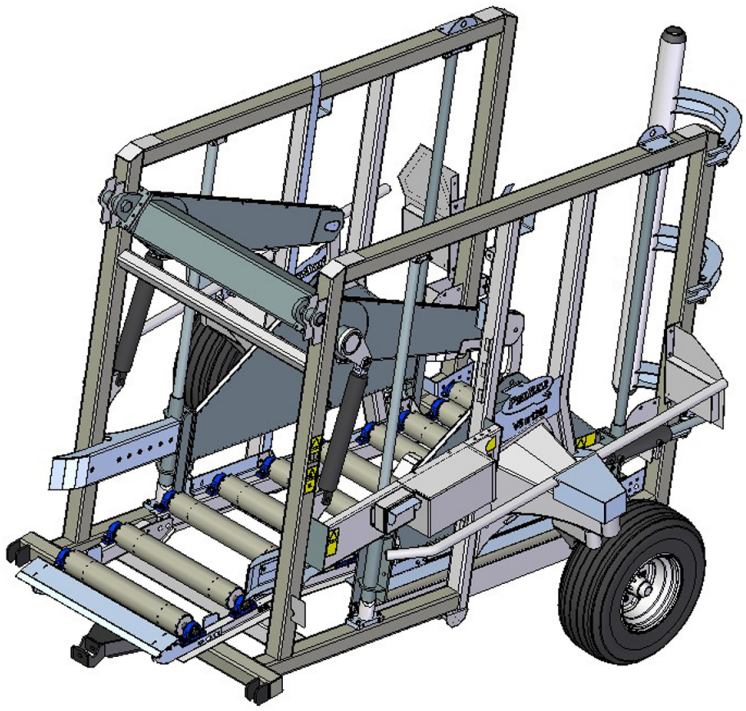
PhiBer Vertical Stacking Accumulator



Model: VS1202

PHIBER

INNOVATIONS FOR PROGRESSIVE PEOPLE

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 accumulator, 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 accumulator 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® Vertical Stacking Accumulator. The PhiBer® Vertical Stacking Accumulator offers the agricultural industry a machine for arranging bales into a desired package that can be handled more efficiently.

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® bale accumulator 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.

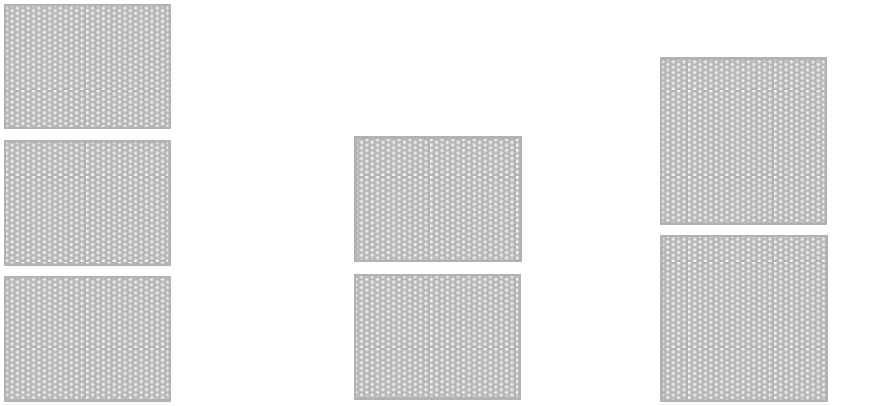
PhiBer® reserves the right to make design changes without prior notice to the end user.

INTRODUCTION

DESCRIPTION OF THE MACHINE

The operator can choose from two different automatic discharge patterns or manually eject the bales. Select the desired bale packaging mode with the PhiBer® Vertical Stacking Accumulator that will complement the preferred method of bale handling in the field.

There are two options of control: automatic unloading and manual unloading. The bales can be unloaded when stacks of two or three bales have been completed. If a bale is halfway out, the accumulator will not allow manual dumping until that bale has completed its cycle. Automatic unloading is recommended. Refer to the Operation section *"Cycle Mode Selection"* pg. 24 for more instructions on how the manual and automatic settings work.



3 ft x 4 ft (90 cm x 120 cm) — A

3 ft x 4 ft (90 cm x 120 cm) / 4 ft x 4 ft (120 cm x 120 cm) — B

FIG. 1.1

BALE PACKAGING MODES* (FIG 1.1)

**shown from front view*

A. Three (3) 3 ft x 4 ft (90 cm x 120 cm) Bales

B. Two (2) 3 ft x 4 ft (90 cm x 120 cm) Bales
or
Two (2) 4 ft x 4 ft (120 cm x 120 cm) Bales*
**Optic sensor must be moved for this option, see pg 24*

ILLUSTRATION OF THE MACHINE

IMPORTANT! All references to "LEFT" or "RIGHT", as used throughout this Operator's Manual, are determined by facing the direction of forward travel when in use.

VERTICAL STACKING ACCUMULATOR ASSEMBLY

RIGHT SIDE VIEW (FIG. 1.2)

1. Load arm
2. Lift trucks: left and right
3. Lift Cylinders
4. Roller bed

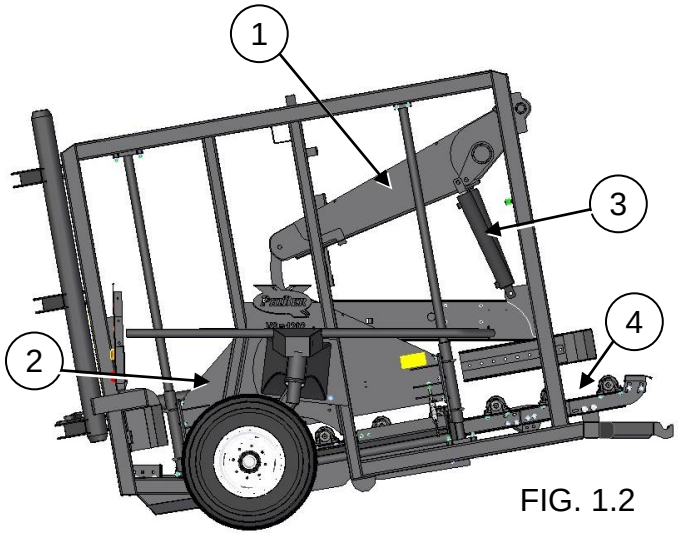


FIG. 1.2

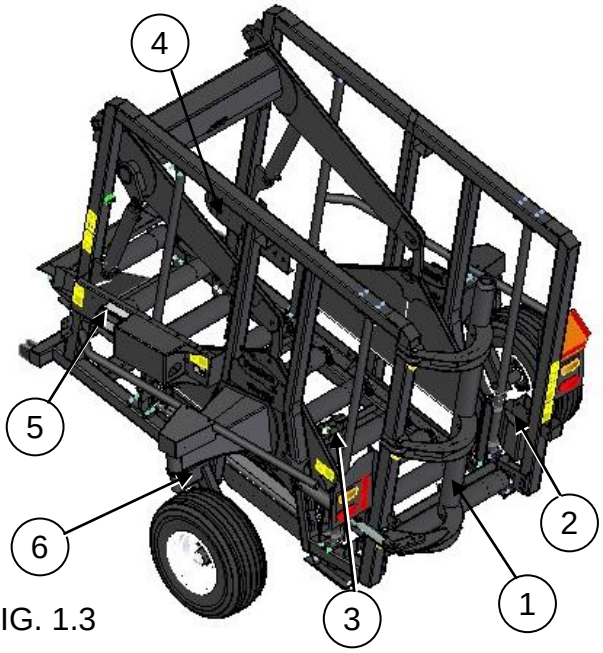


FIG. 1.3

LEFT CORNER VIEW (FIG. 1.3)

1. Tail gate
2. Rear optic sensor
3. Floor switch
4. Front optic sensor
5. Control box
6. Caster

INTRODUCTION

MONITOR AND CONTROLS

MONITOR (FIG. 1.4)

1. Monitor Panel
2. Power Switch
3. Eject Button
4. Indicator Lights
5. Fuse Holder

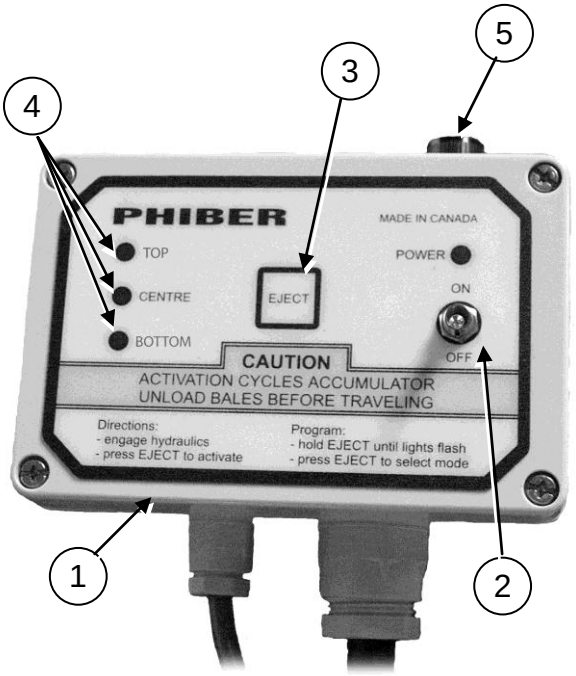


FIG. 1.4

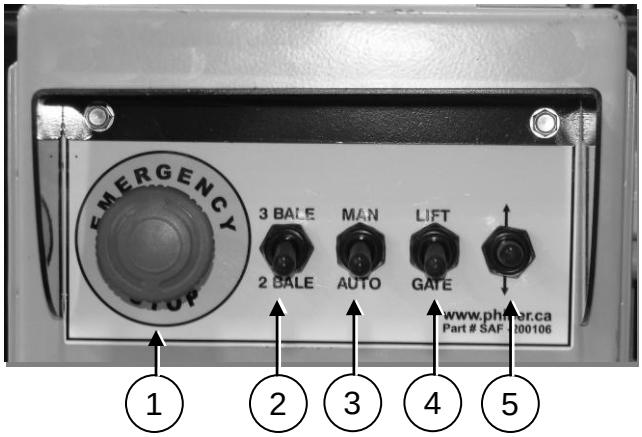


FIG. 1.5

CONTROL BOX (FIG 1.5)

1. Emergency Stop Switch
2. Bale Selection Switch
3. Automatic/Manual Switch
4. Function Selector Switch
5. Actuator Switch to Power Hydraulic Valve

SERIAL NUMBER LOCATION

The Serial Number plate, FIG. 1.6, is located in the middle of the left hand side of the frame, on the right side of the hydraulic control box.

