

5 LOADING AND UNLOADING A DUMP TRAILER

Improper trailer loading causes many accidents and deaths. To safely load a trailer, you must consider:

- Overall load weight;
- Load weight distribution;
- Proper tongue weight; and
- Securing the load properly.

To determine that you have loaded the trailer within its rating, you must consider the *distribution* of weight, as well as the total weight of the trailer and its contents. The trailer axles carry most of the total weight of the trailer and its contents (Gross Vehicle Weight, or “GVW”). The remainder of the total weight is carried by the tow vehicle hitch. It is essential for safe towing that the trailer tongue and tow vehicle hitch carry the proper amount of the loaded trailer weight, otherwise the trailer can develop an undesirable sway at towing speeds, or the rear of the towing vehicle can be overloaded. Read the “Tongue Weight” information in Section 4.

The load distribution must be such that no component part of the trailer is loaded beyond its rating. This means that you must consider the rating of the tires, wheels and axles. For tandem and triple axle trailers, you must make sure that the front-to-rear load distribution does not result in overloading any axle.

Towing stability also depends on keeping the center of gravity as low as possible. Load heavy items on the floor and over the axles. When loading additional items, be sure to maintain even side-to-side weight distribution and proper tongue weight. The total weight of the trailer and its contents must never exceed the total weight rating of the trailer (Gross Vehicle Weight Rating, or “GVWR”).

Loading And Unloading A Dump Trailer

Hazards For Dump Trailers

A dump trailer is specifically designed for hauling equipment or cargo that is to be dumped, not for transporting livestock. The major hazards associated with dump trailers are:

- Overloading.
- Improper weight distribution; both side to side and front to back.
- Getting under a raised dump body.
- Not using, or improperly using the body prop.
- Modifying or altering hydraulic components.
- Modifying or altering dump controls.
- Not dumping from a solid and level foundation.
- Not fully opening rear doors when dumping.
- Jerking the trailer, or hydraulics, to loosen the load.
- Trailer coming near or contacting overhead power lines when body is raised.

WARNING

An overloaded trailer can result in loss of control of the trailer, leading to death or serious injury.

Do not exceed the trailer Gross Vehicle Weight Rating (GVWR) or an axle Gross Axle Weight Rating (GAWR).

Do not load a trailer so that the weight on any tire exceeds its rating.

WARNING

A soft and/or uneven surface may cause the tow vehicle and trailer to tip over when the dump body is raised.

Raise the dump body ONLY if the tow vehicle and trailer are both on a firm and level surface.

Loading And Unloading A Dump Trailer

WARNING

An overloaded trailer or improperly distributed load can result in death or serious injury.

An overloaded trailer can cause the hydraulic system to malfunction, resulting in the dump body falling.

A load that is improperly distributed in the trailer can result in the trailer tipping over when the dump body is raised.

Danger

NEVER alter or substitute any hydraulic system component. Death or serious injury may result.

An altered or component substituted hydraulic system may malfunction, resulting in the dump body falling without warning.

NEVER alter or substitute any hydraulic system component.

WARNING

Risk of electrocution.

Dump body coming near or contacting power lines can cause electrocution. Electrocution can occur without contact.

Be sure there are no overhead power lines over or near the trailer before raising dump body.

5.1 LOADING FIXED LOADS

(Including equipment such as skid-steer loaders, mowers, etc.)

- Fixed loads that are to be carried or dumped should be loaded evenly throughout the trailer. Too much load in the front portion will strain and possibly overload the hydraulic hoist. Too much load in the rear can lead to trailer swaying at highway speeds.
- Couple the trailer to the tow vehicle.

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- Park the tow vehicle and trailer on a firm and level surface, both front-to-back and side-to-side. Attempting to load on a soft or uneven surface may cause the trailer to overturn, which can result in death or serious injury.
- Inspect the “D” rings for any cracks.
- Clear the area around the trailer.

WARNING

Load can suddenly move or topple, which can result in death or serious injury.

Do not load or unload trailer unless coupled to tow vehicle and is on a firm and level surface.

