

## Hydraulic Pump Pack—Slide Gates

Several types of hydraulic pump packs are manufactured at HySecurity®. These instructions apply to all SlideDriver pump packs. The pump pack you receive may look different than the illustration on this page, but the steps involved in assembling and installing the pump pack are the same.

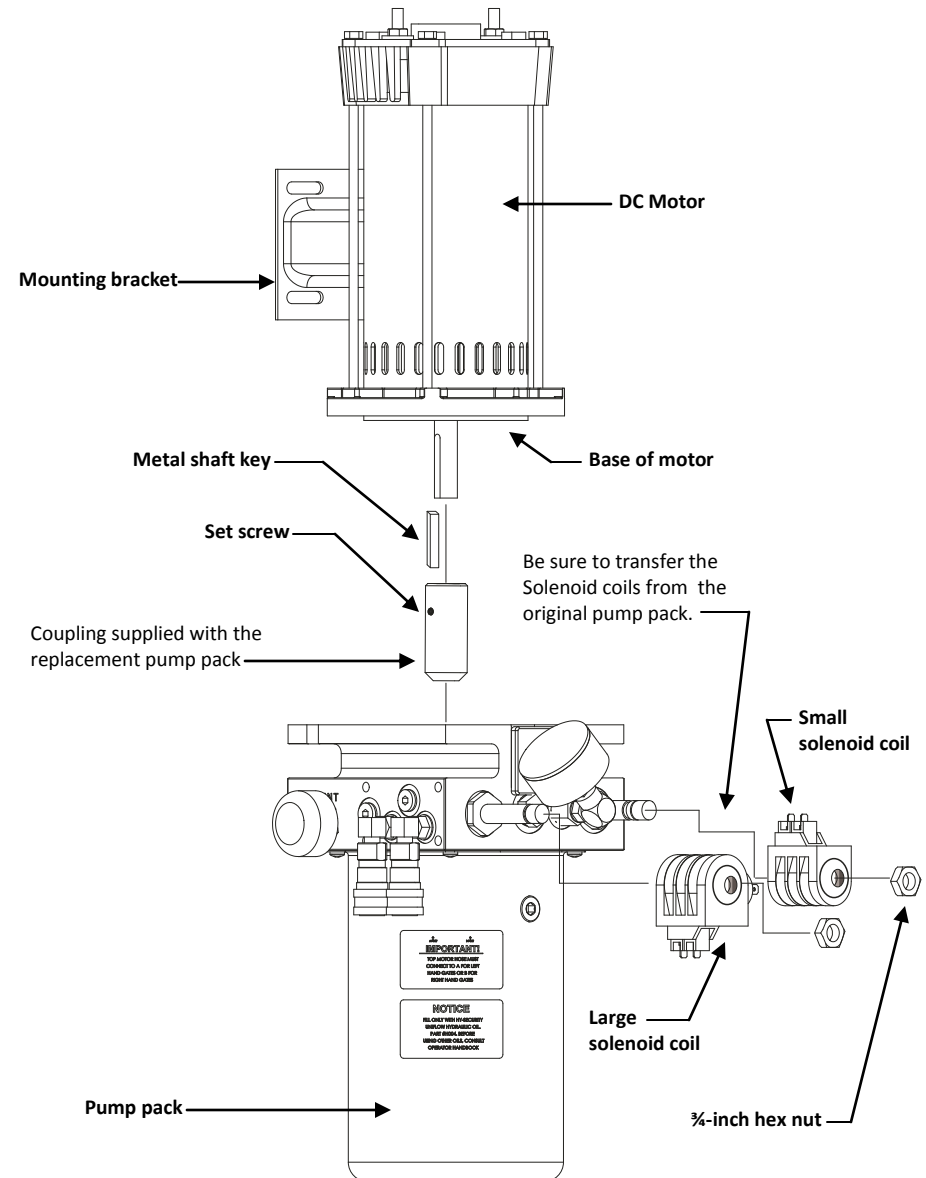
Items to note BEFORE you install the replacement pump pack include:

- The replacement pump pack assemblies cover several models including Relay and Smart Touch equipped units.
- When replacing a pump pack, it is important to check and verify that the pump pack assembly you received from HySecurity and the model being replaced are equivalent.
- All replacement pump packs are equipped with IES sensors. IES sensors are not needed on Relay-based operators. Refer to pages 6 and 7 for valve options.
- The replacement pump pack shipped from HySecurity is wrapped in plastic and mounted on a board. If the replacement is under warranty, use the shipping materials to wrap the old pump pack and ship it per the RMA instructions. Damage incurred during shipping may be grounds for refusal of an RMA.

**NOTE:** All replacement pump packs are shipped without solenoid coils. Be sure to transfer the coils from the original to the replacement pump pack.



**To avoid risk of injury or death, disconnect the gate operator from the main power source prior to performing any of the following service procedures!**



**Replacing the Pump Pack**

# Hydraulic Pump Pack Removal

**IMPORTANT:** All pump packs are shipped with pre-lubed pump shafts and new couplings. Do NOT remove the red dust cover until the new coupling is installed on the electric motor and you are ready to attach the pump.

