



Technical Service Information

BMW ZF6HP26/19 “E” SHIFT DTC 507B STAYS IN PARK

COMPLAINT: 2002 and up BMW vehicles equipped with the ZF6HP26 and or the ZF6HP19, equipped with the “E” Shift, may have a complaint of a Diagnostic Trouble Code of 507B Parking gear sensor implausible, typically after overhaul. The technician observed the gear shift position indicator lamps go from park to neutral to drive and then it immediately returned to park as shown in Figure 1.

CAUSE: The cause may be that the linkage arm that houses the emergency park release cable is bent not allowing the linkage to fully move towards the rear of the case to release the park rod, which causes the DTC 507B and the shifter to go directly back into Park.

Description of operation: The “E” Shift does not have a manual valve, it has a rod that is actuated by solenoids which moves the internal linkage to engage and disengage park as well as other gear selection. There is a pre-loaded barrel spring mounted on a rotating lever that operates the park rod with the tension of the spring pushing the lever and rod into the park position. To release park, the MV3 and MV2 solenoids are energized.

The MV3 Solenoid is mounted on the back side of the park lock cylinder which is on the valve body, as shown in Figure 2. Inside the cylinder there is a piston which connects to the rotating lever. When the MV3 Solenoid is OFF, a shaft extends out from the solenoid, pushing the rear of the piston and lever into the park position. When a command is requested to release park, the MV3 Solenoid is energized and the shaft retracts. At this time the MV2 Solenoid is also energized and it supplies fluid pressure to a chamber inside the front area of the cylinder which pushes the piston, rotating lever and park rod into the released position, as shown in Figure 3.

CORRECTION: To correct this condition, remove the protective cover that houses the emergency park release cable and on a suitable lift, select Drive or Reverse, watching to ensure the free movement of the linkage arm. **Note:** the cable should not impede the movement of the linkage arm, if it does, repair or replace the linkage arm so that it travels freely over the stationary cable, as shown in Figure 4.

