

KEITH
MANUFACTURING CO

RUNNING FLOOR II[®] DX/DXE

KEITH Manufacturing Co.

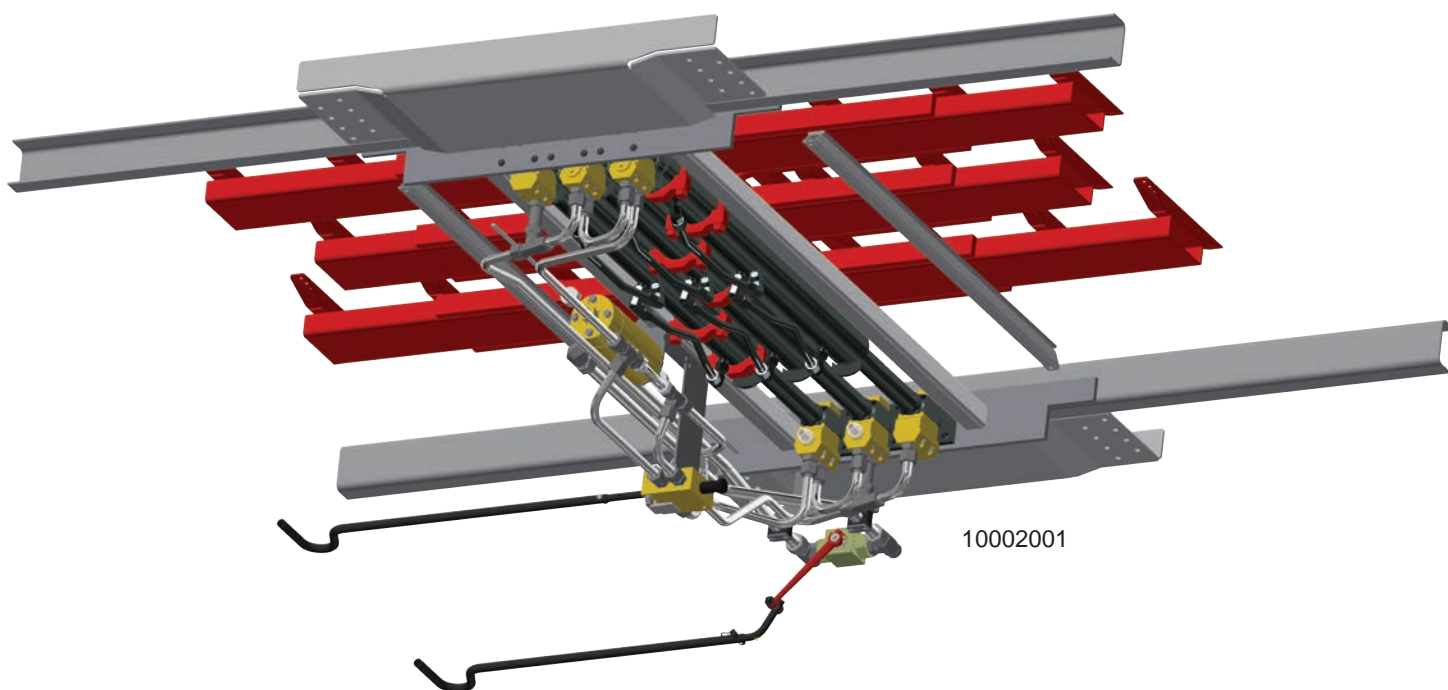
www.KeithWalkingFloor.com

World Headquarters

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OWNER / OPERATOR MANUAL

Original Instructions

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Revised 2019-03-05

DOC06179 Rev. D

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Introduction

We at KEITH Manufacturing Co. are very happy you have decided to equip your trailer with the KEITH® WALKING FLOOR® system. We take great pride in manufacturing the simplest, lowest maintenance self-unloading system available. Installing the KEITH® WALKING FLOOR® system in your trailer provides you with the versatility to load or unload virtually any type of material.

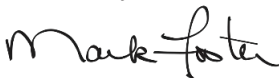
The following pages contain information on the operation of your KEITH® WALKING FLOOR® system. Further support and safety documents (manuals, brochures, and product specs) can be viewed or downloaded from our website at www.KeithWalkingFloor.com.

In addition, we have provided general information on the type of hydraulic wet kit that will be needed to operate your system. Please contact a KEITH sales representative or visit our website for more specific recommendations regarding pumps, filters, pressure relief valves and approved equivalent equipment. *It is critical to adhere to the outlined hydraulic wet kit specifications. Failure to follow the guidelines concerning required operation pressures can lead to system failure due to excessive heat buildup.*

Please review the entire manual before operating the KEITH® WALKING FLOOR® system. If you have any questions, please call 541-475-3802 or email Sales@KeithWalkingFloor.com where our support team will happily assist you.

Thank you again for putting your trust in our company!

Sincerely,



R. Mark Foster
President

Declaration of Incorporation

Manufacturer:

KEITH Manufacturing Co.
401 NW Adler Street
Madras, OR 97741
USA

Hereby declares that the following partly complete machinery,

KEITH® RUNNING FLOOR II® DX/DXE system mobile kit, serial numbers from year
2017 onward

Complies with the following essential health and safety requirements of Directive 2006/42/EC:
1, 2, 3, 4, 1.1.1, 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.1.7, 1.3.1, 1.3.2, 1.3.4, 1.3.6, 1.3.9, 1.5.3, 1.5.4,
1.5.5, 1.5.6, 1.5.8, 1.5.9, 1.5.15, 1.6.1, 1.6.2, 1.6.4, 1.7.1, 1.7.1.1, 1.7.2, 1.7.3, 1.7.4

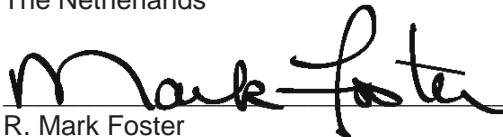
The relevant technical documentation is compiled in accordance with part B of annex VII.

In response to a reasoned request by national authorities, relevant information on the partly
complete machinery will be transmitted as hard copies or digital files, unconstrained by
intellectual property rights.

This partly completed machinery must not be put into service until the final machinery into which
it is to be incorporated has been declared in conformity with the provisions of Directive
2006/42/EC.

The person authorized to compile the technical file is:

KEITH WALKING FLOOR Europe
Harselaarsweg 113
3771 MA Barneveld
The Netherlands



R. Mark Foster
President

Madras, Oregon, USA April 5, 2017

DOC06199 Rev A

KEITH® WALKING FLOOR® Unloading System Limited Warranty

KEITH Manufacturing Co. hereby warrants, to the first owner of a new **KEITH® Unloading system** from the factory or selling distributor, that the product shall be free from defects in material and workmanship for a period of **one year** after delivery or sale to the first registered owner. The **hydraulic drive system** has a **two year** limited warranty on all hydraulic parts and components. This warranty does not cover normal wear and tear and maintenance. A warranty card must be filled out and returned to KEITH Manufacturing Co. to activate this warranty.

Unloading system must only be used as recommended by KEITH Manufacturing Co. for normal use and service. This means the loading and/or unloading of uniformly distributed, non-corrosive material, properly restrained and secured, on properly maintained public roads, with gross vehicle weights not in excess of factory rated capacity. For stationary installations, normal use and service means the conveying of uniformly distributed, noncorrosive materials, with weights not in excess of factory rated capacity. The system must be installed according to **KEITH Manufacturing Co.** installation instructions.

Sole and Exclusive Remedy: If the product covered hereby fails to conform to the above stated warranty, **KEITH Manufacturing Co.**'s sole liability under this warranty and the owner's sole and exclusive remedy is limited to repair or replacement of the defective part(s) at a facility authorized by **KEITH Manufacturing Co.**

THE WARRANTY SET FORTH ABOVE IS EXPRESSLY MADE IN LIEU OF ANY OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY. KEITH MANUFACTURING CO. MAKES NO WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF MERCHANTABILITY. FURTHER, KEITH MANUFACTURING CO. WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SUCH AS, BUT NOT LIMITED TO, THE LOSS OF USE OF THE PRODUCT, DAMAGE TO THE PRODUCT, ATTORNEY'S FEES AND THE LIABILITY IN RESPECT TO ANY OTHER REASON.

TORT DISCLAIMER: KEITH MANUFACTURING CO. EXCLUDES ANY LIABILITY IN TORT WITH RESPECT TO THEIR PRODUCTS, INCLUDING ANY LIABILITY BASED ON STRICT LIABILITY IN TORT AND NEGLIGENCE.

If This Warranty Violates Law: To the extent any provision of this warranty, contravenes the law of any jurisdiction, that provision shall be inapplicable in such jurisdiction and the remainder of the warranty shall not be affected thereby.

Warranty Return Policy

Any defective part(s) must be shipped freight prepaid to the nearest **KEITH** facility. Please contact **KEITH** for additional information on proper locations. Before returning any item for repair or replacement, contact **KEITH Manufacturing Co.** at 1-800-547-6161 or TechDept@KeithWalkingFloor.com for a "Returned Goods Authorization" (RGA) number. Make sure the RGA number is on the outside of the shipping carton and all paperwork is included.

The following information is needed:

- | | |
|-----------------|------------------------------|
| a. Company name | e. Part number |
| b. Contact name | f. Quantity |
| c. Address | g. Reason for return |
| d. Phone number | h. Customer's account number |

Warranty Registration Card

Note: To validate the warranty, the registration information must be filled out completely and returned to KEITH Manufacturing Co. within ten (10) days of purchase and/or installation.

Please fill out the Warranty Registration form on our website at www.KeithWalkingFloor.com or fill out the Warranty Registration Card below and mail, fax or email it to:

KEITH Manufacturing Co.
P.O. Box 1
Madras, OR 97741-0001
Fax: 541-475-2169
TechDept@KeithWalkingFloor.com

This warranty registration card must be completed and on file at KEITH Manufacturing Co. in order for the warranty period to begin on the purchase date. If no purchase date is registered, the beginning of the warranty will automatically revert to the manufacture date.

Name / Company Name: _____

Address: _____

City, State / Prov.: _____ Postal Code: _____

Country: _____

Tel: _____ Fax: _____

E-Mail: _____

SYSTEM DATA:

Date of Purchase: _____

Model / Serial Number: _____

Purchased From: _____

Type of Material Loaded/Unloaded: _____

I have fully read the KEITH Manufacturing Co. warranty information and fully understand and agree to the terms of the warranty.

Name: _____ Date: _____ Signature: _____

1.0 Safety

1.1 General Safety

1.1.1 Intended Function and Expected Use:

1.1.1.1. The KEITH® *WALKING FLOOR*® system is a reciprocating slat conveyor primarily intended to load, hold, or unload bulk materials. It can also handle unit loads such as pallets by using special handling techniques and possibly additional safety controls. The system is supplied as a kit primarily intended for installation into mobile trailers or truck bodies. The floor is often loaded through an open trailer top or through the rear doors. The floor typically discharges material out the rear door. It is hydraulically actuated, powered by a pump mounted either to a PTO or an electric motor. The basic system is controlled by mechanically-actuated valves, but has the option for electrically-actuated valves. The system is compatible with options and accessories to improve performance. For example, it can be electrically controlled by hardwired switches or a wireless remote. A CleanSweep® device can improve clean out. Floor slat styles are selected based on the materials to be conveyed. The standard system handles a wide array of materials in a non-hazardous, non-explosive environment. Special modifications may be required for special environments like food-grade applications or explosive conditions.

1.1.2 Improper Use

- 1.1.2.1. This equipment has been manufactured utilizing state-of-the-art technology in accordance with acknowledged safety regulations. Nevertheless, dangerous situations could arise from improper use, which could endanger life and limbs of personnel and cause severe damage to the equipment and other assets. This equipment may only be used for its intended purpose. It may only be operated in impeccable technical condition and in accordance with the proper use and this user manual. Problems, which could affect safety, must be resolved immediately. The manufacturer is not liable for any damage caused by improper use or arbitrary modifications. The installation, commissioning, operation, and maintenance instructions must be followed as outlined in this manual.
- 1.1.2.2. Personnel must not enter the danger zone(s) when the system is enabled. Specifically, nobody should be inside, under, or behind the trailer in the unloading zone during operation. Additionally, no one should be in a full or filling trailer. Lock-out and tag-out procedures must be followed before accessing the drive area.
- 1.1.2.3. The maximum load capacity must not be exceeded. (See Specifications section)
- 1.1.2.4. The hydraulic power source must not exceed the pressure and flow ratings. Install a relief valve to ensure the maximum pressure is not exceeded.
- 1.1.2.5. Control circuitry must not be altered or bypassed.
- 1.1.2.6. Safeguards must not be altered or bypassed.
- 1.1.2.7. The floor structure must not be altered.
- 1.1.2.8. The floor should not be used to handle any material other than specified.
- 1.1.2.9. The user and system designer must understand the characteristics and safe handling requirements of the material that is being conveyed.

- 1.1.2.10. Bulk materials are by nature unstable and flowable. Avoid burial by avoiding contact with the material.

1.1.3 Training

- 1.1.3.1. Operators must read and understand this manual before operating or maintaining the machine. Only qualified, trained personnel may execute commissioning, operation, and maintenance of the system.

1.1.4 Personal Protective Equipment

- 1.1.4.1. Always wear protective equipment appropriate for risks associated with each phase of the system's life, including transportation, installation, assembly, operation, inspection, maintenance, and dismantling, disabling, and scrapping. As a minimum, this includes the following personal protective equipment:

- Safety glasses
- Gloves
- Welding/grinding protection
- Thermal protection such as coats
- Protective/traction shoes
- Helmets
- Hearing Protection

1.1.5 Airborne Noise Emission

- 1.1.5.1. There is not a defined workstation; sound pressure levels emitted by the *WALKING FLOOR*® modules were measured at a height of 1.6 meters from the floor surface and a distance of 1 meter from the surface of the *WALKING FLOOR*® system at the drive area.

- The A-weighted emission sound pressure level = 74.8 dB.
- The peak C-weighted instantaneous emission sound pressure level = below 63 Pa.

- 1.1.5.2. Slower floor speeds result in less noise.

1.1.6 Temperature

- 1.1.6.1. Operation of the system generates heat in the hydraulic oil. Hot oil can damage the internal seals, resulting in a failure to operate.
- 1.1.6.2. Overheated oil can degrade rapidly. Hot oil and the resulting hot surfaces can cause burns. Do not allow the oil temperature to exceed 140 °F [60 °C].
- 1.1.6.3. KEITH recommends some or all of the following temperature control measures depending on the circumstances. High duty cycle systems and hot environments will require more control measures.
- Maintain adequate oil level in the reservoir.
 - Install a thermometer or sensor to monitor oil temperature.
 - Install a cooler.
 - Set a sensor to automatically shut down the system if oil temperature exceeds 140 °F [60 °C].

1.1.7 Lighting

- 1.1.7.1. Do not use or service the system in an environment of insufficient light.

1.1.8 Movement Around the System

- 1.1.8.1. Hydraulic oil can be slippery. Clean up oil spills immediately.

1.1.9 Hydraulic Oil Safety

- 1.1.9.1. See the MSDS for the oil used in your system for further information about hydraulic oil safety.
- 1.1.9.2. In an accident involving high pressure equipment, hydraulic oil may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, due to the system's driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.
- 1.1.9.3. Do not use high pressure systems in the vicinity of flames, sparks, and hot surfaces. Use only in well ventilated areas.
- 1.1.9.4. Use only designated appropriate fill and drain ports for the oil.

1.2 Design / Installation Safety

1.2.1 Kit Components

- 1.2.1.1. The kit consists of a drive unit, flooring, and miscellaneous boxed parts. These modules are intended to be anchored in a shipping frame or stacked flat and braced with dunnage for shipping and storage.

1.2.2 Installation

- 1.2.2.1. Use designated lifting points as provided.
- 1.2.2.2. Only use equipment with appropriate capacity ratings to lift and handle components.
- 1.2.2.3. Use appropriate lifting procedures when handling loose or boxed components.
- 1.2.2.4. The floor must be installed far enough away from other equipment or fixtures to prevent the moving parts of the floor module from creating a crush or pinch hazard.

1.2.3 Danger Zones

- 1.2.3.1. The reciprocating action of the floor creates pinch and shear points by nature. Specifically, drive area cylinder, cross-drive, and slats approaching each other, frame components, or walls. These and any other relevant exposed areas must be guarded.
- 1.2.3.2. The floor must be incorporated into surroundings such that movement of the material on the floor does not create crushing, burial, drawing in, or entrapment hazards. The system must be designed to limit access to the material flow path.

1.2.4 Electric Components and Installation

- 1.2.4.1. KEITH recommends connecting to earth ground (whenever possible).

- 1.2.4.2. Wiring must be connected consistent with local codes and regulations, including electromagnetic interference regulations.
- 1.2.4.3. Adequate electric overcurrent protection must be provided.