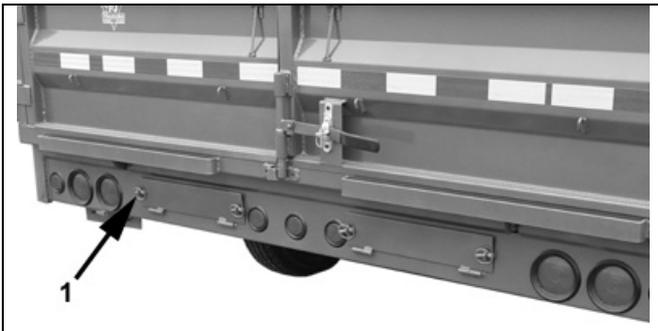
- Place blocking under the rear of the trailer so the weight of the cargo does not raise the front of the trailer during loading.
- Open rear swing gates and secure open.

Caution

The weight of each loading ramp is 80 lbs.

Use a safe lifting procedure to prevent injury when handling ramps.

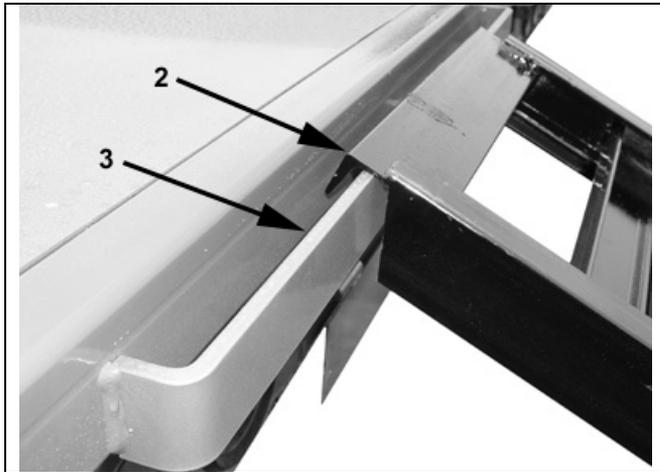
- Remove safety lock pins (1), open covers and pull ramps from storage position. See figure 5-1.



Ramp Safety Lock Pins - Figure 5-1

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- Place bracket (2) on ramps over bracket (3) trailer. See figure 5-2.



Install Ramps – Figure 5-2

- Place the ramps at the proper width and load the equipment. The operator must be experienced and skilled to perform the loading and unloading.
- Secure the cargo to the trailer using appropriate straps, chains and tensioning devices. Refer to www.fmsca.dot.gov for regulations regarding cargo securement rules.
- Remove ramps and place in storage position. Close ramp covers and be certain to install safety lock pins (1) on ramp covers. See figure 5-1.
- Close and secure rear doors.
- Remove blocking under rear of trailer

5.2 LOADING AND UNLOADING BULK MATERIALS

Payload Capacity: Check if the trailer has “payload” decals on the sides. If not, then determine the payload, or Cargo Capacity, by subtracting the empty weight of the trailer from the GVWR given on the Certification / VIN tag. Determine the density of the material to be loaded and dumped so that you will know, approximately, how many cubic yards of material may be safely loaded, carried, and dumped.

Loading And Unloading A Dump Trailer

WARNING

Trailer, hitch or dump body can fail.

You or others can die or be seriously injured.

Load in the trailer must not exceed capacity and must be distributed evenly.

5.2.1 Prepare Trailer For Loading

Couple the trailer to the towing vehicle before loading. This is essential because the tongue can raise during loading. To measure the tongue weight you will have to de-couple the trailer after it is loaded.

Be sure the trailer is located on firm level ground. Attempting to load on uneven ground may cause the trailer to overturn, which can result in serious injury or death.

Do not transport people, containers of hazardous substances, or flammable liquids. The exception is fuel in the tank of vehicles or equipment that are being hauled.

WARNING

Do not transport flammable, explosive, poisonous or other dangerous materials in your trailer. The exception is fuel in the tank of vehicles or equipment that are being hauled.

Loading And Unloading A Dump Trailer

WARNING

RAISED DUMP BODY CAN DROP OR TIP OVER SUDDENLY. YOU AND OTHERS CAN DIE OR BE SERIOUSLY INJURED.