*Special Thanks
to Dino
Lee Myles NY*

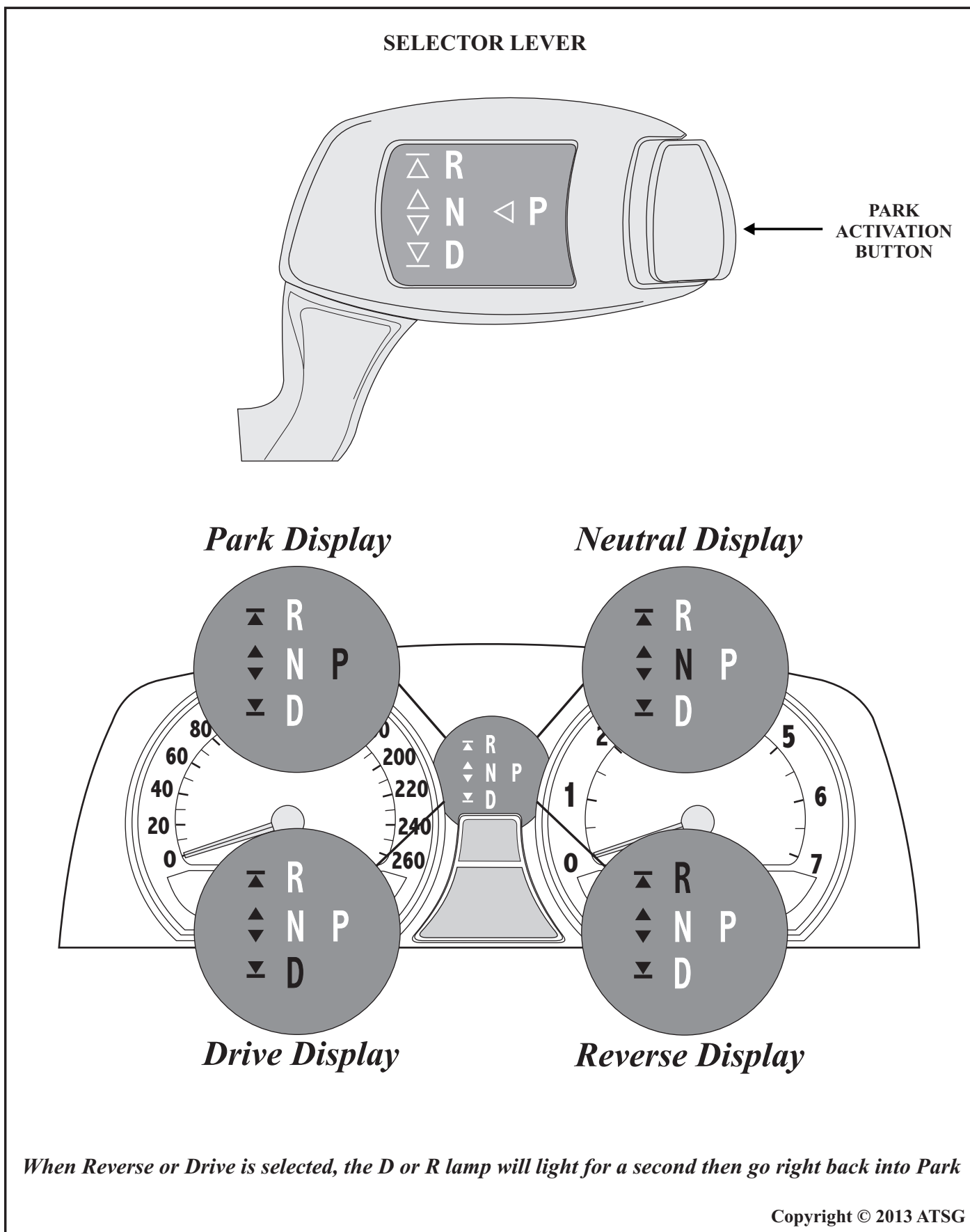


Figure 1

