# GDP80DC, GDP90DC, GDP100DC, GDP100DCS, GDP120DC (GDP190DC, GDP210DC, GDP230DC, GDP230DCS, GDP250DC, GDP280DC) (E876); GDP130EC, GDP140EC, GDP160EC (GDP300EC, GDP330EC, GDP360EC) (E877) SERVICE MANUAL CONTENTS

SECTION	PART Number	YRM Number	REV Date
OPERATOR'S CAB	550033400	0100 YRM 1390	11/13
CAB HEATER	550033398	0100 YRM 1459	08/12
FRAME	550035500	0100 YRM 1496	06/11
CUMMINS ENGINE FAULT CODE GUIDE	524211827	0600 YRM 1101	07/14
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MAST AND CARRIAGES	524203754	4000 YRM 1062	08/12
2-STAGE MAST	550088524	4000 YRM 1647	05/14
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PERIODIC MAINTENANCE	550035509	8000 YRM 1475	08/12
DIAGRAMS	550035508	8000 YRM 1500	06/11
CAPACITIES AND SPECIFICATIONS	550035510	8000 YRM 1501	07/13

Service information for Cummins diesel engines can be ordered through the Hyster Literature Distribution Center.

PART NO. 550035493 (12/14)

0100 YRM 1390 General

# **General**

This YRM describes the functions of the cab and the replacement instructions for the cab components. See Figure 1. Some of the described components are options that may not be present on each cab. The operation of the various switches and controls can be found in the **Operating Manual**.

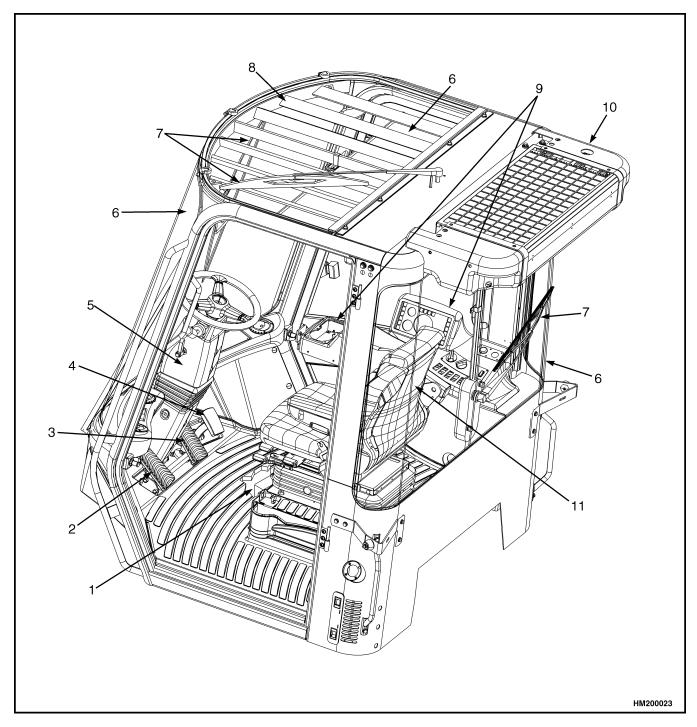
The description and repair instructions for the heater assembly are in **Cab Heater (Prior to Oct. 2008)** 0100YRM1458 for lift trucks built prior to October, 2008, and in **Cab Heater** 0100YRM1459 for lift trucks built after October, 2008.

The remove and replace instructions for the cab as an assembly are in the frame YRM specific to each model lift truck.

Information on systems that are related to the cab are in YRM for the Electrical System, Hydraulic System, Brake System, Steering System and Diagrams specific to each model lift truck.

Before making any repairs to the lift truck, complete the following procedures:

- 1. Place the lift truck on a solid, level surface.
- 2. Lower the mast completely and tilt forward.
- 3. Place the shift lever in **NEUTRAL**.
- 4. Apply the parking brake.
- 5. Shut down the engine.



- 2. 3.
- 4.
- 5. 6.
- HEATER SECTION
  INCHING PEDAL
  BRAKE PEDAL
  ACCELERATOR PEDAL
  STEERING COLUMN
  FRONT, REAR, AND TOP WINDOWS
  FRONT, REAR, AND TOP WIPER ASSEMBLIES
- 8. INTEGRATED OVERHEAD GUARD
- OPERATOR'S CONSOLE, CONTROLS, AND **ARMREST**
- 10. AIR CONDITIONING CONDENSER, DRYER, AND FAN ASSEMBLY (OPTIONAL) 11. SEAT

Figure 1. Operator's Cab

# **Description of Operation**

#### **CAB STRUCTURE**

The cab frame is a welded structure. The overhead guard is an integral part of the cab frame. See Figure 1. In order to maintain maximum overhead protection, changes to the cab frame and integrated overhead guard are not allowed. There are two cab options: an open cab and a closed cab. The closed cab features windows and wipers, doors, a heater, and optional air conditioning. Both cab types feature interior components.

#### **CAB TILT SYSTEM**

On lift trucks with a cab tilt system, the cab can tilt to the right-hand side, providing service access to the engine compartment and components under the cab.

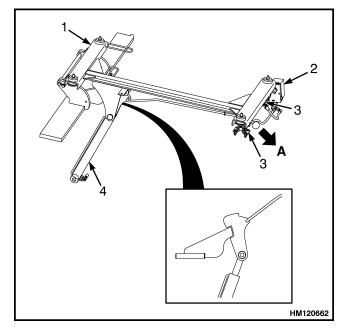
The cab tilt system consists of a cab support frame, cab tilt cylinder, cab tilt hand pump assembly, cab latches, and an optional electrical cab tilt pump. See Figure 2.

