



HY-TOWER SL & DL

COVERING SYSTEMS

TROUBLESHOOTING

HY-TOWER and HY-TOWER SL

1. Pump motor is not working. What should I do?

- A) Make sure truck's battery switch is on.
- B) Make sure Hy-tower kill switch (on dash mount warning light plate) is in "On" position.
- C) Make sure positive and negative leads of battery cable are connected at both battery and pump motor. (Refer to installation instructions for diagram or call DONOVAN AT 1-800-327-8287.
- D) If cables are all properly connected, but motor is not working, remove the positive battery cable lead from the lower 5/16" stud on the motor solenoid. Attach the positive lead to the top 5/16" stud on the motor solenoid. This bypasses the solenoid. Now, try operating the motor. If it operates, you need to replace the solenoid. If it does not operate, reattach the positive lead to the lower 5/16" stud on the solenoid and proceed to Step E.
- E) (Hy-Tower DL only) Remove the cap at the bottom of the hand valve assembly. Make sure the spring is in tact and not stuck to one of the contacts. Remove any black carbon build up on contacts.
- F) If still not working, call DONOVAN AT 1-800-327-8287.

2. The motor is making a grinding sound, but the Hy-Tower is still raising and lowering normally. What should I do?

- A) The motor bushing may be dry. To grease, remove the two 6" screws from the top of the motor. Then remove the thin black lid at the very top of the motor. Turn the thin black lid over and apply wheel bearing grease to the brass bushing in the lid. Replace the lid and secure with the 6" screws.
- B) If still making noise. DONOVAN AT 1-800-327-8287

3. The pump is making a lot of noise and seems to be slowing down. What should I do?

- A) Remove breather cap from fill tube and check fluid level. If the truck is on level ground with the Hy-Tower completely lowered, you should be able to see fluid in the fill tube. If not, add Dextron II automatic transmission fluid until you can see the fluid level in the fill tube. Replace the black breather cap and try operating the pump. If the noise persists, go to Step B.
- B) The suction screen in the pump reservoir may be clogged. This suction screen is located on the end of the suction tube inside the pump reservoir. To unclog, you must



HY-TOWER SL & DL

COVERING SYSTEMS

TROUBLESHOOTING

remove the screws holding the motor and pump sections together. Drop the reservoir down and inspect/clean the suction tube screen. Reattach the pump reservoir and test.

C) If problem remains CALL DONOVAN AT 1-800-327-8287.

4. The motor appears to be working, but the tower is not raising or lowering. What should I do?

- A) Make sure there is enough fluid in the pump reservoir. (With the tower in the full rest (lowest) position, you should be able to remove the fill tube breather cap and see fluid.) If not, add automatic transmission fluid until you can begin to see it in the bottom of the fill tube.)
- B) Make sure there are not leaks where the hydraulic hoses connect to the cylinder and to the pump.
- C) Make sure the hydraulic fittings on the cylinder and pump are not leaking.
- D) Make sure the hydraulic hoses are not leaking.
- E) Remove the hydraulic hoses from the cylinder and try to operate the pump. If the fluid is moving, your problem may be with the cylinder or the Hy-Tower unit itself.
- F) You may insert pressure gauges at the valves coming off of the pump. You should have 1750 psi max operating pressure. If not, please notify DONOVAN AT 1-800-327-8287.
- G) If you have 1750 psi at the pump, you will need to raise the tower with a forklift to inspect the cylinder ram and the tower legs. (DO NOT STAND DIRECTLY UNDER THE TOWER WHEN PERFORMING THIS CHECK.) Any bending or binding may be preventing the tower from raising and lowering. The pump motor has a pressure relief valve set at 1750 max psi. Bending or binding may cause the pressure relief to kick in. (CALL DONOVAN AT 800-327-8287 IF YOU NEED ASSISTANCE.)

5. The top section (motor) and bottom section (pump) are separating from each other when I operate the pump. What should I do?

- A) Check your fill tube. You should have a black breather cap screwed into the fill tube. The breather cap should not be screwed completely into the fill tube. It should only be screwed in until the threads become snug.
- B) If you have a fill plug (screws into the fill tube completely and rests flush with top of the tube with no way for pressure to escape) in your fill tube, you must remove the fill plug and replace with a breather cap.
- C) When your Hy-tower unit is shipped out by Donovan, it has a fill plug in the fill tube for shipping only. A black breather cap is supplied with the unit. During installation, it is



HY-TOWER SL & DL

COVERING SYSTEMS

TROUBLESHOOTING

the responsibility of the installer to replace the plug with a breather cap once the pump has been filled.

6. Hydraulic fluid is coming out through the breather cap. What should I do?

- A) Your reservoir may be overfilled. Keep operating the Hy-Tower and wipe of the excess fluid. Repeat until overflow stops.
- B) Also, ensure that when you are lowering the Hy-Tower, you are pushing the hand lever all of the way to the side. If you are, you should hear the pump motor running. If you do not hear the motor, you are not engaging the pump motor to allow the fluid to pass through the pump and refill the reservoir. The Hy-Tower will lower by gravity, but the fluid will come out of the breather cap because it cannot get into the reservoir.

7. Grease on the Hy-Tower seems very thin.

- A) This is normal. We are using a new, improved grease that is rated -60° to + 300° F. It will not thicken up in temperatures that fall in this range. People are used to slathering on the grease. However, with this type of grease you don't need as much, so the excess will run off.

8. The Hy-Tower SL housing and roller bar are not going all the way down. It is not resting on the rubber bumpers.

- A) Your cables may need adjustments. Using the nuts at the threaded end of the cables, tighten or loosen cables as needed to lower the housing onto the bumpers. If you need assistance, call DONOVAN AT 1-800-327-8287.

NOTE: If you tighten the lower nut too tight, you will see the inner extrusion start to raise. If this happens, loosen lower nut until inner extrusion is lowered fully and there is still tension on the cable.

- B) If this does not solve your problem, call DONOVAN AT 1-800-327-8287.



HY-TOWER SL & DL

COVERING SYSTEMS

TROUBLESHOOTING

9. The Hy-Tower pulley weld has given out. (Hy-Tower SL only)

- A) If you have had your Hy-Tower SL less than one year and you registered your warranty, call Donovan for a warranty replacement or repair at 1-800-327-8287.
- B) If your Hy-Tower is more than 1 year old and you are capable of aluminum welding, you can Tig weld at 200-205 AMPS using 53-65 aluminum.
- C) If you don't want to repair the pulley on your own, call DONOVAN AT 1-800-327-8287.

