



## Congratulations on your purchase of a Vanguard System.

You have just taken a big step toward protecting yourself, your crew, and their families from known and unknown health hazards associated with working around raw sewage.

[www.Vanguard-Systems.com](http://www.Vanguard-Systems.com)

## The Vanguard System

Hydro Products offers two versions of the Vanguard System. The first is the JT System. It is designed for use with either a combination sewer truck or a jetting (flusher) sewer truck. The second is the CCTV System and as the name implies, it is designed for use with CCTV trucks which carry a small amount of water storage.

The Vanguard JT System consists of a Main Control Box, Quad Spray Manhole Roller, Reelcraft reel with 50' of 1/2" hose, five (5) gallon Antibacterial storage tank, and complete Installation kit with tubing, fittings, valves, and mounting templates.

The Vanguard CCTV System consists of a Main Control Box, Reelcraft reel with 35' of 3/8" hose, five (5) gallon Cleaning Concentrate Tank, and complete installation kit with tubing, fittings, valves, and mounting templates. The CCTV System may also include an (Optional) Custom fit Water Tank and Installation Kit if the CCTV truck does not have a sufficient water tank installed as original equipment.



## Vanguard System Components

The Vanguard Systems' Main Control Box combines water from the truck's water tank with a metered amount of sanitizing solution concentrate to the Reelcraft reel. From there, the sanitizing solution is directed to either to the Quad Spray Manhole Roller or to the wash down gun. The Control Box is housed in a rugged NEMA 4 water resistant powder coated steel case.

The Vanguard System Control Box is operated from an illuminated on/off switch. The bright yellow light indicates that the Vanguard System is powered on and standing by for use. Although the system is switched on, the sanitizing spray is not released until the water control valve is opened either on the spray gun or on the roller hose. The System also has a Sanitizing Solution Concentration control knob as well as a Air Purge switch for Winterization or blow out purposes. The Sanitizing Solution Concentrate control knob allows the operator to increase or decrease the amount of concentrate per gallon of water. The Winterization switch allows the operator to evacuate all water from the Vanguard System after use in freezing temperatures. **The Winterization feature requires access to compressed air. Therefore, an external air source is required for the CCTV System Control Box.**



The Vanguard System Control Box continuously measures the pressure within the System. This allows the system to shut the pump off when flow is no longer needed, i.e., the Vanguard System completes priming, the hand gun's trigger is relaxed or the ball valve on the Reelcraft reel is closed. When a demand for sanitizing solution is made, the Control Box senses a pressure drop in the Vanguard System and responds by turning the pump on.

The Vanguard System Control Box has five (5) “Push to Connect” connections on the rear of the unit:



**Water In** – 1/2” DOT rated nylon tubing  
**Water Out** – 1/2” DOT rated nylon tubing  
**Anti-Bacterial In** – 3/8” DOT rated nylon tubing  
**Air In** – 3/8” ID DOT tubing  
**12 VDC Power** - Power Cord 15’

Water storage capacity sufficient to support jet cleaning or tractor cleaning if a CCTV truck

Air brake system with access to its compressed air tank(s) Mounting location:

Hydro Products suggests the Vanguard System Control Box be mounted on the sewer truck in close proximity to the jetting hose/reel. On combination trucks this usually means somewhere close to the front of the truck. On jet trucks it usually means somewhere near the rear of the truck.

Secondly, the Vanguard System Control Box must be in a location that is accessible to tubing from the water supply tank, sanitizing concentrate tank, the compressed air tank and electrical cable from the battery mounting location on the truck.

On a CCTV truck, the Vanguard System Control Box is usually mounted to the wall inside the equipment area with close proximity to the rear doors. If the CCTV truck does not have a water tank, an optional custom fit water tank and installation kit may be obtained from Hydro Products at an additional cost.

The Manhole Roller’s main sections are machined from 6160 aircraft aluminum. Stainless steel and nylon components are added during assembly resulting in an extremely strong yet remarkably light weight device. The Manhole Roller’s unique “Y” design provides:

### Quad-Spray Manhole Roller:

- (1) Excellent stability over a manhole.
- (2) Jetting and vacuum simultaneously with the manhole roller in place.
- (3) Protection against workers accidentally falling into an open manhole.



