - 24 V fill pump—15 A

Complete the installation by securing the wiring to the apparatus. Refer to: *Wiring Best Practices* document available at www.waterousco.com, as a guide to route and secure the wiring for your application.

Connecting the Run-Logic Module to the Pick-Up Pump

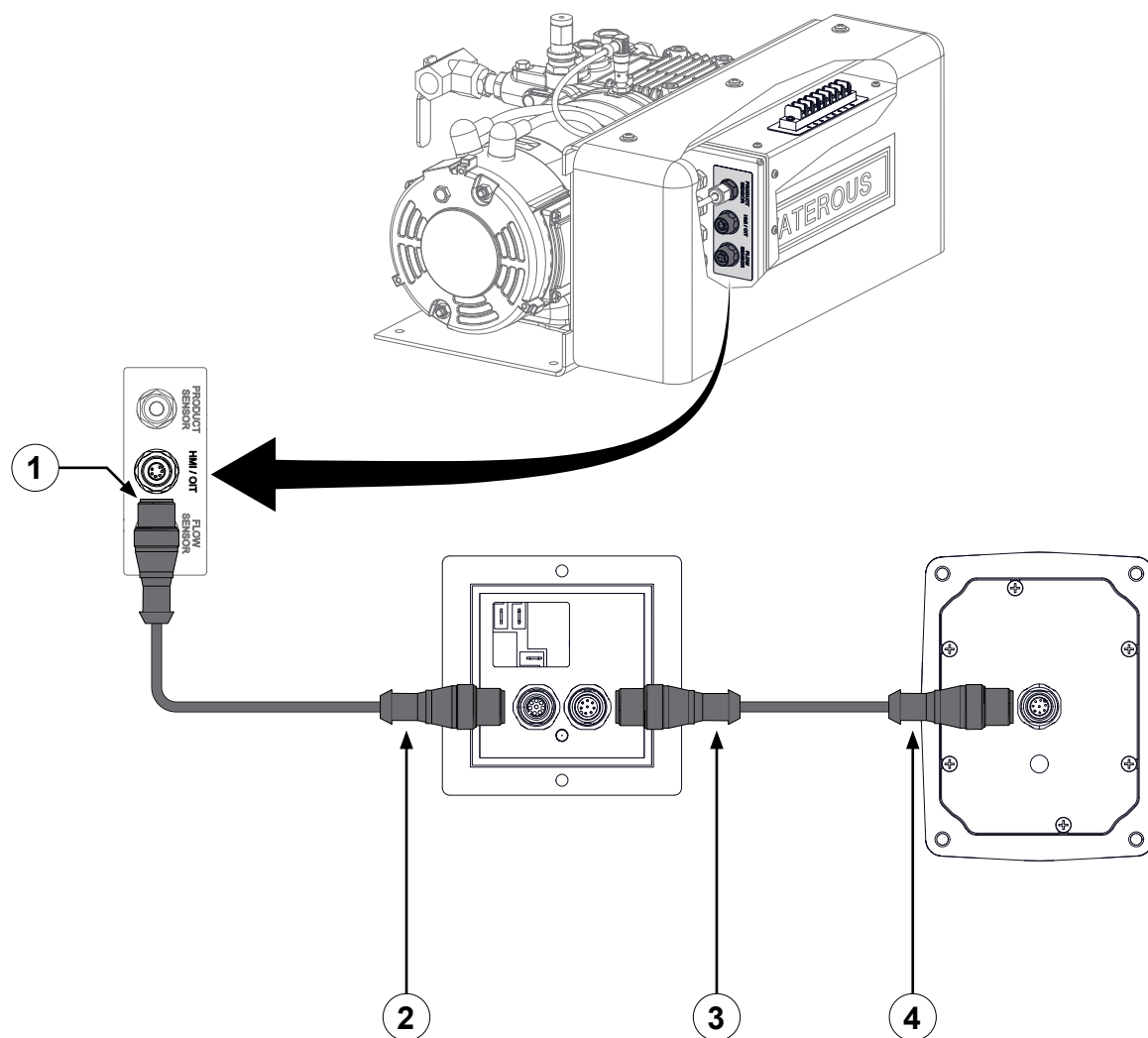


Use the illustration and instruction to connect power to the pick-up pump.

- 1 Locally source wiring and connect it to the post on the solenoid.
- 2 Connect the wire from the solenoid to the N/O (normally open) connector on the run-logic module.
- 3 Locally source wiring and connect it to the ground connector on the run-logic module.
- 4 Connect the wire from the run-logic module to apparatus ground.

Complete the installation by securing the wiring to the apparatus. Refer to: *Wiring Best Practices* document available at www.waterousco.com, as a guide to route and secure the wiring for your application.

