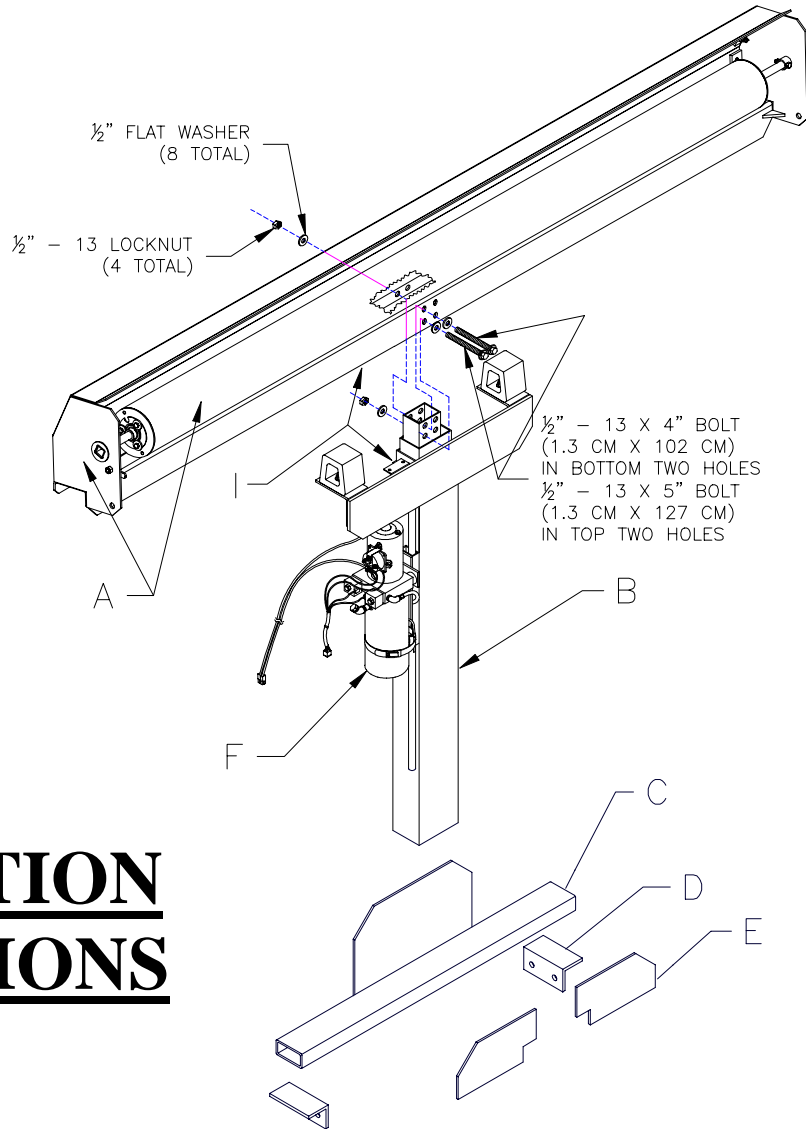




# HY-TOWER™ (SL)

**COVERING SYSTEMS**  
By DONOVAN ENTERPRISES, INC.

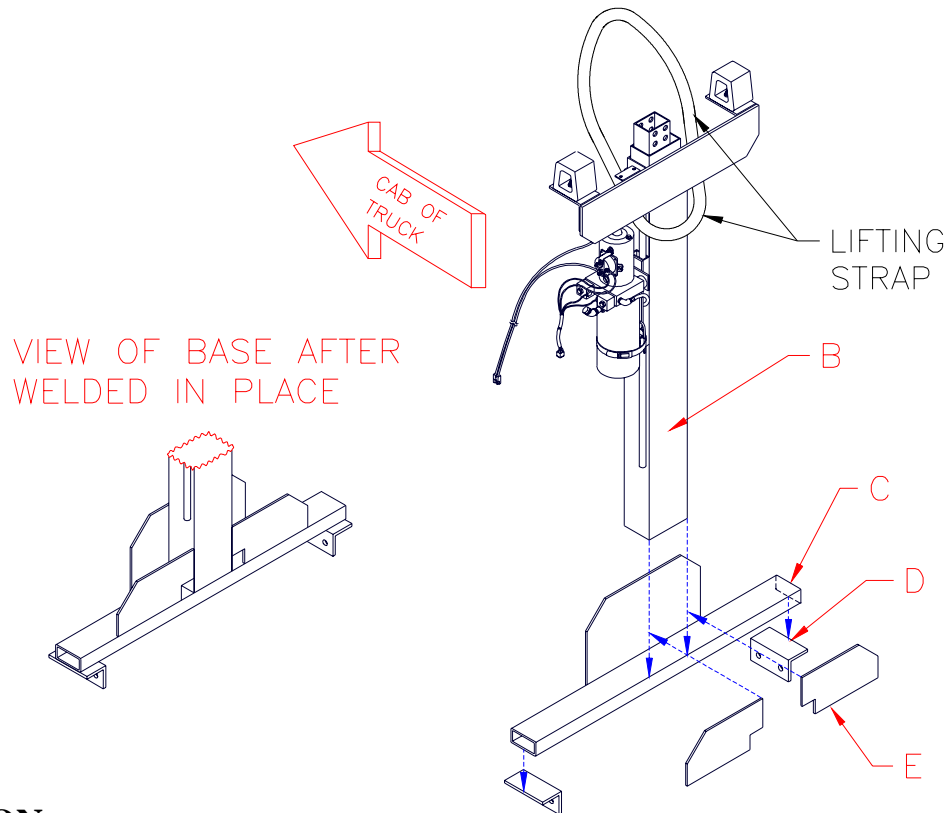


## INSTALLATION INSTRUCTIONS

### DESCRIPTION

### QTY

A	ROLLER BAR AND HOUSING	1
B	LIFTING MECHANISM	1
C	MOUNTING BASE	1
D	MOUNTING ANGLES	2
E	FRONT BRACE	2
F	HYDRAULIC PUMP	1
G	ELECTRICAL PIGTAIL 12' (3.66 M)	1 (NOT SHOWN)
H	REMOTE OPERATING SWITCH W/12' (3.66M) CABLE	1 (NOT SHOWN)
I	ALARM SWITCH / ACTUATOR BRACKETS	1 EACH



## **PREPARATION**

- Check the contents of the kit against the parts list on page 1.

**NOTE:** If the Hy-Tower (SL) is being installed on a **hook lift type truck** ensure there is adequate clearance (minimum **10' (25.4 cm)**) between the hook and the cab of the truck for the Hy-Tower (SL) when the hook is closest to the cab. You will have to watch the hook while it is in use to determine when it is closest to the cab.

- Determine the mounting position for the lifting mechanism (Part B) behind the cab. A minimum distance of 6" (15.2 cm) is recommended between the cab and the hoist (see picture on page 3 for clearance requirements).