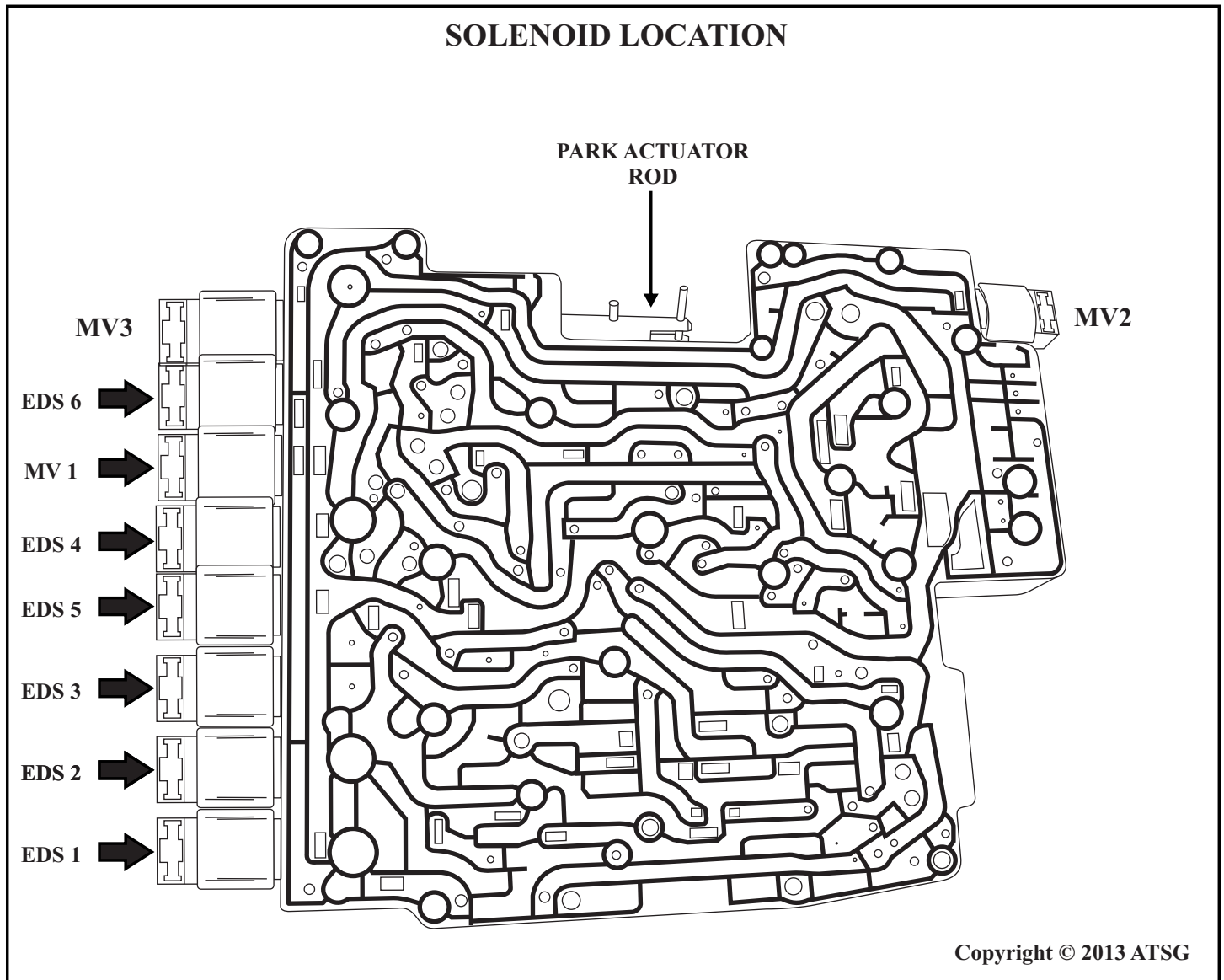
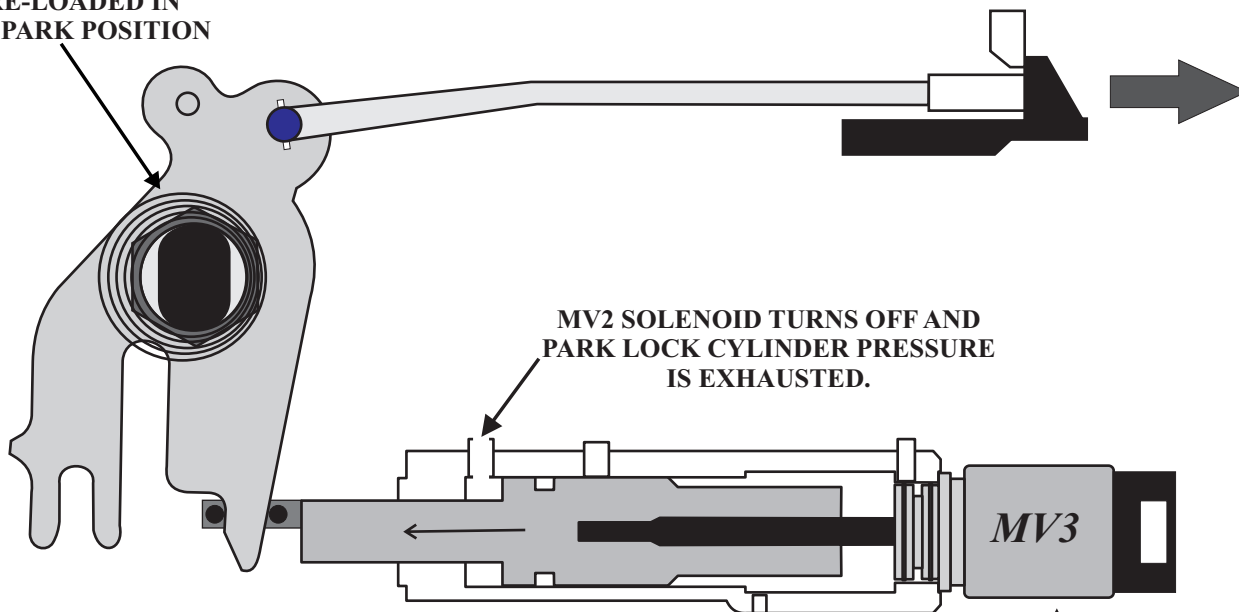