Connecting the Run-Logic Module, OIT, and Foam Pump



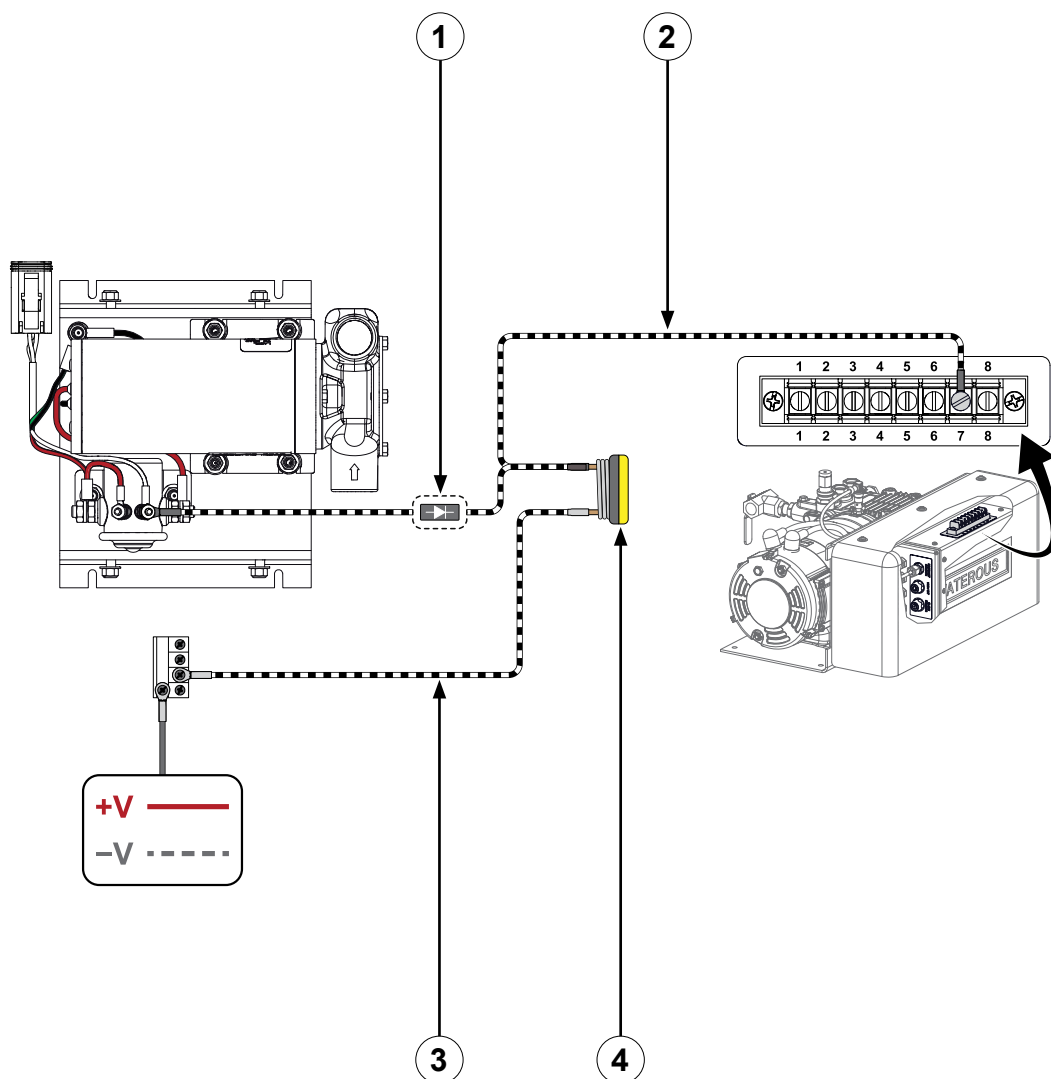
Use the illustration and instructions to connect the OIT, run-logic module, and foam pump with the 8-pin OIT cable.

To access connections on the foam pump, refer to the AQUIS™ Foam System *Operator's Manual*.

- 1 Connect the female end of the cable to the HMI/OIT connector on the foam pump control panel.
- 2 Connect the male end of the cable to the corresponding connector on the run-logic module.
- 3 Connect the male end of the cable supplied with the foam pump, to the corresponding connector on the run-logic module.
- 4 Connect the female end of the cable supplied with the foam pump, to the corresponding connector on the OIT.

Complete the installation by securing the wiring to the apparatus. Refer to: *Wiring Best Practices* document available at www.waterousco.com, as a guide to route and secure the wiring for your application.

Connecting the Optional Prime/Flush Momentary Switch



Use the illustration and instructions to install an optional N/O (normally open) momentary switch and a diode between the pick-up pump and foam pump that initiates manual operation. Locally source wiring, components, and connectors appropriate to connect the components together.

To access the foam-pump connections, refer to: *AQUIS Operation and Installation* publication.

