PhiBer Vertical Stacking Accumulator

Models: VS1206, VS2208

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

Table of Contents

Introduction

Congratulations on your purchase of the PhiBer® Vertical Stacking Accumulator. The PhiBer® Vertical Stacking Accumulator offers the agricultural industry a machine for uniformly 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® Vertical Stacking 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.

Description of the Machine

The operator can choose from three different automatic discharge patterns or manually eject the bales. With the PhiBer® Vertical Stacking Accumulator, you can select the desired bale-packaging mode 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, three or four bales have been completed. If a bale is halfway out of the baler, or more, the accumulator will not allow manual dumping until that bale has completed its cycle. Automatic unloading is recommended. Refer to *ISOBUS Software* for more information on manual and automatic settings.

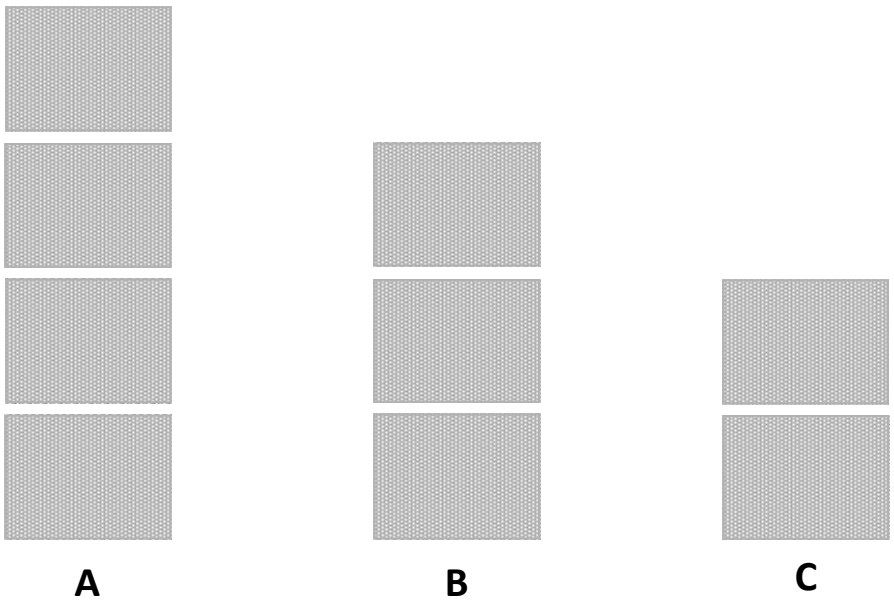


Figure 1.1

Bale Packaging Modes* (Figure 1.1)

**shown from front view*

A. Four (4): 2¼ ft x 4 ft (70 cm x 120 cm) Bales

B. Three (3): 2¼ ft x 4 ft (70 cm x 120 cm) Bales
- or -
Three (3): 3 ft x 4 ft (90 cm x 120 cm) Bales

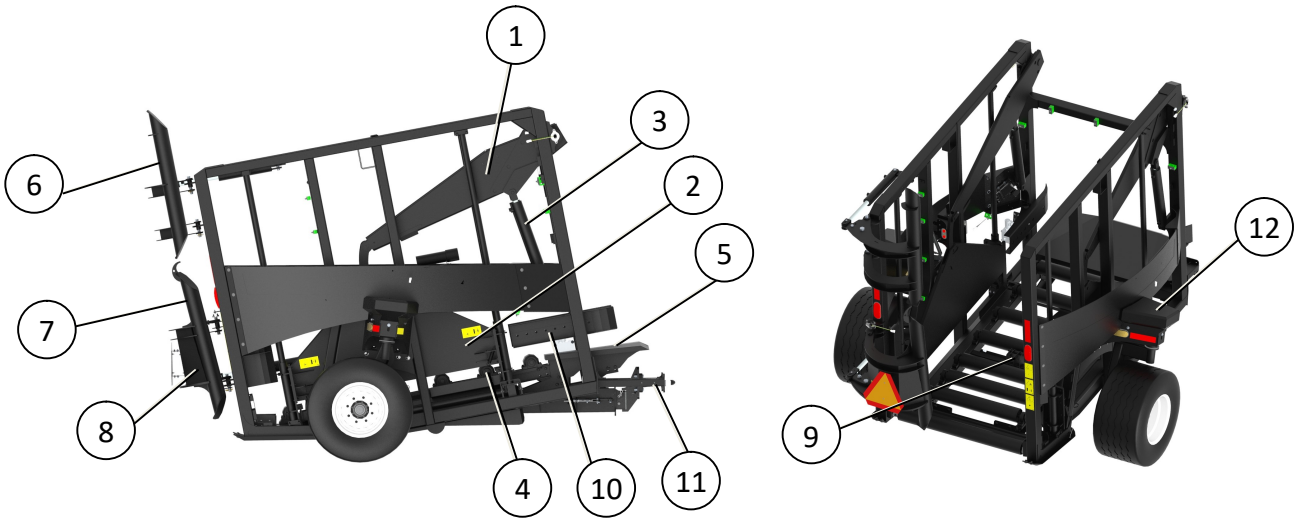
C. Two (2): 2¼ ft x 4 ft (70 cm x 120 cm) Bales
- or -
Two (2) 3 ft x 4 ft (90 cm x 120 cm) Bales
- or -
Two (2) 4 ft x 4 ft (120 cm x 120 cm) Bales

Illustration of the Machine

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

Vertical Stacking Accumulator Assembly

1. Load Arm
2. Lift Trucks: left and right
3. Lift Cylinders
4. Roller Bed
5. Bale Transition Pan
6. Top Tail Gate
7. Bottom Tail Gate
8. Rear Ultrasonic Sensor
9. Floor Switch
10. Front Optic Sensor
11. Telescoping Hitch (VS2208 only)
12. Caster



Virtual Terminal

This accumulator uses a standard ISOBUS (ISO11783) terminal.

Serial Number Location

The serial number plate (Figure 1.2) is located on the front left-hand side of the frame, above the emergency stop button.

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: _____

Figure 1.2

Safety

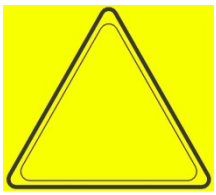
Safety Alert Symbols

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

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

Remember:

ACCIDENTS DISABLE AND KILL
ACCIDENTS ARE COSTLY
ACCIDENTS CAN BE AVOIDED



Signal Words

DANGER

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

WARNING

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

CAUTION

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

Operator Responsibility

Remember, YOU, the operator, are responsible for the safe operation, adjustment, maintenance and repair of this PhiBer® 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 near 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 this Operator's Manual prior to performing any tasks related to the machine.
- Owners have a responsibility to provide training to persons who may operate, adjust, maintain and/or repair the equipment prior to performing any of these tasks.
- Do not perform any unauthorized modifications to the 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.
- Press the emergency stop button and 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 repair).
- Ensure that all persons operating, adjusting, maintaining and/or repairing the accumulator know how to seek or summon medical assistance should an injury occur.
- The accumulator is operated in conjunction with a large square baler powered by an agricultural tractor. The noise level generated by the accumulator is insignificant and does not exceed 70 dB(A).

Maintenance Safety

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

- Store flammable fluids in approved containers and store out of access by unauthorized persons, especially children.

- 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.

- Ensure that hydraulic oil pressure in hoses, lines and components is fully relieved prior to performing maintenance or repairs to the hydraulic system.

- Ensure that the hydraulic lock out is used before commencing any maintenance

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 troubleshooting 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.

- Ensure that all persons operating, adjusting, maintaining and/or repairing the accumulator know how to seek or summon medical assistance should an injury occur.

Installation Safety

- Read, review and understand all bale accumulator installation instructions before attempting to attach accumulator to baler.

- Ensure the baler is properly hitched to the tractor and that the baler is lowered fully to the ground.

- Ensure that tractor engine is shut off, key is removed from the ignition and the 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 accumulator. (VS2208 Only)

- 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.

⚠ **NOTE:** 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.
- Ensure the hitch is fully extended and both casters are locked in the correct orientation before road travel (see *Road Operation* section on p. 31 for more information) (VS2208 Only).

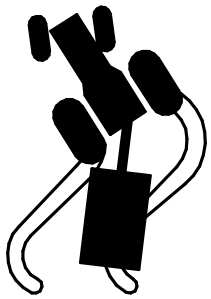
NOTE: Avoid travelling across steep inclines, particularly when accumulator is partially loaded.

- When travelling, lock steering axle on baler.

NOTE: This accumulator makes wide turns.

- Come on and off approaches or roads slowly; too much speed can cause the baler to tip.
- The accumulator adds length to baler and covers a wide path when making turns.

NOTE: Some tractors are capable of operating at speeds that exceed the maximum transport speed of this implement. Regardless of the maximum speed capability of the tractor being used to tow this implement, do not exceed the implement's maximum transport speed



Exceeding the implements maximum transport speed can result in:

- Loss of control of the tractor/implement combination
- Reduced or no ability to stop during braking
- Implement tire failure
- Damage to the implement structure or its components.

Use additional caution and reduce speed when towing under adverse surface conditions, when turning, and when on inclines.

Do not attempt transport if the fully loaded implement weighs more than 1.5 times the weight of the tractor.

Storage Safety

- Store the accumulator away from areas of human activity.
- Do not allow children to play on or around accumulator.
- Ensure Support Jack is properly placed (see Support Jack on p.17) (VS2208 Only).

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 Signs

Safety Sign Location

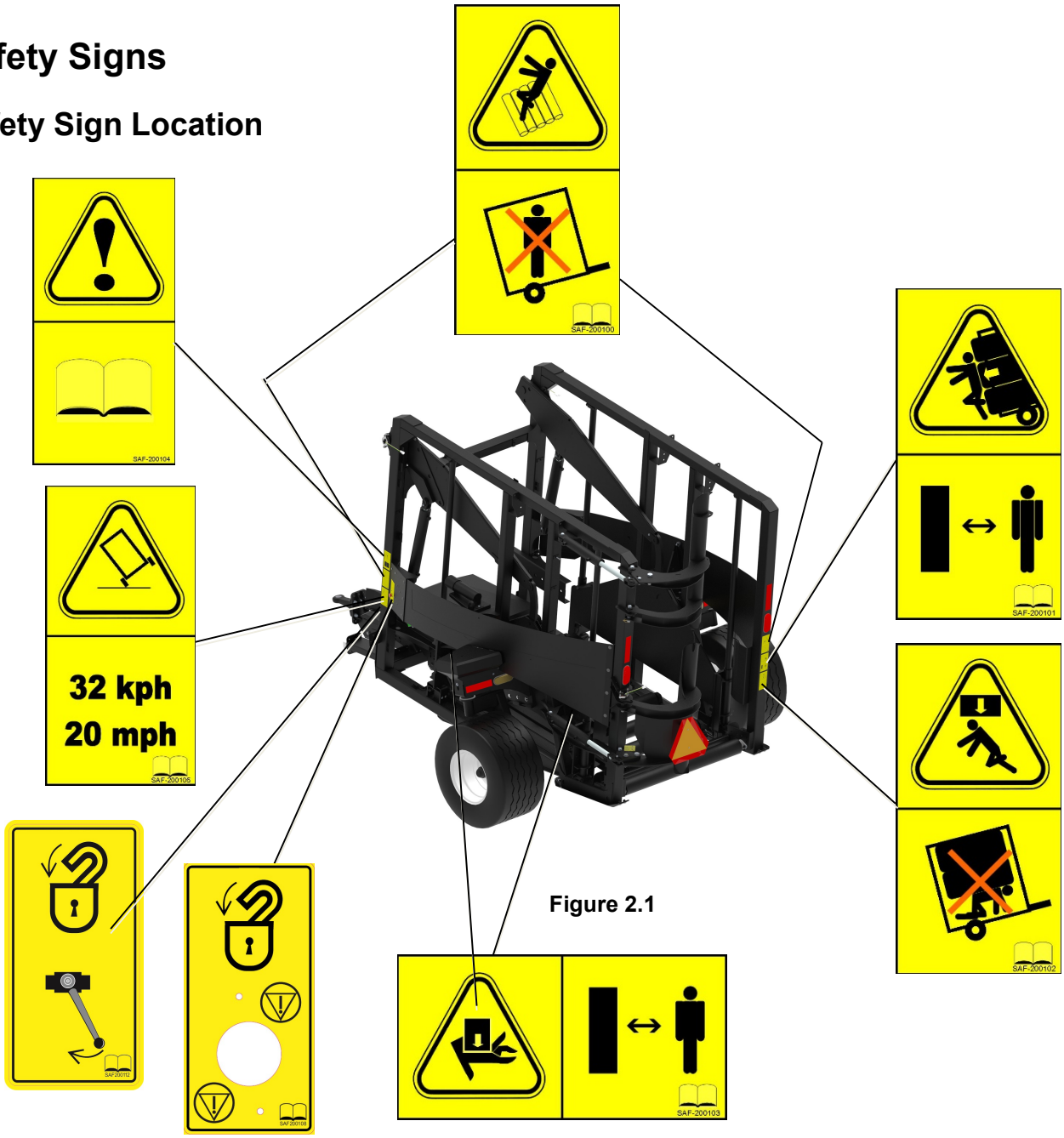


Figure 2.1

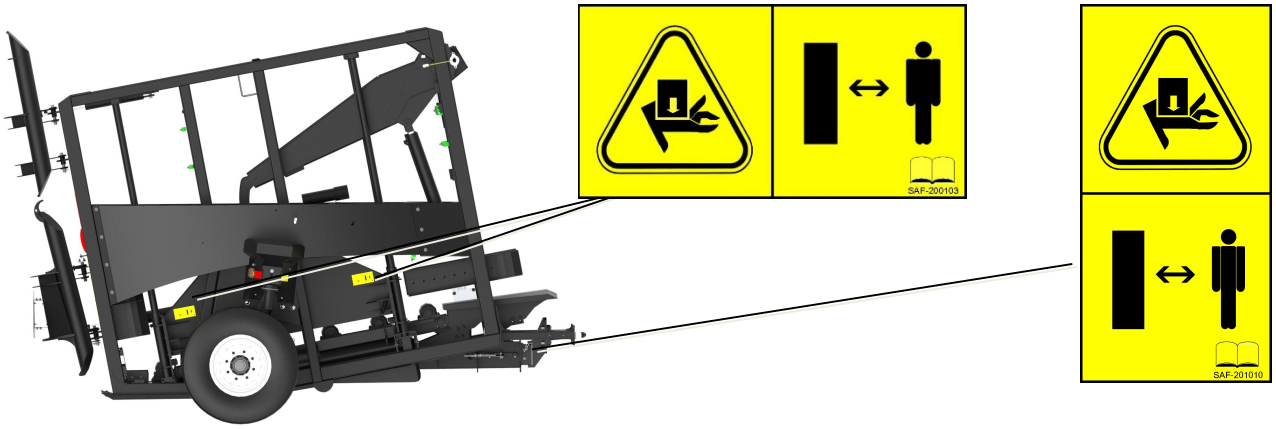


Figure 2.2

Safety Sign Explanation

SLIPPING HAZARD (Figure 2.3)

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

Figure 2.3

CRUSHING HAZARD (Figure 2.4)

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

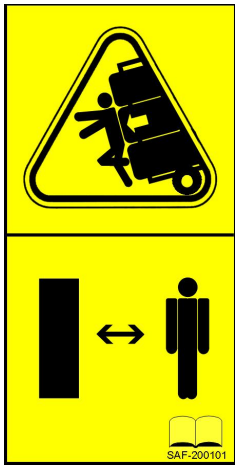


Figure 2.4

CRUSHING HAZARD (Figure 2.5)

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

Figure 2.5

PINCH POINT HAZARD (Figure 2.6 & 2.7)

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

Figure 2.6

Figure 2.7

READ THE OPERATOR'S MANUAL (Figure 2.8)

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

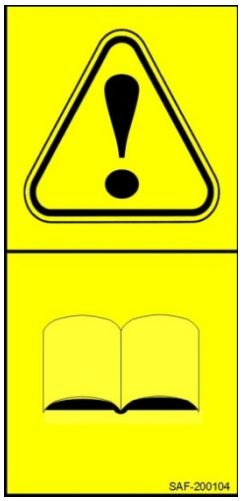


Figure 2.8

TIPPING HAZARD (Figure 2.9)

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

Figure 2.9

EMERGENCY STOP (Figure 2.10)

WARNING! This machine has been equipped with an emergency stop button. In the event of its use, it immediately disables the machine.

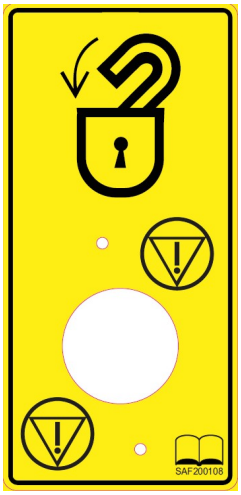


Figure 2.10

HYDRAULIC LOCK OUT (Figure 2.11)

WARNING! This machine has been equipped with a hydraulic lock out. In the event of its use, it immediately disables the machine's hydraulics.

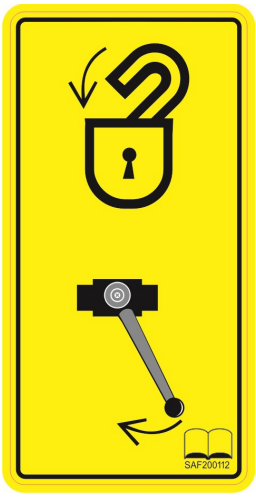
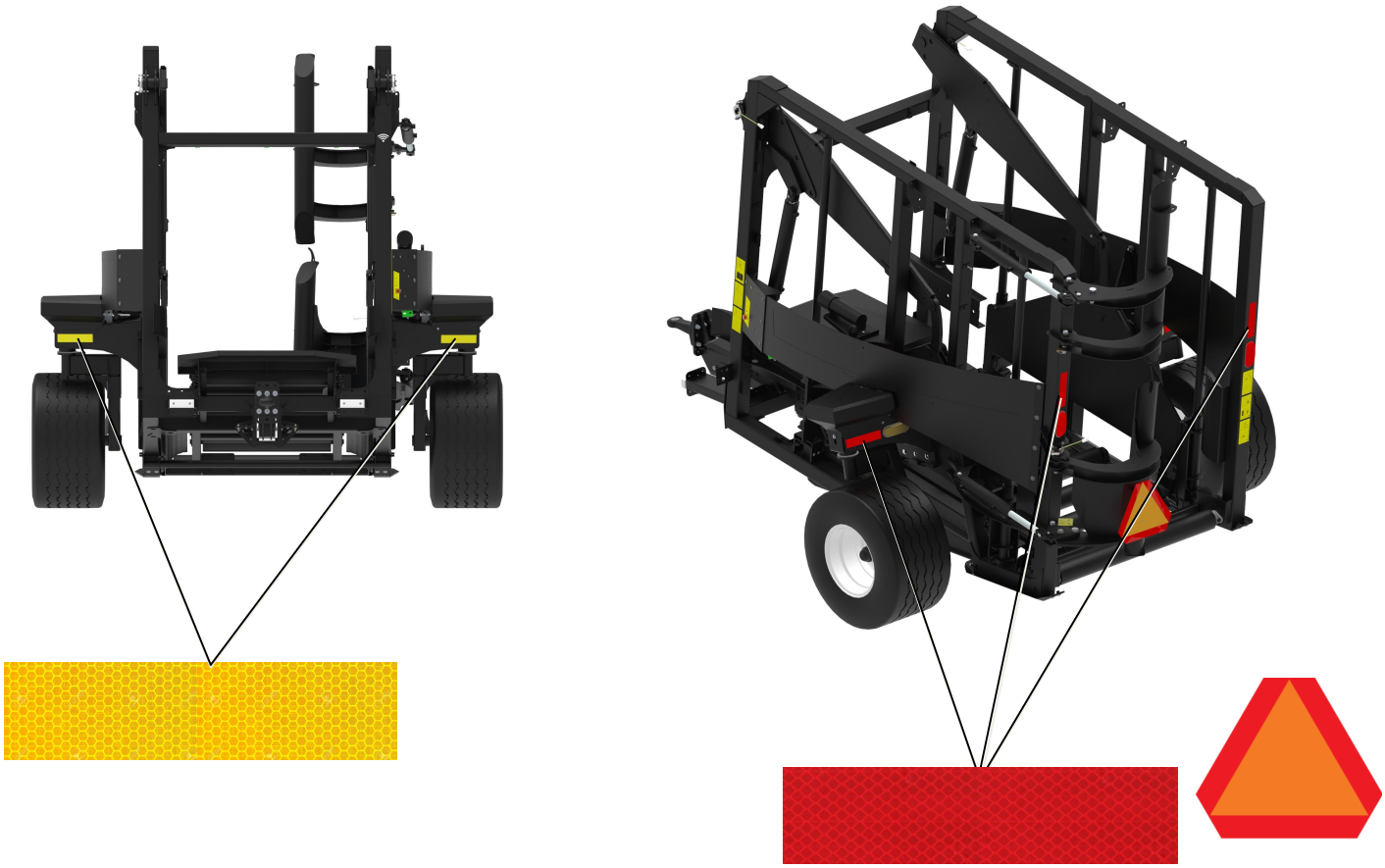


Figure 2.11

Road Safety Sign Location



Road Safety Sign Explanation

AMBER CONSPICUITY TAPE (Figure 2.12)

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

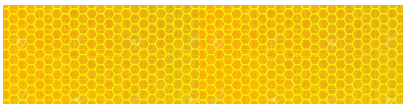


Figure 2.12

RED CONSPICUITY TAPE (Figure 2.13)

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

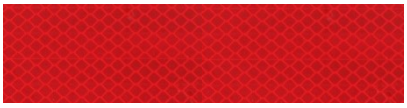


Figure 2.13

SLOW-MOVING VEHICLE SIGN (Figure 2.14)

A slow-moving vehicle (SMV) sign warns other road users that the vehicle is moving at 40km/h (25mph) or less.

