

WATER PUMP

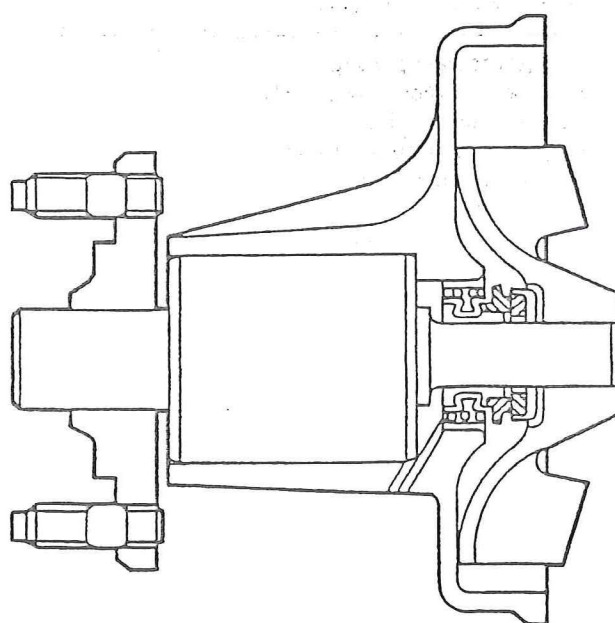
WATER PUMP DESCRIPTION

The water pump is located in the front of the engine. The impeller cavity is built into the timing gear case. The water pump is light and compact. An integral type water seal has been used to improve reliability.

NOTE: The water pump cannot be disassembled and must be replaced as a unit.

WATER PUMP SPECIFICATIONS

Impeller	Diameter	80 mm / (3.15 in)
	No. of blades	6
Bearing shaft	Diameter	40 mm / (1.57 in)
	Total length	112 mm / (4.41 in)



TROUBLESHOOTING GUIDE

Problems	Possible causes	Remedy
Coolant leakage	<ul style="list-style-type: none"> * Damage to the radiator * Coolant leaking from radiator hose or heater hose * Coolant leaking at the water temperature switch * Defective water pump seal * Loose or damaged thermostat cover or gasket * Loose cylinder head bolt * Damaged cylinder head gasket * Cracks in cylinder block * Cracks in cylinder head 	Repair or Replace Repair or replace Repair or replace Replace water pump Repair or replace Tighten Replace Replace Replace
Corrosion	<ul style="list-style-type: none"> * Foreign matter in the coolant 	Clean
Overheating	<ul style="list-style-type: none"> * Clogged coolant passage * Improper thermostat operation * Clogged radiator fins * Improper water pump operation * Loose or broken fan belt * Insufficient coolant * Defective radiator cap 	Clean Replace Clean Repair or replace Adjust or replace Replenish Replace
Engine not reaching normal operating temperature	<ul style="list-style-type: none"> * Improper thermostat operation 	Replace