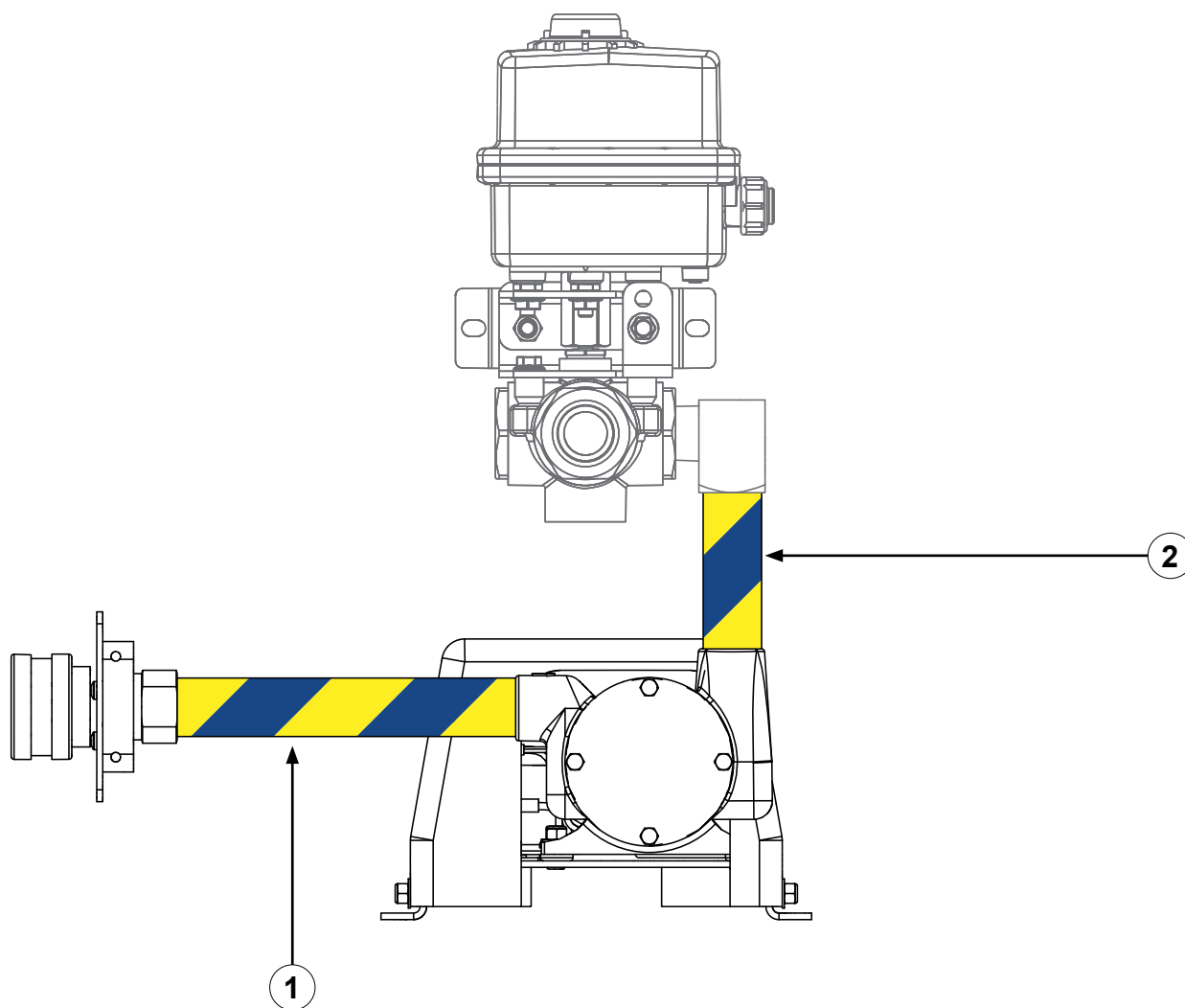
- 1 Prepare a wire with a diode, Deutsch DT04-2P-RT01 or similar, installed in-line in the wire and connect one end to the terminal on the solenoid and the other end of the wire to the momentary switch.

Note: Make sure that you connect the anode to the solenoid and the cathode to the momentary switch.

- 2 Prepare a wire and connect one end to the momentary switch and the other end to terminal 7 on the foam pump terminal strip.
- 3 Prepare a wire and connect one end to the remaining terminal on the momentary switch to the apparatus ground.
- 4 Securely mount the normally-open momentary switch to the desired location on the apparatus.

Complete the installation by securing the wiring to the apparatus. Refer to: *Wiring Best Practices* document available at www.waterousco.com, as a guide to route and secure the wiring for your application.