**NOTE:** Ensure the mounting angles are installed square to the truck frame.

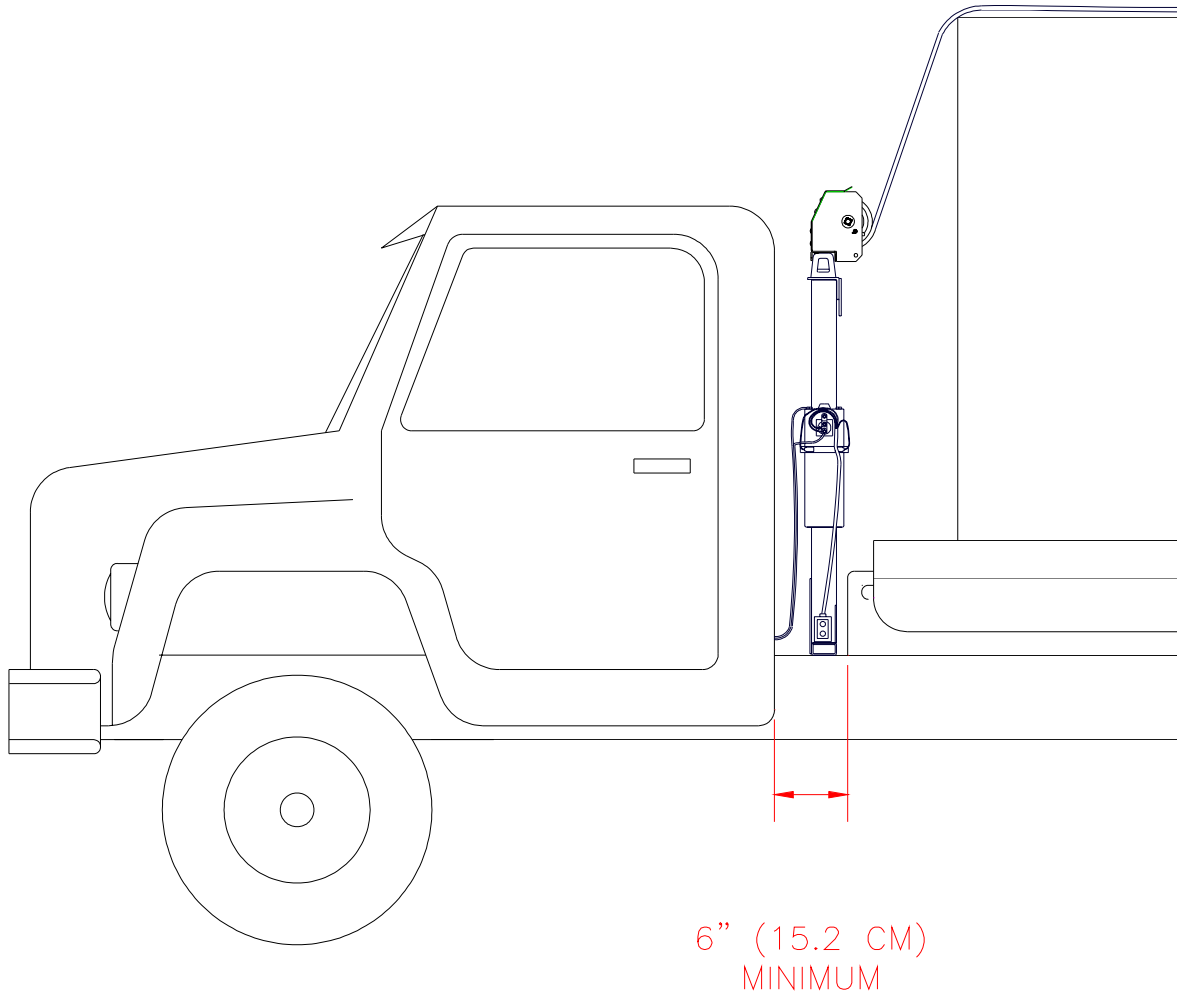
- When the location is determined, drill and bolt the mounting angles (Part D) to the frame of the truck. Use ½" (1.3 cm) grade 8 bolts (not supplied).
- Weld the mounting base (Part C) square to the mounting angles (Part D).

**NOTE:** Ensure the HY-TOWER (SL) unit is centered, square and perpendicular to the truck frame.

**CAUTION:** The lifting mechanism (Part B) weighs approximately 125 Lbs (56 Kg). You should use a lifting strap and crane to lift mechanism in place on truck

- Weld the lifting mechanism (Part B) to the mounting base (Part C).
- Weld the front braces (Part E) to the lifting mechanism (Part B) and the mounting base (Part C).

# HY-TOWER INSTALLATION CLEARANCE REQUIREMENTS AND SAFETY PRECAUTIONS



- A minimum clearance of 6" (15.2 CM) between the cab and the tilt frame is required.
- Hydraulic hoses, exhaust system and other components may interfere with the standard mounting brackets supplied by Donovan Enterprises. Occasionally, special brackets may need to be fabricated by the installer to account for this interference.

