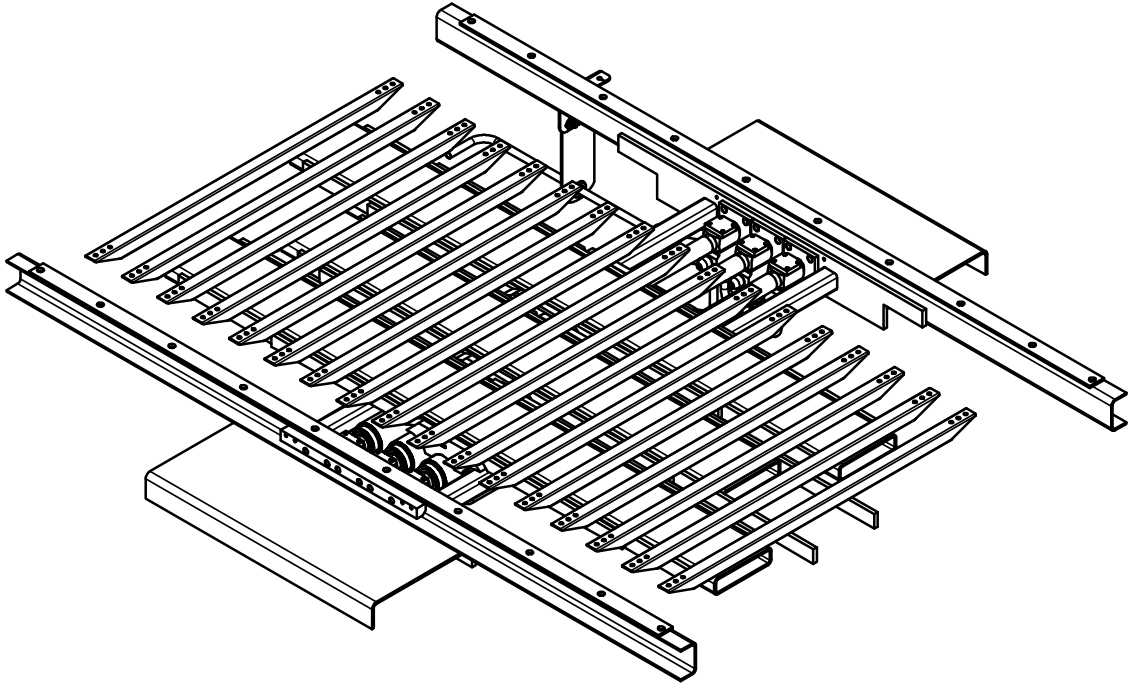


# KEITH® V-FLOOR®

## V-18 Drive

### Installation Manual



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This manual explains procedures for installing the KEITH® V-FLOOR® V-18 unloading system. Many variables affect the installation, but the general process remains constant. Details of the installation vary according to trailer features, kit selections, and installer preferences. Optional sets of instructions are given for some operations to allow for flexibility.

This manual focuses on the installation of a 10" stroke, 18-slat system on 5 ¼" (133.35mm) slat centers. Installation of the system with 5" slat centers is similar. Information unique to 5" (127mm) slat centers is included where it pertains.

Installation time varies and is between 35 and 100 hours, depending upon the experience of the installer and the adaptability of the trailer. If the trailer is not yet built, there are some trailer preparations found Chapter 2 that will save time and effort. One person with welding skills can complete the entire installation.

An efficient installation requires appropriate tools and accessible materials. A list of tools is found in Appendix 1. Appendix 2 lists materials. Several reference drawings accompany this manual. The KEITH® owner's manual contains more detailed information about the system and operation procedures.

Direct any questions to KEITH Mfg. Co. or one of our international offices listed on the cover of this manual.

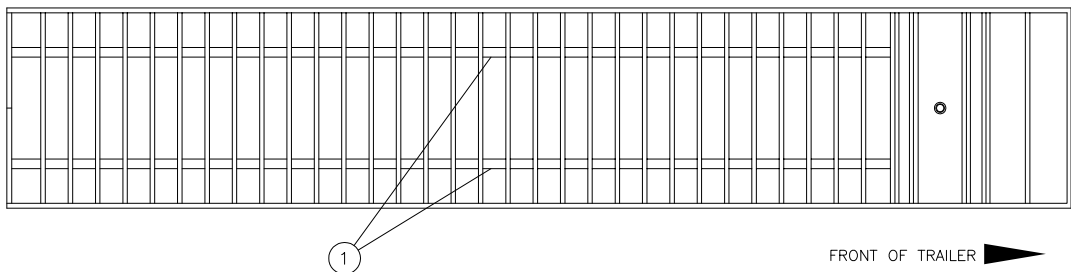
**WARNING:** Installing the *WALKING FLOOR*® system will require some alterations to your trailer. Changes made without approval of the trailer manufacturer may void the trailer's warranty.

The trailer requires preparation before the system is installed. Planning ahead for the *WALKING FLOOR*® installation requirements saves significant preparation time, especially when building a new trailer.

## 2.1 Drive unit compatibility

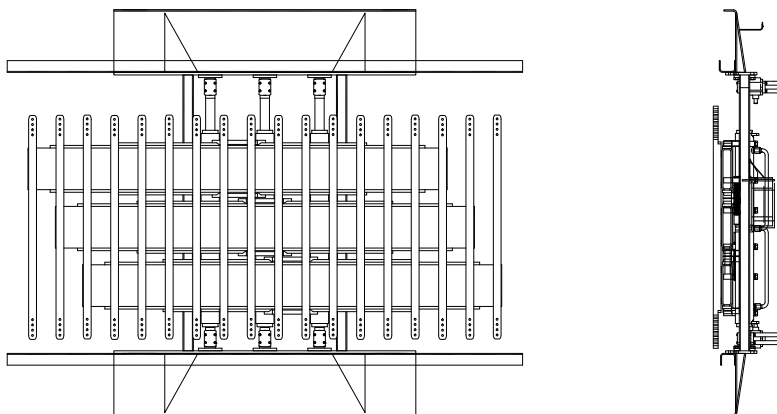
There are two styles of drive units. The trailer's frame determines which style should be used. Check the compatibility of the drive unit with the trailer before making any alterations to the trailer.

If the frame rails extend the full length of the trailer (Figure 1), use a drive unit without frame rails (Figure 2).

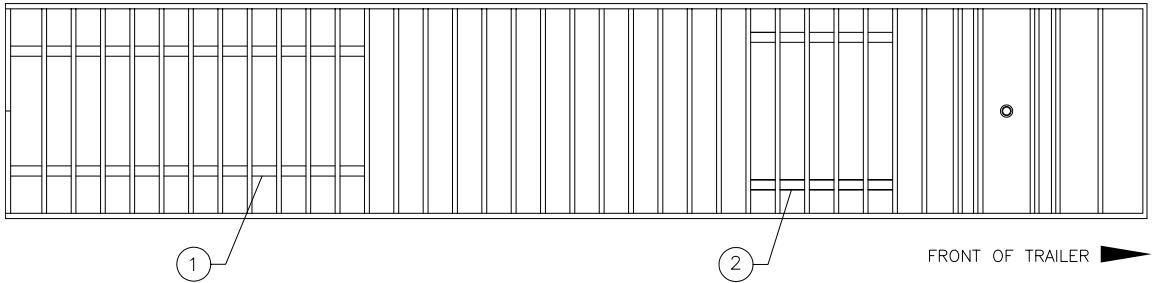


FULL FRAME TRAILER

① CENTER FRAME RAILS

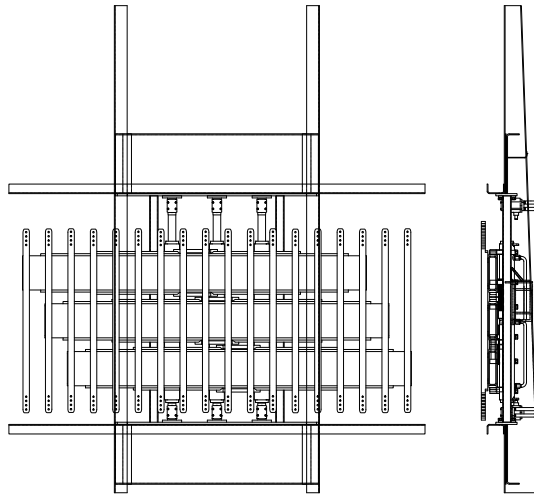


If the trailer is “frameless” (Figure 3), use a drive unit equipped with tapered frame rails (Figure 4).



