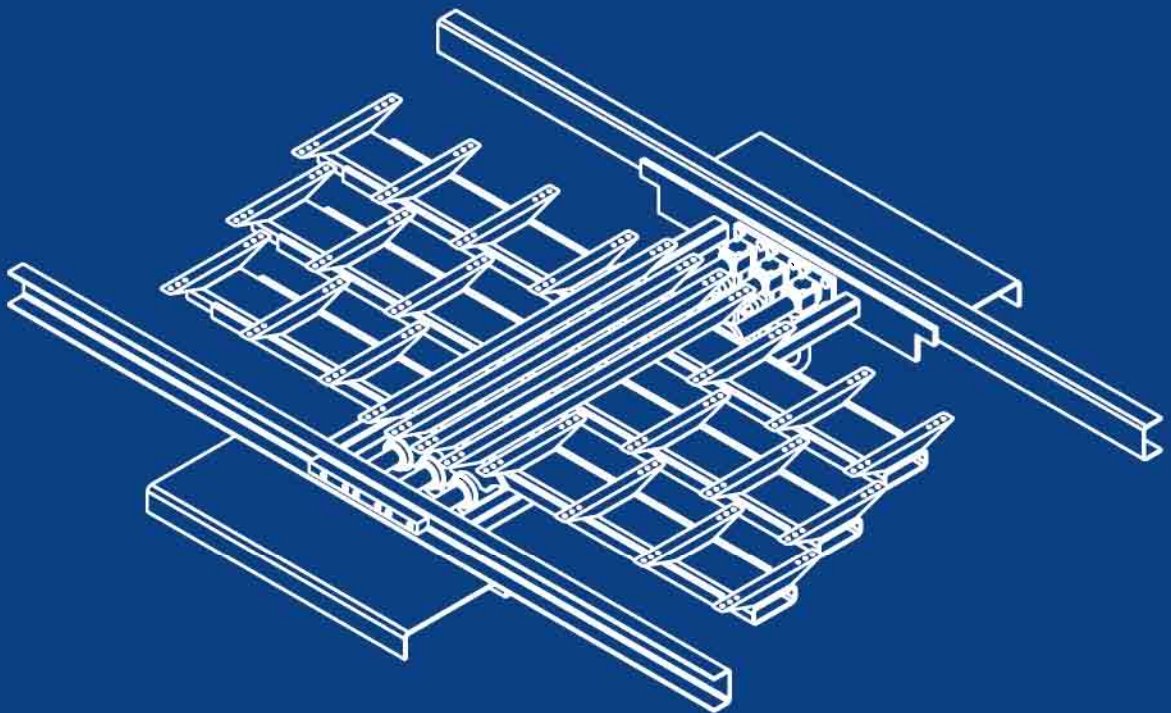


KEITH® ***WALKING FLOOR®***

MATERIAL HANDLING TECHNOLOGY



KEITH® RUNNING FLOOR II® **OWNER'S MANUAL**

- * High Quality Ball Seal
- * Advanced Switching Valve
- * Center Frame Design
- * Cross-Drive Bearing Support
- * Winged Bearings
- * Snapdown Bearings & Flooring
- * Interchangeable Cylinders
- * External Check Valves
- * No Hydraulic Hoses
- * Strong Drive Frame
- * Compact Design
- * Double Rod Wipers Protect Seals

CUT HERE

**PLEASE FILL OUT AND RETURN IMMEDIATELY TO
KEITH Mfg. Co.**

The warranty registration card must be completed and on file at KEITH Mfg. 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 be the date of manufacture if no other date can be determined.

Please make sure the serial number listed on the card coincides with the serial number plate on the drive unit.

Please print or type

KEITH® RUNNING FLOOR II® Warranty Registration Card

<u>Purchaser</u>	
<u>Address</u>	<u>Phone</u>
<u>City</u>	<u>State/Prov.</u>
<u>Country</u>	<u>Postal Code</u>
<u>Original Purchase Date of System</u>	
<u>Model No.</u>	
<u>Serial No. (see page 10 for location guide)</u>	
<u>Installed In: New Trailer</u>	<u>Used Trailer</u>
<u>Dealer Name & Location</u>	
<u>Type of Material Unloaded</u>	

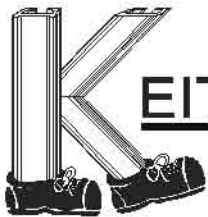
I have fully read the KEITH Mfg. Co. warranty information and I/we fully understand and agree to the terms of the warranty.

<u>Signature</u>	<u>Date</u>
------------------	-------------

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

**Please fax this warranty registration card to KEITH Mfg. Co. at
(541) 475-2169 or mail it to: Warranty Registration
KEITH Mfg. Co.
P.O. Box 1
Madras, OR 97741-0001**

CUT HERE



KEITH® MFG. CO.

Designing  Developing

The Maker of *WALKING FLOOR®* Conveying/Unloading Systems

401 N.W. Adler St.
P.O. Box 1
Madras, OR
97741-0001 • USA
541-475-3802
Fax 541-475-2169
800-547-6161

We at **KEITH MFG. CO.** are very happy that you have decided to equip your trailer with the **KEITH® RUNNING FLOOR II®** unloading system. We take great pride in the fact that we manufacture the most simple and trouble-free unloading system available. Installing the **KEITH® RUNNING FLOOR II®** unloader in your trailer provides you with the versatility to unload virtually any type of material.

The following pages contain information on the operation and maintenance of your **KEITH® RUNNING FLOOR II®** unloader. Also included is a trouble-shooting guide and detailed views of the various parts contained in the **RUNNING FLOOR II®** system.

In addition, we have provided information on the type of hydraulic wet kit that will be needed on your tractor. **Please be sure to use the recommended pumps, filters and pressure relief valves listed, or approved equivalent equipment. It is critical to adhere to the outlined hydraulic wet kit specifications. Failing to follow the guidelines concerning required operation pressures can lead to your system not operating properly.**

Please review the entire manual before operating the **KEITH® RUNNING FLOOR II®** unloading system. If you have any questions or concerns, do not hesitate to contact our factory on our toll-free line, 800-547-6161 and our trained personnel will be happy to assist you.

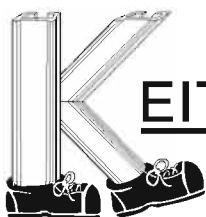
Thank you again for equipping your trailer with a **KEITH® RUNNING FLOOR II®** unloader.

Sincerely,



Keith Foster
President

KEITH®, *WALKING FLOOR®* & *RUNNING FLOOR II®* are registered worldwide trademarks of KEITH Mfg. Co.



KEITH® MFG. CO.



The Maker of *WALKING FLOOR*® Conveying/Unloading Systems

401 N.W. Adler St.
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Madras, OR
97741-0001 • USA
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800-547-6161

KEITH® *WALKING FLOOR*® Warranty Claim

The warranty registration card must be completed and on file at KEITH Mfg. 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.

Dealer		
Address		
City	State/Prov.	
Country	Postal Code	
Purchaser		
Address		
City	State/Prov.	
Country	Postal Code	
Original Purchase Date	Model No.	Serial No.
Defective Part		
Claim Description		

Instructions

Please complete all necessary data and return to KEITH Mfg. Co. with defective part(s).
(Dealer to retain copy.)

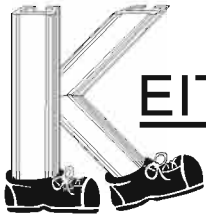
Dealer's Signature	Date
Purchaser's Signature	Date

If warranty claim form is not completely filled out, processing could be delayed and/or the claim denied.

For Factory Use Only

Date Part(s) Received		
Defective Part(s)		
Inspection Findings		
Disposition	Checked By	
Order Request No.	Date	Credit Request No.
Date	Approved By	

Final judgment and disposition of all claims will be made by KEITH Mfg. Co.



KEITH® MFG. CO.

Designing  Developing

The Maker of *WALKING FLOOR*® Conveying/Unloading Systems

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97741-0001 • USA
541-475-3802
Fax 541-475-2169
800-547-6161

WARRANTY

KEITH Mfg. Co. hereby warrants, only to the first owner of a new **KEITH® WALKING FLOOR®** unloader 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 to the first registered owner. This warranty does not cover normal wear and tear and maintenance and is not to be construed as a service contract.

Owners Obligation: To qualify for warranty coverage, a warranty card must be completed and on file at KEITH Mfg. Co. and the equipment must be subject to normal use and service only.

Definition of Normal Use and Service: Normal use and service 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, non-corrosive materials, with weights not in excess of factory rated capacity.

Sole and Exclusive Remedy: If the product covered hereby fails to conform to the above stated warranty, **KEITH Mfg. 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 Mfg. Co.** This is the owner's sole and exclusive remedy for all contract claims, and all tort claims including those based on the strict liability in tort and negligence. Any defective part(s) must be shipped freight prepaid to the facility authorized by **KEITH Mfg. Co.**

Except As Expressly Set Forth Above, KEITH Mfg. Co. Makes No Warranties: Express, implied or statutory, specifically, no warranties of fitness for a particular purpose or warranties of merchantability are made. Further, **KEITH Mfg. Co.** will not be liable for incidental damages or consequential damages such as, but not limited to, loss of use of the product, damage to the product, towing expenses, attorney's fees and the liability you may have in respect to any other reason.

Tort Disclaimer: **KEITH Mfg. Co.** shall not have any liability in tort with respect to the 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.

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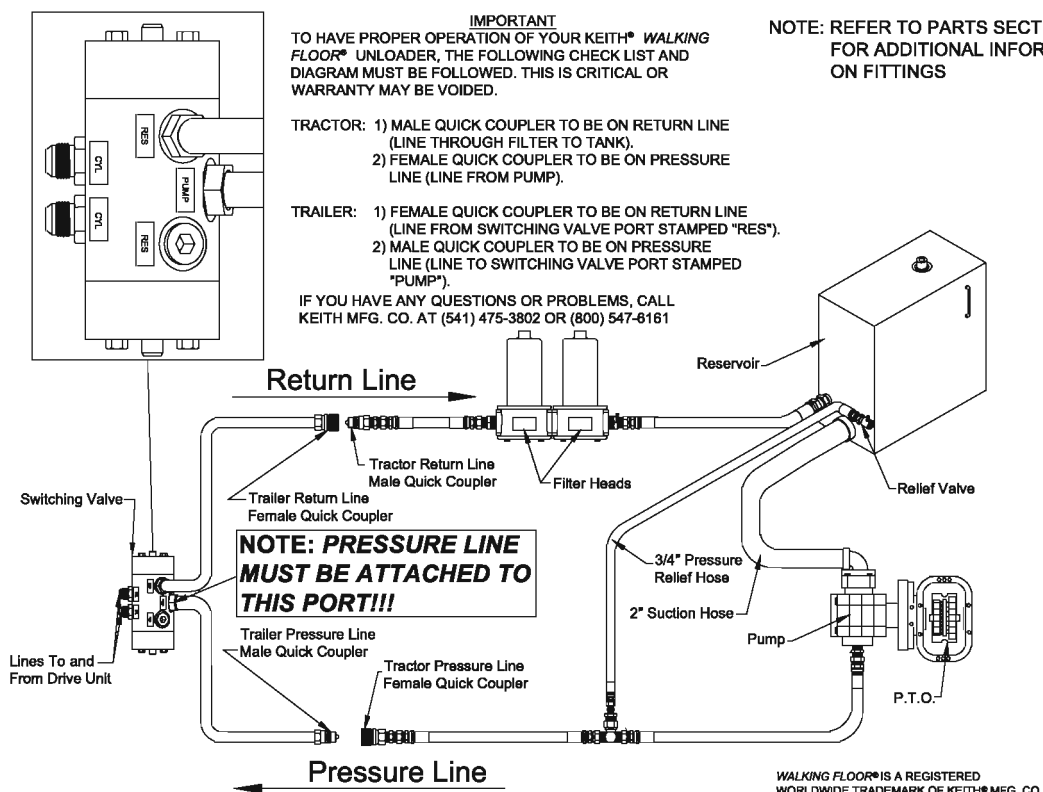
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Note: The following parts guide is for KEITH® RUNNING FLOOR II® 24 slat systems. For all other systems please contact KEITH Mfg. Co. at 800-547-6161.

