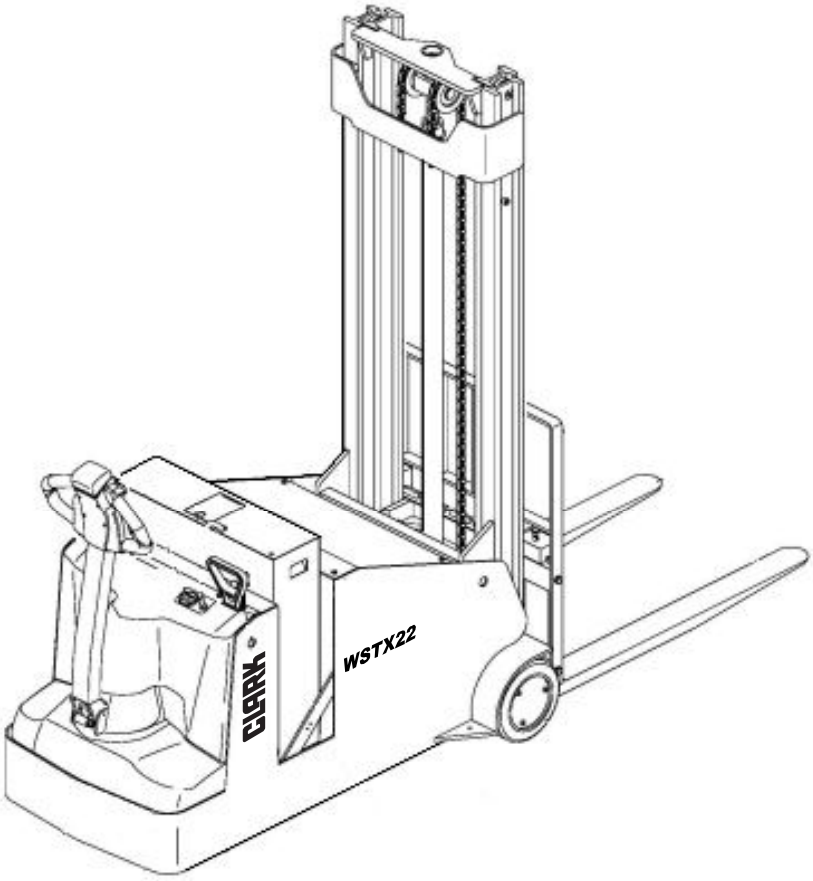
SM-735

WSTX22

Service Manual



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CLARK®
THE FORKLIFT

Technical Publications
Lexington, KY 40510
www.Clarkmhc.com

SAFETY

Safety Signs and Messages

Safety signs and messages in this manual and on the lift truck provide instructions and identify specific areas where potential hazards exist and special precautions should be taken. Be sure you know and understand the meaning of these instructions, signs, and messages. Damage to the truck, death, or serious injury to you or other persons may result if these messages are not followed.

NOTE

This message is used when special information, instructions or identification is required relating to procedures, equipment, tools, pressures, capacities, and other special data.

IMPORTANT

This message is used when special precautions should be taken to ensure a correct action or to avoid damage to, or malfunction of, the truck or a component.

⚠ CAUTION

This message is used as a reminder of safety hazards that can result in personal injury if proper precautions are not taken.

⚠ WARNING

This message is used when a hazard exists that can result in injury or death if proper precautions are not taken.

⚠ DANGER

This message is used when an extreme hazard exists that can result in injury or death or serious injury if proper precautions are not taken. The above terms have been adopted by Clark Material Handling Company. The same terms may be used in different context in service literature supplied directly or indirectly by vendors of truck components.

Safe Maintenance Practices

The following instructions have been prepared from current industry and government safety standards applicable to industrial truck operation and maintenance. These recommended procedures specify conditions, methods, and accepted practices that aid in the safe maintenance of industrial trucks. They are listed here for the reference and safety of all workers during maintenance operations. Carefully read and understand these instructions and the specific maintenance procedures before attempting to do any repair work.

When in doubt of any maintenance procedure, please contact your local Clark dealer.

