

GP/GLP/GDP030, GP/GLP/GDP035VX, GP/GLP/GDP040SVX (C810) SERVICE MANUAL CONTENTS

SECTION	PART NUMBER	YRM NUMBER	REV DATE
FRAME.....	524223754	0100 YRM 1120	12/12
OPERATOR'S CAB.....	524306203	0100 YRM 1290	04/14
MAZDA FE AND F2 ENGINES.....	524223756	0600 YRM 1122	03/12
YANMAR DIESEL ENGINES.....	524240453	0600 YRM 1205	12/14
COOLING SYSTEM.....	524223757	0700 YRM 1123	03/13
LPG FUEL SYSTEM (MAZDA).....	524223759	0900 YRM 1125	10/05
GASOLINE FUEL SYSTEM (MAZDA).....	524223761	0900 YRM 1127	05/05
GASOLINE FUEL SYSTEM MAZDA 2.0L AND 2.2L 2007 EMISSION COMPLIANT ENGINES.....	524289373	0900 YRM 1325	12/09
LPG FUEL SYSTEM MAZDA 2.0L AND 2.2L 2007 EMISSION COMPLIANT ENGINES.....	524289374	0900 YRM 1326	09/12
1 AND 2-SPEED POWERSHIFT TRANSMISSION REPAIR.....	524223762	1300 YRM 1129	09/09
SINGLE SPEED POWERSHIFT ALUMINUM TRANSMISSION REPAIR.....	550010194	1300 YRM 1421	08/13
SINGLE SPEED POWERSHIFT ALUMINUM CHAIN DRIVE TRANSMISSION.....	550030170	1300 YRM 1447	08/13
POWERSHIFT TRANSMISSION REPAIR.....	550043436	1300 YRM 1529	08/13
DRIVE AXLE.....	524240454	1400 YRM 1206	11/08
STEERING AXLE.....	524223764	1600 YRM 1133	07/13
BRAKE SYSTEM.....	524223765	1800 YRM 1135	12/12
HYDRAULIC GEAR PUMP.....	524223766	1900 YRM 1136	04/14
HYDRAULIC CLEANLINESS PROCEDURES.....	550073240	1900 YRM 1620	12/14
MAIN CONTROL VALVE.....	524223767	2000 YRM 1137	04/14
CYLINDER REPAIR (MAST S/N A551, A555, A559, A661, A662, A663, A66, B507, B508, B509, B551, B555, B559, B562, B563, B564, B661, B662, B663, C515, C551, C555, C559, D507, D508, D509, D515, D562, D563, D564, E509, AND E564).....	524223768	2100 YRM 1139	02/14
WIRE HARNESS REPAIR.....	524223769	2200 YRM 1128	12/14
USER INTERFACE.....	524223770	2200 YRM 1130	12/14
USER INTERFACE.....	524223771	2200 YRM 1131	12/14
ELECTRICAL SYSTEM.....	524223772	2200 YRM 1142	04/14
ELECTRICAL SYSTEM (MAZDA).....	524223773	2200 YRM 1143	10/05
ELECTRICAL SYSTEM MAZDA 2.0L AND 2.2L 2007 EMISSION COMPLIANT ENGINES.....	524289375	2200 YRM 1327	09/12
MAST REPAIRS (S/N A551, A555, A559, A661, A662, A663, A664, B507, B508, B509, B551, B555, B559, B562, B563, B564, B661, B662, B663, C515, C551, C555, C559, D507, D508, D509, D515, D562, D563, D564, E509, AND E564).....	524223776	4000 YRM 1148	02/14
METRIC AND INCH (SAE) FASTENERS.....	524150797	8000 YRM 0231	10/13
CALIBRATION PROCEDURES.....	524223780	8000 YRM 1134	12/14
DIAGRAMS.....	524223779	8000 YRM 1152	04/14
PERIODIC MAINTENANCE.....	524240455	8000 YRM 1207	08/13
CAPACITIES AND SPECIFICATIONS.....	524240456	8000 YRM 1208	08/13
DIAGRAMS AND SCHEMATICS.....	524329117	8000 YRM 1387	04/14
DIAGRAMS AND SCHEMATICS.....	550001092	8000 YRM 1409	04/14
DIAGRAMS AND SCHEMATICS.....	550055283	8000 YRM 1585	04/14
DIAGRAMS AND SCHEMATICS.....	550096331	8000 YRM 1689	04/14
DIAGNOSTIC TROUBLESHOOTING MANUAL.....	524221866	9000 YRM 1112	12/14

9000 YRM 1112 ON CD
PART NO. 524240452 (12/14)

General



WARNING

The lift truck must be put on blocks for some types of maintenance and repairs. The removal of the following assemblies will cause large changes in the center of gravity: mast, drive axle, engine and transmission, and counterweight. When the lift truck is put on blocks, put additional blocks in the following positions to maintain stability:

- Before removing the mast and drive axle, put blocks under the counterweight so the lift truck cannot fall backward.
- Before removing the counterweight, put blocks under the mast assembly so the lift truck cannot fall forward.

The surface must be solid, even, and level when the lift truck is put on blocks. Make sure that any blocks used to support the lift truck are solid, one-piece units. See the Operating Manual or the section

Periodic Maintenance 8000 YRM 1150 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

Periodic Maintenance 8000 YRM 1207 for lift truck models

- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)

NOTE: For exhaust system procedure for lift trucks equipped with a Mazda 2007 emissions compliant engine and for lift trucks built after January, 2010 go to section **LPG Fuel System, Mazda FE and F2 Emission Compliant Engines** 900 YRM 1326 or **Gasoline Fuel System, Mazda FE and F2 Emission Compliant Engines** 900 YRM 1325 for exhaust system procedures.

For lift trucks built after January, 2010 and equipped with a GM 2.4L engine, go to section **LPG Fuel System, GM 2.4L Engine** 900 YRM 1124 for exhaust system procedures.

This section contains the description of the frame (see Figure 1) and connected parts. Procedures for removing and installing the counterweight, hood, overhead guard, engine, cooling system, and exhaust system (see **NOTE** above) are found in this section. Checks for the operator restraint system and procedures for the repair of tanks and installation of safety labels are also included.

Description

The frame is one weldment and includes the hydraulic tank and fuel tank for gasoline or diesel fuel. See Figure 1.

There is a counterweight for each capacity of lift truck. The counterweights are similar in appearance, but are different weights.

See Table 3 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)

Table 4 for lift truck models

- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

Table 5 for lift truck models

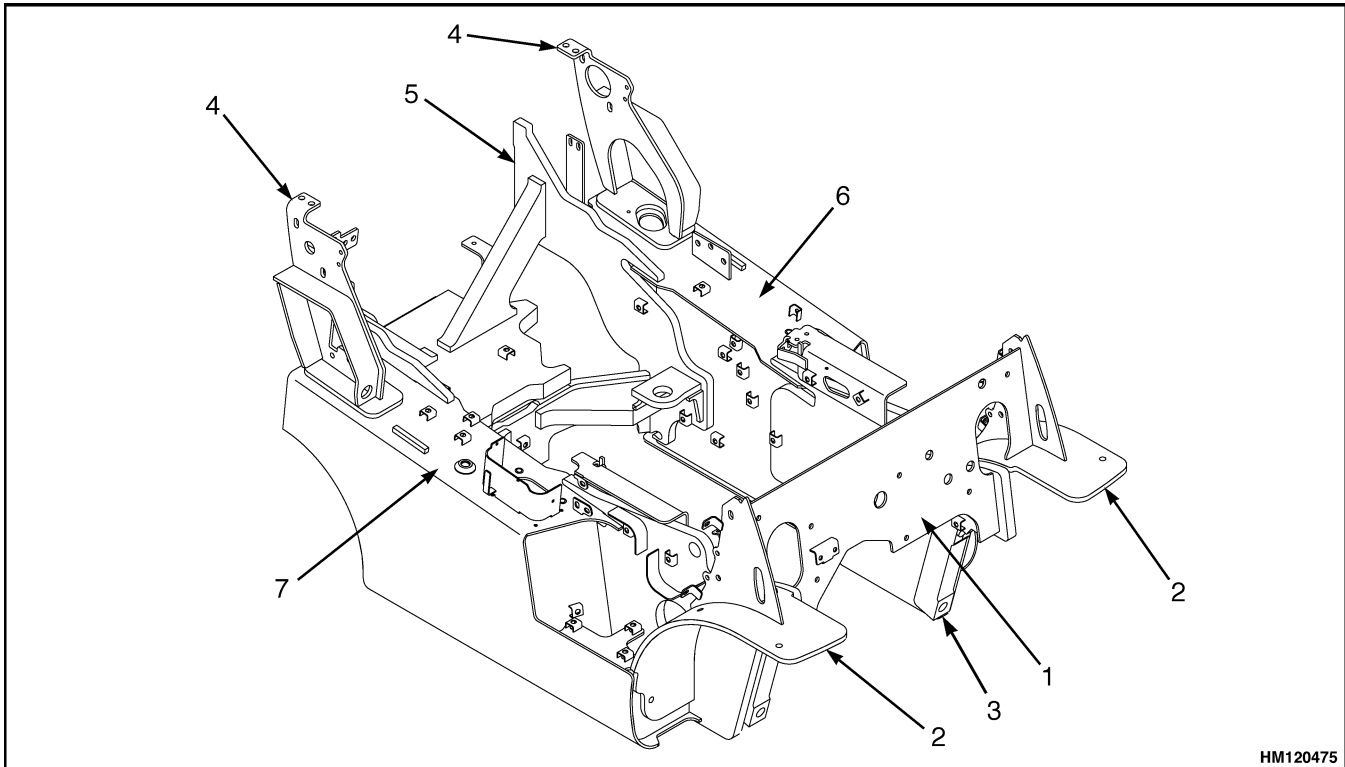
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)

Table 6 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

The muffler is fastened to the frame inside the counterweight.