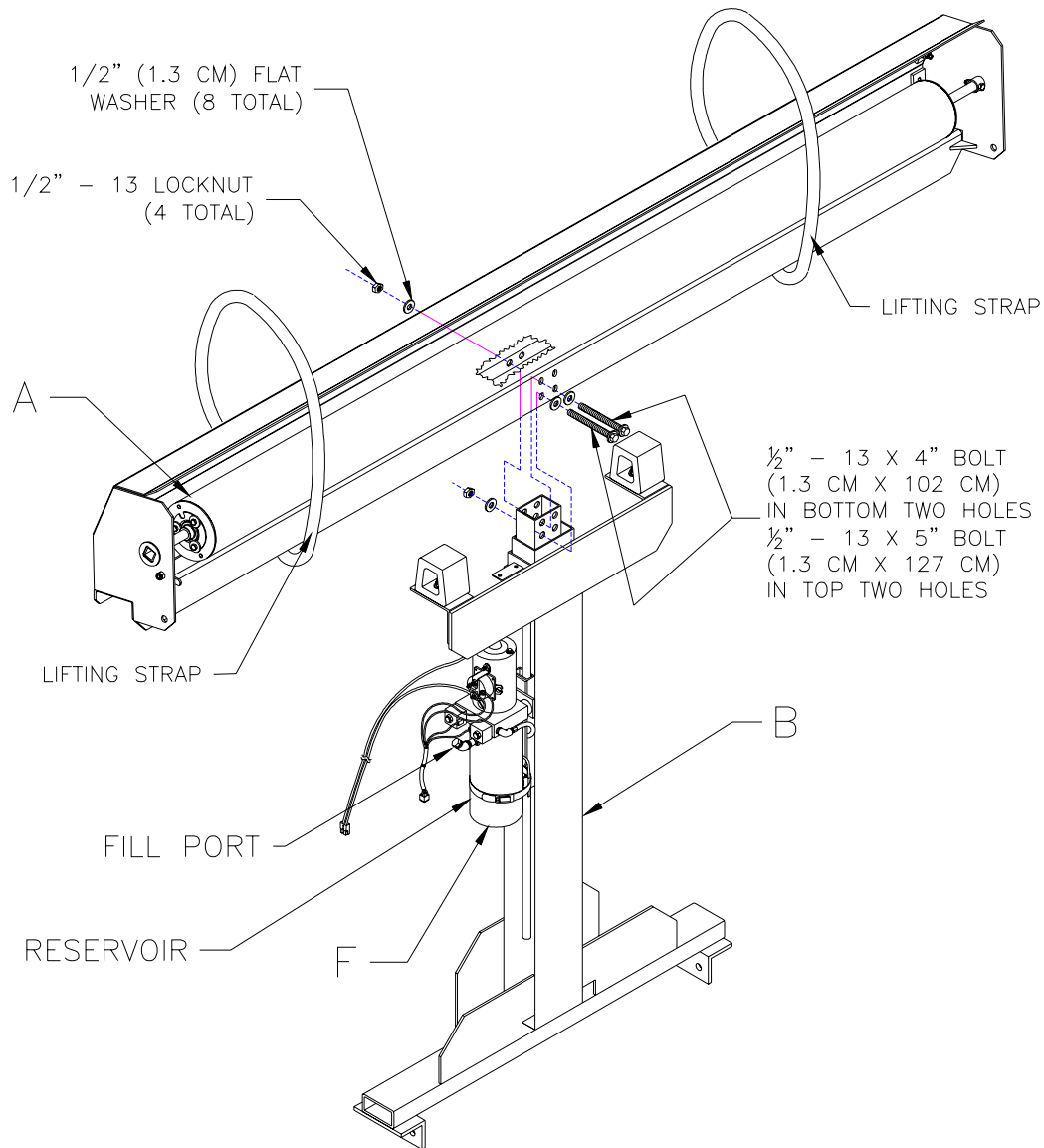
**CAUTION:** When activating the control lever make sure that moving parts are in view.

**CAUTION:** When operating system make sure that no one is present on the side that is not in your direct view.

**CAUTION:** Make sure the truck is not under power lines when raising Hy-Tower.

**CAUTION:** When servicing or repairing the Hy-Tower system, disconnect power to the components from the vehicle battery.

**NOTE:** The noise level is less than 72dB(A)

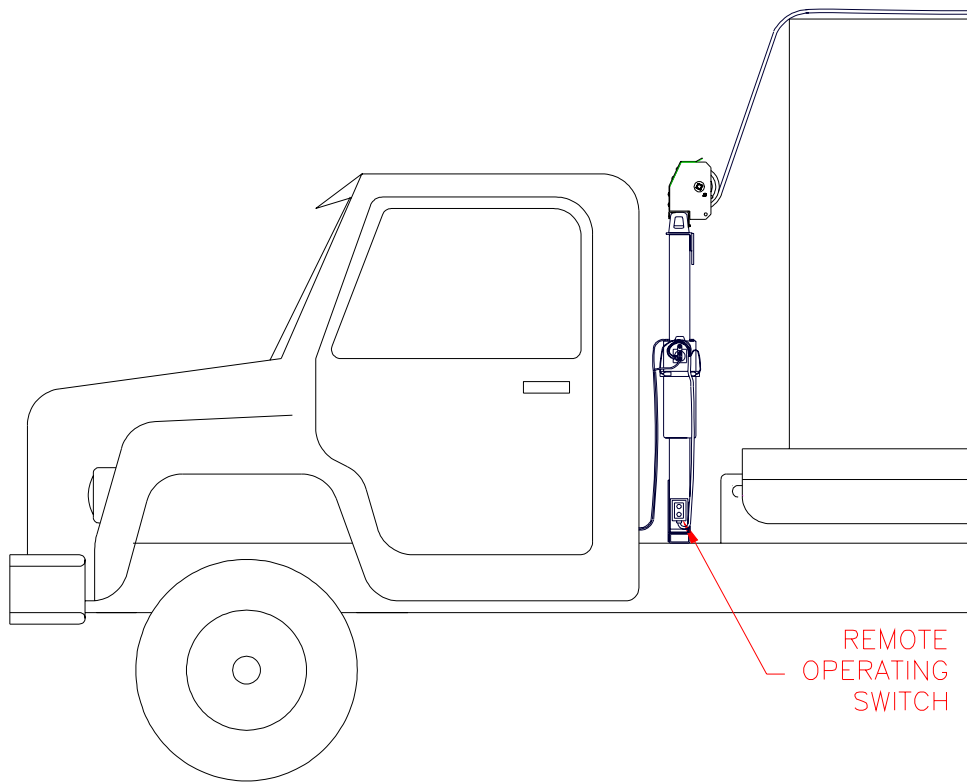


**CAUTION:** The roller bar and housing (Part A) weighs approximately 150 Lbs (67.5 Kg). You should use lifting straps and crane to lift mechanism in place on truck.

- Mount roller bar and housing (Part A) to the lifting mechanism (Part B) using two (2) ½” – 13 x 4” (1.3 CM X 102 CM) bolts in the bottom two holes and two (2) ½” – 13 x 5” (1.3 CM X 127 CM) bolts in the top two holes, four (4) ½” – 13 lock nuts, and eight (8) ½” (1.3 CM) flat washers.
- Fill the hydraulic pump (Part F) reservoir with dextron automatic transmission fluid or equivalent through the fill port (approximately 3 quarts (2.85 L)).

**NOTE:** Ensure the black breather cap is installed on the hydraulic pump fill port after filling the reservoir. **DO NOT** reinstall the fill plug on the pump fill port (top of fill plug is same size as fill port and top of breather cap is larger than fill port).

- Install breather cap on fill port.



**NOTE: Do not use any self drilling screws on the HY-TOWER (SL) lifting mechanism (center sections). This will prevent the lifting mechanism from operating correctly.**

- Attach the remote operation switch to the angled bracket, located on the drivers side of the Hy-Tower (SL) base, using self-drilling screws. When the switch is mounted properly the wire will be coming out of the bottom of the switch. This will prevent water from leaking into the switch along the wire. Then connect the quick disconnect on the end of the wires from the switch to the quick disconnect on the wires going to the hydraulic pump.

**NOTE: If you have a 24-volt hydraulic pump, ensure there is a grounding strap connected from the bolt under the solenoid (there is a sticker next to this bolt telling you about the ground strap) to one of the bolts on the top of the pump.**

- Connect the solid black wire on the electrical pigtail to the negative battery terminal. Connect the black wire with the red stripe to the positive battery terminal. Then connect the quick disconnect on the end of the pigtail (you just connected to the battery) to the quick disconnect on the wires going to the hydraulic pump.

