ShoreStation® SERVICE BULLETIN

Troubleshooting Guide ShoreStation Hydraulic Hoists with Environmentally Friendly Bio-degradeable Hydraulic Oil

*For pumps equipped with **Environmentally Friendly Bio-degradeable Hydraulic Oil**. (For ShoreStation hydraulic hoists manufactured with serial number after ...*

Model	Hydraulic Lift Tube Serial Number
SSV40120 HYD	1011
SSV60120 HYD	1408
SSV90132 HYD	1065
SSV150144 HYD	1011

NOTE: Some of this information is specific to the type of power (AC or DC) used to operate the hoist. Be sure to refer to the proper section for your hoist.

General Troubleshooting – Nonelectrical Issues

Hydraulic Pump and Connections

1. Pumps are shipped with a solid reservoir plug that must be replaced with the provided breather cap before use. Failure to do so will ruin the seal between the motor and the pump.
2. Before operating the pump check that all hydraulic hose connections have been securely tightened to prevent oil spills.
3. With the hoist in the fully raised position, check that the oil reservoir is filled to the proper level, 1” minimum to 2" maximum from the top of the reservoir. Overfilling may cause oil to be forced out of the breather cap. IMPORTANT: to eliminate possible overfilling, the oil level must always be checked and filled when the hoist platform is fully raised.
4. Check that the hydraulic quick-connect couplers are properly mated and secured to ensure unobstructed oil flow.

Hoist Structure

1. Recheck the hoist component parts to make sure they have been properly assembled before operating the hoist.
2. Check to make sure all bolts and fasteners have been properly tightened.
3. Check the platform clearance to make sure the hoist platform will move up and down freely, without binding. (NOTE: to properly check platform clearance the hoist must be on concrete or level ground.)

Hydraulic System - Important Information

Submerged Pump

In the event that the hydraulic pump has been submerged in water, **DO NOT** operate unit until all water and contamination have been removed.

Remove oil from the tank with either a suction gun or transfer pump and refill with ***Royal Purple Bio-degradeable Marine Hydraulic Oil AW46.***
NOTE: Always dispose of contaminated oil properly at a reclaim station.

Oil Grade

This hydraulic pump has been shipped with ***Environmentally Friendly Bio-degradeable Hydraulic Oil***. Always use when adding or replacing oil. See your ***ShoreStation*** dealer for availability.

APPROXIMATE OIL CAPACITIES PER HOIST:

MODEL 40120HYD	6.5 QTS.
MODEL 60120HYD	7.5 QTS.
MODEL 90132HYD	11.5 QTS.
MODEL 150144HYD	22.0 QTS.

Oil Change Schedule

This hydraulic system is filled with superior quality ***Environmentally Friendly Bio-degradeable Hydraulic Oil***. Normal change time for this oil is five (5) years. This will vary however depending on whether it has been contaminated with water or some other foreign material. The ***Environmentally Friendly Bio-degradeable Hydraulic Oil*** is normally clear in appearance. Should the oil have a yellowish or dark coloring, change oil. If the oil has a white, milky color it has been comtaminated with water. If condaminated it must be changed. Remove oil from the tank using the procedure of changing oil below and refill with ***Royal Purple Bio-degradeable Marine Hydraulic Oil AW46.*** See your ***ShoreStation*** dealer for availability.
NOTE: Always dispose of contaminated oil properly at a reclaim station.

Procedure for Changing Oil

To change the oil in your hydraulic system, follow these procedures:

1. With no boat or load on the hoist, raise the platform to the maximum height or fully-raised position.

2. Remove all of the oil from the pump reservoir with either a suction gun, or a transfer pump. Make sure all of the current oil in the pump is removed.

3. Refill the pump reservoir with new bio-degradable oil. **DO NOT RUN PUMP**.

4. Unhook the hose with the female coupler from the pump.

5. Remove the female coupler end from the hose and place that end of the hose into a bucket to catch the old oil.

6. Using precautions to not spill any oil, engage the pump to lower the hoist platform. As it is being lowered, the oil on the backside of the cylinder will be expelled into the bucket while the new oil is being pumped into the cylinder. Additional oil may need to be added to the reservoir as the platform is being lowered to totally lower the platform.