The cab is attached to the lift truck in the lowered position by the cab support pivots on the right-hand frame channel, the two cab latches on the left-hand frame channel, and the cab tilt cylinder.

Hydraulic pressure is required to unlock the cab latches and extend the cab tilt cylinder. The cab can be raised by rotating the cab tilt hand pump directional valve clockwise and operating the cab tilt hand pump. See Figure 3. To lower the cab from the raised position, rotate the cab tilt hand pump directional valve counterclockwise and operating the cab tilt hand pump. The cab tilt cylinder retracts to lower the cab.

The optional electrical cab tilt pump is push-button operated. See Raising and Lowering Cab, Raise Cab, Figure 8.

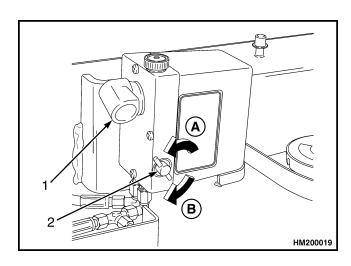
**NOTE:** If the optional electrical cab tilt pump is inoperable, the cab can be raised or lowered by using the manually operated cab tilt hand pump.



A. PULL DIRECTION OF THE TILT LATCH RE-LEASE

- 1. CAB SUPPORT FRAME
- 2. CAB TILT HAND PUMP
- 3. CAB LATCH
- 4. CAB TILT CYLINDER

Figure 2. Cab Tilt System



- A. LOWER
- **B.** RAISE
- PUMP LEVER CONNECTION
- 2. PUMP DIRECTIONAL VALVE

Figure 3. Cab Tilt Hand Pump

When the cab has been raised to the partially open position, the safety latch will engage with a retainer plate that is welded to the frame. To raise or lower the cab after the safety latch has engaged, pull and hold the tilt latch release and raise or lower the cab until the safety latch has passed the retainer plate.

Just before the fully open position is reached, movement becomes gravity-controlled by the weight of the cab. The cab is in the fully open position when the cab tilt cylinder is fully extended.

## Cab Tilt System, Raise

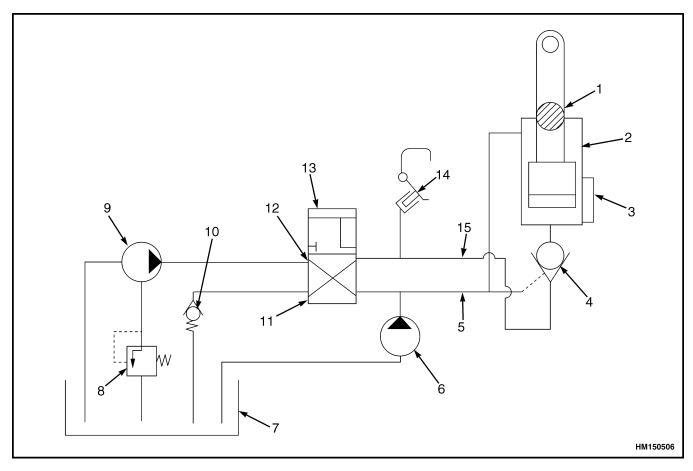
When the directional valve is in the raise position, the pump push port and pump pull port are connected to each other. See Figure 4.

Hydraulic pressure is transferred to the cab latches and both the piston and rod side of the cab tilt cylinder. Hydraulic oil extruded at the rod side enters the piston side of the cylinder through the directional valve in the hand pump. The end of stroke is determined by a retaining ring in the cab tilt cylinder.

## Cab Tilt System, Lower

When the directional valve is in the lower position, the pump push port is connected to the pump reservoir through a reservoir check valve. The reservoir check valve retains enough pressure to keep the cab locks open. The pump pull port is connected to the hand pump. While the hand pump provides sufficient pressure, the cylinder check valve will raise to allow the oil at the piston side of the cylinder to return to the reservoir. The cylinder cannot lower when there is insufficient pressure at the pull connection.

When the piston has reached the free fall area, the oil at the piston side will escape to the rod side and the cab will drop under the influence of its own weight. When the cab drops, the oil in the cab lock cylinders is pushed out through the reservoir check valve. After the cab has dropped, the cab is locked into position by the cab latches.



- 1.
- ROD AREA CAB TILT CYLINDER FREE FALL INTERCONNECTION CHECK VALVE
- 2. 3. 4.
- PULL
- 5. 6. 7. ELECTRIC CAB TILT PUMP (OPTIONAL) RESERVOIR RELIEF VALVE

- 9. CAB TILT HAND PUMP
  10. RESERVOIR CHECK VALVE
  11. LOWER
  12. PUMP DIRECTIONAL VALVE
  13. RAISE
  14. LATCH
  15. PUSH

Figure 4. Cab Tilt System

# Oil Filling for Cab Tilt System



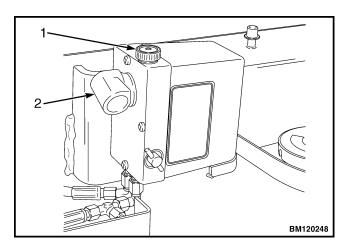
## **CAUTION**

When oil is added to the cab tilt system, place an oil absorbing material around the fill cap before lowering the cab. Excess oil may bleed out of the relief valve, which is located in the fill cap.