1. Powered industrial trucks can become hazardous if maintenance is neglected. Therefore, suitable maintenance facilities, trained personnel, and procedures must be provided.
2. Maintenance and inspection of all powered industrial trucks shall be done in conformance with the manufacturer's recommendations.
3. A scheduled planned maintenance, lubrication, and inspection program shall be followed.
4. Only trained and authorized personnel shall be permitted to maintain, repair, adjust, and inspect industrial trucks. Work should be performed in accordance with the manufacturer's specifications.
5. Properly ventilate work area, vent exhaust fumes, and keep shop clean and floor dry.
6. Avoid fire hazards and have fire protection equipment present in the work area. Do not use an open flame to check for level or leakage of fuel, electrolyte, oil, or coolant. Do not use open pans of fuel or flammable cleaning fluids for cleaning parts.
7. Before starting work on truck:

- a. Raise drive wheels off of floor and use blocks or other positive truck positioning devices.
- b. Disconnect battery before working on the electrical system.

8. Before working on engine fuel system of gasoline- or diesel-powered trucks, be sure the fuel shut-off valve is closed.
9. Operation of the truck to check performance must be conducted in an authorized, safe,clear area.

Section 5

Steering Arm, Control Head and Compartment

5-1 Control Head

5-1.1 Cap Assembly Removal

1. Engage the emergency stop switch and turn off key switch.
2. Remove four screws (17, Figure 5-1), lift up cap assembly (24) and disconnect harness from harness (15, Figure 5-2).