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: _____

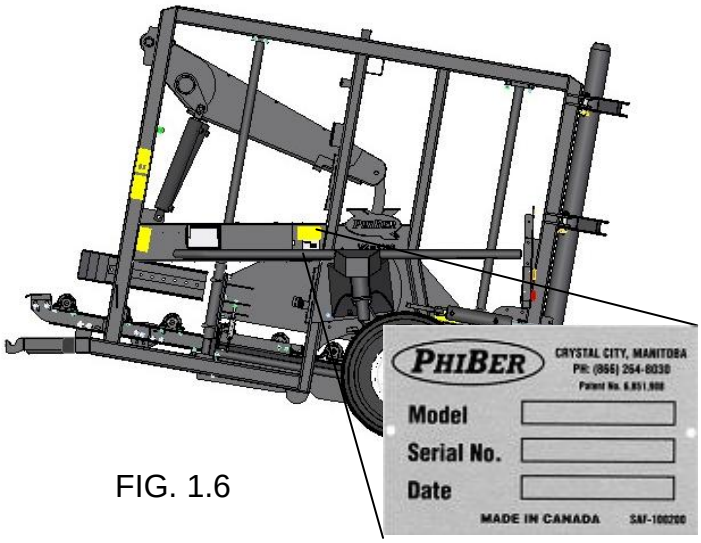


FIG. 1.6

SAFETY ALERT SYMBOLS

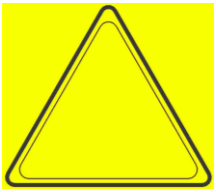
Safety Alert Symbols are intended to draw attention of the machine operator to important safety information both published in the Operator's Manual and applied to the machine. Whenever a Safety Alert Symbol is seen, it means that associated information is provided for recognizing, responding appropriately,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

with exclamation point



double line triangle

These Safety Alert Symbols Mean:

ATTENTION!

BE ALERT!

YOUR SAFETY IS INVOLVED!

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 serves as a reminder to follow appropriate safety practices.

SAFETY

OPERATOR RESPONSIBILITY

Remember, YOU, the operator, are responsible for the safe operation, adjustment, maintenance and repair of this PhiBer® Vertical Stacking Accumulator. 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 in the vicinity of the accumulator. 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 the 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 accumulator or use the accumulator 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.

GENERAL SAFETY PRACTICES

- Read and understand the contents of this Operator's Manual prior to operating, adjusting, maintaining and/or repairing the bale accumulator.
- Locate, read and understand all safety signs applied to the accumulator 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 accumulator.
- Ensure that all bystanders, especially small children, are kept at a safe distance while performing any tasks with the accumulator.
- Do not allow riders on any part of the accumulator.
- Ensure all guards and shields are intact and in place prior to operating the accumulator.
- Keep hands, feet, hair and loose clothing away from moving and/or rotating parts.
- Stop the engine, lower the equipment, set the parking brake, 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 accumulator 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 accumulator is securely blocked and supported prior to working underneath (if it needs to be raised for service).
- Ensure that all persons operating, adjusting, maintaining and/or repairing the accumulator know how to seek or summon medical assistance should an injury occur.

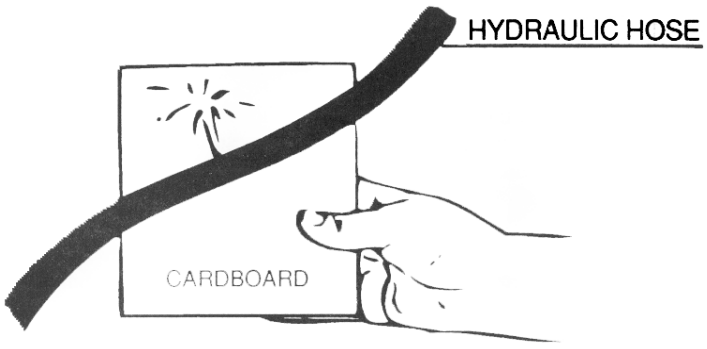
SAFETY

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 are available prior to working on the accumulator.
- Carry a fire extinguisher in the tractor or on part of the baler or the accumulator in case of fire.
- Wear appropriate clothing when performing tasks around the accumulator. Ill-fitting and/or frayed clothing as well as loose or dangling items should not be worn when working near the equipment.
- Stop the engine, lower the equipment, set the parking brake, 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.
- Securely block main frame if adjustment, maintenance or repair is required for wheels and tires.
- Wear personal protective equipment, such as gloves, eye protection, etc. when inspecting hydraulic system for leaks. Use a small piece of cardboard or wood to detect leaks.
- 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.
- When maintaining the accumulator, make sure the loader is lowered or blocked to prevent it from descending unexpectedly.

HYDRAULIC SAFETY

- Ensure that all hydraulic system components are kept clean and in proper working condition.
- Periodically inspect condition of hydraulic 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 hydraulic components during trouble-shooting and/or making repairs.
- Use a piece of cardboard or wood to check for hydraulic leaks. Hydraulic fluid under pressure can penetrate human skin.
- Ensure all fittings, couplings and other hydraulic connections are intact and properly tightened before operating hydraulics.
- Store flammable fluids in approved containers and store out of reach by unauthorized persons, especially children.
- Ensure that hydraulic oil pressure in hoses, lines and components is fully relieved prior to performing maintenance or repairs to the hydraulic system.



SAFETY

INSTALLATION SAFETY

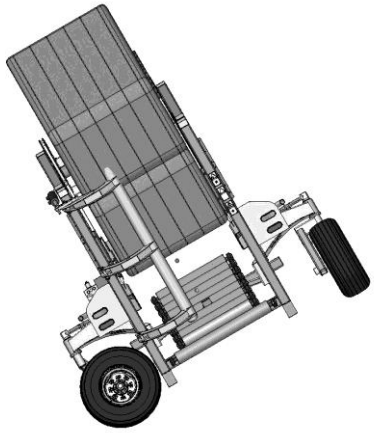
- Read, review and understand all bale accumulator installation instructions before attempting to attach accumulator to baler.
- Ensure that baler is properly hitched to tractor.
- Ensure that tractor engine is shut off, key is removed from the ignition and that parking brake is set and/or wheels blocked.
- Block bale accumulator tires and support the front end of the bale accumulator frame until the accumulator is securely attached to the baler.

TRANSPORT SAFETY

- Ensure that the accumulator is attached to the baler properly.
- Ensure the drawbar hitch pin retainer for baler is in place and engaged properly.
- Ensure the safety tow chain is securely attached between baler and tractor.
- 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.
- The accumulator adds length to baler and covers a wide path when making turns.
- Ensure the accumulator is fully unloaded before road travel.
- Do not exceed 20 mph (32 km/h).
- Reduce travel speed on rough roads and surfaces.
- Do not allow riders on the accumulator at any time.

NOTE:

- Avoid travelling across steep inclines, particularly when accumulator is partially loaded.
- When travelling, lock steering axle on baler.
- This accumulator makes wide turns.
- Come on and off approaches or roads slowly; too much speed can cause the baler to tip.



STORAGE SAFETY

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

TIRE SAFETY

- Ensure tire inflation pressure is maintained per specifications.
- Follow proper procedures for tire repairs, especially when mounting tire to rim.
- Seek assistance from a trained person for tire repairs or mounting, especially if special equipment is required.

