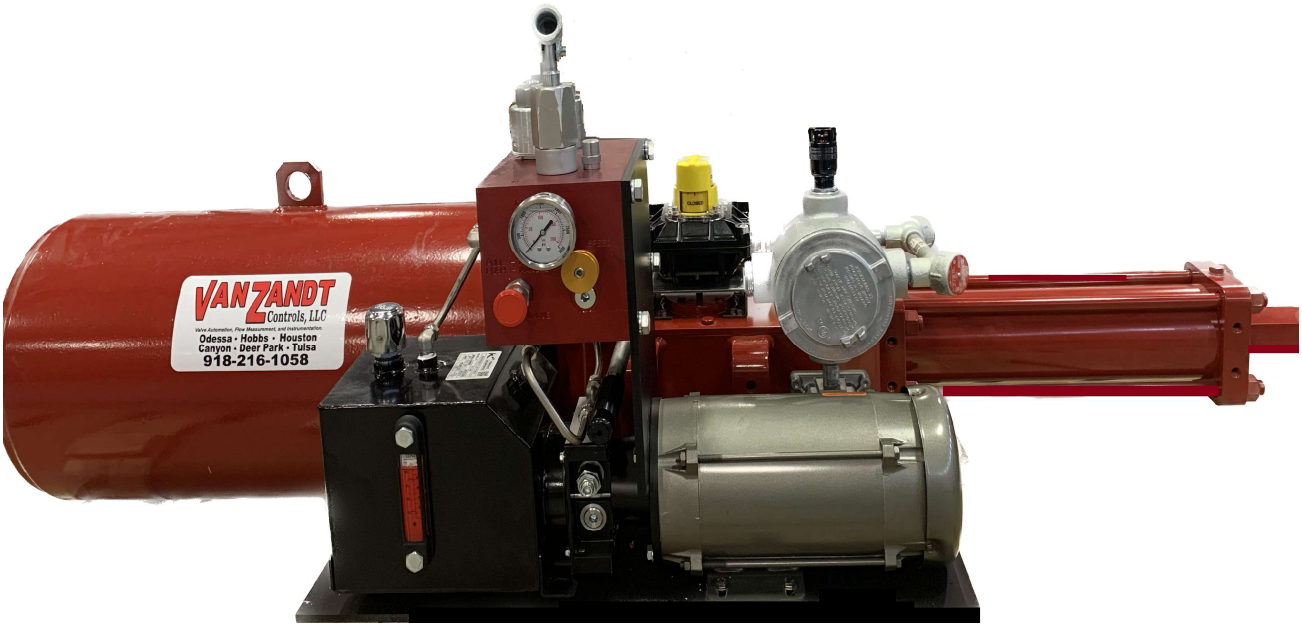
VANZANDT CONTROLS

VZ-ESD HILO GEN.4, ELECTRO-HYDRAULIC EMERGENCY SHUTDOWN

This ESD will open when power is supplied and pressure setpoints are not tripped. It will close via a spring return actuator when the pressure is tripped.



STANDARD STOCK ASSEMBLIES, OTHER SIZES AND VOLTAGES AVAILABLE UPON REQUEST				
VZESD-HP24HILO-2K BTO: 2,643 lbf-in ETC: 1,603 lbf-in Opens in 10 sec Closes in 1-14 sec	VZESD-HP24HILO-7K BTO: 7,125 lbf-in ETC: 5,700 lbf-in Opens in 10 sec Closes in 1-14 sec	VZESD-HP24HILO-12K BTO: 12,000 lbf-in ETC: 9,420 lbf-in Opens in 25 sec Closes in 3-30 sec	VZESD-HP24HILO-20K BTO: 25,800 lbf-in ETC: 15,800 lbf-in Opens in 40 sec Closes in 3-48 sec	VZESD-HP24HILO-55K BTO: 55,000 lbf-in ETC: 44,100 lbf-in Opens in 55 sec Closes in 5-50 sec

STANDARD FEATURES

-BACKUP HANDPUMP TO OPEN IF POWER IS NOT AVAILABLE
-MANUAL PUSHBUTTON, PULL TO MANUALLY CLOSE THE ACTUATOR
-CONTROLS MANIFOLD DESIGNED TO REDUCE LEAK POINTS
-SITE GLASS ON RESERVOIR TO MONITOR FLUID LEVEL
-2 SPDT SWITCHES FOR CUSTOMER USE & VISUAL INDICATOR BEACON
-MOTOR RUN TIMER AND ALARM LED/CONTACTS

