

# Automatic Outboard Flushing System

Version 3.0



*Shown: 4 engine setup # 35-3864-01 and fitting kit # 35-3955-04*

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# System Overview and Technical Specifications

## Fitting Kit (sold separately)

- 1 3/4" hose barb set for water inlet
- 2 1/2" hose barb set for water outlet of engine
- 3 3/8" hose barb set for water outlet of engine

**System** (Shown: 3 engine setup, part # 35-3864-01)

- 4 Connection for Inlet Hose Kit
- 5 Start button and LED status indicator
- 6 Connection for Remote Switch
- 7 Power input

## Inlet Hose kit (sold separately)

- 8 Capped fitting of the hose kit
- 9 Connects to water inlet on system





## 1 Choose your system

A basic system to flush all outboard motors in 12V. Fittings sold separately.

Part #	Automatic Outboard Flushing System
35-3861-01	1 Engine Setup
35-3862-01	2 Engine Setup
35-3863-01	3 Engine Setup
35-3864-01	4 Engine Setup



## 2 Choose Fitting Kit

Required: Inlet 3/4" straight and 90° elbow fitting, Outlet 3/8" and 1/2" hose barb in straight and 90° elbow fittings.

Part #	Fitting Kit
35-3955-01	For 1 Engine Setup
35-3955-02	For 2 Engine Setup
35-3955-03	For 3 Engine Setup
35-3955-04	For 4 Engine Setup



## 3 Choose Remote Switch

Optional: To mount a remote switch in an area easier to access than the system itself.

Part #	Remote Switch Kit
35-3954-02	6' harness assembly
35-3954-04	12' harness assembly
35-3954-06	18' harness assembly



## 4 Choose Inlet Hose

Optional: To mount a remote hose connection elsewhere or provide a comfortable reach to connect hose.

Part #	Inlet Hose Kit
35-3951-03	3' hose length
35-3951-04	6' hose length
35-3951-05	9' hose length



## 5 Choose Deck Kit

Optional: Can be used with Inlet Hose Kit. Includes straight connector.

Part #	Deck Kit
35-3952-01	With 3/4" hose barb straight fitting
35-3952-02	With 3/4" hose barb 90-degree elbow fitting



## 6 Choose Faceplate

Optional: To mount a Deck Kit only, or Deck Kit and Remote Switch.

Part #	Faceplate
35-3952-07	For Deck Kit only
35-3952-03	For Deck Kit and Remote Switch
35-3952-04	For Deck Kit and Remote Switch 90°
35-3952-05	For Deck Kit and Remote Switch 180°
35-3952-06	For Deck Fitting and Remote Switch 270°

## Mounting The System

- Mounting holes:  $\varnothing$  3/16"
- Orientation: Any direction on a flat surface.

## Electrical

- Installation must include protection with 5A fuse or breaker (provided by installer).
- Only connect black (-) and red (+) wires to same respective color. Damage can occur to the system if these wires are crossed.
- Installation of unit should only be performed by qualified electrician who have thoroughly read and understands the installation instructions covered in this manual and adhere to ABYC requirements.
- To avoid the risk of harm or injury, make sure that the power supply is disconnected. Ensure that the power supply is at zero volts with a multimeter before making any electrical connections.
- Be sure that the power source available matches the power requirements.

## Installing Fitting Kit (sold separately)

Contains water inlet options:

- 3/4" straight hose barb
- 3/4" 90° elbow hose barb

Contains water outlets for engines below 300 HP:

- Set of 3/8" straight hose barb
- Set of 3/8" 90° elbow hose barb

Contains water outlets for engines 300 HP and above:

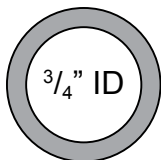
- Set of 1/2" straight hose barb
- Set of 1/2" 90° elbow hose barb

Install the hose barbs hand-tight (40 in-lb) and use one of the following:

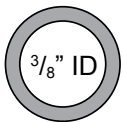
- Teflon tape
- Plastic thread sealant

## Connection to Engines

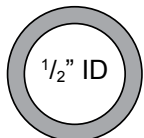
Using hose smaller than the required inner diameter is not recommended.



3/4" inner diameter hose is required for water **inlet**.



3/8" inner diameter hose is required for water **outlet** (to engines). Reinforced hose is recommended.



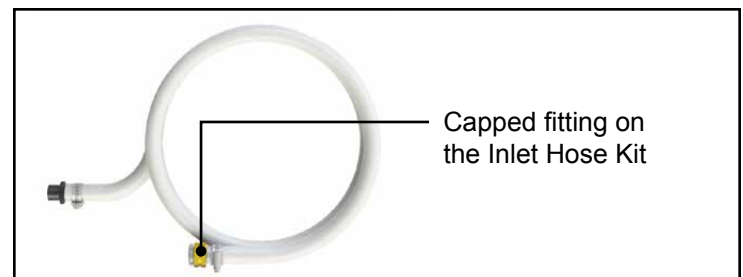
For engines over 300HP, it is best to use 1/2" inner diameter hose is required for water **outlet** (to engines). Reinforced hose is recommended.

Choose fittings which fit the appropriate hose size. The hose will run from the system, through the outboard loom, and to each engine. Locate the flushing port on the engine, split the line, and connect the hose. Or, choose to install a tee.

## Inlet Hose Kit - \*Important: Sealed Water Inlet\*

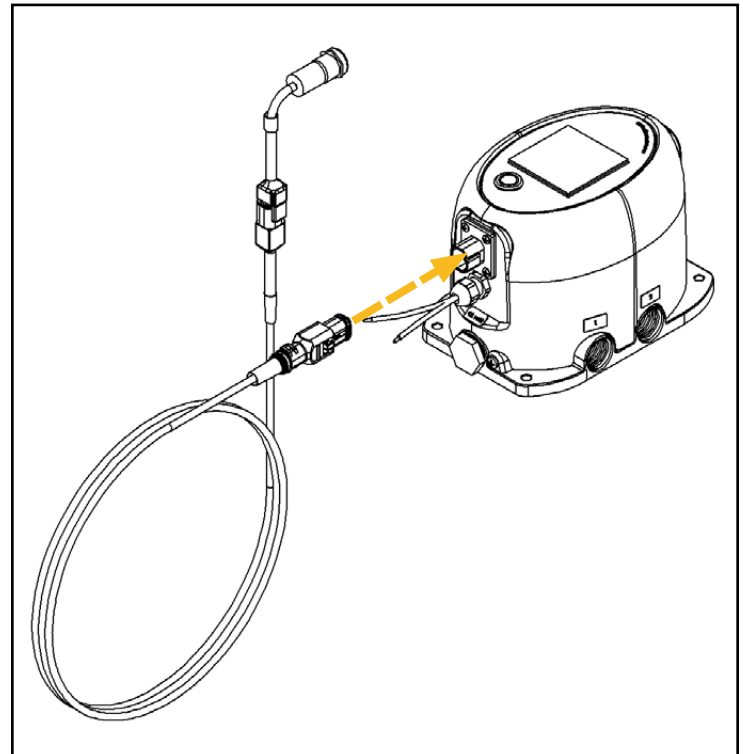
Incorporate a sealed cap for the water inlet to block the possibility of any backflow. Choose one of the following ways:

- Install the Inlet Hose Kit which includes a cap on the hose end already (shown below).
- If the Inlet Hose Kit is not used, an alternative can be a bulkhead cap, quick disconnect, or other sealed fitting provided by the installer.



