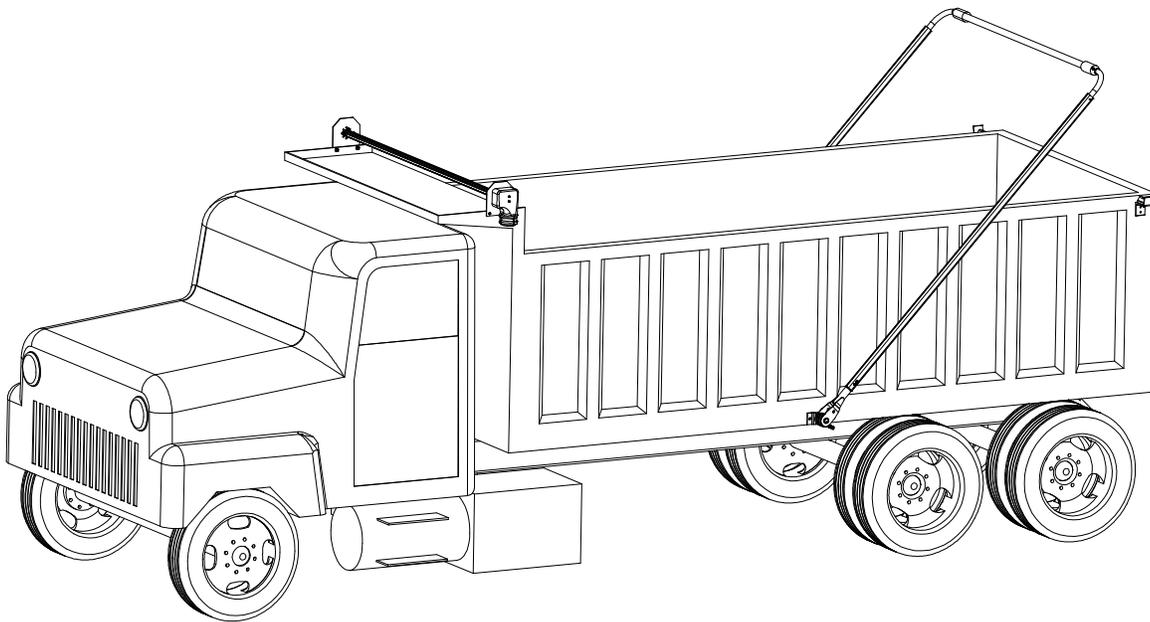




MECH-IN-A-BOX TARPING SYSTEM



OWNER'S MANUAL

FEBRUARY 2010

Donovan Enterprises

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STEP #1

MECH IN BOX

Head Assembly Installation Instructions (Rollerbar & Direct Drive Motor)

Required Parts:

1	Roller Bar Assembly (2365)	1	Direct Drive Motor w/cover (6L1)
1	Rotary Switch Kit (85N)	1	3/4" Extension Shaft (2838)
1	Bearing Plate (3270)	1	Bearing Plate w/ 3/4" Flange Bearing (3678)
1	3/4" shaft collar (450)	1	60' roll of 8ga. Dual Conductor Wire (89)

Before beginning installation:

1. Check parts bags for correct contents. Contact your dealer if parts are missing. **THE LAST PAGE CONTAINS THE REFERENCE GUIDE FOR THE HARDWARE YOU WILL NEED TO INSTALL YOUR SYSTEM.**
2. Read through instructions for entire system to get a general idea of how each component is mounted and how the components fit together.

Choosing the Mounting Location

In general, the direct drive motor and rollerbar should be mounted on top of the cab shield and as far forward as possible so that the DD motor and pivot arms will be less likely to be damaged by loaders. If head assembly is mounted too far forward, the pivot arms may interfere with the truck doors.

Exceptions: Trucks with vertical stacks. Vertical stacks may be in the way of the pivot arms if the DD motor and rollerbar were to be mounted forward of the stack(s). Simply shortening or re-aligning the stack(s) may solve the problem. If the stack(s) still get in the way, it may be necessary to mount the DD motor and rollerbar to the rear of the stack(s). If there is not enough room to mount the DD motor and rollerbar on the cab shield behind the stacks, they will need to be mounted on top of the sideboard pockets to the front of the body.

Installing the Bearing Plates (Optional)

1. Once the mounting location has been determined, you may either install the included bearing plates using the 3/8" x 1 1/2" bolts, flat washer, and lock nuts, or weld the bearing plates to the cab shield, or use the bearing plates as templates to drill the necessary mounting holes into the cab shield sides or other suitable location.
2. If you chose to use the bearing plates as templates and mount directly to the cab shield, remove the 3/4" bearing from the passenger side bearing plate and bolt it in place on the passenger side of the cab shield. **NOTE:** The bearing plates or cab shield holes should be exactly opposite of each other to avoid the tarp bunching to one side during use.
3. Be sure there is enough clearance between the rollerbar and the cab shield to roll-up the entire tarp.