Figure 2.14

Safety Sign Maintenance

SMV sign adjustment

When machine is received, adjustment of the SMV is required. The SMV sign is adjusted by loosening the attachment bolts and adjusting sign until it is perpendicular to direction of travel after tailgates are adjusted.

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

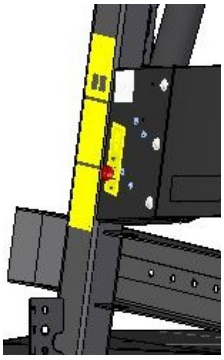
Ensure that replaced parts or components on the accumulator, that had a safety sign attached originally, include a safety sign when they are shipped to you.

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.

Emergency Stop

This machine has been equipped with an emergency stop button. In the event of its use, it immediately disables the machine. If it is necessary to climb onto the deck of the machine, be sure the emergency stop button has been pressed. To resume motion, twist the emergency stop button clockwise.



DANGER! DO NOT CLIMB IN MACHINE while it is running or with bales inside.

Specifications

Vertical Stacking Accumulator

	VS1206	VS2208
Bale Capacity	2 - 4 (depends on bale size)	2 - 4 (depending on bale size)
Bale Size	2¼ ft x 4 ft (70 cm x 120 cm) 3 ft x 4 ft (90 cm x 120 cm) 4 ft x 4 ft (120 cm x 120 cm)	2¼ ft x 4 ft (70 cm x 120 cm) 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	Manual or Automatic
Width (casters)	125 in (3.17 m)	118 in (3.00 m)
Tire Size	18L - 16.1 8 ply	18L - 16.1 8 ply
Length	169 in (4.29 m)	Hitch Retracted – 165 in (4.19 m) Hitch Extended – 195 in (4.95 m)
Height	114 in (2.90 m)	114 in (2.90 m)
Weight	4620 lb. (2,100 kg)	4970 lb. (2,255 kg)
Max Hitch Weight	700 lb. (318 kg)	845 lb. (384 kg)
Electrical Power Supply	12 V	12 V
Hydraulics	14 US gal/min (53 L/min) continuous flow	14 US gal/min (53 L/min) continuous flow
Bale Length (range)	7 ft - 8 ft 6 in (2.13 m - 2.60 m)	7 ft - 8 ft 6 in (2.13 m - 2.60 m)

Tractor Requirements

Hydraulics # of circuits required hydraulic flow	 1 12 - 14 US gal/min (45 - 53 L/min)
Electrical Power Supply	12 V @ 5 amps
ISOBUS	ISO Compatible Tractor or Baler
Recommended Tractor Weight	Combined weight of baler and fully loaded accumulator to not exceed 1.5 times tractor weight

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.

Installation

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 is only a guideline 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 PhiBer® Vertical Stacking Accumulator may not perform as intended.

Preparing 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.

Support Jack (VS2208 Only)

The support jack is located on the front-right corner of the machine.

Transport Position

Once the Stacking Accumulator is securely mounted to the rear of the baler, crank the support jack in the upward direction until it has no pressure on it. Remove the pin and rotate the jack 90˚. Secure the jack in this position using the removed pin (Figure 3.1).

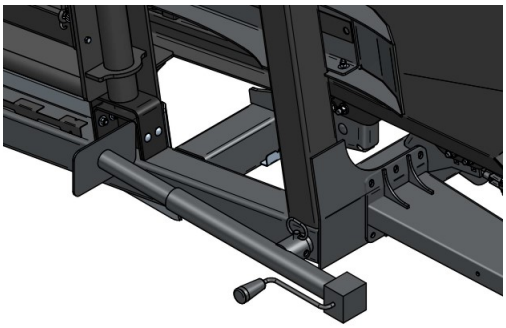


Figure 3.1

Support Position

Before disconnecting the Stacking Accumulator from the baler, remove the pin and rotate the jack 90˚. Secure the jack in this position using the removed pin (Figure 3.2). Crank the support jack in the downward direction until there is no longer pressure on the hitch receiver. Make sure the support jack is pointing straight down before disconnecting the hitch receiver.

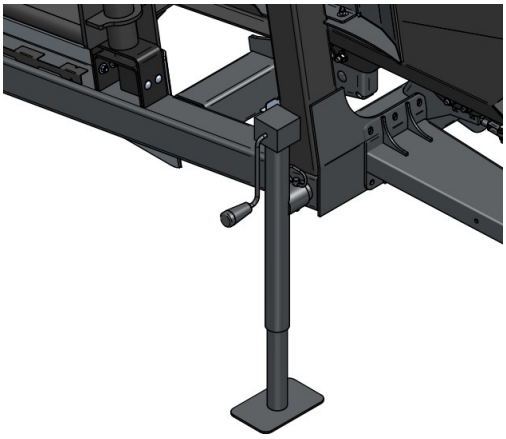


Figure 3.2

General Installation Tips

Accumulator Placement

Ensure that the Stacking Accumulator, (1), is mounted squarely to the rear of the baler (2) (Figure 3.3). Begin installation procedures with Stacking Accumulator set on a firm, level surface behind the baler. The deck should be evenly spaced behind the baler.

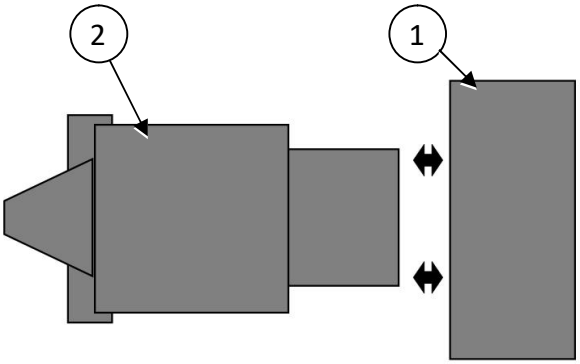


Figure 3.3

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 (Figure 3.4) every 50 hours or weekly. If there is excessive wear on the hitch, hitch receiver or pin contact PhiBer® for replacement parts.

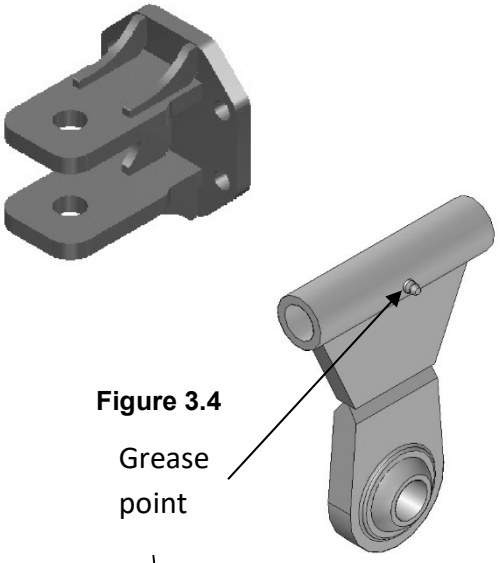


Figure 3.4

Hitch Height

The optimum hitch height is 26 in (660 mm) from the center of the hitch (Figure 3.5). Minimum hitch height is 23 in and maximum is 28 in (584mm-711mm). More hitch height information can be found on p. 36.

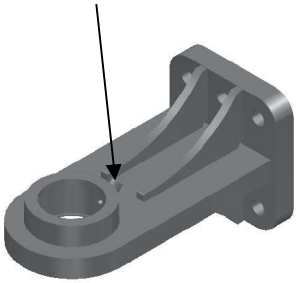


Figure 3.5

Operation

Hydraulic Set-up

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 or closed center. Recent model tractors should be set to open center function. Older tractors normally are configured with closed center hydraulic systems; some adaptation may be required to achieve optimum performance. Contact your dealer or PhiBer® for assistance.

Two crucial elements must be heeded to ensure optimum Stacking Accumulator performance:

1. Tractor hydraulic output flow must be set between 12 - 15 US gal/min (45 - 57 L/min) and be in a continuous operating mode.
   NOTE: Hydraulic oil flow in excess of 15 US gal/min (57 L/min) may cause hydraulic lock up of the system. Flow rates below 12 US gal/min (45 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: This accumulator is sent with a non-locking Pioneer tip that can be plugged into the remote, when hose kit option is ordered.

Component Cycle Times

Component / Action 12 US gal/min (45 L/min) flow rate	Open/Up (sec.)	Close/Down (sec.)
Lift	4	4
Gate	2.5	2.5

Shear Bolt & Tail Gate

*photos are top view

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 will need to be replaced (Figure 4.1). This is a protection mechanism to prevent other parts from breaking. Shear bolt must be tightened to **220 lb-ft (n-m)**. Tighten pivot bolt to snug and loosen off 1/8 of a turn to allow the shear bolt to protect the gate properly. There are wrenches included near the manual holder on the left hand side of the accumulator. (Figure 4.2)

**see Recommended Settings on page 36

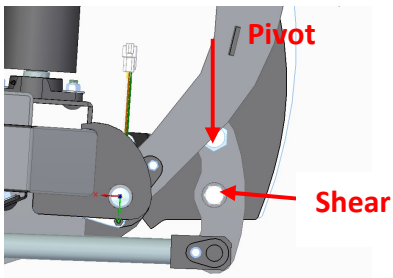


Figure 4.1

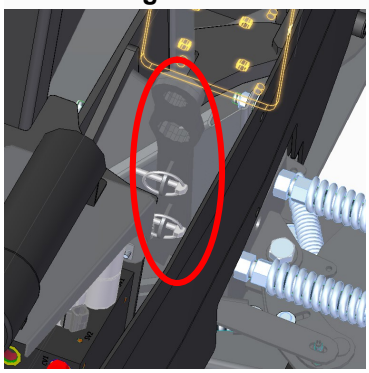


Figure 4.2

Top Tailgate Settings

The Top Gate setting must be made prior to the Bottom Gate setting. Adjust the Top Gate to suit the size of bale being made. The adjustment is made by relocating the Top Gate shear bolt in any of the four different positions provided. To determine the correct position, refer to the diagrams shown in the *Top Tailgate Adjustment* section on p. 39.

NOTE: Adjusting the Top Gate may require the sensors to be realigned; refer to *Sensor Adjustment* on page 22.

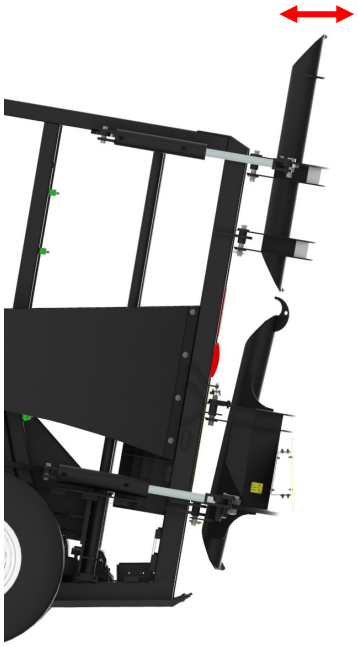


Figure 4.3

Bottom Tailgate Settings

IMPORTANT! The Bottom Gate setting must either be 'centered' (aligned) with the Top Gate, or positioned somewhere 'forward' of the Top Gate. (Figure 4.4) The Bottom Gate must **never** be positioned so that its starting point is 'behind' the Top Gate, otherwise serious stacking failures can occur. To prevent gate damage while calibrating, ensure the stacker is clear of any bales that may have been ejected.

To determine the correct position, refer to the diagrams shown in the *Top Tailgate Adjustment* section on p. 37. Once the correct position has been determined, the Bottom Gate needs to be aligned through the *Calibration Mode*. Position the Bottom Gate in line with, or ahead of the Top Gate then select *SAVE*.

The starting position of the Bottom Gate (as it relates to the Top Gate) can also be adjusted through the programmable *Smart Stack* feature. This feature allows you to advance the Bottom Gate in order to create straighter stacks.
See more about the *Smart Stack* feature in the *Smart Stack and Bottom Gate Alignment* section on p. 28.

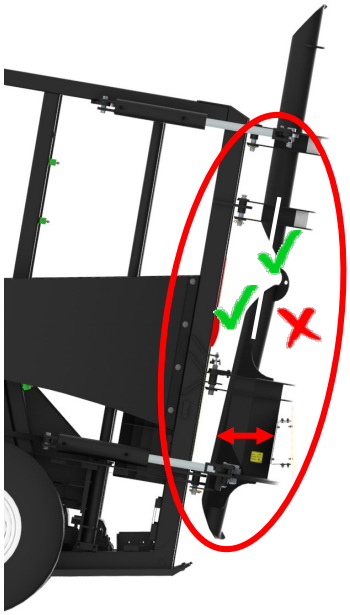


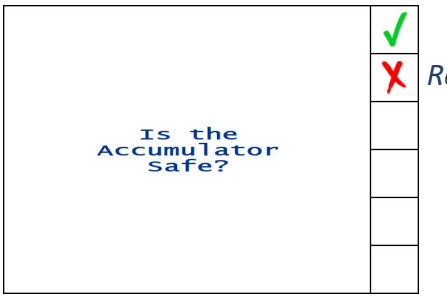
Figure 4.4

Lift Arm Calibration

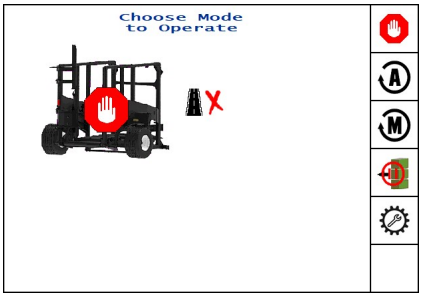
The Lift Arms have been calibrated at the factory and will only require recalibration if parts have been replaced in the Lift Arm (ex; a sensor, or hydraulic cylinder, etc.), when error messages occur on the monitor, or in the event the Lift Arms fail to operate in a synchronized manner.

In order to re-calibrate the Lift Arms, you may begin at the *Start-up* page or *Home* page, and then follow the sequence shown in the following page, while selecting the button shown in each display.

WARNING, SAFETY PRECAUTION: Once these steps have been completed, the machine will calibrate itself and you may see several movements in the lift trucks and/or gates as the machine sequences through its sensors and finds its calibration. Before starting any operation, make sure the accumulator has hydraulic pressure supplied, there are no bystanders near the machine, and that it is safe to begin operation.

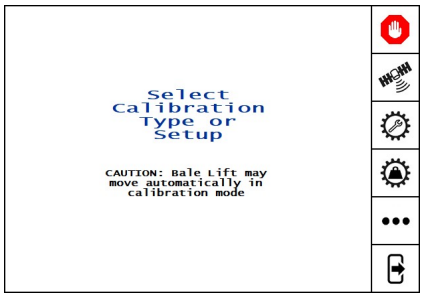


Red X



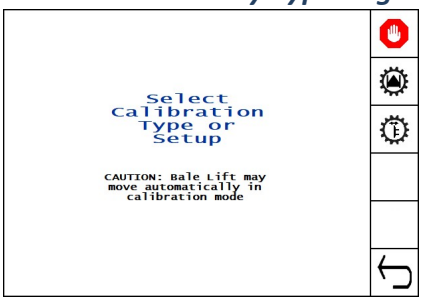
Wrench

3. *Setup and Calibration Page*



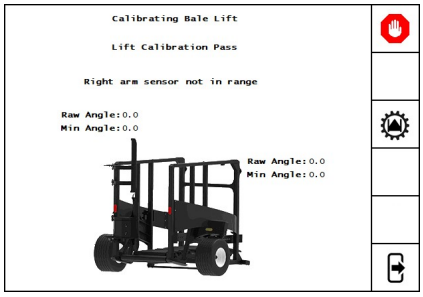
More

4. *Calibration by Type Page*



Lift Truck

5. *Lift Truck Calibration Page*



Stop

Lift Truck

Press the STOP button when calibration is complete. ***NOTE: Once calibration is complete, the Bottom Gate will need to be re-calibrated.***

While the Lift Arms are being calibrated, the Bottom Gate will close all the way to read all the sensors. Once the Lift Arms are calibrated, press *STOP* to return to the *Home* page. See *Bottom Tailgate Settings* on p. 26 to re-calibrate Bottom Gate.

Sensor Adjustment – Photo Emitter

The incoming Photo Emitter and sensor can be found at the front of the accumulator, on each side of the frame. The two must align with each other (Figure 4.5). They are adjusted by moving them to the various holes; further forward for longer bales or further back for shorter bales. If the bale is longer than the sensor setting, the gate will open and eject the bale.

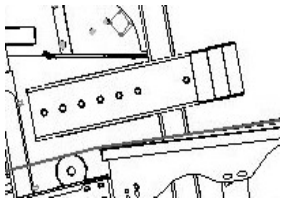


Figure 4.5: Front Sensors

Sensor Adjustment – Ultrasonic Sensor

The Ultrasonic Sensor is located on the front side of the Bottom Gate. The function of the Ultrasonic Sensor is to determine the incoming speed of the bale, and then to send this information to the Falcon controller which will automatically control the movement of the Bottom Gate in such a way that it will gently 'catch' the incoming bale. The angle of the Ultrasonic Sensor should be corrected whenever necessary to compensate for adjustments made to the Bottom Gate starting position. For best performance, the Ultrasonic sensor should be pointing straight, towards the incoming bale. Adjust the Ultrasonic Sensor by loosening the adjustment bolt (Figure 4.6) and repositioning the sensor toward the direction of the incoming bale, and then retighten the bolt.

Figure 4.6: Ultrasonic Sensor

Cycle Mode Selection

The PhiBer® Vertical Stacking Accumulator allows the operator to select one of three bale ejection modes, depending on bale size (Figure 4.7):

A. 4 bales

B. 3 bales

C. 2 bales

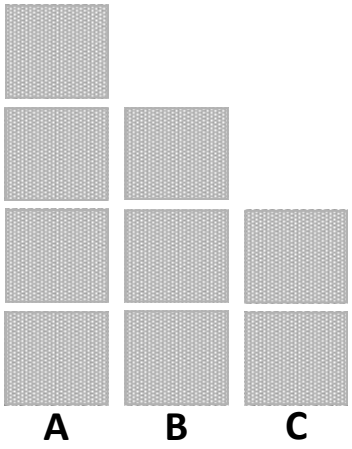


Figure 4.7

Hydraulic Time-out

A hydraulic time-out safety is provided to prevent damage to the machine in case of a machine error. The hydraulic time-out will be activated if up or down travel of lift mechanism is not completed within a pre-set time; an error will appear. The hydraulic time-out safety will prevent any further automatic operations.

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

Proceed as Follows

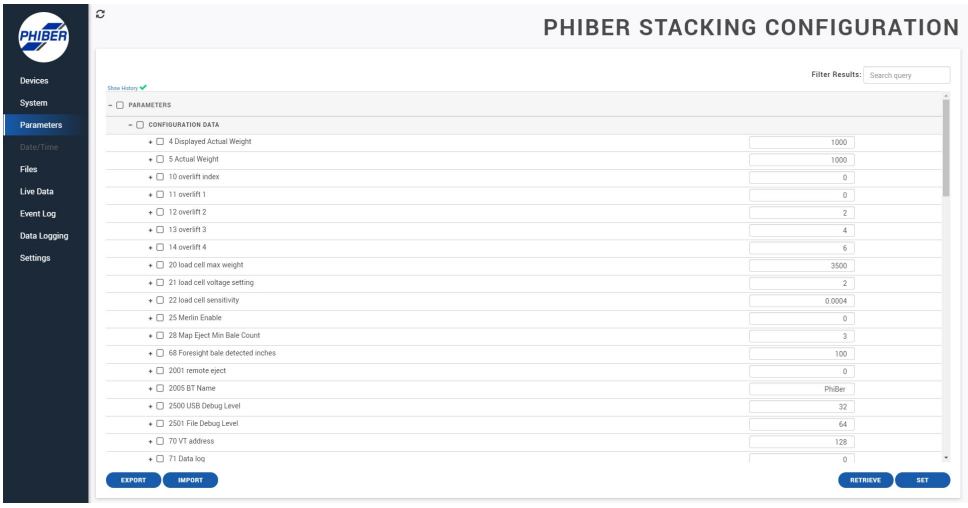
1. Stop tractor and baler.
2. Locate problem (usually missed sensor or no hydraulic flow).
3. Use manual mode to clear accumulator if necessary.
4. Engage hydraulics to accumulator.
5. Use manual control to open tailgate and raise or lower lift mechanism as needed to free trapped material.
6. Restart Bale Accumulator in automatic mode.

