FPR60H

Trench Rammer

FAIRPORT

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SAFETY INFORMATON

1.1 Safety Precautions

Before using this equipment, study the entire owner's manual to become familiar with its operation. Do not allow untrained or unauthorized personnel, especially children, to operate this equipment. Use only factory authorized parts for service.

This manual contains DANGER, WARNING, CAUTION callouts which must be followed to reduce the possibility of personal injury, damage to the equipment, or improper service.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

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

CAUTION

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

1.2 Operating Safety

Familiarity and proper training are required for the safe operation of this equipment! Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions and familiarize yourself with the location and proper use of all instruments and controls. Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate the rammer.

- **NEVER** operate rammer in applications for which it is not intended.
- **NEVER** allow improperly trained personnel to operate rammer.
- **NEVER** touch hot muffler, engine cylinders, or cooling fins. Burns will result.
- **NEVER** use accessories or attachments which are not recommended by FAIRPORT for the rammer. Damage to rammer and/or injury to user may result.
- **NEVER** leave a running machine unattended.
- **NEVER** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.
- **NEVER** tamper with or disable the function of operating controls.
- **NEVER** use the choke to stop the engine.
- **NEVER** operate the machine in areas where explosions may occur.
- **ALWAYS** remove or disconnect engine spark plug before servicing rammer, to avoid accidental start-up.
- **ALWAYS** read, understand, and follow procedures in this Operation Manual before attempting to operate equipment.
- **ALWAYS** be sure that all other persons are at a safe distance from the rammer. Stop the machine if people step into the working area of the machine.
- **ALWAYS** be sure the operator is familiar with proper safety precautions and operation techniques before using rammer.
- **ALWAYS** wear protective clothing when operating rammer. Wear goggles or safety glasses, hearing protection, and safety shoes.
- **ALWAYS** keep hands, feet, and loose clothing away from moving parts of rammer.
- **ALWAYS** use common sense and caution when operating rammer.
- **ALWAYS** be sure the rammer will not tip over, roll, slide, or fall when not being operated.
- **ALWAYS** turn the engine OFF when rammer is not being operated.
- **ALWAYS** guide the rammer in such a way that the operator is not squeezed between the rammer and solid objects. Special care is required when working on uneven ground or when compacting coarse material. Make sure to stand firmly when operating the machine under such conditions.
- **ALWAYS** operate the rammer in such a way that there is no danger of it turning over or falling in, when working near the edges of reinstatements, pits, slopes, trenches and platforms.

