2.2. Specifications

Model	YPD-3MP2	YPD-4MP2	YPD-4MP4
Applicable Engine	3TNV82A /84(T)/88	4TNV84(T) /88	4TNV94 /98(T)/106(T)
Plunger Diameter (mm)	9mm		10mm
Max. Cam Lift (mm)	8.1mm		10mm

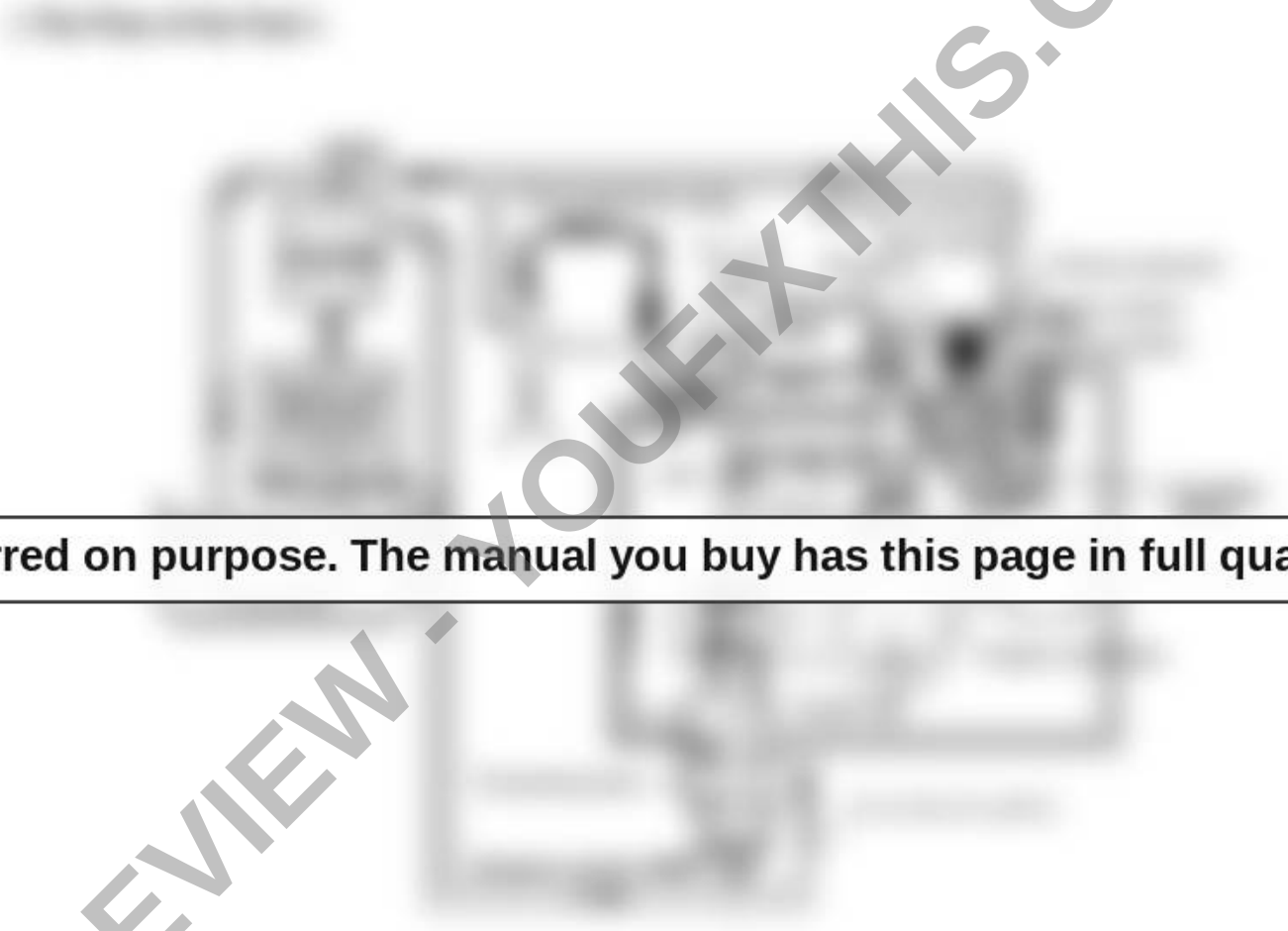
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2.3. Outline of fuel injection pump

Yanmar distribution type fuel injection pump YPD-MP consists of a hydraulic head that is equipped with a single plunger, a single distribution shaft, and delivery valves for each individual cylinders, a pump housing that includes camshafts, and a governor, all of which are integrated into the main unit of the pump.
For the feed of the fuel, the plunger moves up / down and the distribution shaft rotates with the revolution of the camshaft to distribute the fuel among the cylinders individually.
Specifically, one revolution of camshaft completes three cycles (for three cylinder engine) of a process, including switching over to the high pressure flow path to each cylinder with the distribution shaft, opening delivery valve, high pressure pipe, fuel injection valve, and engine cylinders in this order. This process is repeated by the revolution of the camshaft.



