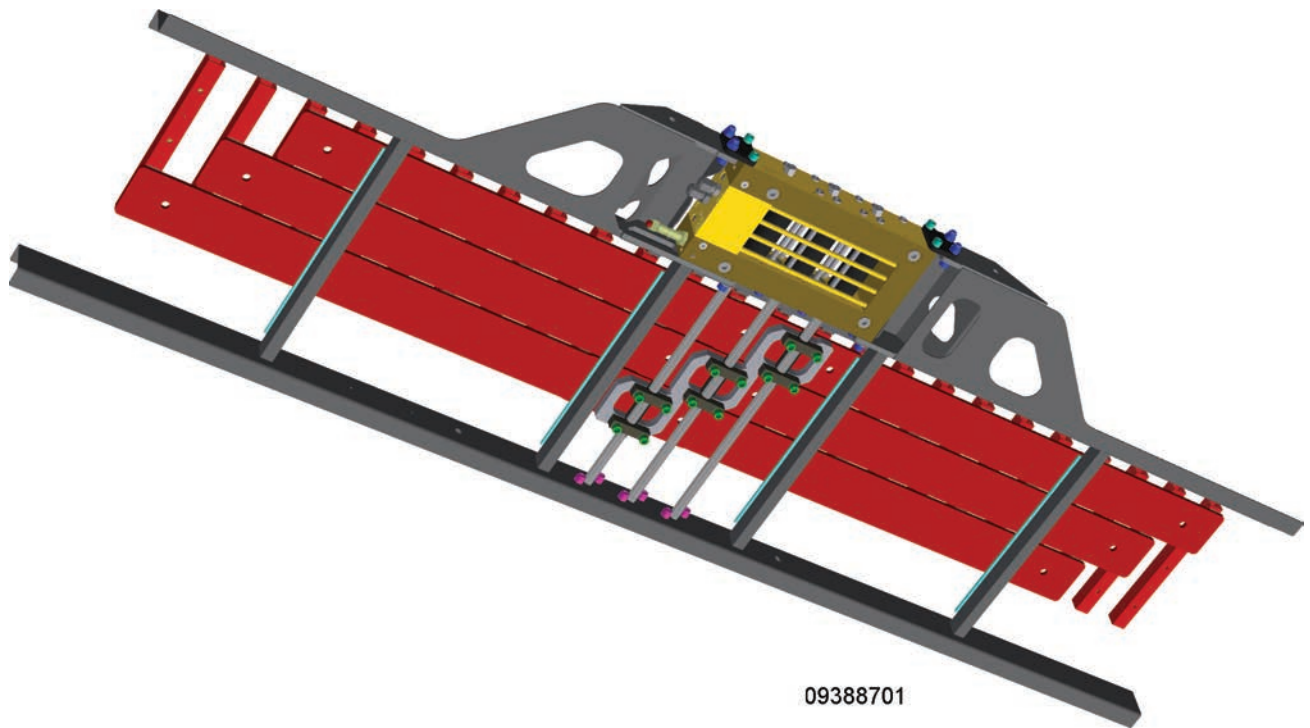


**KEITH**  
MANUFACTURING CO

# KMD 175

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09388701



## INSTALLATION MANUAL

Original Instructions

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## Introduction

This manual explains the procedures for installing the KEITH® KMD 175 system. Please take the time to read the entire manual prior to beginning the installation. Optional sets of instructions have been provided for some of the standard kit options and installer preferences. A typical installation requires approximately 10 to 30 man hours, depending on kit configuration, installer experience and truck or trailer adaptability. Although not required, it is best to install the KMD 175 system as early in the build process as possible. One person with good fabrication and welding skills can complete the entire installation. Because truck and trailer frames vary, some of this information may not apply. For information regarding installation requirements and procedures for applications outside of this basic installation manual, please consult KEITH Mfg. Co. or one of our international offices listed on our website. The KEITH® KMD 175 Owner's Manual contains more detailed information about the KMD 175 system and its operational procedures. The most up-to-date version of this installation manual, as well as the KMD 175 Owner's Manual, and many others, can be found on our website at:

<http://www.keithwalkingfloor.com>

**NOTE: All information, specifications, and procedures subject to change without notice.**

**NOTE: All information contained within brackets [ ] applies to European drives with 97 mm flooring only.**

**NOTE: For the purposes of this manual, rear and discharge end refer to the end of the truck or trailer the material will convey out of, front and load end refer to the opposite end. The right side is always referenced as seen from standing at the rear of the truck or trailer looking forward.**



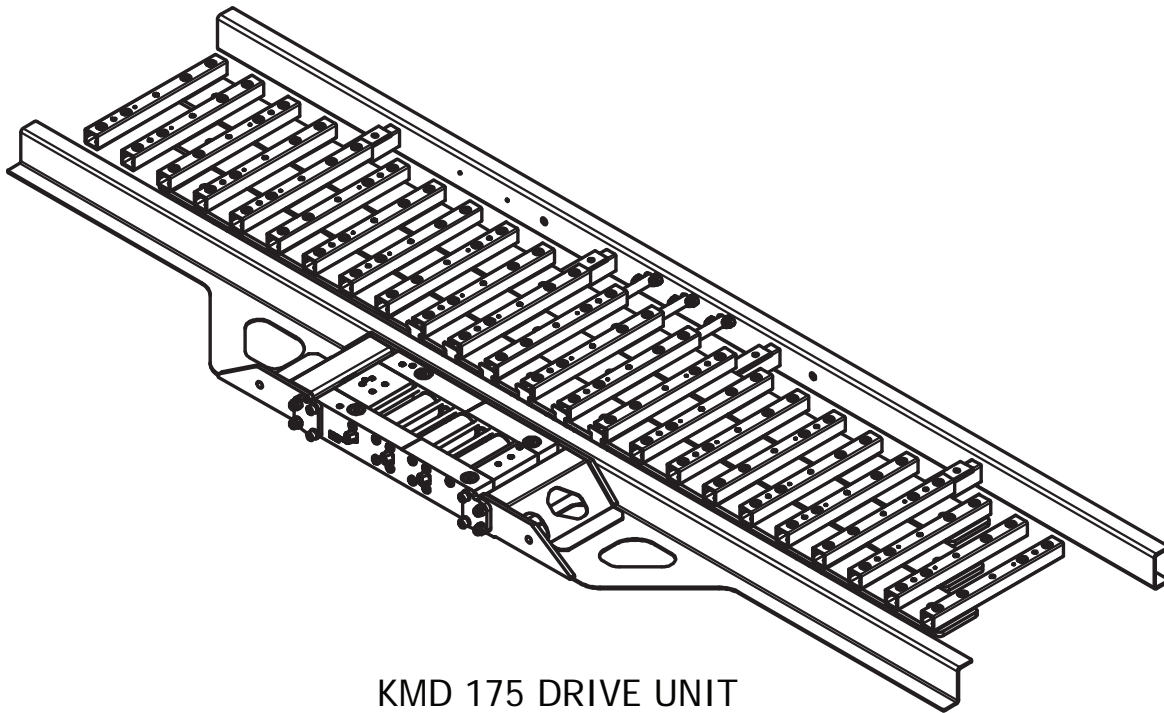
**CAUTION! Installing the *WALKING FLOOR*® system will require some alterations to your truck or trailer. Changes made without the approval of the truck or trailer manufacturer may void the truck or trailer warranty.**



**CAUTION! All cylinders must be fully retracted, cross-drives closest to the cylinders, before flooring is installed. Under NO circumstances should the cylinders be extended before the flooring is installed.**

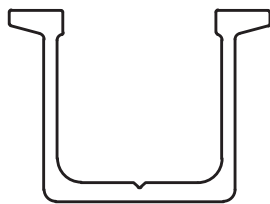
### 1.0 KMD 175 Kit Components

Drive Unit – The KMD 175 drive unit consists of a drive frame, cylinder pack and cross-drives.

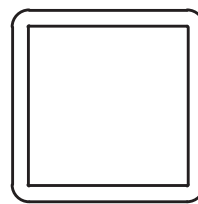


KMD 175 DRIVE UNIT

Sub-Deck – Sub-deck for the KMD 175 comes in two varieties, #2469 aluminum sub-deck, and 1" [25 mm] steel square tubing.

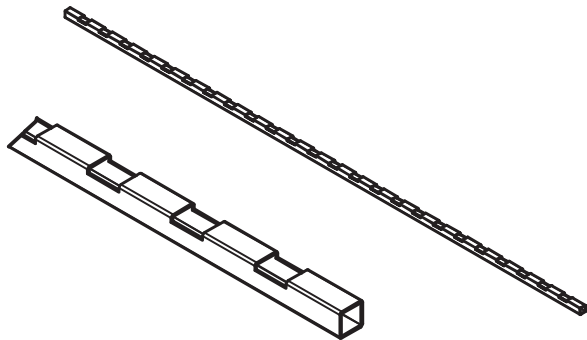


#2469 ALUMINUM SUB-DECK

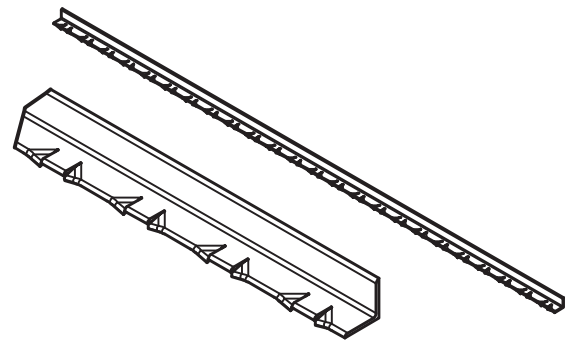


STEEL SUB-DECK

Sub-Deck Jigs – Sub-deck jigs position the sub-deck the appropriate distance apart. There are two forms, stamped angle iron (only available for 1” [25 mm] steel sub-deck), or tubes with machined slots to fit over the sub-decking which are available for both types of sub-deck.

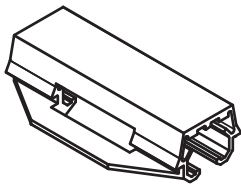


MACHINED SUB-DECK JIG

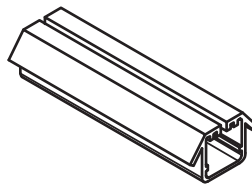


STAMPED ANGLE SUB-DECK JIG

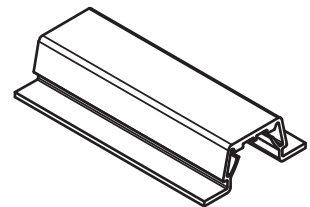
Floor Bearings – There are three different types of bearings used with the KMD 175, #3003 standard 3D bearings, #3004 hold-down bearings, and #2468 splash guard hold-down bearings.



#3003 STANDARD 3D BEARING

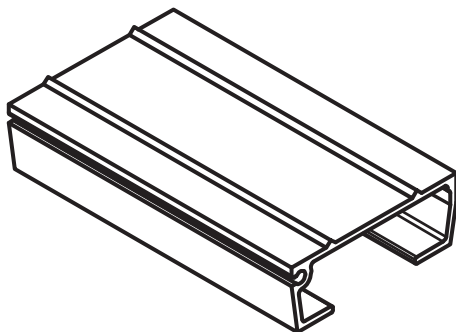


#3004 HOLD-DOWN BEARING

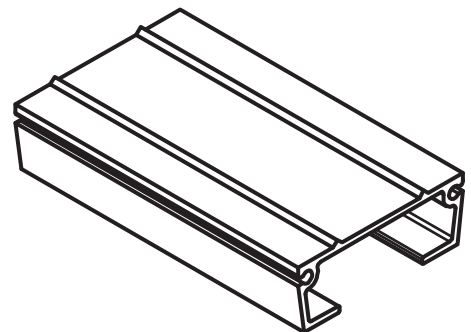


#2468 SPLASH GUARD HOLD-DOWN BEARING

Floor Slats – The floor slats for the KMD 175 come with seals installed ready for installation. There are several different flooring extrusions available from KEITH, but all floor systems include both single seal and double seal floor slats. Floor slats are typically aluminum and are cut to length to fit the customer’s needs.

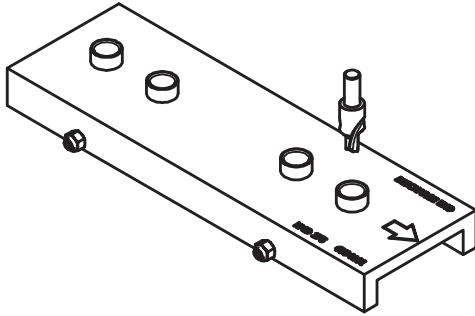


SINGLE SEAL SLAT

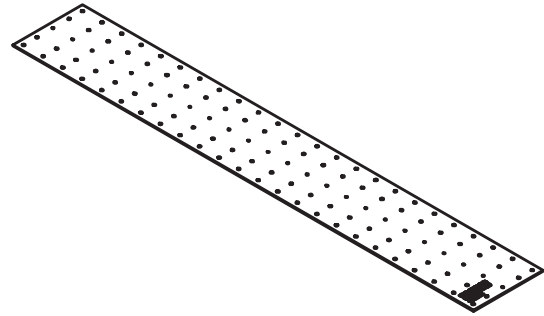


DOUBLE SEAL SLAT

Flooring Drill Jig – There are two different types of floor slat drill jigs; the post installation jig is a large steel plate used to drill through the flooring after it has been installed in the truck or trailer; the pre-installation jig is used to drill through the flooring on a drill press prior to installing the flooring into the truck or trailer. Which drill jig is used often comes down to when the installer would like to drill the flooring and the capabilities of the installer’s facility.