Installing the Hose Lines

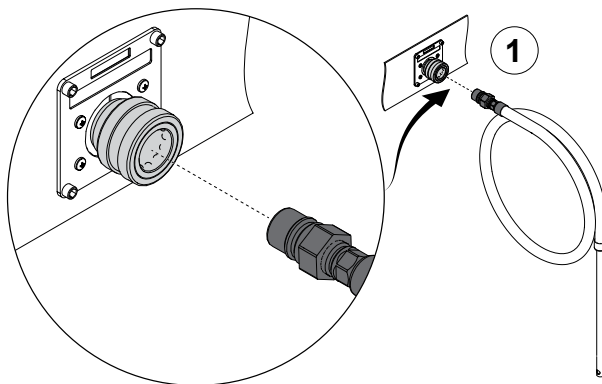


Use the illustration and instructions to install the hoses. Use locally source hoses and fittings that are appropriate for your application. Refer to: **"Hose Connections Overview" on page 14** for more information.

Note: Your application may require additional equipment and plumbing connections.

- 1 Install a hose connecting the quick connect plate to the pick-up pump.
- 2 Install a hose connecting the pick-up pump to the electric valve. Refer to the Dual Tank Selector Operator's Manual, available at www.waterousco.com.

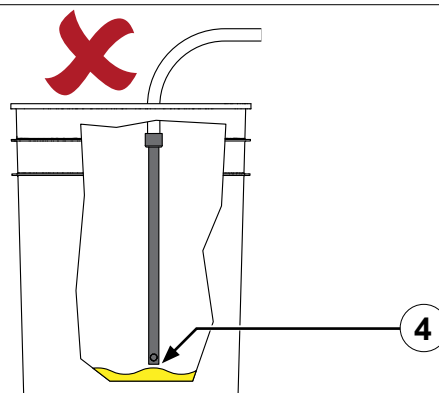
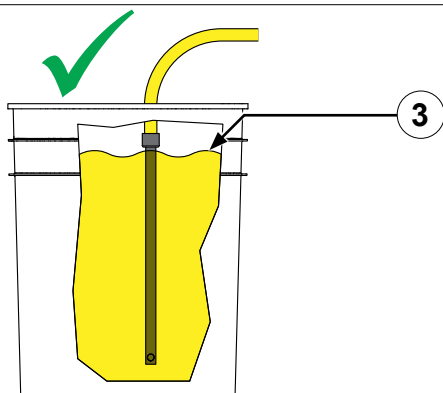
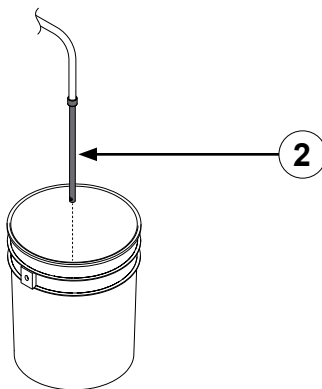
Connecting the Pick-Up Hose



Use the included 6 ft (2 m) pick-up hose to transfer concentrate from a bucket. Obtain the longer 10 ft (3 m) pick-up hose to transfer concentrate from a drum. Contact Waterous for more information.

- 1 Connect the pick-up hose to the quick-connect panel.
- 2 Insert the wand into the concentrate supply container.
- 3 Concentrate level—shown nearly full.
- 4 Concentrate level—shown nearly empty.

Note: Do not operate the equipment without providing concentrate or water to pump through the system.

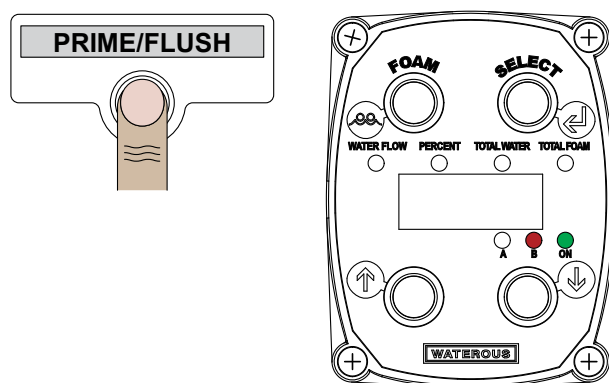


Operating the System

The overboard pick-up system enables you to source foam concentrate, or clear-water, from an external container. It is integrated into the foam proportioning equipment and is enabled as a tank-B option through the OIT. During operation, the foam concentrate is routed through the electric valve used in the dual-tank selector kit. As an option, a momentary switch is wired into the system to manually operate the overboard pick-up pump—allowing you to prime or flush the foam proportioning system as desired.

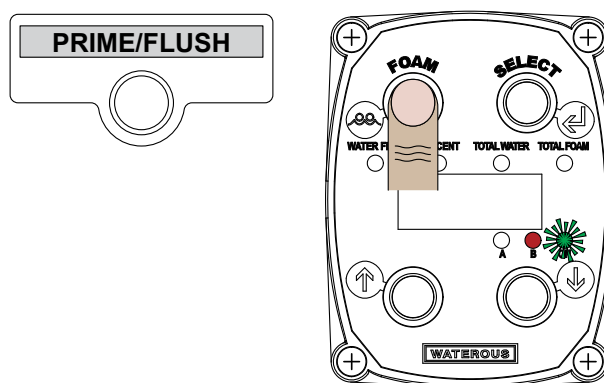
Priming the Foam System

Note: Your application may not require priming.



