

H2O Slurry Press Portable Slurry System Owners Manual



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H2O SLURRY PRESS MANUAL

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Disclaimer

Except where prohibited by law, the following is made in lieu of all expressed or implied rights, warranties, and conditions, statutory or otherwise, including without limitation any implied warranty of merchantability, non-infringement, or fitness for a particular purpose.

Manufacturer shall not be liable for any injury, loss or damage, direct or consequential, arising from the use of, or inability to use the product.

Before using, buyer shall determine the suitability of the product for the intended use. The user assumes all risk and liability whatsoever in connection therewith.

Safety Notice

Components on the H2O Slurry Press operate at and under high pressure and should only be serviced by a person competent in the field.

No modifications may be made to the portable slurry system and its components without prior written approval of the manufacturer.

All operators must be thoroughly familiar with this manual and be trained in the operation of the H2O Slurry Press.

Incoming slurry water must **never be pumped into the H2O Slurry Press at pressures in excess of 80 psi.**

Hydraulic pressure on the filter screens must never exceed 5000 psi. Exceeding this can be extremely dangerous. The pressure is applied to the screens to minimize leaking between the gaskets on each one. The H2O Slurry Press may have a small amount of water leakage during operation – this is considered a normal part of operations. To minimize leakage up the pressure on the filter screens.

The air blow down feature that comes as an option on some models must only be connected to an air supply that **cannot exceed 30 psi.** A regulator or pressure bleedoff valve should be installed to ensure that 30 psi is never exceeded or damage may be done to the system and components.

Hydraulic components including lines and fluids can be dangerous under high pressure. Service and operation should be performed by qualified individuals only.

Proper safety equipment should be worn at all times by any personnel in the vicinity of the H2O Slurry Press.

The water treated and produced by the H2O Slurry Press is NON-POTABLE, it is not fit for human consumption. Do not drink any of the water produced by the system.

Handling, Installation, & Assembly

The H2O Slurry Press should only be placed on a level surface capable of handling the weight of the system when in operation. Care in placement of the inlet side of the H2O Slurry Press should be taken to ensure the most effective operation and ease of access to the shutoff valves on the manifold.

The H2O Slurry Press is shipped with filter screens in order. If they are removed they should be carefully placed in order onto the rails of the press. Note that the screens are all aligned the same direction.

Prior to operating the H2O Slurry Press ensure that all plumbing components are connected and all components of the system are installed and operational. The following list is a basic flow of the system.

- 1 Place H2O Slurry Press on-site near the slurry to be treated. Ensure a level surface and safe workplace area.
- 2 Lock or chock wheels.
- 3 Connect slurry water line to pump inlet – and either place slurry inlet in your slurry tanks or attach to the optional slurry tank.
- 4 Connect a hose to the output of the H2O Slurry Press and either place hose to acceptable drain or to container for collection and reuse of the filtered water.
- 5 Connect a hose to the recirculation line on the H2O Slurry Press and run the hose back into the slurry tank.
- 6 Plumb the slurry system clean water out line to the holding tank.
- 7 Connect the air supply (see notes on air supply requirements)
- 8 Proceed to operation of the H2O Slurry Press.

Operation

The H2O Slurry Press is a liquid-solid separation device used to separate slurry from a liquid stream and to provide for reuse or disposal of both the solids collected in the filter screens and the liquid stream processed.

The H2O Slurry Press accomplishes this within a series of chambers (filter screens) into which the slurry is pumped.

Filtered liquid (filtrate) passes through filter screens and exits the H2O Slurry Press leaving behind filtered solids (filter slabs). When properly operated clear water is produced and can be ran to drain or reused (the water is not potable and can only be used as such). It is possible to operate the system improperly and have dirty water produced. Please contact us if you need guidance in improving the operation and quality of the filtered water.

The H2O Slurry Press is then opened and the filter slabs are discharged by gravity as each screen is shifted.

After cleaning and prior to operation, the H2O Slurry Press must be closed and pressurized with the hydraulic jack prior to operation. This minimizes leakage between the screens as the liquid is processed.

