

WING LANDING GEAR SHOCK STRUT - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
  - (1) The removal of the shock strut from the wing landing gear
  - (2) The installation of the shock strut on the wing landing gear.
- B. The components on the wing landing gear are very heavy. To prevent damage to the landing gear, you must sufficiently hold the shock strut during the removal and installation. If it is available, you can use a transportation dolly to hold the landing gear. If not, you can use an assembly stand.
- C. You must remove the shock strut if it has damaged or worn cylinders. You must also remove the shock strut to remove the lower bearing for a replacement or to change the seals.

TASK 32-11-02-004-001

2. Wing Landing Gear Shock Strut Removal (Fig. 401)

- A. Special Tools and Equipment
  - (1) OHME65B01201-1 - Wing and Body Gear Overhead Mechanical Equipment
  - (2) 12PRE65B00161-1 - Pivot Pin Thread Protector
- B. Standard Tools and Equipment
  - (1) Axle Jack and Adapter
- C. References
  - (1) AMM 09-11-00/201, Towing
  - (2) AMM 32-00-30/201, Landing Gear Door Locks
  - (3) AMM 32-11-01/401, Wing Gear
  - (4) AMM 32-11-03/401, Wing Gear Drag Brace
  - (5) AMM 32-11-23/401, Wing Gear Truck Mechanical Lock
  - (6) AMM 32-11-28/401, Wing Gear Shock Strut Outboard Door Fitting
  - (7) AIPC 32-11-11 Fig. 2
  - (8) AIPC 32-11-14 Fig. 2
  - (9) AIPC 32-11-20 Fig. 1,
  - (10) AIPC 32-11-21 Fig. 1
  - (11) AIPC 32-42-20 Fig. 1
- D. Access
  - (1) Location Zone
    - 735 Wing Landing Gear, LH
    - 745 Wing Landing Gear, RH

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E. Prepare for the Procedure

S 494-039

**WARNING:** YOU MUST CAREFULLY INSTALL THE GROUND LOCKS IN ALL LANDING GEAR. AN ACCIDENTAL RETRACTION OF THE LANDING GEAR CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Install the ground locks in all landing gear (AMM 09-11-00/201).

S 494-040

**WARNING:** YOU MUST CAREFULLY DO THE STEPS IN THE TASKS BELOW TO INSTALL THE DOOR LOCKS ON THE LANDING GEAR DOORS. THE DOORS CAN CLOSE QUICKLY IF YOU DO NOT INSTALL THE DOOR LOCKS CORRECTLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (2) Do this task: "Installation of the Door Locks on the Wing Landing Gear" (AMM 32-00-30/201).

S 494-041

- (3) Do this task: "Installation of the Door Locks on the Body Landing Gear" (AMM 32-00-30/201).

F. Procedure

S 224-050

**CAUTION:** MAKE SURE THAT YOU DO NOT MOVE OR DAMAGE THE WING GEAR TRUCK SENSORS OR TARGET BRACKET. IF THE TARGET BRACKET OR SENSORS ARE MOVED, THEN THE AIRPLANE SYSTEMS MAY NOT RECOGNIZE AN IN-AIR CONDITION.

- (1) If the sensor or target bracket is moved or damaged, then do the task to measure the wing landing gear truck sensor clearance (AMM 32-61-22/201).

