

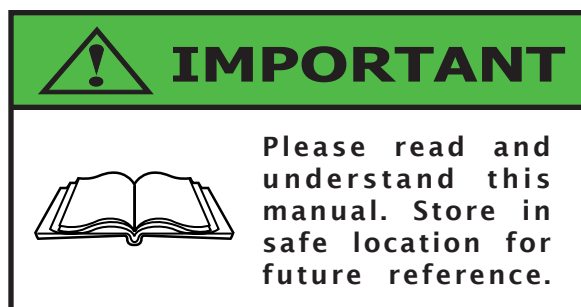


## **Brine Production System**

**DU BPS3000-SS**

### **Owner's Manual #0805**

|                         |                           |
|-------------------------|---------------------------|
| <b>Customer Number:</b> | <b>Serial Number:</b>     |
| <b>Model Number:</b>    | <b>Installation Date:</b> |



**Everyone who operates this unit should understand basic operations and safety precautions!** The time you take to fully understand the proper installation, maintenance and use of the machine will prolong its service life, and assure you of trouble free operation.

When unpacking, check to make sure all the parts shown on the Parts Breakdown near the end of this manual are included. If any parts are missing or broken, please call Dultmeier Sales as soon as possible.

Consumers should notice that this manual may differ slightly from the actual product as more improvements are made to our products. Some of the pictures in this manual may differ slightly from the actual product as well. Dultmeier Sales reserves the right to update designs and / or change the specifications at any time without incurring any obligation to install them on units previously sold.

*If you have any questions or suggestions about this manual, please contact us.*

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**To avoid serious or fatal personal injury or major property damage, read and follow all safety and operation instructions in the manual.**



This is a **Safety Alert Symbol** -

When you see this symbol in the manual, look for the following signal words & be alert to the potential for personal injury or property damage.



Warns of potential hazards that **WILL** cause serious personal injury, death or property damage.



Warns of potential hazards that **CAN** cause serious personal injury, death or property damage.



Warns of potential hazards that **WILL** or **CAN** cause minor personal injury, death or property damage.



Indicates special instructions that **MUST** be followed but not related to hazards.

**This manual is intended to assist in the installation and operation of this unit.  
Do not attempt to operate this unit without reading and understanding this manual.**

### General Safety

*To avoid the risk of serious bodily injury and property damage, read safety instructions carefully before installing this system. Follow all local and/or national plumbing and electrical codes when installing.*



#### **Do Not Allow System or Components to Freeze.**

To do so may damage the system and will void the warranty.



#### **Never Run the System Dry.**

Running the unit dry (without fluid) can damage internal parts, overheat pump (which can cause burns to people handling or servicing the pump), and will void the warranty.



#### **Risk of Electric Shock.**

Keep the unit dry at all times -

Do not wash the motor or electrical panel or allow the unit to sit in standing water.

Use only Ground Fault Circuit Interrupter (GFCI) protected grounded outlet for the cord plug. If you must use an extension cord, use only UL approved indoor/outdoor, 3-wire, grounding type cords. The cord must be rated to support amp draw. Do not allow any part of cord or receptacle ends to sit in water.

*To avoid fatal shocks, proceed as follows if service is needed:*

- Turn off water to the system.
- Disconnect the power at main electrical service before unplugging the unit.
- Ground the electrical outlet box.
- Take extreme care when changing fuses.



Do not run the unit with discharge shut off, as hose may burst or damage may occur.



Modern motors can operate at high temperatures. To avoid burns when servicing pump, allow it to cool for 20 minutes after shutdown before handling.