1.2.5 Hydraulics

- 1.2.5.1. Hydraulic piping and components must be constructed of materials that are rated for system pressures, and must be installed with best industry practices. Follow all pipe, tubing, fitting, and hose manufacturer installation and routing guidelines.
- 1.2.5.2. Hydraulic piping should be supported and isolated from vibration. Contact a KEITH representative for recommendations on installation.
- 1.2.5.3. Place protective shrouds around the hydraulic tubing in any areas that may have operators or people frequently nearby.

1.2.6 Controls

- 1.2.6.1. The control panel must be located such that it is easily accessible for all sizes and capacities of people, and allows the operator to move freely (whenever applicable).
- 1.2.6.2. Control devices must be located outside of danger zones, such that any exposed persons in danger zones are visible from the control station.
- 1.2.6.3. An acceptable means must be provided to monitor the status and movement of the load.
- 1.2.6.4. The floor can generate enormous horizontal force which can destroy improperly designed surroundings. The floor module must not be allowed to compact material against an end wall or door, or end walls and doors must be designed to absorb these forces.
- 1.2.6.5. Do not allow the floor to move material toward the front of the trailer when material is contacting the front wall. KEITH recommends installing limit switches to prevent this. In the absence of a sensor switch, the operator must be keenly aware of the load position, and the control system must require the operator to hold the run signal in the on position to continue running, such that releasing the run signal causes the floor to stop (momentary signal).
- 1.2.6.6. Material compacted against closed doors can force the doors open dangerously fast when the door latch is released. The impact can cause serious injury or death. Do not allow the floor to run when the doors are closed. Do not open a door when it is possible that material may be compacted against it. KEITH strongly recommends installing a control interlock switch to prevent the floor from running when the door is closed. KEITH also recommends a door latch that can be remotely actuated by someone away from the door area unload zone.

1.3 Marking of Machinery

Safety Decal Placement Guide: RUNNING FLOOR II® w/Manual Control Valve (Left Side Controls)

1 **DANGER**
Energy can be stored in compacted material. Doors can open violently. Do NOT run floor with door closed. Stand clear to open door.

2 (x4) **WARNING**
Pinch point. Keep hands clear during operation. Lockout/tagout before servicing.

3 (x2) **DANGER**
BURIAL STAY CLEAR

4 (x2) **WARNING**
To avoid injury, you MUST read and understand technical manual before servicing this machine.

5 (x2) **WARNING**
HYDRAULIC PRESSURE. To avoid possible injury lockout/tagout before servicing.

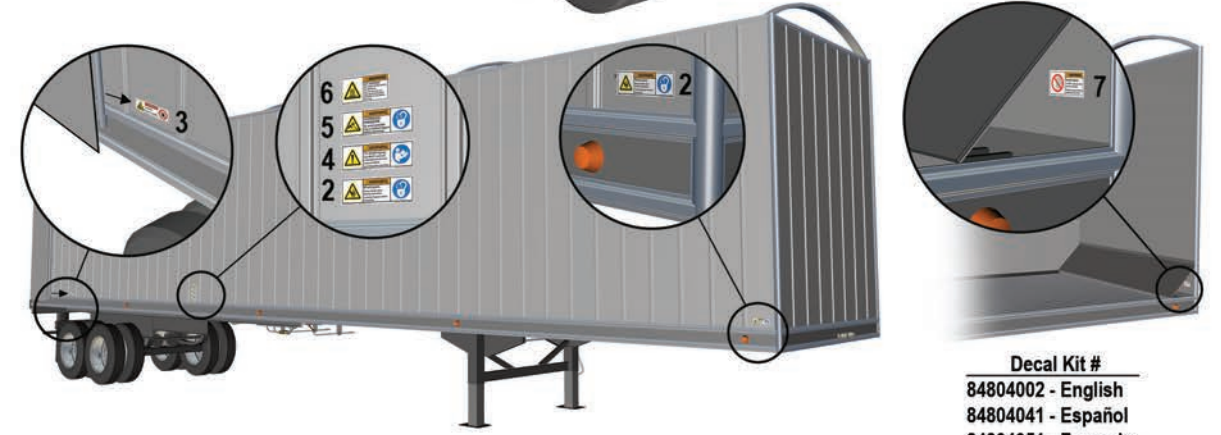
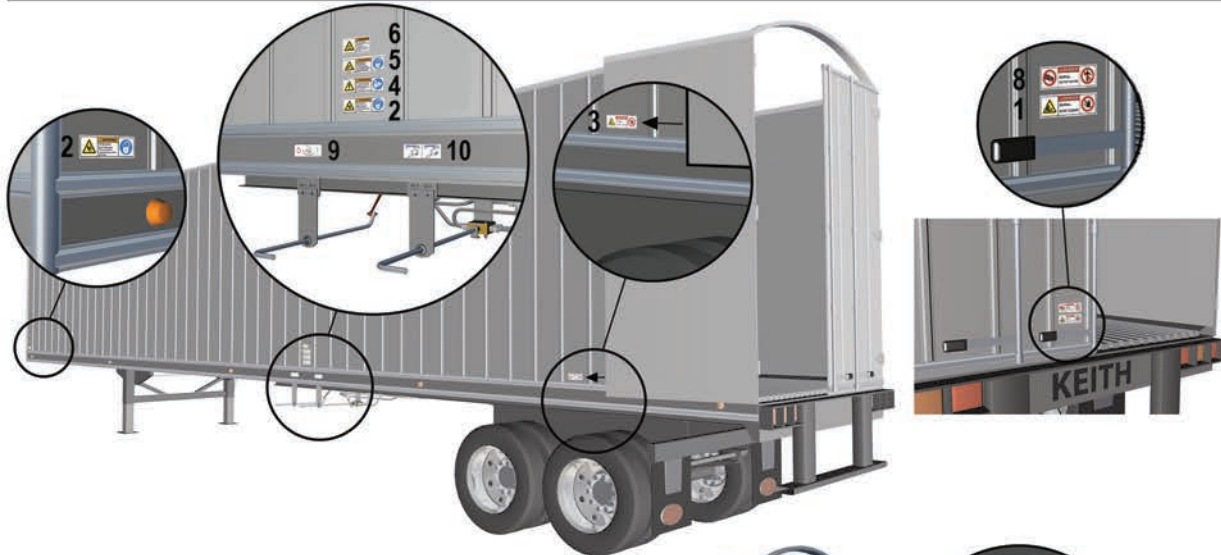
6 (x2) **WARNING**
HOT SURFACE can cause severe burns. Do not touch. Turn off and lock out main power disconnect and allow to cool before servicing.

7 **WARNING**
Avoid injury. Do NOT operate with guard removed. Replace guard before operating machine.

8 **DANGER**
BURIAL DO NOT ENTER

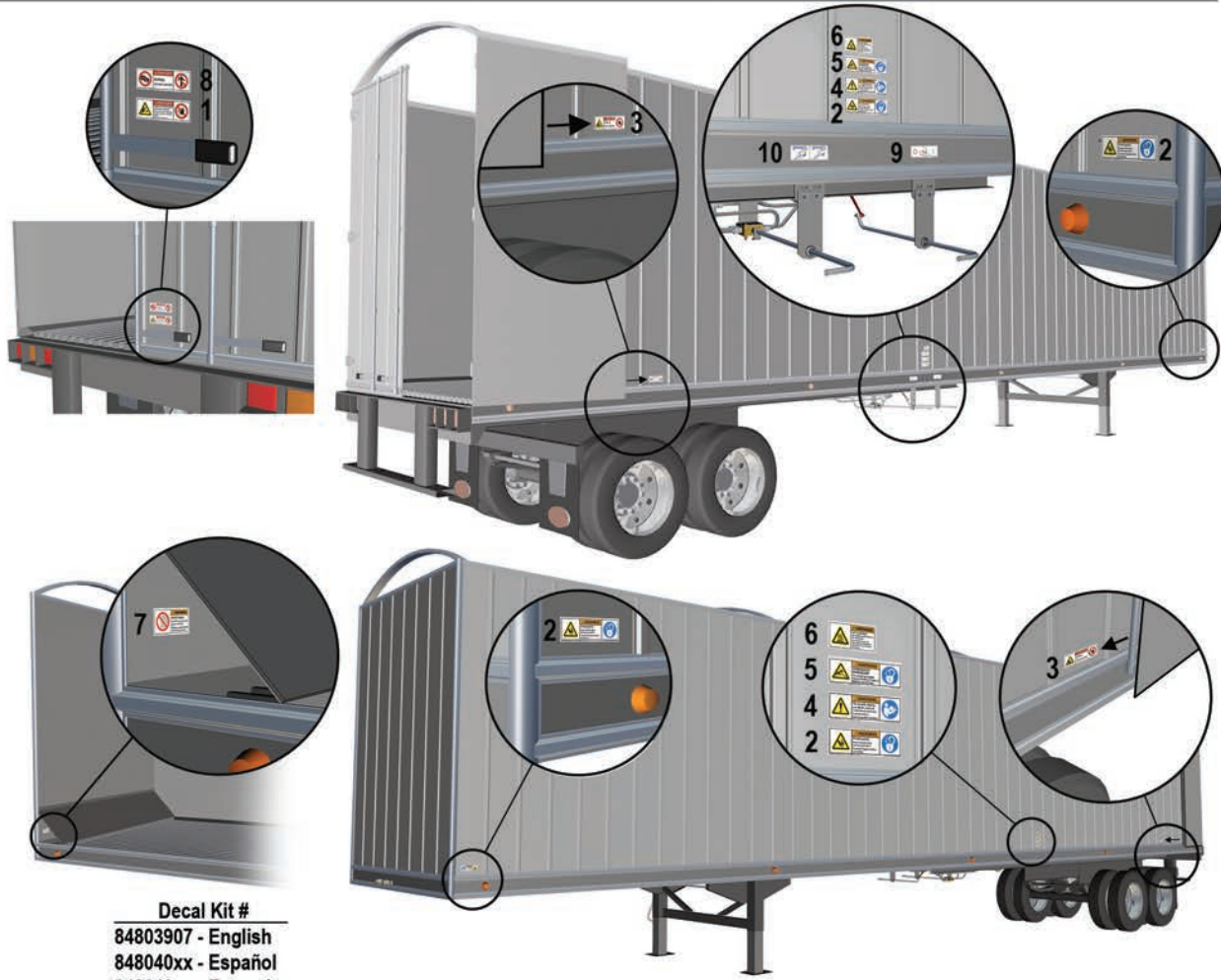
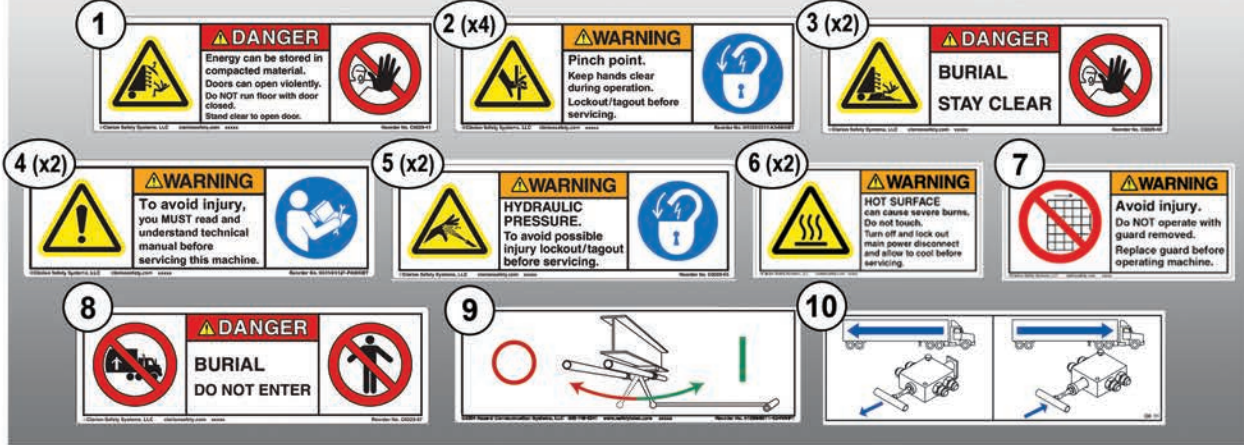
9 (Diagram showing door operation)

10 (Diagram showing manual control valve)



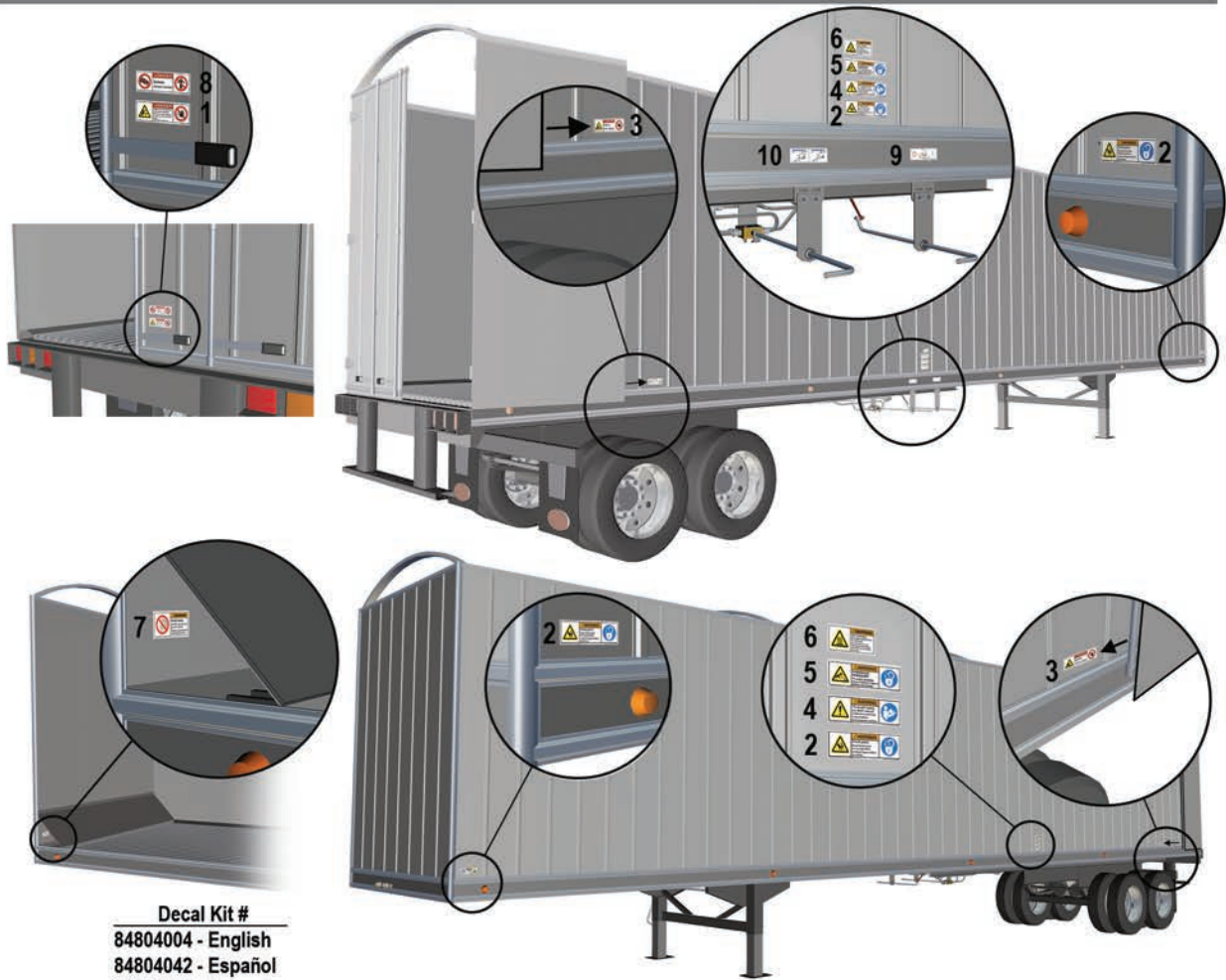
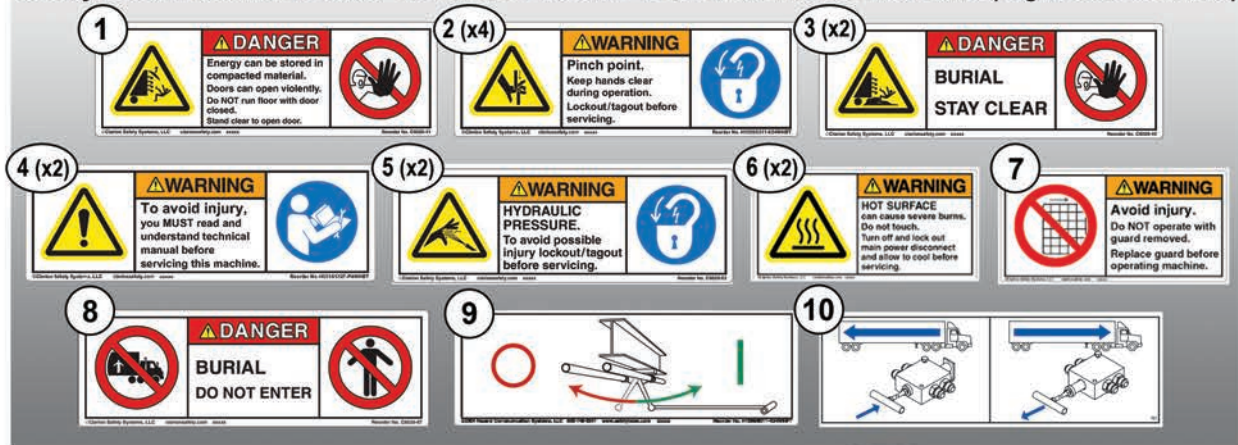
- Decal Kit #**
- 84804002 - English
 - 84804041 - Español
 - 84804051 - Français
 - 84804061 - Deutsch
 - 84804239 - 日本語

