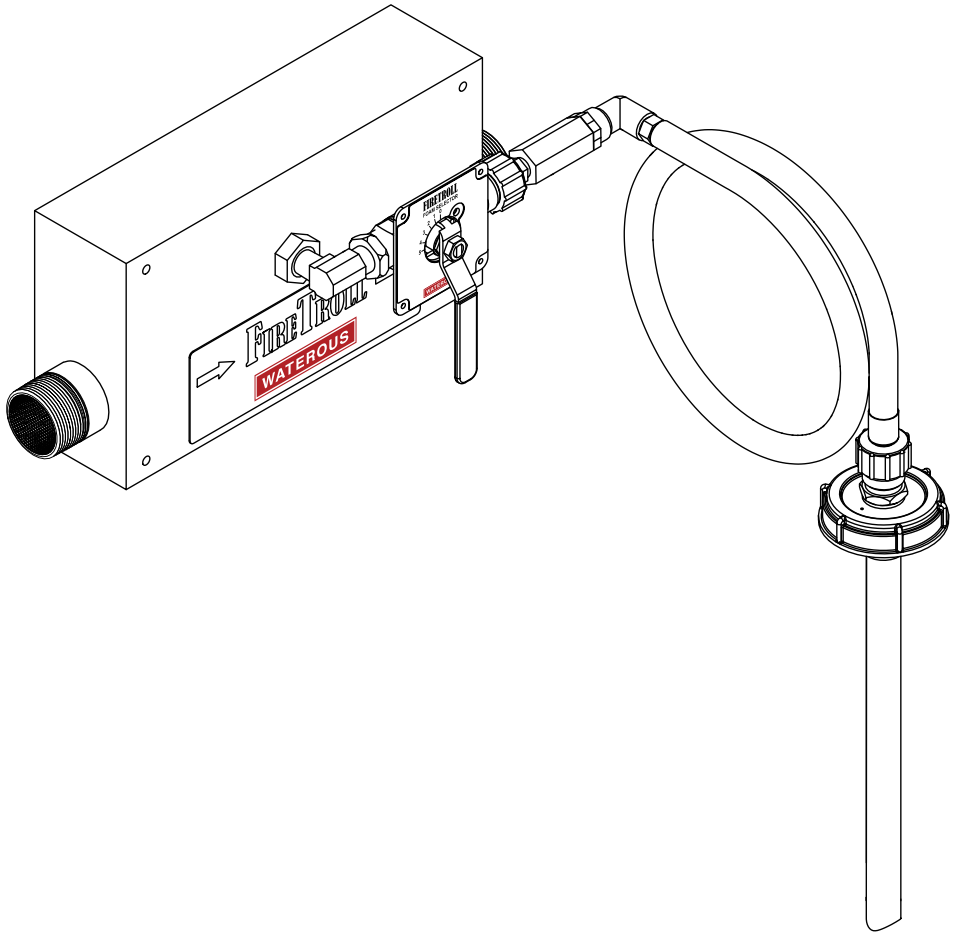
WATEROUS

Form Number: F-2997 Issue Date: Nov 8, 2022

Fire Troll Foam Proportioner

Installation, Operation, and Maintenance



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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

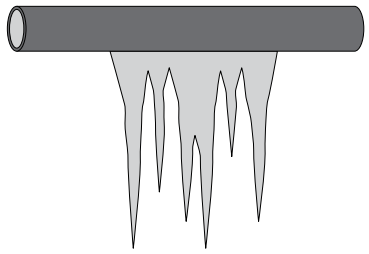
Before Operation

- **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

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.
- Any 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.
- Any equipment described in this document is intended to be operated by a person or persons with the basic knowledge of operating similar equipment.
- Do not install the equipment if you are not familiar with the tools and skills needed to safely perform required procedures—proper installation is the responsibility of the purchaser.

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.

MAINTENANCE

This section describes maintaining the equipment.

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.

Additional Documentation

Additional documentation is available through the MyWaterous login at Waterousco.com. Use your serial number to gain access to the service parts list associated with your system. Dimensional drawings are available through the Waterous Service department.

Symbols

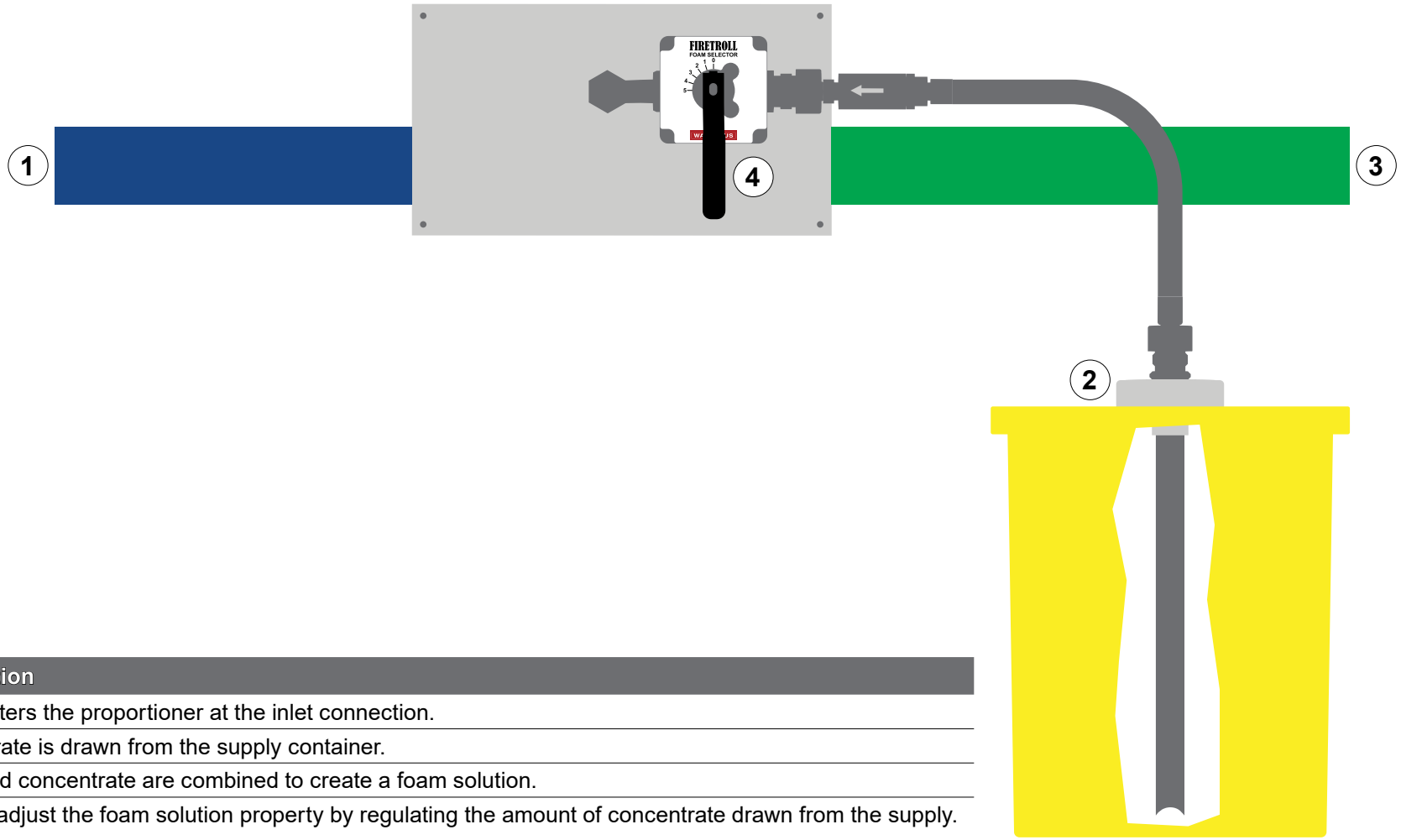
Symbols are used to illustrate additional tools or operations that are required to complete the instructions.

