





**ORIGINAL  
RETROFIT**

ISSUE #04-06-810

Smith & Loveless Retrofit control panels for use in replacing existing panels electrical for use in updating stations to current designs





-  Improved Graphics
-  Increased Functionality
-  Improved Navigation

Delivering simplified operation yet powerful pump station control, **QUICKSMART™** Station Controls provide unparalleled ability to monitor and adjust all of your pump station functions with a simple touch of the screen. A new layout makes control modifications, screen navigation and viewing of pump station status easier than ever, with screen function buttons and a status bar accessible from each screen. Added features take station controller functionality to new levels. Like a new maintenance log feature, which displays periodic recommended operation / maintenance instructions and makes lubrication suggestions based on actual pump run times. Or improved help/ troubleshooting support and a new I/O Status screen that displays controller digital and analog I/O status.

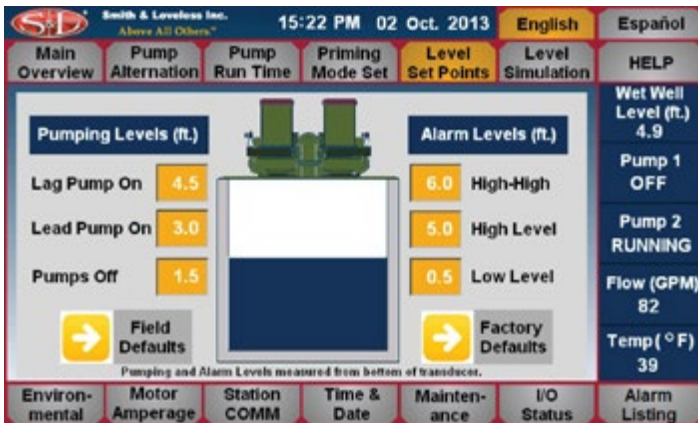
Upgrade your pump station controls today.



Force Main Sync™ is designed for common force mains with multiple pumps on the common force main creating complex pumping variables.



Featured with Shade Aide™!



Level Set Points



I/O Status Overview

#### Main Features

- PLC Station Control
- Alarm Management
- Wet Well Level Simulation
- Prime Mode Selection
- Help / Troubleshooting Info
- Graphical Pump Notifications
- English / Spanish Languages

#### Function Controls

- Pump On / Off Levels
- Alarms (Display / Acknowledgement)
- Wet Well Level Simulator
- Environmental System Set Points
- Pump Run Time Meters
- Two Priming System Modes
- Maintenance Reminders

Visit [smithandloveless.com](http://smithandloveless.com) for more information.

# Featuring:

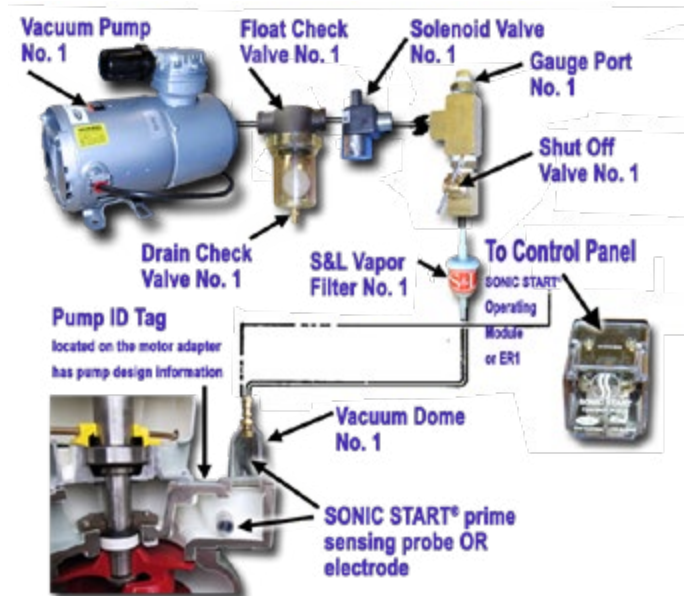
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## SONIC START®

Compare the SONIC START® Prime Sensing System to the SONIC START® STREAMLINE™ Prime Sensing System

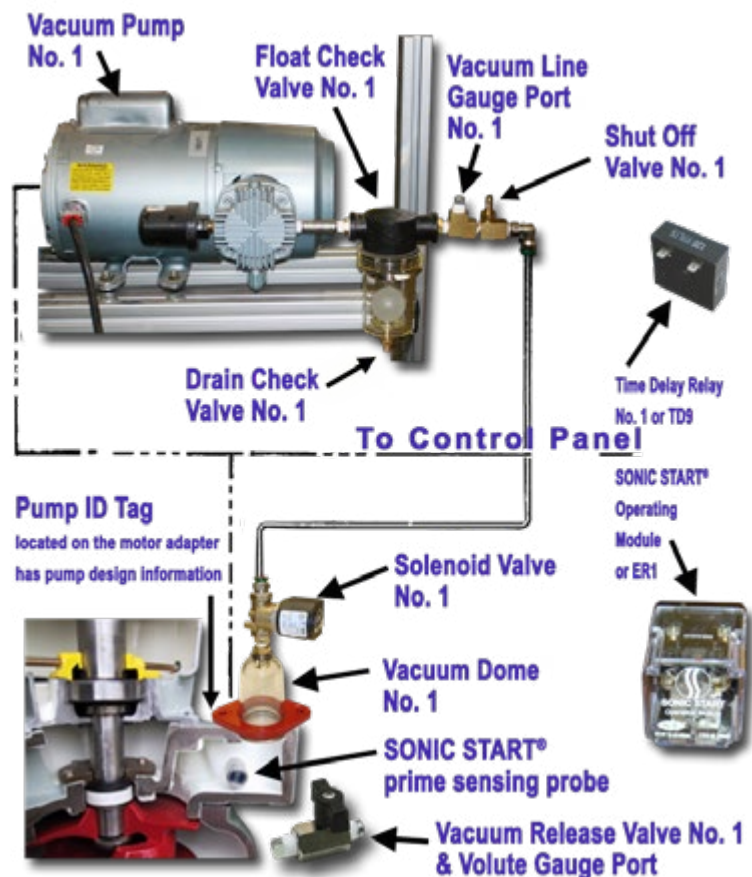
There are differences between the SONIC START® Prime Sensing System and the new SONIC START® STREAMLINE™. For starters, the new system has 50% fewer vacuum fitting connection points. Add to that the fact the solenoid valve is in a new location and no more vapor filter. Take a look, compare and see how the new SONIC START® STREAMLINE™ is just that . . .

