ELECTRICAL SCHEMATICS

The schematic drawing of different engines differ from each other mainly on the starting system and on the sensor. It is suggested to refer to the specific drawing and real condition of the truck first when carrying out repair.

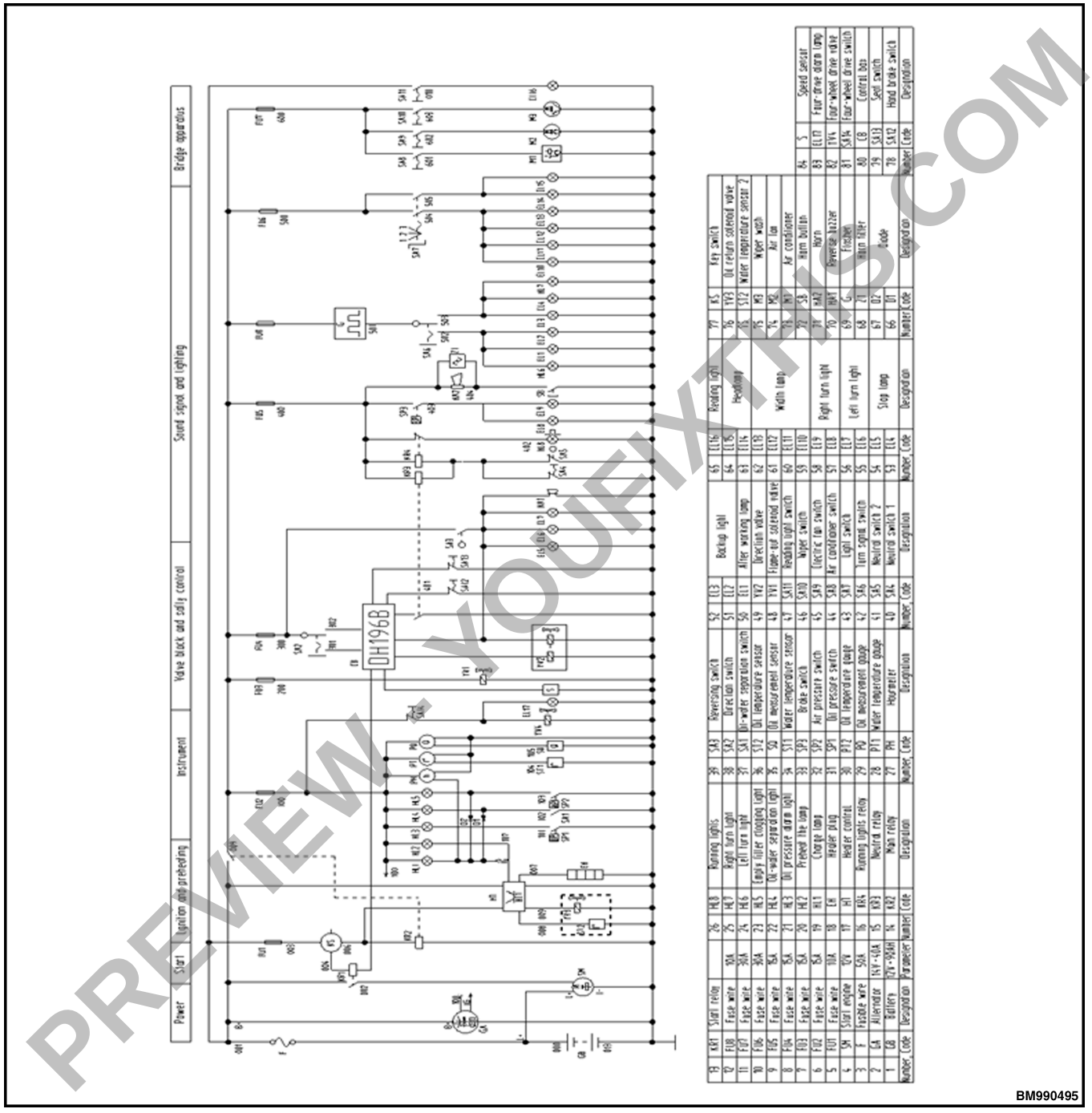


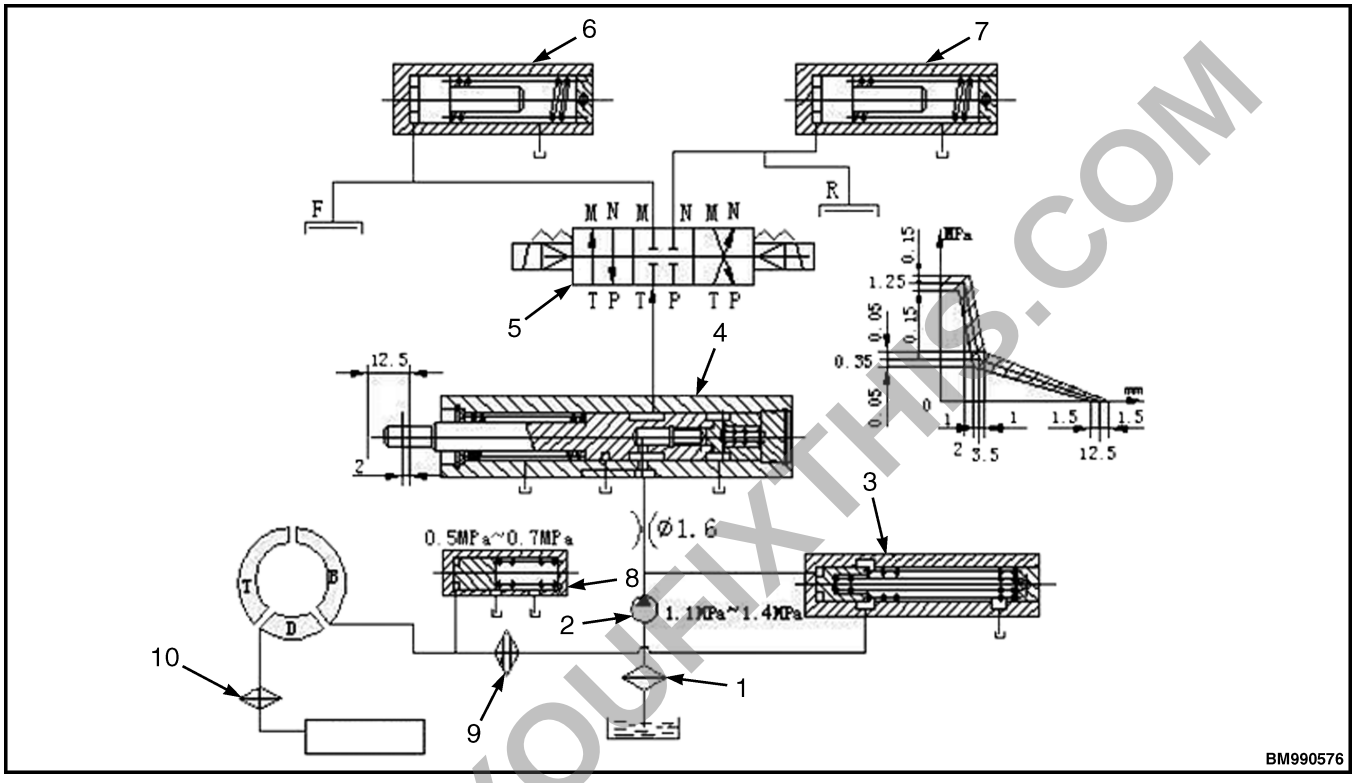
Figure 60. Yanmar Engine

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Principle of Oil Circuit

The schematic diagram of the hydraulic transmission gearbox oil circuit is shown in Figure 9. **F** represents forward gear, **R** represents the backward gear, and **N** represents the neutral gear.