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

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

Fire Troll Proportioner Overview

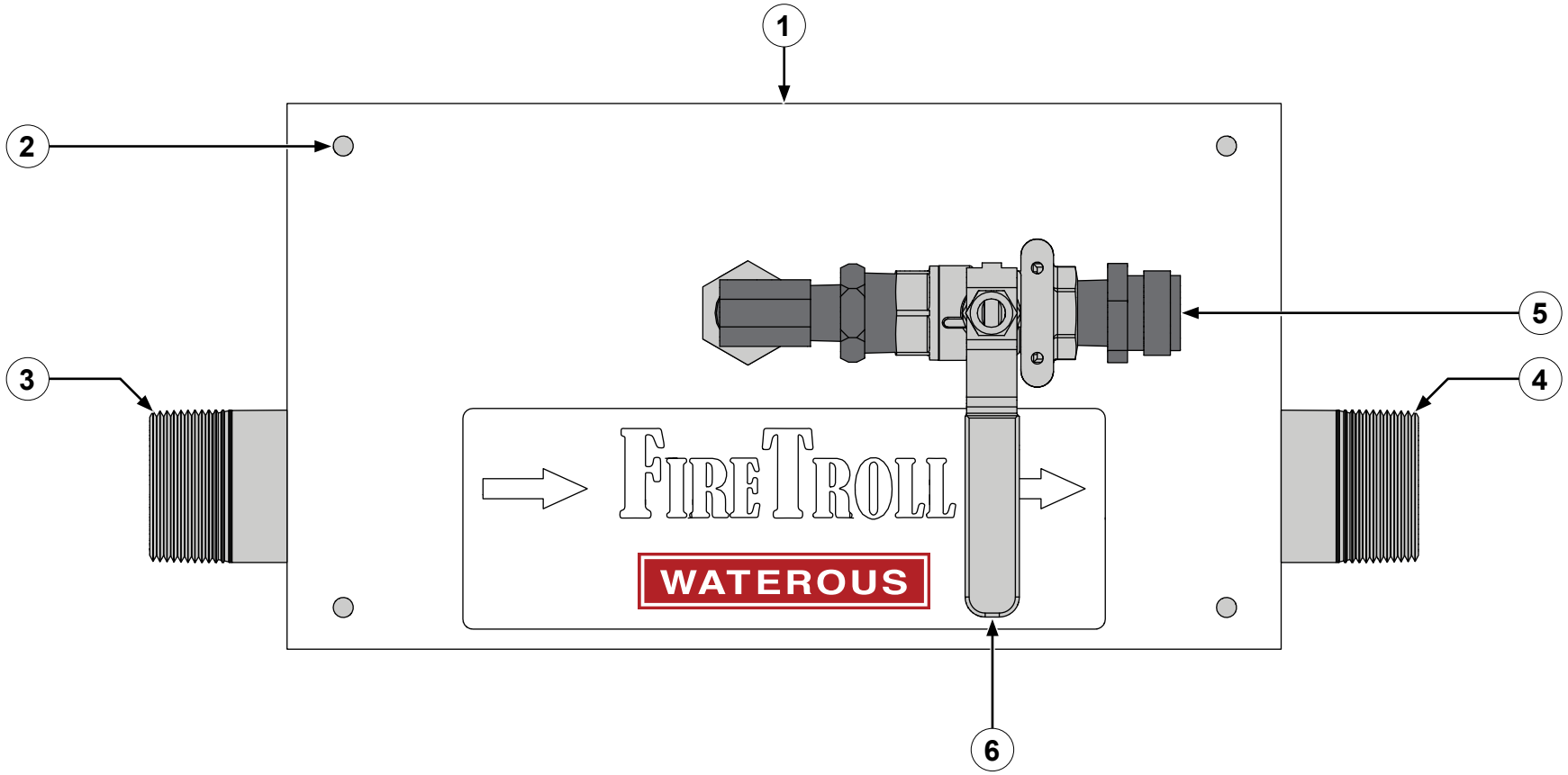
The Fire Troll concentrate proportioning system passively injects concentrate into a solution capable discharge. You can manually adjust the amount from no injection to just under 1%. The Fire Troll can be installed on the apparatus within typical discharge pluming, just before a hose real, or inserted in a hose-lay. It is compatible with a wide range of nozzles—6 to 125 gpm.



	Description
1	Water enters the proportioner at the inlet connection.
2	Concentrate is drawn from the supply container.
3	Water and concentrate are combined to create a foam solution.
4	You can adjust the foam solution property by regulating the amount of concentrate drawn from the supply.

Eductor Body with Control Handle and Fittings

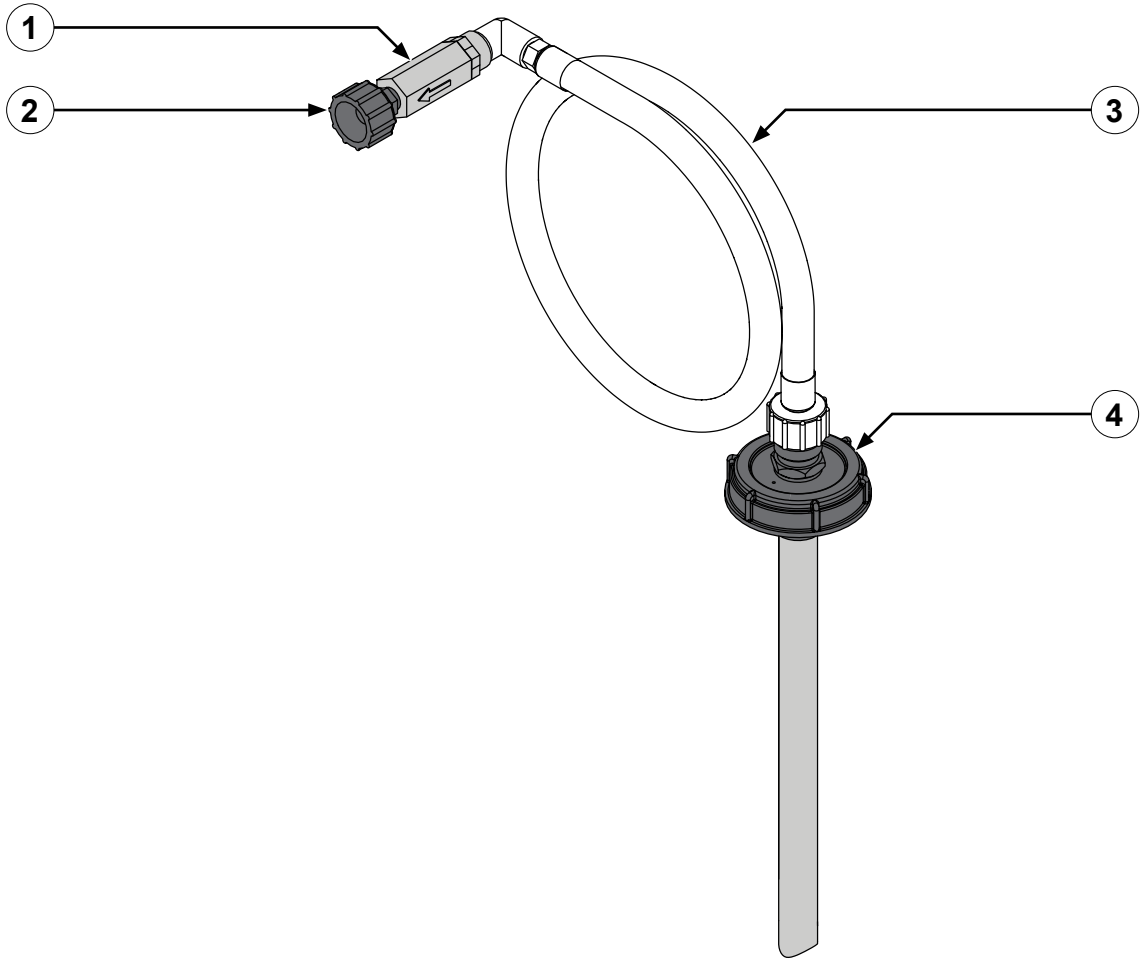
The eductor body is a molded encasement containing the internal components.



	Feature	Description
1	Eductor body	This encapsulates the eductor components.
2	Guide holes	This allows you to drill mounting holes and mount the eductor to the apparatus.
3	Inlet	This is the inlet for clear water—1-1/2 NPT.
4	Outlet	This is the outlet for clear water or solution—1-1/2 NPT.
5	Concentrate inlet	This connects to the concentrate supply.
6	Valve assembly	This allows you to adjust the amount of ejected concentrate.

Concentrate Supply Hose

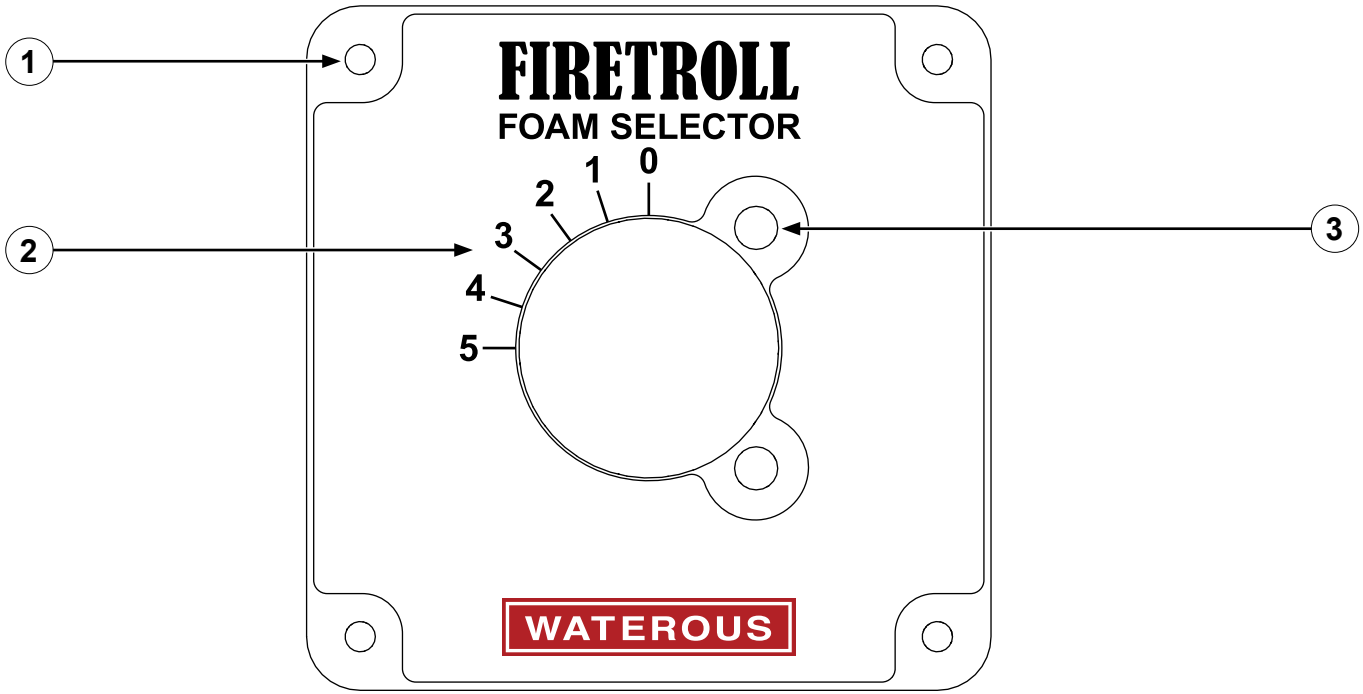
This draws the concentrate supply.



