

The Dash Delivery System



Model: Dash 2.0 & 4.0



OPERATOR'S MANUAL

www.phiber.ca

Limitation of Liability

PhiBer® Manufacturing Inc. shall not be liable for special, incidental or consequential damages arising out of the use of, the misuse of, or the inability to use any product sold by PhiBer® Manufacturing Inc. including, but without limitation: damages or loss of other property or equipment, personal injury, loss of life, loss of profits or revenue, or claims of purchaser for any such damage or loss.

Warranty

PhiBer® Manufacturing Inc. warrants its products to be free from defect in factory workmanship and material under normal use and service, when set-up and operated according to factory instructions. Warranty should be handled through PhiBer® or an authorized selling dealer. Warranty is subject to the following conditions:

Warranty Claims: Must be completed within 30 days of replacement of part(s). Claim must include serial number of Dash, date of delivery, explanation of problem and all other necessary particulars.

Warranty Parts: Must be kept for PhiBer's® inspection unless otherwise specified.

Warranty Labor: PhiBer® must authorize any labor subject to warranty. PhiBer® Manufacturing Inc. reserves the right to set the labor rate and time required to complete a warranty repair.

Warranty Limitations: Warranty will not be granted on any product that has been misused, altered, or modified in any way. Diagnostic and service calls are not covered by warranty. Warranty covers only the cost of repair and parts; it does not include shop supplies, mileage and freight costs.

Government Legislation: Warranty terms and conditions are subject to provincial or state legislation and laws.

Warranty on cylinders, hydraulic components, electronic components, and other trade accessories are limited to the warranties made by the respective manufacturers and not by PhiBer® Manufacturing Inc.

The following table shows the available warranty:

Item	Time from Purchase
Frame and other structural components	One (1) Year
Electronic components	One (1) Year
Hydraulic components	One (1) Year
Hydraulic cylinders	One (1) Year

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Introduction

Congratulations on your purchase of the PhiBer® Dash Delivery System. The PhiBer® Dash Delivery System offers the agricultural industry a machine for quickly mixing and loading spraying chemicals.

All persons authorized to operate this equipment should read and understand the contents of this Operator's Manual, especially the *Safety* section. The owner or operator should seek assistance from the dealer, distributor or PhiBer® for any information not fully understood regarding the safe operation, adjustment, maintenance or repair of this equipment.

Keep this Operator's Manual in a clean, dry place that is easily accessible for reference when more detailed information is required to perform tasks related to the operation, adjustment, maintenance or repair of this equipment. It is further recommended that the contents of this Operator's Manual be reviewed at least annually by persons operating, adjusting, maintaining or repairing this PhiBer® Dash Delivery System and any time a new person is assigned to any of the above-mentioned tasks.

Any information in this Operator's Manual that is not fully understood should be clarified by contacting the dealer, distributor or manufacturer.

The contents of this Operator's Manual are accurate up to the time of printing.

PhiBer® reserves the right to make design changes without prior notice to the end user.

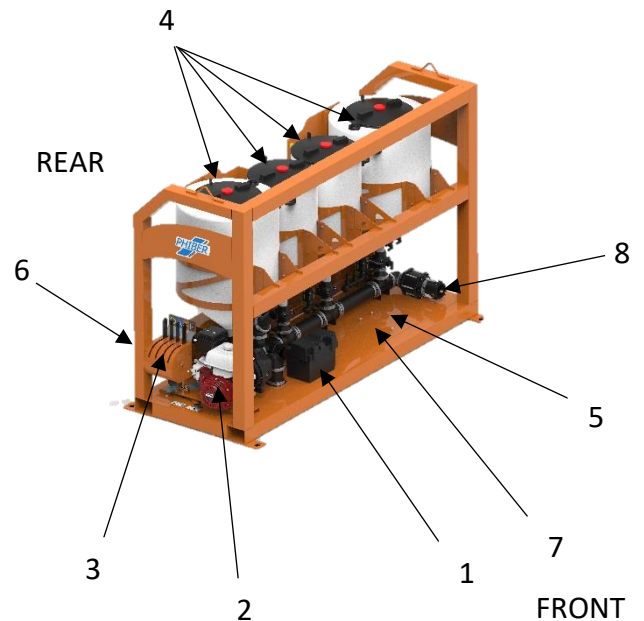
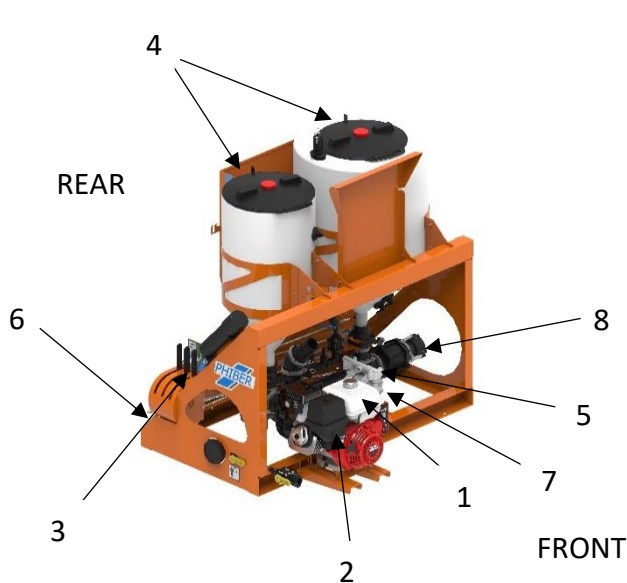
Description of the Machine