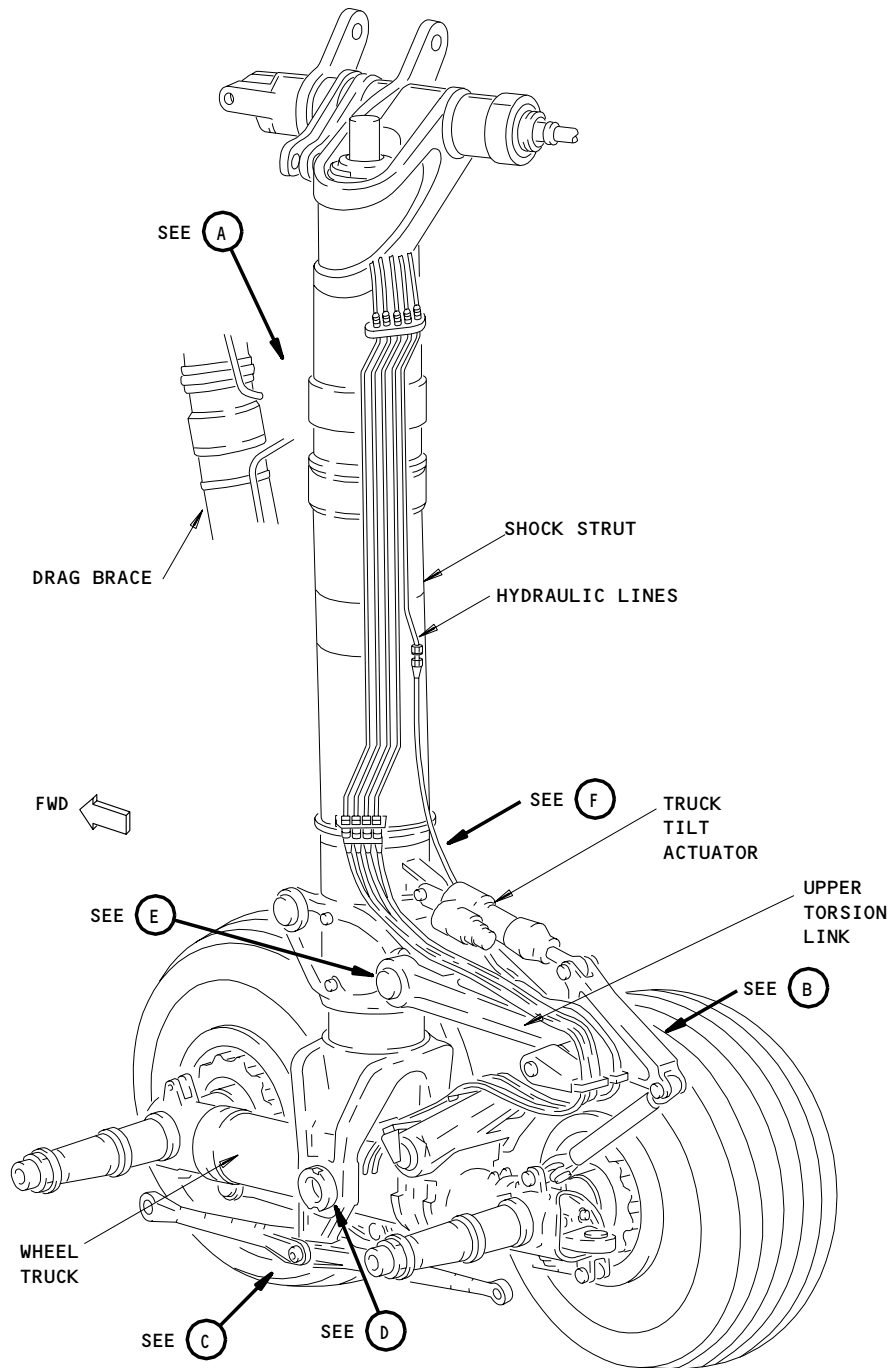
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Wing Gear Shock Strut Installation  
Figure 401 (Sheet 1)