SAFETY

SAFETY SIGNS

SAFETY SIGN LOCATION (FIG. 2.1 & FIG. 2.2)

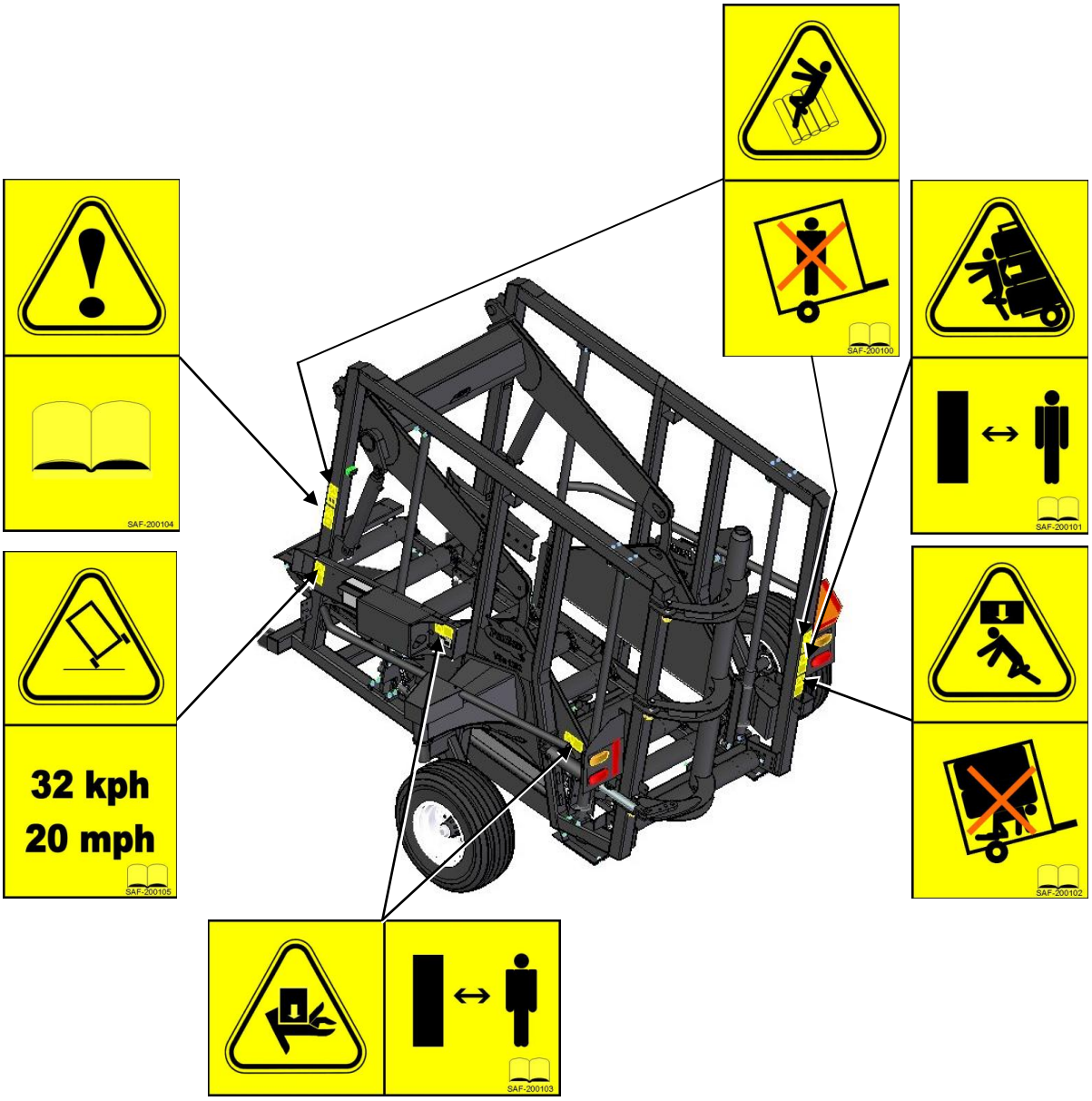


FIG. 2.1

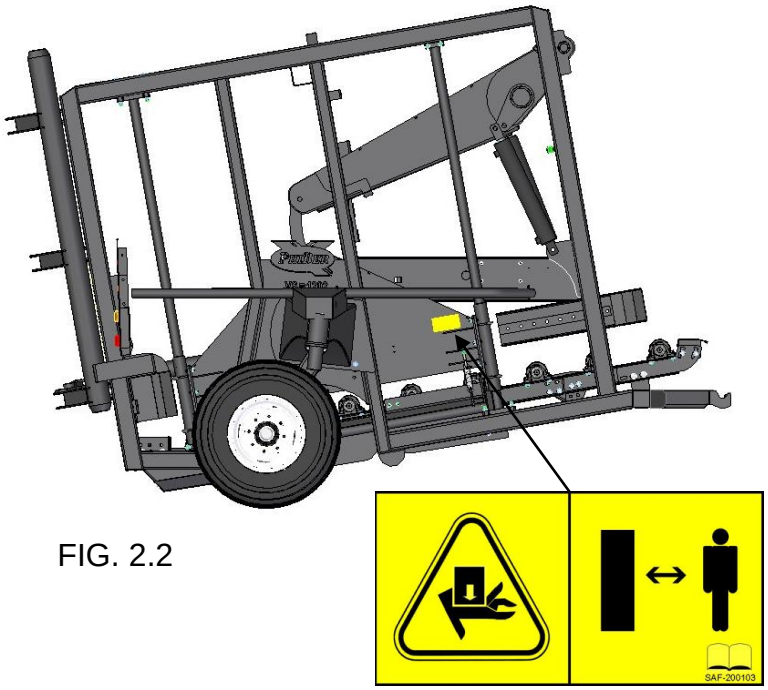


FIG. 2.2

SAFETY SIGN EXPLANATION

SLIPPING HAZARD (FIG. 2.3)

WARNING! SLIPPING HAZARD. Keep off the rollers inside the accumulator during operation, maintenance and repair.

CRUSHING HAZARD (FIG. 2.4)

WARNING! CRUSHING HAZARD. Keep a safe distance away from the end of the accumulator during operation.

FIG. 2.3

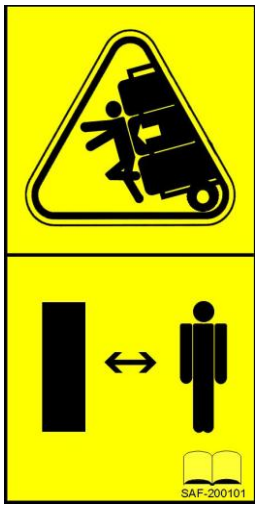


FIG. 2.4

SAFETY

CRUSHING HAZARD (FIG. 2.5)

WARNING! CRUSHING HAZARD. Stay out of space under the bales in the accumulator during operation, maintenance and repairs.

FIG. 2.5

PINCH POINT HAZARD (FIG. 2.6)

WARNING! PINCH POINT HAZARD. Keep all body parts, particularly hands and feet, away from area around lift and loader when machine is operating.

FIG. 2.6

READ THE OPERATOR'S MANUAL (FIG. 2.7)

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.

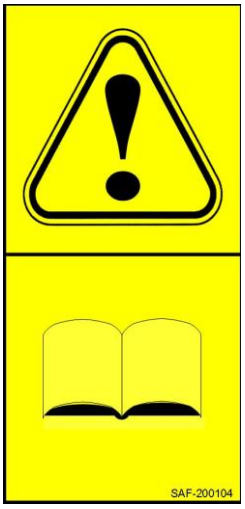


FIG. 2.7

TIPPING HAZARD (FIG. 2.8)

WARNING! TIPPING HAZARD. Travelling at speeds over 20 mph (32 km/h) may cause the accumulator to sway and tip over.

FIG. 2.8

SAFETY SIGN MAINTENANCE

Safety Sign Legibility

All safety signs applied to the accumulator 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 accumulator, 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

VERTICAL STACKING ACCUMULATOR

	VS1202
Bale Capacity	3
Bale Size	3 ft x 4 ft (90 cm x 120 cm) 4 ft x 4 ft (120 cm x 120 cm)
Bale Ejection	Manual or Automatic
Width (wide casters)	128 in (3.25 m)
(narrow casters)	98 in (2.48 m)
Length	152 in (3.86 m)
Height	118 in (3.00 m)
Weight	4,300 lbs (1,955 kg)
Electrical Power Supply	12 V
Hydraulics	12 US gal/min (45.4 L/min) continuous flow
Bale Length (range)	6 - 8 ft (1.83 - 2.44 m)
Silage Bale Handling	Yes

TRACTOR REQUIREMENTS

Hydraulics	
# of circuits required	1
hydraulic flow	9 - 12 US gal/min (34.1 - 45.4 L/min)
Electrical Power Supply	12 V Neg. (-) to ground

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)

Flare-Type Tube Fittings

Tube Size OD in	Nut Size across flats in	Torque n·m (lb-ft)	Recommended # Turns (after finger tightening) turns (flats)
3/16	7/16	8 (6)	1/6 (1)
1/4	9/16	12 (9)	1/6 (1)
5/16	5/8	16 (12)	1/6 (1)
3/8	11/16	24 (18)	1/6 (1)
1/2	7/8	46 (34)	1/6 (1)
5/8	1	62 (46)	1/6 (1)
3/4	1-1/4	102 (75)	1/8 (0.75)
7/8	1-3/8	122 (90)	1/8 (0.75)

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

OPERATION

HYDRAULIC SET-UP OF ACCUMULATOR

Proper set-up of tractor hydraulics ensures optimum operation of the PhiBer® Vertical Stacking Accumulator and will greatly increase system reliability. The hydraulic system on your accumulator is designed to function with open-center, closed-center and closed-center load-sensing tractor hydraulic systems. For tractors configured with closed-center hydraulic systems, some adaptation may be required to achieve optimum performance. Contact your dealer or PhiBer® for assistance.

There are two crucial elements that must be heeded to ensure optimum Vertical Stacking Accumulator performance:

1. Tractor hydraulic output flow must be set between 9 - 12 US gal/min (34.1 - 45.4 L/min)

   NOTE: Hydraulic oil flow in excess of 14 US gal/min (68.1 L/min) may cause hydraulic lock up of the system. Flow rates below 9 US gal/min (45.4 L/min) will cause lower cycle times and can impede productivity.