The Dash has two primary objectives; reduce fill times to keep the sprayer spraying, and to keep chemicals separated. The Dash 4.0 comes with two pumps, a high delivery water pump with a 13hp Honda motor and air diaphragm pump capable of 40 gpm used for auto rinsing and the agitation of dry products. The Dash 2.0 comes with an air diaphragm pump capable of 30 gpm two pumps, also an optional high delivery water pump with a 6.5hp Honda motor is available. The design allows operators to load multiple products for the next sprayer load ahead of time while keeping chemicals separated. Once connected to the sprayer, the operator can stand at the side of the trailer, completely loading the sprayer with up to four different products without moving. The process of loading four different chemicals into a 1,200-gal sprayer will take less than four minutes.

Illustration of the Machine

Dash 2.0 & 4.0

- | | |
|-----------------------------|----------------|
| 1. Battery | 7. 1" Water In |
| 2. Gas Engine/ Suction Pump | 8. 3" Water in |
| 3. Chemical Dump Handles | |
| 4. Chemical Inductor | |
| 5. Air Diaphragm Pump | |
| 6. Air Input | |



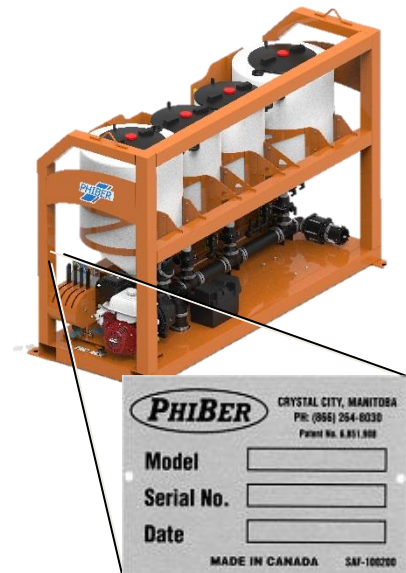
Serial Number Location

The serial number plate (Figure 1.2) is located inside the front right hand side of the frame.

Record the machine Model and Serial Number in the spaces provided below. Use these numbers when contacting the dealer for repair parts or service assistance.

Model Number: _____

Serial Number: _____



Safety

Safety Alert Symbols

Safety Alert Symbols are intended to draw attention of the machine operator to important safety information both published in the Operator's Manual and applied to the machine. Whenever a Safety Alert Symbol is seen, it means that associated information is provided for recognizing, responding appropriately to and avoiding potentially hazardous situations.

An equilateral triangle surrounding an exclamation point or a double line equilateral triangle surrounding symbols or graphics indicates a potentially hazardous situation. Information included on a safety sign or printed in the Operator's Manual describes the hazardous situation and indicates appropriate response and/or avoidance procedures.

Remember:

**ACCIDENTS DISABLE AND KILL
ACCIDENTS ARE COSTLY
ACCIDENTS CAN BE AVOIDED**



Signal Words

DANGER

Indicates an imminently hazardous situation that, if not avoided, **WILL** result in death or serious injury if proper precautions are not taken.



WARNING

Indicates a potentially hazardous situation that, if not avoided, **COULD** result in death or serious injury if proper precautions are not taken.



CAUTION

Indicates a potentially hazardous situation that, if not avoided, **MAY** result in minor or moderate injury if proper precautions are not taken, or it serves as a reminder to follow appropriate safety practices.



Operator Responsibility

Remember, YOU, the operator, are responsible for the safe operation, adjustment, maintenance and repair of this PhiBer® Dash Delivery System. It is the responsibility of the owner, or authorized person in charge, to ensure that all persons who operate, adjust, maintain and/or repair this implement are familiar with the information provided in this Operator's Manual.

A safe operator is the key to safety. Good safety practices not only protect you, but also persons who may be near the DASH. Make good safety practices a part of your farming operation. Ensure that all persons operating, adjusting, maintaining and/or repairing this equipment are familiar with the procedures recommended in this Operator's Manual.

Always heed safety warnings and follow recommended safety precautions to avoid hazardous situations. Do not risk personal injury or death by ignoring safety warnings and safety precautions.

Key Safety Reminders:

- The most important safety device is a safe and qualified operator.
- A safe operator is one who has read and understood the contents of this Operator's Manual prior to performing any tasks related to the machine.
- Owners have a responsibility to provide training to persons who may operate, adjust, maintain and/or repair the equipment prior to performing any of these tasks.
- Do not perform any unauthorized modifications to the Dash or use the Dash for any purpose other than what is described in the contents of this Operator's Manual.
- Plan tasks and work schedules to reduce exposure to unnecessary stress and fatigue.
- Observe all workplace safety and health requirements.
- Read all supplied products manuals.

General Safety Practices

- Read and understand the contents of this Operator's Manual prior to operating, adjusting, maintaining and/or repairing the Dash.
- Locate, read and understand all safety signs applied to the Dash before performing any tasks.
- Review the contents of this Operator's Manual at least annually, and any time a new person is assigned to perform any task with the Dash.