## CAT PUMPS® Pressure Washer with Soap Injector Specifications

|                                 |                                                                 |
|---------------------------------|-----------------------------------------------------------------|
| Model(s) .....                  | DU PM35C & DU PM35C-WH                                          |
| Style .....                     | High Pressure Plunger Pump                                      |
| Capacity .....                  | 3 GPM                                                           |
| PSI .....                       | 1000                                                            |
| Maximum Inlet Pressure .....    | 75 PSI                                                          |
| Maximum Inlet Temperature ..... | 130° F                                                          |
|                                 | *See Included CAT PUMPS® Service Manual for Higher Temperatures |
| Motor .....                     | CC 8052 :: 2 HP / 1 PH, 120 Volts / 20 Amps                     |
| Pump .....                      | CC 2SF30ES                                                      |
| Crankcase Capacity .....        | 11.83 oz.                                                       |
| Pump Drive .....                | Direct                                                          |
| Dimensions .....                | Approx. 20" x 14" x 18"                                         |
| Shipping Weight .....           | Approx. 85 lbs.                                                 |
| Pump Inlet .....                | 3/8"                                                            |
| Pump Discharge .....            | 3/8"                                                            |

## System Features & Options

CAT PUMPS® Plunger Pump with Regulating Unloader  
 2 HP, 1 PH, TEFC, C-Face Motor  
 25' GFCI Power Cord  
 Safety Pop Off Valve  
 Downstream Chemical Injector  
 Trigger Spray Gun with: Gun Swivel, Washjet Nozzle, Adjustable Soap Nozzle, and 17" Extension with Grip  
 25' High Pressure Wash Hose  
 Portable Hand Carry Baseplate or Wheeled Cart  
 All Units are Pre-Plumbed, Pre-Wired, and Tested  
 All Units will operate at 115 or 230 Volt.  
 Pressure Gauge is Optional

## Placement

1. Select a location for your Brine Maker. Locate in a heated room, with sufficient ceiling height, near water & electrical sources, and floor drain. Surface must be level.



**This System is 8' tall.**

## Electrical

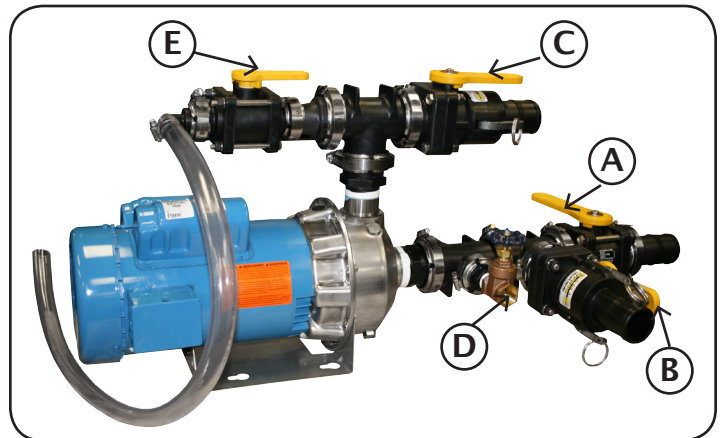


**All Electrical Connections should be made by a qualified Electrician and done according to all local codes.**

1. The room must have sufficient power supply. Power supply to system must be 220V, Single Phase running from a minimum 30 amp breaker. Power supply should be run in water-resistant rigid or flexible conduit with a proper ground wire.

## Plumbing

1. System should be connected to water supply which can provide 50 GPM minimum flowrate. Ensure both water supply lines to system are protected from backflow conditions with proper backflow protection meeting applicable plumbing codes (a Reduced Pressure Zone Backflow Preventor (RPZ) Valve located upstream of the system is strongly recommended and is required by most plumbing codes. Main water supply to system should be 2" hose with "camlock" style female coupler at one end to attach to Main Water Supply Valve (**Valve E**) on system. Secondary water supply to system should be 3/4" hose to attach to "Small Water Inlet Valve" (**Valve D**) on system.
2. Install 2" hoses with "camlock" style female couplers at each end from "Storage Tank Discharge Valve" (**Valve C**) back to storage tank's fill or recirculation point. (**Valve CC**)



