

SUPPLEMENTAL OPERATIONS MANUAL **FOR GOOSENECK TRAILERS**



INCORPORATED



INNOVATORS AND MANUFACTURERS OF TRANSPORTATION EQUIPMENT

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SUPPLEMENTAL OPERATIONS MANUAL **FOR GOOSENECK TRAILERS**

This manual is to be used in conjunction with the MGS Trailer Operations Manual.

⚠ WARNING

This User's Manual contains safety information and instructions for your trailer.

You must read this manual before loading or towing your trailer.

You must follow all safety precautions and instructions.

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1 Trailer to Tow Vehicle Basics

A gooseneck coupler on the trailer connects to a receiving mechanism (hitch) on top of the bed/frame of your tow vehicle. This system of coupling a trailer to the tow vehicle permits the tow vehicle to turn at sharper angles than are permitted by a bumper hitch system. The manufacturer has installed a coupler and support structure that is suitable for the size and weight of the trailer. The load rating of the coupler and the required receiving mechanism are listed on the trailer. You must provide a hitch and structure marked with a rating that exceeds the GVWR of the trailer **and** matches the size of the gooseneck coupler. Hitches can include:

- A ball and support structure
- A kingpin and support structure
- A 5th wheel and support structure

The different coupler/hitch combinations will be covered later in this manual in sections 4 and 5.

WARNING

Coupler-to-hitch mismatch can result in uncoupling, leading to death or serious injury.

Be sure the LOAD RATING of the hitch is equal or greater than the load rating of the gooseneck coupler.

Be sure the SIZE of the hitch matches the size of the gooseneck coupler.

The height of the gooseneck coupler on the trailer must be adjusted to match the height of the hitch on your tow vehicle. There must be clearance between the bottom of the trailer and the sides of the tow vehicle bed. The trailer must be level to allow equal weight distribution on the axles.

WARNING

Improper gooseneck height adjustment can result in overloaded tires, blowout and loss of control, leading to death or serious injury.

Adjust the gooseneck receiver so that the loaded trailer is level.

A trailer having a gooseneck coupler will have one or two drop leg jacks or landing gear for raising and lowering the front of the trailer. Because several jack/landing gear mechanisms are available, the general instructions in this manual may vary slightly from the jack/landing gear manufacturer's instructions. If the trailer jack/landing gear on your trailer does not resemble the jack shown in the figures, follow the jack/landing gear instructions provided by the manufacturer. If you do not have

these instructions, call MGS at (800) 952-4228 or (717) 336-7528 for a free copy.



Goose Neck w/ Landing Gear

Before Attempting to Tow the Trailer

- 1) Be sure the size and rating of the gooseneck coupler match the size and rating of the receiver. Couplers and hitches are marked with their size and ratings.
- 2) Wipe the coupler clean and inspect it visually and by feel for flat spots, cracks, pits and other deformities. Be sure that the locking mechanisms on the coupler function correctly and that they do not allow premature disengagement of the coupler (where applicable).

WARNING

A worn, cracked or corroded gooseneck coupler can fail while towing, and may result in death or serious injury.

Before coupling the trailer, inspect the gooseneck coupler for wear, corrosion and cracks; and replace worn or damaged couplers.

- 3) Check the hitch to make sure it is tight to the support structure.

WARNING

A loose hitch mechanism can result in uncoupling, leading to death or serious injury.

- 4) Wipe the inside/outside of the hitch clean and inspect it visually for cracks; and feel the hitch for worn spots and pits. Be sure that the locking mechanisms on the hitch function correctly and that they do not allow premature disengagement of the hitch (where applicable). If any of these conditions exist, have the hitch replaced before coupling the trailer.