KEITH® RUNNING FLOOR II® - OWNER'S MANUAL, revised January, 2004.

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Start-Up Check List for the KEITH® RUNNING FLOOR II® System

Before starting your new KEITH® RUNNING FLOOR II® unloader, a quick start-up check should be made.

1. Is your entire system plumbed to the plumbing diagram?
2. *Pump: Will it pump 30-35 GPM at pressure?
3. *Relief Valve: Is it set at 2800-3000 PSI?
4. Oil: Have you filled the reservoir?
5. P.T.O.: Is it engaged?
6. Quick Disconnects: Are they completely engaged?
7. Ball Valve: Is the ball valve on the drive unit closed?
8. Is the pressure line on the trailer attached to the pressure line on the tractor and the return line attached to the return line?

The pressure and return lines must attach to their proper ports on the switching valve.

***Note:** If the information about your pump and relief valve is not available, a pressure/flow check will help determine this information. **Be sure that your entire wet kit system meets the requirements of the hydraulic wet kit specifications in this booklet.** (See pages 3 and 4.)

OPERATION OF YOUR KEITH® RUNNING FLOOR II® UNLOADER

UNLOADING

1. To unload with your KEITH® RUNNING FLOOR II® system, pull the control valve handle all of the way out. (See Diagram A.)
2. Make sure that the ball valve, located between the pressure and return lines, is in the closed position. (See Diagram B.) This ball valve is used for the emergency shut-off.
3. Engage the P.T.O. then bring the tractor engine up to the predetermined unloading RPM. Your trailer floor should now be operating.
4. To stop the floor at any time during the loading or unloading process, switch the ball valve to the open position. (See Diagram B.)

LOADING

1. To load with your bi-directional KEITH® RUNNING FLOOR II® system, simply turn the control valve handle parallel to the ground and push it under the valve body. (See Diagram A.) Then follow instructions 2 ,3 and 4 listed above.

!!NOTE!!

Make sure the trailer door is open BEFORE starting the floor or the trailer door will be damaged.

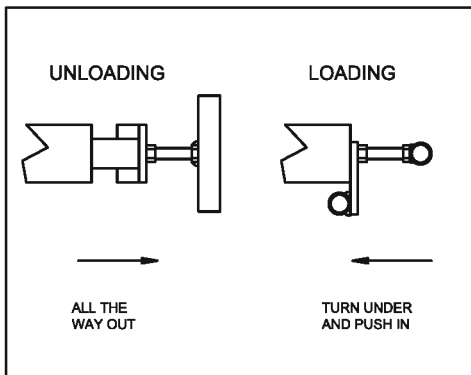


Diagram A: Control Valve

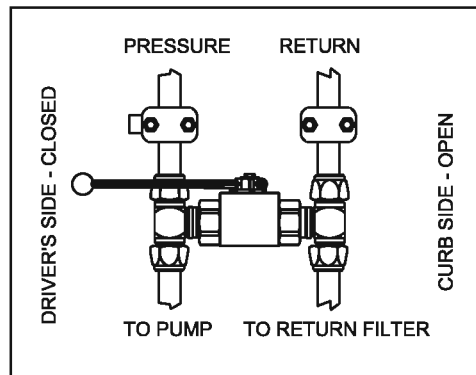
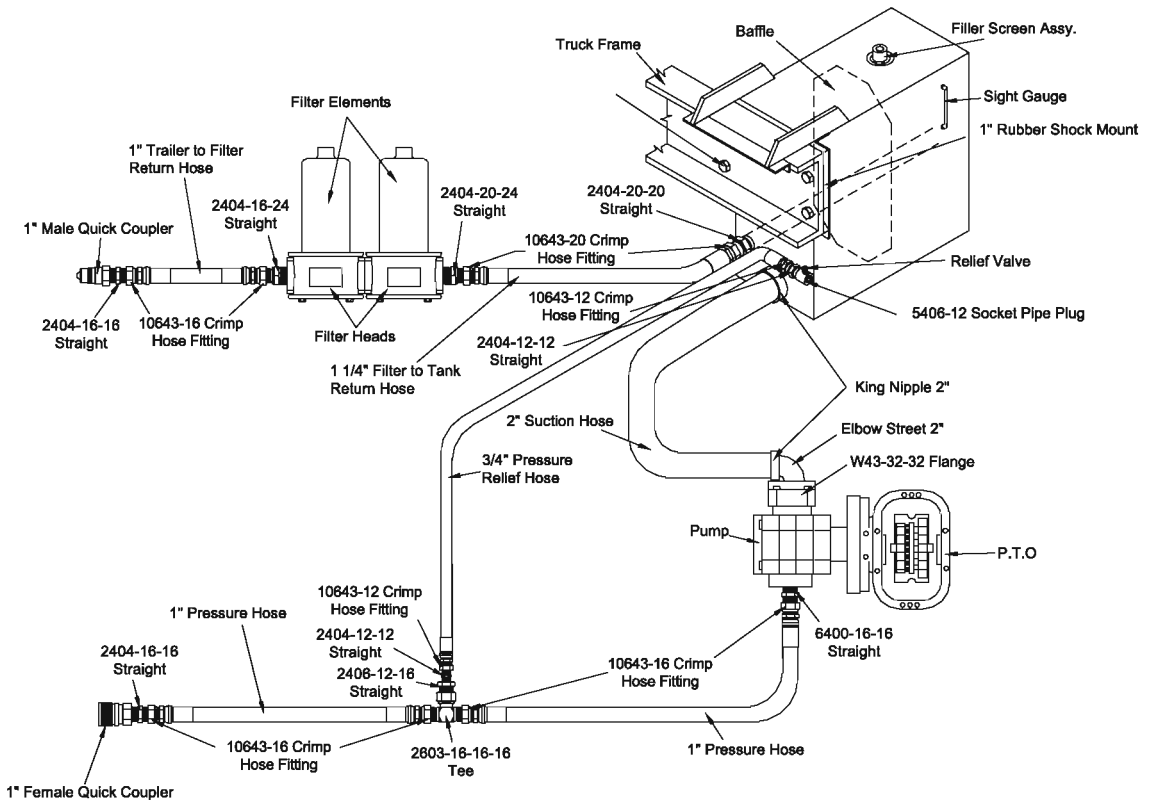


Diagram B: Ball Valve
(View in **Closed Position**. Push handle to the **curb side to open**.)
[View is from beneath the trailer.]

WET KIT DIAGRAM



SPEED OF FLOOR IN RELATION TO ENGINE RPM

With a Fuller 13 or 15 speed transmission, a bottom mount 118% series 442/489 Chelsea power take off, and a Commercial P-51 pump with a 2 1/2" gear, the tractor unload RPM in relation to floor movement is as follows*.

TRUCK RPM	PUMP OUTPUT	FLOOR MOVEMENT*
950 RPM	30 gallon	8.2 ft./minute
1270 RPM	40 gallon	11.0 ft./minute
1430 RPM	45 gallon	12.5 ft./minute
1750 RPM	55 gallon	15.0 ft./minute
1900 RPM	60 gallon	16.4 ft./minute

***Above specifications are for KRFII drive unit with 3.0" bore cylinders. These are approximate feet per minute only and should be used strictly as a guide.**

WET KIT INFORMATION

Transmission: This wet kit is designed for a Fuller 13 or 15 speed transmission. All of the following information applies to this transmission. *(P.T.O. specifications may vary with other transmissions. Please check with KEITH Mfg. Co. for specifications.)*

Oil: Chevron AW46 hydraulic oil or equivalent.

P.T.O.: Chelsea series 442/489 bottom mount (6 or 8 bolt) 118% Power Take Off *(electric over speed is highly recommended)*, or Muncie P.C. 65 with electric over speed.

Pump: Commercial P-51 A297BE (Spl.) 25-25 (2" four bolt suction) with Anchor W43-32-32 flange.

Filter: Filter should be 10 to 30 micron on the return line.
Filter should be a double element Zinga (or equivalent.)
Filter head #DF-15-25. MF 2215-25-0-2-0.
Filter element #LE-10 or LE-30.
(The filter element should be changed after 6 hours initially, and then every 6 months thereafter. This may vary with the operating environment.)

Hydraulic

Reservoir: Should hold approximately 1 gallon of oil for every gallon per minute you plan to pump, i.e. 40 GPM = 40 gallon reservoir. Reservoir should hold a **minimum** of 40 gallons of oil.

Suction Line: Suction line from the tank to the pump should be no more than 5' in length and a minimum of 2" inside diameter.
Example: SAE-100R4. *(This type of line has a spiral wire to keep the hose from collapsing under suction.)*

Pressure line: Hose from truck to trailer should be 1" 16 SAE-100R2.

Return Line: Hose from **trailer to filter** should be 1" 16 SAE-100R1.
Hose from **filter to tank** should be 1-1/4" 20 SAE-100R1.

*Pressure

Relief Valve: Example: Cross #RD12D.

***Note: It is critical that this relief valve is set at no less than 2800 PSI and no more than 3000 PSI.**

START-UP CHECK LIST

1. Is your entire system plumbed to the plumbing diagram?
2. Pump: Will it pump 30-35 GPM at pressure?
3. Relief Valve: Is it set at 2800-3000 PSI?
4. Oil: Have you filled the reservoir?
5. P.T.O.: Is it engaged?
6. Quick Disconnects: Are they completely engaged?
7. Ball Valve: Is the ball valve on the drive unit closed?
8. Is the pressure line on the trailer attached to the pressure line on the tractor and the return line attached to the return line?

The pressure and return lines must attach to their proper ports on the switching valve.

SWITCHING VALVE

Unloading

Problem: Floor does not run at all.

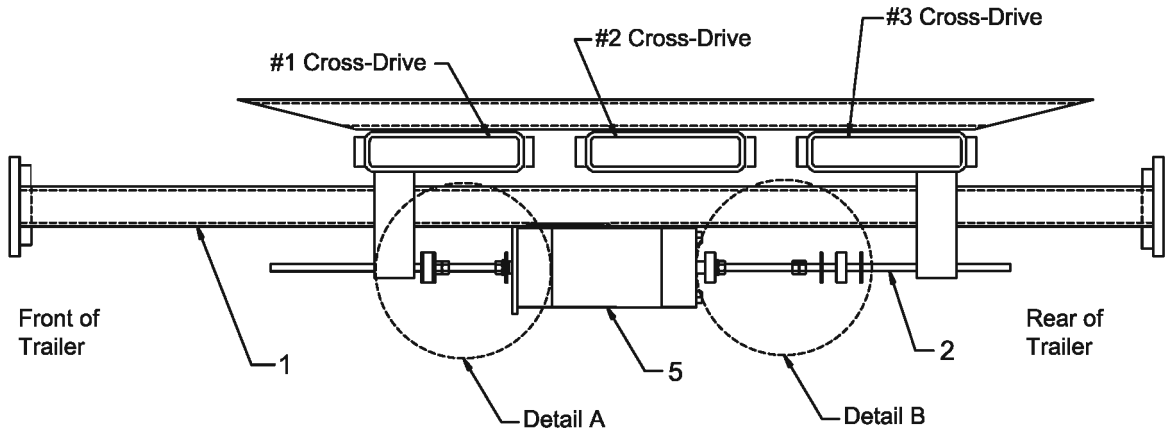
Check: All items on START-UP check list. (See *Start-Up check list*, above.)