***streamlined!***



## SONIC START® STREAMLINE™

50% Fewer Vacuum Tubing  
Connection Fittings





**The SONIC START® STREAMLINE™ Prime Sensing System is the robust, yet simple pump priming process that delivers the benefits of above-ground, operator-safe S&L pumping systems.**

### **Quicker Priming**

**Primes Five Times as Fast** — The S&L system normally primes the pump within 30 seconds or less, while the self-primer can take up to three to five minutes. The self-primer's longer priming times require larger wet wells in order to hold the wastewater while the pump is priming. To achieve shorter priming times, the S&L pump uses a vacuum pump capable of handling large quantities of air. Note that depending on RPM, total dynamic suction lift, elevation, suction pipe dia. etc., self-primers typically can actually prime within 60 seconds for most applications. However, it is true that vacuum priming, on average, is a much faster process. Other self-primer manufacturers, for example, will approve designs as long as they do not exceed five minute re-prime time so the five minute statement can be true.

### **Lower Horsepower to Prime**

**Fractional Horsepower Pump** — The S&L vacuum pump is equipped with a 1/6 or 1/2 Hp motor depending on

suction pipe size. The selfpriming station uses the main pump motor, and is operating at the equivalent of "deadhead" conditions. A 15 Hp pump can use as much as 5 Hp during the priming operation. Thus, S&L pumps use less horsepower and prime much faster.

### **Fewer Valves Required**

**No Suction Flap Valve or Air Release Valve** — Unlike self-priming designs, S&L pumps do not require air release valves or suction flap valves. If the air release valve fails, the pump may not prime. The flap valve could jam open, wear out, could be missing, or a suction flange might be pitted and not allow the flap valve to seat properly causing frequent loss of prime. The air release valve or the valve discharge line has a tendency to clog, or the valve may fail. The flapper valve is considered an energy savings device, however, regular maintenance and replacement is required to ensure proper seating. Self-primers are designed to re-prime regardless of the existence or condition of the flapper valve as long as the volute

is half full. If the air relief valve becomes clogged or fails, the pumps will fail to prime if the discharge pressure is > 7 PSI. Self-primers can typically compress and expel air in the suction line/pump as long the discharge pressure is < 7 PSI. The simpler S&L system does not present these problems.

### **Simple Priming System**

**Reducing Static Suction Lift** — For an S&L wet well mounted pump station, static suction lift is calculated from the pump (off) elevation to the centerline of the pump volute elevation. The centerline of an S&L pump volute is approximately 6"- 8" above grade. For a self-priming station, static suction lift is calculated from the pump (off) elevation to the center line of the pump inlet suction elevation. The centerline of the pump suction for a typical self-priming station is 23"- 28" above grade. This saves nearly two feet of total dynamic suction lift, resulting in faster prime times, energy savings, and system design advantages.

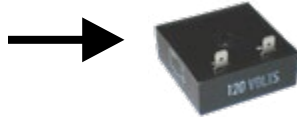


# SONIC START® STREAMLINE™

The clean and simplified **SONIC START® STREAMLINE™** Prime Sensing System relocates the solenoid valve and **fre**es 50% of the original fitting connection points for an improved priming system. What's the difference between the **SONIC START®** and the **SONIC START® STREAMLINE™**? Plenty.

## Delay Timer PN:

**4L406B** Eliminates relay races between the vacuum pump and prime sensor after power surges or power loss.



## SONIC START® STREAMLINE™

### Vacuum Dome Assembly

**PN: 87B728**

Relocating the 2-way solenoid valve to on top of the vacuum dome takes sewage pump pressure off of the vacuum tubing and tubing fittings, which stops liquid and debris from going beyond the vacuum dome. This eliminates routine cleaning of the solenoid valve and the vapor filter.

## Quick Disconnect Male Fitting

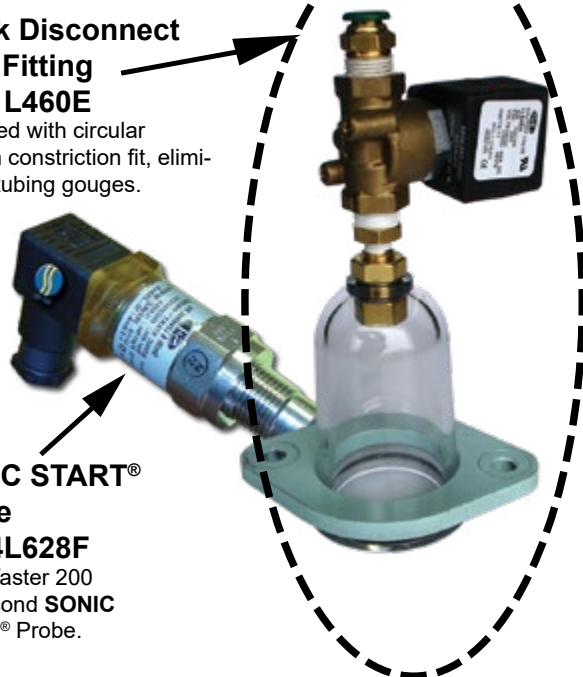
**PN: 1L460E**

Improved with circular uniform constriction fit, eliminating tubing gouges.

## SONIC START® Probe

**PN: 4L628F**

a new faster 200 millisecond **SONIC START®** Probe.



## Vacuum Pump Piping Arrangement

**PN: 87B739**

No solenoid valve located here or at the control panel anymore.

## Quick Disconnect 90° Elbow

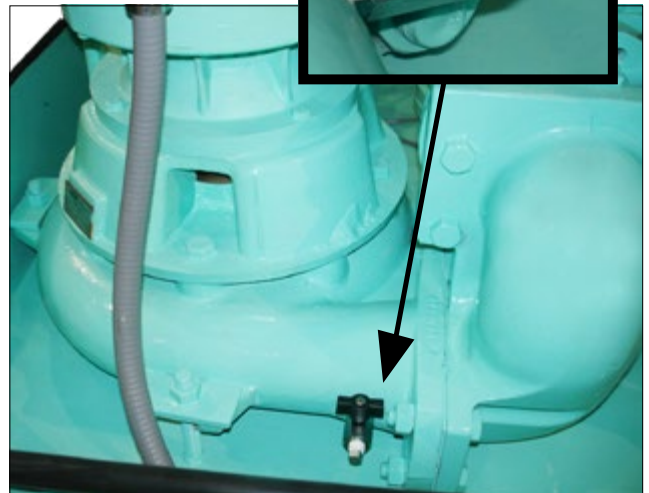
**PN: 1L546C**

Improved with circular uniform constriction fit, eliminating tubing gouges.

## Vacuum Release Valve

**Valve PN: 1L764B**

Located at the volute's gauge port, in case access to the solenoid or inside of the vacuum dome is required, vacuum is released here. Assembly includes a close nipple PN: 1L28B and a straight tee PN: 1L37B.



# ER Relay & Electrode Evolution

Over the years, the electrodes used with Smith & Loveless' vacuum primed pumps have changed from aluminum to hollow stainless steel, to solid stainless steel and then to an all new state-of-the-art technology **SONIC START®** Probe. The same changes have occurred with the electrode relays that started with relays and today use the **SONIC START®**

Operating Module and Delay Timer. In every change, Smith & Loveless has worked to improve the system to meet our customer's expectations: low maintenance and high performance.