Safety Decal Placement Guide: RUNNING FLOOR II® DX w/Manual Control Valve (Right Side Controls)



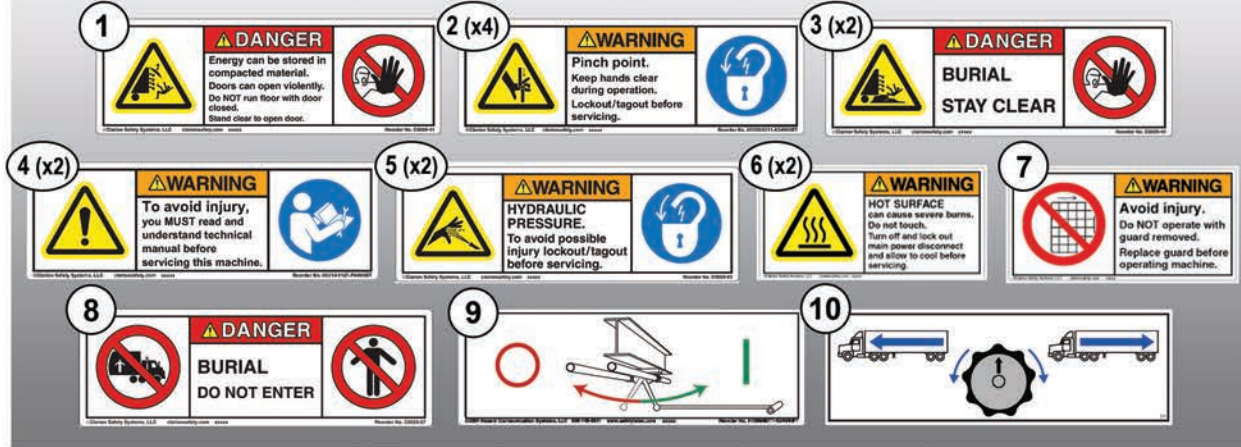
- Decal Kit #
 84803907 - English
 848040xx - Español
 848040xx - Français
 848040xx - Deutsch
 848042xx - 日本語

Safety Decal Placement Guide: RUNNING FLOOR II® DXE w/Manual Control Valve (Right Side Controls)



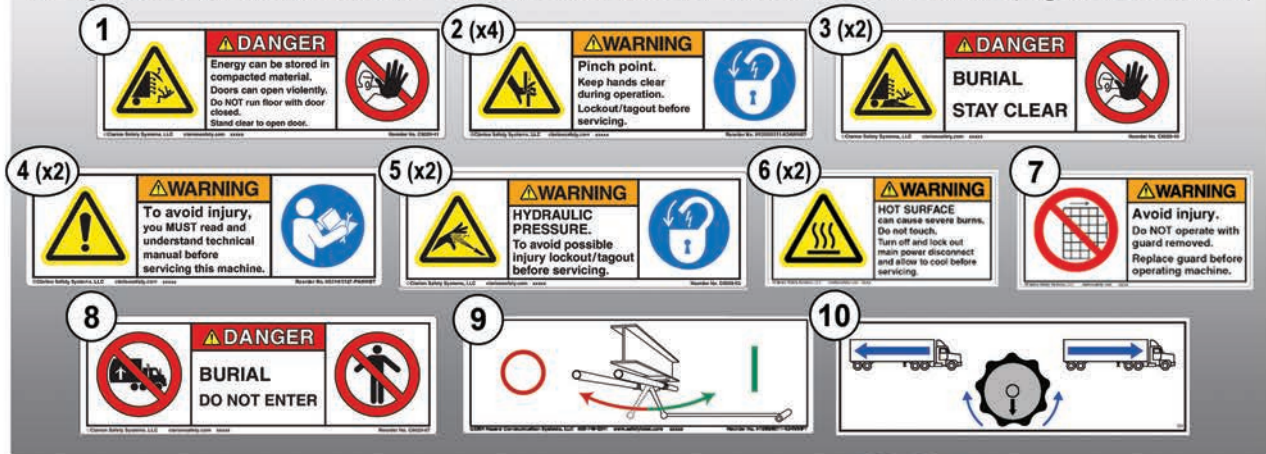
- Decal Kit #
 84804004 - English
 84804042 - Español
 84804052 - Français
 84804062 - Deutsch
 84804240 - 日本語

Safety Decal Placement Guide: KFD & RUNNING FLOOR II® w/Electric Control Valve (Left Side Controls)



- Decal Kit #
- 84804005 - English
 - 84804043 - Español
 - 84804053 - Français
 - 84804063 - Deutsch
 - 84804241 - 日本語

Safety Decal Placement Guide: KFD & RUNNING FLOOR II® w/Electric Control Valve (Right Side Controls)



- Decal Kit #
- 84804007 - English
 - 84804044 - Español
 - 84804054 - Français
 - 84804064 - Deutsch
 - 84804242 - 日本語

1.3.2 Serial Plate

Please fill in the information from the serial plate attached to your drive system. Over time these plates become difficult to read or even locate and this information is crucial in determining the specific replacement parts for your system.

○
○

KEITH

MANUFACTURING CO

KEITH Manufacturing Co.
World Headquarters
401 NW Adler St.
Madras, OR 97741 USA

KEITH WALKING FLOOR Europe
Harselaarseweg 113
3771 MA Barneveld
The Netherlands

RUNNING FLOOR II®

MODEL: _____

SERIAL #: _____

DRIVE CORE #: _____

D.O.M.: _____

LOAD CAPACITY: _____

MAX PRESSURE: _____

MAX FLOW: _____

DRIVE WEIGHT: _____



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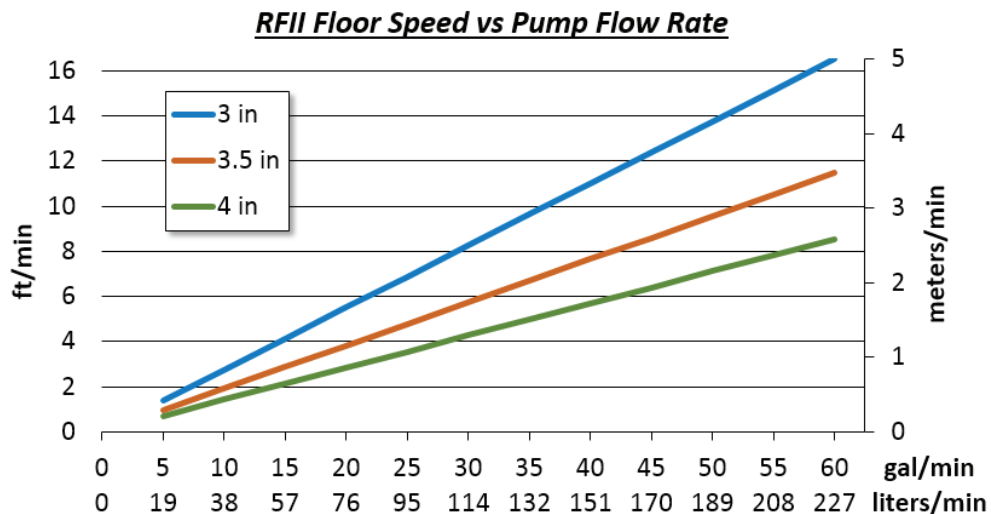
2.0 Specifications

2.1 Hydraulic Drive Unit

Drive Style:		KRFII-3	KRFII-3.5	KRFII-4
Cylinder Bore Diameter:		3.0 in [76 mm]	3.5 in [89 mm]	4 in [102 mm]
Cylinder Stroke:		6.0 - 10.0 in [152 - 254 mm]	6.0 - 10.0 in [152 - 254 mm]	6.0 in [152 mm]
Relief Valve Pressure Range:	Min: Max:	2,800 PSI [193 bar] 3,000 PSI [207 bar]	2,800 PSI [193 bar] 3,000 PSI [207 bar]	2,800 PSI [193 bar] 3,000 PSI [207 bar]
Load Capacity:		35 tons [31.75 tonnes]	50 tons [45.5 tonnes]	75 tons [68 tonnes]
Pump Flow Rate:		5 - 60 gal/min [19 - 227 liters/min]	5 - 60 gal/min [19 - 227 liters/min]	5 - 60 gal/min [19 - 227 liters/min]
Recommended Pump Flow Rate:		40 - 45 gal/min [151 - 170 liters/min]	40 - 45 gal/min [151 - 170 liters/min]	40 - 45 gal/min [151 - 170 liters/min]
* Floor Speed:		1 - 16.5 ft/min [0.3 - 5 meters/min]	1 - 11.5 ft/min [0.3 - 3.5 meters/min]	1 - 8.5 ft/min [0.3 - 2.6 meters/min]
Max Temperature:		140 °F [60 °C]	140 °F [60 °C]	140 °F [60 °C]
** Drive Weight:		850 - 1700 lbs [386 - 771 kg]	950 - 1825 lbs [431 - 828 kg]	1500 - 2100 lbs [680 - 953 kg]

* Load/Unload times vary with pump flow rate, length of trailer, material type or other environmental variables.

** Varies by drive configuration and application.



2.2 General Wet Kit Specifications

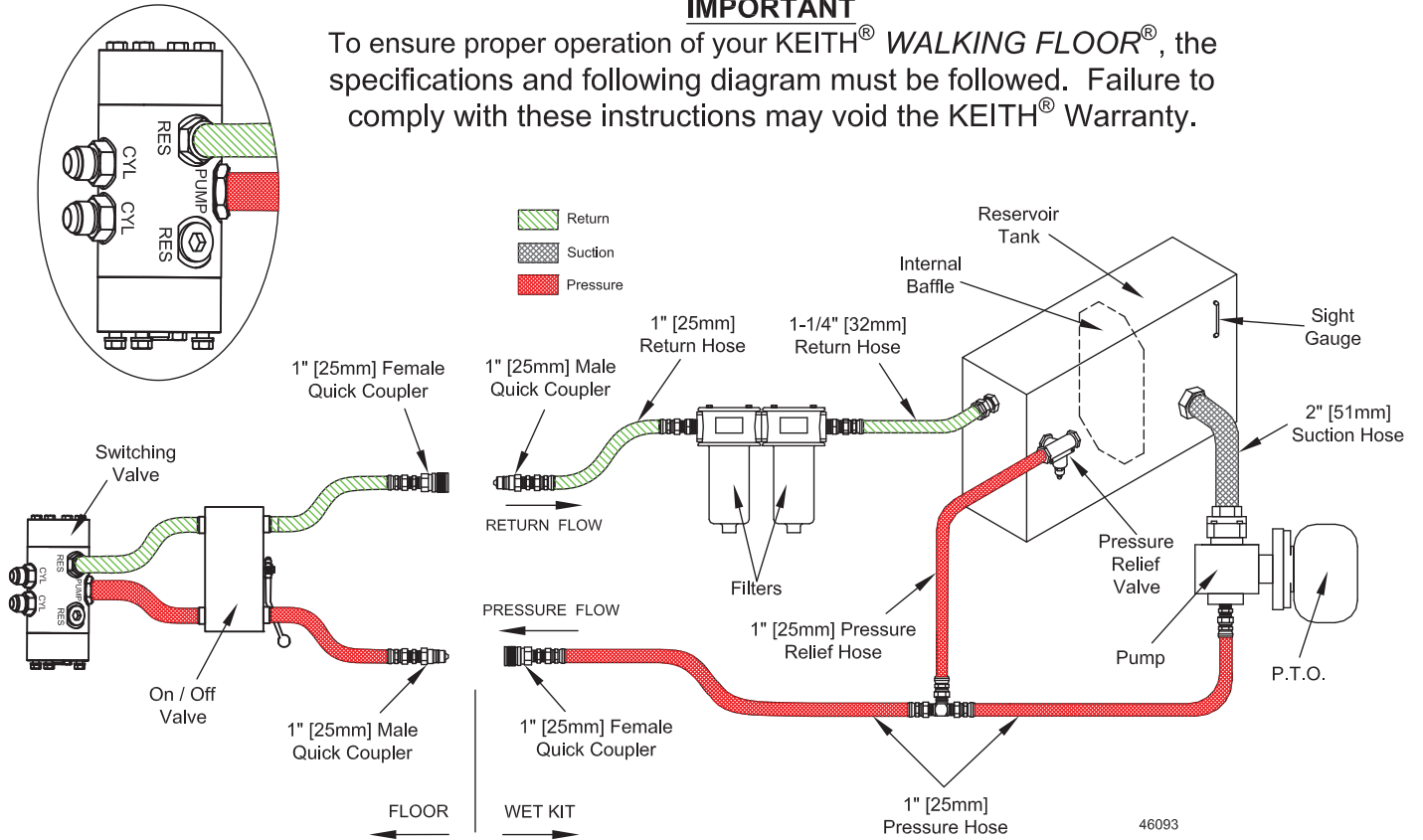
Oil:	ISO-L-HM 46 hydraulic oil (As per ISO 11158).
PTO and Pump: *	<p>The PTO and Pump must be capable of producing a minimum flow rate of 5 gal/min at 3000 PSI [19 liters/min at 207 bar] for proper operation. KEITH recommends a PTO and Pump capable of producing between 40 and 60 gal/min at less than 3000 PSI [151-227 liters/min at less than 207 bar] for optimal operation.</p> <p>NOTE: Pumps with built-in pressure relief valves are NOT recommended.</p> <p>See the Wet Kit RUNNING FLOOR II® document available on the KEITH website www.KeithWalkingFloor.com or contact a KEITH Manufacturing Co. representative for specific recommendations on selecting a wet kit.</p> <p>Do not exceed the maximum flow rate.</p> <p>Do not exceed the maximum pressure.</p>
Filter:	Filter should be double element, 10 to 25 µm, on the return line. (The filter element should be changed after the initial 6 hours of operation, then every 6 months thereafter. This may vary with the operating environment).
Hydraulic Reservoir:	Sized to desired flow rate. Should hold approximately 1 gallon of oil for every gallon per minute you plan to pump, i.e. 40 gal/min = 40 gallon reservoir. Minimum 40 gallons [151 liters]
Suction Line:	Suction hose from the reservoir tank to the pump should be no more than 5 ft [1.5 m] in length and a minimum of 2 inch [51 mm] inside diameter. KEITH recommends using SAE100R4 (This type of hose has a spiral wire to keep the hose from collapsing under suction).
Pressure Line:	Hose from wet kit to floor should be 1 in [-16] SAE-100R2.
Return Line:	Hose from floor to wet kit filter should be 1 in [-16] SAE-100R1. Hose from filter to reservoir tank should be 1¼ in [-20] SAE-100R1.
Pressure Relief Valve: *	High quality valve with the ability to relieve full pump flow at 3000 PSI [207 bar]. NOTE: Relief valve must be set above 2800 PSI [193 bar] and no higher than 3000 PSI [207 bar]

* If the information about your pump and pressure relief valve is not known, have a pressure/flow check done by a professional.

2.3 Floor to Wet Kit Connection Diagram

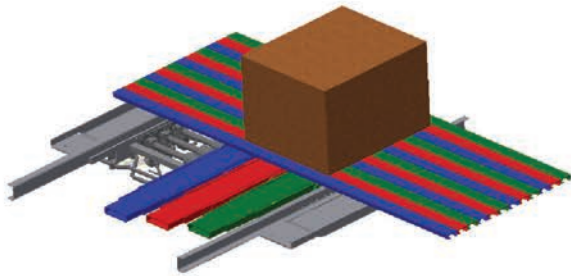
IMPORTANT

To ensure proper operation of your KEITH® WALKING FLOOR®, the specifications and following diagram must be followed. Failure to comply with these instructions may void the KEITH® Warranty.



