SERVICE REPAIR

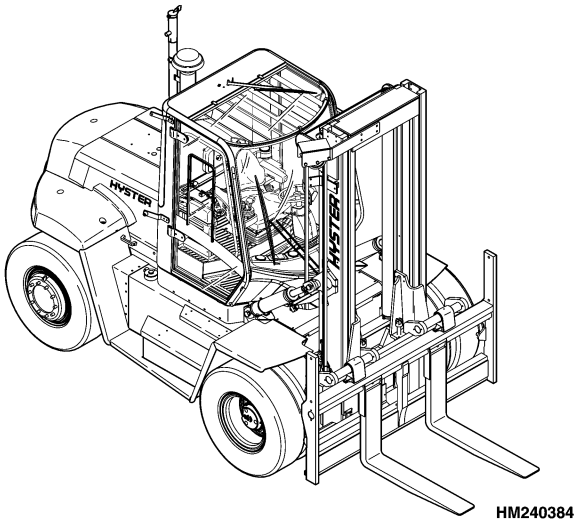
MANUAL

Hyster F019 (H13.00-16.00XM, H10.00-12.00XM-12EC Europe) Forklift

HYSTER

ASSEMBLY GUIDE

H8.00-12.00XM (H170-280HD) [G007, H007]; H13.00-14.00XM (H300-330HD) [F019, G019]; H16.00XM-6 (H360HD) [F019, G019]; H10.00-12.00XM-12EC (H360HD-EC) [F019, G019]



HM240384

HYSTER

PART NO. 1586990

8000 SRM 1181

SAFETY PRECAUTIONS
MAINTENANCE AND REPAIR

- When lifting parts or assemblies, make sure all slings, chains, or cables are correctly fastened, and that the load being lifted is balanced. Make sure the crane, cables, and chains have the capacity to support the weight of the load.
- Do not lift heavy parts by hand, use a lifting mechanism.
- Wear safety glasses.
- DISCONNECT THE BATTERY CONNECTOR before doing any maintenance or repair on electric lift trucks. Disconnect the battery ground cable on internal combustion lift trucks.
- Always use correct blocks to prevent the unit from rolling or falling. See HOW TO PUT THE LIFT TRUCK ON BLOCKS in the **Operating Manual** or the **Periodic Maintenance** section.
- Keep the unit clean and the working area clean and orderly.
- Use the correct tools for the job.
- Keep the tools clean and in good condition.
- Always use **HYSTER APPROVED** parts when making repairs. Replacement parts must meet or exceed the specifications of the original equipment manufacturer.
- Make sure all nuts, bolts, snap rings, and other fastening devices are removed before using force to remove parts.
- Always fasten a DO NOT OPERATE tag to the controls of the unit when making repairs, or if the unit needs repairs.
- Be sure to follow the **WARNING** and **CAUTION** notes in the instructions.
- Gasoline, Liquid Petroleum Gas (LPG), Compressed Natural Gas (CNG), and Diesel fuel are flammable. Be sure to follow the necessary safety precautions when handling these fuels and when working on these fuel systems.
- Batteries generate flammable gas when they are being charged. Keep fire and sparks away from the area. Make sure the area is well ventilated.

NOTE: The following symbols and words indicate safety information in this manual:

WARNING

Indicates a condition that can cause immediate death or injury!

CAUTION

Indicates a condition that can cause property damage!

TABLE OF CONTENTS

This section is for the following models:

H8.00-12.00XM (H170-280HD) [G007, H007];
H13.00-14.00XM (H300-330HD) [F019, G019];
H16.00XM-6 (H360HD) [F019, G019];
H10.00-12.00XM-12EC (H360HD-EC) [F019, G019]

"THE
QUALITY
KEEPERS"

HYSTER
APPROVED
PARTS

List of All Special Tools and Equipment Needed for the Assembly

WARNING

Read all the instructions contained in this manual before starting any work on the unit. Also read all procedures contained in the Operating Manual before operating the truck.

1. **LIFT tools:**

   - A crane with a minimum capacity of 6,500 kg (14,330 lb) when the boom is raised at the top of the mast. This means the boom must have a length of the mast's retracted height +1 m (3 ft) + slings height + hook and cables height, and at that height, it must have the capacity to hoist 6,500 kg (14,330 lb).
   - Cables or slings of sufficient capacity (see components weight chart).
   - Blocks of hard wood of various lengths, widths, and thickness.
   - A small mechanical hoisting winch of 1500 kg (3300 lb) capacity.
   - Strips and two solid ropes of approximately 150 kg (330 lb) capacity each.
   - A lift truck with sufficient lift height to reach the top of the mast.
   - A safety platform fastened on the truck carriage.

2. **Tooling:**

   - Metric ring and open-end spanners/wrenches: size 13, 19, 22, 24, 30, 40, 41, and 48.
   - Imperial ring and open-end spanners/wrenches: size 1/2, 15/16, 1 1/16, 1 1/8, 1 13/16, 1 7/8, 2, and 2 7/8.
   - A torque wrench with a capacity up to 550 N•m (approximately 406 lbf ft).
   - Gloves and protective clothing.
   - Safety glasses and helmets.
   - A hydraulic jack with a minimum capacity of 2/3 of the weight of the lift truck. See the nameplate.
   - A safety cage for inflating tires.

3. **Trained Technicians:**

   - It is recommended that personnel involved in the assembly of the machine have followed a specific training session on those units or have a proven understanding of the product to be able to perform the job professionally.
   - The minimum personnel required to do the job is two mechanics.

General Considerations Before Starting the Job

NOTE: This assembly guide is extensive to cover different situations. Assembly of new trucks depends primarily upon how the truck was transported and which carriage is supplied. If the truck was transported overseas, it will be more disassembled than if shipped by land. Use the portions of the assembly guide that meet your needs.