## Determining Electrode Style vs SONIC START® Probe

Solid Aluminum Electrode



PN: 87A72  
obsolete

Hollow  
Stainless Steel Electrode



PN: 87A229  
(5" Long)  
obsolete

PN: 87A229A  
(5-7/8" Long)

Solid  
Stainless Steel Electrode



PN: 87A285  
(5-1/4" Long)

PN: 87A285A  
(6" Long)

SONIC START® Probe



## NEWEST COMPONENTS! SONIC START® STREAMLINE™ System



4L264S **SONIC START®** Operation  
Module & 4L406B Delay Timer



200 millisecond **SONIC START®**  
Probe 4L628F

Use the Longer Electrode if the motor adapter does not have machining so the Dome can be seated into the motor adapter. The Longer Electrode is used with the PN: 87A225 Retrofit Adapter Ring (which has a machined fit to seat the dome) and the PN: 87A226 Compression Ring.

The Shorter Electrode is used if the motor adapter has a machined fit for the Dome to seat in the motor adapter. The Shorter Electrode only uses the PN: 87A226 Compression Ring.

# Vacuum Dome Evolution

Over the years, the Smith & Loveless Vacuum Dome arrangement has changed. Depending upon which arrangement you currently have installed will vary which replacement parts you require. This page chronicles the major changes.

## ORIGINAL 2-Hole Vacuum Dome, Aluminum Electrode



**Obsolete.** Original 2-hole Vacuum Dome with aluminum electrode.

Use PN: **H87A329A** conversion kit.

## VERSION 2 1-Hole Vacuum Dome, Hollow Electrode



**Obsolete.** Only certain components still available. 1-hole Vacuum Dome with hollow stainless steel electrode. Convert to solid stainless steel electrode with PN: **87B309B & 87B309C**.

## VERSION 3 1-Hole Vacuum Dome, Solid Electrode



**Fully supported in Parts.** 1-hole Vacuum Dome with solid stainless steel electrode.

PN: **87B309B** - 5-1/4" Long Electrode  
PN: **87B309C** - 6" Long Electrode

## VERSION 4 1-Hole Vacuum Dome, SONIC START® Probe



PN: 4L628F  
(Probe only)

**Fully supported in Parts.** 1-hole Vacuum Dome with no electrode. Uses **SONIC START®** Probe  
PN: **87B452A** (Dome Assembly)

## NEWEST VERSION 5 SONIC START® STREAMLINE™ 1-Hole Vacuum Dome, SONIC START® Probe & 2-Way Solenoid Valve



PN: 87B728



PN: 4L628F  
(Probe only)

**Current Version for all Vacuum Primed Pump Stations New Equipment.** 1-hole Vacuum Dome with no electrode. Uses **SONIC START®** Probe and relocates larger ported 5/16" diameter orifice 2-way solenoid valve to above vacuum dome.  
PN: **87B728** (Vacuum Dome Assembly with Solenoid Valve) PN: **H87A391J** full conversion kit



# UPGRADE EXPERTS



**BEFORE**

[https://youtu.be/kCy6Srwqt\\_o](https://youtu.be/kCy6Srwqt_o)

**AFTER**

## Ready for another 43 years

Last year, Smith & Loveless was contacted by a valued client in Northeast Kansas that was in need of an upgrade on a 43 year old pump station. We quickly put our upgrade experts on the case and rapidly had their upgraded pump station operating better than ever.

This case was unique on several fronts, but that is why we found it both challenging and exciting. This customer is in a major Midwestern county that had been dealing with considerable growth and in-turn, increasing flows at a particular pump station. This pump station was located on a busy road, in an affluent neighborhood which created several issues that included “noise level considerations, special work times and very rigid guidelines on the ascetic appeal at the end of the project.”

The original station was a nine-foot diameter underground pump station with the wet well residing only a few feet from the road, limiting our sizing options on the upgrade plans.

The customer needed to upgrade the flow capacity of the pump station by

about 1000 gallons per minute. They also required a 25% increase in the station’s operating horsepower. So considering the location issues, the sizing issues and the requirements for the clients, Smith & Loveless was the only company that could pull off an upgrade like this, at a price the customer would love.

Our upgrade experts came up with the perfect solution, implemented this solution as efficiently as possible. We upgraded the pump station from a bubbler system to transducer. New PLC based controls with variable frequency drives allow for better energy conservation. We installed custom pump stands that allow the center line of the suction and discharge pipes to be met even on the much larger pumps, and we are one of a very few companies that can make that happen. The inside of the pump station was gutted, recoated and all new piping, valves, pumps, air-conditioning unit, dehumidifier, sump pump, and ladder were installed and to cap off the project, the industry’s best control panel was installed at grade.

Our upgrade experts even went the extra mile, by maintaining the thickness

of the pump station shell almost the same as the original thickness, by installing new sacrificial anodes were installed to make sure this pump station shell is ready to pump for another 43 years without the slightest bit of corrosion.

At the end of this project, the upgraded pump station is working better than ever, it’s more efficient and from the street view, this is the most ascetically pleasing pump station in the country.

If you have a pump station in need of an upgrade, you need the upgrade experts from Smith & Loveless. Our upgrade experts are ready to tackle jobs of all sizes, around the globe. From wire to water, Smith & Loveless leads the industry in upgrades big and small, pumps to treatment plants.

**Check out our video of the site before and after online at:**

[https://youtu.be/kCy6Srwqt\\_o](https://youtu.be/kCy6Srwqt_o)



## Toilets the new trashcan? The X-PELLER® Can help.



*Has the cost of flushables taken a bite out of your public works budget? Are your operators tired of unclogging flushables from your system? Fight back with the **X-PELLER®** Impeller, specifically designed to pass rags and stringy items. Also read about how NACWA/WEF and other organizations are working towards developing flushability protocols.*

Every pump station operator has seen his share of applicators and condoms in the wet well. Over the past 1 to 3 years, if you have not seen a dramatic increase in the number of wet wipes, moist toilet paper, paper towels and diapers clogging your pumps ... consider yourself lucky.

At Smith & Loveless, we continue to hear from operators around the United States commenting on the sheer volume of wipes being flushed down the toilet. At one location in Florida, a Smith & Loveless field service technician counted 35 wipes entering the wet well from the inlet pipe to the wet well in a 30 minute timeframe! As you continue to tell us, these new “flushables” can really create a clogging problem. . . even for pump stations that have never had clogging problems in the past because of the volume being thrown into the toilet.

