2-5 Pre-Start Checks

<u>**WARNING:**</u>

• **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.