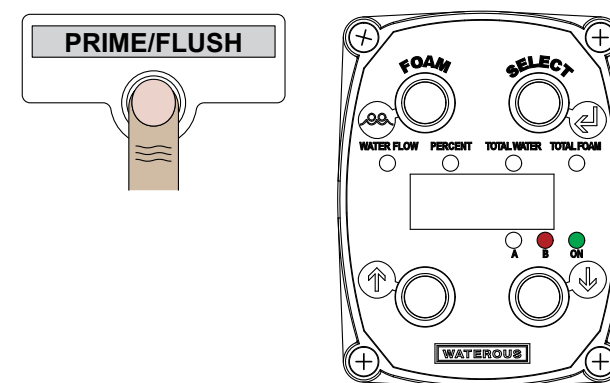
1. Insert the overboard pick-up wand into the external foam concentrate source.
2. Select the external source from the dual-tank selector. Refer to the Dual Tank Selector *Operator's Manual*, available at www.waterousco.com.
3. Press and hold the momentary switch to run the pick-up and foam pumps to prime the system.
4. Release the switch once the system is primed.
5. If applicable, prime the foam system before on-site operation or before storing the apparatus. Make sure that you follow procedures outlined by the department, apparatus, and/or foam manufacturers.

Enabling the Overboard Pick-Up



1. Make sure that the tank-B option is selected on the OIT. Refer to the AQUIS™ foam pump *Operator's Manual*, available at www.waterousco.com.
2. Press the foam button to enable the foam proportioning system. The LED on the run-logic module illuminates to indicate the overboard pick-up system is operating. Refer to: **"Run-Logic Module" on page 11.**
3. Press the foam button to disable the foam proportioning system.
4. After use, it is the users responsibility to follow all post-operation maintenance procedures outlined by the foam concentrate manufacturer. Contact your foam concentrate supplier for more information.

Flushing the Foam System



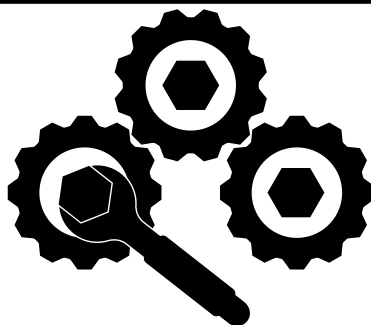
1. Insert the overboard pick-up wand into a clear-water source.
2. Press and hold the momentary switch until you complete the flush procedures outlined by the department, apparatus, and/or foam manufacturers.

Flushing the Foam System

NOTICE

Maintenance

- Not following maintenance procedures can damage your equipment.
- Perform all maintenance procedures as required.



Leaving corrosive solution in the foam system damages the equipment.

You must flush the system under certain conditions. Your environment, the concentrate used and other factors determine if or when you need to flush the pump. Refer to the department, apparatus, and/or concentrate manufacturer to determine a protocol for flushing.

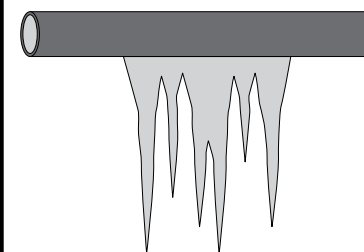
Refer to the AQUIS foam pump *Operator's Manual*, available at www.waterousco.com, for specific instructions to flush the system.

Preventing Freeze Damage

NOTICE

Freeze Damage

- Do not allow fluid in the lines to freeze.
- Remove all freezable fluid from the lines before storing the apparatus.