2 Coupling the Trailer to the Tow Vehicle

- 1) Lubricate the hitch as referenced in sections 4 and 5.
- 2) Be sure the hitch is tight to the trailer. All hitch fasteners must be visibly solid against the trailer frame.
- 3) If equipped, be sure the tow vehicle's tailgate is down.
- 4) Release the jack handle or crank from its holder (see "Goose Neck Leg Jacks" figure).
- 5) Make certain the ground beneath the jack foot is firm enough to support the tongue weight.
- 6) Raise or lower the trailer with the jacks/landing gear to position the coupler and hitch per the instructions for the appropriate coupler setup as referenced in sections 4 and 5.
- 7) Couple the trailer to the tow vehicle as referenced in sections 4 and 5.
- 8) Test to make sure the coupler and hitch are engaged per the instructions referenced in sections 4 and 5.
- 9) After testing to see that the coupler and hitch are properly secured, retract the jack(s) to the fully retracted position.
 - a) For landing gear, crank the handle to lower the leg to the ground (see "Landing Gear" figure).
 - i) On two speed landing gear, pulling/pushing the handle shaft toward the gearbox can perform rapid extension. This shifts the gearbox into a high speed mode.
 - ii) When the lower leg/foot contacts the ground, shift the gearbox into low gear mode by pulling/pushing on the handle shaft until it locks into low gear.



Landing Gear

- b) For drop leg jacks, the extended legs are held in the lowered position with a plunger pin. Rotating the plunger pin while pulling it outward will cause it to come out of engagement with the drop leg and the leg will rapidly rise (see "Spring-Loaded Drop Leg Mechanism" figure).



Spring-Loaded Drop Leg Mechanism

⚠ Caution

The drop legs are heavily spring loaded in the lowered position. They will rapidly return to the upper position when released and can inflict serious bruises, scrapes or pinching. Keep your feet, shins and hands well clear of the drop legs and drop leg bases when releasing the drop legs. Always wear shoes or boots while performing this operation.

⚠ WARNING

If the trailer drops during coupling, death or serious injury may result. There must be no one under the trailer or coupler before or during the coupling operation.

If the gooseneck coupler cannot be secured to the tow vehicle's hitch, do not tow the trailer. Call MGS at (800) 952-4228 or (717) 336-7528 or your dealer for assistance.

- 10) Connect the safety chains to the tow vehicle (if applicable)
- 11) Connect the electrical cables.
- 12) Check all lights for proper operation:
 - a) Clearance and Running Lights (Turn on tow vehicle headlights).
 - b) Brake Lights (Step on tow vehicle brake pedal).
 - c) Turn Signals (Operate tow vehicle directional signal lever).
- 13) Check brakes for proper operation. For details on brake operations, consult the MGS., Inc. Trailer Operations Manual.

⚠ WARNING

Improper electrical connection between the tow vehicle and the trailer will result in inoperable lights and electric brakes, and can lead to collision.

Before each tow:

- Check that the taillights, brake lights and turn signals work
- Check that the electric brakes work by operating the brake controller inside the tow vehicle

3 Uncoupling the Trailer from the Tow Vehicle

- 1) Block trailer tires to prevent the trailer from rolling, before jacking the trailer up.
- 2) Disconnect the electrical connector.
- 3) Disconnect the breakaway brake switch lanyard (if applicable).
- 4) Disconnect the safety chains from the tow vehicle (if applicable).
- 5) Release the jack handle or crank from its holder (see “Goose Neck Leg Jacks” figure).
- 6) Make certain the ground beneath the jack foot is firm enough to support the tongue weight.
- 7) For landing gear, crank the handle to lower the leg to the ground.
 - a) On two speed landing gear, pulling/pushing the handle shaft toward the gearbox can perform rapid extension. This shifts the gearbox into a high speed mode.
 - b) When the lower leg/foot contacts the ground, shift the gearbox into low gear mode by pulling/pushing on the handle shaft until it locks into low gear.
- 8) For drop-leg jacks:
 - a) Rotate the drop leg plunger pin handle so that the plunger pin is released from the drop leg (see “Releasing Drop Leg Mechanism” figure).
 - b) Push down on the drop leg base with your foot to place a drop leg to the desired lowered position.
 - c) Rotate the plunger pin handle so that the plunger pin is attempting to engage the drop leg (see “Releasing Drop Leg Mechanism” figure)
 - d) Slowly raise your foot, permitting the drop leg to raise. The plunger pin will engage a hole in the drop leg.
 - e) Be sure the plunger pin is fully engaged. Push it in by hand if necessary. The bent part of the plunger pin handle must be touching the plunger pin housing.
 - f) If your trailer has two drop leg jacks, lower them both to the same level, following the above instructions.