10. My Hy-Tower is sticking and won't come down freely. What can I do?

- A) If the unit is new, there may be a weld burr that is causing some binding. Look at the grease on the legs for any signs of a wear pattern. Operate the Hy-Tower up and down to see if it frees itself.
- B) If it does not free up, or if your Hy-Tower is not new, you may have some debris caught between the telescopic legs of the unit.

Raise the tower completely and check for debris or wear spots in the grease.

Remove debris and apply grease (DO NOT USE "Never Seize" or similar compound).

Slowly lower and raise to work in the grease. Repeat until unit operates smoothly.

C) If Hy-Tower is still hanging up:

- 1.) Make sure the Hy-Tower is raised all the way up and support it with a 2' x 4'.
- 2.) Check to see if the chain guard is pressed against the sprocket. If so, you must bend the chain guard back so it no longer presses against the sprocket.
- 3.) Lower the tower.
- 4.) Look up through the bottom of the chain guard. Check to see if the "J" bracket below the sprocket is bent and pressed against the chain. If so, you will need to bend the "J" bracket back so it no longer presses against the chain.

Troubleshooting



HY-TOWER SL & DL

COVERING SYSTEMS

TROUBLESHOOTING

11. We received a new roller bar and it's too short!

- A) The roller bar shaft is actually made of a male and a female shaft that are telescopic. When we ship roller bars separately, we slide the shafts in close to the end cap for easier shipment and to prevent damage. To install, simply loosen the set screws on the locking collar of each roller end cap. Slowly ease the shaft out to 3"-5" from the end cap. This will give you enough of the shaft at each end to fit the roller bar into the housing. See our Roller Bar Replacement instructions if you need more help installing the roller bar.

12. Our tarp is not winding up straight.

- A) Pull tarp all the way out and re-roll the tarp up guiding the tarp with the rope.

13. The tarp is too hard to pull out.

- A) You may take tension off of the spring with a 1" wrench by using the ratchet tensioner located inside the housing endplate on the driver's side (US) of the housing. Follow the instructions on the sticker on the side of the housing, or call **DONOVAN AT 1-800-327-8287**.

14. The tarp is unwinding as I drive down the road.

- A) Make sure that your tarp is a Donovan Hy-Tower tarp. We use a material that has the right combination of strength and ability to allow air to flow through.
- B) If you are using a Donovan Hy-Tower tarp, you may simply need to add tension to your roller bar spring. You can easily do this with a 1" wrench by using the ratchet tensioner located inside the housing endplate on the driver's side (US) of the housing. Follow the instructions on page 57.
- C) If this does not solve your problem, you may have a damaged spring. Call **DONOVAN AT 1-800-327-8287**.

15. The tarp is sagging into the load when I pull it out.

- A) See 14 above.

1-800-327-8287

TROUBLE SHOOTING SHEET HY-TOWER

Grease on my new Hy-tower legs seems very thin and appears to run off without adhering.

This is normal. We are using new, improved grease that is rated -60 to 300+ Fahrenheit. It will not thicken up in temperatures that fall in this range. People are used to slathering on the grease. However, with this type of grease you don't need as much, so the excess will run off. But rest assured, the grease is doing its job!

****VERY IMPORTANT ******

You must keep the Hy-Tower SL telescopic legs well greased at all times for proper operation ("Mag 1 Lubridine" grease is recommended for both the Hy-Tower DL and the Hy-Tower SL) However, do not use "never seize" type compounds on the telescoping legs. "Never Seize" like compounds will cause the telescoping legs to stick while the housing is being lowered.

Hy-Tower SL is stuck in the air!

To get the Hy-Tower down if stuck and nothing is binding (If any cables are loose then you have binding):

Have a container ready!

Disconnect the hydraulic hose that connects to the cylinder at pump end and place in the container – hydraulic fluid will pour out!

**** DO NOT GET UNDERNEATH THE TOWER AS IT MAY COME DOWN VERY FAST!!! ****

If Hy-Tower tower is going up OK but drifting down:

There must be a leak somewhere.

- 1.) check the fittings, cylinder and hoses
- 2.) make sure there is pipe dope around the fittings
- 3.) see if there is any hydraulic fluid around the fittings on hoses and cylinders
- 4.) Make sure there is no damage to the fittings, hoses or cylinders
- 5.) Make sure fittings are tight.

Note 1: If no leak is found and drifting continues to be a problem, it could be due to an internal leak in the motor or cylinder. Disconnect lower hose from hydraulic cylinder and install pressure gauge with end of hose plugged. Pressurize this line and watch pressure gauge. If pressure does not hold steady (begins to drop) then the leak is in the hydraulic pump – replace pump. If pressure holds steady (does not change) then the leak is in the hydraulic cylinder – replace cylinder.

The Hy-Tower SL housing and roller bar are not going all the way down. It is not resting on the rubber bumpers.

Your cables may need adjustments. The Upper and Lower Pulley cable replacement instructions will explain what you need to do to correct this problem. Call Donovan to have the directions faxed or e-mailed to you.

NOTE: If you tighten the lower nut too tight, you will see the inner extrusion start to raise. If this happens, loosen lower nut until inner extrusion is lowered fully and there is still tension on the cable.

You might also need to adjust the steel plates.

Note 2: If both cables are loose, then there could be something that has fallen down inside the system and the legs are now sitting on the object. You will have to take the housing off to be able to see if there is something down inside the legs.

The Hy-Tower SL alarm is staying on all the time.

The cables need adjustment. Call Donovan for directions on adjustment.

Note 3: Check the magnets on the base assembly. If they are more than 5/8" apart then you will need to adjust the legs or shim the magnets.

Hy-tower (SL) alarm is not going off.

Note 4: Make sure the wires going to the magnets are connected. Make sure you have a good ground on the short cable coming from the magnet and attached to the base assembly. Check that the wires are connected to the cutoff switch. Check that the power supply to the alarm is connected to a good 12 volt source.

The Hy-Tower SL tower won't raise or lower but there is nothing binding in the legs and motor runs.

One of the coils on the pump may be malfunctioning. Swap the coils on the pump and see if it works in the direction that it wasn't working. If it does operate, then one of the coils is bad.

Facing the pump – right coil is up
Left coil is down Coil part #3833

There is an obstruction in the way of the cylinder on the Hy-Tower DL.

You can off set the cylinder 2"-3" in either direction if there is an obstruction. You would need to re-drill the holes.

One side of the 12' Hy-Tower DL is stuck. One side goes up and the other does not.

In the winter, frost and snow may have melted and drained into one or more of the legs and then froze. Use a blow torch or if possible, bring the truck into the shop to melt the ice.

The last stage of the 12' Hy-Tower DL won't go down and the chain slacks.

1.) Check the grease wear pattern. Re-grease ("Mag 1 Lubridine" grease is recommended) (and try running up and down a few times to get out the welding burrs.