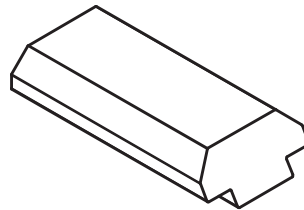


PRE-INSTALLATION DRILL JIG



STANDARD FLOOR SLAT DRILL JIG

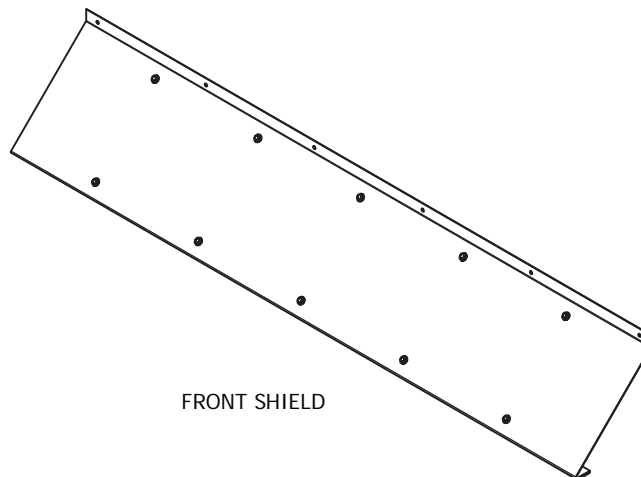
T-Blocks – T-Blocks provide a bearing surface at the discharge end of the truck or trailer, hold the slat down to prevent material from going under, and plug the end of the floor slat. T-Blocks are recommended with all KMD 175 systems.



T-BLOCK

Side Seal – Side seal fills the gap between the floor slats and the inside of the side walls. Side seal comes in a variety of shapes and sizes. Side seal can be supplied by KEITH, but is often fabricated by the installers to meet their exact requirements.

Front Shield – A front shield fills the gap between the front wall and the flooring, as well as covering the crush zone at the front of the floor slats. Front shields can be supplied by KEITH, but are often fabricated by the installers and incorporated into the design of the truck or trailer.



FRONT SHIELD

## 2.0 Preparation

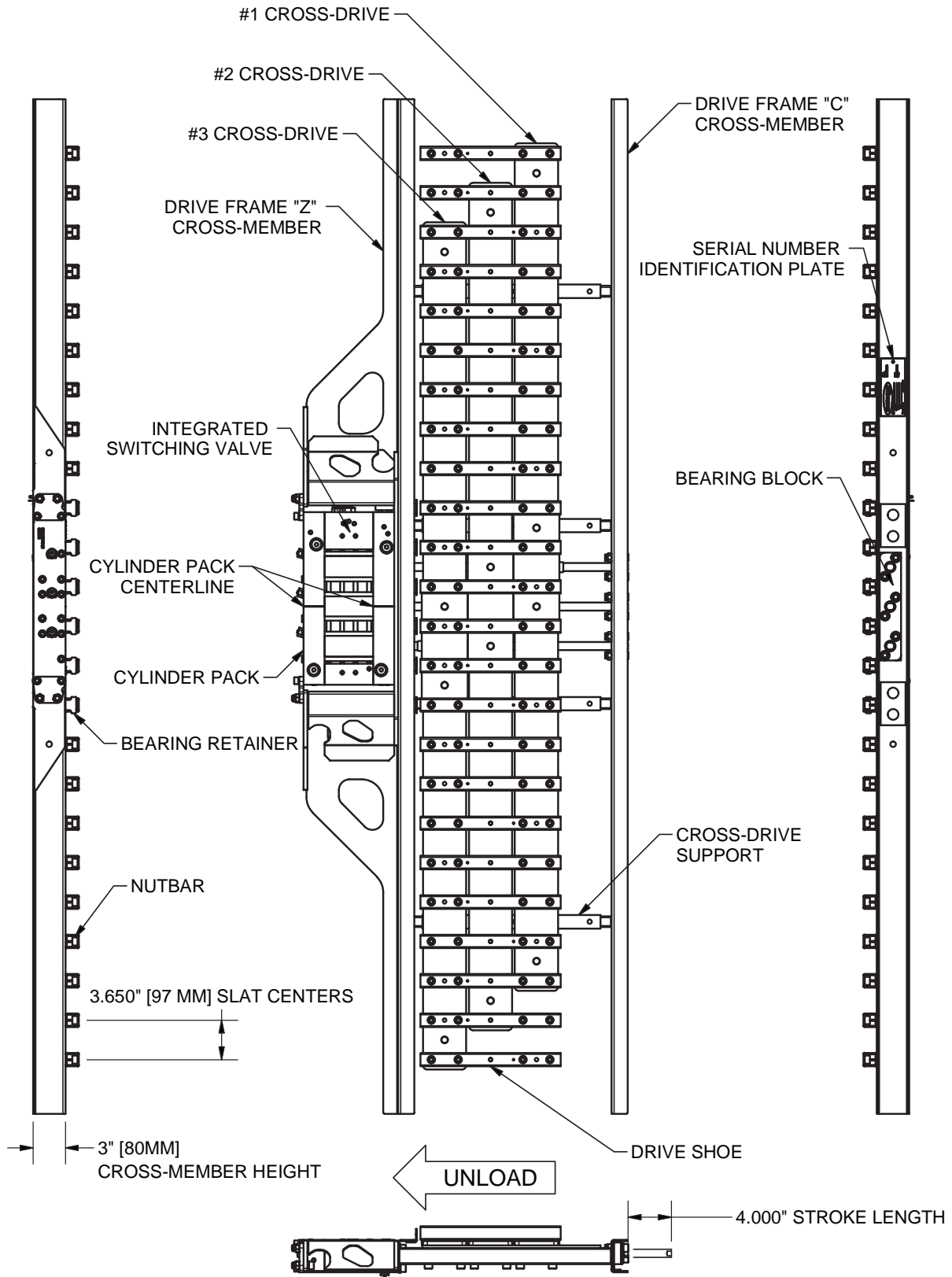
### 2.1 Prepare Drive for Installation



**CAUTION! Do NOT lift the KMD 175 drive unit by the cylinder rods or cross-drives. This could damage the hydraulic components. Lift the drive unit by attaching a chain or strap to at least two points on the drive frame.**

First clean and inspect drive unit, flooring, sub-deck and all other components for any possible damage due to shipping, handling, and storage. Compare parts on work order to parts received to be sure all pieces were received.

Gather all required tools, jigs, and materials required to complete the installation. Familiarize yourself with the components of the KMD 175.



KMD 175 DRIVE UNIT COMPONENTS  
FIGURE 2.1.1



## 2.2 Prepare Chassis for Drive Installation



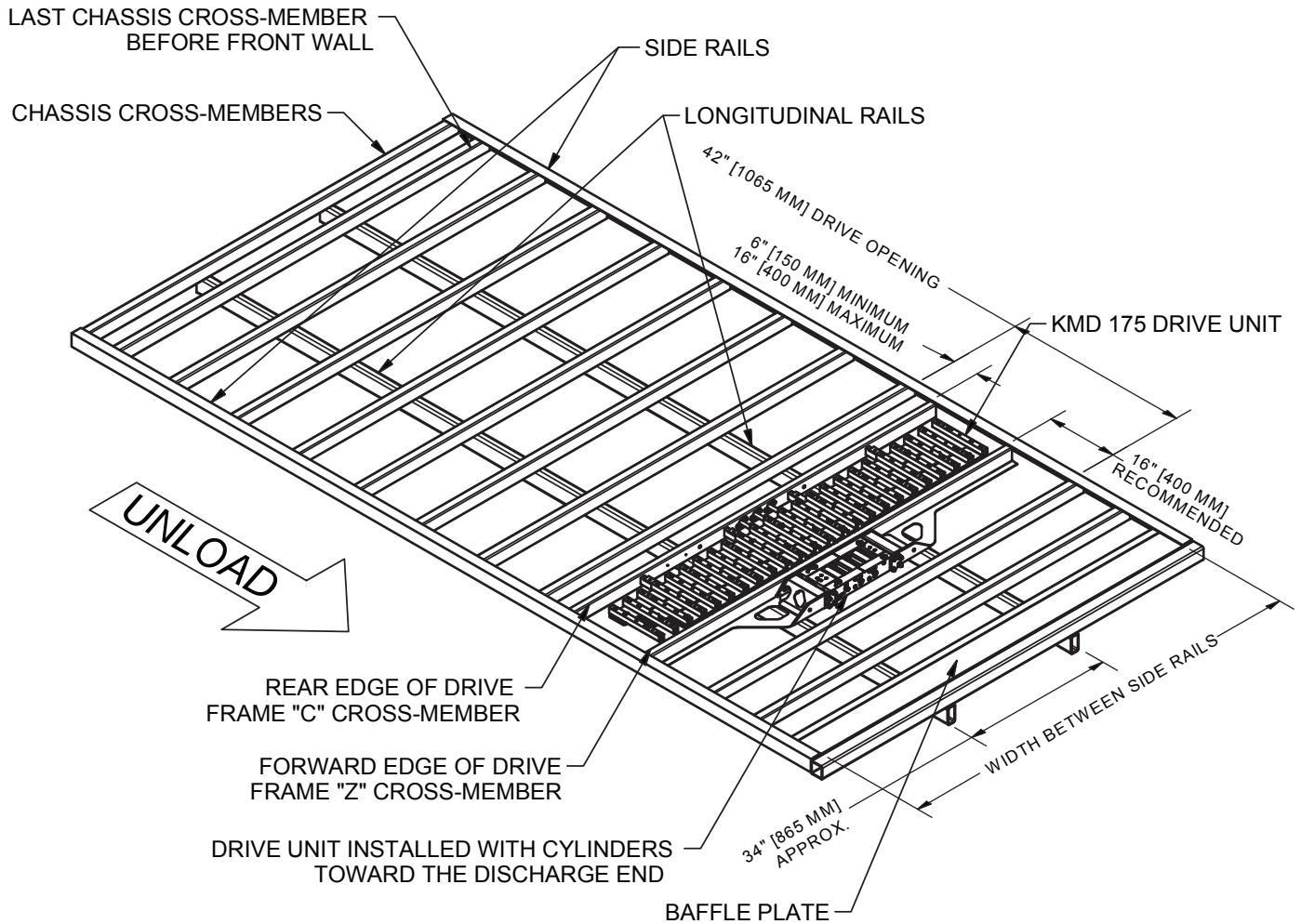
**CAUTION!** Special attention should be given to the front of the truck or trailer body. Under **NO** circumstances should an obstruction be within 6" [152 mm] of the end of the floor slats when the floor slats are in the rear most position.



**CAUTION!** Special attention should be given to any areas that may trap material and allow it to build up and obstruct the floor movement. Ledges, below floor level, at the front and rear of the truck or trailer body have been known to do this.

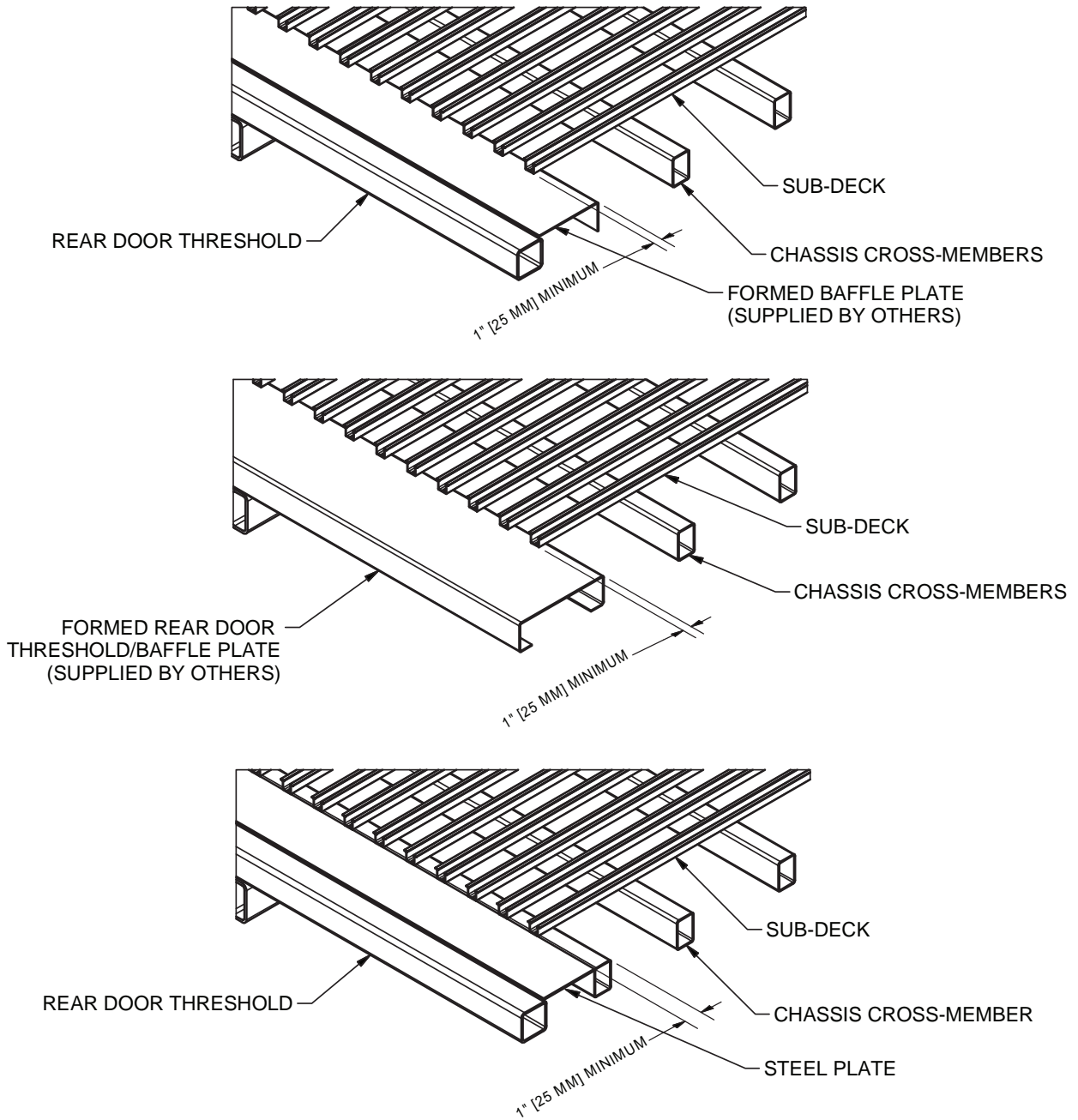
The truck or trailer chassis requires some preparation before installing a KEITH® *WALKING FLOOR*® system. Planning ahead for the *WALKING FLOOR*® unloader installation saves a significant amount of time, especially when building a new trailer.