The overhead guard, cowl, and hood are installed on the frame. The hood is connected to the frame with hinges. Two gas-controlled springs provide assistance when raising the hood and hold the hood in the open position. The floor plate and side covers can be removed for access to the engine, transmission, and other components.



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- | | |
|----------------|------------------------------|
| 1. COWL PLATE | 5. COUNTERWEIGHT MOUNTS |
| 2. FENDERS | 6. FUEL TANK (GAS OR DIESEL) |
| 3. FRAME | 7. HYDRAULIC TANK |
| 4. HOOD MOUNTS | |

Figure 1. Frame

Hood, Seat, and Side Covers Replacement

REMOVE

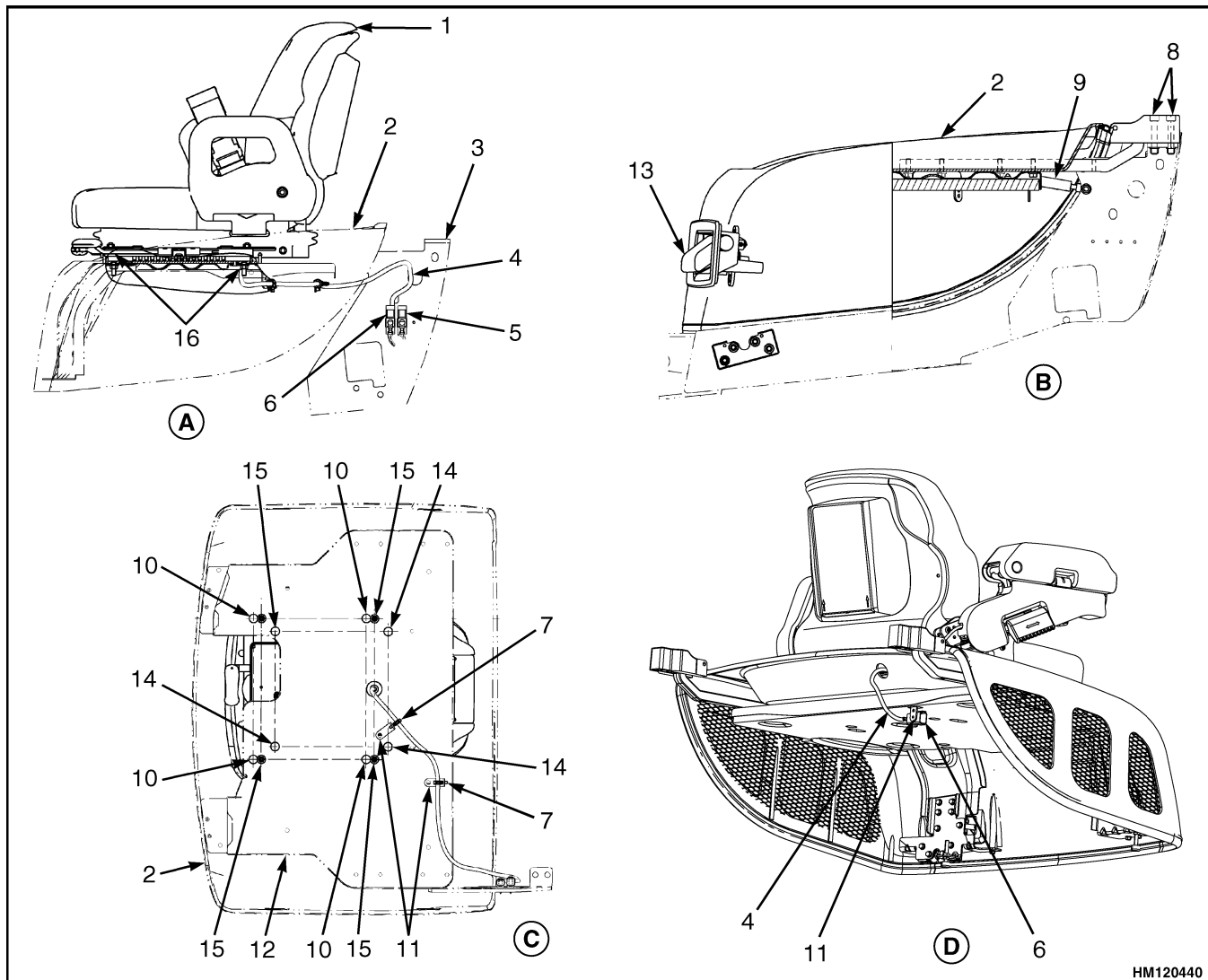
1. Slide seat to the closest position to steering column.
2. Fully tilt steering column forward.
3. If your truck is equipped with an LPG tank, swing tank off to the side.
4. Raise latch on the left, front corner of the hood to unlatch and lift up hood. See Figure 2.
5. Remove floor mat and floor plate.

See Figure 3 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)
- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

See Figure 4 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

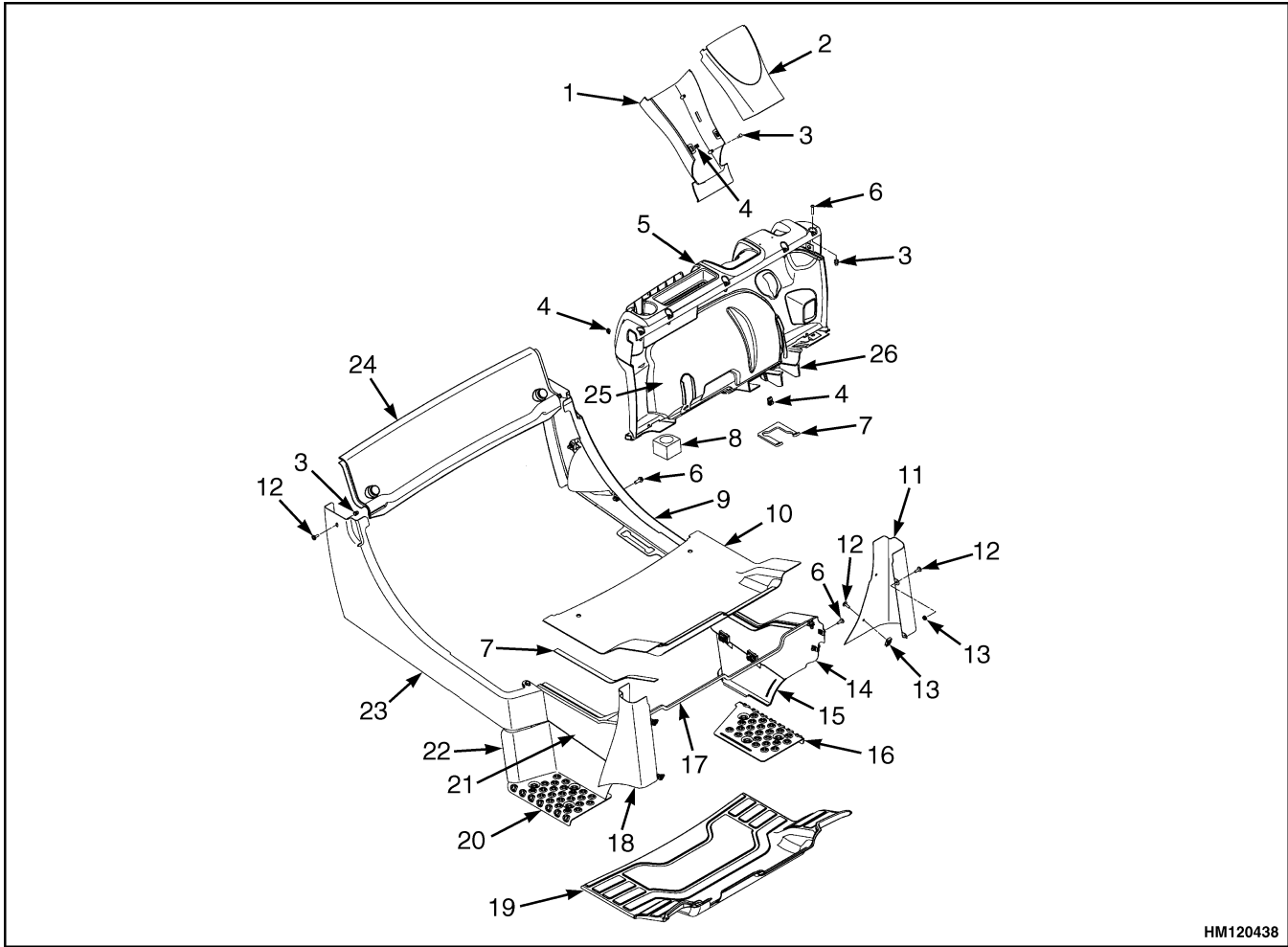


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NOTE: SWIVEL SEAT AND VENTED HOOD ARE OPTIONAL FEATURES.