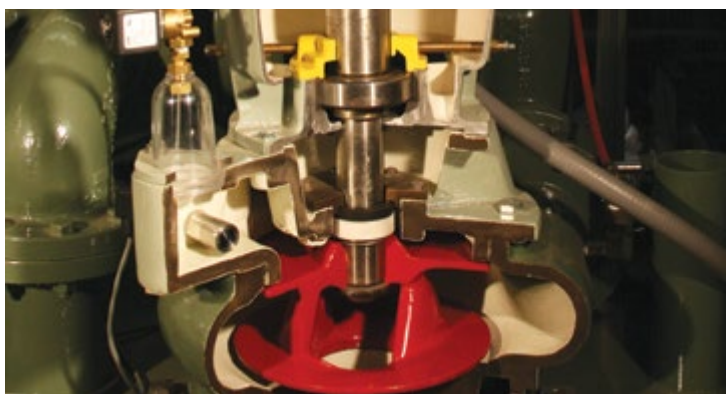
Flushables have become one of the largest growing markets in the Pharmaceutical and Personal Care

Product (PPCP) industry. In fact, just 5 years ago, there wasn't a “flushable” market.

**Today when you search on “flushables”, more than 3,000 products are available to buy on Amazon.com.**

Flushables are now being marketed as a way for consumers to avoid filling up landfills. As anyone within our industry knows, that's false advertising. It is just the longer way to the landfill, starting in the pipe and then hauled out via trash from clogged pumps and bar screens and then via truck to the landfill. With the positive marketing spin on how consumers avoid landfills by flushing products, add to that consumer convenience with a “just flush it” ad campaign, and you have an instant formula for consumer acceptance of the flushable concept... that means **the pump clogging issue from “flushable” products isn't going to go away any time soon.**

All of Smith & Loveless' pumps were designed to pass a minimum of a 3” sphere and feature 2 ports in the impeller to keep hang-ups due to rags to a minimum. However, our customers have noted in lower flow, 4” piping pump stations, they have faced extreme rag applications. This is why Smith & Loveless developed its single ported **X-PELLER®** Impeller, for those extreme locations where wipes, rags and strings are at extreme volumes. The **X-PELLER®** Impeller was originally used in pumps near prisons, schools, and retirement homes where high volumes of unusual items are often flushed. Now it has become popular in residential areas experiencing high volumes of wipes and other “flushables”. The design prevents rag hang-up and build-up in the impeller because the single port of the **X-PELLER®** Impeller allows “flushables” to pass through the impeller without catching and binding the impeller, eliminating a real clogging headache.



The single port of the **X-PELLER®** impeller allows “flushables” to pass through the impeller without catching and binding the impeller. Specifically designed for 4” piping, where the most severe clogging from “flushables” occur.

## What Works and What Doesn't In Combating “Flushables”?

There is a long list of original ideas operators are doing around the United States in trying to resolve their issues surrounding flushables. Most areas are approaching it from at least 2 ways:

- Resolve the immediate, repeating clogging problem
- Long term customer education and regulation

Most of you reading this article are more concerned about resolving the immediate, repeating clogging problem. For the majority of Smith & Loveless pumps, because the pump is outside of the wet well and not in the wet well, these issues don't appear to be occurring as much as with submersibles that are located inside of the wet well. In those S&L pumps experiencing extreme “flushable” problems, by switching impellers from the standard impeller to the **X-PELLER®** Impeller - this does the trick.

For those customers with submersibles, we have seen the answer isn't as easy as an impeller switch out. Again, because the nature of the submersible is being submersed in the wet well, these wipes and other “flushables” really like to wrap themselves around the rails, power cords and the submersibles tend

to suck them down into a “flushable” bed around the unit and then pull them into the impeller. Additionally, when the submersible is pulled out, the wipes have really created problems in settling inside the casing while the submersible is pulled. Then getting everything back down the rail system and the pump seated properly without wipes can be a large problem.

In those cases, many customers have gone to adding baskets on the influent line, or rotating screens or comminutors. Some get by with daily pump out of the wet well. Others have added chopper pumps, but then the maintenance required to keep the choppers sharp enough consistently so that everything is getting chopped at the volumes they are experiencing becomes the next maintenance headache.

The downside of “flushables” is the added maintenance required at these problem submersibles or chopper pumps. The “cure” sometimes becomes as large of a headache as the problem - a clogged pump due to high volumes of “flushables.”

That is why many cities, utilities, and trade associations are working on the long term solution through customer education and promotion of regulation

## How does a product become “flushable”?

*Currently, there are no Federal regulations on what can and can not be advertised as “flushable”. From our research, it appears companies “test” how flushable their product is by putting it in a toilet and seeing if it flushes. If it flushes, it becomes a “flushable” product and they advertise it as such. Of course, these same companies all seem to have a special note in fine print stating it is not recommended to use their product with Septic Tanks or piping systems that are old or in poor condition. This covers their liability in case a homeowner's toilet overflows or piping backs up.*

on what can and can not be advertised as “flushable.” Also in this issue, you will find information on what the National Association of Clean Water Agencies and the Water Environment Federation are doing to fight back against the promotion of “flushable.” There is also the Dispersible Vs. Flushable article that details additional information on what you can do to fight back.

Let's face it. No matter which pump you have installed, that sewage pump was designed to pump sewage, not pump trash. That's why we have separate solid waste hauling divisions and landfills within every city, county or municipal jurisdiction. If it goes down the toilet, we can all agree that it needs to disperse - just like old fashion toilet paper.

Using your pumper truck again to pump out the wet well because of the build-up of a small landfill of “flushables” in the wet well? Taking apart the pump to unbind and unclog the impeller and/or piping again?



## X-PELLER® Solves City's History of Pump Clogging

Just because something is disposable doesn't mean it should be disposed of down a toilet. The city of East Windsor, Conn. found this out the hard way when, in early 2006, it started noticing an abnormally large number of clogging problems at many of its pump stations. One such location, a Smith & Loveless station servicing an apartment complex with more than 600 residents, was regularly being clogged by a large quantity of disposable wipes.

"This was happening about 2-3 times a week," said Ed Alibozek, Chief Operator for the East Windsor Water Pollution Control Authority, "Each time it would tie up 2 people for at least an hour or two."

They turned to their S&L Representative for some answers. "She (Sarah Gager) recommended the **X-PELLER®**," Alibozek said. "Immediately, we went from having to unclog pumps a couple times a week to hardly ever having any problems at all."

The **X-PELLER®** is an S&L impeller upgrade that is specifically designed to pass high volumes of unusual trashy items through S&L pump stations.

Marc Brennan, an Operator for the East Windsor WPCA, said installing two **X-PELLER®**s at the apartment complex has eliminated virtually all of the clogging problems that previously plagued the station. "They are very impressive in what they can pass," Brennan said.