In order for a *WALKING FLOOR*® system to function efficiently, the truck or trailer chassis must meet certain criteria. The trailer/ truck body must be **STRAIGHT** to allow for proper parallel movement of the slats. To determine straightness, place a floor slat along the wall and measure any gaps between the wall and the floor slat. No gaps should measure more than 1/8" [3 mm] anywhere on the wall. The crossmembers, including the rear door threshold on which the sub-deck mounts, must be straight and level. The friction based principle of the *WALKING FLOOR*® system requires a flat floor for efficient operation. No deviations in height between adjacent crossmembers should be more than 1/16" [1.5 mm]; no crossmember should be cambered (crowned or bellied) more than 1/16" [1.5 mm]. Crossmembers serve several purposes; they provide support for the sub-deck and flooring, locate bearings and transfer forces evenly throughout the chassis. The KEITH #3003 standard 3D bearings require a crossmember flange width that is less than 2-7/16" [62 mm]. Special attention should be placed on the location of the crossmembers at the front and rear of the truck or trailer chassis and on both sides of the KMD 175 drive unit. Refer to Figure 2.2.1 for further information. The inside of the rear door frame must be flush with the inside of the side walls; any reduction in area at the rear door will decrease the efficiency of the *WALKING FLOOR*® system. In some cases, making the truck or trailer body tapered with a larger area at the discharge end than at the load end is very beneficial and will greatly increase the efficiency of the *WALKING FLOOR*® system.



KMD 175 DRIVE UNIT  
TYPICAL INSTALLATION  
FIGURE 2.2.1

In a typical installation, the basic layout of the chassis includes two longitudinal rails, spaced approximately 34" [865 mm] apart, with transverse beams (crossmembers or cross sills) resting on top of the longitudinal rails. The recommended chassis crossmember height is 3" [80 mm]. At the rear of the chassis (the discharge end) a baffle plate is required for the floor to cycle on. The baffle plate is an extension of the rear door threshold and the top of both should be level with the top of the crossmembers. Often the baffle plate and rear door threshold are combined into a single formed or fabricated piece. See Figure 2.2.2 for typical baffle plate and rear door threshold options. In a typical KMD 175 installation, T-Blocks are installed on this baffle plate. The recommended width of this baffle plate, front to rear, is 8" [200 mm].



BAFFLE PLATE OPTIONS  
FIGURE 2.2.2

The KMD 175 drive frame requires a drive opening (distance between chassis crossmembers) of 42" [1065 mm]. This space accommodates 5-3/4" [146 mm] behind the rear manifold for maintenance access, as well as a 6" [150 mm] space in front of the drive frame "C" crossmember for the 4" [101.6 mm] cylinder stroke and 2" [50 mm] of clearance. The recommended distance, center to center, between the drive frame crossmembers and the next chassis crossmember is 16" [400 mm]. A centerline mark should be made on the front and rear crossmembers by measuring between the side walls, side rails, or longitudinal rails, depending on which is available.

### 2.3 Hydraulic Lines and Electrical Connections

In its simplest form, the KEITH® KMD 175 system requires a pressure and return line to run from the pump and tank to a ball valve mounted near the rear of the truck or trailer and easily accessible by the operator. The ball valve is used to turn the KMD 175 system on and off. From the ball valve, additional hydraulic lines are required to connect the ball valve to the KMD 175 cylinder pack. It may be beneficial to install these lines and valve prior to installing the drive unit and flooring for better access. The connections on the KMD 175 cylinder pack are located on the left side of the drive unit, as seen from standing at the rear of the truck or trailer looking forward. 1/2" [12.5 mm] hose or hydraulic tubing is recommended for all hydraulic lines.

The electric ball valve assembly should be mounted near the rear of the truck or trailer, easily accessible by the operator. A switch or some other type of electronic control is required to energize the valve.

Another popular option for the KMD 175 system is an electric control valve. This valve changes the direction the system conveys. The control valve is integrated into the KMD 175 cylinder pack and is located near the pressure and return ports. An additional switch or some other type of electronic control is required to energize the valve. An additional electrical connection is required between the valve and the switch or electronic control.

**NOTE: Many customers choose to provide their own controls for the KMD 175 system. Please meet, or exceed, the above recommendations when supplying controls for the KMD 175 system.**

## 3.0 Drive Unit

### 3.1 Prepare Drive Unit for Installation

Measure the length of the drive frame crossmembers and cut if necessary for installation between outer rails.



**CAUTION! Under NO circumstances should a drive frame crossmember be within 1-1/2" [38 mm] of the outside edge of the outer most drive shoe on each side.**

### 3.2 Drive Unit Installation



**CAUTION! Do NOT lift the KMD 175 drive unit by the cylinder rods or cross-drives. This could damage the hydraulic components. Lift the drive unit by attaching a chain or strap to at least two points on the drive frame.**

The KMD 175 drive can now be set on the longitudinal rails. The drive should be placed with the cylinder pack manifold toward the discharge end and the rods pointed toward the front of the chassis. Once the drive is set on the longitudinal rails and positioned near the centerline and with the proper clearance between the drive frame crossmembers and the next chassis crossmember, a string line should be stretched between the two centerline marks made on the chassis crossmembers. The drive unit should be aligned to this string line by using the machined centerlines in the top of the cylinder pack manifolds and a third centerline, that must be made, on the top of the drive frame "C" crossmember by placing a square against the side of the center cylinder rod and measuring over 0.375" [9.5 mm]. The line should be centered directly above the center cylinder rod.



**CAUTION! Do NOT attach ground clamp to any of the hydraulic components or cross-drives. Special attention should be given to protecting the cylinder rods and seals from weld slag and spatter.**

A long straight edge should be placed on the top of the drive frame crossmembers over each of the longitudinal rails. This straight edge should be long enough to extend over two chassis crossmembers on each side of the drive frame. Shim the drive frame up to the straight edge or grind the rails as needed to make all crossmembers the same height. The drive frame crossmembers should not be more than 1/32" [0.8 mm] from level with the chassis crossmembers. The drive unit centerline should not be more than 1/16" [1.5 mm] from the chassis centerline, as measured at the drive frame crossmembers; and no more than 1/32" [0.8 mm] out of parallel as measured at the drive frame crossmembers. Clamp and weld the drive frame to the longitudinal rails on all mating points. Repeat the process of leveling the ends of the drive frame crossmembers to the chassis crossmembers before welding the ends of the drive frame crossmembers to the side rails. An extension might be needed to extend the drive frame crossmembers to the side rail. Do not place an extension in a way that interferes with bearing placement around the drive.

### 3.3 Paint



**CAUTION! Do NOT paint or undercoat any exposed chrome on the cylinder rods. Exposed chrome indicates that the cylinder is not fully retracted. Cylinders should be collapsed before continuing with installation.**



**CAUTION! Do NOT paint identification plate or decals.**

All KMD 175 drive units come pre-primed with a primer coat of either red oxide or gray. Although not required, a finish coat of paint may be applied after welding the drive unit into the chassis, before #2469 aluminum sub-deck is installed or after steel sub-deck is installed. If undercoating is desired, be aware that undercoating on bolts and fittings makes any service and repair work more difficult; undercoating the drive unit should be avoided if possible.

## 4.0 Sub-Deck



**CAUTION!** The sub-deck must **NOT** overhang the drive frame crossmembers.

The sub-deck consists of 1" [25 mm] square steel tubing or #2469 aluminum extrusion and is the structure directly above the crossmembers and underneath the floor slats that provides the support and mounting surface for the floor bearings. The proper installation of the sub-deck is critical for maintaining proper drive alignment, floor straightness, and for optimal performance of the floor seal located between floor slats. The KMD 175 system requires the sub-deck to be straight, flat, parallel, and centered between the truck or trailer walls. No two adjacent pieces of sub-deck should be more than 1/32" [0.8 mm] per 12" [305 mm] from parallel, no more than 1/32" [0.8 mm] per 12" [305 mm] from parallel with the truck or trailer centerline, no more than 1/32" [0.8 mm] out of level between adjacent pieces of sub-deck, and no more than 1/8" [3 mm] out of level within 8 feet [2440 mm] of width. Additionally, the sub-deck needs to be spaced correctly to line up with the drive shoes. The centerline of each piece of sub-deck should be within 1/32" [0.8 mm] of the centerline of the drive shoe.

**NOTE:** Sub-deck should be fastened at all intersections with crossmembers, including the drive frame crossmembers.

### 4.1 #2469 Aluminum Sub-deck

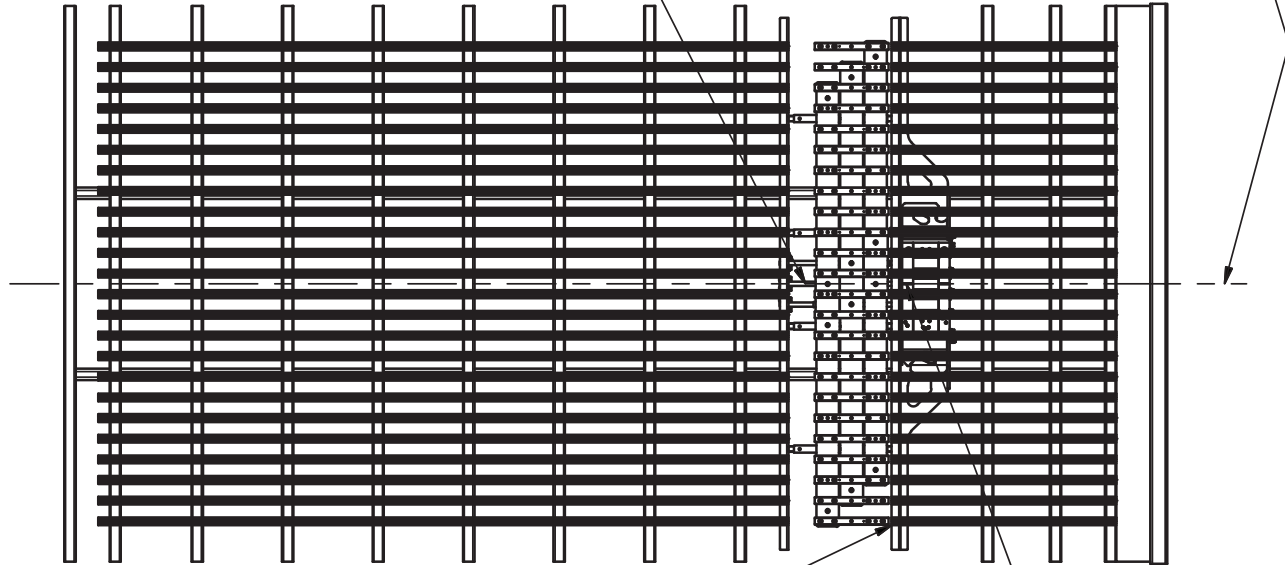


**CAUTION!** The sub-deck must **NOT** overhang the drive frame crossmembers.

Measurements should be taken to cut the sub-deck (See Figure 4.1.1 for installation details). The sub-deck behind the drive unit, toward the discharge end, should be measured from the forward edge of the drive frame "Z" crossmember to the forward edge of the baffle plate, with an additional 1" [25 mm] of overlap on the baffle plate to allow attachment. The sub-deck does NOT overhang the drive frame crossmembers. The sub-deck in front of the drive, toward the load end, should be measured from the rear edge of the drive frame "C" crossmember to the forward edge of the last chassis crossmember before the front wall with an additional 2" [50 mm] overhang to allow #3003 standard 3D bearing attachment. An electrolytic barrier, such as paint or packaging tape, should be placed between aluminum sub-decking and steel crossmembers to prevent corrosion.

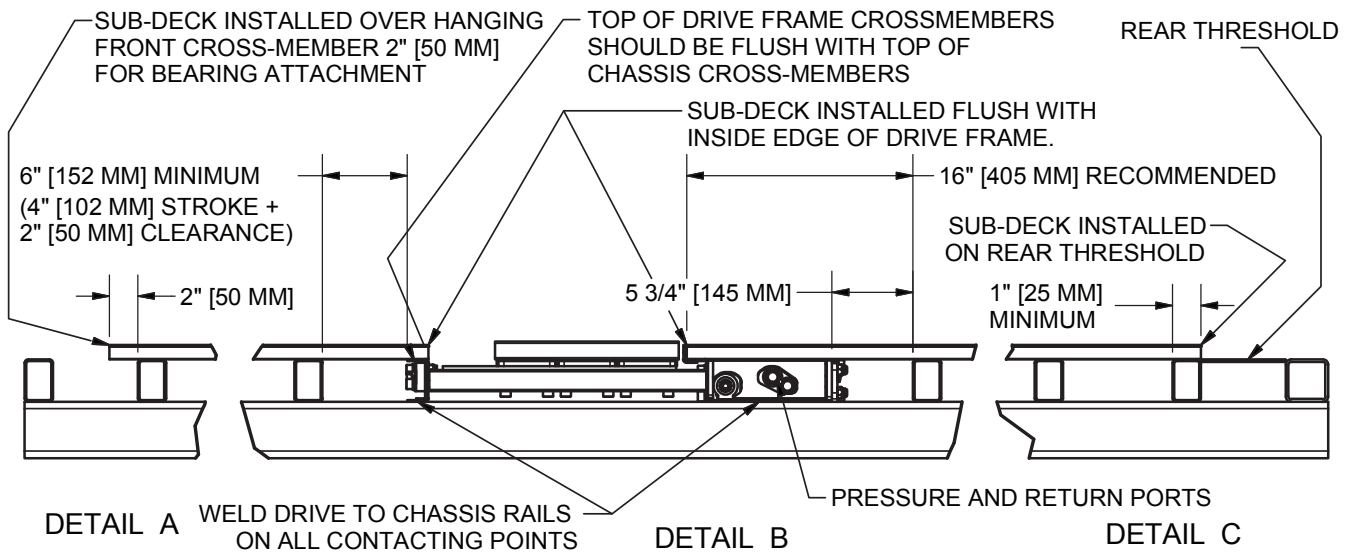
SCRIBE A CENTERLINE ON DRIVE FRAME CROSS-MEMBER BY PLACING A SQUARE AGAINST THE EDGE OF THE CENTER CYLINDER ROD AND MEASURING OVER .375" [9,5 MM] (CENTERLINE SHOULD BE DIRECTLY OVER THE CENTER CYLINDER ROD)