- 1 Slide all filter screens together towards the head (the large metal end with the plumbing manifold) and ensure that all screens are aligned and in their proper order.
- 2 Open all water supply and water shutoff valves.
- 3 Close the release valve on the side of the hydraulic pump (tighten the wing nut to close the valve)
- 4 For hand operated jack: Pump the hydraulic unit until the cylinder extends and reaches a pressure of 5000 psi. **NEVER EXCEED THIS PRESSURE – DOING SO CAN BE EXTREMELY DANGEROUS.**
- 5 **NOTE: It is the responsibility of the operators to ensure no one is in the immediate are and is in a position where they could become pinched in the screens, rollers, or hydraulics during the duration of the H2O Slurry Press opening and closing.**

- 6 Start the slurry pump that pumps water from the slurry container into the H2O Slurry Press. To maximize the effectiveness of the H2O Slurry Press and clarity of the product water operate this pump at a very slow rate at first, 10 PSI OF AIR IS RECOMMENDED to pre-coat the screens so that the water produced is of the best possible quality. Slowly close the recirculation valve while visually inspecting the water quality coming out of the system. When the water quality is acceptable you may completely close the recirculating valve – this will speed up the processing rate of the H2O Slurry Press. After 5 to 10 minutes you may increase the air pressure to the slurry pump (this increases the speed of the pump) as long as the quality of water produced is acceptable. If the water quality begins to look unacceptable – reduce the air to the slurry pump to slow down the slurry water being pushed through the H2O Slurry Press. Typical adjustments in air are 5 psi at a time over the course of a minute or two. Eventually the H2O Slurry Press slurry pump will stall out because of backpressure from solids building up on the filter screens in the system. You may increase air pressure to the slurry pump up to 80 psi max – in 5 psi increments until the slurry pump finally stalls out.
- 7 In some instances additional equipment and processes may be required to filter the slurry water to meet the customer’s expectations.

Air Blow Down (only perform if your H2O Slurry Press is full of sludge-not when empty or partially full).

- 8 Your system may be equipped with an optional air blow down feature that removes some of the moisture from the filter slabs. If so – this feature will help provide slabs that are dryer and easier to dispose of.
- 9 After the filter screens are determined to be full and needing to be cleaned Close the slurry input valve, open the recirculated water valve, close the clean processed water valve.
- 10 Adjust the air into the slurry pump down to 20 psi. Close the air to pump valve, and open the air to blow down valve on the plumbing assembly on the head of the H2O Slurry Press. This valve will send air back through the H2O Slurry Press filter screens and will push excess water out of the filter screens and back into the slurry water tub. (Note Air must never be run through the H2O Slurry Press at more than 20 PSI).

- 11 After air blow down (typically lasts 1 to 2 minutes – until excess moisture stops coming out the recirculation line) turn of the air valve, open the slurry input valve, and open the clean processed water valve.

Opening & Cleaning

- 12 To open the H2O Slurry Press utilizing a hand operated jack - unscrew the hydraulic bleed off valve. The system will slowly retract on its own.
- 13 Separate each screen one at a time and scrape off the sludge slab that does not fall by itself. **Use only a soft plastic or nylon scraper.** This is provided with your system. Other tools can damage the cloths and cause premature failure. Make sure to clean the center feed holes and all edges to ensure a proper seal when the H2O Slurry Press is put back into service.
- 14 Close the H2O Slurry Press back up – **ensure that no personnel are near the screens when closing the system up and applying pressure. Also ensure not to over pressurize the screens (maximum 5000 psi or serious injury or death could occur).**

Air Requirements - Clean, dry filtered air is required to minimize the maintenance on the system. The H2O Slurry Press can be configured to effectively operate in a wide range of locations and conditions. H2O Slurry Presses are equipped with an air operated diaphragm pump. These pumps require a minimum of 4 scfm of air to operate (a large 110 volt compressor with large tank is the smallest air compressor that can operate a H2O Slurry Press). The unit may need more air to operate effectively. Under normal operating conditions never feed over 80 psi of air to the system. The H2O Slurry Press operates best between 3 to 8 scfm of air normally. As air pressure is increased the screens may begin to leak.

There are multiple ways to operate the H2O Slurry Press in the field. You can choose to reuse the water produced by collecting it in a container and reusing it in your industrial process (note again that the water is not potable and cannot be consumed by humans). You may choose to run the water produced to a drain (note it is the user's responsibility to ensure that the water being produced meets all requirements to send to drain).

End of Day Cleaning

At the end of each day of use it is important to flush out any slurry from the system. This includes the air pump and the filtration screens as well as any hoses. This can be done by either running fresh water through the system as if you are processing slurry – or by an air blow down cycle – followed by running fresh water through the slurry pump and out the recirculation water line.

