SERVICE MANUAL

TELETRUK (VARIABLE REACH TRUCK)
TLT 30D High Lift,
TLT 35D, TLT 35D 4x4

EN - 9813/2500 - ISSUE 4 - 08/2017

This manual contains original instructions, verified by the manufacturer (or their authorized representative).

Foreword

The Operator's Manual

⚠

You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator's Manual. You must understand and follow the instructions in the Operator's Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

Do not operate the machine without an Operator's Manual, or if there is anything on the machine you do not understand.

Treat the Operator's Manual as part of the machine. Keep it clean and in good condition. Replace the Operator's Manual immediately if it is lost, damaged or becomes unreadable.

Contents

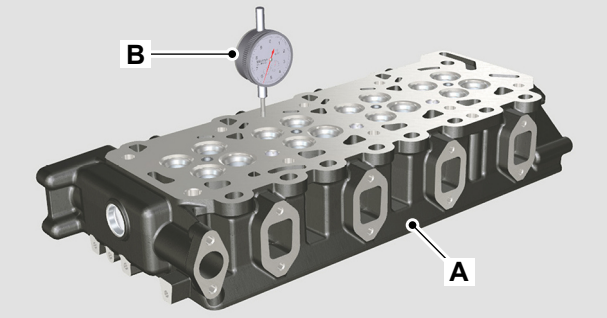
Calibrate

Flatness Check

Put the cylinder head on a surface plate and measure its flatness with a dial gauge.

If the level deviation is greater than 0.10mm (0.004in), the cylinder head must be machined. The cylinder head should not be machined more than 0.20mm (0.008in) in depth.

Figure 100.



A Cylinder head
B Dial gauge

Remove and Install

For: Kohler KDI 1903 TCR ..... Page 15-39
For: Kohler KDI 2504 TCR ..... Page 15-41

(For: Kohler KDI 1903 TCR)

Consumables

Description	Part No.	Size
Cleaner/Degreaser - General purpose solvent based parts cleaner	4104/1557	0.4L

⚠ **CAUTION** This component is heavy. It must only be removed or handled using a suitable lifting method and device.

Before Removal

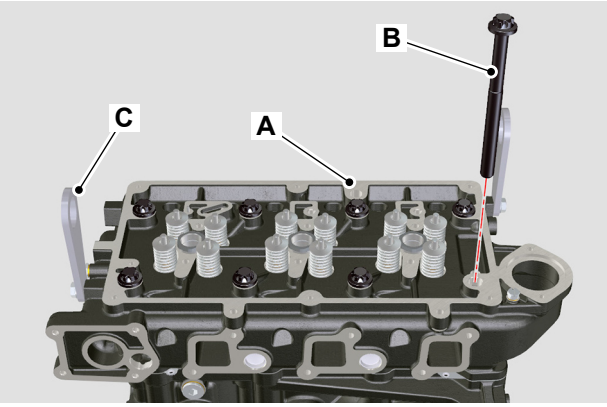
1. This procedure requires service parts. Make sure you have obtained the correct parts before you start, refer to Parts Catalogue.
2. Make sure that the engine is safe to work on. If the engine has been running, let it cool before you start the service work.
3. Get access to the engine.
4. Remove the thermostat.
   Refer to: PIL 21-12-00.
5. Remove the exhaust manifold.
   Refer to: PIL 18-24-04.
6. Remove the inlet manifold.
   Refer to: PIL 18-24-03.
7. Remove the rocker cover.
   Refer to: PIL 15-42-06.
8. Remove the rocker assembly.
   Refer to: PIL 15-42-00.

Remove

Make sure that the engine is at ambient temperature before you remove the cylinder head, to prevent deformation.

1. Remove the bolts that attach the cylinder head to the crankcase. Note that the bolts must not be re-used. Discard the bolts.

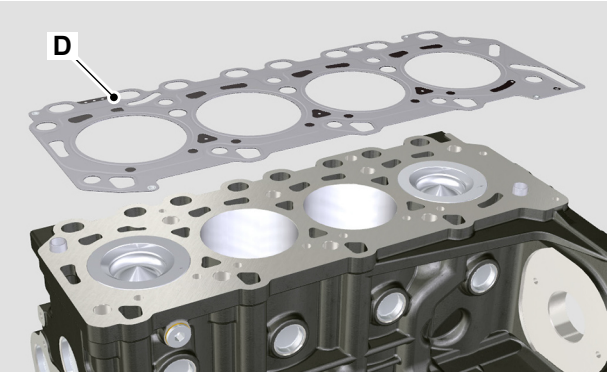
Figure 101.