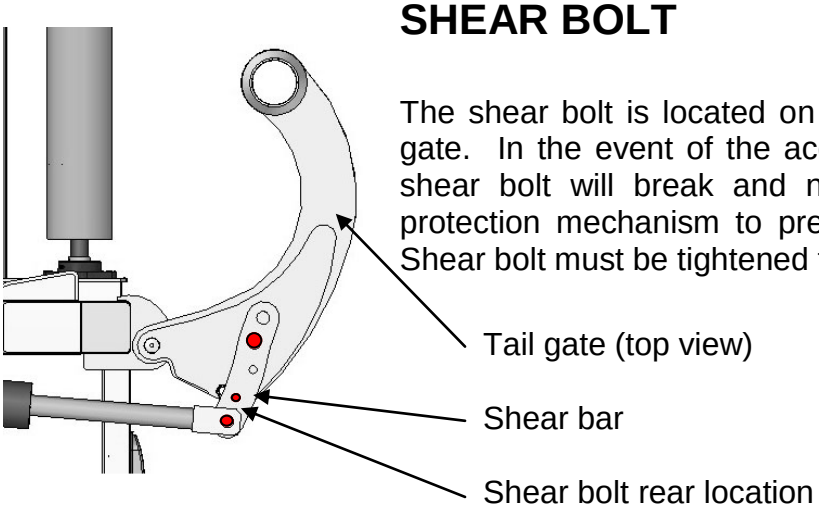
2. The low pressure tank return line must discharge directly into the tractor hydraulic reservoir with negligible system back pressure.

   NOTE:
   2014 and prior: Select a setting on the hydraulic couplers that directs return oil flow straight to the tractor hydraulic reservoir. If the tractor is fitted with an external port that leads directly to the tractor hydraulic reservoir, use it as a return flow inlet. DO NOT connect the tank return line in such a way that return oil flow must work against pilot operated check valves in the tractor hydraulic system.
   2015: These Stacking Accumulators will be sent with a non-locking Pioneer tip that can be plugged into the remote.

COMPONENT CYCLE TIMES

Component / Action 12 US gal/min (45.4 L/min) flow rate	Open/Up (sec.)	Close/Down (sec.)
Lift	4	4
Gate	2.5	2.5

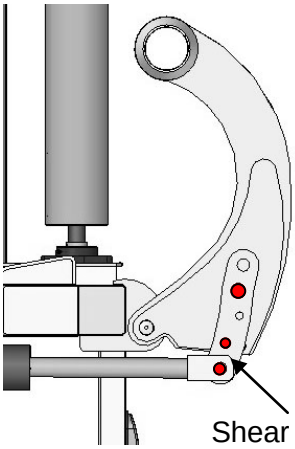
SHEAR BOLT



The shear bolt is located on the bottom of the hinge, on the gate. In the event of the accumulator being overloaded, the shear bolt will break and need to be replaced. This is a protection mechanism to prevent other parts from breaking. Shear bolt must be tightened to 220 lb-ft (n-m).

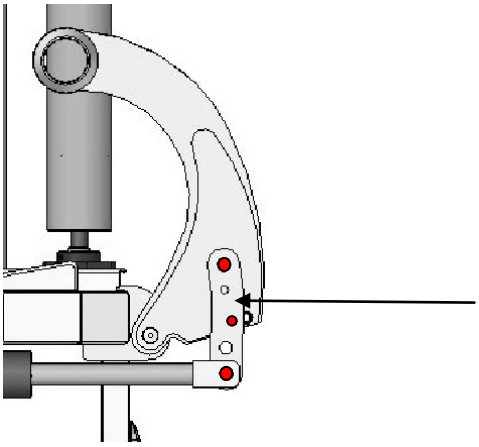
Position 1
102 in (260 cm) +/- 3 in (+/- 8 cm) max. bale length

TAIL GATE ADJUSTMENT



The tail gate has to be adjusted according to the size of bale being made. This may require adjusting sensors (see *"Incoming Sensor Adjustment"* pg. 23). In this case the bale can be as large as 102 in (260 cm). The adjustment is done by removing and repositioning the bolts in three locations. It can be adjusted to three different positions. The red bolt holes are where the bolts (including the shear bolt) are supposed to be placed for each position. In position 3, the plate connecting the tie rod to the gate is flipped over end for end, and one of two large side-by-side holes is used for the cylinder pin.

Position 2
95 in (242 cm) +/- 3 in (+/- 8 cm) max. bale length



Position 3
88 in (224 cm) +/- 3 in (+/- 8 cm) max. bale length

OPERATION

INCOMING SENSOR ADJUSTMENT

The incoming sensor can be found at the front of the accumulator, on the inside of the frame (see FIG. 1.3, pg. 7). It is adjusted by moving it to the various holes; further forward for longer bales or further back for shorter bales. Make sure that the sensor is free of obstacles when adjusting; if it is blocked by a bale, the gate will not close. If the bale is longer than the distance between the two sensors, the gate will open and eject the bale. If your incoming bale is catching on the lifted bale, adjust the incoming sensor to the next highest hole. When lifting 4 ft x 4 ft bales, the lift sensor needs to be moved to the highest position.

CYCLE MODE SELECTION

The PhiBer® Vertical Stacking Accumulator allows the operator to select one of two bale ejection modes (FIG. 4.1):

A. 3 bales
B. 2 bales

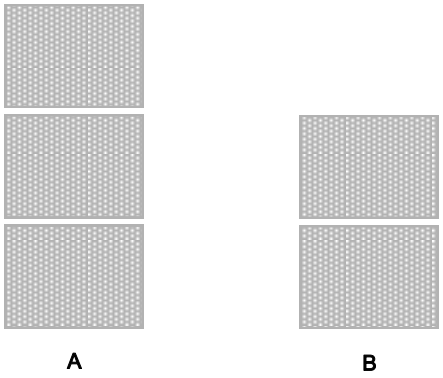


FIG. 4.1

A toggle switch is provided in the control box on the Accumulator for the selection of 3 bale or 2 bale ejection modes. Select the desired bale ejection mode before starting the Accumulator.

NOTE: In order to change bale ejection mode, a re-start is required.

HYDRAULIC TIME-OUT

A hydraulic time-out safety is provided to prevent damage to the machine in case of a bale jam. The hydraulic time-out will be activated if up or down travel of lift mechanism is not completed within a preset time. It will be signaled by fast blinking of all three bale lights. The hydraulic time-out safety will prevent any further automatic operations.

WARNING Stop baler immediately
In case of a Hydraulic time-out baling must be stopped immediately.

PROCEDE AS FOLLOWS

1. Stop tractor and baler.
2. Locate problem.
3. Turn mode switch to “MAN” for operation of manual controls.
4. Engage hydraulics to Accumulator.
5. Use manual control switches to open tail gate and raise or lower lift mechanism as needed to free trapped material.
6. Turn mode switch to “AUTO” and re-start Accumulator.

STAND BY

When battery power is supplied to the monitor and the power switch is turned on, the controller will go into STAND BY mode. This is displayed by the strobing of the bale indicator lights.

START UP PROCEDURE

The START UP PROCEDURE ensures that there are no bales in the accumulator, and that the bale lift mechanism and tail gate are in their respective “home” positions before operating the Vertical Stacking Accumulator in the field. During the start-up procedure any remaining bales in the accumulator will be ejected.

WARNING!
MOVING PART HAZARD.
BALES MAY EJECT
Ensure that the accumulator is clear of any foreign objects and that all bystanders are at a safe distance before starting the tractor, baler and the Stacking Accumulator. Distances to be given: 21 ft (6.4 m) back and 12 ft (3.7m) to the sides.

FIG. 4.2

GETTING STARTED

PROCEED AS FOLLOWS

1. Insure that the accumulator is safe to operate.
2. Start the tractor engine and engage hydraulic flow to the accumulator.
3. Toggle power switch on monitor panel, FIG. 4.2, to the “ON” position.
4. Press “EJECT” button on the monitor panel to activate.
5. Allow 10 seconds to elapse before using the Vertical Stacking Accumulator to ensure both lift and tail gate are in their “home” positions on the control box, FIG. 4.3. Bale indicator lights will be off.

FIG. 4.3

OPERATION

FIELD OPERATION

AUTOMATIC BALE EJECTION

Once the Vertical Accumulator has been started, the accumulator will function automatically, lifting bales that enter the accumulator chamber and ejecting them in stacks as selected. The number of bales in the accumulator as well as their position will be displayed by the bale indicator lights. All three lights will flash while bales are being ejected.

MANUAL BALE EJECTION

Single bales or partial stacks can be ejected during the baling process. To do that, press the “EJECT” button on the Monitor. Bale indicator lights will flash and give visual feedback, acknowledging the command given and all bales in the accumulator will be ejected immediately or upon completion of next bale.

SOLID BALES REQUIRED

Solid bales are required for proper operation of accumulator. Allow soft or deformed bales to roll through before starting the Accumulator. To do this, use the manual controls (as shown on page 27) to open the rear gate and the bale will roll through. Close the gate when the soft bale passes. Place switch #3 in automatic mode and push “EJECT” on the Monitor (see FIG 4.1, pg. 8) to resume auto accumulating.

BALE EJECTION HOLD

1.10 VERSION CHIP

Eject hold: If the “eject” button is double clicked, after initial start up, the Stacker will hold the eject until you press “eject” again when you are ready or the fourth bale hits the front sensor. The double click has to be done every time, once the second bale is lifted. The hold mode is used to get the stack to the end of the row or during turns. Bale hold works with two (2) bale and three (3) bale modes.