Mounting the Direct Drive Motor and Rollerbar

1. Mount the DD motor to the driver's side bearing plate or cab shield.
2. Measure from the inside of one bearing plate to the inside of the other. Cut the roller bar one inch shorter than this length.
3. Drill a 3/8" hole, 1/2" from each end of the rollerbar. Drill a hole in the slot indicated, not a threaded slot (see Figure 1). Slide one end of the rollerbar over the DD motor shaft and secure with a 5/16" x 2 1/2" carriage bolt, flat washer, and lock nut.
4. Slide the 3/4" extension shaft through the passenger side bearing plate and into the roller bar. Line up the holes and secure with the 5/16" x 2 1/2" carriage bolt, washer, and lock nut.
5. Install a 3/4" shaft collar onto the extension shaft on the outside of the 3/4" bearing to prevent lateral movement of the roller bar.

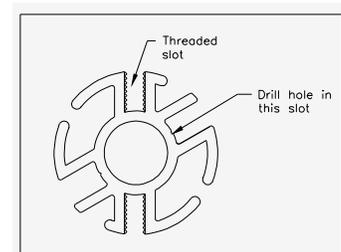


FIGURE 1

Wiring the Motor

Follow the instructions that come with your electrical switch for wiring up the switch, motor, and battery.

STEP #2

Pivot Mount Installation Instructions

Contents of Kit:

- 2 Pivot Arm Mounts (1787)

Installation Instructions

- To find the pivot point, pull one tape measure from point "A" and a separate tape measure from point "B". Next cross the tape measures at the bottom-middle of the truck body where the two measurements are equal – mark the spot beneath where they cross. This is your pivot point. (See **Figure 2**)
- If you are welding your pivot mounts on, skip to step #3. Using the pivot mount as a guide to determine the hole position for mounting, ensure the center of the mounting plate is aligned with the pivot point as determined in step 1. Drill 2 9/16" holes in line with the holes in the pivot mount.
- Weld or bolt the pivot mounts to the box using the included 1/2" bolts, flat washers, and lock nuts (the head of the bolt must be on the outside, and the washer and nut on the inside).

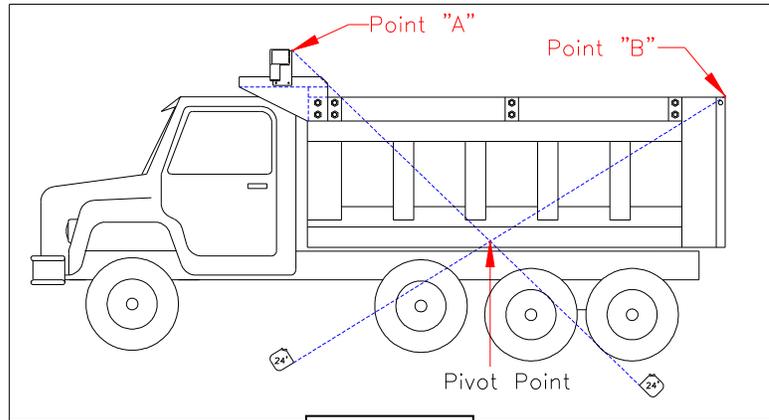


FIGURE 2

STEP #3

Pivot Arm Installation Instructions

Contents of Kit:

- 8 Flat Torsion Springs (2416)
2 90 Degree Elbows (3730)
4 Pivot Arm Brackets (2888)
2 Pivot Arm Pins (3686)

Installer must supply:
3 - 8' Sections of 1" ID Schedule 40 Pipe
1 - 8' Section of 1 1/4" ID Schedule 40 Pipe

Installing the Pivots Arms

- Cut the 1 1/4" ID schedule 40 pipe (you provide) in half, so you have two 4' sections.
- Weld the lower pivot arm assembly together as shown in **Figure 3**.
- Slide one bent elbow into one of the 8' sections of 1" ID Schedule 40 Pipe (you provide) and weld into place. Repeat this procedure with the other bent elbow and a different piece of 1" ID Schedule 40 Pipe (you provide).
- Install the lower pivot arms on the pivot mounts without the flat torsion springs. This will simplify the rest of the installation because the pivot arms may now be moved without spring tension.
- Slide one of the upper pivot arms, with the welded elbow, into a lower arm. Adjust the arm length until the corner rests on the desired landing point at the back of the box (Point B; figure 1 from the Pivot Installation Instructions). If the upper arm is too long, cut both upper arms to allow at least 1 foot of upper pivot arm sticking into the lower pivot arm.
- Attach the other lower arm assembly, again leaving the springs **off** to allow for ease of arm adjustment.