Art Enderle, Superintendent at the East Windsor WPCA, says if there's one thing his 30-plus years in the water industry has taught him, it's that Smith & Loveless pumps, especially when equipped with an **X-PELLER®**, "are second to none." "I've never seen anything that



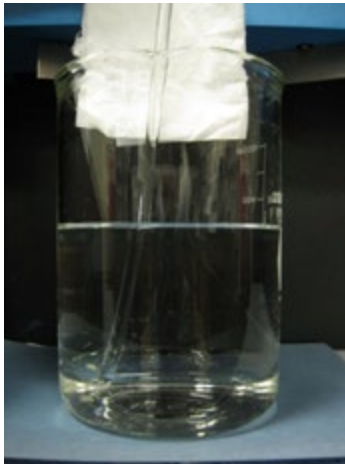
works quite as well as a Smith & Loveless pump with an **X-PELLER®**," Enderle said.

Upgrading with the **X-PELLER®**, he said, has allowed everyone at the department to sleep better at night. Literally. "We can actually sleep now that we know we won't be woken up to go unclog this pump all the time," Enderle said.

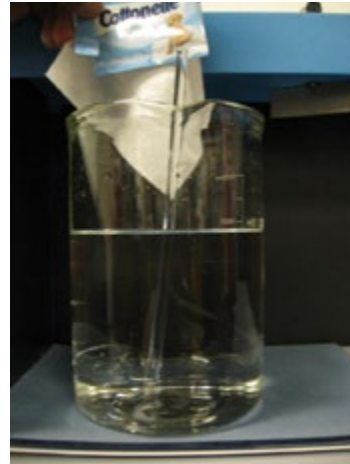
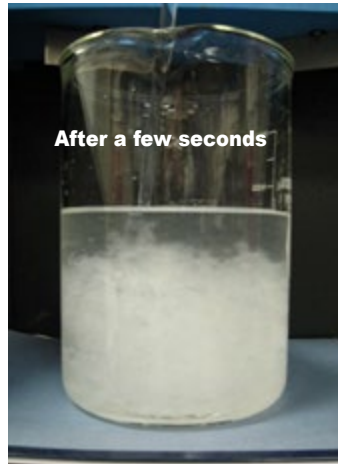


Marc Brennan and Jon Ference, Operators for the East Windsor WPCA, work on their pump station.

# DISPERSIBLE VS. FLUSHABLE



**Toilet Paper Dissolves Quickly**



**Flushable does not dissolve quickly.  
Flushable but not Dispersible Wipes**



By **Patrick McNelly** – *Principal Staff Analyst, Orange County Sanitation District*

**Nicholas J. Arhontes**, P.E. – *Director of Operations and Maintenance, Orange County Sanitation District*

Many public wastewater agencies throughout the United States are experiencing significant maintenance costs associated with the accumulation of nondispersible and other post-consumer products that are routinely flushed down the toilet. Some obvious examples we see every day are cotton balls, Q-tips, condoms, feminine hygiene products, cloth bandages, rags, plastic items, disposable diapers and dental floss.

Of more recent concern are so-called baby wipes and pop-up sanitizing cloths that do not disperse or break-up in water like toilet paper. The main problem with these nondispersible products is that they can become lodged in the impellers of sewage pumps and other process equipment causing the pumps to stop suddenly and sewage to back up. For many agencies (particularly small to mid-

size and those with several smaller pump stations) removing these “rags” from pump station pumps and bar screens has become a costly additional maintenance routine.

In gravity sewers, these woven-fiber cloth products and other similar items can get caught on tree roots inside the pipes which can lead to backups and sanitary sewer overflows (SSOs). These SSOs consume valuable agency resources, violate the statewide Wastewater Discharge Requirements (WDR) order, and can result in significant fines being levied against the agency by a regional water quality control board.

## **Flushability and Dispersibility**

Because of convenience and advertiser’s claims that their products are “flushable,” the consumer feels confident in disposing a wide-range of products down the toilet. These products are “flushable” only in the

sense that they can usually be flushed without causing the toilet to back-up. The real test of anything besides human body waste being flushed is whether it disperses or breaks up when it gets into the sewer. If it doesn’t disperse, it doesn’t belong in the sewer. Truly flushable products, such as toilet paper, are manufactured so that the paper material breaks down when wet, causing them to be classified as dispersible products, and safe for sewers.

While there are several Uniform Plumbing Code restrictions and regulations that specifically prohibit the type of materials that can be disposed of into sewer systems, there are currently no restrictions on these nondispersible products.

For example, a recent television ad by the Kohler Corporation features a man who notices a very attractive



**THE PROBLEM:** Clogged pump suction due to flushables, seen above, clogging this submersible pump. Note the flushables clinging to the submersible as it is lifted out of the wet well (left). The wet well is loaded with “flushables” that cling and wrap to anything inside the wet well. The volume of flushable wipes in sewage is growing exponentially.

*Photos courtesy of Costa Mesa Sanitary District.*

female plumber working next door as he is walking into his home. When he goes inside, he tries to clog up his toilet (hoping that he can hire her to unclog it!) by flushing assorted items including facecloths, candles, underwear, flowers and toiletries. The man finally resorts to pouring a large bag of dog food into the toilet. While he is pouring the food into the toilet bowl, the man looks up to see his wife staring at him sternly. The ad shows that you can flush almost anything that will get through the Kohler toilet

but completely ignores what happens after these “flushable” items get into the sewer.

Tree roots in private laterals can also cause clogs, and in many cases when a plumber clears the obstruction from the lateral, the debris is pushed farther down the line until it reaches the public sewer main. At this point the offending debris becomes the sewer agency’s problem.

### What’s the Problem?

Ultimately, we as an industry need to specifically identify what products are causing the ragging problem and to identify those products that are labeled or advertised as being “flushable”, but are causing the problems. Some of this research has already been done by the Water Environment Research Foundation (WERF), but more is needed.

### The Future

Here are some possible courses of action agencies might take to mitigate or minimize the problem:

- Agencies and associations can send letters to product manufacturers explaining the problem and requesting that they conduct more aggressive advertising campaigns that emphasize proper disposal options.





# Continuous Hinge/Backing Bar Kit



The new S&L Continuous Hinge/Backing Bar Retrofit Kit is the ideal way to extend the life of your hood lip where the hinge bolts to it. This solid extruded aluminum backing bar runs the full length of the hood, providing support for the new solid stainless steel continuous hinges. These rugged, heavy-duty hinges mount to the base side plate and the lip of the hood. The Continuous Hinge/Backing Bar Retrofit Kit comes in a 49" length and 62" length.

The only thing you need to know is the length of your hood lip that your existing hinges are now installed. Many of Smith & Loveless' Representatives also provide installation services of these Retrofit Kits.

## SAVE MONEY!

**Buy the Hood Lift Assist/Continuous Hinge/Backing Bar Retrofit Kits At The Same Time!**

Ask your S&L Rep about our special combo kit prices!

**Call today to find out more.**

**The 49" Kit includes:** a 49" backing bar, two continuous hinges, mounting hardware and step-by-step 3-D illustrated installation instructions.

**The 62" Kit includes:** a 62" backing bar, three continuous hinges, mounting hardware and step-by-step 3-D installation instructions.

Includes: (1) Hood Lift Assist Kit, (1) Continuous Hinge/Backing Bar Combo Kit.