A Cylinder head
B Bolt
C Eye-bolt

2. Carefully lift the cylinder head from the crankcase. Only use the eye-bolts installed on the cylinder head to move the cylinder head.
3. Remove and discard the head gasket.

Figure 102.



D Head gasket

4. Using a suitable cleaning agent, carefully remove all traces of the head gasket material from the cylinder head and crankcase mating faces.

   Consumable: Cleaner/Degreaser - General purpose solvent based parts cleaner
5. Check the cylinder head and crankcase mating faces for signs of damage and distortion.

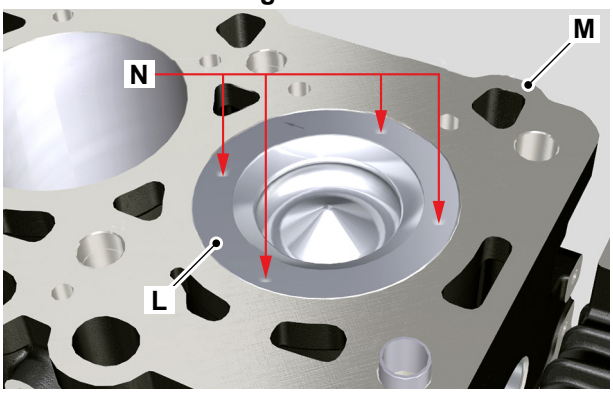
   Refer to: PIL 15-06-00.

Before Assembly

1. Measure the injector projection.

   Refer to: PIL 18-18-00.
2. Obtain the correct new cylinder head bolts. Note that the original bolts must not be re-used.
3. Obtain the correct replacement head gasket. Note the number of identification holes as shown in Refer to Table 26.

Figure 103.



L Piston
M Crankcase
N Measuring points

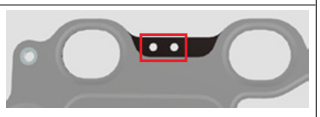
   3.1. Turn the crankshaft to put the piston at TDC (Top Dead Centre).

   3.2. Put a dial gauge on the crankcase and measure the piston protrusion from the crankcase surface.

   3.3. Do step 3.2 again for all the pistons.

   3.4. Record the highest mean value by applying the fraction given in Refer to Table 26.
4. Make sure that all items are clean and free from damage and corrosion.

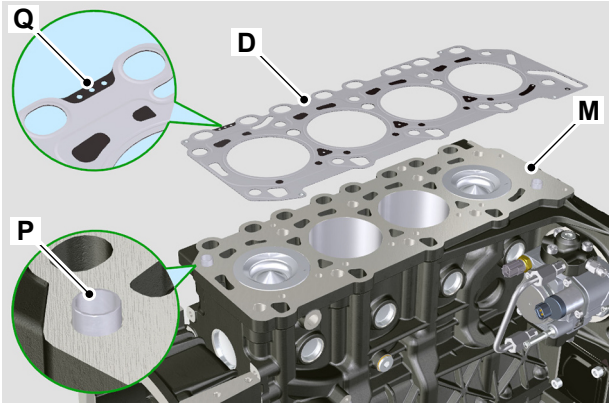
Table 26.

Fraction	Number of identification hole
0.03–0.126mm	
0.127–0.25mm	
0.251–0.375mm	

Assemble

1. Replacement is the reversal of the removal procedure.
2. Position a new head gasket on to the crankcase mating face. Make sure that the gasket is installed in the correct orientation and correctly aligned with the bushings.