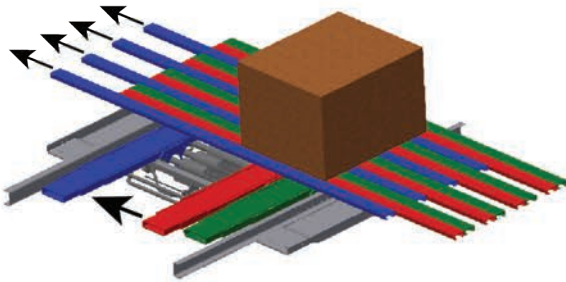
3.0 Operation

3.1 How It Works



Initial Stage

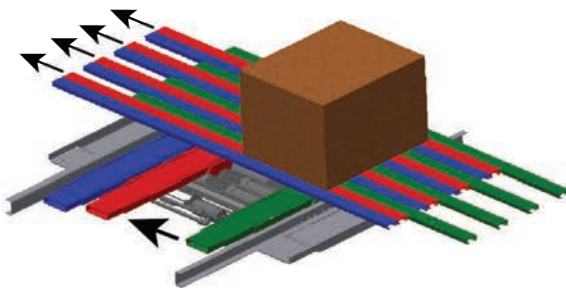
All slats are staged together toward the direction of material travel (discharge end).



Stage 1

The first group of slats (approximately every 3rd slat) moves under the load.

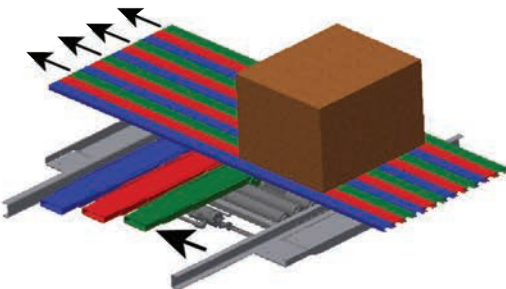
Load does not move.



Stage 2

The second group of slats moves under the load.

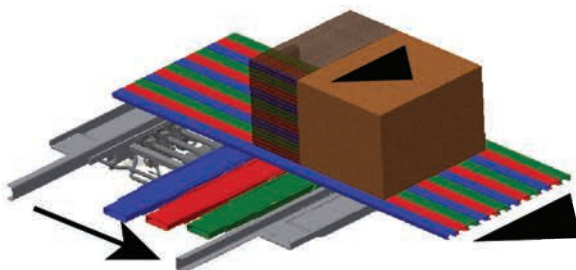
Load does not move.



Stage 3

The final group of slats moves under the load.

Load does not move.



Stage 4

All slats move together.

Load moves with the floor toward the discharge end.

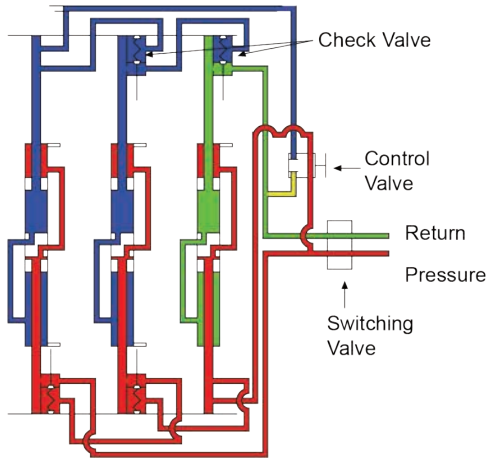
(Stages 1, 2 & 3 require more pressure than Stage 4.)

8175101

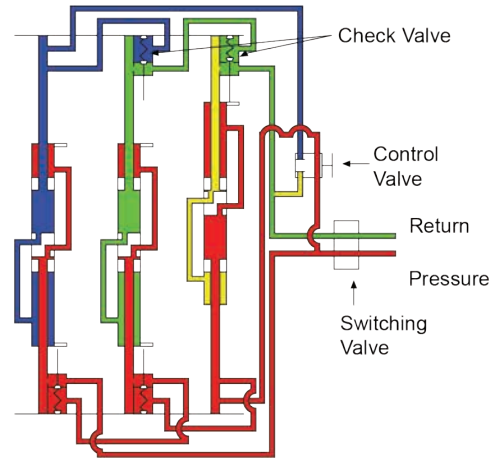
3.2 Oil Flow Diagrams

KEITH® RUNNING FLOOR II® OIL FLOW DIAGRAM (UNLOADING CYCLE)

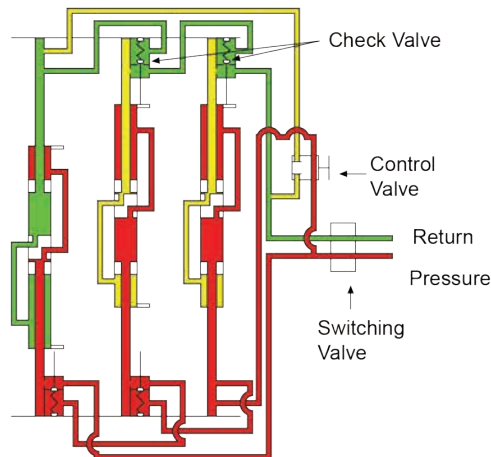
■ Pressure
 ■ Return
 ■ Blocked Return Oil
 ■ Standing Oil



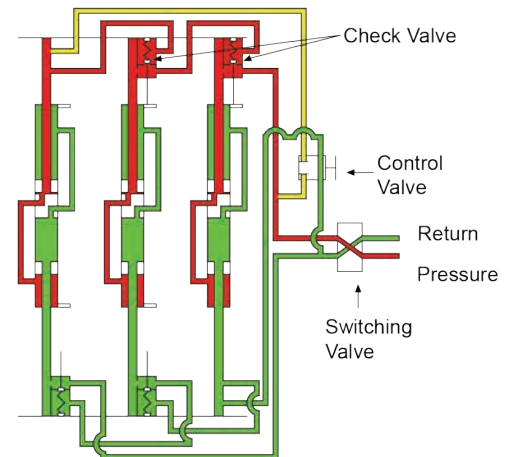
Phase 1
 Pressure in the rear of all cylinders as shown in ■.
■ Open to return.
■ Blocked by check valves.
Note: Phase 1 requires more pressure than phase 4.



Phase 2
 The #1 cylinder completes its full stroke, opening the check valve and allowing the oil in the #2 cylinder to escape as shown in ■. (■ Shows standing oil.)
 Pressure still in rear of all cylinders as shown in ■.
■ Blocked by check valve.
Note: Phase 2 requires more pressure than phase 1.

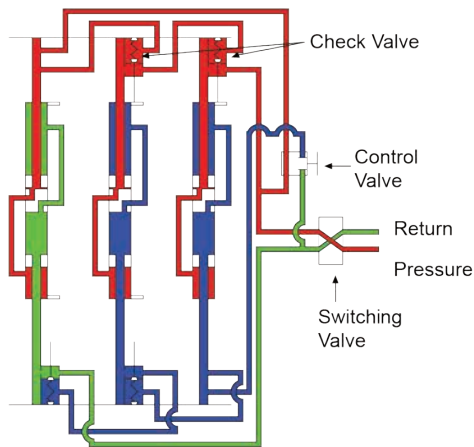


Phase 3
 The #2 cylinder completes its full stroke, opening the check valve and allowing the oil in the #3 cylinder to escape to return as shown in ■. (■ Shows standing oil.)
 Pressure still in rear of all cylinders as shown in ■.
Note: Phase 3 requires more pressure than phase 2.

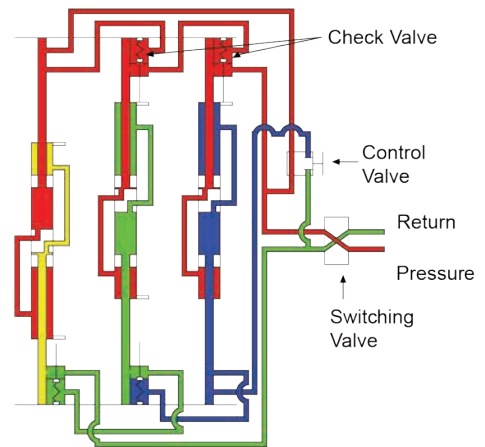


Phase 4
 When the #3 cylinder completes its stroke, the pressure and return are switched by the switching valve, transferring the pressure to the front of all cylinders as shown in ■. All cylinders are open to return as shown in ■. All cylinders move to rear of trailer together, moving the load.
Note: Phase 4 requires less pressure than phases 1, 2, or 3.

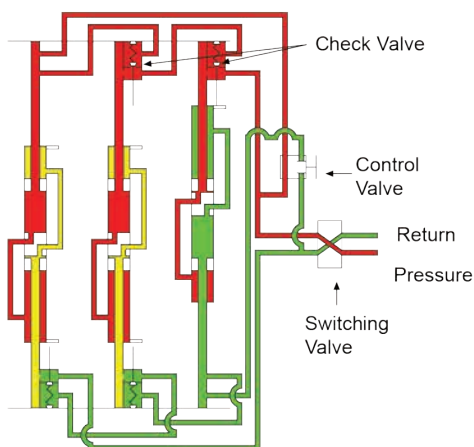
KEITH® RUNNING FLOOR II® OIL FLOW DIAGRAM (LOADING CYCLE)



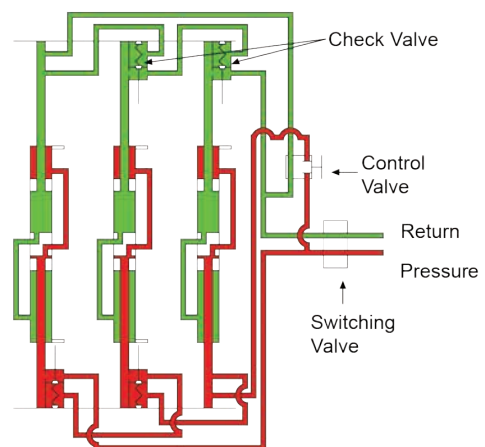
Phase 1
 Pressure in the front of all cylinders as shown in ■.
■ Open to return.
■ Blocked by check valves.
Note: Phase 1 requires more pressure than phase 4.



Phase 2
 The #3 cylinder completes its full stroke, opening the check valve and allowing the oil in the #2 cylinder to escape as shown in ■. (■ Shows standing oil.)
 Pressure still in front of all cylinders as shown in ■.
■ Blocked by check valve.
Note: Phase 2 requires more pressure than phase 1.



Phase 3
 The #2 cylinder completes its full stroke, opening the check valve and allowing the oil in the #1 cylinder to escape to return as shown in ■. (■ Shows standing oil.)
 Pressure still in rear of all cylinders as shown in ■.
Note: Phase 3 requires more pressure than phase 2.

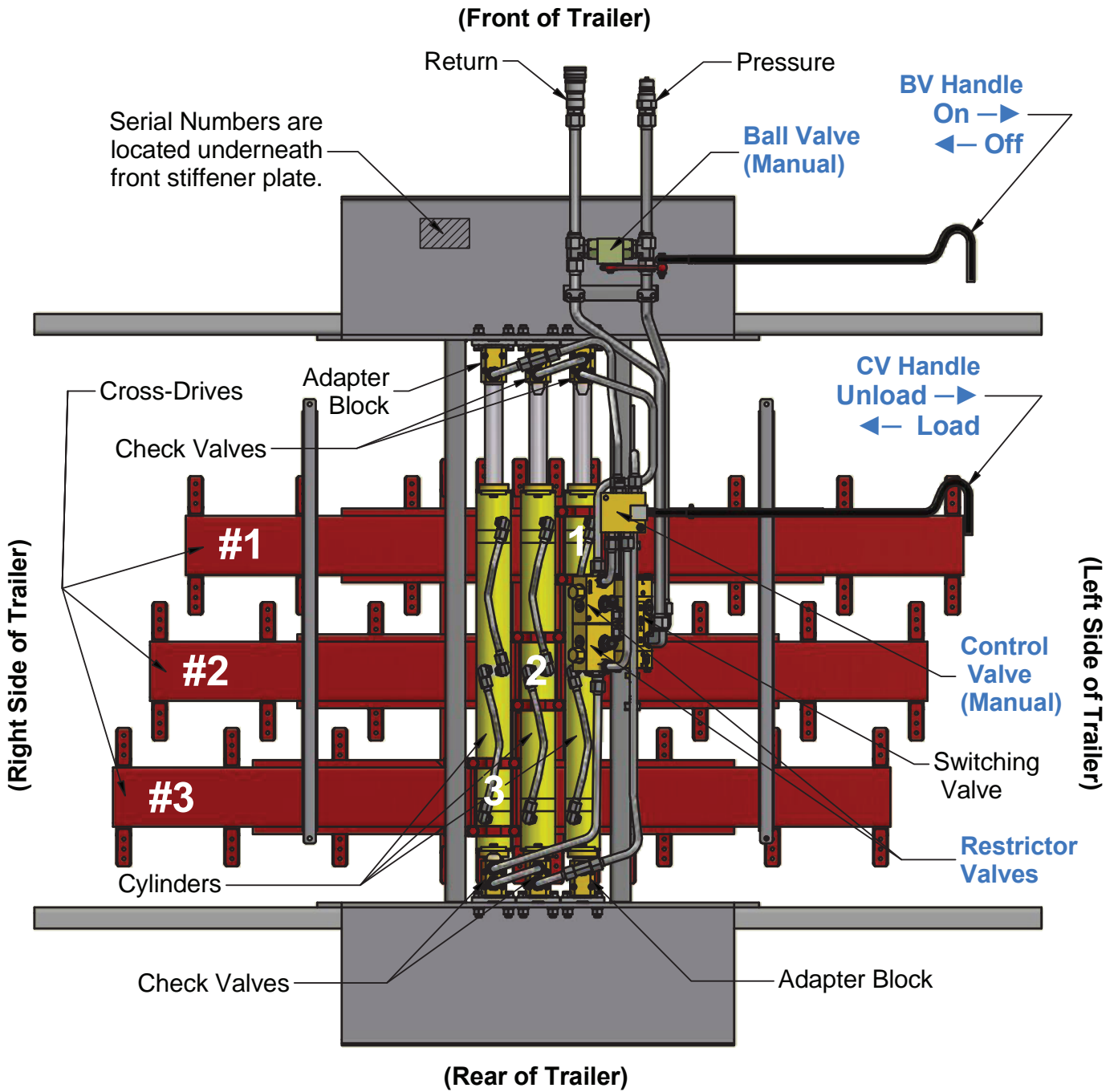


Phase 4
 When the #1 cylinder completes its stroke, the pressure and return are switched by the switching valve, transferring the pressure to the rear of all cylinders as shown in ■. All cylinders are open to return as shown in ■. All cylinders move to front of trailer together, moving the load.
Note: Phase 4 requires less pressure than phases 1, 2, or 3.