### FRAMELESS TRAILER

- ① AXLE FRAME
- ② LANDING GEAR FRAME



**NOTE:** Manufacturers of frameless trailers may want to consider extending their axle rails far enough forward that a frameless drive unit can be installed: extend 113" for 10" stroke, 109" for 6" stroke.

Chapter 4 discusses the drive unit installation process in more detail.

## 2.2 Trailer alignment

1. The trailer must be **straight** to allow for proper parallel movement of the slats. Determine straightness by sighting down a floor slat positioned in the trailer.

2. Measure the width of the trailer at the front and make a scribe mark in the center. Do the same in the middle and at the back of the trailer. Clamp a string line at the center scribe mark at the front, pull taut and clamp at the center scribe near the rear. This will give you the true center of the trailer.
3. The cross-members on which the sub-deck mounts must be level, because the friction based principle of the *WALKING FLOOR* system requires a flat floor. If there are deviations exceeding  $\frac{1}{8}$ ", make corrections.
4. Ensure that the last beam of the trailer at the rear door threshold is level with the cross-members.
5. When using aluminum threshold, top of steel or stainless steel wear plate must be level with the cross members.

### 2.3 Bracing

Trailer bracing prevents warping.

If flat bar is used, make a cross-bracing because it will buckle easily under pressure.

Steel angle does not require a cross. Make sure there is enough wheel clearance when installing steel angle.

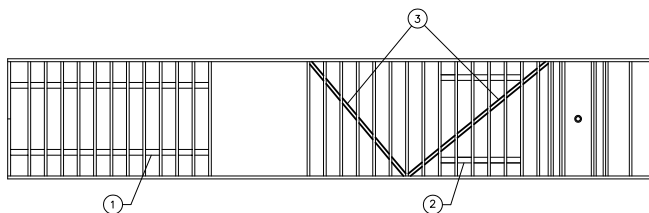


Figure 5

1. AXLE FRAME
2. LANDING GEAR FRAME
3. BRACES

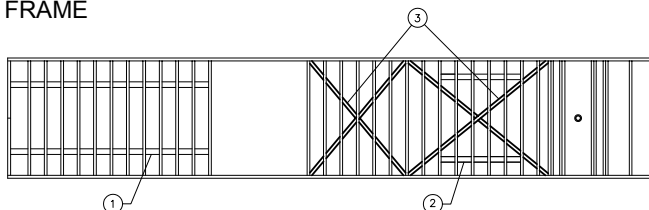


Figure 6

1. Install bracing as shown in Figures 5 and 6.

It is best to add bracing before removing the old floor because the floor keeps the trailer straight. The bracing reaches to the drive opening. Weld or bolt the braces to each intersecting cross-member.

## 2.4 Hydraulic tubing locations.

Hydraulic pressure, generated by the tractor's wet kit, powers the drive unit. Tubing must connect the drive unit to the tractor. A central location is preferable for the quick-couplers in front of the trailer. This keeps the hose length down, if they stay connected while driving.

Make sure that brake lines and electrical wires will not interfere with moving parts. If necessary reroute them to protect them from damage.

There are three options available:

1) Routing the hydraulic tubing through the cross-members (Figure 7). Make two 1  $\frac{3}{8}$ " holes per cross-member. The holes should be close to the sides of the trailer to maintain the structural integrity of the cross-members.

Access holes must be cut or drilled through the nose of the trailer, in line with where the tubes will pass through cross-members.

Patch the holes after the tubing is in place.

The tubes may drop below the cross-members anywhere behind the landing gear and attach to the underside of cross-members.

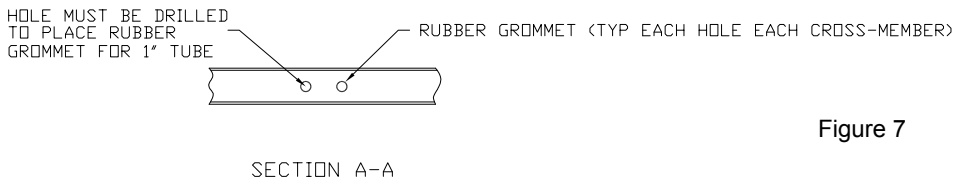
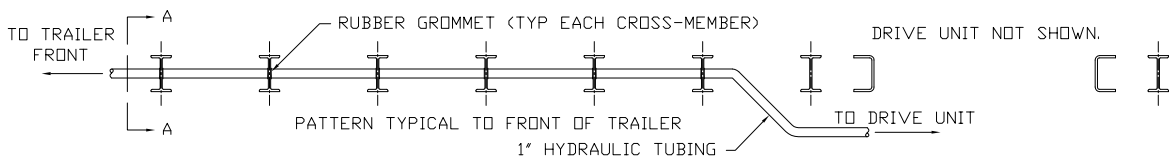
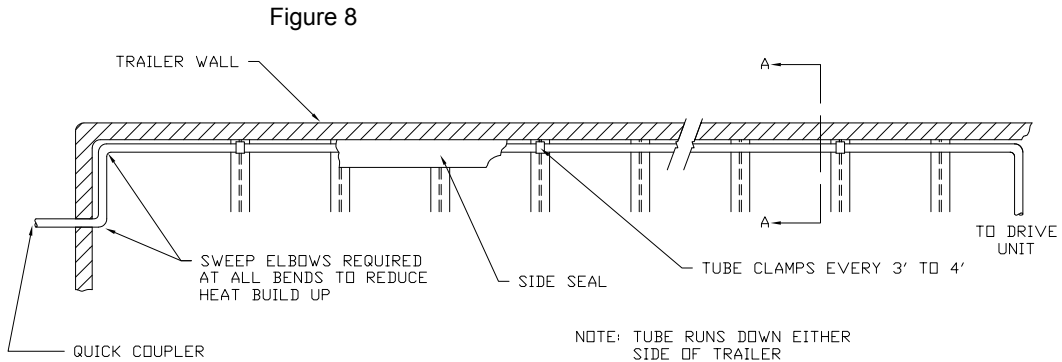


Figure 7





### 3) Routing the tubing underneath the cross-members.

This option is not recommended, as it can cause problems with truck tire clearance and it makes the tubing very vulnerable.

## 2.5 Cross-members

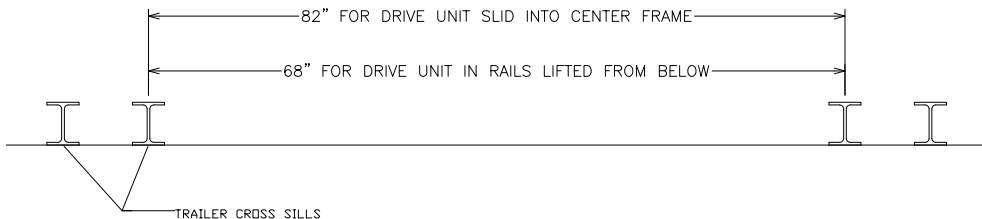
Cross-members function as support for the sub-deck.

**NOTE:** Holes for the hydraulic tubing should be made through cross-members before they are mounted on a new trailer.

Compare the trailer cross-member height to the formed cross sills on the drive unit. They should be the same. If they differ, contact KEITH Mfg. Co. or one of our international offices.

1. Remove cross-members to create an adequate gap for the drive unit (Figure 9). See Chapter 3 for more information about drive unit location.

Figure 9



2. Reposition cross-members if necessary.

The rear most cross-member should be mounted a minimum of 17" inside the trailer doors. The foremost cross-member should be about 17" away from the front wall.