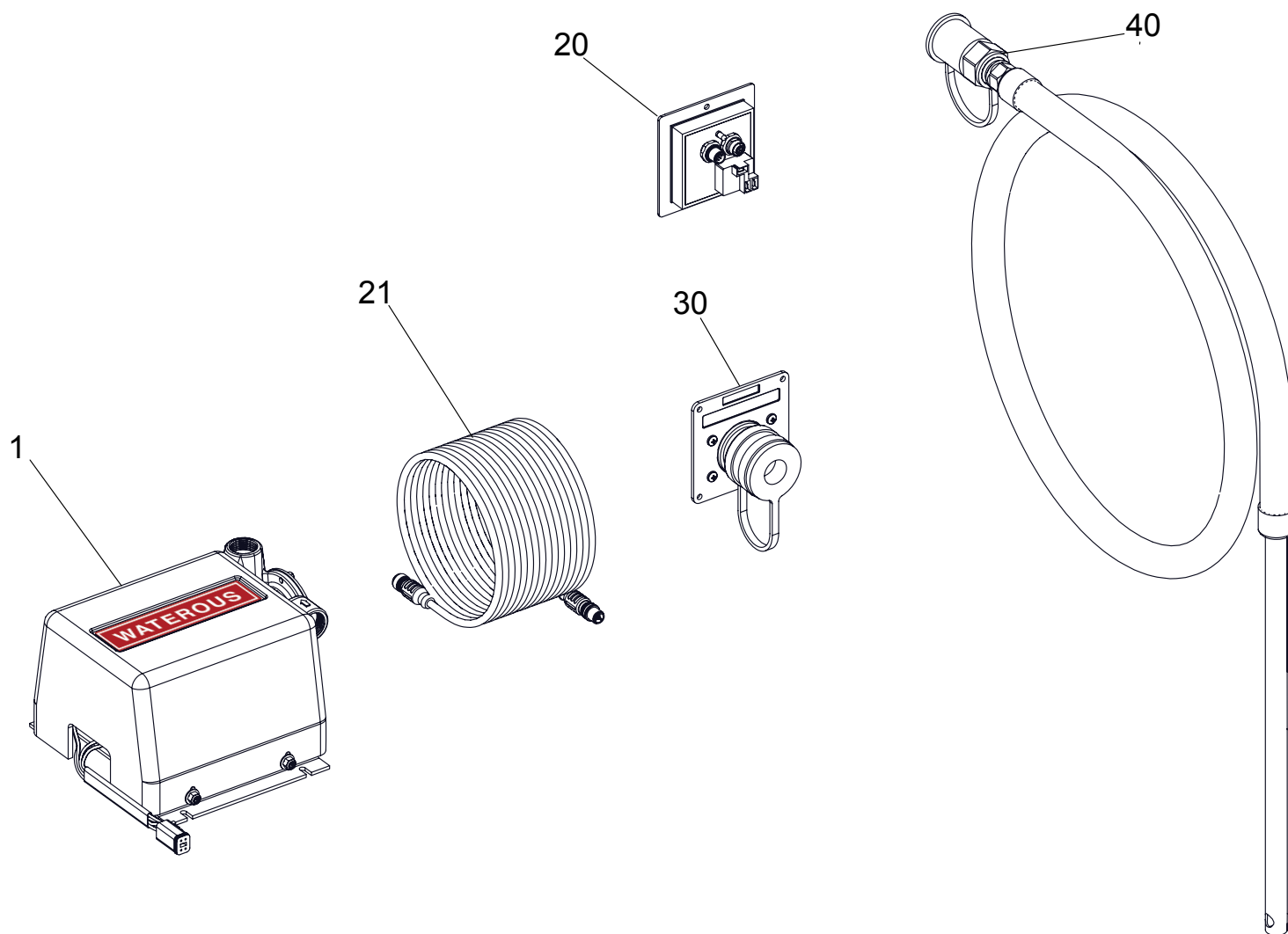


Leaving fluid in the foam system that can freeze causes damage to the equipment.

Never leave freezable fluid in the lines when environmental conditions can cause fluid in the lines to freeze. Remove fluids from the lines or fill the lines with non-freezable fluid when temperatures enable freezing.