- | | |
|---|---|
| <p>A. SIDE VIEW OF HOOD AND SEAT</p> <p>B. SIDE VIEW OF HOOD</p> <p>C. BOTTOM VIEW OF HOOD</p> <ol style="list-style-type: none"> 1. SEAT 2. HOOD 3. FRAME 4. SEAT WIRE HARNESS 5. SEAT WIRE HARNESS CONNECTOR (WITHOUT ELECTRONIC CONTROL) 6. SEAT WIRE HARNESS CONNECTOR (WITH ELECTRONIC CONTROL) 7. CABLE CLIPS 8. HINGE SCREWS 9. GAS SPRING | <p>D. SIDE VIEW OF VENTED HOOD WITH SWIVEL SEAT</p> <ol style="list-style-type: none"> 10. ATTACHMENT HOLES ATTACHING HOOD TO SEAT (SEMI-SUSPENSION) 11. SEAT WIRE HARNESS BRACKETS 12. SEAT LINER 13. HOOD LATCH 14. ATTACHMENT HOLES ATTACHING HOOD TO SEAT (NON-SUSPENSION) 15. ATTACHMENT HOLES ATTACHING HOOD TO SEAT (FULL SUSPENSION) 16. SPACER |
|---|---|

Figure 2. Hood and Seat Arrangement



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- | | |
|--------------------------------|-----------------------------|
| 1. LOWER STEERING COLUMN COVER | 14. LEFT HAND FRONT PANEL |
| 2. UPPER STEERING COLUMN COVER | 15. LEFT HAND STEP PANEL |
| 3. INSERT | 16. LEFT HAND TREAD PLATE |
| 4. CLIP | 17. PLATE ASSEMBLY SEAL |
| 5. DASHBOARD | 18. RIGHT HAND FENDER COVER |
| 6. CAPSCREW | 19. FLOOR MAT |
| 7. SEAL | 20. RIGHT HAND TREAD PLATE |
| 8. GROMMET | 21. RIGHT HAND FRONT PANEL |
| 9. LEFT HAND REAR PANEL | 22. RIGHT HAND STEP PANEL |
| 10. FLOOR PLATE | 23. RIGHT HAND REAR PANEL |
| 11. LEFT HAND FENDER COVER | 24. RADIATOR COVER |
| 12. SCREW | 25. KICK PANEL |
| 13. NUT | 26. PLATE ASSEMBLY |

Figure 3. Side Cover, Floor Plate, and Cowl Components, Lift Truck Models GLC20-35VX (GC/GLC040-070VX,GC/GLC055SVX) (A910), GLP/GDP16-18VX, GLP/GDP20SVX (GP/GLP/GDP030-35VX, GP/GLP/GDP040SVX) (C810), and GC/GLC030-035VX, GC/GLC040SVX (C809)

6. Remove two capscrews holding left and right rear side covers to the frame. Remove rear side covers from frame.

See Figure 3 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)
- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

See Figure 4 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

7. Remove two capscrews holding left and right fender covers to front overhead guard leg. Remove covers.

See Figure 3 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)
- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

See Figure 4 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

8. Remove four capscrews holding left and right front side covers to frame. Remove covers.

9. Fully lower steering column.

10. Remove upper steering column cover by pulling up on upper steering column cover to release latches (one on either side), and pulling cover away from steering column. See Figure 5.

11. Remove five fasteners (see Figure 5) securing dash to the top of cowl. Remove four clips, located underneath dash, that attach dash to the kick panel. Lift to remove dash.

12. Lift the kick panel to remove from truck.

See Figure 3 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)
- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

See Figure 4 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

13. Remove three capscrews holding the seal plate. Remove seal plate. See Figure 6.

14. Disconnect seat wire harness connector. See Figure 2.



CAUTION

When removing the seat from the hood, DO NOT use an impact wrench to remove the capscrews. Damage can be caused to the threads on the screws and in the holes.

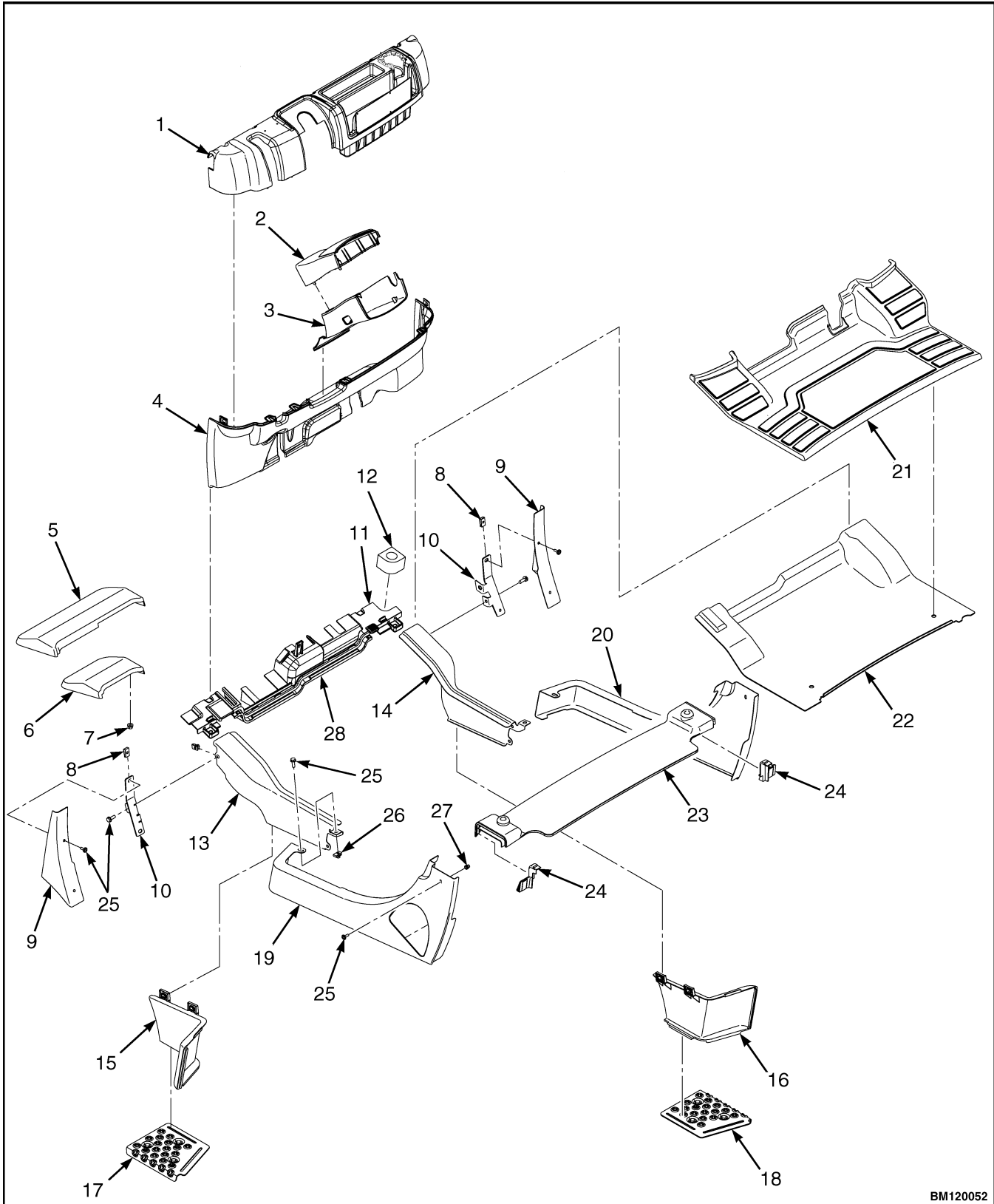
15. If seat is to be removed, and truck is equipped with a non-swivel seat, remove seat wire harness from seat wire harness brackets that are attached to the underside of hood. Remove the cable clips from the seat wire harness. If truck is equipped with a swivel seat, remove seat wire harness from seat wire harness bracket attached to underside of the hood and behind the seat (see Figure 2).

16. Remove four capscrews and washers holding the seat to hood. Lift seat off the hood. Pull seat wire harness through hood. See Figure 2.