	Feature	Description
1	Check valve	This prevents contamination of concentrate by preventing reverse fluid flow in the line.
2	Supply hose connection	This connects to the eductor.
3	Supply hose	This transfers the concentrate to the eductor.
4	Foam pail capper	This connects to the concentrate supply pail.

Foam Selector Plate

This mounts to the valve assembly and indicates the relative amount of concentrate injected during operation.



	Feature	Description
1	Panel mounting holes	This mounts to the operator panel.
2	Scale indicator	This indicates the relative amount of concentrate injecting during operation.
3	Eductor mounting holes	This mounts to the valve assembly.

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 to pluming
- Final testing.

- Do not install the equipment if you are not familiar with the tools and skills needed to safely perform required procedures—proper installation is the responsibility of the purchaser.

Optional Equipment

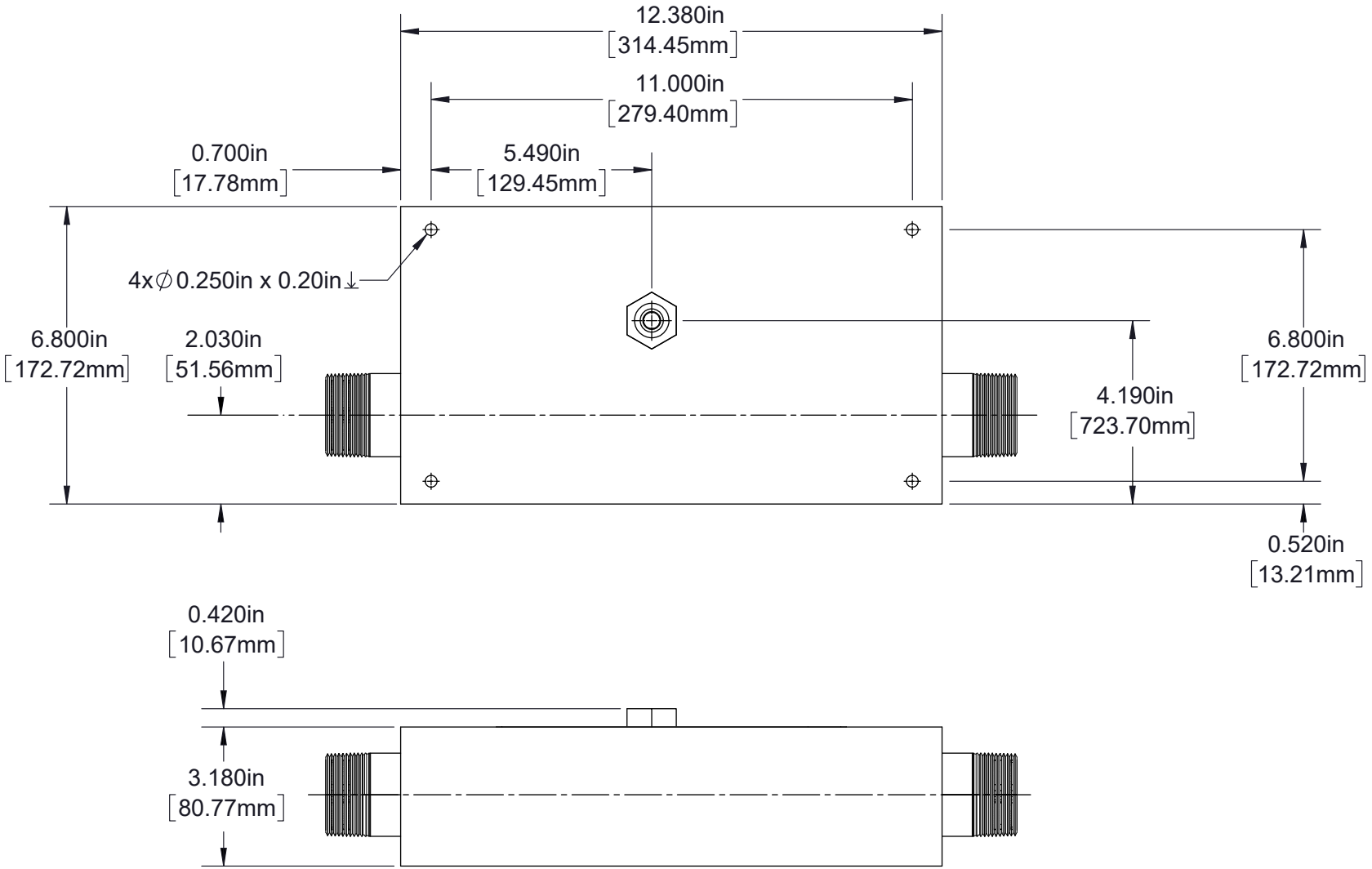
Be aware that the installation instruction may include optional equipment not included in your application.

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.

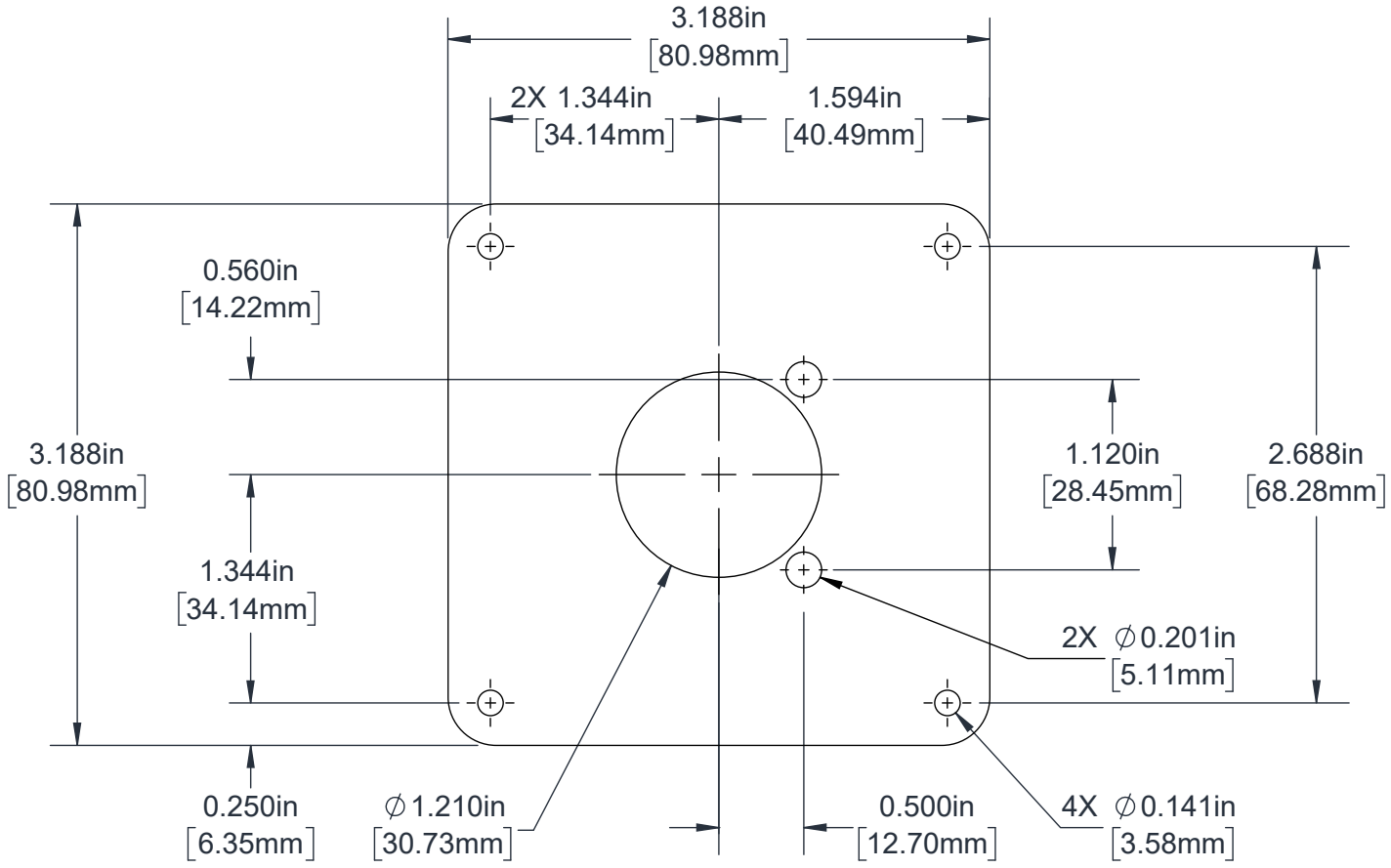
Eductor Dimensions

Use the illustration to create the cutout and drill the mounting holes for the eductor.