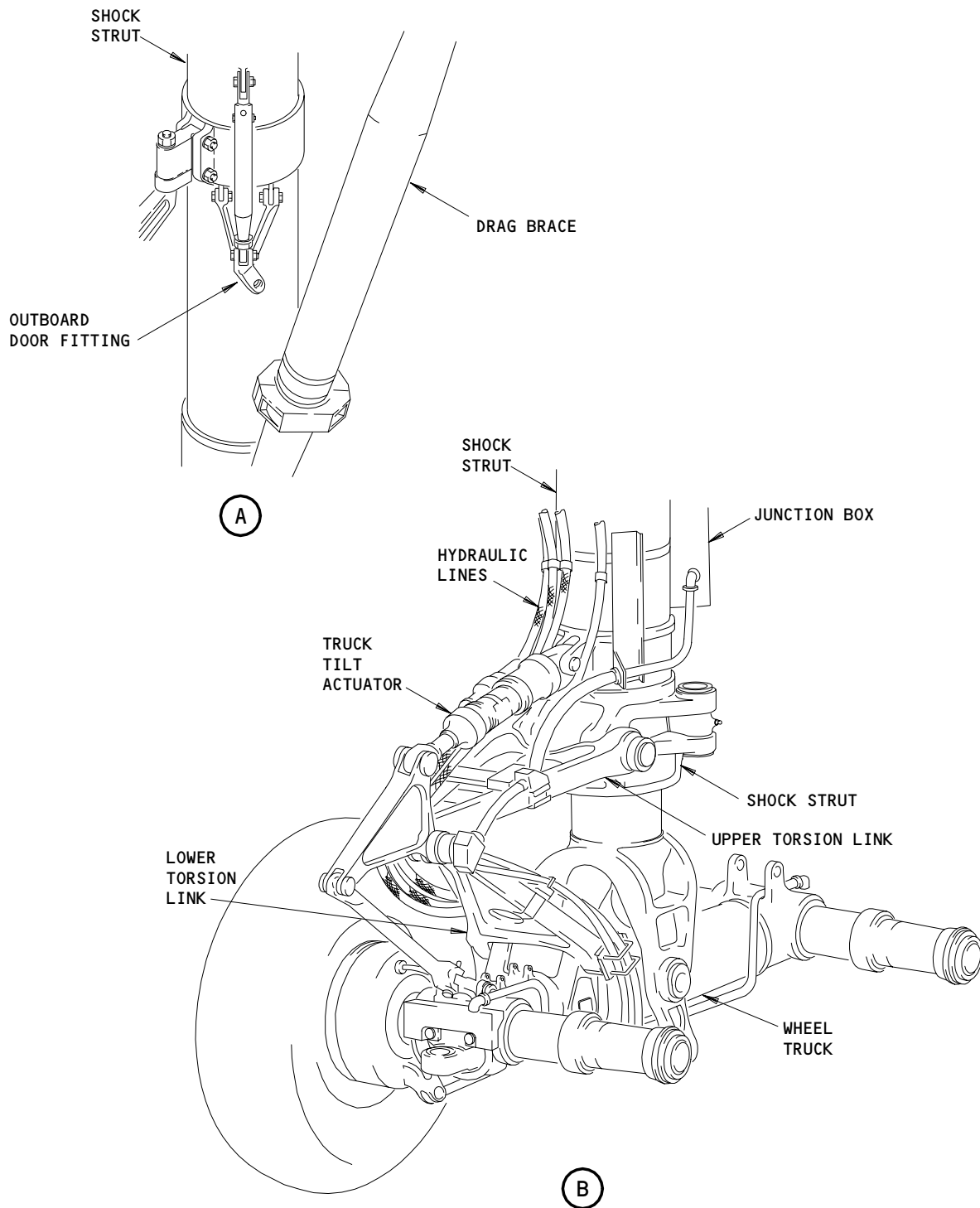
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Wing Gear Shock Strut Installation  
Figure 401 (Sheet 2)