7. Once the cylinder is fully extended or the platform is fully lowered, re-install the female coupler that was removed from the hose and tighten it.

8. Reconnect the hose to the pump and engage the pump in the **UP** mode. This will raise the platform as the oil that was just removed in step 6 is being replaced with the new bio-degradable oil in the reservoir.

9. Raise and lower the platform several times until any air that may have been trapped in the system is removed.

10. With the platform in the fully-raised position refill the reservoir to the proper oil level, 1" minimum to 2" maximum from the top of reservoir. Re-install the breather cap.

Storage

Before storing hoist, always check that the system is full of oil to prevent condensation.

12 Volt Pump

If our hoist has a 12 volt pump, prepare the motor for storage as follows:

1. Remove the vinyl pump cover.

2. Identify one of the black drain plugs located approximately 1" from the back end of the motor. Remove it by prying it out the hole with a screwdriver.

3. Place the nozzle tube of the WD-40 lubricant into the hole. Squirt WD-40 into the hole approximately 3-4 seconds. This will fog all the internal parts and protect them over the winter season. It is not necessary to clean or remove the WD-40 in the spring. The motor will function properly without cleaning.

4. Replace the black drain plug if it is on the side of the motor. If it is located near the bottom of the motor, discard the plug. This will serve as a weep hole for any moisture that may enter the motor from condensation build up in the future.

5. Replace the vinyl cover to protect the pump unit from the weather.

6. Disconnect the battery and store in a warm place. Do not store directly on the ground or concrete. Always insulate the battery from the ground or concrete by placing it on a wood board, rubber or plastic mat.

Biodegradable Oils

There are several brands of environmentally friendly hydraulic oil available in the market place today. We recommend that you use only ***Royal Purple Biodegradeable Marine Hydraulic Oil AW46*** in your system to ensure that the oil doesn't break down during use.

Hydraulic System Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump runs but not at full speed.	Low voltage to pump	Check voltage. Increase power supply Wire size. See chart A
Pump runs but the platform won't go up or down	Couplers not mated properly	Recheck couplings making sure they are properly mated and locked together.
Unit raises slowly	Low voltage to pump	Have wiring checked for proper size from power source.
	Unit is overloaded	Remove load. Check travel speed without load. Weigh load to see if load is within limits of the hoist capacity.
	Load on hoist is within hoist rated load	Pressure relief valve may be set to low. Contact local dealer to have the pressure checked and the valve reset.
Platform will not lower	Hose coupling are not fully connected	Recheck couplings making sure they are completely snapped together. Replace if needed.
	Push-button controller is not making proper connection	Check the connection between the controller and the pump unit. If problem is in the controller, contact your dealer.
	Solenoid is not pulling the spool valve open	Check solenoid, place screwdriver on nut of solenoid. Operate pump. Magnetism in solenoid will draw screwdriver if operating properly.
		Spool valve maybe stuck. Tap lightly on hex nut and spool valve located on face of solenoid. Retry, if it fails. Remove nut, solenoid and spool valve. Insert small phillips screwdriver into end of valve. Compress moving internal portion of valve 1/4". Repeat several times. Reinstall. Contact your dealer.
	Low voltage	AC units must have 110 volts while motor is running. DC units must have 12 volts in battery.
Platform drifts down	Oil is seeping past the lift cylinder in the lift tube or a control valve.	Contact your dealer.
	Contamination in the oil	Flush the hydraulic system removing contamination. Refill with proper weight & grade of oil. See oil specifications.
	Air in system	Cycle system until air is removed. Re-check oil level in reservoir.
When controller is in ON position, platform doesn't raise to the full UP position	Micro switch malfunction on hydraulic cylinder	Contact your dealer.
When controller is ON Pump continues to run when platform is completely raised.	Micro switch malfunction on hydraulic cylinder	Contact your dealer.
Pump makes squealing noise while running	Air in system	Raise & lower platform several times without load to remove trapped air. If squeal continues, contact your dealer.

