INTRODUCTION

1-1 Using Your Tsurumi Operation, Repair and Service Manual

We thank you for purchasing a Tsurumi trash pump. We are sure that the trash pump you have selected will meet your portable pumping needs.

This manual applies to the Tsurumi trash pumps listed below. Specifications for the trash pumps are provided in the **SPECIFICATIONS** section. Key features of the trash pump are shown in the **DESCRIPTION** section.

EPT3-50HA
EPT3-80HA
EPT3-100HA

This manual provides instructions for operation, service, and repair of your trash pump. We strongly recommend that those who operate the trash pump become familiar with the trash pump's features and controls, and read the operating instructions before using the trash pump.

The Operation, Repair, and Service Manual also provides instructions to service, checkout, and repair the trash pump. This manual also provides replacement parts information.

Repair and service information for the Honda engine is provided in the Owner's Manual for Models GX160, GX240, and GX340. A copy of the Owner's Manual has been provided in the trash pump's literature package. Parts information for the Honda Engine is available in Honda's Parts Catalogs.

When there are differences between trash pump models, separate instructions are provided. The separate instructions are provided to make sure the correct procedures are used on the affected trash pumps.

All information in the Tsurumi manuals is based upon the latest production configuration of the trash pump at the time of approval for printing.

If you have a problem with your trash pump that cannot be resolved using the Operation, Repair, and Service Manual, or if you have questions about the operation, service, repair, or maintenance of your trash pump, contact your local Tsurumi trash pump dealer.

1-2 Precautions

Pay special attention to precautionary notes preceded by the words **WARNING**, **CAUTION**, and **NOTE**.

WARNINGS indicate that there is a strong possibility of personal injury or loss of life if the procedure is not followed, or if cleaning, lubricating, adhesives, and other materials are not used properly.

CAUTIONS indicate that there is a possibility of equipment damage if instructions are not followed.

NOTES are used in procedures to provide additional or supplemental information to make the procedure easier or more efficient.

WARNING:

- **The trash pump is designed to give safe and dependable service when operated according to the instructions in the technical manual provided with the trash pump.**
- **Do not operate the trash pump before you have read and understand the instructions and the engine manufacturer's manual. Failure to do so could result in personal injury or equipment damage.**

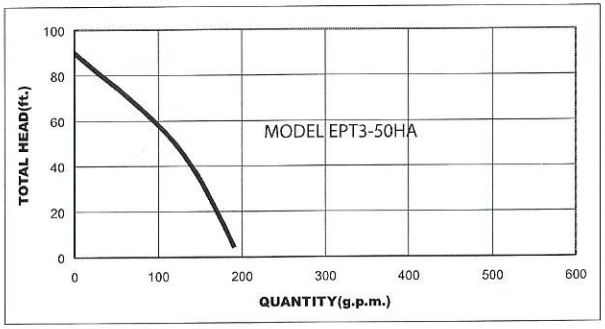
1-3 Safety Precautions

WARNING:

- **IN ORDER TO ASSURE SAFE AND EFFICIENT OPERATION OF THE TRASH PUMP, OPERATOR'S SHOULD READ AND COMPLY WITH THE FOLLOWING SAFETY PRECAUTIONS.**
- **Do not operate the trash pump near gasoline or gaseous fuels because of the potential danger from explosion or fire.**
- **Do not fill the fuel tank with fuel while the engine is running.** Be careful not to spill fuel during refueling. If fuel is spilled, wipe it off and let it dry before starting the engine.
- **Do not smoke or use open flame near the fuel tank.**
- **Do not place flammable materials near the trash pump.** Be careful not to place fuel, matches, gunpowder, oily cloths, straw, trash, or any other combustibles near the trash pump.
- **Do not operate the trash pump inside a room, cave, tunnel, or other insufficiently ventilated area.** Always operate the trash pump in a well-ventilated area. The engine may become overheated, and the poisonous carbon monoxide gas contained in the exhaust gases will endanger human lives.
- **Keep the trash pump at least 1 meter (3 feet) away from any structure or building during use.** When a trash pump is located close to a building or nearby equipment, heat and exhaust from the engine will cause the surrounding temperature to rise. This will degrade the engines cooling efficiency, causing overheating.
- **Do not enclose the trash pump nor cover it with a box.** The trash pump has a built-in, forced-air cooling system, and may become overheated if it is enclosed.
- **Operate the trash pump on a level surface.** It is not necessary to prepare a special foundation for the trash pump. However, the trash pump will vibrate on an irregular surface. Therefore, choose a level place without surface irregularities.
- **Shutoff the trash pump when moving the trash pump to another work site.** It the trash pump is tilted or moved during operation, fuel may spill and/or the trash pump may tip over, causing a hazardous situation. Proper lubrication cannot be expected if the trash pump is operated on a steep incline or slope. In such a case, the piston may seize; it may seize even if the oil is above the upper level.