CENTER THE DRIVE IN CHASSIS USING A STRINGLINE STRETCHED BETWEEN THE CENTER MARKS ON THE FRONT MOST CROSS-MEMBER AND THE REAR DOOR THRESHOLD



FASTEN SUB-DECK TO CROSSMEMBERS AT ALL INTERSECTIONS USING 1/4" [6 MM] STEEL BLIND RIVETS, WITH A SHEAR STRENGTH OF 2500 LBS [1134 Kg] OR GREATER, 1/4" [6 MM] SELF TAPPING SCREWS, OR AN 1/8" [3 MM] FILLET WELD 1/2" [12,5 MM] LONG

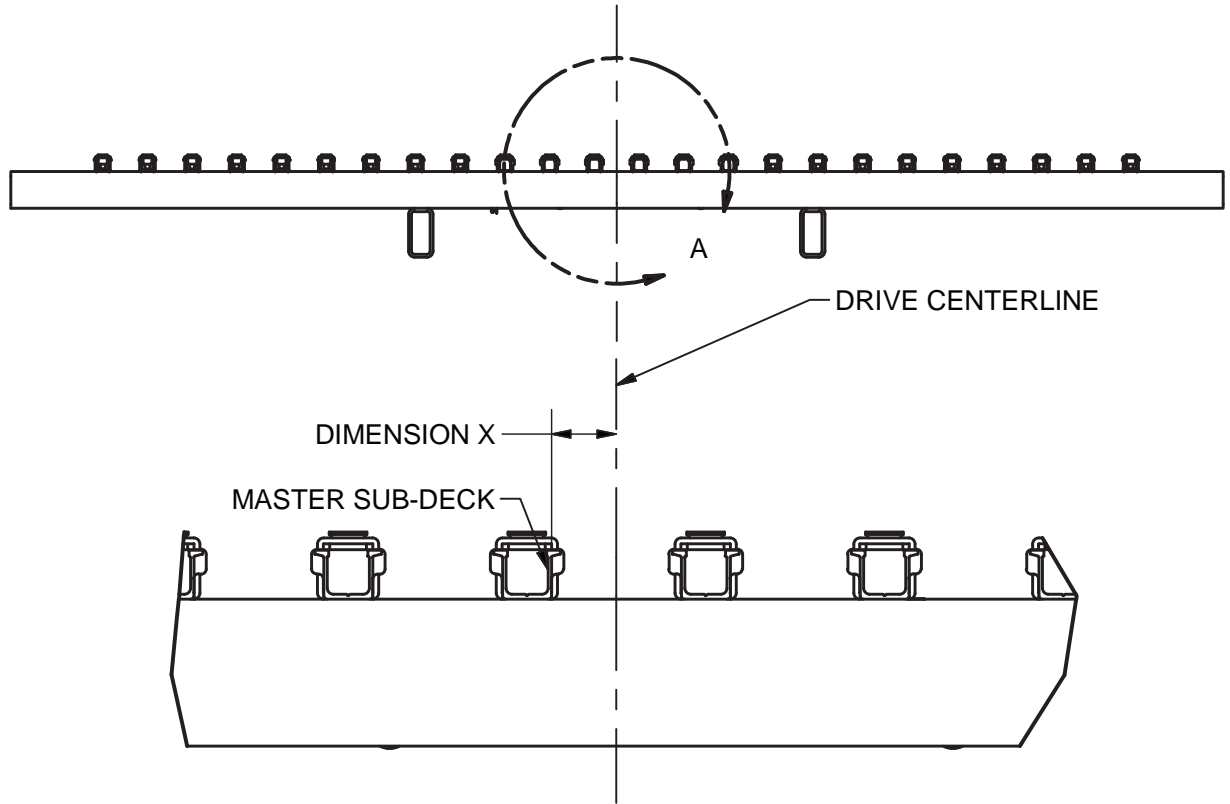
CENTER LINE MACHINED IN TOP OF CYLINDER PACK MANIFOLDS



SUB-DECK INSTALLATION  
FIGURE 4.1.1



To begin jiggling the sub-deck, a line should be scribed, with a square, on the top of all crossmembers; 1-5/16" from the chassis centerline on a drive with an even number of slats and 3.65" flooring; [36 mm for a drive with an even number of slats and 97 mm flooring]; all drives with an odd number of slats have the master piece of sub-deck centered on the chassis centerline (See Figure 4.1.2). This line will be used to locate the edge of the master piece of sub-deck. Line up the bottom edge (the side closest to the centerline) of the sub-deck with the scribed line and clamp in place. It is very important to get this exact, as the rest of the sub-deck will be aligned to this master piece.



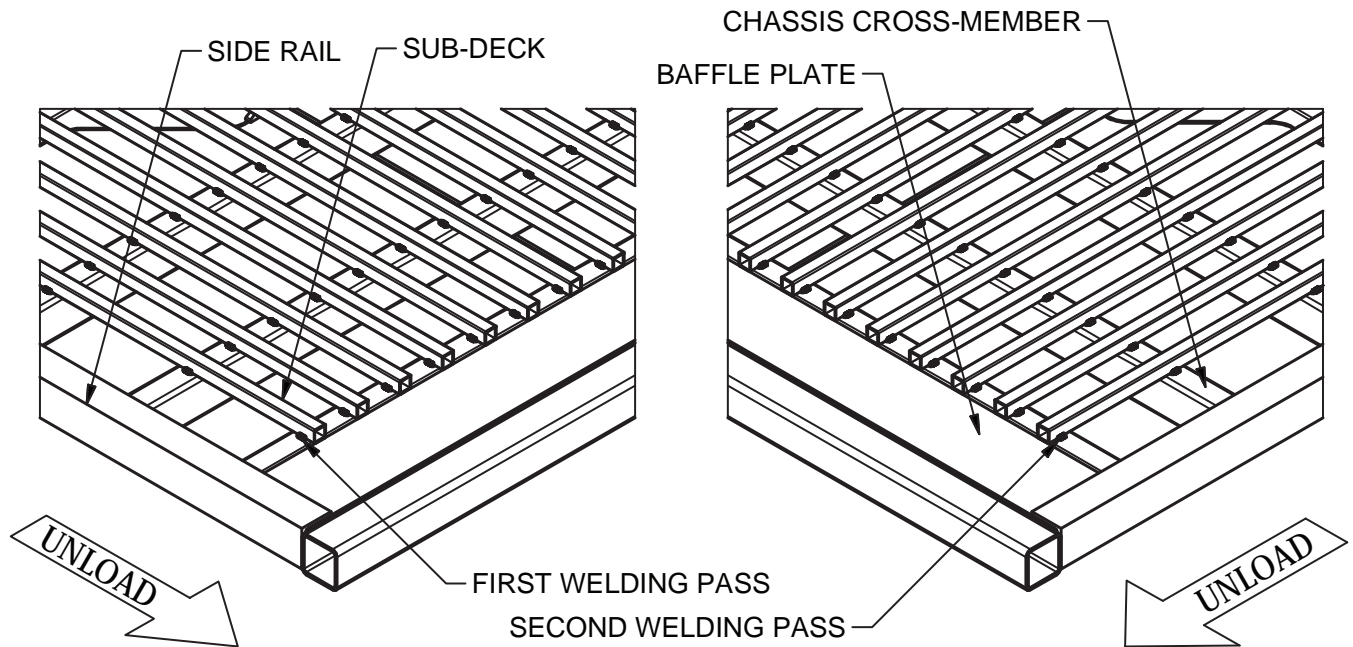
DETAIL A

DIMENSION X =  
 1-5/16" FOR DRIVES WITH AN EVEN NUMBER OF SLATS AND 3.65" FLOORING  
 [36 MM FOR DRIVES WITH AN EVEN NUMBER OF SLATS AND 97 MM FLOORING]  
 (MASTER SUB-DECK IS CENTERED ON DRIVE CENTERLINE ON  
 ALL DRIVES WITH AN ODD NUMBER OF SLATS)

MASTER SUB-DECK DETAIL  
 FIGURE 4.1.2



Once clamped and checked for perfect alignment the master piece of sub-deck should be fastened using either 1/4" [6 mm] steel blind rivets, with a shear strength of 2500 lbs [1134 Kg] or greater, 1/4" [6 mm] self tapping screws, or welds if using aluminum crossmembers. Welds should be an 1/8" [3 mm] fillet, 1/2" [12.5 mm] long centered on the top flange of the crossmember on both sides of the sub-deck. Excessive welding and too little cooling will cause crossmembers to warp, alternate the welds as shown in Figure 4.1.3. Start both the first and second welding passes from the same side to give sufficient cooling time.



SUB-DECK WELDING PROCEDURE  
FIGURE 4.1.3

Once the master sub-deck is installed the rest of the sub-deck can be placed on the crossmembers and aligned with the drive shoes. Using the supplied sub-deck jigs align the sub-deck by placing it in the slot in the jig and the jig on the master piece of sub-deck. Clamp and fasten the remaining sub-deck as instructed above.

## 4.2 Steel Sub-deck



**CAUTION!** The sub-deck must NOT overhang the drive frame crossmembers.

Measurements should be taken to cut the sub-deck (See Figure 4.1.1 for installation details). The sub-deck behind the drive unit, toward the discharge end, should be measured from the forward edge of the drive frame “Z” crossmember to the forward edge of the baffle plate, with an additional 1” [25 mm] of overlap on the baffle plate to allow attachment. **The sub-deck does NOT overhang the drive frame crossmembers.** The sub-deck in front of the drive, toward the load end, should be measured from the rear edge of the drive frame “C” crossmember to the forward edge of the last chassis crossmember before the front wall with an additional 2” [50 mm] overhang to allow #3003 standard 3D bearing attachment.

To begin jiggging the sub-deck, a line should be scribed, with a square, on the top of all crossmembers; 1-5/16” from the chassis centerline on a drive with an even number of slats and 3.65” flooring; [36 mm for a drive with an even number of slats and 97 mm flooring]; all drives with an odd number of slats have the master piece of sub-deck centered on the chassis centerline (See Figure 4.1.2). This line will be used to locate the edge of the master piece of sub-deck. Line up the bottom edge (the side closest to the centerline) of the sub-deck with the scribed line and clamp in place. **It is very important to get this exact, as the rest of the sub-deck will be aligned to this master piece.**

Once clamped and checked for perfect alignment the master piece of sub-deck should be fastened by welding. Welds should be an 1/8” [3 mm] fillet, 1/2” [12.5 mm] long centered on the top flange of the crossmember on both sides of the sub-deck. Excessive welding and too little cooling will cause crossmembers to warp, alternate the welds as shown in Figure 4.1.3. Start both the first and second welding passes from the same side to give sufficient cooling time.

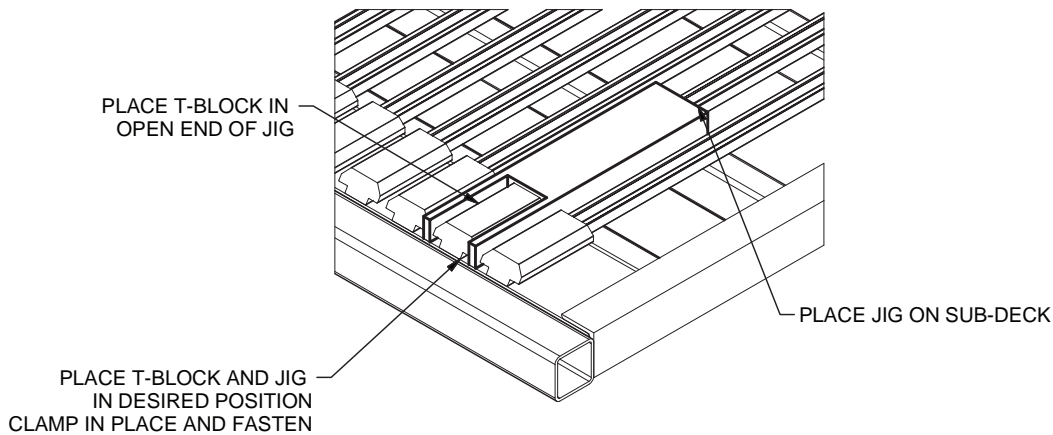
Once the master sub-deck is installed, the rest of the sub-deck can be placed on the crossmembers and aligned with the drive shoes. Using the supplied sub-deck jigs, align the sub-deck by placing it in the slot in the jig and the jig on the master piece of sub-deck. Clamp and fasten the remaining sub-deck as instructed above.

**4.3 T-Blocks**

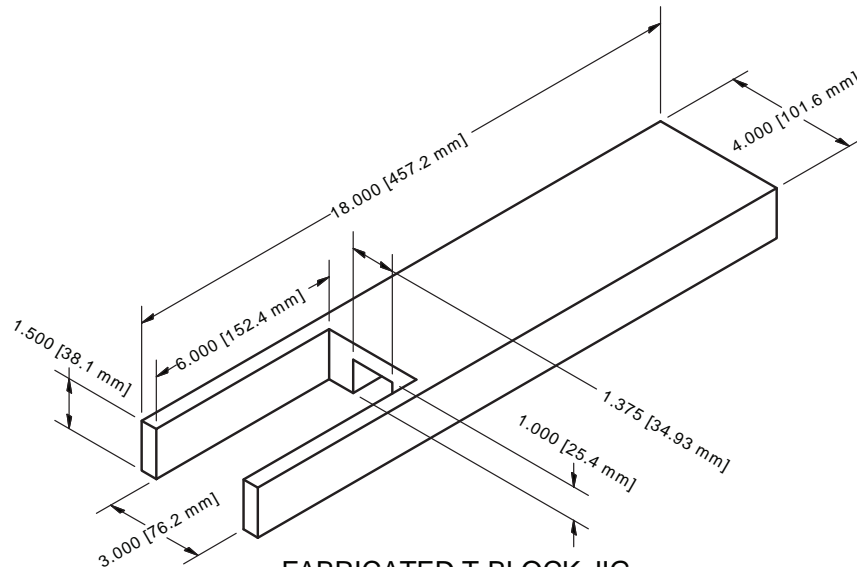
Place a T-Block in the desired position on the baffle plate and measure from the front wall to the forward edge of the T-Block.