CAUTION

The following assembly procedures are for assembling the lift truck after shipment from the factory. Be sure to check all fluid levels and tire pressures before removing the lift truck from the trailer. If in doubt, check the torque of all relevant hardware.

1. **Safety First!**

   When lifting parts or assemblies, make sure that all slings, chains, or cables are correctly fastened and balanced before lifting. Verify all lifting devices have enough capacity to lift the weight. If in doubt, do not hesitate to use a device with a higher capacity than required. Always use common sense and avoid dangerous situations.

2. **Plan enough personnel** to do the job. Never lift heavy parts by hand. Always use a lifting mechanism.

3. **The rental price** of a crane, which will be needed to lift the major components, is very expensive. Plan the job as well as possible in order to limit the costs to the minimum required.

4. **Check** that all the items ordered are available upon receipt of the machine and its components. Unpack the case accompanying the machine and identify all the components contained in it. Check that all capscrews, nuts, pins, washers, and brackets are present.

5. **Prepare** the job. Do all possible preparation and preassembly of parts, cleaning, or lubrication in advance. Allowing yourself half a day before the arrival of the crane will enable you to mount the drive wheels and prepare the mast for direct assembly, and will reduce the rental charges of the crane.

6. **Take enough time** to read the instructions contained in this guide and become familiarized with the procedures. It is advised to read those procedures when the machine and components have arrived, in order to have a better practical understanding of the instructions.

7. **It is recommended** to perform all assembly procedures outside. The mast (front-end) assembly will be done with the mast hanging vertically under the top of the crane. During the carriage assembly, the inner mast will be almost fully extended.

Preparation of the Components Before Assembly

1. As previously mentioned, first check that all the components, which will be needed later during installation, are available. (Check this according to the specific packaging list.)

2. If needed, clean all parts before installation.

3. Check that the following hanging points are clean and free of paint and grease:

   - Mast hanger holes in the frame
   - Mast hanger holes in the upright
   - Tilt cylinder bushings in the mast
   - Tilt cylinder rod ends

Liquefied Petroleum Gas (LPG Engines Only)

REMOVE

NOTE: During transport, the LPG tanks are filled to a maximum of 25% of the total tank capacity.

WARNING

Do not store LPG tanks near heat or an open flame.

NOTE: Removable LPG tanks can be replaced indoors only if the truck is a minimum of 8 m (26 ft) from any open flame or ignition source.

1. Move the truck to the area where LPG tanks are changed.

2. Place the truck on a solid and level surface.

3. Apply the parking brake.

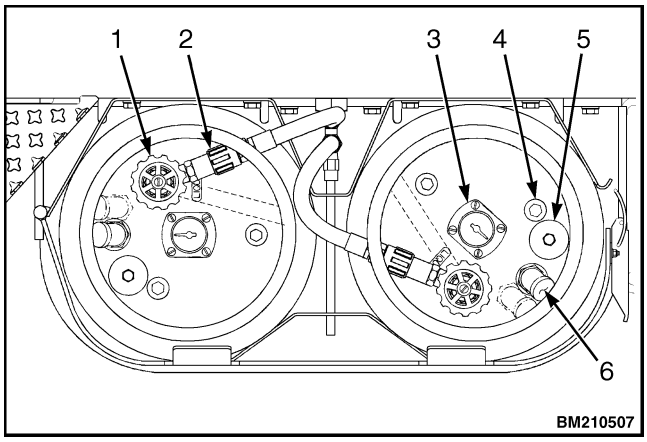
4. Turn both fuel valves clockwise until the fuel valves are completely closed. See Figure 1.

5. Run the engine until it stops, then turn the key switch to the **OFF** position.

6. Disconnect the quick disconnect fittings on the LPG tanks.

7. Release the latch that holds the LPG tanks in their bracket.

8. Remove the LPG tanks from the bracket.



1. SERVICE VALVE
2. QUICK DISCONNECT FITTING
3. FUEL GAUGE
4. OPTIONAL AUX FILL VALVE
5. FIXED LIQUID LEVEL GAUGE
6. RELIEF VALVE

Figure 1. LPG Fuel Valves

INSTALL

WARNING

Use only the LPG tanks listed on the label on the tank bracket. Do not use an LPG tank that is damaged. A damaged LPG tank must be removed from service.

NOTE: Before the LPG tanks are installed on the truck, check the operation of the fuel gauge. Look at the fuel gauge and move the tank. If the gauge needle does not move, a new tank must be installed.

1. Put the LPG tanks on the tank bracket and close the door latches.
2. Connect the quick disconnect fittings to the fuel valves on the LPG tanks. Tighten the fitting by hand.

WARNING

The hoses or the fittings can be damaged if the LPG tanks are not installed in the correct position. See Figure 1. A damaged hose or fitting can release LPG fuel and cause an explosion and fire hazard. Verify correct positioning of the LPG fuel tanks to avoid bending the hoses.

3. Turn both fuel valves counterclockwise to open the fuel valves.

WARNING

Frost on the surface of the tanks, valves, fittings, or a strong odor of LPG fuel indicates a leak. Inspect the LPG system and repair a leak immediately. An LPG fuel leak creates an explosion and fire hazard. Do not attempt to start the engine if there is a leak in the LPG fuel system.

4. Inspect the fuel system for leaks when the fuel valves are open.

Checking of the Wheels

AIR PRESSURE

WARNING

Add air pressure to the tires only in a safety cage. Check the nameplate of the lift truck, for correct pressure, before inflating the tires. Inspect the safety cage for damage before use. When air pressure is added to the tire, use a chuck that fastens onto the valve stem of the inner tube. Verify there is enough air hose to permit the operator to stand away from the safety cage when air is added to the tire.