1.3 Operator Safety while using Internal Combustion Engines

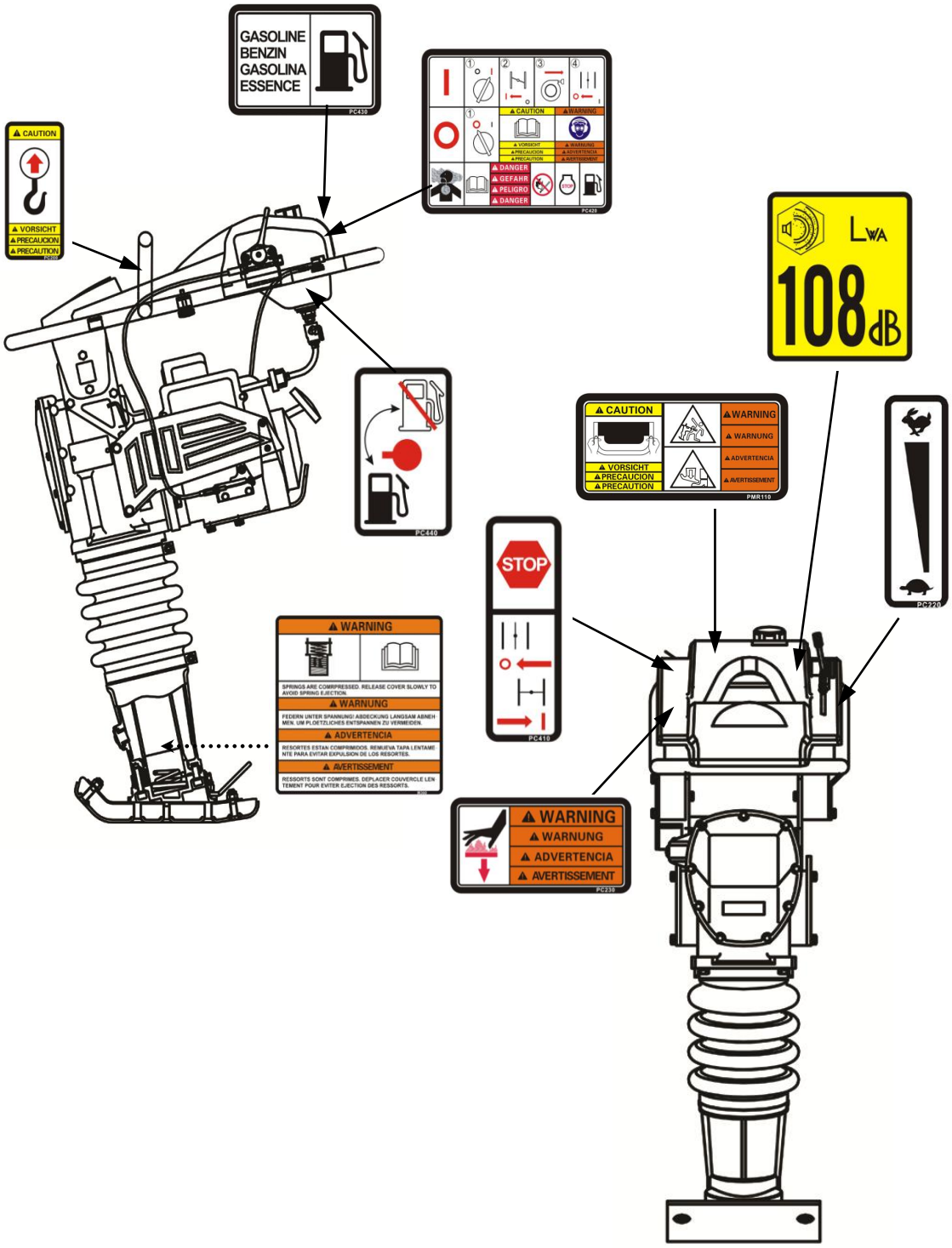
- DO NOT smoke when refueling the engine or during any other fuel handling operation.
- DO NOT refuel a hot or running engine.
- DO NOT refuel the engine near an open flame.
- DO NOT spill fuel when refueling the engine.
- DO NOT smoke while operating the rammer.
- DO NOT operate the rammer near open flames.
- ALWAYS refill fuel tank in well-ventilated area.
- ALWAYS replace fuel tank cap after refueling.
- ALWAYS check fuel lines, fuel cap and fuel tank for leaks and cracks before starting the engine. Do not run the machine if fuel leaks are present, or the fuel cap or fuel lines are loose.
- If fuel is spilled during refueling, wipe it off the engine immediately and discard the rag in a safe place. Do not operate the unit if fuel or oil leaks exist - repair immediately.
- NEVER operate this equipment in an explosive atmosphere.
- NEVER operate any petrol powered equipment in a poorly ventilated or enclosed area.
- NEVER perform any work on the unit while it is running. Before working on it, stop the engine and disconnect the spark plug lead to prevent accidental starting.
- Avoid prolonged breathing of exhaust gases.
- Avoid contact with hot exhaust systems and engine parts.
- Allow engine to cool before performing any repairs or service.
- ALWAYS transport and handle fuel only when contained in approved safety containers.
- ALWAYS keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.

1.4 Service Safety

Poorly maintained equipment can become a safety hazard! In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.