## Remote Switch Kit

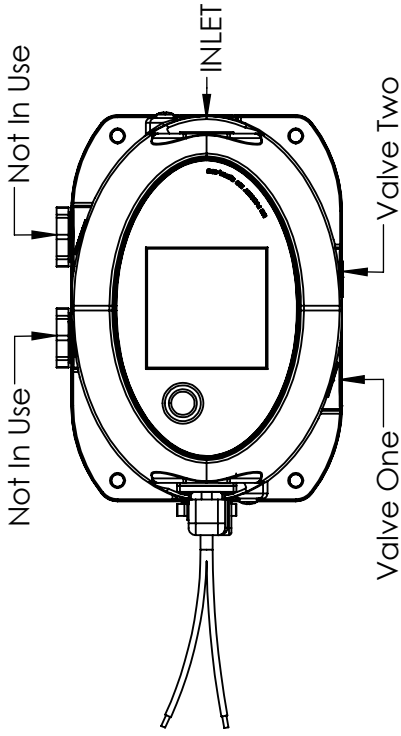
The Remote Switch requires a 3/4" diameter hole for mounting. Remove the dust cover and connect the remote switch kit (Deutsch connector).



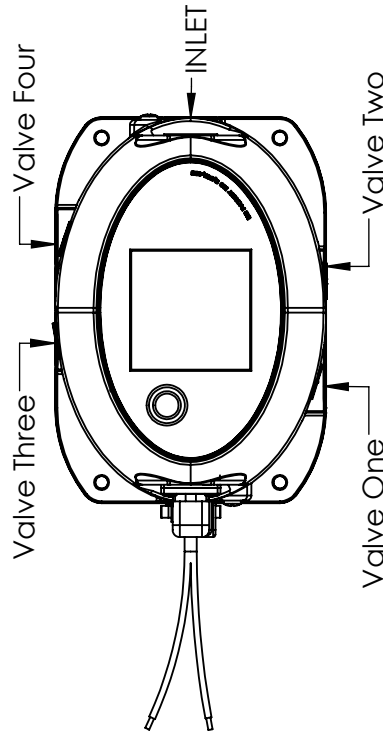
## Quick Disconnect Deck Kit

The Quick Disconnect Deck Kit requires 1 1/2" diameter hole for mounting.