1.14 VERSION CHIP

Eject hold: If the “eject” button is double clicked, after initial start up, the Stacker will hold the mode until you double click again or restart the machine. In this mode, the bales will not dump until you manually eject (press “eject” once) or when the fourth bale hits the front sensor. The hold mode is used to get the stack to the end of the row or during turns. Bale hold works with two (2) bale and three (3) bale modes.

UNSTABLE STACKS

A forward speed range between a minimum of 3 mph (5 km/h) and a maximum of 13 mph (21 km/h) is required for stacks to stand properly; this will vary in some conditions. On uneven ground reducing stack height from 3 bales to 2 bales may be required. On severe slopes, 2 bales high is recommended.

OVERSIZE BALE SAFETY

An oversize bale safety is provided which will prevent malfunctions in the event of broken bales or any bale(s) that exceed(s) the maximum length allowed for the accumulator chamber. In such event, the bottom bale indicator light will blink and the tail gate will open to allow oversized bale(s) to roll out. The tail gate will close automatically and accumulation will resume normally. In the event you have one or two bales lifted and the next bale covers both sensors, it will roll through without the lifted bales coming down.

MANUAL CONTROL SWITCHES

For the purpose of service and convenience, manual controls are provided in the control box, FIG. 4.4, on the accumulator.

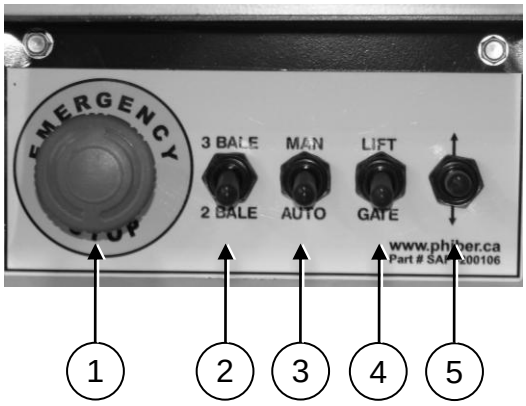


FIG. 4.4

Switch 1: “EMERGENCY STOP SWITCH”

This switch immediately stops all accumulator functions; functions will resume when reset.

Switch 2: “BALE SELECTION SWITCH”

Select the desired bale packaging mode by toggling up for 3 bales or down for 2.

Switch 3: “AUTOMATIC/MANUAL SWITCH”

This switch toggles between two positions: automatic operation and manual operation.

Switch 4: “FUNCTION SELECTOR SWITCH”

This switch is used in manual mode and toggles between two positions selecting either the operation of the bale lift system or the tail gate.

Switch 5: “ACTUATOR SWITCH”

This switch toggles momentarily between a center position (OFF) and two opposite positions which will activate the hydraulic movement of the lift or gate cylinders as indicated by the arrows (up for open or down for closed).

OPERATION

TRANSPORTING

WARNING! Unload all bales from accumulator deck before traveling on public roads.

WARNING! WIDE TURNING PATH. Ensure that all oncoming and/or overtaking traffic is clear before making turns on public roads. Slow down and look for both oncoming and overtaking traffic before making turns.

Always travel on public roads with the Vertical Accumulator within the lane of travel, FIG. 4.5.

Allow oncoming and overtaking traffic to clear before making turns when traveling on public roads, FIG 4.6.

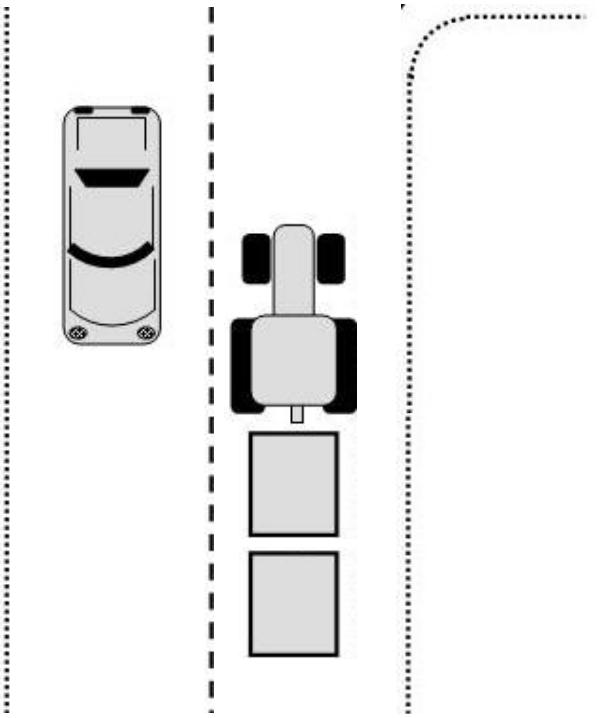


FIG. 4.5

STORAGE

WARNING! Store Vertical Accumulator away from human activity. DO NOT allow children to play on the Vertical Accumulator at any time.

To ensure optimum operation of the Vertical Accumulator for the next season:

1. Clean all crop material and dirt from Vertical Accumulator frame and deck.
2. Retract hydraulic cylinders fully.
3. Lubricate casters to prevent rusting.
4. Lubricate bearings in rollers.

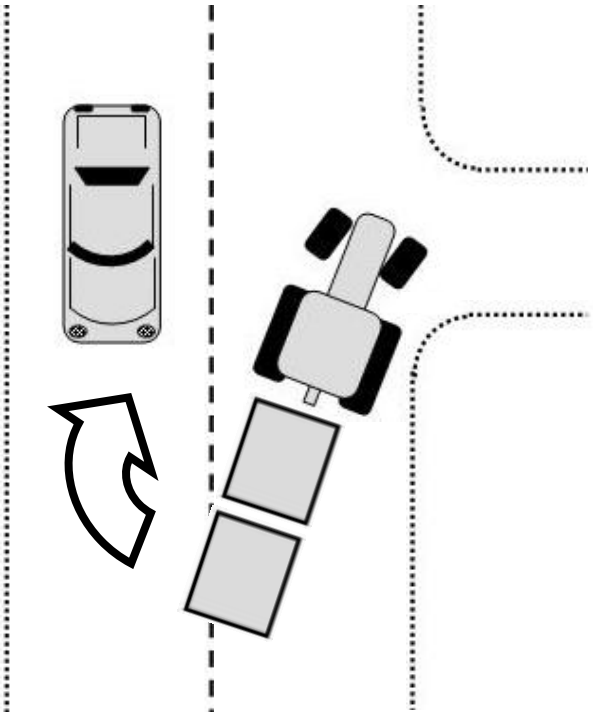


FIG. 4.6

ROUTINE MAINTENANCE

Proper maintenance of the accumulator 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														
12 ⧖															
✓	Sensors														
50 ⧖															
♦	Hitch Receiver														
✓	Floor Switch Spring Tension														
100 ⧖															
♦	Roller Bearings														
♦	Caster Detent														
1000 ⧖															
✓	Wheel Lug Nuts														
♦	Wheel Bearings														

MAINTENANCE

WARNING!
Before any work is done to the Vertical Stacking Accumulator, the Loader Arm must be raised and blocked with a suitable block; wood or metal, refer to FIG. 5.5 on pg. 31. Failure to do so may result in bodily harm while maintaining this machine.

SENSORS

Check optic and limit sensors daily to ensure they are clear of accumulation of foreign material. Check electrical sensors periodically, refer to FIG. 5.7 on pg. 33.

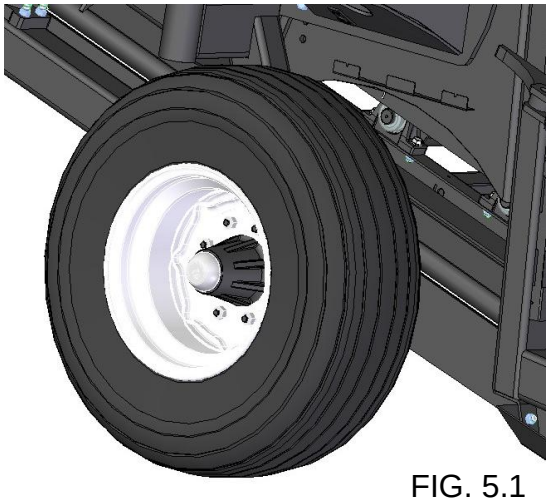


FIG. 5.1

WHEEL LUG NUTS

Check wheel lug nut, FIG. 5.1, tightness after the first two (2) hours of operation, again after the first ten (10) hours, then periodically.

WHEEL BEARINGS

Remove, clean and re-pack wheel bearings, every 1000 hours or annually.

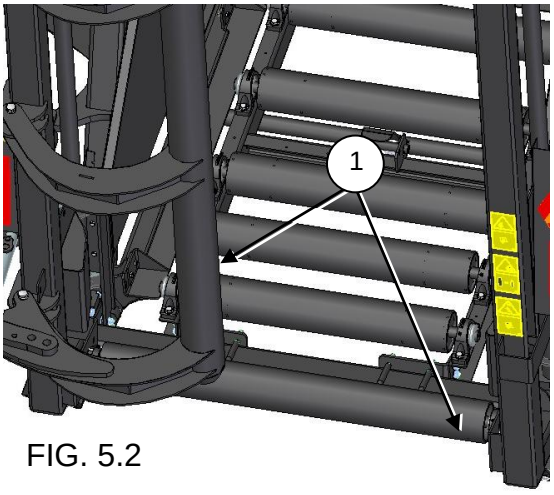


FIG. 5.2

ROLLER BEARINGS

Grease roller bearings, FIG. 5.2, every 100 hours or monthly.