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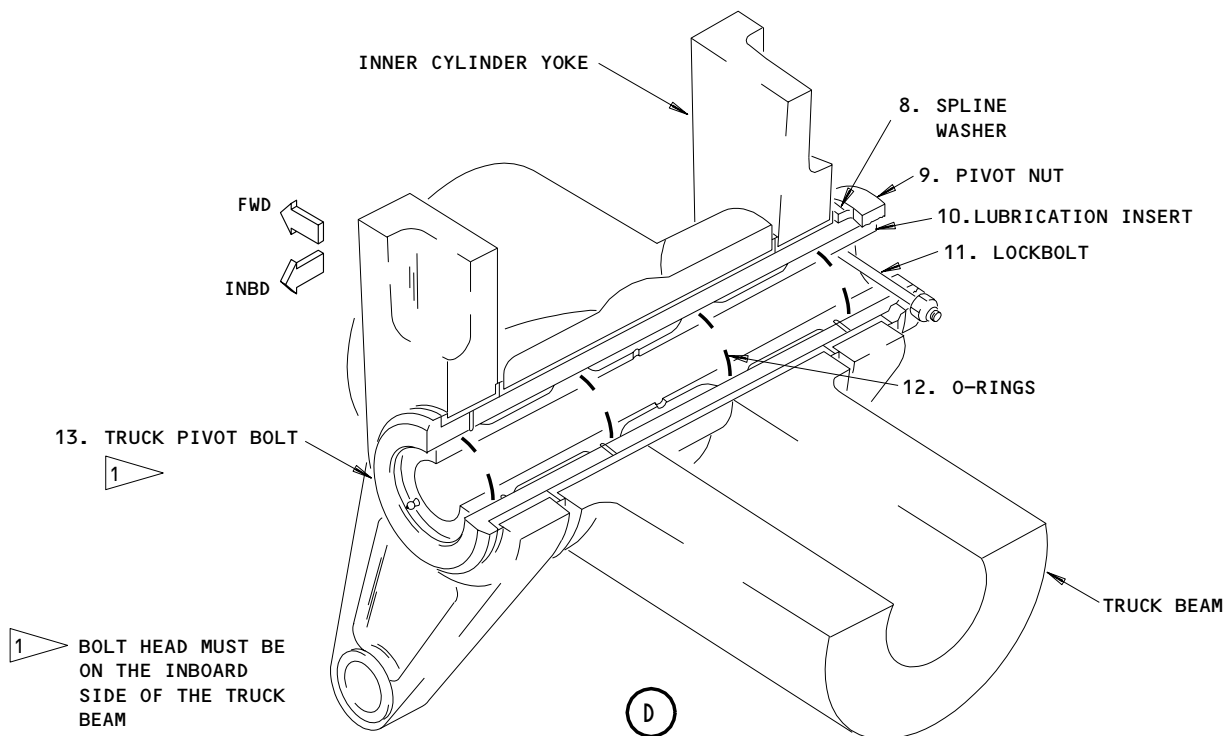
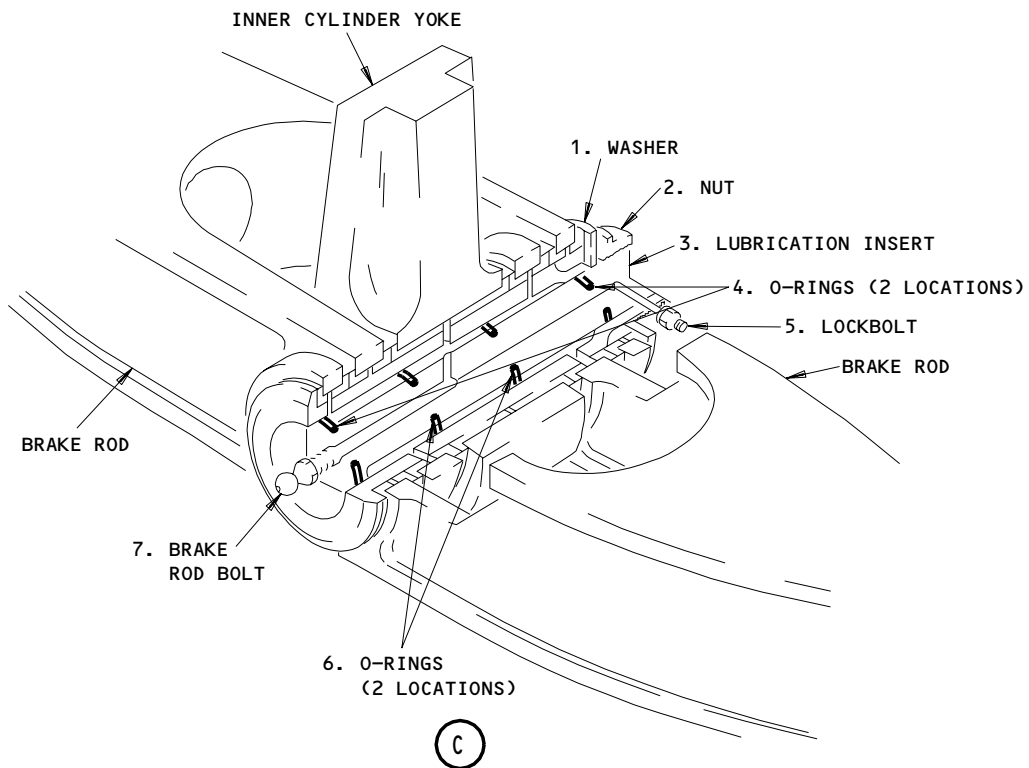
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**BOEING**  
747-400  
MAINTENANCE MANUAL



Wing Landing Gear Shock Strut Installation  
Figure 401 (Sheet 3)

