SILVER MIST
AQUATIC PLANT
MANAGEMENT

SM 301

Operator's Manual

V 1.2

Revision Date April 2025

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Table of Contents

Chapter	Description	Page
1	Introduction	1
2	Check Lists	2
3	Safety	9
4	Controls	15
5	Operation	18
6	Adjustments	28
7	Lubrication	31
8	General Operational Practices	35
9	Troubleshooting	36
10	Service	40
11	Specifications	42
12	Warranty	43
	Index	44
	Notes	45
	Functions: Tachometer Displays	46
	Torque Specifications	47

Chapter 1

Introduction

This Operator's Manual gives the owner/ operator information for operating, maintaining, and servicing the SILVER MIST SM301 Aquatic PLANT Management Machine. This manual provides the operator with information required for safe operation of the SM301. Major points of safe operation are detailed in the ***Safety*** chapter of this manual.

It is recommended that you read and understand the contents of this manual completely and become familiar with this machine before operating it. See your authorized SILVER MIST dealer if you have any questions concerning information in this manual or require additional manuals.

Information in this manual may be set in italic type and introduced by the words ***NOTE*** or ***IMPORTANT.*** BE SURE to carefully read and comply with the message – It will improve your operating and maintenance efficiency, help avoid breakdowns and damage, extend your machine's life, and improve the operator's safety

It suggests the Operator's Manual be stored in the storage box of the machine.

DO NOT use this machine for any applications or purposes other than those described in this manual. Any person using non-approval attachments with this machine is responsible for the consequences.

SILVER MIST stands ready to provide any assistance you may require, including providing service parts. All service parts should be obtained from your SILVER MIST dealer. Record the serial number in the space provided above as a record for quick reference.

"Right" and "Left" are determined from a position sitting on the seat and facing forward. From this position, the engine speed control is on the "left".

Please be aware that SILVER MIST Company strives to continually improve its products and reserves the right to make changes and improvements in the design and construction of any part without incurring the obligation to install such changes on any unit previously delivered.

Chapter 2
Checklists

Pre-Delivery

The following checklist is an important reminder of valuable information and inspections which MUST be made before delivering this machine to the customer. Check off each item after prescribed action is taken.

Check that:

- Unit has not been damaged in shipment. Check for such items as dents and loose or missing parts; correct or replace components as required.
- Battery is securely mounted and not cracked.
- Hydraulic pumps, valves, cylinders, motors, and hoses are not damaged, are properly mounted, and are not leaking.
- Filters are not damaged, leaking, or loosely secured.
- Hydraulic system reservoir and engine crankcase are filled to their proper levels with the proper fluids.
- All adjustments are made to comply with settings given in the Adjustments chapter of this manual.
- All guards, shields, and decals are in place and securely attached.
- Model and serial numbers, for this machine, are recorded in the space provided on this page

- **Start the machine and test-run to check for proper operation of all controls.**

I acknowledge that pre-delivery procedures were performed on this machine as outlined in the Pre-Delivery Checklist.

Dealership Name

Dealer Representative's Name

Date Checklist Completed

Model Number Serial Number Engine Serial Number

Chapter 2
Checklists
(Continued)

Pre-Delivery (Copy)

The following checklist is an important reminder of valuable information and inspections which MUST be made before delivering this machine to the customer. Check off each item after prescribed action is taken.

Check that:

- Unit has not been damaged in shipment. Check for such items as dents and loose or missing parts; correct or replace components as required.
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- Filters are not damaged, leaking, or loosely secured.
- Hydraulic system reservoir and engine crankcase are filled to their proper levels with the proper fluids.
- All adjustments are made to comply with settings given in the Adjustments chapter of this manual.
- All guards, shields, and decals are in place and securely attached.
- Model and serial numbers, for this machine, are recorded in the space provided on this page and on page 2.
- **Start the machine and test-run to check for proper operation of all controls.**

I acknowledge that pre-delivery procedures were performed on this machine as outlined in the Pre-Delivery Checklist.

Dealership Name

Dealer Representative's Name

Date Checklist Completed

Model Number Serial Number Engine Serial Number

Unload Check List

1. Raise Choke

2. Raise Conveyor

3. Anchor Post – Remove Tape

4. Cut Paddle Wheel Zip Ties

5. Remove Tie Down Straps

Chapter 2
Checklists
(Continued)

Delivery

Check that:

The following Checklist is an important reminder of valuable information and MUST be passed on to the customer at the time the unit is delivered. Check off each item as it is explained to the customer.

Review with the customer the contents of this manual; especially:

- The Index for quickly locating topics.
- The Safety, Controls & Safety Equipment, and Operations chapters for information regarding safe use of the machine.
- The Adjustments, Lubrication, Service, and Troubleshooting chapters for information regarding proper maintenance of the machine. Explain that regular lubrication and maintenance are required for continued safe operation long life.
- Give the Operator's Manual to the customer and instruct the customer to be sure to read and completely understand its contents BEFORE operating this machine.
- Explain that the customer MUST consult the engine manual (provided) for related specifications, operating adjustments, and maintenance instructions.

Completely fill out the Owner's Registration, including customer's signature, and return it to the company.

Customer's Signature

Date Delivered

Chapter 2
Checklists
(Continued)

Delivery (Copy)

Check that:

The following Checklist is an important reminder of valuable information and MUST be passed on to the customer at the time the unit is delivered. Check off each item as it is explained to the customer.

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- The Index for quickly locating topics.
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Completely fill out the Owner's Registration, including customer's signature, and return it to the company.

Customer's Signature

Date Delivered

Chapter 3
Safety

The above Safety Alert Symbol Means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** It stresses an attitude of "Heads Up for Safety" and can be found throughout this manual and on decals on this machine.

Before you attempt to operate this machine, read and study the following safety information. In addition, be sure that everyone who operates or works with this machine, whether family member or employee, is familiar with these safety precautions. It is essential to have competent and careful operators, who are not physically or mentally impaired, and who are thoroughly trained in the safe operation of the machine. It is recommended that the operator be capable of obtaining a valid motor vehicle operator's license.

Use of this machine is subject to certain hazards that cannot be eliminated by mechanical means, but only by exercising intelligence, care, and common sense. Such hazards include, but are not limited to weather conditions, overloading, instability of the load, poor maintenance, and using the machine for a purpose for which it was not intended or design.

SILVER MIST Aquatic Systems ALWAYS takes the operator and his/her safety into consideration when designing this machine and guards exposed to moving parts. However, some areas cannot be guarded or shielded in order to assure proper operation. Furthermore, this Operator's Manual and decals on the machine warn of additional hazards and should be read and observed closely.

Some photographs used in this manual may show doors, guards, and shields open or removed for illustration purposes ONLY. BE SURE that all doors, guards, and shields are in their proper operating positions BEFORE starting the engine to operate the machine.

Different applications may require certain optional safety equipment. BE SURE you know the job site hazards and equip your machine as needed.

DANGER

"DANGER" indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

"WARNING" indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

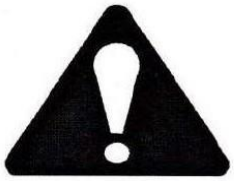
CAUTION

"CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. May also alert against unsafe practices.

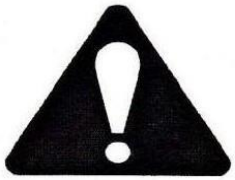
Mandatory Safety Shutdown Procedure

1. **Secure craft with anchors or cast lines to dock.**
2. **Move directional controls to "neutral" positions.**
3. **Move conveyor to safe position.**
4. **Shut off engine and remove key.**

ONLY when you have taken these precautions can you be sure it is safe to proceed. Failure to follow this procedure could lead to death or serious bodily injury.



Chapter 3
Safety
(Continued)



Before Starting

- Operator is properly wearing a Personal Flotation Device (PFD)
- To ensure safe operation, replace damaged or worn parts with SILVER MIST service parts, BEFORE operating this machine.
- Remove all trash and debris from the machine each day, especially in the engine compartment, to minimize the risk of fire.
- Always face the machine and use hand holds when getting on and off the machine.
- Do not wear loose clothing, long uncovered hair, or jewelry near the machine.
- Do not use machine in an atmosphere with explosive dust or gases or where exhaust can contact flammable material. Explosion or fire may result.
- Check near machine and warn all nearby personnel before starting the machine.
- Always perform a daily inspection of the machine before using it. Look for damage, loose or missing parts, leaks, etc. Be sure fluid levels are at the proper level for operation and all guards and shields are in place

REMEMBER, it is the owner's responsibility for communicating information on the safe use and proper maintenance to users of this machine.

During Operation

- When operating, be comfortably seated in the operator's seat with your feet in their proper place and at least one hand on the steering control levers.
- Start the operation slowly and carefully. The engine speed, water conditions, load being carried, abrupt control movements can affect stability. IF MISUSED, ANY OF THE ABOVE FACTORS CAN CAUSE THE MACHINE TO TIP, THROWING THE OPERATOR OUT OF BALANCE OR OUT OF THE MACHINE, CAUSING DEATH OR SERIOUS BODILY INJURY. Therefore, ALWAYS operate the machine with caution. Operate the controls smoothly and gradually at an appropriate engine speed that matches the operating conditions.
- NEVER carry riders. Do not allow others to ride on the machine because they could fall or cause an accident.
- NEVER use ether on a gasoline fueled engine. Use only starting aids as approved by the engine manufacturer.
- Stop and cool the engine before adding fuel.
- Do not exceed rated operating capacity.
- Always look to the rear before backing up the machine.
- Operate the controls only from the operator's seat.

Chapter 3
Safety
(Continued)

During Operation (continued)

- Always keep hands and feet inside the operator's compartment while operatingthe machine.
- New operators must practice machine operation in an open area away from bystanders. Practice with the controls until the machine can be operated safely and efficiently.
- Exhaust fumes can kill. Do not operate this machine in an enclosed area unless there is adequate ventilation.
- When exiting the machine, make certain the machine is anchored or secured to a dock.

Maintenance

- NEVER use your hands to search for hydraulic fluid leaks. Use a piece of paper or cardboard. Escaping fluid under pressure can be invisible and can penetrate the skin and cause serious injury. If any fluid is injected into your skin, see a doctor at once. Injected fluid MUST be surgically removed by a doctor familiar with this type of injury or gangrene may result.
- ALWAYS wear safety glasses with side shields when striking metal against metal. In addition, it is also recommended that a softer (chip-resistant) material be used to cushion the blow. Failure to heed could lead to serious injury to the eyes or other body parts.
- ALWAYS wear eye protection when servicing the machine. Wear a hard hat or other protection as needed.
- ALWAYS "jump" start the machine using the procedure described in the Service chapter of this manual.
- NEVER charge a frozen battery.
- Lead acid batteries produce flammable and explosive gases. Keep electrical arcs, sparks, flames, and smoking materials away from the batteries.
- Battery acid causes severe burns. In case of acid contact, immediately wash with water and seek medical attention.
- DO NOT smoke while filling the fuel tank or while working on the fuel or hydraulic systems.
- NEVER by-pass the key switch to start the engine. Only use the jump-starting procedure detailed in the Service chapter of this manual.

Transporting

- ALWAYS use an approved trailer with an adequate load rating to transport the machine.
- ALWAYS secure machine to trailer before transporting.

Chapter 3
Safety
(Continued)

Chapter 3
Safety
(Continued)

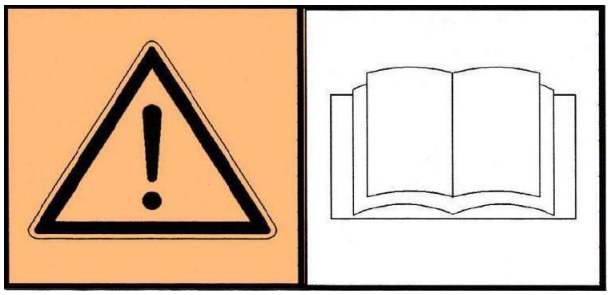


Fig. 2

Chapter 3
Safety
(Continued)

WARNING

Gasoline is highly flammable and explosive.
Turn engine off and let cool before refueling.

The engine emits toxic carbon monoxide.
Do not run in an enclosed area.