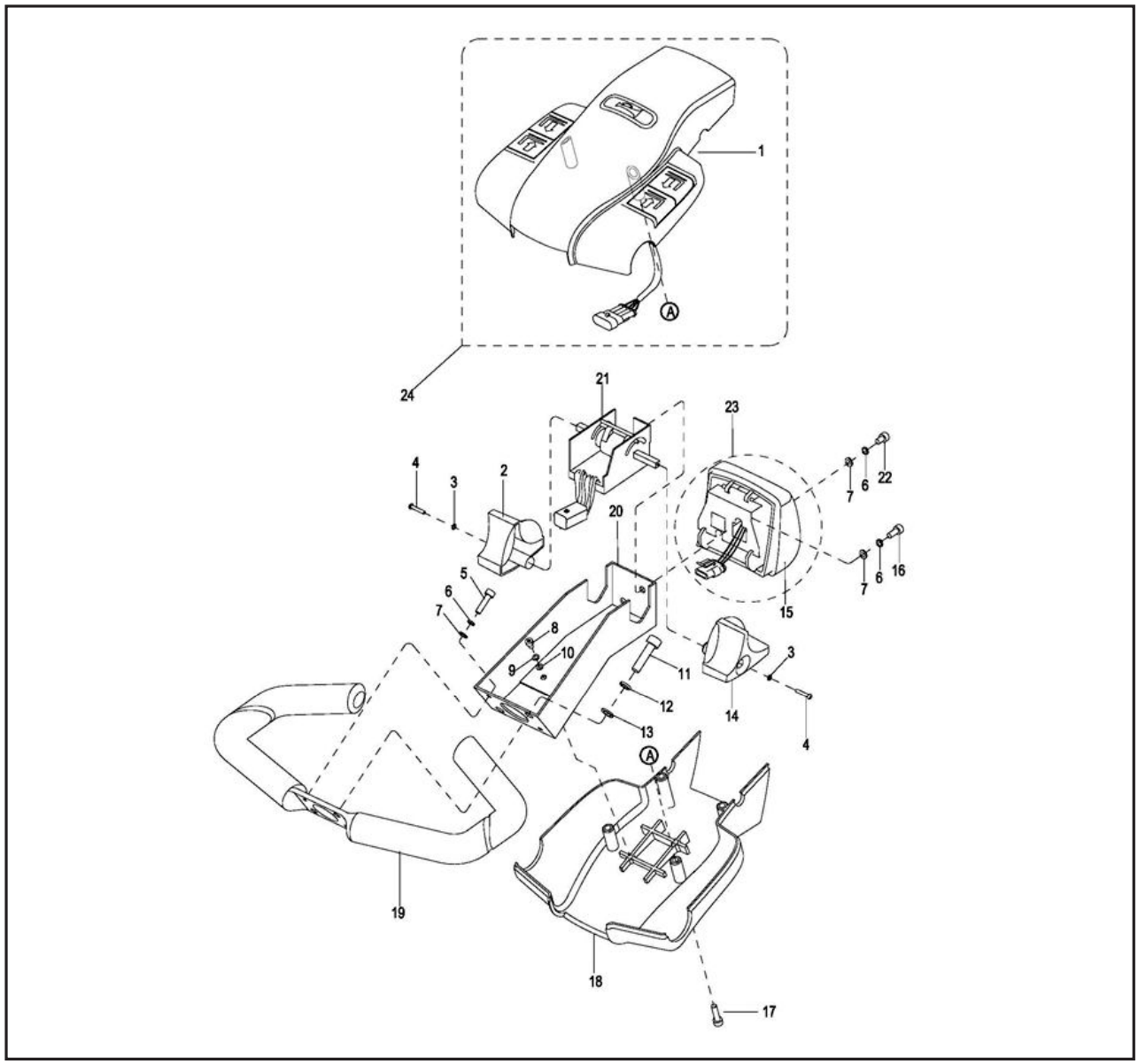

Figure 5-1 Control Head

5-1.2 Cap Assembly Installation

1. Hold cap assembly (24, Figure 5-1) in place and connect harness to harness (15, Figure 5-2).
2. Position cap assembly (24, Figure 5-1) on control head and secure with four screws (17).
3. Disengage the emergency stop switch and turn on key switch.