**VERY IMPORTANT:**

**Do not use “never seize” or similar compound on the telescoping legs of the Hy-Tower (SL). It will cause the telescoping legs to stick while the housing is being lowered.**

**NOTE FOR COLD TEMPERATURE OPERATIONS (BELOW FREEZING):**

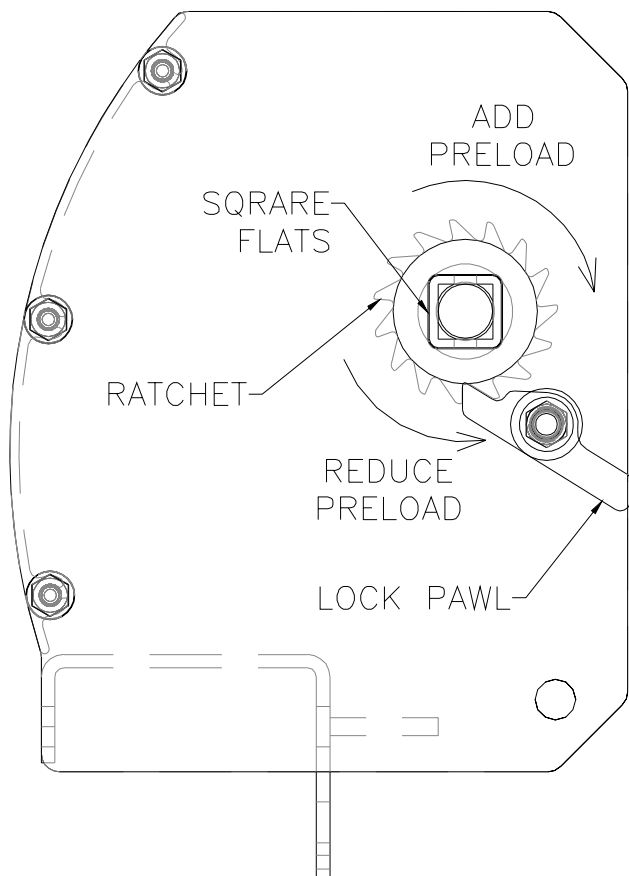
**If the Hy-Tower will be in operation at temperatures below freezing (32° F / 0° C) we recommend you use Lubriplate Mag-1 grease or similar cold weather grease when re-greasing the telescopic legs.**

# ROLLER BAR PRE-LOAD TENSION INSTRUCTIONS

## ----- WARNING -----

- Do not adjust roller bar spring tension without proper sized 1” (2.5 CM) wrench.
- Maintain a tight grip on wrench at all times top avoid possible injury.
- Always ensure lock paw is fully engaged in ratchet before releasing wrench.
- Recommended pre-load turns of roller bar (pre-load is already added to roller bar at factory on new systems. This pre-load guide is only to be used if you remove this pre-load (for example, during tarp replacement)):
  - Lightweight tarp: 32 turns
  - Heavyweight tarp: 38 turns
- Do not exceed 50 turns total (do not forget to add pre-load turns to the number of turns that you have added )or you may cause spring to break.

## ADJUSTING ROLLER BAR SPRING TENSION



### INCREASE SPRING TENSION:

**CAUTION:** Lock pawl must be fully engaged before wrench is removed to prevent personal injury.

- Use a 1” (2.5 CM) wrench on square flats and rotate ratchet clockwise while counting each full rotation.

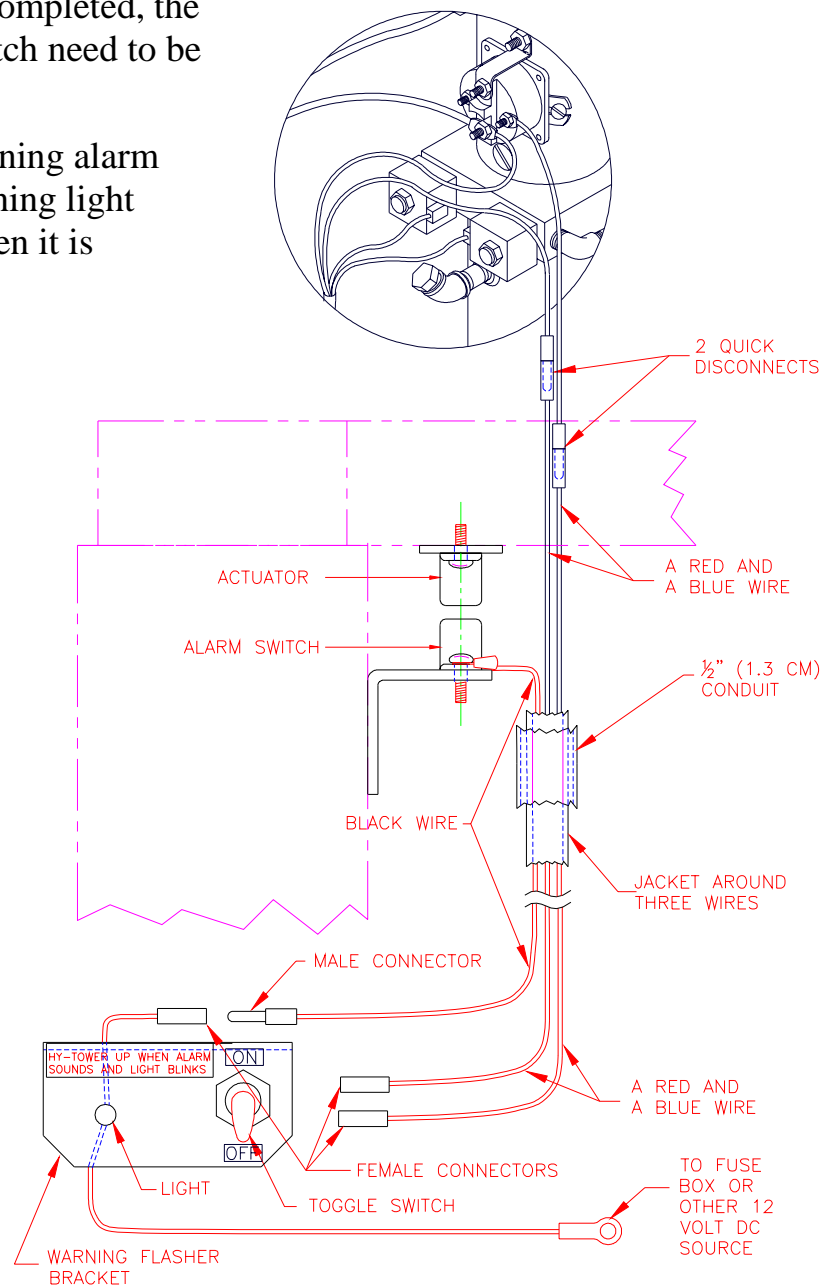
### DECREASE SPRING TENSION:

**CAUTION:** Lock pawl must be fully engaged before wrench is removed to prevent personal injury.

- While holding a 1” (2.5 CM) wrench on square flats, lift lock pawl to disengage pawl. Rotate ratchet counterclockwise until desired tension is achieved.