17. Remove capscrews and washers at the top of gas springs. Remove gas springs from hood.

18. Remove hinge screws, located in the rear of the hood.

19. Lift hood from the truck. See Figure 2.

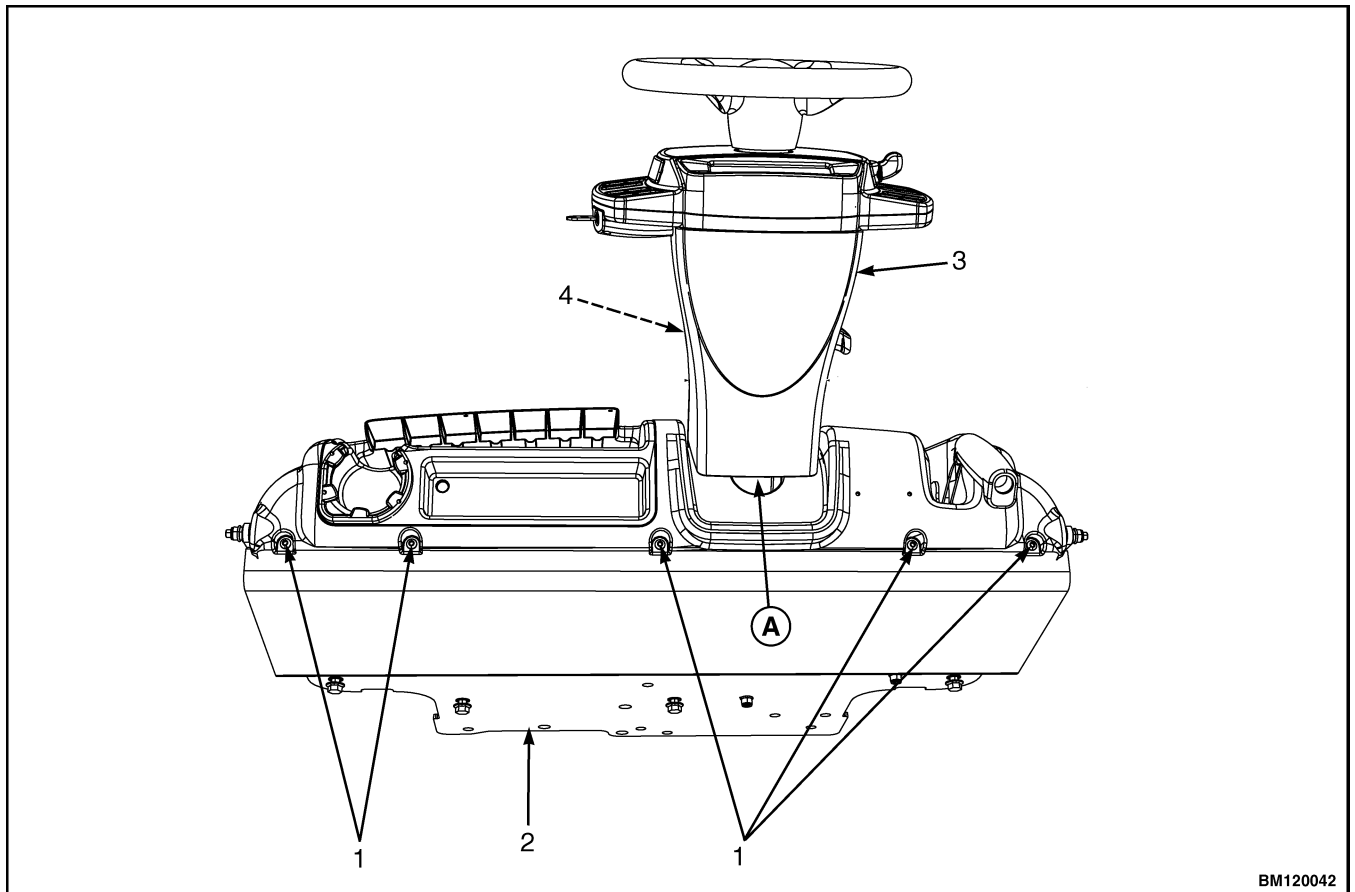


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Figure 4. Side Covers, Floor Plate, and Cowl Components, Lift Truck Models GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

Legend for Figure 4

- | | |
|--------------------------------|-------------------------|
| 1. DASH ASSEMBLY | 15. LEFT STEP PANEL |
| 2. UPPER STEERING COLUMN COVER | 16. RIGHT STEP PANEL |
| 3. LOWER STEERING COLUMN COVER | 17. LEFT STEP PLATE |
| 4. KICK PANEL | 18. RIGHT STEP PLATE |
| 5. MUD GUARD (LH) | 19. LEFT REAR PANEL |
| 6. MUD GUARD (RH) | 20. RIGHT REAR PANEL |
| 7. LOCK NUT | 21. FLOOR MAT |
| 8. NUT | 22. FLOOR PLATE |
| 9. COVER | 23. RADIATOR COVER |
| 10. BRACKET | 24. SEALS |
| 11. PLATE ASSEMBLY | 25. CAPSCREW |
| 12. GROMMET | 26. CLIP NUT |
| 13. LEFT FRONT PANEL | 27. INSERT |
| 14. RIGHT FRONT PANEL | 28. PLATE ASSEMBLY SEAL |



NOTE: TOP VIEW OF DASH SHOWN.

A. INDICATES TO PULL UP TO UNLATCH

- | | |
|-----------------|--------------------------------|
| 1. ALLEN SCREWS | 3. UPPER STEERING COLUMN COVER |
| 2. COWL | 4. LOWER STEERING COLUMN COVER |

Figure 5. Remove Dash From Cowl

INSTALL

1. Place hood onto the lift truck frame.
2. Install hinge screws, located in the rear of the hood, and tighten to 38 N•m (28 lbf ft). See Figure 2.
3. Align top holes in the gas springs with holes in hood. Install capscrews and washers to attach gas springs to hood. Tighten capscrews to 19.2 N•m (170 lbf in).

See Figure 7 and Table 1 for lift truck models

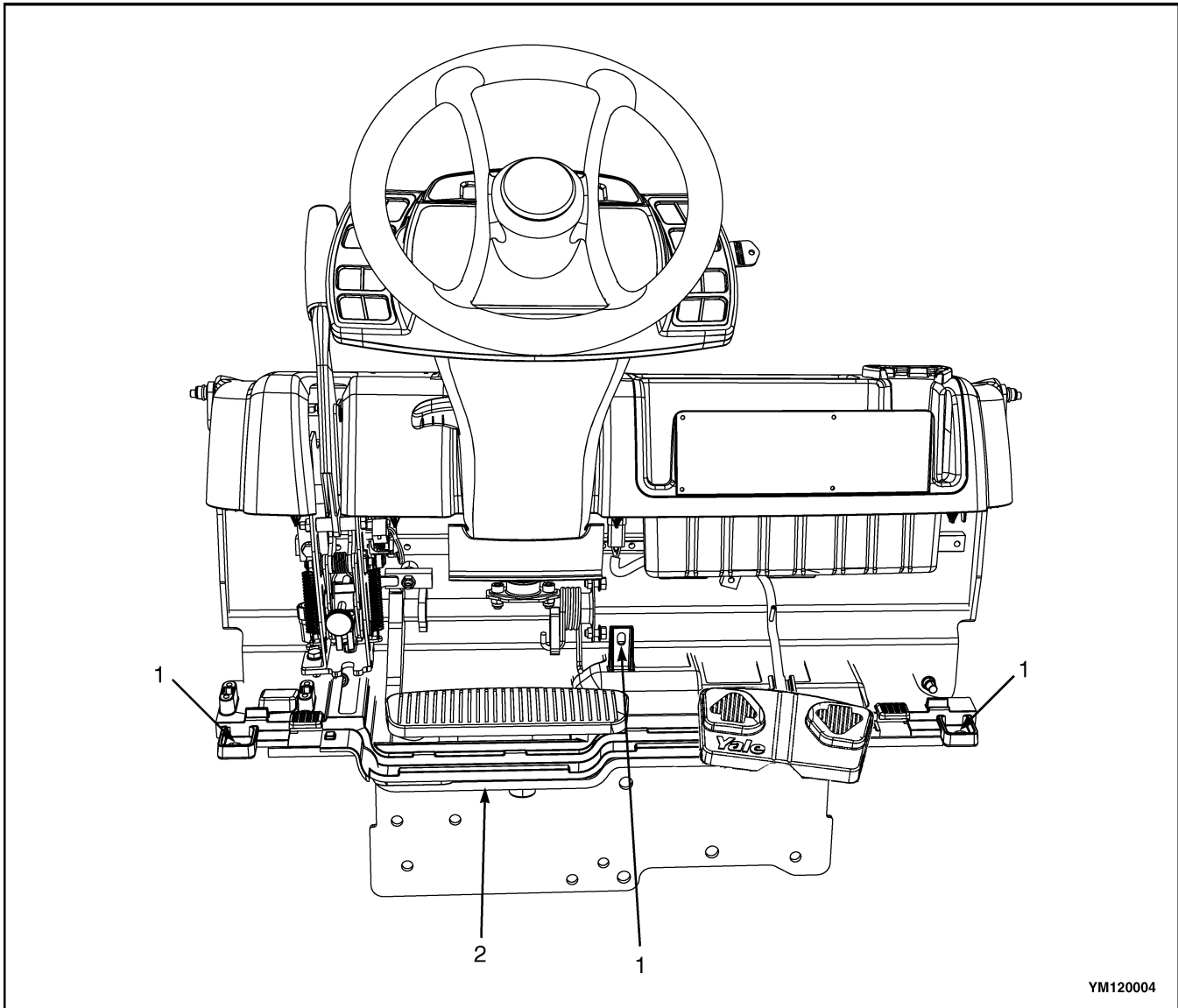
- GLP/GDP16VX, GLP/GDP18VX,
GLP/GDP20SVX (GP/GLP/GDP030VX,
GP/GLP/GDP035VX, GP/GLP/GDP030SVX)
(C810) and GLC20-35VX (GC/GLC040-070VX,
GC/GLC055SVX) (A910)