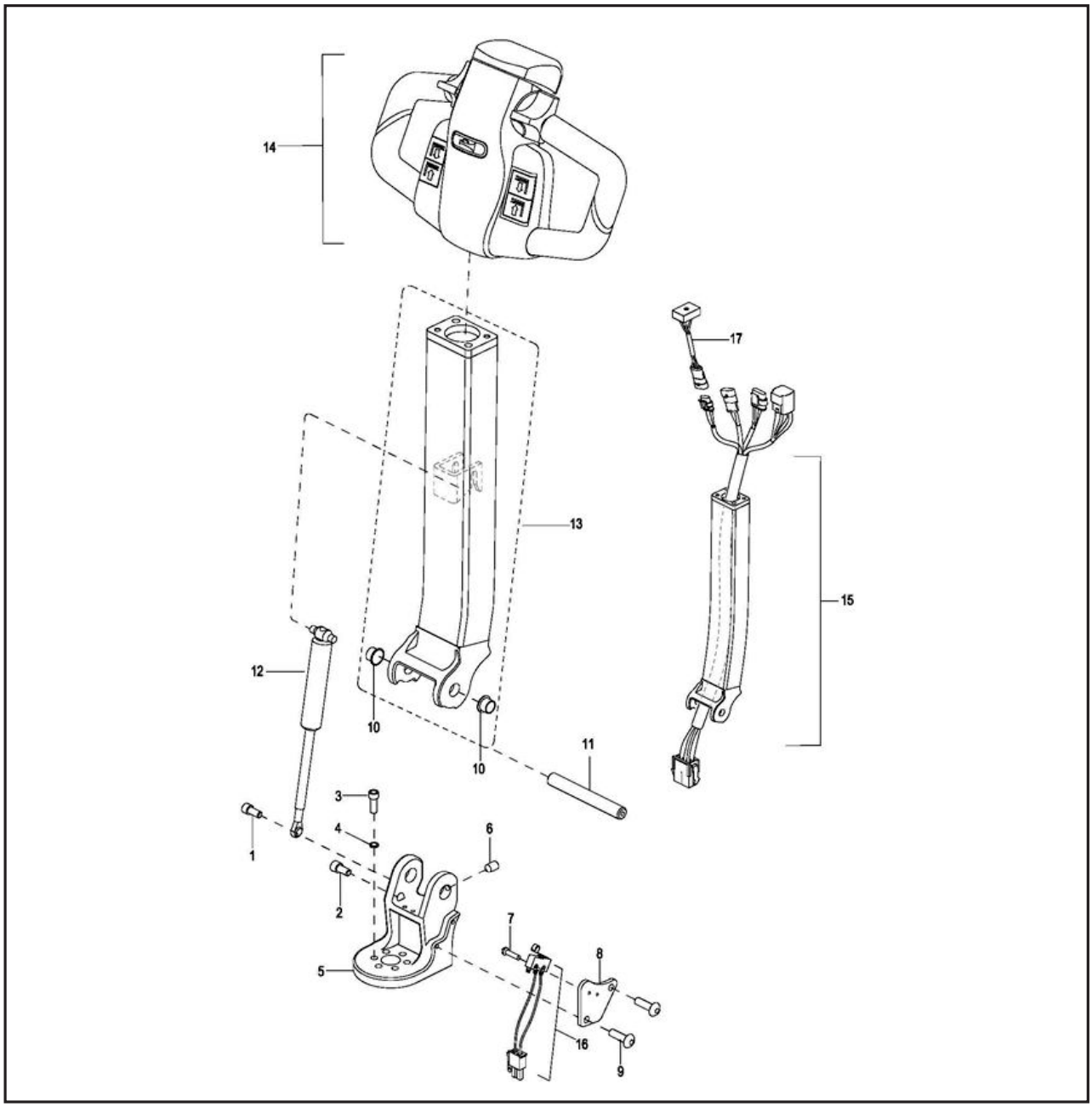

Figure 5-2 Steering Arm

5-1.3 Control Head Removal

1. Remove the cap assembly as described in paragraph 5-1.1.
2. Disconnect harness (15, Figure 5-2) from potentiometer (21, Figure 5-1) and reversing switch (25).
3. Remove two screws (11), two lock washers (12) and two flat washers (13).

⚠ WARNING

When removing the control head in the following steps, be sure to hold it in place until the control harness is disconnected.

1. Remove two screws (5), two washers (6) and two flat washers (7).
2. Remove the control head and handle (19).

5-1.4 Control Head Installation

1. Hold control head and handle (19, Figure 5-1) in place and install two screws (5), two washers (6) and two flat washers (7).
2. Install two screws (11), two lock washers (12) and two flat washers (13).
3. Reconnect harness (15, Figure 5-2) to potentiometer (21, Figure 5-1) and reversing switch (25).
4. Install the cap assembly as described in paragraph 5-1.2.

5-1.5 Speed Potentiometer Replacement.

1. Remove the cap assembly as described in paragraph 5-1.1.
2. Disconnect harness (15, Figure 5-2) from potentiometer (21, Figure 5-1).
3. Remove screw (4), washer (3) and control knob (2) from potentiometer (21).
4. Remove screw (4), washer (3) and control knob (14) from other side of potentiometer (21).
5. Remove screw (22), lock washer (6) and flat washer (7).
6. Remove screw (16), lock washer (6) and flat washer (7) and remove potentiometer (21) from bracket (20).
7. Position new potentiometer (21) in bracket (20) and secure with screw (16), lock washer (6) and flat washer (7).
8. Install screw (22), lock washer (6) and flat washer (7).
9. Install control knob (14) on potentiometer (21) and secure with screw (4), and washer (3).
10. Install control knob (2) on the other side of potentiometer (21) and secure with screw (4), and washer (3).
11. Connect harness (15, Figure 5-2) to potentiometer (21, Figure 5-1).
12. Install the cap assembly as described in paragraph 5-1.2.

5-1.6 Belly-Button Switch Replacement.

1. Remove the cap assembly as described in paragraph 5-1.1.
2. Disconnect harness (15, Figure 5-2) from reversing switch (23, Figure 5-1).
3. Remove screw (22), lock washer (6) and flat washer (7).
4. Remove screw (16), lock washer (6) and flat washer (7) and remove switch assembly (23) from bracket (20).
5. Remove pin (5, Figure 5-3), bracket (4), and spring (2) from button (1).
6. Remove two pins (3) and switch assembly (15, Figure 5-4) from bracket (4, Figure 5-3).
7. Position the new switch assembly (15, Figure 5-4) in bracket (4, Figure 5-3) and secure with two pins (3).
8. Position bracket (4) in button (1) and install pin (5).
9. Position switch assembly (23, Figure 5-1) on bracket (20) and secure with two screws (22 & 16).
10. Reconnect harness (15, Figure 5-2) to reversing switch (23, Figure 5-1).
11. Install the cap assembly as described in paragraph 5-1.2.