Caution

The drop legs are heavily spring loaded in the lowered position. They will rapidly return to the upper position when released and can inflict serious bruises, scrapes or pinching. Keep your feet, shins and hands well clear of the drop legs and drop leg bases when releasing the drop legs. Always wear shoes or boots while performing this operation.

Notice

If the drop legs are not set at the same level, one of the drop leg jacks can be overloaded and can be damaged.

Notice

Do not use high gear to lift the trailer; the landing leg mechanism can be damaged.

High gear is used only to rapidly move the leg base into contact with the ground.

- 9) Continue to extend the jack(s), making sure that the ground is providing stable and level support for the trailer.
- 10) Uncouple the trailer from the tow vehicle as referenced in sections 4 and 5.

4 Gooseneck with Ball Coupler

- 1) A gooseneck ball coupler will connect to a ball hitch with a support structure on the tow vehicle.
- 2) The ball size and load rating (capacity) are marked on the ball; hitch capacity is marked on the hitch.

WARNING

Coupler-to-hitch mismatch can result in uncoupling, leading to death or serious injury.

Be sure the LOAD RATING of the hitch is equal or greater than the load rating of the coupler.

Be sure the SIZE of the hitch matches the size of the coupler.

- 3) The height of the ball hitch on the trailer must be adjusted to match the height of the gooseneck ball on your tow vehicle.
- 4) Check that there is clearance between the bottom of the trailer and the sides of the tow vehicle bed and that the trailer is level and allows equal weight distribution on tandem axles.
- 5) The “Gooseneck Ball Coupler and Height Adjustment” figure shows an example of a gooseneck ball coupler. Be sure that the coupler will reach the towing vehicle to couple with the hitch ball while the load bearing pin is installed properly, or within the extension of the coupler if the coupler is adjustable. If equipped with a load bearing pin/pinch bolt, it must be fully inserted through both the inner and outer tubes and the retaining pin/locking nut installed

in order for the coupler to support its rated load. Tighten the set bolt(s) and nut(s) to minimize vibrations in the coupler during towing. Do not over-tighten because the tube can be deformed. After tightening the bolts, tighten the jam nuts on the bolts.



Gooseneck Ball Coupler and Height Adjustment

! WARNING

Improper gooseneck height adjustment can result in overloaded tires, blowout and loss of control, leading to death or serious injury.

Adjust the gooseneck receiver so that the loaded trailer is level.

4.A Coupling a Ball Coupler and Hitch

- 1) Lubricate the inside of the gooseneck ball receiver with automotive bearing grease.
- 2) Using the jacks/landing gear, raise the bottom surface of the gooseneck to be above the top of the gooseneck ball.
- 3) Release the lock plate on the gooseneck ball receiver.
- 4) With the spring-loaded lock plate locking pin in the OPEN position, rotate the lock plate to a position that allows the gooseneck ball to enter the receiver (see “Gooseneck Ball Receiver and Height Adjustment” figure).
- 5) Slowly back up the tow vehicle so that the gooseneck ball is aligned under the gooseneck ball receiver.

! WARNING

If the trailer drops during coupling, death or serious injury may result.

There must be no one under the trailer or coupler before or during the coupling operation.

- 6) After verifying that the coupler and hitch are aligned, lower the coupler over the ball hitch using the jacks/landing gear crank handle. When the jack/landing gear foot is no longer

resting on the ground, the towing vehicle hitch is holding all of the weight of the trailer tongue.