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Detailed Specs

Motor FLA current consumption: 13A @120VAC, 12A @24VDC
Solenoid current: 170ma @ 120VAC, 834 ma @ 24VDC
Reservoir Capacity: 1.5 gallons
Standard Hydraulic Fluid: Dexron III ATF or equivalent for 0-150F

24V models are shown below. 120V models have the same dimensions and weights				
VZESD-LP24HILO-2K	**VZESD-HP24HILO -7K**	**VZESD-HP24HILO -12K**	**VZESD-HP24HILO-20K**	**VZESD-HP24HILO-55K**
435 lbs	490 lbs	550 lbs	615 lbs	983 lbs
32”x29”x21”	49”x30”x21”	54”x30”x21”	64”x30”x21”	74”x30”x21”

INSTALLATION INSTRUCTIONS

1. Mount to the Valve if Valve was not provided by VanZandt Controls. Make sure the bolts/nuts are properly secured.
2. The reservoir should be filled with DEXRON III or equivalent hydraulic fluid. If it is not, fill until the level is at the top of the sight glass. WARNING: Do not fill the reservoir unless the actuator is in the closed position. Filling while in the open position can cause it to overflow when closed. Low temperature applications require Univis J13 or equivalent.
3. Connect power/control per schematics.
4. The actuator has adjustable stops for end of travel open and close. These stops are set at the factory and typically should not need to be adjusted. The purpose for adjusting these stops is to help prevent wear and tear on the valve by not letting the actuator slam the valve open and closed.
   If they need adjusted:
   a. Close the valve, loosen the lock nut and turn the stop bolt in the clockwise direction until it stops against the yoke.
   b. Open the valve and repeat step one, close the valve again to ensure full travel.
   c. Once travel adjustment is correct, re-tighten both lock nuts to ensure stop bolts are secure.
5. If the Valve was provided by VanZandt Controls, the limit switch “Cam” style switch labeled “SW1” will already be setup to shut off the motor when the actuator moves the valve to the fully open position. If VanZandt Controls didn’t provide the valve, the “SW1”

needs to adjusted to shut off the motor when the valve is opened. Failure to properly adjust this switch will cause the motor to continuously run *which* will wear out components prematurely.

6. "SW2", "SW3", and "SW4" are for customer use and can be set up to signal when the valve is in the open or closed position. See wiring schematics for more details.
7. During shipment, the fittings could vibrate loose. Verify all fittings are tight before connecting power. The VZESD-HP unit is capable of generating pressure up to 3,000 psi and may cause injury if there is a leak. The VZESD-LP Unit can produce up to 120psi.

Remote Operation W/ Power Supplied,

Complete above 7 steps first

1. Verify the Red Manual Pushbutton is in the Push position.
2. Supply the required power to open the valve. Most units require 24VDC power. Some units do have an additional 24VDC solenoid used for additional method to open/close the actuator. Both the motor and the solenoid (if provided) need power to open the actuator. To open, the high/low pressure sensors cannot be tripped. Once the actuator is open, the limit switch should turn off the motor.
3. The actuator will remain open until either the high or low pressure is tripped or the solenoid (if provided) power is removed. When the sensor is tripped or the solenoid (if provided) is removed, the spring in the actuator will push the fluid back to the reservoir and close the valve. The valve will remain closed until the pressure is not tripped and the solenoid (if provided) power is supplied again.