Field Operation

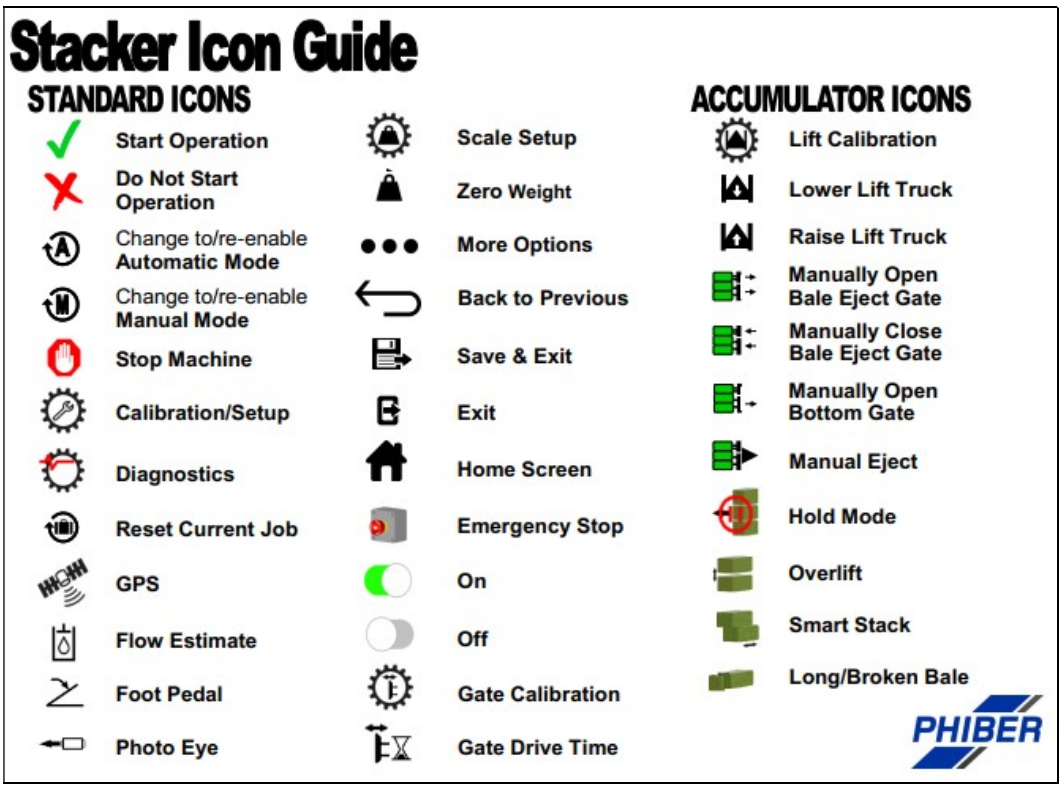
ISOBUS Software

Updating Software and Advanced Configuration

Each machine is shipped with a USB cable located in the Operator's Manual holder on the machine. There is an application for windows computers available from PhiBer® that is used for machine software updated and advanced configuration of the accumulators. User instructions are provided within the software application.



Icon Guide

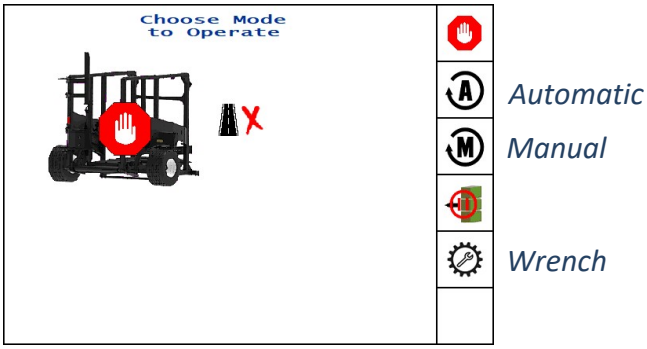


Home Page

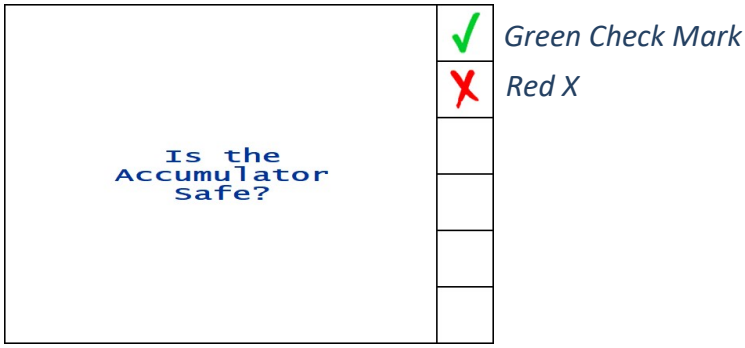
<u>WARNING</u>! MOVING PART HAZARD! Before starting any operation, make sure the accumulator has hydraulic pressure supplied and that it is safe to begin operation by reading the *Start-up Procedure* section following this.

The *Home* page provides the choices between *Automatic* mode and *Manual* mode. Choosing *Automatic* will bring up the *Start-up* page where it will ask 'Is the Accumulator Safe?'. By pressing the *Green Check Mark*, the machine will be instructed to begin its start-up procedure automatically and a *Field* page will appear with a display of the current operations that are occurring (see *Field Page* section on next page).

Home Page



Start-up Page



Start-up Procedure

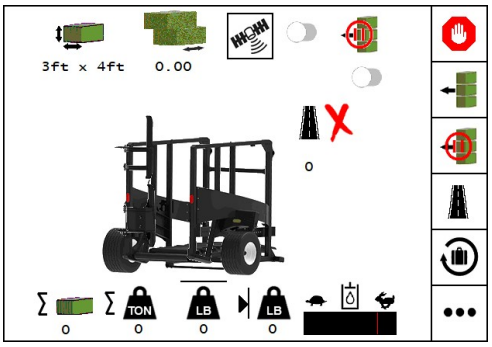
<u>WARNING</u>! MOVING PART HAZARD! BALES MAY EJECT! During the start-up procedure, any remaining bales in the accumulator will be ejected. Ensure that the accumulator is clear of any foreign objects and that all bystanders are at a safe distance before starting the tractor, baler, and the Stacking Accumulator. Distances to be given: 21 ft (6.4 m) back and 12 ft (3.7m) to the sides.

The *Start-up Procedure* ensures that there are no bales in the accumulator, and that the bale lift mechanism and tailgate are in their respective *home* positions before operating the PhiBer® Vertical Stacking Accumulator in the field. The machine will cycle through its homing procedure by moving the lift trucks and bale gates to their maximum and minimum positions as well as retracting the hitch completely (VS2208 Only) (more information on the hitch movements and *Field/Road Mode* can be found in the *Road Operation* section on p. 31).

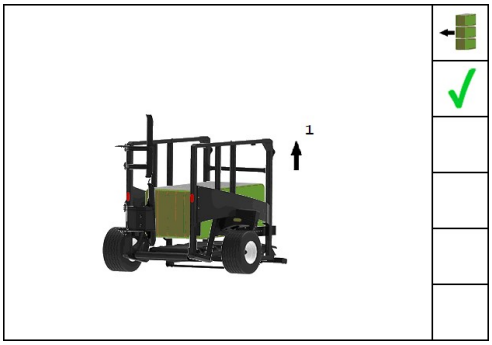
Field Page

The *Field* page continuously reports which field operations are occurring, such as when the Lift Trucks go up or down, when either of the Gates are opening or closing, and the current Bale count in the stacker. The following pictures show examples of this reporting:

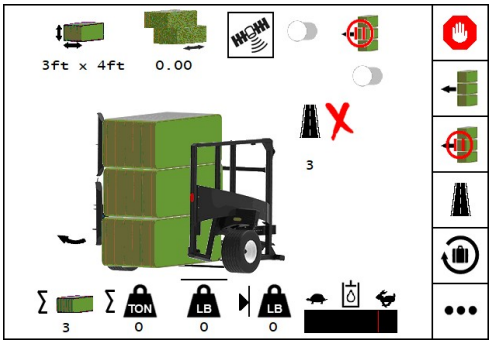
Bales loaded 0, ready for next operation



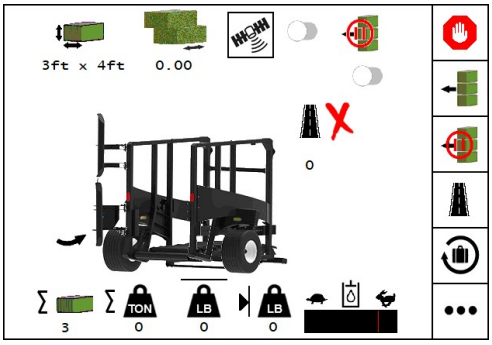
Bales loaded 1, Lift Truck is lifting



Bales loaded 3, Gate is opening



Bales loaded 0, Gate is closing



At any given time during field operations, the operator may also eject bales manually, hold bales, or access the diagnostics page. If the machine settings or calibration needs to be changed, the machine should be stopped, and the *Setup* and *Calibration* steps should be followed as explained in the following sections. To arrive at the *Setup and Calibration* page, the *Stop* button should be pressed, and then the *Wrench* button. This will take you directly to the *Setup and Calibration* page.

Solid Bales Required

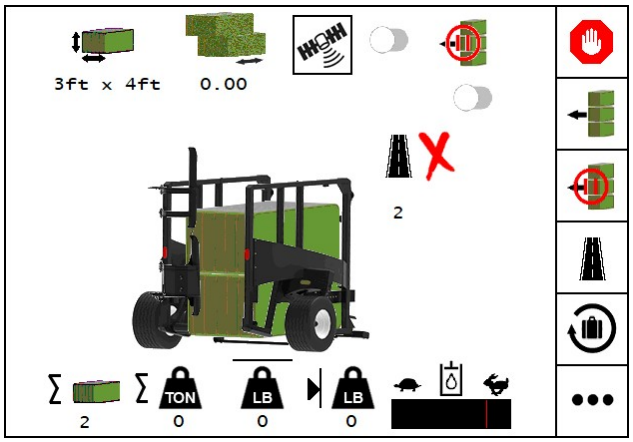
Solid bales are required for proper operation of accumulator. Allow soft or deformed bales to roll through before starting the accumulator. To do this, use the *Manual Bale Eject* button to open the rear gate and the bale will roll through (see *Manual Bale Eject* section on the following page). Close the gate when the soft bale passes. Start in automatic mode to resume auto accumulating.

Automatic Bale Eject

Once the Stacking Accumulator has been started, the accumulator will function automatically, lifting bales that enter the accumulator chamber and ejecting them as stacks accordingly.

Manual Bale Eject

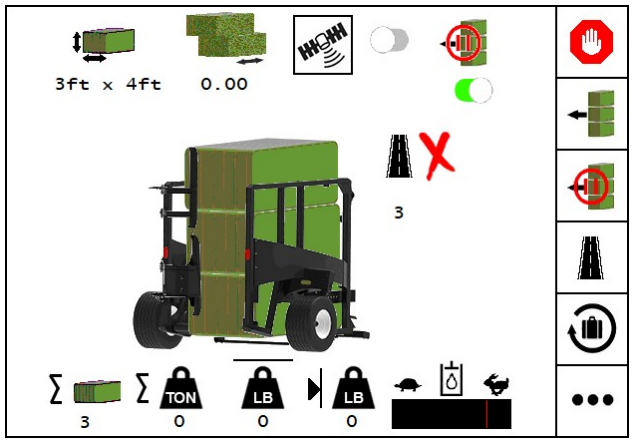
Single bales or partial stacks can be ejected during the baling process. To do that, press the *Manual Bale Eject* button and all bales in the accumulator will be ejected immediately or upon completion of the next bale.



Manual Bale Eject

Hold Mode

If hold mode is enabled, the accumulator will not eject a full stack until the operator presses manual eject or the accumulator detects the next incoming bale.

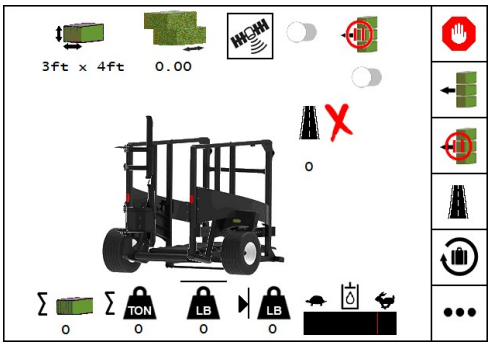


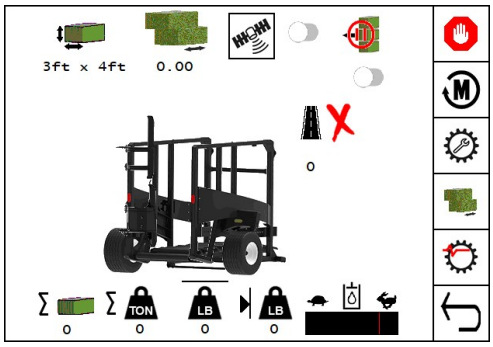
Hold Mode

Note: When ejecting bales, ensure the bales are clear of the gates before stopping to change to manual mode, recalibrate gates, or to open and close gates to prevent gate damage.

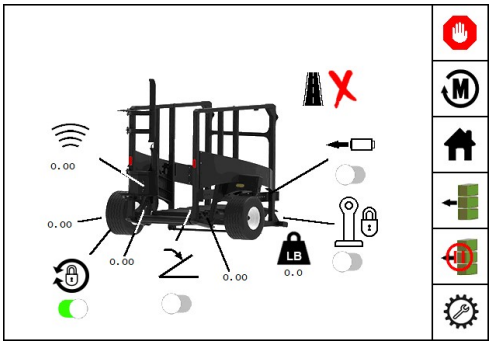
Diagnostics Page

The *Diagnostics* page can be selected when the unit is in field operation. When in the *Field* page, simply select the *More* button, then select the *Diagnostics* button to see a report of the activity of each sensor on the machine.





Diagnostics Page



Unstable Stacks, Misaligned 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 with conditions. On uneven ground, reducing stack height may be required. If Stacks are consistently found to be leaning forward or misaligned when they come to rest, the *Smart Stack* feature can be used to automatically advance the Bottom Gate in order to correct the stack alignment. See the *Smart Stack and Bottom Gate Alignment* section on p. 26.

Broken or 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 the maximum length allowed for the accumulator chamber. In such an event, the bottom tailgate will open to allow oversized bale(s) to roll out. The tailgate will close automatically, and accumulation will resume normally on the next good bale. In the event you have one or two bales lifted and the next bale activates both sensors, it will roll through without the lifted bales coming down. In the diagnostic screen, both front and rear sensors will be enabled. If a broken bale becomes stuck in the accumulator manually eject the bales inside the accumulator. If broken bales need to be removed from the accumulator be sure to shut off tractor, baler and accumulator and engage the

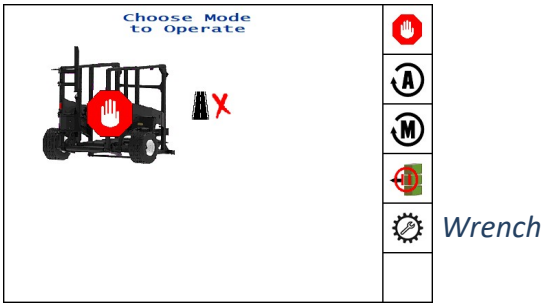
emergency stop. **Never enter the accumulator with the tractor running or with bales in the accumulator.**

Smart Stack, and Bottom Gate Alignment

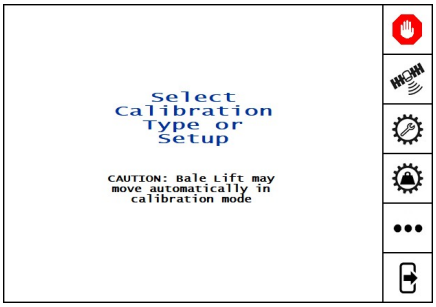
The bottom gate is set at the factory to align with the top gate. This setting will normally produce uniform stacks in the field. However, if you find the bale stacks are shifting forward when they come to rest in the field, the *Smart Stack* feature can help correct the problem. The *Smart Stack* feature is programmed through the monitor, and allows you to advance the starting position of the Bottom Gate. Whenever the Bottom Gate is set in an 'advanced' position (compared to the Top Gate), *Smart Stack* will automaticaly build an offset stack in order to counteract the effects of the forward momentum (shifting) as the bales release to the field. To use the *Smart Stack* feature, follow the steps shown below, and then select *Exit* when finished.

1. Start-up Page

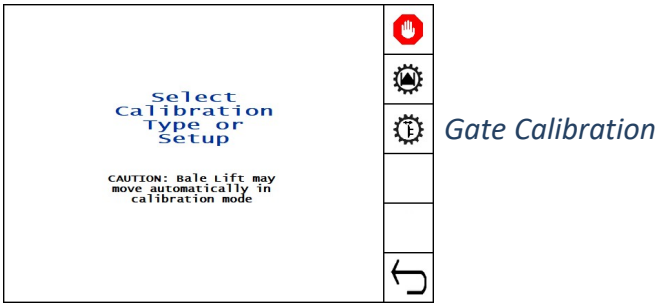
2. Home Page



3. Setup and Calibration Page

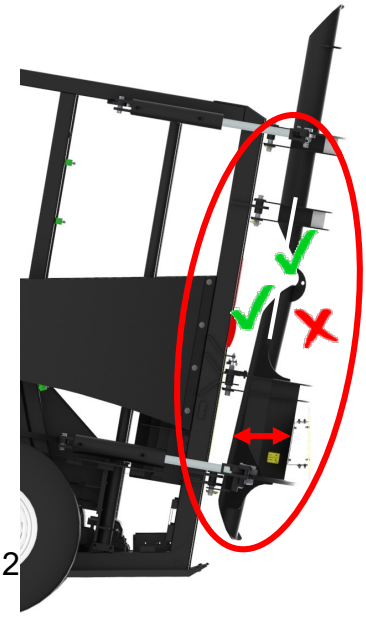


4. Calibration by Type Page



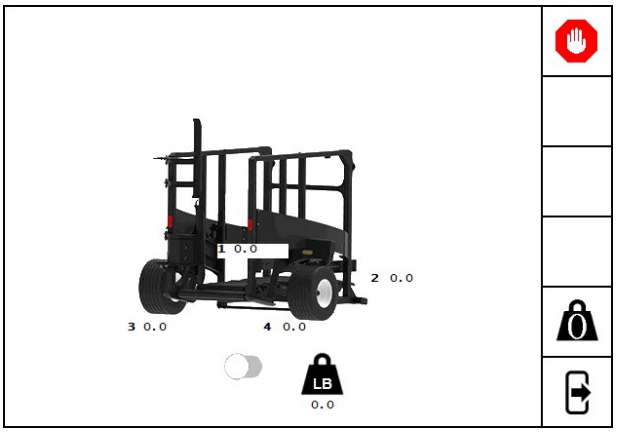
5. Gate Calibration Page

Use the Gate arrows to advance or retract the position of the Bottom Gate. Press EXIT when finished. ***Warning: Always set the Bottom Gate to be aligned with, or ahead of the Top Gate. It must never be set behind the Top Gate or serious stacking failure can occur.***



Scale Setup Page

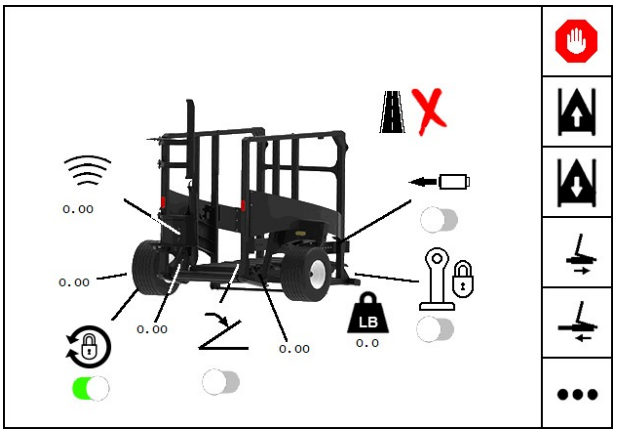
This page shows the information for the scale. The scale should be zeroed out periodically using the *Zero Weight* button. Use *PC Tools* to calibrate scale.



Zero Weight

Manual Mode Page

In manual mode, the operator can move any hydraulic function manually. This is mostly used for testing purposes, such as to cycle the *Gates*, or to raise the *Lift Trucks* in order to remove the safety stops when the unit is delivered.