Problem: Cycle starts then floor stops.

-
1. **Specific trouble:** Driver's side cylinder (#1) moves **toward the front** of the trailer, center cylinder (#2) moves toward the front of the trailer, passenger side cylinder moves toward the front of trailer; then the system stops.
Solution: The threaded rod nuts on the discharge end of the switching valve are not adjusted correctly. Break the two nuts apart and adjust toward the rear of the trailer. (See *Switching Valve Adjustment*, page 6.)
 2. **Specific trouble:** All three cylinders move **toward the rear** of the trailer; then the system stops.
Solution: The threaded rod nuts on the forward end of the switching valve are not adjusted correctly. Break the two nuts apart and adjust toward the front of the trailer. (See *Switching Valve Adjustment*, page 6.)
 3. **Specific trouble:** Floor runs fine empty or with a light load, but will not cycle with a heavy load.
Solution: This means that the nuts on the threaded rod are slightly out of adjustment or that you don't have enough hydraulic pressure. Repeat previous solutions. (See *Switching Valve Adjustment*, page 6.)

Note: If floor stops in the full rear position and the switching valve has switched, you may not have enough oil pressure. Less pressure is required to move the load than to pull the slats 1/3 at a time under the load. (See *Oil Flow Diagram*, page 9.)

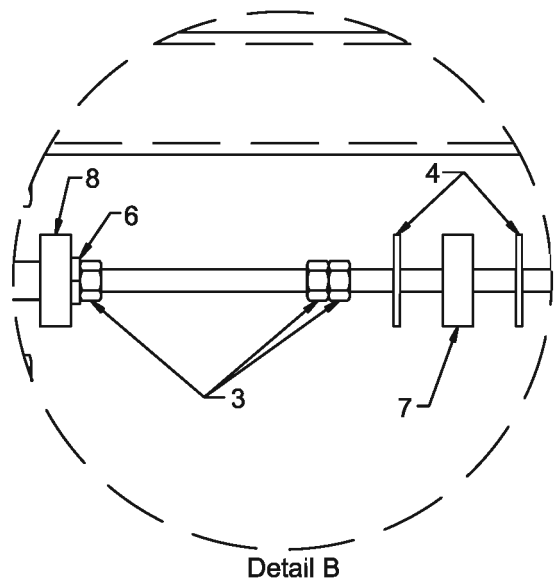
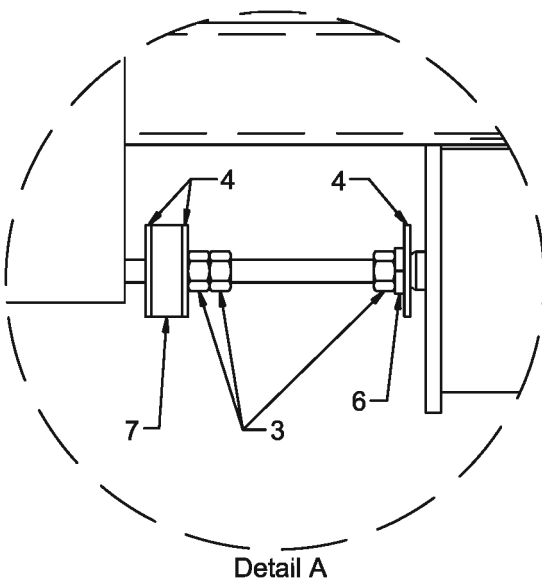
SWITCHING VALVE ADJUSTMENT



NOTE: This view is from the driver's side of the trailer. All cylinders are shown to the rear of the trailer.

1. 2" x 2" Steel Tube
2. 3/8" Threaded Rod (typ. 2 pcs)
3. 3/8" Nuts
4. 3/8" Flat Washers

5. Switching Valve
6. 3/8" Lock Washer
7. Switching Valve Grommet
8. Switching Valve Limit Cap



CHECK VALVE

Unloading

Problem: Does not cycle correctly.

- Specific trouble:** Cylinders (#1) and (#2) extend together **toward the front** of the trailer while unloading.
Solution: The check valve at the forward end of cylinder (#1) has malfunctioned. Replace the check valve. (See *Replacing a Check Valve*, page 8.)
- Specific trouble:** Cylinders (#2) and (#3) extend together **toward the front** while unloading.
Solution: The check valve at the forward end of cylinder (#2) has malfunctioned. Replace the check valve. (See *Replacing a Check Valve*, page 8.)
- Specific trouble:** All cylinders extend together **toward the front** while unloading.
Solution: The check valves at the forward end of cylinders (#1) and (#2) have malfunctioned. Replace the check valves. (See *Replacing a Check Valve*, page 8.)

Loading

Problem: Does not cycle correctly.

- Specific trouble:** Cylinders (#2) and (#3) extend together **toward the rear** of the trailer while loading.
Solution: The check valve at the rear end of cylinder (#3) has malfunctioned. Replace the check valve. (See *Replacing a Check Valve*, page 8.)
- Specific trouble:** Cylinders (#1) and (#2) extend together **toward the rear** while loading.
Solution: The check valve at the rear end of cylinder (#2) has malfunctioned. Replace the check valve. (See *Replacing a Check Valve*, page 8.)
- Specific trouble:** All cylinders extend together **toward the rear** while loading.
Solution: The check valves at the rear end of cylinders (#2) and (#3) have malfunctioned. Replace the check valves. (See *Replacing a Check Valve*, page 8.)

Note: When empty, some trailers will cycle in sequence forward 1-2-3, then back 3-2-1, (instead of all slats moving back together.) This is **not** a malfunction; no repairs are needed. When a load is put on a trailer, the drag will cause the floor to sequence properly.

REPLACING A CHECK VALVE

Replacing a KEITH® RUNNING FLOOR II® external check valve is a simple procedure. The tools required to do this are:

- (1) 1/2" socket
- (1) 6" or 12" extension
- (1) ratchet

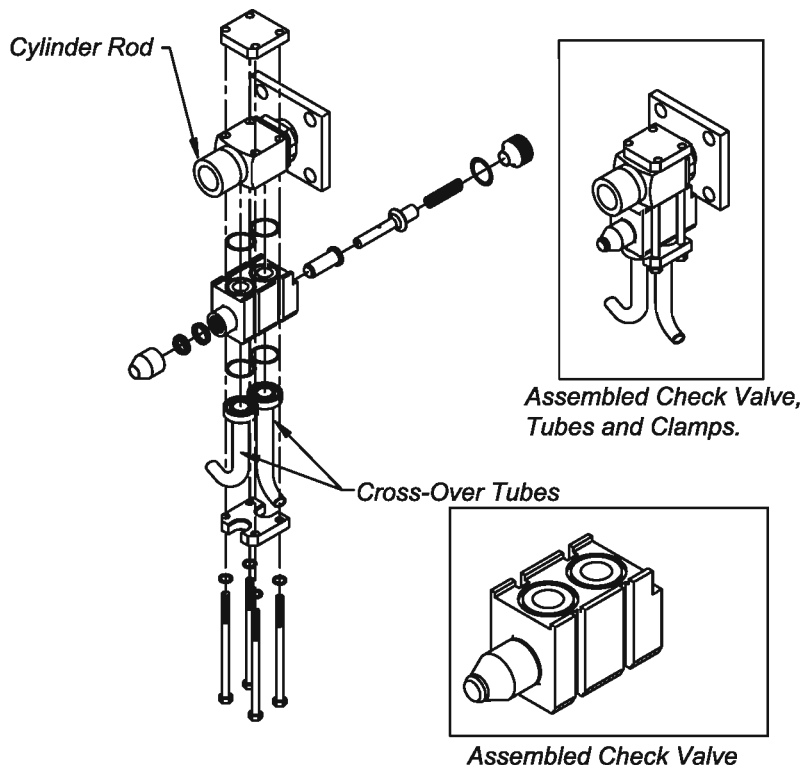
DISASSEMBLY

Before removing any bolts, run the cylinder away from the check valve in order to free it. Next remove the four 5/16" x 5-1/2" bolts and the tube clamp. Loosen the other end of the tubes and remove the check valve.

ASSEMBLY

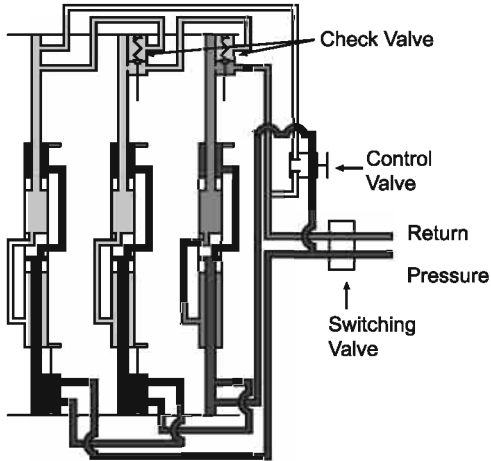
First, make sure all of the surfaces are clean and the O-Rings are in their proper places. Put the new check valve in place making sure it seats flat on the rod end. Put the tube clamp back on and put the 5/16" x 5-1/2" bolts back in. Make sure the tubes fit snugly back into the tube clamp and tighten the 5/16" x 5-1/2" bolts down. Tighten the other ends of the cylinder cross-over tubes and run the floor to check for leaks.

***SEE CHECK VALVE ASSEMBLY PARTS LIST AND DIAGRAM ON PAGES 19 & 20 TO IDENTIFY PARTS BY GIVEN NUMBERS.**



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

Pressure
 Return
 Blocked
 Standing Oil
 Return Oil



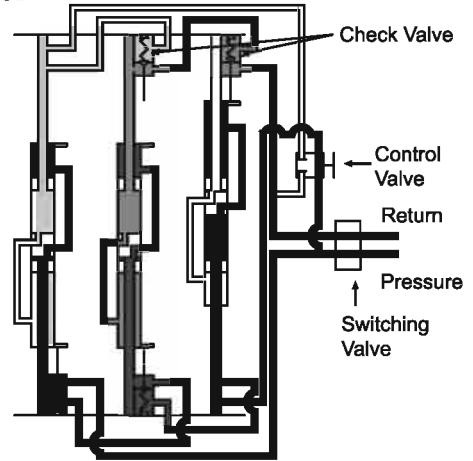
Phase 1

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.

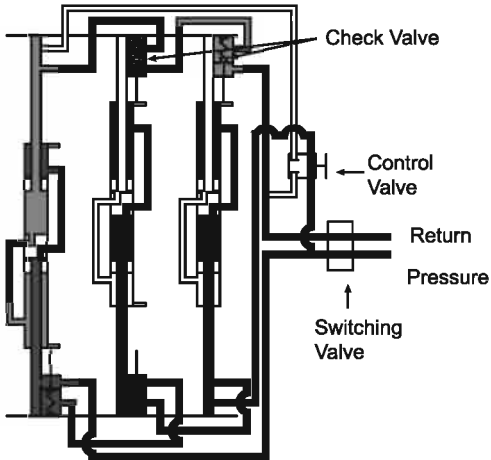


Phase 2

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.

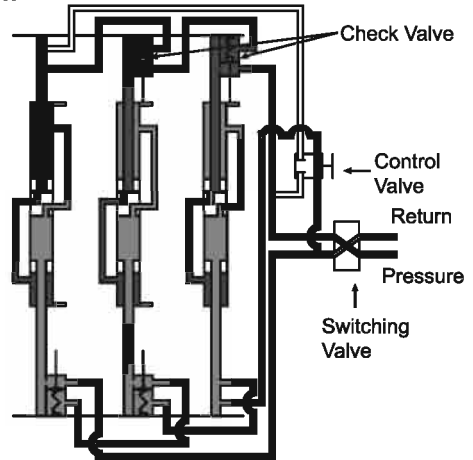
Note: Phase 2 requires more pressure than phase 1.