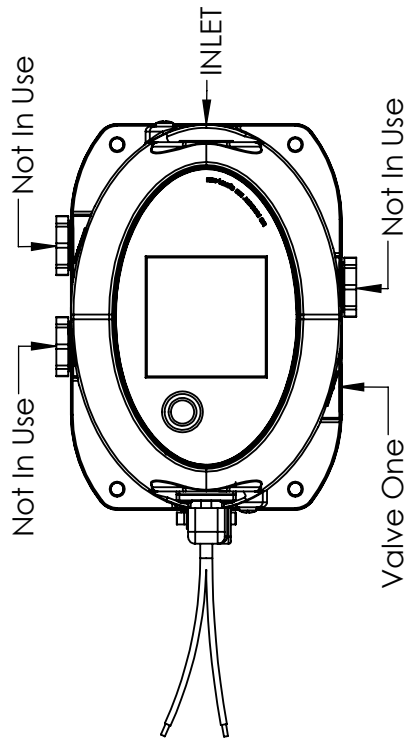
**Two Engine Setup**



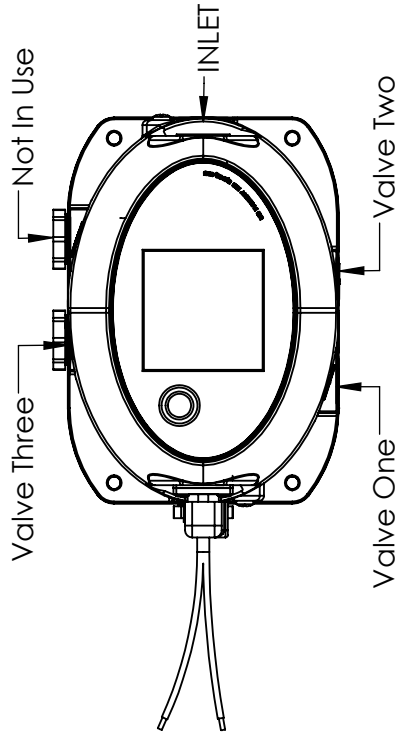
**Four Engine Setup**



**Single Engine Setup**



**Three Engine Setup**



TITLE: **Outboard Flushing System V3.0**  
**Valve Port Layout**

NAME	DATE
JC	10/6/2017
JC	1/22/2020

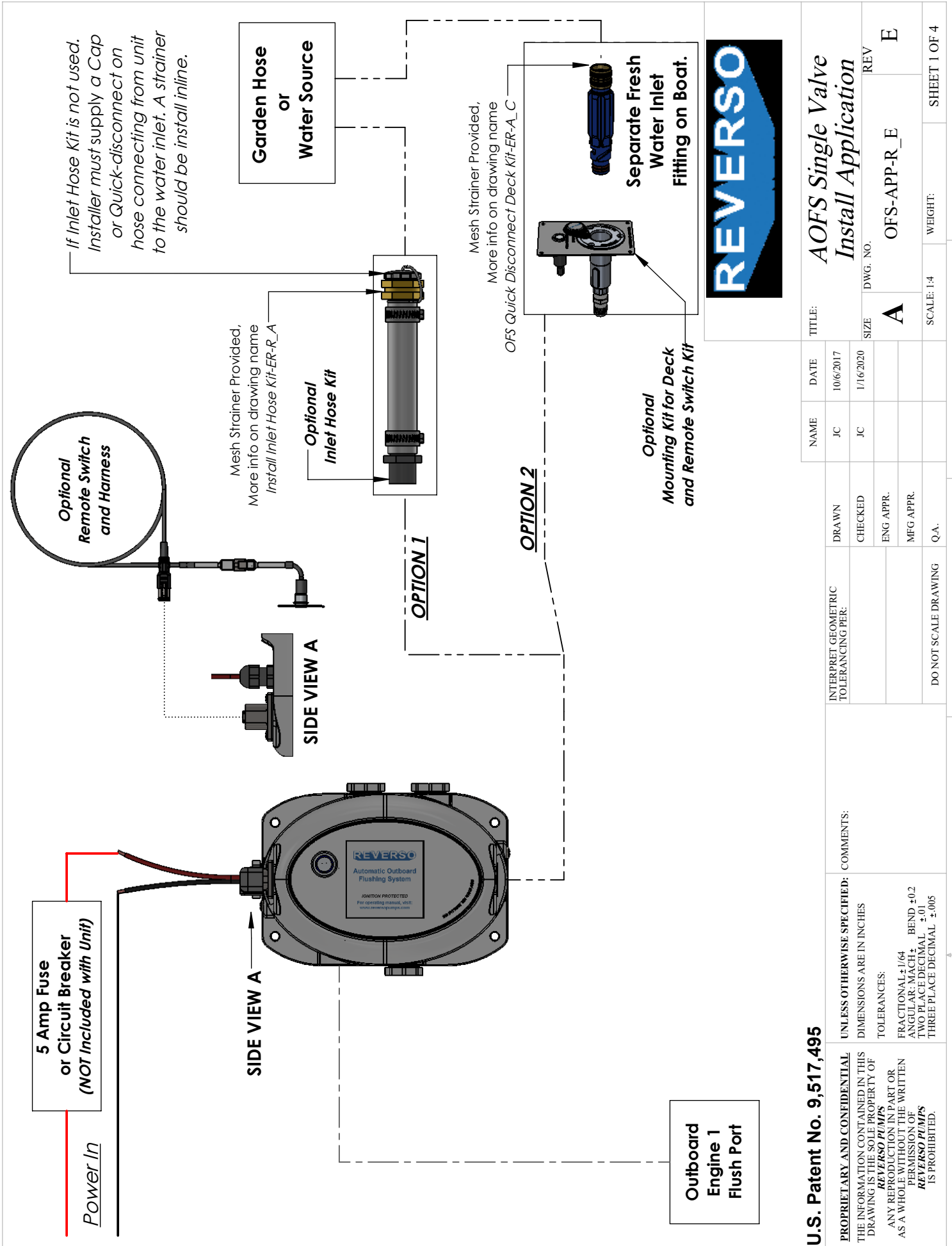
INTERPRET GEOMETRIC TOLERANCING PER:	DRAWN
	CHECKED
	ENG APPR.
	MFG APPR.
DO NOT SCALE DRAWING	Q.A.

SIZE	DWG. NO.	REV
<b>A</b>	AOFS Valve Port Layout-APP-R_B	<b>B</b>
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

REV.	DESCRIPTION	DATE	APPROVED
A	Drawing was made to show customer the valve layout	10/6/2017	JC
B	Update the Version to 3.0 on the drawing.	6/13/2019	JC

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	<p>DO NOT SCALE DRAWING</p>	

# Installation Diagram: 1 Engine Setup



**U.S. Patent No. 9,517,495**

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FRACTIONAL: ± 1/64 BEND: ± 0.2  
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THREE PLACE DECIMAL ± 0.005

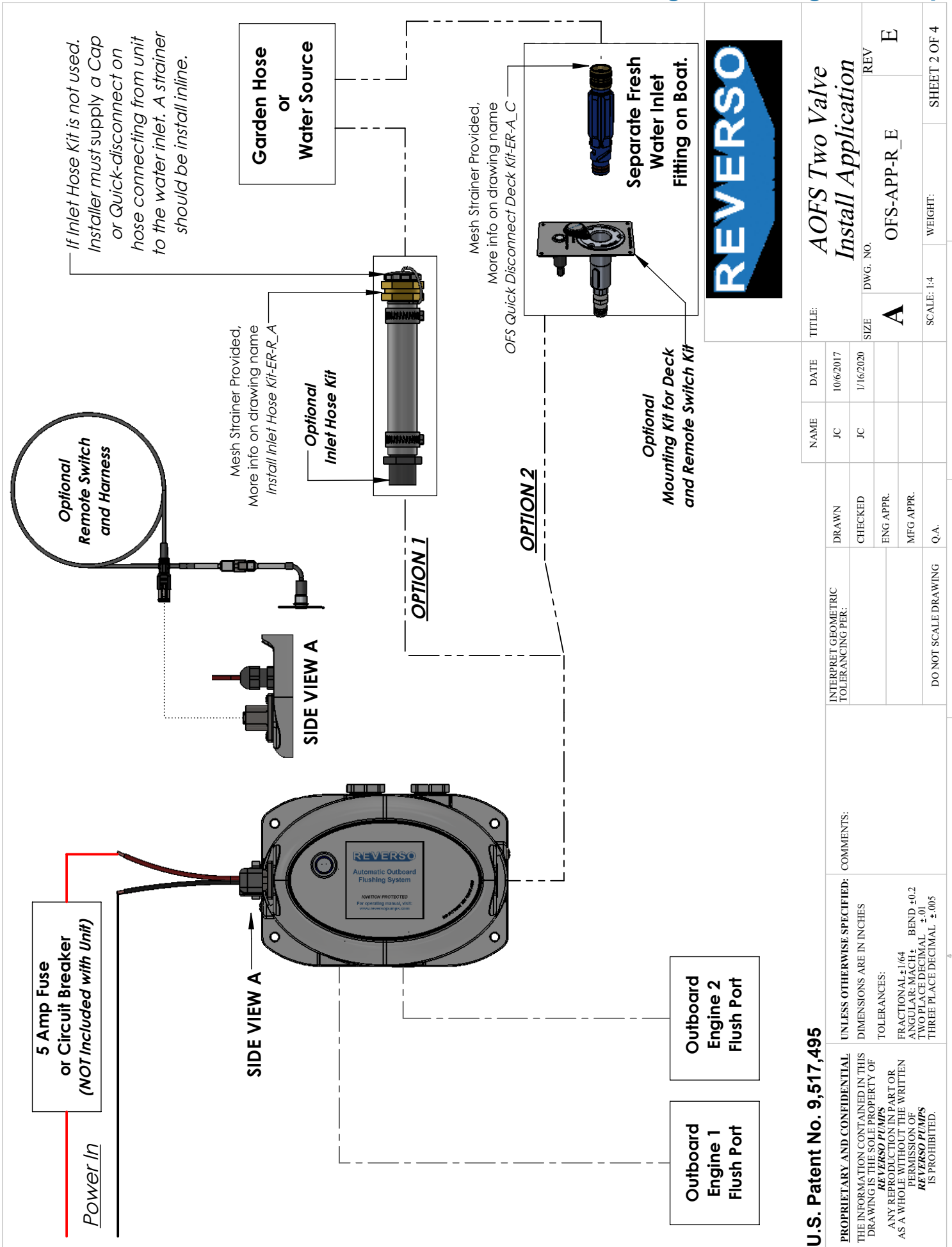
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DO NOT SCALE DRAWING

Q.A.