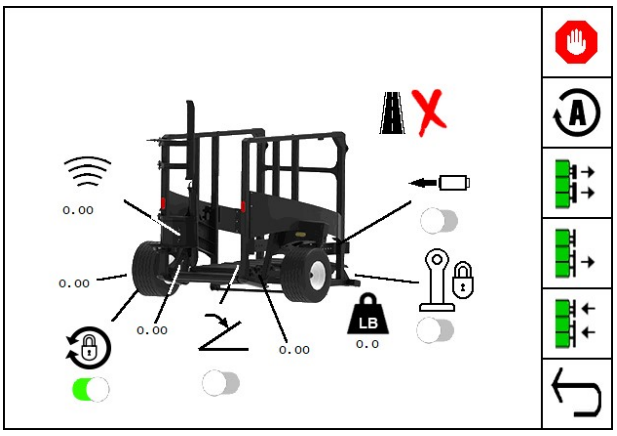


Lift Truck Up

Lift Truck Down

Hitch Extend

Hitch Retract



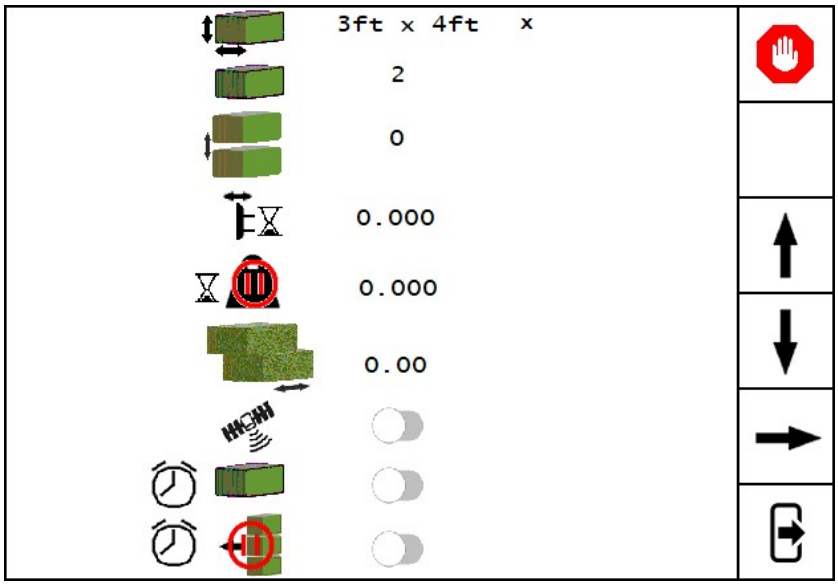
Both Gates Out

Bottom Gate Out

Both Gates In

Setup Page - Bale Size Selection, Bluetooth/ Wi-Fi, Map Eject

There are several various function setups on this page: The *Bale Size* feature allows you to set your Bale size, toggle the Arrow keys to move the cursor to the Bale Size field and enter the size of bale you are making; The *Stack Size* will automatically populate as a ‘2’ or a ‘3’ depending on your bale size; The *Weight Hold* is the time the scale needs to accurately weigh a bale if the accumulator is equipped with a scale. This page also features the settings to enable *Bluetooth/ Wi-Fi* capability to control the accumulator with a Bluetooth device, as well as, *Map Eject* to eject bales by rows. The *Bale Weight Alarm,* if enabled, brings up icons on Baler screen and will beep when the next bale comes in. Exit once completed.

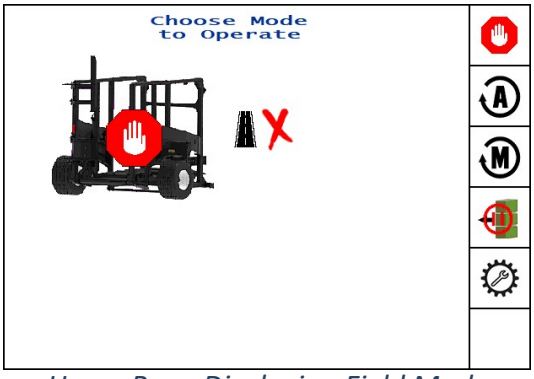


Road Operation (VS2208 Only)

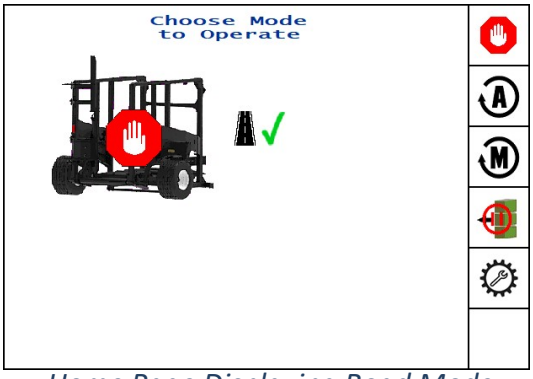
WARNING! Before extending/retracting the hitch, always make sure the entire unit is parallel. When retracting the hitch always make sure the unit is also moving in a slow forward motion.

Start-up Page

The start-up page shows users if the machine is in *Field* or *Road Mode*. Changing the mode of the machine can be done automatically or manually. *Field Mode* is when the hitch is retracted as far as it will go so the plastic bumpers on the accumulator are resting on the pads of the hitch kit and the casters are unlocked and free to rotate. *Road Mode* is when the hitch is extended as far as it will go, and the casters are locked so the wheels are pointed in the forward moving direction.



Home Page Displaying Field Mode

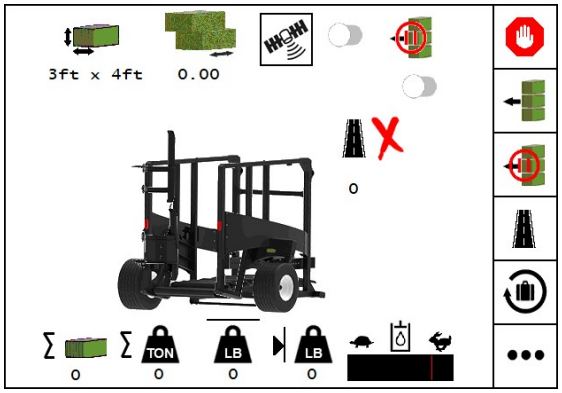


Home Page Displaying Road Mode

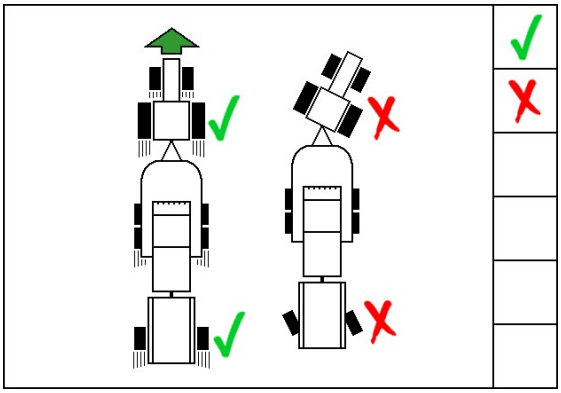
Automatic

WARNING! MOVING PART HAZARD! The hitch will automatically retract (if not already retracted) after the *Automatic* button and G*reen Check Mark* have been pressed.

On the *Automatic* screen, the hitch can be extended by pressing the *Road Mode* button. Pressing this button will bring up a screen ensuring the machine is parallel with the baler and the tractor is moving in a straightforward direction. Press the *Green Check Mark* once the machines meet these criteria. The bales will eject, hitch will extend, locking the wheels so they are facing the direction of forward motion. The screen will then automatically exit the *Automatic Mode* screen and enter the *Home Page*, displaying the *Road Mode* icon (as shown above).



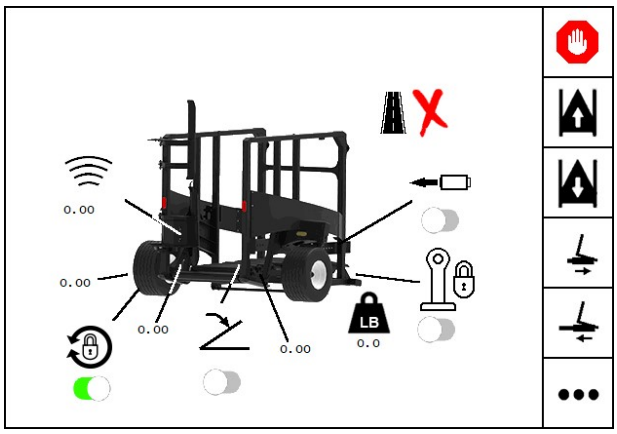
Road Mode



Parallel Machine Check Screen

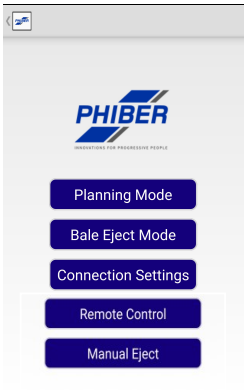
Manual

The hitch can be manually moved by pressing the *Manual* button on the home screen followed by the *Green Check Mark* once the machine is safe. Press and hold the *Extend Hitch* button to put the accumulator into Road Mode. By pressing and holding the *Retract Hitch* button, the hitch will retract, and the accumulator will be put into Field Mode.



Hitch Extend

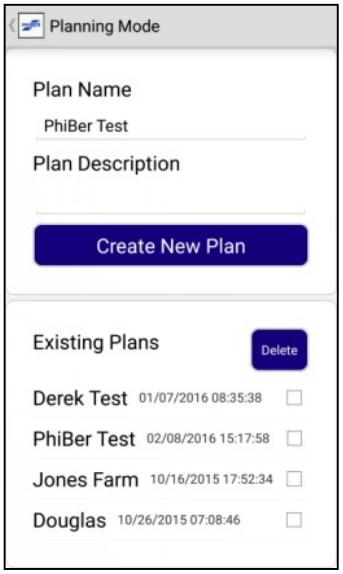
Hitch Retract



PhiBer® Accumulator App

PhiBer® has created an app for a phone or tablet to help maximize efficiency when handling large square bales. With this app the operator can plan where to eject the bales and then automatically drop them in those locations during baling. The App is called *PhiBer Accumulator*.

Planning Mode



The operator has two planning options; choose from *Create New Plan* or edit a plan in *Existing Plans*. To create new, choose the *Planning Mode* button, name the plan and then tap *Create New Plan*. PhiBer is utilizing Google satellite images to view the field. To find the field there are two options.

A. With GPS enabled, click the GPS icon in the top right-hand corner of the map and it will show the current location.
B. In the search bar, type in desired location.

Once the desired field can be viewed on the map, create the eject zones. A zone is created between two dropped pins. To drop a pin, press and hold the desired location and a pin will appear. On the other end of the zone press and hold to drop a second pin, your zone will immediately appear as a green line. A zone has now been created between the two pins. To change the size of the zones, use the plus and minus buttons above the *Delete Zone* button.

> ***Tip:*** *The closer you zoom in on your screen, the more accurate your pins will be.*

Note: The plus and minus buttons located on the map are used for zooming in and out, these do not change the size of the zone.

To add more zones, repeat the process of dropping pins in desired locations. If more than one zone has been created, only the active zone will appear green, all others will be pink. All zones created are listed in the bottom left corner of the screen. Tap the chosen zone to make it active. To delete a zone, select zone and press *Delete Zone*. When field is complete, tap *Save Plan*. Plan can be emailed to colleagues by tapping *Email Plan*, it will then prompt to default email program.

> ***Tip:*** *Create zones in such a way that you are never leaving a zone while turning.*

How the Zones Work

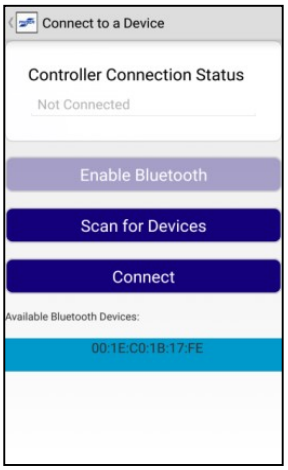
As the handheld device enters a zone, it will send a signal to the accumulator to eject the bales. If the accumulator is not full, it will wait to eject bales. The purpose of this is to maximize the number of bales in the desired package. A second eject signal is sent from the device when leaving the zone, forcing an immediate eject if possible.

> ***Tip:*** *Create small zones if location is important (i.e., flood irrigation). Create larger zones if bale grouping is important for faster handling (i.e., dry land or pivot irrigation).*

Note: Data connectivity is required when planning fields. While the map is running, connectivity is not required; the App saves the GPS coordinates and will eject based on coordinates.

Bale Eject Mode

To run the automatic, eject mode, the handheld device has to be paired with the accumulator. See *Bluetooth Connection* below. Select *Bale Eject Mode*, then choose from the list of existing plans, enable automatic eject.

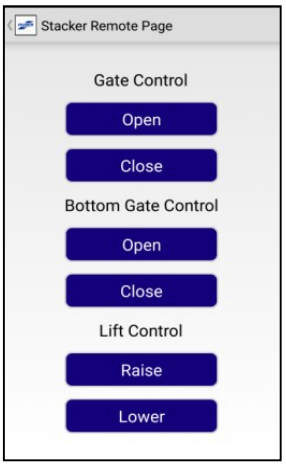


Bluetooth and Wi-Fi Connection

Identifying Connection Type: Your machine will be Wi-Fi enabled if it has a Wi-Fi decal on the front of the frame.

Connecting to Wi-Fi: Open your devices Wi-Fi configuration page and select the PhiBer network, enter password 12345678. Then open app.

Connecting to Bluetooth: Tap *Connection Settings,* switch to *Bluetooth* and then scan for devices (in the App). If Bluetooth is not already enabled on the device, tap *Enable Bluetooth*. It will list all available Bluetooth devices, select desired accumulator and tap *Connect*.



Note: The pairing to Bluetooth is done through the App, not through the device Bluetooth configuration.

Remote Control

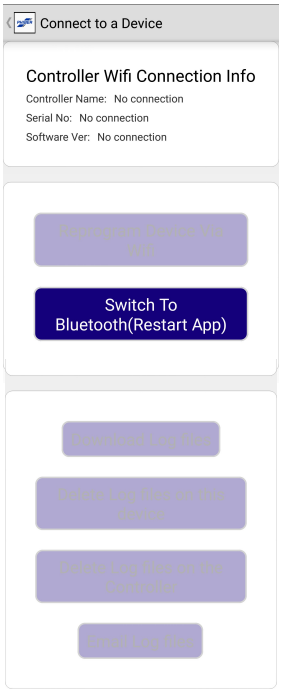
To run the *Remote-Control Mode*, the device has to be paired with the accumulator. Once paired, operators can manually override any hydraulic function. In the remote-control mode, the VT Terminal will be locked out so that only one operator has access to this feature for safety reasons.

Manual Eject

Tap *Manual Eject* to unload current bales on accumulator.

Updating Accumulator Software Through App

Tap *Connection Settings,* and then tap *Reprogram Device Via Wi-Fi*



Downloading and Sending Log Files

Log files allow the manufacturer to better help diagnosis service calls. Tap *Connection Settings,* and then tap *Download Log Files.* To send files first disconnect from Wi-Fi, then tap *Email Log Files*.

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.

Allow oncoming and overtaking traffic to clear before making turns when traveling on public roads (Figure 4.7).

Always travel on public roads with the Stacking Accumulator within the lane of travel (Figure 4.8).

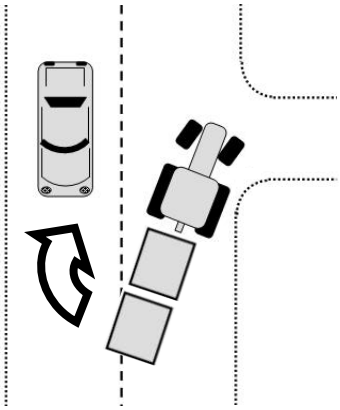


Figure 4.7

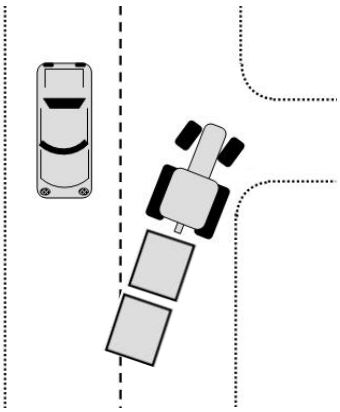


Figure 4.8

WARNING! Ensure the hitch is fully extended and both casters are locked in the correct orientation before road travel (see *Road Operation* section on pg. 31 for more information) (VS2208 Only)

Storage

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

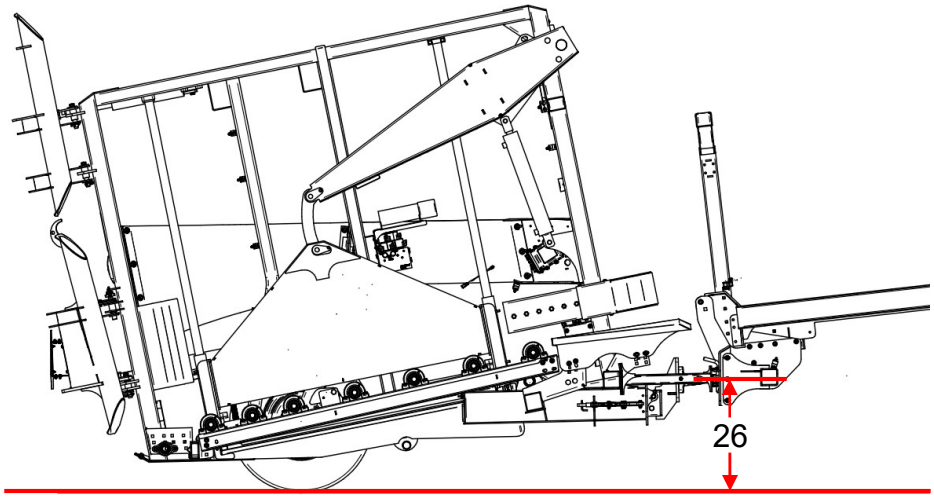
To ensure optimum operation of the Stacking Accumulator for the next season:

1. Clean all crop material and dirt from Stacking Accumulator frame and deck.
2. Retract hydraulic cylinders fully.
3. Lubricate casters to prevent rusting.
4. Lubricate bearings in rollers.
5. Ensure Support Jack is position correctly (See *Support Jack* on p. 17) (VS2208 Only)

Recommended Settings

Hitch Height Settings

Hitch Height: The distance from the ground to the center of the hitch clevis or center of bolt should be between 24 in (61 cm) and 28 in (71 cm). The optimum height is 26 in (66 cm).



Roller Bed Settings

26-28” Hitch Height: The Stacking Accumulator is shipped with the roller bed in a position that is optimal at this hitch height. Should the transition from the bale chamber to the bale transition pan not be smooth, take the time to adjust the pan higher or lower accordingly.

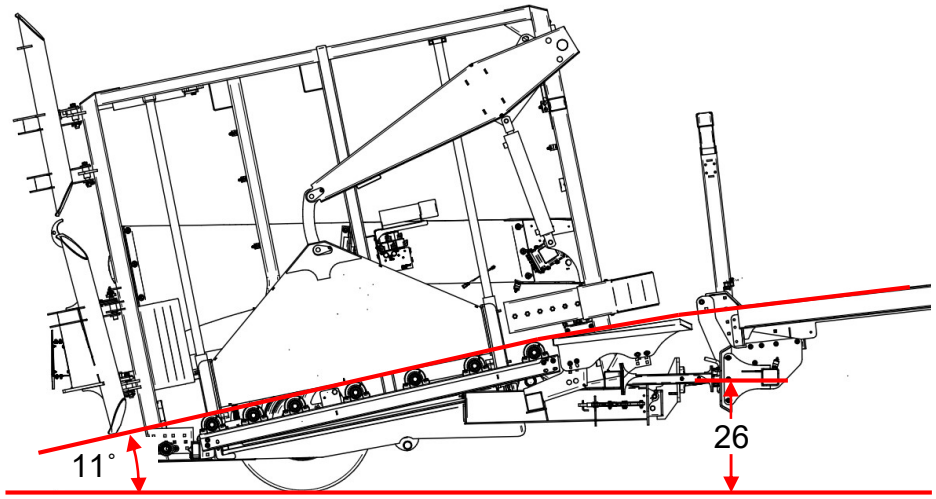


Figure 5.2

24” Hitch Height: This will require moving the front of the roller bed up, accordingly. Adjust the bale transition pan to make a smooth transition between the bale chamber floor and the roller bed. The minimum is 11° from the ground to the angle of the roller bed.

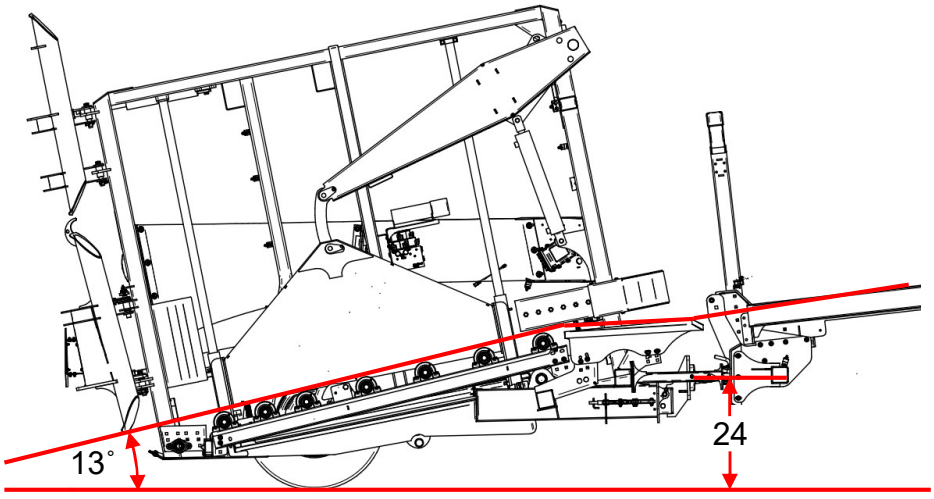


Figure 5.3

NOTE: The bale transition pan should be level with the bale chamber. If the pan is too high at the front, the strings on the bale may break.

Hills: This will require moving the front of the roller bed up, accordingly. Adjust the bale transition pan to make a smooth transition between the bale chamber floor and the roller bed. The minimum is 13° from the ground to the angle of the roller bed.