### 3 DRIVE UNIT

Drive unit installation in a center frame trailer differs from an installation in a frameless trailer.

Collapse all cylinders to the discharge end of the trailer if not already done.

Trailer walls need to be straight or tapered so that the trailer is wider at the discharge end. There should be no restrictions that may hinder the flow of material.

#### 3.1 Center frame trailer

1. Decide on the location of the drive unit.

The drive unit should be installed as close to the rear of the trailer as is practical.

2. Mark a centerline from rear to front of trailer. This will be used to align drive and sub-decking.

3. Position drive unit.

The drive should be positioned and welded, before the sub-deck is installed. The system can be lifted into an open top trailer from above with a crane.

If the trailer top is closed or a lifting mechanism is not available, use the following method:

- a. Set a sheet of plywood inside the rear of the trailer.
- b. Place blocking on the sheet to protect hydraulic tubing.
- c. Lay the drive unit on the sheet.
- d. Slide the sheet forward into the drive gap.
- e. Raise the rear of the unit so the front stiffener plate will fit under the forward cross sill.
- f. Slide the unit forward so the rear stiffener clears the rear cross sill.
- g. Lower the unit and slide to position.

**NOTE:** A minimum drive gap of 86" is necessary to maneuver the drive unit.

**IMPORTANT:** Do not damage piston rods. Do not lift drive unit by the hydraulic crossover tubes on the cylinders or any other hydraulic components.

#### 4. Align and level drive unit.

##### Front to rear alignment

Center the drive unit in the drive gap. The 2" x 8" cross-drive tubing should be parallel to trailer cross-members.

##### Side to side alignment

Align the drive unit's center punch marks with the trailer's centerline.

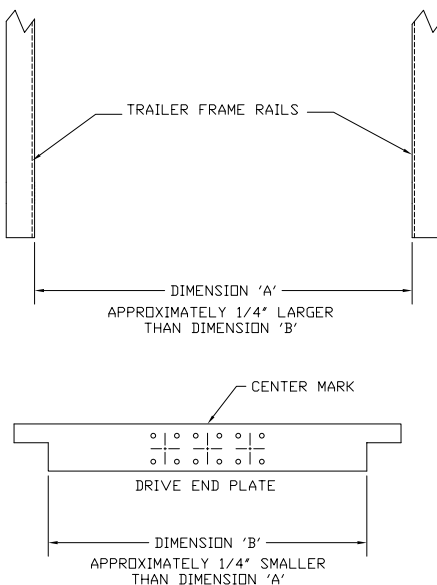


Figure 10a

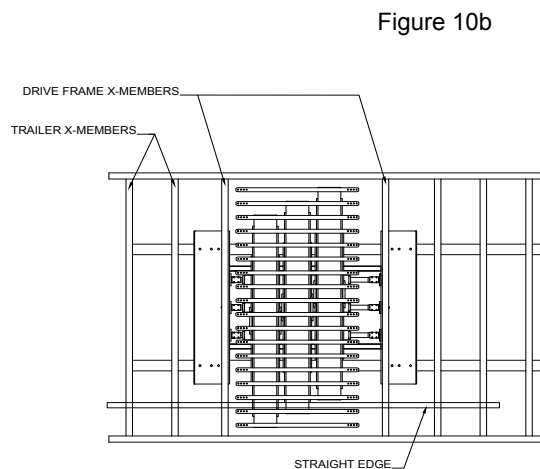


Figure 10b

### Height

- a. Lay a straight edge from cross-member to cross-member across the drive, stretching over two cross-members on each side of the drive unit. (Figure 10)
- b. Raise the drive so the top of the drive cross-members touch the straight edge across the shoe length on each straight edge. Make height adjustments by shimming or grinding ears of the drive unit end plates.

This method gives the proper drive height as drive unit cross-members height should match the trailer's cross-member heights. Shim if necessary. (Figure 11).

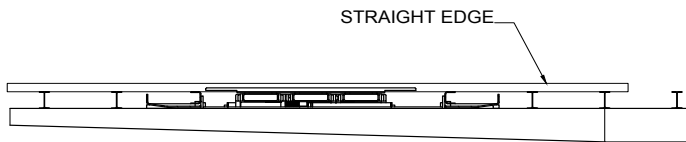


Figure 11

5. Weld the drive unit in place.

Weld according to reference drawing C-10797A.

- a. Use the center punch mark on the top center of the  $\frac{1}{2}$ " x 5" cylinder mount plates to align the center of the drive unit to the center of the trailer.
- b. Make sure top of shoe is  $1 \frac{1}{4}$ " above top of cross-member. If needed, shim drive to correct height.
- c. Adhere to the five weld symbols shown on the drawing.

6. Weld bracing to side walls as shown in reference drawing C-10797A.

On aluminum trailers bolt a steel strip to side rails to weld braces.

7. Install cross-drive support tubes as shown in reference drawing C-10797A.

Slide the support tubes into position between 8" x 2" cross drives and trailer frame rails. Place the tubes where they will support the cross-drives over a full stroke. The steel tubes can be shimmed to create a close drive to UHMW fit. Do not shim too much as an extremely tight fit could tear the UHMW from the steel. Bolt the tubes in place with one  $\frac{3}{8}$ " x 1" bolt at each end.

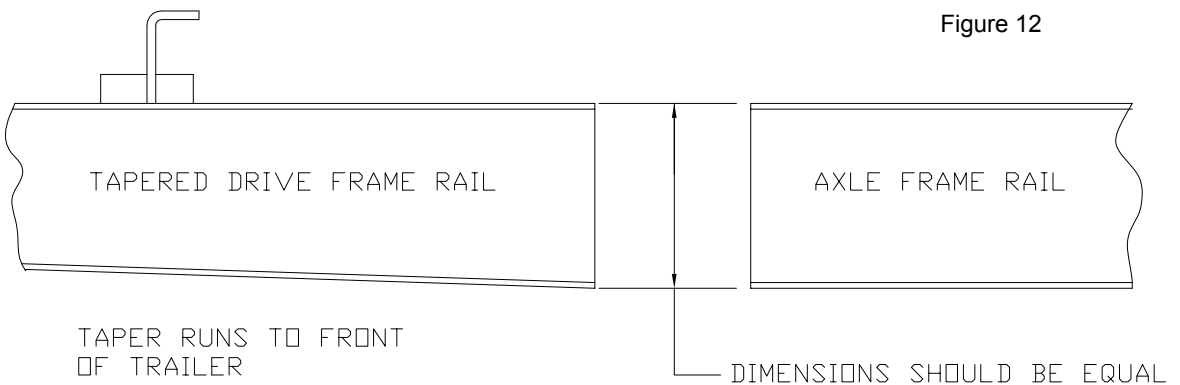
### 3.2 Frameless trailer

**NOTE:** Manufacturers of frameless trailers may want to consider extending the axle rails far enough forward that a frameless drive unit can be installed. Extend 113" for 10" stroke, 109" for 6" stroke.

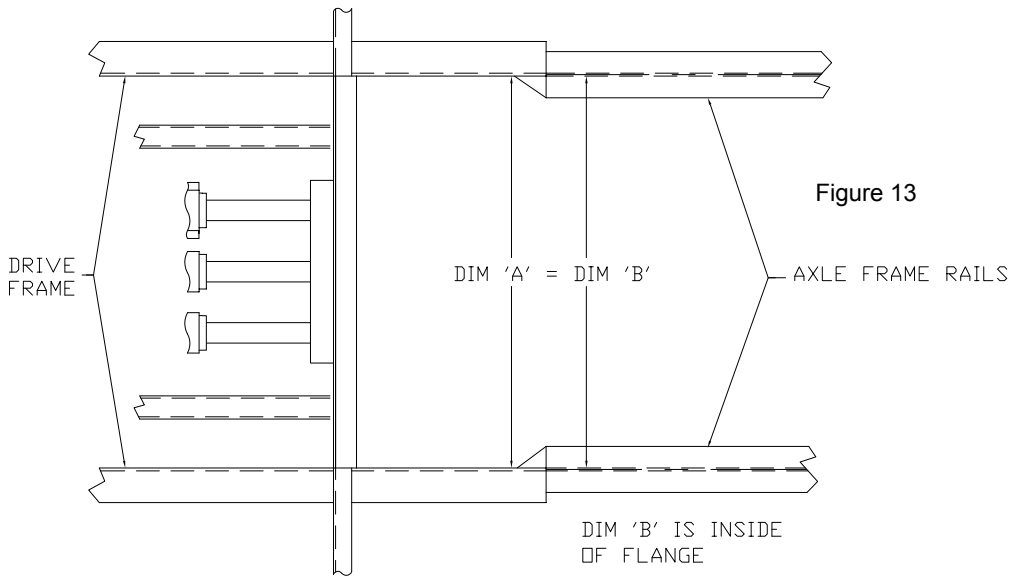
#### 1. Position drive unit in the drive gap.