AC Powered Hoists
General Electrical Troubleshooting

Check the following:

A. The circuit breaker in the electrical control panel is snapped into position.

B. The cord is plugged in.

C. All wire connections are tight.

D. The GFCI is reset for use. It must be reset AFTER the power supply is turned on. (NOTE: When GFCIs are connected in series and the GFCI closest to the power source disconnects or loses power, connected GFCIs down the line will automatically trip out. When resetting a series of GFCIs, the one closest to the power source must be engaged first.)

E. The voltage and wire size are adequate to properly power the unit. See Chart A (below) for proper wire size recommendations. Wire size requirements will vary depending on the distance from the power source to the hoist. LOW VOLTAGE WILL CAUSE PUMP MALFUNCTION AND MOTOR FAILURE.

F. The push-button controller is properly connected. See wiring diagram and instructions.

Proper Wire Gauge

To minimize voltage drop in the power supply line, it is very important to use the proper size wire when connecting the hydraulic pump to the electrical supply. While the pump is running, the voltage must never be lower than 110 volts. Voltage less than 110 volts can cause the pump to not function properly and may cause premature pump failure.

NOTE: the chart below is only a guideline and exact requirements may vary depending on the power source and electrical panel for each installation.

The wire size recommendations below are based on these assumptions:

1. The line to run the hydraulic pump is being connected directly into your home's electrical power control panel.
2. The power supply at the electrical power control panel has a minimum rating of 115 volts with 20 amps.
3. The hydraulic pump is being connected to its own 20 amp circuit breaker in the control panel.
4. The power source has GFCI protection.
5. The length of the power cord, from the control panel to the hydraulic pump is not longer than the length specified in the chart below.

CHART A – Wire Gauge

LENGTH (FEET)	WIRE GAUGE
50'	14 ga
75'	12 ga
100'	10 ga
150'	8 ga
200'	8 ga
250'	6 ga
300'	6 ga

Contact a certified electrician to ensure that the above requirements have been met properly and that all wiring is installed according to the electrical code in your area.

AC Powered Hoists - Electrical Powered Pump Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump will not run	Circuit breaker in electrical panel not engaged	Engage circuit breaker
	Cord not plugged in	Plug in cord
	Loose wire connection	Check that all connections are tight.
	GFCI not reset	Reset GFCI by pushing the reset button on the GFCI. If GFCI won't stay engaged, replace. See item D under General AC Electrical Items.
	Low voltage to unit	Check voltage. Proper voltage is critical to pump operation. Voltage should read 110 volts when the motor is running. If low, the unit will require heavier wire from the power source to the unit.
	Push-button control pendent not properly connected.	Check connection to the pump unit. Make sure the plugs are properly mated and locked together by turning the locking ring clockwise.

DC Powered Hoists
General Electrical Troubleshooting

Check the following:

A The battery used to power the hydraulic pump meets the following specifications to insure proper power supply to the unit:

MARINE DEEP CYCLE BATTERY
MARINE CRANKING AMPS (MCA) 625 AMPS
RESERVE CAPACITY OF OR EQUAL TO
180 MINUTES @ 25 AMP DRAW

B. The battery supplying power to the unit is fully-charged.

C. All connections are tight.

D. The battery terminals are not corroded.

E. The ground cable has a good connection.

F. The push-button controller is properly connected. See wiring diagram and instructions.

DC Powered Hoists - Electrical Powered Pump Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump won't run.	Battery dead.	Check charge in battery. Recharge if necessary.
	Improperly sized battery	See General DC Electrical Items for Battery specifications.
	In-line fuse may be blown. (Located in the line when using boat battery)	Check and replace if bad.
	Bad connections. Either loose or corroded.	Tighten all connections. Clean if corroded.
	Bad ground connection	Make sure the ground connections on both the motor and battery are tight and not corroded.
	Push-button controller not properly connected.	Check connection to the pump unit. Make sure the plugs are properly mated and locked together by turning the lock ring clockwise.