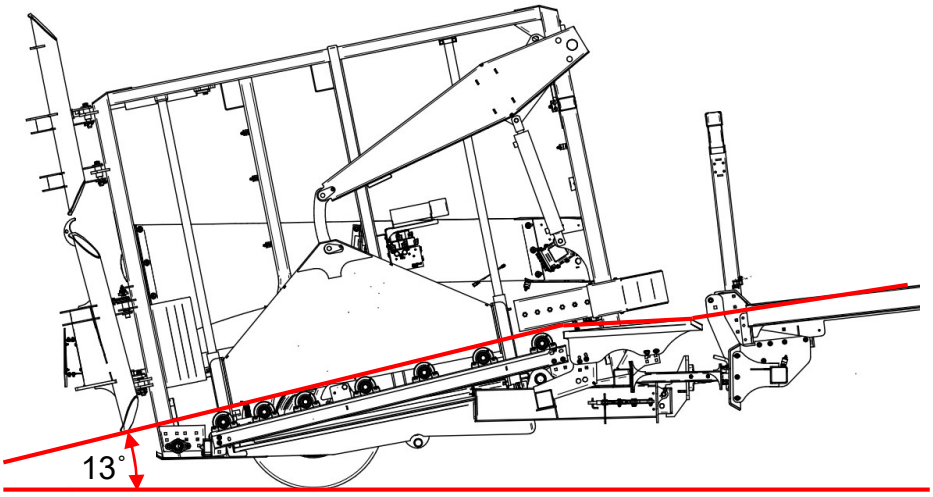


Figure 5.4

Roller Bed Angle Settings

On flat ground, the machine should have an 11-12 degree roller bed angle. On hills, the machine should have a 13-14 degree roller bed angle. Use the table below to calculate the optimum roller bed angle setting.

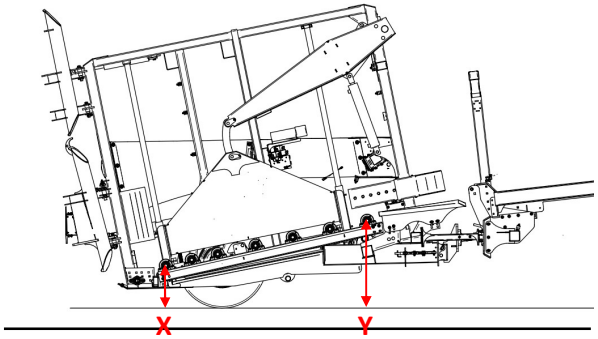


Figure 5.5

(Y)-(X) = Rise	Degrees	(Y)-(X) = Rise	Degrees	(Y)-(X) = Rise	Degrees
16.46	11.0	18.08	12.1	19.55	13.1
16.61	11.1	18.23	12.2	19.70	13.2
16.75	11.2	18.37	12.3	19.84	13.3
16.90	11.3	18.52	12.4	19.99	13.4
17.05	11.4	18.67	12.5	20.13	13.5
17.20	11.5	18.81	12.6	20.28	13.6
17.34	11.6	18.96	12.7	20.43	13.7
17.49	11.7	19.11	12.8	20.57	13.8
17.64	11.8	19.26	12.9	20.72	13.9
17.79	11.9	19.40	13.0	20.87	14.0
17.93	12.0				

Caster Adjustment

If the roller bed angles are not achievable due to a too high hitch height or if the rear roller is too close to the ground and hits the crown of roads the casters can be set in a higher position. Remove the spacer from above the caster box and position on the caster shaft below the caster. The detent and springs will also have to be relocated to the lower set of holes.

Warning: Detent springs will be under tension when removing.

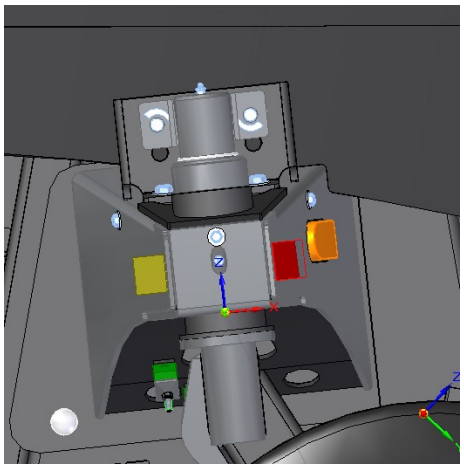


Figure 5.6

Top Tail Gate Adjustment

The photos below are from the top view of the tailgate, showing the different positions the tailgate can be in, depending on the length of bales.

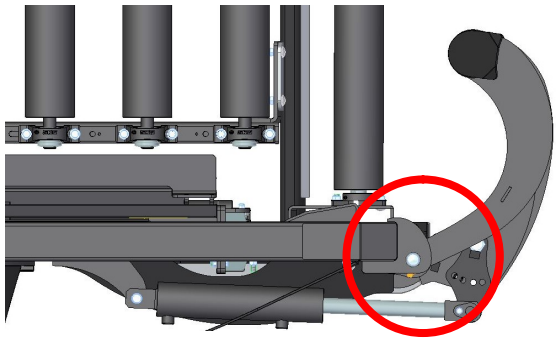


Figure 5.7: Position 3*

98 in (249 cm) +/- 3 in (+/- 8 cm) max. bale length, use the 3rd bolt position

* factory shipping position

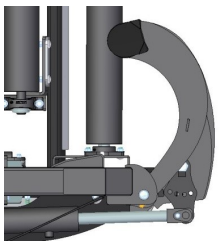


Figure 5.8: Position 1

91 in (231 cm) +/- 3 in (+/- 8 cm) max. bale length, use the last bolt position

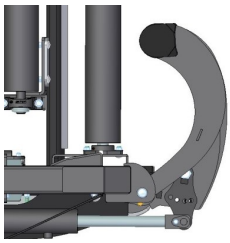


Figure 5.9: Position 2

94 in (239 cm) +/- 3 in (+/- 8 cm) max. bale length, use the 2nd bolt position

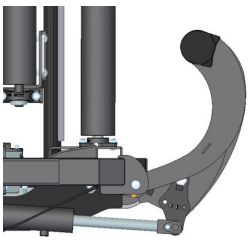


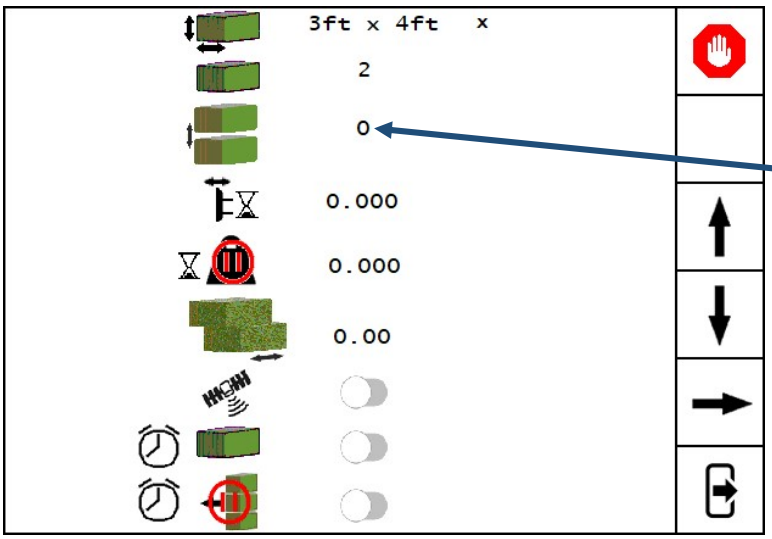
Figure 5.10: Position 4

102 in (259 cm) +/- 3 in (+/- 8 cm) max. bale length, use the 1st bolt position

If the incoming bales are dragging on the upper bales as they enter the chamber, the *Overlift* setting should be increased. Conversely, if the overlift is too high, the setting should be lowered (see figure 5.5 for correct overlift). Changes to the *Overlift* are made in the *Setup Page*. Each overlift setting represents a 2-inch increment. There are four settings possible, i.e. 0-2-4-6, which represent 0”, 2”, 4, or 6” higher than the default setting. Lifting too high can cause the next incoming bale to be unsupported by the bale guides, which in turn may cause it to move sideways and catch on the bale guides when they come down for the next bale.

Warning: this may cause physical damage to the machine.

Overlift Settings are changed on the Setup Page



Correct Overlift – Bale is supported at the side.

Incorrect Overlift – Bale is NOT supported at the side.

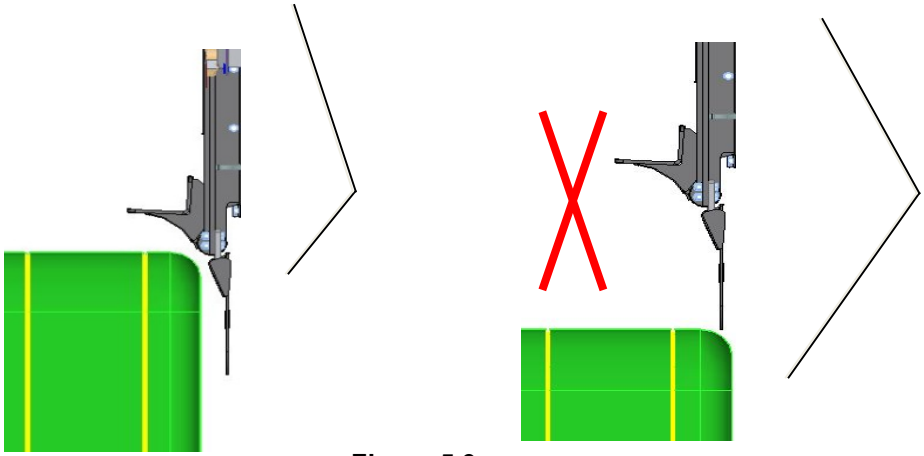


Figure 5.9

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 ⧖															
♦	Caster														
♦	Caster Detent														
♦	Hitch Receiver														
✓	Floor Switch Spring Tension														
100 ⧖															
♦	Roller Bearings														
✓	Wheel Lug Nuts														
500 ⧖															
♦	Wheel Bearings														

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 (Figure 6.5). Failure to do so may result in bodily harm while maintaining this machine.

Sensors

Check optic and limit sensors, as well as the Ultrasonic Sensor daily to ensure they are unobstructed and free from foreign material.

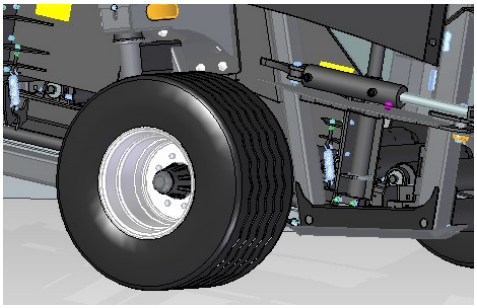


Figure 6.1

Wheel Lug Nuts

Check wheel lug nut (Figure 6.1) tightness after the first two (2) hours of operation, again after the first ten (10) hours, then periodically.

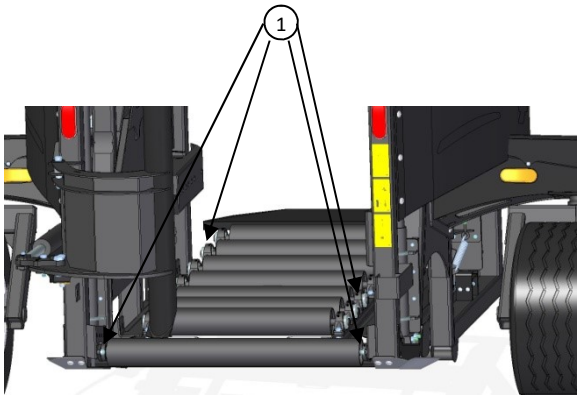


Figure 6.2

Wheel Bearings

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

Roller Bearings

Grease roller bearings (Figure 6.2) every 100 hours or monthly.

Figure 6.3

Caster Detent (If Equiped)

Grease caster detent (Figure 6.3) every 100 hours or monthly.

Floor Switch

Check spring tension in floor switch (Figure 6.4).

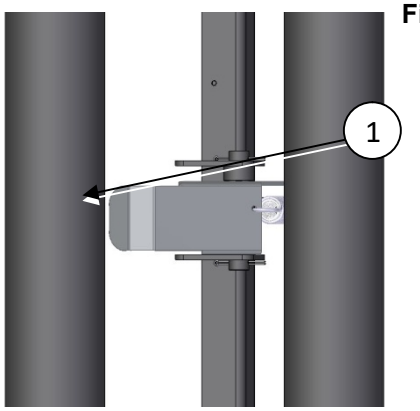


Figure 6.4

Hydraulic Cylinder and/or Component Replacement

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

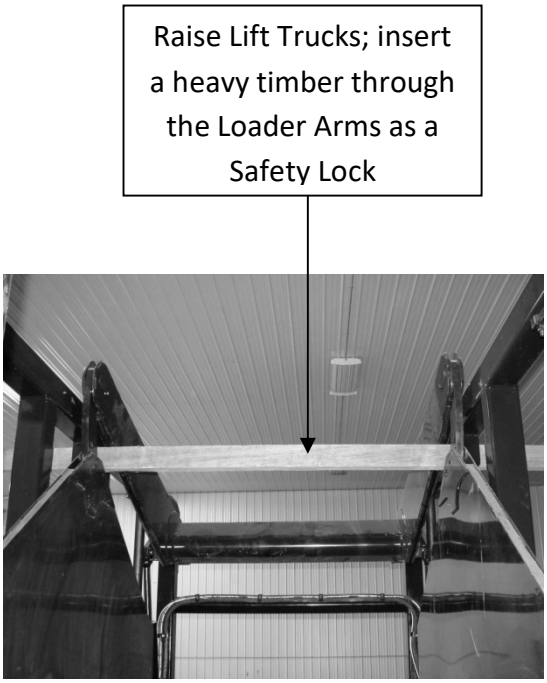


Figure 6.5

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

1. Install new component and ensure that all seals are seated properly, and all fittings and hoses are tightened to specs given. Where possible, fill hydraulic cylinders with oil before connecting hydraulic lines.

2. Connect Hydraulic lines to tractor as indicated on p. 19, *Hydraulic Set-up*.

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

WARNING! UNEXPECTED MOTION HAZARD, MOVING PART HAZARD.

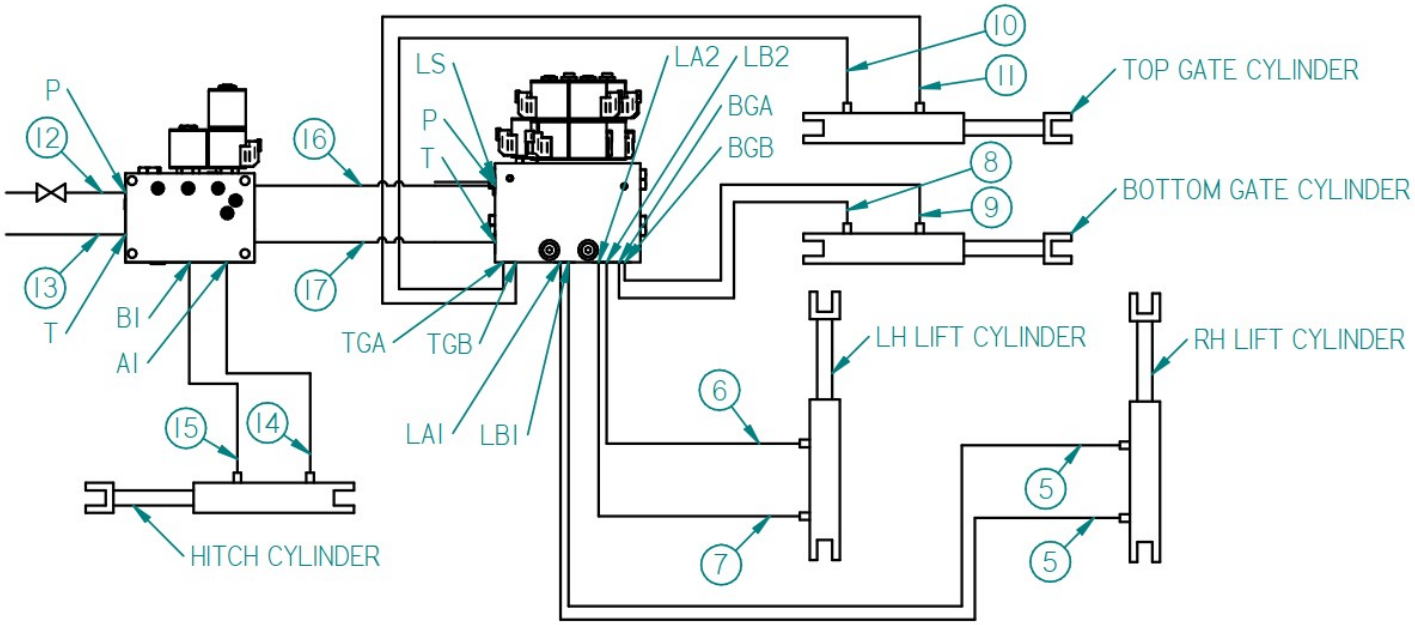
Ensure all bystanders are clear of accumulator and at a safe distance from tailgate and other moving parts during this air removal procedure. Use caution when activating any function. NEVER climb inside accumulator while the tractor is running.

1. Ensure Loader Arms are blocked (see figure 6.5).
2. Install new component and ensure 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. Enter *Manual Mode* on software.
5. Start tractor and engage hydraulic flow to accumulator.
6. Operate tailgate cylinder until cylinder extends and retracts smoothly.
7. Lift loader arm to take pressure off safety block (board).
8. Remove safety block from lift mechanism.

9. Operate lift cylinders until cylinders extend and retract smoothly.
10. Switch to *Automatic Mode*, on software.

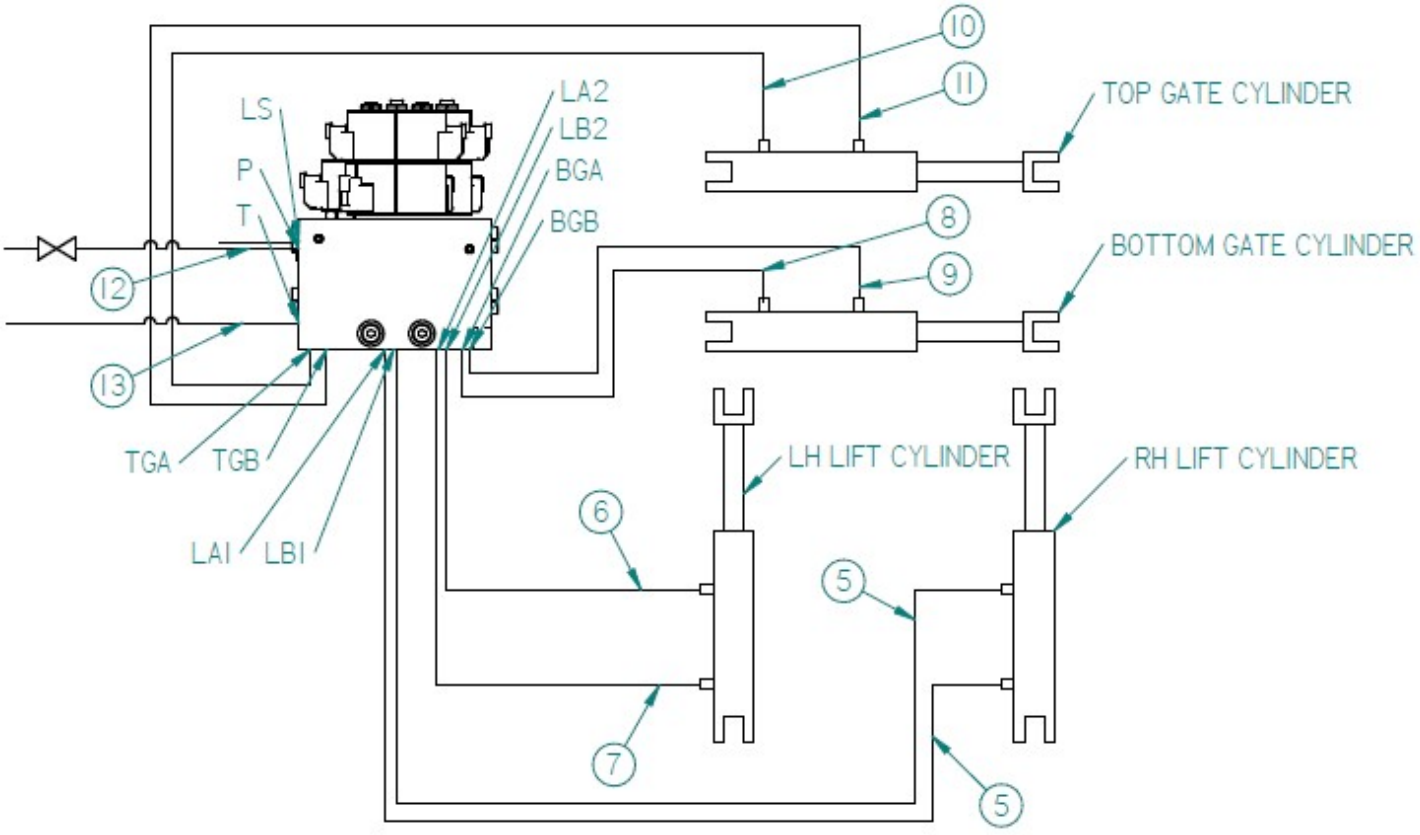
VS2208 Hydraulic Schematic

ITEM	PART NO.	DESCRIPTION	QTY
1	HYD100337	6801-08-08 ELBOW 90°, MALE ORB	3
2	HYD100530	CAP 08 FJIC	1
3	HYD100594	CAP 12 FJIC	1
4	HYD100798	6400-08-06 ADAPTER, MALE JIC TO	4
5	HYD200152	HOSE, RH LIFT CYL, ROD END	2
6	HYD200153	HOSE, LH LIFT CYL, ROD END	1
7	HYD200154	HOSE, LH LIFT CYL, CAP END	1
8	HYD200155	HOSE, BOTTOM GATE, CAP END	1
9	HYD200156	HOSE, BOTTOM GATE, ROD END	1
10	HYD200157	HOSE,TOP GATE, CAP END	1
11	HYD200158	HOSE,TOP GATE, ROD END	1
12	HYD200160	HOSE, VALVE RETURN	1
13	HYD200161	HOSE, VALVE SUPPLY	1
14	HYD201007	HOSE, HITCH CYLINDER, CAP END	1
15	HYD201008	HOSE, HITCH CYLINDER, ROD END	1
16	HYD201009	HOSE, VALVE RETURN	1
17	HYD201010	HOSE, VALVE SUPPLY	1