YOU MUST:

- Have trailer on level, firm ground before dumping.
- Keep others away while dumping.
- Stay at controls until dump body is down.

NEVER LEAVE THE SCENE WHEN DUMP BODY IS LIFTED.

- Lock hoist controls after use.
- Have dump body down before moving trailer.
- Use body-prop and have dump body empty before getting under raised dump body.
- If the hoist does not lift the load:
 - Manually reduce the load - obtain service from a qualified hydraulics technician.

NEVER ASSIST THE HOIST. (i.e., with a jack, crane, heavy equipment, etc.

- If the load does not leave the dump body: Lower the dump body and manually free the load.
- Never attempt to free a load from a raised dump body.

5.2.2 Loading Bulk Material

- Couple the trailer to the tow vehicle.
- Park the trailer and tow vehicle on a firm and level surface, both side-to-side and front-to-rear.
- Check the dump body for damage. Repair before loading trailer.
- Close and latch trailer gates.
- Tell the loader operator the GVWR of your trailer. The loader operator will have an approximate weight of the material to be loaded.
- Use common sense when loading. If you are uncertain of the weight of the material, load a small amount and weigh your trailer. It is

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much easier to add to a light load than to remove material from an overloaded trailer.

- Level (evenly distribute) the load within the trailer from front to back and from side to side.
- If material may blow out while driving, tarp the trailer.
- If the trailer is overloaded, **DO NOT attempt to raise the dump body**. The excess material must be removed by equipment designed for this purpose, or by hand.

5.2.3 Unload Bulk Material Using The Spreader Gate

- Read and understand the hoist operating procedure before operating the dump body.
- Clear the area around the dump trailer.
- Park the tow vehicle and trailer on a firm and level surface both left / right and front / rear. Attempting to unload on a soft or uneven surface may cause the trailer to overturn, which can result in death or serious injury.
- For spreading material, the surface in which the tow vehicle and trailer will travel **MUST** be firm and level.

WARNING

A soft and/or uneven surface may cause the tow vehicle and trailer to overturn when the dump body is raised or while spreading material.

Raise the dump body **ONLY** if the tow vehicle and trailer are both on a firm and level surface.

WARNING

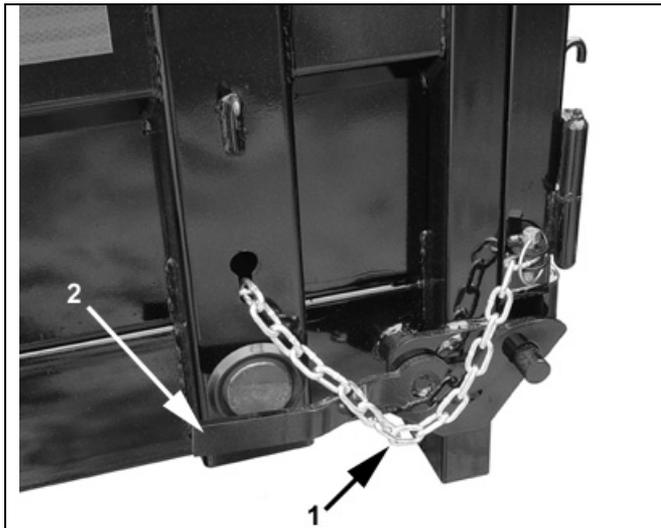
An overloaded trailer or improperly distributed load can result in death or serious injury.

An overloaded trailer can cause the hydraulic system to malfunction, resulting in the dump body falling.

A load that is improperly distributed in the trailer can result in the trailer overturning when the dump body is raised.

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- Set the metering chains (1) at the desired number of links to control the opening distance of the spreader gate. Be sure to set both chains at equal length. Push down on lever (2) to unlock spreader gate. See figure 5-3.



Set Metering Chains and Unlock Spreader Gate – Figure 5-3

⚠ Caution

Loaded materials can exert pressure against the spreader gate. This may cause the spreader gate to swing out with force when unlocked, causing serious injury.

Stand on the side of the trailer to unlock spreader gate.