## Hood Fixes

Thousands of Smith & Loveless' Classic Wet Well Mounted Pump Stations have been installed in the field for more than 15 years. Over this time, some of the hoods have been damaged in one form or another at the hinge area. The Continuous Hinge/Backing Bar Retrofit Kit can bring your 15+ year old hood back to life for a fraction of the cost of a replacement hood. The backing bar installs along the full length of the fiberglass hood

lip. It fully covers the old hinge points and adds all of the structural support required for the rugged, stainless steel continuous hinges.

Check out the fiberglass around your hood's hinges. If it is beginning to show its age, your hood might be a good candidate for a Continuous Hinge/Backing Bar Retrofit Kit.





4L336A & B

## Protect Your Investment!

The Phase Monitor PN: 4L336A and PN: 4L336B is one of the cheapest insurance policies you can have for your pump station. The Phase Monitor will shut down your pump station and send an alarm if incoming phase variances hit the pump station. The Phase Monitor protects your pump station if:

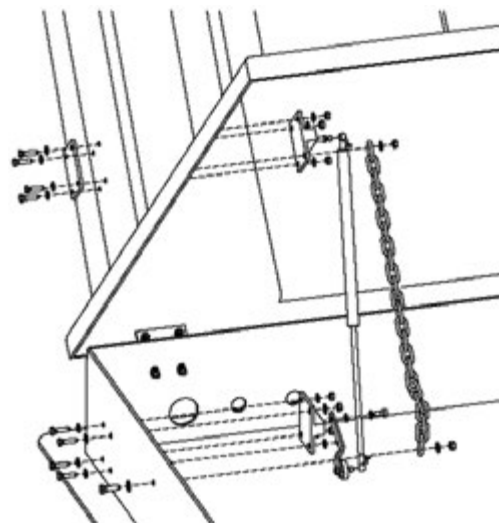
1. A phase is lost.
2. A phase is reversed.
3. Voltage drops causing brown outs, resulting in control panel and motor damage.

While some amount of wiring is required to connect to your pump station's alarms, installing the Phase Monitor is simple for a qualified electrician to perform.

### Phase Monitor

PART #	VOLTAGE
4L336A	190 to 270
4L336B	430 to 480

## Hood Lift Assist Kit



Opening your Classic Pump Station hood just got easier with the new Hood Lift Assist by Smith & Loveless, specially designed for the insulated and non-insulated single piece Smith & Loveless above grade pump station hood.

The Hood Lift Assist Kit features two (2) Gas Shocks and two (2) patent-pending Gas Shock Pivot Assemblies that extend the hood opening to an amazing 85 degrees\* in most installations. Without this patented Gas Shock Pivot Assembly, you only get a 45 degree opening.

All you need to know are the hood & side plate dimensions and weight of your station hood. Order your Hood Lift Assist Retrofit Kit today!

\* In a limited number of installations, the bracket will prevent the hood from opening the full 85 degrees.

You may also want to upgrade the hinge kit of your Classic Hood.

### Hood Lift Assist Retrofit Kit

Hood Size	Hood Type	Part #
49" W x 64" L	Non-Insulated	LiftAssist
49" W x 64" L	Insulated	LiftAssist
62" W x 64" L	Non-Insulated	LiftAssist
62" W x 64" L	Insulated	LiftAssist
62" W x 70" L	Non-Insulated	LiftAssist
62" W x 70" L	Insulated	LiftAssist



# In-Stock Control Panels

Smith & Loveless now offers a cost effective In-Stock Control Panel for Wet Well Mounted Pump Stations and Underground Pump Stations. Customers can get a significant price break when they buy this off-the-shelf control panel. Once we receive your order, we just install the starters and breakers for the horsepower and voltage you need.

The In-Stock Control Panel has no options and comes with everything seen under component description and ships within 2-4 weeks. For more information, contact your local Smith & Loveless Representative or contact the Smith & Loveless Retrofit Department. It's a way to save money and quickly upgrade your pump station's control panel.

## Vacuum Primed Control Panels - On-Demand/Constant Prime

Every In-Stock Control Panel for Wet Well Mounted Pump Stations comes with **On-Demand/Constant Prime** operation. When the priming system is in "**On-Demand**" mode, it will operate only after a pump is called on to run and if it is not primed. Once primed, the pump will be allowed to run. In the "**Constant Prime**" mode, both pumps are kept primed continuously, and ready to start immediately when called to pump. A simple selector switch changes the pump station operation from one mode to the other.

### NEMA 1

**In-Stock Control Panel Sizes**  
NEMA or IEC Rated Starters

HP	VOLTAGE
5	208
5	230
5	460
7.5	208
7.5	230
7.5	460
10	208
10	230
10	460
15	230
15	460
20	460
25	460

### NEMA 12

**In-Stock Control Panel Sizes**  
NEMA or IEC Rated Starters

HP	VOLTAGE
15	208
20	208
20	230
25	208
25	230
30	208
30	230
30	460

### COMPONENT DESCRIPTION

#### NEMA 1 Enclosure

*Opening the front single door (unscrew/lift off) is not necessary to reach the starters, breakers & switches as there are cut outs so these appear through the door for easy access. Starters and breakers are NEMA or IEC rated.*

or

#### NEMA 12 Enclosure

*Two door front with hinges and handle allows easy access to starters, breakers & switches. All starters and breakers are NEMA or IEC rated.*