Figure 2

DESCRIPTION OF OPERATION

PARK POSITION

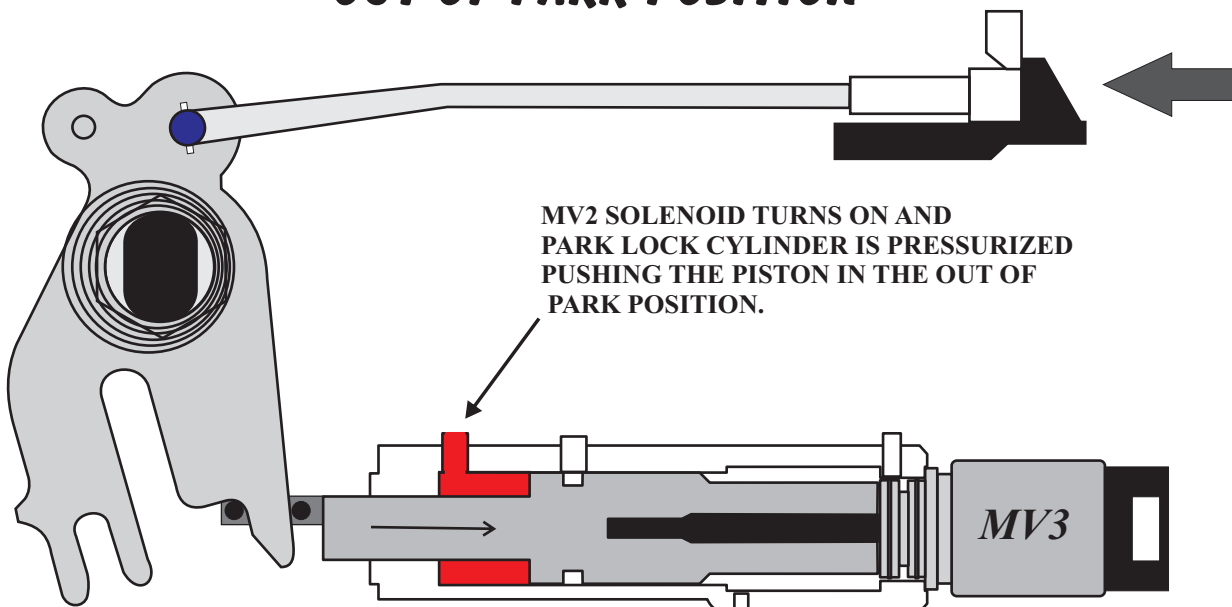
THE BARREL SPRING IS
PRE-LOADED IN
THE PARK POSITION



MV2 SOLENOID TURNS OFF AND
PARK LOCK CYLINDER PRESSURE
IS EXHAUSTED.

MV3 SOLENOID TURNS OFF
CAUSING ITS SHAFT TO EXTEND
PUSHING THE PISTON INTO THE
PARK POSITION.

OUT OF PARK POSITION



MV2 SOLENOID TURNS ON AND
PARK LOCK CYLINDER IS PRESSURIZED
PUSHING THE PISTON IN THE OUT OF
PARK POSITION.