- Open the battery box and locate the dump body controller. While using the dump body controller, position yourself in a safe location clear of the dump body. Check for overhead power lines and other obstructions before raising dump body.

Loading And Unloading A Dump Trailer

WARNING

Risk of electrocution.

Dump body coming near or contacting power lines may result in electrocution. Electrocution can occur without contact.

Be sure there are no overhead power lines over or near the trailer before raising dump body.

Danger

A lowering or falling dump body can result in death or serious injury.

NEVER enter the area under the dump body unless the empty dump body is supported by the body prop.

Danger

The body prop is designed to support an empty dump body only.

NEVER support a loaded dump body by the body prop.

Unload the dump body before using body prop.

- Press and hold button (3) to raise the dump body. Release the button when the body has reached approximately the halfway point of its dumping angle, or if the load begins to shift rearward. Never leave the dump body control when operating the dump body. See figure 5-4.

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Remote or Pendant Dump Controller – Figure 5-4

WARNING

Fully raising the loaded dump body may result in the tow vehicle rear wheels losing traction.

Do not fully raise a loaded dump body or place the entire load at the rear of trailer.

- Return the dump body control to the battery box. Watch for and avoid obstructions such as tree limbs, overhead lines, potholes, etc. and SLOWLY drive the tow vehicle and trailer ahead to spread the material.
- **DO NOT** drive forward and stop quickly to “shock” the load out of the body. **DO NOT** “jerk” the control button up and down to dislodge the load. **The proper procedure for a stuck load is to fully lower the dump and dislodge the material by hand.**
- You may need to raise the dump body higher after a portion of the load has been spread to place the remaining material at the rear of the dump body.

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- Stop tow vehicle after all material has exited the dump body.
- Press and hold button (4) to lower the dump body. See figure 5-4. Release the button when the dump body is fully lowered. Place dump body controller in the storage or travel location. Close and lock battery box.
- Close and lock rear gate before moving trailer.

5.2.4 Unload Bulk Material Using The Swing Gates

- Read and understand the hoist operating procedure before dumping the load.
- Be sure the trailer is on level ground, both side-to-side and front-to-rear. Attempting to unload on uneven ground may cause the trailer to overturn, which can result in death or serious injury.

WARNING

A soft and/or uneven surface may cause the tow vehicle and trailer to overturn when the dump body is raised or while spreading material.

Raise the dump body ONLY if the tow vehicle and trailer are both on a firm and level surface.

WARNING

An overloaded trailer or improperly distributed load can result in death or serious injury.

An overloaded trailer can cause the hydraulic system to malfunction, resulting in the dump body falling.

A load that is improperly distributed in the trailer can result in the trailer overturning when the dump body is raised.

Caution

Loaded materials can exert pressure against the swing gates. This may cause the gates to swing out with force when unlatched, causing serious injury.

Stand away from the trailer to unlock swing gates.

Loading And Unloading A Dump Trailer

- Clear the area around the dump trailer.
- Remove safety lock pin, pull up on gate latch (1) to release swing gates. See figure 5-5. Lock gates against the side of trailer.



Latch On Double Swing Gates – Figure 5-5

- Open the battery box and locate the dump body controller. While using the dump body controller, position yourself in a safe location clear of the dump body. Check for overhead power lines and other obstructions before raising dump body.

WARNING

Risk of electrocution.

Dump body coming near or contacting power lines may result in electrocution. Electrocution can occur without contact.

Be sure there are no overhead power lines over or near the trailer before raising dump body.

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Danger

A lowering or falling dump body can result in death or serious injury.

NEVER enter the area under the dump body unless the empty dump body is supported by the body props.