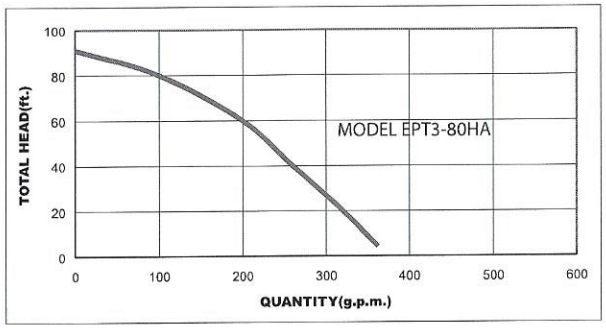
INDIVIDUAL PERFORMANCE

MODEL EPT3-50HA



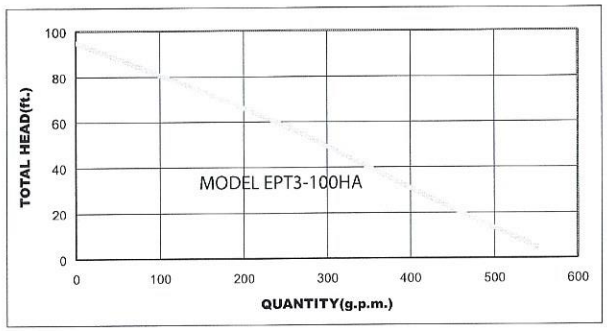
INDIVIDUAL PERFORMANCE

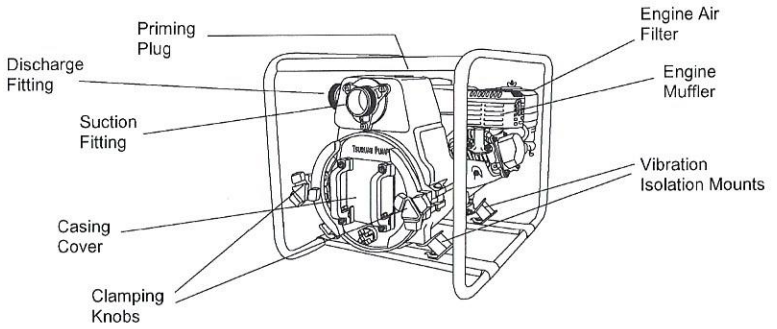
MODEL EPT3-80HA



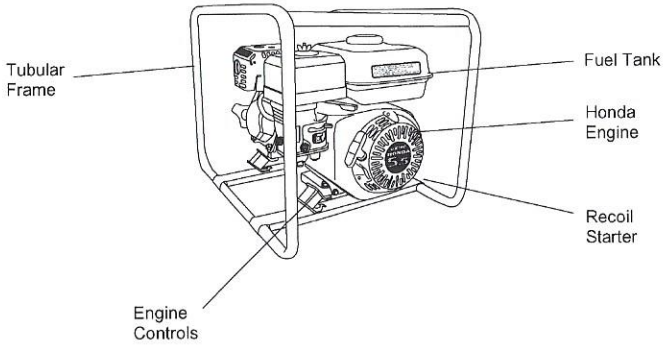
INDIVIDUAL PERFORMANCE

MODEL EPT3-100HA





PUMP END



ENGINE END

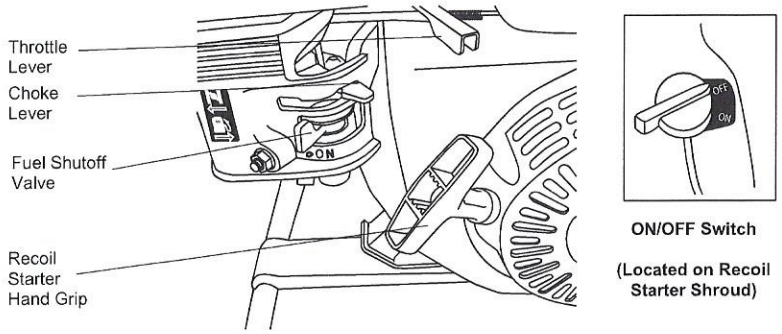
Figure 1: Key Features of the Trash Pump