NAME	DATE	TITLE:
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JC	1/16/2020	REV
		SIZE DWG. NO. <b>A</b> OFS-APP-R_E <b>E</b>
		SCALE: 1:4 WEIGHT:
		SHEET 1 OF 4

# Installation Diagram: 2 Engine Setup



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 ANGULAR: MACH ± BEND ±0.2  
 TWO PLACE DECIMAL ±.01  
 THREE PLACE DECIMAL ±.005

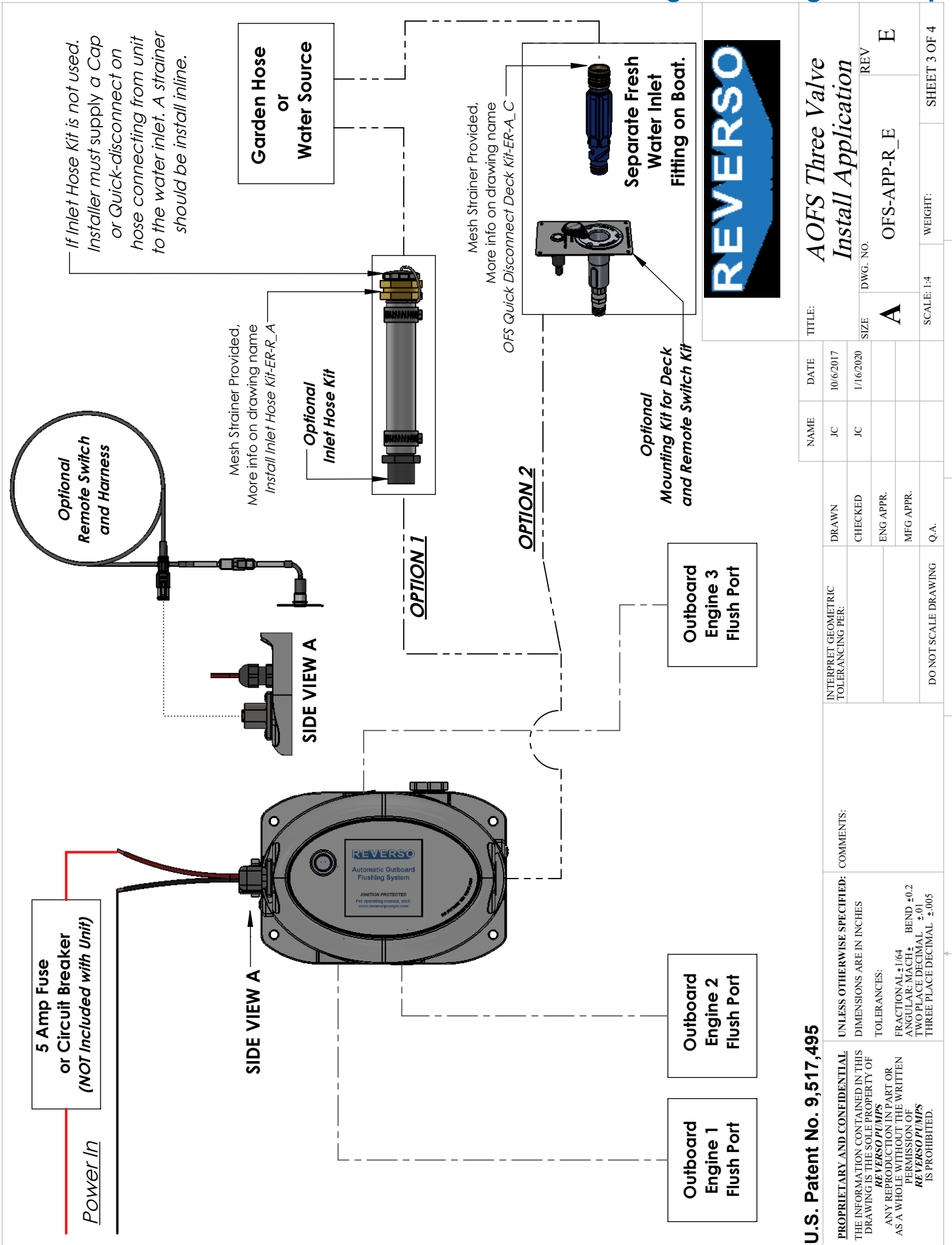
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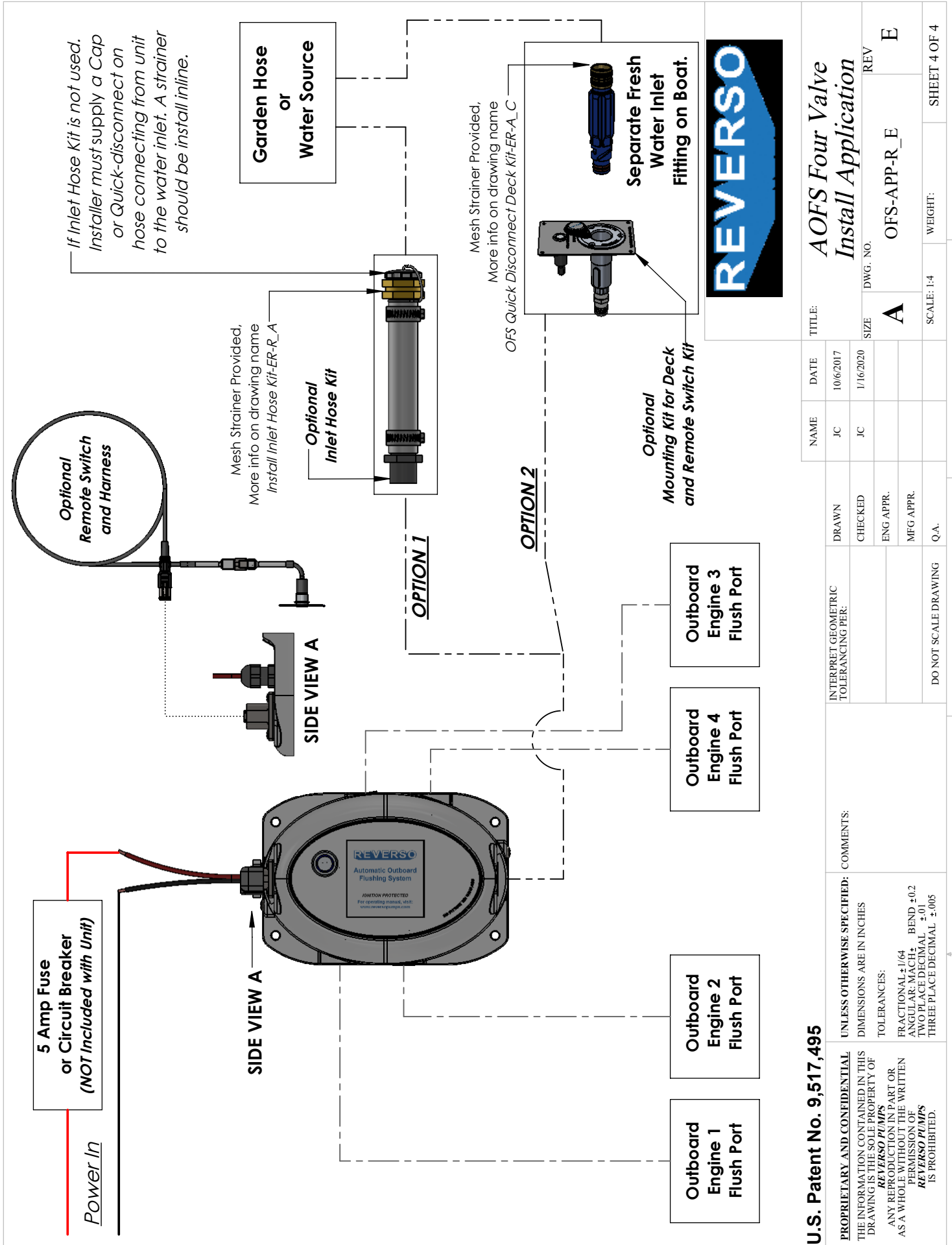
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JC	10/6/2017	<b>AOFS Two Valve Install Application</b>
JC	1/16/2020	
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CHECKED	ENG APPR.	<b>A</b>
MFG APPR.	Q.A.	DWG. NO. <b>OFS-APP-R_E</b>
SCALE: 1:4		REV <b>E</b>
WEIGHT:		SHEET 2 OF 4