Read Owner's Manual Before Operation!

Chapter 4
Controls

Warning

Become familiar with ALL safety devices and controls on the machine BEFORE starting it. Know how to stop the machine's operation BEFORE starting it.

Warning

Read and understand ALL safety decals on the machine BEFORE operating it. DO NOT operate the machine unless ALL factory installed guards and shields are properly secured in place.

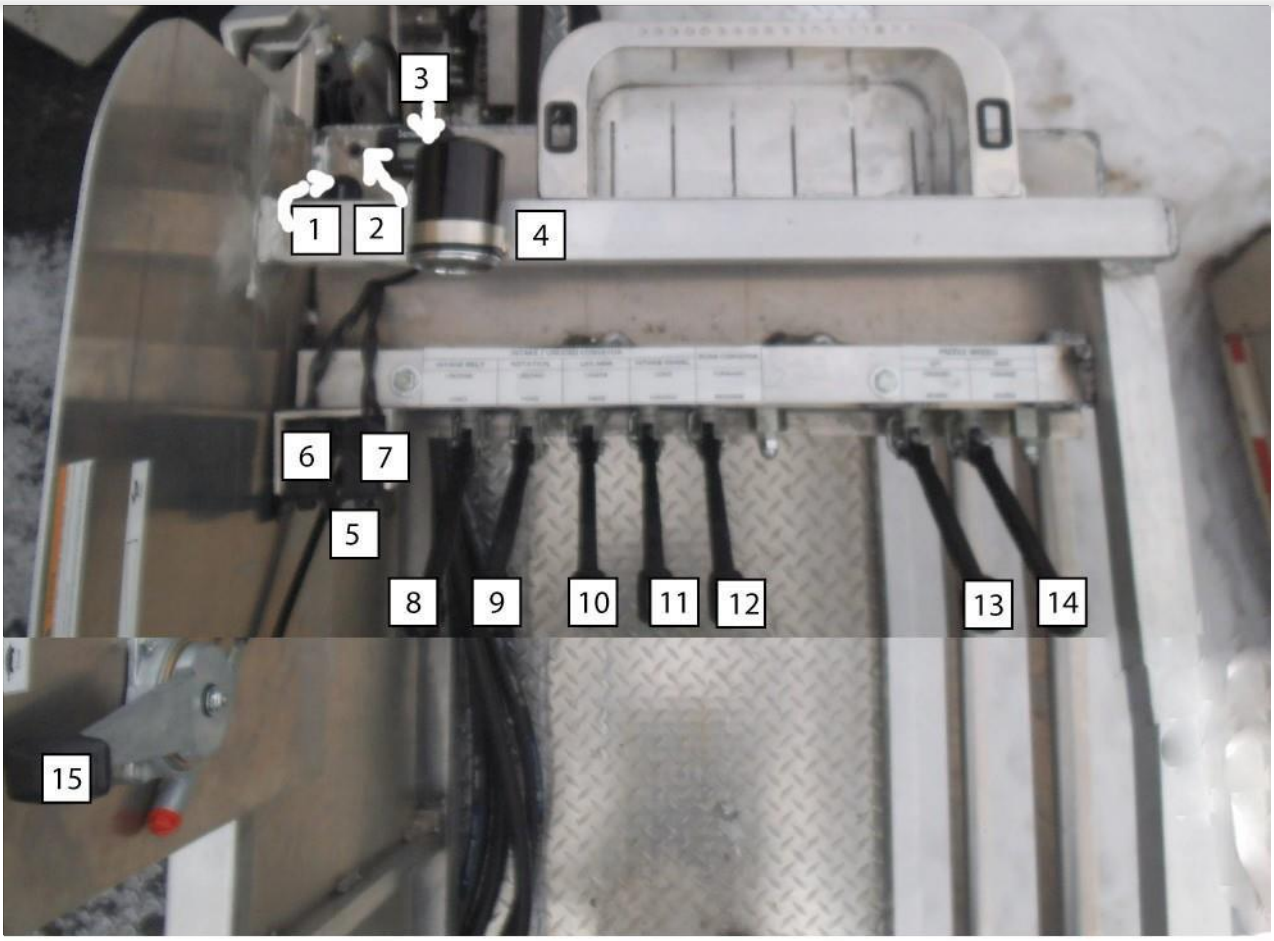
Guards & Shields

Whenever possible and without affecting machine operation, guards and shields are used to protect potentially hazardous areas. In many places, decals are also provided to warn of potential hazards and to display operating procedures.

Warning

ALWAYS be sure that all controls are in their "neutral" position BEFORE starting the engine. Operation of the controls should be smooth. Excessive travel speed and quick control movements are hazardous and could cause an accident.

Chapter 4
Controls
(Continued)



1. Choke Control
2. Oil Pressure Light
3. Hour Meter
4. Gas Gauge
5. Ignition Switch (under 6 & 7)
6. Left Stabilizer
7. Right Stabilizer
8. Bunk Conveyor
9. Conveyor Rotation
10. Lift Arm
11. Intake Wheel
12. Intake Conveyor
13. Left Paddle Wheel
14. Right Paddle Wheel
15. Throttle

Fig. 3

Machine Controls (Fig. 3)

1. **Choke Control –** The choke control is an aid for starting a cold engine. Pulling "out" on the choke control will close the choke, which enriches the air---fuel mixture. That helps start the engine. Once the engine is started, the choke control is pushed "in" and the engine functions normally.
2. **Oil Pressure Light** – is illuminated when the ignition switch is in the ON position; light will be off when engine is running. Shut off IMMEDIATELY if light illuminates to avoid engine damage.

Chapter 4
Controls
(Continued)

Machine Controls (Fig. 3) (continued)

3. **Hour Meter** – Indicated total operating hours of the machine. The Hour Meter is especially useful for logging time in the "mainteнance schedule" located in the backof this manual.

4. **Gas Gauge** – Indicates how much gas is in the tank and is available for the motor to use.

5. **Ignition Switch –** The ignition switch controls the starting and stopping of the engine by rotating the switch to various positions. These positions are:

Off Position – When the switch is rotated fully counterclockwise, power from the battery is disconnected from the machine and the engine is stopped. This is the only position in which the key can be inserted or removed from the ignition switch.

Run Position – When the key is turned one position clockwise from OFF, power from the battery is supplied to all machine circuits and the power light.

Start Position – When the key is turned fully clockwise and held in that position, the electric starter will be energized for stating the engine. By releasing the switch once the engine starts, the switch will return to the RUN position.

6. **Left Stabilizer** – Moving the switch"out" raises the stabilizer. Moving the switch "in" lowers the stabilizer.

7. **Right Stabilizer** – Moving the switch"out" raises the stabilizer. Moving the switch "in" lowers the stabilizer.

15. **Throttle** – Moving the throttle lever forward increases engine RPM. Moving the lever rearward decreases engine RPM.

Chapter 5
Operation

Before Starting the Engine

Before starting the engine and running the machine, refer to the Controls & Safety Equipment chapter and familiarize yourself with the various operating controls, indicators, and safety devices on this machine.

⚠ Caution

BEFORE starting the engine and operating the machine, review ALL safety recommendations in the SAFETY chapter of this manual. Know how to STOP the machine BEFORE starting the engine.

⚠ Caution

BEFORE starting the engine and operating the machine, the operator's seat must be secured in the operating position.

Fig. 4

1. Stored Position

2. Operating Position

Operator Seat Position (Fig. 4)

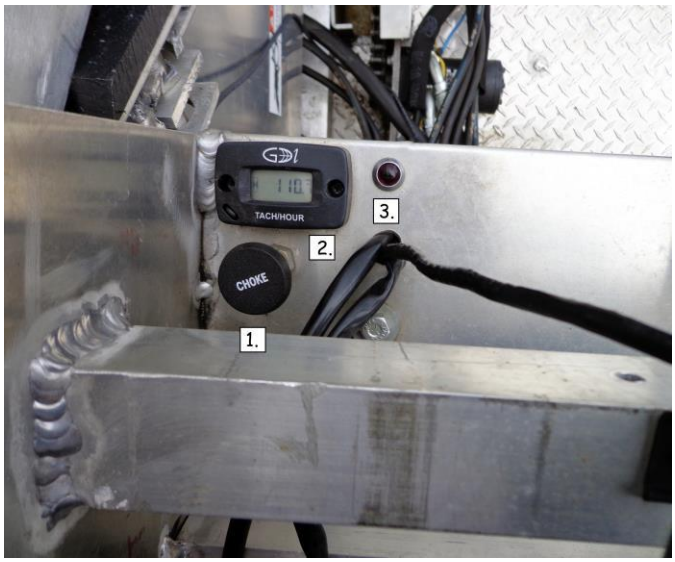
The operator seat must be locked in the operating position BEFORE starting the engine. To move the operator's seat to the operating position:

1. Swing the seat out to face towards the control panel.

DO NOT USE TRAILER FENDER AS A STEP TO CLIMB ONTO HARVESTER!!!!!

Chapter 5
Operation
(Continued)

Starting the Engine (Fig. 5)



1. Choke Control
2. Hour Meter
3. Power Light

4. Throttle Lever
5. Ignition Switch

Fig. 5

⚠ Caution

BEFORE starting the engine and operating the machine, check that ALL of the machine's control levers are in their neutral positions.

The following procedure is recommended for starting the engine:

1. Check that all of the controls are in their "neutral" positions.
2. Move the throttle to one fourth of full speed.
3. On a "cold" engine, pull choke control to the "up" position. On a "warm" engine, push the choke control to the "down" position.

NOTE: When the ignition switch is turned to the "on" position, the Power Light will illuminate.

4. Turn the ignition switch "clockwise" to the "on" position to start the engine.

5. Once the engine starts, slowly push the choke control to the down position as the engine reaches operating temperature.

NOTE: If the engine runs a short time and stops or will not start, turn the ignition switch to the "off" position, wait at least two minutes to allow the starter to cool, and repeat steps 1 through 5.

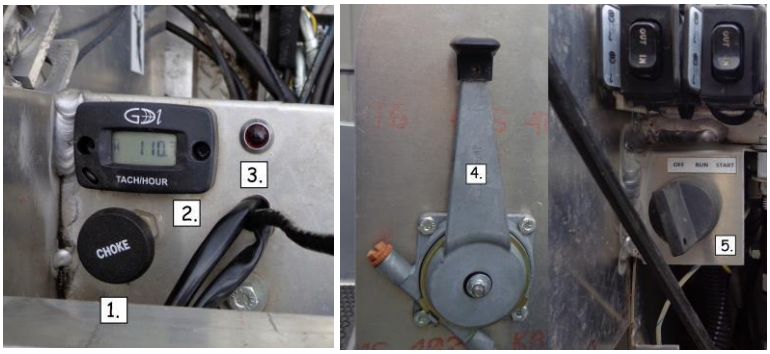
After the engine starts, allow a sufficient warm-up time before attempting to operate the controls.

Chapter 5
Operation
(Continued)

Stopping the Engine (Fig. 6)

Caution

BEFORE stopping the engine, place the intake conveyor in a “safe” position, check that ALL of the machine’s control levers are in their neutral positions, the throttle is at its slowest position, and the craft is secured by anchors or cast lines.



1. Choke Control
2. Hour Meter
3. Power Light
4. Throttle Lever
5. Ignition Switch

Fig. 6

The following procedure is the recommended sequence for stopping the engine:

1. Place the intake conveyor in the "down rest" position.
2. Move the throttle lever to the slowest idle position.
3. Check that all of the control levers are in their neutral positions.
4. Secure the craft with anchors or cast lines.
5. Turn the ignition switch “counterclockwise” to the “off” position.