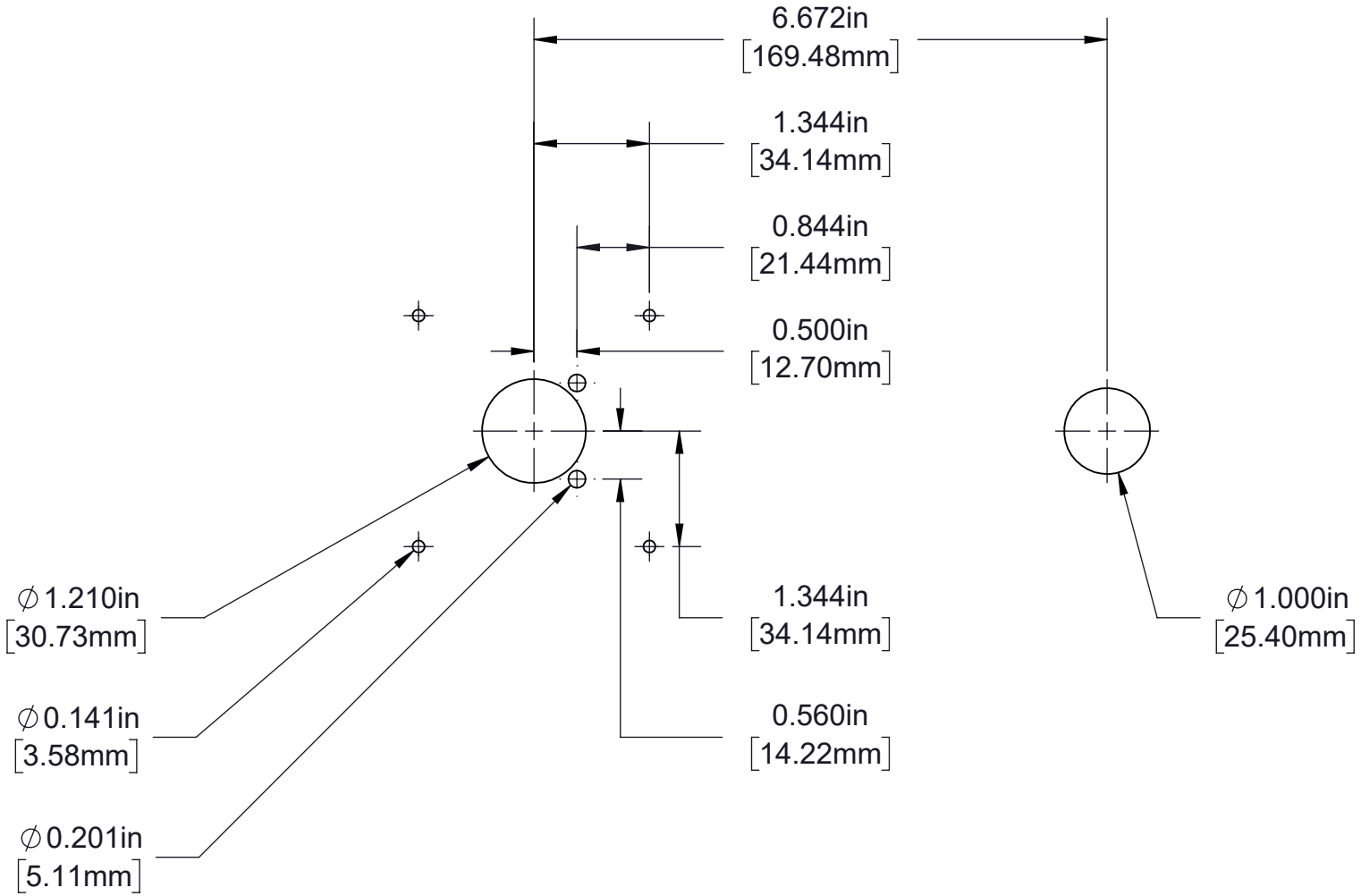
Panel Plate Cutout Dimensions

Use the illustration to create the cutout and drill the mounting holes for the panel plate.

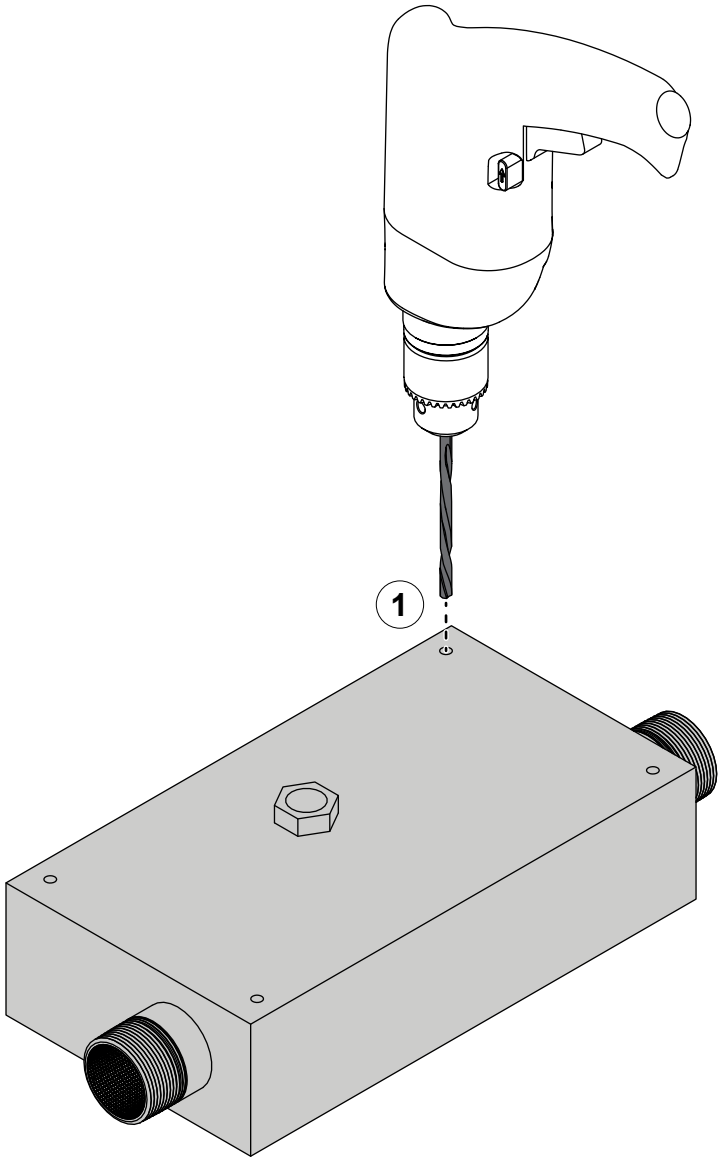


Alternative Installation Valve Assembly Cutout Dimensions

Use the illustration to create the cutout and drill the mounting holes for the alternative installation.