OPERATING INSTRUCTIONS

2-1 Operating Controls

A. The trash pump operating controls are located on the engine.

B. The controls consist of a throttle lever (for speed control), choke lever (for cold weather starting), fuel shutoff lever (to prevent fuel spills), and a recoil starter (to turnover engine by hand). (Refer to Figure 2-1.)



ON/OFF Switch

(Located on Recoil Starter Shroud)

Figure 2-1: Operating Controls

2-2 Check the Engine Oil Level

CAUTION:

- **ENGINE OIL IS A MAJOR FACTOR AFFECTING PERFORMANCE AND SERVICE LIFE. NON-DETERGENT OILS AND 2-STROKE OILS ARE NOT RECOMMENDED BECAUSE THEY HAVE INADEQUATE LUBRICATING CHARACTERISTICS**
- **CHECK THE OIL LEVEL WITH THE ENGINE ON A LEVEL SURFACE AND THE ENGINE STOPPED.**

A. The trash pump is controlled by the engine operating controls.

B. Use Honda 4-stroke oil, or use an equivalent high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirements for Service Classification SG, SF. Motor oils classified SG, SF will show this designation on the container. SAE 10W/30 is recommended for general, all-temperature use.

C. Other viscosity grades shown in Figure 2-2 may be used when the average temperature in your area is within the indicated range.

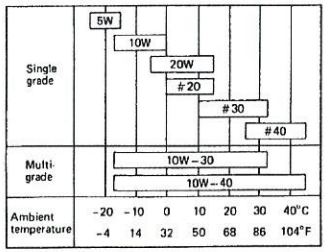


Figure 2-2: Oil Viscosity Grade-to-Temperature Recommendations

D. When checking oil, observe the following (refer to Figure 2-3): (Make sure the engine is in a level position.)

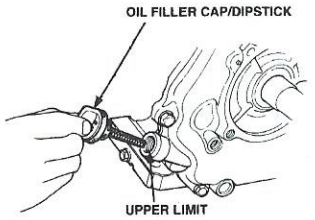
(1) Remove the oil filler cap/dipstick and wipe it clean.

(2) Insert the filler cap/dipstick into the oil filler neck, but do not screw it in.

(3) Remove the filler cap/dipstick and check the oil level.

(4) If the level is low, fill to the top of the oil filler neck with the recommended oil.

(5) Reinstall the oil filler cap/dipstick.



2-3 Check Engine Fuel

WARNING

- **MAKE SURE YOU REVIEW EACH WARNING IN ORDER TO PREVENT FIRE HAZARD.**
- **DO NOT REFILL TANK WHILE ENGINE IS RUNNING OR HOT.**
- **CLOSE FUEL SHUT OFF VALVE BEFORE REFUELING WITH FUEL.**
- **BE CAREFUL NOT TO GET DUST, DIRT, WATER OR OTHER FOREIGN OBJECTS INTO FUEL.**
- **WIPE OFF SPILLED FUEL THOROUGHLY BEFORE STARTING ENGINE.**
- **KEEP AWAY FROM OPEN FLAMES.**
- **DO NOT USE SMOKING MATERIALS WHEN FILLING THE FUEL TANK.**
- **DO NOT REFUEL WHILE SMOKING OR NEAR OPEN FLAME OR OTHER SUCH POTENTIAL FIRE HAZARDS. OTHERWISE FIRE ACCIDENT MAY OCCUR.**
- **AVOID REPEATED OR PROLONGED CONTACT WITH SKIN OR BREATHING OF VAPOR.**
- **KEEP OUT OF REACH OF CHILDREN.**

2-4 Check Fuel Level

A. If fuel level is low, refill with unleaded automotive gasoline.

B. Fuel tank capacities are provided below:

EPT3-50HA . . . . . .0.95 gal.
EPT3-80HA . . . . . .1.60 gal.
EPT3-100HA . . . . . .1.70 gal.

