

# VANGUARD PATHOGEN DEFENSE SYSTEM

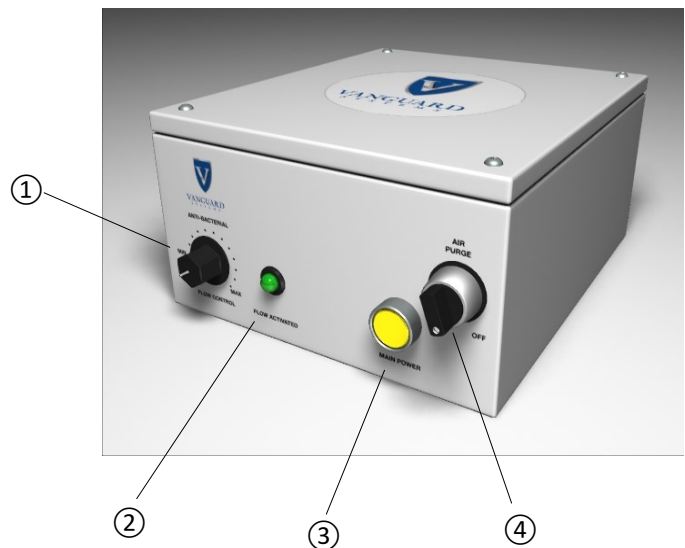
## OPERATION MANUAL



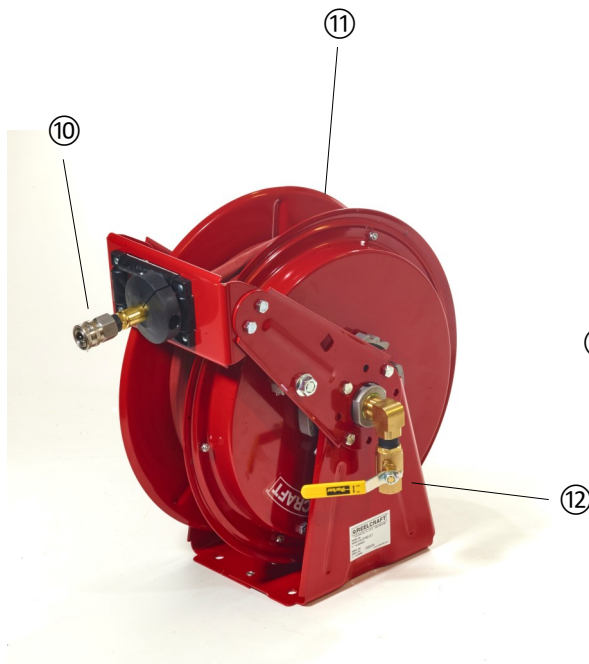
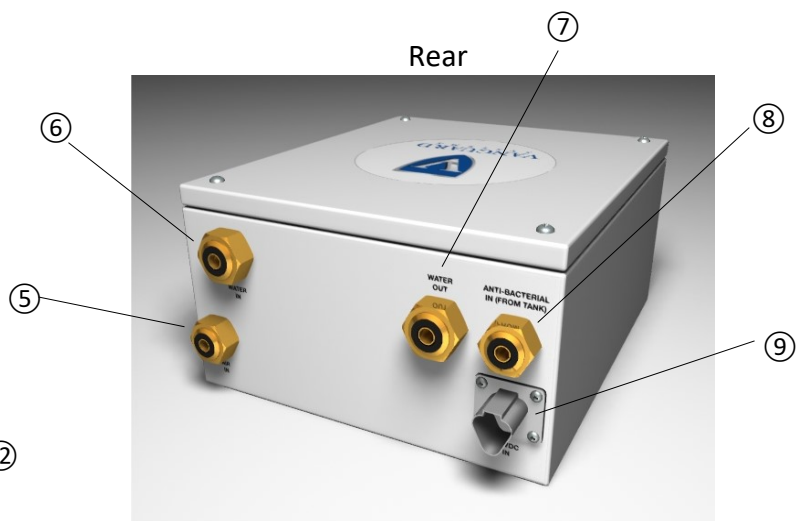
The Vanguard System has been custom designed to help protect wastewater workers against many of the hazards associated with wastewater. The system is easy to use and the controls are very straight forward. First- lets identify the controls.