H2O SLURRY PRESS Maintenance

Hydraulic system: check reservoir levels periodically. Ensure that there are no leaks and that oil levels are at proper levels. Fill as needed with proper oil as stipulated in the hydraulic jack instructions. **Only fill when the ram is fully retracted. Serious damage can be caused if filled improperly.**

Screens & Cloths: should be checked periodically for any sign of damage or premature wear. The cloths must be washed on a regular basis (depends on the volume of use of the system) to ensure proper sealing of the filter screens. To clean the cloths use a high pressure (1000 psi) washer with warm water. Cloths and gaskets should be checked for wear and may need replacing to get a proper seal and proper water quality.

Air Regulators: filter bowls should be purged periodically to ensure dry air. Dirty elements should be replaced if found. Again, the facility is responsible to provide clean, dry air to specification for operating all the system components that utilize air.

Pumps: follow maintenance and operation recommendations in each individual pump manual. Try to avoid large solids entering the suction line to minimize service issues with the pump.

Piping: maintain all piping to ensure no ruptures. Long term operation of your system will require cleaning of the inlet piping on the slurry pump and into the H2O Slurry Press. This can be accomplished with warm water and an appropriate brush to eliminate buildup in the piping.

Troubleshooting the H2O Slurry Press

Water quality from the system is not clean enough.	<ol style="list-style-type: none"> 1. Cloth is torn or loose. 2. Unsuitable cloth material for your sludge. 3. Pre coat process wasn't followed 4. Air pump operating too fast 	<ol style="list-style-type: none"> 1. Replace cloth 2. Replace with proper cloths 3. Follow pre coat process by slowly bringing the system up to speed.
Sludge pump stalls, slabs appear watery throughout – not as dry as they should be.	<ol style="list-style-type: none"> 1. Sludge pump air pressure too low. 2. Sludge pump not stalled out long enough. 3. Oil or other substances in your sludge blinding the cloths. 4. Running sludge pump at too high psi initially. 5. Filter Screen cloths plugged 6. Area between cloths and Screens are dirty. 	<ol style="list-style-type: none"> 1. Increase pressure up to 100 psi maximum. 2. Pump should stall until 1 to 2 strokes per minute – forcing dryer cakes. 3. Clean cloths with soap and water. 4. Start more slowly and gradually. 5. Clean cloths (see 3 above) 6. Remove screens and thoroughly clean them.
Sludge sprays out of screens and/or water leaks from screens during operation.	<ol style="list-style-type: none"> 1. Gaskets loose or torn 2. Hydraulic pressure too low on press. 3. Area between cloths and screens are dirty. 4. Incoming air pressure too high 	<ol style="list-style-type: none"> 1. Fix or replace gaskets 2. Increase sludge pump air pressure via regulator 3. Remove screens and thoroughly clean them. 4. Lower air pressure to slurry pump.
Hydraulic cylinder does not retract	<ol style="list-style-type: none"> 1. Coupling loose 2. Oil level high 3. other 	<ol style="list-style-type: none"> 1. tighten fittings on ram 2. follow hydraulic ram instructions to remove excess oil 3. consult troubleshooting section of hydraulic ram instructions for further information.
Sludge pump does not pump	<ol style="list-style-type: none"> 1. Air is not being fed to the pump. 2. The pump screen is plugged on the intake line. 3. The air end of the pump is damaged 4. The intake piping is plugged 5. The outgoing piping is plugged 	<ol style="list-style-type: none"> 1. Check air compressor 2. Check regulator and feed line 3. Consult pump manual – replace parts as needed. 4. Clean and/or replace piping 5. Clean and/or replace piping
Filter Screen Cloths not seated in grooves	<ol style="list-style-type: none"> 1. Air blow down started when H2O Slurry Press was not full of sludge. 	<ol style="list-style-type: none"> 1. Reseat filter cloths. Ensure H2O Slurry Press is full before blowdown.
Hydraulic jack does not pressurize the press	<ol style="list-style-type: none"> 1. Jack release valve is open 2. Oil level is low 3. Loose fittings and couplings 4. Trapped air in system 	<ol style="list-style-type: none"> 1. Close valve 2. Add oil according to instructions in Jack manual 3. Tighten couplings 4. Remove air according to instructions in Jack manual.
Cylinder does not hold pressure.	<ol style="list-style-type: none"> 1. Leaking connections or seals 2. Internal leakage in pump 	<ol style="list-style-type: none"> 1. Tighten all connections 2. Locate leaks and/or call a technician.