#### Starters & Overload Coils for Pump Motors

**Manual Reset Operators** - Turns starters on/off without opening the door

**Set of Environmental Controls** - heater, blower & GFI convenience outlet

**Blower Thermostat**

**Control Panel Heater** - mounted to back of control panel with internal Thermostat

**Circuit Breakers & Relays for Vacuum Pumps & Solenoids**

**SONIC START® Operating Modules**

**SONIC START® STREAMLINE™ Time Delay Relays**

**Switch to Operate Constant Prime/On Demand Priming System**

**Sequential Alternation with Manual Switch** - Sequentially alternates the pumps each time a pump starts.

**Float Switch Controls Circuit Breaker** - Off, Low Level, High Level, & High Water Alarm

**Running Time Meters**

**Pump Motor Circuit Breakers**

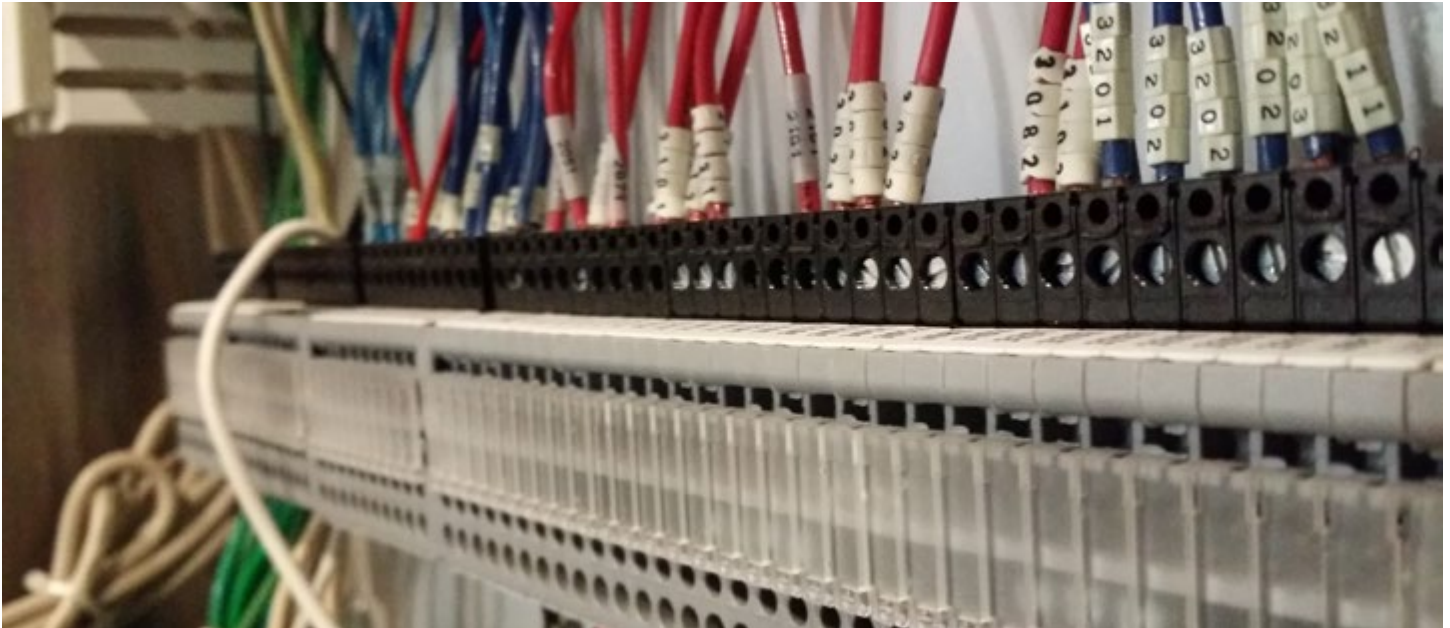
**Pump Motor Handle Locks for Circuit Breakers**

**H-O-A (Hand-Off-Auto) Switches**

**3 KVA Transformer Circuit Breaker**



# NEW: Underground Controls



## Flooded Suction Control Panels

Every panel will need an entrance tube of 36" minimum to fit down the tube. This control panel operates with float controls, no option for bubbler controls.

### NEMA 1

**In-Stock Control Panel Sizes**  
*IEC Rated Starters*

HP	VOLTAGE
5	208
5	230
5	460
7.5	208
7.5	230
7.5	460
10	208
10	230
10	460
15	230
15	460
20	460
25	460

### COMPONENT DESCRIPTION

#### NEMA 1 Enclosure

*Opening the continuous hinge single door enclosure is not necessary to reach the selector switches and run time meters as these are mounted through the door for easy access. The circuit breakers are UL rated and the pump motor starters are IEC rated.*

#### Starters & Overload Coils for Pump Motors

**Set of Environmental Controls** - lights, entrance switch, light switch, blower, GFI convenience outlet, & sump pump

**Sequential Alternation with Manual Switch** - Sequentially alternates the pumps each time a pump starts.

**Float Switch Controls Circuit Breaker** - Off, Low Level, High Level, & High Water Alarm

#### Running Time Meters

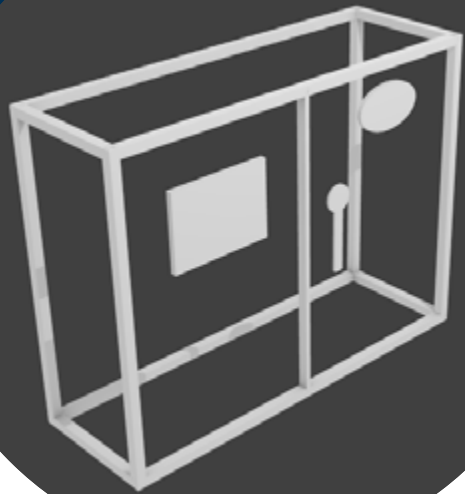
#### Pump Motor Circuit Breakers

#### Pump Motor Handle Locks for Circuit Breakers

#### H-O-A (Hand-Off-Auto) Switches

#### Transformer Circuit Breaker

# CONTROL PANEL UPGRADES



This photo shows the internal components installed in the Retrofit Control Panel at Smith & Loveless. Field work involves mounting the Retrofit Control Panel to existing panel struts and landing wiring at the terminals.

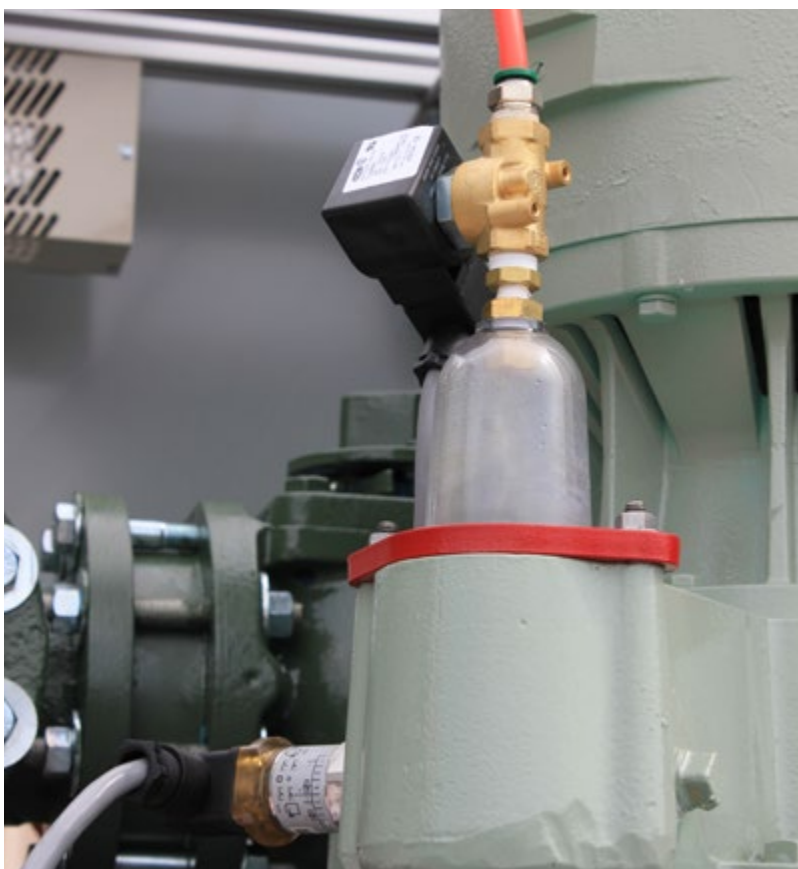


This photo shows the complete Retrofit Control Panel installed in the existing pump station.