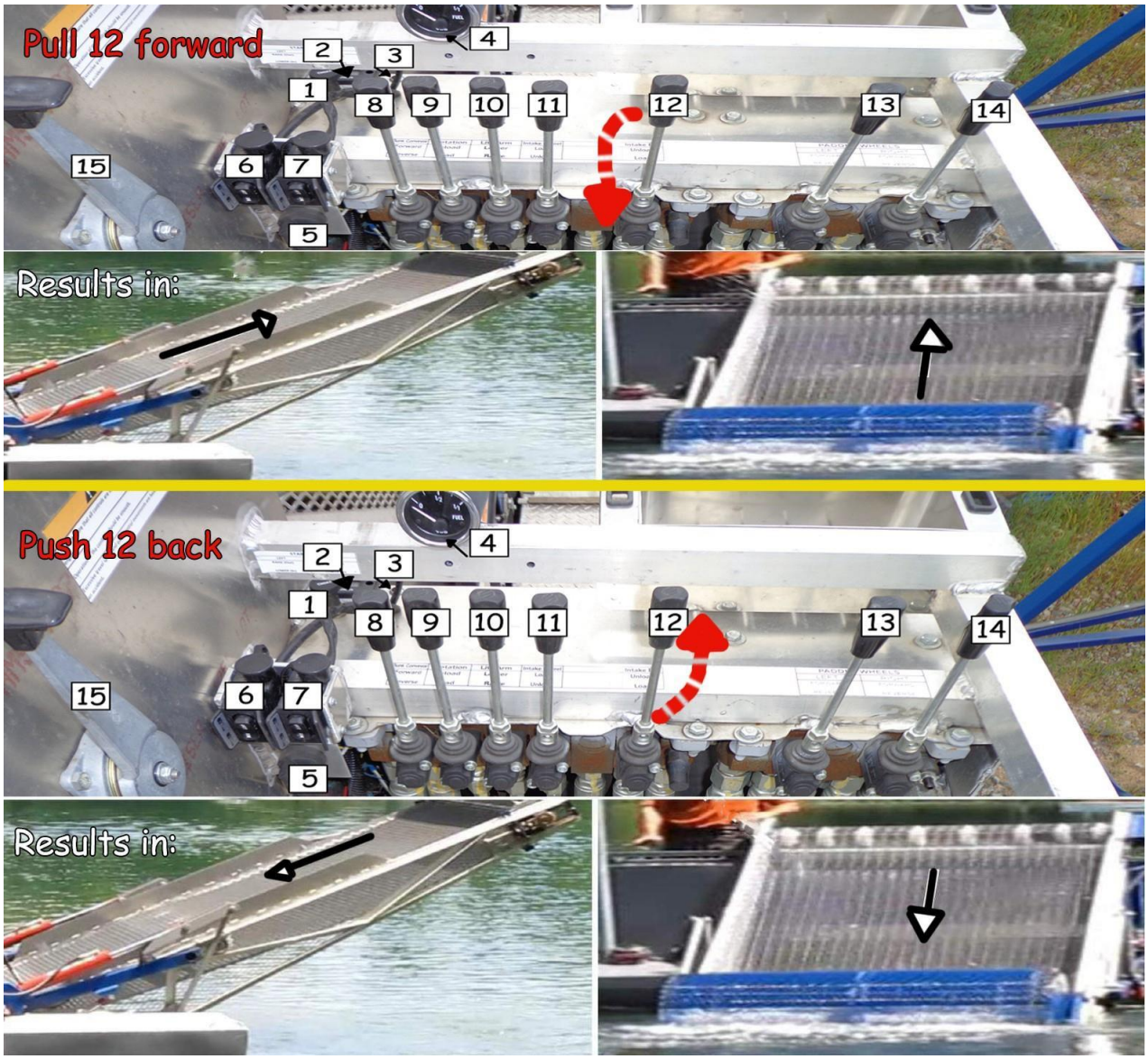
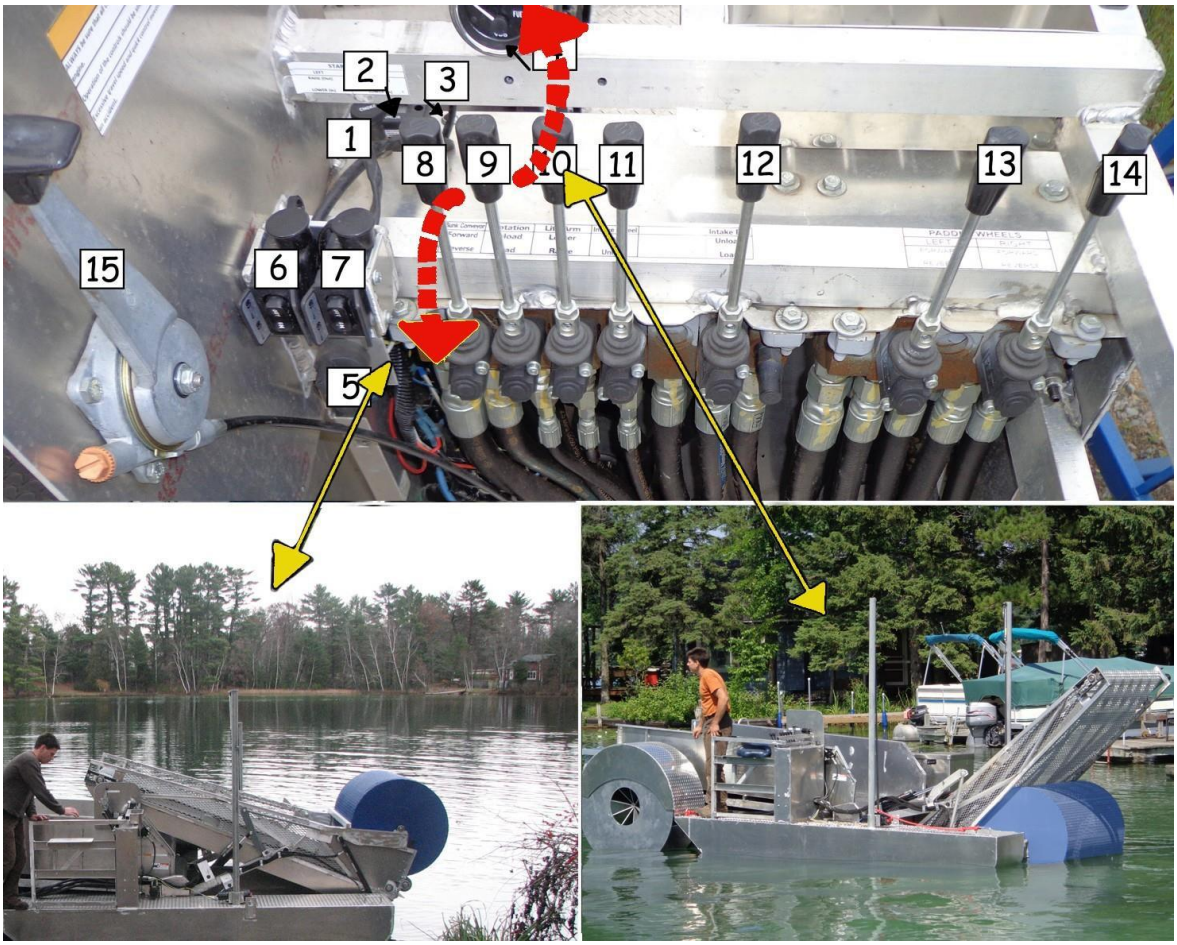


Fig. 7

Intake/Unload Conveyor Operation (Fig. 7)

Pulling the intake/unload conveyor control lever rearward will move the intake/unload conveyor in the "load" or "unload" direction.

Pushing the intake/unload conveyor control lever forward will reverse the intake/unload conveyor.



Load Position Unload Position

Fig. 8

Intake/Unload Conveyor Position Operation (Fig. 8)

Pulling the intake/unload conveyor control lever “rearward” will rotate the intake/unload conveyor to the “load” position.

Pushing the intake/unload conveyor control lever forward will rotate the intake/unload conveyor to the “unload” position.