WARNING

Do not sit or stand by the safety cage. Do not use a hammer to try and correct the position of the side flange or lock ring when the tire has air pressure greater than 20 kPa (3 psi). When the correct air pressure is reached, check that all wheel parts are correctly installed. The clearance at the ends of the side ring or lock ring will be 2.5 to 6.5 mm (0.1 to 0.3 in.) when the tire has the correct air pressure.

STEP 1.

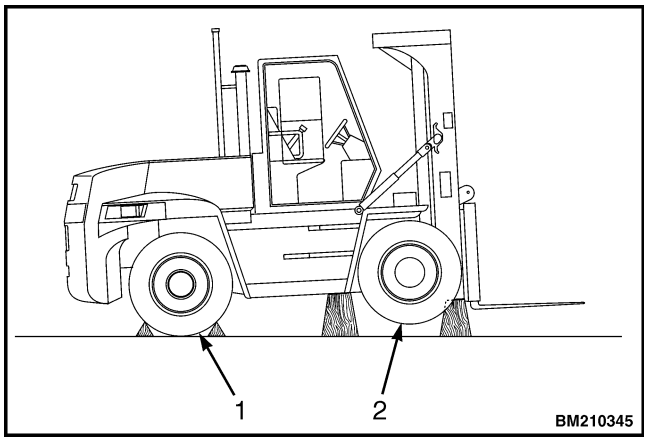
Check the air pressure of the wheels. See the nameplate for correct air pressure of the tires. If the air pressure is less than 80 percent of the pressure indicated on the nameplate, remove all air from the tire, remove the wheel, and inflate the tire in a safety cage.

DRIVE WHEELS

WARNING

Verify the jack, needed for the installation of the wheels, has a capacity equal to at least half the weight of the lift truck. Refer to the nameplate for weight. The surface must be solid and even. Tires and wheels must be changed and repaired by trained personnel only. Always wear safety glasses, safety shoes, and gloves.

STEP 1.
Place blocks on each side (front and back) of the steer tires to prevent movement of the lift truck.



1. STEER TIRES
2. DRIVE TIRES

STEP 2.
Place the mast in vertical position. Place a block under the each outer mast channel.

STEP 3.
Tilt the mast fully forward until the drive tires are raised from the surface.

STEP 4.
Put additional blocks under the frame behind the drive tires. Verify the blocks are under frame channels and not under tanks and compartments.

STEP 5.
If the hydraulic system does not operate, use a hydraulic jack under the side of the frame near the drive axle. Verify the jack has a capacity of at least half the weight of the lift truck. See the nameplate.

WARNING

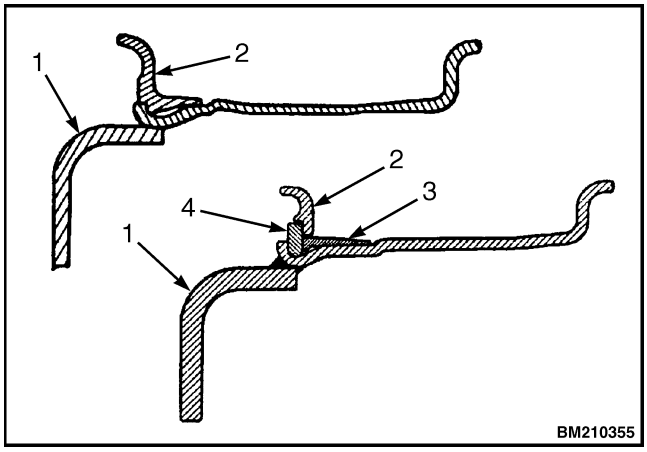
Deflate tires before removing the wheel from the lift truck. Air pressure in the tires can cause the tire and rim parts to explode, causing serious injury or death. Always wear safety glasses. Never loosen the nuts that hold the inner and outer wheel halves together when there is air pressure in the tire.

WARNING

Always move wheels during assembly with a lifting device. Verify the lifting device has the correct capacity for the parts being moved. Consult the specification chart for the weight of the parts.

STEP 6.

Completely remove air pressure from the tires of the drive wheels. Remove the valve core to verify that all air is out of the inner tube. Push a wire through the valve stem to verify the valve stem does not have a restriction. If dual tires are installed, remove the air pressure from both tires.



1. WHEEL RIM
2. SIDE RING
3. WEDGE BAND
4. LOCK RING

CAUTION

Do not damage the threads on the studs when removing the wheels.

STEP 7.

Remove the wheel nuts and remove the wheel from the lift truck. Use caution not to damage the studs when removing the wheels. The lift truck wheels are heavy and must be removed by using a lifting device.

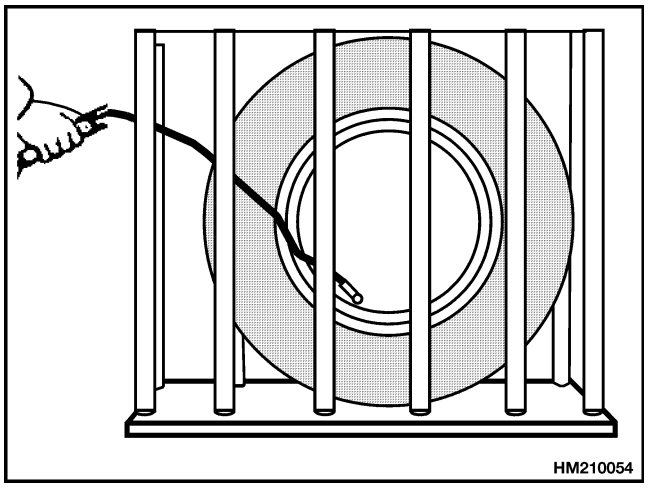
WARNING

Add air pressure to the tires only in a safety cage. Check the nameplate of the lift truck, for correct pressure, before inflating the tires. Inspect the safety cage for damage before use. When air pressure is added to the tire, use a chuck that fastens onto the valve stem of the inner tube. Verify there is enough air hose to permit the operator to stand away from the safety cage when air is added to the tire.