CASTER DETENT

Grease caster detent, FIG. 5.3, every 100 hours or monthly.

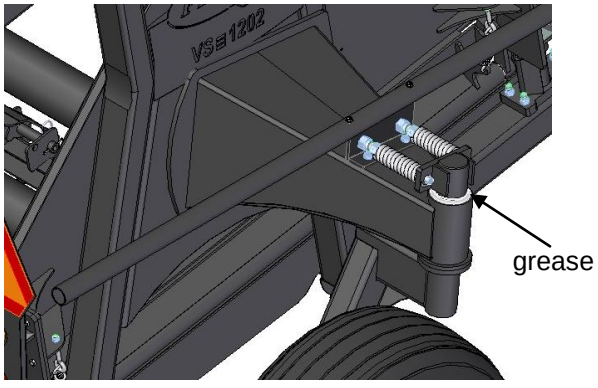


FIG. 5.3

MAINTENANCE

FLOOR SWITCH

Check spring tension in floor switch FIG. 5.4.

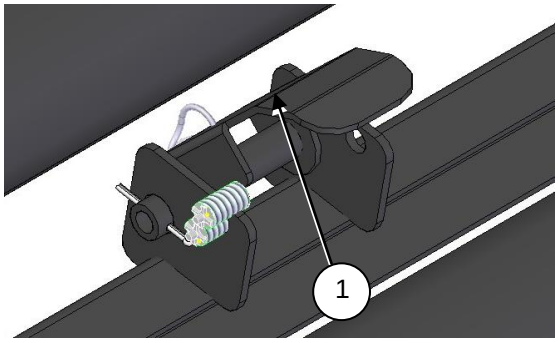


FIG. 5.4

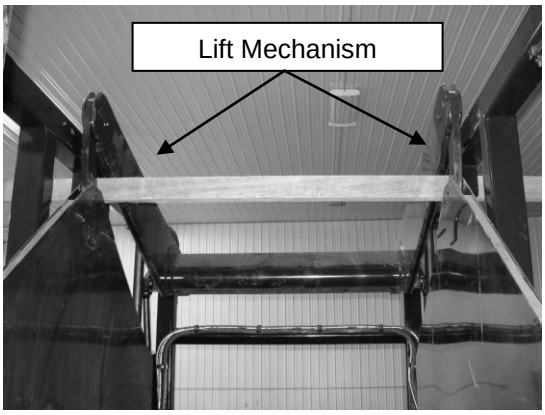
HYDRAULIC CYLINDER AND/OR COMPONENT REPLACEMENT

WARNING! UNEXPECTED MOTION HAZARD. Before removing any hydraulic components, lift mechanism must be securely locked in place to prevent injury from parts moving unexpectedly.

Once lift mechanism has been securely locked, service to the hydraulic system may be performed. The lift can be locked as follows:

1. Install new component and insure that all seals are seated properly and all fittings and hoses are tightened to specs given.

2. Connect Hydraulic lines to tractor as indicated on pg 22 under *"Hydraulic Set-up of Accumulator".*



Note: Place board through safety block holder to block loader arm from falling unexpectedly.

FIG. 5.5

NOTE: After servicing hydraulic components, the subsequent procedure must be followed in order to remove air from the hydraulic system.

MAINTENANCE

WARNING! UNEXPECTED MOTION HAZARD. Ensure all bystanders are clear of accumulator and at a safe distance from tail gate and other moving parts during this air removal procedure.

1. Block Loader Arm, see pg. 32 FIG. 5.5.
2. Install new component and insure that all seals are seated properly and all fittings and hoses are tightened to specs given. Where possible fill hydraulic cylinder(s) with oil before connecting hydraulic lines.
3. Connect Hydraulic lines to tractor.
4. Make sure switch 3 is set to “MAN” (manual) mode. (FIG. 5.6).
5. Start tractor and engage hydraulic flow to accumulator.

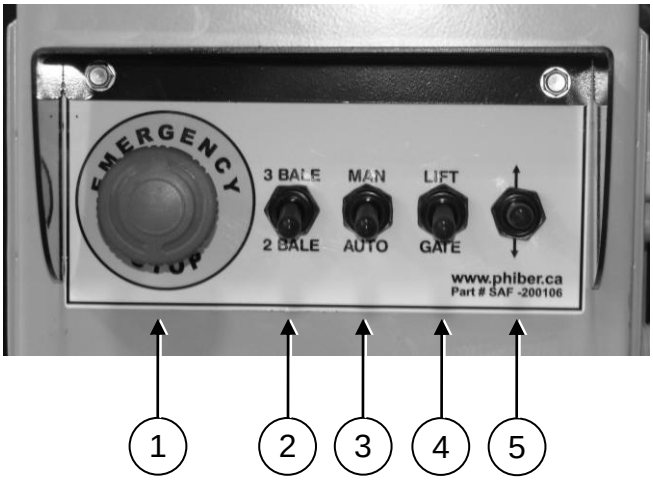


FIG. 5.6

6. Toggle power switch to “ON” position.
7. Select “GATE” (tail gate) function with selector switch 4 (FIG. 5.6).
8. Operate tail gate cylinder using the actuator switch, 5, (FIG. 5.6) until cylinder extends and retracts smoothly.
9. Select “LIFT” with function selector switch 4 (FIG. 5.6) and lift loader arm to take pressure off of safety block (board).
10. Remove safety block from lift mechanism.
11. Operate lift cylinders using the actuator switch, 5 (FIG. 5.6), until cylinders extend and retract smoothly.
12. Switch Mode switch to “AUTO” (automatic operation) with selector switch 3 (FIG 5.6).
13. Toggle power switch to “OFF” on Monitor, wait 5 seconds and restart.
14. Press “EJECT” button to start accumulator.

WARNING! MOVING PART HAZARD.
Use caution when activating any function. NEVER climb inside accumulator while the tractor is running.

ELECTRICAL SCHEMATIC

ACCUMULATOR CONTROLS

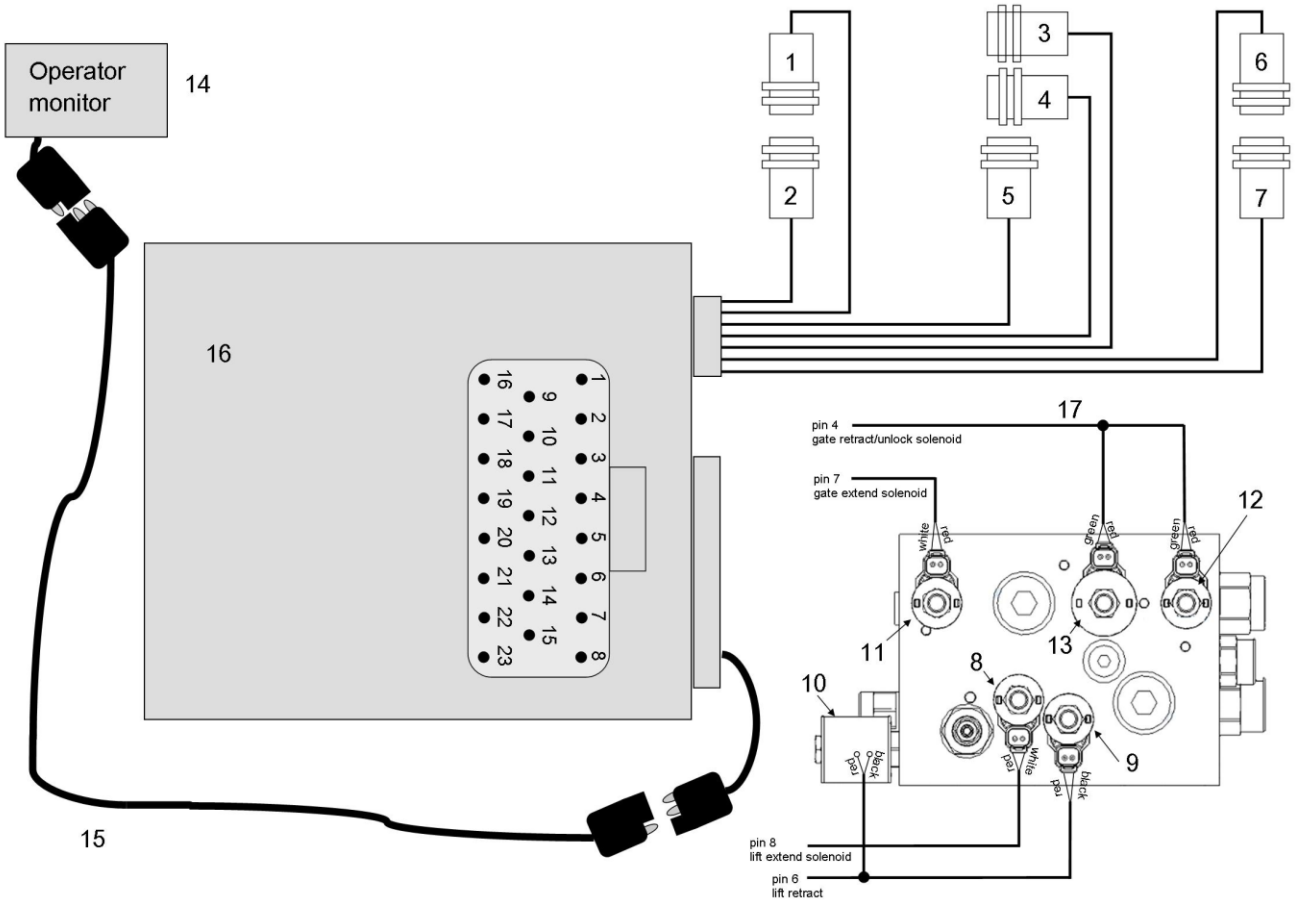


FIG. 5.7

Item	Description	Pin	Item	Description	Pin
1	Photo emitter front		10	Lift unlock solenoid	6
2	Photo sensor front	16	11	Gate close solenoid	7
3	Upper limit proximity sensor	1	12	Gate open solenoid	4
4	Lower limit proximity sensor	2	13	Gate unlock solenoid	4
5	Floor switch sensor	3	14	Operator monitor	
6	Photo emitter rear		15	Extension cable	
7	Photo sensor rear	17	16	Control circuit board	
8	Lift solenoid extend	8	17	Wire harness	
9	Lift solenoid retract	6			