**NOTE:** If the oil level is low, the cab will not tilt/raise completely.

**NOTE:** If the cab is lowered, perform Step 1. If the cab is raised, go to Step 2.

- Tilt/Raise raise the cab until it locks in the partially open position. Refer to the section Raising and Lowering Cab.
- Lower the cab until it locks in the partially open position. Refer to the section Raising and Lowering Cab.
- **3.** Place the pump lever connection in the fully down position to create easy access to the fill cap. See Figure 5.



- 1. FILL CAP
- 2. PUMP LEVER CONNECTION

Figure 5. Hand Pump

- 4. Remove the fill cap. See Figure 5.
- 5. Add hydraulic oil through the filler opening until the level is within 30 to 35 mm (1.18 to 1.38 in.) of the top of the reservoir. See Figure 6. For your lift truck, refer to the appropriate Periodic Maintenance YRMfor the correct hydraulic oil specification.

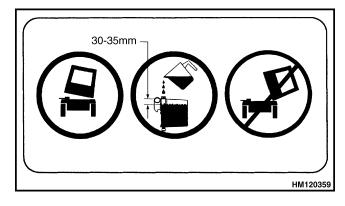


Figure 6. Cab Tilt Label

- **6.** Install the fill cap. See Figure 5.
- Tilt/raise the cab and make sure the maximum tilted/raised (fully opened) position can be reached. Refer to the section Raising and Lowering Cab.
- **8.** If necessary, repeat Step 1 through Step 7.
- **9.** Lower the cab until it is in the fully lowered position and completely latched. Refer to the section Raising and Lowering Cab.

# **Raising and Lowering Cab**

#### **RAISE CAB**



#### WARNING

Make sure no one is under the cab when tilting/ raising or lowering the cab, or serious personal injury may occur.



### WARNING

Before doing any work under the cab, always make sure the cab is fully tilted/raised, or if partially open, is locked with the tilt latch, or serious personal injury may occur.



#### **CAUTION**

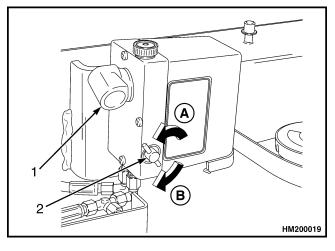
Cab damage may occur if the mast is not completely tilted forward.

- 1. Tilt the mast fully forward.
- 2. Remove all unsecured items from the cab.
- **3.** Close and securely latch the left-hand and right-hand cab doors.
- **4.** Clear all obstacles from the right-hand side of the lift truck. Provide a minimum of 2 m (7 ft) clearance space.
- **5.** Use the pump lever to turn the pump directional valve clockwise to the "Tilt/Raise" position. See Figure 7.
- **6.** Operate the pump with the pump lever (or push-button, if equipped with an electric pump), until the cab locks in the partially open position. See Figure 8.

**NOTE:** Just before the fully open position is reached, movement becomes gravity-controlled by the weight of the cab.

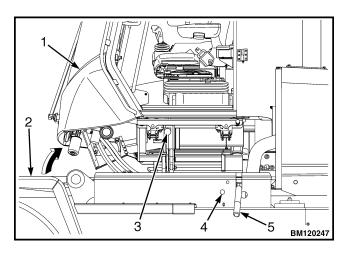
**7.** Pull the tilt latch release and continue to tilt/raise the cab to the fully open position. See Figure 8.

**NOTE:** If the cab will not fully tilt/raise, lower the cab until the cab locks in the partially open position, and check the oil level. Refer to the section Oil Filling for Cab Tilt System.



- A. LOWER
- B. RAISE
- 1. PUMP LEVER CONNECTION
- 2. PUMP DIRECTIONAL VALVE

Figure 7. Pump and Direction Valve



- 1. CAB
- FRAME
- 3. TILT LATCH RELEASE KNOB
- ELECTRIC CAB TILT PUSH-BUTTON (OP-TIONAL)
- 5. PUMP LEVER

Figure 8. Pump Lever and Tilt Latch Release Knob

Cab Door Assembly 0100 YRM 1390

#### **LOWER CAB**



# WARNING

Make sure no one is under the cab when raising or lowering the cab, or serious personal injury may occur.



## WARNING

Before doing any work under the cab, always make sure the cab is fully tilted/raised, or if partially open, is locked with the tilt latch, or serious personal injury may occur.



## **CAUTION**

Cab damage may occur if the mast is not completely tilted forward.

- **1.** Make sure all foreign items/tools are removed from under the cab.
- **2.** Use the pump lever to turn the pump directional valve counterclockwise to the "Lower" position. See Figure 7.
- **3.** Operate the pump with the pump lever (or push-button, if equipped), until the cab locks in the partially open position. See Figure 8.
- **4.** Pull the tilt latch release knob and continue to lower the cab until the cab is in the fully lowered and latched position.

# **Cab Door Assembly**

#### **CAB DOOR**

#### Remove

- **1.** Open the sliding windows.
- 2. Attach a lift strap at the left-hand and right-hand side of the sliding windows inside the sliding window frame. Place a cushion between the sliding window frame and the lift straps (left-hand and right-hand sides) to prevent damage.
- **3.** Position the cab door at a 90° angle to the frame, so the cab door can be lifted out the hinges.



# **CAUTION**

Use caution when lifting the cab door to avoid damage to the cab frame.

- **4.** Lift the cab door out of the cab door hinges. See Figure 9.
- **5.** Move the cab door away from the lift truck and place it on the ground.
- **6.** Close the sliding windows.