Check to be sure drive unit dimensions fit the location. The rail heights should be close, (Figure 12) and dimension A should equal dimension B (Figure 13). The system can be lifted from above with a crane or from below with a forklift. Raise the tapered drive frame rail tight against the bottom of the cross sills.

**IMPORTANT:** Do not damage piston rods. Do not lift drive unit by the hydraulic crossover tubes on the cylinders or any other hydraulic components.



**NOTE:** Exact alignment of trailer centerline with the drive unit centerline is more important than alignment of the drive unit frame with the trailer's axle beams.



## 2. Align and level drive unit.

The ends of the formed cross sills should rest on the trailer side rails.

### Front to rear alignment

Butt the tapered drive frame rails tight against the ends of the axle beams (Figures 14 and 15). A transfer plate may be placed between the two beams if a flat surface does not exist on either the drive frame or the axle beam.

### Side to side alignment

Align the drive unit's center punch marks with the trailer's centerline. (Figure 14)

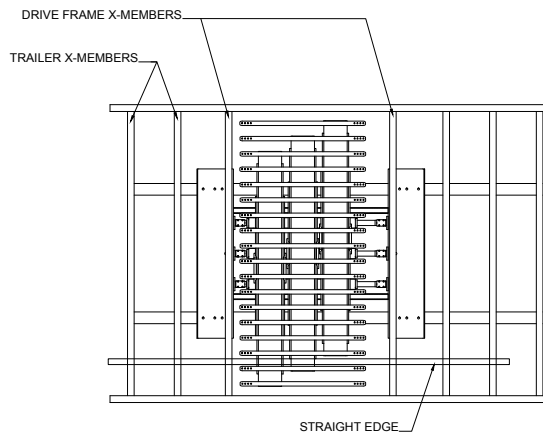


Figure 14

### 3. Height (Figure 15)

- Lay a straight edge from cross-member to cross-member across the drive, stretching over two cross-members on each side of the drive unit.
- Raise the drive so the top of the drive cross-member touches the straight edge across the shoe length on each straight edge. Raise or lower the drive unit accordingly .

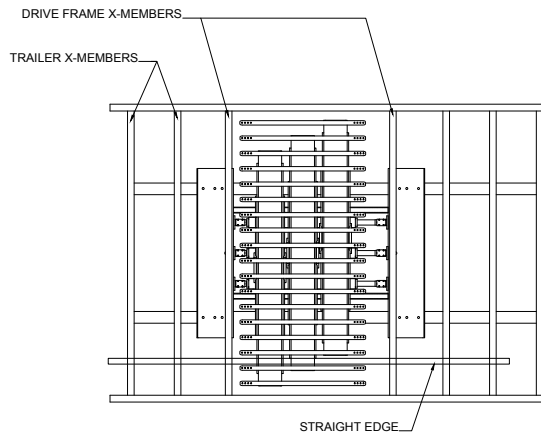


Figure 15

### 4. Weld the drive unit in place.

Weld according to reference drawing C-10797A

- Use the center punch mark on the top center of the  $\frac{1}{2}$ " x 5" cylinder mount plates to align the center of the drive unit to the center of the trailer.
- Align the drive shoes with 1" x 1" sub-deck tubing.
- Make sure top of shoe is  $1 \frac{1}{4}$ " above top of cross-member. If needed, shim drive to the correct height.

### 5. Weld bracing to side walls as shown in reference drawing C-10797A.

On aluminum trailers bolt a steel strip to side rails to weld braces.

## 3.3 Painting

The factory paints drive units with red oxide or gray oxide primer.

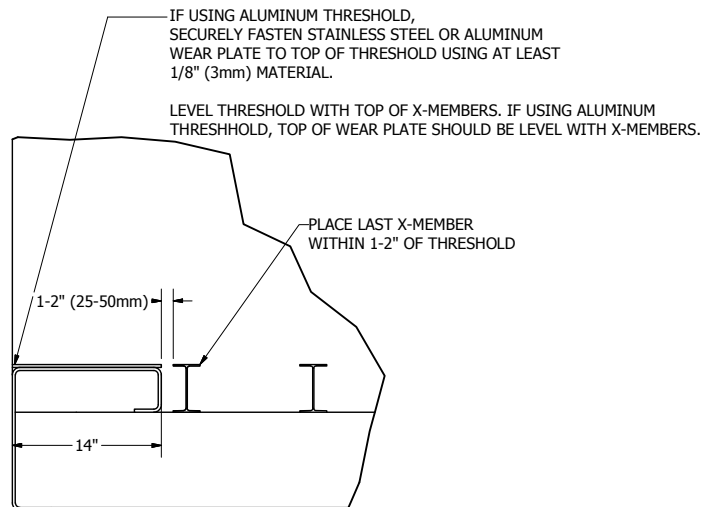
- Confirm that the drive unit is coated well with primer.
- Treat the drive unit and sub-deck with a finishing paint.

**IMPORTANT:** Make sure that the following parts are protected when painting: cylinder chrome rods, switching valve chrome rod, serial plate and any decals.

#### 4 V-18 SUB-DECK

The sub-deck is the structure directly above the cross-members and underneath the floor slats. The sub-deck consists of aluminum profiles. The aluminum profiles mount on top of the cross-members.

A baffle plate extends forward from the door threshold to prevent material from sifting through the floor when slats are in the forward position.



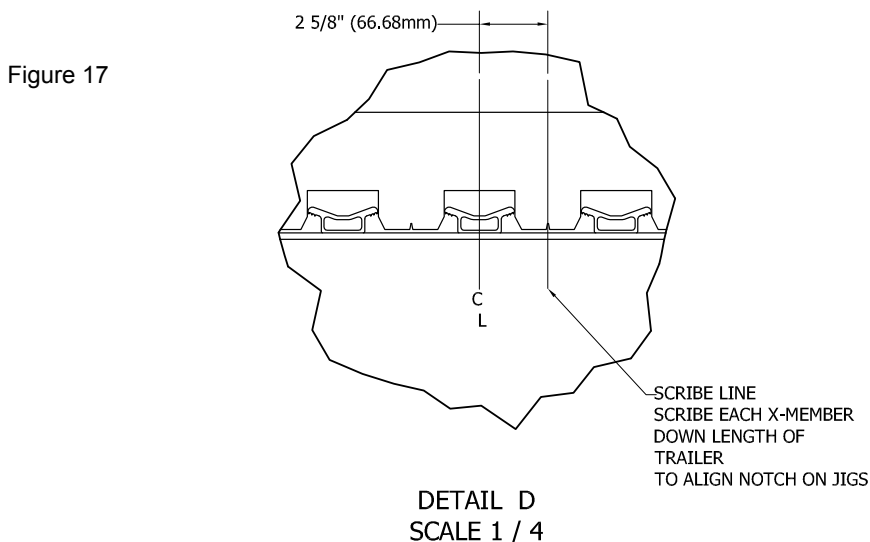
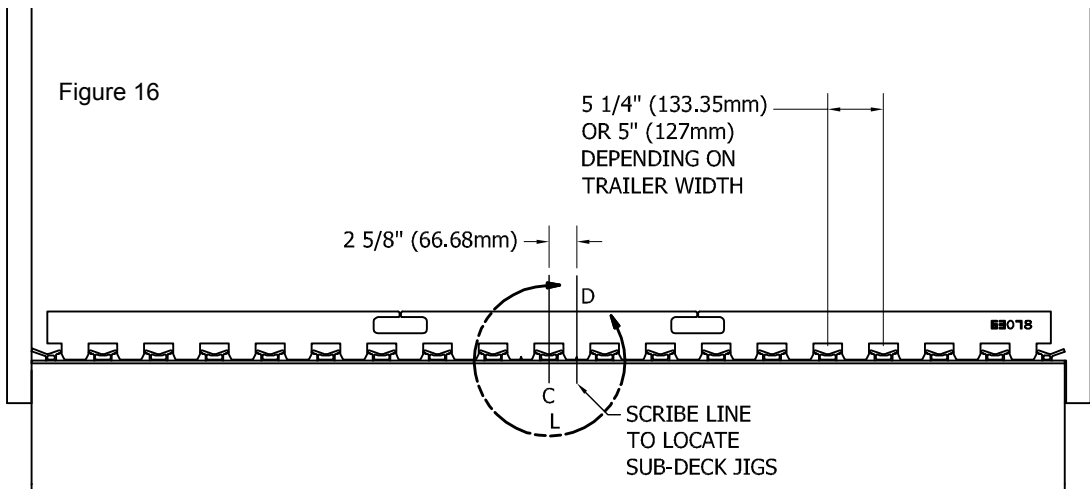
DETAIL A  
SCALE 1 / 8