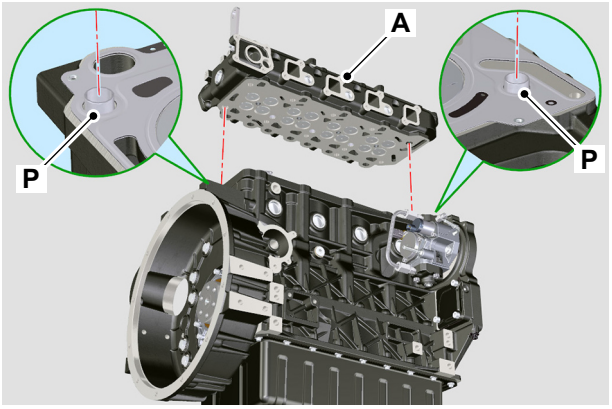
Figure 104.



D Head gasket
M Crankcase
P Centering bushings
Q Identification holes

3. Lower the cylinder head on to the crankcase. Make sure that the cylinder head is correctly aligned with the bushings.

Figure 105.

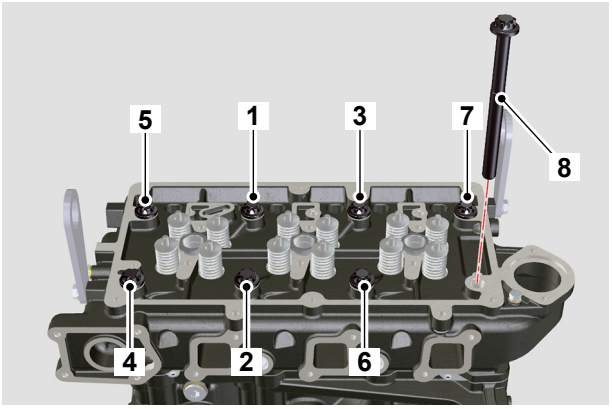


A Cylinder head
P Bushings

4. Install the new cylinder head bolts.

5. Tighten the bolt to the correct torque value. Strictly follow the torque sequence shown.

Figure 106.



6. Tighten the bolts in six stages, use the torque and angle method.

Refer to: PIL 72-00-00.

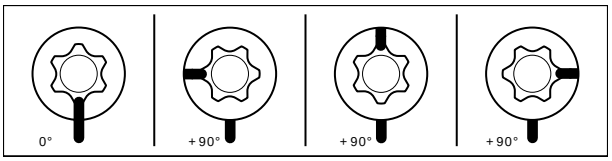
6.1. Tighten the bolts, starting with the middle pair and working outwards (in sequence 1-10) to the 1st stage pre-torque.

6.2. Then, further tighten the bolts, starting with the middle pair and working outwards (in sequence 1-10) to the 2nd stage pre-torque.

6.3. Then, re-tighten the bolts, starting with the middle pair and working outwards (in sequence 1-10) to the 3rd stage pre-torque.

6.4. Use the angle gauge to angle tighten the bolts, starting with the middle pair and working outwards (in sequence 1-10) to the 4th stage pre-torque. As a visual check, match mark the bolts to the cylinder head before you start. When the bolts have been angle tightened, the match marks will appear as shown.

Figure 107.



6.5. Then, further angle tighten the bolts, starting with the middle pair and working outwards (in sequence 1- 10) to the 5th stage pre-torque.

6.6. Finally, angle tighten the bolts, starting with the middle pair and working outwards (in sequence 1- 10) for the final stage torque.

Table 27.

Description	Torque Value
Cylinder head to crankcase bolts 1-10	
- first stage torque	40N·m
- second stage torque	70N·m
- third stage torque	100N·m
- fourth stage torque	90°
- fifth stage torque	90°
- final stage torque	90°

(For: Kohler KDI 2504 TCR)

Consumables

Description	Part No.	Size
Cleaner/Degreaser - General purpose solvent based parts cleaner	4104/1557	0.4L

⚠ **CAUTION** This component is heavy. It must only be removed or handled using a suitable lifting method and device.

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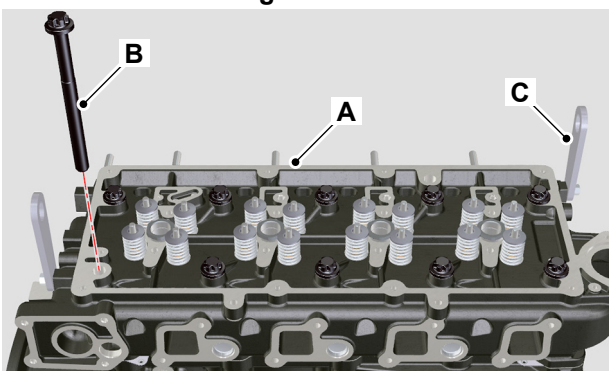
   Refer to: PIL 18-24-03.
7. Remove the rocker cover.
   Refer to: PIL 15-42-06.
8. Remove the rocker assembly.
   Refer to: PIL 15-42-00.