- Do not allow riders on any part of the Dash or trailer.
- Ensure all guards and shields are intact and in place prior to operating the Dash.
- Keep hands, feet, hair and loose clothing away from moving and/or rotating parts.
- Stop the engine, remove the ignition key and allow time for moving parts to stop prior to adjusting, maintaining or repairing the equipment.
- Ensure that all equipment lighting and marking is intact, clean and operating properly prior to traveling on public roads. Check with local highway authorities to confirm that the Dash is properly equipped for highway travel.
- Provide a fully stocked First-Aid kit in a highly visible and easily accessible location.
- Keep a fully charged fire extinguisher in a highly visible and easily accessible location.
- Ensure that the Dash is securely blocked and supported prior to working underneath (if it needs to be raised for repair).
- Ensure that all persons operating, adjusting, maintaining and/or repairing the Dash know how to seek or summon medical assistance should an injury occur.
- Ensure deck remains clean and dry to reduce slipping/tripping.
- Do not climb onto tote deck or cage, use ladder from ground to secure tote straps.
- Only allow one operator at any time
- Use caution when using jug knives

Maintenance Safety

- Read and understand all of the information provided in this Operator's Manual covering the operation, adjustment, maintenance and repair prior to performing any of these tasks.
- Ensure proper tools, equipment and personal protective equipment is available prior to working on the Dash.

- Stop the engine, remove the ignition key and allow time for moving parts to stop prior to adjusting, maintaining or repairing the equipment.
- Ensure that all moving parts have come to a complete stop before performing adjustments, maintenance or repairs.
- Prior to operating equipment, ensure that all guards and shields are intact and in place after performing adjustment, maintenance or repairs.
- Check for bushing wear and weldment fatigue on moving parts.
- Store flammable fluids in approved containers and store out of access by unauthorized persons, especially children.
- Wear appropriate clothing when performing tasks around the Dash. Ill-fitting and/or frayed clothing as well as loose or dangling items should not be worn when working near the equipment.
- Ensure that pressure in hoses, lines and components is fully relieved prior to performing maintenance or repairs to the system.

Water and Chemical Safety

- Periodically inspect condition of hoses, lines and components. Remove and replace any parts showing damage or deterioration.
- Use only repair or replacement parts specified by the manufacturer.
- Follow instructions provided by the manufacturer when making repairs.
- Wear appropriate personal protective equipment when unsure if residual pressure may exist in components during trouble-shooting and/or making repairs.
- Wear appropriate personal protective equipment when handling chemicals.
- Ensure all fittings, couplings and other connections are intact and properly tightened before operation.

- Store flammable/ toxic fluids in approved containers and store out of reach by unauthorized persons, especially children.
- Ensure that pressure in hoses, lines and components is fully relieved prior to performing maintenance or repairs to the fluid system.
- Ensure that all persons operating, adjusting, maintaining and/or repairing the Dash know how to seek or summon medical assistance should an injury occur.
- Insecticide should be poured directly into sprayer tank to limit exposure.
- Follow all local regulations for chemical spills



- Follow all chemical manufacturer's instructions for use and safety.

Installation Safety

- Read, review and understand all Dash installation instructions before attempting to attach Dash to trailer.
- Ensure the trailer is properly hitched to the tractor.
- Ensure that tractor engine is shut off, key is removed from the ignition and the parking brake is set and/or wheels blocked.

Transport Safety

- Ensure that the Dash, Dash accessories, and all loads or chemical totes are attached to the trailer according to local regulations.
- Ensure the trailer hitch is in place and engaged properly.
- Ensure all lighting and implement marking devices are intact and visible.
- Ensure equipment is properly marked according to local road regulations and heed all local traffic regulations.
- Reduce travel speed on rough roads and surfaces.
- Come on and off approaches or roads slowly; too much speed can cause the trailer to tip.