## 4.1 Sub-deck profiles

The proper installation of the aluminum profiles is critical for maintaining drive alignment, floor straightness and for optimal performance of the bearing located under the floor slats. Sub-decking is applied after the drive unit is positioned.

Collapse all cylinders of the drive unit to the discharge end of the trailer if not already done.

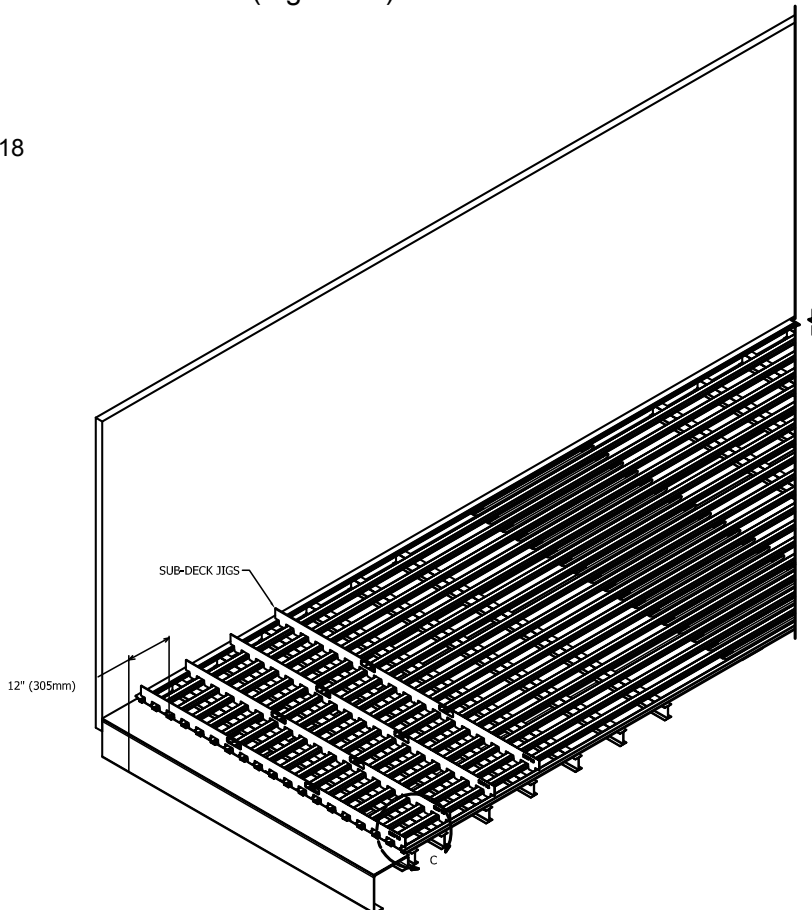
1. Scribe line each cross-member down the length of the trailer to align the notch on the jigs. Scribe at 2 5/8" (66.68mm) off trailer centerline. (Figure 16) Locate notch in sub-deck jigs with offset scribe line. (Figure 17)





2. Place sub-deck in trailer. Sub-deck centers should be  $5\frac{1}{4}$ " (133.35mm) or 5" (127mm) apart, depending on the width of the trailer.
3. Align sub-deck jigs. Use scribe line to locate sub-deck jigs. Sub-deck should end 12" (305mm) inside of rear door. (Figure 18)

Figure 18



4. Install sub-deck.

For weld down sub-deck:

Weld sub-deck to every cross-member on both sides except for the cross-members supplied by KEITH Mfg. Co. that are located on either side of the drive. This will make installing the J-Bearing easier.

Alternative method: The sub-deck can be welded underneath transverse to sub-deck on both sides.

Note: Stop weld  $\frac{1}{4}$ " (6mm) from edges of cross-member. (Figure 19)

5. When sub-deck is secured up to front jig, then move jigs forward and secure sub-deck.

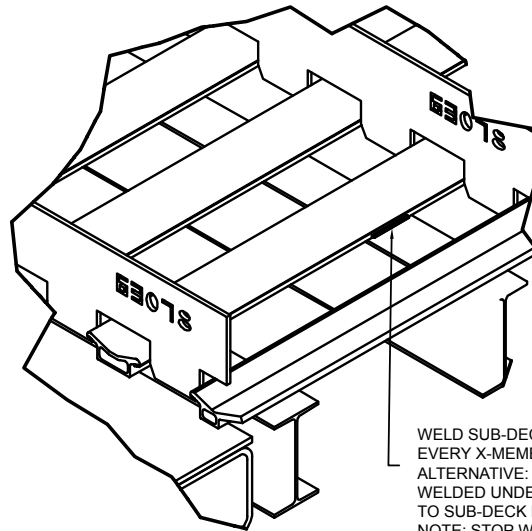


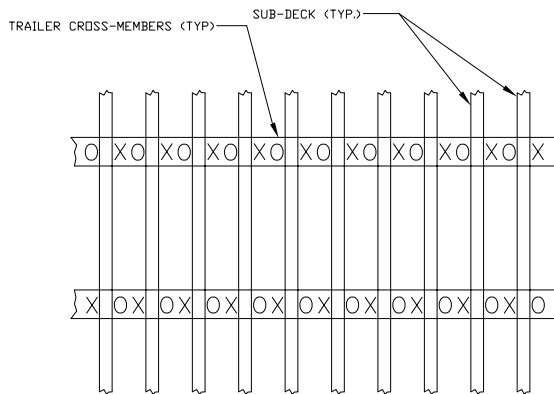
Figure 19

WELD SUB-DECK TO X-MEMBER EVERY X-MEMBER BOTH SIDES. ALTERNATIVE: SUB-DECK CAN BE WELDED UNDERNEATH TRANSVERSE TO SUB-DECK BOTH SIDES. NOTE: STOP WELD 1/4" (6mm) FROM EDGES OF X-MEMBER

DETAIL C  
WELD DOWN SUB-DECK DETAIL

Figure 20 suggests a welding pattern. Starting each pass on the same side of the trailer gives sufficient cooling time.

