

Mazda TM Engine Parts contact:  
[EngineParts@HeavyEquipmentRestorationParts.com](mailto:EngineParts@HeavyEquipmentRestorationParts.com)

Phone: 2696731638



## A

Air Cleaner	
Replacement .....	2-4
Service .....	2-4
Air Heater System	
Air Heater Relay .....	7-18
Bench Test .....	7-19
Input/Output Voltage Inspection .....	7-18
Cold Start Indicator Lamp Inspection .....	7-20
Control Unit Inspection .....	7-16
Coolant Temperature Sensor Inspection .....	7-19
Description of Operation .....	7-16
Diagram-System .....	7-15
Heater Element and Intake Elbow Installation .....	7-20
Heater Element Inspection .....	7-18
Principal of Operation .....	7-15
Test Points and Values .....	7-17
Timer Operation Graph .....	7-16
Alternator	
Circuit Diagram .....	7-2
Circuit Schematic .....	7-1
Connection Illustration .....	7-1
Disassembly .....	7-3
Brush Inspection and Replacement .....	7-4
Exploded View .....	7-3
Front Bearing Inspection .....	7-5
Rear Bearing Inspection .....	7-5
Rectifier Inspection .....	7-5
Rectifier Removal .....	7-4
Rotor Inspection .....	7-4
Stator Inspection .....	7-3
Stator Removal .....	7-3
Loaded Output Test .....	7-2
No-Load Output Test .....	7-1
Reassembly .....	7-5
Removal and Installation .....	7-2
Specifications .....	7-1
Alternator Belt	
Adjustment .....	2-3
Inspection .....	2-3
Replacement .....	2-3

## B

Bleeding Air from the Fuel System .....	2-8, 6-13
---	-----------

## C

Compression Test-Engine .....	2-7
Cooling System	
Components-Engine .....	5-2
Diagram .....	5-1
Specifications .....	5-2
Thermostat Inspection .....	5-2
Water Pump .....	5-3
Description .....	5-3
Specifications .....	5-3

## D

Diagrams	
Air Heater System .....	7-15
Alternator Circuit .....	7-2
Alternator Rectifier .....	7-5
Alternator Schematic .....	7-1
Cooling System .....	5-1
Fuel Stop Motor Circuit .....	6-21
Fuel System .....	1-8, 6-1
Injection Pump Lubrication .....	6-2
Lubrication System .....	1-7
Starter .....	7-7
Starter Bench Test .....	7-14
Starter/Relay Assembly .....	7-10

## E

Engine Disassembly	
Cylinder Block Disassembly-Accessory Components .....	3-5
Crankshaft Pulley Removal .....	3-6
Flywheel Removal .....	3-6
Cylinder Block Disassembly-External Components .....	3-7
Cam Gear and Friction Gear Removal .....	3-7
Cylinder Block Disassembly-Internal Components .....	3-8
Camshaft Removal .....	3-9
Connecting Rod and Piston Assembly Removal .....	3-9
Cylinder Liner Removal .....	3-11
Main Bearing Cap Removal .....	3-11
Piston Ring Removal .....	3-10
Rear Oil Seal Removal .....	3-9
Snap Ring and Piston Pin Removal .....	3-10
Cylinder Head Disassembly .....	3-3
Cylinder Head Bolt Removal .....	3-4
Rocker Arm and Shaft Removal .....	3-4
Valve Guide Removal .....	3-4
Valve Retainer Removal .....	3-4
Valve Seal Removal .....	3-4
Mounting the Engine to the Engine Stand .....	3-1
Special Tools Required .....	3-1
Order of Disassembly .....	3-2
Special Tools Required .....	3-2
Engine Identification Illustration .....	1-3
Engine Inspection and Repair .....	3-12
Camshaft Inspection .....	3-21
Connecting Rod Inspection .....	3-20
Crankshaft Inspection .....	3-20
Cylinder Block and Liner Dimensions .....	3-17
Cylinder Block and Liner Identification .....	3-19
Cylinder Block Inspection .....	3-17
Cylinder Head Bolt Inspection .....	3-13
Cylinder Head Inspection .....	3-13
Cylinder Liner Inspection .....	3-18
Main and Connecting Rod Bearing Inspection .....	3-21
Piston and Piston Pin Inspection .....	3-18
Push Rod Inspection .....	3-16
Rocker Arm and Rocker Shaft Inspection .....	3-16
Special Tools and Supplies Required .....	3-12
Tappet Inspection .....	3-23
Valve and Valve Guide Inspection .....	3-13
Valve Seat Inspection .....	3-14
	9-1