3.3 Component Location Guides

RUNNING FLOOR II® DX

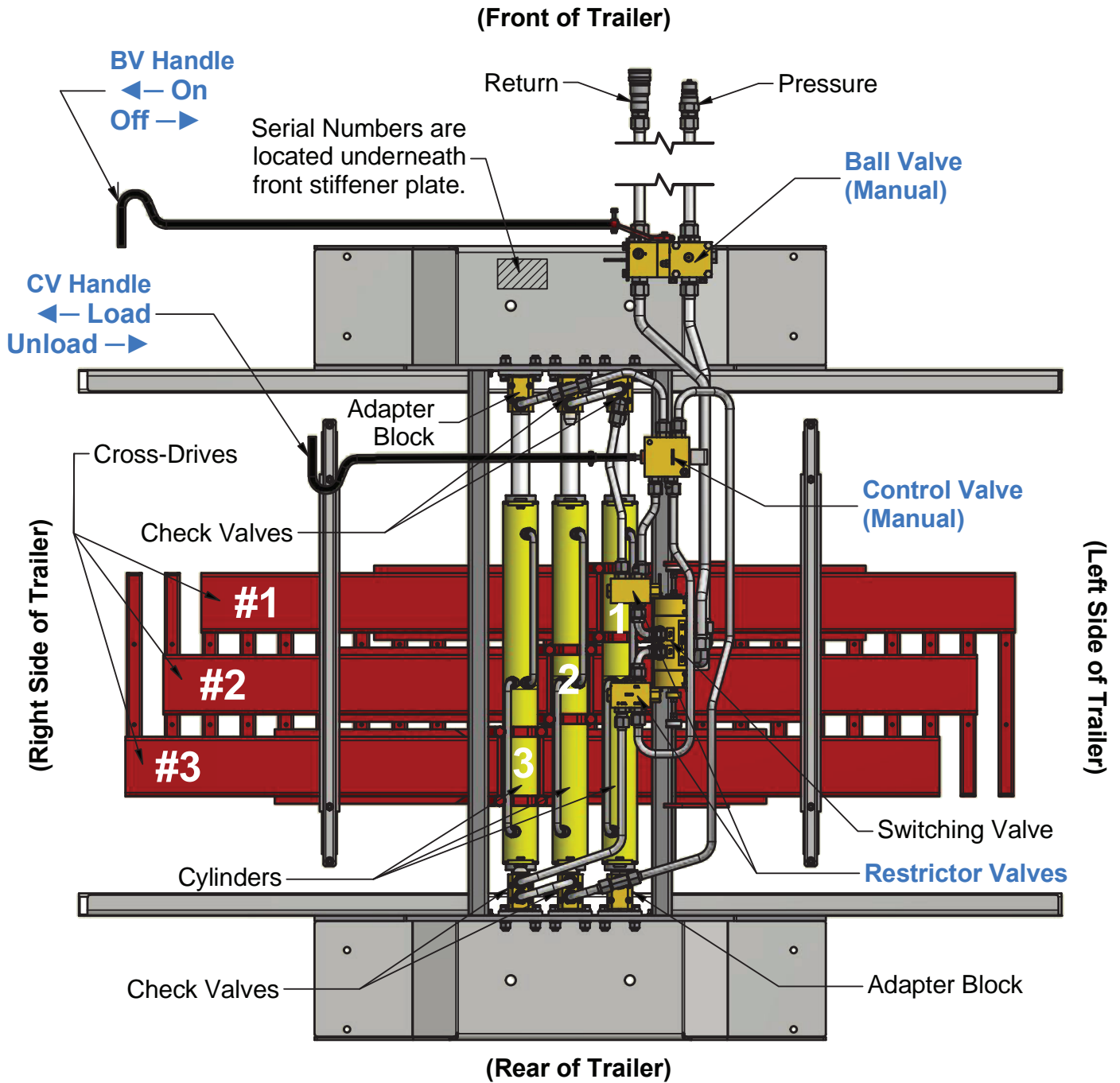
Manual Controls (Left Side),
Restrictor Valves (If Required)



View From Underneath Trailer

RUNNING FLOOR II® DXE

Manual Controls (Right Side),
Restrictor Valves (If Required)

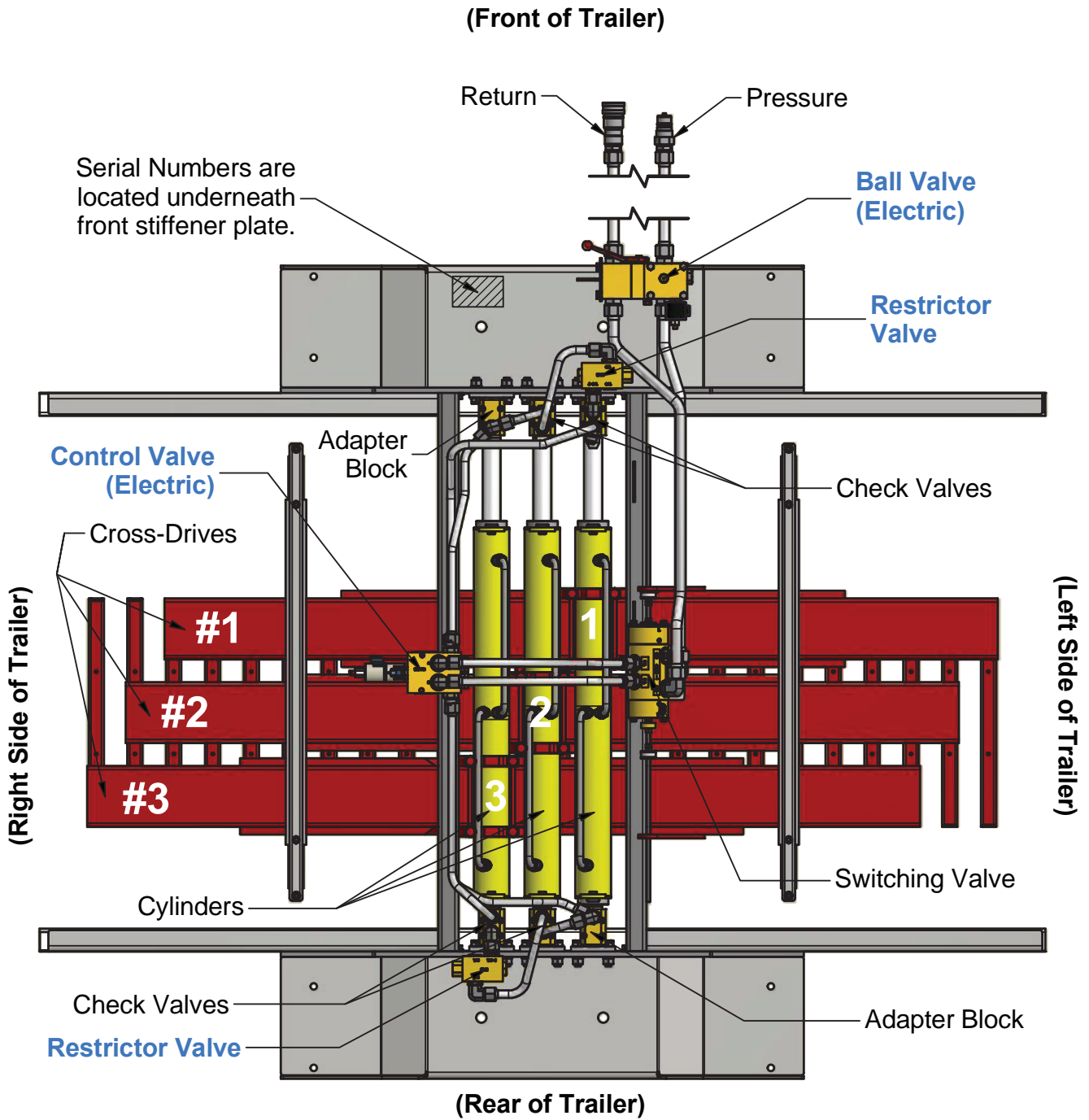


View From Underneath Trailer

97010-4

RUNNING FLOOR II® DXE

Electric Controls,
Restrictor Valves (If Required)



View From Underneath Trailer

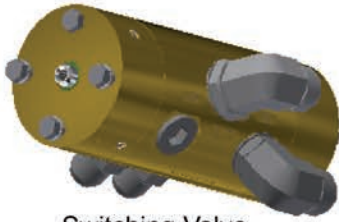
97010-6

3.4 Drive Unit Component Descriptions

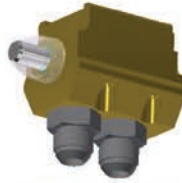
Ball Valve: (On/Off Valve)	A closed ball valve routes oil to the drive system (floor On). An open ball valve redirects it back to the tank (floor Off).
Switching Valve:	The switching valve changes the cylinder sequence from restaging of the floor slats to material movement and back. (Changes the direction of cylinder travel)
Actuator Rod:	The actuator rod is attached to both ends of the switching valve and allows the stroke to be adjusted between the actuators and is important for the efficient movement of the drive unit.
Control Valve:	The direction of material movement (Load/Unload) is controlled with an electric or manual control valve. It determines which check valves are active.
Check Valves:	The check valves determine the cylinder restaging sequence.
Cylinders:	The cylinders move the floor slats.
Cross-Drives:	Three cross-drives are connected to the cylinders, allowing each cylinder to move multiple floor slats.
Cross-Drive Supports:	The cross-drive supports help maintain the position of the cross-drives over the mainframe rails.
Drive Shoes:	The drive shoes connect the cross-drives to the floor slats.

3.5 Drive Component Identification

(See RUNNING FLOOR II® DX or DXE Parts Catalogs for additional details)



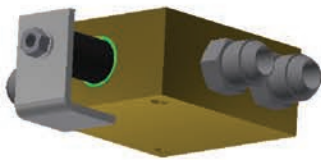
Switching Valve



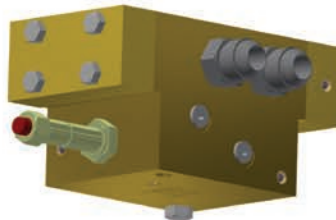
Check Valve



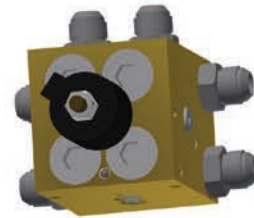
Adapter Block



Control Valve



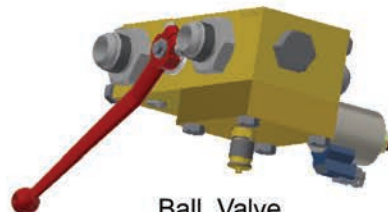
Control Valve
(Manual or Electric)



Control Valve
(Electric)



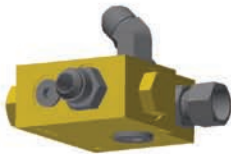
Ball Valve



Ball Valve
(Electric/Manual)



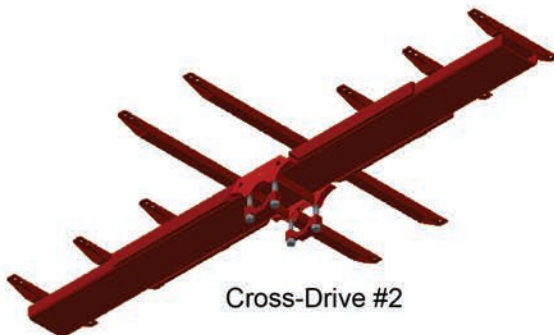
Restrictor Valve



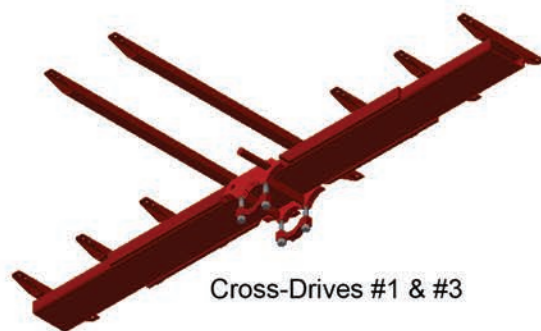
Restrictor Valve



Cylinder



Cross-Drive #2



Cross-Drives #1 & #3

(Shape, size and quantity of shoes on cross-drives may vary by configuration.)

3.6 Start-Up Operation

3.6.1 Before initial start-up:

- Read through this manual. If there is any confusion, contact a KEITH representative and resolve any concerns before operation of this system (see Contact Information section).
- Ensure that the hydraulic reservoir has the recommended amount of oil as well as the correct type of oil (see Specifications section or visit our website for additional details).
- Torque cylinder barrel clamp bolts, rod end bolts and floor bolts. Floor bolts coming loose can severely damage floor slats. (See Maintenance section)
- Familiarize yourself with the Preventative Maintenance section of this manual. Following the maintenance schedule will significantly improve the life of the system.

3.6.2 After initial 6 working hours OR first week of operation:

- Visually inspect the system for hydraulic leaks. If any leaks are found, retighten fittings.
- Change oil filters. This will ensure that any contamination that was flushed out in the start-up will not prematurely wear out your system.
- Torque cylinder barrel clamp bolts, rod end bolts and floor bolts. Loose floor bolts can severely damage floor slats. If any bolts were loose, bolt torques will need to be checked twice as often as recommended in the Maintenance section of this manual.

3.7 Pre-Trip Checklist

- ✓ Inspect hoses and quick connectors for damage and contamination. Clean all dirt and water from connectors before hooking up (if applicable).
- ✓ Inspect drive unit for leaking fittings or hoses, and visible damage.
- ✓ Open truck or trailer doors and inspect flooring for damage. Inspect flooring at the rear of the truck or trailer for loose or bent slats that may have popped up.
- ✓ Hook up hydraulic connectors, if applicable, and operate the floor. Inspect for leaks during operation. Test the remote control or engage and disengage ball valve fully to check for proper operation (On/Off). Check control valve for proper operation (Load/Unload).
- ✓ If problems are found, report them to the maintenance shop as soon as possible.
- ✓ Secure truck or trailer doors and proceed.

As the driver, you will see damage or operational problems before anyone else. Please report issues and concerns as soon as possible.



WARNING: Do not attempt to make adjustments or repairs without consulting with a trained service technician from your company or KEITH Manufacturing Co. (See the Technical Support section for contact information.)

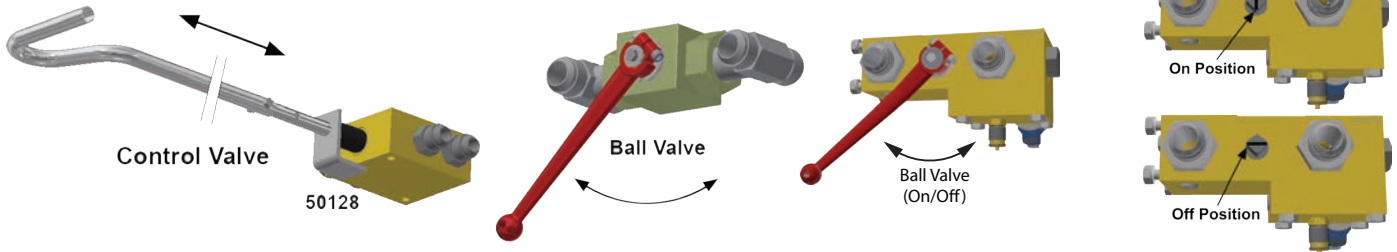
3.8 Manual Controls

1. Before operating set the parking brake on the truck and trailer and follow the Pre-Trip Check List.
2. Open truck or trailer doors fully and secure doors with provided chains or loop rings.



CAUTION: ALWAYS have doors fully open! Do not, under any circumstances, engage the Power Take Off (PTO) / Pump System or *WALKING FLOOR*® unloader with the doors of the truck or trailer closed. Catastrophic failure to the trailer, as well as serious injury or death may occur.

3. Inspect hydraulic hoses and quick connects for damage, then connect the floor to the truck wet kit (If applicable).
4. Engage the PTO, then bring the truck engine up to the RPM to achieve desired flow rate from the wet kit.
5. Place control valve (See figure below) in the required position for the desired direction of material movement (Unload/Load).



6. Pull the ball valve (See figure above) fully closed. It is located between the pressure and return lines. Your truck or trailer floor should now be operating. **NOTE:** This ball valve controls (On/Off) and is used as an emergency shut-off.



CAUTION: While unloading, NEVER leave truck and trailer unattended.



WARNING: Do not go under the truck or trailer body or enter the truck or trailer while the system is in operation, nor allow anyone to stand or move through the area where the load is being discharged. Burial, loss of limb or life may occur.

7. After loading/unloading has been completed, stop the floor with all slats in the forward position by pushing the ball valve to the fully open position.
8. Disengage PTO and return the truck engine to idle.
9. Close and secure the truck or trailer doors.
10. Disconnect and secure the hydraulic hoses (If applicable).

EMERGENCY STOP: In case of emergency the floor can be stopped in one of the following ways:

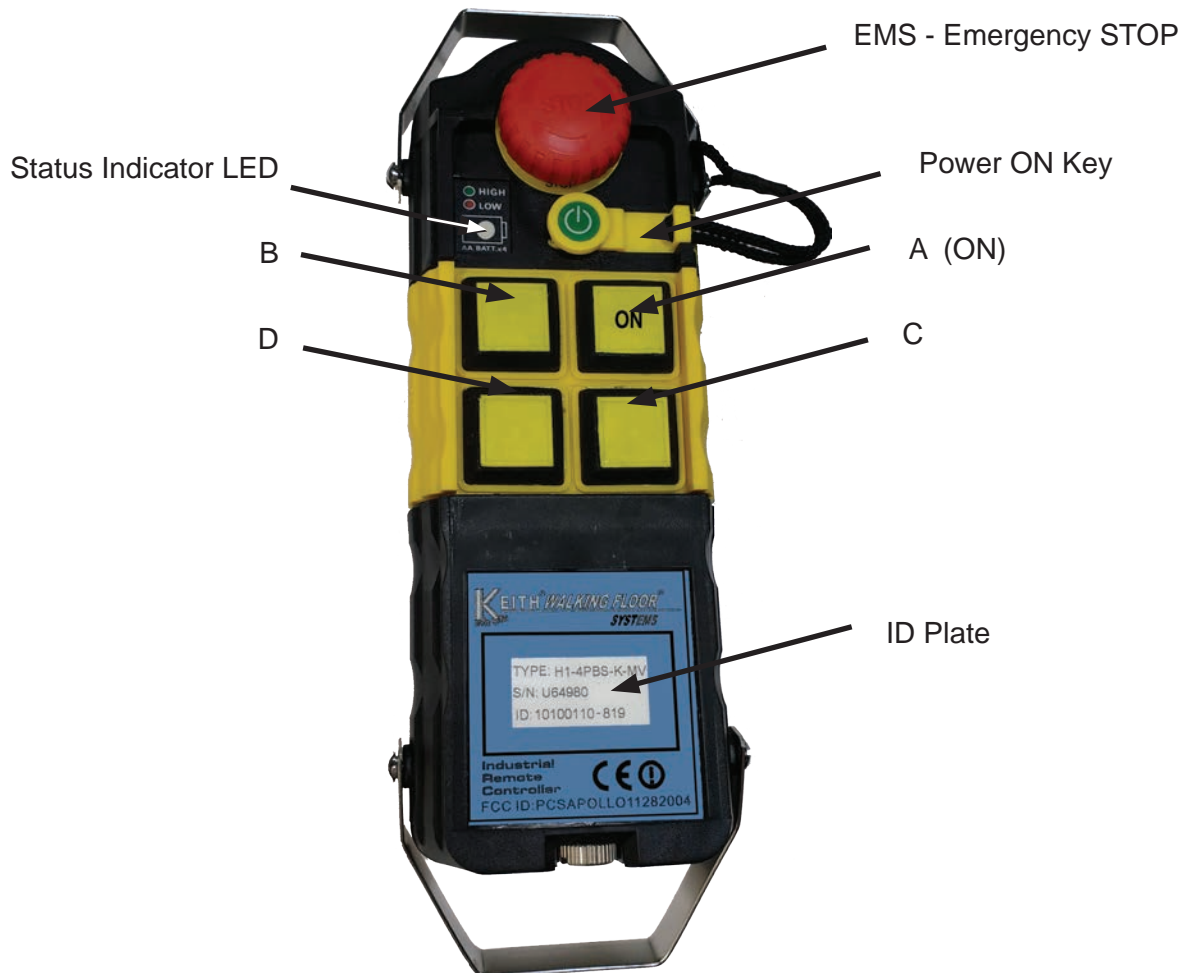
- Disengage the PTO / Pumping System.
- Push the ball valve fully open.