If Hy-Tower is still hanging up:

- 1.) Make sure the Hy-Tower is raised all the way up and support it with a 2' x 4'.
- 2.) Check to see if the chain guard is pressed against the sprocket.
- 3.) Check to see if the "J" Bracket on the bottom is bent and pressed against the chain. If so, you will need to unbend the "J" bracket or you will need to cut off the chain guard and move out.

The Hy-Tower is making a loud noise and seems to be slowing down.

The suction screen on the pump may be clogged. This suction screen is located on the tube that sucks the fluid out of the reservoir. The packing material from the cylinder may have loosened up and may have been sucked up.

The Hy-Tower SL pulley weld has given out.

Can Tig weld at 200-205 AMPS using 53-65 aluminum. Call Donovan for instructions.

We received a new roller bar and it's too short!

You will need to loosen the set screw and adjust the shaft.

Our tarp is not winding up straight.

Pull tarp all the way out and re-roll the tarp guiding the tarp with the rope.
Make sure the tarp is square.

Can you mount a Hy-Tower DL to the tilt frame?

Yes, you will need additional gusseting and extra cable.

- a.) Make sure you brace it well.
- b.) Need to run the lines for the pump and alarm down the tilt frame and back. We recommend you get 2" vacuum tubing (like pool hose) and put the cables inside to protect.
- c.) Make sure the pump reservoir always is at least ½ full.

**** Can not mount Hy-Tower SL to the tilt frame ******

The tarp is getting snagged on the load.

Make sure Hy-Tower is fully raised.
Make sure the driver is standing far enough back from the end of the truck.
Also make sure there is enough tension on the tarp.

The pump stopped working.

See Pump trouble shooting sheet. Call Donovan for information.

Oil is spraying out of pump

Make sure red shipping plug has been replaced by the black breather cap.

How is the best way to use the Hy-Tower with a 40 yard container?

Level the load as much as possible.

Make sure the tower is extended fully to 12' or 15'.

Make sure there is enough tension on the tarp.

Stand far enough back from the end of the container.

The tarp is too hard to pull out.

You need to adjust the tension (see installation instructions).

The Hy-Tower does not operate.

- 1.) Make sure the kill switch is on.
- 2.) Make sure the positive and negative leads are attached properly to the pump. See Diagram
- 3.) see Pump trouble shooting sheets

I think the roller bar is in backwards.

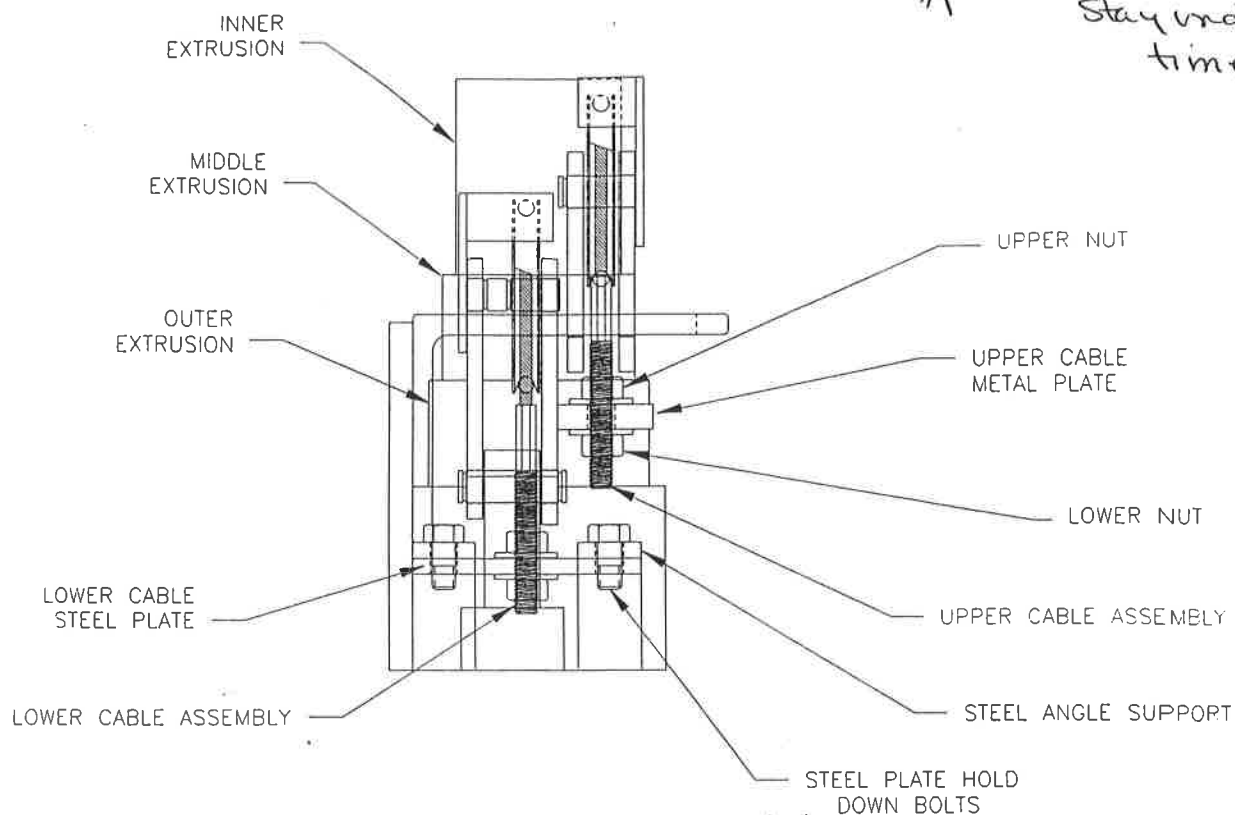
Check and make sure the sticker is on the driver's side (ratchet side). The arrow on the label should be pointing up and over.

My exhaust stack is in the way of mounting the Hy-Tower.

You need to add an elbow in the stack to divert the stack to the side so you can mount the Hy-Tower.