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.

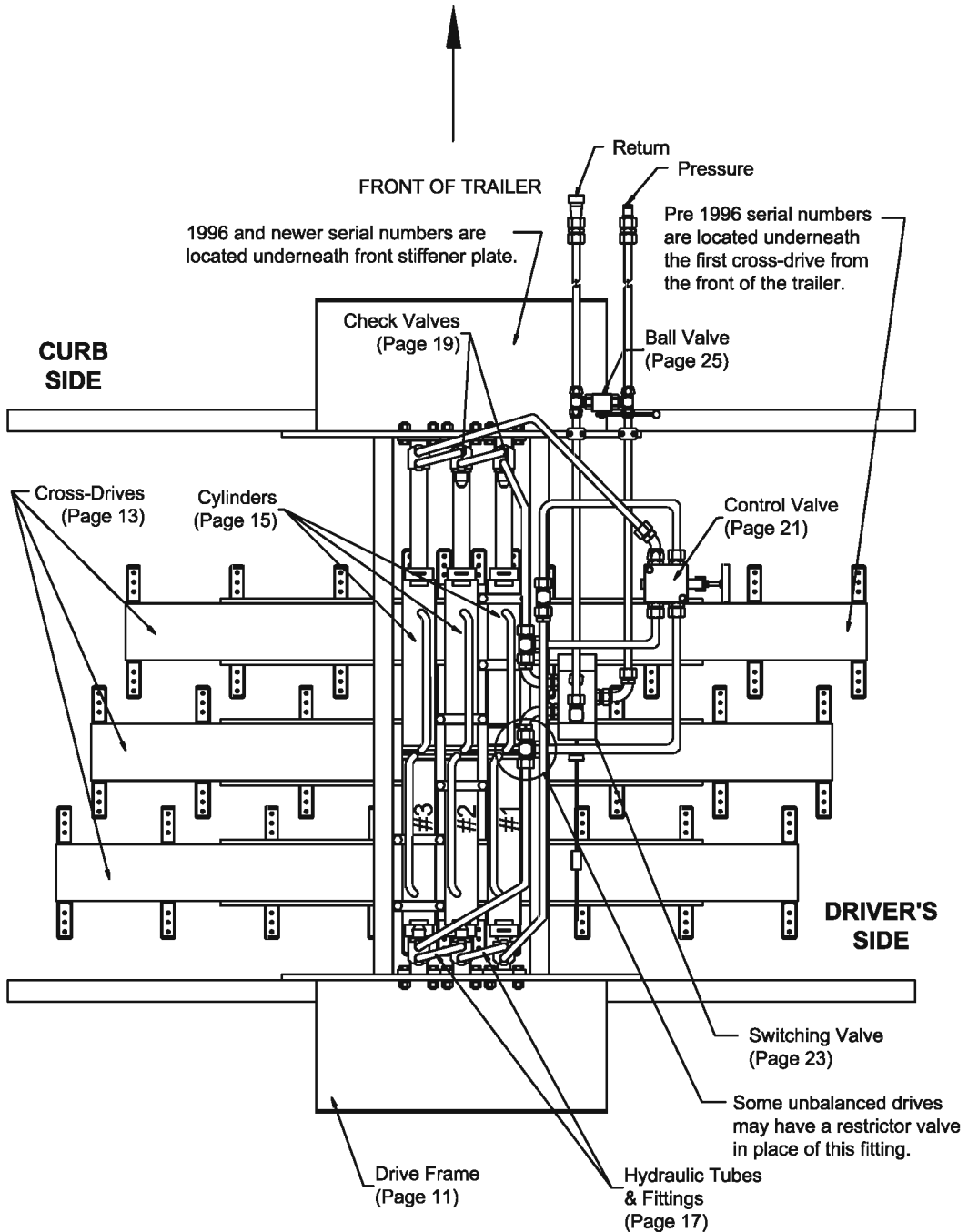


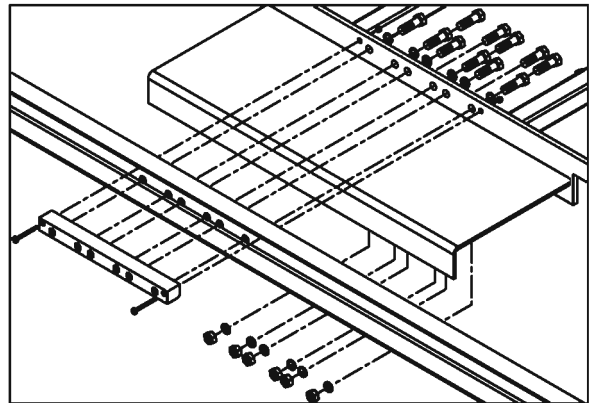
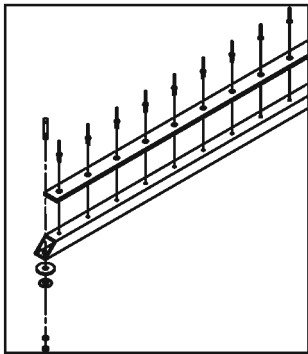
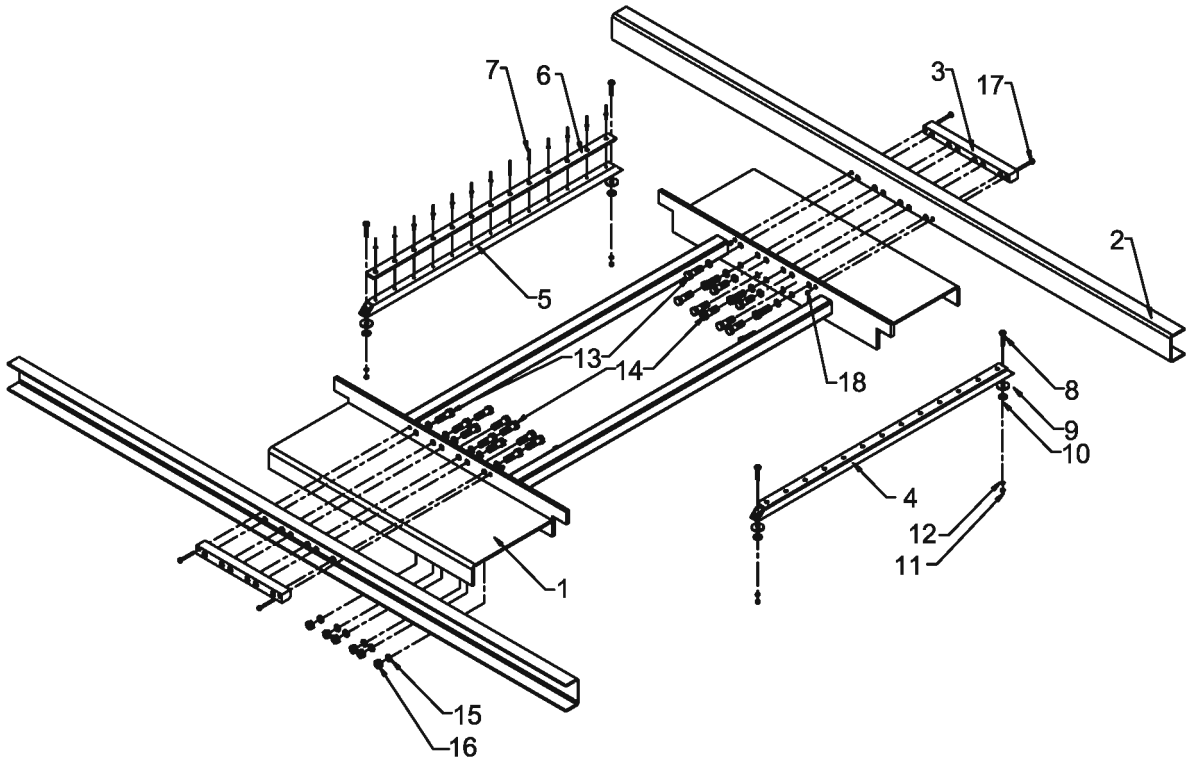
Phase 4

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.