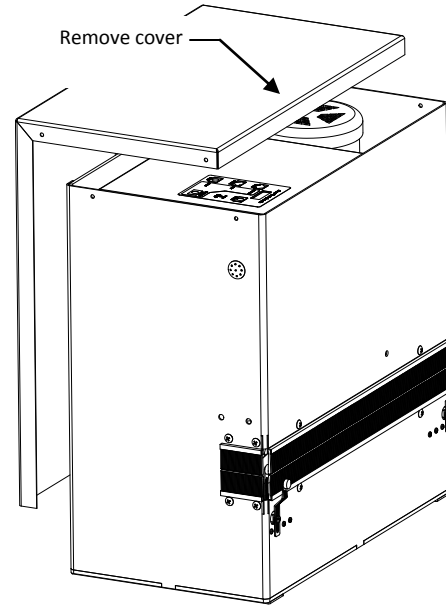
To remove the existing pump pack, take the following steps:

1. Remove the operator's front cover and set it on a level work surface.
2. Turn OFF power to the operator at the main disconnect and make sure the power toggle switch located on the Control Box is in the OFF position.
3. Check to see if the pump pack you received from HySecurity is the same as the unit you are replacing. Refer to the pump pack illustrations and,
  - Verify that both the old and replacement pump packs match in their brake and/or their AWOOG assemblies.
  - Check that the replacement pump packs are equipped with IES sensors. These IES sensors are not used on Relay-based operators.
  - Note that some older Relay operators may have different valves. Refer to page 6 for valve options.
4. Determine whether the length of cable from the control box to the motor is long enough to let you lift the motor and pump assembly off the chassis bracket mount and set it down on the chassis floor. If the motor cable is not long enough, obtain blocks to place beneath the pump pack.

**NOTE:** Alternatively, the entire motor/pump pack assembly can be removed from the chassis by disconnecting the wire leads in the electrical connection box. For the location of the electrical connection box, see the illustration on page 5. Label the lead wires so it is easy to reconnect them during reassembly.

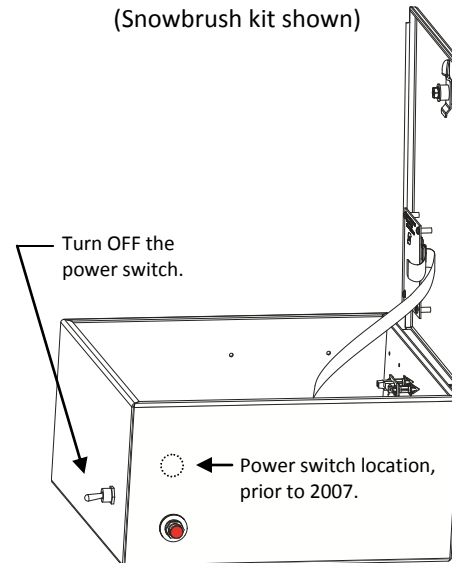


**When you lift the motor and pump pack assembly out of the chassis, be careful not to bend the valve stems! Broken or bent valve stems due to routine maintenance are not covered by the Limited Warranty.**

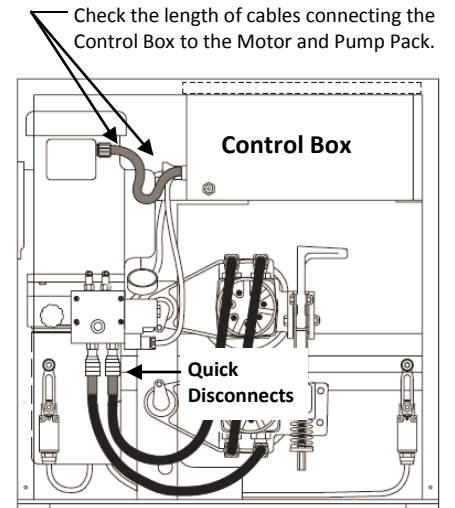


**SlideDriver: Remove the Cover**

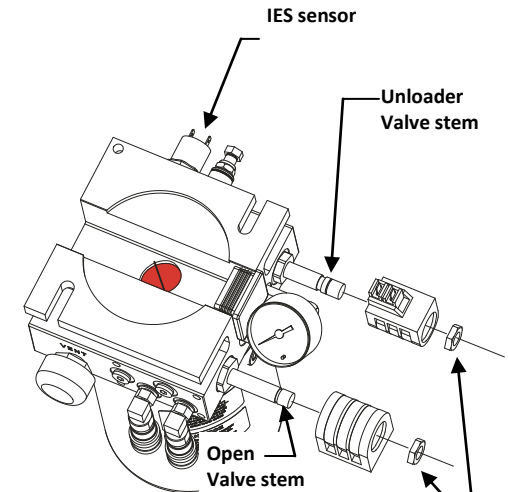
(Snowbrush kit shown)



**Control Box—Power OFF**



**Check Cable Length & Remove Hoses**



Remove solenoids from the open and unloader valves

**Remove Solenoids & Hoses**

5. Disconnect the two hoses from the Quick Disconnects (QD's). See illustration on page 2.
  6. Remove the 3/4-inch hex nut which secures each solenoid coil onto its valve stem.
  7. Slide the coils off the valves. If your machine has an IES sensor, mark the two wires and remove them from the spade terminal connections.
- NOTE: The solenoid coils and the cables will be reused! Use care when removing them as they will have to be replaced if damaged. Let them dangle or tuck them up and out of the way.
8. Lift the entire motor and pump pack assembly straight up and out of the bracket mount.
  9. Set the assembly on the floor of the operator.