WARNING

Do not sit or stand by the safety cage. Do not use a hammer to try and correct the position of the side flange or lock ring when the tire has air pressure greater than 20 kPa (3 psi). When the correct air pressure is reached, check that all wheel parts are correctly installed. The clearance at the ends of the lock ring will be approximately 2.5 to 6.5 mm (0.1 to 0.3 in.) when the tire has the correct air pressure.

STEP 8.
Put the tire in a safety cage.



NOTE: Safety cage in use.

STEP 9.
Add 20 kPa (3 psi) of air pressure to the tire.

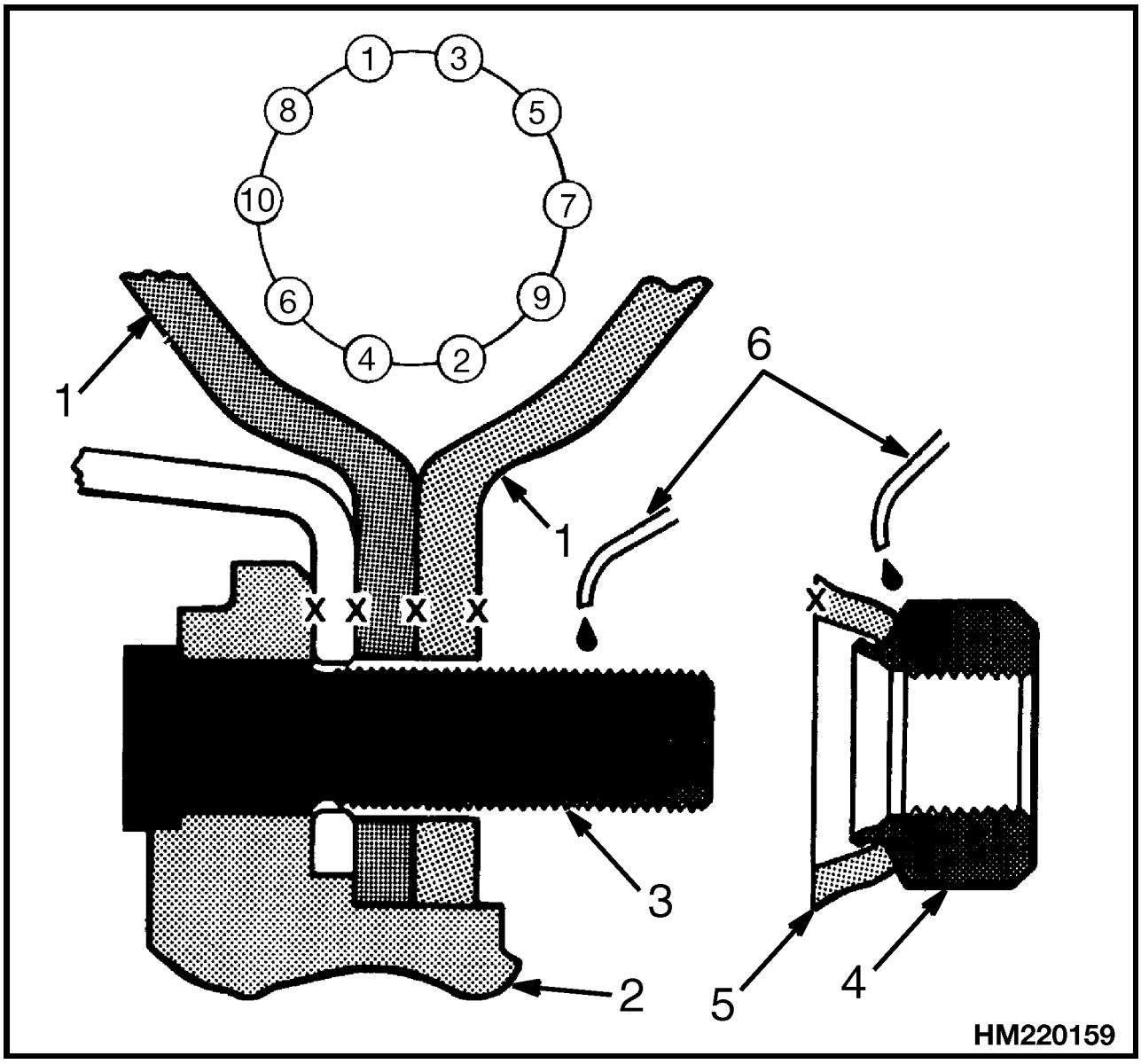
STEP 10.
Verify all wheel parts are correctly installed. Hit the side ring and/or lock ring lightly to verify that it is in the seat.

STEP 11.
If installation is correct, add air pressure to the tire. Verify the correct air pressure is in the tire. Verify all wheel parts are correctly installed.

CAUTION

Do not damage the threads on the studs when installing the wheels.

STEP 12.
Reassemble the wheel on the hub with a lifting device. When dual wheels are used, install the inner wheel so it is tight against the brake drum. Install the outer wheel. Use caution not to damage the threads on the studs.



X. NO LUBRICANT

1. WHEEL RIM
2. HUB
3. WHEEL STUD
4. WHEEL NUT
5. FLANGE
6. LUBRICATE

STEP 13.
Lubricate the studs and nuts as shown in STEP 12. Do not get any oil on the outer surfaces of the wheel or the flange of the nut.