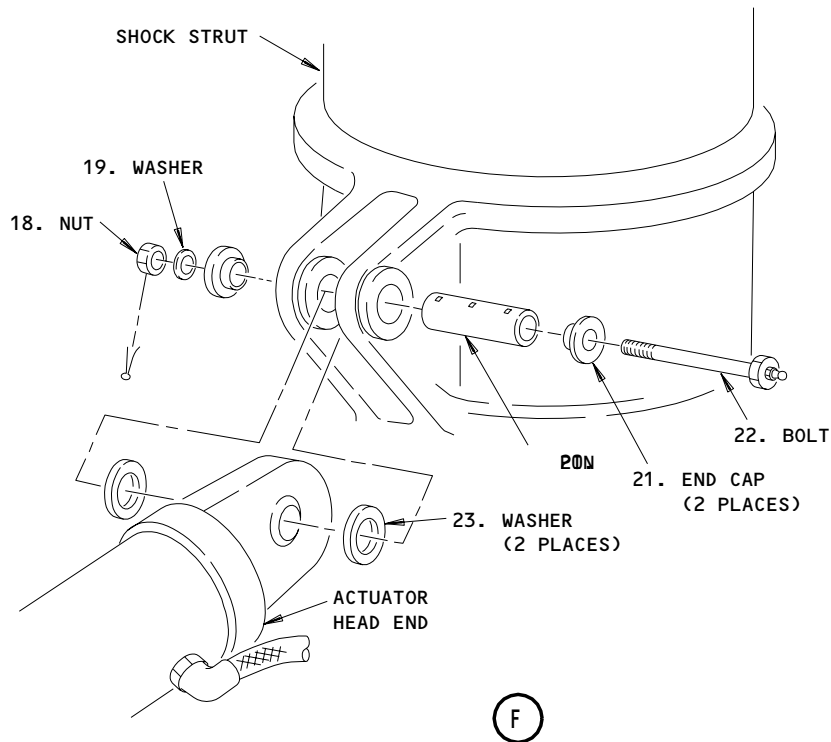
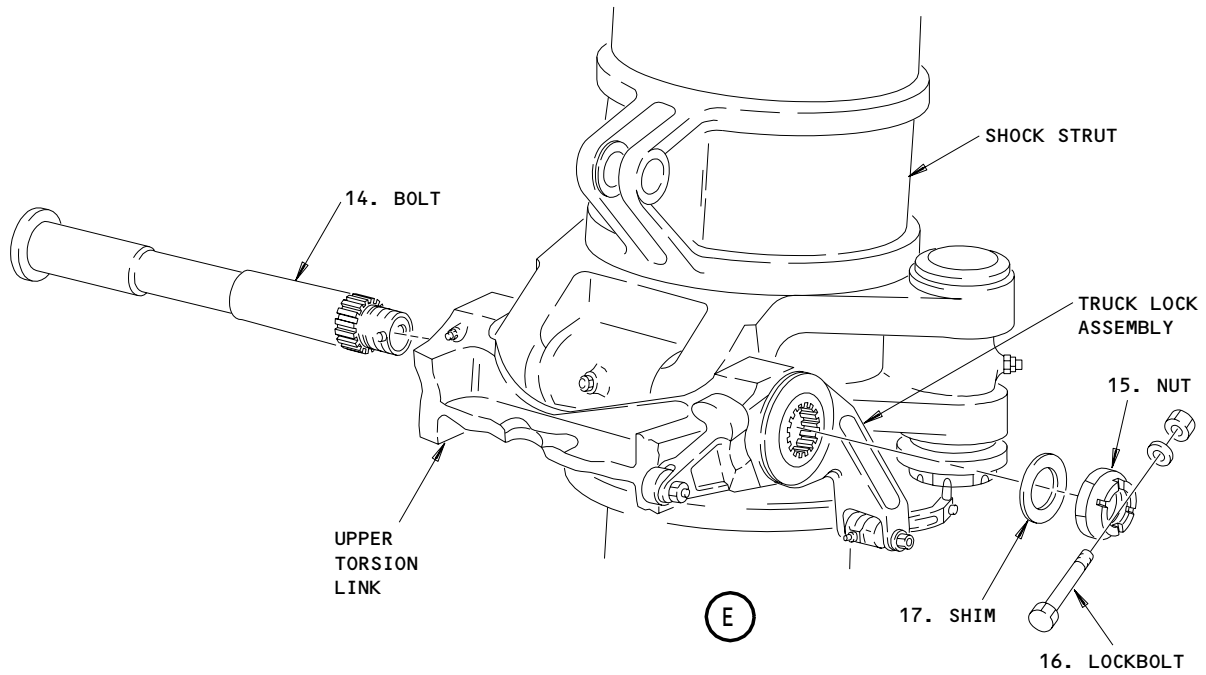
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Wing Gear Shock Strut Installation  
Figure 401 (Sheet 4)