Remove

Make sure that the engine is at ambient temperature before you remove the cylinder head, to prevent deformation.

1. Remove the bolts that attach the cylinder head to the crankcase. Note that the bolts must not be re-used. Discard the bolts.

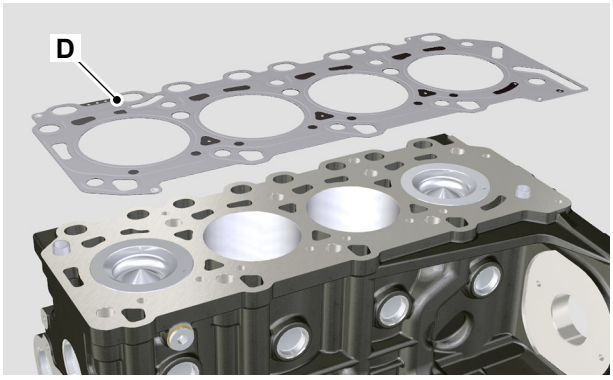
Figure 108.



A Cylinder head
B Bolt
C Eye-bolt

2. Carefully lift the cylinder head from the crankcase. Only use the eye-bolts installed on the cylinder head to move the cylinder head.
3. Remove and discard the head gasket.

Figure 109.



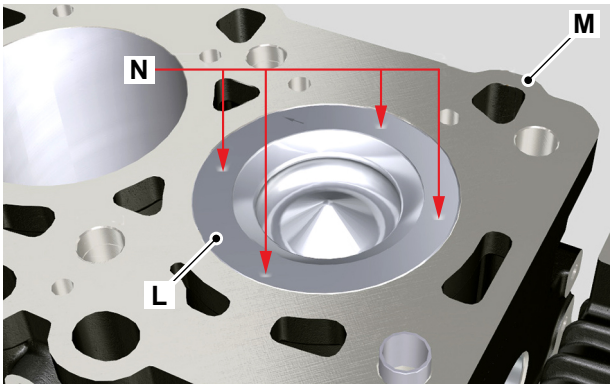
D Head gasket

4. Using a suitable cleaning agent, carefully remove all traces of the head gasket material from the cylinder head and crankcase mating faces.
   Consumable: Cleaner/Degreaser - General purpose solvent based parts cleaner
5. Check the cylinder head and crankcase mating faces for signs of damage and distortion.
   Refer to: PIL 15-06-00.

Before Assembly

1. Measure the injector projection.
   Refer to: PIL 18-18-00.
2. Obtain the correct new cylinder head bolts. Note that the original bolts must not be re-used.
3. Obtain the correct replacement head gasket. Note the number of identification holes as shown in Refer to Table 28.

Figure 110.



L Piston
M Crankcase
N Measuring points

3.1. Turn the crankshaft to put the piston at TDC.

3.2. Put a dial gauge on the crankcase and measure the piston protrusion from the crankcase surface.

3.3. Do step 3.2 again for all the pistons.

3.4. Record the highest mean value by applying the fraction given in Refer to Table 28.

4. Make sure that all items are clean and free from damage and corrosion.

Table 28.

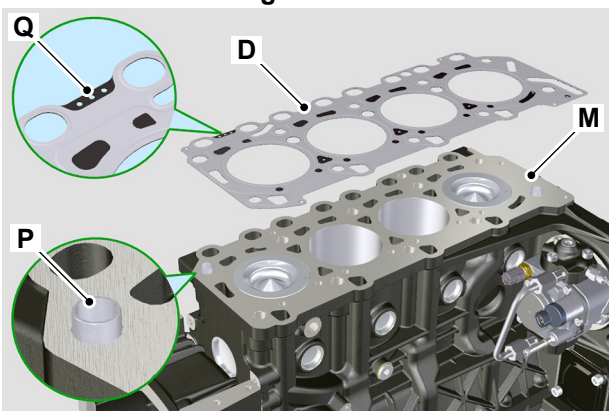
Fraction	Number of identification hole
0.03–0.126mm	
0.127–0.25mm	
0.251–0.375mm	

Assemble

1. Replacement is the reversal of the removal procedure.

2. Position a new head gasket on to the crankcase mating face. Make sure that the gasket is installed in the correct orientation and correctly aligned with the bushings.