Drilling the Mounting Holes

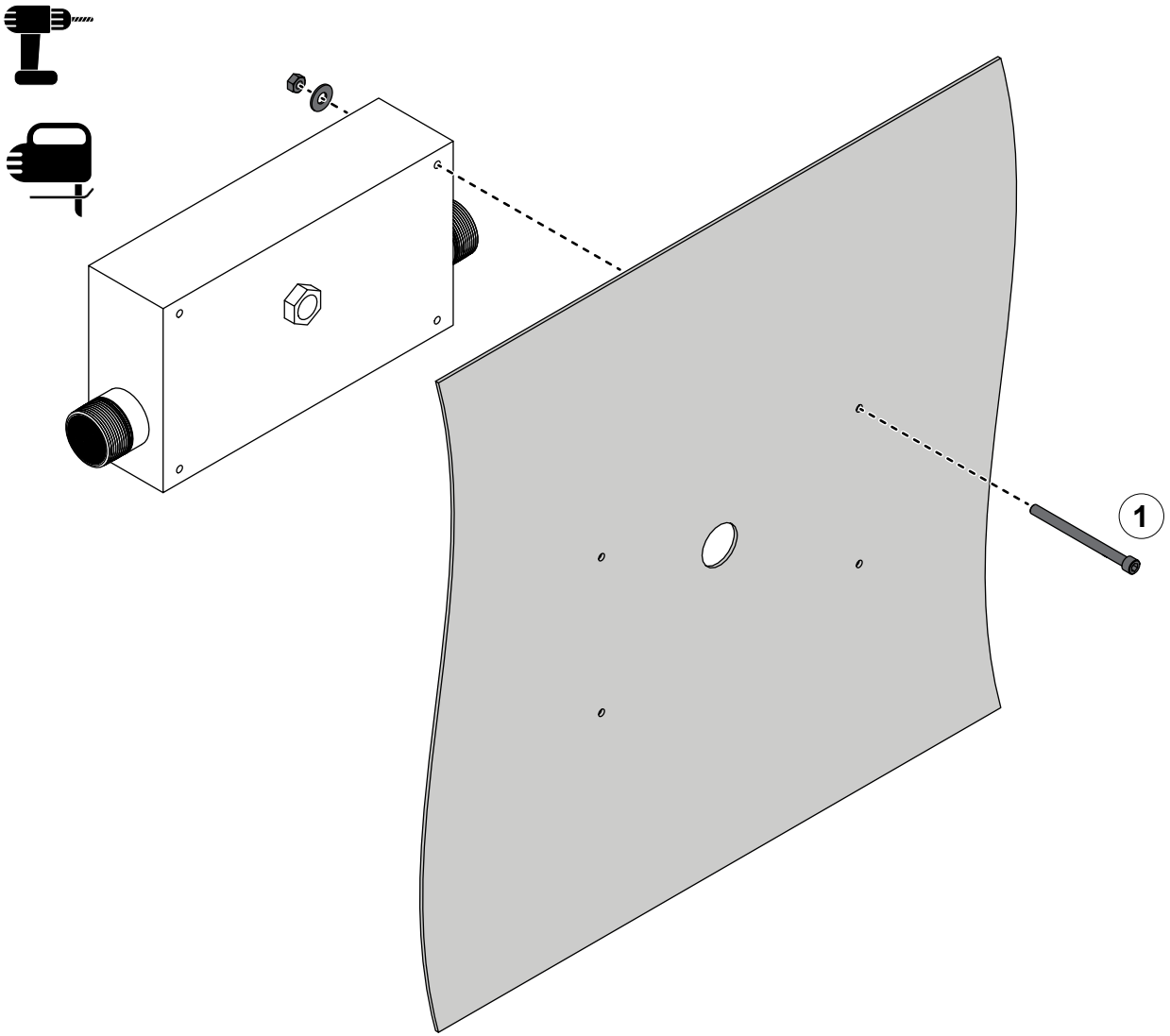


Use the illustration and instructions to create the cutout and mounting holes for the eductor.

1 Use a drill or similar to drill the mounting holes for the eductor.

Note: *Pilot holes are featured on the eductor body that indicate where you can safely drill the mounting holes.*

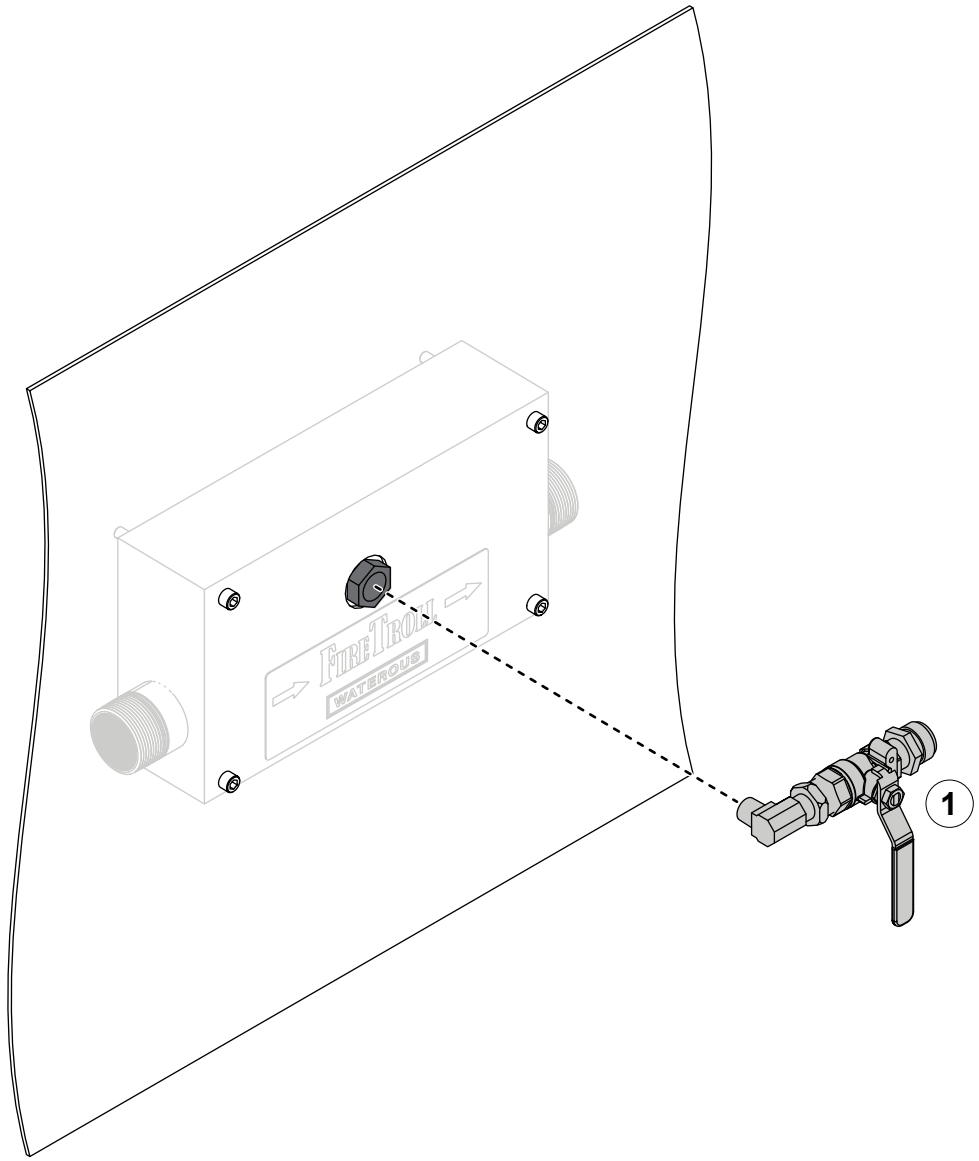
Mounting the Eductor to the Panel



Use the illustration and instructions to mount the eductor to a panel.

1. Create the cutout and drill the mounting holes for the eductor. Refer to: **"Eductor Dimensions" on page 11**
2. Locally source the appropriate hardware to mount the eductor to the panel.

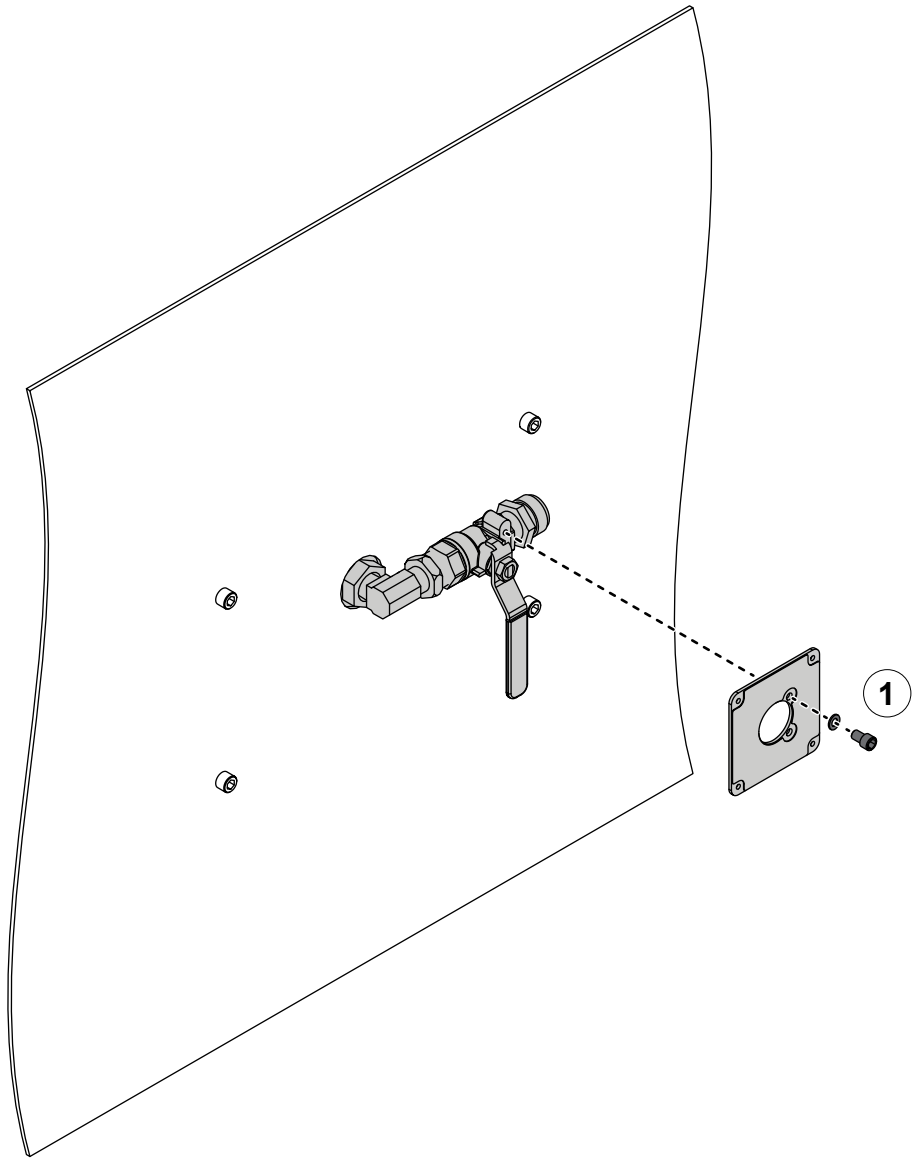
Installing the Valve Assembly



Use the illustration and instructions to install the valve assembly.

