

IOWA MOLD TOOLING CO., INC.

BOX 189, GARNER, IA 50438-0189 641-923-3711

MANUAL PART NUMBER: 99903701

Iowa Mold Tooling Co., Inc. is an Oshkosh Truck Corporation company.

In addition to the information presented in this manual, read and understand the IMT Crane Operator's Safety Manual before operating or performing any maintenance on your crane.

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REVISIONS LIST

99903701:24562/28562INSTALLATION:20131211 PARTS-3 READ ALL INSTRUCTIONS PRIOR TO STARTING INSTALLATION!

MATERIALS REQUIRED

- Mounting Kit (IMT # 95719252)
- Torque wrench capable of measuring from 220 to 885 ft-lb
- Grinder
- Cut-off wheel
- Band / chop saw
- Square
- Level
- Paint marker
- Welder
- Drill (for 1/2" and 5/8" drill bits)
- Sockets sized for 30 mm and 33 mm (1-13/16" and 2")
- Shim stock (see instructions)
- Hammer
- Feeler gage

The instructions provided here for an IMT 24562 crane apply to a mount similar to the one shown in Figure 1, a "behind the cab mount". This guide references a Sterling chassis and assumes no interferences with the crane.

NOTE

ALL APPLICABLE LEGAL HEIGHT, LENGTH, WIDTH AND WEIGHT LIMITS ARE THE RESPONSIBILITY OF THE INSTALLER.

INSTALLATION STEPS

The installation procedure is broken into eight steps. Read the procedure prior to starting work, and follow the steps in order.

- Step I. Truck Chassis Preparation Check for fit Check for shims Step II. Riser Construction Match truck frame dimensions Shear plate on each corner Step III. Crane Preparation Check and fix pockets if necessary Step IV. Crush Tube Installation Install for a force fit Step V. Crane Tie Rod Installation Confirm clearances Tighten either M30 or M33 size tie rod to the proper torque value Step VI. Gusset Stop Block Installation Ensure proper fit Weld additional stop blocks after crane is tied
- down Step VII. Final Tie Down Process Install frame to riser bolts Crush tube retainers
- Step VIII. Marker System Marker (Paint) system

Unique Crane Applications: Units mounted on non-Sterling chassis may require unique handling. Consult IMT if the unit is not compatible with these instructions.



Figure 1: Behind the cab crane mount

99903701:24562/28562INSTALLATION:20131211 PARTS-4
STEP I. TRUCK CHASSIS PREPARATION

Inspect chassis for adequate space to mount the crane. These instructions and parts were developed for a chassis which has no interferences (no cross member issues, frame bolts or other equipment in the way). The instructions are formatted using a Sterling chassis. Other chassis types may vary significantly.

If a double frame is used, check the truck frame for gaps in between the frame channels . Shim any truck frame flange gaps using shim stock as necessary to fill gaps:

- i. If gap is less than 1/16", do nothing as gap will be absorbed when tie rods are tightened.
- ii. If gap is between 1/16" and 1/4", shim.
- iii. If gap is greater than 1/4", consult IMT.

The shims are installed in relation to the crush tube and crane tie down bolt areas. The pieces should be about 3-1/2 inches long and about 2-1/2 inches wide and of the thickness necessary to fill the gap. Steel stock of 1/8, 3/16 and 1/4" in thickness is the most commonly used. The IMT kit does not include the shim stock since only a small percentage of the trucks need to have the shims installed. See figure 2 for additional detail on shim locations.

Ensure no cross members will interfere with the crush tubes and retaining bracket. Also check to assure the tie rods will clear any frame bolts.

STEP II. RISER CONSTRUCTION

Construct the riser for the crane from 3/8" thick tube and plate. Take special care to match the width of the tube to the truck frame flange width. For example, if the frame flange is 4-inches wide, the tube should be 4-inches wide. The height of the riser tube should be kept to 4 inches. If a 6-inch riser is used, an internal stiffener in the tube is required. Ensure the tubes extend beyond the width of the crane base by at least 1/2" (more space is needed on the compensated side to allow for stop block installation). The width of the riser should be flush with the outside of the truck frame. Constructing the riser in this manner aids in the installation of the crane by making sure no interferences exist. Incorporate shear plates on each corner to ensure the riser does not move on the truck frame. Ensure the shear plates do not cause an interference with the tie rods. Welding end caps on the tubes stiffens the sides and prevents water from entering the tube. See fiaure 3.

After the riser is constructed, mount the crane and stop blocks to the riser (instruction steps III through VI) prior to bolting the riser to the truck frame.



Figure 2: Areas which may require shims



Figure 3: Crane riser example

99903701:24562/28562INSTALLATION:20131211 **STEP III. CRANE PREPARATION**

Measure the tie rod pockets on the stabilizer side of the crane, as shown in figure 4. Use a square and a level to make sure the pockets are level and true to 1/ 16". Some grinding may be necessary to ensure the pockets are flat.