Operation With Manual Hand Pump

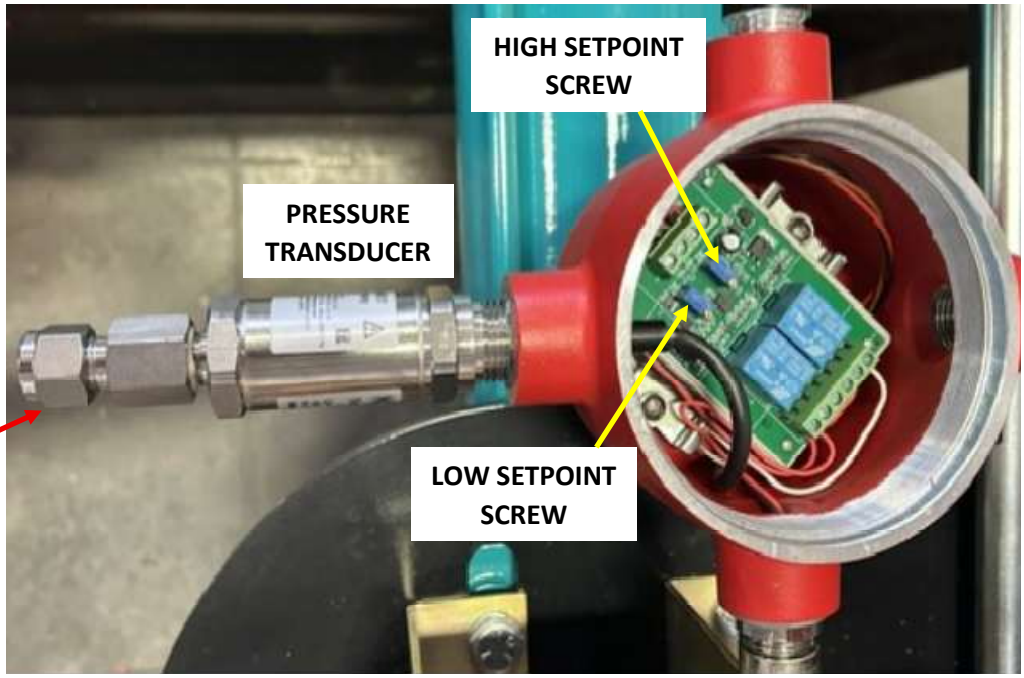
1. If the solenoid (If provided) has power, skip to step 3.
2. If the solenoid does not have power or is not provided, Move the Red Manual Pushbutton to the pulled position.
3. Remove the handle from the clips and place in the handpump.
4. Begin pumping up and down. The actuator will slowly move to the open position. Stop pumping when the actuator is fully open. There is a relief valve that will prevent you from over pumping the

system and will bleed pressure back to the reservoir if continually pumped after it is fully open.

5. Remove the handle and place back into the clips
6. The actuator will remain open until the Red Manual Pushbutton is pulled and twisted to lock in the pulled position. Note that if the solenoid (if provided) is on and the pushbutton is locked in the pulled position, the solenoid will override the pushbutton, and the actuator will NOT close. WARNING: LEAVING THE PUSHBUTTON IN THE "PULLED" POSITION WILL NOT ALLOW YOU TO RE-OPEN THE ACTUATOR.

Pressure Setpoint Adjustment/Connection

There is a pressure transducer with high and low setpoints. If adjusting the setpoints, turn the screw on the blue potentiometer pictured below ccw to increase the setpoint value or cw to decrease the setpoint value. These setpoints will cause the actuator to close if the pressure rises above the high pressure setpoint or below the low pressure setpoint. Connect 3/8" Tube to **pipeline pressure connection**.



SPEED CONTROL – This functions only if a solenoid is provided.

The Opening speed is not adjustable. The closing speed can be adjusted if a solenoid is provided. Using the gold knob located below the pressure gauge. The following 4 steps will explain how to adjust the closing speed:

1. Close the actuator, which should release pressure from the system.

2. There is a locking nut behind the gold knob that must be turned counterclockwise before you can adjust the speed control. Back it off before proceeding to the next step.
3. Turn the knob clockwise to slow down the speed, or counterclockwise to make the actuator close faster. If the Knob will not turn any more then it is at the max setting.
4. Open the actuator and then close IT again to time the speed. If the speed is not what you want, repeat the previous step. If the speed is ok, then tighten the lock nut to maintain the desired speed. Note that hot temperatures will cause it to close faster and cold temperatures will cause it close slower.