1. Install the valve assembly to the fitting on the eductor.

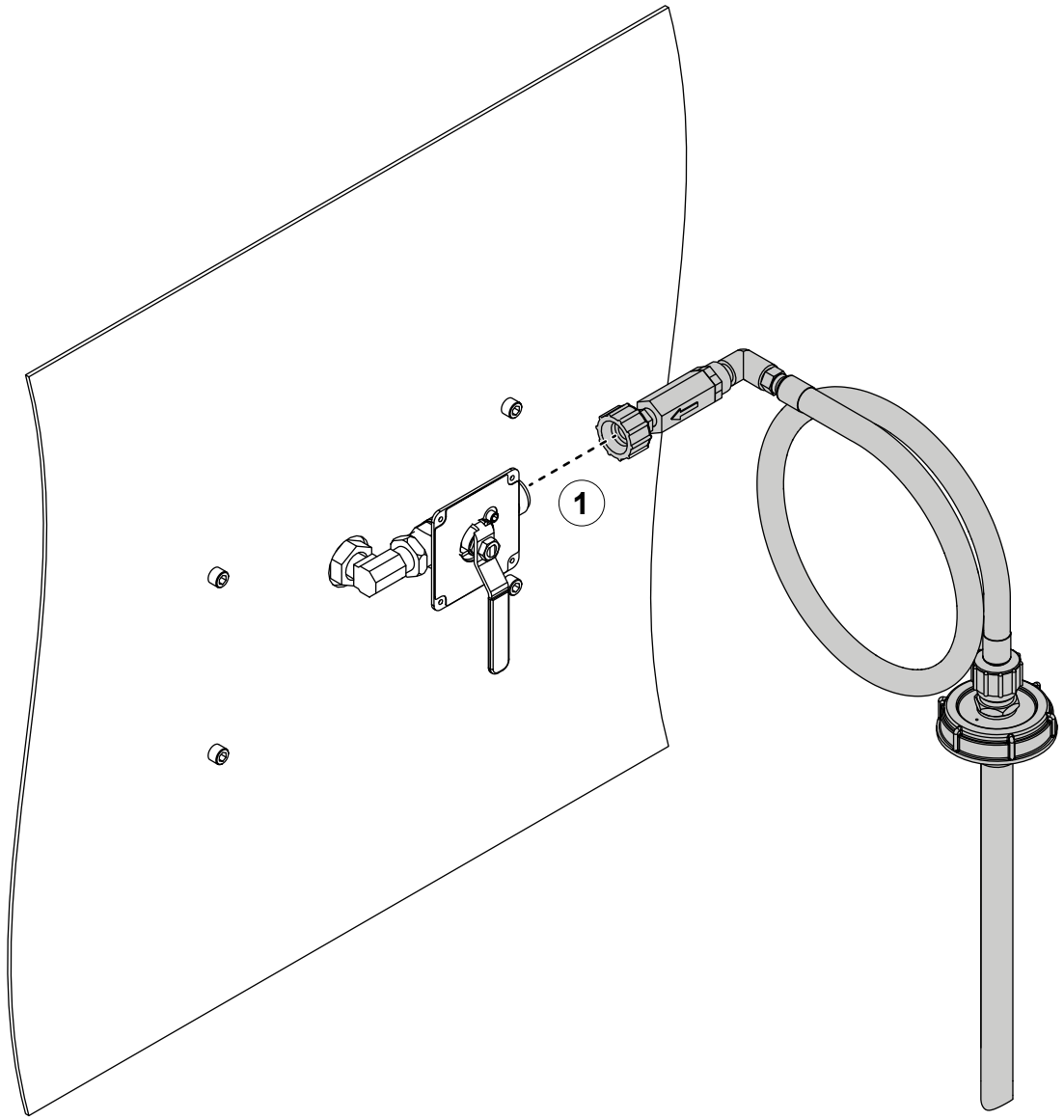
Installing the Panel Plate



Use the illustration and instructions to install the panel plate to the valve assembly.

1 Locally source the appropriate hardware to mount the panel plate to the valve assembly.

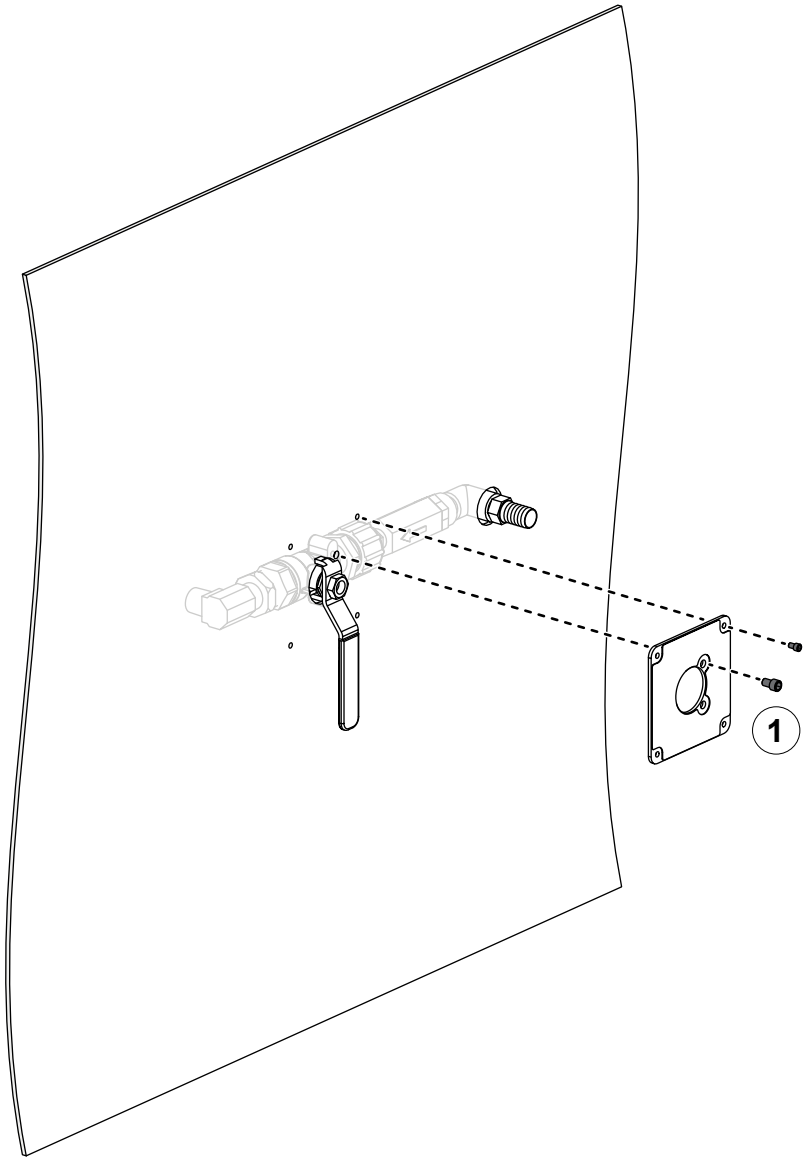
Installing the Hose Assembly



Use the illustration and instructions to mount the hose assembly.

1 Install the hose assembly to the valve assembly.

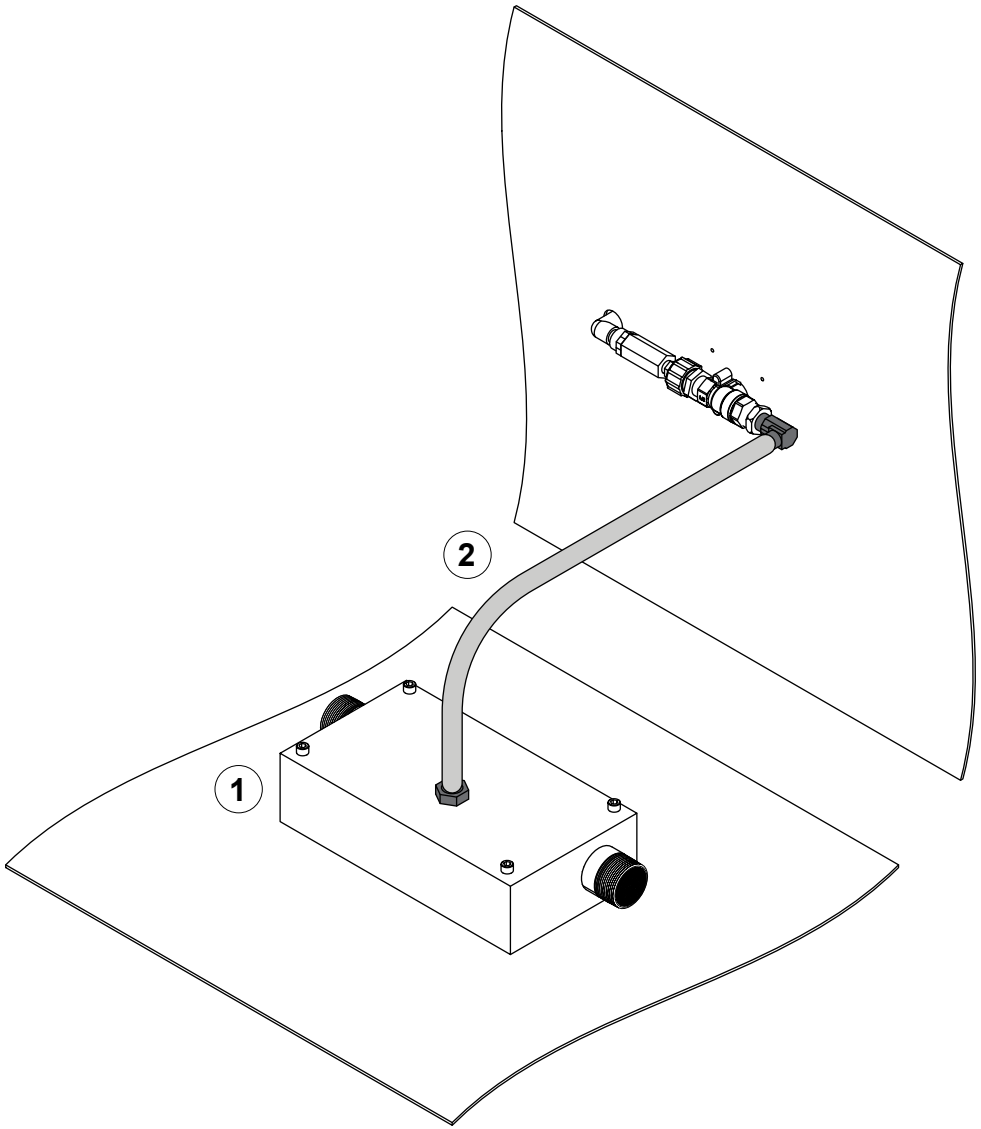
Alternative Installation—Mounting the Valve Assembly