If this measurement is shorter than the floor slat length, the flooring will have to be installed before T-Blocks are bolted in. In this case, the flooring will be installed to the very front (against the front wall), the T-Blocks will be placed in the end of the slat and bolted down (Note: The bolt holes in the T-Block need to be accessible and not covered by the flooring.) Bolt the T-Blocks in and slide the flooring toward the discharge end to the desired location.

If the measurement taken above is longer than the floor slat length, the T-Blocks can be bolted in now. A jig can be fabricated to center the T-Blocks on the sub-deck. See Figure 4.3.1 and 4.3.2 for a description of the jig and fabrication instructions.



T-BLOCK JIG INSTRUCTIONS  
FIGURE 4.3.1



FABRICATED T-BLOCK JIG  
FIGURE 4.3.2

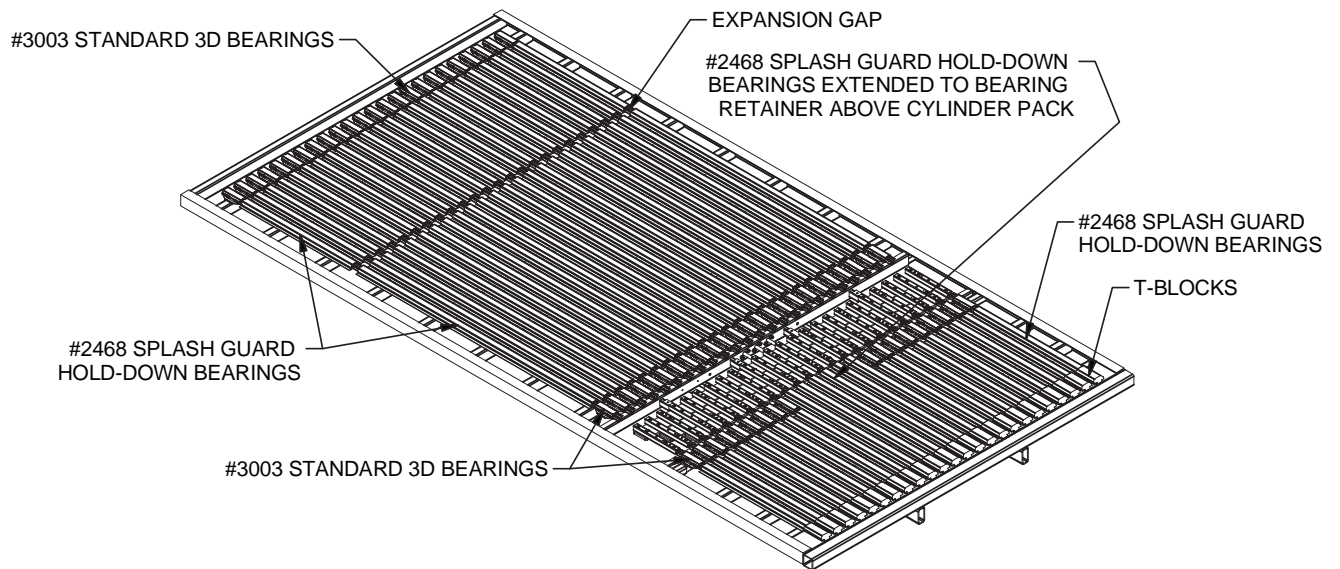
T-Blocks require two bolts per block. T-blocks should be pre-drilled on a drill press with a countersink or counter-bore, depending on type of bolt to be used, deep enough to install the bolts below flush.

## 5.0 Bearings

The KMD 175 system is typically installed with #2468 splash guard hold-down bearings, #3003 standard 3D bearings and #3004 hold-down bearings.

### 5.1 Bearings on #2469 Aluminum Sub-deck

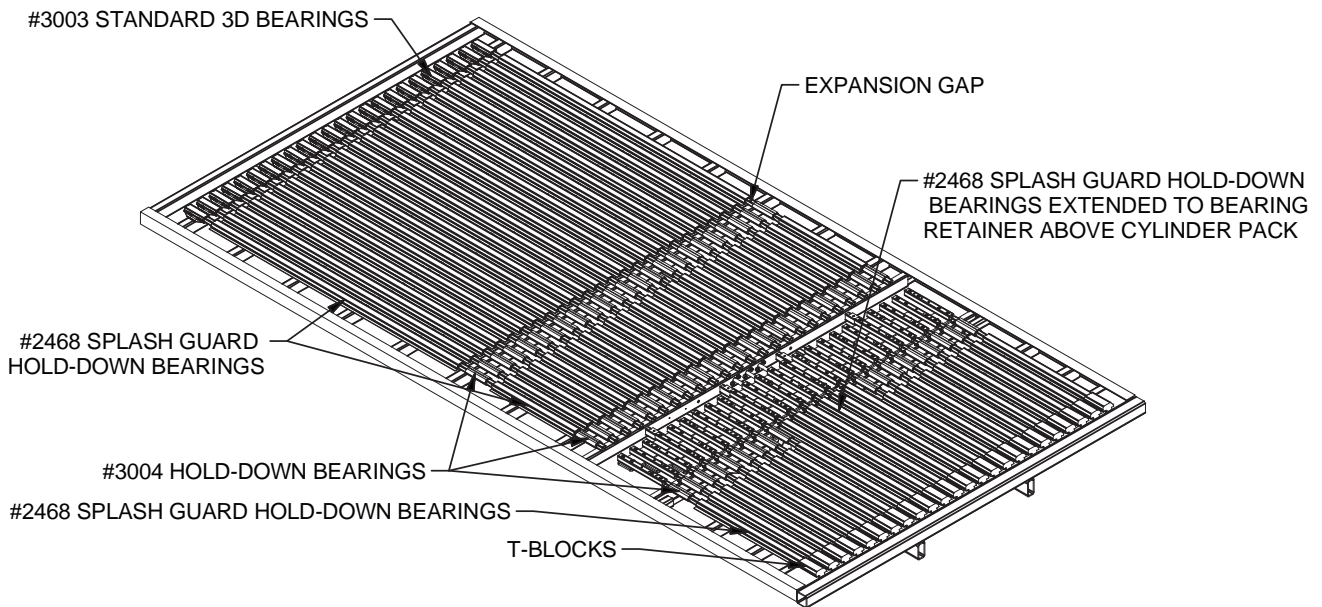
Figure 5.1.1 shows a typical bearing layout for a floor with #2469 aluminum sub-deck. Start by placing a row of #3003 standard 3D bearings on the last chassis crossmember before the front wall, on the sub-deck in front of and behind the drive frame. **These should NOT be clipped over the drive frame crossmembers.** Note that the #3003 standard 3D bearings cannot be installed over the top of the cylinder pack. Measure the distance between the two rows of #3003 standard 3D bearings in front of the drive and cut the #2468 splash guard hold-down bearings to cover the sub-deck between the bearings with approximately a 2" [50 mm] gap exposed to allow thermal expansion. Measure from the forward side of the T-Block to the rear side of the row of #3003 standard 3D bearings behind the drive frame and cut the #2468 splash guard hold-down bearings to fit as before. The #2468 splash guard hold-down bearings over the top of the cylinder pack need to extend to the bearing retainer on the drive frame "Z" crossmember with approximately a 2" [50 mm] gap exposed to allow thermal expansion. The #2468 splash guard hold-down bearings are best installed by starting one end of the bearing on the sub-deck against a #3003 standard 3D bearing and "walking" down it, using your foot and your own weight to do the work for you. Hitting it with a rubber mallet has little or no effect on snapping the bearing down and can damage the sub-deck.



BEARING LAYOUT  
#2469 ALUMINUM SUB-DECK WITH T-BLOCKS  
FIGURE 5.1.1

**5.2 Bearings on Steel Sub-Deck**

Figure 5.2.1 shows a typical bearing layout for a floor with steel sub-deck. Start by placing a row of #3003 standard 3D bearings on the last chassis crossmember before the front wall. Place #3004 hold-down bearings on the sub-deck in front of and behind the drive frame. **These should NOT be clipped over the drive frame crossmembers.** Note that the #3004 hold-down bearings cannot be installed over the top of the cylinder pack. Measure the distance between the row of #3004 hold-down bearings in front of the drive and the row of #3003 standard 3D bearings at the front of the chassis. If the distance is greater than 96" [2440 MM], place an additional row of #3004 hold-down bearings 76" [1930 mm] from the row of #3003 standard 3D bearings and cut the #2468 splash guard hold-down bearings to cover the sub-deck between the bearings with approximately a 2" [50 mm] gap exposed to allow thermal expansion. If the distance is less than 96" [2440 mm], cut the #2468 splash guard hold-down bearings to cover the sub-deck between the bearings, with approximately a 2" [50 mm] gap exposed to allow thermal expansion, without adding an additional row of #3004 hold-down bearings.



**BEARING LAYOUT  
STEEL SUB-DECK WITH T-BLOCKS  
FIGURE 5.2.1**

If T-Blocks are used at the rear of the floor, measure from the forward side of the T-Block to the rear side of the row of #3004 hold-down bearings behind the drive frame and cut the #2468 splash guard hold-down bearings to fit as before.

If T-Blocks are not used, install an additional row of #3004 hold-down bearings on the sub-deck in front of the baffle plate. Cut the #2468 splash guard hold-down bearings to cover the sub-deck between bearings with approximately a 2" [50 mm] gap exposed to allow thermal expansion.

The #2468 splash guard hold-down bearings over the top of the cylinder pack need to extend to the bearing retainer on the drive frame "Z" crossmember with approximately a 2" [50 mm] gap exposed to allow thermal expansion. The #2468 splash guard hold-down bearings are best installed by starting one end of the bearing on the sub-deck against a #3003 standard 3D bearing and "walking" down it, using your foot and your own weight to do the work for you.

6.0 Flooring

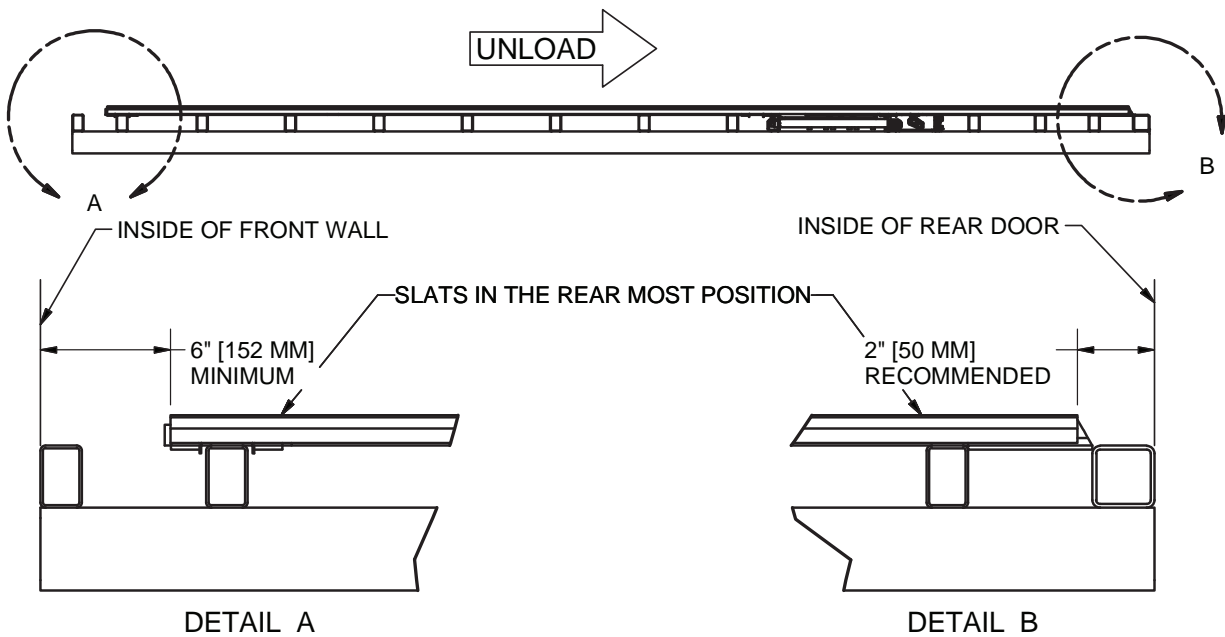


**CAUTION!** Special attention should be given to the front of the truck or trailer body. Under **NO** circumstances should an obstruction be within 6" [152 mm] of the end of the floor slats when the floor slats are in the rear most position.



**CAUTION!** All cylinders must be fully retracted, cross-drives closest to the cylinders, before flooring is installed. Under **NO** circumstances should the cylinders be extended before the flooring is installed.

There are two distinct options for drilling the flooring on a KMD 175 system. In Option 1 the flooring is installed in the truck or trailer, then drilled from above with the supplied plate jig and a hand-held power drill. Option 2 requires a pre-drill jig, a drill press and adequate room to handle drilling the floor slats on the drill press. Figure 6.0.1 shows necessary clearances for the floor to function properly.