WARNING

Check all wheel nuts after 2 to 5 hours of operation. Tighten the nuts in a cross pattern to the correct torque value shown in the Maintenance Schedule table. When the nuts stay tight for 8 hours, the interval for checking the torque can be extended to 500 hours.

CAUTION

Insufficient mounting torque can cause rim slippage, resulting in broken valves, worn parts, and damaged tires. Excessive mounting torque can cause damage by stripping studs, collapsing spacer band, or forcing rims out of round.

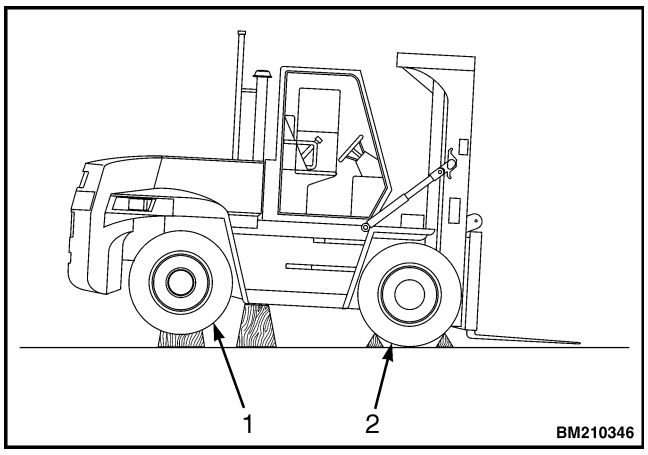
STEP 14.
Verify the tires are not touching the ground. Tighten the wheel nuts in steps according to the correct sequence until the torque of 68 to 136 N•m (50 to 100 lbf ft) has been reached. Check to verify that the wheel(s) is tight against the hub, then tighten until the final torque of 640 to 680 N•m (472 to 502 lbf ft) has been reached. Perform the torque adjustment a minimum of two times. See STEP 12.

STEP 15.
Lower the lift truck, and remove the hydraulic jack.

STEP 16.
Remove the wooden blocks in front and behind the steer tires.

STEER WHEELS

STEP 1.
Apply the parking brake. Put blocks on both sides (front and back) of the drive tires to prevent movement of the lift truck.



1. STEER TIRES
2. DRIVE TIRES

WARNING

Verify the jack, needed for the installation of the wheels, has a capacity equal of at least 2/3 of the weight of the lift truck. Refer to the nameplate for weight. The surface must be solid and even. Tires and wheels must be changed and repaired by trained personnel only. Always wear safety glasses, safety shoes, and gloves.

STEP 2.
Use a hydraulic jack to raise the steer tires.

STEP 3.
Put the hydraulic jack under the mounting pad of the steer axle to raise the lift truck. Raise the lift truck so the steer tire is just above the surface. Put additional blocks of wood under the frame and counterweight to support the lift truck so the lift truck is stable.

WARNING

Check all wheel nuts after 2 to 5 hours of operation. Tighten the nuts in a cross pattern to the correct torque value shown in the Maintenance Schedule table. When the nuts stay tight for 8 hours, the interval for checking the torque can be extended to 500 hours.

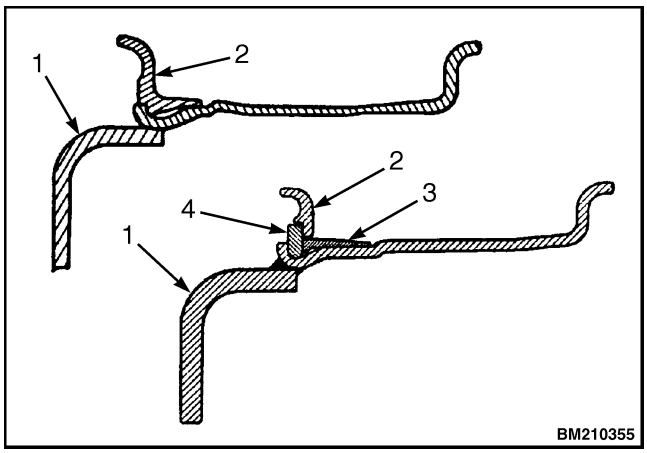
WARNING

Deflate tires before removing the wheel from the lift truck. Air pressure in the tires can cause the tire and rim parts to explode, causing serious injury or death. Always wear safety glasses. Never loosen the nuts that hold the inner and outer wheel halves together when there is air pressure in the tire.

WARNING

Always move wheels during assembly with a lifting device. Verify the lifting device has the correct capacity for the parts being moved. Consult the specification chart for the weight of the parts.

STEP 4.
Completely remove air pressure from the tires of the steer wheels. Remove the valve core to verify that all air is out of the inner tube. Push a wire through the valve stem to verify the valve stem does not have a restriction. If dual tires are installed, remove the air pressure from both tires.



1. WHEEL RIM
2. SIDE RING
3. WEDGE BAND
4. LOCK RING

CAUTION

Do not damage the threads on the studs when removing the wheels.

STEP 5.
Remove the wheel nuts and remove the wheel from the lift truck. Use caution not to damage the studs when removing the wheels. The lift truck wheels are heavy and must be removed by using a lifting device.