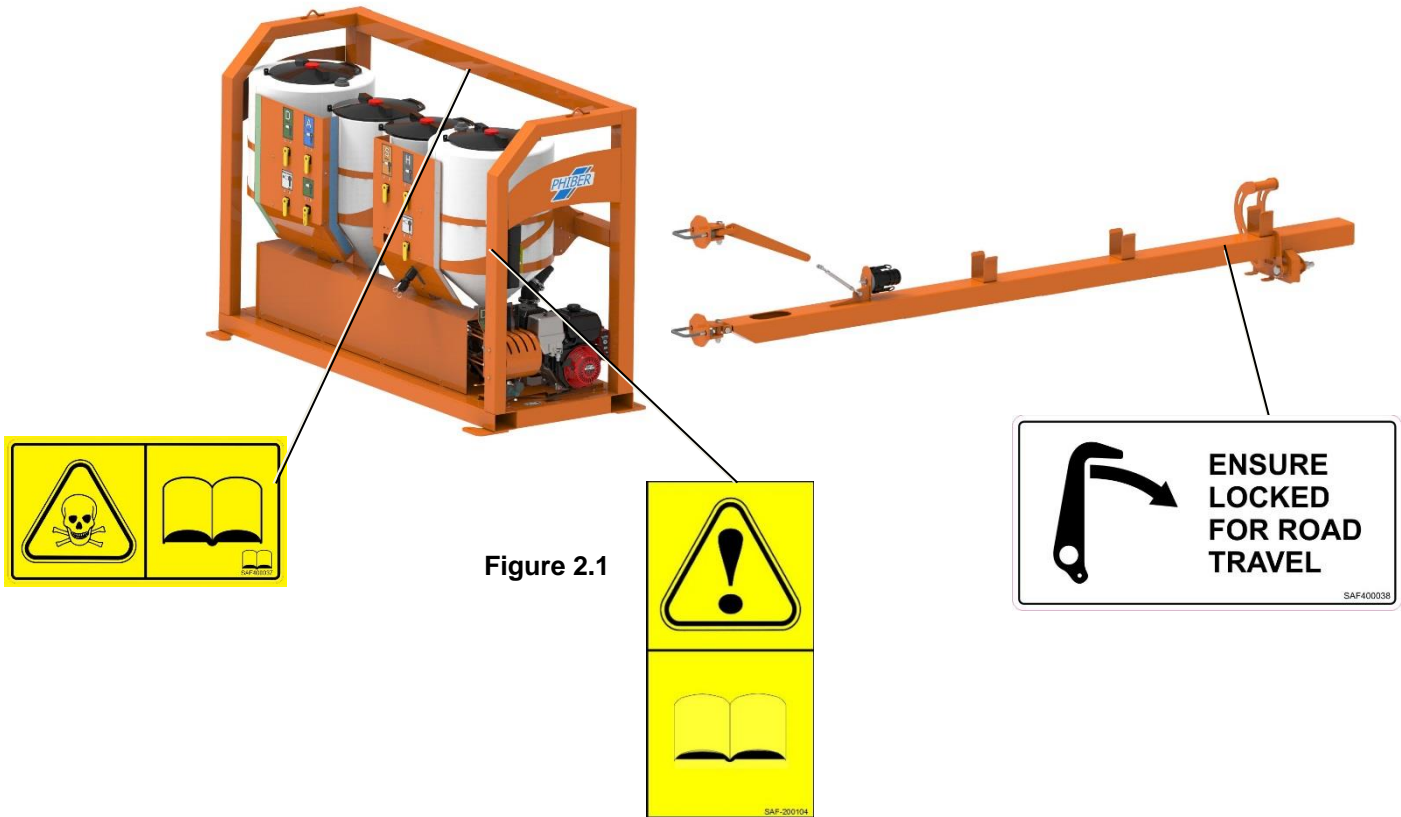
- Use additional caution and reduce speed when towing under adverse surface conditions and when turning.
- Do not allow riders on any part of the Dash or trailer.
- Ensure boom and/or end gate is securely latched before transport.

Storage Safety

- Store the Dash away from areas of human activity.
- Do not allow children to play on or around Dash or trailer.


Safety Signs

Safety Sign Location



Safety Sign Explanation

BOOM LATCH (Figure 2.2)

 **WARNING!** Ensure boom is securely latched before transport.



READ THE OPERATOR'S MANUAL (Figure 2.3)

! WARNING! Read and understand the contents of the Operator's Manual before performing any tasks related to the operation, adjustment, maintenance or repair of the machine.

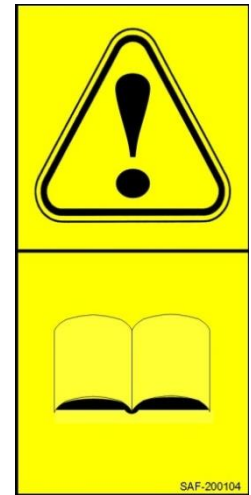


Figure 2.3

CHEMICAL HAZARD (Figure 2.4)

! WARNING! Read and understand the contents of the manufacturers handling and use instructions

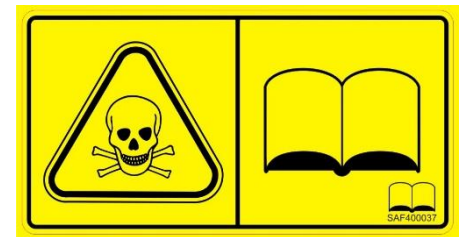
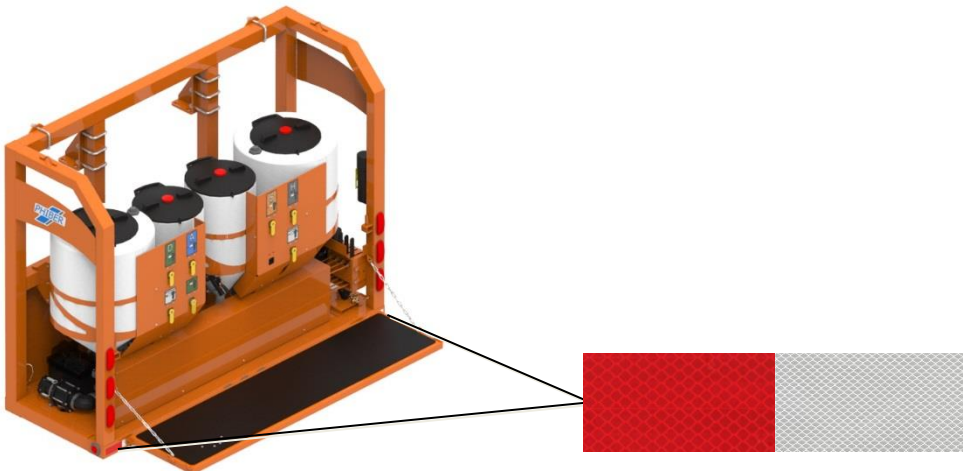


Figure 2.4

Road Safety Sign Location



Road Safety Sign Explanation

CONSPICUITY TAPE- RED/WHITE (Figure 2.12)

Tape serves as reflectors to render vehicle visible in low light or dark driving conditions.