Notes

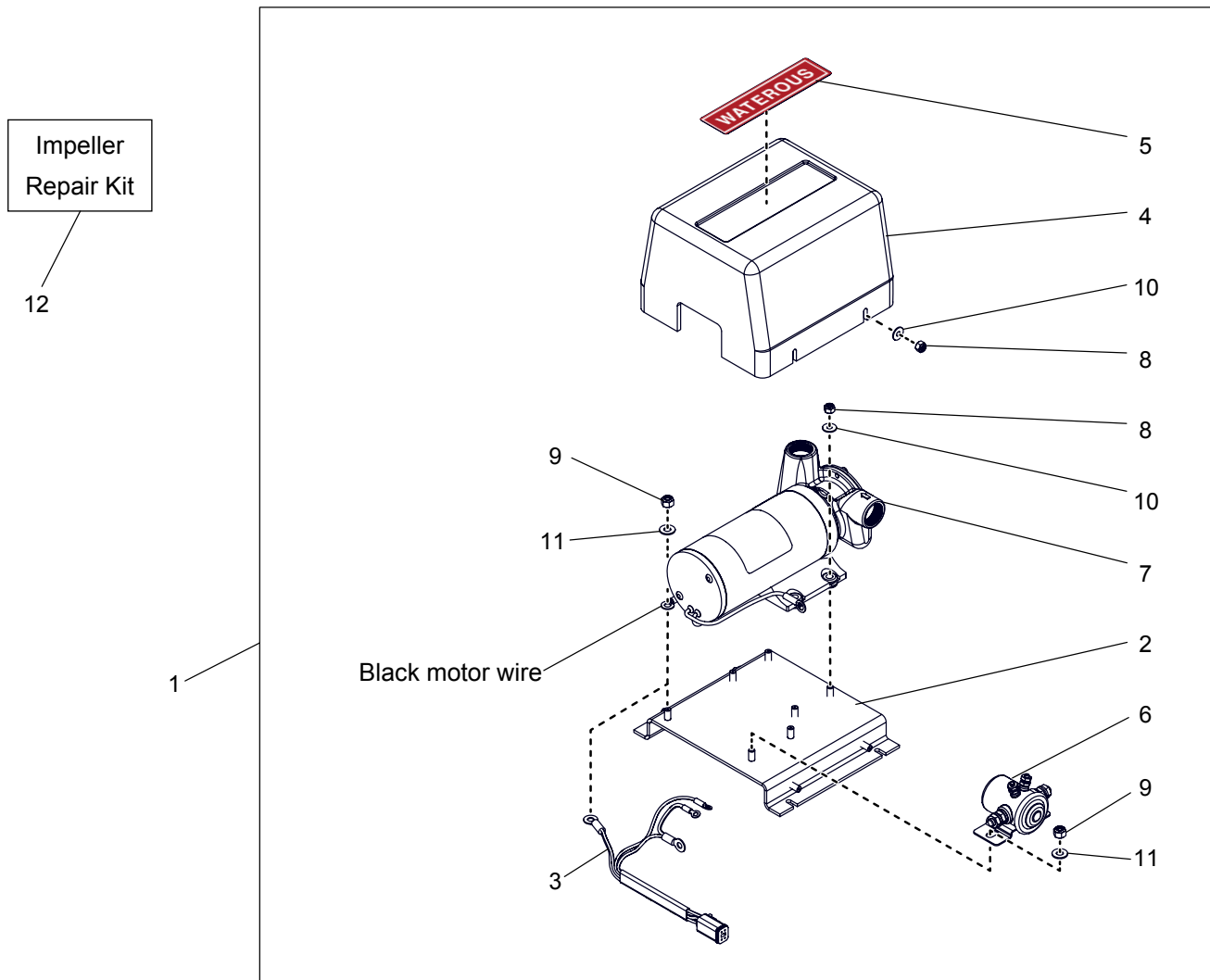
Main Components



Main Components

Description	
1	Motor and pump subassembly
20	Run-logic module
21	Cable—20 ft (6 m)
30	Quick-connect panel
40	Overboard pick-up hose