## Operation

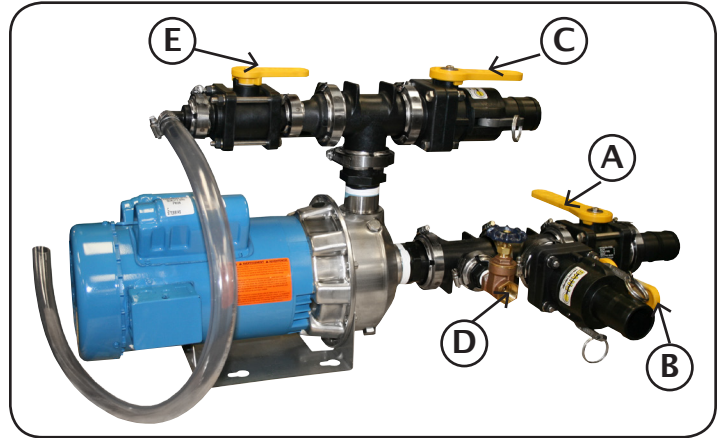
1. Keep the special tool provided to rotate the swivels located on the upper outside of the hopper (the swivels allow the operator to change the angle of the water spray pipes).

## Making a Brine Batch:

1. Fill hopper with salt, maintain at least 2/3 full; refill hopper periodically to maintain salt at this level while making brine.
2. Open the “Brine System Suction Valve”. (**Valve A**)
3. Close the “Storage Tank Suction Valve”. (**Valve B**)
4. Open the “Storage Tank Discharge Valve”. (**Valve C**)
5. Turn the Power Switch ON.
6. Turn the “On-Off-Shut Down” Switch to ON. (The Electric Water Supply Valve (**Valve H**) will now be open. Leave the “Pump Only” and “Hydraulic System” Switches OFF.)
7. Open the “Manual Water Supply Valve”. (**Valve E**) Later adjust so the water inflow rate is slightly less than the brine pump discharge rate. Watch the “Reduce Flow” light on the Control Panel: If the “Reduce Flow” light comes on (water will also stop spraying momentarily) close Valve E slightly. Repeat this procedure until the “Reduce Flow” light does not turn on anymore.
8. Slightly open the “Small Water Inlet Valve” (**Valve F**) and check the brine salinity using the “Brine Sample Valve” (**Valve G**) and a certified salimeter or hydrometer. If brine salinity is still stronger than desired, then open Valve F slightly more and check again. Repeat this process until desired brine salinity is reached.

You may skip this step, simply make full strength brine, then proceed to “Reducing Brine Salinity” on page \_.

9. Stop making brine before the storage tank is full, leave at least 25% freeboard in tank to allow for adding sufficient water. See “Ending a Brine Batch” on page \_.



## Ending a Brine Batch (Shutting Down) or Pausing:

1. Leave the Power Switch ON.
2. Turn the “Auto-Off-Shut Down” Switch to SHUT DOWN. (The Electric Water Supply Valve (Valve H) will now be closed.)
3. Close the “Manual Water Supply Valve”. (Valve E)  
Leave all other valves as noted in “Making Brine Batch” on page \_.
4. Leave the “Pump Only (Manual)” and “Hydraulic System” Switches OFF.
5. Pump will shut off automatically when brine in lower tank is depleted.
6. After pump shuts off, Proceed to “Reducing Brine Salinity on page \_.

## Reducing Brine Salinity: (For Brine in Storage Tank)

1. Close the "Brine Suction Valve". (Valve A)
2. Open the "Storage Tank Suction Valve". (Valve B)
3. Open the "Storage Tank Discharge Valve." (Valve C)
4. Close the "Brine Recirculation Valve." (Valve D)
5. Close the "Manual Water Supply Valve." (Valve E)
6. Turn the Power Switch ON.
7. Turn the "Auto-Off-Shut Down" Switch to SHUT DOWN. (The Electric Water Supply Valve (Valve H) will now be closed.
8. Turn the "Pump Only (Manual)" Switch ON.
9. Run the pump at least two minutes and then take a sample using the "Brine Sample Valve" (Valve G) and a certified salimeter or hydrometer.
10. See the "Reducing Brine Salinity Chart" on page \_ to determine how many gallons of water to add to reduce brine salinity to the desired level.
11. Open the "Small Water Inlet Valve" (Valve F) and monitor until the correct number of gallons of water have been added (a small water flow meter is helpful for this purpose).
12. After the correct amount of water has been added, continue circulation of the brine for at least 60 minutes to ensure proper mixing in the storage tank (large tanks may take longer to ensure complete mixing).
13. Take another sample of the finished brine from the "Brine Sample Valve" (Valve G) using a certified salimeter or hydrometer. If brine is still stronger than desired, then repeat starting at Step #10.