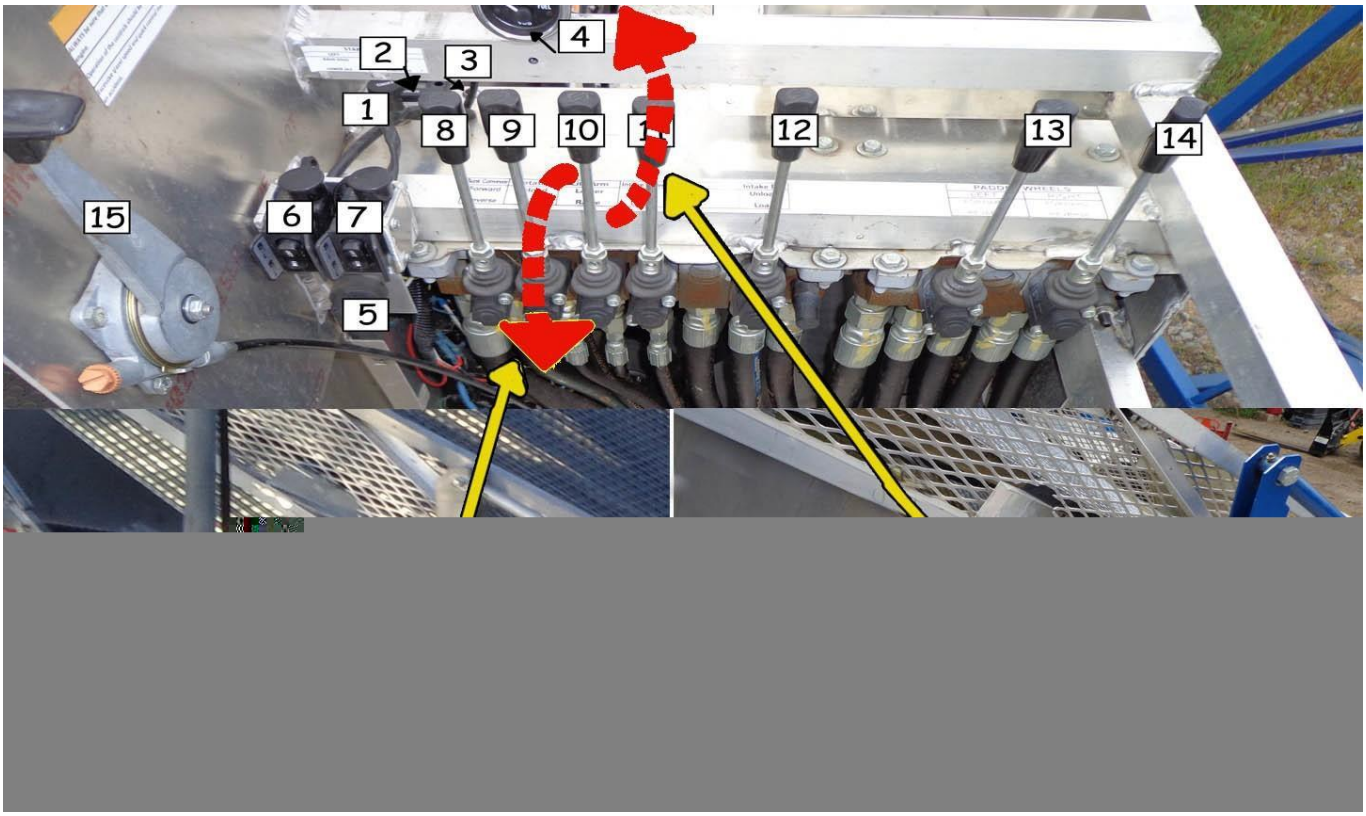


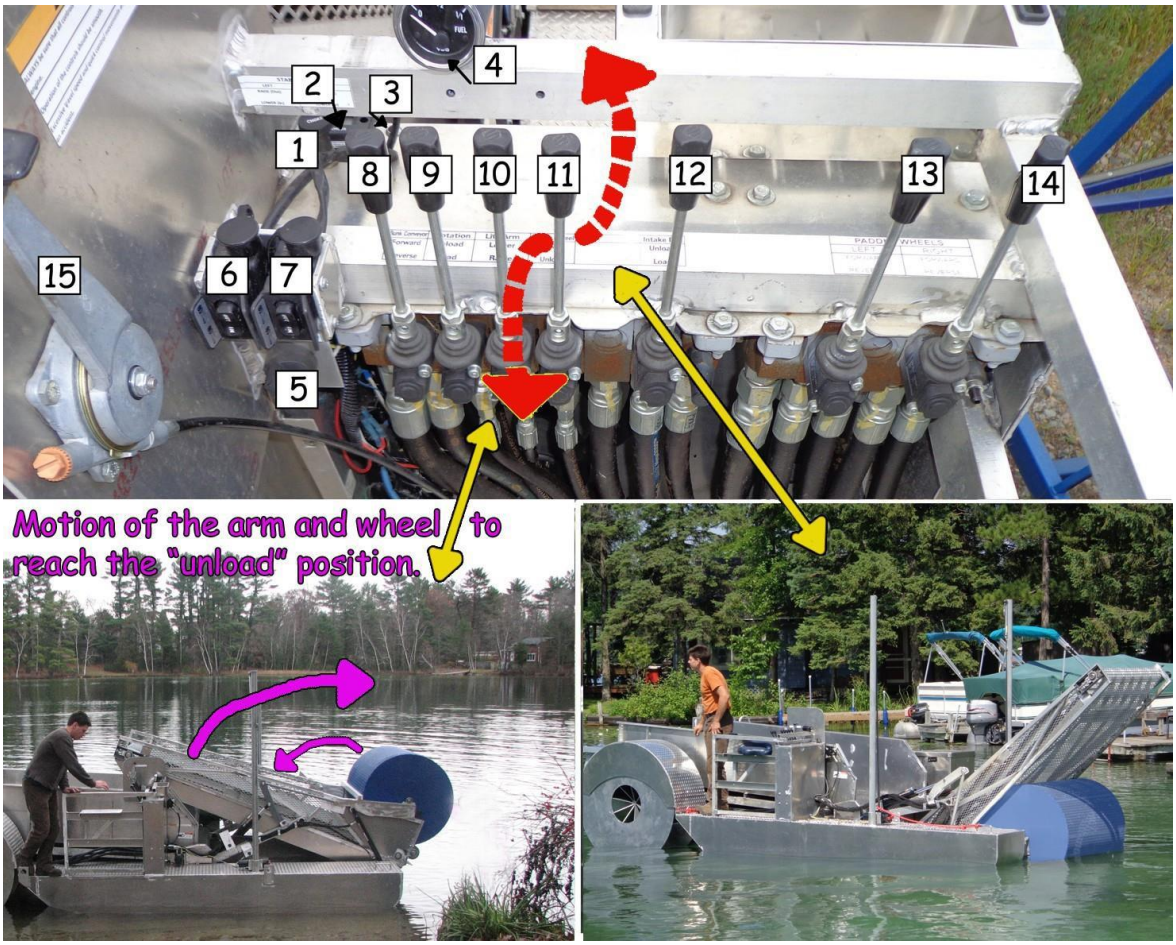
Fig. 9

Intake/Unload Lift Arm Operation (Fig. 9)

Pulling the intake/unload lift arm control lever "rearward" will raise the lift arm.

Pushing the intake/unload lift arm control lever "forward" will lower the lift arm.

Chapter 5
Operation
(Continued)



Load Position Unload Position

Fig. 10

Intake/Unload Wheel Position Operation (Fig. 10)

Pulling the intake/unload wheel position control lever "rearward" will rotate the wheel to the "load" position.

Pushing the intake/unload wheel position control lever forward will rotate the intake/ unload conveyor to the "unload" position.

During Operation: Don't force intake conveyor down against any solid surface. Example 1: This could happen when conveyor rotation occurs in too shallow of water, hitting the lake bed and putting down pressure on the conveyor or rotation in the wrong direction. If you hit the bottom, STOP operating the levers and THINK what needs to happen with the conveyor belt arm to lift it up and relieve pressure, assess how you are going to do that, and then proceed to carefully operate the lift arm. Example 2: Setting Intake Conveyor to rest on trailer. Gently set the conveyor down. Beware of hydraulic line clearance to Harvester guides on trailer. Stop engine and then relieve hydraulic pressure by toggling levers back and forth with the engine off.

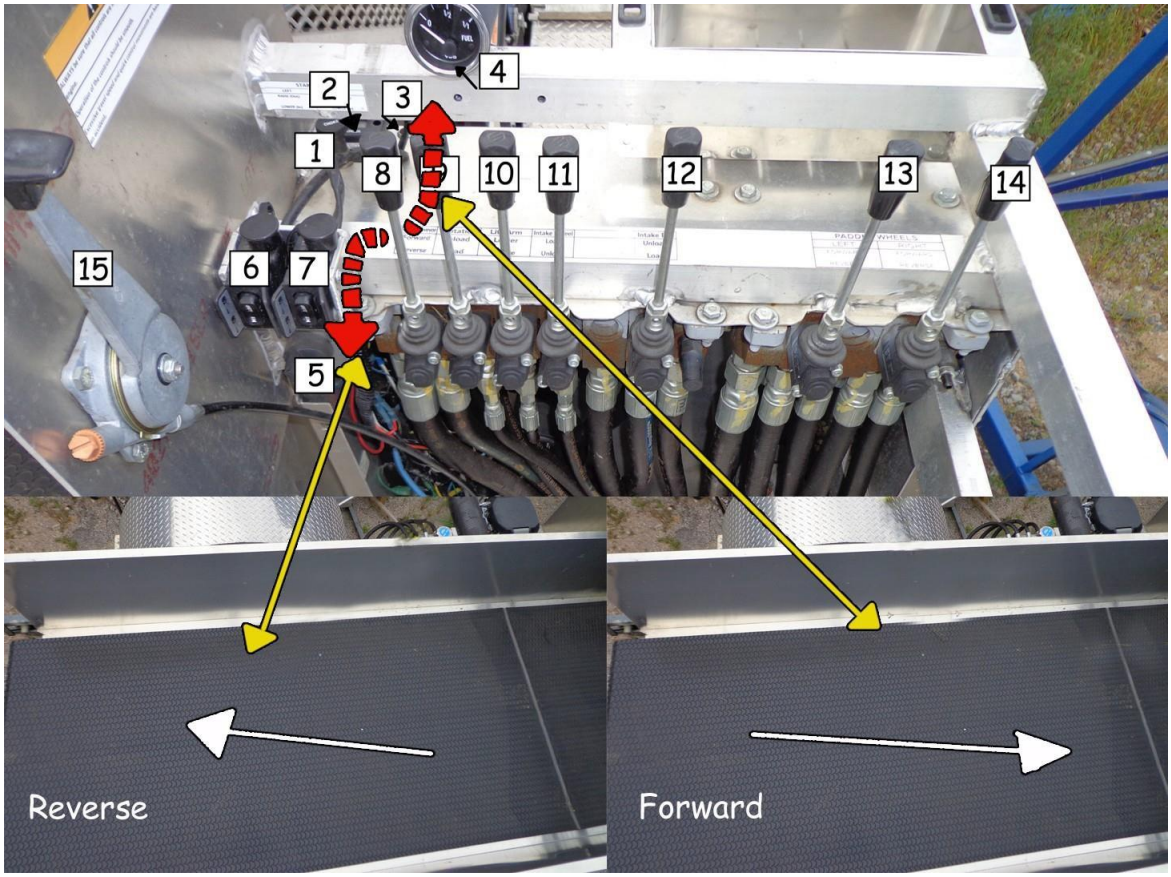


Fig. 11

Bunk Conveyor Operation (Fig. 11)

Pulling the bunk conveyor control lever towards the back will move the bunk conveyor belt in the "reverse" direction. The belt will move plant material away from the intake wheel and closer to the water at the far end of the weed harvester.

Pushing the bunk conveyor control lever "forward" will move the bunk conveyor in the "forward" direction. After you have a full load, this will move the gathered plant material from the bunk back to the front of the harvester to offload the material onshore.

During Operating: When unloading, do not unload an entire bunk load's worth of weeds onto the unloading inclined conveyor all at once. Only allow small bunches of weeds (not to exceed 200 lbs) to fall off of the bunk conveyor onto the off-load conveyor, while emptying bunk. To do this operate bunk conveyor at a slower speed than the off load conveyor belt and/or stop the bunk conveyor entirely for a larger clump to pass over the off load conveyor belt, into the onshore receptacle.

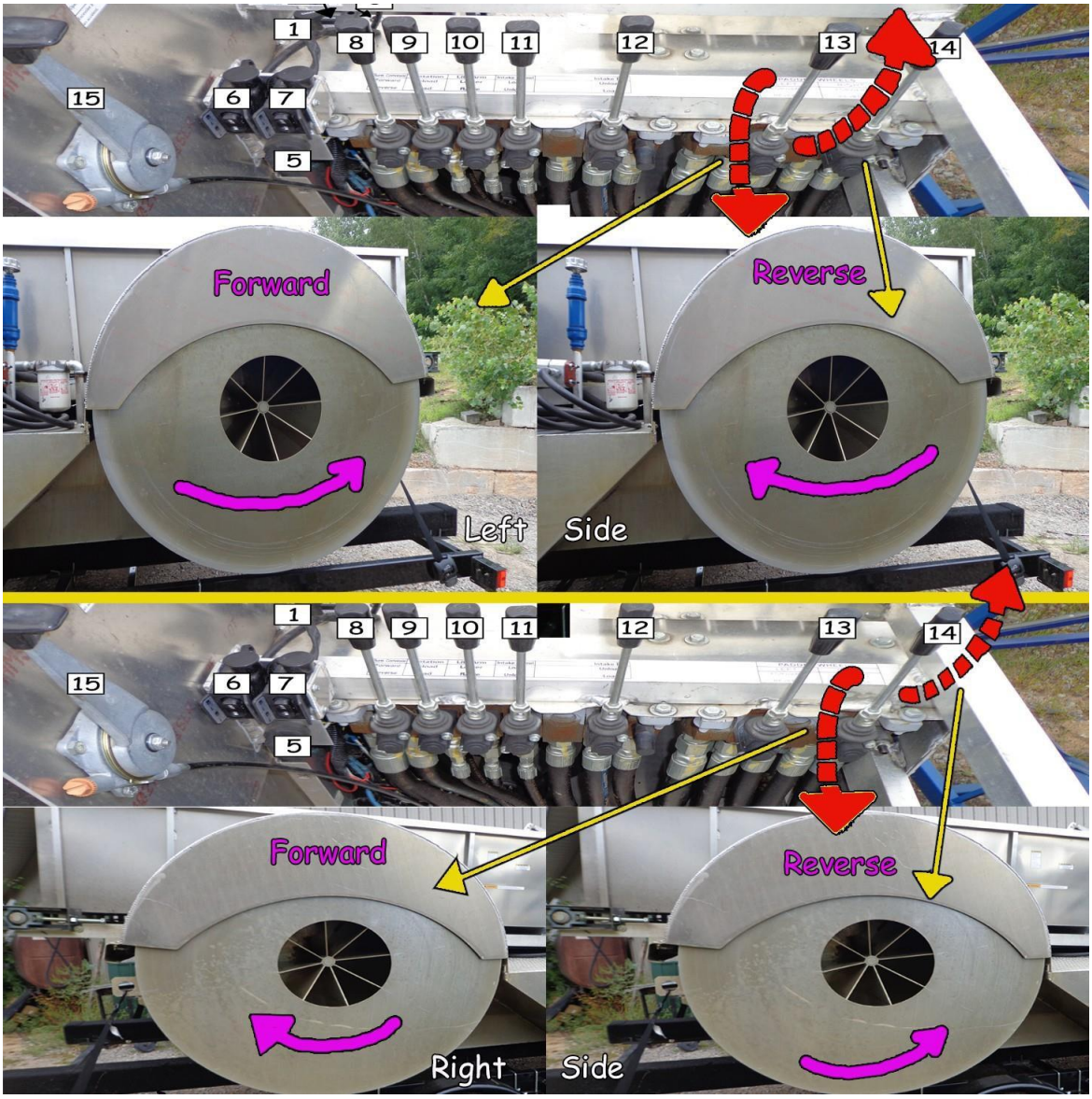
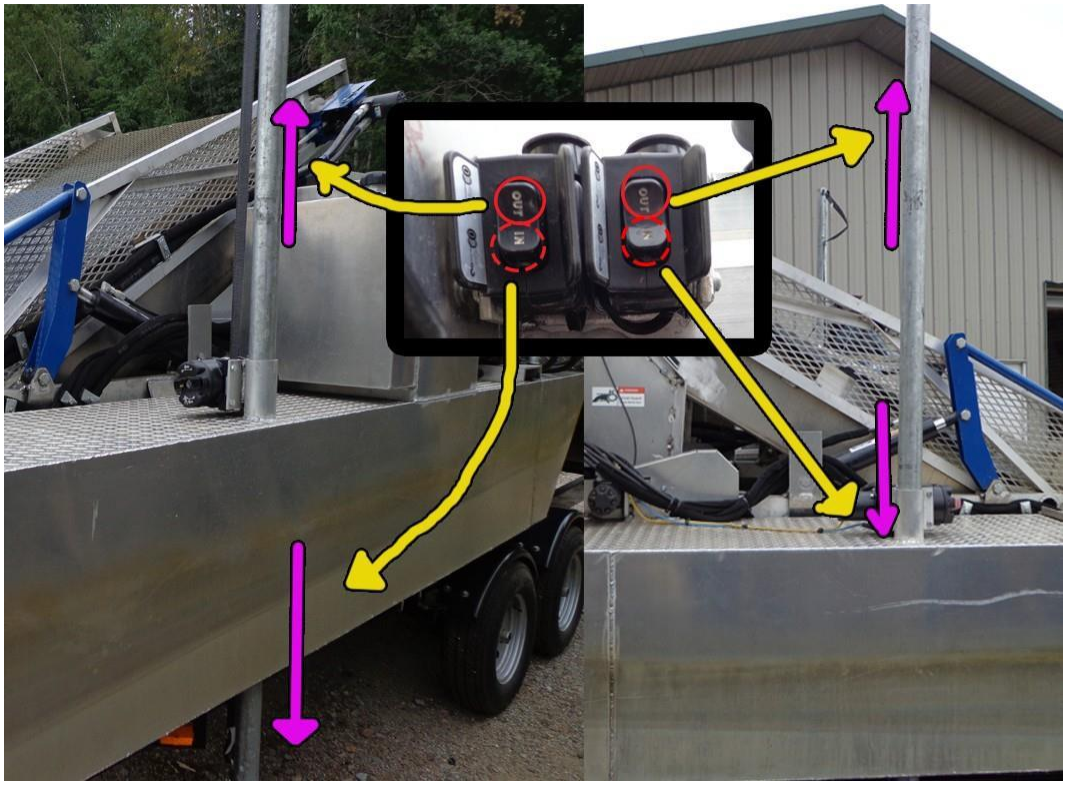