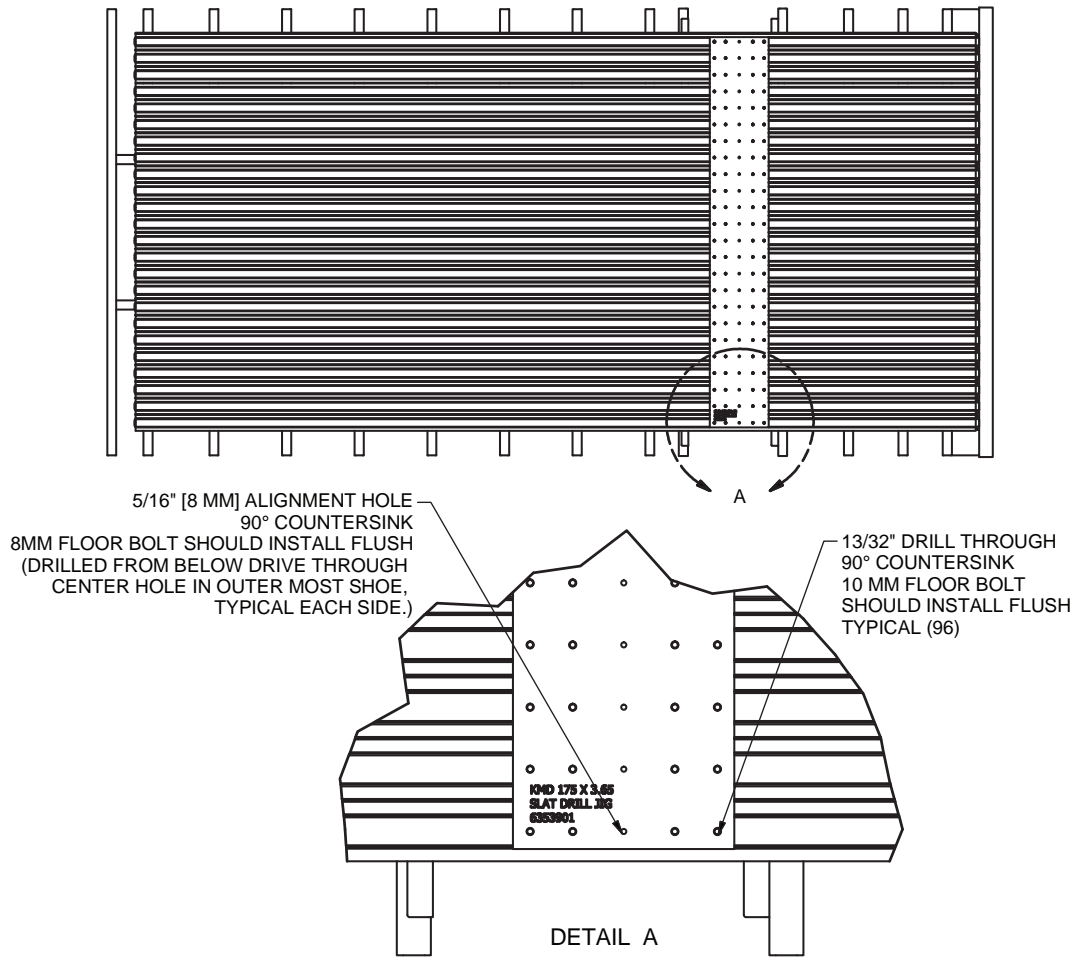
FLOOR SLAT INSTALLATION DIMENSIONS  
FIGURE 6.0.1

6.1 Option 1 - Standard Drill Jig

Option 1 starts by snapping the floor slats on to the bearings. Start by placing a single seal floor slat on the right most piece of sub-deck and bearing (right as seen from the discharge end looking forward), with the seal on your right; snap the flooring down using a large rubber mallet, start at one end and work your way down the length of the slat being careful to not dent the flooring. Repeat process with remaining slats, being sure to place all the single seal slats with the seal to the right, and the double seal slat on the far left of the floor. Once all of the flooring is snapped down, line the ends of the flooring up at the discharge end, leaving 2 inches [50 mm] clearance between the end of the slat and the inside of the rear doors.

Once the slats are lined up, clamp the slats down so there is no chance of the slats moving. Using a long 5/16" [8 mm] drill bit, drill up through the center 5/16" [8 mm] hole in the outer most drive shoe (one on each side) from under the drive (See Figure 6.1.1). Place the supplied floor slat drill jig on the top of the flooring, using two 5/16" [8 mm] drill bits to align the drill jig on the holes in the outer most slats. Drill four 13/32" [10 mm] holes through the floor slat drill jig, into each floor slat (be careful to not drill too deep and damage the nut bar inside drive shoe).





FLOOR SLAT DRILL INSTRUCTIONS  
FIGURE 6.1.1



**CAUTION!** Do NOT over countersink. This will make a weak connection and cause floor slat damage.



**CAUTION!** All floor bolts should install with the head flush or up to 1/16" [1.5 mm] above the floor slat.

Remove the drill jig and countersink all 13/32" [10 mm] holes with a 1" [25 mm] x 90 degree countersink, using a floor bolt as a depth gauge. After blowing all chips and shavings out of the holes, apply a small amount of medium strength thread retaining compound to the floor bolts and bolt the flooring down.



**CAUTION!** Correct torque on the floor bolts is required to ensure a long floor life. The recommended torque for 10 mm floor bolts is 32 ft-lbs [43 Nm].

Using a 1" [25 mm] x 90 degree countersink, countersink the two 5/16" [8 mm] alignment holes, using one of the supplied 8 mm x 50 mm floor bolts as a gauge. Once the hole is countersunk to the proper depth, install the 8 mm x 50 mm floor bolt in the jig hole with an 8 mm flat washer and 8 mm nylock nut on the bottom of the shoe.

## 6.2 Option 2 - Pre-Installation Drill Jig



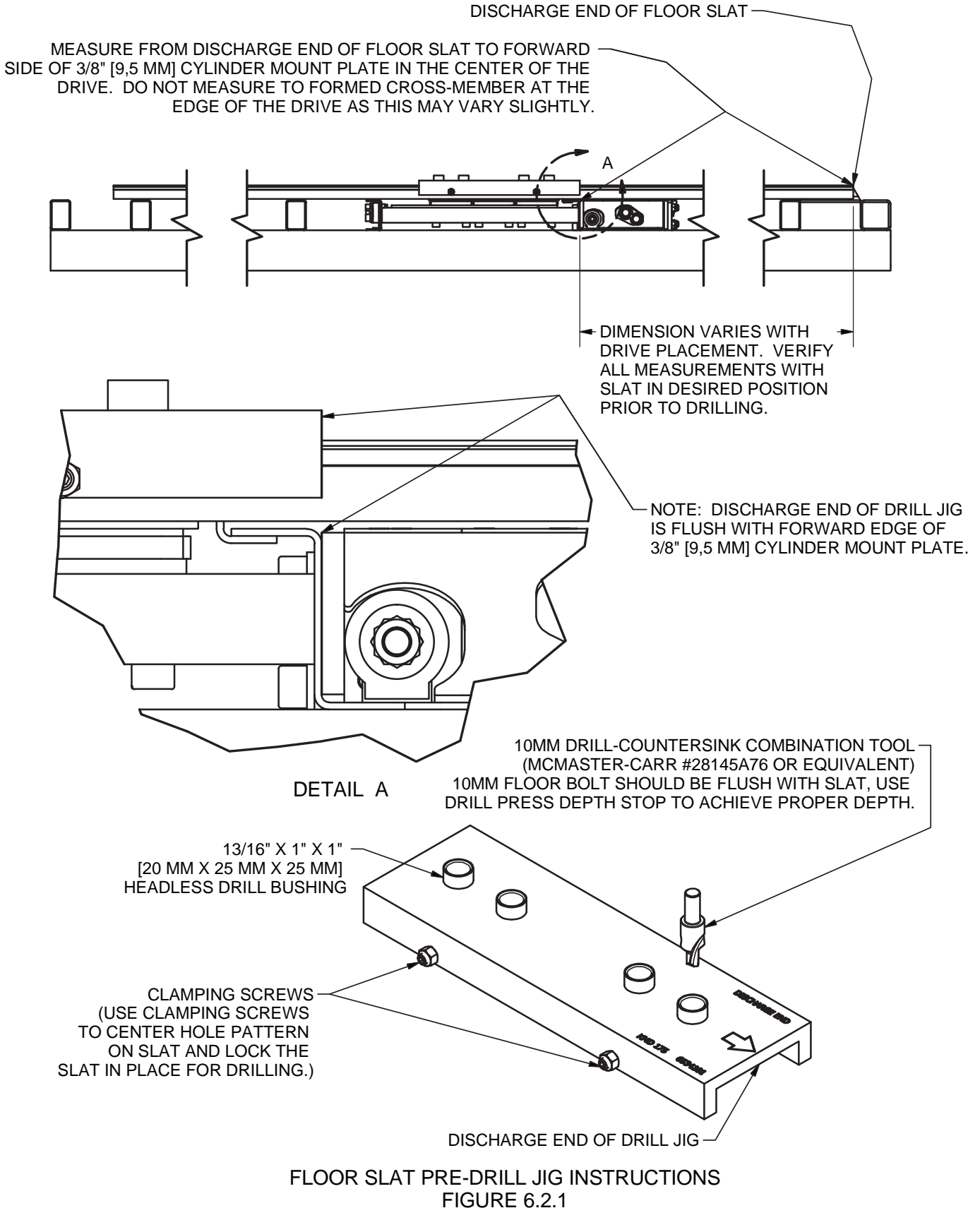
**CAUTION!** Do NOT over countersink. This will make a weak connection and cause floor slat damage.



**CAUTION!** All floor bolts should install with the head flush or up to 1/16" [1.5 mm] above the floor slat.

Option 2 is to pre-drill the flooring on a drill press (See Figure 6.2.1). This requires a drill press, a table or sawhorses, a #6534101 KMD 175 pre-drill jig, and a 10 mm drill-countersink combination tool. After the drive is placed in the chassis, measure from the forward edge of the 3/8" cylinder mount plate in the center of the drive frame to the rear-top edge of the T-Block. Slide the pre-drill jig on the floor slat with the arrow pointing toward the discharge end and lock the set screws down when the rear edge of the jig is the appropriate distance from the discharge end of the floor slat. Drill four holes through the floor slat pre-drill jig, into each floor slat with the drill-countersink combination tool. Countersink until the proper depth is achieved using a floor bolt to check depth. Adjust the depth stop on the drill press to the correct depth. Continue drilling the remaining floor slats. Install flooring on bearings same as above. After lining up the holes in the slats with the holes in the drive shoes, apply a small amount of medium strength thread retaining compound to the floor bolts and bolt the flooring down. The 5/16" [8 mm] hole on the outer slat on each side is not required for this option. The 8 mm x 50 mm floor bolts are not required as well.