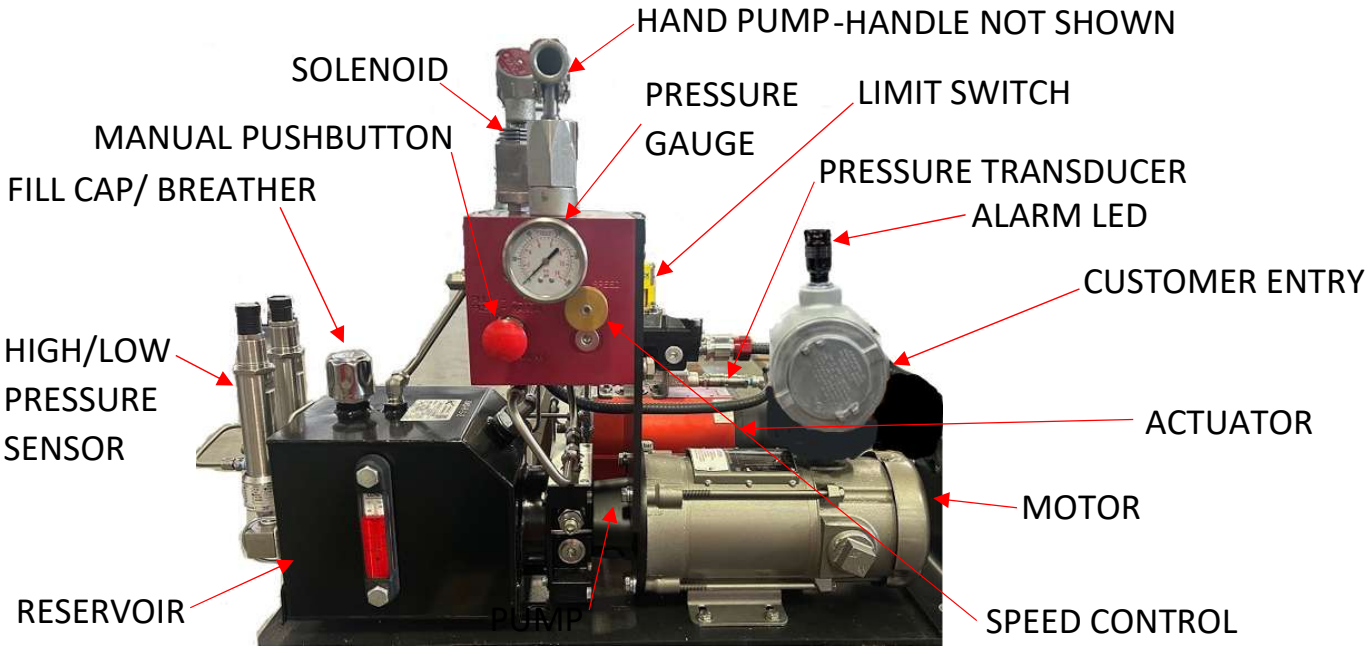
RECOMMENDED MAINTENANCE

Every Month
- -Visually inspect for leaks
- -Check the reservoir level
- -Make sure the fill cap is tight

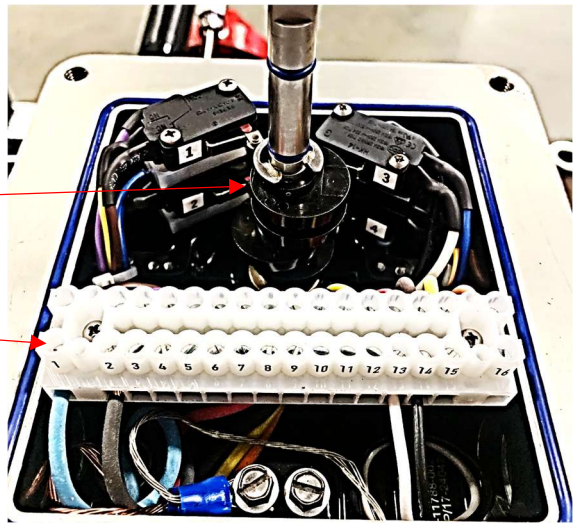
Every 6 Months
- -Perform the monthly steps above
- -Cycle the actuator closed and back open
- -Verify the fittings are tight

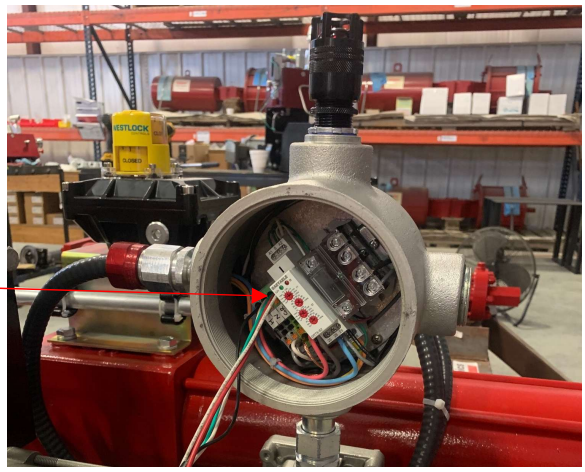
Every year
- -Change the fluid

BILL OF MATERIAL



LIMIT SWITCH/ALARM CONNECTIONS





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