#### Install

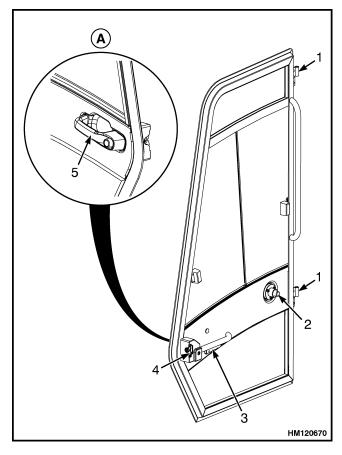
1. Open the sliding windows.

- 2. Attach a lift strap to the left-hand and right-hand side of the sliding windows inside the sliding window frame. Place a cushion between the sliding window frame and the lift straps (left-hand and right-hand sides) to prevent damage.
- **3.** Raise the cab door and place it in position above the hinges.
- **4.** Slowly lower the cab door until the cab door is seated on the hinges.
- 5. Remove the lift strap.
- **6.** Make sure the cab door is opening, closing, and moving properly on the hinges.
- 7. Make sure the locking system functions properly.

**NOTE:** Adjust one hinge at a time.

- 8. If necessary, adjust the hinge location when the door is closed. Door clearance must be evenly divided around the door and door opening of the cab.
- **9.** Loosen the three capscrews and use a nylon hammer to adjust the hinge. Retighten the capscrews.
- **10.** If necessary, adjust the door striker pin. Refer to the section Door Striker Pin Adjustment.

0100 YRM 1390 **Cab Door Assembly** 



## A. VIEW TURNED 90° COUNTERCLOCKWISE

- DOOR HINGE DOOR PUSH-BUTTON
- 3. DOOR RELEASE
- 4. DOOR LATCH
- 5. DOOR HANDLE

Figure 9. Cab Door

# **DOOR HINGE**

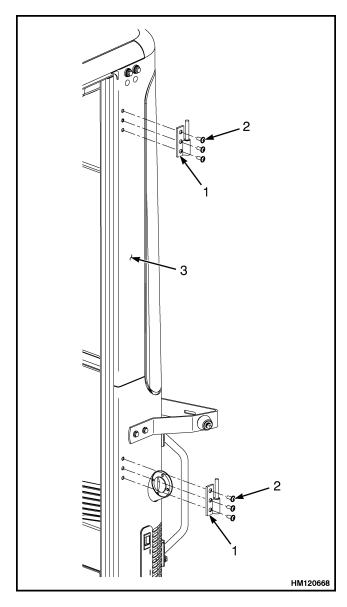
#### Remove

- 1. Remove the cab door. See the section Cab DoorRemove.
- 2. Mark the location of the two hinges on the cab frame.
- 3. Remove the six capscrews retaining the two hinges to the cab frame and remove the two hinges. See Figure 10.

#### Install

- 1. Position the two hinges to the cab frame as marked and install the six capscrews to retain the hinges to the cab frame.
- 2. Install the cab door. Refer to the section Cab DoorInstall.
- 3. Make sure the locking system functions properly.

**NOTE:** Adjust one hinge at a time.



- 1. DOOR HINGE
- 2. CAPSCREW
- 3. CAB FRAME

Figure 10. Door Hinge

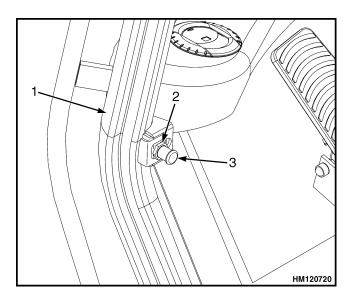
0100 YRM 1390 Cab Door Assembly

- 4. If necessary, adjust the hinge location when the door is closed.
- 5. Loosen the three capscrews and use a nylon hammer to adjust the hinge. Retighten the capscrews.

#### DOOR STRIKER PIN

# **Door Striker Pin Adjustment**

- **1.** Make sure the door hinges are correctly installed.
- 2. Loosen the securing nut that retains the door striker pin to the cab frame. See Figure 11.
- 3. Place the door striker pin in the expected latching position.
- 4. Push and hold the release button and close the door with normal force so that the door is positioned correctly in the door opening of the cab.
- 5. Open the door with the release button still engaged.
- 6. Carefully tighten the securing nut that retains the door striker pin to the cab frame.
- 7. Close the door and make sure the door is correctly seated against the door seals.
- 8. If necessary, repeat Step 1 through Step 7.



- **CAB FRAME** 1.
- SECURING NUT
- DOOR STRIKER PIN

Figure 11. Door Striker Pin

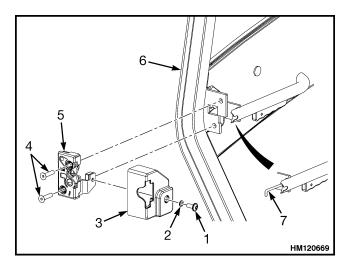
#### DOOR LATCH

#### Remove

- 1. Remove the capscrew and washer that retain the plastic cover to the door latch. See Figure 12.
- 2. Remove the two capscrews that retain the door latch to the door frame.
- 3. Disconnect the connector rod from the door latch attached to the door release.

#### Install

- 1. Connect the connector rod to the door latch attached to the door release.
- 2. Install the two capscrews to retain the door latch to the door frame.
- 3. Install the capscrew and washer that retain the plastic cover to the door latch.
- **4.** Make sure the locking system functions correctly.



