

LANDING GEAR

OPERATING and MAINTENANCE PROCEDURES



Mark V Landing Gear



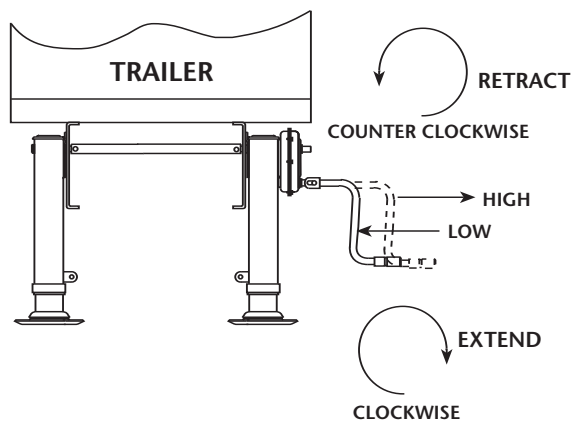
Before attempting to operate the landing gear, you must read and understand the following procedures:

- Perform all procedures in a lighted area clear of obstacles and other personnel.
- Always grip the crank handle securely with both hands.
- Maintain proper footing at all times.
- Never attempt to shift the landing gear while under load.
- Lifting and lowering of the trailer must always be done in **LOW GEAR**.
- **DO NOT ATTEMPT TO LIFT OR LOWER TRAILER WITH LANDING GEAR IN HIGH GEAR, AS SERIOUS PERSONAL INJURY COULD OCCUR.**
- Always secure the crank handle when not in use.

OPERATING INSTRUCTIONS

Before operating, identify the mounting style of your landing gear — Inside or Outside Mount (See figures below).

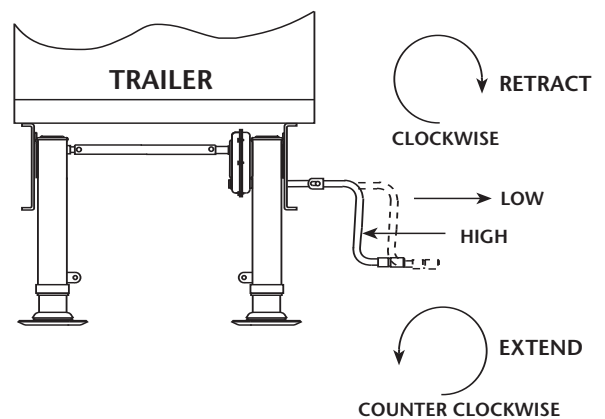
Figure 1



OUTSIDE MOUNT

- Push crank handle in for **low** speed.
- Pull crank handle out for **high** speed.
- Turn crank:

counterclockwise = retract
clockwise = extend



INSIDE MOUNT

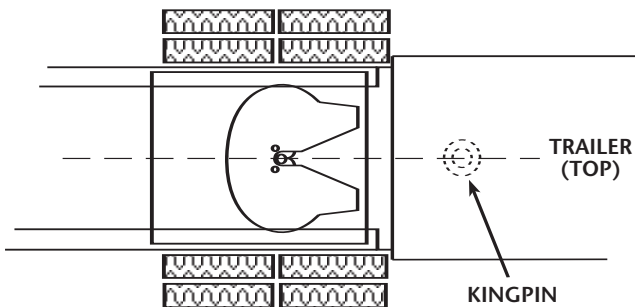
- Push crank handle in for **high** speed.
- Pull crank handle out for **low** speed.
- Turn crank:

counterclockwise = extend
clockwise = retract

COUPLING INSTRUCTIONS

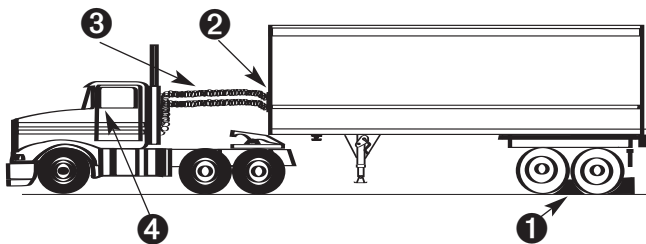
STEP 1

Inflate tractor air suspension and back up close to the trailer, centering the kingpin with the throat of the fifth wheel and **STOP! DO NOT ATTEMPT TO COUPLE UNTIL STEPS 2 THROUGH 4 ARE COMPLETED.**



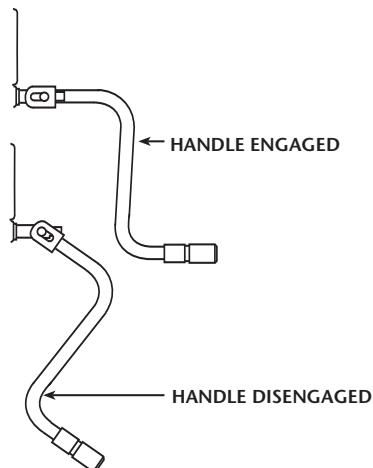
STEP 2

- 1 Chock trailer wheels.
- 2 Connect brake lines and light cord.
- 3 Support slack in lines to prevent interference.
- 4 Set trailer brakes.