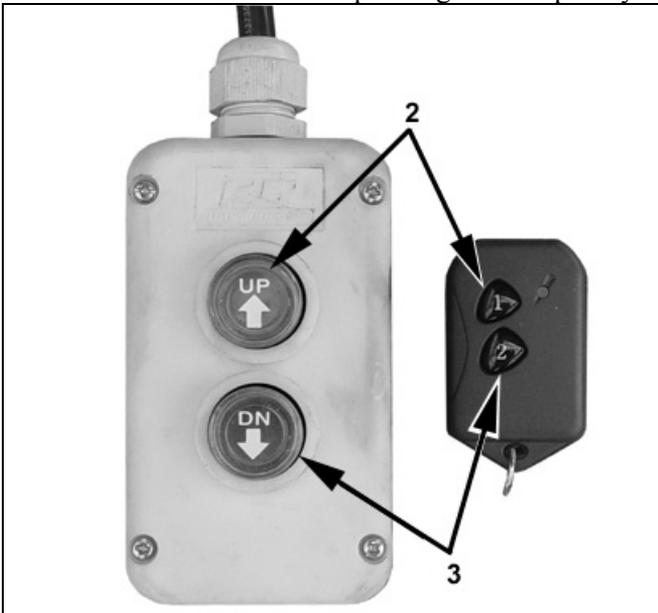
Danger

The body props are designed to support an empty dump body only.

NEVER support a loaded dump body by the body props.

Unload the dump body before using body props.

- Standing well clear of the dump body in a safe location, push and hold the up button (2) on the control until the dump body reaches approximately the **halfway point** of its dumping angle. See figure 5-6. Never leave the control when operating the dump body.



Remote or Pendant Dump Controller – Figure 5-6

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- Discontinue pushing the up button and walk to the rear of the trailer so you can estimate if there is enough space for the remainder of the load to be safely dumped. If not, then you need to fully lower the dump body by pushing and holding the down button (3) and then pull the trailer forward and then repeat the previous step. See figure 5-6.
- Standing well clear of the dump body, raise the dump body to the **three quarter point** of the maximum dump angle. Discontinue pushing the up button and walk to the rear of trailer to check to see if there is enough space for continued dumping.
- Repeat the process until the load has been completely dumped.
- If the load has not completely dumped DO NOT drive forward and stop quickly to “shock” the load out of the body. Also DO NOT “jerk” the control button up and down to dislodge the load. The proper procedure for a stuck load is to lower the dump and dislodge the material by hand.
- Press and hold the down button (3) to lower the dump body. See figure 5-6.
- Release the button when the dump body is fully lowered. Place dump body control in the storage or travel location. Close and lock battery box.
- Close and lock rear doors before moving the trailer.

5.3 HYDRAULIC COMPONENTS

Do not alter or substitute and hydraulic components on the dump trailer. The hoist system is designed with each component being compatible with the safe and reliable operation of the hoist system. Under no circumstances should you alter the hydraulic pressure or flow rate to the hoist system.

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Danger

NEVER alter or substitute any hydraulic system component. Death or serious injury may result.

An altered or component substituted hydraulic system may malfunction, resulting in the dump body falling without warning.

NEVER alter or substitute any hydraulic system component.

Always have the hoist system repaired or maintained by a qualified technician.

5.4 BODY PROP

The body prop supplied as part of the trailer is to be used only when the dump body is empty. The purpose of the body prop is a back-up to the hydraulic system and will hold the empty dump body in a raised position while performing maintenance on the hoist, trailer body, or the trailer itself.

DO NOT use the body prop to support a loaded dump body.

DO NOT perform maintenance under a raised dump body without first blocking the empty dump body up with the body prop.

Danger

Risk of death by crushing.

Empty dump body before using body prop.

WARNING

Risk of death by crushing.

Make sure dump body is empty.

DO NOT manipulate the body prop if a person is near the control.

Loading And Unloading A Dump Trailer

WARNING

Risk of death by crushing.
Dump body can drop unexpectedly.
Never go under a raised dump body.
Use body prop for maintenance.

Park the trailer on a firm and level surface. Raise the dump body and lock the body prop in the upright position. Lower the dump body onto the body prop.

5.5 SECURING THE CARGO

Since the trailer cargo is subjected to longitudinal (front / back) and lateral (side / side) forces you must secure all cargo, that is not flowable, so that it does not shift while the trailer is being towed.

WARNING

Shifting cargo can result loss of control of the trailer, and can lead to death or serious injury.
Tie down all loads with proper sized fasteners, ropes, straps, etc.

Refer to www.fmsca.dot.gov for regulations regarding cargo securement rules.