Fig. 12

Paddle Wheel Operation (Fig. 12)

Pulling the paddle wheel control lever rearward will rotate the wheel counterclockwise. The wheel will be spinning towards the back of the weed harvester.

Pushing the paddle wheel control lever forward will rotate the wheel clockwise, in the "forward" direction.



Left Stabilizer Right Stabilizer

Fig. 13

Stabilizer Operation (Fig. 13)

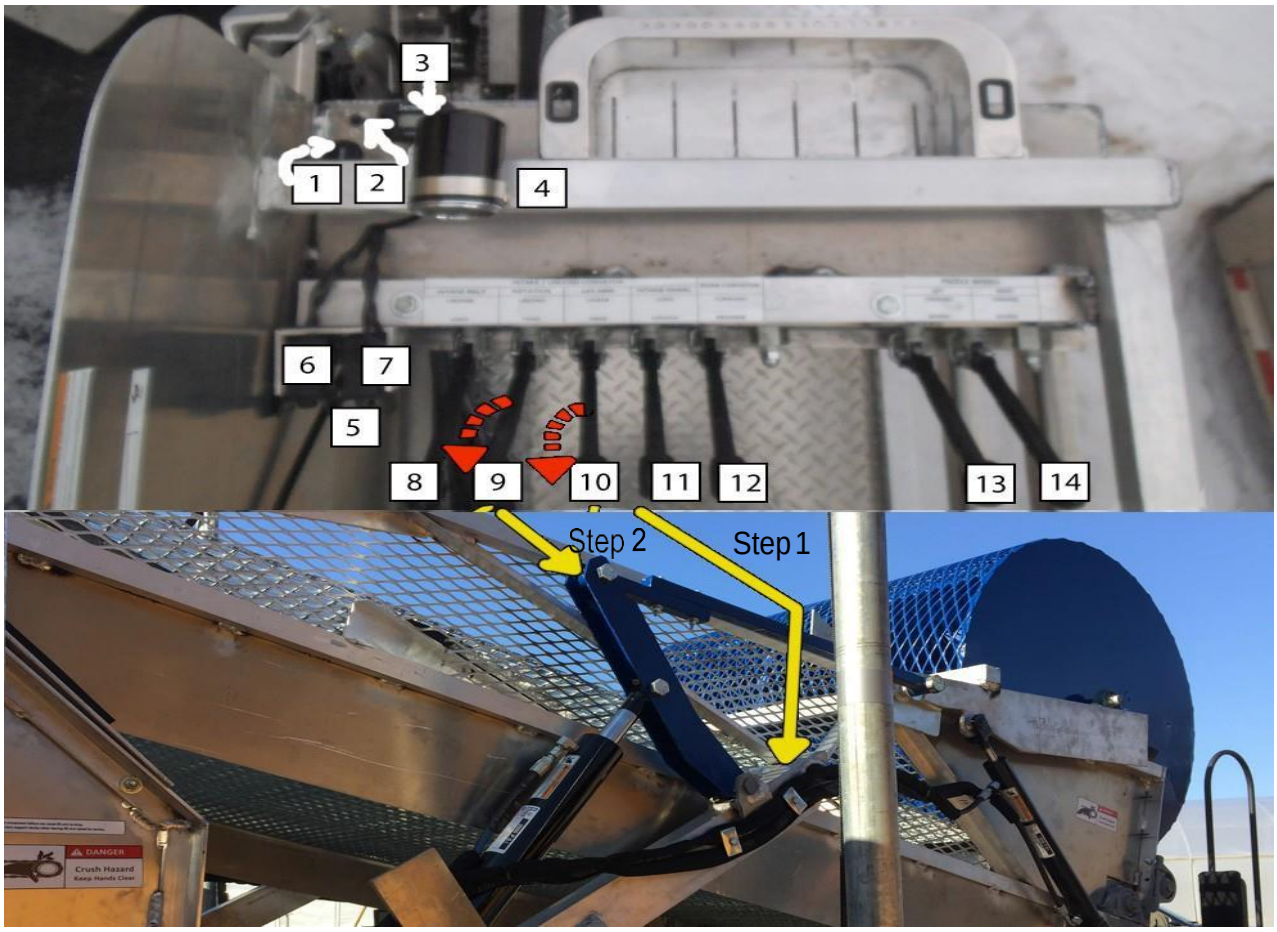
Pushing the “out” tab on the stabilizer switch will raise the stabilizer.

Pushing the “in” tab on the stabilizer switch will lower the stabilizer.

Chapter 6
Adjustments

Warning

BEFORE adjusting this unit, exercise the STOPPING THE ENGINE PROCEDURE (page 21)



1. Conveyor Rotation Arm
2. Conveyor Lift Arm

Fig. 14

Conveyor Adjustment Position (Fig. 14)

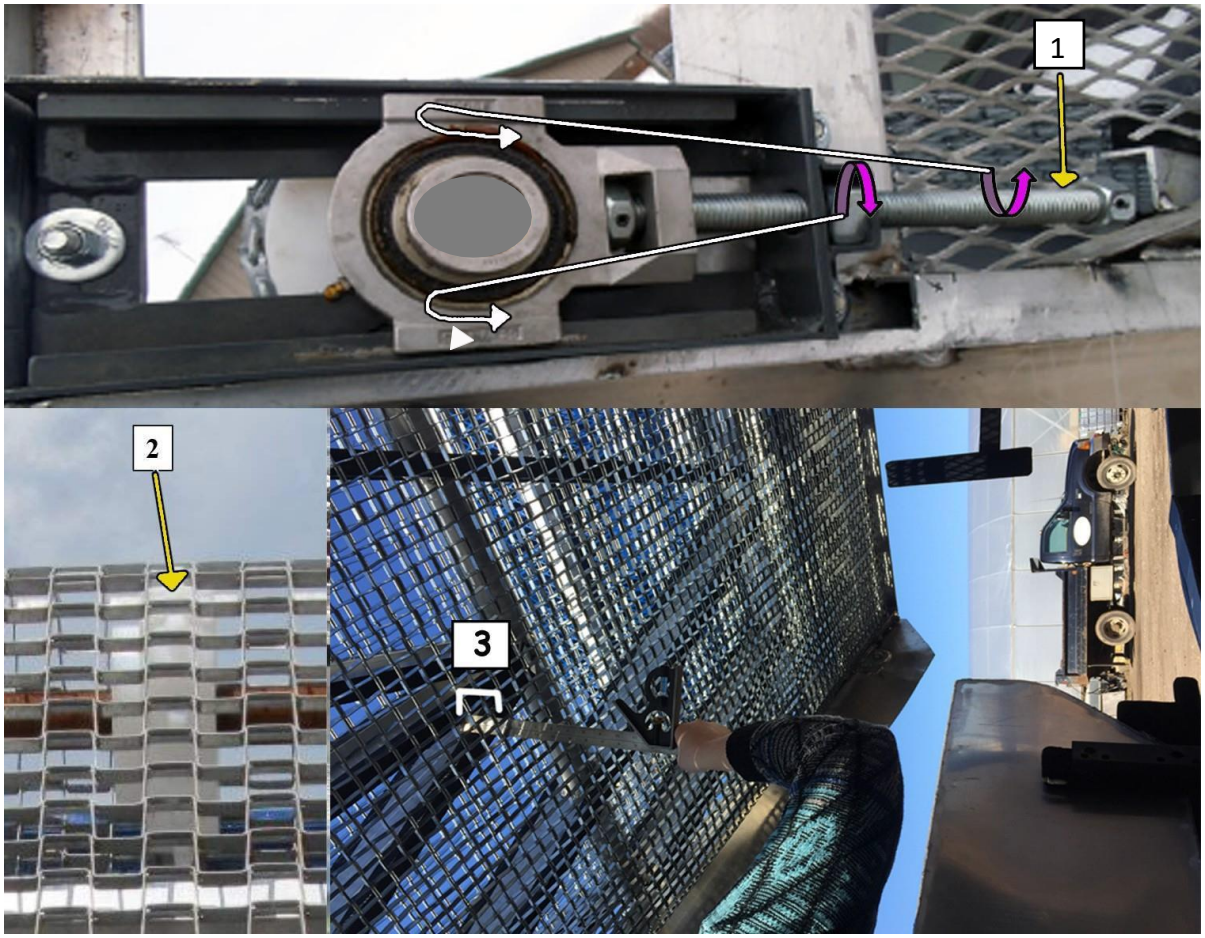
With the engine running:

1. Raise the conveyor lift arm fully to the "raised" position by pulling the lever rearward. (Refer to pg. 23 for help.)

2. Rotate the conveyor fully to the "load" position by pulling the lever rearward. (Refer to pg. 22 for help.)

3. Stop the engine.

During Operating: When lifting or rational operations are performed with the intake conveyor, do not let the topsides of the bunk of the harvester pad come into contact with the rotating intake conveyor. To avoid this, watch as you use both levers 9 and 10 in concert, to make minor adjustments as the intake conveyor arm is rotated to the desired position. Failure to do so could result in binding (rubbing) of harvester components, in turn damaging those components.