CAUTION: Observations may be made while system is operating for troubleshooting purposes, but NEVER touch any moving part or attempt to make any adjustments to the system with the Power Take Off (PTO) / Pumping System engaged or the *WALKING FLOOR*® unloader operating.

3.9 Electric On/Off, Manual Load/Unload - Wireless Remote Control

3.9.1 4 Channel Remote Control Transmitter



1. Before operating set the parking brake on the truck and trailer and follow the Pre-Trip Check List.
2. Open truck or trailer doors fully and secure doors with provided chains or loop rings.

⚠ CAUTION: ALWAYS have doors fully open! Do not, under any circumstances, engage the Power Take Off (PTO) / Pump System or *WALKING FLOOR*® unloader with the doors of the truck or trailer closed. Catastrophic failure to the trailer, as well as serious injury or death may occur.

3. Inspect hydraulic hoses and quick connects for damage, then connect the floor to the truck wet kit (If applicable).
4. Engage the PTO, then bring the truck engine up to the RPM to achieve desired flow rate from the wet kit.
5. Turn ON the remote receiver by twisting the EMS button clockwise to disengage the EMS (emergency stop) button. (The button will pop up.)

6. Insert the yellow power-on key into the transmitter. The status indicator LED will start blinking.

Transmitter Status Indicator:

Green: Battery power sufficient

Red: Battery power low. Requires 4x AA (1.5V) alkaline or nickel rechargeable batteries.

7. The remote transmitter is now ready for use.

ON - Maintained: Push and release the “ON” button on the remote transmitter. The floor will continue to move until the “ON” button is pressed again.

“B” - Momentary: Push and hold the “B” button on the remote transmitter. The floor will continue to move until the button is released.



CAUTION: While unloading, NEVER leave truck and trailer unattended.



WARNING: Do not go under the truck or trailer body or enter the truck or trailer while the system is in operation, nor allow anyone to stand or move through the area where the load is being discharged. Burial, loss of limb or life may occur.

8. After unloading has been completed, stop the floor with all slats in the forward position, turn off the remote control by pushing the EMS button and remove the power-on key from the transmitter.
9. Turn off the receiver by pushing the EMS button.
10. Disengage PTO and return the truck engine to idle.
11. Close and secure the truck or trailer doors.
12. Disconnect and secure the hydraulic hoses (If applicable).

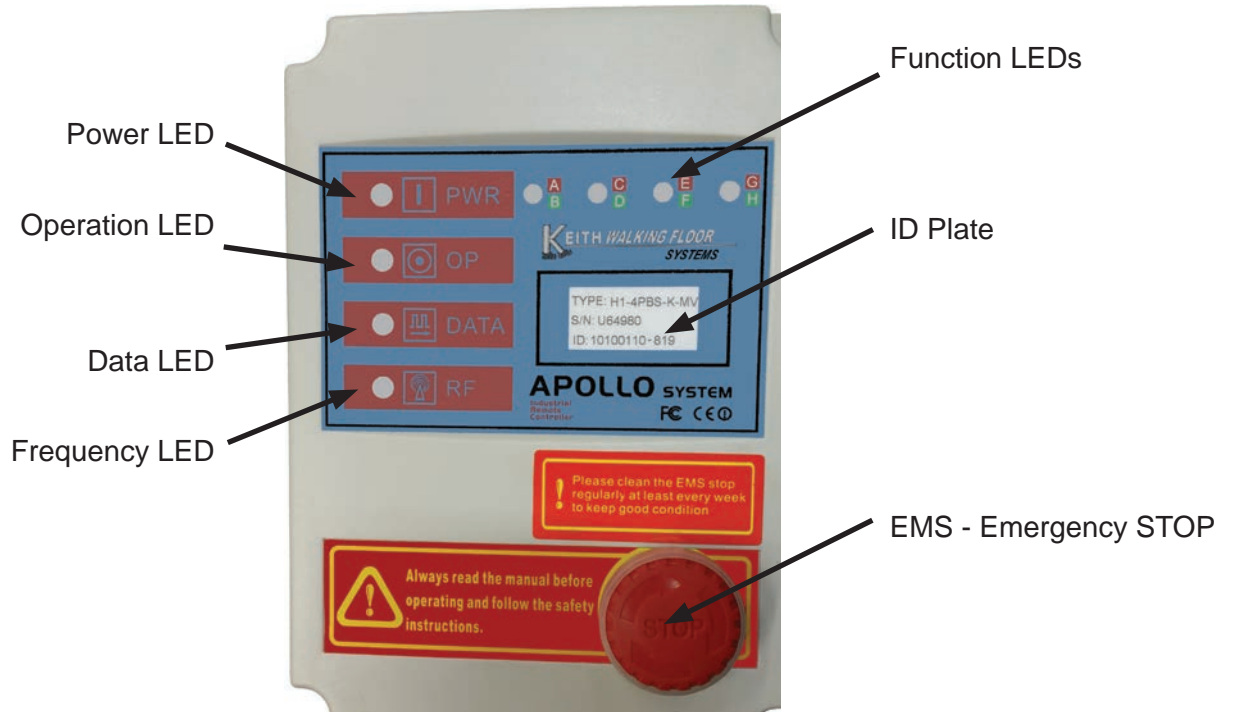
EMERGENCY STOP: In case of emergency the floor can be stopped in one of the following ways:

- Push the red EMS (emergency stop) button on the transmitter or receiver.
- Remove the yellow key from the transmitter.
- Disengage the PTO / Pumping System.
- Stop the electric power to the receiver.
- Manually push the On/Off valve off.

IMPORTANT NOTE: The KEITH wireless remote control has some built in features:

- The floor automatically stops moving if the continuous signal link, between receiver and transmitter, is not detected or out of range.
- The wireless remote control automatically turns off after 10 minutes if no buttons have been pressed. This will also cause the floor to stop moving.

3.9.2 4 Channel Remote Control Receiver

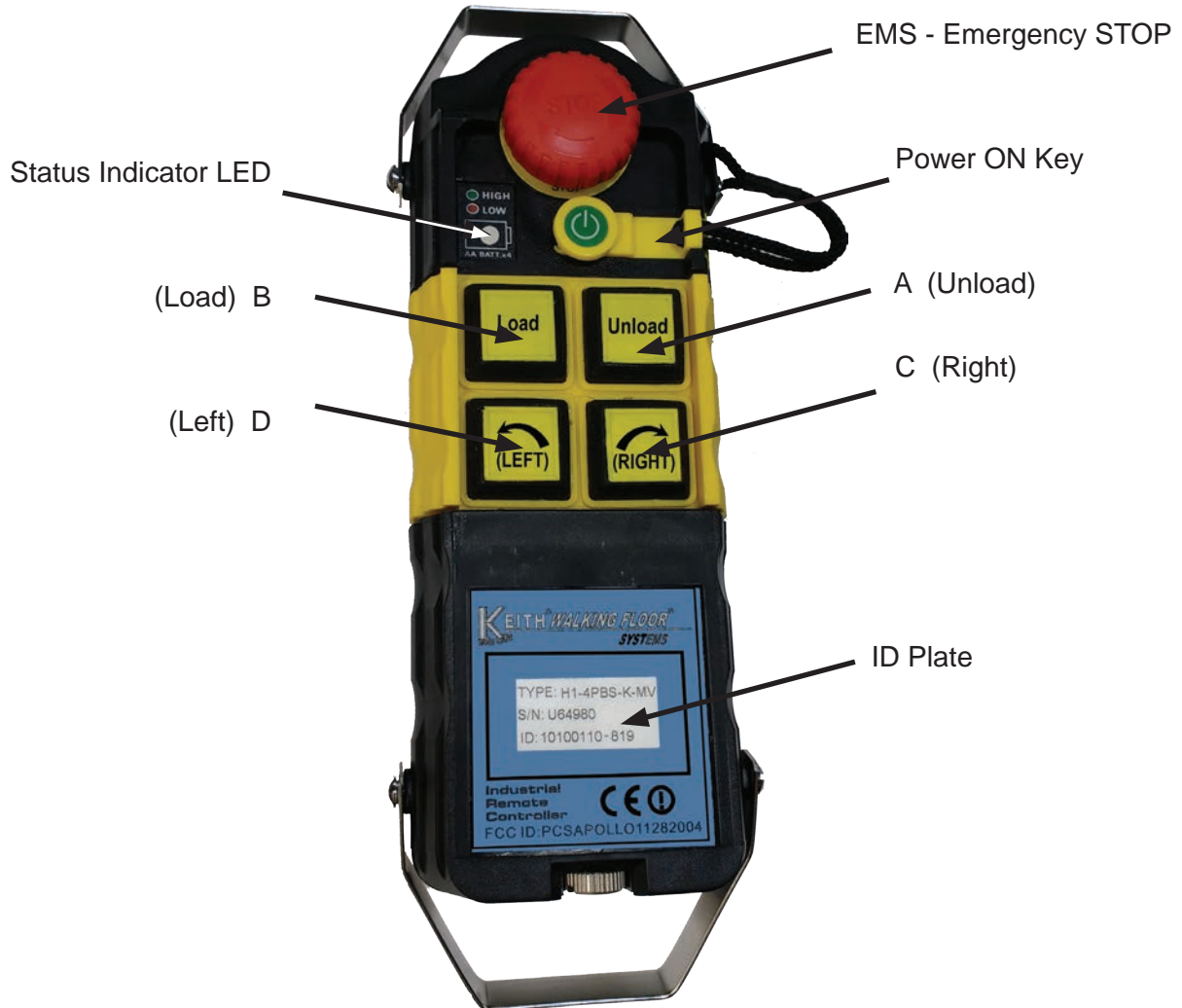


RECEIVER STATUS INDICATOR:

	<p>Power LED</p> <ul style="list-style-type: none"> GREEN = Receiver power is ON
	<p>Operation LED</p> <ul style="list-style-type: none"> GREEN = Both transmitter and receiver are ON OFF = Transmitter power is OFF
	<p>Data LED</p> <ul style="list-style-type: none"> OFF briefly = A button on the transmitter was pressed RED = Transmitter OFF (EMS engaged and/or Power Key not inserted)) RED blinking slowly = Normal continuous signal link RED blinking irregularly = ID codes don't match
	<p>Frequency LED</p> <ul style="list-style-type: none"> OFF = Normal state RED = Blinking irregularly when interference incurred
	<p>Function LEDs</p> <ul style="list-style-type: none"> ON = Solid RED light "A" until pressed again or until "B" is pressed B = RED "A" and GREEN "B" both light while button is pressed C = RED "C" light while button is pressed D = GREEN "D" light while button is pressed

3.10 Electric On/Off & Electric Load/Unload - Wireless Remote Control

3.10.1 4 Channel Remote Control Transmitter



1. Before operating set the parking brake on the truck and trailer and follow the Pre-Trip Check List.
2. Open truck or trailer doors fully and secure doors with provided chains or loop rings.

⚠ CAUTION: ALWAYS have doors fully open! Do not, under any circumstances, engage the Power Take Off (PTO) / Pump System or *WALKING FLOOR*® unloader with the doors of the truck or trailer closed. Catastrophic failure to the trailer, as well as serious injury or death may occur.

3. Inspect hydraulic hoses and quick connects for damage, then connect the floor to the truck wet kit (if applicable).
4. Engage the PTO, then bring the truck engine up to the RPM to achieve desired flow rate from the wet kit.
5. Turn ON the remote receiver by twisting the EMS button clockwise to disengage the EMS (emergency stop) button. (The button will pop up.)

6. Insert the yellow power-on key into the transmitter. The status indicator LED will start blinking.

Transmitter Status Indicator:

Green: Battery power sufficient

Red: Battery power low. Requires 4x AA (1.5V) alkaline or nickel rechargeable batteries.

7. The remote transmitter is now ready for use.

UNLOAD - Maintained: Push and release the “UNLOAD” button on the remote transmitter. The floor will continue to move until the “UNLOAD” button is pressed again.

LOAD - Momentary: Push and hold the “LOAD” button. The floor will continue to move until the button is released.

LEFT / RIGHT: These buttons can be used for other functions, for example retracting a KEITH® WALKING FLOOR® Sweep System. Pushing and holding one of these buttons activates the function until the button is released.



CAUTION: While unloading, NEVER leave truck and trailer unattended.



WARNING: Do not go under the truck or trailer body or enter the truck or trailer while the system is in operation, nor allow anyone to stand or move through the area where the load is being discharged. Burial, loss of limb or life may occur.

8. After loading/unloading has been completed, stop the floor with all slats in the forward position. Turn off the remote control by pushing the EMS button and remove the power-on key from the transmitter.
9. Turn off the receiver by pushing the EMS button.
10. Disengage PTO and return the truck engine to idle.
11. Close and secure the truck or trailer doors.
12. Disconnect and secure the hydraulic hoses (If applicable).

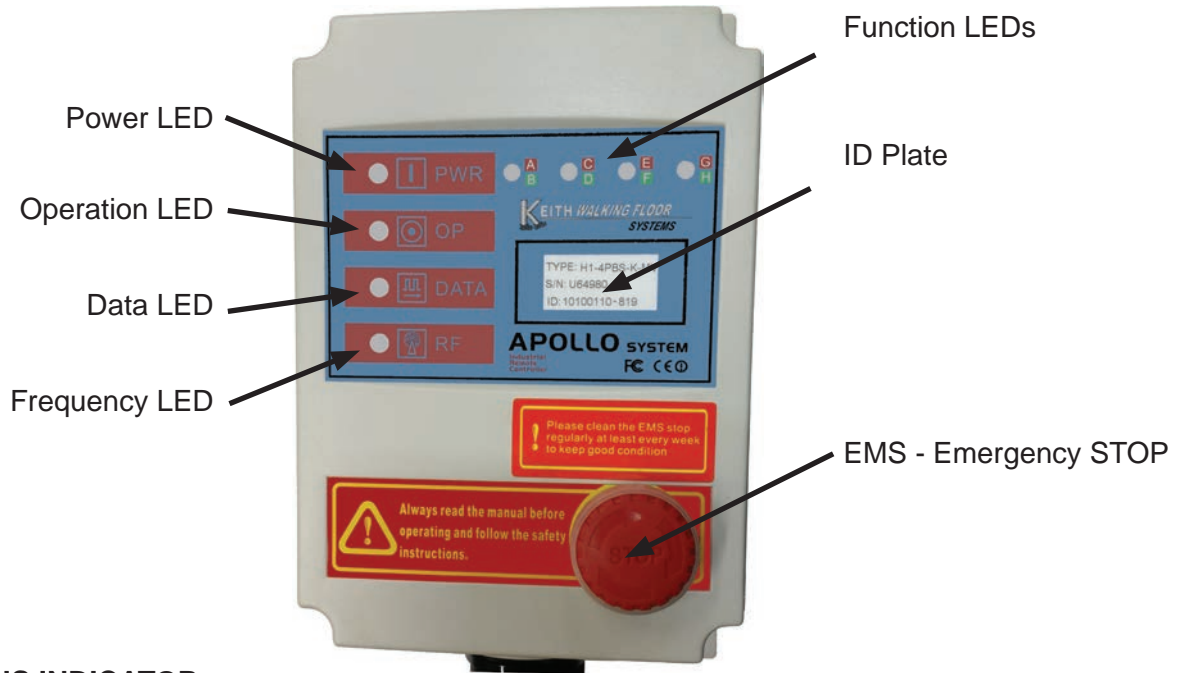
EMERGENCY STOP: In case of emergency the floor can be stopped in one of the following ways:

- Push the red EMS (emergency stop) button on the transmitter or receiver.
- Remove the yellow key from the transmitter.
- Disengage the PTO / Pumping System.
- Stop the electric power to the receiver.
- Manually push the On/Off valve off.