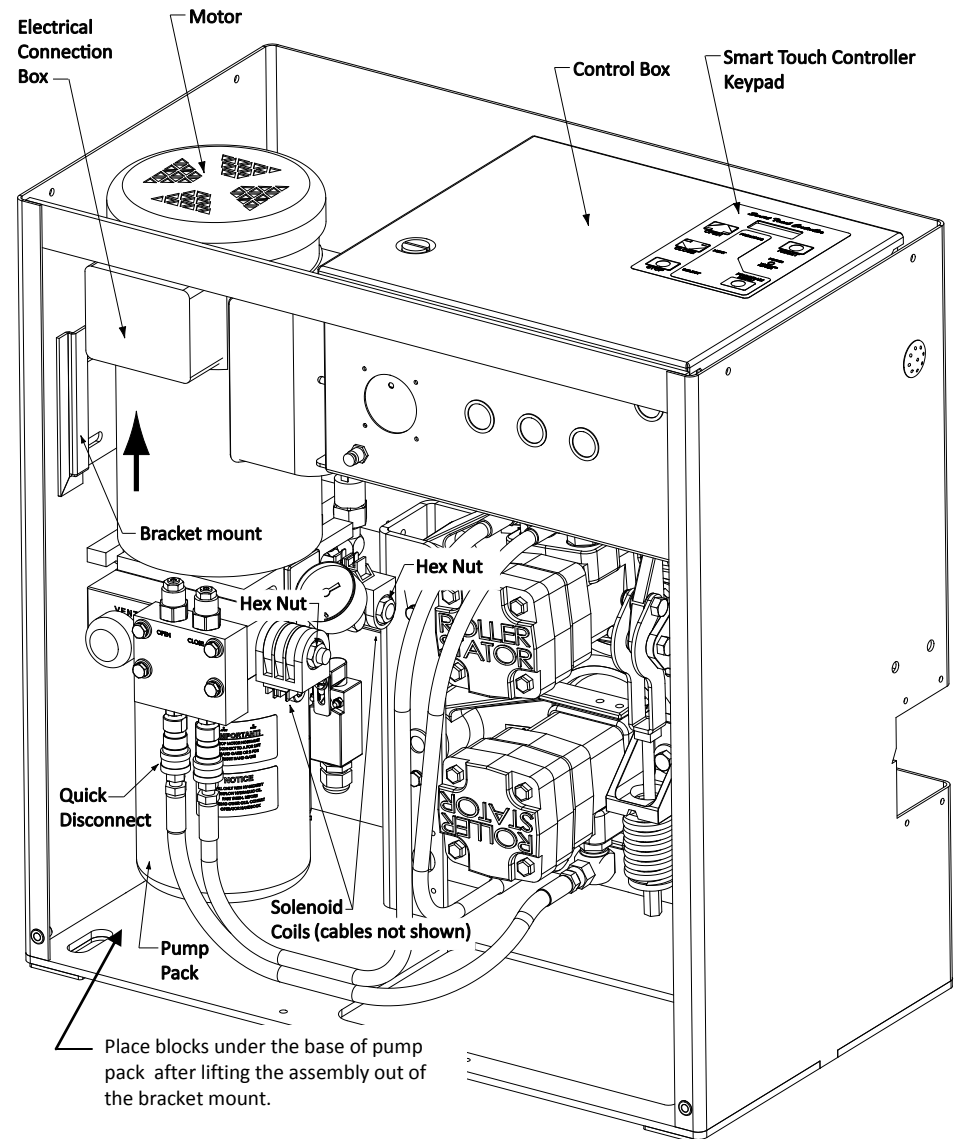
NOTE: If your machine does not have QDs, unscrew the hose fittings from the elbows and the elbows from the pump. Keep the hose ends supported above the hydraulic motors, otherwise the hydraulic fluid will drain out. Have rags handy to absorb any fluid residue.

10. Separate the pump pack from the electric motor by removing the two bolts using a 9/16-inch wrench. The bolts are factory-installed with blue thread lock, so it will require a bit of torque to remove them. Gently, rock the pump pack to disengage the coupling and to pull the motor and pump pack apart.

**CAUTION**

Do not use a pry bar or a screwdriver to separate the pump pack from the electric motor as damage may occur to the motor's shaft.

11. Remove the motor coupling by loosening the set screw. Slide the coupling and the metal key off the motor's shaft. Refer to the illustration on the first page.
12. Discard the coupling and metal key. A new coupling and metal key are supplied with the replacement pump pack.



Example: SlideDriver 222E Interior View

# Hydraulic Pump Pack Replacement

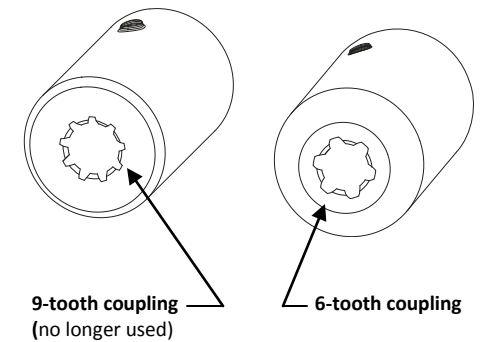
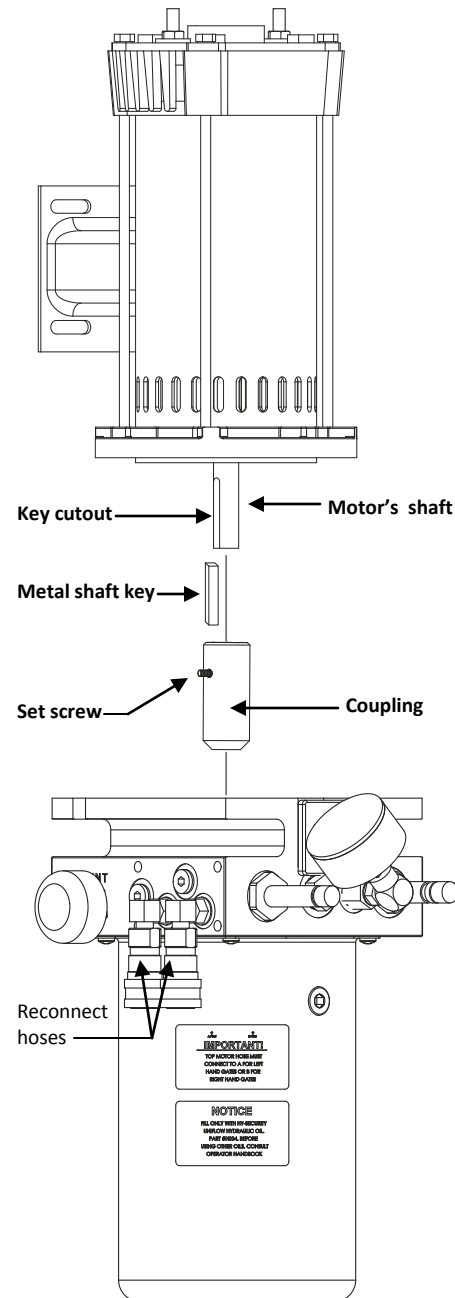
The installation of the replacement pump pack is basically a reverse operation of the removal.