## Loading Out Finished Brine to Applicator Trucks

Always check Brine Salinity again with a certified salimeter or hydrometer before loading it out to applicator trucks. If Brine Salinity is stronger than desired, repeat “Reducing Brine Salinity” procedures on page \_ before loading out. If Brine Salinity is weaker than desired, do not use - See operations manual for more details.

1. Close the “Brine System Suction Valve”. (Valve A)
2. Open the “Storage Tank Suction Valve”. (Valve B)
3. Open the “Storage Tank Discharge Valve”. (Valve C)
4. Couple the “Storage Tank Discharge Hose” to the Applicator Truck.
5. Close the “Brine System Recirculation Valve”. (Valve D)
6. Close the “Manual Water Supply Valve”. (Valve E)
7. Turn the Power Switch ON.
8. Turn the “Auto-Switch-Shut Down” Switch to SHUT DOWN. (The Electric Water Supply Valve (Valve H) will now be closed.)
9. Turn the “Pump Only (Manual)” Switch ON.
10. Fill Applicator Tank and then Turn the “Pump Only (Manual)” Switch OFF.
11. Do not run the pump dry. Turn the “Pump Only (Manual)” Switch OFF before the liquid level in the Storage Tank drops below the Tank Suction Port.

## Clean-Out Procedures: Determining When to Clean-Out

1. You should clean out the system after making approximately 10,000 gallons of brine (depending upon the amount of dirt and debris in your salt).
2. You should also clean out the system if the “Time to Clean Screen” light comes on (red flashing light and pilot light on Control Panel will both come on), especially if you have made more than 10,000 gallons of brine since the last cleaning.

## Clean-Out Procedures: Preparing to Clean-Out

1. First, continue to make brine until the salt pile height is reduced as follows:
  - A. Leave the Power Switch ON.
  - B. Leave the "Auto-Off-Shut Down" Switch on AUTO. (This allows water to continue coming into the system in order to reduce the salt pile height.)
  - C. Stop adding salt to the Hopper.
  - D. As the salt pile height starts to drop inside the Hopper (look through the sight glass windows periodically), use the special tool provided to rotate the water pipe swivels so that the water spray pipes inside the Hopper continues to direct the water streams onto the salt pile.
2. Monitor the Brine Salinity periodically using the "Brine Sample Valve" (Valve G) and a certified salimeter or hydrometer. When the salt pile drops low enough (about 2' above the trash screen), turn the "Auto-Off-Shut Down" Switch to SHUT DOWN and close the "Manual Water Supply Valve". (Valve E) Wait until the Brine pump stops running (this will take a few minutes.)
3. You may then proceed to the "Clean-Out" Section on page \_\_.

The Brine Salinity may drop below your minimum desired salinity before the salt pile height has dropped to 2' about the trash screen. In this case, you may "recirculate" this weak brine back through the brinemaker to strengthen it before sending it to storage. To do this, turn the "Auto-Off-Shut Down" Switch to SHUT DOWN; this closes the Electric Water Supply Valve (Valve H). Then close the "Storage Tank Discharge Valve" (Valve C) and open the "Brine System Recirculation Valve". (Valve D) Then take another brine sample periodically using the "Brine Sample Valve". (Valve G) When the brine salinity is back above your minimum desired salinity, keep the "Auto-Off-Shut Down" Switch on SHUT DOWN. Then open the "Storage Tank Discharge Valve" (Valve C) and close the "Brine Sample Valve". (Valve G) This will now divert the strengthened brine back to the storage tank. Then wait until the brine pump stops running (this will take a few minutes). You may then proceed to the "Clean-Out" Section on page \_\_.

## Clean-Out Procedures: Clean-Out

1. Turn the “Auto-Off-Shut Down” Switch to OFF, but leave the Power Switch ON.
2. Position your 2 or 3 cubic yard loader bucket underneath the Lower Brine Holding Tank.