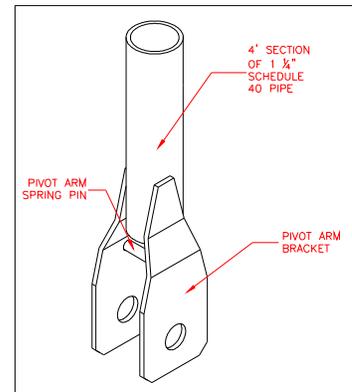


FIGURE 3

7. Slide both upper pivot arms into the lower pivot arms (make sure that both arms end up the same length) and tack weld into place. **NOTE: Do not fully weld upper and lower arms together at this time. Final adjustments may be necessary later in these instructions.**
8. Measure the distance between the upper arms as shown in **Figure 4**. Cut the rear cross piece 4" shorter than the distance measured.
9. Slide the ends of the rear cross piece (RCP) over the upper pivot arm ends.
10. Drill a 1/4" hole through each end of the rear cross piece and both upper arms. Secure the RCP to the upper arms with the included cotter pins.
11. Swing the complete pivot arm assembly forward until it rests on the head assembly. The RCP should be resting in the center of the head assembly opening (see **Figure 5**). If the RCP is not landing in the center of the opening, remove the tack welds that hold the upper arms into the lower arms and adjust where the RCP lands. Tack weld arms in new position.
12. Swing the pivot arm assembly back to the rear of the truck and check the landing position. If it appears that the RCP will interfere with the operation of the tailgate, the pivot point may need to be moved or mount the pivot arm rests (pivot arm rest installation discussed later) so that the RCP remains clear of the tailgate.
13. Check for binding or rubbing of the pivot arms against the sides of the box. Check both sides of the box, and adjust the pivot mounts or arms as necessary for clearance.
14. Remove the RCP, lower and upper arms so that you may install the flat torsion springs.
15. Remount the lower and upper pivot arms with the flat torsion springs (4 per side). **NOTE:** It may be necessary to remove the tack welds and the upper pivot arms to install the springs. Ensure you mark both upper arms where they slide into the lower arms prior to removing the tack welds. Make sure the hook ends of the springs have clipped over the pin in the spring guard. After the springs and pivot arms are in place, slide the 1 1/4" shim over pivot mount shaft. Place the spring clip into the groove on the pivot mount shaft.
16. Completely weld the upper and lower arms together. If you removed the tack welds, then you will need to slide the upper pivot arms into the lower pivot arms to the marks made in Step 15 and then weld them in place.

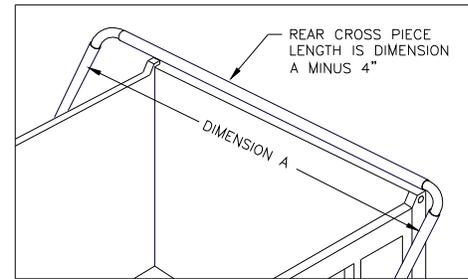


FIGURE 4

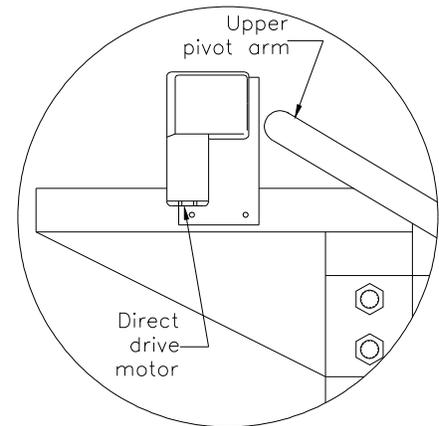


FIGURE 5

Installing the Tarp

1. Thread the tarp spline into the aluminum roller bar. (Make sure to remove excess spline or it may hinder the system's operation).
2. Slide the RCP into the tarp pocket (sewn into the tarp).
3. Center the tarp on both aluminum roller bar and rear cross piece.
4. Attach the Rear Cross Piece back to the 90° bend welded in the upper arm using the included cotter pins.
5. Check all mechanism bolts, screws, and welds for security.

Installing the Pivot Arm Rests

1. Unwind the tarp so that the system is in the "covered" configuration.
2. Position the pivot arm rests so that upper arms are as level as possible and do not make contact with the tailgate or any other part of the dump body.
3. Weld pivot arm rests into place.
4. To reduce the chances of damage caused by vibration, pieces of rubber may be attached to the pivot arm rests to cushion the pivot arms.

Mech-In-A-Box Hardware Kit

Description	QTY	Part#
<u>Rear Cross Piece to Arms</u>		
Cotter Pins	2	2475
<u>Pivot Mount</u>		
1/2 " x 1 1/2" Hex bolt	4	1309
1/2" Flat washer	4	2878
1/2" Nylock nut	4	2877
<u>Head Assembly</u>		
3/8" x 1 1/2" Bolt	4	2464
3/8" Washer	4	2875
3/8" Nylock nut	4	2874
<u>Motor and Cover</u>		
5/16" x 2 1/2" Carriage Bolt	2	3237
5/16" Washer	2	2867
5/16" Lock Nuts	2	2868
<u>Pivot Arms to Pivot Mount</u>		
1 1/4" Retaining Ring	2	2834
1.25" X .047 Shim	2	2833
<u>Pivot Arm Rests</u>		
3/8" x 1 1/2" Hex Bolt	4	2464
3/8" Lock Nut	4	2874
3/8" Flat Washer	4	2875

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