CALL FOR INSTRUCTIONS

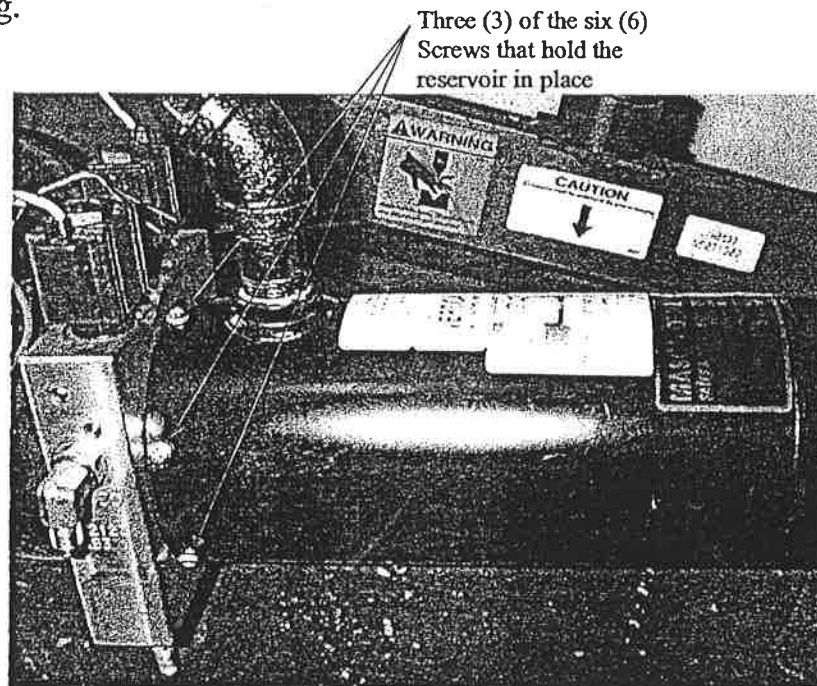
Changing out the tarp
Replacing the Hy-Tower Roller Bar Spring
Roller bar replacement Instructions
Hy-Tower SL cable change out directions
Hy-Tower SL extrusion replacement direction
Pump Trouble Shooting Sheet
Pump Wiring Diagram
Cable Adjustment Sheet
Hy-Tower Pulley Weld Directions



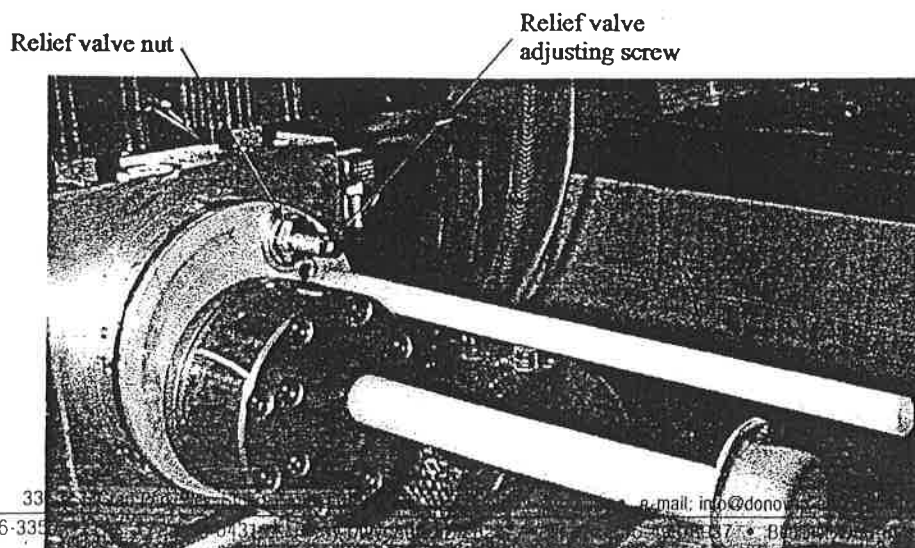
1. Loosen the nut on the lower cable assembly above the lower cable steel plate.
2. Adjusting the nut below the lower cable steel plate will cause the upper pulley to raise (screw nut on threads) or lower (screw nut off threads).
3. Once the upper pulley is in the correct position tighten the upper nut back against the lower cable steel plate.
4. If there is not enough adjustment available on the lower cable, then you can place the lower cable steel plate on top of the two steel angle supports instead of below the two angles by removing the two steel plate hold down bolts.
5. The inner extrusion can also be raised or lowered using the same procedure on the upper cable (except you can not move the upper cable metal plate).
6. If you still do not get the proper adjustments for the housing to rest on the rubber bumpers, then you can add a spacer below the rubber bumpers to raise the bumpers up higher.

Hydraulic pump pressure adjustment instructions

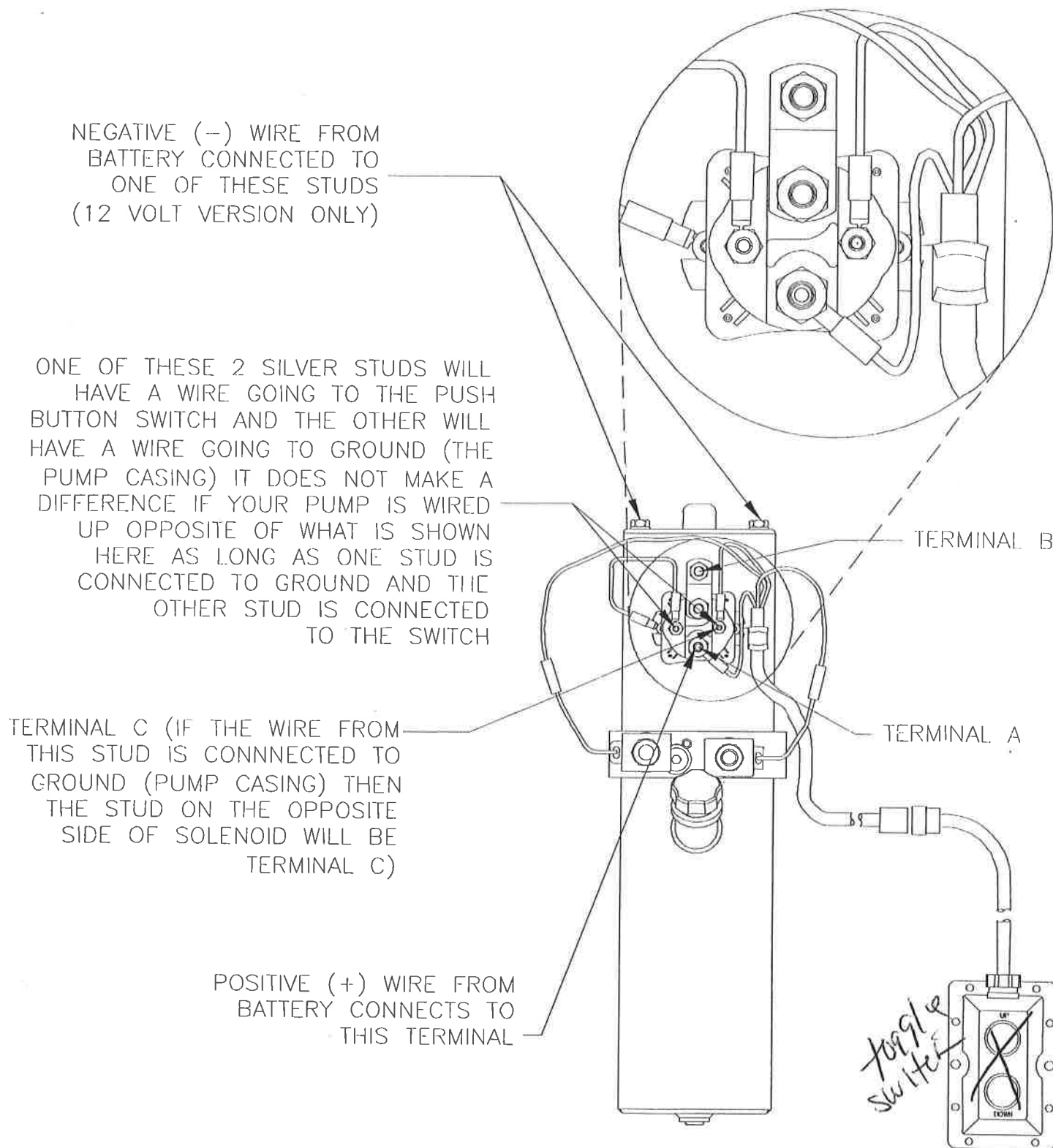
- Remove the six screws that hold the reservoir in place (see picture below).
- Remove the reservoir. There is a rubber o-ring that seals the reservoir, so it will take some force to remove. We recommend using a rubber mallet to hit end of reservoir and then put tip of screw driver in gap on the opposite side at top of reservoir to prevent gap from closing.