Figure 2.12

Safety Sign Maintenance

Safety Sign Legibility

All safety signs applied to the Dash must be visible and legible. Keep dust and dirt cleared from safety signs and ensure that visibility is not obscured.

Damaged or Deteriorated Safety Signs

Remove and replace any safety signs that have been damaged or show signs of deterioration.

Safety Sign Replacement

Replacement safety signs may be ordered through your dealer or distributor. Contact PhiBer® if you are unable to obtain replacement safety signs from a dealer or distributor.

Safety Signs on Replacement Parts

Ensure that replaced parts or components on the Dash, that had a safety sign attached originally, include a safety sign when they are shipped to you.

Affixing Safety Signs to Machine

1. Ensure proper position and orientation before installing.
2. Ensure installation area is clean and dry.
3. Ensure ambient temperature is above 50° F (10° C).
4. Remove backing material to expose label adhesive.
5. Place one edge of label to machine surface.
6. Slowly press the label onto the surface.
7. Ensure no air pockets exist under surface of the label.

Specifications

DASH

	<u>2.0</u>	<u>Center Mount 4.0</u>	<u>Rear Mount 4.0</u>
Width	65 in (165 cm)	102 in (259 cm)	102 in (259 cm)
Length	40 in (102 cm)	36 in (91 cm)	36 in (91 cm)
Height	62 in (158 cm)	66 in (168 cm)	78 in (198 cm)
Dry Weight	440 lbs. (200 kg)	1400 lbs. (635 kg)	1550 lbs. (704 kg)
Requirements	3" Water Supply Line, 1" Water Supply Line, 3/8" Air Line		

Hardware Torque

SAE

Bolt Diameter	Bolt Torque		
inches	SAE 2 n·m (lb-ft)	SAE 5 n·m (lb-ft)	SAE 8 n·m (lb-ft)
1/4	8 (6)	12 (9)	19 (12)
5/16	13 (10)	25 (19)	36 (27)
3/8	27 (20)	45 (33)	63 (45)
7/16	41 (30)	72 (53)	100 (75)
1/2	61 (45)	110 (80)	155 (115)
9/16	95 (70)	155 (115)	220 (165)
5/8	128 (95)	215 (160)	305 (220)
3/4	225 (165)	390 (290)	540 (400)
7/8	230 (170)	570 (420)	880 (650)
1	345 (225)	850 (630)	1320 (970)

Metric

Bolt Diameter	Bolt Torque	
mm	8.8 n·m (lb-ft)	10.9 n·m (lb-ft)
M3	0.5 (0.4)	1.8 (1.3)
M4	3 (2.2)	4.5 (3.3)
M5	6 (4)	9 (7)
M6	10 (7)	15 (11)
M8	25 (18)	35 (26)
M10	50 (37)	70 (52)
M12	90 (66)	125 (92)
M14	140 (103)	200 (148)
M16	225 (166)	310 (229)
M20	435 (324)	610 (450)
M24	750 (555)	1050 (774)
M30	1495 (1103)	2100 (1550)
M36	2600 (1917)	3675 (2710)

Valve Bolts

Valve Size	Nut Size across flats	Handle Bolt Torque	Body Bolt Torque
in	in	n·m (in-lb)	n·m (in-lb)
3/4	7/16	5 (45)	5 (45)
1	1/2	5 (45)	5 (45)
2	9/16	17 (150)	10 (88)
3	9/16	28.3 (250)	10 (88)

NOTE: Torque values listed are based on lubricated connections in reassembly.

Mounting and Installation

Mounting the DASH

1. Place Dash on trailer where desired.
2. Drill 11/16" holes through trailer deck through Dash feet.
3. Insert provided 5/8" x 2" carriage bolts through rear Dash feet. (Figure 4.1)
4. Use provided 5/8" x 4" carriage bolts and springs to attach front Dash feet to trailer. Compress spring to 1-13/16 long (Figure 4.2)
5. Attach 3" water line to suction supply line.
6. Attach 1" water supply line.
7. Attach 3/8" airline to air supply line.
8. Attach 3" output hose to outlet.



Figure 4.1-Mounting Feet

Mounting the DASH Accessories

Cage

1. Place Cage on trailer where desired.
2. Drill 11/16" holes through trailer deck through Cage feet.
3. Insert 5/8" carriage bolts through Cage feet. (Figure 4.1)

Tote Platform (4.0 only)

1. Use supplied 5/8" bolts to bolt Platform legs to Platform.
2. Use supplied 5/8" U-bolt to bolt Tote Platform to Dash. (Figure 4.3)
3. Drill 11/16" holes through trailer deck through Platform feet.
4. Insert 5/8" carriage bolts through Platform feet. (Figure 4.1)



Figure 4.2-Mounting Spring

Light Kit

1. Use supplied 5/8" U-bolts to bolt Light Kit onto Dash frame.
2. Mount Switch Box using supplied #10 self-drilling screws.
3. Connect power wires to battery.
4. Use supplied p-clips and screws to secure wire to Dash frame

Boom Kit

1. If not mounting to Dash frame, bolt Standalone Boom Kit to trailer deck with 1/2" bolts.



Figure 4.3-Tote attached to Dash

2. Use supplied 5/8" U-bolts to bolt Boom Kit onto Dash frame or Standalone Boom Kit. Bottom U-bolt ~9" from deck, with ~19" in-between U-bolts.
3. Drill 7/16" holes in deck and bolt Boom Latch to deck with 3/8" bolts at desired location under one of the boom supports.
4. Attach 3" hoses to boom.