To replace the existing pump pack, take the following steps:

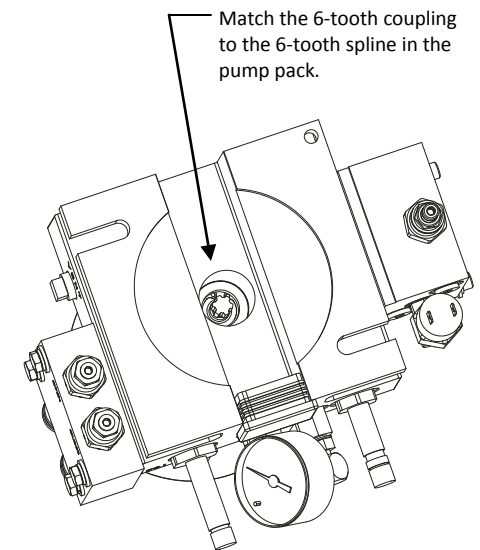
1. Prepare the replacement pump pack for installation by removing any accessories (such as the breather cap) that may be tie-wrapped to the pump pack kit.
2. Locate the motor, shaft key and coupling shipped with the replacement pump pack.
3. Loosen the set screw on the coupling.
4. Place the metal shaft key securely in the motor's shaft.
5. Align the coupling with the metal shaft key and slide the coupling onto the motor's shaft as far as it will go. Tap the coupling lightly with a plastic or rubber mallet to be sure it is situated completely on the motor's shaft.
6. Place blue thread locker onto the coupling set screw and tighten it securely.
7. Remove the red dust cover from the pump pack's manifold.
8. Look inside the shaft to verify that the pump shaft is coated with "anti-seize" (grease). If grease has not been applied, call Technical Support.

To orient the motor and pump pack assembly, see the example given in the illustration on page 3. Make sure:

- The hose connections are in front.
  - The motor's electrical connection box is directly above the hoses. (DC motors do not have an electrical connection box.)
  - The flat mounting face of the pump pack's manifold and the motor's mounting bracket are on the same side and properly aligned.
9. Carefully, slide the motor and coupling into the pump pack. Make sure that the sleeves in the coupling interlock with the teeth on the pump's shaft. Continue until the pump pack and the base of the motor are touching.
  10. Coat the end of both mounting bolts with blue-colored Loctite. Insert both bolts and alternately tighten each bolt so there is even closure between the motor and pump pack. No torque setting is required, but make sure to tighten the bolts securely.



## Old and new versions of Couplings



## Match Coupling to Pump Pack

11. Carefully, slide the motor and pump pack assembly onto the wall bracket inside the chassis.
12. Reconnect the two hoses. Take care when reconnecting the hoses. For right-hand gate operation, the hose from the left port of the top hydraulic motor should be connected to the right pump port. For left-hand operation, this hose will connect to the left pump port.

**NOTE:** On SlideDriver 10 (222 SS ST) operators without Quick Disconnects (QD's), remove the QD's and elbows from the replacement pump pack and install the elbow fittings from the old pump. Place liquid thread sealer (Loctite® 545) on the threads of the hose fittings. Insert them into the ports in the manifold and tighten. **DO NOT** use Teflon tape or you may void the Limited Warranty.

## Finishing the Installation

To complete the installation, solenoid coils need to be replaced and on some operators, valve adjustments must be made. General and model-specific instructions appear on the next few pages.