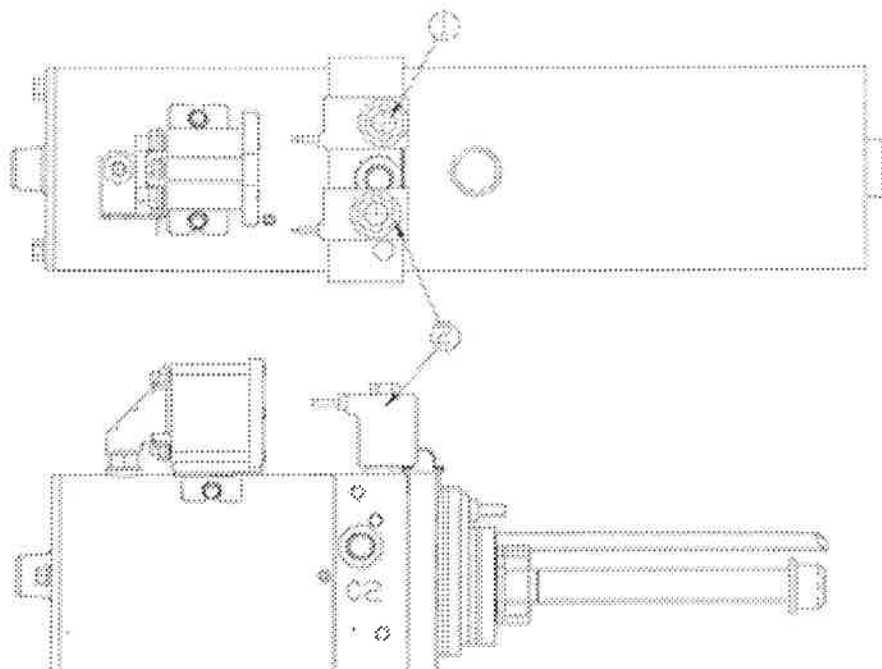
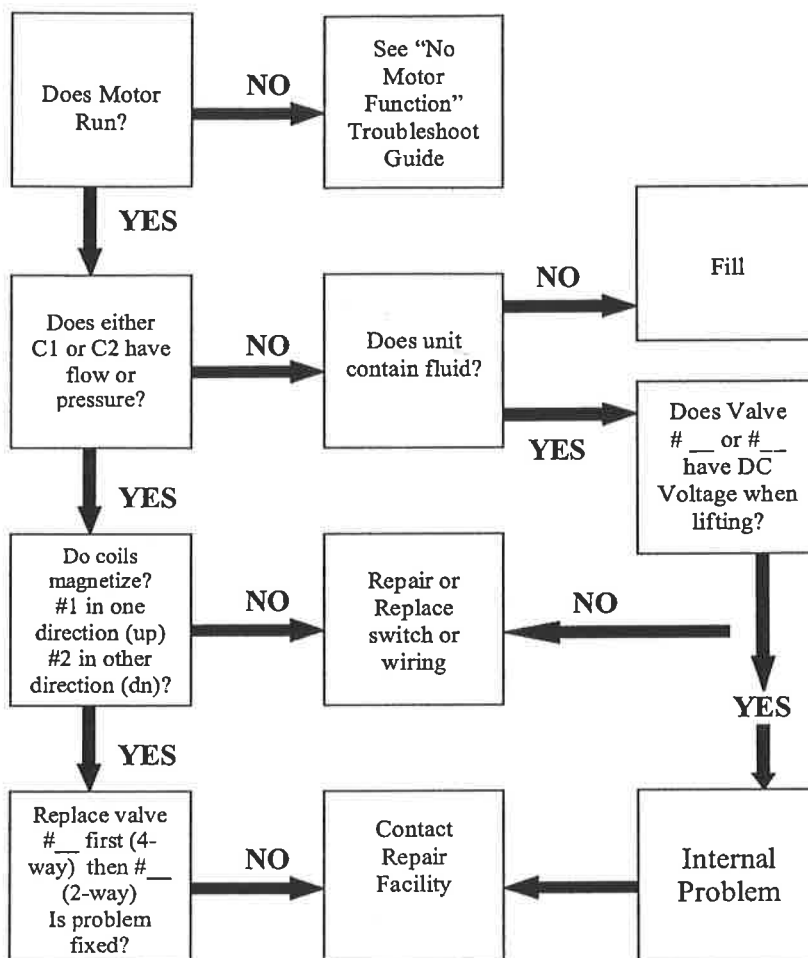
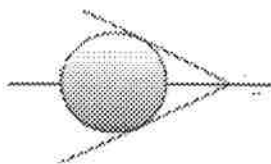
- Loosen the relief valve nut (see picture below)
- Turn the relief valve adjusting screw clockwise to increase pressure (1/8 turn will increase pressure 100-200 psig).
- Hold adjusting screw in place and tighten down relief valve nut.
- Reinstall reservoir and secure in place with six screws removed earlier.



DONOVAN 12 VOLT HY-TOWER/SIDEWINDER PUMP TROUBLE SHOOTING GUIDE



Verify that the pump is wired up as shown above. If your pump is not wired up correctly it will not work properly, and it will be difficult to continue with the troubleshooting procedure.