COMPONENT LOCATION GUIDE



DRIVE FRAME & RELATED COMPONENTS

DRIVE FRAME & RELATED COMPONENTS

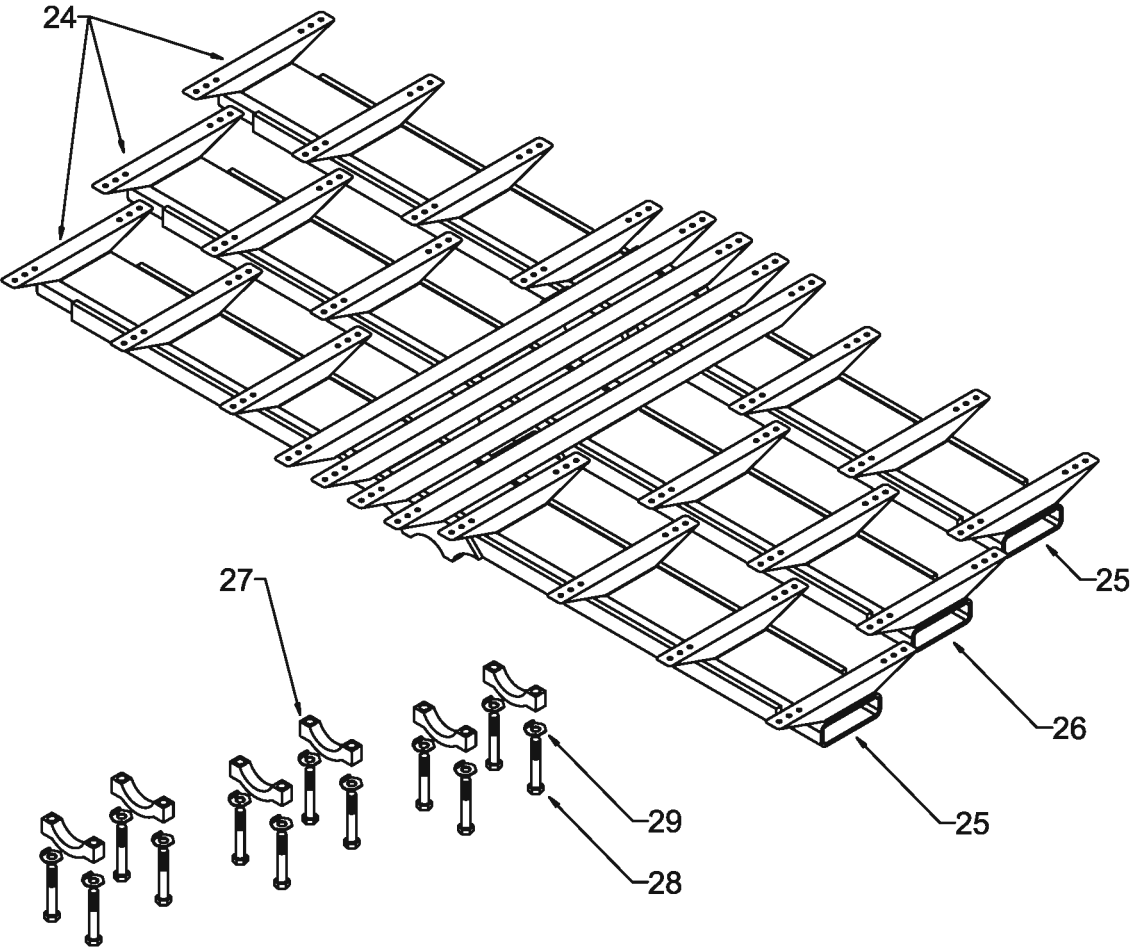
PARTS LIST

ID #	QUANTITY	DESCRIPTION	PART NUMBER
-	1	Drive Frame Assembly	-
-	-	Includes items 1-18	-
1 ⁽¹⁾	1	Drive Frame Steel	-
2 ⁽¹⁾⁽²⁾	2	Channel Formed 4"x2 1/4"x3/16"	w/frame
3 ⁽¹⁾	2	Nut Bar Threaded 4.5" Cylinder Centers	04175101
3 ⁽¹⁾	2	Nut Bar Threaded 5.0" Cylinder Centers	01173101
4 ⁽¹⁾	2	Bearing 1/4" Cross-Drive Support Assembly	03467801
-	-	Includes items 5-7	-
5 ⁽¹⁾	1	Bearing Cross-Drive Support Tube	03467701
6 ⁽¹⁾	1	Bearing Cross-Drive Support 1/4" UHMW	03453901
7	13	Rivet 3/16"x1/2"	86528000
8	4	Bolt Hex GR5 3/8"x1 1/4"	86438000
9	4	Washer Large OD 3/8"	86553500
10	4	Washer Flat 3/8"	86554000
11	4	Nut Hex 3/8"	86628500
12	4	Washer Lock 3/8"	86555000
13	12	Bolt Hex GR8 5/8"x2 3/4", (3.0" Cyl)	86466500
13	12	Bolt Hex GR8 5/8"x3", (3.5" Cyl)	86467000
14	12	Bolt Hex GR8 5/8"x2", (3.0" Cyl)	86464500
14	12	Bolt Hex GR8 5/8"x2 1/4", (3.5" Cyl)	86465500
15	24	Washer Lock 5/8"	86559000
16	24	Nut Hex 5/8"	86632000
17	4	Bolt Hex GR5 1/4"x2 1/4", (3.0" Cyl)	86419500
17	4	Bolt Hex GR5 1/4"x2 1/2", (3.5" Cyl)	86420000
18	4	Nut Hex Nylock 1/4"	86626000

(1) Part numbers and descriptions vary based on drive configuration and application.

(2) Formed Channels are included with frame. In many applications they are non-removable.

CROSS-DRIVE ASSEMBLY



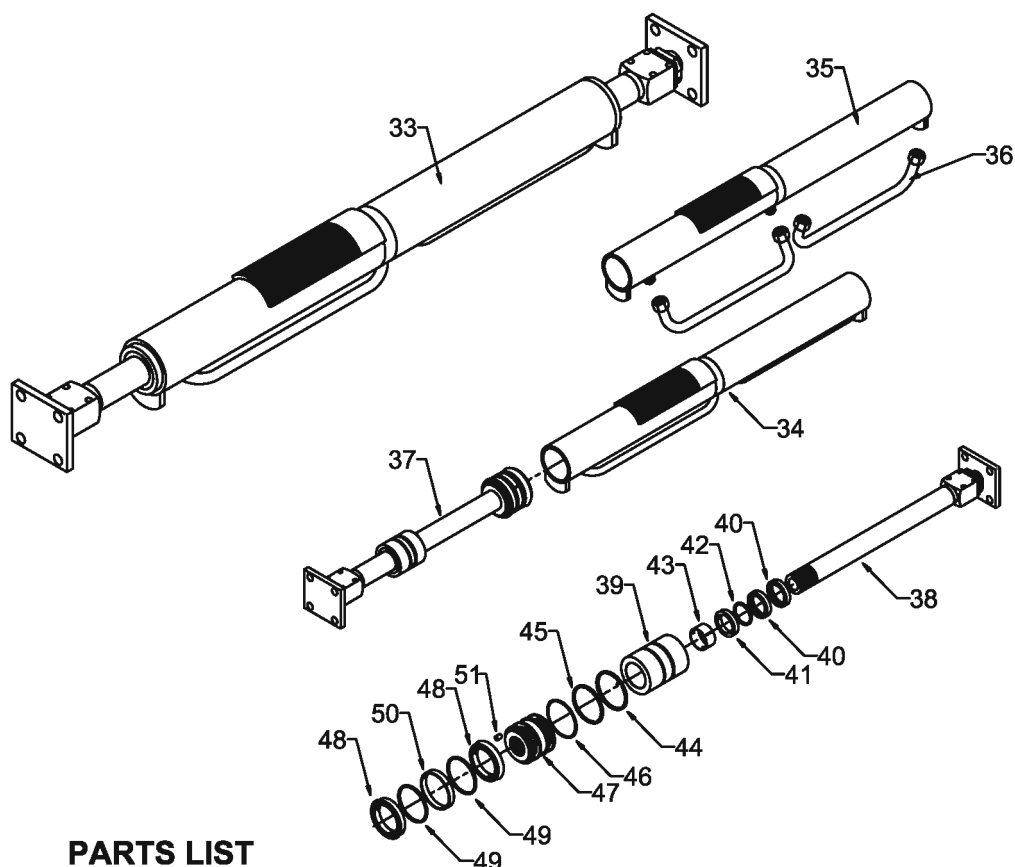
CROSS-DRIVE ASSEMBLY

PARTS LIST

ID #	QUANTITY	DESCRIPTION	PART NUMBER
24 ⁽¹⁾	1	Cross-Drive 24 Slat 3.0" 4.5" Cylinder Center Set	02535501
24 ⁽¹⁾	1	Cross-Drive 24 Slat 3.5" 5.0" Cylinder Center Set	02520501
-	-	Includes items 25 & 26	-
25 ⁽¹⁾	2	Cross-Drive 24 Slat 3.0" 4.5" Cylinder Center #1 & #3	02535502
25 ⁽¹⁾	2	Cross-Drive 24 Slat 3.5" 5.0" Cylinder Center #1 & #3	02520502
26 ⁽¹⁾	1	Cross-Drive 24 Slat 3.0" 4.5" Cylinder Center #2	02535503
26 ⁽¹⁾	1	Cross-Drive 24 Slat 3.5" 5.0" Cylinder Center #2	02520503
27	6	Clamp 3.0" Lower Cross-Drive	03910501
27	6	Clamp 3.5" Lower Cross-Drive	03910601
28	12	Bolt Hex Patchloc GR8 5/8"x4", (3.0" Cyl)	86470010
28	12	Bolt Hex Patchloc GR8 5/8"x4 1/2", (3.5" Cyl)	86470510
29	12	Washer Tab Lock 5/8"	04430601

(1) Part numbers and descriptions vary based on drive configuration.

CYLINDER ASSEMBLY



PARTS LIST

ID #	QUANTITY	DESCRIPTION	PART NUMBER
33	1	Cylinder 3.0" Assembly	04567901
33	1	Cylinder 3.5" Assembly	04568001
-	-	Includes items 34-51	-
34	1	Barrel Assembly 3.0" Cylinder	04560901
34	1	Barrel Assembly 3.5" Cylinder	04561001
-	-	Includes items 35 & 36	-
35	1	Barrel Weld Assembly 3.0" Cylinder	04560601
35	1	Barrel Weld Assembly 3.5" Cylinder	04560701
36	2	Cylinder Cross-Over Tube Assembly	04560801
37	2	Rod W/Piston & Head 3.0" Assembly	02553201
37	2	Rod W/Piston & Head 3.5" Assembly	02553301
-	-	Includes items 38-51	-
38 ⁽¹⁾	1	Rod 45mm W/Block & Plate	02568501

(1) Part numbers and descriptions vary based on drive configuration and application.

CYLINDER ASSEMBLY

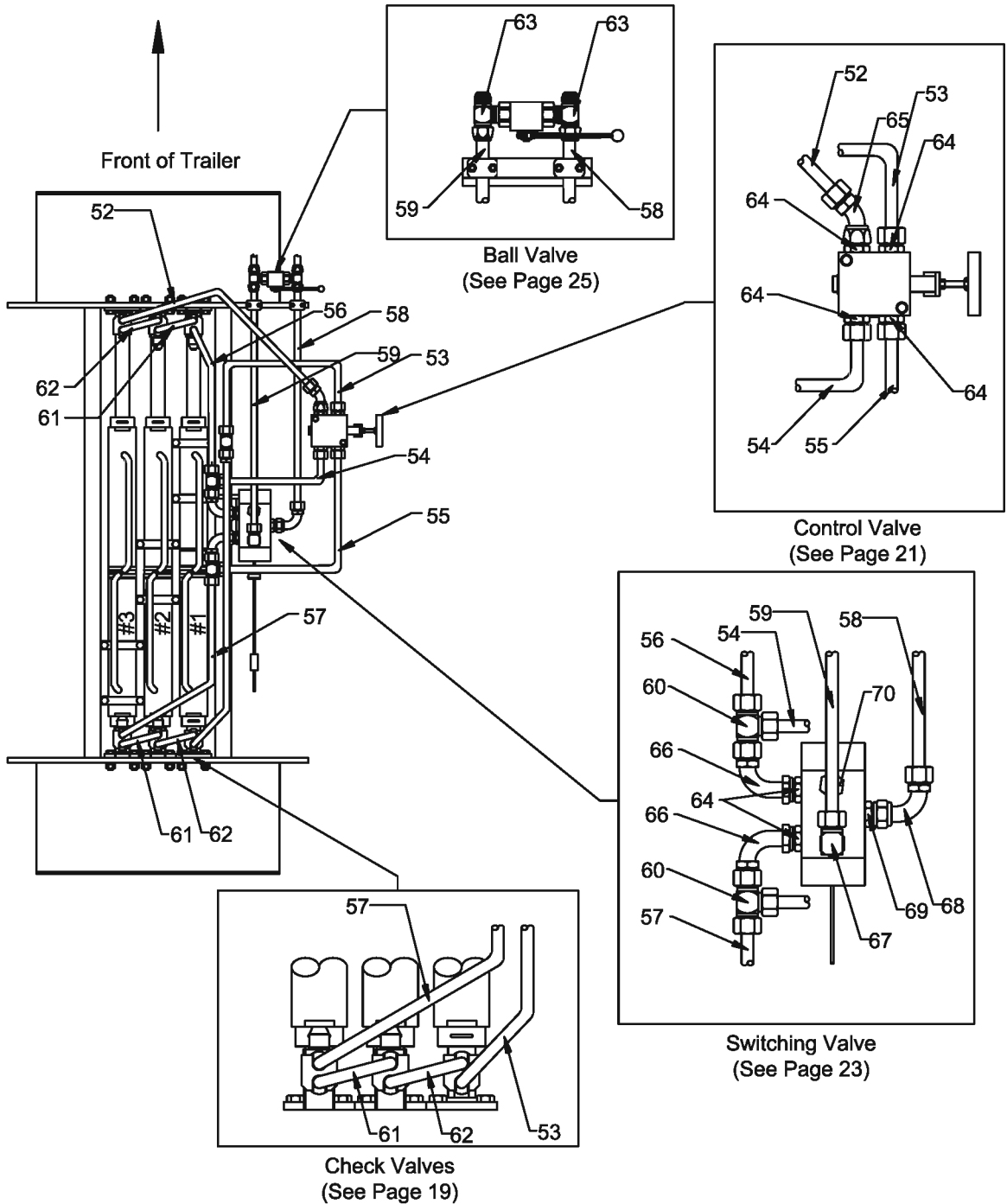
PARTS LIST (CONT.)