1. Antibacterial Flow Control Knob
2. Antibacterial Flow Indicator
3. Main Power ON/OFF
4. Air Purge (Winterization) ON/OFF
5. Air **In** From Air Supply Tank
6. Water **In** From Main Water Storage Tank
7. Water **Out** To Reel and Cleaning Collar
8. Antibacterial **In** From 5 Gallon Tank
9. 12 VDC **In** From Truck's Electrical Box
10. Stainless Steel Quick Coupler
11. Reelcraft 50' reel
12. Water ON / OFF Valve for Reel

Front



Rear



13. Antibacterial Spray Gun

14. Stainless Steel Quick Coupler

15. 15° Nozzle (Yellow)

16. 25° Nozzle (Green)

17. 0° Nozzle (Red)

18. Nipple

19. Antibacterial Concentrate Lid

20. Antibacterial Tank (5 Gallon)

21. ON/OFF Valve Antibacterial tank

22. 3/8" Tube

23. Cleaning Collar Open

24. Cleaning Collar Closed

25. Main Body

26. Main Body Top

27. Door

28. Nozzle Body

29. 3/8" SS

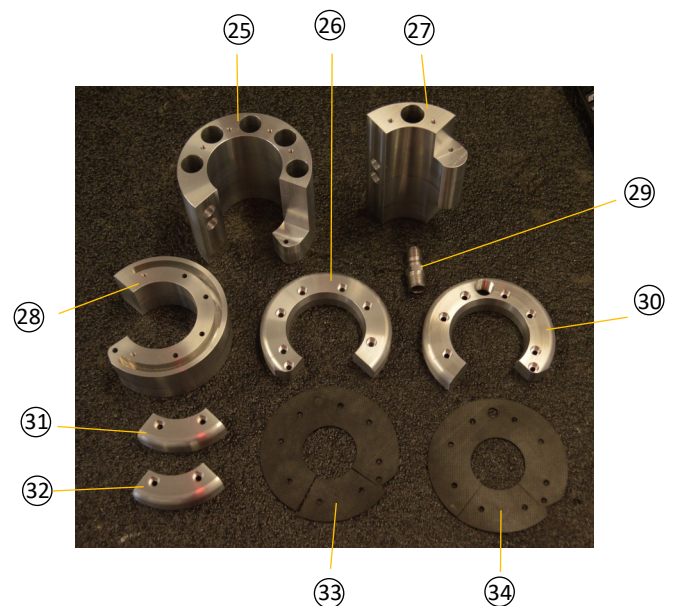
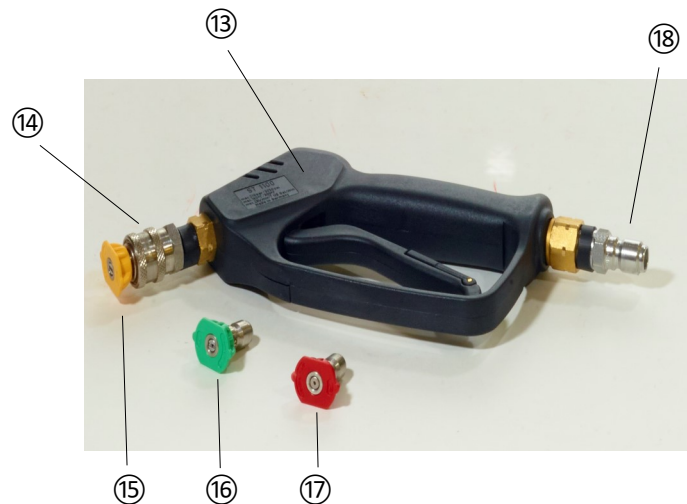
30. Body Top

31. Door Top

32. Door Bottom

34 Top Gasket

34. Bottom Gasket

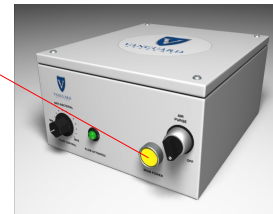
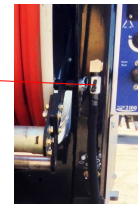
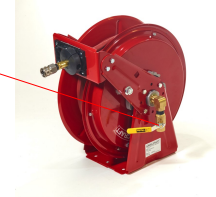
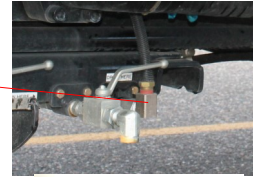
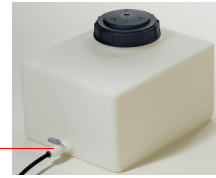