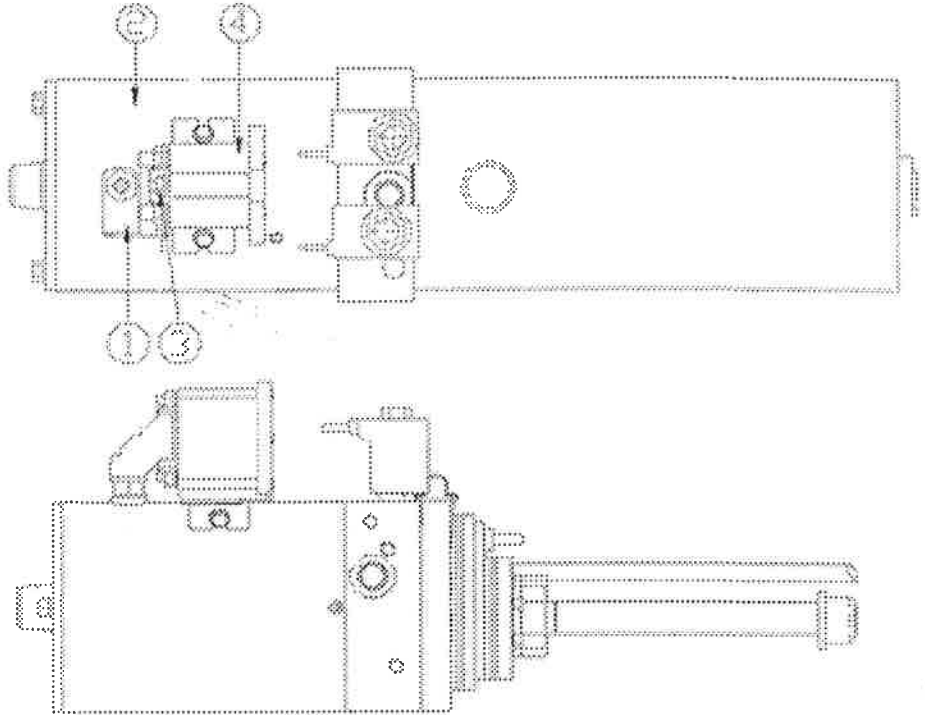
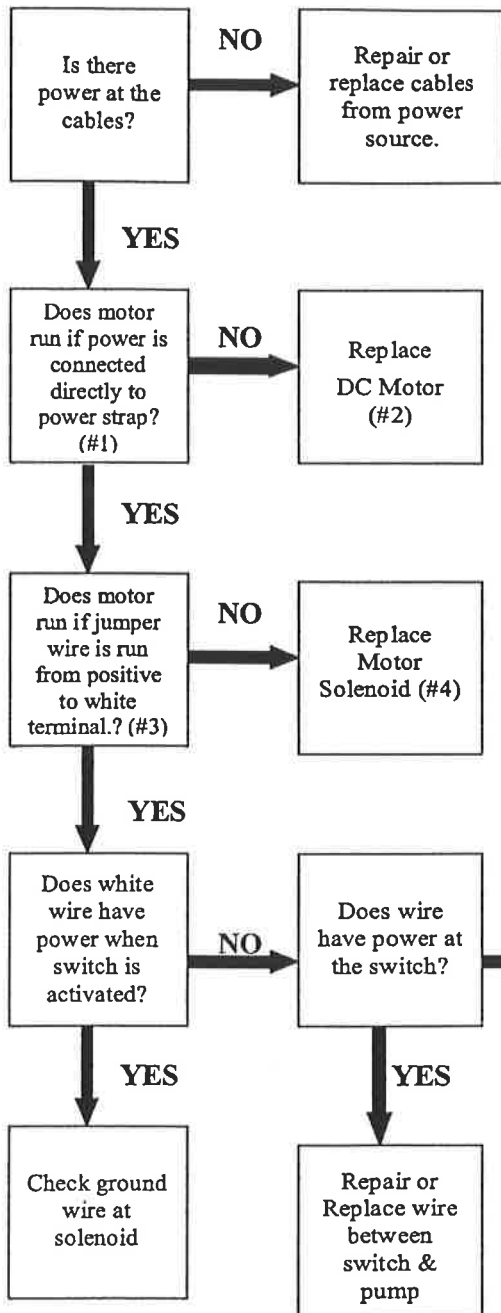
Most Common Problems

- Bad Ground
- Bent Valves
- Low Voltage
- Bad Switch
- Dirt in Valves
- Bad Quick Disconnects (if Equipped)

For questions not answered herein, please contact our technical support: 800.653.1382