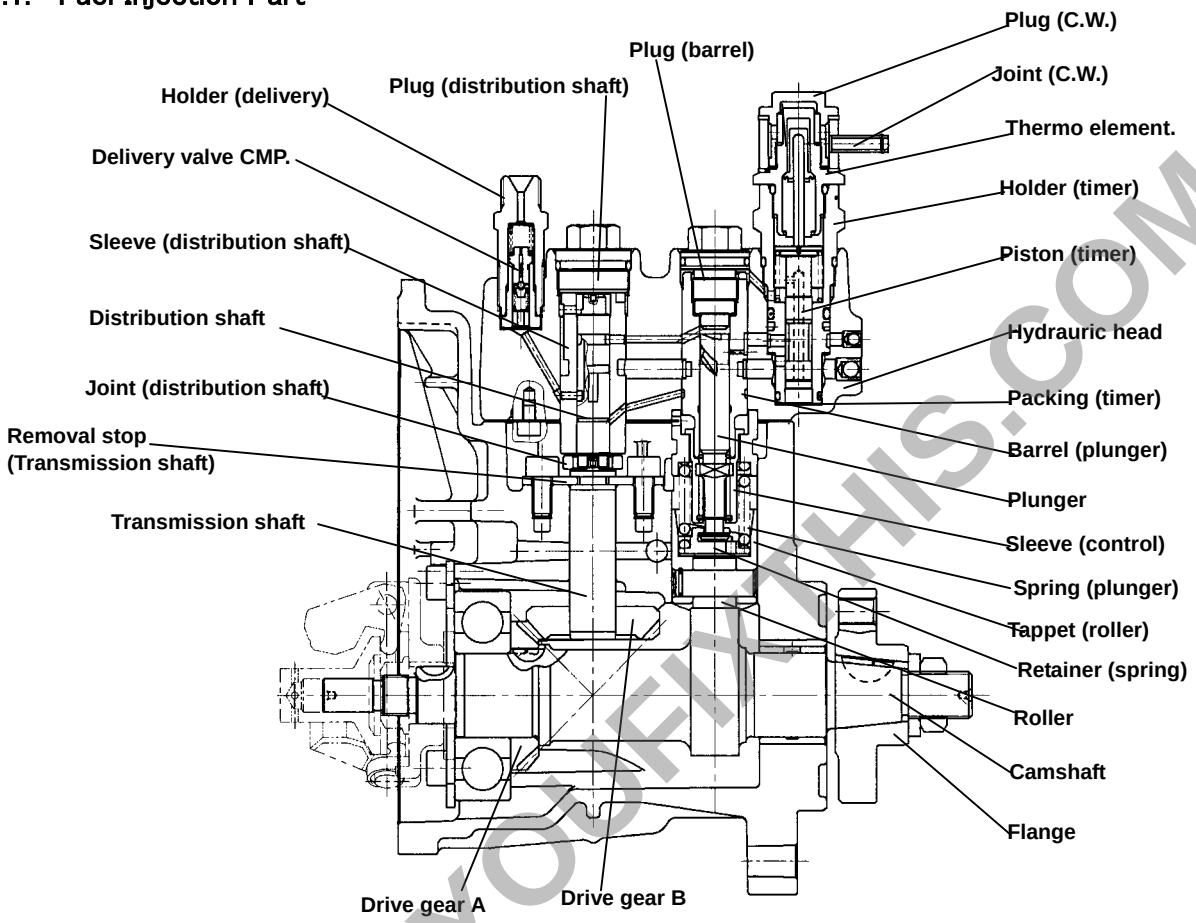
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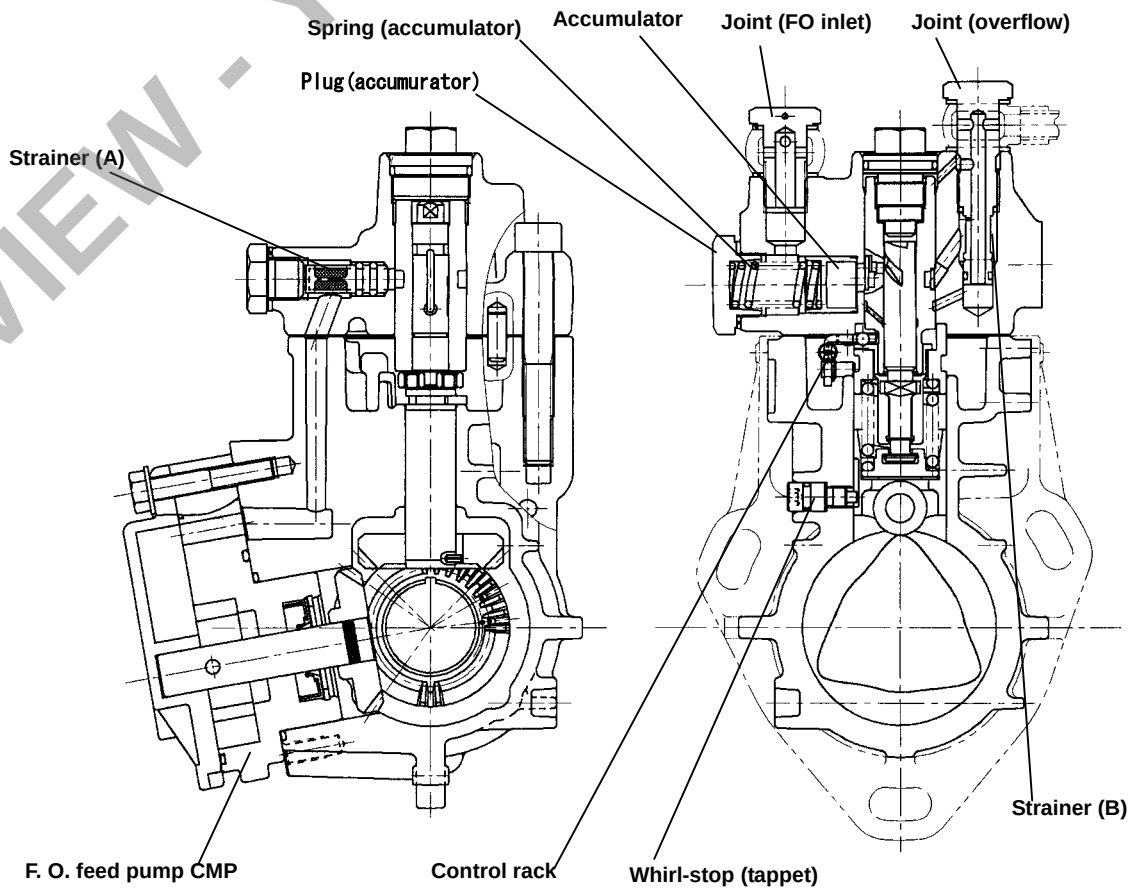
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2.4. Construction of MP-Pump