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S 034-004

- (2) Remove the drag brace from the airplane (AMM 32-11-03/401).

S 034-005

- (3) Remove the outboard door fitting from the shock strut (AMM 32-11-28/401).

S 034-006

**WARNING:** USE THE CORRECT EQUIPMENT TO HOLD THE SHOCK STRUT IN THE VERTICAL POSITION WHEN YOU REMOVE THE WHEEL TRUCK. THE SHOCK STRUT CAN FALL IF YOU DO NOT SUFFICIENTLY HOLD THE STRUT WITH A TRANSPORTATION DOLLY OR AN ASSEMBLY STAND. A SHOCK STRUT WHICH FALLS CAN CAUSE DAMAGE TO THE EQUIPMENT AND INJURY TO PERSONS.

- (4) Remove the wing landing gear from the airplane (AMM 32-11-01/401).

S 034-007

- (5) Loosen the brackets which hold the conduit and the junction box to the shock strut.

S 034-008

- (6) Lower the full harness of wires to the ground.

**NOTE:** The harness can stay connected to the torsion links and the wheel truck.

S 034-009

- (7) Remove all hydraulic lines from the shock strut.  
(a) Put a cap on all disconnected lines.  
(b) Put a plug in all open fittings.  
(c) Lower the hydraulic lines to the ground.

S 034-010

- (8) Disconnect the forward end of the tilt actuator.  
(a) Remove the bolt (22), the end caps (21), the washers (23), and the pin (20) (Detail F).

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S 094-011

- (9) Remove the oleo locks.

S 034-046

**WARNING:** USE A ROPE OR A SLING TO HOLD THE UPPER TORSION LINK BEFORE YOU DISCONNECT IT FROM THE SHOCK STRUT. THE TORSION LINK WEIGHS APPROXIMATELY 82 POUNDS. IF THE TORSION LINK FALLS, IT CAN CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

- (10) Remove the lockbolt (16), the nut (15), the shim (17), and the bolt (14) from the shock strut (Detail E).

S 034-014

- (11) Remove the truck lock (AMM 32-11-23/401).

S 034-015

- (12) Remove the lockbolts (5), the lubrication inserts (3), the nuts (2), the washers (1), and the bolts (7) from each brake rod (Detail C).  
(a) Use the mechanical equipment and the axle jack to remove the load from the bolts on the brake rods.  
(b) Pull the bolts from the brake rods.

S 034-016

- (13) Remove the lockbolt (11), the pivot nut (9), the lubrication insert (10), and the spline washer (8) (Detail D).

S 034-017

- (14) Remove the pivot bolt:  
(a) Use the mechanical equipment and the axle jack to remove the load from the pivot bolt.  
(b) Pull the bolt from the wheel truck.

S 024-047

**CAUTION:** MOVE THE DISCONNECTED HYDRAULIC LINES AND THE WIRE HARNESS AWAY FROM THE EQUIPMENT AND THE SHOCK STRUT. THE DISCONNECTED LINES AND CONDUITS CAN CATCH ON THE EQUIPMENT AND THE LANDING GEAR WHEN YOU REMOVE THE SHOCK STRUT. THIS CAN CAUSE DAMAGE TO THE LANDING GEAR COMPONENTS AND THE EQUIPMENT.

- (15) Lift the shock strut from the wheel truck.

TASK 32-11-02-404-019

3. Wing Landing Gear Shock Strut Installation (Fig. 401)

A. Special Tools and Equipment

- (1) OHME65B01201-1 - Wing and Body Gear Overhead Mechanical Equipment  
(2) 12PRE65B00161-1 - Pivot Pin Thread Protector

B. Standard Tools and Equipment

- (1) Axle Jack and Adapter

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