# HY-TOWER (SL) WARNING FLASHER INSTALLATION

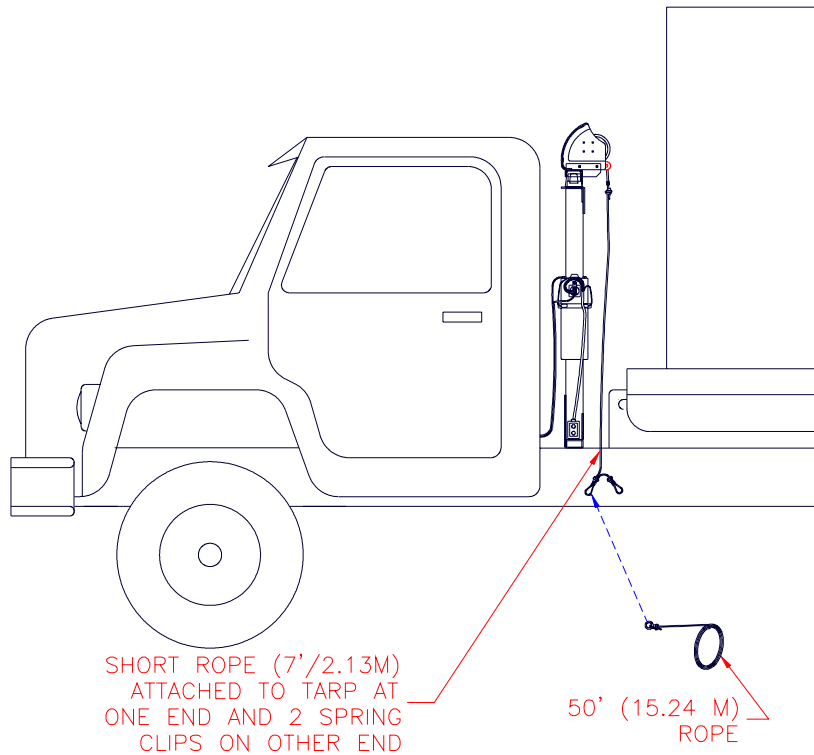
- After Hy-Tower unit installation is completed, the warning light, alarm, and cutout switch need to be installed.
- Determine mounting location of warning alarm bracket inside cab of truck. The warning light should be easily visible to driver when it is installed.
- Run the wires (there are three wires inside a jacket) that are coiled at the end of the conduit near the base of Hy-Tower (SL) to the warning alarm bracket you just installed.
- Connect black wire from the alarm switch to the wire attached to the light (quick disconnects are already installed on wires).
- Connect the blue and red wires to the male connectors on the back of the toggle switch (it does not matter which wire goes to what connector).
- Connect the black wire, coming from the light (wire has ring terminal on end), to the fuse box or some other 12 volt DC power source.



## **TEST OPERATION:**

- When the Hy-Tower is raised approximately 1" (2.5 CM) the red light on the warning flasher should be blinking and the audible alarm will sound.
- Place the toggle switch in the "off" position and try to raise Hy-Tower. Hy-Tower hydraulic pump should not start. Always place the toggle switch in the "off" position when the Hy-Tower is not being raised or lowered.

# HY-TOWER (SL) OPERATING INSTRUCTIONS



## COVERING INSTRUCTIONS

**NOTE:** The operating instructions are the same for the original Hy-Tower system, the Mini Hy-Tower system, and the Skip Manual system. The operating instructions are also the same for a Cable roll off truck, Hook Lift style, or a Skip truck. The original Hy-Tower is shown in these instructions.

**CAUTION:** When activating the control lever make sure that moving parts are in view.

**CAUTION:** When operating system make sure that no one is present on the side that is not in your direct view.

**CAUTION:** Make sure the truck is not under power lines when raising Hy-Tower.

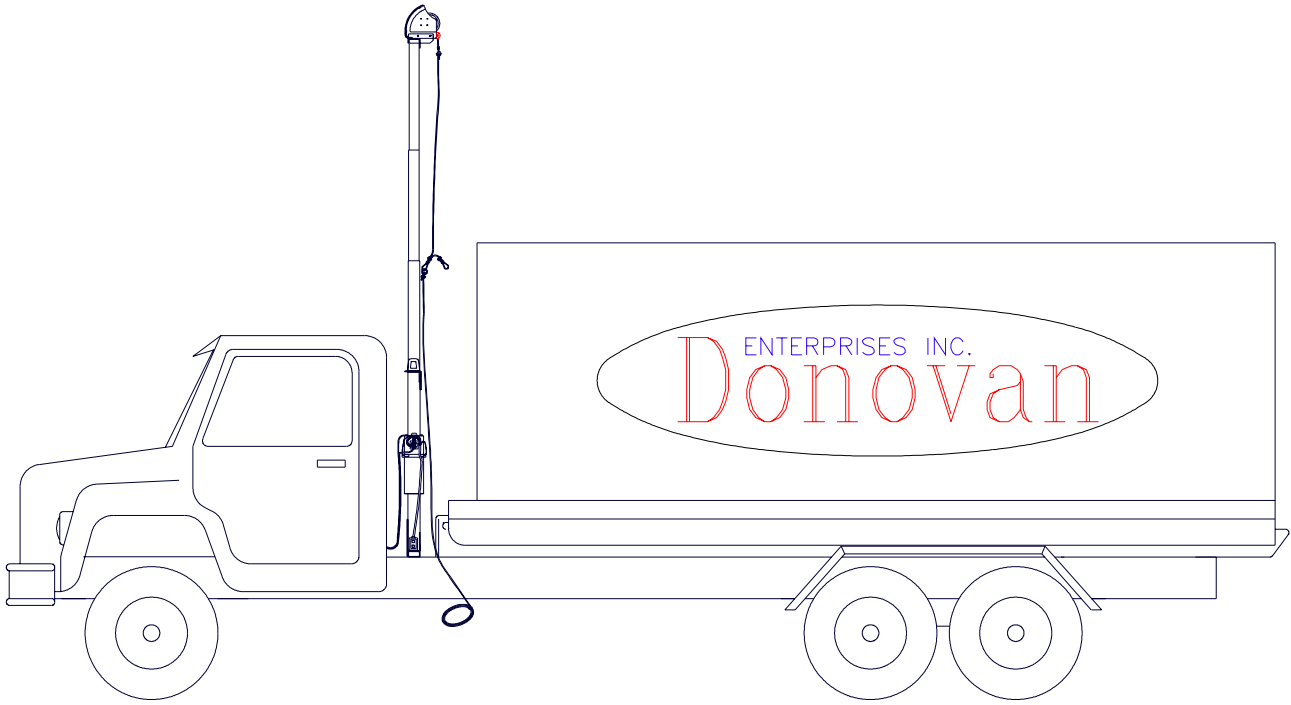
**CAUTION:** In an emergency stop the vehicles engine.