2.4.1. Fuel Injection Part





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3. Disassembly ,Reassembly and Inspection

3.1. Disassembly

Disassembled parts must be put aside in order.

Wash them before reassembly.

3.1.1. Separating the pump body from the governor body



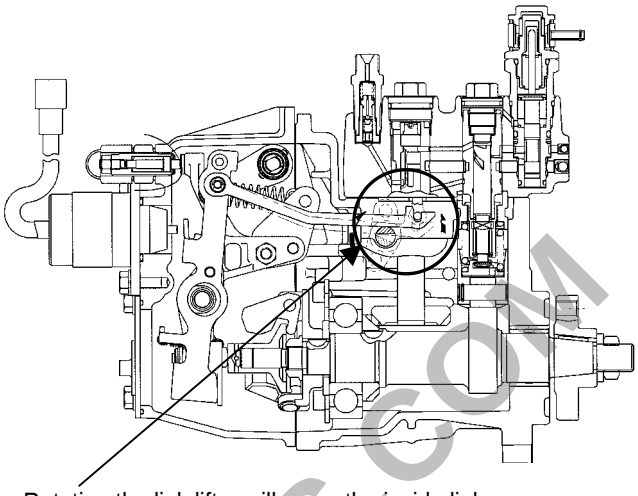
Install the pump body to the disassembly table.



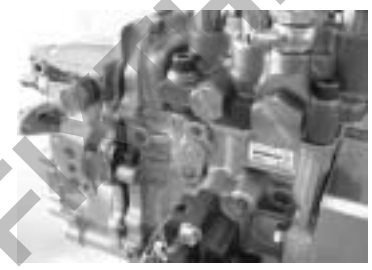
Remove the link lifter fix bolt.