- 7) Close the lock plate on the gooseneck ball receiver.
- 8) Move the spring-loaded lock plate locking pin to the CLOSED position. Be sure the locking pin is holding the lock plate.
- 9) Be sure the receiver is all the way on the gooseneck ball and the lock plate is engaged. A properly engaged locking mechanism will allow the coupler to raise the rear of the tow vehicle.
- 10) Using the jacks/landing gear, test to see that you can raise the rear of the tow vehicle by 1 inch.

Notice

Overloading can damage the drop leg jack. Do not use the drop leg jack to raise the tow vehicle more than 1 inch.

- 11) **If the gooseneck ball cannot be secured to the receiver, do not tow the trailer.** Call MGS at (800) 952-4228 or (717) 336-7528 or your dealer for assistance.
- 12) After testing to see that the hitch is properly secured and locked to the ball, retract the jacks/landing gear their fully retracted position.
- 13) Rig the safety chains so that they attach to the “safety chain receivers” in the bed of the truck. If you are not certain of the hitch provisions for receiving safety chains, contact the hitch manufacturer or installer. **DO NOT** attach the safety chains to the gooseneck ball or its support; and
- 14) Rig the safety chains so they have sufficient slack to permit turning, but not too much slack – the safety chains must keep the gooseneck on the tow vehicle bed if the trailer uncouples.

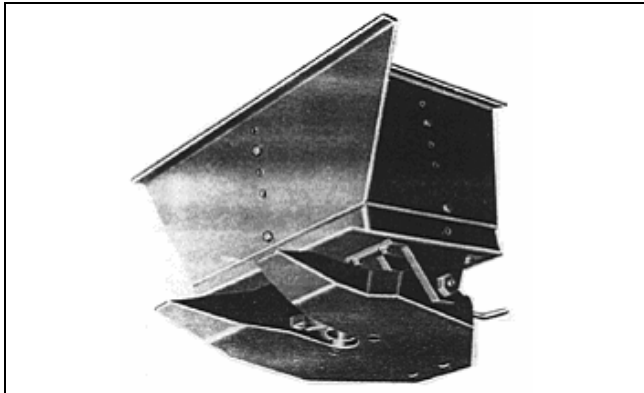
! WARNING

Improper rigging of the safety chains can result in loss of control of the trailer and tow vehicle, leading to death or serious injury, if the trailer uncouples from the tow vehicle.

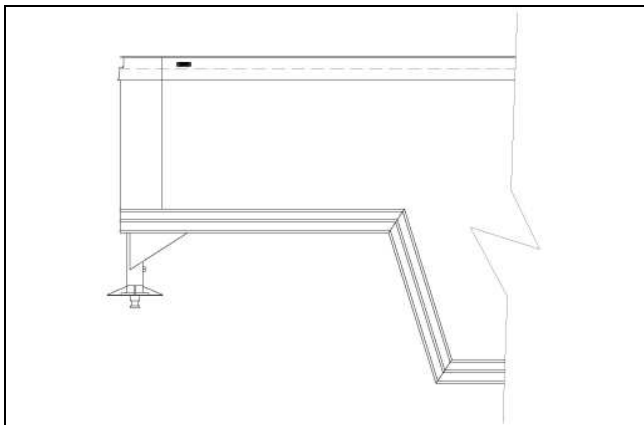
- Fasten chains to safety chain receivers on the hitch, not to ball.
- Have sufficient slack to permit turning and to keep gooseneck on bed of tow vehicle, if the trailer comes loose.