ID #	QUANTITY	DESCRIPTION	PART NUMBER
-	1	Head 3.0" Assembly Cylinder	03808501
-	1	Head 3.5" Assembly Cylinder	03811001
-	-	Includes items 39-46	-
39	1	Head 3.0" Cylinder	01786201
39	1	Head 3.5" Cylinder	02553501
40	2	Wiper Rod 45mm Canned	84426600
41	1	Seal Rod Cylinder 45mm	84354200
42 ⁽²⁾	1	Seal Backup Rod Cylinder 45mm	w/seal
43	1	Wear Ring Rod Cylinder 45mm	84401200
44	1	Lock Wire 3.0" Head Cylinder	03812102
44	1	Lock Wire 3.5" Head Cylinder	03812104
45	1	O-Ring 232, (3.0" Cyl)	84384200
45	1	O-Ring 236, (3.5" Cyl)	84384600
46	1	O-Ring Backup 8-232, (3.0" Cyl)	84392400
46	1	O-Ring Backup 8-236, (3.5" Cyl)	84392800
-	1	Piston 3.0" Assembly Cylinder	03808101
-	1	Piston 3.5" Assembly Cylinder	03810901
-	-	Includes items 47-51	-
47	1	Piston 3.0" Cylinder	02564801
47	1	Piston 3.5" Cylinder	02553601
48	2	Seal Piston Cylinder 3.0"	84353600
48	2	Seal Piston Cylinder 3.5"	84353800
49 ⁽²⁾	2	Seal Backup Piston Cylinder 3.0" & 3.5"	w/seal
50	1	Wear Ring Piston 3.0"	84404600
50	1	Wear Ring Piston 3.5"	84404800
51	1	Pin Drive Lock 3/16" x 1/2"	86650400
-(3)	1	Seal Kit 3.0" Cylinder Metric	03877501
-(3)	1	Seal Kit 3.5" Cylinder Metric	03877601
-	-	Includes items 40-46 & 48-50	-

(2) Backup included with seal.

(3) The seal kit includes all necessary items required to rebuild the entire cylinder. It does not include items such as the Rod or Piston.

HYDRAULIC TUBES & FITTINGS



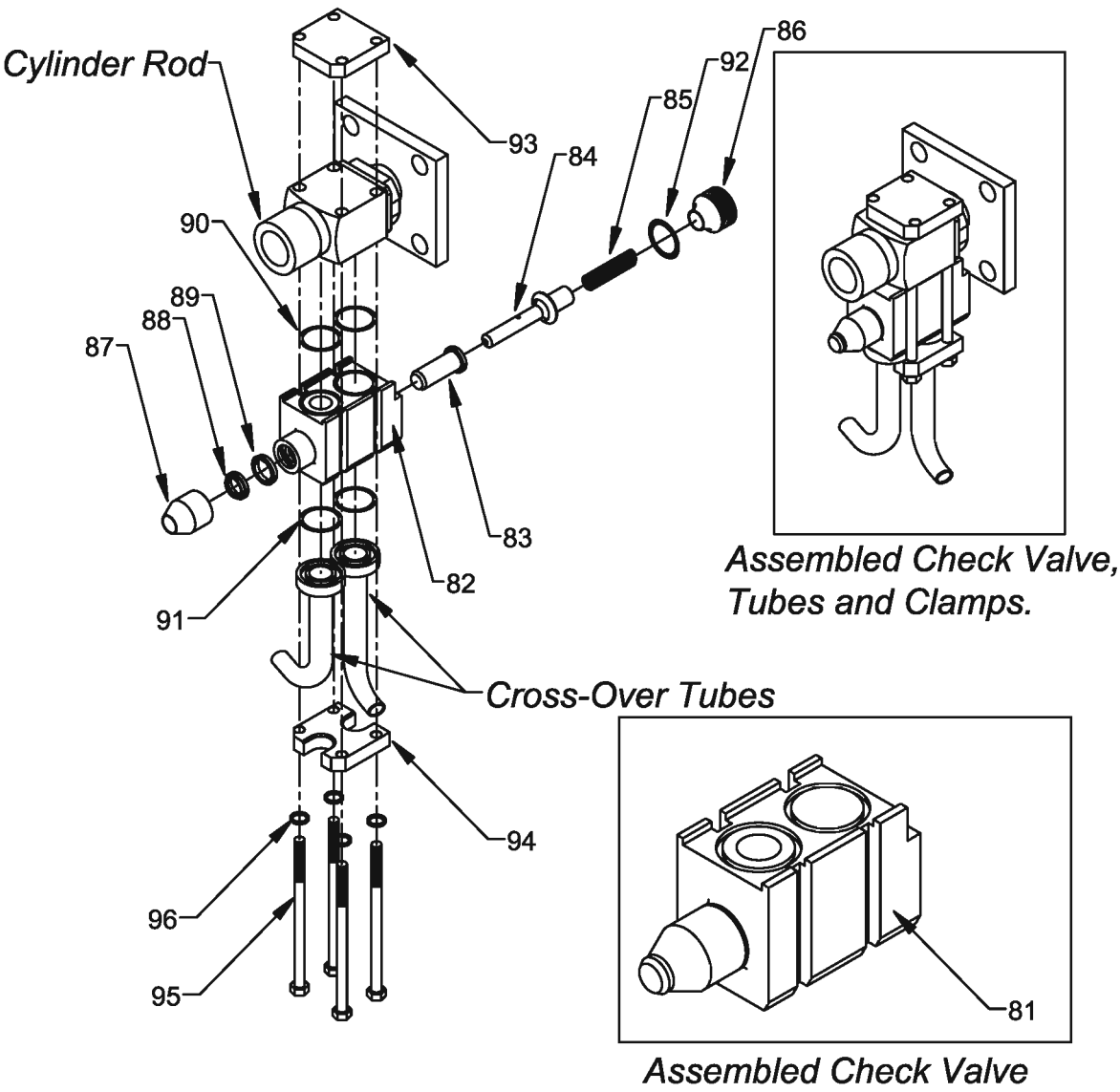
HYDRAULIC TUBES & FITTINGS

PARTS LIST

ID #	QUANTITY	DESCRIPTION	PART NUMBER
-	-	Hydraulic Tubes & Fittings	-
-	-	Includes items 52-70	-
52 ⁽¹⁾	1	Tube #52 Front of Cylinder #3 to CTV	03843501
53 ⁽¹⁾	1	Tube #53 Rear of Cylinder #1 to CTV	03843601
54	1	Tube #54 Control Valve to Front of SWV	03843701
55	1	Tube #55 Control Valve to Rear of SWV	03843801
56 ⁽¹⁾	1	Tube #56 SWV to Front of Cylinder #1	03816901
57 ⁽¹⁾	1	Tube #57 SWV to Rear of Cylinder #3	03817001
58	1	Tube #58 Switching Valve Pressure	03843901
59	1	Tube #59 Switching Valve Return	03844001
60	2	6602-12-12-12 Tee	84690300
61 ⁽¹⁾	2	Tube #61 CkV to CkV 4.5" Cylinder Centers	03813801
61 ⁽¹⁾	2	Tube #61 CkV to CkV 5.0" Cylinder Centers	03813802
62 ⁽¹⁾	2	Tube #62 CkV to Non-CkV 4.5" Cylinder Centers	03813901
62 ⁽¹⁾	2	Tube #62 CkV to Non-CkV 5.0" Cylinder Centers	03813902
63	2	2601-16-16-16 Tee	84677700
64	6	6400-12-12 Straight	84685000
65	1	63TA-12-12 Bent Stem 45°	84682600
66	2	63UA-12-12 Bent Stem 90°	84683100
67	1	6801-16-12 90°	84691700
68	1	63UA-16-16 Bent Stem 90°	84683200
69	1	6400-16-16 Straight	84685400
70	1	6408-12 O-Ring Plug	84686900

(1) Part numbers and descriptions vary based on drive configuration and application.

CHECK VALVE ASSEMBLY

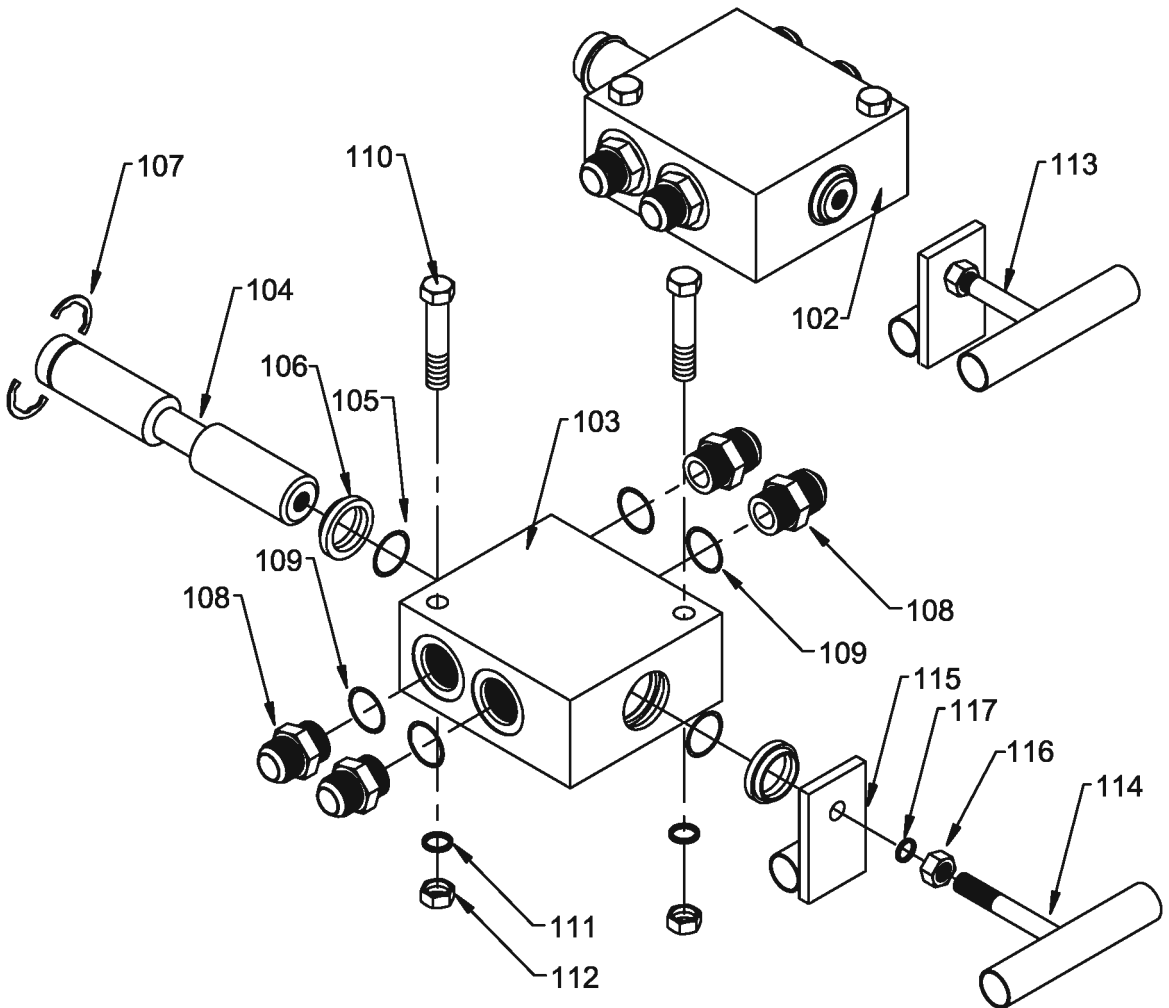


CHECK VALVE ASSEMBLY

PARTS LIST

ID #	QUANTITY	DESCRIPTION	PART NUMBER
81	1	Check Valve External Assembly	03709401
-	-	Includes Items 82-92	-
82	1	Body Check Valve External	03654601
83	1	Plunger Check Valve External	01771101
84	1	Rod Check Valve External	01766901
85	1	Spring Check Valve External Large #B-18273	84453400
86	1	End Cap Check Valve External Threaded	03654501
-	1	Seal Kit Check Valve External	03878101
-	-	Includes items 87-92	-
87	1	Dust Boot Check Valve External	84801100
88	1	Plunger Wiper Check Valve External	84426800
89	1	Seal Rod 5/8"	84352200
90	2	O-Ring 122	84377800
91	2	O-Ring 214	84381600
92	1	O-Ring 916	84387800
_(1)	1	O-Ring 124	84378000
_(1)	1	Lock Wire Check Valve External	03889301
93	1	Clamp Top Check Valve External	02513001
94	1	Clamp Bottom Check Valve External	02513101
95	4	Bolt Hex GR5 5/16"x5 1/2"	86434500
96	4	Washer Lock 5/16"	86553000

(1) Not shown, for use with Check Valve Body part #01248601 equipped with lock wire end cap.