- **CAPSCREW**
- 2.
- WASHER PLASTIC COVER 3.
- **CAPSCREW**
- DOOR LATCH
- **CAB DOOR**
- CONNECTOR ROD

Figure 12. Door Latch

0100 YRM 1390 Cab Door Assembly

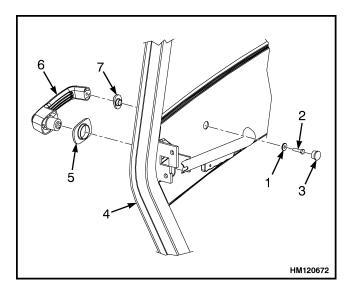
#### **DOOR HANDLE**

#### Remove

- 1. Remove the door latch. Refer to the section Door LatchRemove
- 2. Remove the plastic plug at the inside of the door frame. See Figure 13.
- 3. Remove the capscrew and washer that retain the door handle, through the hole from the plastic plug.
- 4. Remove the large nut and washer that retain the door handle on the release button side of the door handle.
- 5. Remove the door handle and two rubber cushions.

#### Install

- 1. Position the door handle and two rubber cushions on the door. See Figure 13.
- 2. Install the washer and large nut on the release button side of the door handle.



- 1. WASHER
- **CAPSCREW**
- PLASTIC PLUG
- **CAB DOOR**
- RUBBER CUSHION (LARGE) DOOR HANDLE
- 7. RUBBER CUSHION (SMALL)

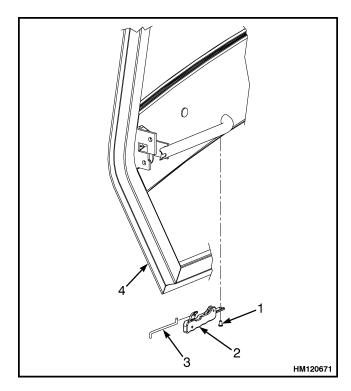
Figure 13. Door Handle

- 3. Install the washer and capscrew through the hole from the plastic plug.
- 4. Install the plastic plug at the inside of the door frame.
- 5. Install the latch. Refer to the section Door LatchInstall.
- **6.** Make sure the locking system functions correctly.

# **DOOR RELEASE**

#### Remove

- 1. Remove the door latch. Refer to the section Door LatchRemove.
- 2. Remove the capscrew that retains the door release inside the bar located at the inside of the door frame. See Figure 15.
- 3. Remove the connector rod and door release from inside the bar.



- **CAPSCREW**
- DOOR RELEASE
- **CONNECTOR ROD**
- **CAB DOOR**

Figure 14. Door Release

Cab Tilt System 0100 YRM 1390

**4.** Disconnect the connector rod from the door release.

#### Install

- **1.** Connect the connector rod to the door release. See Figure 14.
- **2.** Install the connector and door release inside the bar, located at the inside of the door frame.
- **3.** Install the capscrew that retains the door release inside the bar.
- Install the door latch. Refer to the section Door LatchInstall.

#### DOOR PUSH BUTTON

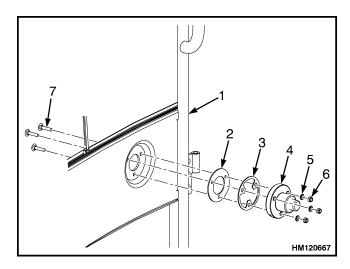
#### Remove

- 1. Remove the three plastic caps from the nuts located at the inside of the door frame. See Figure 15.
- 2. Remove the three nuts, washers, and capscrews that retain the door holder (push button), washer, and seal to the door frame.

#### Install

1. Install the three capscrews, washers, and nuts that retain the door holder (push button), washer, and seal to the door frame. Hand tighten the nuts. See Figure 15.

- 2. Position the cab door in the locking system.
- 3. Tighten the three nuts.
- 4. Make sure the door holder is positioned properly by placing the door in the lock system. Adjust the door holder (push button) as needed.
- **5.** Install the three plastic caps to the nuts located at the inside of the door frame.



- 1. CAB DOOR
- 2. WASHER
- 3. SEAL
- 4. DOOR HOLDER (PUSH BUTTON)
- WASHER
- NUT
- 7. CAPSCREW

Figure 15. Door Push Button

# **Cab Tilt System**

# **ELECTRIC TILT PUMP**

#### Remove

- **1.** Tilt/raise the cab to the fully open position. Refer to the section Raising and Lowering Cab.
- 2. Disconnect the electrical connector, located at the left-hand panel, from the cab tilt push-button. See Raising and Lowering Cab, Raise Cab, Figure 8.
- **3.** Remove the two capscrews and washers that retain the left-hand panel to the frame and remove the left-hand panel.

- **4.** Disconnect the electrical connector from the electrical tilt pump.
- **5.** Tag and disconnect the two hydraulic hoses from the electrical tilt pump and place plugs on the hose ends.
- **6.** Remove the two nuts that retain the bracket with the electrical tilt pump to the frame.
- **7.** Remove the bracket with the electrical tilt pump from the frame.
- **8.** Remove the two capscrews that retain the electrical tilt pump to the bracket.

0100 YRM 1390 Cab Tilt System

**9.** Remove the electrical tilt pump from the bracket.

#### Install

- **1.** Position the electrical tilt pump on the bracket.
- **2.** Install the two capscrews that retain the electrical tilt pump on the bracket.
- **3.** Position the bracket with the electrical tilt pump on the frame.
- **4.** Install the two nuts that retain the bracket with the electrical tilt pump to the frame.
- **5.** Remove the plugs and connect the two hoses to the electrical tilt pump.
- **6.** Connect the electrical connector to the electrical tilt pump.
- 7. Position the left-hand panel on the frame and install the two capscrews and washers to retain the panel to the frame.
- **8.** Connect the electrical connector to the cab tilt push-button. See Raising and Lowering Cab, Raise Cab, Figure 8.
- **9.** Lower the cab to the fully lowered and latched position. Refer to the section Raising and Lowering Cab.
- **10.** Operate the electric tilt pump to check for leaks and to remove air from the cab tilt system.
- **11.** Check the hydraulic oil level. Refer to the section Oil Filling for Cab Tilt System.
- **12.** Operate the cab tilt system to check for correct operation.