IMPORTANT NOTE: The KEITH wireless remote control has some built in features:

- The floor automatically stops moving if the continuous signal link, between receiver and transmitter, is not detected.
- The wireless remote control automatically turns off after 10 minutes if no buttons have been pressed. This will also cause the floor to stop moving.

3.10.2 4 Channel Remote Control Receiver



RECEIVER STATUS INDICATOR:

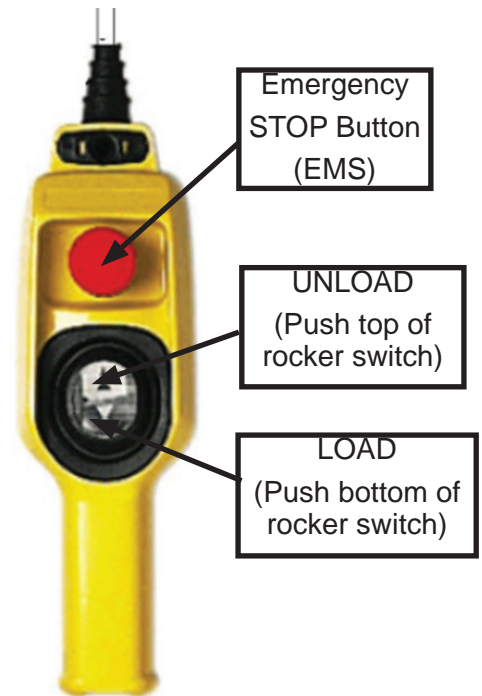
	<p>Power LED</p> <ul style="list-style-type: none"> GREEN = Receiver power is ON
	<p>Operation LED</p> <ul style="list-style-type: none"> GREEN = Both transmitter and receiver are ON OFF = Transmitter power is OFF
	<p>Data LED</p> <ul style="list-style-type: none"> OFF briefly = A button on the transmitter was pressed RED = Transmitter OFF (EMS engaged and/or Power Key not inserted)) RED blinking slowly = Normal continuous signal link RED blinking irregularly = ID codes don't match
	<p>Frequency LED</p> <ul style="list-style-type: none"> OFF = Normal state RED = Blinking irregularly when interference incurred
	<p>Function LEDs</p> <ul style="list-style-type: none"> UNLOAD = Solid RED light "A" until any button is pressed LOAD = RED "A" and GREEN "B" both light while button is pressed RIGHT = RED "C" light while button is pressed LEFT = GREEN "D" light while button is pressed

3.11 Electric On/Off & Electric Load/Unload - Cabled Remote Control

1. Before operating set the parking brake on the truck and trailer and follow the Pre-Trip Check List.
2. Open truck or trailer doors fully and secure doors with provided chains or loop rings.

⚠ CAUTION: ALWAYS have doors fully open! Do not, under any circumstances, engage the Power Take Off (PTO) / Pump System or *WALKING FLOOR*® unloader with the doors of the truck or trailer closed. Catastrophic failure to the trailer, as well as serious injury or death may occur.

3. Inspect hydraulic hoses and quick connects for damage, then connect the floor to the truck wet kit (If applicable).
4. Engage the PTO, then bring the truck engine up to the RPM to achieve desired flow rate from the wet kit.
5. Turn on the electric power to operate the remote control.
6. Turn ON the remote by twisting the EMS button clockwise to disengage the EMS (emergency stop) button. (The button will pop up.)
7. Now the remote control is ready for use.



UNLOAD - Maintained: Push and release the top of the rocker switch on the control. The floor will continue to move until any button is pushed.

LOAD - Momentary: Push and hold the bottom of the rocker switch on the control. The floor will move until the switch is released.

⚠ CAUTION: While unloading, NEVER leave truck and trailer unattended.

⚠ WARNING: Do not go under the truck or trailer body or enter the truck or trailer while the system is in operation, nor allow anyone to stand or move through the area where the load is being discharged. Burial, loss of limb or life may occur.

8. After loading/unloading has been completed, stop the floor with all slats in the forward position, turn off the remote control by pushing the EMS button.
9. Turn off the electric power to the remote control.
10. Disengage PTO and return the truck engine to idle.
11. Close and secure the truck or trailer doors.
12. Disconnect and secure the hydraulic hoses (If applicable).

EMERGENCY STOP: In case of emergency the floor can be stopped in one of the following ways:

- Push the red EMS (emergency stop) button on the remote
- Disengage the PTO / Pumping System.
- Manually push the On/Off valve off.

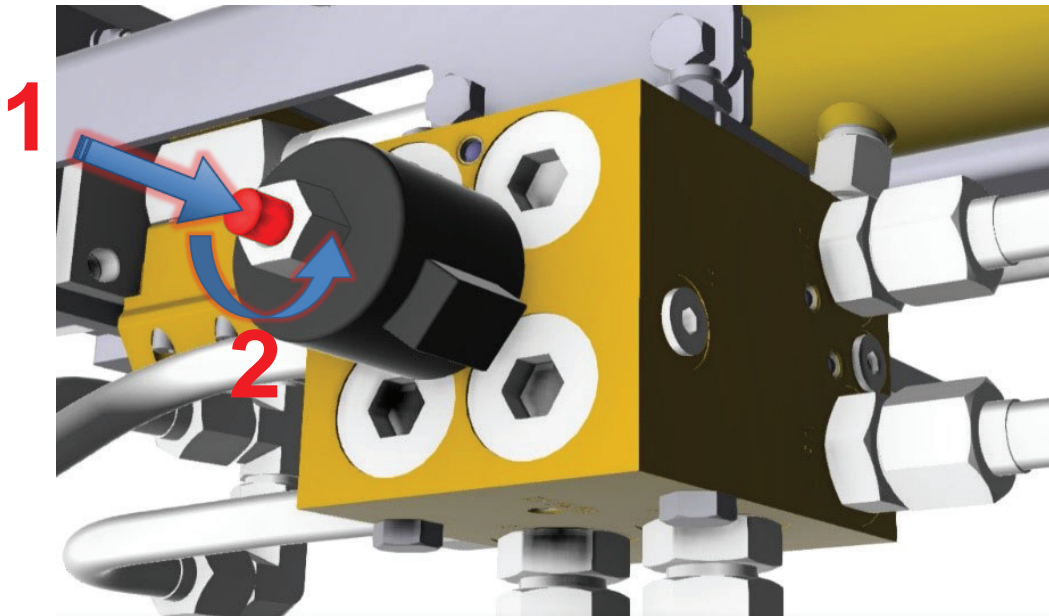
3.12 Manual Override of Electric Controls

In the case of a malfunction in the electrical system or loss of the remote control, the electric valves can still be operated by activating the manual override fitted for that purpose.

1. Before operating set the parking brake on the truck and trailer and follow the Pre-Trip Check List.
2. Open truck or trailer doors fully and secure doors with provided chains or loop rings.

⚠ CAUTION: ALWAYS have doors fully open! Do not, under any circumstances, engage the Power Take Off (PTO) / Pump System or *WALKING FLOOR*® unloader with the doors of the truck or trailer closed. Catastrophic failure to the trailer, as well as serious injury or death may occur.

3. Inspect hydraulic hoses and quick connects for damage, then connect the floor to the truck wet kit (If applicable).
4. Engage the PTO, then bring the truck engine up to the RPM to achieve desired flow rate from the wet kit.
5. Determine if the floor is in the load or unload mode. (The default position of the solenoid is in the unload position.) If the floor is not in the desired mode: (1) Push the red button in and (2) turn it half a turn. (3) Release the red button.



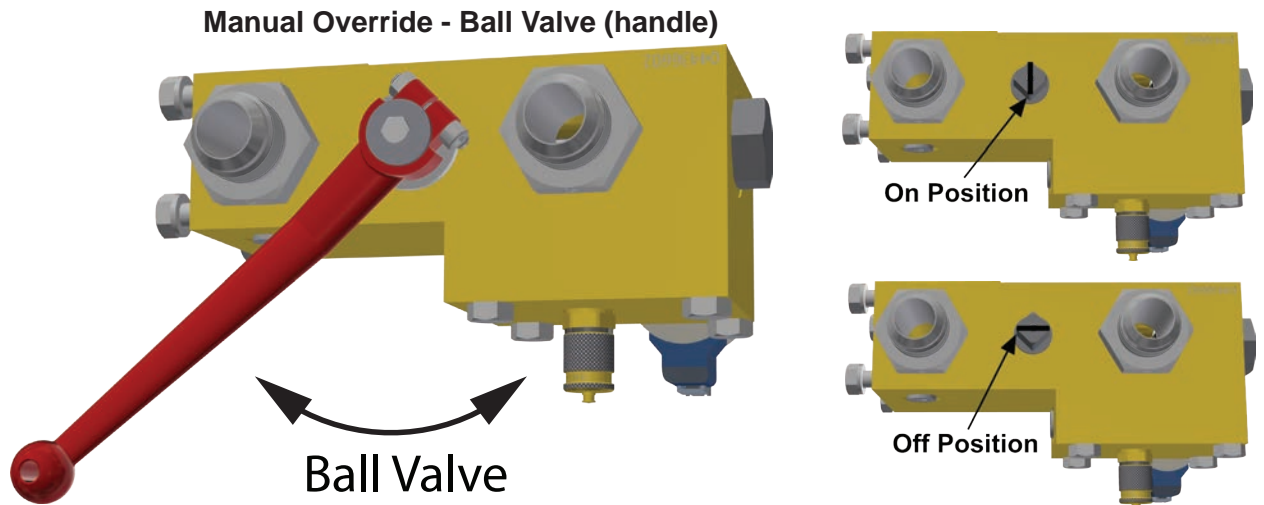
Manual Override - Control Valve (solenoid)

Red Button

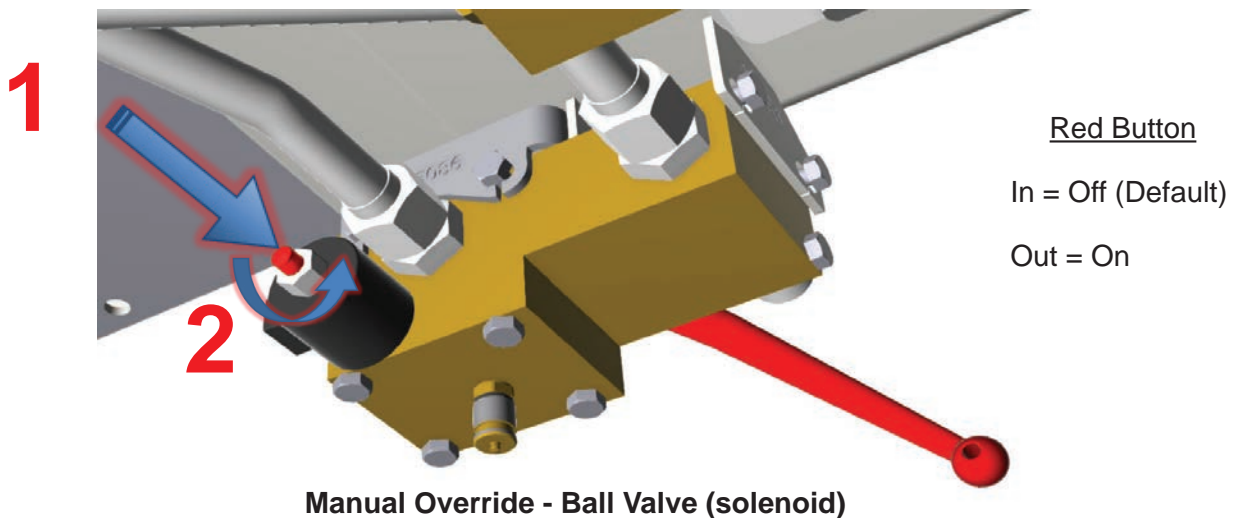
In = Unload (default)

Out = Load

6. There are two ways to put the Ball Valve (On/Off) in ON-position.
 A) Pull the red handle to the fully closed position. The floor will start to move! Take into account that the system can be left-hand (LH) or right-hand (RH) drive.




- B) (1) Push the red button in and (2) turn it half a turn. (3) Release the red button. The floor will start to move!



7. The floor can be stopped by returning the red button to the default position.
 8. After using the system, return the On/Off solenoid red button to the default position.

4.0 Maintenance

 **WARNING:** The extreme forces exerted by the floor, when in operation, can result in damage to equipment, as well as cause serious injury or death. Always follow lockout/tagout procedures. Switch off the Power Take Off (PTO) / Pumping System and manually push the ball valve to the fully open position during maintenance and/or service work.

4.1 Life Extending Practices

- Follow the Start-Up procedures in the Operation section of this manual.
- Use only clean oil, free from contamination.
- Use required torque on all bolts. The cylinder barrel clamp bolts, rod end bolts and floor bolts attaching the slats must be checked regularly. Loose floor bolts will cause serious damage to the floor slats. (See Bolt Torque Requirements section)
- Be aware of the pressures your system typically runs at (with and without loads). Increased pressure can indicate potential problems.

4.2 Preventative Maintenance

4.2.1 Monthly Service (25 operating hours)

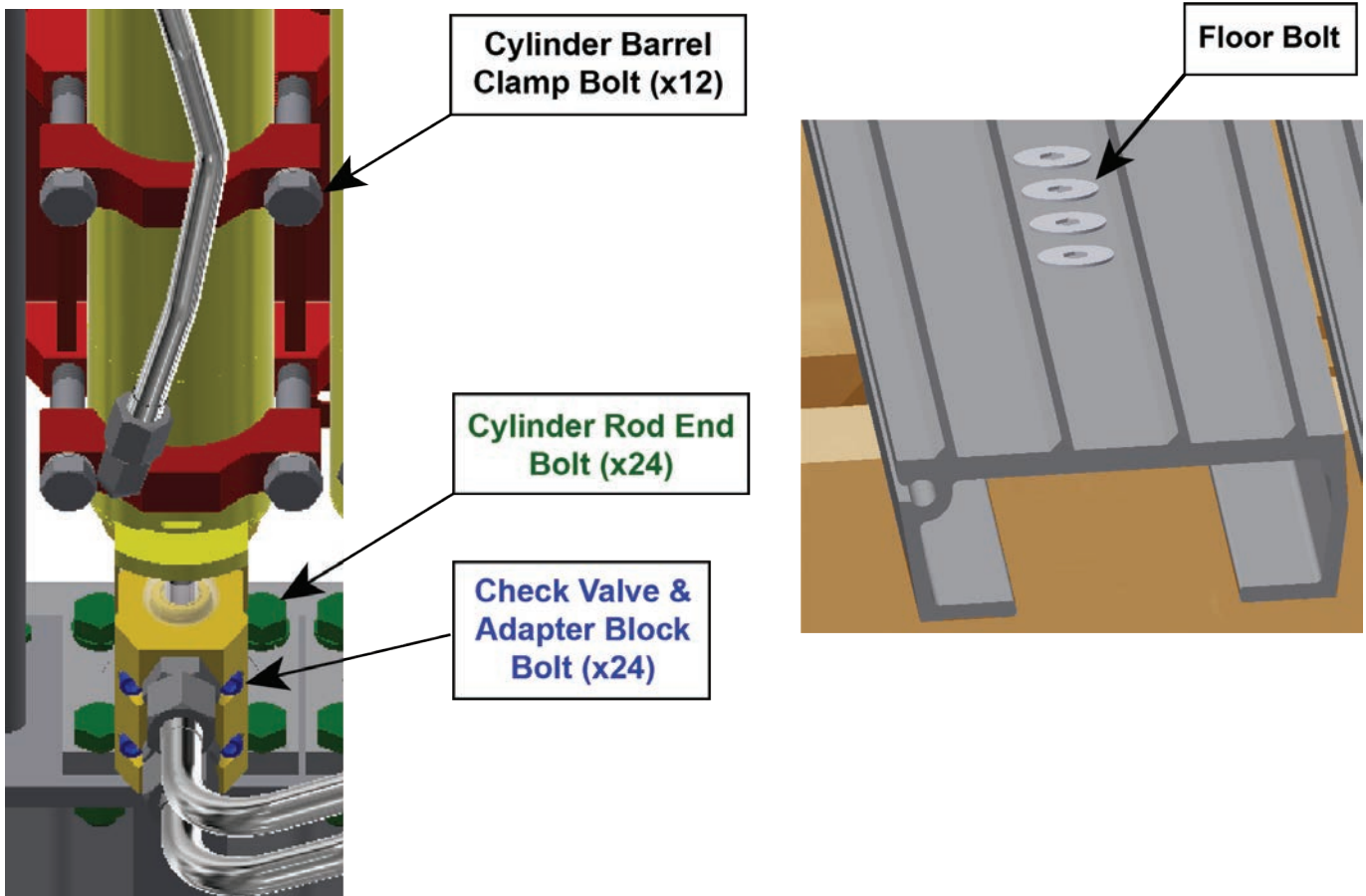
- Check the system for hydraulic leaks.
- Check the operating temperature. No single component should be warmer than 140 °F [60 °C] while the system is running.
- Check and torque all floor bolts attaching the floor slats. (See Bolt Torque Requirements section)
- Check and torque the cylinder barrel clamp bolts. (See Bolt Torque Requirements section)
- Pressure wash drive unit, sub-deck, and slats (recommended quarterly, minimum twice per year).