1. COARSE OIL FILTER
2. OIL PUMP
3. MAIN PRESSURE REGULATING VALVE
4. INCHING VALVE
5. SOLENOID VALVE
6. CUSHION VALVE
7. CUSHION VALVE
8. RELIEF VALVE
9. FINE OIL FILTER
10. ON-BOARD COOLER

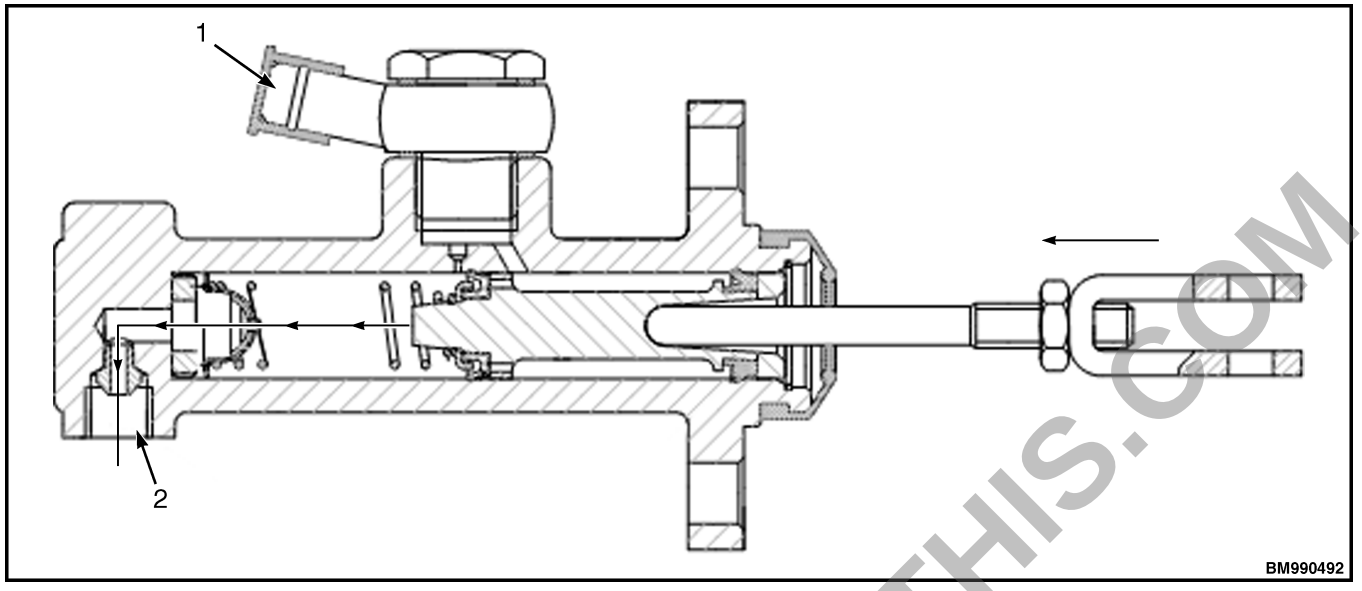
Figure 9. Schematic Diagram of Oil Circuit of QXD40MKS-XH Limited Slip Hydraulic Drive Gearbox Shown

Introduction to Hydrodynamic Gearbox Structure

Structure Profile

The structure of the hydraulic drive gearbox is shown in Figure 10 and its working principle is described above. The hydraulic drive gearbox is composed of hydraulic torque converter (13), gearbox, reducer and limited slip differential mechanism. Engine power is input into the clutch assembly (6) on the gearbox through the role of the torque converter by torque converter turbo-shaft. The gearbox includes a clutch assembly (6), output gear (12), idler shaft (9), electro-hydraulic control valve assembly (5), inching valve assembly (14), oil supply pump assembly (4) and other major parts and components. The reducer mainly consists of output shaft (10), spiral bevel gear (16), gear shaft (1) and other components. Both ends of the gear shaft are supported by the tapered roller bearing (2). An adjustment gasket is arranged on both ends respectively, used to adjust the color prints, backlash and bearing clearance of the bevel gear. The power from the gearbox through the reducer is passed to the wheel via the axle shaft gear and axle shaft after differential driving is generated by the limited slip differential assembly (15). Part (8) is the gearbox housing in which a gear shift gear, shift clutch, reducer gear and limited slip differential mechanism are installed. It also plays the role of oil tank.