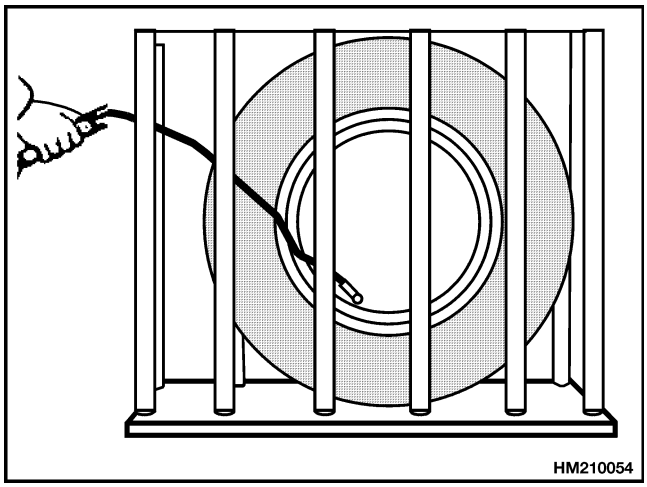
WARNING

Add air pressure to the tires only in a safety cage. Check the nameplate of the lift truck, for correct pressure, before inflating the tires. Inspect the safety cage for damage before use. When air pressure is added to the tire, use a chuck that fastens onto the valve stem of the inner tube. Verify there is enough air hose to permit the operator to stand away from the safety cage when air is added to the tire.

WARNING

Do not sit or stand by the safety cage. Do not use a hammer to try and correct the position of the side flange or lock ring when the tire has air pressure greater than 20 kPa (3 psi). When the correct air pressure is reached, check that all wheel parts are correctly installed. The clearance at the ends of the side ring or lock ring will be 2.5 to 6.5 mm (0.1 to 0.3 in.) when the tire has the correct air pressure.

STEP 6.
Put the tire in a safety cage.



NOTE: Safety cage in use.

STEP 7.
Add 20 kPa (3 psi) of air pressure to the tire.

STEP 8.
Verify all wheel parts are correctly installed. Hit the side ring and/or lock ring lightly to verify that it is in the seat.

STEP 9.
If installation is correct, add air pressure to the tire. Verify the correct air pressure is in the tire. Verify all wheel parts are correctly installed.

Do not damage the threads on the studs when installing the wheels.

STEP 10.
Reassemble the wheel on the hub with a lifting device. When dual wheels are used, install the inner wheel so it is tight against the brake drum. Install the outer wheel. Use caution not to damage the threads on the studs. See Drive Wheels, STEP 12.

STEP 11.
Lubricate the studs and nuts as shown in STEP 10. Do not get any oil on the outer surfaces of the wheel or the flange of the nut.

WARNING

Check all wheel nuts after 2 to 5 hours of operation. Tighten the nuts in a cross pattern to the correct torque value shown in the MAINTENANCE SCHEDULE table. When the nuts stay tight for 8 hours, the interval for checking the torque can be extended to 500 hours.

CAUTION

Insufficient mounting torque can cause rim slippage, resulting in broken valves, worn parts, and damaged tires. Excessive mounting torque can cause damage by stripping studs, collapsing spacer band, or forcing rims out of round.

STEP 12.
Verify the tires are not touching the ground. Tighten the wheel nuts in steps according to the correct sequence until the torque of 68 to 136 N•m (50 to 100 lbf ft) has been reached. Verify that the wheel(s) is tight against the hub, then tighten until the final torque of 640 to 680 N•m (472 to 502 lbf ft) has been reached. Perform the torque adjustment a minimum of two times. See Drive Wheels, STEP 12

STEP 13.
Lower the lift truck, and remove the hydraulic jack.

STEP 14.
Remove the wooden blocks in front and behind the steer tires.

WHEEL NUT TORQUE

STEP 1.
Check the wheel nut torque of each wheel. When the wheel nut torque for one or more wheels is not correct, the wheel nut torque must be adjusted. Perform the torque adjustment a minimum of two times.

WARNING

Verify the jack needed for lifting one side of the lift truck has a capacity equal to at least 2/3 of the weight of the lift truck. Refer to the nameplate for the correct weight. The standing surface must be solid and even. Always wear safety glasses, safety shoes, and gloves.

STEP 2.
Put blocks in front and behind each tire that will remain on the ground. Put a jack under the mounting pad of the axle and lift one side of the lift truck. (the opposite side). Raise the lift truck so the tires are just above the surface. Put additional blocks under the frame to support the lift truck so the lift truck is stable.

WARNING

Check all wheel nuts after 2 to 5 hours of operation. Tighten the nuts to the correct torque again. When the nuts stay tight after an 8-hour check, the interval for checking can be extended to 500 hours.

STEP 3.
Verify the tires are not touching the ground. Tighten the wheel nuts in the correct sequence until the torque indicated has been reached. The torque for drive and steer wheels is between 640 to 680 N•m (472 to 501 lbf ft). See Drive Wheels, STEP 12.

STEP 4.
Lower the lift truck, and remove the hydraulic jack.

STEP 5.
Remove the blocks in front and behind the tires.

Mast Label Placement

WARNING

When working on or near the mast, review and follow the Safety Procedures When Working Near Mast.

NOTE: The mast labels are stored in the card box located inside the operator's cab. The labels were not installed prior to shipment to prevent damage.