1. Conveyor Tension Adjuster
2. Conveyor Sprocket
3. Conveyor Slack Adjustment

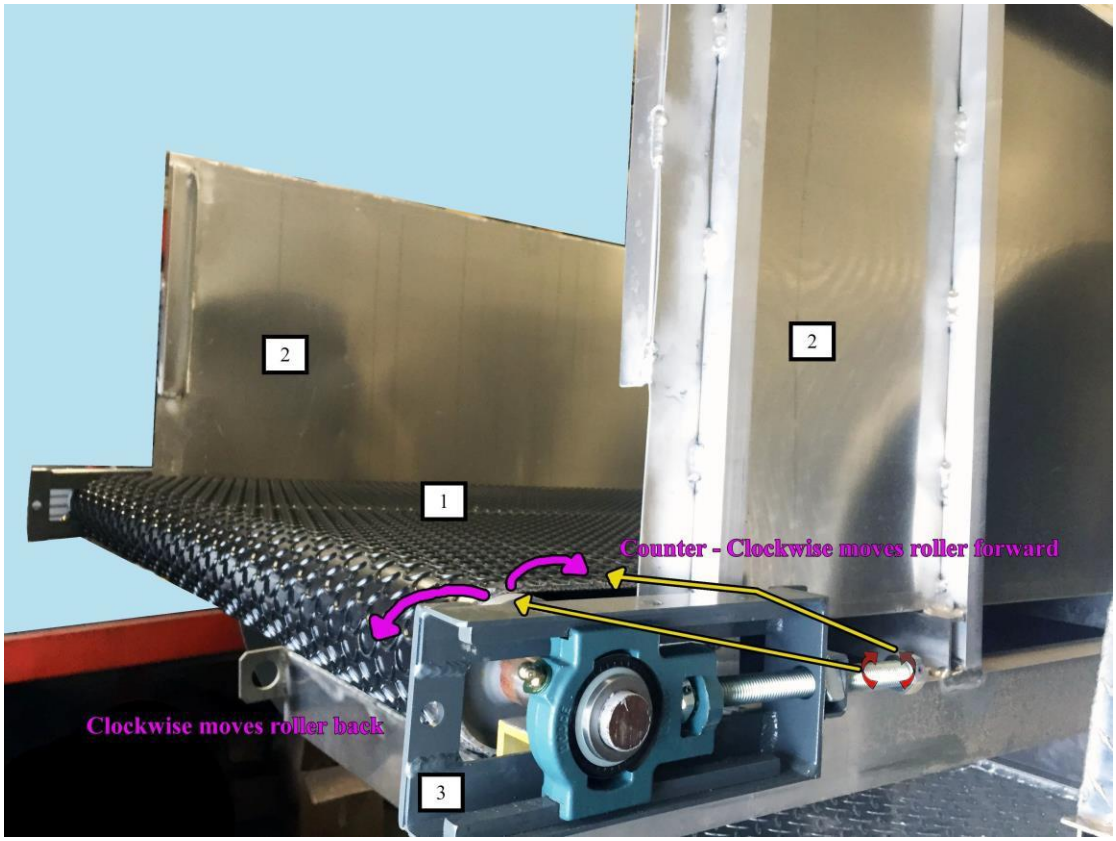
Fig. 15

Conveyor Adjustment (Fig. 15)

There are two Conveyor Adjusting Screws, one on each side of the conveyor. Adjust the conveyor as follows:

1. First, you must loosen the hydraulic motor. Then turn the conveyor adjusting screws (Item 1, Fig.15) in equal increments to achieve a conveyor slide deck clearance (Item 3, Fig 15) of 6-10 inches measured from directly below the center of the bottom conveyor slide (black plastic pads).
2. After adjusting the conveyor slide deck clearance, slowly operate the conveyor to ensure that the sprocket teeth (Item 2, Fig. 15) are centered by adjusting only one adjuster until the conveyor is "centered". All of the conveyor sliders should be fully engaged in their appropriate grooves. You can find the sliders at the end of the slide deck.

Chapter 6
Adjustments
(Continued)



1. Bunk Conveyor
2. Bunk Sides
3. Bunk Conveyor Adjuster

Fig. 16

Bunk Conveyor Adjustment (Fig. 16)

When properly adjusted, the bunk may not move from side-to-side during normal operation. If the bunk conveyor is rubbing against one side of the bunk, it will need to be adjusted. There is an adjuster located on each end of the rear bunk conveyor shaft.

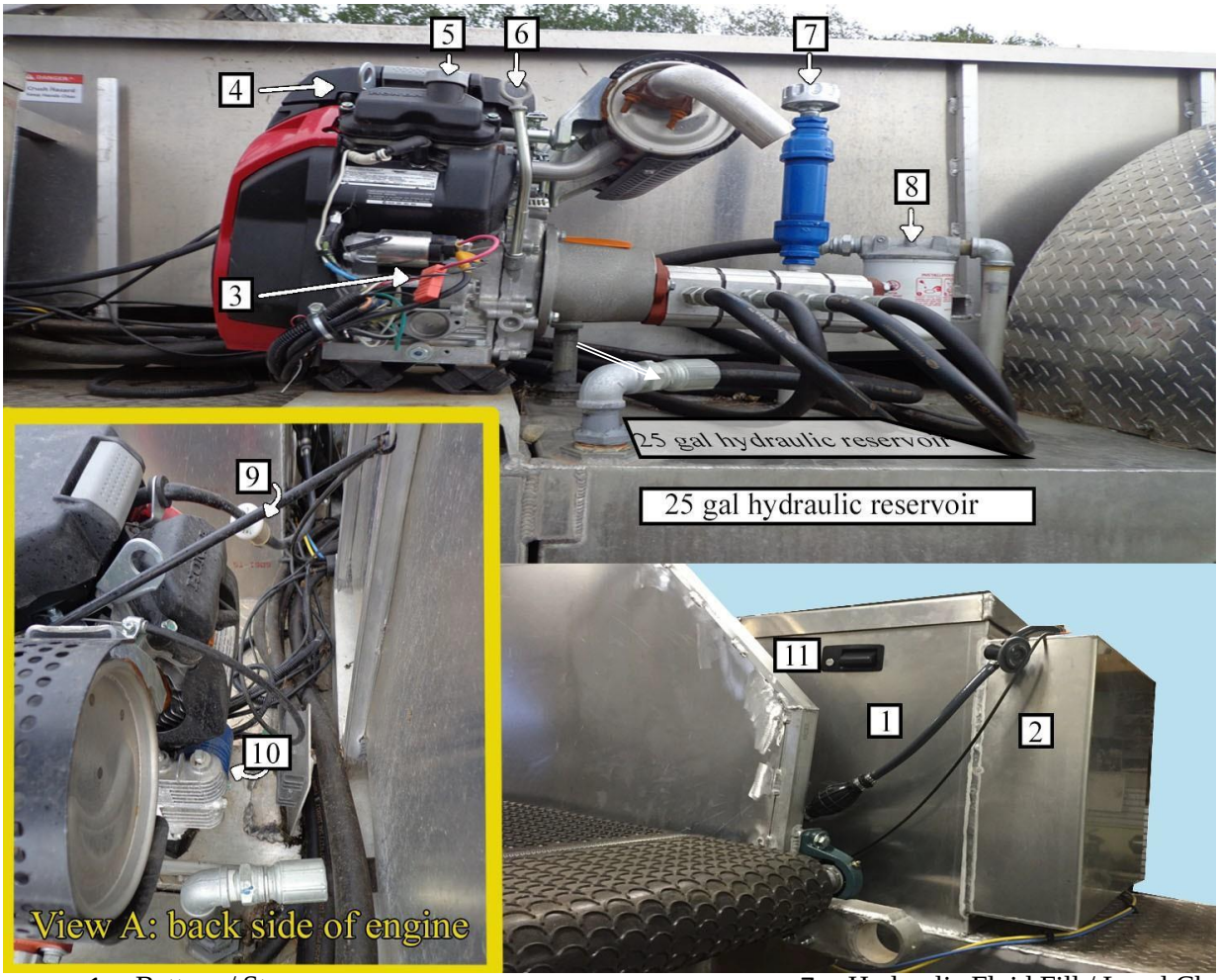
To adjust the bunk conveyor:

1. Rotate the adjuster "clockwise" to increase the tension on the bunk conveyor.
2. Rotate the adjuster “counterclockwise” to loosen the tension on the bunk conveyor.

Chapter 7
Lubrication

Warning

BEFORE performing maintenance on this unit, exercise the STOPPING THE ENGINE PROCEDURE (page 17)



1. Battery / Storage
2. Fuel Tank
3. Fuse
4. Air Filter
5. Oil Fill Cap
6. Oil Dip Stick
7. Hydraulic Fluid Fill / Level Check
8. Hydraulic Fluid Filter
9. Fuel Filter
10. Engine Oil Filter
11. Battery / Storage Latch / Lock

Fig. 17

Engine Lubrication

All engine maintenance and lubrication requirements are listed in the engine operator's manual that is supplied with this machine.

Hydraulic Reservoir

This machine is equipped with a 25 gal (94.6 L) hydraulic reservoir. A dipstick is fastened to the hydraulic reservoir cap. Markings on the dipstick are for full and low (add oil) levels. **Use BIODEGRADABLE Chevron Clarity Hydraulic Oil AW 32.**

The hydraulic oil should be changed every 500 hours (or annually).

Greasing

NOTE: Grease all fittings at intervals of operation listed, after pressure washing, and before and after storing unit. Use Marine Grade of lithium-based grease.

Wipe dirt from fittings before greasing to prevent dirt from being forced into the bearing or pivot. Replace any missing fittings. Force grease into the fittings until it comes out at the bearing seals or the shaft. To minimize dirt build-up, avoid excessive greasing.

When selecting a bearing lubricant, SILVER MIST suggests any lithium-based NLGI #2 grease.

Re-lubrication, when administered correctly, can substantially increase the life of a bearing.

NOTE: Over-lubrication is a major cause of bearing failures. Please re-lubricate conservatively when unsure of bearing requirements.

Chapter 7
Lubrication
(Continued)

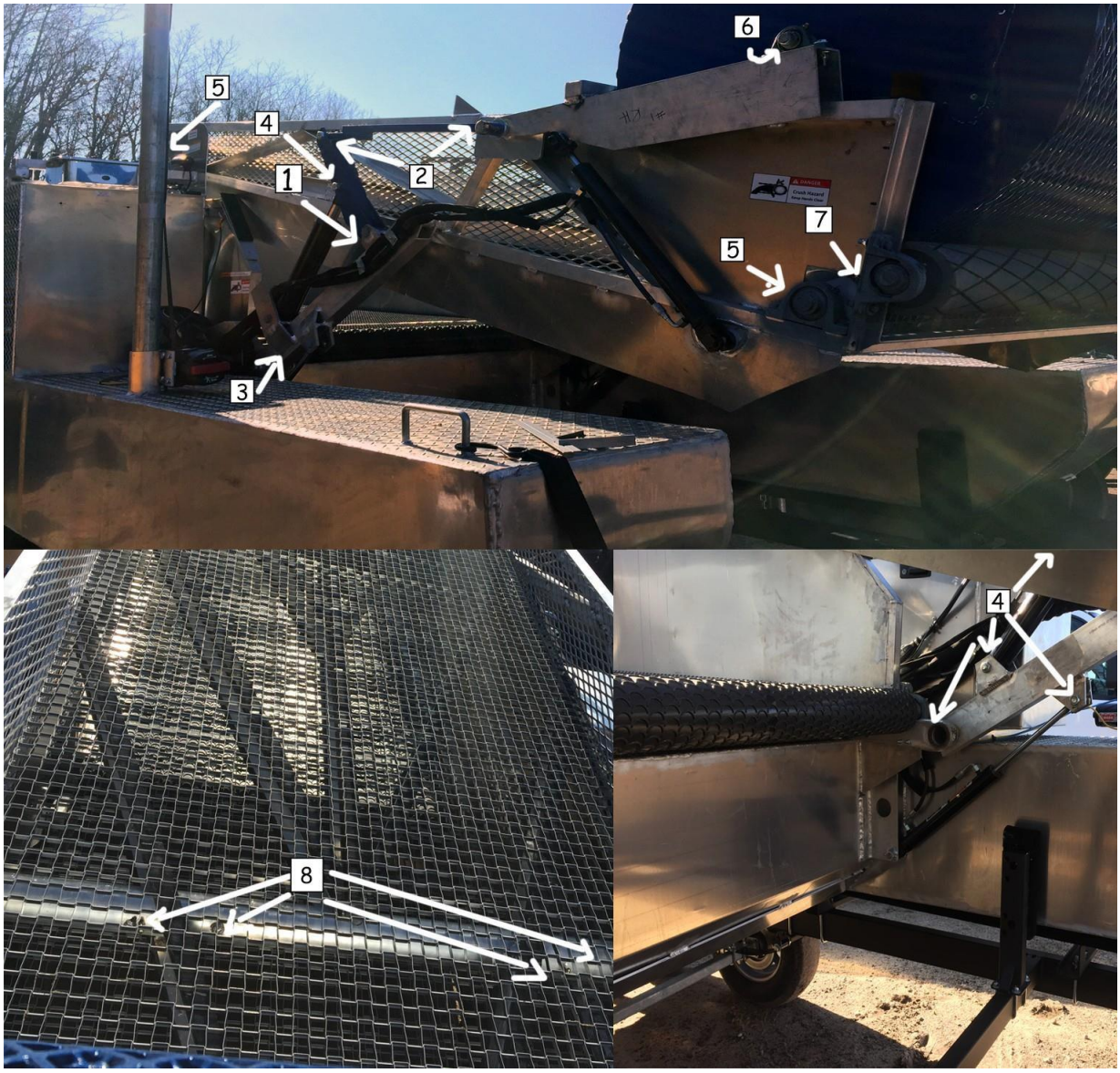


Fig. 18

Conveyor - Grease Every 10 Hours of Operation (or Daily)(Fig. 18)