NOTES

6

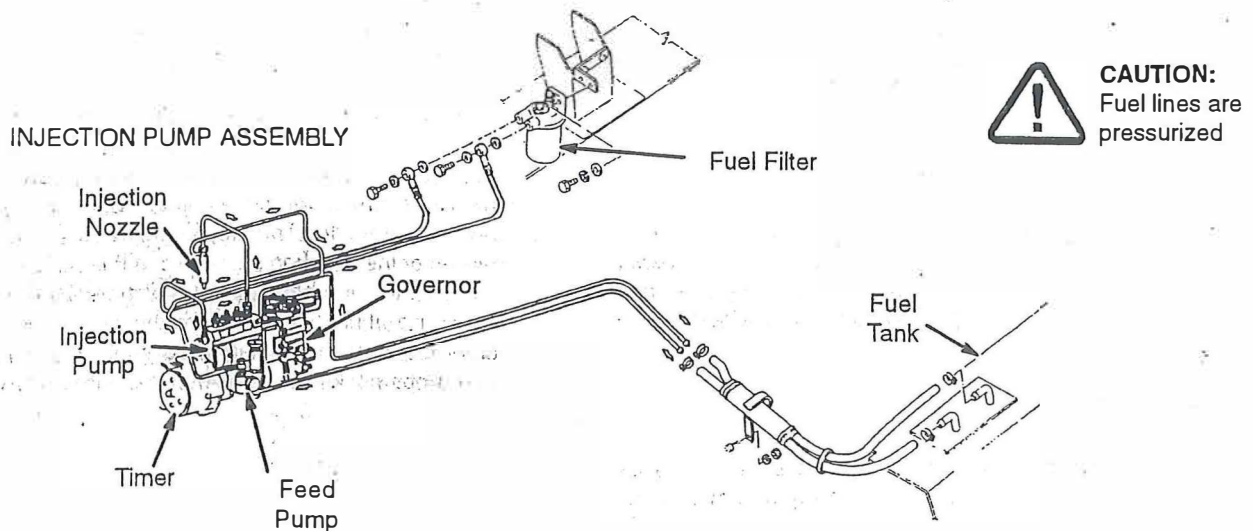
FUEL SYSTEM

SECTION 6 – CONTENTS

FUEL SYSTEM

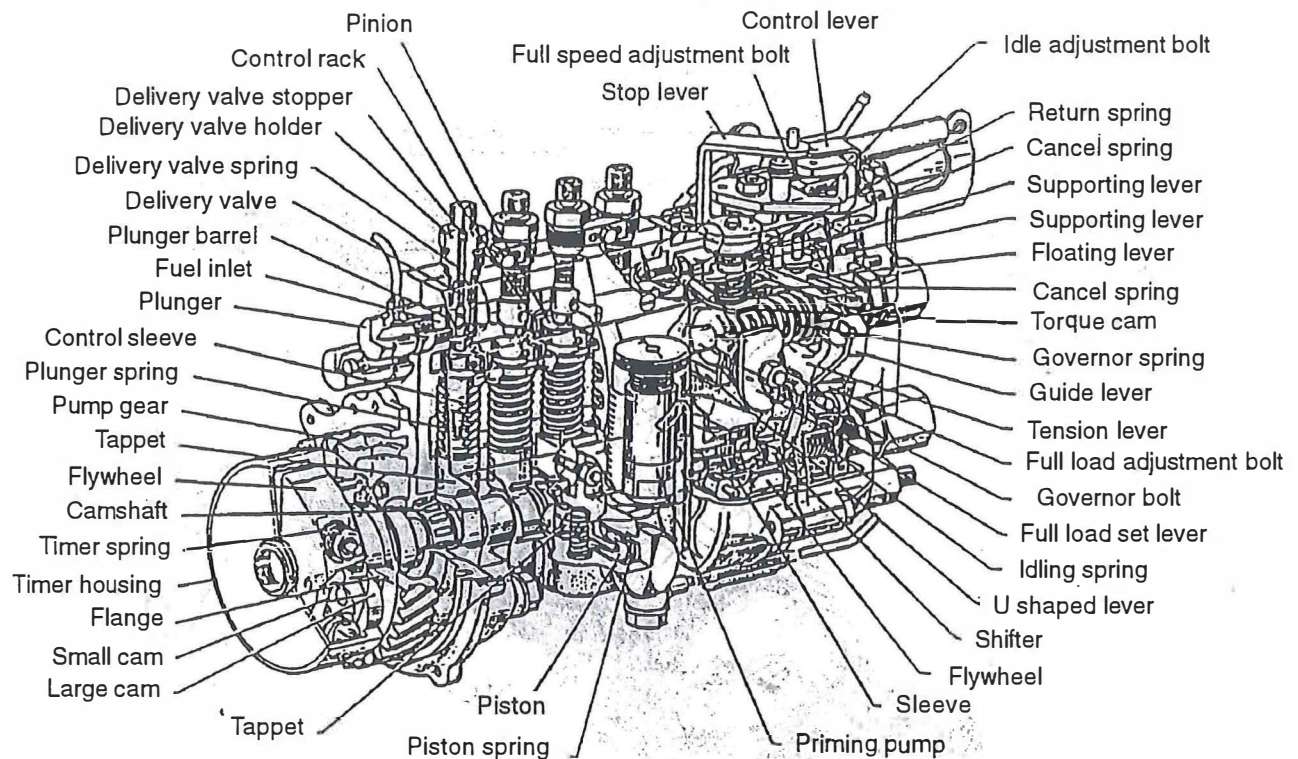
DESCRIPTION	PAGE NUMBER
FUEL SYSTEM DIAGRAM	6-1
INJECTION PUMP	6-1
INJECTION PUMP COMPONENT ILLUSTRATION	6-1
INJECTION PUMP DESCRIPTION	6-2
GOVERNOR DESCRIPTION	6-2
INJECTION PUMP LUBRICATION DESCRIPTION	6-2
INJECTION PUMP LUBRICATION DIAGRAM	6-2
FUEL FEED PUMP DESCRIPTION	6-3
INJECTION PUMP TIMER COMPONENT ILLUSTRATION	6-3
TIMER DESCRIPTION	6-3
INJECTION PUMP SPECIFICATIONS	6-4
ENGINE IDLE	6-4
INSPECTION OF THE ENGINE IDLE	6-4
ADJUSTMENT OF THE ENGINE IDLE	6-4
INJECTION TIMING	6-4
INSPECTION OF THE INJECTION TIMING	6-4
ADJUSTMENT OF THE INJECTION TIMING	6-5
INJECTION PUMP REMOVAL, REPLACEMENT AND INSTALLATION ..	6-8
FUEL INJECTION PUMP ASSEMBLY REMOVAL	6-8
INJECTION PUMP ASSEMBLY AND TORQUE VALUE ILLUSTRATION	6-10
INJECTION PUMP REPLACEMENT	6-11
INJECTION PUMP INSTALLATION AND SETUP	6-11
BLEEDING AIR FROM THE FUEL SYSTEM	6-13
FUEL FILTER ELEMENT REPLACEMENT	6-14
FUEL FEED PUMP STRAINER INSPECTION	6-14
INJECTORS-FUEL	6-15
INJECTOR REMOVAL	6-15
INSPECTION OF THE INJECTORS	6-15
CHECKING INJECTOR STARTING PRESSURE	6-16
CHECKING VALVE SEAT INTEGRITY	6-16
CHECKING INJECTOR SPRAY PATTERN	6-16
DISASSEMBLY OF THE INJECTOR	6-17
CLEANING OF THE INJECTOR	6-17
REASSEMBLY OF THE INJECTOR	6-17
INSTALLATION OF THE INJECTOR	6-18
FUEL STOP MECHANISM	6-19
FUEL STOP CABLE INSPECTION AND ADJUSTMENT	6-20
OPERATION OF THE FUEL STOP CONTROL	6-21
FUEL STOP RELAY CIRCUIT INSPECTION	6-23
FUEL STOP RELAY BENCH TEST	6-24
FUEL STOP MOTOR CIRCUIT INSPECTION	6-24
FUEL STOP MOTOR BENCH TEST	6-25
TROUBLESHOOTING GUIDE	6-26