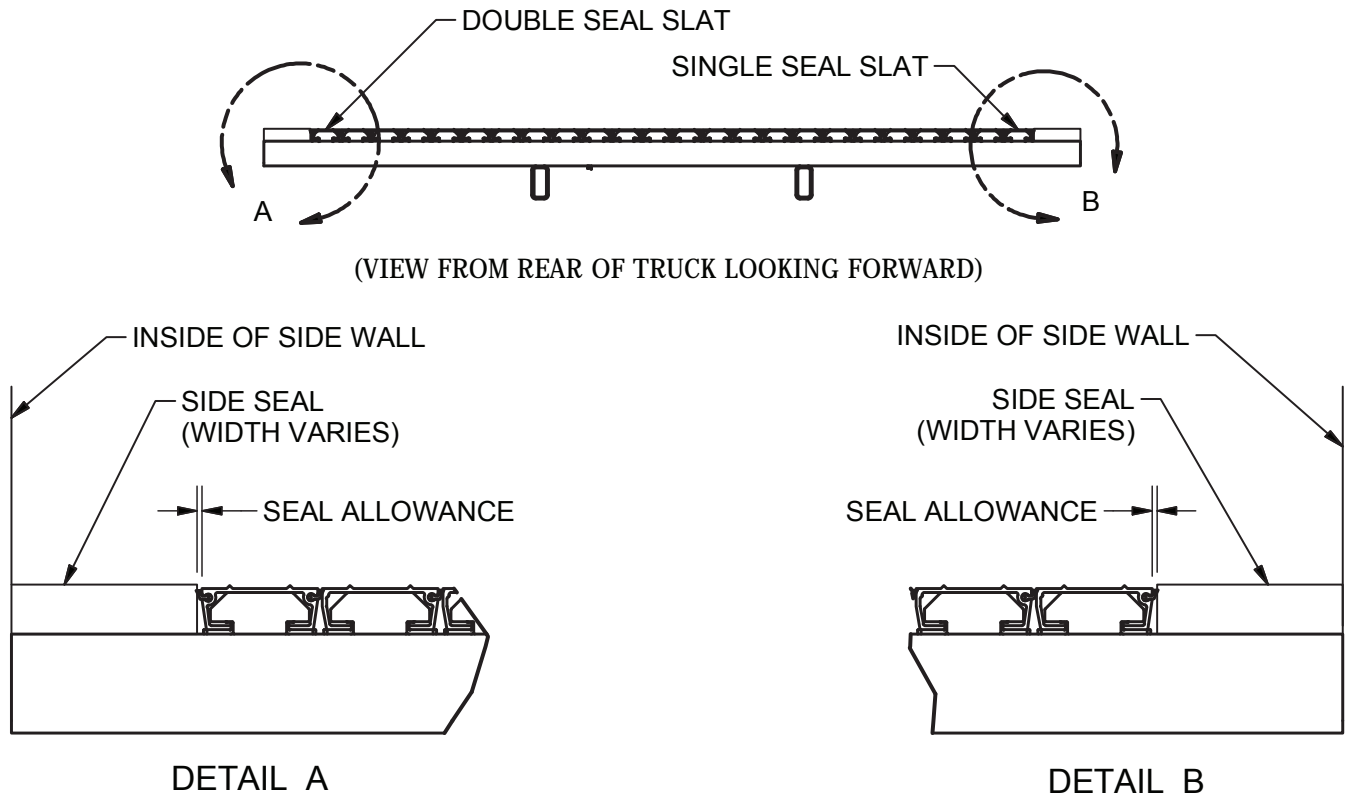




7.0 Miscellaneous

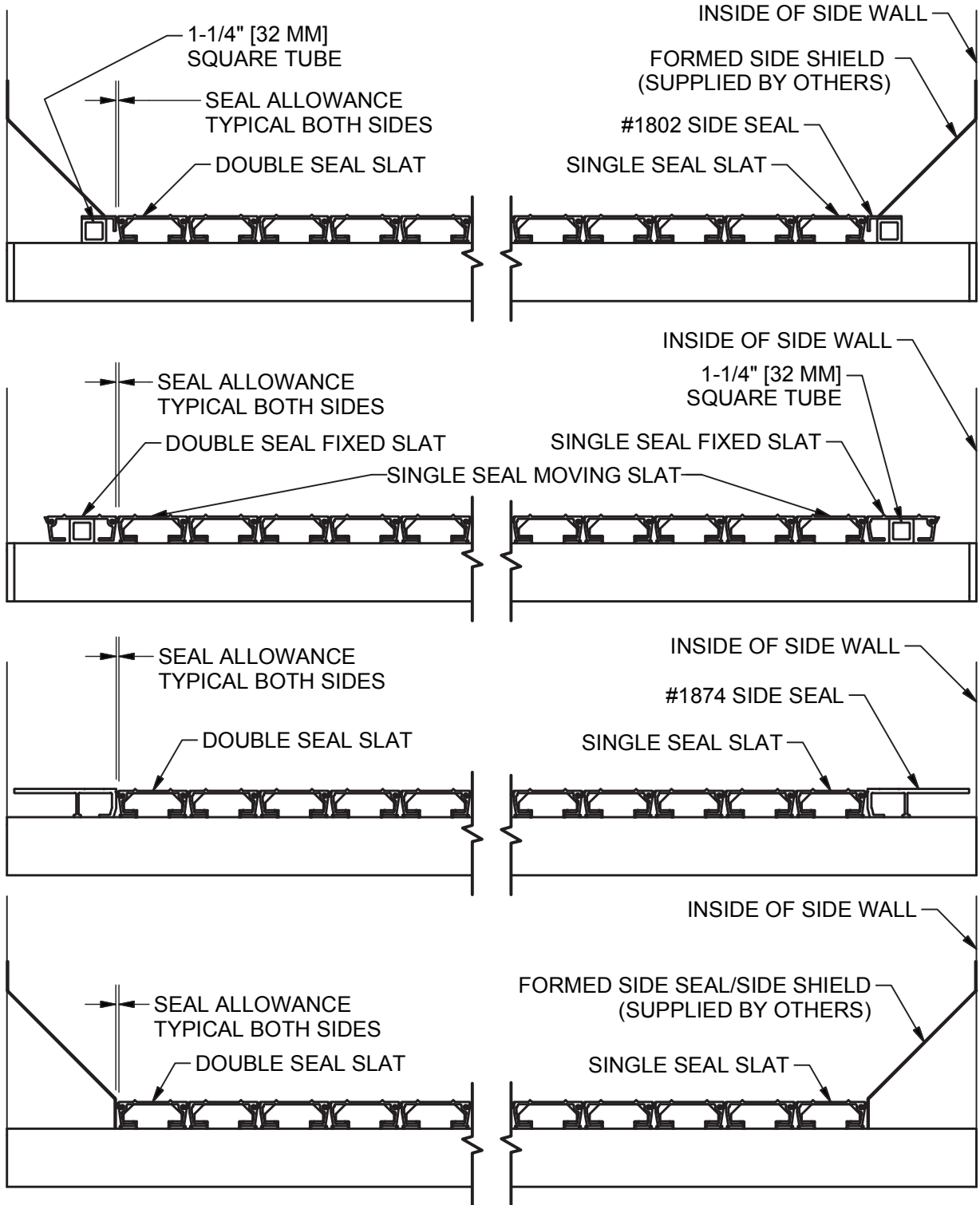
7.1 Side Seal

Due to the varying widths of truck and trailer bodies, a gap is generally present between the outer edge of the floor slats and the inside of the side wall (See Figure 7.1.1). This gap can be filled a number of different ways as shown in Figure 7.1.2. It is important to maintain the appropriate seal allowance, 0.150" for 3.65" flooring and [1 mm for 97 mm flooring], between the side seal and the outer most floor slats.



NOTE: SEAL ALLOWANCE FOR 3.65" FLOORING = .150"  
 [SEAL ALLOWANCE FOR 97 MM FLOORING = 1 MM]

SIDE SEAL DESCRIPTION  
 FIGURE 7.1.1

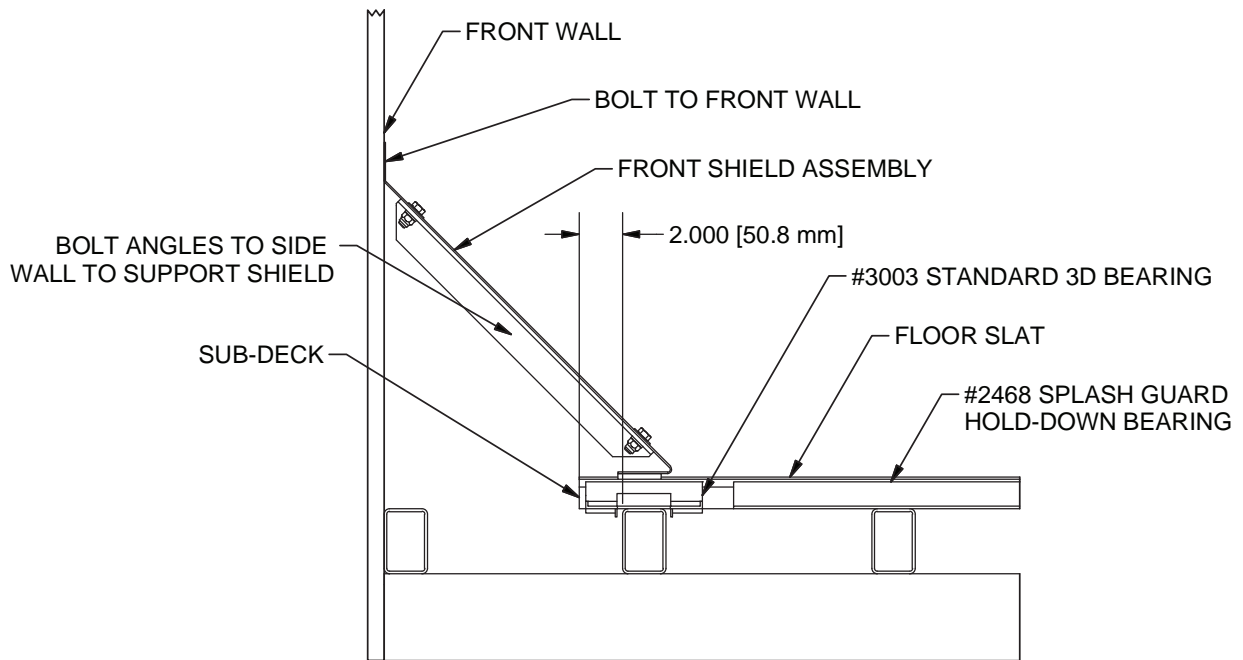


NOTE: SEAL ALLOWANCE FOR 3.65" FLOORING = .150"  
 [SEAL ALLOWANCE FOR 97MM FLOORING = 1 MM]

SIDE SEAL OPTIONS  
 FIGURE 7.1.2

**7.2 Front Shield**

The front shield covers the gap at the front of the truck or trailer body, between the inside of the front wall and the floor slats, as well as acting as a protective guard for the crush zone in front of the floor slats. An additional guard may be required if there is access to the crush zone from below. Expanded metal works well for this purpose. Several options are available for front shields. Many installers choose to make their own. Figure 7.2.1 shows the factory supplied front shield. This shield is an option on all KMD drives and is available by request.



FRONT SHIELD  
FIGURE 7.2.1

**7.3 Hydraulic Plumbing**

Hydraulic hoses should be installed between the KMD 175 cylinder pack and the ball valve installed earlier, 1/2" [12.5 mm] hoses are recommended. The pressure and return ports are located on the left side of the cylinder pack and are accessible from below.

**7.4 Control Valve Handle**

If a manual control valve is used, an extension handle is supplied to extend the controls to the side of the truck or trailer where an operator can easily access them. The extension handle assembly includes a flexible coupling that attaches to the valve at the cylinder pack, a tube to extend to the side of the truck or trailer and a knob to rotate the valve. The flexible coupling allows some variation in the handle's location at the side of the truck or trailer. A handle mount plate, or some other hanger, should be used to position the knob on the end of the handle assembly in an easily accessible location that is protected from damage.

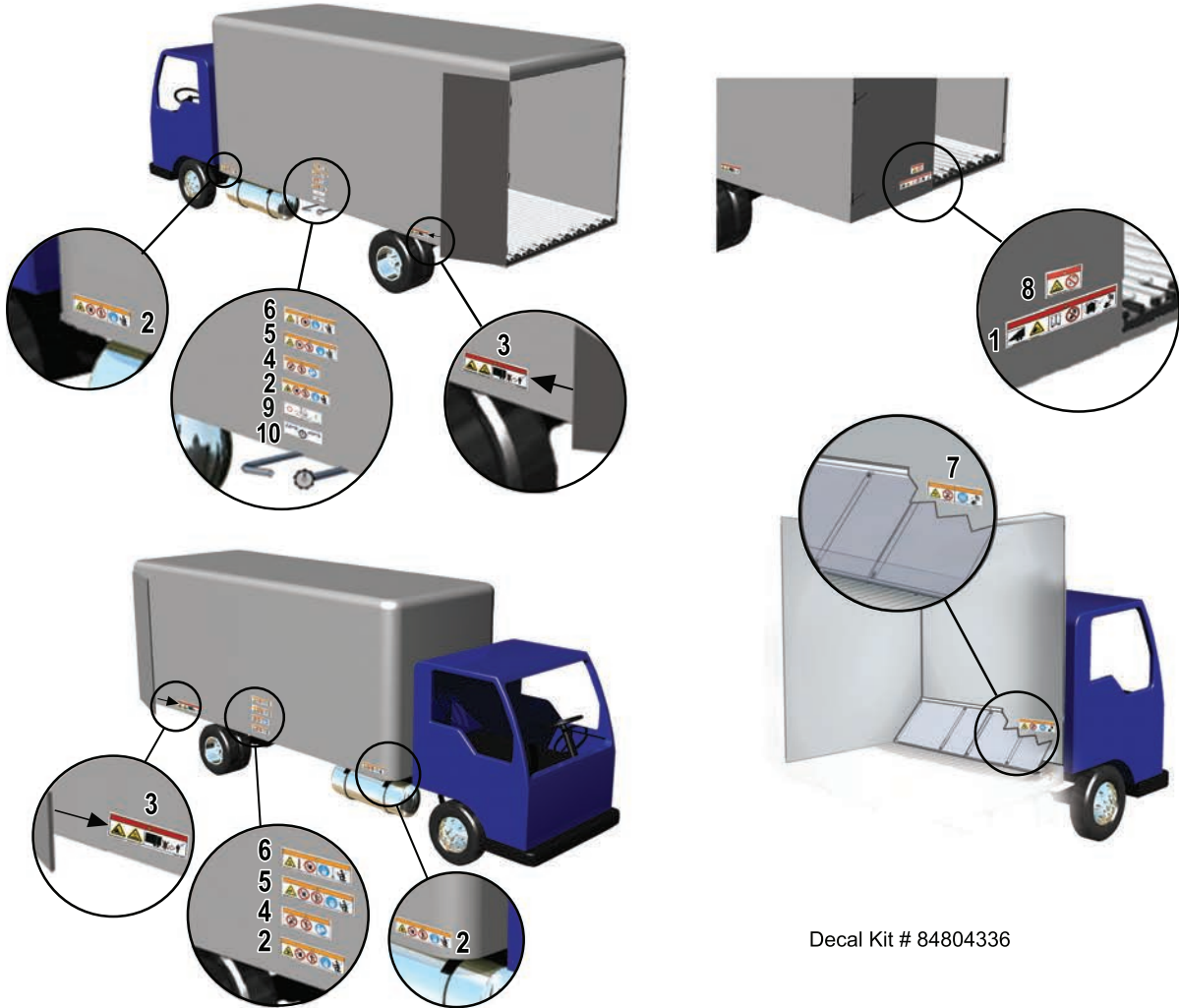
**7.5 Truck and Trailer Wires and Lines**

Mount all electrical wires, air lines, hoses and other equipment away from the moving parts of the KMD 175 system to prevent rubbing, crushing, or other damage. Check the brakes, lights and other functions before placing truck or trailer into service.