# Installation Diagram: 3 Engine Setup



# Installation Diagram: 4 Engine Setup



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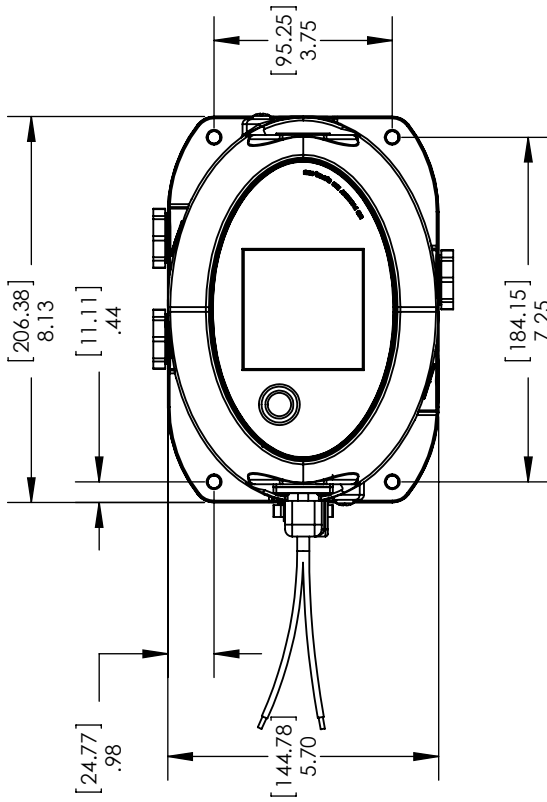
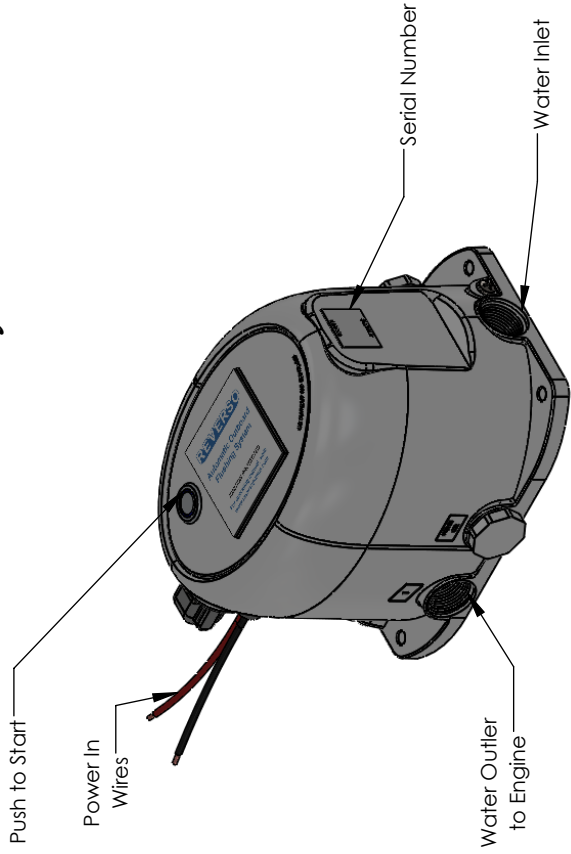
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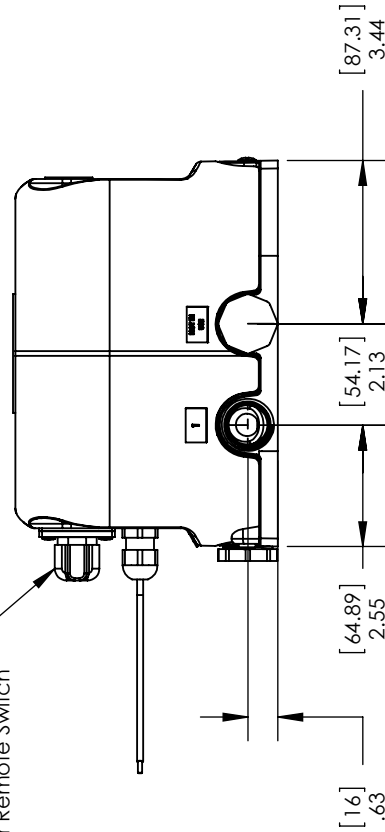
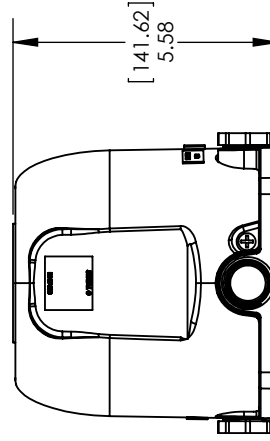
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	CHECKED	10/6/2017	AOFS Four Valve
	ENG APPR.	1/16/2020	Install Application
	MFG APPR.		REV
	Q.A.		SIZE
			A
			DWG. NO.
			OFS-APP-R_E
			E
			SCALE: 1:4
			WEIGHT:
			SHEET 4 OF 4

Part #: 35-3861-01

All Dimensions for Reference Only  
Secondary Dimensions in Millimeters



Deutsch Connector for Remote Switch



U.S. Patent No. 9,517,495

**TECHNICAL SPECIFICATIONS**

Port Size - 3/4" FNPT (Manifold Base)  
Inlet: 3/4" Hose Barb  
Outlet: 3/8" Hose Barb / 1/2" Hose Barb

Weight - 3lbs. / 1.36kg.