5 Gooseneck with Kingpin or 5th-Wheel Coupler

- 1) There are two types of kingpin to fifth wheel coupling configurations.
 - a) A fifth wheel coupler on the trailer (see "Fifth Wheel Coupler" figure) connects to a kingpin hitch that is installed on the tow vehicle.
 - b) A Kingpin Coupler on the tow vehicle (see "Kingpin Coupler" figure) connects to a fifth wheel hitch that is installed on a trailer.
 - c) As the hitch methods on these two configurations are similar they will both be covered in this section.
- 2) A fifth wheel includes a flat load-bearing plate with a slot, and a mechanism inside the slot that "grips" the kingpin.
- 3) The kingpin is a machined pin that fits into the jaws of the fifth wheel.
- 4) The manufacturer has installed a fifth wheel or kingpin coupler that is suitable for the size and weight of the trailer. You must provide a kingpin/plate hitch or a fifth wheel hitch that will match the coupler and that is rated for the Gross Vehicle Weight Rating (GVWR) of your trailer.



Fifth Wheel Coupler



Kingpin Coupler

WARNING

A worn, bent, cracked or corroded kingpin can fail while towing, and may result in death or serious injury.

Before coupling the trailer, inspect the kingpin and kingpin plate for wear, bending, cracks or corrosion; and replace worn or damaged kingpin.

WARNING

A loose fifth wheel or kingpin can result in uncoupling, leading to death or serious injury.

Be sure the fifth wheel and kingpin are tight before coupling the trailer.

5.A Coupling a Kingpin and Fifth Wheel

- 1) Be sure the fifth wheel locking mechanism operates freely and locks in place, and that the pivot points allow the fifth wheel plate to swivel.
- 2) Lubricate the fifth wheel plate surface with a light coat of Lithium-base, waterproof grease.
- 3) Be sure the fifth wheel and kingpin fasteners are tight and any welds are solid.
- 4) Be sure the brake line, electrical line, and any other lines are clear of the coupling area.
- 5) Be sure the locking jaws/bar are open (see "Fifth Wheel Coupler" figure).
- 6) If the tow vehicle is equipped with a tailgate, lower it.
- 7) Block the trailer wheels, front and rear.
- 8) Make certain that trailer fifth wheel and the kingpin plate are slightly over center of one another so that as the fifth wheel pushes into the kingpin the trailer should actually rise slightly as the trailer weight is supported.
- 9) Back tow vehicle up close to the trailer, centering the kingpin in the slot of the fifth wheel.
- 10) **STOP** before engaging the coupling.

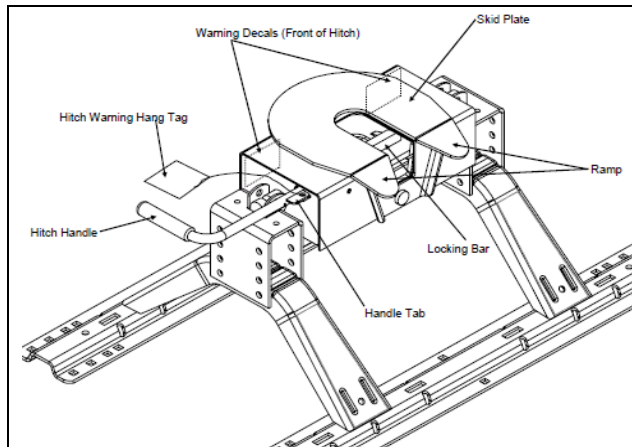
WARNING

If the trailer drops during coupling, death or serious injury may result.

There must be no one under the trailer or coupler before or during the coupling operation.

- 11) If the kingpin plate and fifth wheel plate are not in contact at this point, adjust the height of the trailer, using the jack, so that the fifth wheel plate just touches the kingpin plate.
- 12) Slowly back up the tow vehicle, keeping the kingpin centered in the slot of the fifth wheel. Continue backing up until the fifth wheel locks firmly on the kingpin.

- 13) Visually check to confirm that the fifth wheel locks are properly locked onto the kingpin by performing the three checks illustrated in the "Fifth Wheel Coupler Operation" figure.
- 14) Attempt to pull forward as an initial test of the closing of the fifth wheel locks.
- 15) **If the fifth wheel and kingpin cannot be secured to the receiver, do not tow the trailer.** Call MGS at (800) 952-4228 or (717) 336-7528 or your dealer for assistance.