- DO NOT attempt to clean or service the rammer while it is running.
- DO NOT operate rammer with safety devices or guards removed or not in working order.
- DO NOT operate the rammer without the air cleaner.
- DO NOT remove air cleaner paper element, precleaner, or air cleaner cover while operating the rammer.
- DO NOT alter engine speeds. Run engine only at speeds specified in the Technical Data Section.
- ALWAYS replace safety devices and guards after repairs and maintenance.
- ALWAYS keep the area around muffler free of debris in order to reduce to chance of an accidental fire.
- ALWAYS carry out Periodic Maintenance as recommended in Operation Manual.
- ALWAYS clean debris from engine cooling fins.
- ALWAYS replace worn or damaged components with spare parts designed and recommended by FAIRPORT for servicing this rammer.

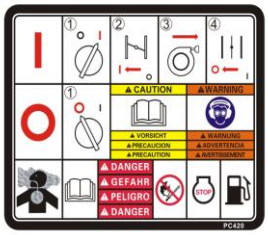
1.4 Decal Locations



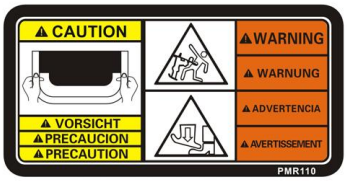
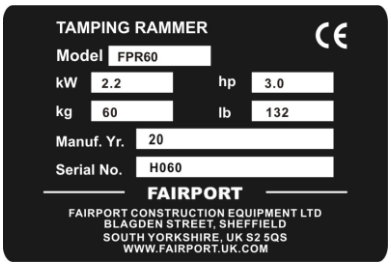
SAFETY INFORMATION

1.5 Safety Decals

FAIRPORT machines use international pictorial decals where needed. These decals are described below:

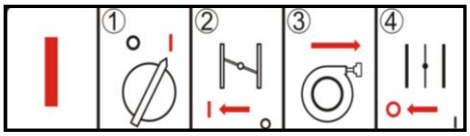
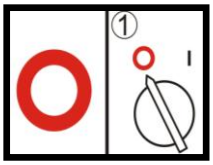
Decal	Meaning
	This label contains important safety and operating information. If it becomes illegible, the cover must be replaced. Refer to the Parts Manual for ordering information.
	DANGER! Engines emit carbon monoxide; operate only in well-ventilate area. Read the Operation Manual for machine information. No sparks, flames, or burning objects near the machine. Shut off the engine before refueling. Use only clean, filtered unleaded gasoline.
	CAUTION ! Lifting point.
	CAUTION! Use only clean, filtered gasoline fuel.
	WARNING! Hot surface!

SAFETY INFORMATION

Decal	Meaning
	CAUTION! For optimal control, performance, and minimal hand/arm vibration, grasp handle as shown.
	WARNING! Serious injury if struck by compressed spring or cover. If the spring system cover is removed improperly, the springs can eject.
	Guaranteed sound power level in dB(A).
	A nameplate listing the model number and serial number is attached to each unit. Please record the information found on this plate so it will be available if the nameplate lost or damaged. When requesting service information, the serial number of the machine should be specified.

1.7 Operating Decals

FAIRPORT machines use international pictorial decals where needed. These decals are described below:

	Start the engine: ① Turn the engine switch to the ON position ② Close the choke. ③ Pull the rewind starter. ④ Open the choke.
	Stop the engine: Turn the engine switch to OFF position.
	Fuel valve: Closed Open
	Engine stop button: Press to stop engine. Choke: O: Open I: Closed
	NOTICE! Throttle control lever: Turtle = Idle or Slow Rabbit = Full or Fast

OPERATION

2 Operation

2.1 Application

Rammers are designed to compact loose soils and gravel to prevent settling and to provide a firm, solid base for the placement of footings, concrete slabs, foundations, gas piping works, water pipe works and cable backfill works, etc.

WARNING

Use in the following applications may cause damage because machine is likely to be unbalanced.