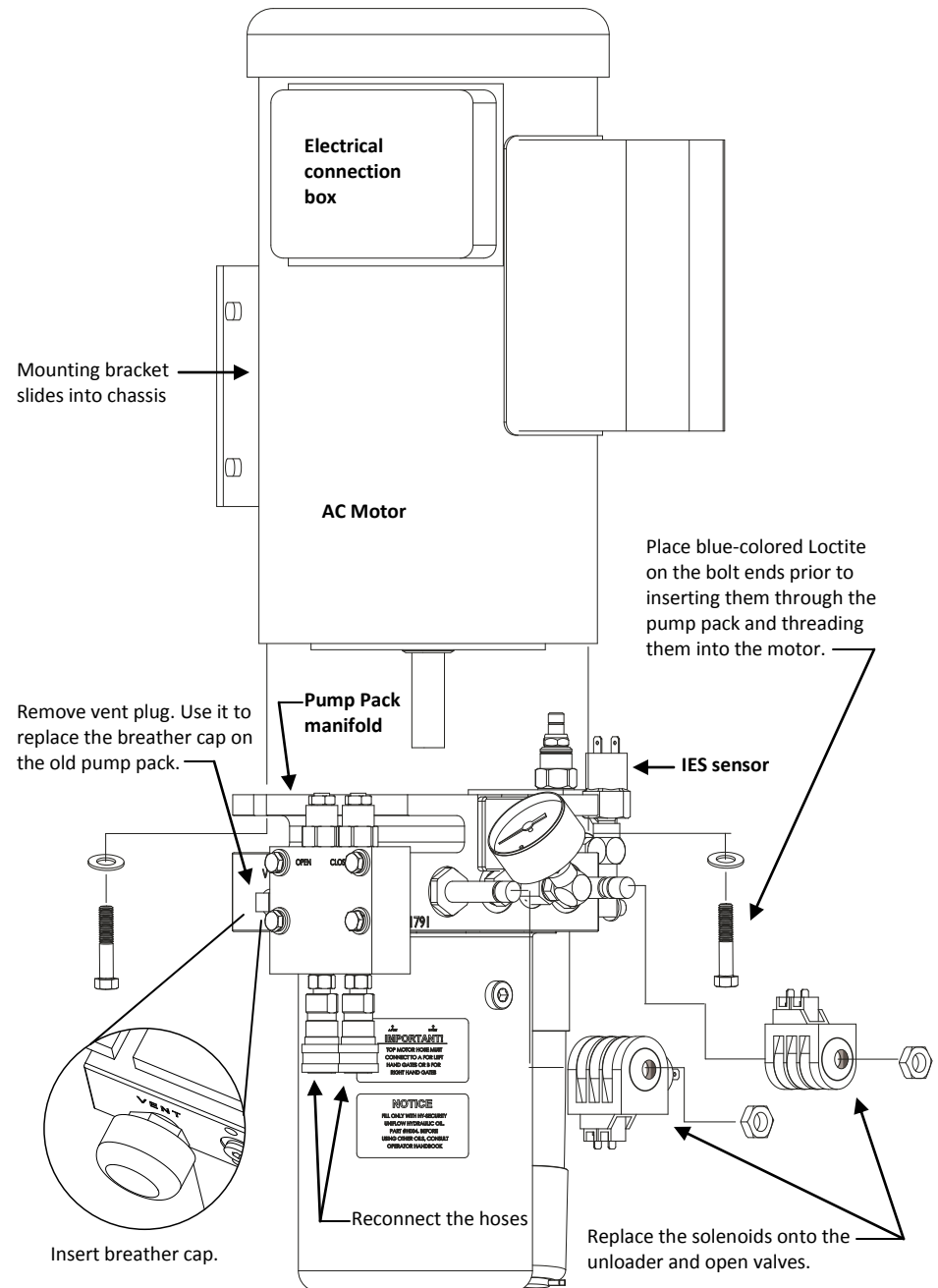
**NOTE:** To prevent rust or corrosion, touch-up any damage to the paint after the installation is complete.

### All Operators



**If the breather cap is not properly installed, pump pack seals may be damaged and you may void the Limited Warranty.**

1. Remove the vent plug from the replacement pump pack. Do NOT discard it! Use it to replace the breather cap on the old pump pack. Securely screw the vent plug into the old pump pack to prevent fluid spillage during shipment.
2. Install the new breather cap (shipped tie-wrapped to the replacement pump pack) onto the replacement pump pack.



**CAUTION**

Do not over-tighten the 3/4-inch nut that holds the coil in place. A damaged or bent solenoid valve will not work properly and is not covered by the Limited Warranty.

3. Replace the solenoid coils. Re-attach the proper solenoid coil to the appropriate valve and lightly tighten the nuts. The larger of the two coils mounts on the front (Open) valve.
4. Reconnect any wiring disconnected during the removal of the pump pack, such as the IES sensor and solenoid coils.
5. Perform any model-specific instructions pertinent to your operator. Detailed model-specific instructions start on page 7.
6. Turn on the main power to the operator.
7. Turn on the power switch attached to the Control Box.
8. To verify that the electric motor is turning counterclockwise, briefly start and stop the operator. If the motor is not turning counterclockwise (as viewed from the top), rewire it for proper rotation.

**NOTE:** In DC motors, swap the cables. In 3-phase AC motors, you need to choose two main power wires in the motor's electrical connection box and switch them.

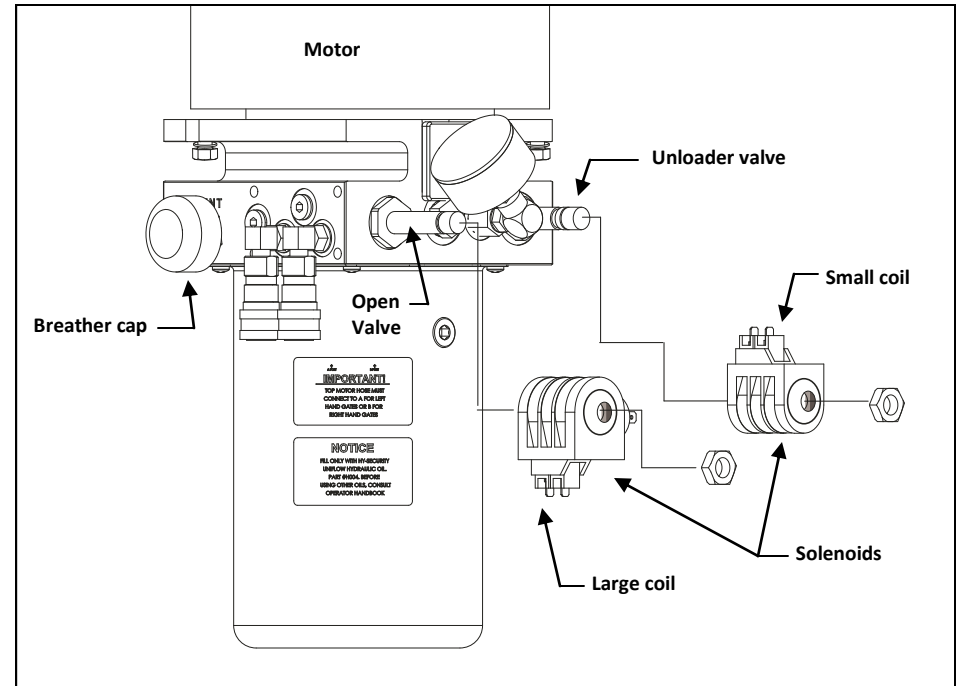
### Pressure Relief Valve

To limit the pressure applied to the gate wheels, all pumps are equipped with a pressure relief valve on the back side of the pump pack (see pictures for location). This valve is preset to a level that will operate most gates well. Heavy or stiff gates may require pressure relief valve adjustment when the pump pack is replaced.