Step Kit

1. Using included Drill Template, drill the mounting holes through deck at desired location.
2. Bolt Step Frames loosely to trailer deck using supplied 1/2" carriage bolts.
3. Insert Steps into Step Frame using supplied fasteners.
4. Tighten Step Frame bolts.
5. Mount Handle to trailer side next to the steps using supplied 1/2" bolts.

Manifold Kit

1. Drill holes in trailer deck at desired location.
2. Bolt Manifold Kit to trailer .
3. Connect hoses to designated ports on rear of Manifold.
(Figure 4.3)

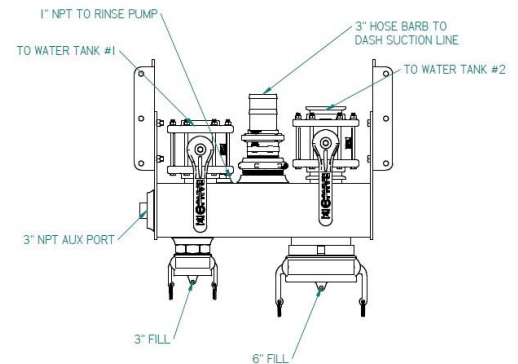


Figure 4.3-Manifold Hose Ports

Working Platform (Center Mount 4.0 only)

1. Use supplied 5/8" U-bolts to bolt Working Platform Kit onto Dash frame.
2. Drill 11/16" holes through trailer deck through Platform feet.
3. Insert 5/8" carriage bolts through Platform feet. (Figure 4.1)

Deck Bulkhead

1. Drill 4-1/8" hole in deck at desired position.
2. Place Bulkhead in trailer deck.
3. Drill 7/16" holes through trailer deck using Bulkhead plate as template.
4. Bolt Bulkhead onto the deck using supplied 3/8" fasteners.
5. Attach hoses to Bulkhead.

Flow Meter

1. Cut 3" hose in desired location.
2. Insert Flow Meter Kit into hose.
3. Clamp hose to Flow Meter using supplied T-bolt clamps.

Pump Mount Kit (2.0 only)

1. Use supplied 3/8" bolts to attach Pump Mount Kit to rear of Dash.
2. Use supplied 5/16" bolts to attach pump and motor to pump mount.

Auxiliary Chemical Meter (2.0 only)

1. Bolt Chemical Meter into supplied place in Dash side using supplied 1/4" bolts. (Figure 4.4)
2. Connect 1" hoses to Chemical Meter using supplied hose clamps.



Figure 4.4- Aux. Chemical Meter

Jug Knife Kit

1. Remove tank lid.
2. Replace spray nozzle frame with Jug Knife Kit.
3. Replace tank lid.

Hose Reel

1. Bolt Hose Reel on to trailer deck.

Honda Motor w/ Pump

1. Attach Motor to mount. (Figure 4.5)
2. Attach pump inlet and outlet to pump circuit.
3. Use supplied screws to fasten battery box to Dash.
4. Attach battery to motor.

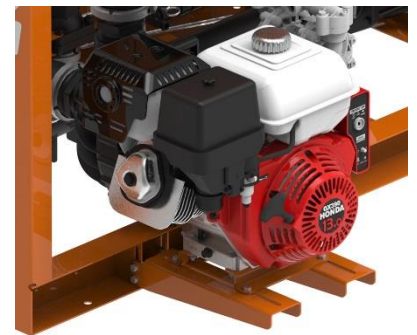


Figure 4.5-Honda Motor w/ Pump

Chemical Transfer Pump

1. Bolt Chemical Transfer Pump on to Dash bottom using 5/16" bolts.
2. Attach hoses to the pump.

Water Tanks

1. Place Water Tank on trailer in desired location.
2. Use included mounts to attach tank to trailer deck.

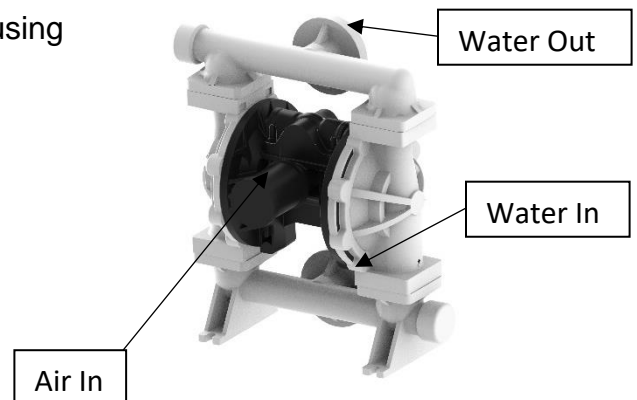


Figure 4.6-Chemical Transfer Pump

Operation

Pre-loading Products

Jugs and Liquid Products

1. Set Rinse Source to Water.
2. Pour product into desired inductor, or use optional jug knife.
3. Turn on inductor manual Rinse and rinse the jug out using the standard rinsing head.