Power - 12 Volt @ 3 Amp

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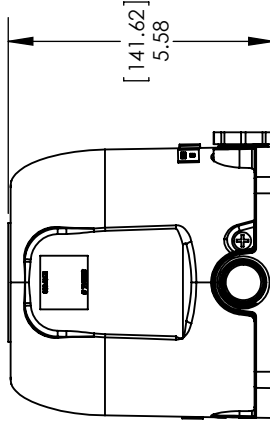
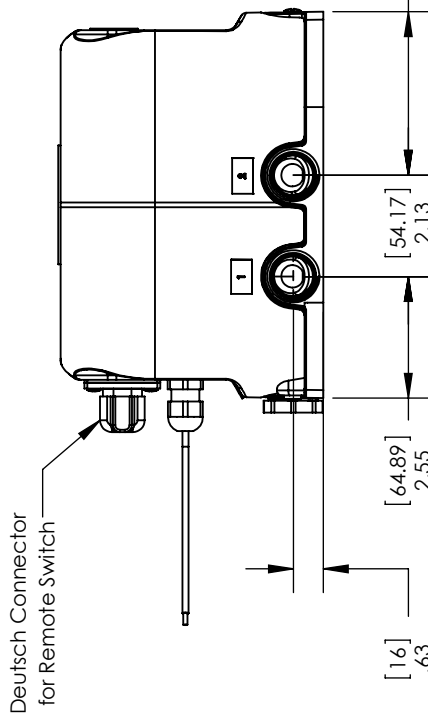
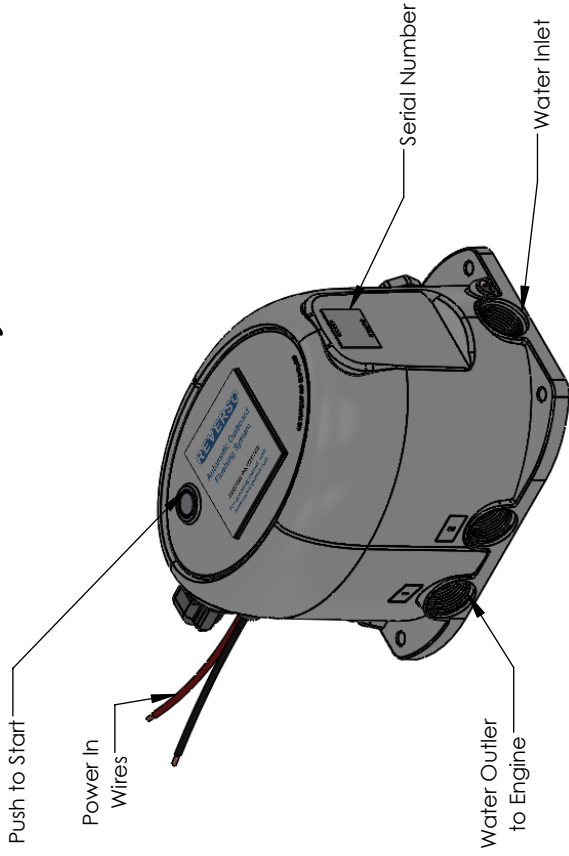
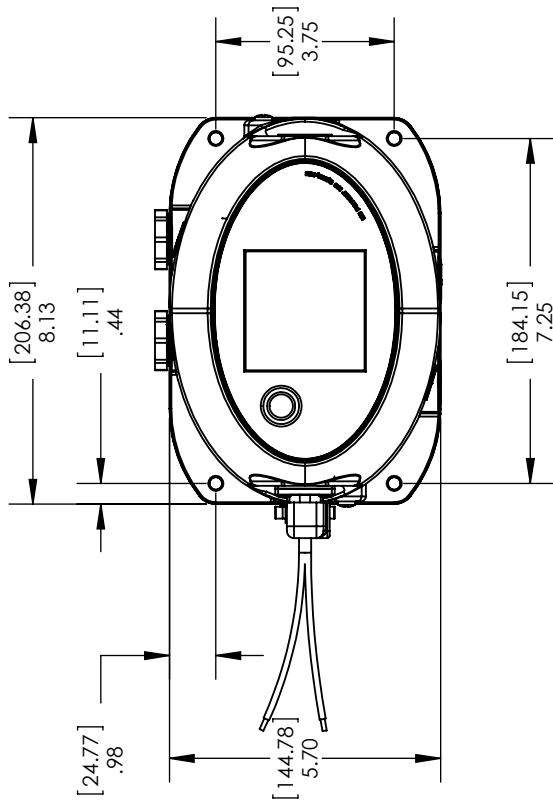
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ANGULAR: MACH ± BEND ±0.2  
TWO PLACE DECIMAL ±.01  
THREE PLACE DECIMAL ±.005  
DO NOT SCALE DRAWING

REVERSO PUMPS		DATE
DRAWN	JC	10/6/2017
CHECKED	JC	1/22/2020
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		
TITLE: OFS-1-12 Outboard Flushing System - Single Engine Setup - Version 3.0 - 12 Volt		
SIZE	DWG. NO.	REV
A	AOFS V2.0 ER_R_C	C
SCALE: 1:4	WEIGHT:	SHEET 1 OF 8

Part #: 35-3862-01

All Dimensions for Reference Only  
Secondary Dimensions in Millimeters



U.S. Patent No. 9,517,495

**TECHNICAL SPECIFICATIONS**

Port Size - 3/4" FNPT (Manifold Base)  
Inlet: 3/4" Hose Barb  
Outlet: 3/8" Hose Barb / 1/2" Hose Barb  
Weight - 3lbs. / 1.36kg.  
Power - 12 Volt @ 3 Amp