Two types of valves are used:

- Type 1 has a hex head bolt and lock nut
- Type 2 has an Allen screw and lock nut

If adjustment is needed, follow the adjustment procedure on the yellow tag attached to the replacement pump pack. The maximum setting for each operator is listed in the Model Specific Instructions section of this document and on the Yellow Tag.



**CAUTION** **ATTENTION INSTALLERS!**

Pressure is preset at the factory. Adjustments of the pressure relief valve may be required for heavy or stiff gates. To provide the greatest entrapment protection, adjust the pressure level as necessary for good operation. Do NOT set the pressure limit higher than the maximum settings listed here.

**DO NOT EXCEED THESE MAXIMUM PRESSURE SETTINGS**

- SlideDriver 10, 40 (1hp) = 1000 psi
- SlideDriver 30F, 50VF models, 80 (2hp) = 1350 psi
- SlideDriver 200 (5hp) = 2000 psi

During the initial installation, adjust the pressure relief valve according to the steps found on the back of this tag. When adjustments are completed, discard this notice.

**NOTE:** The steps are also available in the operator's installation manual.

MX001853 Rev B

**PRESSURE RELIEF ADJUSTMENT PROCEDURE**

**WARNING! The gate moves during this procedure!**

Make sure the limit ramps and the gate are properly installed and aligned BEFORE adjusting the pressure relief valve. Only experienced hydraulic gate technicians should perform the following procedure.

1. Locate the pressure relief valve on the pump pack. (For illustrations, see your installation manual.)
2. Loosen the 9/16-inch locknut on the relief valve.
3. Use a 5/32-inch Allen wrench or 1/2-inch hex head wrench to adjust the relief valve.
4. With the gate attached and the drive wheels clamped, cycle the gate using the OPEN, CLOSE, and STOP buttons on the operator's keypad. As the motor assembly runs, slowly turn the adjusting screw CLOCKWISE. Since the drive wheels are clamped, the motor runs for 2 - 3 seconds and then stops. The alert code SAFE appears on the display.
5. Clear the SAFE code by pressing RESET, and then repeat step 4 until one of the following two situations occurs:
  - The gate starts and runs consistently without displaying SAFE.
  - The maximum pressure for the operator is reached. (See reverse side of this tag.)
6. Hold the adjuster screw in place while tightening the 9/16-inch locknut on the relief valve.

**NOTE:** If you encounter any problems or the operator requires more than the maximum pressure to run the gate, contact HySecurity Technical Support at 800-321-9947.

## Relay Controlled Operators

Three different types of operator instructions are described below. Follow the steps that pertain to your operator.

**NOTE:** On Relay-based operators, no wires need to be attached to the IES sensor because it is not used.

### **Relay-controlled operators with only one valve and one 24VAC coil**

Place the old coil on the front (Open) valve and lightly tighten the nut. The rear valve is unused. (This rear valve is the “Quick Stop” valve used on later relay operators). Should you wish to incorporate this function, there are instructions and a list of additional required parts available through Technical Support.)

### **Relay-controlled operators with two valves and two 24VAC coils**

Place the old large coil on the front (Open) valve and lightly tighten the hex nut. Place the smaller coil on the rear (Quick Stop) valve and lightly tighten the hex nut.

### **Relay-controlled operators with one electrically controlled valve with two 24VAC coils on the stem**

Two options depending on the operator at your site:

1. Re-use the valve from the old unit by removing the front (Open) valve from the replacement pump pack and replacing it with the long stemmed valve and coils from the old pump pack. Leave the rear (Unloader/Quick Stop) valve in place but unused.
2. New coils and cables can be installed on the Open and Unloader/Quick Stop valves and wired to the controller with minor wiring changes. Contact HySecurity Technical Support for details.

**Model: SlideDriver 10 (222 SS)**

The system is ready to operate. Run the system a few times, check for, and fix any leaks.