The Manhole Rollers stainless steel feet fit both 23” and 24” diameter manhole rings. The Manhole Roller features a self lubricating nylon roller that rotates on a stainless steel shaft. It easily guides the jetting hose as it is retracted from the manhole and rewound on the reel. The roller also protects the jetting hose against potential damage resulting from scrapping against the manhole’s steel ring. The Manhole Roller has four spray nozzles positioned near the nylon roller. The four spray nozzles direct a steady stream of sanitizing solution at the jetter hose as it’s retracted from the manhole. This flow of solution cleans the jetting hose while removing solid debris. The downward direction of the spray, keeps both the sanitizing solution and hose debris in the manhole.

## Reelcraft Reel and Hose:



Quick connect fittings on the Manhole Roller and spray gun accepts the female connector on the end of the Reelcraft hose to provide a quick, secure, easy to use connection.

The Manhole Roller sports an attractive anodized finish offered in several functional bright colors. It is easily seen when deployed in the field and can be transported in one of



## Installation Kit and Procedures:

The Vanguard System installation kit includes the following:

The unique modular design allows you to remotely mount each component where it is most convenient to your particular vehicle. Hydro Products does suggest you look for the nearest opportunity to mount the antibacterial tank near the main Control Box. CCTV trucks often have some available location near the roof of the vehicle close to the rear doors with several different mounting positions available. The installation kit contains a hole drilling template to simplify hose reel mounting.



The hose connects easily and securely to the connector found on both the Manhole Roller and the hand held wash down gun. The Installation kit contains a hand held trigger gun and 3 different nozzles with quick connect fittings. This provides the operator with nozzle options given the work and a simple, fast yet secure way to change out nozzles.



The Vanguard System offers two different Reelcraft reels. The JT System uses a Reelcraft reel equipped with 50' of 1/2" hose. The hose length enables the operator to reach all areas of even the largest combo truck.

The CCTV System uses a Reelcraft reel with 35' of 3/8" hose. Although a bit shorter, this hose length has proven ideal for washing down the CCTV tractor and cable, and even reaching into close easements. Reelcraft reels and hoses have proven to be the industry standard for rugged design, reliability and ease of use.

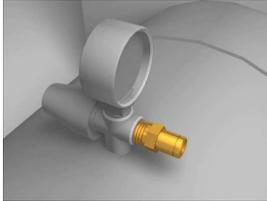


The five gallon polypropylene Antibacterial Concentrate tank provides the Vanguard's Sani-Solution™ concentrate to the Control Box. There, it is combined with water to produce a highly effective cleaning solution. The tank is designed to be horizontally positioned on a flat surface and features a large 5" screw on "splash proof vent cap" on top side for easy filling. The four positioning feet contain threaded bosses to accept mounting bolts for a clean, secure installation. A full size template is provided for hole positions.

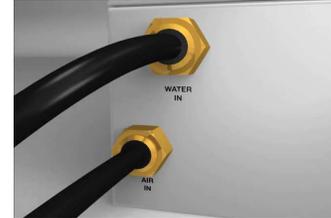
## Main Installation Components



**Electrical:** 15' of 16g coated wire  
 15' of protective plastic wire  
 Positive terminal connector with 15 Amp  
 Negative terminal connector



**Air:**  
 15' of 3/8" DOT approved nylon tubing  
 15' of protective plastic tubing cover  
 3/8" "Push to Connect" DOT brass fitting



**Water / Reel Hook-Up**  
 1/2" Hex nipple  
 1/2" 90° Elbow  
 1/2" Brass ball valve  
 1/2" Wedge valve  
 80 mesh water filter and housing  
 1/2" "Push to Connect" Fitting  
 15' of 1/2" DOT approved nylon tubing  
 15' of protective plastic tubing cover



**Cleaning Solution Tank:**  
 3/8" DOT "Push to Connect" fitting  
 15' of 3/8" DOT approved nylon tubing  
 15' of protective plastic tubing cover



**Mounting Templates:**  
 Control Box  
 Reelcraft Hose Reel (2 sizes)  
 Antibacterial Solution Tank



**Fasteners For:**  
 Control Box  
 Reelcraft Hose Reel  
 Cleaning Solution Tank

## Installation Procedure

Before starting the Vanguard System installation, please complete the following steps:

Review the installation video at [www.vanguard-systems.com](http://www.vanguard-systems.com).

Make sure the sewer truck's water tank is low or empty.