Always have a “spotter” in a safe position directing the loader operator during this step.

3. IMP: Open the screen latch located on the front top of the Lower Brine Holding Tank (this will allow the trash screen to drop with the Lower Brine Tank so that all debris will fall into the unloader bucket).
4. IMP: Unlock the side locking pins so the Lower Brine Tank is free to rotate down also.
5. Turn the “Hydraulic System” Switch ON.
6. Move the Hydraulic Control Knob so that the Lower Brine Holding Tank (& trash screen) rotate down until all debris on the screen flows into the loader bucket.
7. Now, shift the Hydraulic Control Knob so that the Lower Brine Holding Tank (& trash screen) rotate back up to the closed position.
8. Then, hook the front latch so the trash screen will now stay in the up position and shift the Hydraulic Control Knob again so that the Lower Brine Holding Tank rotates down again (trash screen remains up this time).
9. Flush out the remaining silt from the Lower Brine Holding Tank using a hose with a cleaning type nozzle (you should remove the lower screen inside the Lower Brine Holding Tank when doing this step).
10. Shift the Hydraulic Control Knob again so that the Lower Brine Holding Tank rotates back up to the closed position.
11. Relock the side locking pins so the Lower Brine Tank is locked in the up position. You are finished with clean-out and ready to make more brine.

## Safety Procedures

1. Do not smoke near system - Hydraulic Fluid vapors are flammable!
2. Do not climb on system - use the sight gauge windows to observe the salt pile height and water spray angle.
3. Always “lock out” the Control Panel before servicing the system. Also, exercise the Hydraulic Control Valve several times to eliminate residual pressure in the Hydraulic System.

YOU are responsible for the safe operation of this System. YOU must ensure that you and anyone else who is going to operate, maintain, or work around this System be familiar and understand all the related safety information in this manual. All good safety practices should be adhered to while operating this System.

Remember, YOU are the key to safety. Good safety practices not only protect you but also the people working around you. Make these practices a working part of your safety program. Be certain that everyone operating this type of equipment is familiar with the recommended procedures and follows all safety precautions. Most accidents can be prevented. Do not climb on or into the unit. Do not risk injury or death by ignoring good safety practices.

Do not modify the equipment in any way. Unauthorized modification may impair the safety or equipment function and could affect the life of the machine.

1. Read and understand all the safety signs and the Operator's Manual before operating or maintaining this unit.
2. Have a first aid kit available should the need arise and know how to use it.
3. Wear appropriate protective gear. The list includes, but is not limited to:  
  
Hard Hat  
Protective Goggles  
Rubber Boots  
Neoprene Gloves
4. Check all guards and clear people from the area before starting the unit.

## Parts Breakdown: Model Number

| Item | Part Number    | Description                                  |
|------|----------------|----------------------------------------------|
| 1    | DU 1252        | Hose Holder                                  |
| 2    | GA 6HR25       | 25' Black Wash Hose                          |
| 3    | CC 8052        | Cat Motor 2HP 1PH                            |
| 4    | CC 2SF30ES     | Cat Super Flow Pump with Regulating Unloader |
| 5    | AA A7547       | Injector                                     |
| 6    | TF 1           | Vinyl Tube                                   |
| 7    | GA 3204EB-3/8  | 2-Braid Black Flex Hose                      |
| 8    | DU 1051-12-25  | 25' GFCI Cord                                |
| 9    | SM 900-3/8     | Swivel                                       |
| 10   | NP ST1500      | Spray Wand                                   |
| 11   | NP ST007-18    | 17" Wand Extension with Grip                 |
| 12   | IP ST55N       | Adjustable Soap Nozzle                       |
| 13   | SS 1/4MEG25055 | Washjet Nozzle                               |
| 14   | AH 2750-3      | Gauge (Optional)                             |
|      | GU 22531A      | <i>Safety Pop Off Valve (Not Shown)</i>      |



## Notice Regarding Manufacturer's Limited Warranty

Dultmeier Sales Limited Liability Company (hereinafter Dultmeier), notifies you that component part(s) carry a manufacturer's limited warranty provided by the manufacturer of said component part(s). These warranties do not pertain to normal wear of component part(s) that may occur within any specified period. While Dultmeier is not the manufacturer of any of the component part(s), Dultmeier will assist you in processing any and all manufacturer's warranty claim if applicable and available. Any and all manufacturer's claims must be submitted in writing to the manufacturer within the warranty periods provided by the manufacturer.