#### **HAND PUMP**

#### Remove

**1.** Tilt/raise the cab to the fully open position. Refer to the section Raising and Lowering Cab.

- 2. If equipped, disconnect the electrical connector located at the left-hand panel, from the cab tilt push-button. See Raising and Lowering Cab, Raise Cab, Figure 8.
- **3.** Remove the two capscrews and washers that retain the left-hand panel to the frame and remove the left-hand panel.
- **4.** Remove the two capscrews and washers that retain the hand pump to the frame. See Figure 16.

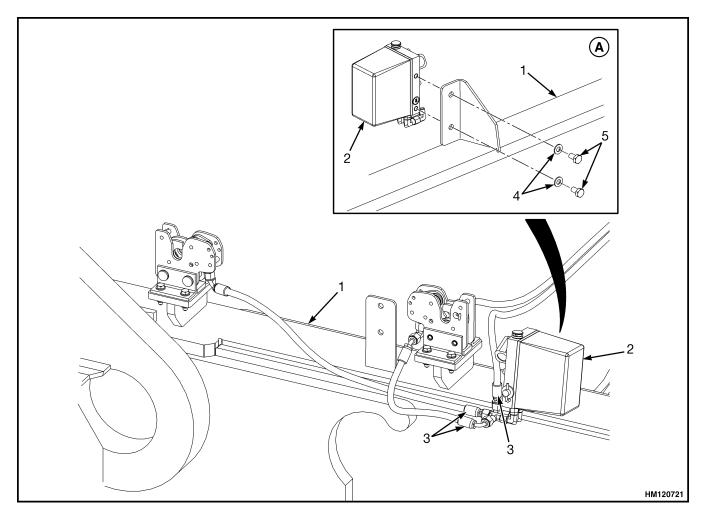
**NOTE:** Keep the hydraulic hose connection locations from the hand pump facing upward to avoid spilling hydraulic oil.

**5.** Tag and disconnect the three hydraulic hoses and place plugs on the three hose ends. See Figure 16.

#### Install

- 1. Remove the plugs from the three hose ends and connect the three hydraulic hoses to the hand pump. See Figure 16.
- 2. Position the hand pump on the frame and install the two capscrews and washers that retain the hand pump to the frame. See Figure 16.
- **3.** Position the left-hand panel to the frame and install the two capscrews and washers to retain the left-hand panel to the frame.
- **4.** If equipped, connect the electrical connector to the cab tilt push-button. See Raising and Lowering Cab, Raise Cab, Figure 8.
- **5.** Lower the cab to the fully lowered and latched position. Refer to the section Raising and Lowering Cab.
- **6.** Remove the fill cap of the hand pump and fill the reservoir with hydraulic oil. Refer to the section Oil Filling for Cab Tilt System.
- **7.** Make sure the cab tilt system functions correctly.

**Cab Tilt System** 0100 YRM 1390



- A. 180 DEGREES TURNED

- FRAME HAND PUMP HYDRAULIC HOSE

- 4. WASHER5. CAPSCREW

Figure 16. Hand Pump

0100 YRM 1390 Cab Tilt System

#### **CAB TILT CYLINDER**

#### Remove

- Tilt/raise the cab until it locks in the partially open position. Refer to the section Raising and Lowering Cab.
- **2.** Place wooden blocks between the frame and the cab to prevent the cab from suddenly lowering.
- 3. Tag and disconnect the two hydraulic hoses from the cab tilt cylinder and install caps on the hydraulic fittings and plugs in the hydraulic hoses. See Figure 18.
- **4.** Remove the snap ring from the pin that retains the cab tilt cylinder to the frame. See Figure 17.
- **5.** Remove the snap ring from the pin that retains the cab tilt cylinder to the cab tilt frame.
- **6.** Remove the cab tilt cylinder from the pins and remove the cab tilt cylinder from under the frame.

#### **Disassemble**

- 1. Place the cab tilt cylinder in a horizontal position with the fittings pointing downward in a vise with soft jaws.
- 2. Place a drain pan under the fittings.
- **3.** Remove the caps from the fittings and drain the hydraulic oil from the cab tilt cylinder.
- **4.** Remove the wiper from the cylinder shell. See Figure 18.
- **5.** Press the gland inside the cylinder shell until the gland retaining ring is free.
- **6.** Remove the gland retaining ring.



#### **CAUTION**

Be careful not to damage the finished surface of the piston rod when removing the piston rod assembly from the cylinder shell in a horizontal position.

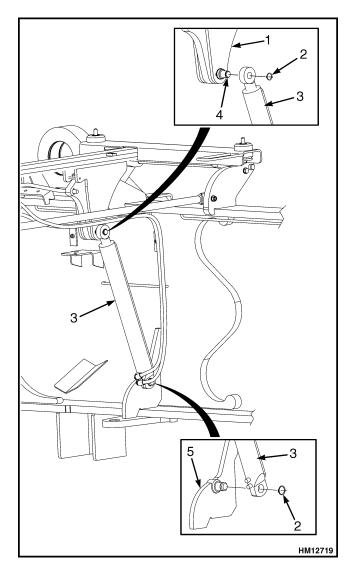
**7.** Remove the piston rod assembly from the cylinder shell by pulling it out of the cylinder shell.