5-1.7 Horn Switch Replacement.

1. Remove the cap assembly as described in paragraph 5-1.1.
2. Remove three screws (11, Figure 5-4), bracket (10) and springs (10).
3. Remove two pins (10) and defective switch from bracket (10).
4. Position the new switch in bracket (10) and secure with two pins (10).
5. Position bracket (10) in cover (1) and secure with three screws (11).
6. Install the cap assembly as described in paragraph 5-1.2.

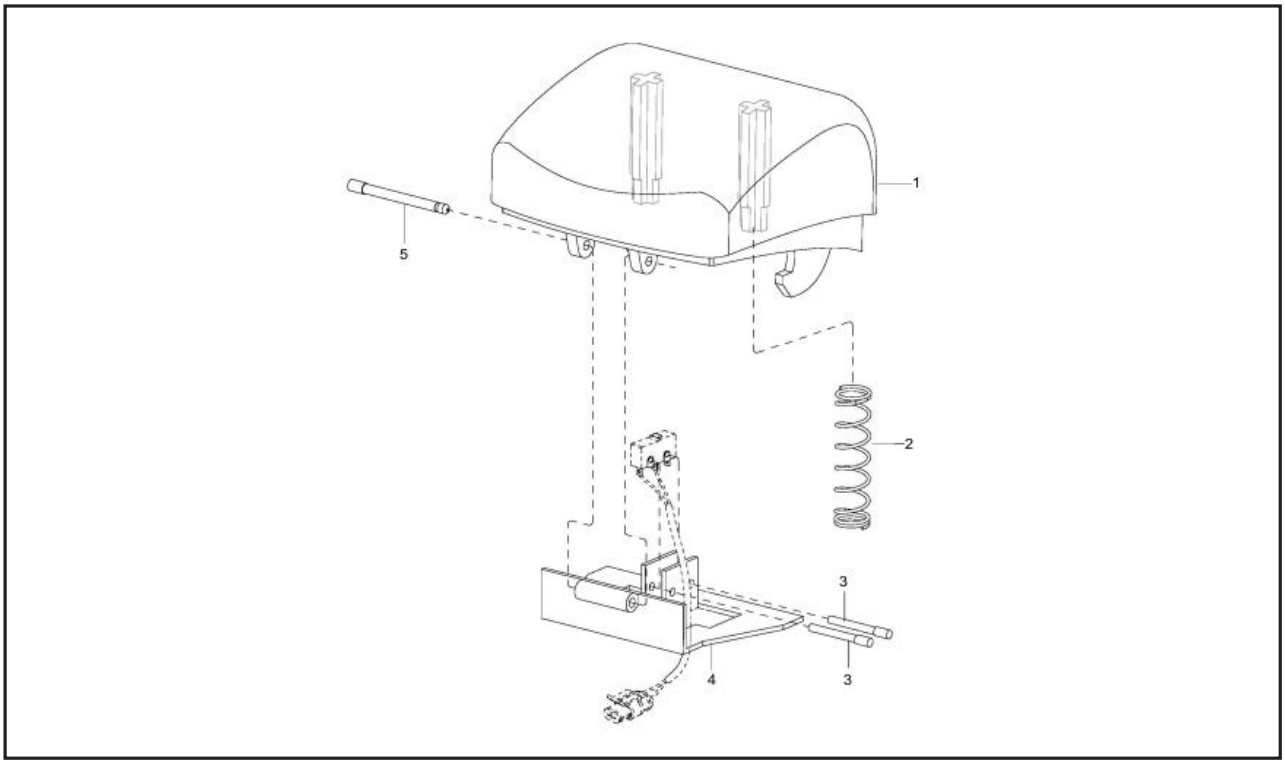

Figure 5-3 Emergency Reverse Switch

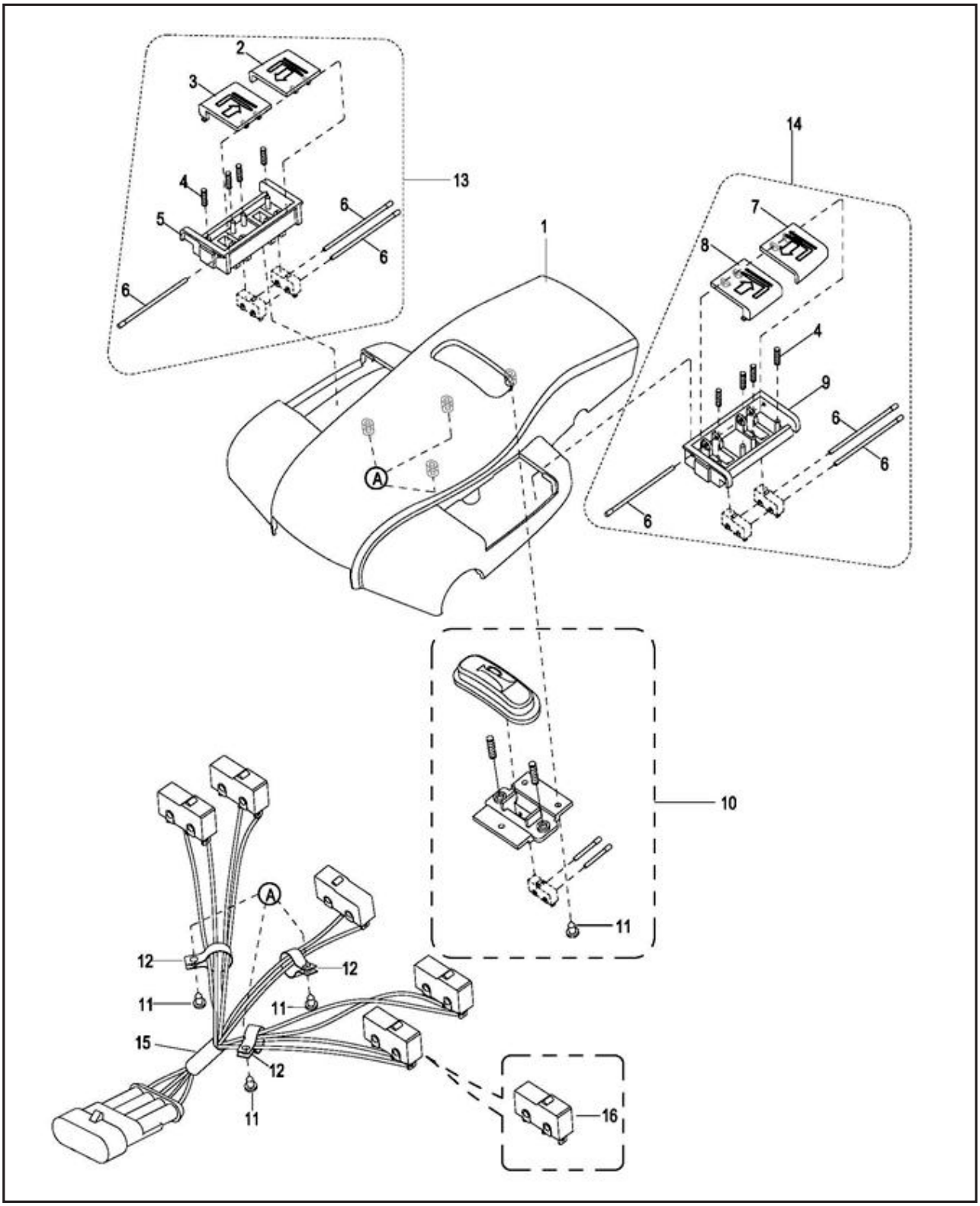

Figure 5-4 Cap Assembly

5-1.8 Lift and Lower Switch Replacement

1. Remove the cap assembly as described in paragraph 5-1.1.
2. Remove switch assembly (13 or 14, Figure 5-4) form cap (1).
3. Remove pin (6) securing buttons (2 and 3 or 7 and 8) and remove the buttons.
4. Remove two pins (6), two switches and four springs (4) from bracket (5 or 9).
5. Position the new switches and four springs (4) in bracket (5 or 9) and secure with two pins (6).
6. Position switch assembly (13 or 114 in cover (1) and secure with pin (6).
7. Install the cap assembly as described in paragraph 5-1.2.