Fifth Wheel Coupler

WARNING

An improperly coupled fifth wheel can come loose, resulting in death or serious injury.

Do not tow the trailer until all of the visual checks have been performed:

- Adjustment nut against fifth wheel.
- Secondary lock behind yoke.
- Fifth wheel against kingpin plate.

After testing to see that the hitch is properly secured and locked to the ball, retract the jacks/landing gear their fully retracted position.

6 Inspection, Service & Maintenance

6.1 INSPECTION, SERVICE & MAINTENANCE SUMMARY CHARTS

You must inspect, maintain and service your trailer regularly to insure safe and reliable operation. If you cannot or are unsure how to perform the items listed here, have your dealer do them.

Note: See the MGS Inc. Trailer Operations Manual for more inspection and service information. In addition to this manual, also check the relevant component manufacturer's manual.

Inspection and Service before Each Use		
Item	Inspection / Service	Manual Section Reference
Gooseneck Ball	Check for cracks, pits, and flats. Replace w/ball & coupler having trailer GVW Rating. Check locking device & replace when worn. Lubricate	Section 1.4 Section 1.4 Section 4.A.1
Gooseneck Fifth Wheel & Kingpin	Check for cracks, Check locking device & replace when worn. Lubricate	Section 1.4 Section 1.4 Section 5.A.2

6.1.1 Gooseneck Ball Coupler

The gooseneck receiver on the trailer connects to a hitch-mounted ball on the towing vehicle. The coupler, ball and hitch transfer the towing forces between the tow vehicle and the trailer. Before each tow, coat the ball with a thin layer of automotive bearing grease to reduce wear and ensure proper operation. Check the locking device that secures the receiver to the ball for proper operation.

See the gooseneck ball receiver manufacturer's manual for other inspection and maintenance activities. If you do not have a manual for the receiver, call MGS at (800) 952-4228 or (717) 336-7528 for a free copy.

If you see or can feel evidence of wear, such as flat spots, pitting or corrosion, on the ball or receiver, immediately have your dealer inspect them to determine the proper action to prevent possible failure of the ball and receiver system.

When replacing a ball, the load rating must match or exceed the GVWR of the trailer.

6.1.2 Gooseneck Fifth-Wheel & Kingpin

Before each tow, inspect the fifth wheel and kingpin for wear, and coat the contact surface of the fifth wheel plate with water-resistant Lithium-base grease. If you see evidence of wear on the fifth wheel or kingpin, immediately have your dealer inspect them to determine the proper action to prevent failure of the fifth wheel and kingpin system.

See the manual prepared by the manufacturer of the fifth wheel and kingpin for other inspection and maintenance activities. If you do not have this manual, call MGS at (800) 952-4228 or (717) 336-7528 for a free copy.



INNOVATORS AND MANUFACTURERS OF TRANSPORTATION EQUIPMENT

The information contained in this manual was current at time of publication. This manual is updated regularly. Information supplied is subject to change. Please contact MGS with any questions you may have regarding the safe operation of your trailer. If you need copies of any of the documents mentioned in this manual, contact us for a free copy:

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For further details on trailer components, please see the following links:

Dexter Axles <http://www.dexteraxle.com/literature1>

For Dexter axles, brakes and hubs, click the link above and select the appropriate axle capacity section under the heading "Service Manuals".

Demco Brake Actuators <http://dem.co/tc/drum-brake-actuators/>

For Demco hydraulic brake actuators, click the link above and select the appropriate actuator model for the application required.

Titan/Dico Brake Actuators <http://www.titan-intl.com/titan-tire/titan-trailer/I-&I-Manuals>

For Titan/Dico hydraulic brake actuators, click the link above and select the appropriate actuator model for the application required.

Bulldog Trailer Jacks <http://www.bulldogproducts.net/content/products.aspx?vl=1&parentid=7500&catID=0&part=0>

For Bulldog trailer jacks, click the link above and select the appropriate type and model of jack for the application required.