MAINTENANCE

ELECTRICAL SCHEMATIC

WIRE HARNESS

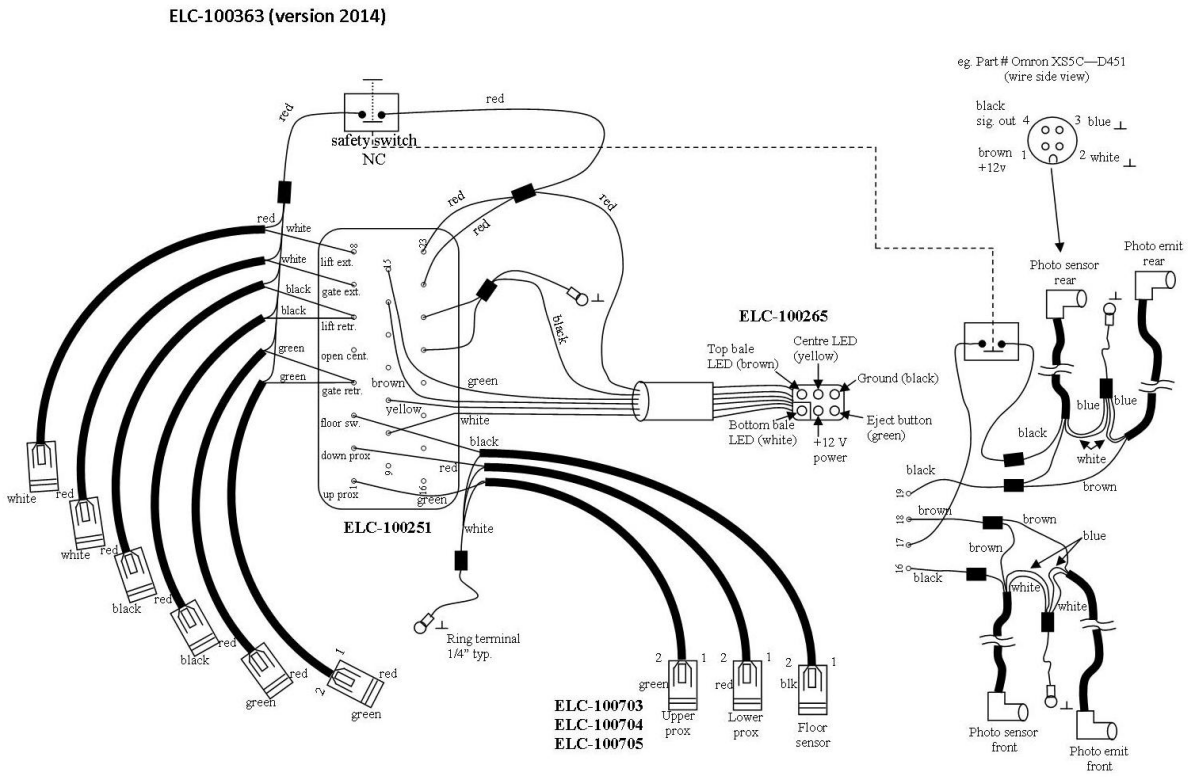


FIG. 5.8

HYDRAULIC SCHEMATIC

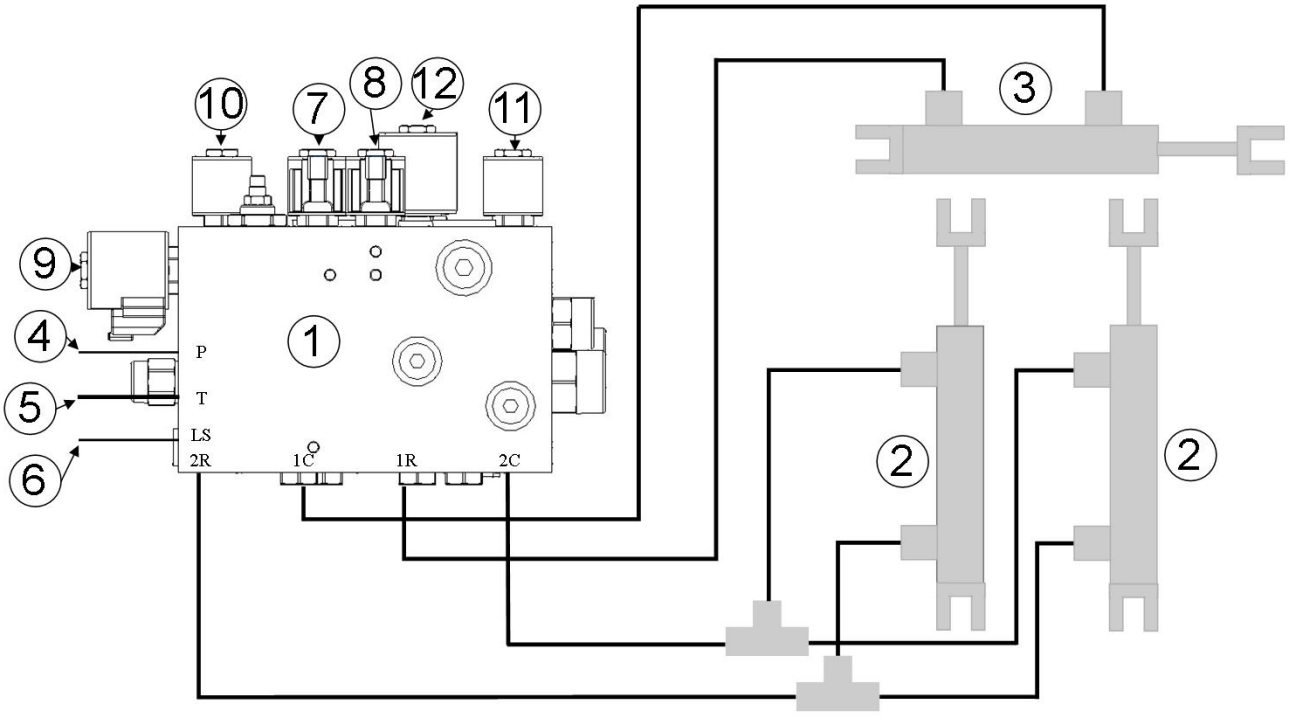


FIG. 5.9

Item	Description
1	Solenoid Control Valve
2	Lift Cylinder
3	Gate Cylinder
4	Supply line from Tractor
5	Return line to Tractor
6	Load sense line
7	Lift extend solenoid
8	Lift retract solenoid
9	Lift load holding valve NC
10	Gate extend solenoid
11	Gate retract solenoid
12	Gate load holding valve NC