Maximum Relief Pressure equals 1000 PSI

**Model: SlideDriver 40 (222 E)**

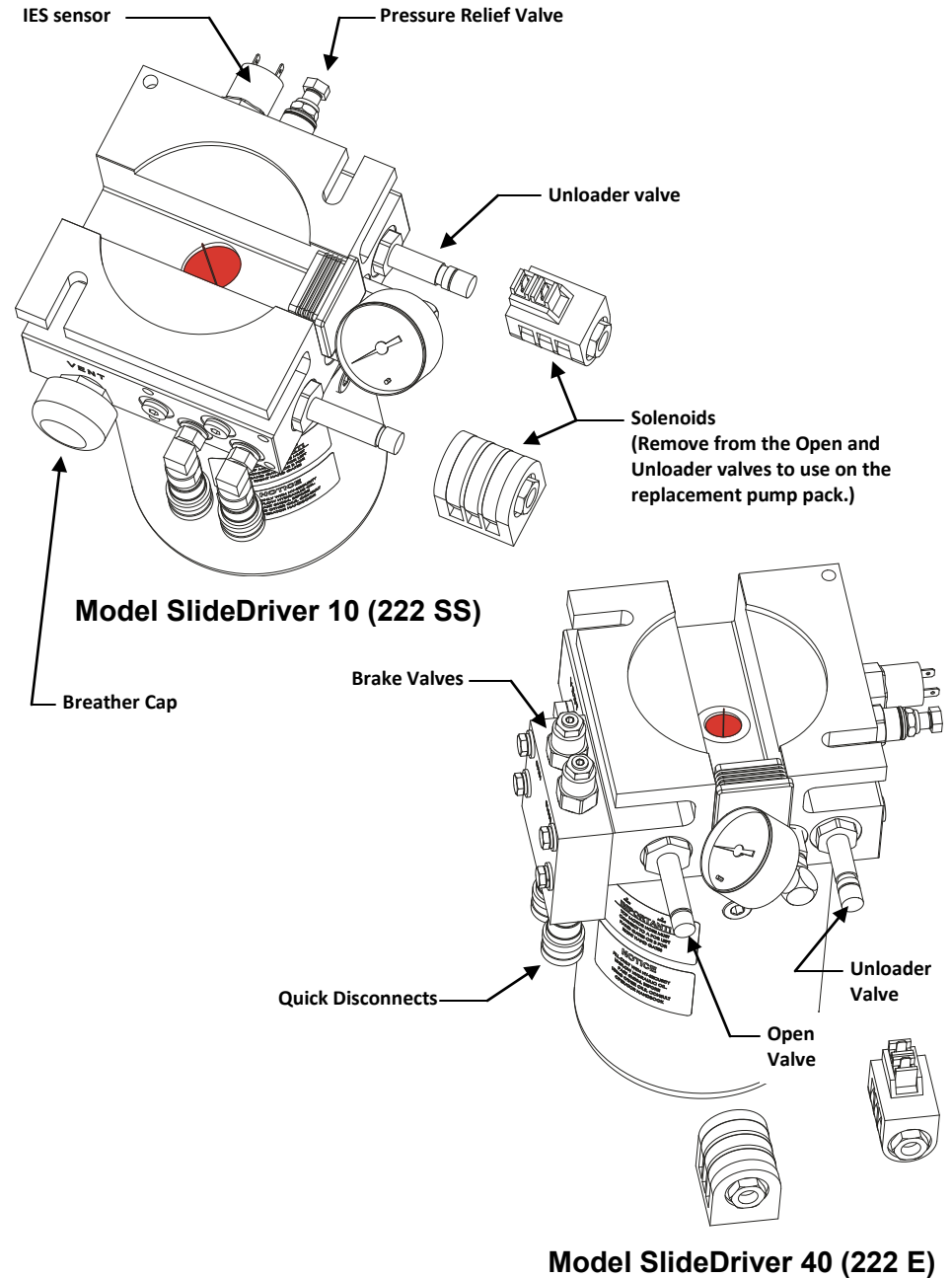
If you are replacing a model SlideDriver 40 pump pack, you will need to adjust the brake valves to ensure smooth stopping as the brakes are not preset for your machine.

With proper brake adjustment, the limit ramps stop one to two inches from the drive wheels without the gate contacting the end stops. The valve on the left controls braking in the open direction and the valve on the right controls the close direction.

To adjust the brakes, take the following steps:

1. To release the brake valve's Allen screw, use a 5/32-inch Allen wrench to hold it steady while loosening the 9/16-inch jamb nut.
2. Turning the Allen screw clockwise will result in less braking. Counter-clockwise will result in more braking. If the brakes are fully clockwise and the gate still stops with the ramp further than 2 inches from the drive wheels turn the adjuster ¼ turn counter clockwise then lock it down. This is minimum braking force.
3. It should not be necessary to check the fluid, as the unit should have come from the factory full of fluid and ready to go.

Maximum Relief Pressure equals 1000 PSI





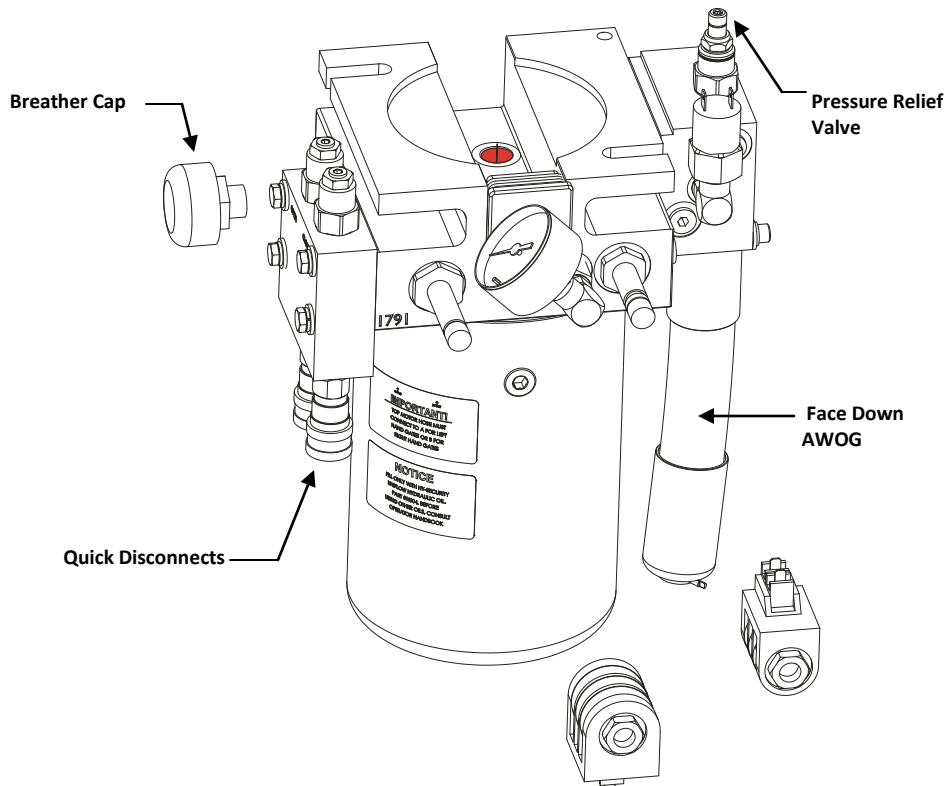
**Model: SlideDriver 30F/40F/80/200 (222 EX/EX1.7, X1, 444)**