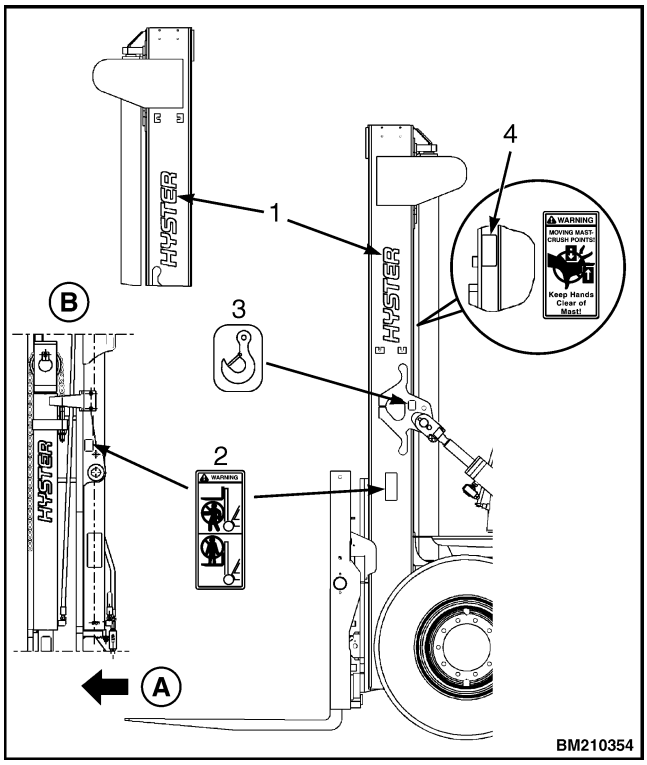
1. Clean the mast in the areas of label replacement prior to affixing the labels. Clean the mast with a solvent or high pressure washer using a water soluble degreaser with warm water.

2. Attach the Hyster label. See Figure 2, item 1.
   - 2-stage mast - attach the Hyster label to the top left-hand and right-hand outer mast channel as shown in Figure 2.
   - 3-stage mast - attach the Hyster label to the top left-hand and right-hand lift cylinder as shown in Figure 2, item B.

3. Attach the mast warning label (item 2) to the left-hand and right-hand outer mast channel as shown in Figure 2.

4. Attach the lifting eye label (item 3) to the left-hand and right-hand outer mast channel as shown in Figure 2.

5. Attach the mast warning label (item 4) to the left-hand and right-hand outer mast channel as shown in Figure 2.



A. DRIVE DIRECTION
B. 3-STAGE MAST OPTION

1. HYSTER LABEL
2. MAST WARNING LABEL
3. LIFTING EYE LABEL
4. MAST WARNING LABEL

Figure 2. Mast Labels

Safety Procedures When Working Near Mast

The following procedures MUST be used when inspecting or working near the mast. Additional precautions and procedures can be required when repairing or removing the mast. See the correct Service Manual section for the specific mast being repaired.

WARNING

Mast parts are heavy and can move. Distances between parts are small. Serious injury or death can result if part of the body is hit by parts of the mast or the carriage.

- **Never put any part of the body into or under the mast or carriage unless all parts are completely lowered or a safety chain is installed. Also make sure that the power is OFF and the key is removed. Put a DO NOT OPERATE tag in the operator's compartment. Disconnect the battery on electric lift trucks and put a tag or lock on the battery connector.**
- **Be careful of the forks. When the mast is raised, the forks can be at a height to cause an injury.**
- **DO NOT climb on the mast or lift truck at any time. Use a ladder or personnel lift to work on the mast.**
- **DO NOT use blocks to support the mast weldments nor to restrain their movement.**
- **Mast repairs require disassembly and removal of parts and can require removal of the mast or carriage. Follow the repair procedures in the correct Service Manual for the mast.**

WHEN WORKING NEAR THE MAST ALWAYS:

- **Lower the mast and carriage completely. Push the lift/lower control lever forward and make sure there is no movement in the mast. Make sure that all parts of the mast that move are fully lowered.**

OR

- **If parts of the mast must be in a raised position, install a safety chain to restrain the moving parts of the mast. Connect moving parts to a part that does not move. Follow these procedures:**

1. Put the mast in a vertical position.
2. Raise the mast to align the bottom crossmember of the weldment that moves in the outer weldment with a crossmember on the outer weldment. On the two-stage and free-lift mast, the moving part is the inner weldment. On the three-stage mast, it is the intermediate weldment. See Figure 3.
3. Use a 1/2 inch minimum safety chain with a hook to fasten the crossmembers together so the movable member cannot lower. Put the hook on the back side of the mast. Make sure the hook is completely engaged with a link in the chain. Make sure the safety chain does not touch lift chains or chain sheaves, tubes, hoses, fittings, or other parts on the mast.