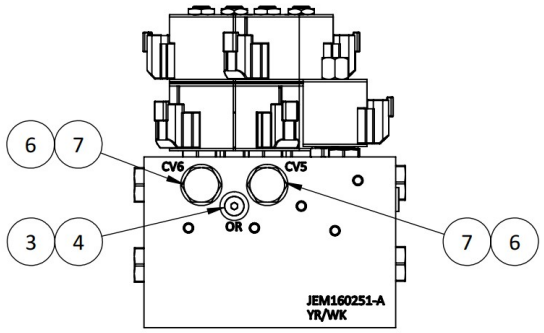
VS1206 Hydraulic Schematic

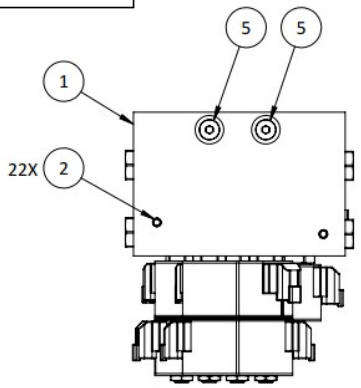
Item	Part NO.	Description	QTY
1	HYD100337	6801-08-08 ELBOW 90°, MALE ORB	3
2	HYD100530	CAP 08 FJIC	1
3	HYD100594	CAP 12 FJIC	1
4	HYD100798	6400-08-06 ADAPTER, MALE JIC TO	4
5	HYD200152	HOSE, RH LIFT CYL, ROD END	2
6	HYD200153	HOSE, LH LIFT CYL, ROD END	1
7	HYD200154	HOSE, LH LIFT CYL, CAP END	1
8	HYD200155	HOSE, BOTTOM GATE, CAP END	1
9	HYD200156	HOSE, BOTTOM GATE, ROD END	1
10	HYD200157	HOSE,TOP GATE, CAP END	1
11	HYD200158	HOSE,TOP GATE, ROD END	1
12	HYD200161	HOSE, VALVE SUPPLY	1
13	HYD200160	HOSE, VALVE RETURN	1

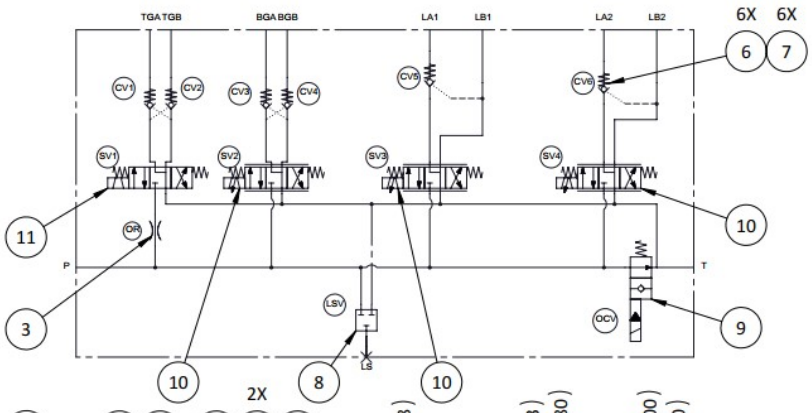


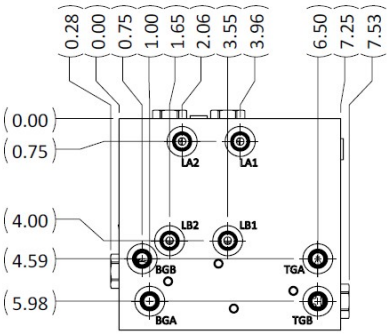
Manifold Assembly

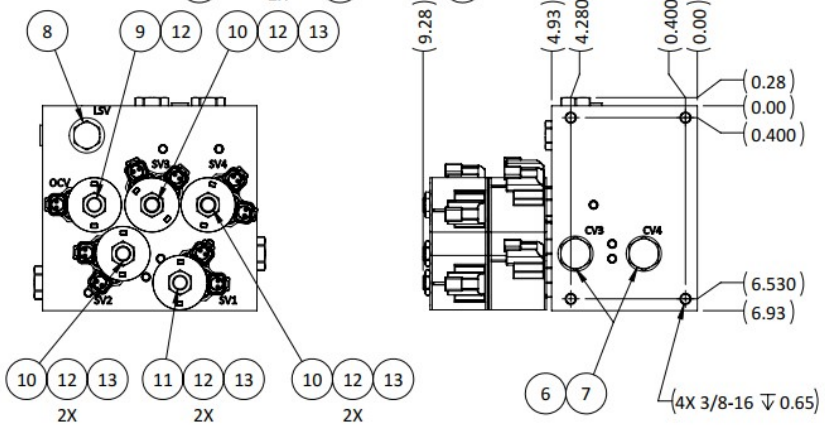
13	4539700	4	-10 SIZE E-COIL SPACER
12	4303712	9	12 VDC, -10 SIZE E-COIL, DEUTSCH
11	SV10-47D-0-N-00	1	SOLENOID VALVE, 4W/3P, MOTOR SPOOL
10	SP10-47D-0-N-00	3	PROP. SOLENOID VALVE, 4W/3P, MOTOR SPOOL
9	SV12-21-0-N-00	1	2/2 N.O. SOLENOID VALVE
8	CP08-30-N	1	VC08-3 CAVITY PLUG, ALL PORTS BLOCKED
7	CV10-20-0-N-100	6	CHECK VALVE, 100 PSI
6	7013200	6	PILOT PISTON, SINGLE, -10
5	515-06	3	SAE PLUG, SOCKET
4	515-04	1	SAE PLUG, SOCKET
3	6112110	1	0.110 ORIFICE, 3/8-16
2	HW10286-070	22	EXPANDER PLUG, 7 MM
1	160251M-A	1	JEM MANIFOLD BLOCK
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION