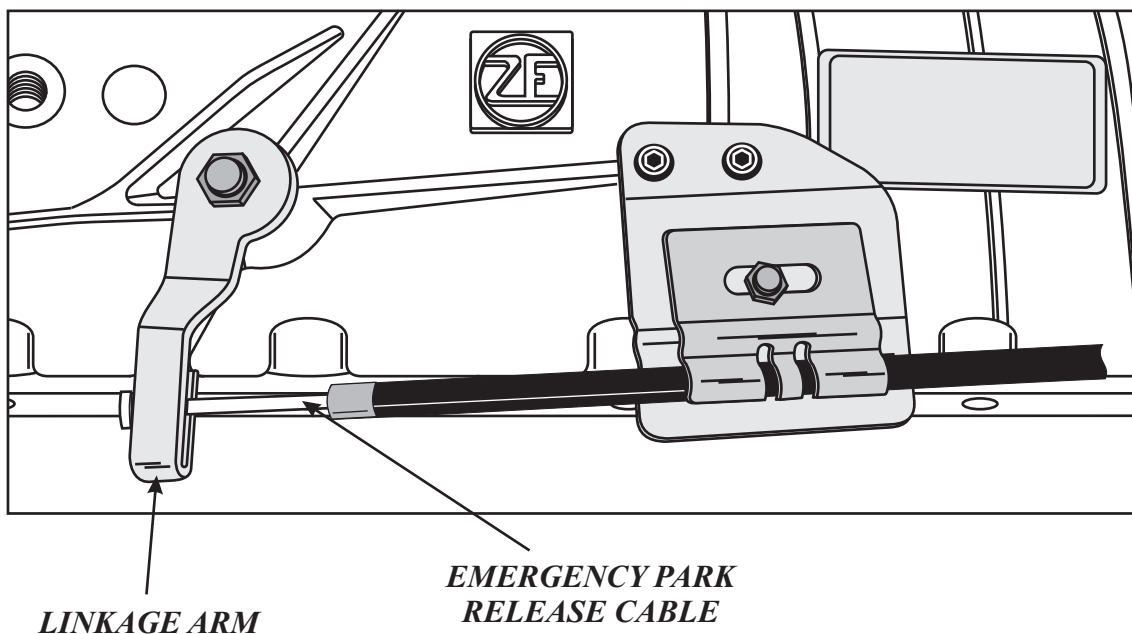
MV3 SOLENOID TURNS ON
CAUSING ITS SHAFT TO RETRACT.

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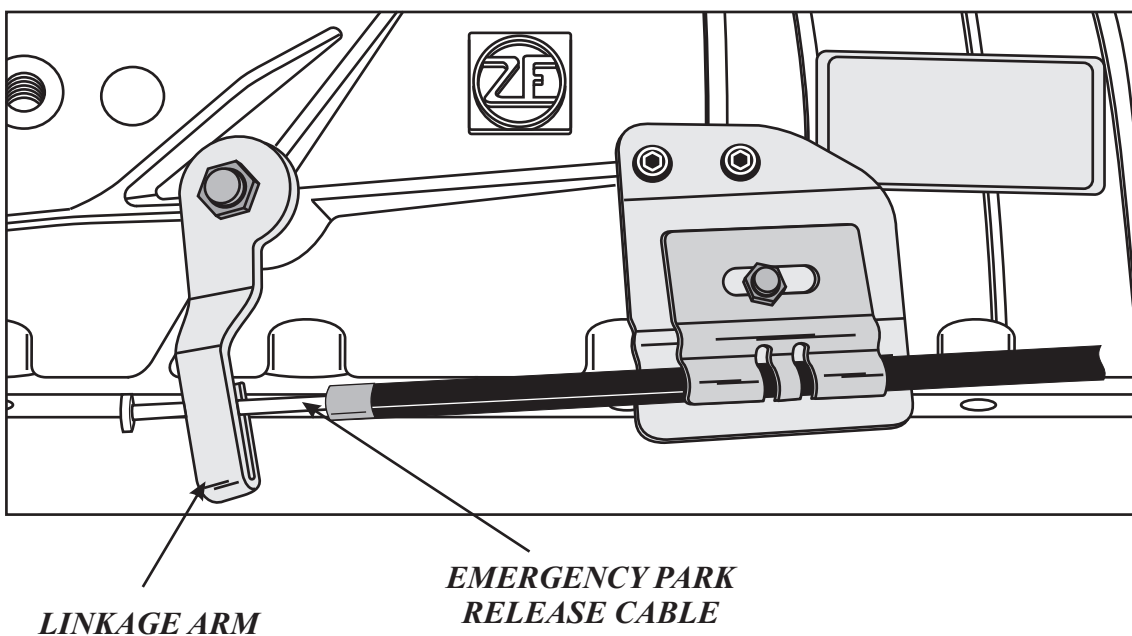
Figure 3

LINKAGE OPERATION

PARK POSITION



OUT OF PARK POSITION



The Linkage arm must move freely over the stationary Emergency Park Release Cable or it will cause it to set the DTC 507B

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Figure 4