4.2.2 6-Month Service (150 operating hours)

- Change the oil filters.
- Cycle the system (unloaded) in both directions and observe to ensure proper operation.
- Inspect cross-drive support bearings, wearpads, tubes and shoes for wear. (See Cross-Drive Wear Component Diagram section). Replace as needed.
- Inspect floor wear bearings and seals for excessive wear (especially above the tires). (See Floorings Wear Component Diagrams section) Replace as needed.
- Inspect floor slats for wear. If discharge end of slats are worn down more than 75% of original material thickness rotate all floor slats, end for end, to increase life of the floor. If floor has already been rotated, contact KEITH for replacement slats.

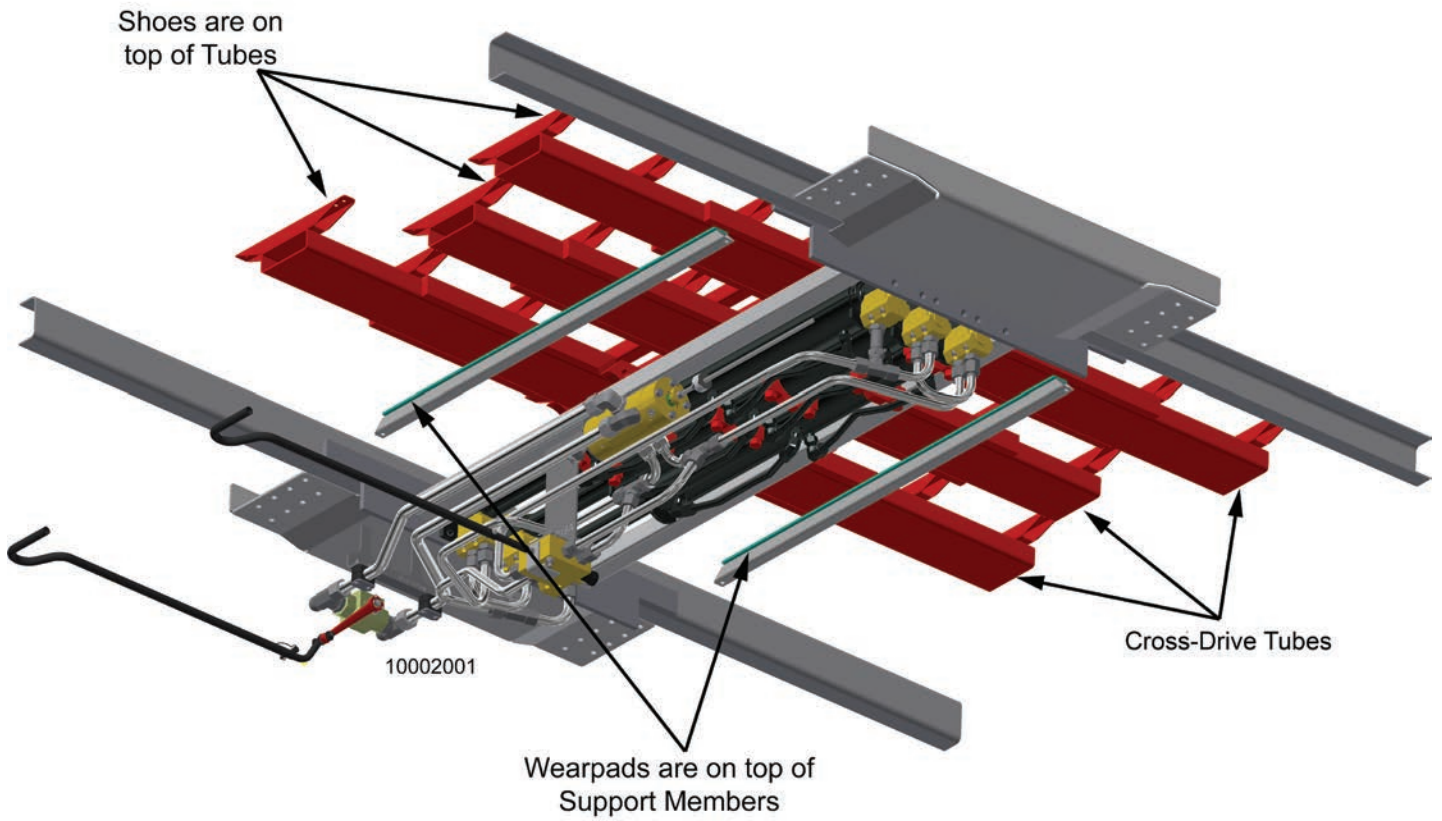
4.3 Bolt Torque Requirements

Description	Size	Quantity	Torque Values
3 in & 3.5 in Cylinder Barrel Clamp Bolts	5/8 in HCS [16 mm] HCS	4 per cylinder	135 ft-lbs [183 N·m]
4 in Cylinder Barrel Clamp Bolts (require Loctite 243 PN#24079)	3/4 in HCS [20 mm] HCS	4 per cylinder	125 ft-lbs [170 N·m]
Cylinder Rod End Bolts	5/8 in HCS [16 mm] HCS	8 per cylinder	135 ft-lbs [183 N·m]
Check Valve & Adapter Block Bolts	5/16 in HCS [8 mm] HCS	4 per valve or block	20 ft-lbs [27 N·m]
Floor Bolts (Flat Head)	5/16 in FHCS (82°) [8 mm] FHCS (90°)	Varies with Flooring	24 ft-lbs [32 N·m]
Floor Bolts (Flat Head)	3/8 in FHCS (82°) [10 mm] FHCS (90°)	Varies with Flooring	45 ft-lbs [61 N·m]
Flooring w/Nut Bar Shoes (Flat Head, Use thread lock)	M12x35mm FHCS (90°) Grade 10.9	Varies with Flooring	81 ft.-lbs [110 N·m]



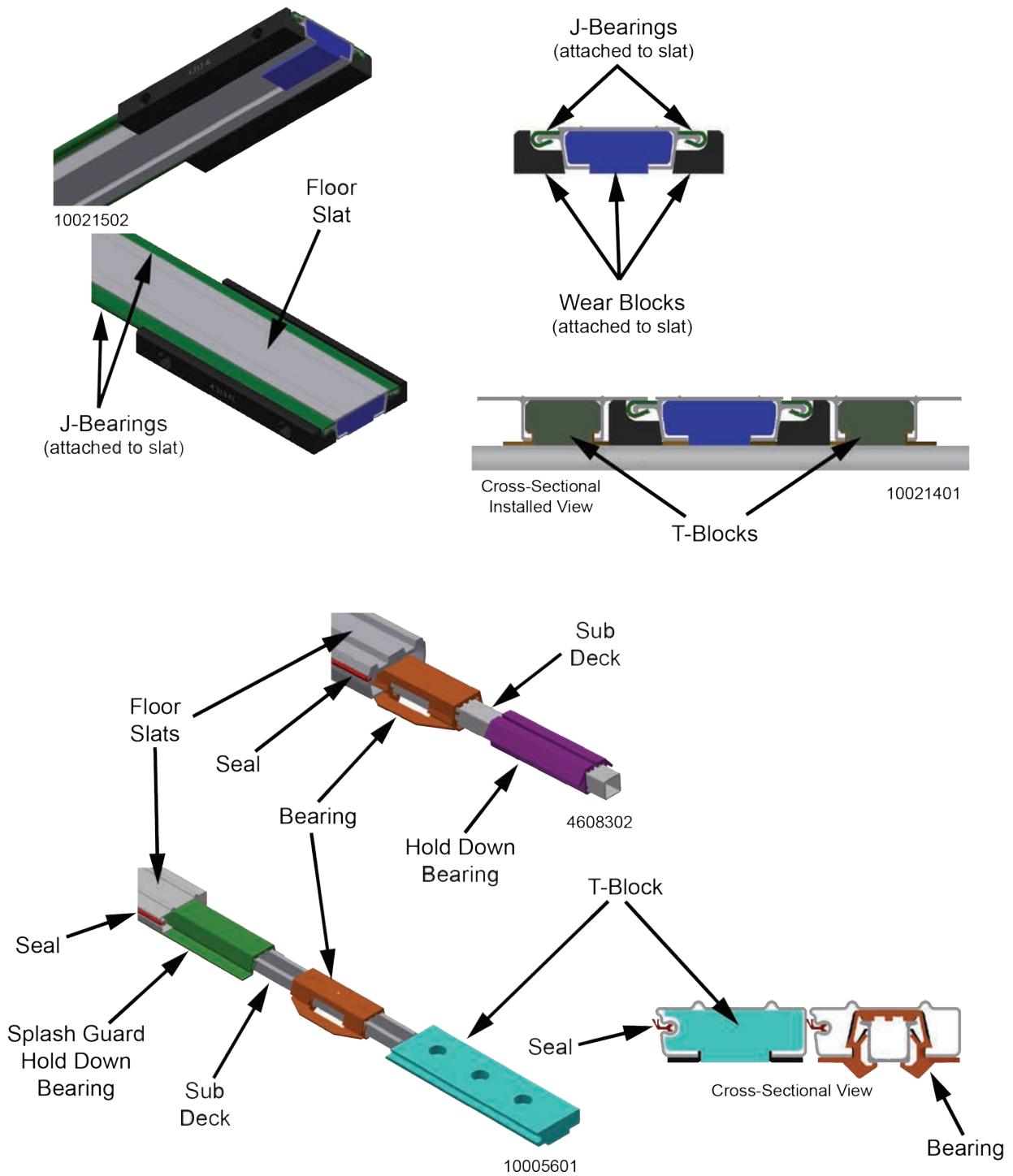
4.4 Cross-Drive Wear Component Diagram

Cross-Drive Assembly (shown in red)



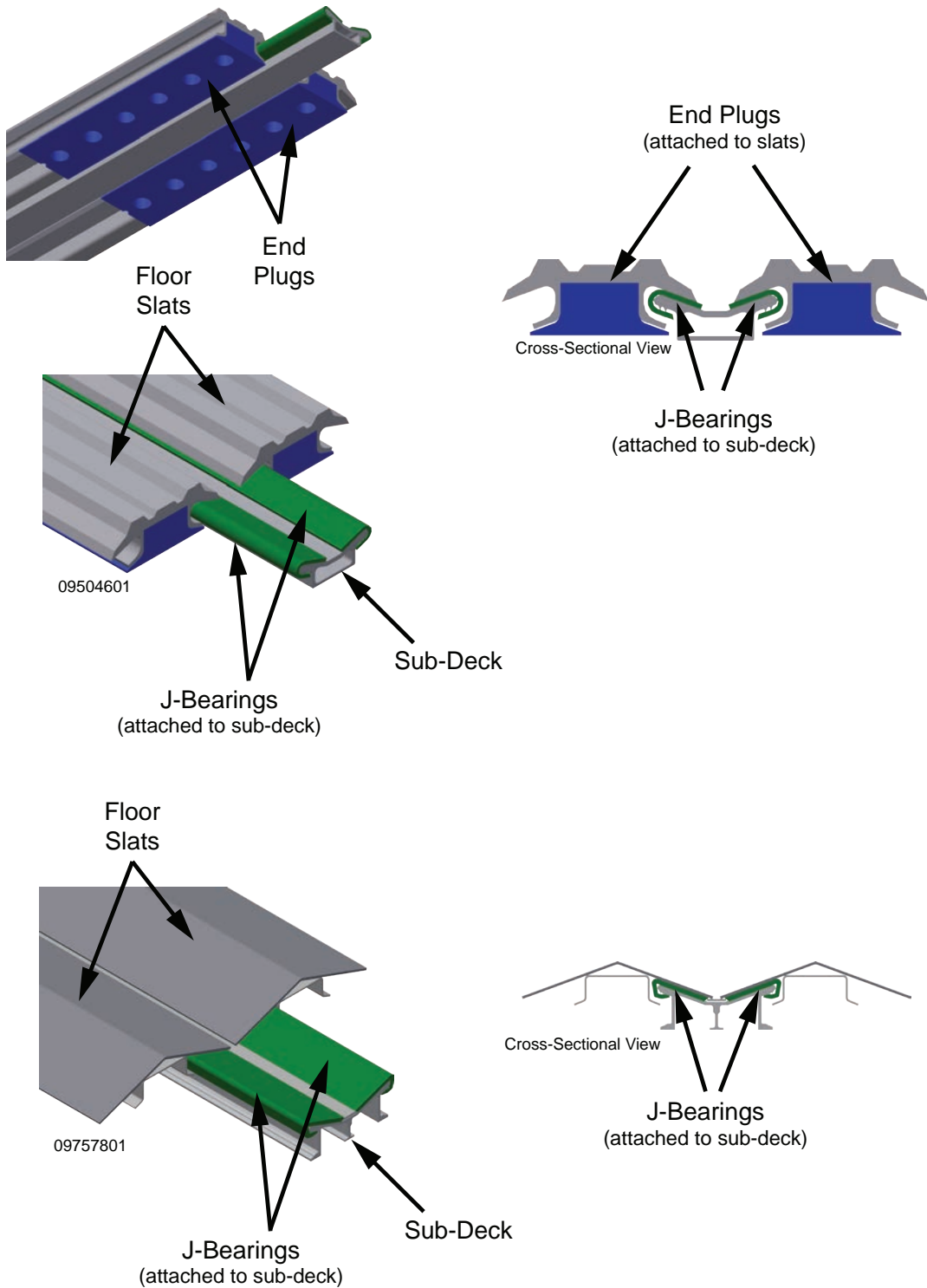
4.5 Flooring Wear Component Diagrams

Floor Wear Bearings & Seals *



* These images are for illustrative purposes with colors modified for clarity.
 Style and quantity of wear bearings & seals varies by design.
 Wear bearings & seals are non-metallic and run the length of the floor.
 (They are designed to be replaced to extend the life of the floor.)

Floor Wear Bearings & Seals *



* These images are for illustrative purposes with colors modified for clarity.
 Style and quantity of wear bearings & seals varies by design.
 Wear bearings & seals are non-metallic and run the length of the floor.
 (They are designed to be replaced to extend the life of the floor.)

5.0 Troubleshooting

5.1 Check List

Before contacting KEITH Manufacturing Co. for technical assistance please verify the following:

- ✓ Wet Kit: Does your entire wet kit system meet the requirements in the Specifications section in this manual? (Additional Wet Kit information is available on our website.)
- ✓ Plumbing: Is your entire system plumbed per the Floor to Wet Kit Connection Diagram in Specifications section in this manual?
- ✓ Connections: Inspect the quick connects on the hydraulic lines for damage or contamination. Are the pressure line and return line quick disconnects the correct size and style and are they securely attached between the wet kit and floor and are they connected Pressure to Pressure, Return to Return?
- ✓ Pump: Does it meet minimum requirements in Specifications Section?
- ✓ Relief Valve: Is it set per the requirements in the Specifications Section?
- ✓ Oil: Is the oil reservoir full?
- ✓ Power Take Off: Is the PTO engaged?
- ✓ Ball Valve: Is the ball valve, that engages the drive unit (On/Off), pulled fully closed?
- ✓ Control Valve: Is the control valve fully engaged in the appropriate position (Load/Unload)?
- ✓ Electrical Operation: Is there sufficient voltage? Is the Emergency Stop button disengaged?

5.2 Problem / Solution - Troubleshooting

See Troubleshooting on our website www.KeithWalkingFloor.com

5.3 Adjustments & Repairs

See Support and Troubleshooting on our website www.KeithWalkingFloor.com

5.4 Technical Support

Please have the following information readily available before contacting KEITH Manufacturing Co. for support:

- Model Number (Located on the Serial Plate of the drive unit)
- Serial Number (Located on the Serial Plate on the drive unit)
- Number of floor slats
- Vehicle make and unit installer

KEITH Manufacturing Co. Technical Support Contact Information:

Website: www.KeithWalkingFloor.com

Email: TechDept@KeithWalkingFloor.com

Toll-Free: (800) 547-6161

Telephone: (541) 475-3802

Fax: (541) 475-2169

6.0 Contact Information

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