See Figure 8 for lift truck models

- GC/GLC030VX, GC/GLC035VX,
GC/GLC040SVX (C809)

See Figure 9 and Table 2 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX)
(B875)

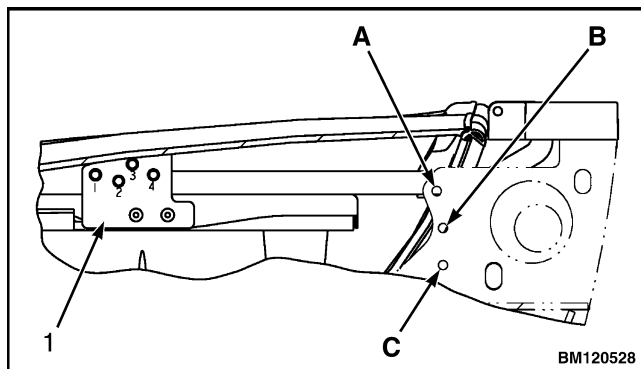


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1. CAPSCREWS

2. SEAL PLATE

Figure 6. Remove Seal Plate From Dash



Legend for Figure 7

NOTE: LEFT SIDE SHOWN

- A. MOUNTING LOCATION FOR CYLINDER END OF GAS SPRING FOR NON-SUSPENSION SEAT
- B. MOUNTING LOCATION FOR CYLINDER END OF GAS SPRING FOR SEMI OR FULL SUSPENSION SEAT
- C. MOUNTING LOCATION FOR CYLINDER END OF GAS SPRING FOR SEMI OR FULL SUSPENSION SEAT WITH CAB*

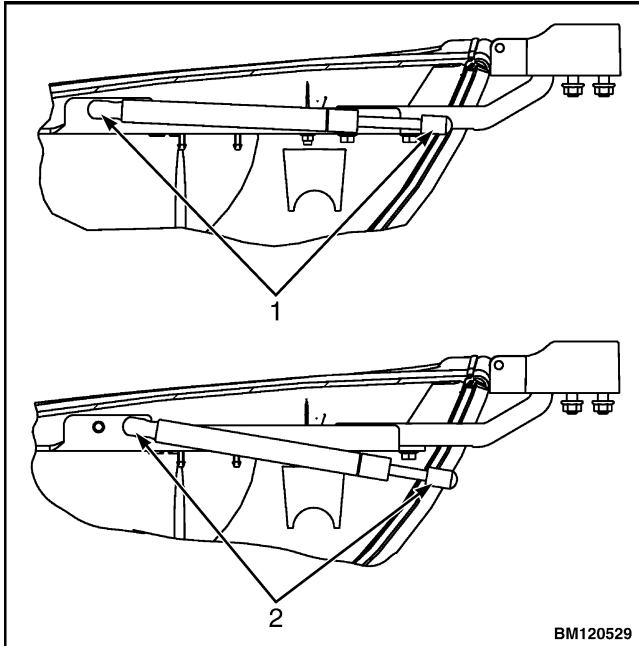
1. MOUNTING POINTS FOR GAS SPRING ON HOOD

*CAB ONLY ON LIFT TRUCK MODELS GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP030SVX) (C810)

Figure 7. Gas Spring Installation, Lift Truck Models GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP030SVX) (C810) and GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)

Table 1. Gas Spring Installation, Lift Truck Models GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP030SVX) (C810) and GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)

	Full or Semi Suspension Seat				Non-Suspension Seat			
	Frame		Hood		Frame		Hood	
	Left Side	Right Side	Left Side	Right Side	Left Side	Right Side	Left Side	Right Side
Seat Without E-Control	B	B	3	3	A	A	1	1
Seat With E-Control	B	B	2	2	N/A	N/A	N/A	N/A
Cab	C	C	2	2	N/A	N/A	N/A	N/A



Legend for Figure 8

NOTE: LEFT SIDE SHOWN.

1. MOUNTING LOCATION FOR CYLINDER END OF GAS SPRING FOR NON-SUSPENSION SEAT
2. MOUNTING LOCATION FOR CYLINDER END OF GAS SPRING FOR SEMI OR FULL SUSPENSION SEAT

Figure 8. Gas Spring Installation, Lift Truck Models GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

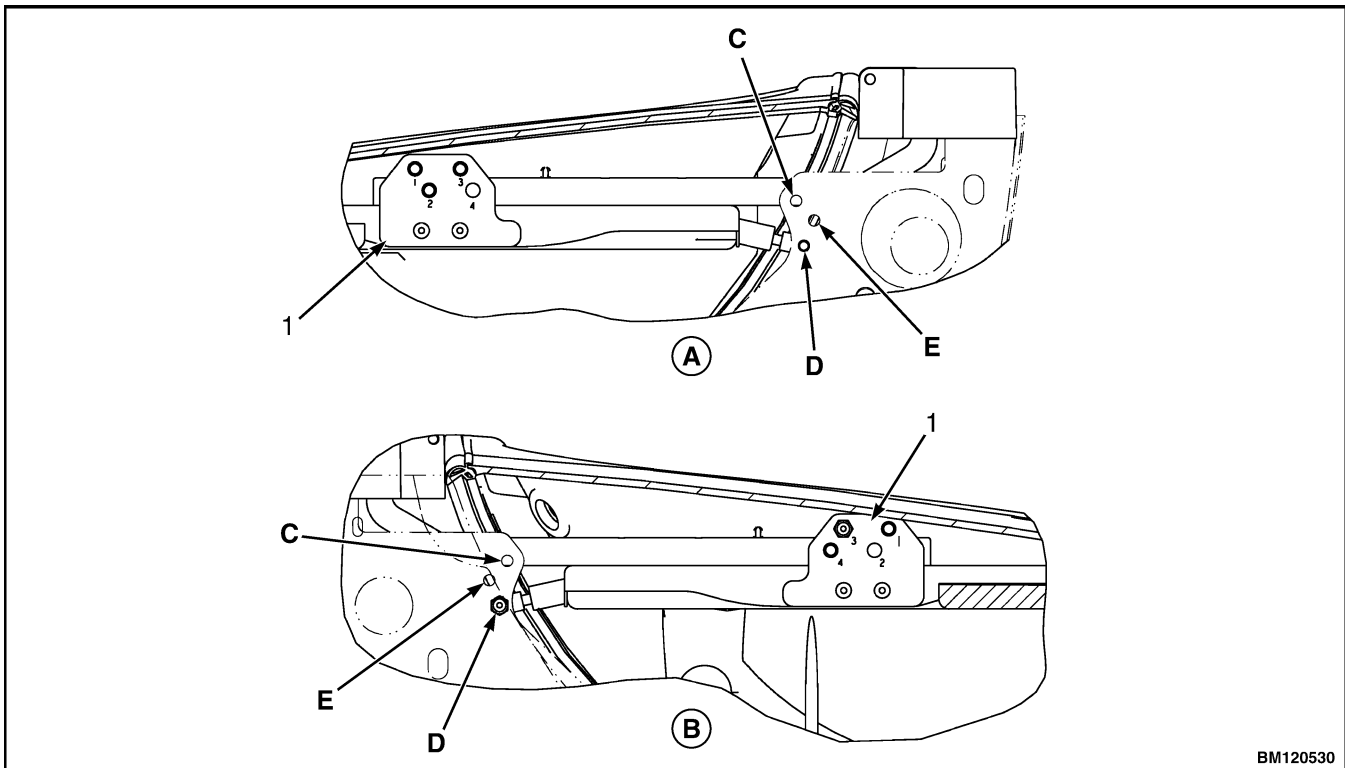


Figure 9. Gas Spring Installation, Lift Truck Models GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