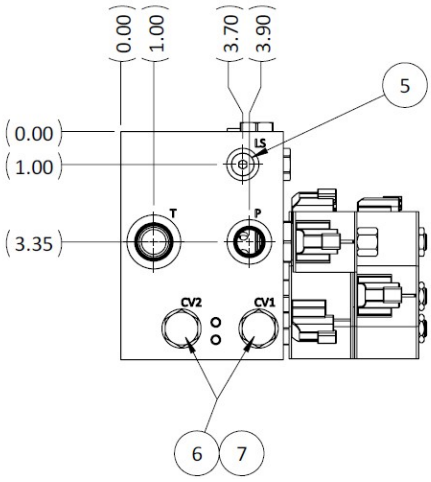




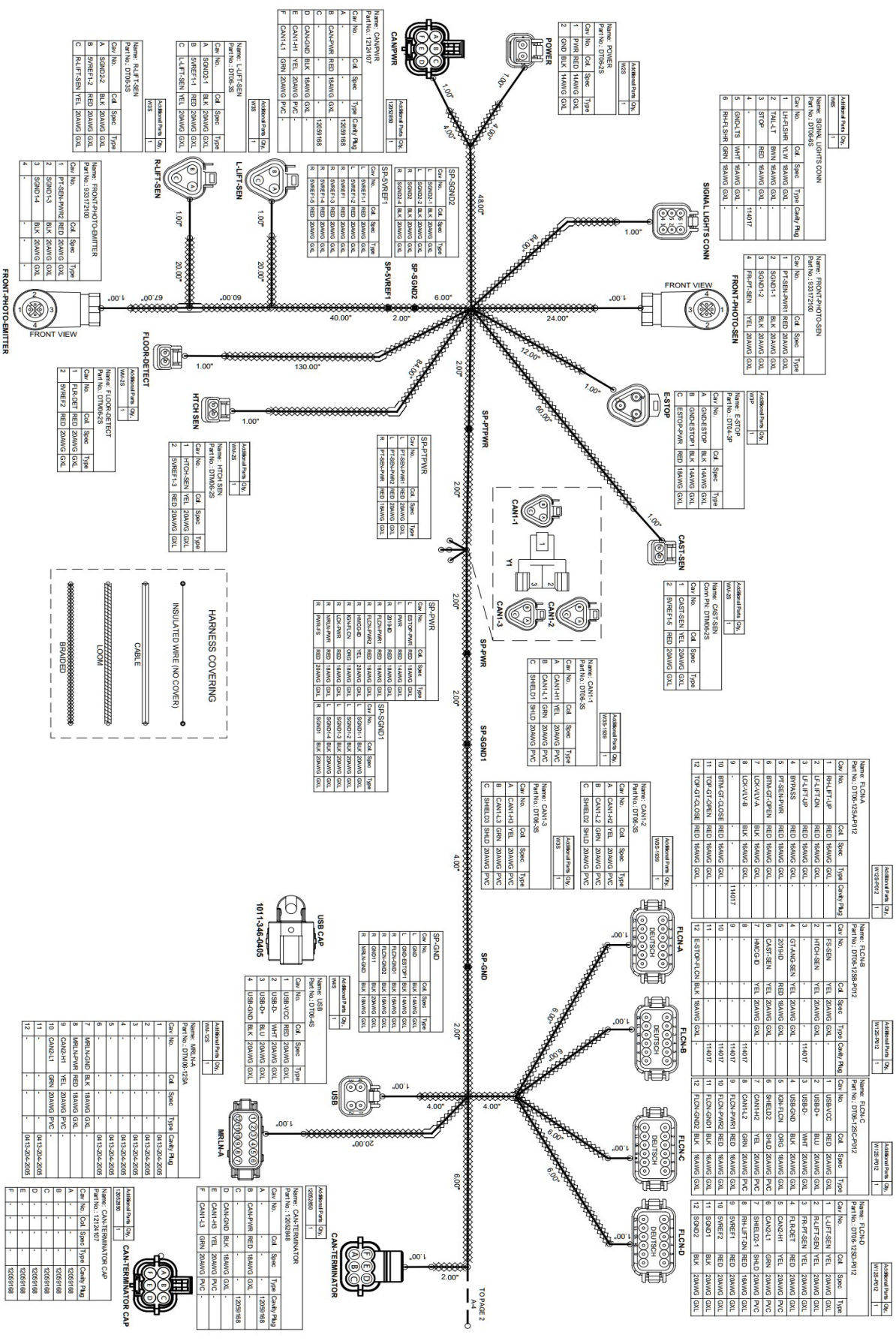




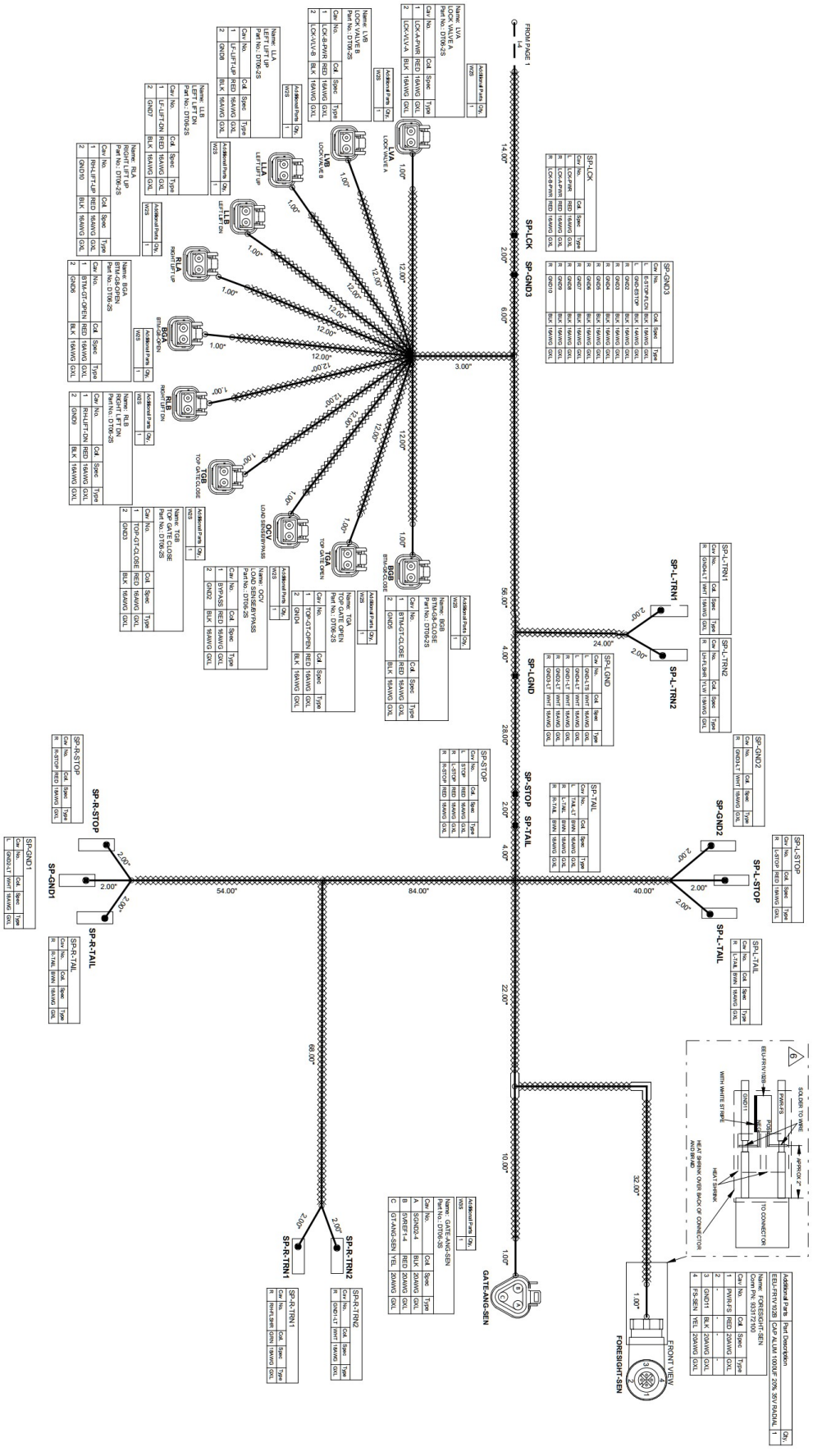




VS2208 Wiring Schematic



VS2208 Wiring Schematic



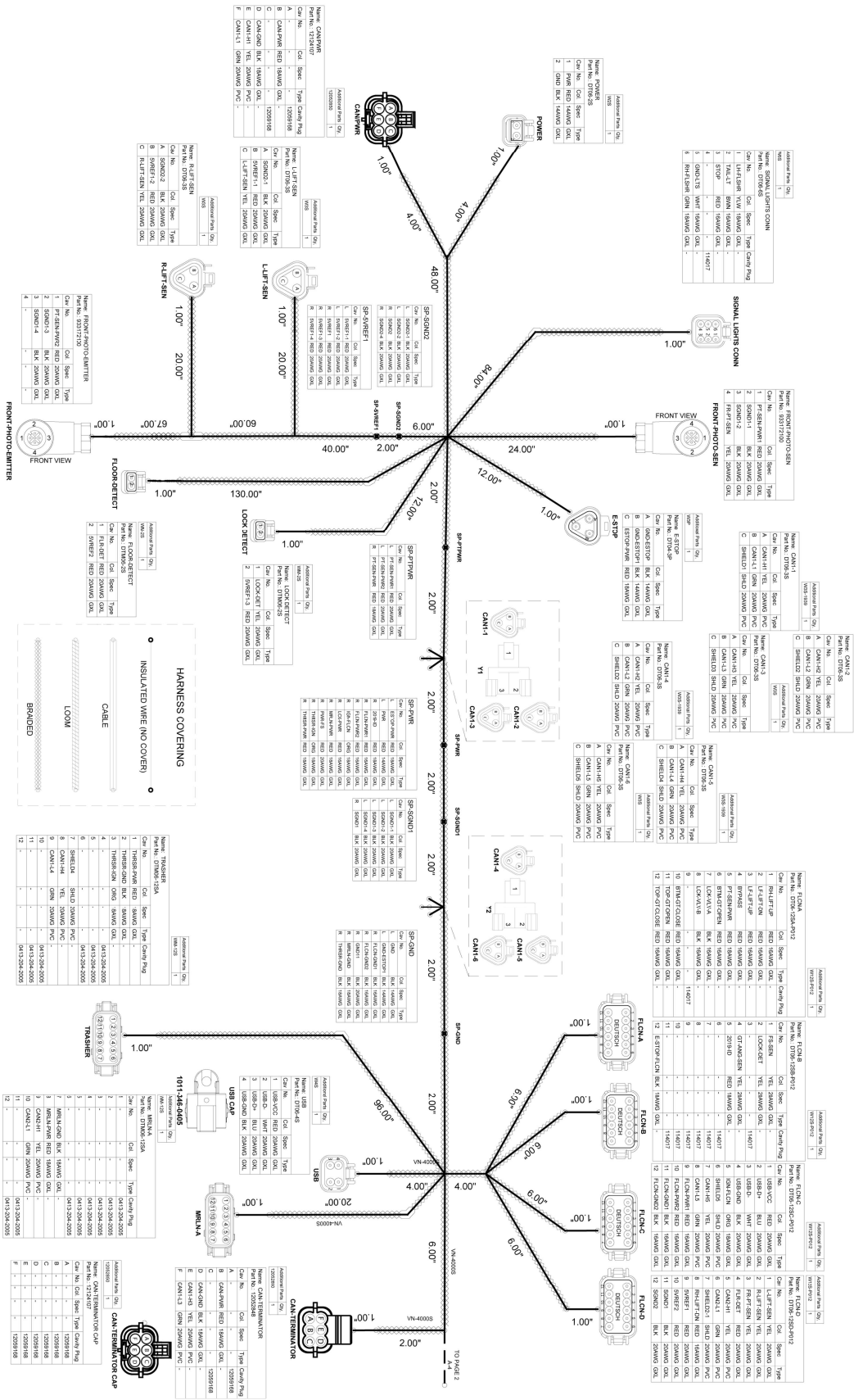
VS2208 Wiring Schematic

FROM-TO WIRE LIST														
INDEX	WIRE NO	SPEC	COL	FROM	CAV	CONNECTOR 1	TERMINAL PN 1	WIRE SEAL PN	TO	CAV	CONNECTOR 2	TERMINAL PN 2	WIRE SEAL PN	M/C
1	CAN-PWR	18AWG	RED	CAN-TERMINATOR	B	12052848	12048074	12048087	CAN/PWR	B	12124107	12045773	15324973	
2	CAN-GND	18AWG	BLK	CAN-TERMINATOR	D	12052848	12048074	12048087	CAN/PWR	D	12124107	12045773	15324973	
3	SHIELD1	20AWG	SHLD	CAN1-1	C	DT06-3S	0462-201-16141							MC804
4	CAN1-H1	20AWG	YEL	CAN1-1	A	DT06-3S	0462-201-16141		CAN/PWR	E	12124107	12045773	15324973	MC819
5	CAN1-L1	20AWG	GRN	CAN1-1	B	DT06-3S	0462-201-16141		CAN/PWR	F	12124107	12045773	15324973	MC819
6	CAN1-H2	20AWG	YEL	CAN1-2	A	DT06-3S	0462-201-16141		FLCN-C	7	DT06-12SC-P012	0462-201-16141		MC821
7	CAN1-L2	20AWG	GRN	CAN1-2	B	DT06-3S	0462-201-16141		FLCN-C	8	DT06-12SC-P012	0462-201-16141		MC821
8	SHIELD3	20AWG	SHLD	CAN1-3	C	DT06-3S	0462-201-16141							MC808
9	CAN1-H3	20AWG	YEL	CAN1-3	A	DT06-3S	0462-201-16141		CAN-TERMINATOR	E	12052848	12160223	12089678	MC817
10	CAN1-L3	20AWG	GRN	CAN1-3	B	DT06-3S	0462-201-16141		CAN-TERMINATOR	F	12052848	12160223	12089678	MC817
11	CAST-SEN	20AWG	YEL	CAST-SEN	1	DTM06-2S	0462-201-20141		FLCN-B	6	DT06-12SB-P012	0462-201-16141		
12	BTM-GT-OPEN	16AWG	RED	FLCN-A	6	DT06-12SA-P012	0462-201-16141		BGA	1	DT06-2S	0462-201-16141		
13	BTM-GT-CLOSE	16AWG	RED	FLCN-A	10	DT06-12SA-P012	0462-201-16141		BGB	1	DT06-2S	0462-201-16141		
14	PT-SEN-PWR	18AWG	RED	FLCN-A	5	DT06-12SA-P012	0462-201-16141		SP-PTPWR	R				
15	TOP-GT-OPEN	16AWG	RED	FLCN-A	11	DT06-12SA-P012	0462-201-16141		TGA	1	DT06-2S	0462-201-16141		
16	TOP-GT-CLOSE	16AWG	RED	FLCN-A	12	DT06-12SA-P012	0462-201-16141		TGB	1	DT06-2S	0462-201-16141		
17	E-STOP-FLCN	18AWG	BLK	FLCN-B	12	DT06-12SB-P012	0462-201-16141		SP-GND3	L				
18	2019-ID	18AWG	RED	FLCN-B	5	DT06-12SB-P012	0462-201-16141		SP-PWR	R				
19	SHIELD2	20AWG	SHLD	FLCN-C	6	DT06-12SC-P012	0462-201-16141		CAN1-2	C	DT06-3S	0462-201-16141		MC806
20	FLCN-GND1	16AWG	BLK	FLCN-C	11	DT06-12SC-P012	0462-201-16141		SP-GND	R				
21	FLCN-GND2	16AWG	BLK	FLCN-C	12	DT06-12SC-P012	0462-201-16141		SP-GND	R				
22	IGN-FLCN	18AWG	ORG	FLCN-C	5	DT06-12SC-P012	0462-201-16141		SP-PWR	R				
23	FLCN-PWR1	16AWG	RED	FLCN-C	9	DT06-12SC-P012	0462-201-16141		SP-PWR	R				
24	FLCN-PWR2	16AWG	RED	FLCN-C	10	DT06-12SC-P012	0462-201-16141		SP-PWR	R				
25	USB-VCC	20AWG	RED	FLCN-C	1	DT06-12SC-P012	0462-201-16141		USB	1	DT06-4S	0462-201-16141		
26	USB-D+	20AWG	BLU	FLCN-C	2	DT06-12SC-P012	0462-201-16141		USB	3	DT06-4S	0462-201-16141		
27	USB-DUSB-	20AWG	WHT	FLCN-C	3	DT06-12SC-P012	0462-201-16141		USB	2	DT06-4S	0462-201-16141		
28	GND	20AWG	BLK	FLCN-C	4	DT06-12SC-P012	0462-201-16141		USB	4	DT06-4S	0462-201-16141		
29	SHIELD2-1	20AWG	SHLD	FLCN-D	7	DT06-12SD-P012	0462-201-16141							MC814
30	FR-PT-SEN	20AWG	YEL	FLCN-D	3	DT06-12SD-P012	0462-201-16141		FRONT-PHOTO-SEN	4	933172100	282600000		
31	5VREF1	20AWG	RED	FLCN-D	9	DT06-12SD-P012	0462-201-16141		SP-5VREF1	R				
32	SGND1	20AWG	BLK	FLCN-D	11	DT06-12SD-P012	0462-201-16141		SP-SGND1	R				
33	SGND2	20AWG	BLK	FLCN-D	12	DT06-12SD-P012	0462-201-16141		SP-SGND2	R				
34	FLR-DET	20AWG	RED	FLOOR-DETECT	1	DTM06-2S	0462-201-20141		FLCN-D	4	DT06-12SD-P012	0462-201-16141		
35	5VREF2	20AWG	RED	FLOOR-DETECT	2	DTM06-2S	0462-201-20141		FLCN-D	10	DT06-12SD-P012	0462-201-16141		
36	FS-SEN	20AWG	YEL	FORESIGHT-SEN	4	933172100	282600000		FLCN-B	1	DT06-12SB-P012	0462-201-16141		
37	SGND1-3	20AWG	BLK	FRONT-PHOTO-EMITTER	2	933172100	282600000		SP-SGND1	L				
38	SGND1-4	20AWG	BLK	FRONT-PHOTO-EMITTER	3	933172100	282600000		SP-SGND1	L				
39	SGND1-1	20AWG	BLK	FRONT-PHOTO-SEN	2	933172100	282600000		SP-SGND1	L				
40	SGND1-2	20AWG	BLK	FRONT-PHOTO-SEN	3	933172100	282600000		SP-SGND1	L				

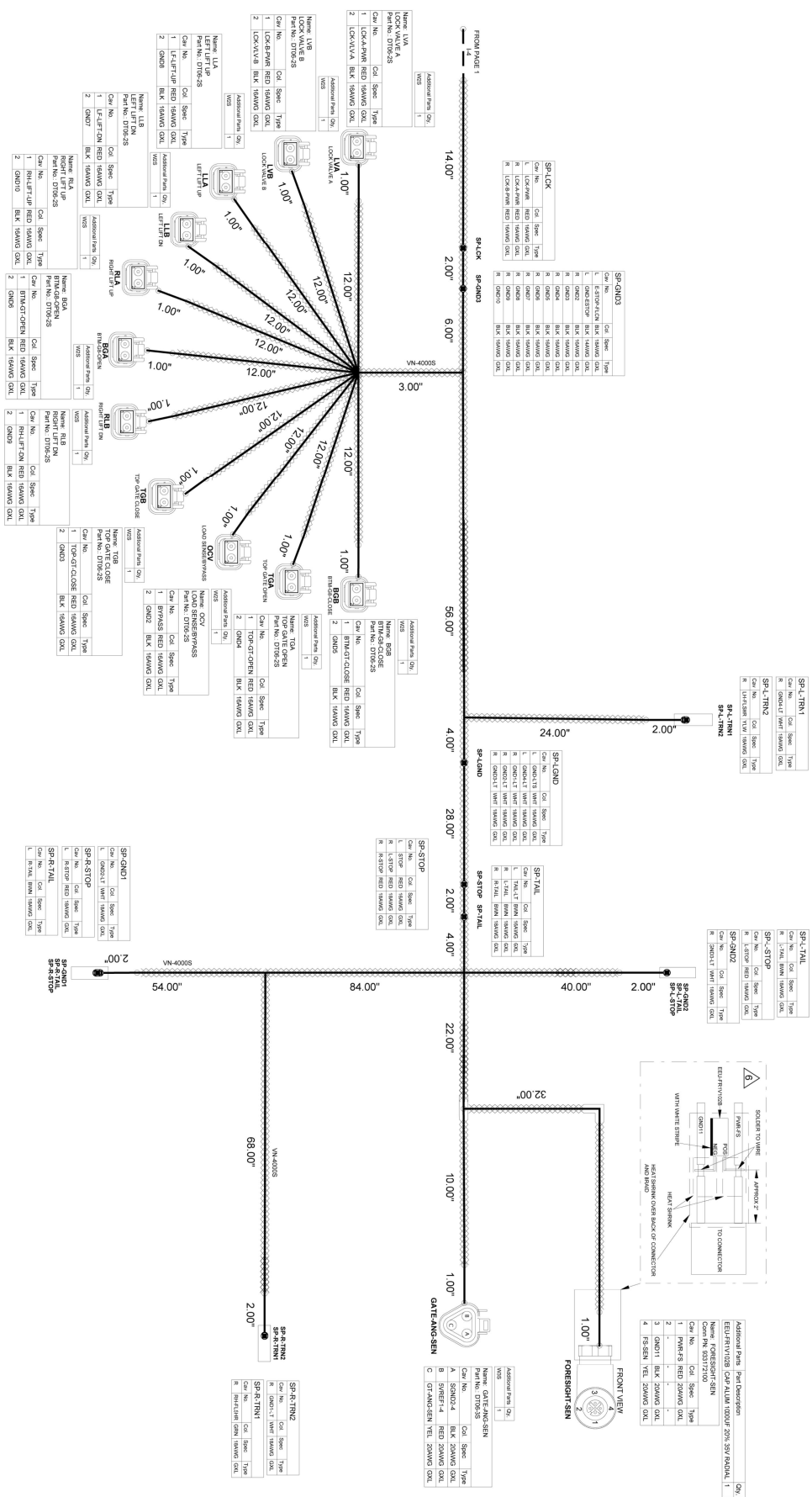
41	GT-ANG-SEN	20AWG	YEL	GATE-ANG-SEN	C	DT06-3S	0462-201-16141		FLCN-B	4	DT06-12SB-P012	0462-201-16141		
42	HTCH-SEN	20AWG	YEL	HTCH SEN	1	DTM06-2S	0462-201-20141		FLCN-B	2	DT06-12SB-P012	0462-201-16141		
43	5VREF1-3	20AWG	RED	HTCH SEN	2	DTM06-2S	0462-201-20141		SP-5VREF1	R				
44	L-LIFT-SEN	20AWG	YEL	L-LIFT-SEN	C	DT06-3S	0462-201-16141		FLCN-D	1	DT06-12SD-P012	0462-201-16141		
45	LF-LIFT-UP	16AWG	RED	LLA	1	DT06-2S	0462-201-16141		FLCN-A	3	DT06-12SA-P012	0462-201-16141		
46	GND8	16AWG	BLK	LLA	2	DT06-2S	0462-201-16141		SP-GND3	R				
47	LF-LIFT-DN	16AWG	RED	LLB	1	DT06-2S	0462-201-16141		FLCN-A	2	DT06-12SA-P012	0462-201-16141		
48	GND7	16AWG	BLK	LLB	2	DT06-2S	0462-201-16141		SP-GND3	R				
49	LCK-VLV-A	16AWG	BLK	LVA	2	DT06-2S	0462-201-16141		FLCN-A	7	DT06-12SA-P012	0462-201-16141		
50	LCK-A-PWR	16AWG	RED	LVA	1	DT06-2S	0462-201-16141		SP-LCK	R				
51	LCK-VLV-B	16AWG	BLK	LVB	2	DT06-2S	0462-201-16141		FLCN-A	8	DT06-12SA-P012	0462-201-16141		
52	LCK-B-PWR	16AWG	RED	LVB	1	DT06-2S	0462-201-16141		SP-LCK	R				
53	CAN2-H1	20AWG	YEL	MRLN-A	9	DTM06-12SA	0462-201-20141		FLCN-D	5	DT06-12SD-P012	0462-201-16141		MC816
54	CAN2-L1	20AWG	GRN	MRLN-A	10	DTM06-12SA	0462-201-20141		FLCN-D	6	DT06-12SD-P012	0462-201-16141		MC816
55	MRLN-GND	18AWG	BLK	MRLN-A	7	DTM06-12SA	0462-005-20141		SP-GND	R				
56	MRLN-PWR	18AWG	RED	MRLN-A	8	DTM06-12SA	0462-005-20141		SP-PWR	R				
57	BYPASS	16AWG	RED	OCV	1	DT06-2S	0462-201-16141		FLCN-A	4	DT06-12SA-P012	0462-201-16141		
58	GND2	16AWG	BLK	OCV	2	DT06-2S	0462-201-16141		SP-GND3	R				
59	PWR	14AWG	RED	POWER	1	DT06-2S	0462-209-16141		SP-PWR	L				
60	R-LIFT-SEN	20AWG	YEL	R-LIFT-SEN	C	DT06-3S	0462-201-16141		FLCN-D	2	DT06-12SD-P012	0462-201-16141		
61	RH-LIFT-UP	16AWG	RED	RLA	1	DT06-2S	0462-201-16141		FLCN-A	1	DT06-12SA-P012	0462-201-16141		
62	GND10	16AWG	BLK	RLA	2	DT06-2S	0462-201-16141		SP-GND3	R				
63	RH-LIFT-DN	16AWG	RED	RLB	1	DT06-2S	0462-201-16141		FLCN-D	8	DT06-12SD-P012	0462-201-16141		
64	GND9	16AWG	BLK	RLB	2	DT06-2S	0462-201-16141		SP-GND3	R				
65	LH-FLSHR	18AWG	YLW	SIGNAL LIGHTS CONN	1	DT06-6S	0462-201-16141		SP-L-TRN2	R				
66	GND-LTS	16AWG	WHT	SIGNAL LIGHTS CONN	5	DT06-6S	0462-201-16141		SP-LGND	L				
67	RH-FLSHR	18AWG	GRN	SIGNAL LIGHTS CONN	6	DT06-6S	0462-201-16141		SP-R-TRN1	R				
68	STOP	16AWG	RED	SIGNAL LIGHTS CONN	3	DT06-6S	0462-201-16141		SP-STOP	L				
69	TAIL-LT	16AWG	BWN	SIGNAL LIGHTS CONN	2	DT06-6S	0462-201-16141		SP-TAIL	L				
70	5VREF1-5	20AWG	RED	SP-5VREF1	R				CAST-SEN	2	DTM06-2S	0462-201-20141		
71	5VREF1-4	20AWG	RED	SP-5VREF1	R				GATE-ANG-SEN	B	DT06-3S	0462-201-16141		
72	5VREF1-1	20AWG	RED	SP-5VREF1	L				L-LIFT-SEN	B	DT06-3S	0462-201-16141		
73	5VREF1-2	20AWG	RED	SP-5VREF1	L				R-LIFT-SEN	B	DT06-3S	0462-201-16141		
74	GND-ESTOP1	14AWG	BLK	SP-GND	L				E-STOP	B	DT04-3P	0460-202-16141		
75	GND11	20AWG	BLK	SP-GND	R				FORESIGHT-SEN	3	933172100	282600000		
76	GND	14AWG	BLK	SP-GND	L				POWER	2	DT06-2S	0462-209-16141		
77	GND2-LT	18AWG	WHT	SP-GND1	L				SP-LGND	R				
78	GND3-LT	18AWG	WHT	SP-GND2	R				SP-LGND	R				
79	GND6	16AWG	BLK	SP-GND3	R				BGA	2	DT06-2S	0462-201-16141		
80	GND5	16AWG	BLK	SP-GND3	R				BGB	2	DT06-2S	0462-201-16141		
81	GND-ESTOP	14AWG	BLK	SP-GND3	L				E-STOP	A	DT04-3P	0460-202-16141		
82	GND4	16AWG	BLK	SP-GND3	R				TGA	2	DT06-2S	0462-201-16141		
83	GND4-LT	18AWG	WHT	SP-LGND	L				SP-L-TRN1	R				
84	GND1-LT	18AWG	WHT	SP-LGND	R				SP-R-TRN2	R				

85	PT-SEN-PWR2	20AWG	RED	SP-PTPWR	L				FRONT-PHOTO-EMITTER	1	933172100	282600000		
86	PT-SEN-PWR1	20AWG	RED	SP-PTPWR	L				FRONT-PHOTO-SEN	1	933172100	282600000		
87	ESTOP-PWR	18AWG	RED	SP-PWR	L				E-STOP	C	DT04-3P	0460-202-16141		
88	HMCG-ID	20AWG	YEL	SP-PWR	R				FLCN-B	7	DT06-12SB-P012	0462-201-16141		
89	PWR-FS	20AWG	RED	SP-PWR	R				FORESIGHT-SEN	1	933172100	282600000		
90	LCK-PWR	16AWG	RED	SP-PWR	R				SP-LCK	L				
91	SGND2-4	20AWG	BLK	SP-SGND2	R				GATE-ANG-SEN	A	DT06-3S	0462-201-16141		
92	SGND2-1	20AWG	BLK	SP-SGND2	L				L-LIFT-SEN	A	DT06-3S	0462-201-16141		
93	SGND2-2	20AWG	BLK	SP-SGND2	L				R-LIFT-SEN	A	DT06-3S	0462-201-16141		
94	L-STOP	18AWG	RED	SP-STOP	R				SP-L-STOP	R				
95	R-STOP	18AWG	RED	SP-STOP	R				SP-R-STOP	R				
96	L-TAIL	18AWG	BWN	SP-TAIL	R				SP-L-TAIL	R				
97	R-TAIL	18AWG	BWN	SP-TAIL	R				SP-R-TAIL	R				
98	GND3	16AWG	BLK	TGB	2	DT06-2S	0462-201-16141		SP-GND3	R				