5-2 STEERING ARM

5-2.1 Return Spring Replacement.

The steering arm gas return spring (12, Figure 5-2) is replaced while the steering arm (13) is in the upright position.

1. Engage the emergency stop switch and turn off key switch.
2. Remove three screws and rotation cover.
3. Secure the steering arm (13, Figure 5-2) in the upright position.
4. Remove screw (1) and free the gas return spring (12) from bracket (5).
5. Pull downward on the gas return spring (12) to free it from its seat inside steering arm (13).
6. Position the new gas return spring (12) inside the steering arm being sure it fully engages its seat.
7. Position the opposite end of the gas return spring (12) on bracket (5) and install screw (1).
8. Install rotating cover and secure with three screws.
9. Disengage the emergency stop switch and turn on key switch.

5-2.2 Steering Arm Removal.

1. Engage the emergency stop switch and turn off key switch.
2. Remove the return spring as described in paragraph 5-2.1.
3. Disconnect harness (15, Figure 5-2) from harness.
4. Attach a hoist to steering arm (13, Figure 5-2).
5. Remove screw (6), shaft (11) and the steering arm (13).

5-2.3 Steering Arm Installation

1. Position steering arm (13, Figure 5-2) in bracket (5) and secure with shaft (11) and screw (6).
2. Install the return spring as described in paragraph 5-2.1.
3. Reconnect harness (15) from harness.
4. Disengage the emergency stop switch and turn on key switch..

5-3 COMPARTMENT COVERS

5-3.1 Removal

1. Engage the emergency stop switch and turn off key switch.
2. Remove two screws and two washers (2) and remove cover.

5-3.2 Installation

1. Install cover and secure with two screws and two washers (2).
2. Disengage the emergency stop switch and turn on key switch.

5-4 UPRIGHT COVER

5-4.1 Removal

1. Engage the emergency stop switch and turn off key switch.
2. Remove six screws and six washers (2) and remove cover (3).
3. Installation.
4. Install cover and secure with six screws (1) and six washers (2).
5. Disengage the emergency stop switch and turn on key switch.

Section 6

Brake Serving

6-1 BRAKES

The brake system consists of a drive motor mounted brake. This brake is spring applied and electrically released.

6-1.1 Brake Assembly Replacement

1. Block load wheels.
2. Turn off the key switch and disconnect the batteries.
3. Remove the rear compartment covers as described in paragraph 5-3.
4. Remove the steering arm as described in paragraph 5-2.2.
5. Disconnect electric brake (2, Figure 6-1) from the harness.
6. Remove three screws (1, Figure 6-1) and remove brake (2).
7. Place the new brake into position and secure with the three screws (1).
8. Reconnect electric brake (2) to the harness
9. Install the steering arm as described in paragraph 5-2.3.
10. Install the rear compartment covers as described in paragraph 5-3.
11. Reconnect the batteries and turn on the keyswitch.