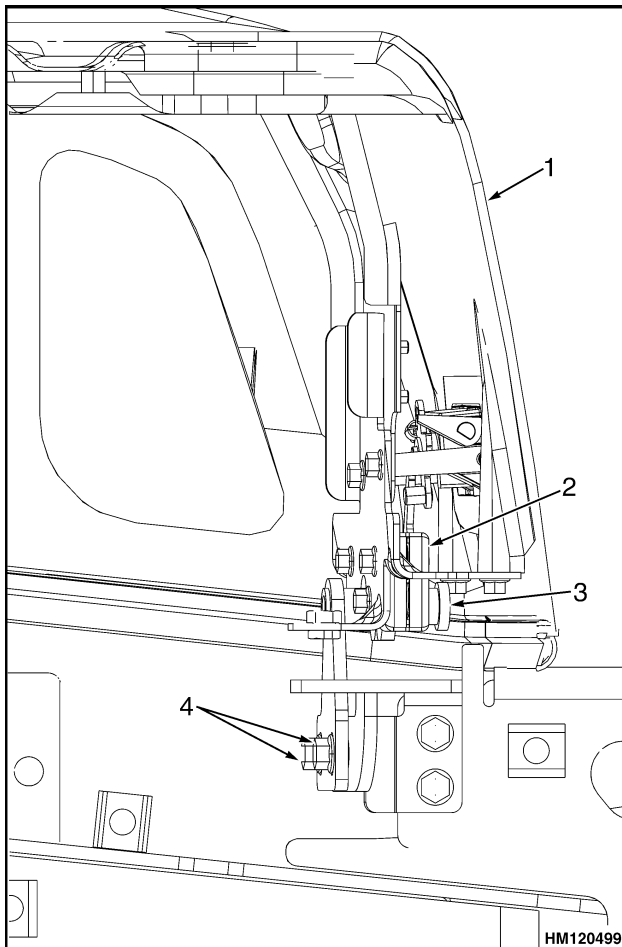
Legend for Figure 9

- A. LEFT SIDE
 - B. RIGHT SIDE
 - C. MOUNTING LOCATION FOR CYLINDER END OF GAS SPRING FOR NON-SUSPENSION SEAT
 - D. MOUNTING LOCATION FOR CYLINDER END OF GAS SPRING FOR SEMI OR FULL SUSPENSION SEAT, LIFT TRUCKS WITH CAB OR GP/GLP/GDP040-070VX (B875) LIFT TRUCKS WITHOUT CAB
 - E. MOUNTING LOCATION FOR CYLINDER END OF GAS SPRING FOR SEMI OR FULL SUSPENSION SEAT, LIFT TRUCKS GLP/GDP20-35VX (B875) WITHOUT CAB
1. MOUNTING POINTS FOR GAS SPRING ON HOOD

Table 2. Gas Spring Installation, Lift Truck Models GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

	Full or Semi Suspension Seat				Non-Suspension Seat			
	Frame		Hood		Frame		Hood	
	Left Side	Right Side	Left Side	Right Side	Left Side	Right Side	Left Side	Right Side
Non-Cab GP/GLP/ GDP040- 070VX (B875)	D	D	3	3	C	C	1	1
Non-Cab GLP/ GDP20- 35VX (B875)	E	E	2	2	C	C	1	1
Cab	D	D	1	1	N/A	N/A	N/A	N/A

4. Install latch striker in highest slot position. Check that latch striker is in center of jaws of hood latch when hood closes. Open and close hood to ensure that center pin strikes hood latch properly and that the stop screw contacts frame. A properly closed hood MUST click twice on the hood latch. If the hood latch does not close properly, loosen capscrews on the back of center pin and adjust center pin up or down as required for correct alignment. See Figure 10.
5. Push down until hood just touches rubber bumper. Make sure latch striker is still in center of hood latch. Open hood and tighten capscrews for latch.
6. Check operation of hood latch. Have an operator sit in seat. Make sure hood is fully closed (two clicks). Also check that hood touches rubber bumper. If necessary, repeat Step 5.



- | | |
|---------------|-------------|
| 1. HOOD | 4. CAPSCREW |
| 2. HOOD LATCH | |
| 3. CENTER PIN | |

Figure 10. Hood Latch Adjustment



CAUTION

When installing the seat to the hood, DO NOT use an impact wrench to install the capscrews. Damage can be caused to the threads on the screws and in the holes.

7. Place seat on the hood and thread seat wire harness through the hole in the hood. See Figure 2.
8. Align holes in the seat with the holes in hood. Insert washers and capscrews. Tighten capscrews to 18 N•m (159 lbf in).
9. If truck is equipped with a non-swivel seat, tie cable clips to seat wire harness and insert harness into seat wire harness brackets under hood. If truck is equipped with a swivel seat, secure seat harness to bracket. See Figure 2.
10. Install seal plate using three capscrews. See Figure 6.
11. Install kick panel onto truck.

See Figure 3 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)
- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

See Figure 4 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

12. Install dash to top of cowl. See Figure 5. Install four clips to attach the dash to kick panel.
13. Install upper steering column cover to dash.
14. Using four capscrews, install left and right front side covers to frame.

See Figure 3 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)
- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

See Figure 4 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

15. Using two capscrews, install left and right fender covers to front of overhead guard legs.

16. Using two capscrews, install left and right rear side covers to frame.

See Figure 3 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX,

GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)

- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

See Figure 4 for lift truck models

- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

17. Install floor mat and floor plate.

18. If truck is equipped with an LPG tank, swing LPG tank into position on back of counterweight.

19. Adjust the steering column and seat positions.

Steering Column

DESCRIPTION

This section describes the repair procedures for the steering column. The steering column assembly mounts to the cowl inside the operator compartment and is the mechanical connection between the steering wheel and the steering control unit. The steering column includes the steering wheel, housing, bracket and lower shaft. For lift trucks with gas and LPG engines, bolts and bushings attach the steering column to the cowl standoffs. For lift trucks with diesel engines, bolts, bushings and isolators attach the steering column to the cowl standoffs. See Figure 11.

STEERING COLUMN REPAIR

Remove

1. Put blocks on each side (front and back) of tires to prevent lift truck from moving.



WARNING

Disconnect the battery before removing any covers to avoid injury to personnel.

2. Attach a tag on the battery connector or negative battery cable stating, DO NOT CONNECT BATTERY. Move the steering column to the most FORWARD position.



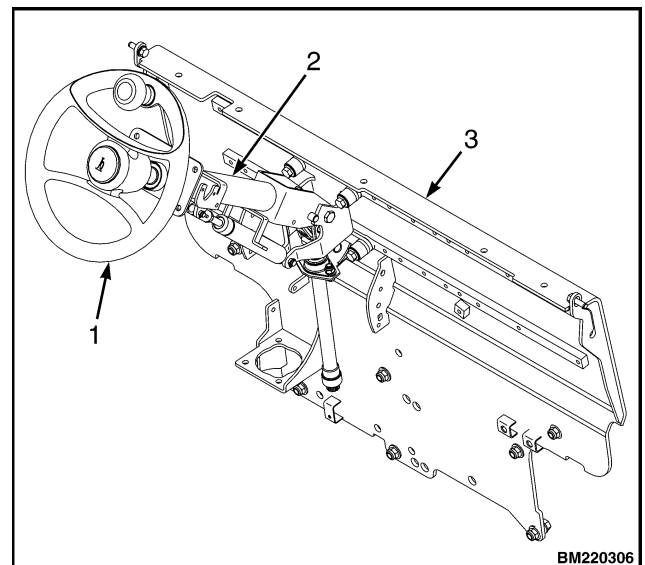
CAUTION

If a puller tool is used to remove steering wheel from steering column, be careful not to damage horn wires.

NOTE: This procedure is for the removal of all components of the steering column assembly. Not all components are removed for a repair procedure. Do only those steps of the procedure necessary to remove the required component.

NOTE: Tag wires prior to disconnect.

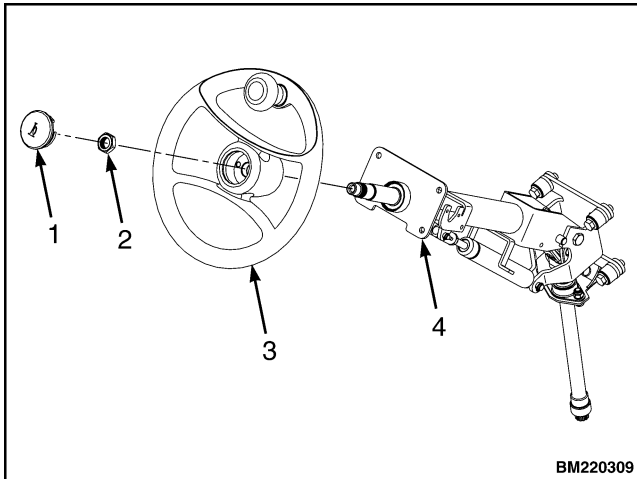
3. Remove the horn button assembly and disconnect electrical wires. Remove large hex nut and steering wheel from steering column. See Figure 12.



NOTE: DIESEL SHOWN, LPG AND GAS SIMILAR.