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1. TO OIL STORAGE
2. TO WHEEL SPEED REDUCER

Figure 23. Brake Master Cylinder

WHEEL BRAKE

Wheel brake is in an internal expansion and hydraulic type, and it is composed of brake shoe, spring, wheel cylinder, adjuster, and bottom plate. The two brakes are respectively mounted on the two ends of front axle. One end of brake shoe is connected with support pin, while the other end is connected with clearance adjuster, and bears down onto the bottom plate by spring and tension spring pull rod. Lever LH Brake is mounted on primary brake shoe, while adjustment pull rod for automatic clearance adjuster is fitted on secondary brake shoe. See Figure 24 and Figure 25.

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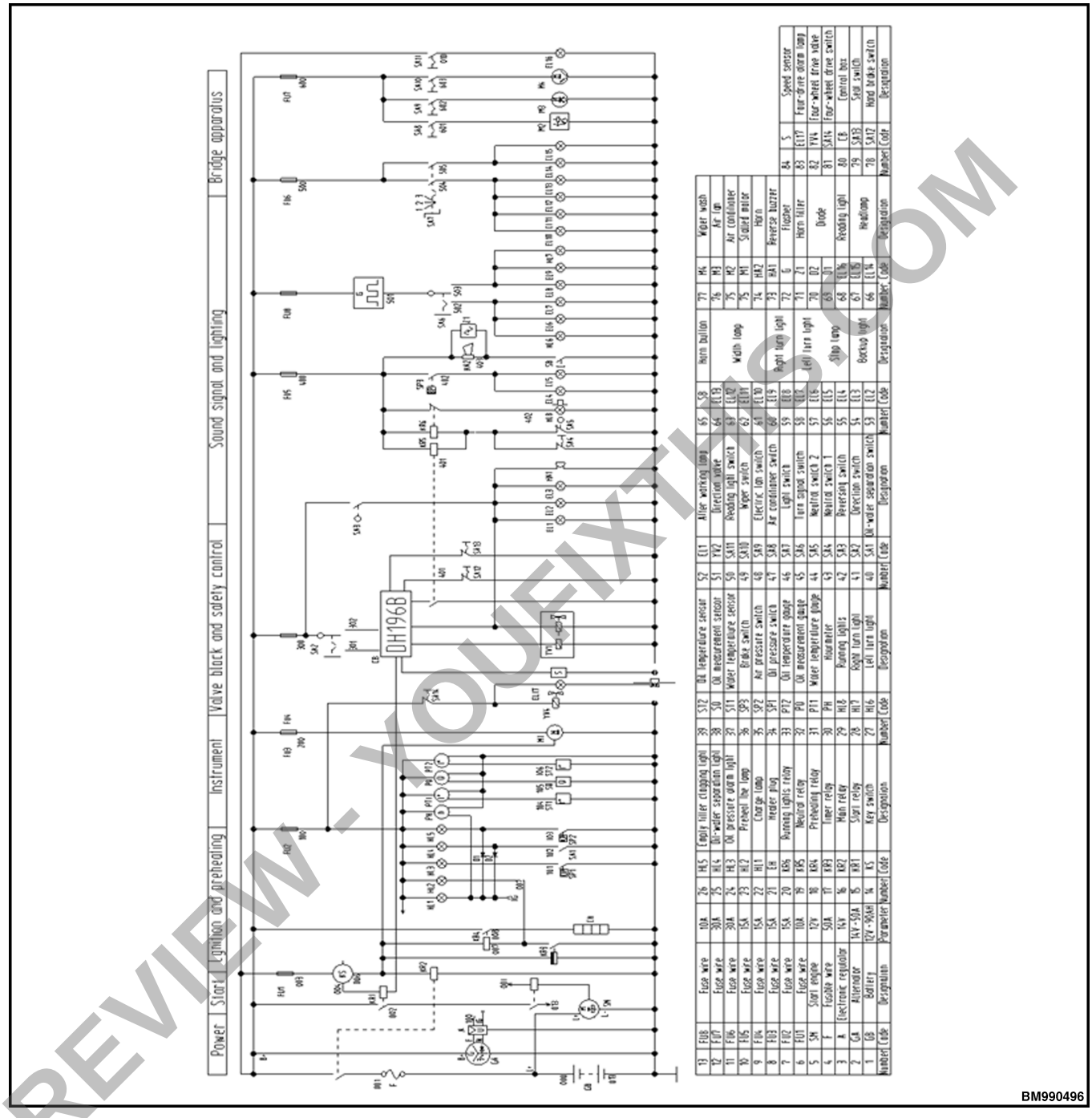
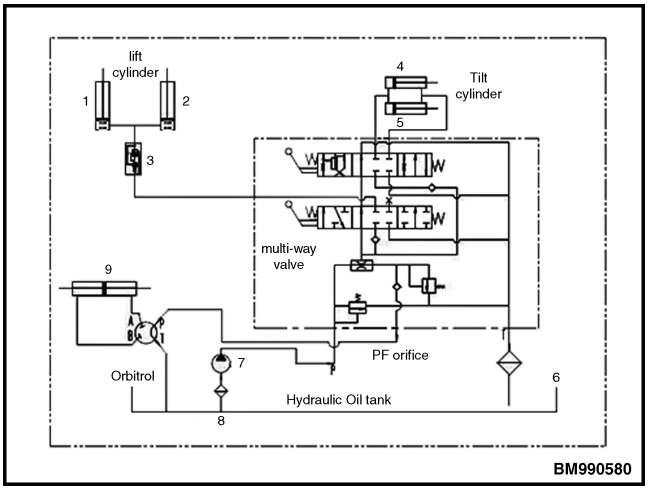