Use the illustration and instructions to remotely mount the eductor and panel mount the valve assembly.

1. Create the cutout and drill the mounting holes for the eductor. Refer to: **"Alternative Installation Valve Assembly Cutout Dimensions" on page 13**.
2. Locally source the appropriate hardware to mount the valve assembly and the panel plate to the operator panel.

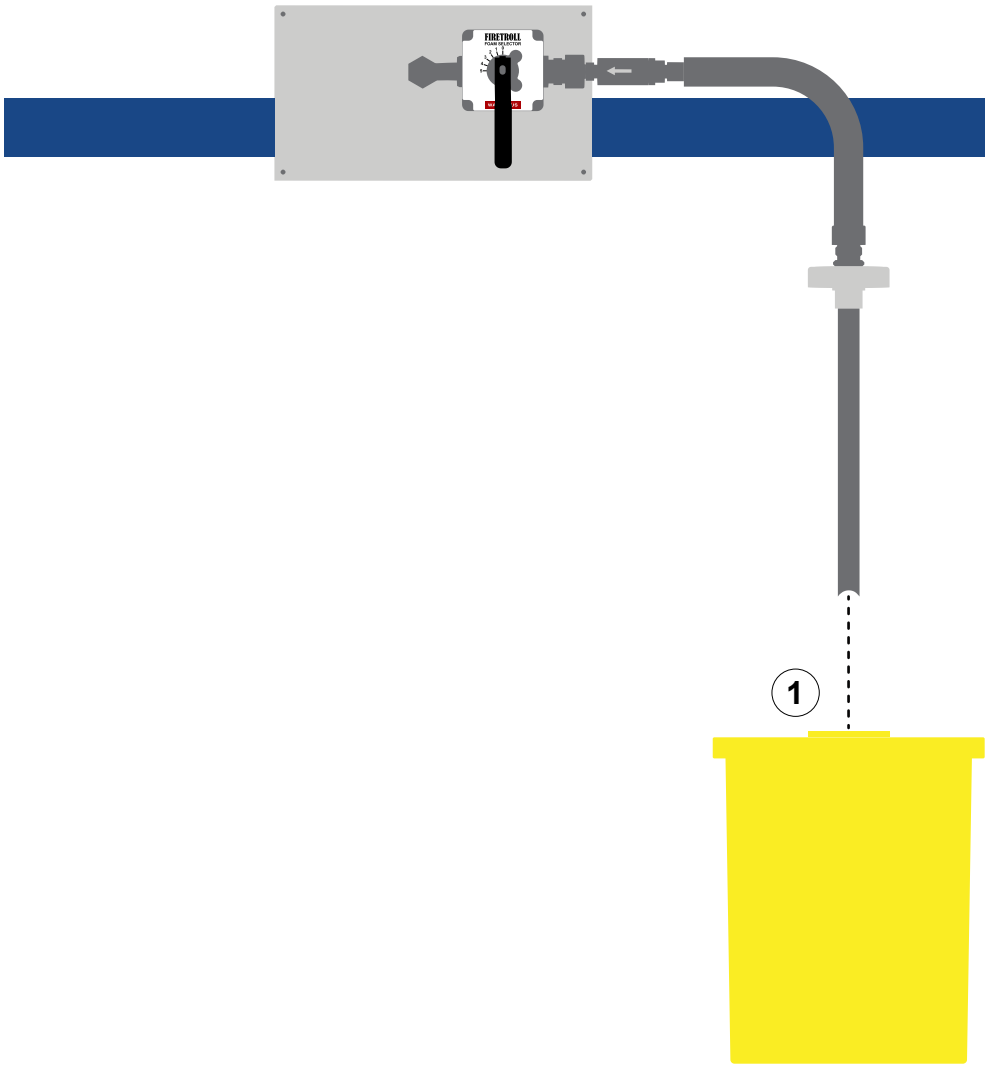
Alternative Installation—Connecting the Valve Assembly to Eductor



Use the illustration and instructions to remote mount the eductor and connect it to the valve assembly.

1. Locally source the appropriate hardware to mount the eductor body.
2. Locally source the appropriate hose to connect the valve assembly to the eductor.

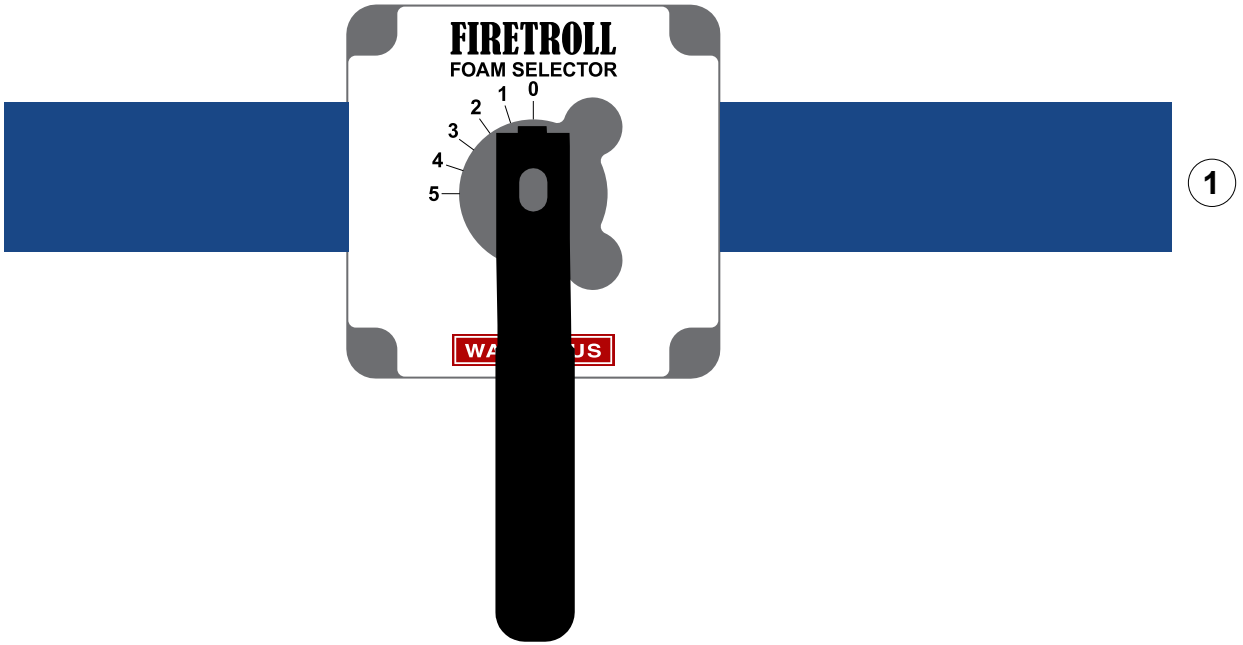
Connecting the Concentrate Supply



Use the illustration and instruction to connect the concentrate supply.

1 Insert the wand into the concentrate supply and tighten the capper.

Adjusting the Solution



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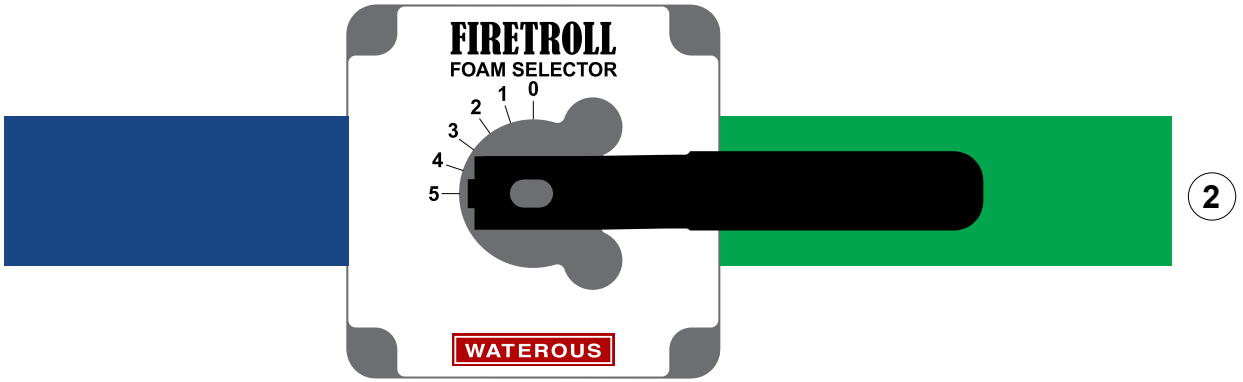


2

Use the illustration and instructions to adjust the amount of concentrate injected into the waterway.