Figure 20



X = first pass

O = second pass

For bolt down sub-deck:

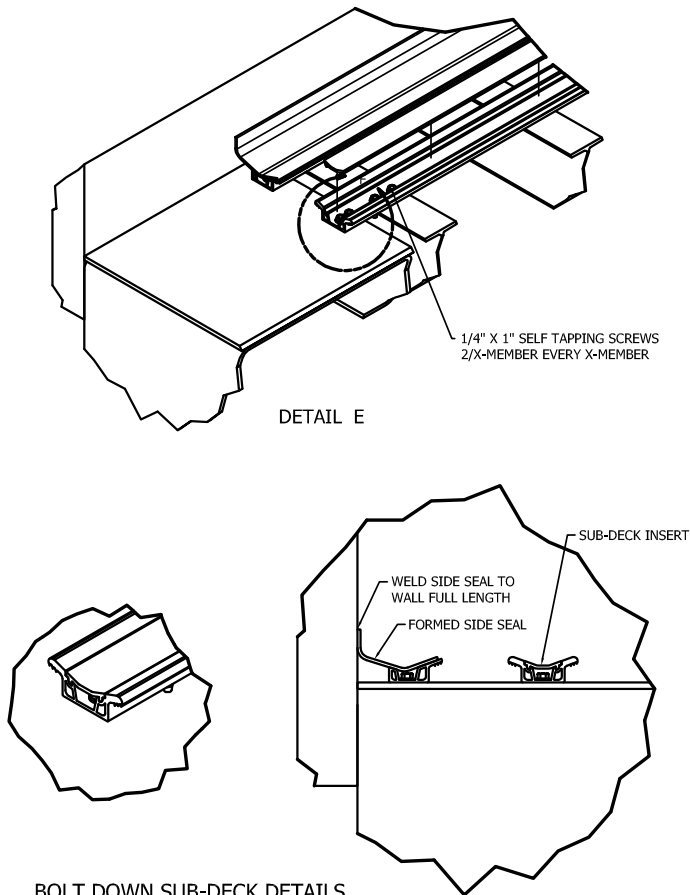
The sub-decking needs to be secured on both sides of the cross-members except for cross-members supplied by KEITH Mfg. Co. that are located on either side of the drive. Do not bolt these cross-members. This will make installing the J-Bearing easier. (Figure 21)

Complete steps 1-3 as detailed above, then proceed as described below.

- a. Pilot drill holes using #2 ( $\text{Ø}.221''$  or 5mm)
- b. Attach each sub-deck piece using  $\frac{1}{4}''$  (6mm) x 1'' (25mm) self-tapping bolts.
- c. Place the full length insert strip into sub-deck flush with end of sub-deck at discharge end. Weld insert only to the sub-deck cap at the discharge end. The J-Bearing will hold the insert in place.

Mylar tape or paint should separate aluminum profiles from steel cross-members to prevent metal decay.

Figure 21



## 4.2 Threshold wear plate

- 1) If using steel or stainless steel threshold, ensure that threshold is level with the top of the cross-members.
- 2) If using aluminum threshold, it must be topped with a steel or stainless steel wear plate. The steel or stainless wear plate needs to be a minimum of 1/8" thick and securely fastened to the threshold.
- 3) The wear plate can either be bolted or welded, but must be securely fastened so that it does not distort or warp causing premature failure to slat and bearings.
- 4) If the wear plate is bolted down, use counter-sunk bolts between the slat travel areas to provide a smooth surface for the bearings to ride on.

## 4.3 Side seal options

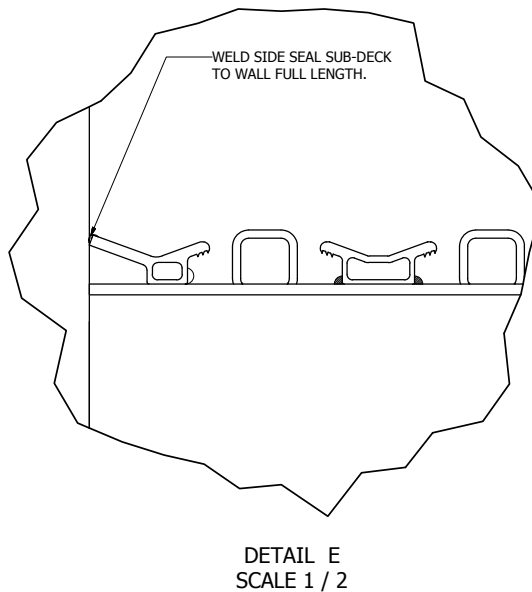
The side seal incorporates the trailer walls to the two outside pieces of sub-decking (also known as side seal sub-decking). The correct quantity and side seal profiles are supplied with your kit.

The side seal material will match the material of the trailer walls. For example, an aluminum walled trailer will use aluminum side seal.

Side seal should span the entire length of the sub-deck. One section of each side may need to be cut, as side seal comes in 12' lengths for steel and 10' lengths for aluminum.

1. Weld the full-length of the side seal to the trailer wall. This should be done with several stitch welds to keep from concentrating the heat in one area. The full-length weld will keep material from getting behind the side seal and separating it from the wall.

Figure 23



## 4.4 J-bearing

The “J”-shaped bearing supports the flooring and creates a bearing surface so that there is no metal-to-metal contact between the flooring and sub-deck. For slats with the J-Bearing already installed, skip steps 1-9.

### Installing the J-Bearing

1. If J-Bearings have been coiled for shipment, uncoil and lay them flat in a warm room at least 24 hours prior to installation.
2. To install the J-Bearing onto the sub-deck, start at the load end of the trailer and position two J-Bearing pieces on each side of the sub-decking. Start the J-Bearing 3” (50mm) from the load end of the sub-deck to allow for thermal expansion and contraction.
3. Hammer on the J-Bearing 24” (600mm) to get each piece started.
4. Use a rubber mallet or the installation tool (P/N 63484) to fully install the J-Bearing from load to discharge end. J-Bearing may not extend past the discharge end to allow room to weld on end caps.

Note: Make sure the J-Bearing is mated to the sub-deck. If the J-Bearing is not all of the way on, it may cause problems when installing the slats.

5. Continue to install J-Bearing pieces on each piece of sub-decking. The two outermost pieces of the side seal sub-deck will need to have the J-Bearing installed the full length by hammering each piece on with a rubber mallet.
6. Cut the excess bearing flush with the discharge end of the sub-deck.
7. Clamp the drill jig in place (P/N 7585501) and drill pilot holes through the J-Bearing and sub-deck using the drill template jig and a 11/64” (4.4 mm) drill bit. Lubricating the drill bit with aluminum cutting oil between drilling holes will minimize broken bits. (Figure 24)
8. Countersink the holes in the J-Bearing using an 82° countersink bit. Be careful not to over countersink!
9. Install four #10-24 x ½” countersunk Flathead Rolok screws (P/N86404410) at the discharge end of each piece of J-Bearing. Use Loctite thread retainer #243. Be sure the heads of the screws are flush or just below the surface of the bearing. This secures the bearing in place. (Figure 26)

10. Weld end caps onto the discharge end of the sub-deck. These caps will plug the sub-deck cavities and keep the bearing from sliding out the rear of the trailer. Make sure the top of the caps are no higher than the top surface of the bearing. (Figure 26)

11. After the J-Bearing installation is complete, return to drive unit and weld or bolt the sub-deck the cross-members on either side of the drive unit.