FUEL SYSTEM DIAGRAM



INJECTION PUMP

INJECTION PUMP COMPONENT ILLUSTRATION



NOTE: Special tools and testing equipment are required to service the pump's internal parts.



CAUTION: Servicing of the internal components of the injection pump is not recommended except by an authorized service facility.

INJECTION PUMP DESCRIPTION

The TM model diesel engine incorporates an in-line injection pump (Bosch A type) to utilize the advantages of high pressure injection. The design of the engine and the injection pump allows maximum output while maintaining efficiency and economy.

GOVERNOR DESCRIPTION

The engine is equipped with an RLD type governor. This is an all-speed mechanical governor with a torque cam and small

lever reaction. The governor is built into the torque cam and the small lever reaction contributes to the small force required to depress the accelerator pedal. The full load injection amount is factory set to meet engine requirements. Fuel injection amount is automatically increased during start up.

INJECTION PUMP LUBRICATION DESCRIPTION

The injection pump is pressure-lubricated with engine oil. Engine oil from the oil pan is pressurized by the oil pump and delivered to the oil filter. The filtered engine oil is sent to the number 4 tappet of the injection pump and to the center of the timer. The oil fed to the number 4 tappet is dispersed by the rotating camshaft and lubricates most of the pump. The engine oil fed to the timer lubricates the timer. Excess oil exits the injection pump and drops back into the oil pan through the timing gear case.

INJECTION PUMP LUBRICATION DIAGRAM