1. Set the handle to 0 to not inject concentrate into the waterway.
2. Set the handle to 5 to inject the maximum of concentrate into the waterway.

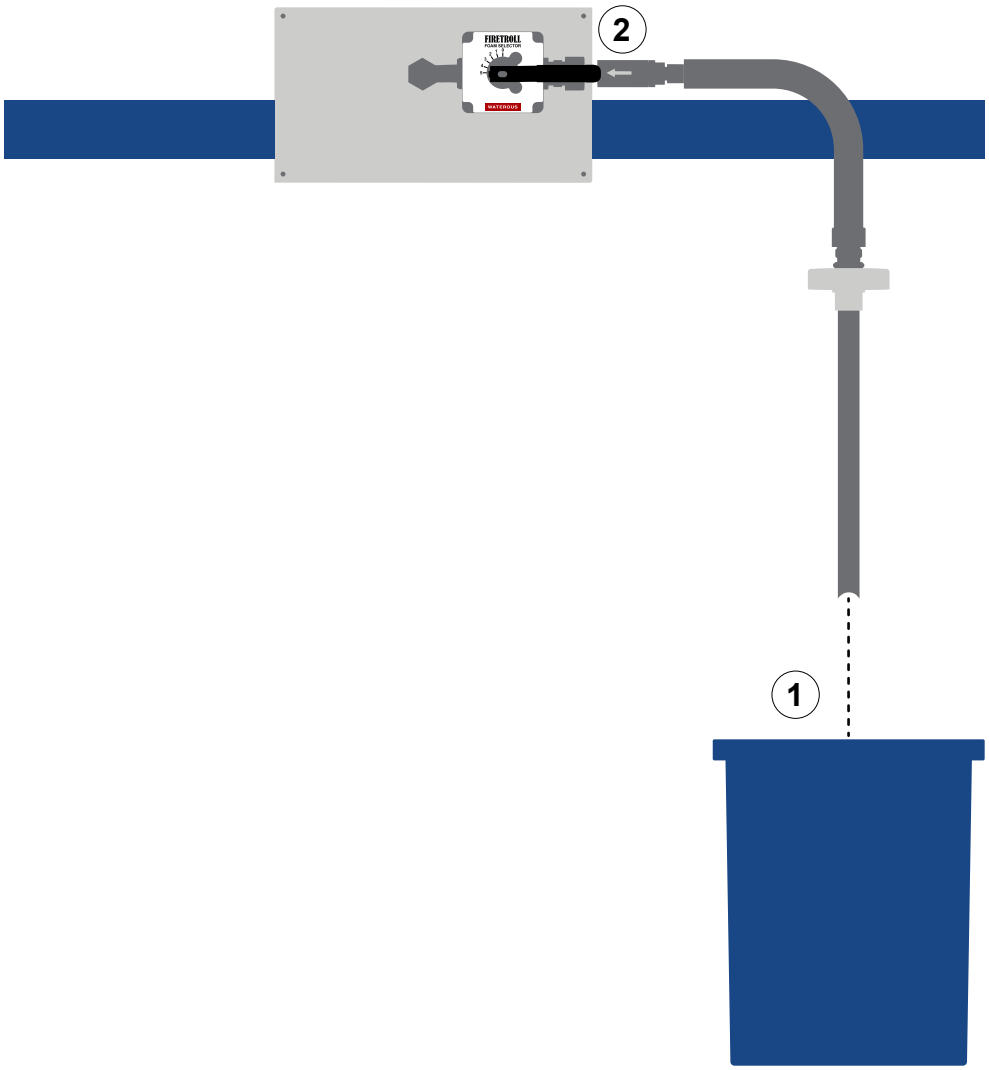
   Note: *Review the information described in the* **"Performance Table" on page 23** *to determine the amount of concentrate injected into the waterway under various conditions.*

Performance Table

Inlet Pressure—PSI	Water Flow—GPM	Concentrate Flow—GPM**	% Foam
100	35	0.347	0.99
	50	0.375	0.75
	100	0.350	0.35
125	35	0.350	1.00
	50	0.350	0.70
	100	0.350	0.35
150	50	0.250	0.50
	100	0.300	0.30

Values based on factory conditions. Pressure drop across Fire Troll is 30-60 PSI depending on flow. **Foam concentrate metering valve fully open.

Flushing the System



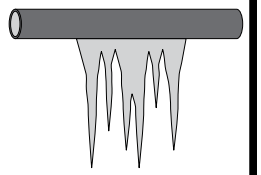
Flush the system after each use to prevent any residue buildup that could degrade performance. Drain any remaining water to prevent freezing when such conditions apply.

1. Insert the wand into a clear water supply.
2. Set the handle to maximum injection while flowing the waterway.

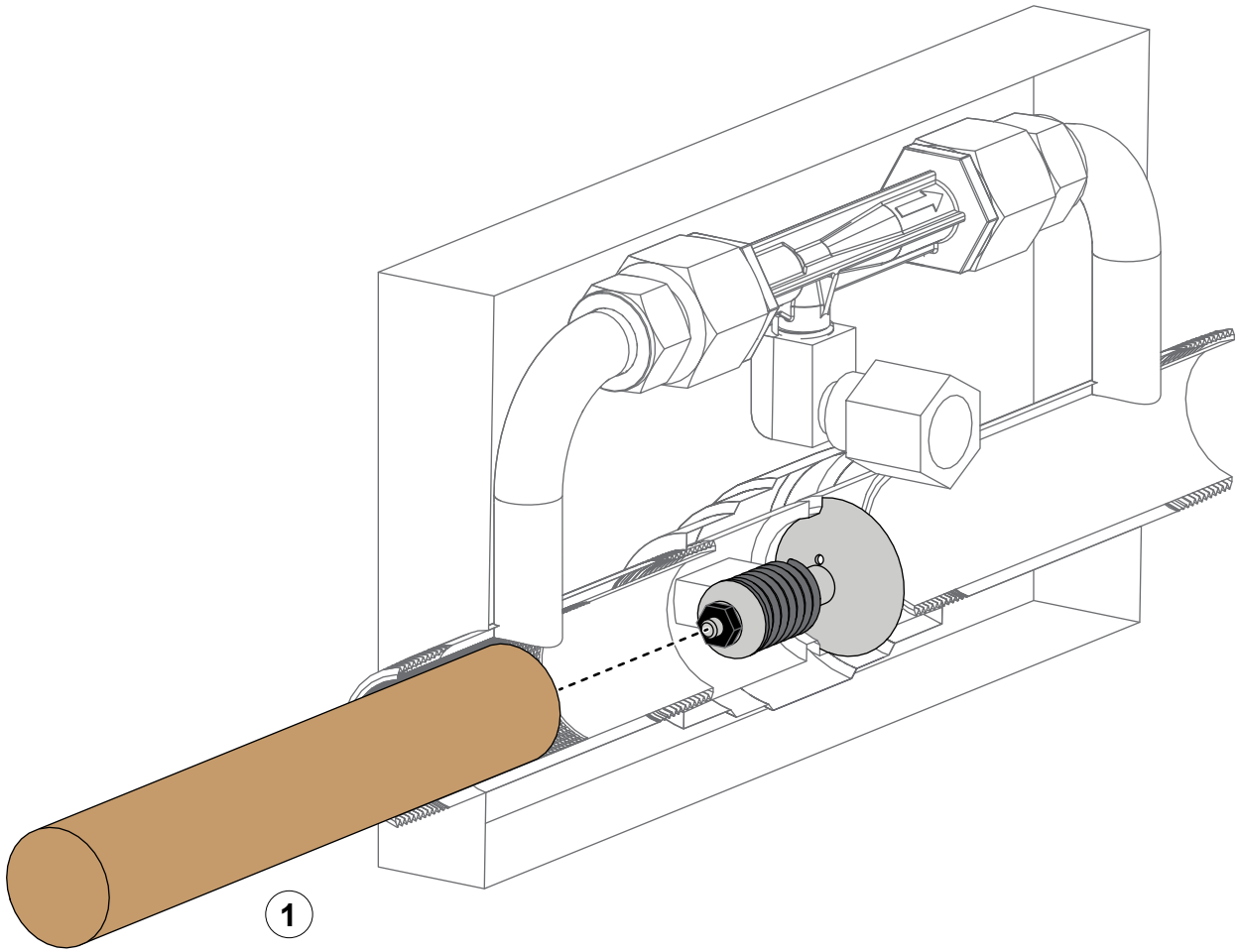
NOTICE

Freeze Damage

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



Clearing a Check Valve Jam



Use the illustration and instructions to clear a check valve jam condition if a jam condition occurs.

1 Use a wooden dowel to relieve the spring pressure to dislodge any trapped debris from the seal around the check valve .

WATEROUS

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