# VANGUARD PATHOGEN DEFENSE SYSTEM



## USING THE SYSTEM

1. Fill the Antibacterial tank (20) with Sani-Solution and turn the valve to the ON position. (21)
2. Turn the water supply ON which feeds the Vanguard System. It is usually positioned somewhere attached to the main water storage tank or around the drain outlet as pictured right (the small valve).
3. Open the valve on the hose reel. (12) If the system was winterized or has never been used, the hose will be empty. It needs to be filled with water to activate the automatic pressure sensing switches.
4. Press the Main Power button (3) on the Vanguard System. Once the water flow is consistent (all air is gone) turn the Valve on the hose reel (12) to the off position.
5. Next, go to the main ON/OFF valve which operates the Cleaning Collar (pictured right). Turn it On and get the air out of that hose as well. Once the water flow is consistent, turn it off.
6. Once all the air is removed from the hoses and the valves are turn off, the system will be in "Stand By" mode. The Yellow Power Light (3) will remain on, but the water pump will not be running.
7. When a valve is opened to operate either the Cleaning Collar (24) or the Spray gun (13), the internal electronics in the system will automatically sense the pressure drop and activate both the Water Pump and the Antibacterial pump (indicated with the Green Light) (2).
8. The Antibacterial concentrate can be turned OFF, or any position from LOW to HIGH. We recommend you set it in the MIDDLE between low and high as a standard setting. Once it is set, you can just leave it there unless needed for extra killing power for SSO clean up or OFF for pure water only.
9. The Air Purge switch is strictly used for winterization only and is outlined in another section. This switch should be in the OFF position.



**Note:** Once the air is out of all lines, if the water pump continues to run there is a problem. Air is most likely getting into the system somewhere. First, make sure there is water in the trucks storage tank and the water valve in the ON position. Next, make sure the Water filter typically connected to the next to water ON/OFF valve (not pictured) is firmly screwed down. Next, make sure the tubes for both "Water IN" on the back of the VG main box and the tube coming from the water supply are both firmly pushed in. If the pump continues to run, turn off the main power button and call me (TJ) to troubleshoot the issue with you. (303) 884-7552



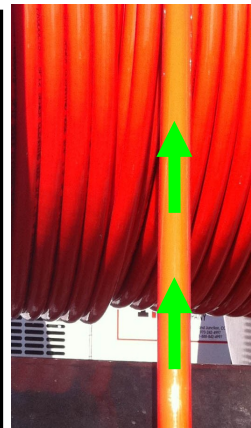
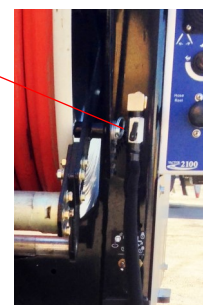
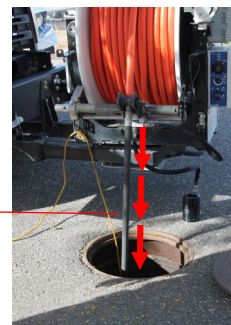
# VANGUARD PATHOGEN DEFENSE SYSTEM

## USING THE CLEANING COLLAR



The cleaning collar is specifically designed to simply and efficiently do one thing; remove the bulk of pathogens attached to the jet hose and keep them in the sewer—not on you. Operation is simple:

1. Jet out as you normally would **without** having the Cleaning Collar attached. There is no reason to attach the Collar as you are jetting out, it will simply be in the way. The Collar is designed to clean the jet hose as it is retrieved onto the reel.
2. Attach the Cleaning Collar to the Jet hose. The door has two permeant magnets to hold the door to the cleaning collar closed. Just open the door and place the hose inside the collar. It is easiest to place the Collar on an angle as shown.
3. Once the Collar is installed, close the door and lower it into the manhole by the hose attached to it.
4. Turn on the water flow valve to the Collar. The water / antibacterial concentrate will begin to flow. Set the antibacterial control knob to halfway between low and high setting.
5. Retrieve the jet hose as normal. No need to slow down the retrieval process. With the Vanguard System on, the hose spooled onto the reel has the bulk of pathogens removed according to independent lab studies.