**CAUTION:** When servicing or repairing the Hy-Tower system, disconnect power to the components from the vehicles battery.

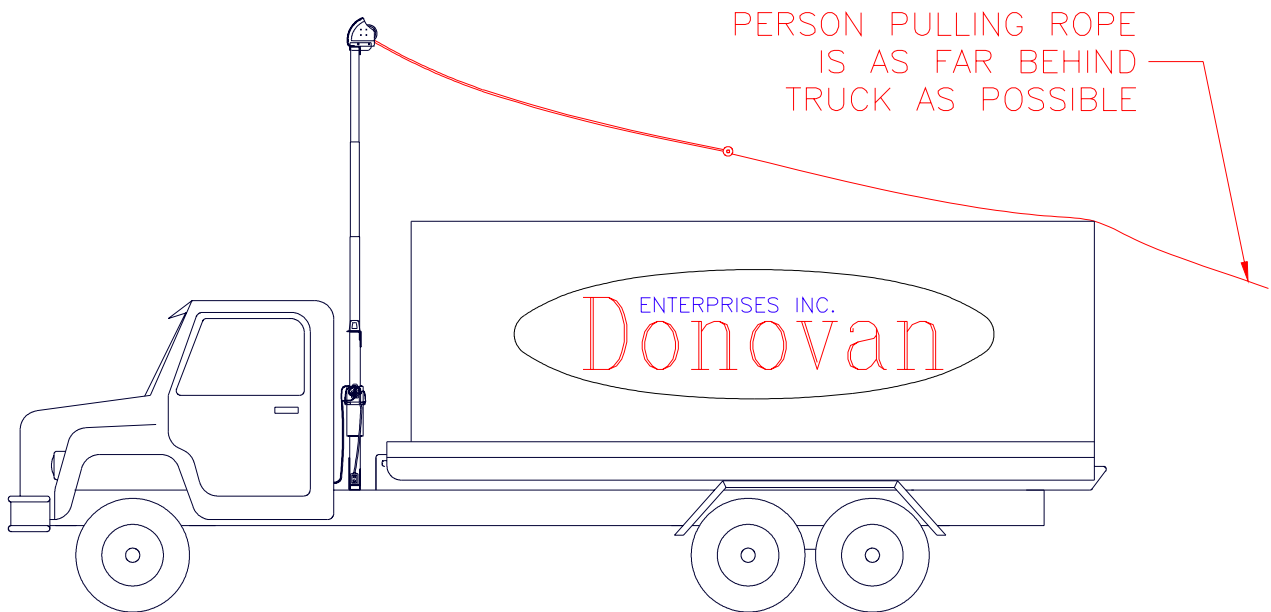
**NOTE:** The noise level is less than 72dB(A)

**STTEP 1:** Prior to raising tower, clip ring on 50' (15.24 M) pull rope to spring clip on short rope attached to tarp (fig. 1).



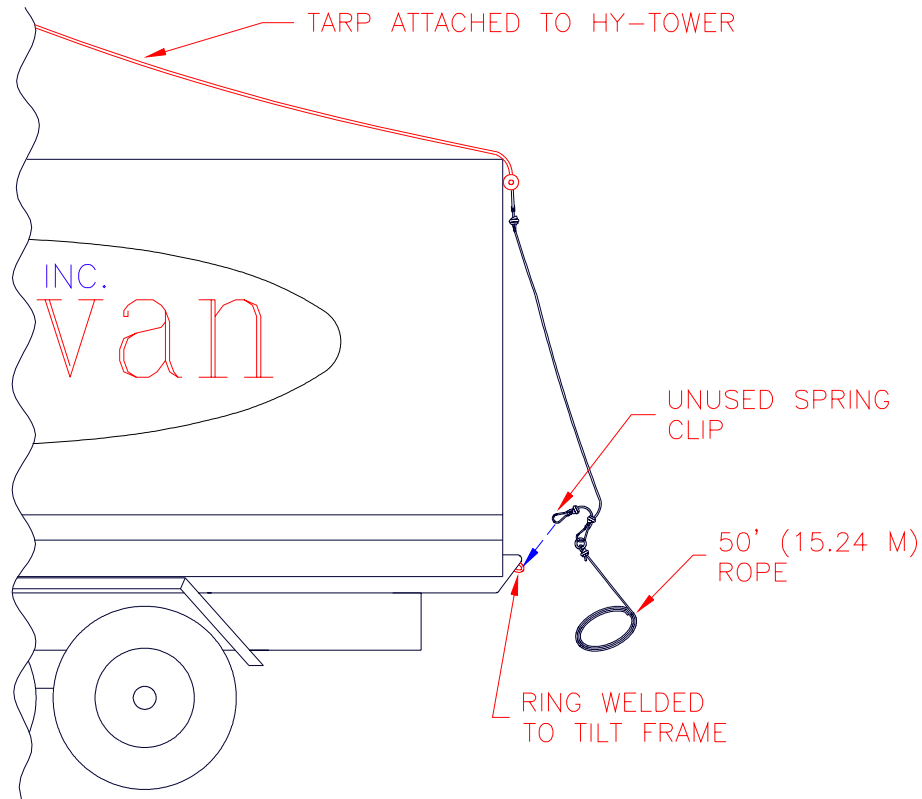


**STEP 2:** Use remote operating switch to raise HY-TOWER™ (SL) to its maximum height, while allowing rope to extend with tower (fig. 2).