This photo shows the Prime Mode selector switch - "Constant Prime/Prime On Demand" furnished with Retrofit Control Panel

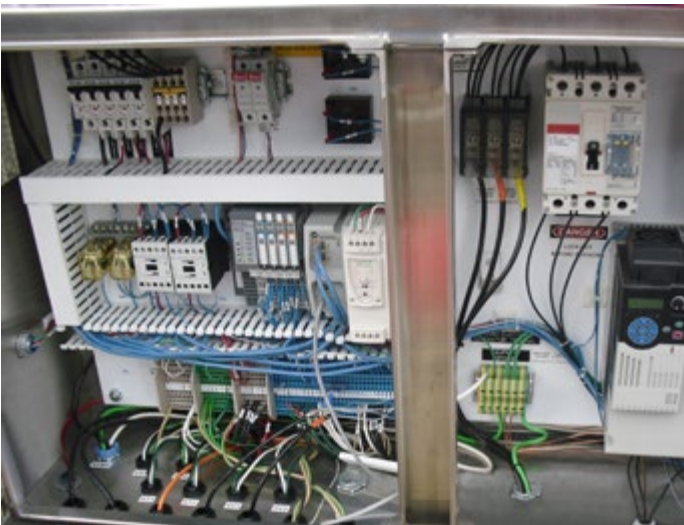
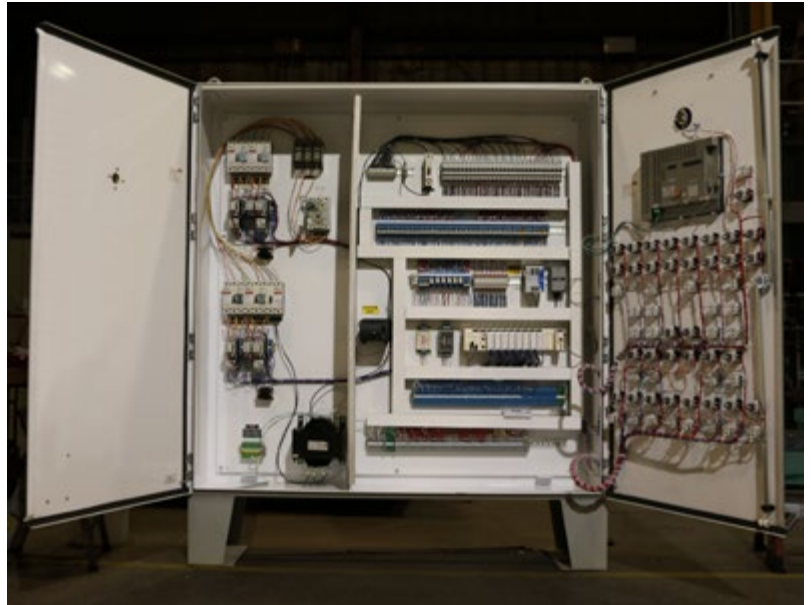




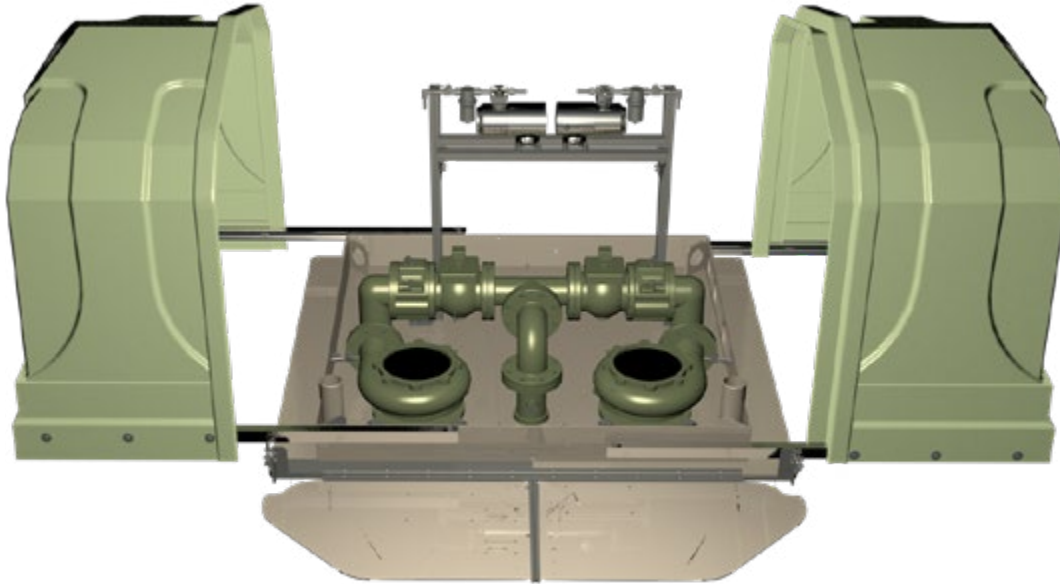
This photo shows the **SONIC START® STREAMLINE™** system components that consists of the **SONIC START® STREAMLINE™** Probe, Vacuum dome and solenoid valve mounted on top of the vacuum dome.



# FACTORY BUILT CONTROL PANELS



# You'll retire before it does.



## The EVERLAST™ Baseplate Conversion

We're all thinking about retirement. Now you can compare when you'll retire to the DURO-LAST™ SST Baseplate warranty. In many cases, you'll retire long before the warranty ends.

The DURO-LAST™ SST baseplate by Smith & Loveless comes standard with a 25 year warranty so you don't have to worry about the baseplate of your pump station.

Save money by reusing your existing rotating assemblies and control panel. You can upgrade your entire pump station for a fraction of the price.

Where else can you get a 25 year warranty? Run the numbers. You'll save money and retire before it does.

- **DURO-LAST™** SST Baseplate with 25-Year Warranty
- **NEW RAPIDJACK™** Wafer Check Valves
- **NEW EVERLAST™** Pump Station Piping to the Volute
- Vacuum Priming Shelf with 2 new Vacuum Pumps
- Pump Failure Alarms
- **SONIC START® STREAMLINE™** Priming System
- Easy Lift & Tilt Hood or 2-piece Rolling Hood depending upon model
- Easy Split Entry Access to the Wet Well
- Convenient Wet Well Float/Transducer Access Hatch
- Blower and Ventilation Installed on the Hood





Smith & Loveless, Inc.  
14040 Santa Fe Trail Drive  
Lenexa, KS 66215

Smith & Loveless Inc.

## See Your HMI. Finally.

Your HMI Lasts Longer with SHADE AIDE™



Are the sun's harmful rays making it impossible to do your job?  
Block them out with the SHADE AIDE™ by Smith & Loveless.