- Pile foundation
- Over-compacted and hard ground conditions
- Steep bank slopes

Rammers are used for compacting cohesive clay, gravels, and patching work on asphalt, etc.

2.2 Structure

The upper part of the Rammer is the power source; Clutch, Connecting Rod, Operating Handle, Fuel Tank and this is connected via Anti-vibration Rubbers to the body. The bottom end is made up of the Spring Cylinder (Sliding part), Foot Plate, Foot and the Bellows that cover the sliding parts.

2.3 Before Starting

- This machine has an oil bath lubrication system.
- Check the oil level through the sight glass at the rear of the foot. Replenish oil if it is not visible through the sight glass. For lubrication, use automobile engine oil of 10W-30 SE, SF or better grade. Capacity is 830cc.
- Fill the fuel tank with regular petrol (unleaded). Check the engine oil and make it a habit to replenish it before it gets too low. Low lubrication oil level may result in engine seizure due to consumption during operation. Nevertheless, the oil level should always be checked prior to start up. For lubrication, use automobile engine oil of 10W-30 SE, SF or better grade. See Engine Operating Manual for further details.
- Check every bolt, nut or screw for tightness. ***Vibration may result in loosening of fasteners and fixings and this can result in unexpected problems. Be sure to tighten any loose fasteners and fixings.***
- Remove dirt and dust. Particularly clean the vicinity of recoil starter and foot.

2.4 Starting

1. Open the fuel shut-off valve by moving the fuel cock lever to the open position.
2. If starting the engine from cold, set the choke ON by moving the choke lever fully to the left. If restarting a warm engine, the choke is usually not required. However, if the engine has cooled to a degree, partial choke may be required.
3. Turn the engine ON/OFF switch clockwise to the “1” position.
4. Set the throttle to the idle position. Do not start the engine on full throttle, as the Rammer will vibrate as soon as the engine starts.
5. Taking a firm hold of the control handle with one hand, grasp the recoil starter handle with the other. Pull the recoil starter until engine resistance is felt, then let the starter rope return.
6. Taking care not to pull the starter rope fully out, pull the starter handle briskly.
7. Repeat until the engine fires.
8. Once the engine fires gradually set the choke lever to the OFF position by moving it to the right.
9. If it is difficult to start the engine, remove the spark plug and check the sparking performance. If the plug is wet due to excessive fuel intake or soiled, replace the plug or clean well. With the spark plug removed, pull the recoil starter handle 2-3 times to discharge excessive blended fuel.

2.5 Operation

1. Turn the choke lever to open the choke. Run the engine for 5 minutes at low/idle speed to warm the engine.
2. Move the throttle level quickly to the “FULL OPEN” position. DO NOT move the throttle level slowly as this may cause damage to the clutch or spring.

CAUTION

Make sure that the throttle lever is moved to the FULL OPEN position. Operating the rammer at less than full speeds can result in damage to the clutch springs or foot.

3. After starting the tamping action, adjusts the jumping motion to suit the particular soil condition by lightly controlling the throttle lever. When the engine speed falls between the set values shown on the engine, your work can be carried out at the best efficiency. Increasing the engine speed unnecessarily does not cause the compaction force to increase. On the contrary, a resultant resonance causes the compaction force to decrease, damaging the machine.
4. Under cold weather, the oil in the machine may be viscous. The resistance at reciprocating part is greater causing the tamping rammer to perform a somewhat irregular movement. Therefore, it is recommended to perform the warm-up run by moving the throttle lever repeatedly between ON and OFF positions, before starting the work.
5. The contact surface of the foot is lined with a heat-treated metal sheet for extra strength wear resistance. However, for compacting cobblestones, cover with backfill material so that the foot hits the cobbles uniformly.
6. The tamping rammer has been designed to advance while jumping. For quicker advance, operate the machine by pushing its handle down slightly so that flat surface of the foot at it’s rear-end contacts the ground.
7. To stop the tamping action, move throttle lever quickly from the FULL OPEN to IDLE position.