CONTROL VALVE ASSEMBLY

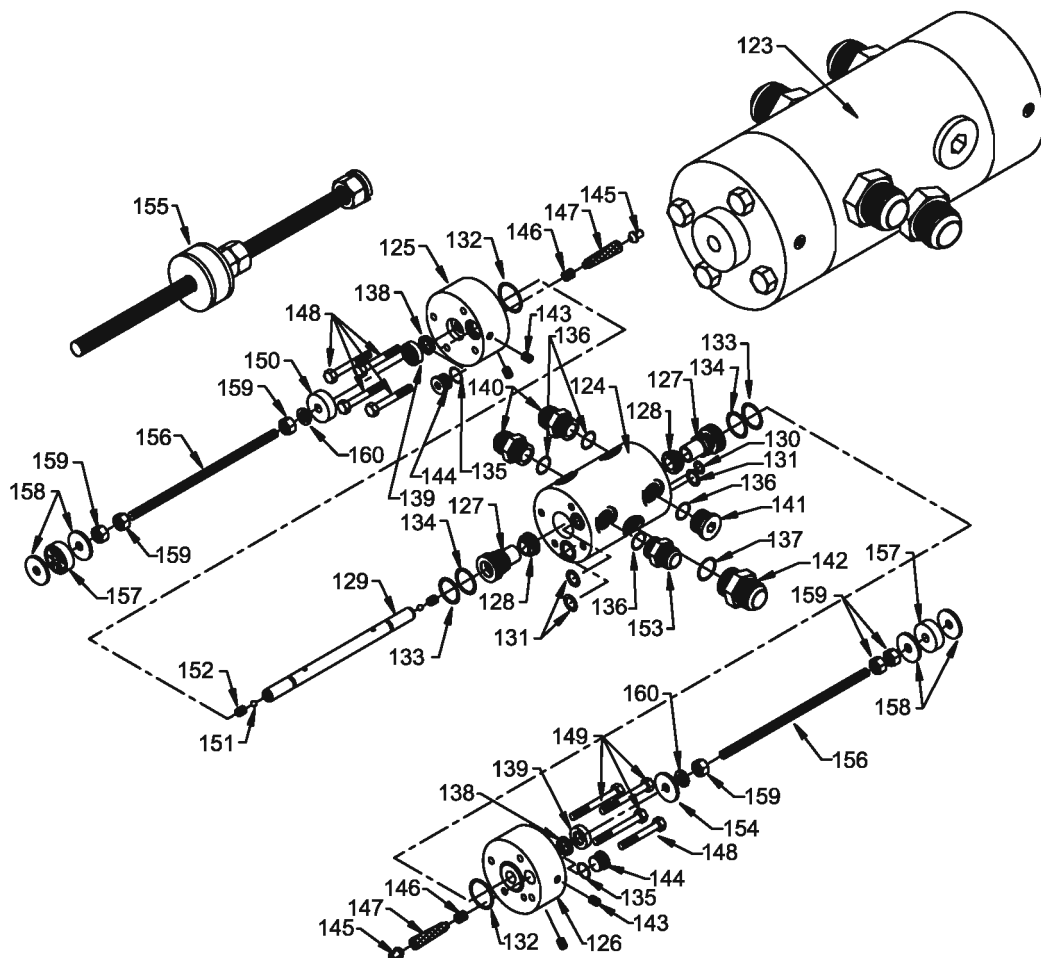
CONTROL VALVE ASSEMBLY

PARTS LIST

ID #	QUANTITY	DESCRIPTION	PART NUMBER
102	1	Control Valve Load/Unload Assembly	02552701
-	-	Includes items 103-109	-
103	1	Body Control Valve	01049501
104	1	Spool Control Valve	03423201
-	1	Seal Kit Control Valve Load/Unload	03877901
-	-	Includes items 105-107	-
105	2	O-Ring 214 B-70	84381800
106	2	Wiper 1" Rod	84427000
107	1	Snap Ring 2-Piece For Spool	84801000
108	4	6400-12-10 Straight	84684900
109	4	O-Ring 910	84387200
110	2	Bolt Hex GR5 3/8"x3"	86442000
111	2	Washer Lock 3/8"	86555000
112	2	Nut Hex 3/8"	86628500
113	1	Handle Assembly Control Valve Load/Unload	02552601
-	-	Includes items 114-117	-
114 ⁽¹⁾	1	"T" Handle	-
115 ⁽¹⁾	1	"T" Handle Plate	-
116	1	Nut Hex 3/8"	86628500
117	1	Washer Lock 3/8"	86555000

(1) Not sold separately. Included only with Control Valve Handle Assembly.

SWITCHING VALVE ASSEMBLY



PARTS LIST

ID #	QUANTITY	DESCRIPTION	PART NUMBER
123 ⁽¹⁾	1	Switching Valve Assembly SAE	03888901
-	-	Includes Items 124-154	-
124 ⁽¹⁾	1	Body Switching Valve	04504601
125 ⁽¹⁾	1	End Cap Right Switching Valve	04504701
126 ⁽¹⁾	1	End Cap Left Switching Valve	04504801
127	2	Poppet Switching Valve	03718901
128	2	Ring Poppet Switching Valve	03718801
129	1	Rod Control Switching Valve	01335501
130 ⁽²⁾	1	Seal Kit Switching Valve	03878001
-	-	Includes items 130-139	-
130	1	O-Ring 111	84376200

(1) Part numbers vary for Switching Valves made before 1998.

(2) The Switching Valve Seal Kit contains all necessary components to rebuild all Switching Valve models.

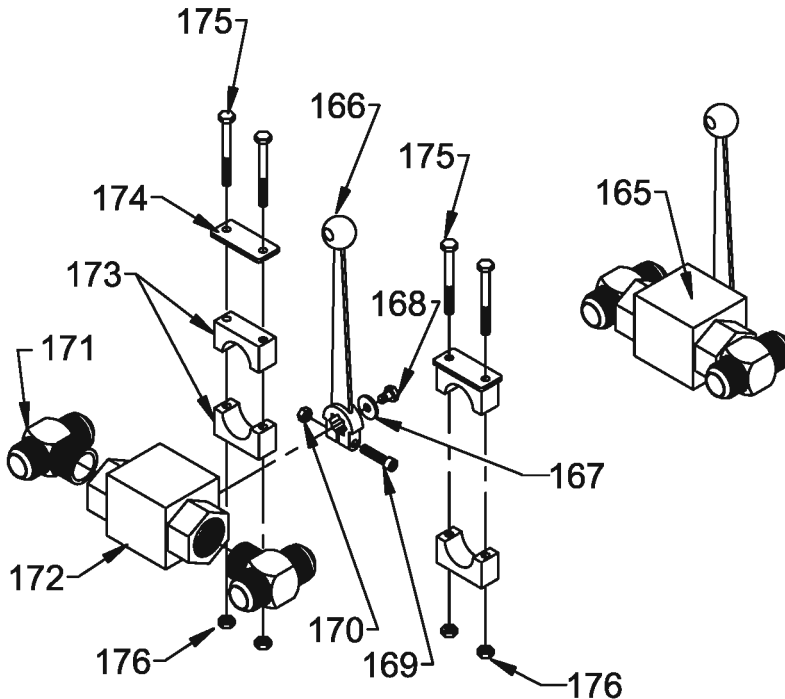
SWITCHING VALVE ASSEMBLY

PARTS LIST (CONT.)

ID #	QUANTITY	DESCRIPTION	PART NUMBER
131	3	O-Ring 117 Urethane	84377200
132	2	O-Ring 126	84378200
133	2	O-Ring 216	84382200
134	2	O-Ring Backup 8-216	84391600
135	2	O-Ring 908	84387000
136	4	O-Ring 912	84387400
137	1	O-Ring 916	84387800
138	2	Seal Rod 5/8"	84352200
139	2	Wiper Canned 5/8" Rod	84427200
_(3)	3	O-Ring 011	84375200
_(3)	1	O-Ring 114	84376700
_(3)	2	O-Ring 124	84378000
_(3)	1	1/2" Pipe Plug Socket 7/8" Taper	84680790
140	2	6400-12-12 Straight	84685000
141	1	6409-12 M O-Ring Socket Plug	84687700
142	1	6400-16-16 Straight	84685400
143	4	1/8" Pipe Plug Socket 7/8" Taper	84680780
144	2	6409-08 M O-Ring Socket Plug	84687500
145	2	Pilot Filter Seat	04502701
146	2	Spring S157	84451750
147	2	Filter Element CF0563-46	84012700
148	5	Bolt Hex GR5 3/8"x2 1/2"	86441000
149	3	Bolt Hex GR5 3/8"x3"	86442000
150	1	Cap Limit Switching Valve	02552101
151	2	Ball 5/16" Chrome Steel	84800500
152	2	Set Screw 3/8"x3/8" Half Dog	86435500
153	1	6400-16-12 Straight	84685300
154	1	Washer Large OD 3/8"	86553500
155	2	Rod Threaded Assembly Switching Valve	03869701
-	-	Includes Items 156-160	-
156	1	Threaded Rod 3/8"x18"	86603000
157	1	Switching Valve Grommet	83217500
158	2	Washer Large OD 3/8"	86553500
159	3	Nut Hex 3/8"	86628500
160	1	Washer Lock 3/8"	86555000

(3) Not shown. For use with previous model Switching Valve.