1. Conveyor Rotation Arm (2 places)
2. Conveyor Rotation Arm Link (4 places)
3. Conveyor Lift Arm Pivot (2 places)
4. Hydraulic Cylinders (12 places)
5. Conveyor Shafts (4 places)
6. Drum Shaft (2 places)
7. Rubber Intake Roller
8. Intake Conveyor Shaft

The same lubrication spots on the left side are mirrored on the right side of the conveyor

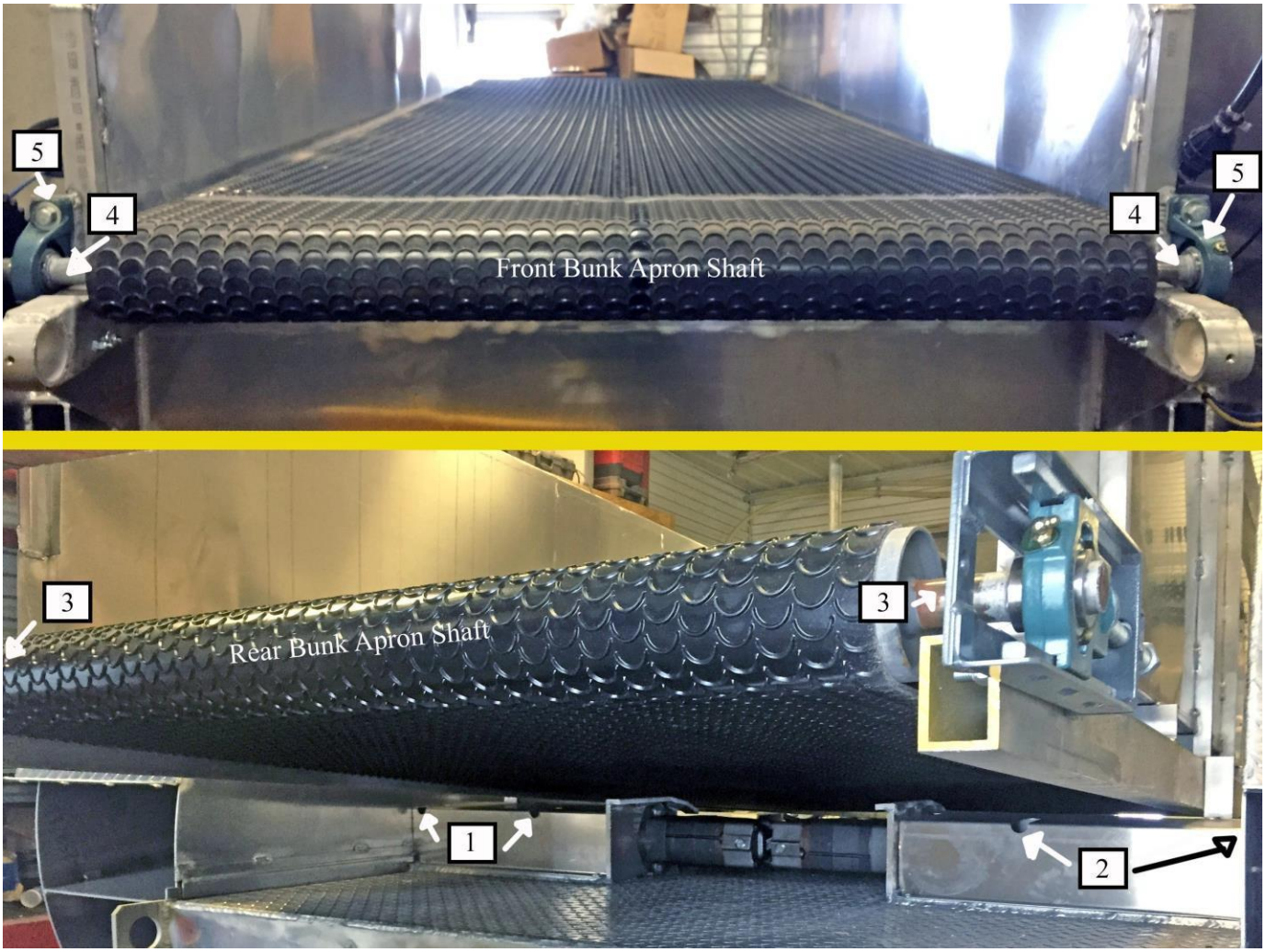


Fig. 19

Paddle Wheels and Bunk Conveyor - Grease Every 10 Hours (or Daily) (Fig. 19)

1. Right Paddle Wheel Shaft (2 places)
2. Left Paddle Wheel Shaft (2 places)
3. Rear Bunk Conveyor Shaft (2 places)
4. Front Bunk Conveyor Shaft
5. Front Bunk Bearings

Chapter 8
General Operational Practices

1. Do NOT use trailer fender as a step to get on and off of the harvester on land.

2. No less than 6"of slack and no more than 10”, measured in the middle, underneath the intake conveyor should be permitted. Too much slack in the conveyor will cause the conveyor to ride up on the sprockets. This in turn will cause wearing to the rubber intake roller, conveyor belt and sprockets, as the metal belt and the rubber roller will be exerting an opposing force.

3. When lifting or rational operations are performed with the intake conveyor, do not let the top sides of the bunk of the harvester pad come into contact with the rotating intake conveyor. To avoid this, watch as you use both levers 9 and 10 in concert, to make minor adjustments as the intake conveyor arm is rotated to the desired position. Failure to do so could result in binding (rubbing) of harvester components, in turn damaging those components.

4. Don't force intake conveyor down against any solid surface.

   Example 1: This could happen when conveyor rotation occurs in too shallow of water, hitting the lake bed and putting down pressure on the conveyor or rotation in the wrong direction. If you hit the bottom, **STOP AND THINK!!!!** STOP operating the levers and THINK what needs to happen with the conveyor belt arm to lift it up and relieve pressure, assess how you are going to do that, and then proceed to carefully operate the lift arm with the appropriate levers. No damage has probably occurred if you have only tapped the lake bed. The damage occurs if additional, continued pressure is placed on it.
   Example 2: Setting Intake Conveyor to rest on trailer. Gently set the conveyor down. Beware of hydraulic line clearance on the harvester in relation to the trailer padding guides. The hydraulic lines should not be pinched or touching the trailer. The top of the conveyor arm should be resting lightly on the top of the bunk, where there is a black plastic pad. The bottom of the intake conveyor arm and rubber intake roller, should be lightly resting against the trailer. Stop engine and then relieve hydraulic pressure by toggling levers back and forth with the engine off.

5. When unloading, do not unload an entire bunk load's worth of weeds onto the unloading inclined conveyor all at once. Only allow small bunches of weeds (not to exceed 200 lbs) to fall off of the bunk conveyor onto the off-load conveyor, while emptying the bunk. To do this operate bunk conveyor at a slower speed than the off load conveyor belt and/or stop the bunk conveyor entirely for a larger clump to pass over the off load conveyor belt, into the onshore receptacle.

Chapter 9
Troubleshooting

Note: This Troubleshooting guide presents problems, causes, and suggested remedies beyond the extent of loose, worn or missing parts. It was developed with the understanding that the machine is in otherwise good operating condition. Refer to the index at the back of this manual for chapter and topic page references. For additional assistance, contact your SILVER MIST dealer.

ELECTRICAL SYSTEM		
PROBLEM	**CAUSE**	**REMEDY**
Starter will not crank.	Main Fuse is blown	Replace fuse. If fuse blows again, contact your SILVER MIST dealer for assistance.
	Battery and /or harness connections are loose.	Check wiring connections and tighten as necessary.
	Battery and/or harness connections are corroded.	Clean battery and harness connections.
Battery will not charge.	Battery electrolyte level is low.	Add distilled water to battery cells to replenish electrolyte level.
	Battery and /or harness connections are loose.	Check wiring connections and tighten as necessary.
	Battery and/or harness connections are corroded.	Clean battery and harness connections.
Entire electrical system does not function.	Main fuse is blown.	Replace fuse. If fuse blows again, contact your SILVER MIST dealer for assistance.
Power light does not function.	Main fuse is blown.	Replace fuse. If fuse blows again, contact your SILVER MIST dealer for assistance.
	Power light bulb is burned out.	Replace bulb.

Chapter 9
Troubleshooting
(Continued)

ENGINE (See also separate Engine Manual)		
PROBLEM	**CAUSE**	**REMEDY**
Engine will not turn over.	Main fuse is blown.	Replace fuse. If fuse blows again, contact your SILVER MIST dealer for assistance.
	Hydraulic control levers not in neutral position.	Make certain hydraulic control levers are in the neutral position.
	Battery and /or harness connections are loose.	Check wiring connections and tighten as necessary.
	Battery and/or harness connections are corroded.	Clean battery and harness connections.
	Battery is discharged or defective.	Recharge battery (refer to battery topic in Service chapter) or replace it.
	Starter is faulty.	Contact your SILVER MIST dealer.
	Ignition switch connections are loose, broken, or disconnected.	Inspect wiring for poor connections or broken leads. Repair wiring or connections as necessary.
Engine turns over but will not start.	Fuel tank is empty.	Refill fuel tank.
	Ethanol fuel has plugged carborator.	Remove carborator. Clean. Rebuild. Replace
	Fuel filter is plugged.	Replace fuel filter.
	Fuel pump is not functioning.	Contact your SILVER MIST dealer.
	Hydraulic control levers not in neutral position.	Make certain hydraulic control levers are in the neutral position.
	Battery is discharged or defective.	Recharge battery (refer to battery topic in Service chapter) or replace it.
	Battery cranking speed is too slow.	Battery requires charging.
		In cold temeratures, pre-warm engine and hydraulic oils.
Engine overheats.	Air cleaner air filter is restricted.	Replace air filter.
	Engine cooling air inlet screen on engine is covered with debris.	Clean engine cooling air inlet screen
	Crankcase oil is low or too full.	Add or remove oil as necessary.
	Engine is overloaded	Operate at half to full throttle.
		Reduce load on engine.
	Engine oil is of the improper grade or is excessively dirty.	Drain and replace engine oil with proper grade.

DO NOT USE ETHANOL BASED FUEL!!!!!!!!

Chapter 9
Troubleshooting
(Continued)

PROBLEM	CAUSE	REMEDY
Hydraulic system is sluggish or does not respond.	Low or no fluid in hydraulic reservoir.	Add hydraulic fluid to hydraulic reservoir to proper level.
	Hydraulic system filter is plugged.	Replace hydraulic system filter.
	Internal component leakage	See your SILVER MIST Dealer.
	Loose fitting on pump inlet.	See your SILVER MIST Dealer.
	System relief valve is not adjusted properly	See your SILVER MIST Dealer.
	Improper Hydraulic Fluid	See your SILVER MIST Dealer.
	Hydraulic pump is worn.	See your SILVER MIST Dealer.
	Engine not responding to load.	Troubleshoot / adjust engine per Engine Manual.
		See your SILVER MIST Dealer.
Hydraulic system overheating.	System is overloaded.	Improve efficiency of operation
	Paddle wheel system is overloaded	Improve efficiency of operation
		Reduce load in bunk.
	Bunk is overloaded	Improve efficiency of operation
		Reduce load in bunk.
	Internal component leakage	See your SILVER MIST Dealer.
	Improper hydraulic fluid	See your SILVER MIST Dealer.
Hydraulic cylinders leak down or do not hold position.	Hydraulic fluid is leaking past the cylinder seals.	See your SILVER MIST Dealer.
	Hydraulic system valve has internal leakage.	See your SILVER MIST Dealer.