2.6 Stopping

2.6.1 Normal shutdown

1. With the throttle lever closed from ON to OFF, run the engine for 3-5 minutes at low speed, and after temperature is lowered, turn the switch to the “OFF” position.
2. Close the fuel shut-off valve by moving the fuel cock lever to the CLOSED position.

2.6.2 Emergency shutdown

Move the throttle lever quickly to the IDLE position, and turn the engine ON/OFF switch to the OFF position.

3 MAINTENANCE

3.1 Periodic Maintenance Schedule

The chart below lists basic maintenance. Refer to engine manufacturer's Operator's Manual for additional information on engine maintenance. A copy of the engine Operator's Manual was supplied with the machine when it was shipped.

	Daily Before Starting	After First 5 hours	Every Week or 25 hours	Every month or 100 hours	Every 3 months or 300 hours
Check fuel level.	●				
Check oil level of machine.	●				
Check fuel line and fittings for cracks or leaks.	●				
Tighten ramming shoe hardware.		●	●		
Check and tighten engine cylinder screws.		●	●		
Check and tighten external hardware.		●	●		
Clean engine cooling fins.			●		
Clean and check spark plug gap.			●		
Replace spark plug.				●	
Clean recoil starter.					●
Change ramming system oil. *					●
Clean engine muffler and exhaust port.					●

*** Change ramming system oil after first 50 hours of operation.**

Note: If engine performance is poor, check, clean, and replace air filter elements as needed.

3.2 Transporting

1. Shutdown engine for transportation.
2. For transportation, tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
3. For transportation over long distances or on bad roads, drain the fuel.
4. Secure the machine firmly to prevent it from moving or tipping.
5. The Rammer should be transported so that it is placed on level ground. Where it must be laid down for transportation, drain the fuel tank as well as carburetor and make sure that oil plug is tightened securely.
6. When laying down the rammer, ensure that the air cleaner is in the vertical position. After laying down, make sure that there are no fuel or oil leaks.
7. Make sure the lifting device has sufficient capacity to hold the machine (see identification plate on machine for weight). Use the central lifting point (A) when lifting machine.

3.3 Spark Plug

Check and clean spark plugs regularly. A dirty spark plug may cause difficult starting and poor engine performance. Set spark plug gap to the recommended clearance. Refer to engine manual.

WARNING

The muffler and engine cylinder become very hot during operation and remain hot for a while after stopping the engine. Allow the engine to cool before removing the spark plug.

NOTE: A loose spark plug can become very hot and may cause engine damage.

MAINTENANCE

3.4 Air Cleaner

Maintaining a clean engine will extend the engine life. Keep the air filter clean at all times. Clean the air filter using a recommended solvent daily. See engine manual for proper cleaning procedure. Let the filter dry before reinstalling.

WARNING

NEVER use petrol or other types of low flash point solvents for cleaning the air cleaner. A fire or explosion could result.

3.5 Storage

The Rammer should be stored in its upright position after the engine and the machine have cooled down. Be sure to secure the rammer as necessary to avoid falling over. If the rammer has to be laid down, wait until engine and machine have cooled down and tighten fuel tank cap and engine oil plug securely. After laying it down, make sure that there are no leaks of fuel or oil. (If fuel leaks, drain the tank).

3.5.1 Long-Term Storage

- Drain the fuel from the fuel tank, fuel line and carburetor.
- Remove the spark plug and pour a few drops of motor oil into cylinder. Crank the engine 3 to 4 times so that oil reaches all internal parts.
- Clean the exterior with a cloth soaked in clean oil.
- Store the rammer covered with a plastic sheet in a moisture free and dust free location out of direct sunlight.

3.6 Troubleshooting

3.6.1 Rammer Troubleshooting

SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Engine rotates but amplitude not uniform or does not strike	Operating speed of throttle lever is incorrectly set.	Set throttle lever to correct position.
	Excess Oil.	Drain excess oil. Set to correct level.
	Clutch slipping.	Replace or adjust clutch.
	Spring failure.	Replace spring.
	Incorrect engine speed.	Adjust engine speed to correct operating RPM setting.