Defective component part(s) that are to be considered for manufacturer's limited warranty must be returned to the manufacturer by prepaid shipment with the applicable manufacturer's limited warranty period. If the component part(s) are deemed to be defective under the manufacturer's warranty, Dultmeier will assist in obtaining a replacement or repair of the component part(s). Said component part(s) will be returned F.O.B. Omaha, Nebraska. Replacement or repair shall be the exclusive remedy for any breach of warranty. Labor for installation, either with respect to original or replacement part or components, is not covered under the manufacturer's limited warranty.

Neither the manufacturer nor Dultmeier warrants loss of income or consequential damages for injury or commercial loss resulting from any breach of warranty or warranties stated above.

The manufacturer's limited warranty as stated does not apply to component part(s) which have been improperly installed, misused, altered, neglected, abused or not installed, adjusted, maintained, or used in accordance with applicable codes and ordinances and in accordance with the manufacturer's specifications as to such factors.

Notwithstanding Dultmeier's willingness to assist in the processing of the manufacturer's limited warranty, Dultmeier makes no warranty against infringement of the like, makes no warranty of merchantability, makes no warranty of fitness for a particular purpose, and makes no other warranty, express or implied, including implied warranty arising from the course of dealing or usage of trade.

Compliance with all local, state and federal codes regarding the installation and operation of said equipment, parts and components shall be the responsibility of the purchaser. The rights and obligations of the parties shall be governed by the laws of the State of Nebraska.

## Production Checklist

|                                                         |                                             |                                                         |                             |
|---------------------------------------------------------|---------------------------------------------|---------------------------------------------------------|-----------------------------|
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Oil Level                                   | <input type="checkbox"/> OK <input type="checkbox"/> NA | Pop-Off Valve Set _____ PSI |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Clamps Tight                                | <input type="checkbox"/> OK <input type="checkbox"/> NA | Unloader Valve Locked       |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Bolts Tight & Anti-Seized                   | <input type="checkbox"/> OK <input type="checkbox"/> NA | PSI _____                   |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Belts Tight                                 | <input type="checkbox"/> OK <input type="checkbox"/> NA | Pump RPM _____              |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Pulleys Aligned & Torqued to Specifications | <input type="checkbox"/> OK <input type="checkbox"/> NA | Motor Amps _____            |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Fittings Straight                           | <input type="checkbox"/> OK <input type="checkbox"/> NA | Motor Wired For _____       |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Tested                                      | <b>Accessories</b>                                      |                             |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Winterized                                  | <input type="checkbox"/> OK <input type="checkbox"/> NA | Safety Pop Off Valve        |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | _____                                       | <input type="checkbox"/> OK <input type="checkbox"/> NA | Trigger Gun     1     2     |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | _____                                       | <input type="checkbox"/> OK <input type="checkbox"/> NA | High Pressure Hose          |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | _____                                       | <input type="checkbox"/> OK <input type="checkbox"/> NA | Injector / Injector Hose    |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | _____                                       | <input type="checkbox"/> OK <input type="checkbox"/> NA | Gauge                       |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | _____                                       | <input type="checkbox"/> OK <input type="checkbox"/> NA | _____                       |

Built By \_\_\_\_\_

Checked By \_\_\_\_\_

## Customer Checklist

|                                                         |                                            |
|---------------------------------------------------------|--------------------------------------------|
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Oil Level To Manufacturer's Specifications |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Accessories Included                       |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Electric Cord                              |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Shipping Container Was In Good Shape       |
| <input type="checkbox"/> OK <input type="checkbox"/> NA | Overall Condition                          |

*If you have any questions or concerns about condition of this unit, please contact us before operating.*