Dry Products

1. Set Rinse Source to Water.
2. Pour product into inductor D (4.0) or inductor J (2.0).
3. Turn on the tank's Agitate function and fill inductor to desired volume.
4. Change Rinse Source to D (4.0) or J (2.0).
5. Turn on Agitate and let run for desired duration.

Loading the Sprayer

1. Load products into inductors.
2. Ensure Rinse Source is set to Water
3. Connect loading hose to sprayer.
4. Start engine.
5. Open main valve.
6. Open the tank valve halfway to dump product into water stream, open all the way to rinse tank.

Note: Idle Dash pump down or turn pump off before closing sprayer valve, or pump may fail.

Cleaning the DASH

See Also DOC400006

1. Set Rinse Source to Water. Fill the left inductor D or J, depending on the model, $\frac{1}{2}$ - $\frac{3}{4}$ full of water using the Agitate valve.
2. Add cleaning agent to left inductor. Add the appropriate amount of cleaning agent for the sprayer.
3. Change the Rinse Source to inductor D or J (Figure 5.1).
4. Turn on the Agitate valve and let run for 1 minute (Figure 5.1).

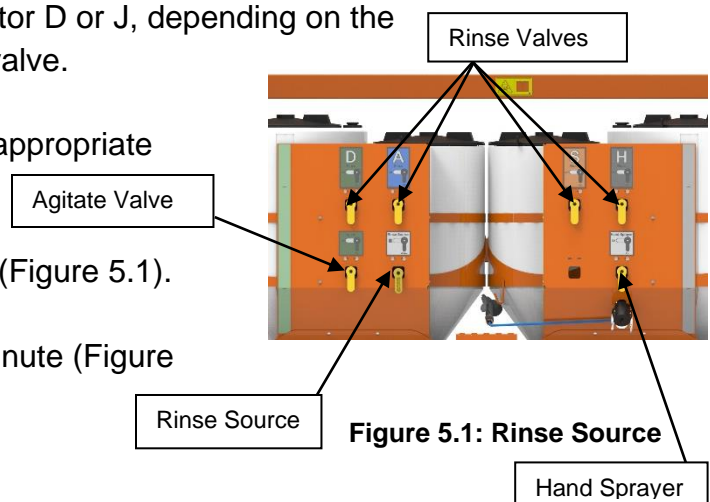


Figure 5.1: Rinse Source

5. Turn on all the manual Rinse valves to wash down all inductors. The hand sprayer can be used to clean manually if desired. Run until inductor D or J is empty. Follow cleaning agent's directions for time duration to sit before moving on to step 6.
6. Change the Rinse Source to Water (Figure 5.1).
7. Turn on the Agitate valve and let run for 30 seconds (Figure 5.1).
8. Turn on all the manual Rinse valves to wash down all inductors. Let run for 1 minute. If the hand sprayer was used in step 5 let it run until the cleaning agent is flushed out.
9. Hook main hose to sprayer and empty all inductors using the gas powered water pump (Figure 5.2). Add more fresh water as required for sprayer rinse.
10. Turn on all the manual Rinse valves and let run for 1 minute.
11. Turn on the Agitate valve (Figure 5.1) and fill left inductor with enough fresh water to push any rinse water out of the main water hose.
12. Change the Rinse Source to inductor D or J (Figure 5.1).
13. Turn on the Agitate valve and let run for 30 seconds (Figure 5.1).
14. Turn the Rinse Source back to Water (Figure 5.1).
15. Empty the remaining rinse water in the inductors into the sprayer.

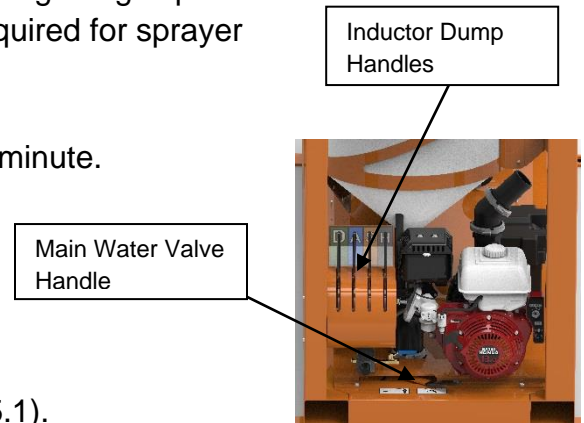


Figure 5.2: Chemical Dump Handles and Pump Motor

Service and Maintenance

Winterizing

1. Disconnect 3 in water line from DASH.
2. Disconnect 1 in water line from tank.
3. Place 1 in water line in jug of antifreeze.
4. Set Rinse Source to Water.
5. Turn on Agitate for 5 sec.
6. Turn on each inductors Rinse valve for 5 sec.
7. Set Rinse Source to D or J.
8. Turn on Agitate for 5 sec.
9. Turn on Hand Sprayer for 5 sec.
10. Ensure main water valve is closed.
11. Open each inductor dump valves in turn.
12. Close inductor dump valves.