Pick-Up Pump Components

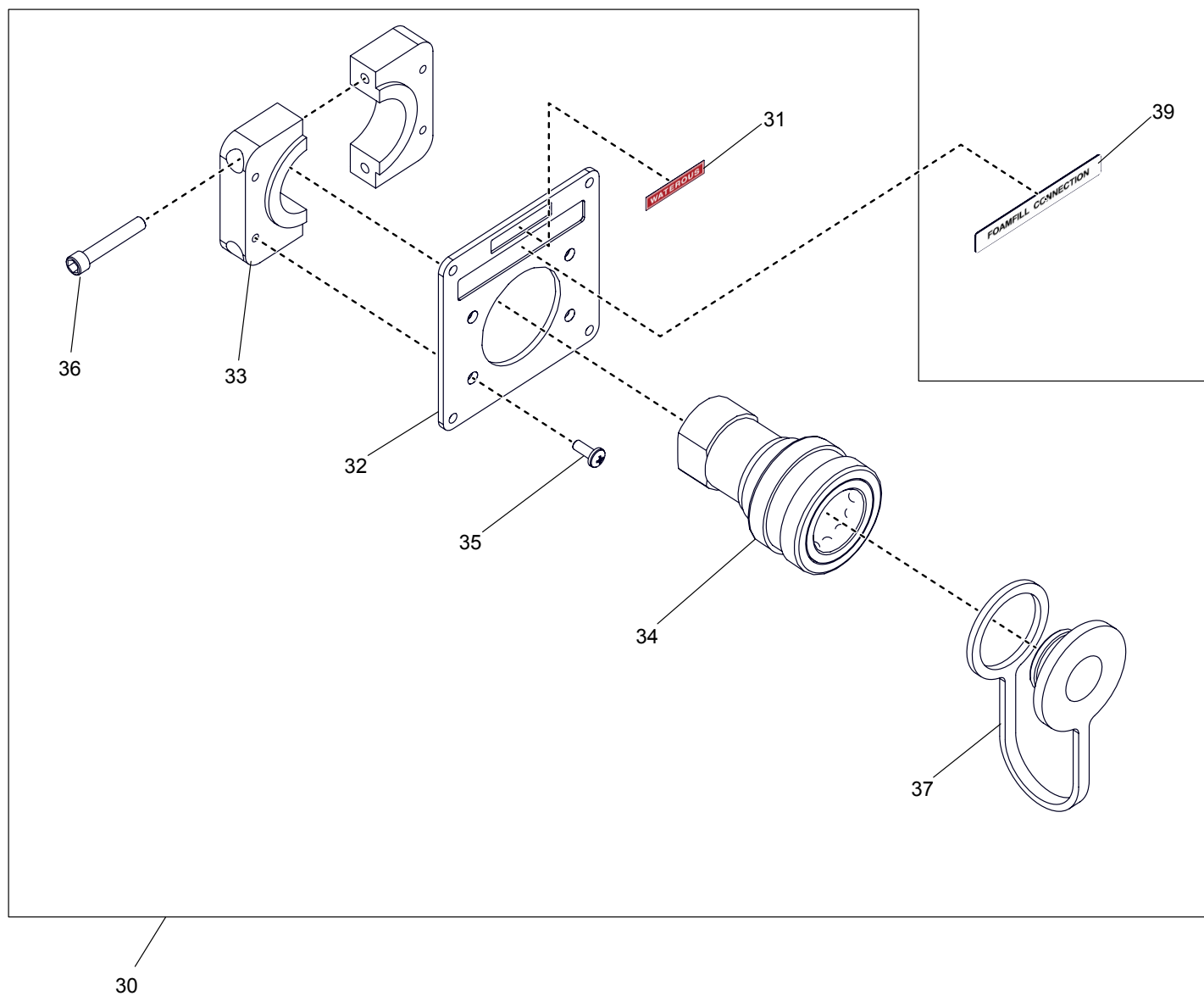


SPL83438TP

Pick-Up Pump Components

Description	
1	Motor and pump subassembly
2	Mounting plate
3	Wire harness
4	Cover
5	Label—Waterous, 1.5 x 6.0 inches
6	Solenoid
7	Fill pump
8	Locknut—#10-32
9	Locknut—1/4-20 inch
10	Washer—#10
11	Washer—1/4 inch
12	Impeller repair kit

Quick-Connect Panel Components

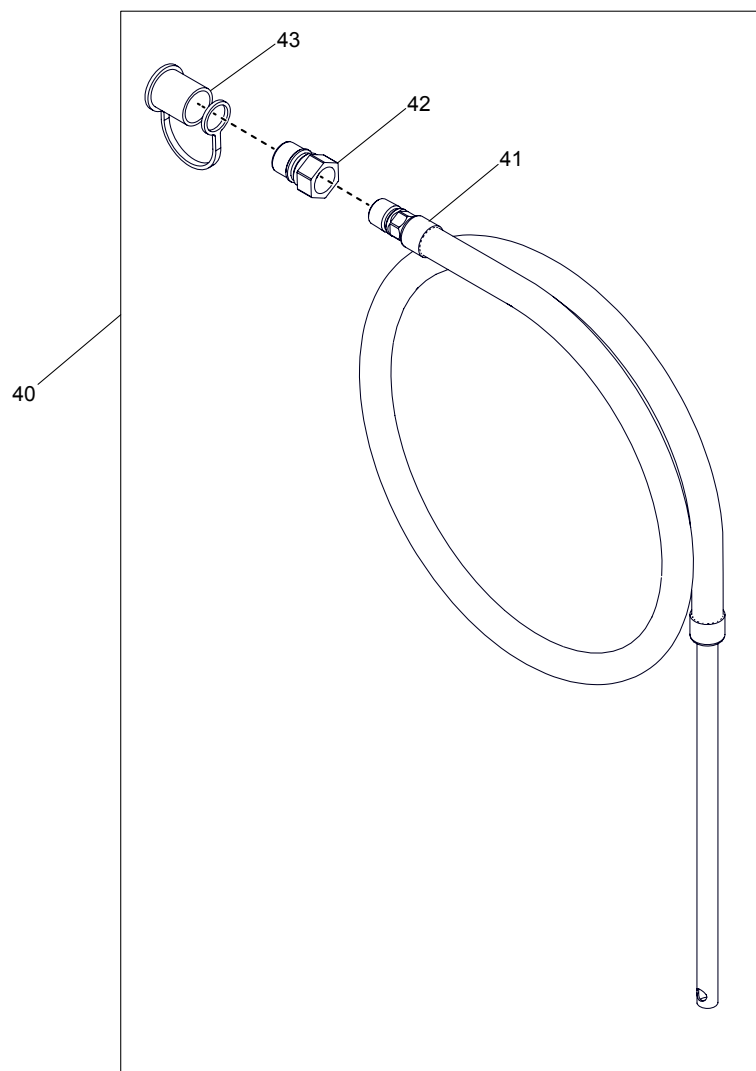


SPL83438TP

Quick-Connect Panel Components

Description	
30	Quick-connect panel
31	Label—Waterous, 0.300 x 1.485
32	Quick-connect plate
33	Quick-connect clamp
34	Quick-connect socket
35	Screw—#10-32 x 1/2 inch
36	Screw—1/4-20 x 1-1/2 inches
37	Socket dust cap
39	Label—foam fill connection

Pick-Up Hose Components



SPL83438TP

Pick-Up Hose Components

Description	
40	Pick-up hose assembly
41	Pick-up hose and wand
42	Quick-connect plug
43	Dust cap

WATEROUS

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