# CAUTION

Be careful not to damage the grooves when removing O-rings, sleeve, U-cup, and retaining rings.

- **8.** Remove the shaft retaining ring (10,Figure 18) that retains the piston to the piston rod.
- **9.** Remove the piston from the piston rod.



- 1. CAB TILT FRAME
- 2. SNAP RING
- 3. CAB TILT CYLINDER
- 4. PIN
- 5. FRAME

Figure 17. Cab Tilt Cylinder

Cab Tilt System 0100 YRM 1390

- **10.** Remove the end of stroke ring (9,Figure 18) from the piston rod.
- **11.** Remove the gland from the piston rod.
- **12.** Remove and discard the O-ring from the piston rod.
- **13.** Remove and discard the O-ring and sleeve from the piston.
- **14.** Remove and discard the O-ring and U-cup from the gland.

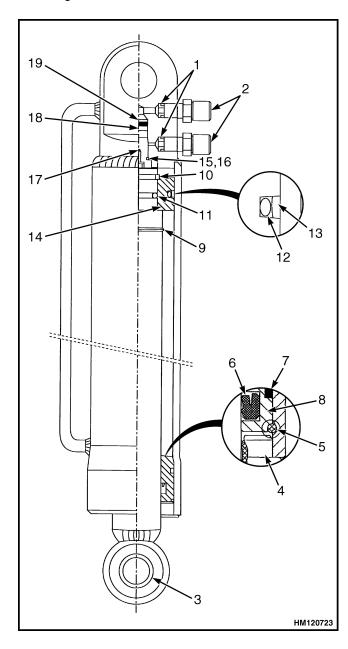


Figure 18. Cab Tilt Cylinder

#### Legend for Figure 18

- 1. FILTER
- 2. HYDRAULIC FITTINGS
- 3. SPACER
- WIPER
- 5. GLAND RETAINING RING
- 6. U-CUP
- 7. O-RING
- 8. GLAND
- 9. END OF STROKE RING
- 10. SHAFT RETAINING RING
- 11. O-RING
- 12. O-RING
- 13. SLEEVE
- 14. PISTON
- 15. WASHER
- 16. O-RING
- 17. CHECK VALVE ASSEMBLY
- 18. PILOT PISTON ASSEMBLY
- 19. O-RING
- **15.** Use a special tool to remove the check valve assembly, located inside the cylinder shell.
- **16.** Remove and discard the pilot piston assembly, located inside the cylinder shell.

#### Clean



## WARNING

Cleaning solvents can be flammable and toxic and can cause skin irritation. When using cleaning solvents, always follow the solvent manufacturer's recommended safety procedures.

Compressed air can move particles so they cause injury to the user or to other personnel. Make sure that the path of the compressed air is away from all personnel. Wear protective goggles or a face shield to prevent injury to the eyes.

Clean all parts in solvent and dry with compressed air.

# Inspect

Inspect the parts of the cab tilt cylinder for damage, rust, or wear. Carefully inspect the rod surface for dents and scratches. Make sure that the internal stroke surface of the cylinder shell and grooves for the seals do not show any nicks, scratches, or other damage. Repair or replace parts as needed.

0100 YRM 1390 Cab Tilt System

#### **Assemble**

NOTE: Make sure that all parts are clean before assembly.

NOTE: Always use new O-rings, sleeve, and U-cup. Lubricate all parts with clean hydraulic oil.

- 1. Install the new pilot piston assembly, located inside the cylinder shell.
- 2. Use a special tool to install the check valve assembly into the cylinder shell and tighten to 40 to 45 N·m (30 to 33 lbf ft).
- 3. Install a new O-ring and U-cup to the gland.
- **4.** Install a new O-ring and sleeve on the piston.
- **5.** Install a new O-ring on the piston rod.
- **6.** Assemble the gland on the piston rod.
- 7. Install the end of stroke ring (9, Figure 18) on the piston rod.
- **8.** Install the piston on the piston rod.
- 9. Install the shaft retaining ring (10, Figure 18) that retains the piston to the piston rod.



# **CAUTION**

Be careful not to damage the finished surface of the piston rod when installing the piston rod assembly into the cylinder shell in a horizontal position.

- 10. Lubricate the cylinder shell bore with clean hydraulic oil. Place the piston rod assembly into the cylinder shell.
- 11. Press the gland inside the cylinder shell until the groove for the gland retaining ring is free.
- 12. Install the gland retaining ring.
- 13. Pressurize the push port until the extended rod locks the gland into the gland retaining ring.
- 14. Install the wiper.

#### Install

1. Position the cab tilt cylinder inside the frame with the hydraulic hose fittings positioned to the underside.

- 2. Install the cab tilt cylinder to the pin of the cab tilt frame and the pin of the frame.
- 3. Install the snap ring to the pin that retains the cab tilt cylinder to the cab tilt frame.
- 4. Install the snap ring to retain the cab tilt cylinder to the frame.
- 5. Remove the caps and plugs from the cab tilt cylinder and hydraulic hoses and connect the two hydraulic hoses to the cab tilt cylinder.

**NOTE:** If the oil level is low, the cab will not tilt/raise completely. Refer to the section Oil Filling for Cab Tilt System.