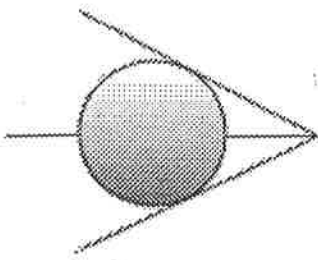
No Motor Function

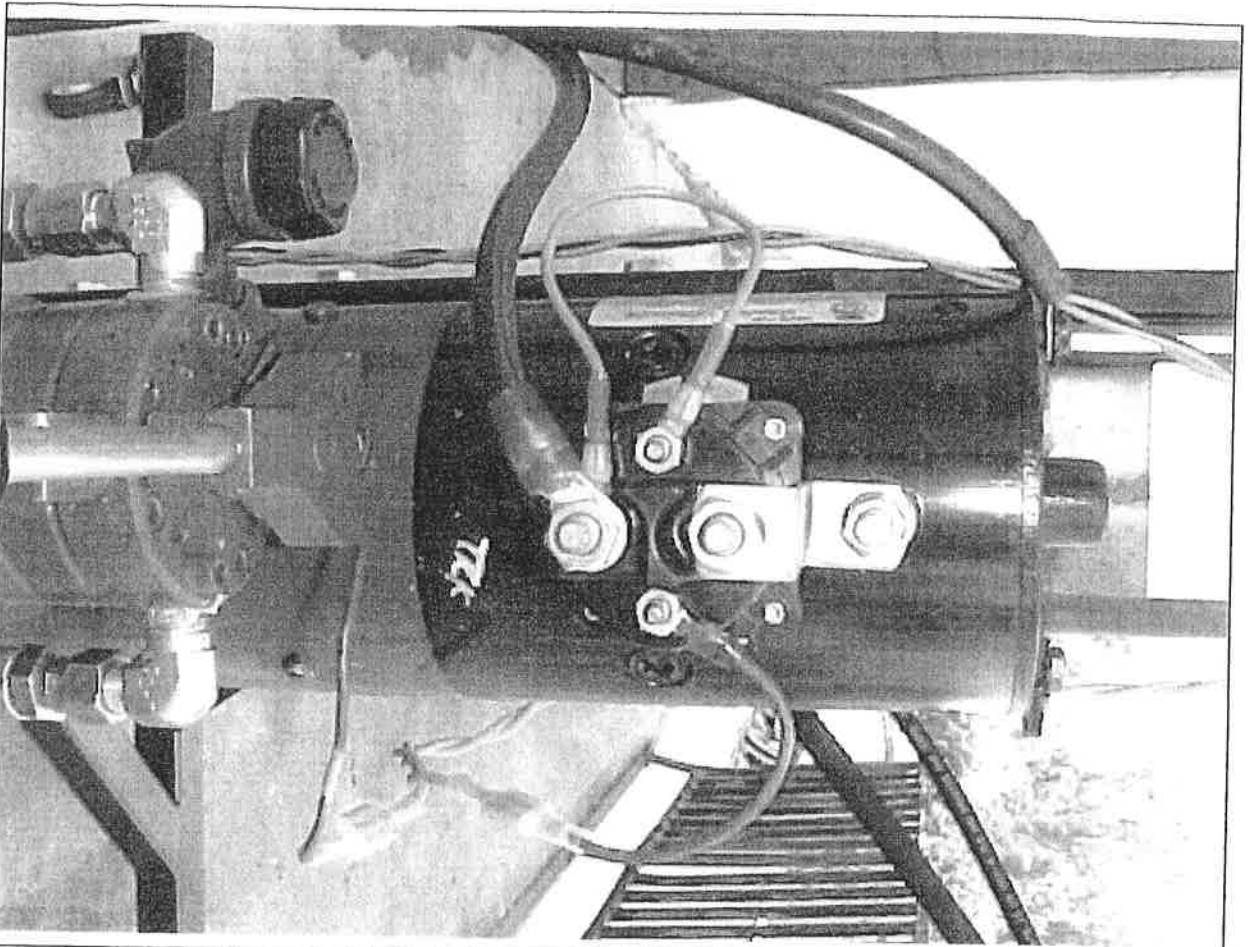
TROUBLE SHOOT GUIDE



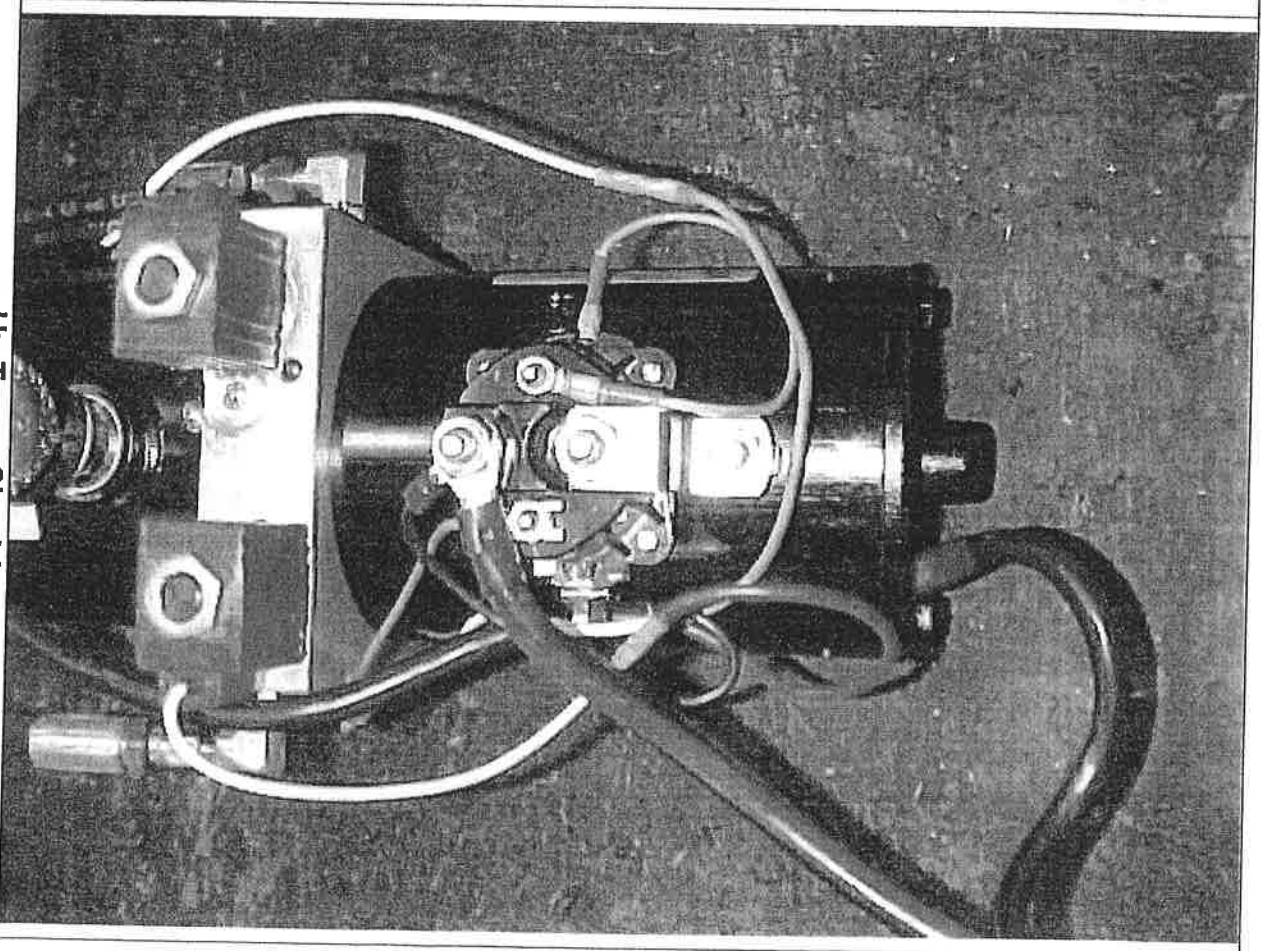
Most Common Problems

- Bad Ground
- Low Voltage
- Dirt in Valves
- Bent Valves
- Bad Switch
- Bad Quick Disconnects (if Equipped)





Hy-Tower DL wiring



Hy-Tower SL wiring



Addendum for positive grounded vehicles

NOTE: Donovan's installation instructions are written for installations performed on trucks with negative ground (earth) electrical systems.

If you have a positive ground (earth) vehicle, you must follow the modifications listed below:

- If the instructions direct you to connect a wire to ground, connect this wire to the truck somewhere, or the positive terminal on the battery.
- If the instructions direct you to connect a wire to power, connect this wire to the negative terminal on the battery.
- If the instructions direct you to connect a wire to the positive terminal on the battery, connect this wire to the negative terminal on the battery.
- If the instructions direct you to connect a wire to the negative terminal on the battery, connect this wire to the positive terminal on the battery.
- If the instructions direct you to connect a wire to a 12-volt or 24-volt DC source, connect this wire to the negative terminal on the battery, or to a negative power source (in the fuse box).