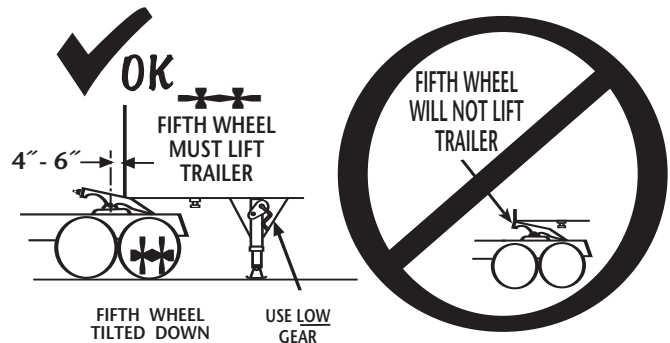
STEP 3

Make sure that the landing gear is in low speed (see Figure 1) and engage crank handle.



STEP 4

Adjust trailer height so that the fifth wheel will lift the trailer.



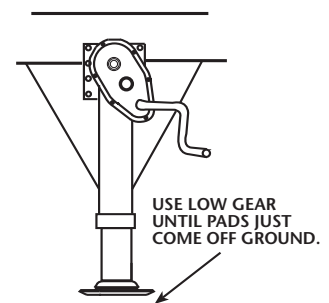
STEP 5

Couple and verify that the fifth wheel locks are properly closed around the kingpin.



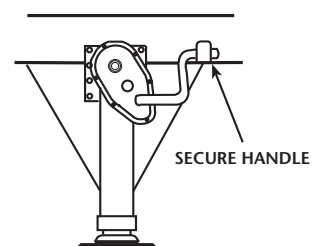
STEP 6

While still in low gear, retract landing gear until pads just come off the ground.



STEP 7

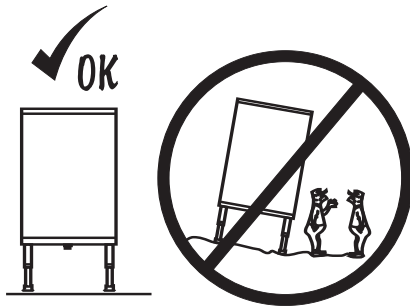
Switch to high gear, fully retract and secure crank handle.



UNCOUPLING INSTRUCTIONS

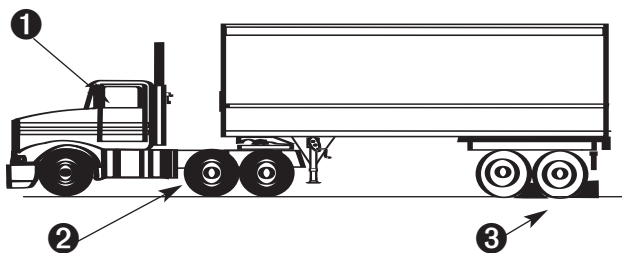
STEP 1

Position the tractor and trailer on level ground, clear of persons and obstacles.



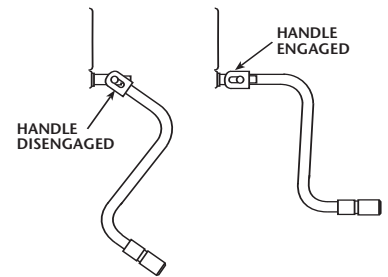
STEP 2

- 1 Set trailer brakes.
Slowly back tractor tightly against trailer.
- 2 Set tractor brakes.
- 3 Chock trailer wheels.



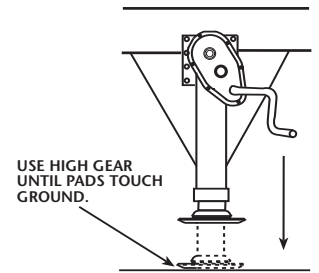
STEP 3

Shift landing gear to high speed and engage crank handle.



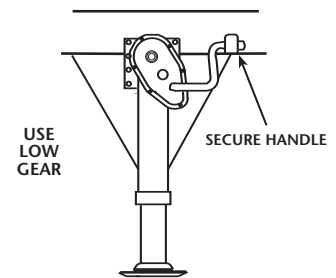
STEP 4

Extend landing gear until pads just touch the ground.



STEP 5

Switch to low gear and crank an additional 4-8 turns. Secure crank handle.



STEP 6

- Pull fifth wheel release handle.
- Disconnect air lines and light cord.
- Release tractor brakes and slowly drive away from trailer.