MAINTENANCE

LIGHTING AND MARKING

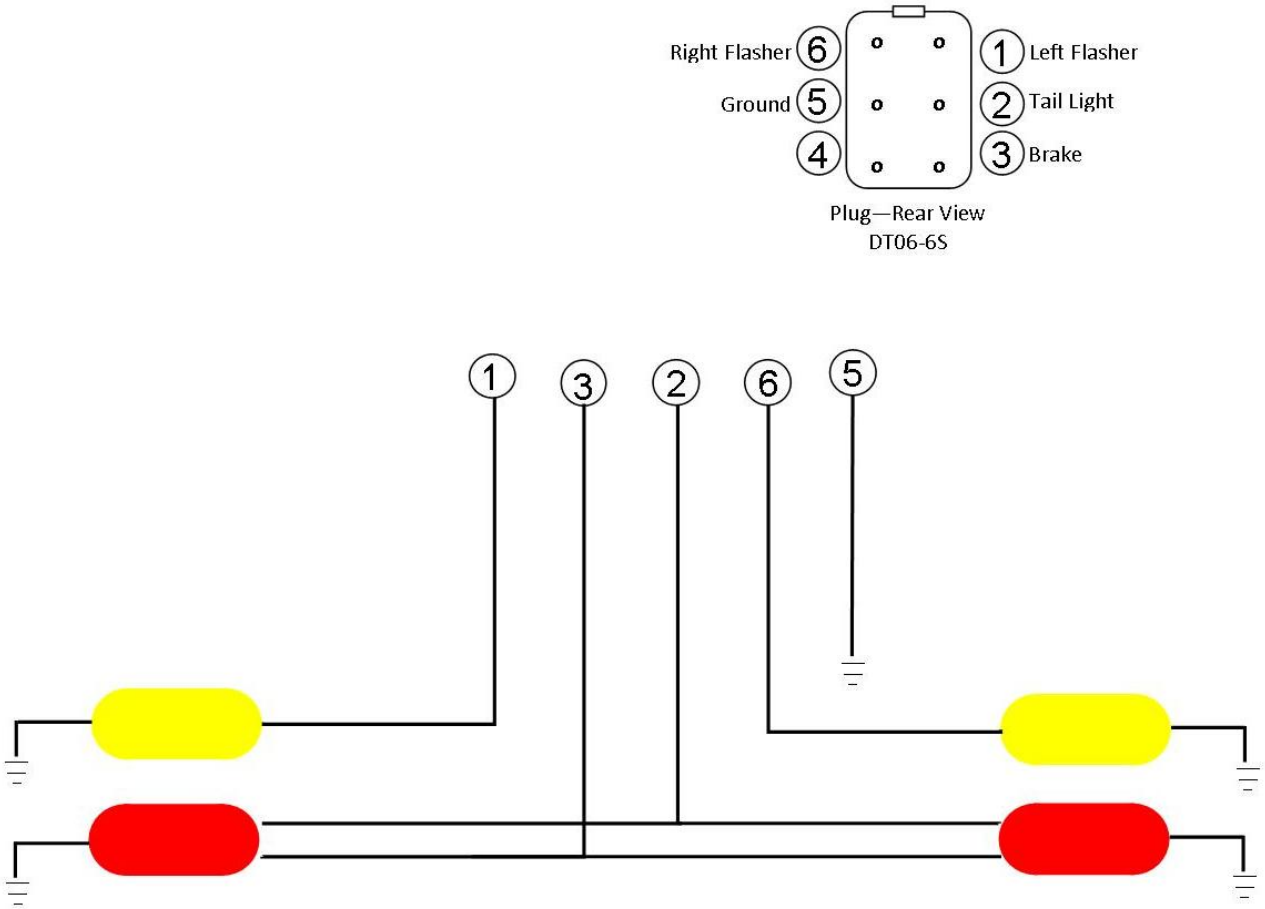


FIG. 5.10

TROUBLE-SHOOTING

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Lift mechanism and tail gate do not move when tractor hydraulic lever actuated	Hydraulic hose connections reversed	Change hose connections at tractor hydraulic quick couplers.
	Hydraulic lock. Due to high return flow, hydraulic quick couplers can cause flow checking	Place tractor hydraulic control lever in float position or disconnect return hydraulic hose coupler to drain off excessive oil. Re-connect hydraulic hose coupler. Inspect quick coupler tips for proper action and/or blockage.
	Hydraulic lock	Ensure that return oil is discharging into tractor hydraulic reservoir.
	Hydraulic lock	Reduce tractor hydraulic flow to 12 US gal/min (45.4 L/min) or less.
Bottom bale light flashes	Oversize bale safety is active. Both front and rear optic sensors are “on”	Allow oversize bale to roll out. And normal operation will resume.
	Bale may be broken. Both front and rear optic sensors may be covered by loose material	Turn off accumulator and clear loose material away from optic sensors.
	Poor bale separation. (Bales stay connected)	Raise front of accumulator. Adjust hitch height of accumulator into interference mode to aid bale separation.
Accumulator does not work	Fuse blown	Remove and replace 10A fuse on monitor in tractor cab.
	Poor electrical connection	Inspect the wiring harness coupling and clean, if necessary.
	Electronic system malfunction	Toggle power switch to “OFF”. Press and hold “EJECT” button for 3 seconds to clear and reset memory. Indicator lights will strobe when power is resumed to indicate proper operation.
	Improper limit switch setting	Check settings on limit switches for lift mechanism. Adjust the settings if necessary.

TROUBLE-SHOOTING

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Bale indicator lights flash rapidly	Hydraulic time out due to bale jam Hydraulic time out due to sensor failure	Stop Tractor and Baler. Bale Gap between proximity switch and trigger plate is too large. Measure gap between proximity switch and trigger plate. Adjust gap, if necessary. Proper gap setting is between 1/8in - 3/16in (1.5 - 3 mm).
Electronic system appears inactive. Indicator lights do not strobe at start-up	Blown fuse on circuit board	Toggle power switch to “OFF”. Open control box under deck of accumulator, remove and replace 800 mA fuse. Toggle power switch back to “ON”.
Tractor hydraulic oil overheating	Open/closed center mismatch Tractor hydraulic oil flow set too high Low pressure return oil flow is not discharging into tank properly	See section on Hydraulic setup. Reduce tractor hydraulic oil flow setting. Ensure that low pressure return flow is discharging directly into the tractor hydraulic reservoir. Newer tractor hydraulic systems have provisions for setting oil flow return directly into the tractor reservoir. With older model tractors, it may be necessary to plumb return flow to a port or fitting to allow direct discharge into the reservoir.

HITCH KIT MOUNTING GUIDELINES

All PhiBer® Vertical Stacking Accumulator hitch kits are similar in design, but each specific baler make and model require certain specific hitch parts. All hitch kits consist of two main components:

1. Center mount hitch assembly that carries the weight of the accumulator.
2. Pair of link arms with associated hardware for towing the accumulator.

> **NOTE:** All PhiBer® Vertical Stacking Accumulator hitch kits are shipped with a complete set of installation instructions. Refer to the provided install instructions first. The information provided here are only guidelines for preparing the baler for installation of the Stacking Accumulator.

Read, understand and follow all installation instructions prior to installing the Stacking Accumulator onto the baler. Failure to follow these instructions may result in improper installation and the Vertical Stacking Accumulator may not perform as intended.

PREPARE TRACTOR AND BALER

1. Hitch baler to tractor per instructions found in baler Operator's Manual.
2. Park tractor and baler on firm, level surface.
3. Shut tractor engine off and remove key from ignition.
4. Set tractor parking brake.
5. Support bale chute securely and remove retaining hardware.
6. Carefully lower bale chute to the ground and move it away from the baler.

INSTALLATION

GENERAL INSTALLATION TIPS

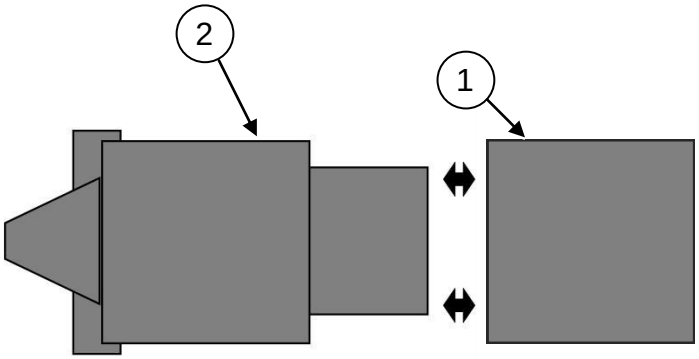


FIG. 7.1

Accumulator Placement

Ensure that the Stacking Accumulator, (1), is mounted squarely to the rear of the baler, (2), as shown in FIG. 7.1. Begin installation procedures with Stacking Accumulator set on a firm, level surface behind the baler. The deck should be evenly spaced behind the baler.

After-Market Baler Attachments

Check for potential interference with any after-market baler attachments such as bale ejectors, preservative tanks, etc. Contact PhiBer® if any modifications are necessary.

Hitch Receiver

Grease hitch receiver, FIG. 7.2, every 50 hours or weekly.

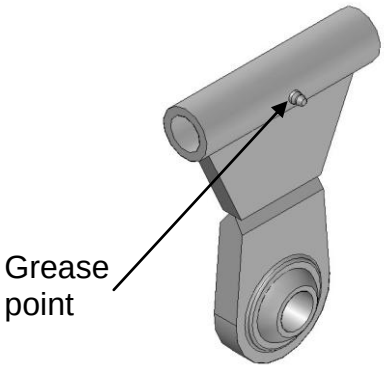


FIG. 7.2

Hitch Height

The optimum hitch height is 26 in (660 mm) from the centre of the 1 1/8 in bolt to the ground as shown in FIG. 7.3. Minimum hitch height is 24 in and maximum is 28 in (609mm-711mm).

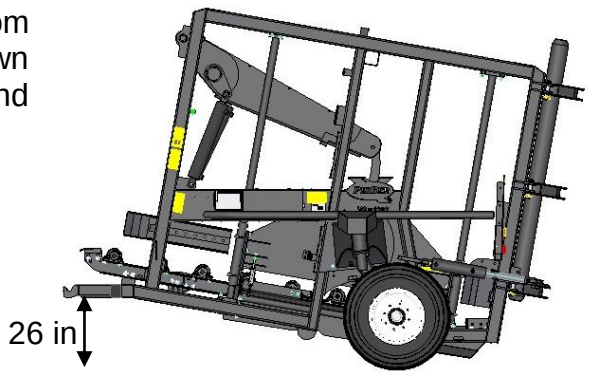
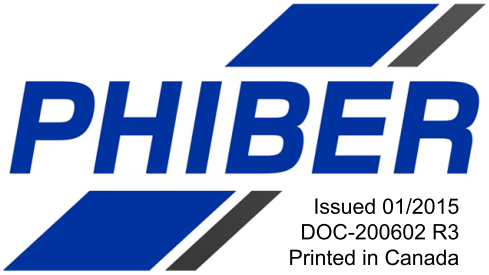


FIG. 7.3

INDEX

INDEX



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