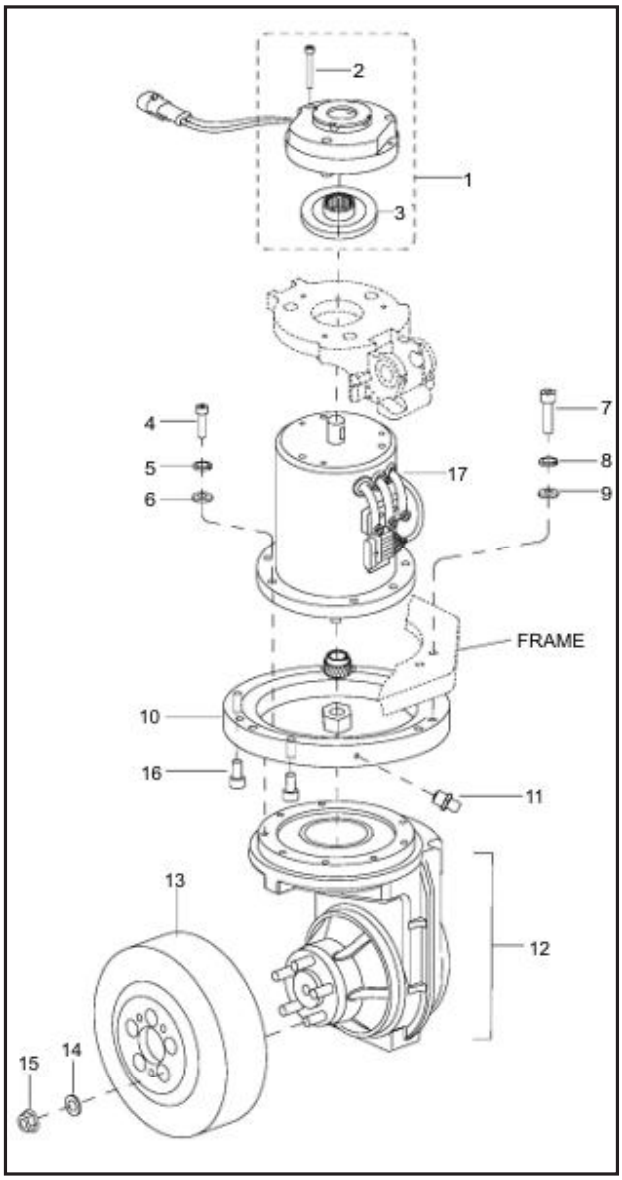

Figure 6-1 Transmission , Motor, Brake Assembly

Section 7

Transmission, Drive Wheel, Load Wheels

7-1 Drive Wheel

1. Turn off the key switch and disconnect the batteries.
2. Remove the compartment covers as described in paragraph 5-3.
3. Loosen but do not remove the five nuts (15, Figure 7-1).
4. Jack up the truck so the drive wheel is off the ground; then securely block the truck to prevent movement.
5. Remove the five nuts (15), five washers (14) and drive wheel (13) from the transmission (12).
6. Install new drive wheel in reverse order of removal.
7. Install the compartment covers as described in paragraph 5-3.
8. Reconnect the batteries and turn on the keyswitch.

7-2 Transmission

1. Remove the drive wheel (13) as described in paragraph 7-1.
2. Remove the brake (2, Figure 7-1) as described in paragraph 6-1.1.
3. Remove the steering arm as described in paragraph 5-2.2.
4. Note routing of cables to ensure proper installation.
5. Tag the cables connected to the drive motor; then disconnect these cables from the drive motor.
6. Remove three screws and three lock washers (27) to free brake plate (17) from motor (3, Figure 7-1)
7. Support the transmission (12, Figure 7-1) and remove the six screws (7), six lock washers (8) and six flat washers (9).
8. Slowly lower the transmission out the bottom of the frame.
9. Install new transmission by reversing the steps above.

7-3 Load Wheel

7-3.1 Removal

1. Turn off the key switch and disconnect the batteries.
2. Block the drive wheel to prevent the truck from rolling.
3. Jack up the truck to raise the load wheel off the floor. Securely block the truck in the raised position.
4. Remove three screws (1, Figure 7-2) and cover (2).
5. Remove two screws (3), two lock washers (4), two flat washers (5) and retainer (6).
6. Remove load wheel (7).
7. Remove bearings (13) from load wheel (7).

NOTE: Inspect the load wheel assembly. If the load wheel is worn within 1/8" of the metal sleeve, or is cracked or damaged, replace the entire load wheel and bearing assembly. CLARK recommends that both load wheel assemblies be replaced at the same time. This ensures level and safe operation of the lift truck.

7-3.2 Load Wheel Installation

1. Install bearings (13, Figure 7-2) in load wheel (7).
2. Position load wheel (7) on spindle.
3. Remove retainer (6) and secure with two screws (3), two lock washers (4) and two flat washers (5).
4. Install cover (2) and secure with three screws (1).
5. Remove blocking from under the truck and lower to the ground.
6. Reconnect the batteries and turn on the keyswitch.