Figure 61. With Mitsubish S4S Engine

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1. LEFT HAND LIFT CYLINDER
2. RIGHT HAND LIFT CYLINDER
3. LOWERING SPEED REGULATOR
4. LEFT HAND TILTING CYLINDER
5. RIGHT HAND TILTING CYLINDER
6. REURN OIL FILTER
7. GEAR PUMP
8. FEEDING OIL FILTER
9. STEERING CYLINDER

Figure 41. Oil Circuit of Hydraulic System

LIFT CYLINDER

Two single-acting lift cylinders are attached on the rear side of the steel channel of the outside mast, and the bottom part of cylinder is attached on the bracket of lift cylinder on the outside mast using pins and bolts. The top part of the cylinder (piston rod) is connected with an active beam. The piston strokes must be adjusted to be consistent, for the two cylinders to lift simultaneously.

The lift cylinder is composed of cylinder body, piston, piston rod, cylinder cover, cylinder bottom and sealing parts. One port is located in the lower part of cylinder body. A return pipe is mounted in the upper part of cylinder body for a small amount of leaked fluid to return to the tank. The piston is fastened onto the piston rod using a nut and cotter pin, and one seal ring, retainer ring and wear ring are fitted on the outer surface of the piston (see Figure 42). The high-pressure fluid moves the piston along the cylinder body. A shaft sleeve and dust ring are mounted in the inner hold of cylinder cover, to support the piston rod, while resisting dust.

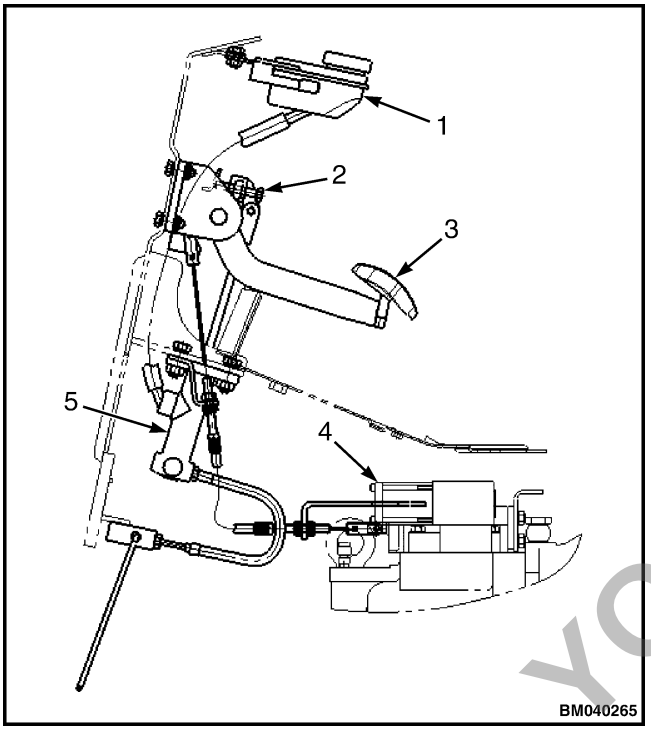
When the lift spool valve is pulled backwards, the high-pressure fluid enters through the bottom part of lift cylinder, pushing up the piston attached to the mast and raising the inner mast along with the lift chain. When lift spool valve is pushed forward, the fluid under the piston will flow out under the weight of the forks and cargo, and the inner mast will be lowered. The fluid drained from the lift cylinder returns to the fluid tank.