### E

Valve Spring Inspection .....	3-16
Engine Introduction	
Cooling System .....	1-6
Cylinder Block .....	1-4
Cylinder Head .....	1-5
Cylinder Head Cover .....	1-4
Electrical System .....	1-8
Fuel System .....	1-8
Diagram—Fuel System .....	1-8
Intake and Exhaust Systems .....	1-6
Lubrication System .....	1-7
Diagram .....	1-7
Pistons and Crankshaft .....	1-4
Timing Gear and Timing Gear Case .....	1-4
Valve System .....	1-5
Engine Oil. <i>See</i> Oil	
Engine Reassembly .....	3-24
Cylinder Block Reassembly—Accessory Components	3-38
Assembly and Torque Value Illustration .....	3-38
Crankshaft Pulley Installation .....	3-40
Engine Mount Installation .....	3-38
Flywheel Installation .....	3-39
Fuel Line Installation .....	3-39
Oil Filter Assembly Installation .....	3-39
Oil Pipe Installation .....	3-39
Water Pipe Installation .....	3-40
Cylinder Block Reassembly—External Components	3-34
Assembly and Torque Value Illustration .....	3-34
Fuel Injection Pump Installation .....	3-36
Oil Cooler Assembly Installation .....	3-35
Oil Pan Installation .....	3-37
Oil Pressure Switch Installation .....	3-35
Oil Pump Installation .....	3-34
Oil Strainer Installation .....	3-37
Stiffener Plate Installation .....	3-37
Timing Gear Case Installation .....	3-35
Timing Gear Cover Installation .....	3-36
Timing Gear Installation .....	3-35
Cylinder Block Reassembly—Internal Components	3-26
Assembly and Torque Value Illustration .....	3-26
Camshaft Installation .....	3-27
Crankshaft and Bearing Installation .....	3-27
Crankshaft Crank Pin Finish Dimensions .....	3-32
Crankshaft Main Journal Finish Dimensions .....	3-29
Crankshaft Thrust Bearing Finish Dimensions .....	3-30
End Plate and Rear Oil Seal Installation .....	3-33
Piston and Connecting Rod Installation .....	3-30
Piston Cooling Jet Installation .....	3-26
Cylinder Head Reassembly .....	3-41
Assembly and Torque Value Illustration .....	3-41
Cylinder Head Cover Installation .....	3-46
Cylinder Head Gasket Installation .....	3-43
Cylinder Head Installation .....	3-43
Dipstick and Guide Pipe Installation .....	3-45
Exhaust Manifold Installation .....	3-46
Fuel Injector Line Installation .....	3-45
Injection Nozzle Installation .....	3-44
Injector Line Clip Installation .....	3-45

### E

Intake Manifold Installation .....	3-44
Rocker Arm Installation .....	3-43
Seal Cover Installation .....	3-46
Thermostat Housing Installation .....	3-43
Valve Guide Installation .....	3-41
Valve Retainer Installation .....	3-42
Valve Seal Installation .....	3-42
Valve—Valve Spring—Valve Spring Seat Installation	3-42
Special Tools Required .....	3-24
Engine Specification Table .....	1-1
Engine Specifications	
Overhaul Specifications and Wear Limits .....	3-47
Torque Specifications .....	3-50