1. STEERING WHEEL
2. STEERING COLUMN
3. COWL

Figure 11. Steering Column and Cowl



1. HORN BUTTON
2. HEX NUT
3. STEERING WHEEL
4. STEERING COLUMN

Figure 12. Steering Wheel Remove/Install

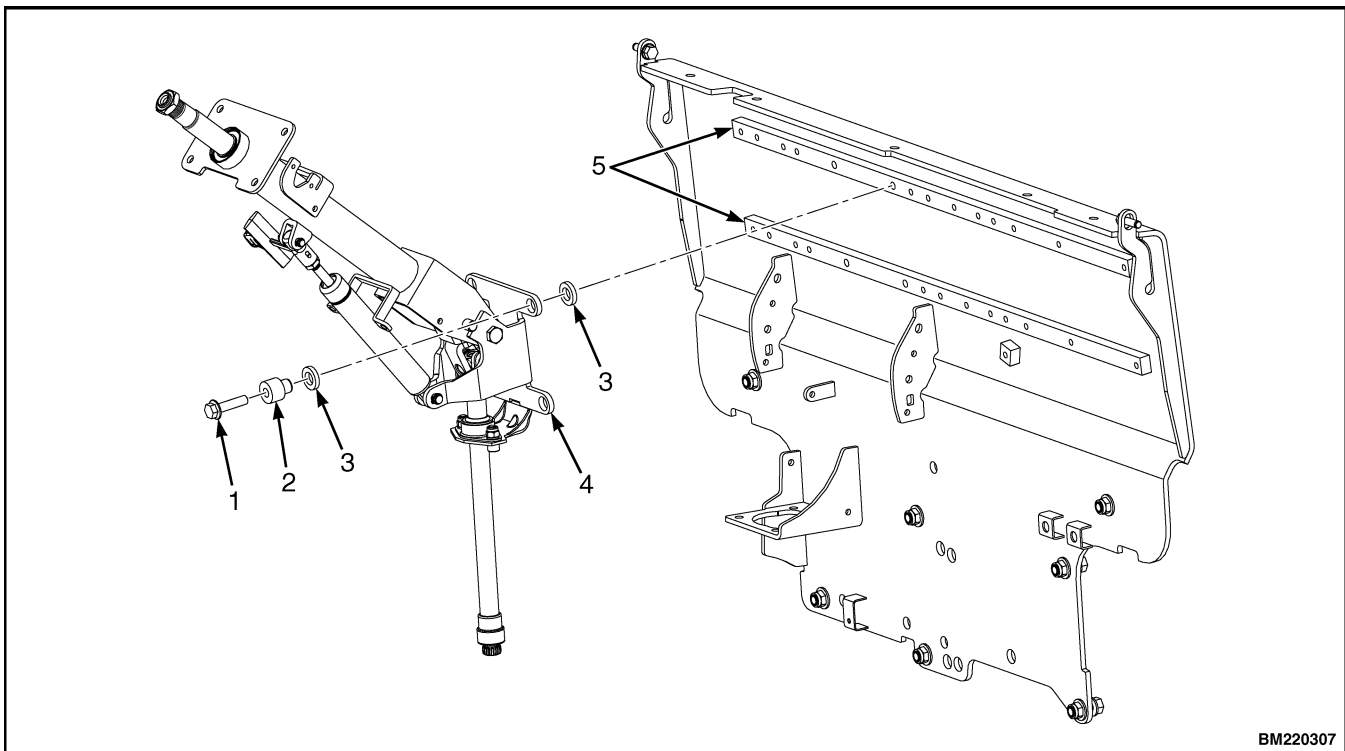
4. Remove steering column covers. Remove floor mats and floor plate. See section Hood, Seat, and Side Covers Replacement.

NOTE: Perform Step 5 for lift trucks equipped with gas or LPG engines.

5. Remove four capscrews, four bushings and steering column from cowl standoffs. See Figure 13.

NOTE: Perform Step 6 for lift trucks equipped with diesel engines.

6. Remove four capscrews, four bushings, four isolators, steering column and four isolators from cowl standoffs. See Figure 13.



NOTE: DIESEL SHOWN, LPG AND GAS SIMILAR.

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. CAPSCREW 2. BUSHING 3. ISOLATOR | <ol style="list-style-type: none"> 4. STEERING COLUMN 5. COWL STANDOFF |
|--|--|

Figure 13. Steering Column Remove/Install

Disassemble

NOTE: Remove and discard snap rings if installed.

1. Remove two pins and gas spring from housing.
 See Figure 14, for lift trucks manufactured before January, 2012.
 See Figure 15, for lift trucks manufactured after January, 2012.
2. Remove two pivot bolts, two bushings, two nuts and bracket from housing.
 See Figure 14, for lift trucks manufactured before January, 2012.
 See Figure 15, for lift trucks manufactured after January, 2012.
3. Remove split pin and lower shaft from upper shaft.
 See Figure 14, for lift trucks manufactured before January, 2012.
 See Figure 15, for lift trucks manufactured after January, 2012.
4. Remove connector from connector bracket. Remove connector bracket, fastener, four screws and two horn contacts from housing.
 See Figure 14, for lift trucks manufactured before January, 2012.
 See Figure 15, for lift trucks manufactured after January, 2012.

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 precautions.



WARNING

Compressed air is used for cleaning and drying purposes, or for cleaning restrictions. Wear protective clothing (goggles/shields, gloves, etc.). Make sure

the path of the compressed air is away from all personnel to avoid injury.

1. Clean metal parts in solvent. Remove all traces of old lubricant and dirt. Clean nonmetal parts with warm soapy water and a lint free cloth.
2. After cleaning, dry parts with compressed air. **DO NOT** dry parts with a cloth.

Inspect

1. Inspect for loose, burned, missing, cracked or damaged hardware.
2. Inspect all parts for dents, holes, bends, burrs, rust, corrosion or marred finishes.
3. Replace all defective or damaged parts.

Assemble

NOTE: This procedure is for the installation of all components of the steering column assembly. Not all components are removed for a repair procedure. Do only those steps of the procedure necessary to install the required component.

NOTE: Perform Step 1 only for lift trucks manufactured before January, 2012.

1. Lubricate the horn contact slip rings with a small amount of conductive grease (Yale P/N 582014302).
2. Install fastener, connector bracket and connector, two horn contacts and four screws.

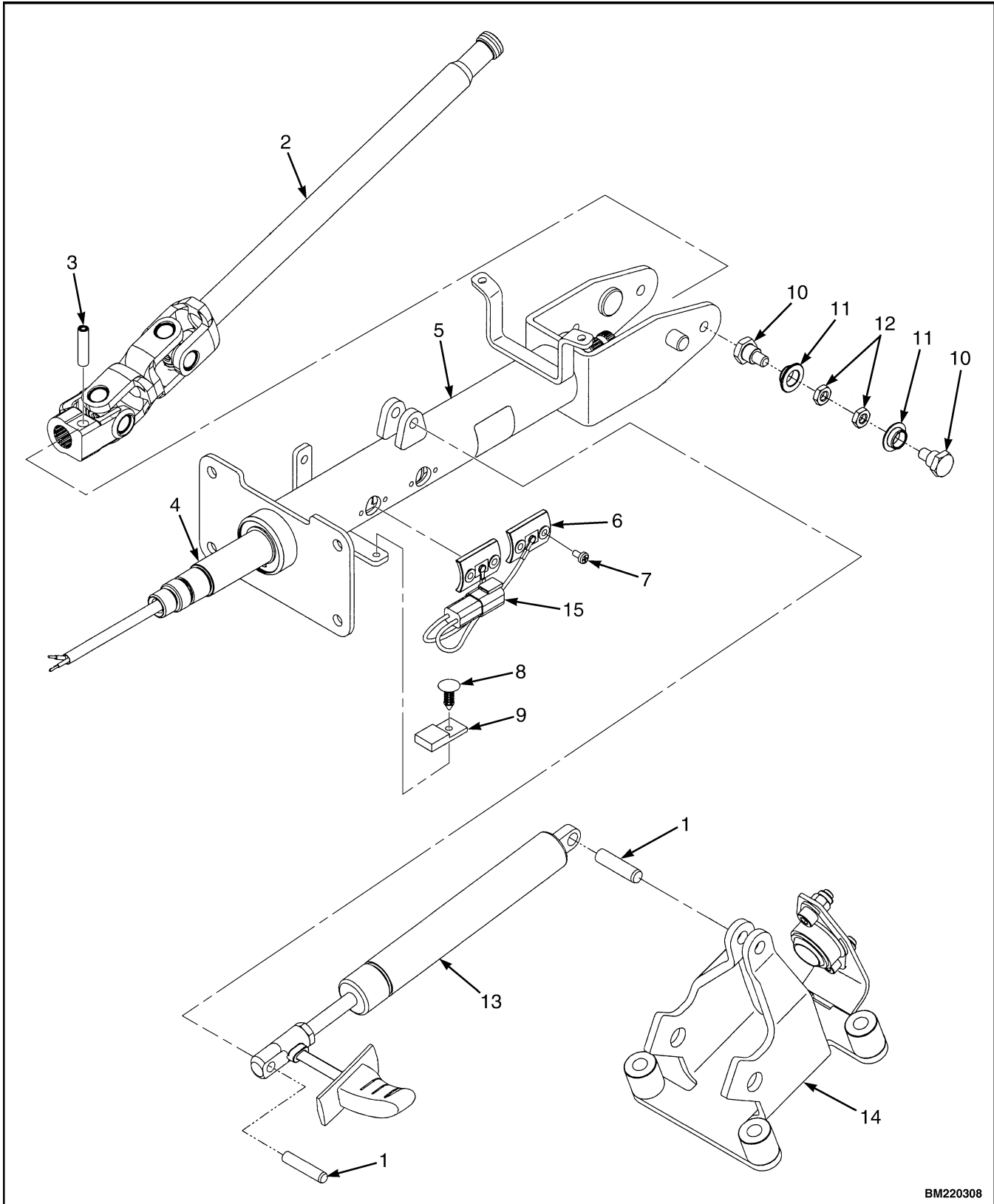
See Figure 14, for lift trucks manufactured before January 2012.