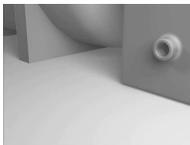
Make sure the sewer truck's **compressed air tanks are empty.**

The most important decision is the location of the Control Box and the Reelcraft reel. They should be located as near as possible to the truck's jet hose reel and relatively close to each other for convenient system operation. The cleaning solution tank can be located any number of places on the truck with a major consideration being the ability to conveniently fill the tank.

All connections must be secure and leak tight. Hydro Products Corp supplies some connectors with a dark red colored sealant already applied to the threads. **All other threaded connectors require Teflon tape (or other appropriate sealant) be applied to the threads to make a leak proof connection.** We recommend three complete wraps of Teflon tape over the threads.



Once the location for the Control Box, Reelcraft Reel and Cleaning Solution Tank have been decided, use the appropriate mounting templates to locate and drill the required holes into the mounting surface. Use the appropriate stainless steel bolts to fasten each component to its mounting surface. Make sure to use both the flat and lock washers provided and to securely tighten.



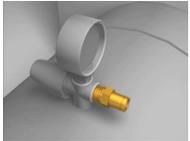
Some sewer trucks utilize plastic water tanks. You may be able to select an ideal location for the water tap, drill a hole into the plastic water tank and tap the hole for threads to screw in the 1/2" nipple. **If your sewer truck has a plastic water tank, contact your truck manufacturer or your local dealer to find out if you can drill and tap directly into the plastic water tank.**



Select an unused boss into the sewer truck's water tank. Make sure it's in an area that can be easily accessed so that the ball valve can be opened or closed and the 80 mesh screen filter can be periodically cleaned. Remove the existing 1/2" plug from the tank boss. Wrap the threads of the 1/2" nipple as directed above and screw into the open boss and tighten. Wrap the threads on the ball valve and screw it into the nipple and tighten. Screw the 80 mesh water filter housing onto the wrapped threads of the ball valve and tighten.



Use the 1/2" tubing to connect the sewer truck's water tank to the Control Box. Use the Control Box to the Reelcraft hose reel. Cover the tubing with the appropriate tubing protector before attaching the ends to the DOT approved connectors.



Select an unused boss into the sewer truck's compressed air tank. **DRAIN AIR TANK.** Remove the 3/8" plug and replace it with the supplied 3/8" brass fitting and tighten. Next, screw the tubing connector into the brass fitting. Use the supplied 3/8" DOT tubing to connect air supply to the main Control Box.



Use the 3/8" tubing to connect the sewer truck's air tank to the Control Box. Cover the tubing with the appropriate tubing protector before attaching the ends to the DOT approved connectors.



Use the appropriate 3/8” tubing to connect the Cleaning Solution Tank to the Control Box. Cover the tubing with tubing protector before attaching the ends to the DOT approved connectors. Secure with tie-downs.



Fit the 16 gauge wire from the Control Box to the sewer truck’s battery. Connect the non fused end of the wire to the Control Box. When completed, connect the fused end to the sewer truck’s battery. Connect the red wire to the positive battery terminal and the black wire to the battery’s negative terminal.

### **Vanguard System Operation:**

Start the sewer truck and recharge the compressed air tank. Check for leaks.

Open the ball valve and then fill the sewer truck’s water tank. Fill it with enough water allow us to test the Vanguard System’s installation adequately.

Fill the Cleaning Solution Tank with 5 gallons of SaniSolution concentrate.

Connect the Reelcraft hose to either the manhole tool or the spray gun. If using the spry gun, depress the trigger. If using the Roller, place the ball valve to the “Open” position.

Turn on the Control Box.

Turn the Cleaning Solution control knob to maximum.

If using the spray gun, keep the trigger depressed until water is spraying and the scent of the SaniSolution is obvious. Turn the Cleaning Solution control knob back to its normal “minimum” position.

If using the spray gun, release the trigger. The Control Box should sense the increase in pressure and stop pumping.

Turn off power to the main Control Box at the end of the shift.

### **Water Blowout in Freezing Conditions:**

Connect the Reelcraft hose to the spray gun.

Turn the “Air Purge” to the “ON” position.

Listen for the water to evacuate the water feed line and air bubbles entering the water tank. Then close the ball valve on the water tank feeding the Control Box.

Open the spray gun trigger and let all the water spray out followed by air.