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ADJUSTMENT OF BRAKE PEDAL

1. Adjust the limit bolts to the pedal location shown in Figure 28. Confirm the distance between the front floor and the brake pedal is 113 mm (4.4 in.) and the pedal stroke is 20 mm (0.8 in.). Tighten the limit bolts.



1. OIL TANK
2. LIMIT BOLT
3. PEDAL
4. INCHING VALVE
5. BRAKE MASTER PUMP

Figure 28. Adjustment of Brake Pedal

MAINTENANCE

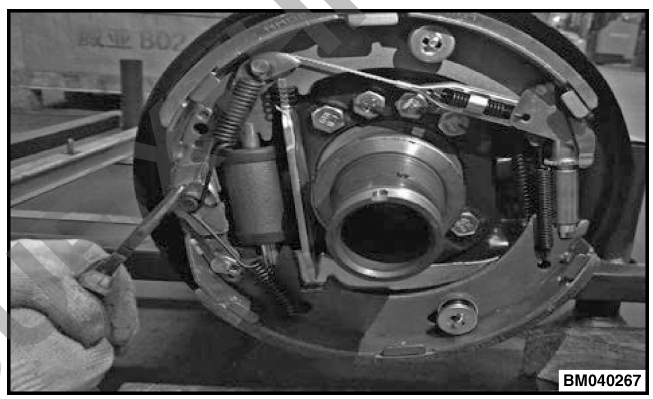
This section covers brake disassembly, reassembly, and adjustment.

Disassemble, Wheel Brake

1. Remove the spring of the secondary brake shoes, and the adjusting lever, top lever, and the top lever return spring.



2. Remove the return springs for the two brake shoes.



3. Remove the other three fixed springs.

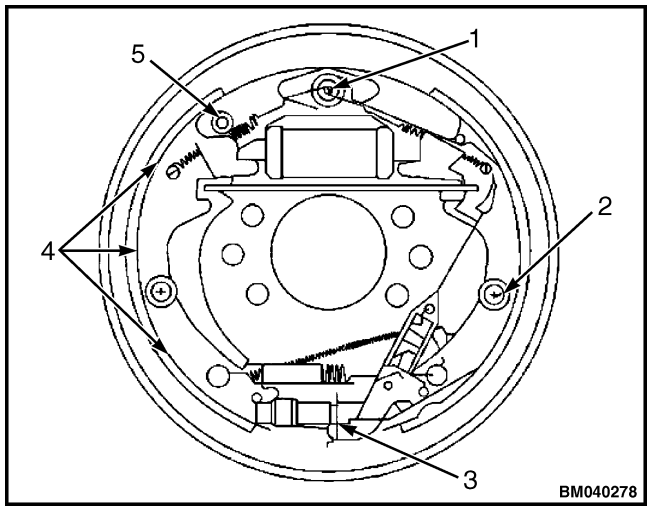


4. Detach the primary brake shoes and the secondary brake shoes, and remove the spring for adjuster.

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5. Add #2 calcium base lubricating grease at items 1, 2, 4 and 5 on Figure 33. Be careful not to allow this grease to adhere to brake shoes.