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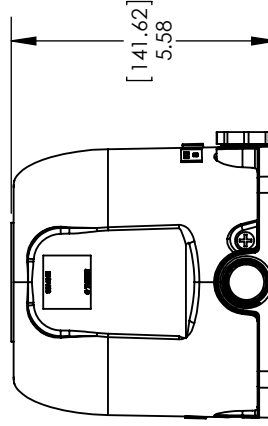
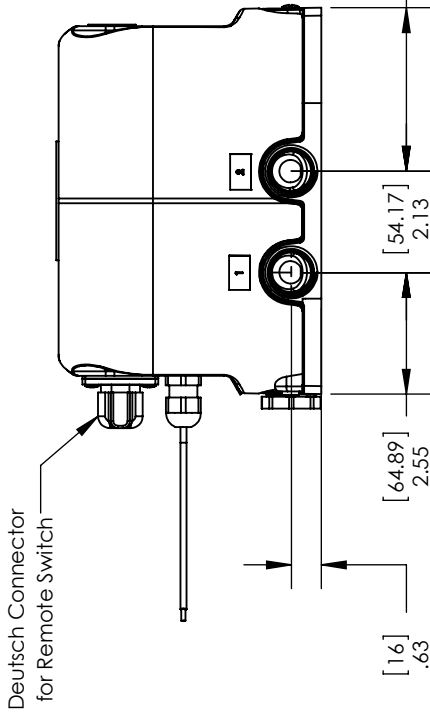
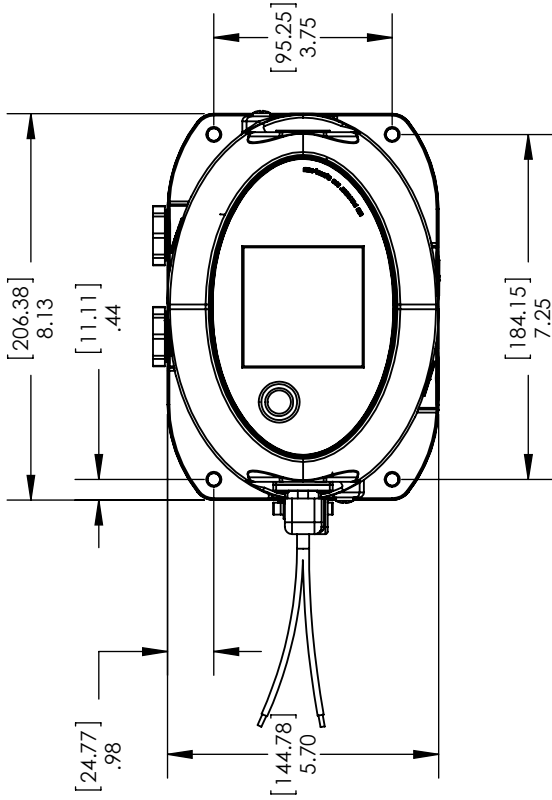
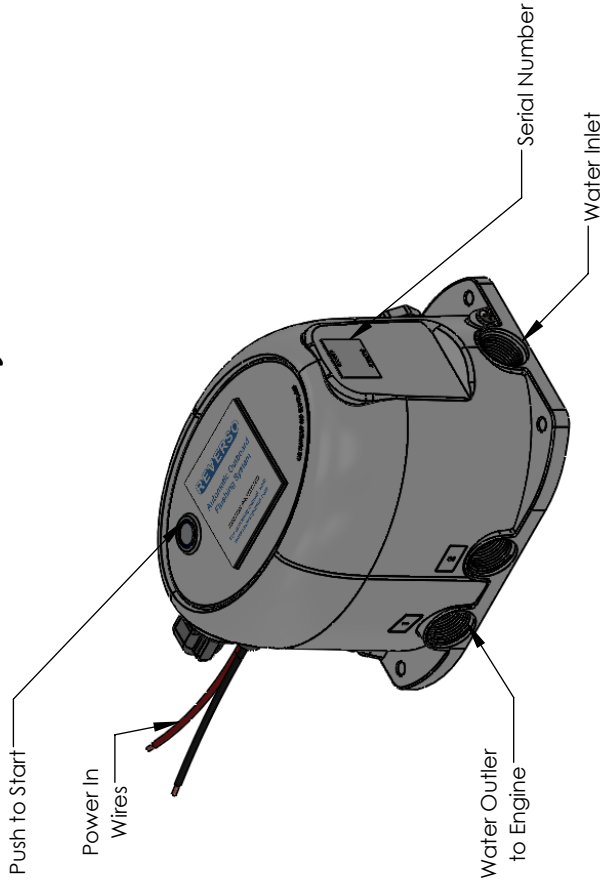
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TWO PLACE DECIMAL ±.01  
THREE PLACE DECIMAL ±.005  
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REVERSO PUMPS		NAME	DATE
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CHECKED	JC	JC	1/22/2020
ENG APPR.			
MFG APPR.			
Q.A.			
COMMENTS:			
TITLE: OFS-2-12 Outboard Flushing System - Two Engine Setup - Version 3.0 - 12 Volt			
SIZE	DWG. NO.	REV	REV
A	AOFS V2.0 ER_R_C	C	C
SCALE: 1:4	WEIGHT:	SHEET 3 OF 8	

Part #: 35-3863-01

All Dimensions for Reference Only  
Secondary Dimensions in Millimeters



REVERSO PUMPS		DATE	REV
DRAWN	JC	10/6/2017	
CHECKED	JC	1/22/2020	
ENG APPR.			
MFG APPR.			
Q.A.			
COMMENTS:			
UNLESS OTHERWISE SPECIFIED:		DIMENSIONS ARE IN INCHES	
TOLERANCES:		FRACTIONAL +1/64	
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		THREE PLACE DECIMAL ±.005	
DO NOT SCALE DRAWING			

TITLE:		SIZE	DWG. NO.	REV
OF3-3-12 Outboard Flushing System - Three Engine Setup - Version 3.0 - 12 Volt		A	AOFS V2.0 ER_R_C	C
SCALE: 1:4	WEIGHT:	SHEET 5 OF 8		

U.S. Patent No. 9,517,495

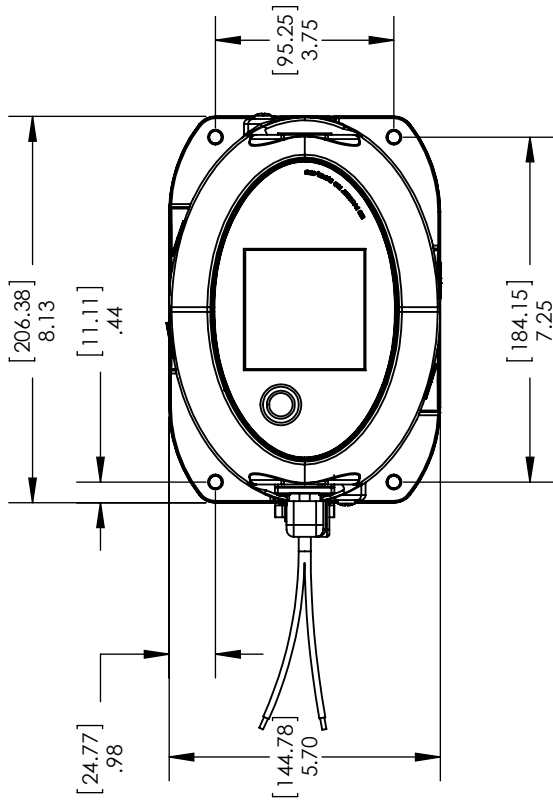
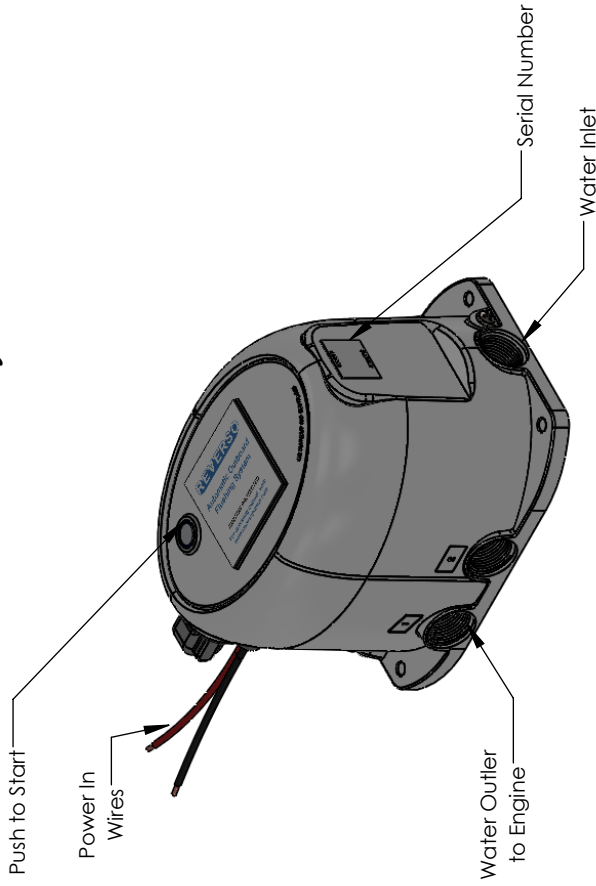
**TECHNICAL SPECIFICATIONS**