Turn the link lifter plate counterclockwise.



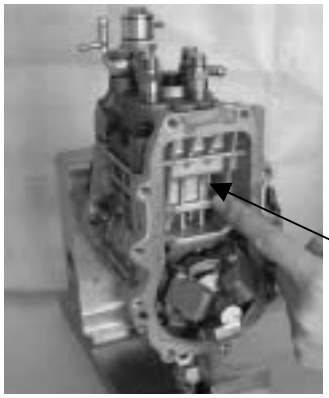
Rotating the link lifter will move the inside link upward/downward, so the control rack may be engaged/disengaged.



Remove the bolt fixing the pump and governor bodies.



Separate the governor from the pump body.



The pump body separated from t he governor body

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7. Tightening torques for main bolts and nuts

7.1. Pump part

No.	Name of parts	Tightening torque (N-m)		No.	Name of parts	Tightening torque (N-m)	
		MP4	MP2			MP4	MP2
2	Pipe joint bolt, fuel inlet	25 - 29		18	Tappet guide	4 - 5	
		M12×1.25				M6×1 (hexagon socket head)	
4	Overflow joint, fuel outlet	25 - 29		19	Plug, barrel	50 - 55	30 - 35

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6. Troubleshooting

6.1. Troubleshooting of fuel injection pump

Complete repair means not only replacing defective parts, but finding and eliminating the cause of the trouble as well. The cause of the trouble may not necessarily be in the pump itself, but may be in the engine or the fuel system. If the pump is removed prematurely, the true cause of the trouble may never be known. Before removing the pump from the engine, at least go through the basic check points given here.

Basic checkpoints

- Check for breaks or oil leaks throughout the fuel system, from the fuel tank to the nozzle.
- Check the injection timings for all cylinders. Are they correctly adjusted? Are they too fast or too slow?
- Check the nozzle spray.
- Check the fuel delivery. Is it in good condition? Loosen the fuel pipe connection at the injection pump inlet and test operate the fuel feed pump.

6.2. Major faults and troubleshooting

Fault		Cause	Remedy
1. Engine won't start.	Fuel not delivered to injection pump.	(1) No fuel in the fuel tank.	Resupply
		(2) Fuel tank cock is closed.	Open
		(3) Fuel pipe system is clogged.	Clean
		(4) Fuel filter element is clogged.	Disassemble and clean, or replace element
		(5) Air is sucked into the fuel due to defective connections in the piping from the fuel tank to the fuel pump.	Repair
		(6) Fuel feed pump is damaged.	Replace
		(7) Fuel freeze.	Replace with a fuel for cold weather.
	Fuel delivered to injection pump.	(1) Defective connection of control lever and accel. rod of injection pump.	Repair or adjust
		(2) Plunger is worn out or stuck.	Repair or replace
		(3) Delivery valve is stuck.	Repair or replace
		(4) Control rack doesn't move.	Repair or replace
		(5) Injection pump coupling is damaged, or the key is broken.	Replace
		(6) Air sucking.	Bleed air.
		(7) Plunger/Distribution shaft is seized.	Replace pump.
		(8) Tappet is seized.	Replace pump.
		(9) Stop solenoid is damaged.	Replace
		(10) Cold start device is damaged.	Replace
		(11) Low cranking speed.	Replace battery.
		(12) Governor is damaged.	Replace
		(13) Barrel crack	Replace pump.
		(14) Transmission shaft is seized. Gear slip.	Replace

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1.1. Warning Symbols 1

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1. For Safe Servicing

- Most accidents are caused by negligence of basic safety rules and precautions. For accident prevention, it is important to avoid such causes before development to accidents.
  Please read this manual carefully before starting repair or maintenance to fully understand safety precautions and appropriate inspection and maintenance procedures.
  Attempting at a repair or maintenance job without sufficient knowledge may cause an unexpected accident.
- It is impossible to cover every possible danger in repair or maintenance in the manual. Sufficient consideration for safety is required in addition to the matters marked CAUTION. Especially for safety precautions in a repair or maintenance job not described in this manual, receive instructions from a knowledgeable leader.

1.1. Warning Symbols

- Safety marks used in this manual and their meanings are as follows:



DANGER indicates an imminently hazardous situation, which if not avoided, WILL result in death or serious injury.



WARNING indicates a potentially hazardous situation, which if not avoided, COULD result in death or serious injury.



CAUTION indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury.

- Any matter marked **[NOTICE]** in this manual is especially important in servicing.
  If not observed, the product performance and quality may not be guaranteed.

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