### F

Fuel Feed Pump Strainer Inspection .....	6-14
Fuel Filter .....	6-14
Bleeding Air From the Fuel System .....	2-8
Element Replacement .....	6-14
Fuel Filter Replacement .....	2-4
Strainer Inspection .....	6-14
Fuel Injector. <i>See</i> Injectors	
Fuel Pump. <i>See</i> Injection Pump	
Fuel Stop Mechanism .....	6-19
Description .....	6-19
Fuel Stop Cable Inspection and Adjustment .....	6-20
Fuel Stop Motor .....	6-24
Bench Test .....	6-25
Circuit Inspection .....	6-24
Fuel Stop Relay .....	6-23
Bench Test .....	6-24
Circuit Inspection .....	6-23
Operation of the Fuel Stop Control .....	6-21
Fuel System Diagram .....	6-1

### I

Idle—Engine	
Adjustment .....	2-5, 6-4
Inspection .....	2-5, 6-4
Injection Pump	
Component Illustration .....	6-1
Description .....	6-2
Fuel Feed Pump Description .....	6-3
Governor Description .....	6-2
Lubrication Description .....	6-2
Lubrication Diagram .....	6-2
Removal/Replacement/Installation	
Pump Assembly and Torque Value Illustration ...	6-10
Pump Assembly Removal .....	6-8
Pump Installation and Setup .....	6-11
Pump Replacement .....	6-11
Specifications .....	6-4
Timer Component Illustration .....	6-3
Timer Description .....	6-3
Injection Timing	
Adjustment .....	6-5
Inspection .....	6-4



### I

Injectors—Fuel	
Cleaning	6-17
Disassembly	6-17
Inspection	6-15
Spray Pattern	6-16
Starting Pressure	6-16
Valve Seat Integrity	6-16
Installation	6-18
Reassembly	6-17
Removal	6-15

### L

Lubrication System	
Diagram	4-1
Specifications	4-2

### O

Oil and Filter—Engine	
Engine Oil Capacity	2-1
Oil Change and Refill	2-1
Oil Filter Replacement	2-1
Oil Level Inspection	2-1
Oil—Engine	
Capacity	4-2
Cooler Installation Illustration	4-5
Filter Housing Replacement	4-3
Filter Replacement Interval	4-2
Filter Replacement—Main and Bypass	4-3
Inspection	4-2
Line and Pipe Installation	4-5
Lubrication System Diagram	4-1
Lubrication System Specifications	4-2
Pressure Switch Installation	4-4
Pressure Test	4-3
Special Tools Required	4-3
Pump—Oil	
Inspection	4-4
Installation	4-4
Replacement	4-2
Replacement Interval	4-2

### P

Pump—oil. *See* Oil—Engine

### R

Recommended Schedule of Preventive Maintenance	2-9
--	-----

### S

Special Tool List	8-1
Starter	
Armature Inspection	7-12
Assembly Illustration	7-6
Brush and Brush Holder Inspection	7-13
Brush Replacement	7-14
Circuit Diagram	7-7
Components List	7-6
Disassembly	7-9
Exploded View	7-9
Field Coil Inspection	7-13
Inspection—On Vehicle	7-7
Starter Circuit Inspection	7-8
Starter Current Draw Specifications	7-7
Installation	7-14
No—Load Test	7-14
Relay Bench Test	7-10
Removal and Installation	7-8
Solenoid	7-11
Coil Test	7-11
Continuity Test	7-11
Specifications	7-7
Wiring Layout	7-10
Strainer Inspection—Fuel Feed Pump	6-14

### T

Thermostat. <i>See</i> Cooling System	
Timing—Engine. <i>See</i> Injection Timing	
Timing—Injection Pump	
Adjustment. <i>See</i> Inspection and Adjustment of the Injection Timing	
Inspection	2-6
Tool List—Special	8-1
Torque Specifications	3-50
Troubleshooting Guides	
Cooling System Troubleshooting Guide	5-4
Electrical System Troubleshooting Guide	7-21
Engine Troubleshooting Guide	3-51
Fuel System Troubleshooting Guide	6-26
Lubrication System Troubleshooting Guide	4-6

### V

Valve Clearance—Engine	
Adjustment	2-2
Inspection	2-2

Mazda TM Engine Parts contact:  
EngineParts@HeavyEquipmentRestorationParts.com

Phone: 2696731638