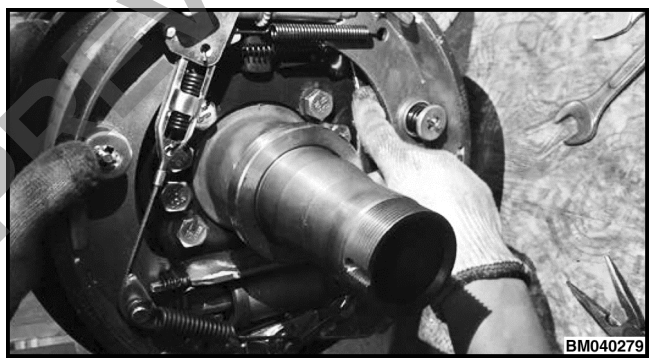


1. SUPPORT FACE OF BOTTOM PLATE
2. SUPPORT PIN OF LEVER L H BRAKE
3. SUPPORT PIN
4. ADJUSTER THREAD AND OTHER ROTATING PARTS
5. CONTACT FACE OF BRAKE SHOE AND WASHER CUP

Figure 33. For 2-3.5T Forklift Truck

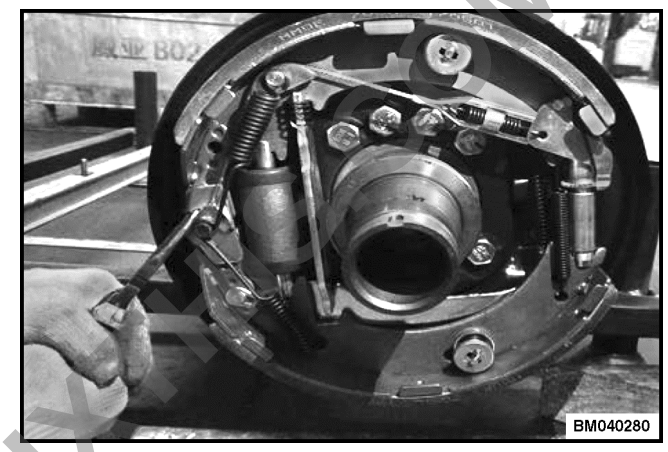
6. Mount the brake cable assembly onto the bottom plate using E-shaped retainer ring.

7. Mount the brake shoes onto the bottom plate using the fixing spring. Install the washer, cup and the adjusting lever. Mount the bottom part of the secondary brakes shoe with fixing spring. Make sure that the pressure seat is fitted in the holes of brake shoes and adjusting lever.



8. Mount the compressed spring onto the hand brake push rod. Install the push rod onto the brake shoes.

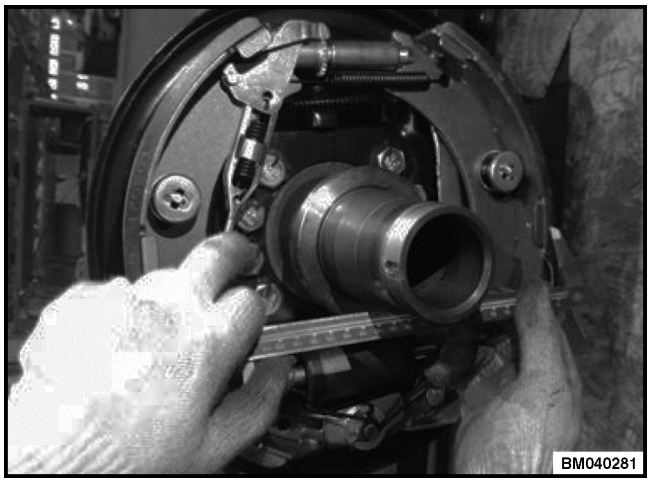
9. Mount the guide plate of brake shoes onto the support pin. Install the return spring of brake shoes.



10. Install adjuster, adjuster spring, top rod, and return spring for top rod.

Check the following:

- Adjuster thread direction and installation direction.
- Adjuster spring direction The tooth part of adjuster must not contact the spring.
- Top rod return spring direction. The spring hook must be installed on the opposite side of the top rod at the end of the support pin.
- Top rod and top rod return spring shall be fixed inside the slot of support pin.
- Make sure that the lower end of adjusting lever contacts the tooth of the adjuster.



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