MAINTENANCE PROCEDURES

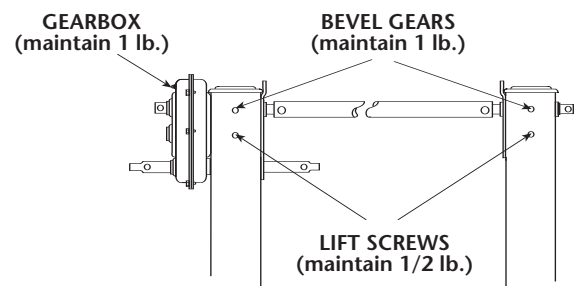
LUBRICATION

Lubrication should be performed at least every six months and more frequently in applications where the landing gear are exposed to excessive moisture, waterspray, dust, or if they are not used for extended periods. Lubricate with the trailer securely coupled to a tractor (see coupling instructions). Employ a lubricant compatible with the original type of grease used:

Standard = Lithium base EP-2

Low Temperature = Lubriplate aero-grade

1. Fully retract the landing gear, then using high gear extend 2-3 turns.
2. Lubricate through the grease fittings as shown.
3. Extend and retract the landing gear to apply grease to the entire length of the screw.



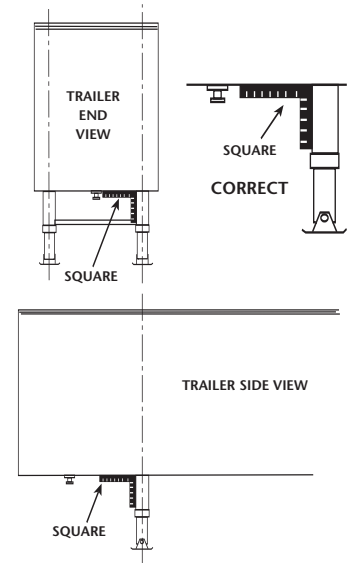
MAINTENANCE PROCEDURES (con't.)

HARDWARE

- Tighten or replace mounting bolts as necessary.
- Inspect the mounting bracket for cracks or other signs of damage.
- Repair or replace any broken or damaged part of the landing gear assembly or mounting structure.
- Inspect the crank handle bolt and lock nut. Tighten or replace as necessary.
- Cross shaft connection bolts and lock nuts should be secure, but allow side-to-side play in the cross shaft.
- Check for proper crank shaft engagement in both high and low gear.
- Landing gear with excessive play should be rebuilt or replaced.

ALIGNMENT

- Using a square, check that both landing gear legs are square with the trailer and parallel with each other as shown. Bent or damaged legs are an indication of possible damage to the lift screw, lift nut or other internal components and should be replaced.



TROUBLE-SHOOTING POINTS

Problem	Cause	Correction
Hard to crank landing gear	<ol style="list-style-type: none"> 1. Turning crank in wrong direction. 2. Attempting to raise or lower trailer in high gear. 3. Cross shaft binding <ul style="list-style-type: none"> - over-tightened bolts - cross shaft bent or too long 4. Mis-aligned landing gear legs. 5. Lack of grease. 6. Mis-aligned crank shaft holder or crank shaft extension. 7. Damaged lift screw or lift nut. 8. Interference between powder metal bushing and trailer mounting surface. 	<ol style="list-style-type: none"> 1. See <i>Figure 1</i> on Page 1 for proper crank rotation. 2. Shift into low gear (see <i>Figure 1</i>). DO NOT ATTEMPT TO LIFT OR LOWER IN HIGH GEAR. 3. Inspect cross shaft bolts. Back off bolts to allow lateral (side-to-side) movement of the cross shaft. 4. Legs must be parallel and extend and retract evenly. Remove cross shaft, adjust landing gear legs to same height. 5. Grease landing gear legs as provided above in <i>Maintenance</i> section of manual. 6. Inspect and align crank shaft holder or extension with the crank shaft. 7. Check landing gear for signs of impact (accident) damage. Disconnect cross shaft and crank legs individually to determine which leg is damaged. Replace damaged leg. 8. Hole in trailer mounting surface may need to be enlarged. See Holland Service Bulletin #30.
Shaft turns but legs do not operate	<ol style="list-style-type: none"> 1. Broken shaft or shaft bolt. 2. Broken pinion gear or bevel gear or gear pins. 	<ol style="list-style-type: none"> 1. Replace broken bolt(s) and shaft as needed. 2. Replace broken gear(s) or pins.
Shaft does not turn	<ol style="list-style-type: none"> 1. Broken gear teeth. 2. Damaged lift screw or nut. 3. Seized lift screw or nut. 4. Bent inner or outer leg tube. 	<ol style="list-style-type: none"> 1. Replace broken gear(s). 2. Replace inner leg or entire landing gear leg. 3. Replace inner leg or entire landing gear leg. 4. Replace bent inner or outer leg, or entire landing gear leg.
Crankshaft skips when cranking	<ol style="list-style-type: none"> 1. Broken gear teeth. 	<ol style="list-style-type: none"> 1. Replace broken gear(s).

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