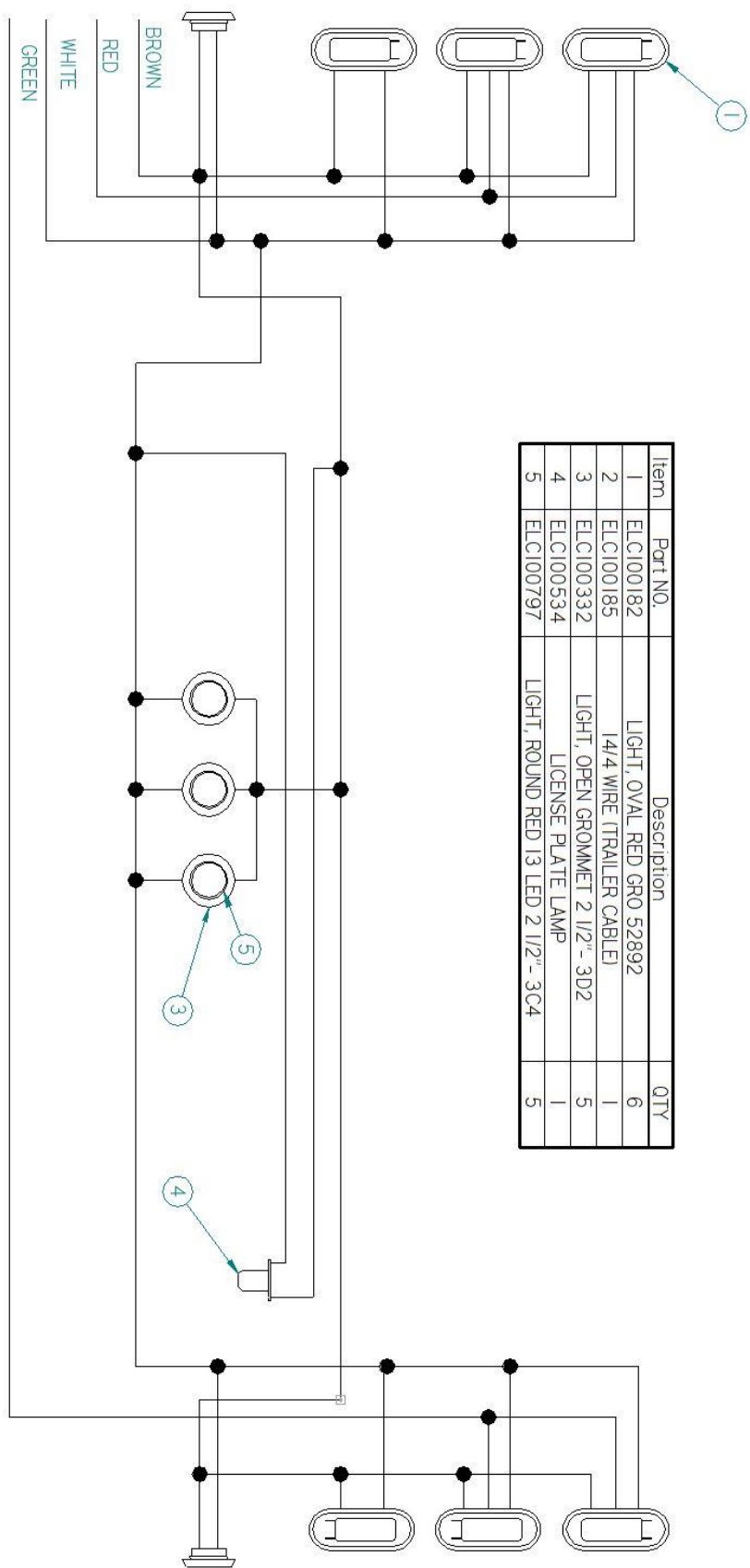
Springtime Preparation

1. Attach water hoses to DASH.
2. Set Rinse Source to Water.
3. Turn on Agitate and let run for 30 sec.
4. Turn on all the manual rinse valves to wash down all inductors. Let run for 1 minute.
5. Turn on Hand Sprayer and let it run until the antifreeze is flushed out.
6. Dump inductors into main water line.
7. Use gas driven pump to empty rinse water out of inductors and main water line.
8. Dispose of antifreeze per local regulations.
9. DASH ready for next season.

Proper maintenance of the Dash will result in more reliable performance. Please refer to the chart below for recommended maintenance information:

Key			Maintenance Record											
✓	check		hours											
◆	lubricate		by											
◇	clean		date											
▲	change													
⌘	hours													
Every Use														
✓	Engine Oil													
50 ⌘														
▲	Engine Oil													
◆	Air Pump Grease													

Rear Mount Dash Light Schematic



Troubleshooting

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Air pump lock up	Pressure equalization in pump	Vent pressure from airline and reapply
	Lack of lubrication on O-Ring seals	Also see air diaphragm pump manual Clean air chamber and re-lubricate seals
Tank fill with water	Misalignment of valve handles	Realign valve rods
	Torque ball valve	Retorque valves
Pump cavitation	Misalignment of valve handles	Realign valve rods
	Torque ball valve	Retorque valves
Boom not latching	Boom too high or low	Adjust tie rod link

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