- **6.** Check the hydraulic oil level. Refer to the section Oil Filling for Cab Tilt System.
- 7. Completely tilt/raise the cab. Refer to the section Raising and Lowering Cab.
- 8. Remove the wooden blocks between the frame and the cab.
- 9. Lower the cab until it is in the fully lowered and latched position.
- 10. Operate the cab tilt system to check for leaks and correct operation.

#### LATCH

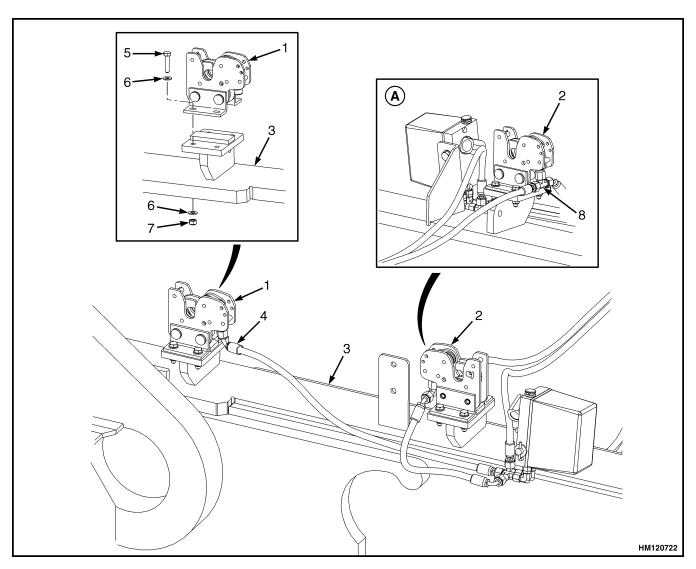
#### Remove

- 1. Tilt/raise the cab until it locks in the partially open position. Refer to the section Raising and Lowering Cab.
- 2. Disconnect the hydraulic hose from the front latch and plug the hose end. See Figure 19.
- 3. Remove the T-adapter from the rear latch and place a cap at the T-adapter. See Figure 19.
- 4. Remove the eight capscrews and nuts, and 16 washers that retain the front and rear latches to the frame. See Figure 19.

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#### Install

- 1. Position the front and rear latches on the frame and install the eight capscrews and nuts, and 16 washers to retain the front and rear latches to the frame. See Figure 19.
- **2.** Remove the cap at the T-adapter and install the T-adapter to the rear latch. See Figure 19.
- **3.** Remove the plug from the hose end and connect the hydraulic hose to the front latch. See Figure 19.
- **4.** If required, remove the fill cap of the hand pump and fill the reservoir with hydraulic oil. Refer to the section Oil Filling for Cab Tilt System.



A. 180 DEGREES TURNED

- 1. FRONT LATCH
- 2. REAR LATCH
- 3. FRAME
- 4. HYDRAULIC HOSE

- 5. CAPSCREW
- WASHER
- 7. NUT
- 8. T-ADAPTER

Figure 19. Latch

Lower the cab until it is in the fully lowered and latched position. Refer to the section Raising and Lowering Cab. Check the latches for correct operation.

# **Brake and Inching Pedals**

#### **REMOVE**

- **1.** Remove the split pin and washer from the rod, located behind the inching pedal.
- 2. Disconnect the rod from the inching pedal.
- Remove the two capscrews, washers, and nuts that retain the inching pedal to the bracket at the floor of the cab.
- **4.** Remove the two capscrews, washers, and nuts that retain the brake pedal to the bracket at the floor of the cab.
- 5. Remove the inching and brake pedal assembly.
- **6.** Separate the inching pedal from the brake pedal and remove the three shims.
- **7.** Remove the two bearings from the inching pedal.

#### **INSTALL**

1. Install the two bearings on the inching pedal.

**NOTE:** Make sure the three shims are positioned correctly.

- **2.** Position the three shims and install the inching pedal to the brake pedal.
- **3.** Position the inching and brake pedal assembly between the brackets at the floor of the cab.
- Install the two capscrews, washers, and nuts that retain the brake pedal to the bracket at the floor of the cab.
- **5.** Install the two capscrews, washers, and nuts that retain the inching pedal to the bracket, at the floor of the cab.
- **6.** Connect the rod to the inching pedal.
- 7. Install the washer and split pin to the rod, located behind the inching pedal.

 Check if adjustments to the inching and brake pedals are required, and adjust as needed. Refer to the sections Brake Pedal Adjustment and Inching Pedal Adjustment.

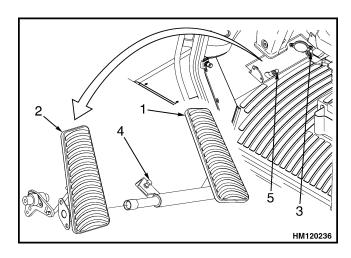
#### **BRAKE PEDAL ADJUSTMENT**

# **Dry Brake**

 Adjust the capscrew (3,Figure 20) behind the pedal on the brake pedal assembly so that there is 5 to 10 mm (0.2 to 0.4 in.) travel until the brake lights come ON.

#### **Wet Brake**

1. Adjust the capscrew (3,Figure 20) behind the pedal on the brake pedal assembly so that the roller has contact with the capscrew on the valve and there is no free travel.



- BRAKE PEDAL
- 2. INCHING PEDAL
- 3. ADJUSTMENT BOLT FOR BRAKE PEDAL AS-SEMBLY
- 4. ADJUSTMENT BOLT FOR INCHING/BRAKE PEDAL COUPLING
- ADJUSTMENT BOLT FOR INCHING PEDAL AS-SEMBLY

Figure 20. Brake Pedal System

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