Figure 24

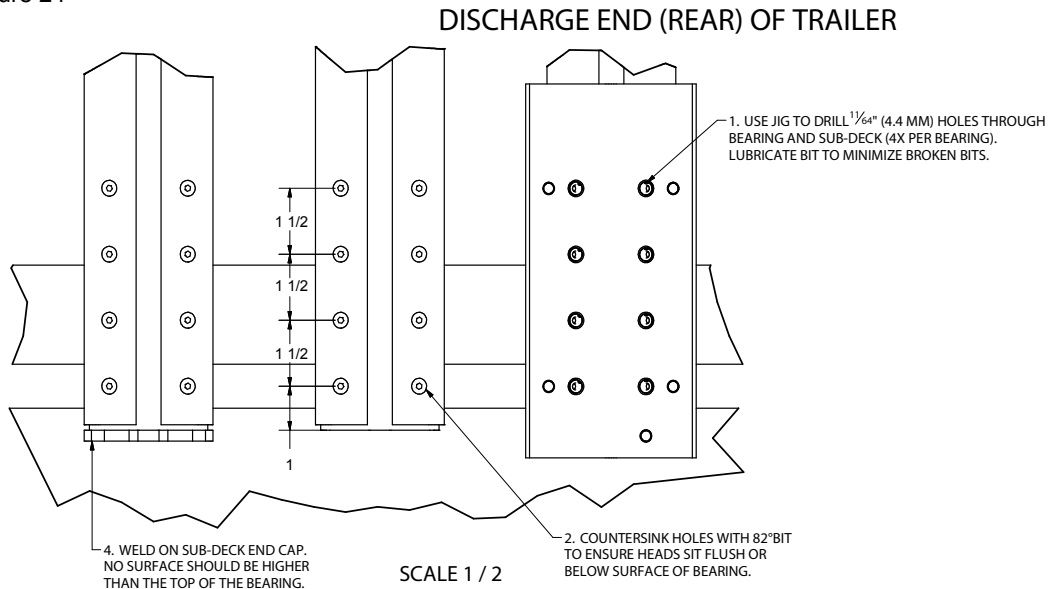
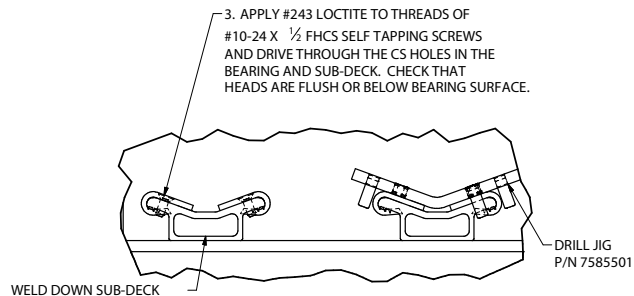
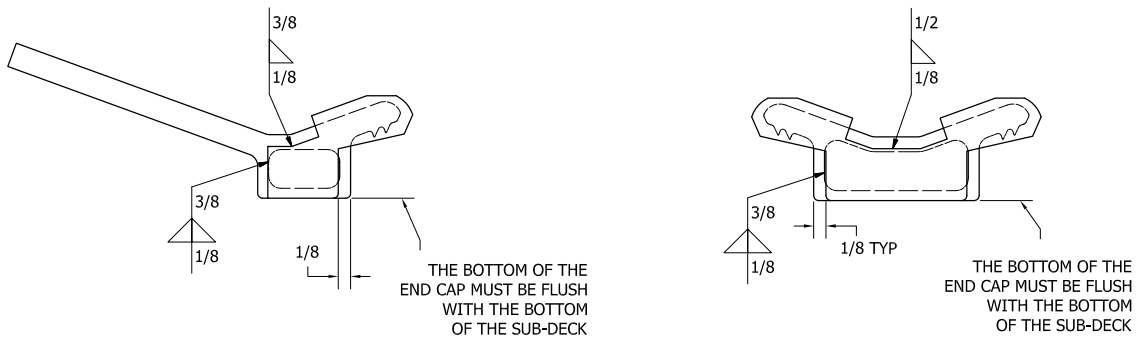


Figure 25



## WELD DETAIL

Figure 26



## 5 FLOORING

### 5.1 Floor slats

#### 1. Determine length of floor slats.

The slats have to reach from 1" from the doors to a minimum of 9"-- for a 6" stroke system-- from the closest point on the front wall at floor level. This implies that the maximum length of the slats is 10"-- for a 6" stroke system-- shorter than the inner length of the trailer. For example, maximum slat length for a 6" stroke unit in a 45' trailer is 44'-2".

**WARNING:** Make sure that the slats do not bump the front wall; watch for round shaped walls. Be particularly careful with bull nosed trailers.

#### 2. Cut floor slats to length.

If a wear plate is mounted on one end of the floor slat, cut the surplus off at the opposite side.

**NOTE:** KEITH Mfg. Co. normally performs steps 1-2.



## 5.2 Slat Installation

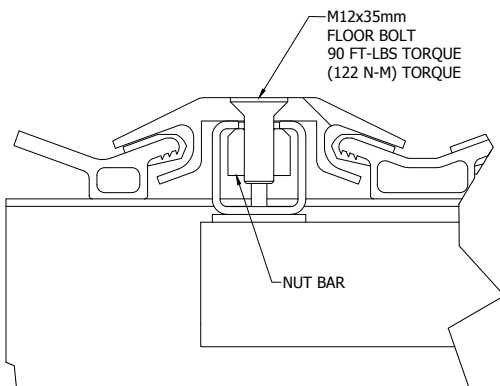
### Floor Slat Installation

Make sure all cylinders are collapsed to the discharge end of the trailer.

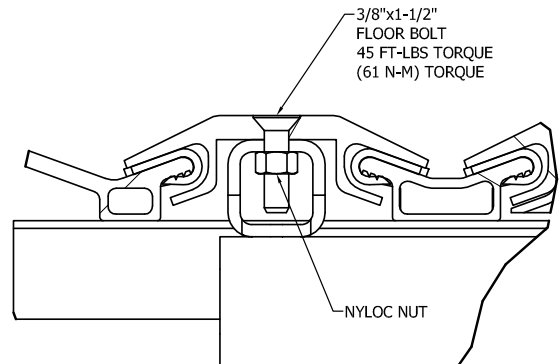
KRFII Floor Slat Bolt Instructions:

1. Slide slats onto the trailer. Slats should end  $\frac{1}{2}$ " (12.7mm) from inside of rear door when cylinders are collapsed toward discharge end.
2. Drill holes in the slats from underneath, through the drive shoes. Some holes may need to be drilled from above, if slats are over frame rails.
3. Countersink the holes so that the floor bolts are flush with the top slat.  
Important: Do not over countersink. This will make a weak connection and may cause the floor to come loose.
4. Bolt floor slat down tightly. Use  $\frac{3}{8}$ " x  $1\frac{1}{2}$ " (9.5mm x 38mm) Grade 8 countersunk floor bolts with nyloc nuts. Torque to 45 ft-lbs (61 N-M).

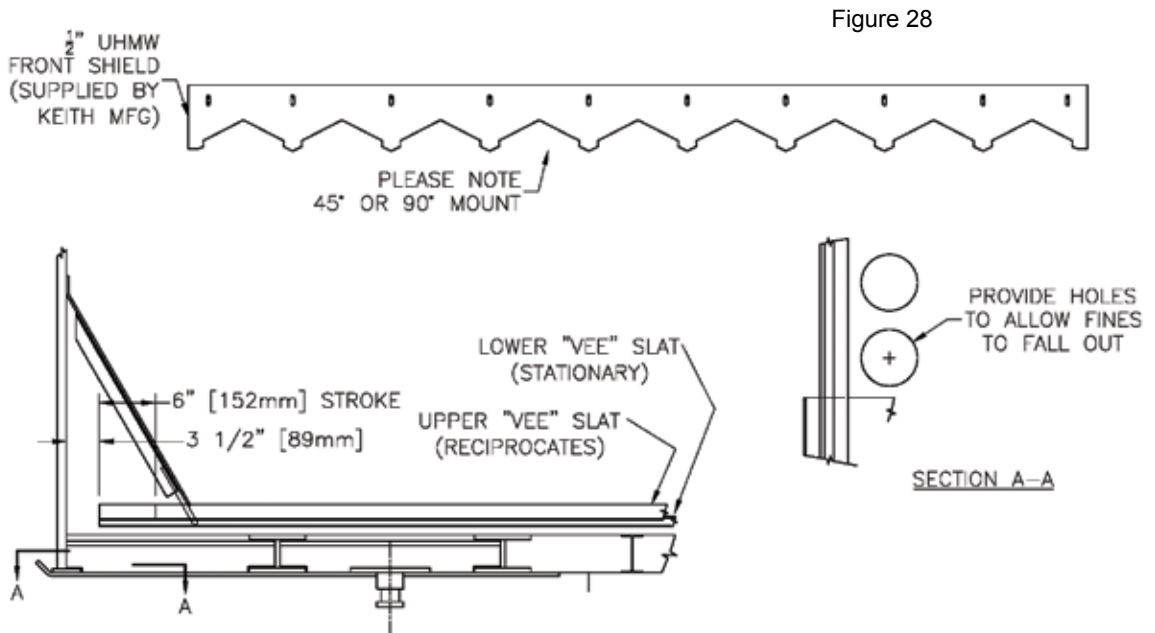
Figure 27



KFD BOLT DETAIL



KRFII BOLT DETAIL



### 5.3 Front shield

#### 1. Determine dimensions (Figure 28).

The width is equal to the inner trailer width. The front shield is angled at 45°.