Your replacement pump pack may have either an upward facing or downward facing (inverted) AWOG tube. The complete pump packs are interchangeable, *but some of the individual components may not be.* Contact HySecurity Technical Support before substituting parts between different styles of pump packs.

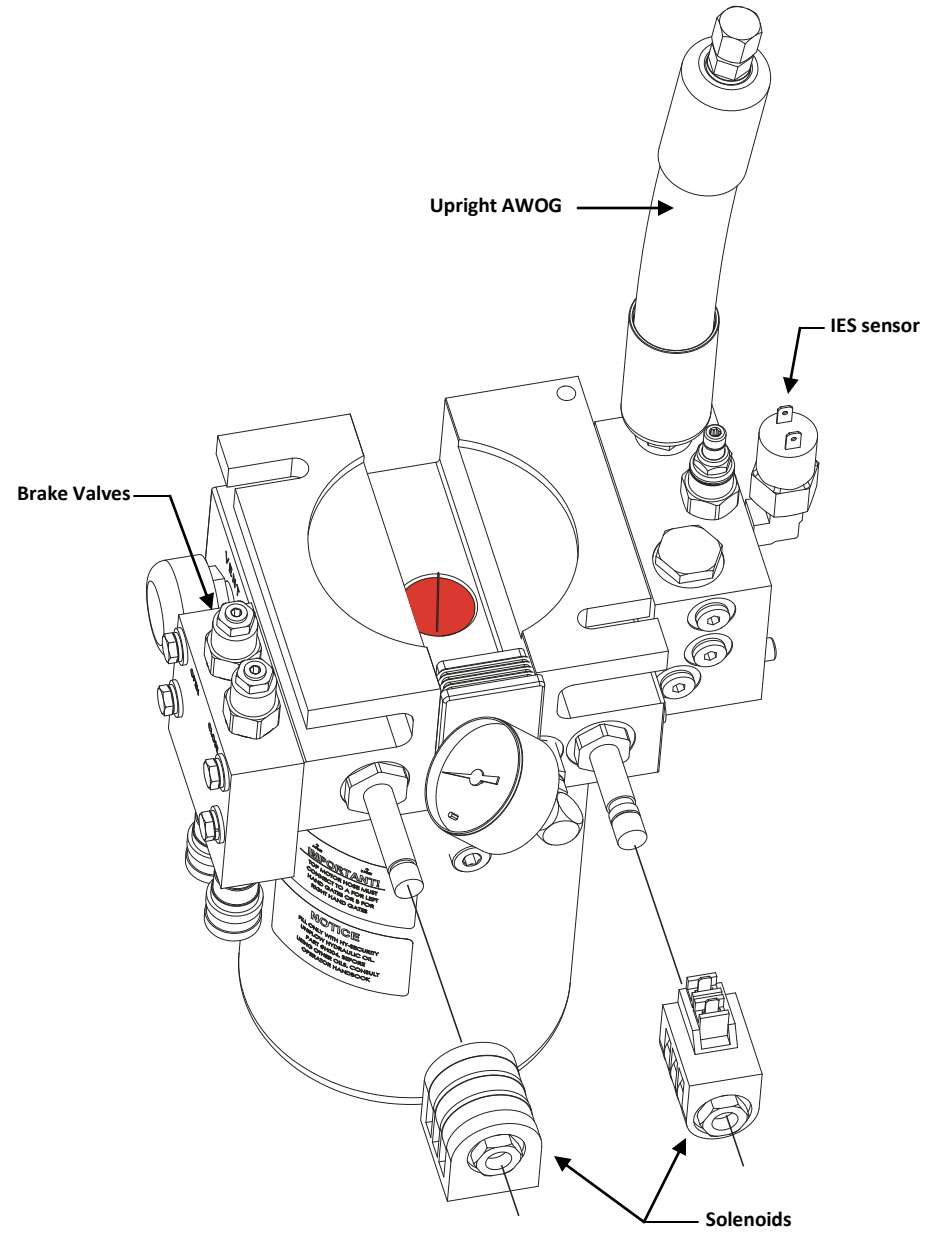
**NOTE:** Remember to adjust the brake valves. Follow the steps in SlideDriver 40 (222 E) on page 8.

Maximum Relief Pressure equals 1350 PSI.  
(The exception being SD 200/444 = 2000 PSI)

**NOTE:** An upright AWOG will need to be bled.



**Model SlideDriver 30F/40F (222 EX/EX1.7)**



**Model with Upright AWOG**  
Pre-April 2008

## Maintenance

For Maintenance or Troubleshooting issues, refer to the operator's *Installation and Maintenance Manual*. If you do not have a copy of the manual, it is available on the HySecurity website.

## Technical Support

- For technical support, call your installer or authorized HySecurity distributor. Obtain the serial number of your operator before calling. For the name of a distributor near you, call HySecurity at 800-321-9947.
- For information about HySecurity training for installers, maintenance personnel and end users, refer to the company website at [www.hysecurity.com](http://www.hysecurity.com) or call 800-321-9947.