See Figure 15, for lift trucks manufactured after January 2012.

3. Assemble lower shaft and upper shaft, secure with spit pin.

See Figure 14, for lift trucks manufactured before January 2012.

See Figure 15, for lift trucks manufactured after January 2012.

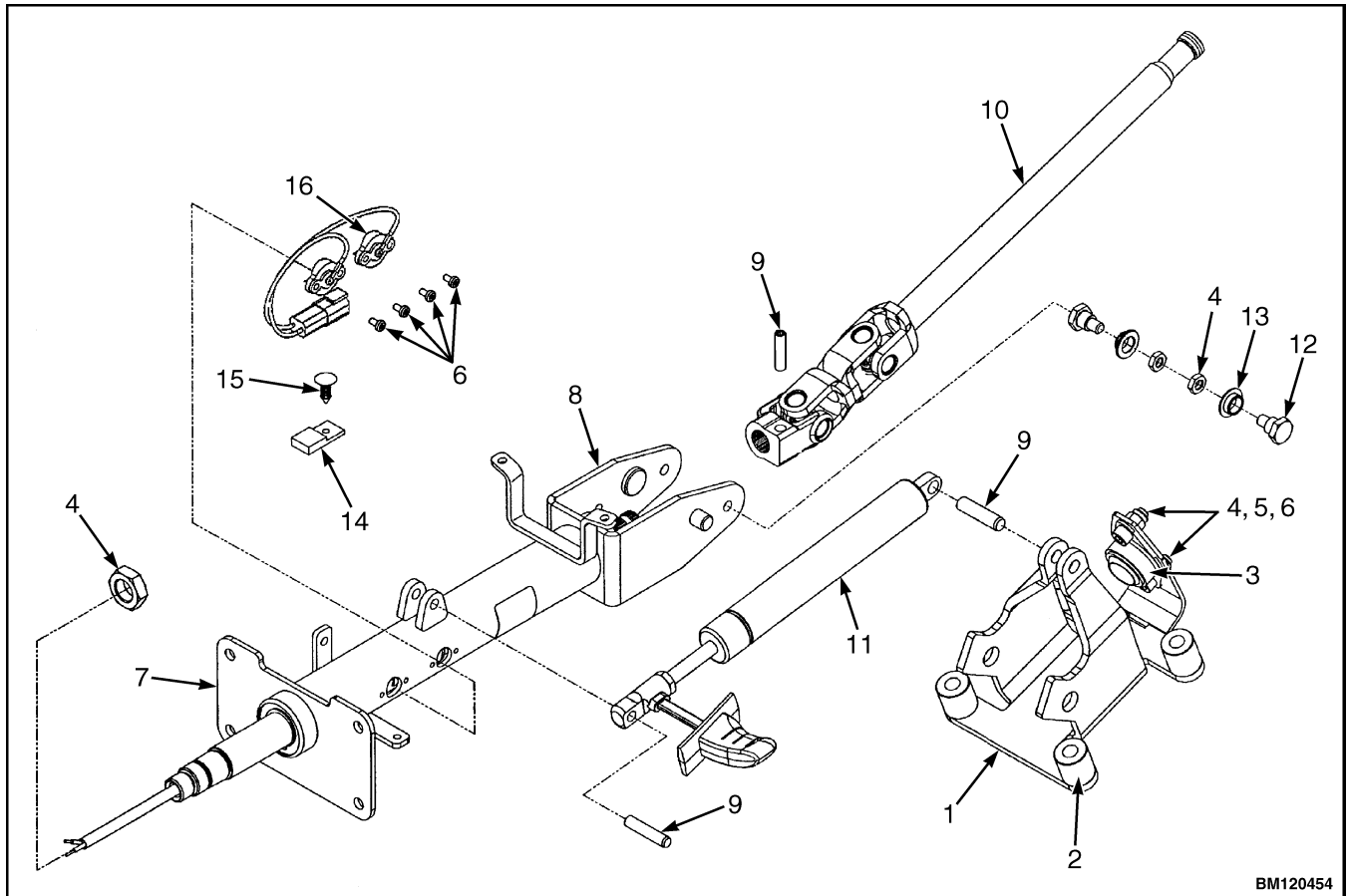


BM220308

Figure 14. Steering Column Assembly, Lift Trucks Manufactured Before January, 2012

Legend for Figure 14

- | | |
|-----------------|----------------------|
| 1. PIN | 9. CONNECTOR BRACKET |
| 2. LOWER SHAFT | 10. PIVOT BOLT |
| 3. SPLIT PIN | 11. BUSHING |
| 4. UPPER SHAFT | 12. NUT |
| 5. HOUSING | 13. GAS SPRING |
| 6. HORN CONTACT | 14. BRACKET |
| 7. SCREW | 15. CONNECTOR |
| 8. FASTENER | |



- | | |
|----------------|------------------|
| 1. BRACKET | 9. PIN |
| 2. SPACER | 10. LOWER SHAFT |
| 3. JOINT | 11. GAS SPRING |
| 4. NUT | 12. BOLT |
| 5. WASHER | 13. BUSHING |
| 6. SCREW | 14. CONNECTOR |
| 7. UPPER SHAFT | 15. FASTENER |
| 8. HOUSING | 16. HORN CONTACT |

Figure 15. Steering Column Assembly, Lift Trucks Manufactured After January, 2012

4. Install two pivot bolts, two bushings, two nuts and bracket onto housing.

See Figure 14, for lift trucks manufactured before January 2012.

See Figure 15, for lift trucks manufactured after January 2012.

5. Install gas spring and two pins on housing.

See Figure 14, for lift trucks manufactured before January 2012.

See Figure 15, for lift trucks manufactured after January 2012.

Install

NOTE: Lubricate spline end of lower shaft with multi purpose grease. See one of the **Service Manuals** for procedures

Periodic Maintenance 8000 YRM 1150 for lift truck models

- GLC20-35VX (GC/GLC040-070VX, GC/GLC055SVX) (A910)
- GLP/GDP20-35VX (GP/GLP/GDP040-070VX) (B875)

Periodic Maintenance 8000 YRM 1207 for lift truck models

- GC/GLC030VX, GC/GLC035VX, GC/GLC040SVX (C809)

- GLP/GDP16VX, GLP/GDP18VX, GLP/GDP20SVX (GP/GLP/GDP030VX, GP/GLP/GDP035VX, GP/GLP/GDP040SVX) (C810)

NOTE: Perform Step 1 for lift trucks equipped with gas or LPG engines.

1. Install steering column, four bushings and four bolts on cowl standoffs. Tighten bolts to 38 N•m (28 lbf ft). See Figure 13.

NOTE: Perform Step 2 for lift trucks equipped with diesel engines.

2. Install four isolators, steering column, four isolators, four bushings, and four bolts on cowl standoffs. Tighten bolts to 38 N•m (28 lbf ft). See Figure 13.
3. Install floor plate, floor mats, and steering column covers. See section Hood, Seat, and Side Covers Replacement.
4. Install steering wheel and hex nut on steering column, tighten hex nut to 40 to 54 N•m (30 to 40 lbf ft). Connect electrical wiring and install horn button. See Figure 12.
5. Remove tag from negative battery connector and connect to battery. Adjust steering column to neutral position.
6. Remove blocks from each side of tires.

LPG Tank and Bracket Assembly

For procedures to remove and install the LPG tank, LPG tank bracket, and the LPG tank alignment pin, see one of the following **Service Manuals**.

LPG Fuel System, GM 2.4L Engine 900 YRM 1124 for lift truck models

- GLC20-35VX (GLC040-070VX, GLC055SVX) (A910)
- GLP20-35VX (GLP040-070VX) (B875)

LPG Fuel System, Mazda 2.0L and 2.2L Engines 900 SRM 1125 for lift truck models

- GLC20-35VX (GLC040-070VX, GLC055SVX) (A910)

- GLP20-35VX (GLP040-070VX) (B875)
- GLC030VX, GLC035VX, GLC040SVX (C809)
- GLP16VX, GLP18VX, GLP20SVX (GLP030VX, GLP035VX, GLP040SVX) (C810)

LPG Fuel System, Mazda FE and F2 Emission Compliant Engines 900 YRM 1326 for lift truck models

- GLC20-35VX (GLC040-070VX, GLC055SVX) (A910)
- GLP20-35VX (GLP040-070VX) (B875)
- GLC030VX, GLC035VX, GLC040SVX (C809)
- GLP16VX, GLP18VX, GLP20SVX (GLP030VX, GLP035VX, GLP040SVX) (C810)

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