- Port Size - 3/4" FNPT (Manifold Base)
- Inlet: 3/4" Hose Barb
- Outlet: 3/8" Hose Barb / 1/2" Hose Barb
- Weight - 3lbs. / 1.36kg.
- Power - 12 Volt @ 3 Amp

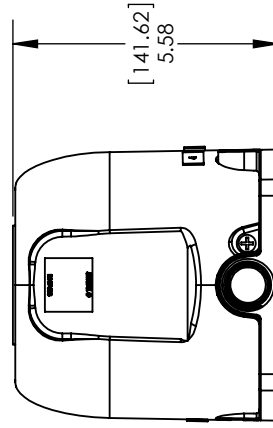
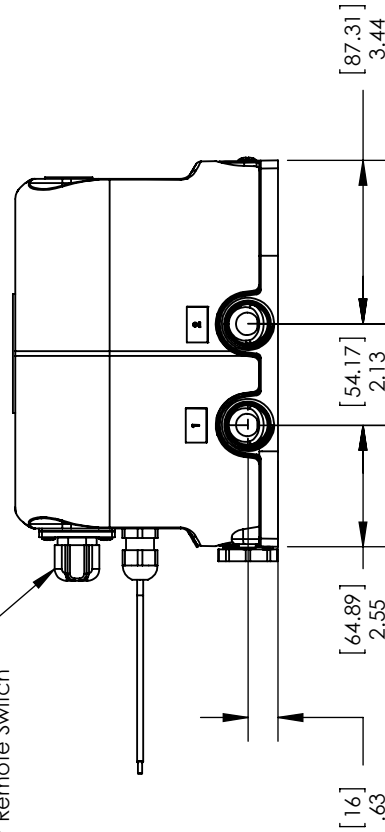
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Part #: 35-3864-01

All Dimensions for Reference Only  
Secondary Dimensions in Millimeters



Deutsch Connector for Remote Switch



REVERSO PUMPS		NAME	DATE
DRAWN	JC	JC	10/6/2017
CHECKED	JC	JC	1/22/2020
ENG APPR.			
MFG APPR.			
Q.A.			
COMMENTS:			

UNLESS OTHERWISE SPECIFIED:  
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ANGULAR: MACH ± BEND ± 0.2  
TWO PLACE DECIMAL ± 0.01  
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**U.S. Patent No. 9,517,495**  
**TECHNICAL SPECIFICATIONS**  
**Port Size - 3/4" FNPT (Manifold Base)**  
**Inlet: 3/4" Hose Barb**  
**Outlet: 3/8" Hose Barb / 1/2" Hose Barb**  
**Weight - 3lbs. / 1.36kg.**  
**Power - 12 Volt @ 3 Amp**

TITLE: **OFS-4-12 Outboard Flushing System - Four Engine Setup - Version 3.0 - 12 Volt**  
SIZE: DWG. NO. **A** AOFS V2.0 ER\_R\_C REV **C**  
SCALE: 1:4 WEIGHT: SHEET 7 OF 8

## Operation

1. Connect water hose to unit.
2. Turn on water. The unit will not work without water pressure.
3. To activate:
  - a. Push start button **once** to activate **solid blue** for **15 minute** flush cycle per engine.
  - b. Push start button **twice** to activate **flashing blue** for **7.5 minute** cycle per engine.
4. The unit will automatically cycle each engine and shuts off once complete.
5. Disconnect water hose.

## To Stop Operation:

1. Stopping in the middle of a cycle will stop program. The system will reset back to engine 1.
  - a. If running the **15 minute** cycle per engine, then press the button **twice** to stop.
  - b. If running the **7.5 minute** cycle per engine, then press the button **once** to stop.
2. The system can be activated again by following Operation instructions.

## LED Indicator

<b>Solid Blue</b>	System is operating, 15 minute cycle per engine
<b>Flashing Blue</b>	System is operating, 7.5 minute cycle per engine
<b>Solid or Flashing Red</b>	Low or no water pressure. Ensure sufficient water pressure is applied to the system. If normal operation does not resume, contact us for further assistance.

## Service Mode:

1. To enter the Service Mode, hold down button for 5 seconds until the LED **flashes blue** and then turns off. This indicates you have entered maintenance mode.
2. The Service Mode will only cycle through the amount of engines on the vessel. To **manually** cycle through engines, press the button once for each engine you need to test.
  - a. The first press will flush engine 1. Indicator light flashes from blue to red once.
  - b. The second press will switch to engine 2 (if applicable). Indicator light flashes from **blue to red** 2x.
  - c. The third press will switch to engine 3 (if applicable). Indicator light flashes from **blue to red** 3x.
  - d. The fourth press will switch to engine 4 (if applicable). Indicator light flashes from **blue to red** 4x.
3. On the last engine, press once to end. The button will return to OFF state, and normal Operation can be completed.
4. To exit Service Mode at any time, hold down button for 5 seconds until it **flashes red**.

Note: Service mode can be used to winterize.

## Troubleshooting

- Reset the system.
- Confirm correct voltage is powering the unit.
- If connected to a battery, check that it is fully charged.
- Ensure there is enough water pressure to the system.
- Observe LED indicator. See Operation instructions for details.
- Ensure all connections have been properly tightened and no kinked hose causing restriction.
- Confirm the correct fittings are installed for hose and unit.