7.6 Safety Decals

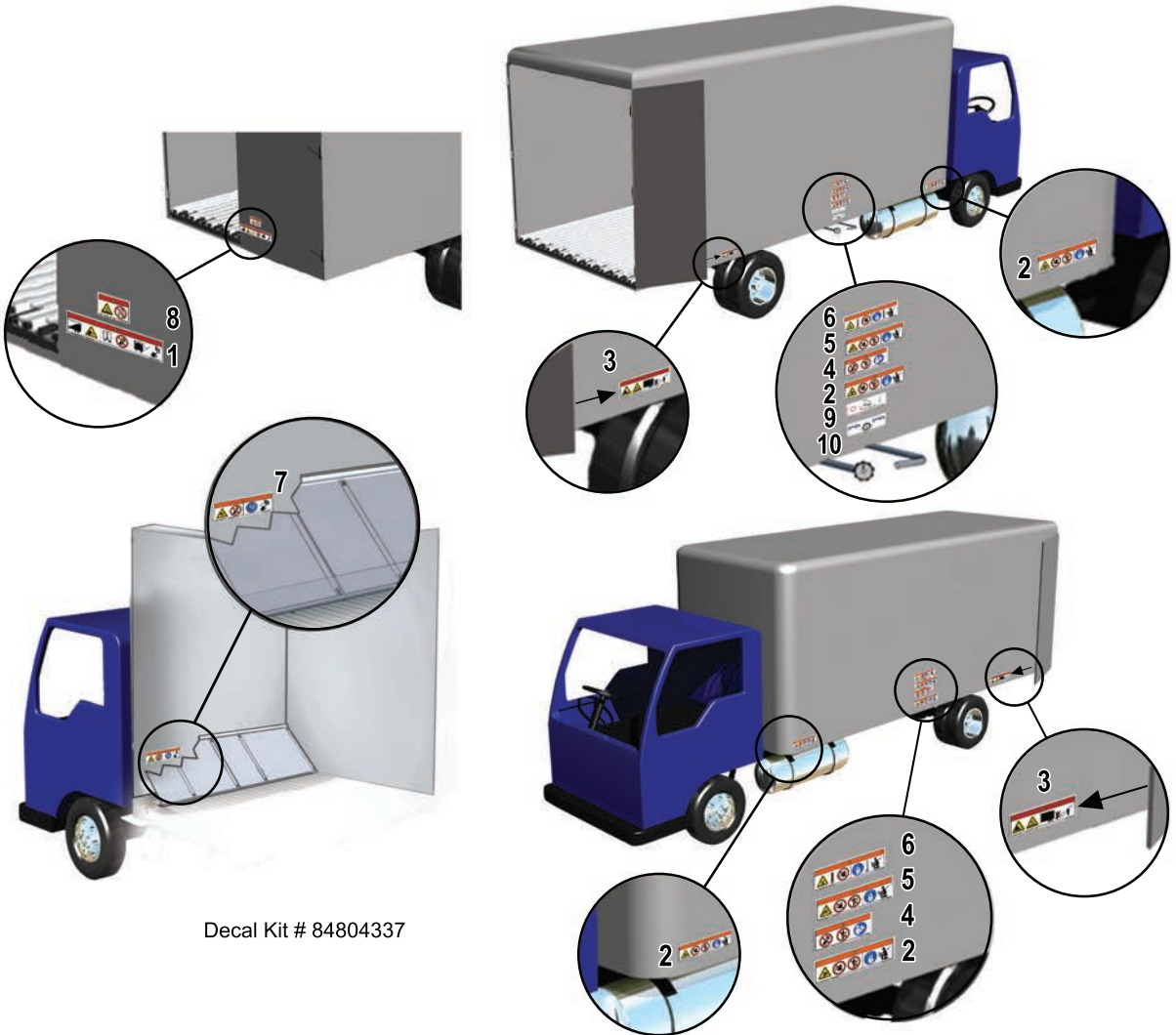
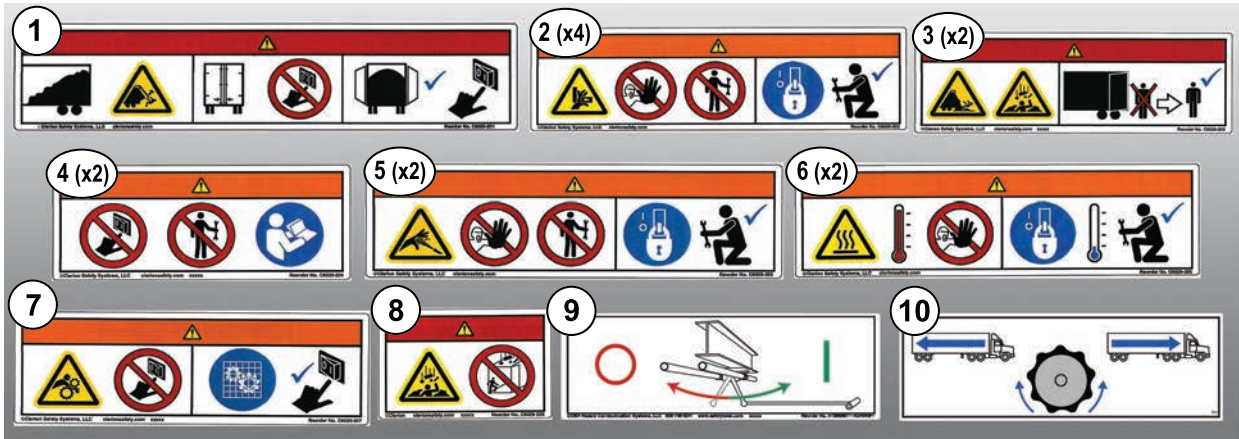
It is very important to place the supplied caution decals on the truck or trailer in the proper locations.

Safety Decal Placement Guide: KMD (Left Side Controls)



















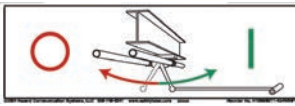
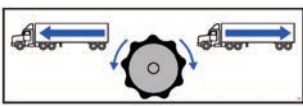
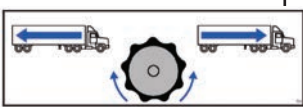
Decal Kit # 84804336

Safety Decal Placement Guide: KMD (Right Side Controls)

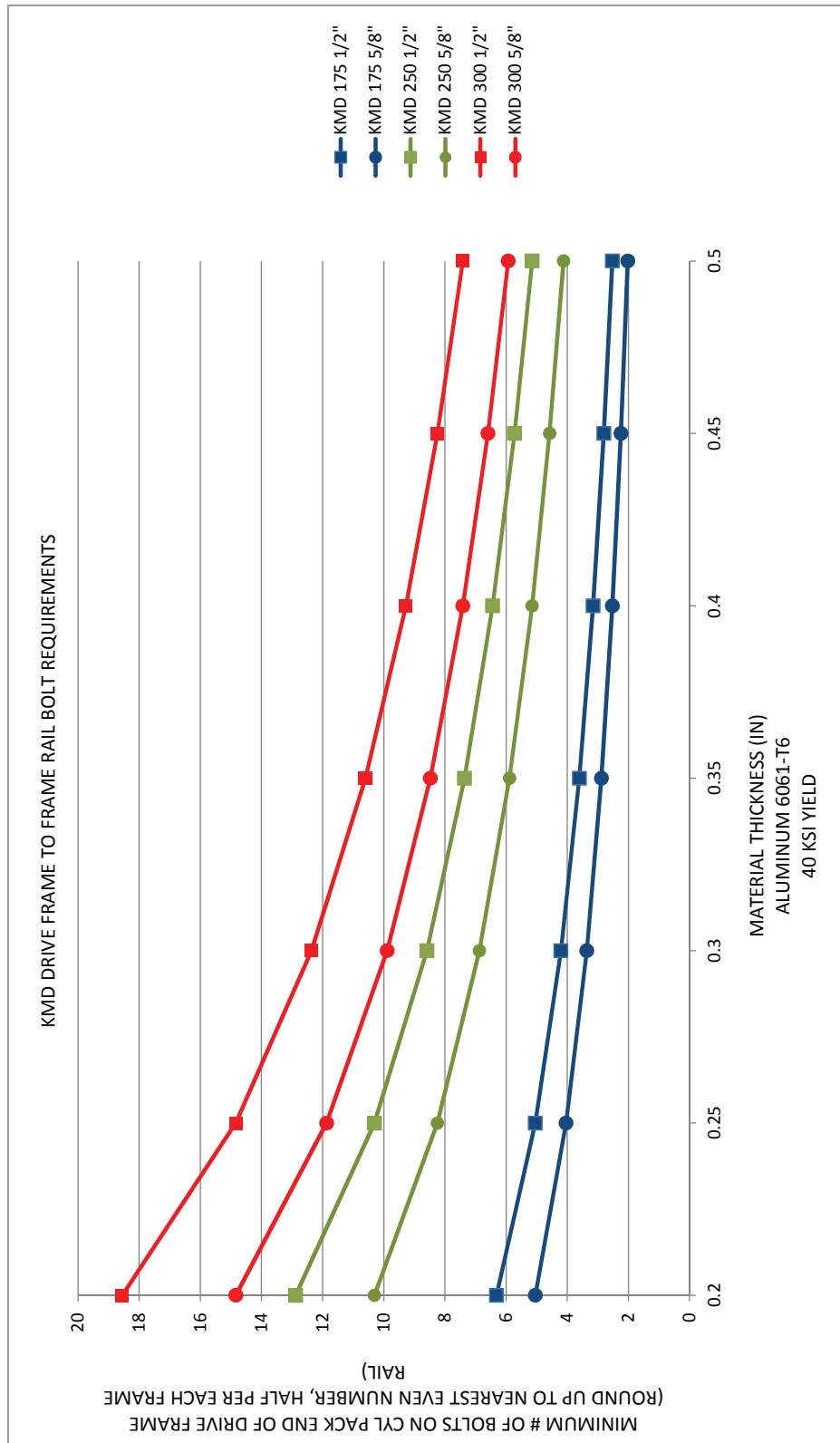


Decal Kit # 84804337



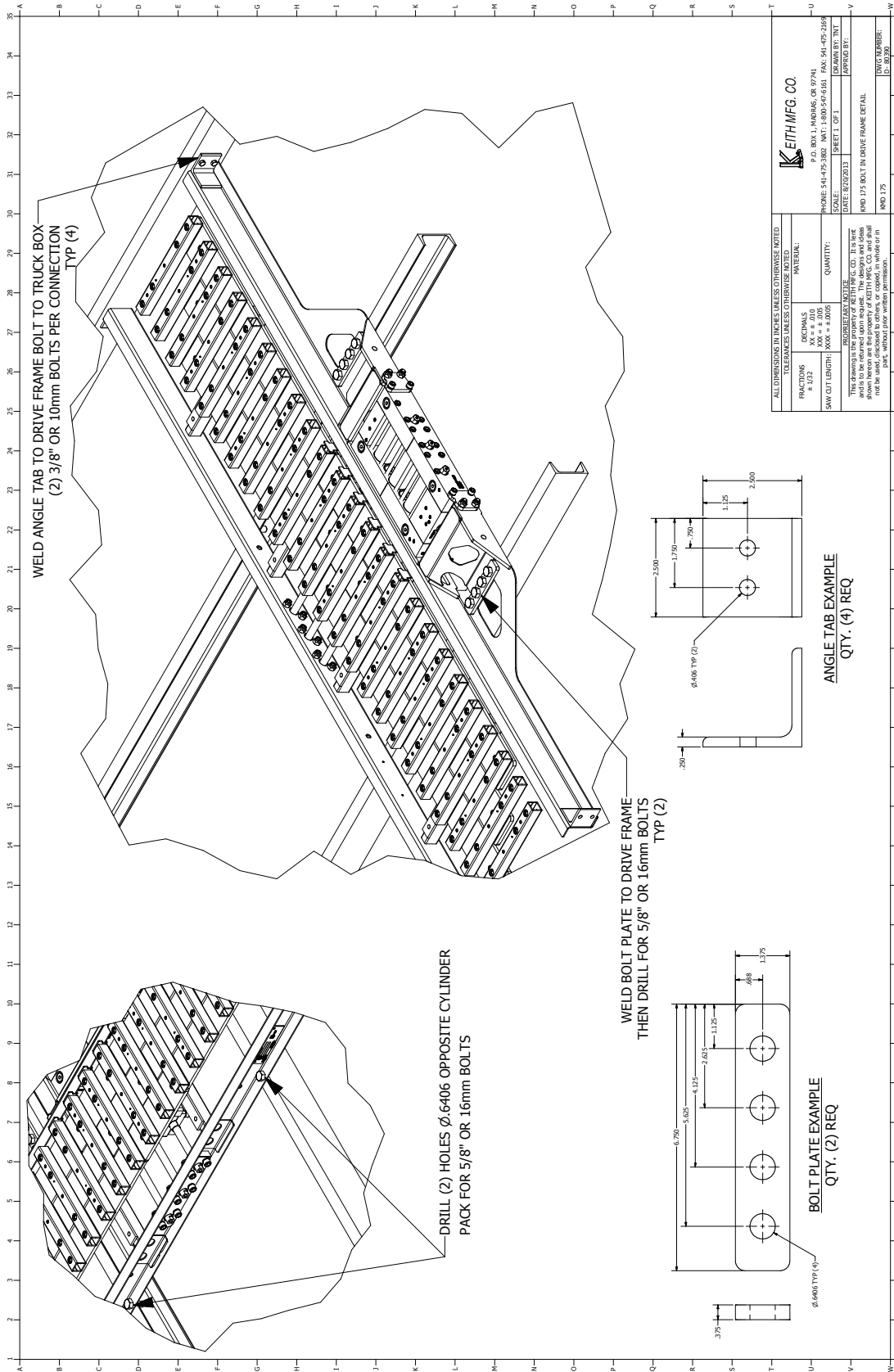
|    | <b>Worded<br/>(Old - 2019)</b>  | <b>Wordless<br/>(2020 - Future)</b>  | <b>Description</b>   |
|----|---|--|--|
| 1  |    |   | Pressure can build when material is compacted. Doors can open violently causing serious injury or death. Do not operate floor with doors closed. Stay clear to open doors. |
| 2  |    |   | Pinch point can cut or crush causing serious injury. Stay clear during operation. Lockout/tagout before servicing.   |
| 3  |    |   | Burial could cause serious injury or death. Stay clear during operation.   |
| 4  |    |   | To avoid injury, you MUST read and understand technical manual before operating or servicing this machine.   |
| 5  |    |   | Hydraulic pressure can cause serious injury. Stay clear during operation. Lockout/tagout before servicing.   |
| 6  |   |    | Hot surface can cause severe burns. Do not touch. Turn off and lock out main power disconnect and allow to cool before servicing.  |
| 7  |  |   | Avoid injury. Do NOT operate with guard removed. Replace guard before operating machine.   |
| 8  |  |   | Burial could cause serious injury or death. Do Not Enter when being loaded.  |
| 9  |   |   | Pull handle out to turn floor on. Push handle in to turn floor off.  |
| 10 | Controls on <u>Left</u> Side of Truck/Trailer                                       |   | Turn knob clockwise to unload. Turn knob counterclockwise to load.   |
| 10 |   |  Controls on <u>Right</u> Side of Truck/Trailer | Turn knob clockwise to unload. Turn knob counterclockwise to load.   |

7.7 Bolt Requirements





7.8 Bolt In Drive Frame Detail



## 8.0 Contact Information - KEITH Manufacturing Co.

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