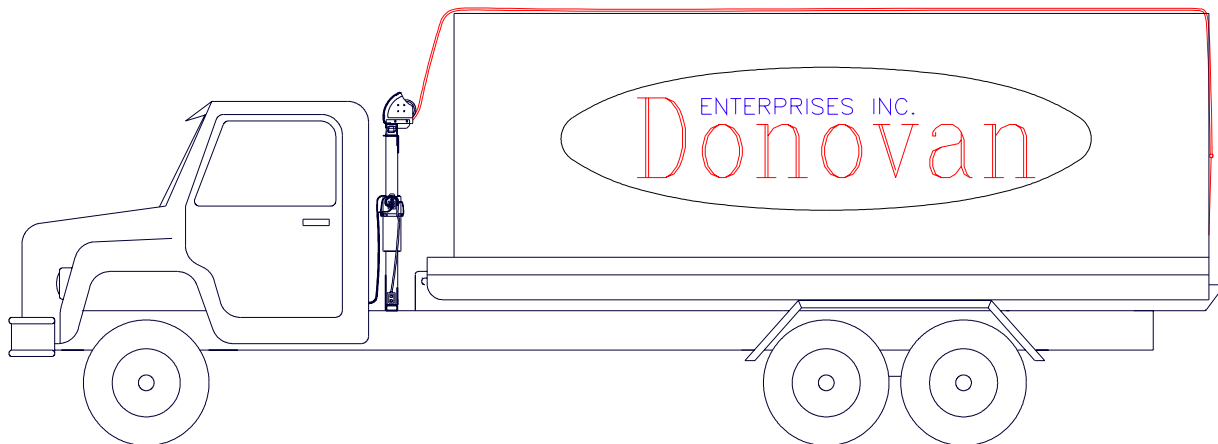


**STEP 3:** With rope in hand, walk to rear of truck to a position directly behind container as far back as rope will allow (fig. 3).

**STEP 4:** Pull tarp out so it completely covers container.

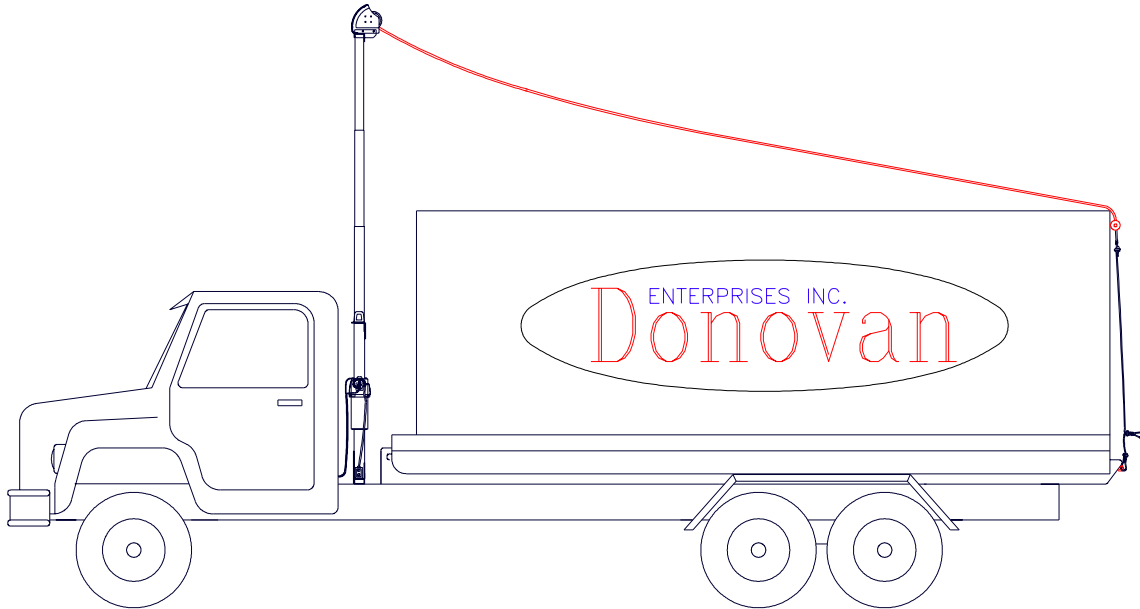


- STEP 5: While maintaining tarp position over container, walk toward container until you are at rear of truck.
- STEP 6: Clip the unused spring clip on short rope attached to tarp to the rear of the tilt-frame or container. Now the tarp is secured (fig. 4).
- STEP 7: Detach the long (50'/15.24 M ) rope section and store it in cab of truck or in tarp box.



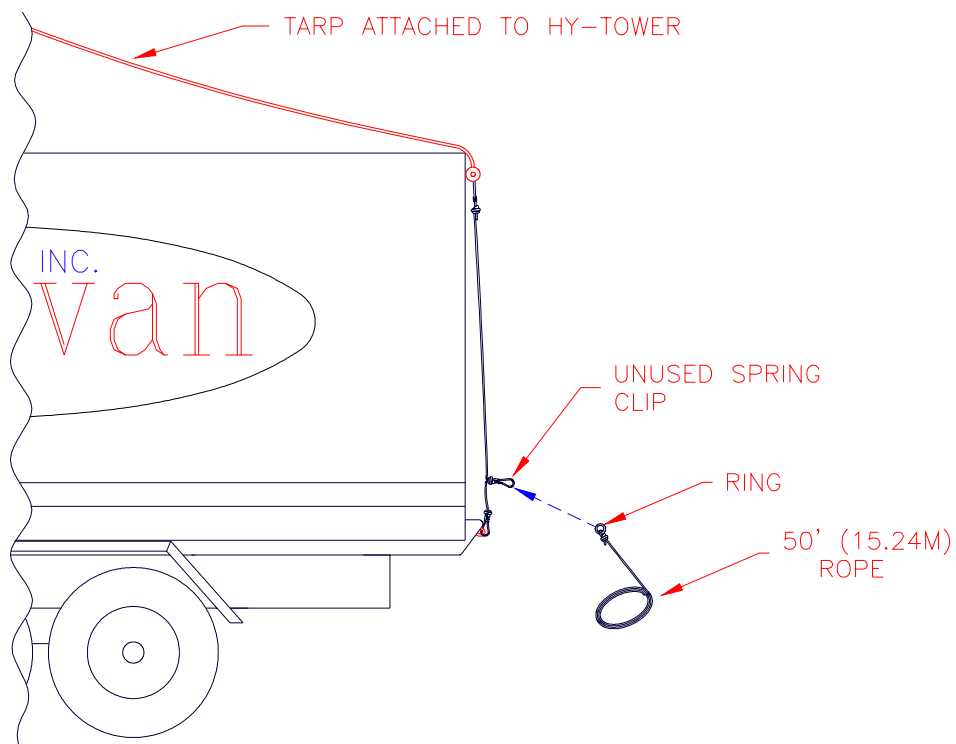
**CAUTION: NEVER MOVE TRUCK UNLESS HY-TOWER™ (SL) IS IN THE FULLY RETRACTED POSITION.**

- STEP 8: Use the remote operating switch to lower HY-TOWER™ (SL) to its fully retracted position (fig. 5).