2-5 Pre-Start Checks

WARNING:

- **MAKE SURE YOU REVIEW EACH WARNING IN ORDER TO PREVENT FIRE HAZARD.**
- **KEEP AREA CLEAR OF FLAMMABLES OR OTHER HAZARDOUS MATERIALS.**

A. Check the following items before starting the engine.

(1) Fuel leakage from (fuel hose, sediment cup, etc.).

(2) Bolts and nuts for looseness.

(3) Components for damage or breakage.

(4) Check trash pump surroundings.

(a) Keep trash pump at least three (3) feet (one [1] meter) away from buildings or other structures.

(b) Only operate trash pump in a dry, well-ventilated area.

(c) Keep exhaust pipe clear of foreign objects.

(d) Keep trash pump away from open flame.

(e) Keep trash pump on a stable and level surface.

(f) Do not block trash pump air vents with paper or other material.

2-6 Starting and Operating the Engine

A. Refer to the Honda engine owner's manual.

B. Put the fuel valve in the ON position.

C. Move the choke lever to the closed position.

NOTE:

- The choke may not be needed if the engine is warm or the air temperature is high.

D. Set the ON/OFF switch to ON (the ON/OFF switch is mounted on the recoil shroud).

E. Move the throttle lever slightly to the left.

F. Pull the starter grip lightly until resistance is felt, then pull briskly.

NOTE:

- Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

G. As the engine warms up, gradually move the choke lever to the OPEN position.

2-7 Using The Trash Pump

A. Connect suction and discharge hoses. Make sure suction hose is fitted with a strainer.

B. Remove priming plug from top of pump and fill chamber with water.

C. Operate the engine at idle speed for 3 to 5 minutes.

D. After engine warm up, move the throttle lever to the operating speed.

2-8 Stopping The Trash Pump

A. Move the throttle lever fully to the right.

B. Set the ON/OFF switch to OFF.

C. Turn the fuel valve to the OFF position.

2-9 Oil Alert

A. The oil alert sensor detects the lowering of the oil level in the crankcase and automatically stops the engine when the oil level falls below the predetermined level.

(1) When the engine stops automatically, check the oil level. Refill engine oil to the upper level and restart the engine.

(2) If the engine does not start by usual starting procedures, check the oil level.

TROUBLESHOOTING

The troubleshooting tables below can be used as a guide to isolate trash pump faults. Refer to these tables when the engine fails to start after several attempts. If, after following these procedures, the pump fails to start, contact the nearest Tsurumi generator dealer.

Table 3-1: Troubleshooting Table

Fault	Probable Cause	Remedy
Pump does not pump.	Insufficient priming water.	Add more water through priming plug.
	Mechanical seal chipped or broken.	Replace mechanical seal.
	Check valve damaged.	Replace check valve.
	Suction hose damaged or strainer clogged.	Replace hose. Clean strainer.
	Air leaks caused by O-ring damage.	Replace O-rings.
Discharge flow or pump pressure too low.	Air leaks caused by O-ring damage.	Replace O-rings.
	Suction hose or strainer clogged.	Replace hose. Clean strainer.
	Excessive impeller clearance.	Disassemble to obtain casing cover and impeller. Determine clearance and re-shim as required (refer to Replacement of Mechanical Seal).
	Engine rpm too low.	Check rpm and reset throttle as required.
	Lift head too high.	Lower lift head.
Pump primes too slowly.	Insufficient priming water.	Add more water through priming plug.
	Mechanical seal chipped or broken.	Replace mechanical seal.
	Check valve damaged.	Replace check valve.
	Suction hose damaged or strainer clogged.	Replace hose. Clean strainer.
	Air leaks caused by O-ring damage.	Replace O-rings.
	Engine rpm too low.	Check rpm and reset throttle as required.
	Lift head too high.	Lower lift head.
Noise or vibration.	Faulty mounting.	Pump/engine attaching parts loose. Tighten as required. Damaged vibration isolation mounts. Replace mounts.