BALL VALVE ASSEMBLY

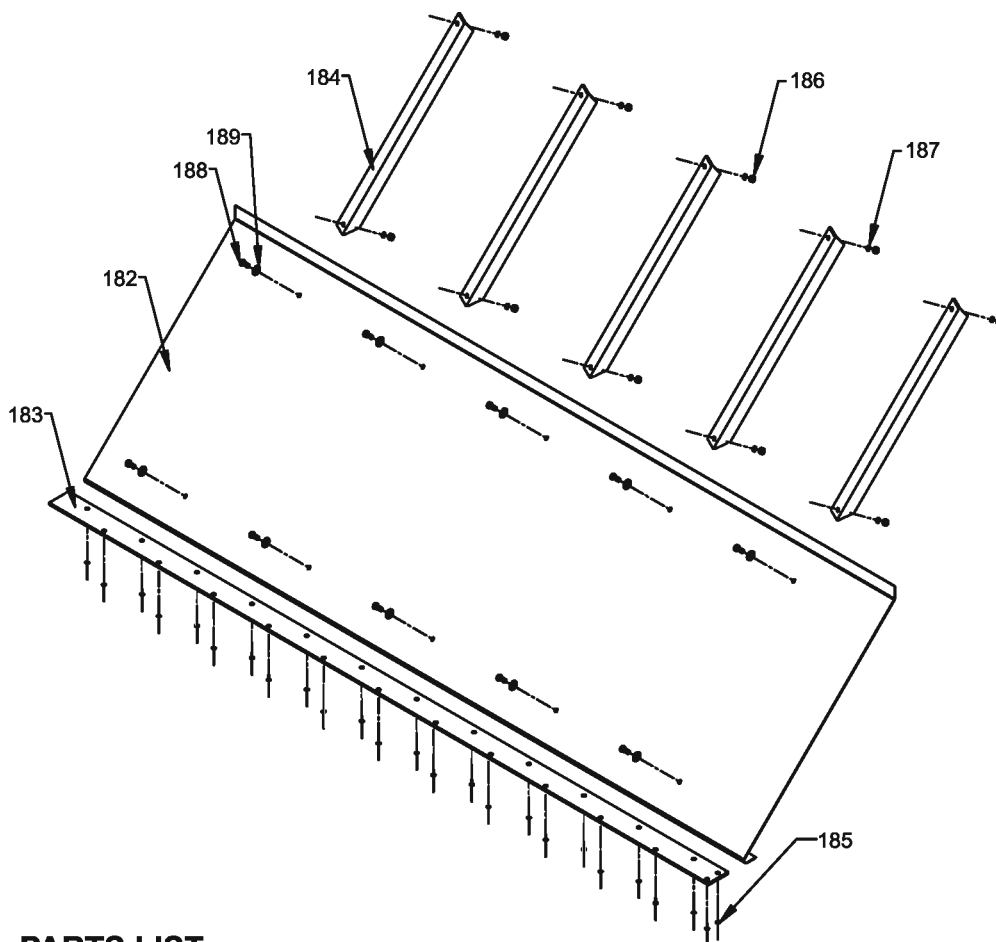


PARTS LIST

ID #	QUANTITY	DESCRIPTION	PART NUMBER
165	1	Ball Valve 1" W/ Tees & Handle	84802600
-	-	Includes items 166-172	-
166	1	Handle Ball Valve	84802900
167	1	Washer Flat 6mm	w/ball valve
168	1	Bolt Hex GR8 6mmx1mmx10mm	w/ball valve
169	1	Bolt Socket Head GR8 6mmx1mmx30mm	w/handle
170	1	Nut Hex 6mmx1mm	w/handle
171	2	2601-16-16-16 Tee	84677700
172	1	Ball Valve Assembly 1"	84802800
-	2	Clamp Hydraulic Tube 1" Kit	04631101
-	-	Includes items 173-176	-
173 ⁽¹⁾	1	Clamp Hydraulic Tube 1" Set	84750300
174	1	Plate Clamp Tube Top COP-3	84751200
175	2	Bolt Hex GR5 1/4"x2 1/4"	86419500
176	2	Nut Hex Nylock 1/4"	86626000

(1) 1 set includes 2 clamp halves.

FRONT SHIELD ASSEMBLY



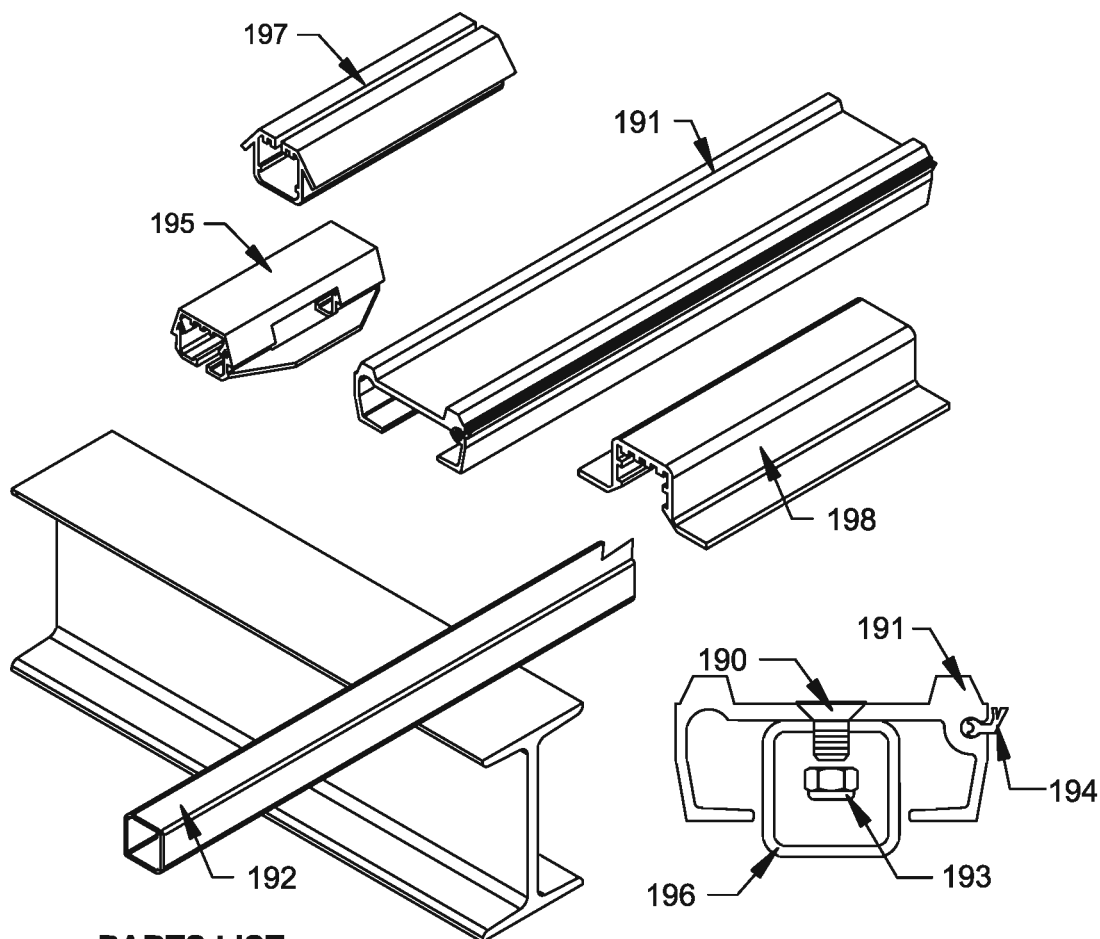
PARTS LIST

ID#	QUANTITY	DESCRIPTION	PART NUMBER
-(1)	1	Front Shield 96" Wide Assembly	03539550
-	-	Includes Items 182-189	-
182 ⁽¹⁾	1	Front Shield 96" Wide 14 Gauge	03539750
183 ⁽¹⁾	1	Bearing Strip Front Shield 1/4"x2 7/8"	03540150
184	5	Stiffener Angle Front Shield 1 1/2"x1 1/2"x3/16"	03539901
185 ⁽²⁾	25	Rivet 3/16"x1/2"	86528000
186	10	Nut Hex 3/8"	86628500
187	10	Washer Lock 3/8"	86555000
188	10	Bolt Hex GR5 3/8"x3/4"	86437000
189	10	Washer Large OD 3/8"	86553500

(1) Part numbers and descriptions vary based on trailer width and application.

(2) Quantity varies based on trailer width and application.

FLOOR COMPONENTS



PARTS LIST

ID#	QUANTITY	DESCRIPTION	PART NUMBER
-	-	Floor Components	-
-	-	Includes Items 190-198	-
190 ⁽¹⁾	-	Bolt Hex GR5 5/16"x2 1/4"	87406000
191 ⁽¹⁾	-	Slat 3.5" 1914 1/2" Impact® Series 1212	8222950000*
192 ⁽¹⁾	-	Subdeck 1"x1"x.063"x20' Steel Tube	80300200
193 ⁽¹⁾	-	Nut Hex Nylock 5/16"	86627500
194 ⁽¹⁾	-	Seal Floor Bent "Y"	83121200
195 ⁽¹⁾	-	Bearing 3.5" Floor Slat	00300301
196 ⁽¹⁾	-	Drive Shoe	-
197 ⁽¹⁾	-	Bearing Hold Down 3.5" Floor Slat	00300401
198 ⁽¹⁾	-	Splash Guard Bearing	83222800

(1) Part numbers and descriptions vary based on application.

* The last four digits in a ten digit part number refers to length in feet and inches (Example 8222954305 is 43'05" long).

MAINTENANCE FOR YOUR NEW KEITH® RUNNING FLOOR II® AND HYDRAULIC WET KIT

1. For proper operation of your new **RUNNING FLOOR II®** equipped trailer and wet kit, make sure the pressure and return lines are hooked up in the correct sequence.
2. Change the hydraulic return filter element after the first six (6) hours of operation and then every six (6) months. This may vary with the operating environment.
3. During the first two (2) weeks of operation, it will be necessary to check and tighten all floor bolts. Floor bolts should be checked regularly for proper torque, in accordance with a preventive maintenance program, as loose floor bolts will cause serious damage to floor slats.
4. After the first week of operation, you must check and tighten the lower cross-drive clamps that fasten the cross-drives to the cylinder. Also check the end cylinder rod plates that fasten the cylinders to the drive frame.
5. During the first several weeks of operation, examine the check valve and tube clamps to ensure that they are securely fastened.

Recommended Bolt Torque Values for KRFII Drive

<u>Bolt Description</u>		<u>Torque</u>
Bolt Floor 5/16" FHCS	82° flat head floor bolt	22 FT-LBS
Bolt Floor 3/8" FHCS	82° flat head floor bolt	42 FT-LBS
Bolt Hex 5/8" HCS	Lower cross-drive clamp bolt (Over torque may distort the barrel enough to bind the piston.)	125 FT-LBS
Bolt Hex 5/8" HCS	Rod end plates	135 FT-LBS
Bolt Hex 5/16" HCS	Check valve and tube clamp bolts	20 FT-LBS

Problems and Trouble-Shooting

KEITH Mfg. Co. 24-hour Fax Service (541) 475-2169
 KEITH Mfg. Co. Customer Service and Support (800) 547-6161 or (541) 475-3802
 Monday - Friday, 7 am to 4 pm Pacific Standard Time

Before you call, please review the following:

1. See start-up check list on page 5.
 Re-checking items on this list can solve most problems.
2. We will be better able to help solve any problems if you have the information indicated below before you call.
 - a. Model Number
 - b. Serial Number (See location guide, page 10.)
 - c. Number of floor slats
 - d. Trailer make
 - e. Cylinder bore size
 - f. Drive unit model

Warranty Return Policy

1. Call KEITH Mfg. at 800-547-6161 or 541-475-3802 for a "Returned Goods Authorization" (RGA) number before returning any item for repair or replacement. The following information is needed to ensure parts are returned as quickly as possible.
 - a. Company name
 - b. Contact name
 - c. Part number
 - d. Quantity
 - e. Reason for return
 - f. Customer's account number
 - g. Phone number
 - h. Address
2. Prior approval and a RGA number is needed when returning any unused product for credit. Make sure the RGA number is on the outside of the shipping carton and all paperwork is included. Return all material on a Freight Prepaid Basis.

!!CAUTION!!

To Prevent Possible Injury or Death

DO NOT:

1. Operate the floor with the doors closed.
2. Stand behind the trailer or in the discharge area.
3. Make adjustments to the unloading mechanism with floor operating.
4. Operate the unloader when protective covers and screens are not in place.
5. Go underneath the trailer.
6. Leave the trailer unattended while the unloader is in operation.

ALWAYS:

1. Disconnect the trailer from the hydraulic power unit (P.T.O.) before service and maintenance.
2. Shut off the power supply before going underneath the trailer.
3. Stay away from any oil leaks when hydraulic pressure is high.
4. Shut off the hydraulic power take off unit (P.T.O.) before moving the trailer.

!!Keep your hands, body parts and loose clothing away from the floor slats and drive mechanism when the unloading system is in operation!!

KEITH®
WALKING FLOOR®
MATERIAL HANDLING TECHNOLOGY