VS1206 Wiring Schematic



VS1206 Wiring Schematic



VS1206 Wiring Schematic

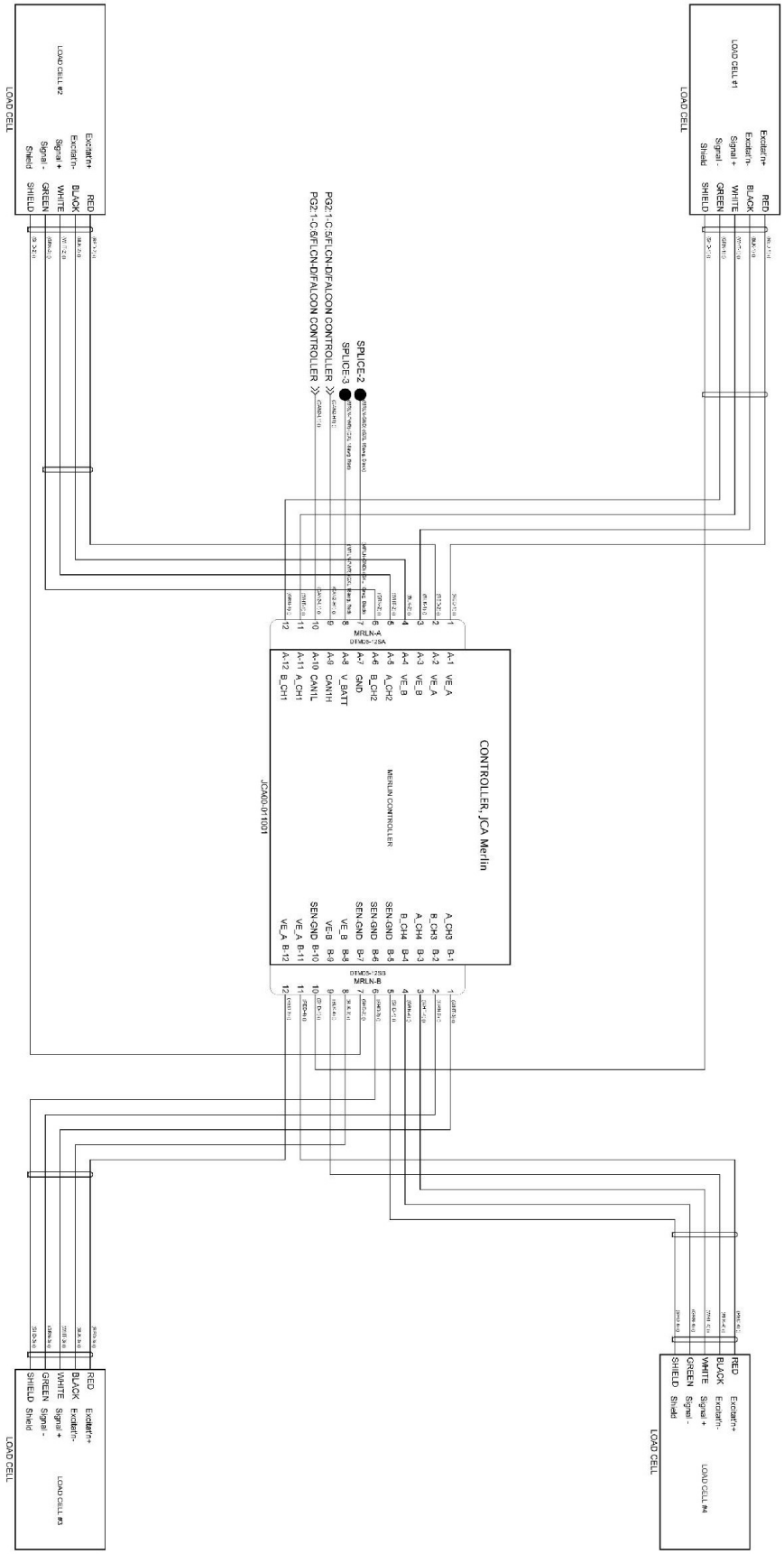
FROM-TO WIRE LIST

INDEX	WIRE NO	SPEC	COL	FROM	CAV	CONNECTOR 1	TERMINAL PN 1	WIRE SEAL PN	TO	CAV	CONNECTOR 2	TERMINAL PN 2	WIRE SEAL PN	M/C
1	CAN-PWR	18AWG	RED	CAN-TERMINATOR	B	12052848	12048074	12048087	CAN/PWR	B	12124107	12045773	15324973	
2	CAN-GND	18AWG	BLK	CAN-TERMINATOR	D	12052848	12048074	12048087	CAN/PWR	D	12124107	12045773	15324973	
3	SHIELD1	20AWG	SHLD	CAN1-1	C	DT06-3S	0462-201-16141							MC804
4	CAN1-H1	20AWG	YEL	CAN1-1	A	DT06-3S	0462-201-16141		CAN/PWR	E	12124107	12045773	15324973	MC819
5	CAN1-L1	20AWG	GRN	CAN1-1	B	DT06-3S	0462-201-16141		CAN/PWR	F	12124107	12045773	15324973	MC819
6	CAN1-H2	20AWG	YEL	CAN1-2	A	DT06-3S	0462-201-16141		CAN1-4	A	DT06-3S	0462-201-16141		MC821
7	CAN1-L2	20AWG	GRN	CAN1-2	B	DT06-3S	0462-201-16141		CAN1-4	B	DT06-3S	0462-201-16141		MC821
8	SHIELD3	20AWG	SHLD	CAN1-3	C	DT06-3S	0462-201-16141							MC808
9	CAN1-H3	20AWG	YEL	CAN1-3	A	DT06-3S	0462-201-16141		CAN-TERMINATOR	E	12052848	12160223	12089678	MC817
10	CAN1-L3	20AWG	GRN	CAN1-3	B	DT06-3S	0462-201-16141		CAN-TERMINATOR	F	12052848	12160223	12089678	MC817
11	SHIELD2	20AWG	SHLD	CAN1-4	C	DT06-3S	0462-201-16141		CAN1-2	C	DT06-3S	0462-201-16141		MC806
12	CAN1-H4	20AWG	YEL	CAN1-5	A	DT06-3S	0462-201-16141		TRASHER	8	DTM06-12SA	0462-201-20141		MC818
13	CAN1-L4	20AWG	GRN	CAN1-5	B	DT06-3S	0462-201-16141		TRASHER	9	DTM06-12SA	0462-201-20141		MC818
14	BTM-GT-OPEN	16AWG	RED	FLCN-A	6	DT06-12SA-P012	0462-201-16141		BGA	1	DT06-2S	0462-201-16141		
15	BTM-GT-CLOSE	16AWG	RED	FLCN-A	10	DT06-12SA-P012	0462-201-16141		BGB	1	DT06-2S	0462-201-16141		
16	PT-SEN-PWR	18AWG	RED	FLCN-A	5	DT06-12SA-P012	0462-201-16141		SP-PTPWR	R				
17	TOP-GT-OPEN	16AWG	RED	FLCN-A	11	DT06-12SA-P012	0462-201-16141		TGA	1	DT06-2S	0462-201-16141		
18	TOP-GT-CLOSE	16AWG	RED	FLCN-A	12	DT06-12SA-P012	0462-201-16141		TGB	1	DT06-2S	0462-201-16141		
19	E-STOP-FLCN	18AWG	BLK	FLCN-B	12	DT06-12SB-P012	0462-201-16141		SP-GND3	L				
20	2019-ID	18AWG	RED	FLCN-B	5	DT06-12SB-P012	0462-201-16141		SP-PWR	R				
21	SHIELD5	20AWG	SHLD	FLCN-C	6	DT06-12SC-P012	0462-201-16141		CAN1-6	C	DT06-3S	0462-201-16141		MC812
22	CAN1-H5	20AWG	YEL	FLCN-C	7	DT06-12SC-P012	0462-201-16141		CAN1-6	A	DT06-3S	0462-201-16141		MC820
23	CAN1-L5	20AWG	GRN	FLCN-C	8	DT06-12SC-P012	0462-201-16141		CAN1-6	B	DT06-3S	0462-201-16141		MC820
24	FLCN-GND1	16AWG	BLK	FLCN-C	11	DT06-12SC-P012	0462-201-16141		SP-GND	R				
25	FLCN-GND2	16AWG	BLK	FLCN-C	12	DT06-12SC-P012	0462-201-16141		SP-GND	R				
26	IGN-FLCN	18AWG	ORG	FLCN-C	5	DT06-12SC-P012	0462-201-16141		SP-PWR	R				
27	FLCN-PWR1	16AWG	RED	FLCN-C	9	DT06-12SC-P012	0462-201-16141		SP-PWR	R				
28	FLCN-PWR2	16AWG	RED	FLCN-C	10	DT06-12SC-P012	0462-201-16141		SP-PWR	R				
29	USB-VCC	20AWG	RED	FLCN-C	1	DT06-12SC-P012	0462-201-16141		USB	1	DT06-4S	0462-201-16141		
30	USB-D+	20AWG	BLU	FLCN-C	2	DT06-12SC-P012	0462-201-16141		USB	3	DT06-4S	0462-201-16141		
31	USB-DUSB-	20AWG	WHT	FLCN-C	3	DT06-12SC-P012	0462-201-16141		USB	2	DT06-4S	0462-201-16141		
32	GND	20AWG	BLK	FLCN-C	4	DT06-12SC-P012	0462-201-16141		USB	4	DT06-4S	0462-201-16141		
33	SHIELD2-1	20AWG	SHLD	FLCN-D	7	DT06-12SD-P012	0462-201-16141							MC814
34	FR-PT-SEN	20AWG	YEL	FLCN-D	3	DT06-12SD-P012	0462-201-16141		FRONT-PHOTO-SEN	4	933172100	282600000		
35	5VREF1	20AWG	RED	FLCN-D	9	DT06-12SD-P012	0462-201-16141		SP-5VREF1	R				
36	SGND1	20AWG	BLK	FLCN-D	11	DT06-12SD-P012	0462-201-16141		SP-SGND1	R				
37	SGND2	20AWG	BLK	FLCN-D	12	DT06-12SD-P012	0462-201-16141		SP-SGND2	R				
38	FLR-DET	20AWG	RED	FLOOR-DETECT	1	DTM06-2S	0462-201-20141		FLCN-D	4	DT06-12SD-P012	0462-201-16141		
39	5VREF2	20AWG	RED	FLOOR-DETECT	2	DTM06-2S	0462-201-20141		FLCN-D	10	DT06-12SD-P012	0462-201-16141		
40	FS-SEN	20AWG	YEL	FORESIGHT-SEN	4	933172100	282600000		FLCN-B	1	DT06-12SB-P012	0462-201-16141		

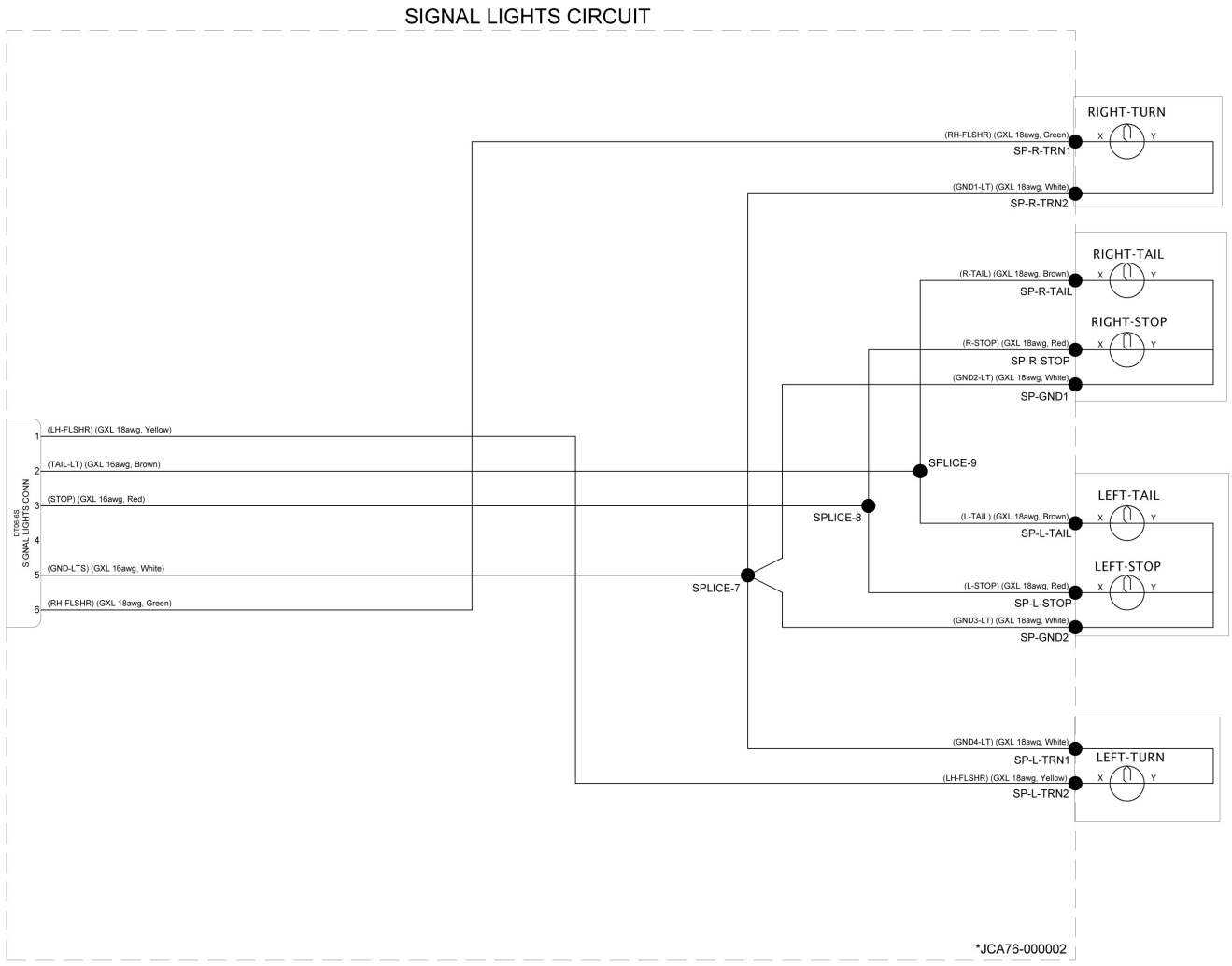
41	SGND1-3	20AWG	BLK	FRONT-PHOTO-EMITTER	2	933172100	282600000		SP-SGND1	L				
42	SGND1-4	20AWG	BLK	FRONT-PHOTO-EMITTER	3	933172100	282600000		SP-SGND1	L				
43	SGND1-1	20AWG	BLK	FRONT-PHOTO-SEN	2	933172100	282600000		SP-SGND1	L				
44	SGND1-2	20AWG	BLK	FRONT-PHOTO-SEN	3	933172100	282600000		SP-SGND1	L				
45	GT-ANG-SEN	20AWG	YEL	GATE-ANG-SEN	C	DT06-3S	0462-201-16141		FLCN-B	4	DT06-12SB-P012	0462-201-16141		
46	L-LIFT-SEN	20AWG	YEL	L-LIFT-SEN	C	DT06-3S	0462-201-16141		FLCN-D	1	DT06-12SD-P012	0462-201-16141		
47	LF-LIFT-UP	16AWG	RED	LLA	1	DT06-2S	0462-201-16141		FLCN-A	3	DT06-12SA-P012	0462-201-16141		
48	GND8	16AWG	BLK	LLA	2	DT06-2S	0462-201-16141		SP-GND3	R				
49	LF-LIFT-DN	16AWG	RED	LLB	1	DT06-2S	0462-201-16141		FLCN-A	2	DT06-12SA-P012	0462-201-16141		
50	GND7	16AWG	BLK	LLB	2	DT06-2S	0462-201-16141		SP-GND3	R				
51	LOCK-DET	20AWG	YEL	LOCK DETECT	1	DTM06-2S	0462-201-20141		FLCN-B	2	DT06-12SB-P012	0462-201-16141		
52	5VREF1-3	20AWG	RED	LOCK DETECT	2	DTM06-2S	0462-201-20141		SP-5VREF1	R				
53	LCK-VLV-A	16AWG	BLK	LVA	2	DT06-2S			FLCN-A	7	DT06-12SA-P012	0462-201-16141		
54	LCK-A-PWR	16AWG	RED	LVA	1	DT06-2S			SP-LCK	R				
55	LCK-VLV-B	16AWG	BLK	LVB	2	DT06-2S			FLCN-A	8	DT06-12SA-P012	0462-201-16141		
56	LCK-B-PWR	16AWG	RED	LVB	1	DT06-2S			SP-LCK	R				
57	CAN2-H1	20AWG	YEL	MRLN-A	9	DTM06-12SA	0462-201-20141		FLCN-D	5	DT06-12SD-P012	0462-201-16141		MC816
58	CAN2-L1	20AWG	GRN	MRLN-A	10	DTM06-12SA	0462-201-20141		FLCN-D	6	DT06-12SD-P012	0462-201-16141		MC816
59	MRLN-GND	18AWG	BLK	MRLN-A	7	DTM06-12SA	0462-005-20141		SP-GND	R				
60	MRLN-PWR	18AWG	RED	MRLN-A	8	DTM06-12SA	0462-005-20141		SP-PWR	R				
61	BYPASS	16AWG	RED	OCV	1	DT06-2S	0462-201-16141		FLCN-A	4	DT06-12SA-P012	0462-201-16141		
62	GND2	16AWG	BLK	OCV	2	DT06-2S	0462-201-16141		SP-GND3	R				
63	PWR	14AWG	RED	POWER	1	DT06-2S	0462-209-16141		SP-PWR	L				
64	R-LIFT-SEN	20AWG	YEL	R-LIFT-SEN	C	DT06-3S	0462-201-16141		FLCN-D	2	DT06-12SD-P012	0462-201-16141		
65	RH-LIFT-UP	16AWG	RED	RLA	1	DT06-2S	0462-201-16141		FLCN-A	1	DT06-12SA-P012	0462-201-16141		
66	GND10	16AWG	BLK	RLA	2	DT06-2S	0462-201-16141		SP-GND3	R				
67	RH-LIFT-DN	16AWG	RED	RLB	1	DT06-2S	0462-201-16141		FLCN-D	8	DT06-12SD-P012	0462-201-16141		
68	GND9	16AWG	BLK	RLB	2	DT06-2S	0462-201-16141		SP-GND3	R				
69	LH-FLSHR	18AWG	YLW	SIGNAL LIGHTS CONN	1	DT06-6S	0462-201-16141		SP-L-TRN2	R				
70	GND-LTS	16AWG	WHT	SIGNAL LIGHTS CONN	5	DT06-6S	0462-201-16141		SP-LGND	L				
71	RH-FLSHR	18AWG	GRN	SIGNAL LIGHTS CONN	6	DT06-6S	0462-201-16141		SP-R-TRN1	R				
72	STOP	16AWG	RED	SIGNAL LIGHTS CONN	3	DT06-6S	0462-201-16141		SP-STOP	L				
73	TAIL-LT	16AWG	BWN	SIGNAL LIGHTS CONN	2	DT06-6S	0462-201-16141		SP-TAIL	L				
74	5VREF1-4	20AWG	RED	SP-5VREF1	R				GATE-ANG-SEN	B	DT06-3S	0462-201-16141		
75	5VREF1-1	20AWG	RED	SP-5VREF1	L				L-LIFT-SEN	B	DT06-3S	0462-201-16141		
76	5VREF1-2	20AWG	RED	SP-5VREF1	L				R-LIFT-SEN	B	DT06-3S	0462-201-16141		
77	GND-ESTOP1	14AWG	BLK	SP-GND	L				E-STOP	B	DT04-3P	0460-202-16141		
78	GND11	20AWG	BLK	SP-GND	R				FORESIGHT-SEN	3	933172100	282600000		
79	GND	14AWG	BLK	SP-GND	L				POWER	2	DT06-2S	0462-209-16141		
80	GND2-LT	18AWG	WHT	SP-GND1	L				SP-LGND	R				
81	GND3-LT	18AWG	WHT	SP-GND2	R				SP-LGND	R	DT06-2S	0462-201-16141		
82	GND6	16AWG	BLK	SP-GND3	R				BGA	2	DT06-2S	0462-201-16141		
83	GND5	16AWG	BLK	SP-GND3	R				BGB	2	DT04-3P	0460-202-16141		
84	GND-ESTOP	14AWG	BLK	SP-GND3	L				E-STOP	A	DT06-2S	0462-201-16141		

85	GND4	16AWG	BLK	SP-GND3	R				TGA	2				
86	GND4-LT	18AWG	WHT	SP-LGND	L				SP-L-TRN1	R				
87	GND1-LT	18AWG	WHT	SP-LGND	R				SP-R-TRN2	R	933172100	282600000		
88	PT-SEN-PWR2	20AWG	RED	SP-PTPWR	L				FRONT-PHOTO-EMITTER	1	933172100	282600000		
89	PT-SEN-PWR1	20AWG	RED	SP-PTPWR	L				FRONT-PHOTO-SEN	1	DT04-3P	0460-202-16141		
90	ESTOP-PWR	18AWG	RED	SP-PWR	L				E-STOP	C	933172100	282600000		
91	PWR-FS	20AWG	RED	SP-PWR	R				FORESIGHT-SEN	1				
92	LCK-PWR	16AWG	RED	SP-PWR	R				SP-LCK	L	DT06-3S	0462-201-16141		
93	SGND2-4	20AWG	BLK	SP-SGND2	R				GATE-ANG-SEN	A	DT06-3S	0462-201-16141		
94	SGND2-1	20AWG	BLK	SP-SGND2	L				L-LIFT-SEN	A	DT06-3S	0462-201-16141		
95	SGND2-2	20AWG	BLK	SP-SGND2	L				R-LIFT-SEN	A				
96	L-STOP	18AWG	RED	SP-STOP	R				SP-L-STOP	R				
97	R-STOP	18AWG	RED	SP-STOP	R				SP-R-STOP	L				
98	L-TAIL	18AWG	BWN	SP-TAIL	R				SP-L-TAIL	R				
99	R-TAIL	18AWG	BWN	SP-TAIL	R				SP-R-TAIL	L				
100	GND3	16AWG	BLK	TGB	2	DT06-2S	0462-201-16141		SP-GND3	R				
101	SHIELD4	20AWG	SHLD	TRASHER	7	DTM06-12SA	0462-201-20141		CAN1-5	C	DT06-3S	0462-201-16141		MC810
102	THRSR-GND	18AWG	BLK	TRASHER	2	DTM06-12SA	0462-005-20141		SP-GND	R				
103	THRSR-PWR	18AWG	RED	TRASHER	1	DTM06-12SA	0462-005-20141		SP-PWR	R				
104	THRSR-IGN	18AWG	ORG	TRASHER	3	DTM06-12SA	0462-005-20141		SP-PWR	R				

Scale Schematic - Load Cells



Lights Schematic



Troubleshooting

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Accumulator does not work	Emergency Stop Switch pushed in	Turn clockwise to reset.
	Poor electrical connection	Inspect the wiring harness coupling and clean, if necessary.
	Electronic system malfunction	Check settings on angle sensors for lift mechanism. Adjust the settings if necessary.
Front photo sensors enabled	Oversize bale safety is active. Both Photo and Ultrasonic sensors are “enabled”	Allow oversize bale to roll out and normal operation will resume.
	Bale may be broken. Both Photo and Ultrasonic sensors may be covered by loose material	Turn off accumulator and clear loose material away from Photo and Ultrasonic sensors.
	Poor bale separation (Bales stay connected)	Raise front of accumulator. Adjust hitch height of accumulator into interference mode to aid bale separation.
No Stacker on VT	Incorrect Termination at Stacker	Terminate System Correctly (At End of Bus)
	Incorrect Object Pool in VT	Delete Object Pool from VT and Restart
	No Power at Falcon	Investigate Connections for Continuity
	No CAN Signal at Falcon	Investigate Connections for Continuity
Machine Function Halted	Hydraulic flow not turned on	Enable remote on tractor.
	Hydraulic time out due to sensor failure	Check all sensors on diagnostics page.
Fuse	Blown fuse on power cord	Check fuse.
Tractor hydraulic oil overheating	Open/closed center mismatch	See section on hydraulic setup.
	Tractor hydraulic oil flow set too high	Reduce tractor hydraulic oil flow setting.
	Low pressure return oil flow is not discharging into tank properly	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.
	Tractor hydraulic oil overheating	Can use free flow coupler to plug into remotes directing the oil back into the oil cooler.

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Drops only single bales/ All Bales are Being Ejected	Incoming and emitter sensors are closer together than the bale length	Move the front sensor forward. Adjust rear tailgate and sensor rearward. Shorten bale length.
	Incorrect PhotoEye Location	Adjust PhotoEye Location
	Calibration Not Completed Correctly	Recalibrate
Will not lift when bale is in chamber	Floor sensor too far away from magnet	Move sensor closer.
	Sensor damaged	Replace sensor.
	Magnet position on bale button not activating the sensor when bale rolls over it	Re-drill position of magnet.
	Power not powering up controller	Check connections.
Lift arm pulsing and lift arms are not parallel	Lift Sensors out of adjustment	Ensure lift arm sensors are concentric to the sensor magnet. Ensure the sensors are set to .05-.1” (1.2-2.7mm) from the magnet
Lift Arms Not Moving in Sync/ Jerky	Calibration Not Completed Correctly	Recalibrate
	Insufficient Hydraulic Flow	Increase Tractors Flow
	Lift Arm Sensors are Not Installed Correctly	Reinstall/Readjust Sensor Mounts
	Incorrect Software Version/Parameters	Reinstall Latest Software Version into Falcon and Update Parameters
	Slide Shafts Have Incorrect Spacing	Give Slide Shafts More Clearance
	Coils/Cartridges are Over Torqued	Loosen Coils/Cartridges and Retorque as per Specs
Lift Trucks Get Stuck on Bale Going Down	Incorrect VT Settings (Overlift)	Change VT Settings to be Correct
	Calibration Not Completed Correctly	Recalibrate
	Bales are Extremely Inconsistent	Weave as Baling According to Baler Display

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. Reduce tractor hydraulic flow to 12 US gal/min (45.4 L/min) or less.
Bottom Gate Shear Bolts Breaking	Incorrect VT Settings	Change VT Settings to be Correct
	Calibration Not Completed Correctly	Recalibrate
	Incorrect Software Version/Parameters	Reinstall Software into Falcon and Update Parameters
	Floor Switch is Not Engaging/Disengaging Correctly	Adjust Floor Switch Sensor Position, Replace Spring and/or Floor Switch if Damaged
	Ultrasonic Sensor Is Not Adjusted to Aim at the Bale	Readjust Ultrasonic Sensor Position
Gate Not Closing After Eject	Calibration Not Completed Correctly	Recalibrate

INDEX

Issued 2021
DOC200608 R4
Printed in Canada

PhiBer Manufacturing Inc.
Box 58 Crystal City, MB
Canada R0K 0N0