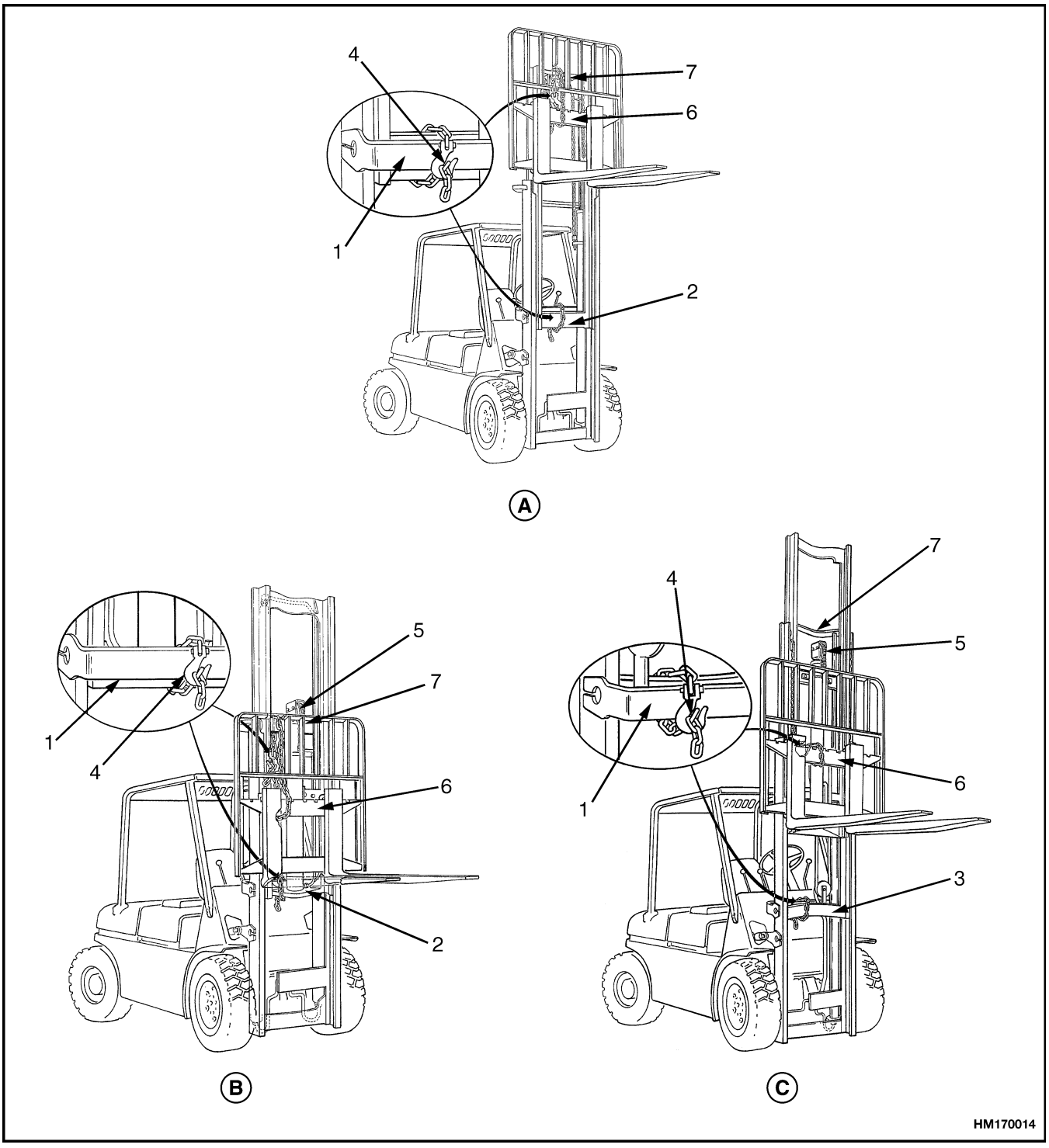


Figure 3. Two-Stage LFL, Two-Stage FFL, and Three-Stage FFL Masts

Legend for Figure 3

A. TWO-STAGE LFL MAST
B. TWO-STAGE FFL MAST
C. THREE-STAGE FFL MAST

1. OUTER WELDMENT
2. INNER WELDMENT
3. INTERMEDIATE WELDMENT
4. CHAIN
5. FREE-LIFT CYLINDER
6. CROSSMEMBER
7. CROSSMEMBER

Mast Installation

MAST

WARNING

When working on or near the mast, review and follow the Safety Procedures When Working Near Mast.

WARNING

Verify that the mast lifting device has a minimum rated capacity of 6,500 kg (14,500 lb).

Required tools:
- 30 mm socket wrench
- 24 mm socket wrench
- Torque wrench

1. Place the truck on a solid and level surface.

2. Apply the parking brake.

3. Turn the engine off.

4. Position the mast in front of the truck. See Figure 4.

5. Clean the mast chains with solvent and lubricate the chains with clean engine oil.

6. Remove the mast hanger pins. See Figure 5.

7. Clean and lubricate the mast pin and the mast pin bearing surfaces on the frame and mast with a multipurpose grease with 2 to 4% molybdenum disulfide.

8. Install the mast hanger pins in the truck frame with the grease fitting positioned towards the center of the truck. See Figure 6.

9. Install the shims. All shims are installed on the right-hand mast hanger pin. One shim is installed on the pin inside surface towards the center of the truck. All remaining shims are installed on the pin outside surface. Position the shim opening to point downward.

10. Remove the tilt cylinder mast anchor pins. See Figure 7.

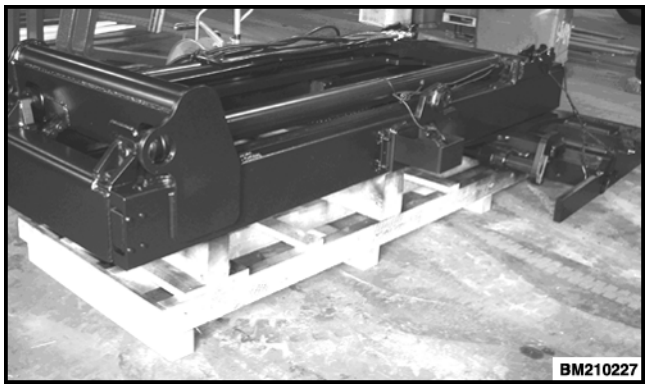


Figure 4. Mast Positioning

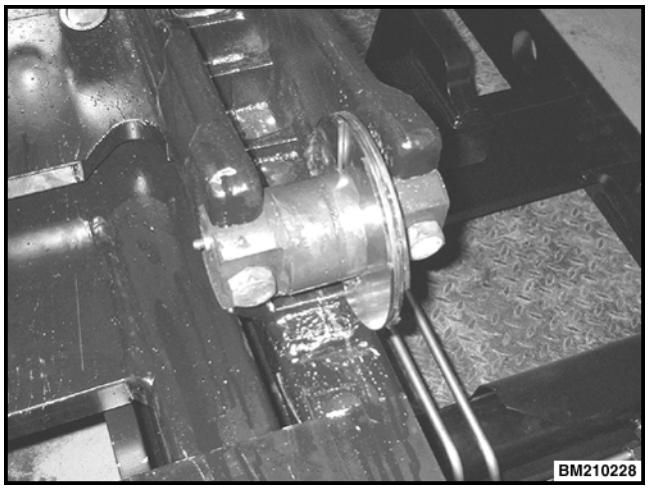


Figure 5. Mast Hanger Pin