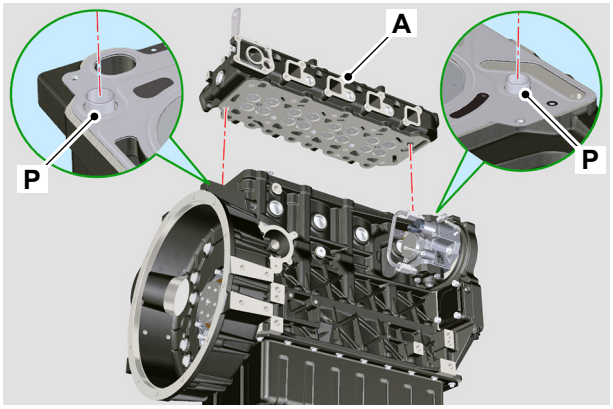
Figure 111.



D Head gasket
M Crankcase
P Centering bushings
Q Identification holes

3. Lower the cylinder head on to the crankcase. Make sure that the cylinder head is correctly aligned with the bushings.

Figure 112.

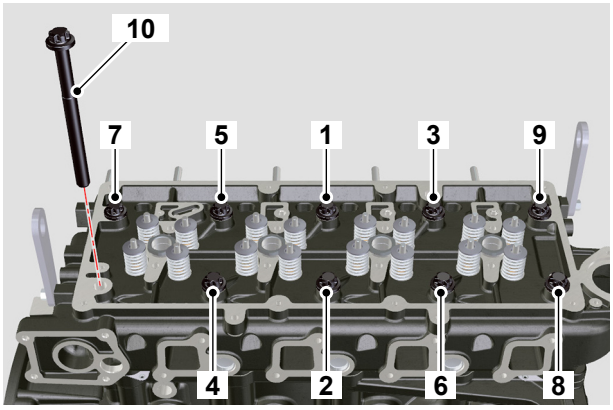


A Cylinder head
P Bushings

4. Install the new cylinder head bolts.

5. Tighten the bolt to the correct torque value. Strictly follow the torque sequence shown.

Figure 113.



6. Tighten the bolts in six stages, use the torque and angle method.

Refer to: PIL 72-00-00.

6.1. Tighten the bolts, starting with the middle pair and working outwards (in sequence 1-10) to the 1st stage pre-torque.

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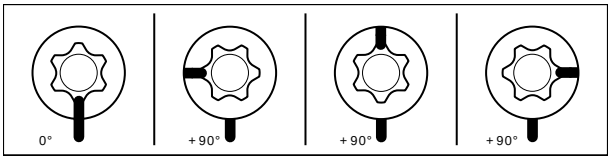
6.3. Then, re-tighten the bolts, starting with the middle pair and working outwards (in sequence 1-10) to the 3rd stage pre-torque.

6.4. Use the angle gauge to angle tighten the bolts, starting with the middle pair and working outwards (in sequence 1-10) to the 4th stage pre-torque. As a visual check, match mark the bolts to the cylinder head before you start. When the bolts have

been angle tightened, the match marks will appear as shown.

Figure 114.



6.5. Then, further angle tighten the bolts, starting with the middle pair and working outwards (in sequence 1- 10) to the 5th stage pre-torque.

6.6. Finally, angle tighten the bolts, starting with the middle pair and working outwards (in sequence 1- 10) for the final stage torque.

Table 29.

Description	Torque Value
Cylinder head to crankcase bolts 1-10	
- first stage torque	40N·m
- second stage torque	70N·m
- third stage torque	100N·m
- fourth stage torque	90°
- fifth stage torque	90°
- final stage torque	90°

Our support email:

ebooklibonline@outlook.com