## UNCOVERING INSTRUCTIONS

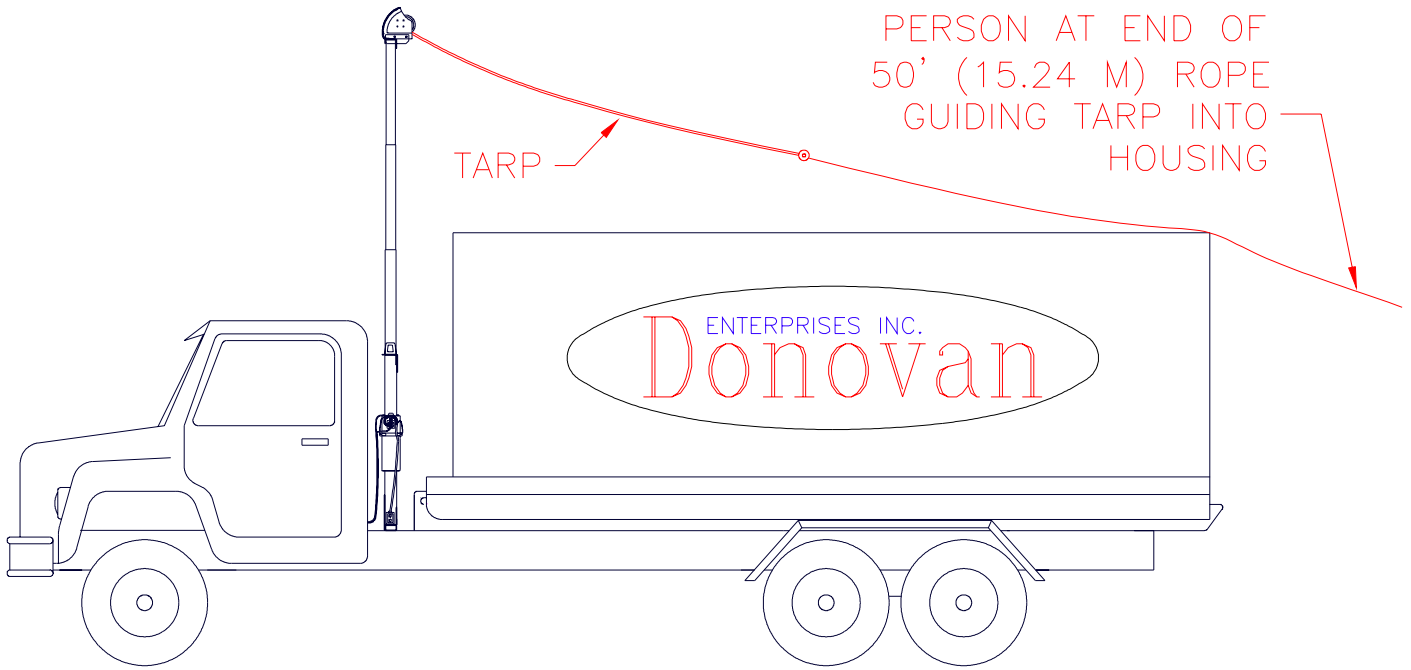
STEP 1: Use remote operating switch to raise HY-TOWER™ (SL) to its maximum height (fig. 6).



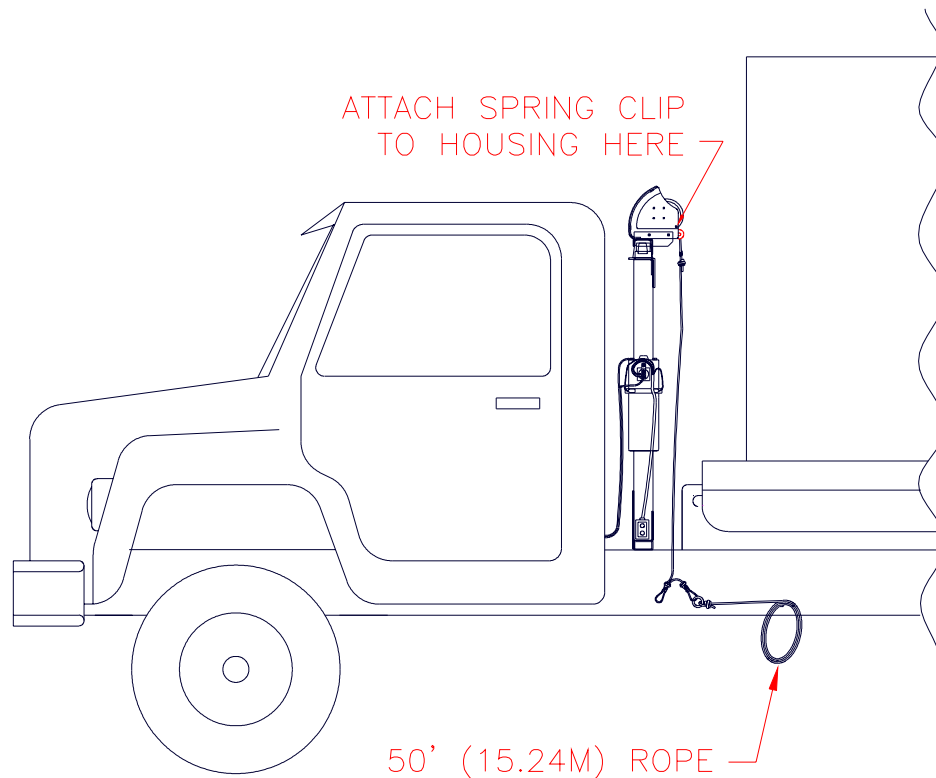
STEP 2: Clip ring on 50' (15.24 M) pull rope to unused spring clip on short rope at rear of trailer (fig. 7).

**NOTE:** Pulling down on 50' (15.24 M) rope will take tension off of spring clip attached to back of truck. This will make it easier to disconnect spring clip from rear of truck.

STEP 3: While holding 50' (15.24 M) rope assembly securely, unclip spring clip from back of truck.



**STEP 4:** Use 50' (15.24 M) rope to guide tarp as it rolls up into housing (fig. 8).



- STEP 5:** Using remote operating switch, lower HY-TOWER™ (SL) to its fully retracted position.
- STEP 6:** Disconnect 50' (15.24M) rope and store it in truck cab or tarp box.
- STEP 7:** Attach spring clip to HY-TOWER™ (SL) housing to prevent short rope attached to tarp from swinging freely (fig. 9).

## Periodic Inspection and Maintenance

### Daily:

1. Check hydraulic hoses for wear, tear and leaks.
2. Check mechanism for any damage.
3. Check tarpaulin for tears.
4. Clean wheel tracks on the base.
5. Check if the system operates smoothly.

### Weekly:

1. Check mechanism for any excessive wear and tear.
2. Check hydraulic hoses and components for leak and damage.
3. Check tarp tension.
4. Check hydraulic fluid in power unit.

### Monthly:

1. Verify the tightness of hydraulic fittings.
2. Verify the tightness of the fasteners.
3. Check welds and other joins for cracks.
4. Apply grease to inner stages. (Do NOT use anti-seize or similar compound as this will damage the system.)