Chapter 9

Troubleshooting

(Continued)

INTAKE CONVEYOR BELT		
PROBLEM/DAMAGE	**CAUSE**	**REMEDY**
Random broken link	Contact with objects on lake bed or in the water	Avoid contacting objects
Damage to links on the left or right side of the belt	Conveyor belt tension is incorrect causing it to pull too hard or ride up on the lower sprocket teeth.	Adjust belt tension so that there is 6”-10” of sag in the middle of the belt. (This is especially important during the initial break in phase of the belt.)
Conveyor starts pulsing in the unload position	Belt tension is too loose causing unnatural wear	Adjust belt tension so that there is 6”-10” of sag in the middle of the belt.

Chapter 10
Service

Daily Service (Every 10 Hours)	
Service Required	**Service Reference**
Check engine oil.	Refer to **Engine** operator's manual.
Check engine air cleaner.	Refer to **Engine** operator's manual.
Clean engine air inlet screen.	Refer to **Engine** operator's manual.
Check hydraulic fluid level.	Refer to **Chapter 8, Lubrication**.
Lubricate grease fittings.	Refer to **Chapter 8, Lubrication**.

Date of Service							

Monthly Service (Every 100 Hours)	
Service Required	**Service Reference**
Change engine oil and filter	Refer to **Engine** operator's manual.
Clean or replace engine air filter.	Refer to **Engine** operator's manual.
Check engine fuel filter.	Refer to **Engine** operator's manual.
Check apron adjustment.	Refer to **Chapter 7, Adjustments**
Check bunk apron adjustment.	Refer to **Chapter 7, Adjustments**.

Date of Service							

Yearly Service (Every 500 Hours)	
Service Required	**Service Reference**
Change hydraulic fluid filter.	Refer to **Chapter 7, Adjustments**.

Date of Service							

Chapter 11

Specifications

Performance

- Harvester Weight..... 4200 lbs
- Draft Empty .....10”
- Intake Conveyor..... 4’

Dimensions

- Overall..... 8’6”wide x 20’ 5" long
- Barge Platform… .....8’6" wide x17'2" long
- Weed Bunk Size .....4’3" wide x 11’6" long x 2' deep
- Weed Bunk Volume… ..... 4 Cubic Yards

Engine

- Manufacturer ..... Honda
- Model GX690
- Net Horsepower…..... 25 HP
- Net Torque…..... 35.6 ft. lbs.
- Fuel.....Gasoline, with NO Ethanol in it

Hydraulics

- Gear Pumps..... 4
- Operating Pressure… .....depends on pump
- Use Chevron Clarity Hydraulic Oil AW 32

Propulsion

- Type…..... Dual Independent Paddle Wheels
- Power Transfer.....Hydraulic

Capacities

- Fuel.....10.3 Gallons
- Oil engine…..... 2.1 Qts.

Speed

- 7-10 mph (Top-end speed), variable with hydraulic pressure
- 2-5 mph (Harvesting/skimming speed)

Limited Warranty

Eco Harvester LLC warrants at no additional charge to the original purchaser each new SILVER MIST Aquatic Plant Harvester "Hull" for one (1) year to be free from defects in material and workmanship. The Engine is covered by the manufacturer's separate warranty. All other components are warranted for a period not to exceed ninety (90) consecutive days from the date of delivery to the original purchaser.

Genuine Eco Harvester replacement parts and components will be warranted for forty-five (45) days from the date of delivery. Intake conveyor belts, sprockets and rollers are "wear items" and are not covered under warranty.

This limited warranty will, under no circumstances, cover any components, which in the opinion of Eco Harvester, has been subject to misuse, unauthorized modification, alteration, and accident or if repairs have been made with parts other than those obtainable through Eco Harvester LLC.

Eco Harvester in no way warrants engines, batteries, or other trade accessories since these items are warranted separately by their respective manufacturers.

Eco Harvester's obligation under this limited warranty shall be limited to repairing or replacing, free of charge for the original purchaser, any part that, in Eco Harvester's judgment, shall show evidence of such a defect provided further that such a part, if so requested, shall be returned within thirty (30) days, from the date of failure, to Eco Harvester with transportation charges prepaid.

This limited warranty shall not render Eco Harvester liable for injury or damages of any kind or nature to any person or property. This limited warranty does not extend to the loss of crops, loss because of delay in harvesting, or any expense incurred for labor, substitute machinery, rental, or for any other reason.

Except as set forth above, Eco Harvester shall have no obligation of any kind on account of any of its equipment and shall not be liable for special or consequential damages. Eco Harvester makes no other warranty, expressed or implied, and, specifically, Eco Harvester disclaims any implied limited warranty or merchantability or fitness for a particular purpose. Some areas do not permit limitations or exclusions of implied warranties or incidental or consequential damages. If purchaser is in such a jurisdiction or wants additional warranty coverage it is the purchaser's due diligence to request such coverage so it can be line itemed as additional cost for the additional coverage.

The selling dealer makes no warranty of its own on any item covered by this limited warranty, and makes no warranty on other items unless the dealer delivers to the purchaser a separate written warranty certificate specially warranting the item. The dealer has no authority to make any representations or promises on behalf of Eco-Harvester, or to modify the terms or limitations of this limited warranty in any way.

This contract is governed by Wisconsin State Law and any dispute shall be finally resolved in Wisconsin Courts. Should the occasion arise where a higher authority is required this contract will then be governed by courts and laws of the United States of America.

This warranty is subject to existing conditions of supply which may directly affect our ability to obtain materials of manufacture replacement parts.

Eco Harvester reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold.

In the case of any legal dispute, the cost of Eco Harvester's attorney fees, costs and time cost of Eco-Harvester personnel in disputing case will be covered by the disputing party. No expenses can be transferred to Eco-Harvester or it's other customers.

No one is authorized to alter, modify, or enlarge either this limited warranty or its exclusions, limitations, and reservations.

Index

Adjustments 28
Conveyor 29
Conveyor Speed Control.....
Bunk Conveyor 30
Conveyor Adjustment Position..... 28

Checklists 2
Delivery 7
Pre-Delivery 2
Unload 6
Controls 15
Guards & Shields 15
Machine Controls 16
Choke 16
Hour meter 17
Ignition Switch 17
Left Stabilizer 17
Power Light 16
Right Stabilizer 17

Functions: Tachometer Displays 46

General Operational Practices 35

Index 44

Introduction 1

Lubrication 31
Engine 32
Greasing 32
Conveyor 33
Paddle Wheels 34
Bunk Conveyor 34
Hydraulic Reservoir 33
Notes 45

Operation 18
Before starting the engine 18
Bunk Conveyor 25
Intake/ Unload Conveyor 21
Intake/Unload Conveyor Position 22
Intake/Unload Lift Arm 23
Operator Seat Position 18
Paddle Wheel 26
Intake/Unload Position 24
Stabilizer 27
Starting the Engine 19
Stopping the Engine 20

Safety 9
Before Starting 10
During Operation 10
Maintenance 11
Decals 12
Transporting 11

Service 40
Daily Service 40
Monthly Service 41
Yearly Service 41

Specifications 42

Table of Contents X
Torque Specifications 47

Trouble Shooting 36
Electrical System 36
Engine 37
Hydraulic System 38
Intake Conveyor Belt 39

Warranty 46

Notes

Functions: Tachometer-Displays RPMs for 1-2 cyl engines

Flash Alert: Flashes "CHG OIL" at 100 hours service intervals and "LUBE" at 25 hrs service intervals. The service interval is based on actual engine run hours.

Operation: Alerts begin flashing a warning 4 hours before service is due, and clear Automatically 1 hour afterward. Meter displays RPM while engine is running and hours while engine is off.

Flash Alert Reset:

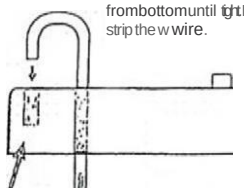
Service alarms will automatically reset 1 hour after service interval

Code: 1023

INSTALLATION INSTRUCTIONS

Step 1

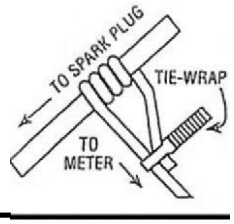
Pull wire through meter from bottom. Place wire end into deadend hole and pull from bottom until tight. Do not strip the wire.



DEADEND

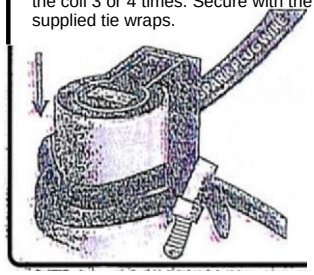
Step 2a: Spark Plug

Wrap the meter pick-up wire around spark plug wire 4 to 5 times. Secure with the supplied tie-wrap.



Step 2b: Coil Over

Wrap the meter pick-up wire around the coil 3 or 4 times. Secure with the supplied tie wraps.



Mount using sheet metal screws or double sided tape. The mounting location should not exceed 150 °F (65°C). Never drill or puncture gas tanks, fuel lines, or any other hazardous material containers. Contact a qualified dealer if in doubt. Always we ar safety glasses while installing.

WARRANTY: For a period of one year from the date of purchase, Global Digital Instruments, LLC will at its option repair or replace, free of charge, any parts that prove to be defective from faulty material or workmanship. Return product postage prepaid along with a sales receipt, showing the date of purchase and price to: Global Digital Instruments, LLC, Attn: Warranty Department, 151 Perinton Parkway, Fairport, New York 14450.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF All OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. .

warranty is void if failure is caused from high heat, physical damage or any condition of misuse or abuse beyond the normal operating conditions.

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Packaging PN 920-010

6 58675 11002

TORQUE SPECIFICATIONS

NOTE: Use these torque values when tightening hardware (excluding: Locknuts and Self-tapping, Thread Forming and Sheet Metal Screws) unless specified otherwise

All torque values are in Lb-Ft except those marked with an * which are Lb-In
(For metric torque value Nm, multiply Lb-Ft value by 1.355 or Lb-In value by 0.113)

Unified National Thread	Grade 2		Grade 5		Grade 8	
	Dry	Lubed	Dry	Lubed	Dry	Lubed
8-32 8-36	19* 20*	14* 15*	30* 31*	22* 23*	41* 43*	31* 32*
10-24 10-32	27* 31*	21* 23*	43* 49*	32* 36*	60* 68*	45* 51*
1/4-20 1/4-28	66* 76*	50* 56*	9 10	75* 86*	12 14	9 10
5/16-18 5/16-24	11 12	9	17 19	13 14	25	18 20
3/8-16 3/8-24	20 23	15 17	30 35	23 25	45 50	35
7/16-14 7/16-20	32 36	24 27	50 55	35 40	70 80	55 60
1/2-13 1/2-20	50 55	35 40	75 90	55 65	110 120	80 90
9/16-12 9/16-18	70 80	55 60	110 120	80 90	150 170	110 130
5/8-11 5/8-18	100 110	75 85	150 180	110 130	220 240	170 180
3/4-10 3/4-16	175 200	130 150	260 300	200 220	380 420	280 320
7/8-9 7/8-14	170 180	125 140	430 470	320 360	600 660	460 500
1-8 1-14	250 270	190 210	640 710	480 530	900 1000	680 740
Metric Course Thread	**Grade 8.8**		**Grade 10.9**		**Grade 12.9**	
	Dry	Lubed	Dry	Lubed	Dry	Lubed
M6-1	8	6	11	8	13.5	10
M8-1.25	19	14	27	20	32.5	24
M10-1.5	37.5	28	53	39	64	47
M12-1.75	65	48	91.5	67.5	111.5	82
M14-2	103.5	76.5	145.5	108	176.5	131
M16-2	158.5	117.5	223.5	165.5	271	200