When the floor slats are in the rear position, the UHMW profile must still lie fully on top of the floor slats.

#### 2. Fabricate front shield.

Form the plate and attach angled steel for support. Bolt the UHMW profile to the shield.

#### 3. Mount front shield.

Screw the plate to the side of the trailer.

Provide clean-out holes below the slope sheet.

## 6 HYDRAULIC TUBING

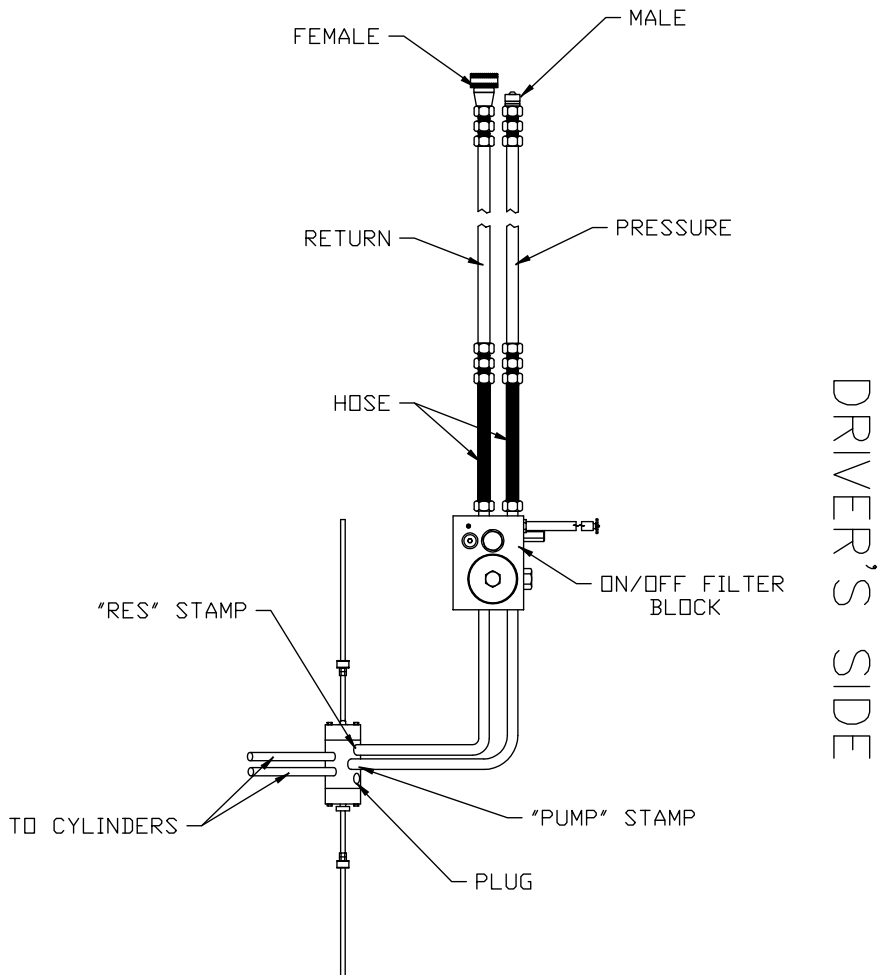
Section 2.4 discusses the location of hydraulic tubing.

**IMPORTANT:** All components and tubing must be kept absolutely clean to prevent dirt from entering the system.

1. Determine tube locations and lengths.  
Keep bends to a minimum. Make all bends with sweeping elbows to reduce heat build up.
2. Cut tubes to length.
3. Position tubes.  
Use rubber grommets or PVC tubes to protect the tubing when installing tubes through cross-members. Installing the tubes underneath the side seal or cross-members requires fastening with clamps.  
1" hoses can be used to connect the tubes to the drive unit.
4. Mount quick couplers at front of trailer.  
Connect the male coupler on the pressure line (line to switching valve port stamped "pump"). Connect the female coupler to the return line (line to switching valve port stamped "res") (Figure 30). Apply hydraulic sealant.
5. Connect tubes to drive unit.  
Connect the pressure line to switching valve port labeled "PUMP" and return line to switching valve port labeled "RES". Make sure that rubber hoses are not twisted.

FRONT OF TRAILER

Figure 29



## **7 MISCELLANEOUS**

### **7.1 Trailer wires and lines**

Make sure that wires and lines cannot be damaged by moving parts. Mount them so they cannot rub against other parts. Check proper light and brake performance.

### **7.2 Caution decals**

Affix caution decals to the side of the trailer at the location of the drive unit.

### **7.3 Front guard**

A front guard should deny access to the underside of the front end of the slats so they cannot shear anything entering from below. A screen or plate similar to the rear baffle plate is adequate if one does not already exist.

Tools provided by KEITH Mfg. Co.

- Spacer jigs (for alignment of the sub-deck)

Basic tools not supplied with kit

- End wrench set up to 1 1/2"
- 3/8" ratchet set with 12" extension
- Allen wrenches
- Hack saw
- Hand grinder
- 25 ' tape measure
- 20 C-clamps 11 R
- 3/8" and/or 1/2" hand drill, bit set, 1 3/8" hole saw
- Straight edges
- Dead blow hammer

Special tools

- 11/64" Drill Bit
- Flow meter
- Flaring tool for 1" pipe
- 5/16" drill bit, 12" long
- Torque wrench up to 50 ft-lbs
- Mig welder (wire welder)
- Rivet gun
- Overhead crane (hoist or forklift)
- Circular saw

Optional tools

- Knee pads
- Band saw

Miscellaneous

- Hydraulic sealant
- Paint

Standard kit

- Drive unit
- Floor slats
- Sub-deck
- UHMW front shield profile
- Formed side seal
- J-bearings
- Sub-deck cap
- Floor bolts
- Caution decals

NOT provided with standard kit

- 1" hydraulic tubing
- Hydraulic quick couplers
- Hydraulic hose (for connecting drive unit to tubes)
- Steel plate (12 gauge or 14 gauge to fabricate baffle plate)
- Front shield

Options

- Aluminum wear strips
- Tube clamps
- Rubber grommets
- 1" I.D. PVC pipe

Appendix 3 includes scaled down copies of the reference drawings. Full-scale reference drawings also accompany the installation manual.

Reference drawings accompanying installation manual

- C-10797A Drive installation, frame in tapered rails.
- C-40075 Drive installation into full frame trailer.
- D-12005 Examples of drive mounts.
- D-63092 F 18-Slat V-FLOOR Installation instructions.



Carefully check the items on this list. They are essential for optimal floor performance.

#### Before installation

1. The trailer should be straight.
2. The trailer should have cross bracing.
3. Cross-members should be level with other cross-members and kingpin plate.

#### During installation

4. The aluminum sub-deck tubing must be centered in the trailer.
5. The drive unit must be properly aligned.
6. The cylinders must be entirely collapsed before attaching drive channels.
7. A front guard should deny access to the underside of the front end of the trailer so slats cannot shear anything entering from below.
8. The J-bearings should seat properly on the sub-deck and the flooring should seat properly on the bearings.

#### After installation

9. The pressure and return lines should connect to the correct switching valve port.
10. Caution decals should be visible.

Run the system following the instructions in the owner's manual.

#### After operation

11. Check for leaks and unnecessary rubbing.
12. Refer to the owner's manual and adjust the switching valve.

BOLT	LOCATION	GRADE	TORQUE (ft. lbs.)
1/4-20	Tube Clamp at Ball Valve	5	8
5/16-18	Tube Clamp to Cylinder	5	17
5/16-18	Check Valve	5	17
3/8-16	Flooring	8	45
5/8-11	Barrel Clamp	5	125
5/8-11	Drive End Plate	5	125