NOTE: It is not necessary to modify any wires already connected to the unit as long as you hook up the wires that supply power to the unit as directed in the above note.

DONOVAN 12 VOLT HY-TOWER/SIDEWINDER PUMP TROUBLE SHOOTING GUIDE

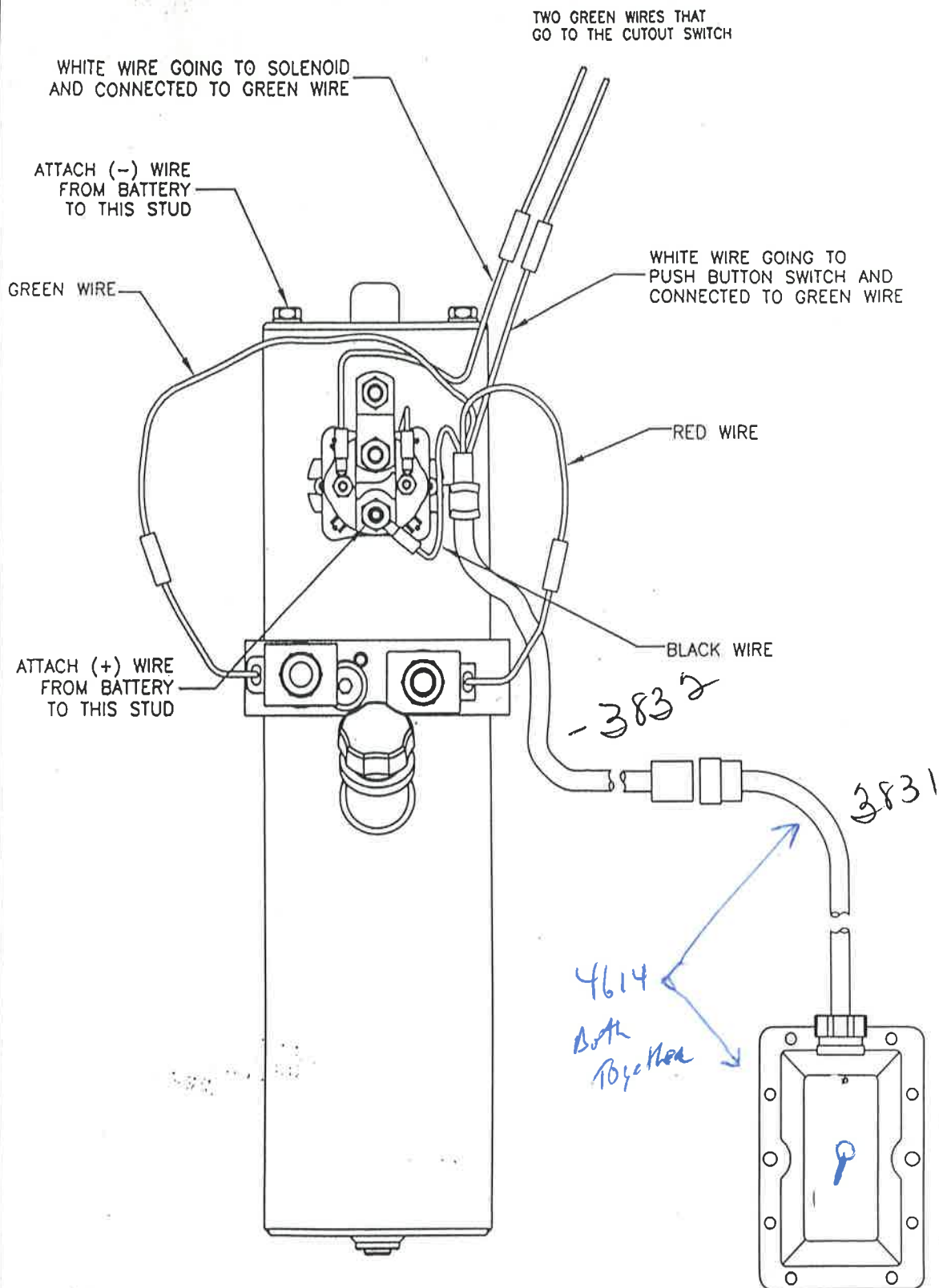
CAUTION:ALWAYS REMOVE POSITIVE WIRE (BLACK WITH RED STRIPE) FROM BATTERY PRIOR TO MOVING WIRES ON SOLENOID.

1. Make sure that your truck's battery kill switch is not engaged.
2. Make sure your Hy-Tower cutout switch is in the "on" position.
3. Make sure the electrical wires to the hydraulic pump are properly connected to the truck's battery, and the terminals are not corroded.
4. After doing these initial checks try to start the unit. If the unit still does not run continue with the following troubleshooting procedure.
5. Using a voltage meter, test the power going to the pump to verify that you have 12 volts being supplied to the pump (measure from terminal A to terminal B). Do this test while pushing one of the two buttons to start the pump, then while pushing the other button, and finally check voltage when no buttons are being pushed. If you do not have twelve volts being supplied to the pump for all three tests, then you have a problem with your wiring or your battery. If the voltage drops when pushing the buttons, then you have a bad battery or a loose wire. Continue on only if you have twelve volts and your pump still does not start.
6. Disconnect positive lead (black wire with red stripe) for the HY-TOWER pump from the battery.
7. Disconnect positive lead (black wire with red stripe) from terminal A and attach it to terminal B (see drawing above).
8. Connect positive lead back up to battery. If pump starts running then you know that the pump is working properly. You now have isolated the problem to the solenoid or the electrical wiring. (If the pump does not run, then you have a bad pump that needs to be replaced. Contact Donovan Enterprises at **1-800-327-8287** to make arrangements for another hydraulic pump.)
9. If your pump started running in step 8, then the next step is to disconnect the positive lead from the battery.
10. Remove the positive lead from terminal B (you connected it to this terminal in step 7) and connect it to terminal C.
11. Connect positive lead back up to battery. If pump starts running then you know that the pump and solenoid are both working properly. This means that you have a problem with the wiring. Check all the connections at the battery and the pump. Also verify that wire between the battery and the pump is in good condition.
12. Reconnect the pump to the battery as indicated on page one.

To get Hy-Tower
down if stuck &
nothing binding -

disconnect hydraulic
hose that connects
to cylinder at
pump end & put
end in container - hyd
fluid will leak out!

Do not get underneath
it & pull may come
crashing down



HYTOWER (SL) 12
VOLT PUMP (M-3351)