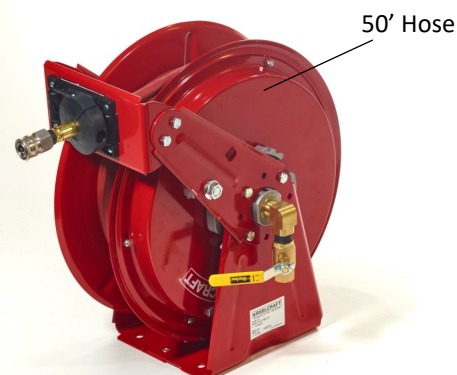
**IMPORTANT NOTE:** The Vanguard System is designed to assist you in further protecting your workers against exposure to known bacterial and viral contaminants. The Vanguard System does not replace, in any way, your current worker safety program, policies, procedures or equipment. All current safety equipment, policies and procedures are to remain in place with the addition and/or use of the Vanguard System.

# VANGUARD PATHOGEN DEFENSE SYSTEM



## USING THE ANTIBACTERIAL SPRAY GUN

The antibacterial spray gun is used to help decontaminate items which have come in contact with sewage. The spray gun has a carefully designed balance of pressure, water conservation, and operator safety. The spray gun has an excellent pressure for cleaning common items such as gloves, boots, tools, vacuum tubes, tiger-tails, nozzles, control surfaces, floor mats, truck steps, door handles, lift station pumps, etc. The volume of water generated by the 12 VDC water pump is not designed for cleaning up bulk SSO's or blasting off hardened debris. This is the job of your high volume / high pressure spray wand provided with your truck. Each has a designed purpose— The Vanguard System is designed to help protect you from dangerous pathogens found in the environment in which you work.



The Vanguard System is designed to use Sani-Solution™ which is custom blended with the safety of the operator, environment, and equipment in mind. It is non-caustic, non-acetic, and biodegradable. Using the current “gold standard” for antibacterial solution in hospitals—Quaternary Ammonium compounds, allows for broad spectrum protection of pathogens without a scent. Sani-solution has scent added (Lemon, Pine, Lime) to alert the operator when the tank runs dry.



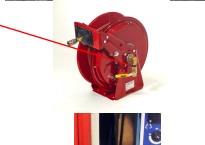
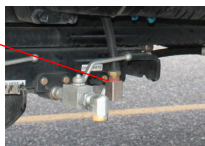
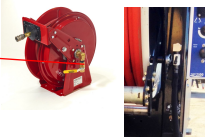
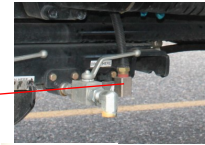
# VANGUARD PATHOGEN DEFENSE SYSTEM

## WINTERIZATION



The Vanguard System is quickly and easily winterized when needed. It is vitally important to do so in freezing conditions to prevent serious damage to the unit.

1. Turn off the main power to the unit.
2. Turn off the main water supply going to the Vanguard Unit.
3. Turn off the Valve on the Hose Reel and Collar.
4. With all valves closed and the unit turned off, turn the "AIR PURGE" switch to the ON position and leave in that position. This pressurizes the system with air from the trucks main air storage tank.
5. Next, go to the main water valve which feeds the Vanguard Unit. Turn the water valve to the **ON** position for just a **3 to 5 seconds** and then turn it back to the OFF position. Note: You will hear air bubbles going to the water storage tank clearing the water feed line and water filter of water.
6. Next, remove the Spray Gun and turn **ON** the main valve on the hose reel. Water will be pushed out of the hose with the air. Allow the air to flow out for a few seconds after the water is evacuated. The hose reel is now purged of water.
7. Last but not least, turn **ON** the main valve feeding the collar and air purge that line as well for a few seconds.
8. Turn **OFF** the Air Valve on the Vanguard Unit.
9. Turn on the hose reel valve briefly to remove residual air pressure then put back in the OFF position.
10. The System is now winterized. The Sani-Solution is freeze protected so you do not need to do anything with that product.



Any questions what so ever, please call me. Thank you.

TJ Suiter (303) 884-7552