DO NOT GRIND THE WELD ON THE CRANE POCKET!

Measure the stabilizer side crane tie rod pockets and make sure the stop blocks will fit. The stop block part was designed to fit the largest gap of the tie rod pocket so it is normal to have the part milled down to accomplish a slight forced fit. The rear stop blocks (P/N 60128955) are welded to the riser. Make sure the crane fits flat on the riser and is not suspended on a weld.

Bevel the rear top washer plate (60128019) on the long edge on one side. Place the ground corner near crane base for tie rod pocket weld clearance as shown in Figure 5. Otherwise the washer plate can sit on a weld which will cause an uneven condition as shown in Figure 6.

PARTS-5



Figure 4: Pocket check



Figure 5: Beveled edge on washer plate



99903701:24562/28562INSTALLATION:20131211 STEP IV. CRUSH TUBE INSTALLATION

PARTS-6

Cut crush tube weldment (52719230) to length. Force fit into truck frame rail (use hammer if necessary). Custom fit each corner of the mount. If the crush tube causes installation interference, consult IMT.

Weld retaining "L" (angle) bracket (P/N 60128035) onto the tube. After the crane is tightened down, drill a hole for 1/2" diameter bolt to secure the retaining bracket as close to the frame centerline as possible.

See Figure 7 for details.

STEP V. CRANE TIE ROD INSTALLATION

Fit up the parts to center the clamp plates and make sure the tie rods will be parallel and perpendicular to 1/8" on the truck. Once the parts are in place, check for clearance between the tie rods, truck frame, and riser (nominal 1/4" clearance).

Front of Crane (tilting compensator- nearest cab)

Center tie rods on the truck frame.

Tighten to 680 ft-lb \pm 65 ft-lb for M30 (P/N 71411440 and P/N 71411441). Tighten tie rod nuts in increments to ensure clamp plate and washer plates are parallel, and both tie rods have the same load. Use a second nut as a jam nut on both ends of the tie rod.

Rear of Crane (farthest from cab)

Center tie rods on the truck frame.

Tighten to 850-880 ft-lb for M33 (P/N 71411439). Tighten tie rod nuts in increments to ensure clamp plate and washer plates are parallel, and both tie rods have the same load. Use a second nut as a jam nut on both ends of the tie rod.

The top washer plates are tack welded to the crane pocket. The rear washer plates must be ground on one edge to allow the plate to fit up next to the crane base. Otherwise the washer plate can sit on a weld which will cause an uneven condition.

NOTES:

1) DRIVE THE NUT ONTO THE TIE ROD FROM THE BOTTOM TO AVOID TOP MOUNT INTERFERENCE.

2) MAKE SURE THE SOCKET HAS ENOUGH DEPTH TO ALLOW TWO FULL THREADS BEYOND THE JAM NUT.



Figure 7: Crush tube weldment and bracket



Figure 8: Part locations

99903701:24562/28562INSTALLATION:20131211 PARTS-7 **STEP VI. GUSSET STOP BLOCK INSTALLATION** The gusset stop blocks (P/N 60128954) are welded to the crane only. The gusset stop blocks prevent the crane from twisting on the truck frame. On the rear side of the crane, the gusset stop block must be welded to the reinforced area, not the area where the surface steps down.



Figure 9: Stop block views

STEP VII. FINAL TIE DOWN PROCESS

Drill the holes in the truck frame and bolt on the riser after the crane tie rods have been tightened. This requires four 5/8" diameter bolts, grade 5 to grade 8, on each shear plate.

Drill holes for the crush tube retainers and install bolts to hold them in place after the crane tie rods have been tightened. Bolt to frame with 1/2" diameter bolt, grade 5 to grade 8. See Step IV and refer to Figure 7 for additional information.

Follow the chassis manufacturer's requirements for hole locations, etc.

99903701:24562/28562INSTALLATION:20131211 PARTS-8 STEP VIII. MARKER SYSTEM

Using a paint marker, mark the nuts and rod after the tie rods are tightened so that a visual mechanism exists to verify the rods were tightened correctly and to help aid in future visual inspections.

Also mark the clamp plate and the frame to use as a visual aid in inspecting for clamp plate movement on the truck frame. Paint marks across the frame (Figure 10) and both sides of the clamp plate (Figure 11). If the clamp plate has moved in any direction relative to the truck frame during use, the marks will no longer line up. This system has measurement resolution to approximately 1/8" and provides a baseline for future comparison. If the marks degrade or wear away, please repaint them.

While conducting the crane inspection, monitor the clamp plates for movement. If the clamp plates have moved, the entire mount should be inspected. Possible corrective action may be necessary- consult IMT for assistance.



Figure 10: Mark painted across the frame and clamp plate near the center of the truck frame



Figure 11: Marks painted on both sides of clamp plates

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