3.6.2 Engine Troubleshooting

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Difficult to start		
Fuel is available but spark plug will not ignite (Power available at high tension code)	Carbon deposit on spark plug.	Clean or replace spark plug.
	Short circuit due to deficient insulator.	Replace insulators.
	Incorrect spark plug gap.	Set spark plug to the correct gap.
	Short circuit at stop switch.	Check stop switch circuit. Replace stop switch if defective.
Fuel is available but spark plug will not ignite. (Power NOT available at high tension code.)	Ignition coil defective.	Replace ignition coil.
	Muffler clogged with carbon deposits.	Clean or replace muffler.
Fuel is available and spark plug ignites (compression normal).	Contamination in fuel (water, dust).	Flush fuel system and replace with fresh fuel.
	Air cleaner clogged.	Clean or replace air cleaner.
	Defective cylinder head gasket.	Tighten cylinder head bolts or replace head gasket.
	Cylinder worn.	Replace cylinder.
	Spark plug loose	Tighten spark plug.

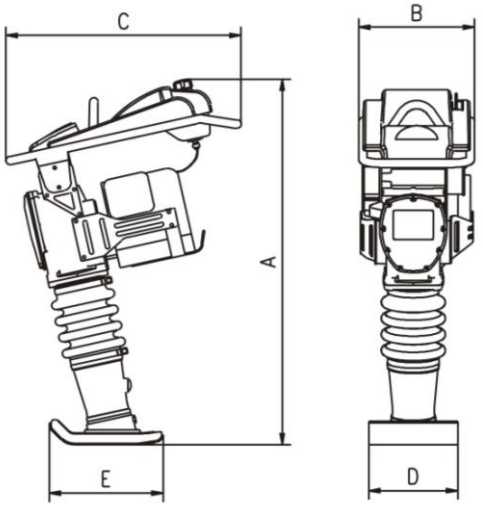
MAINTENANCE

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Operation not satisfactory		
Not enough power available (compression normal, no misfiring)	Air cleaner clogged.	Clean or replace air cleaner.
	Air in fuel line.	Bleed (remove air) from fuel line.
	Fuel level in carburetor float chamber incorrect.	Adjust carburetor float.
	Carbon deposit in cylinder.	Clean or replace cylinder.
Not enough power available (compression normal, no misfiring)	Ignition coil defective.	Flush fuel system and replace with fresh fuel.
	Ignition plug often shorts.	Replace ignition lead, clean ignition.
	Contamination in fuel (water, dust).	Flush fuel system and replace with fresh fuel.
Engine overheats.	Excessive carbon deposition in combustion chamber.	Clean or replace crankcase.
	Exhaust or muffler clogged with carbon.	Clean or replace muffler.
	Spark plug heat value incorrect.	Replace spark plug with correct type spark plug.
	Governor adjustment incorrect.	Adjust governor to correct lever.
Rotational speed fluctuates.	Governor spring defective.	Clean or replace ignition.
	Fuel flow erratic.	Check fuel line.
	Air taken in through suction line.	Check suction line.
	Dust in rotating part.	Clean recoil starter assembly.
Recoil starter not working properly.	Spiral spring failure.	Replace spiral spring.

4. TECHNICAL DATA

Model	FPR60H
Engine type	Honda GX100
Engine speed operating rpm	3800±100
Power kw (hp)	2.2 (3.0)
Weight kg (lb)	60 (132)
Impact Force (kN)	10.7
Jumping stroke mm (in)	50-85 (2-3.4)
Fuel tank Capacity (L)	3.5
Shoe Size mm (in)	265x338 (10.4x13.3)
Ramming System Lubrication	0.8L, CD10W-30

Working Size mm:



Model	A	B	C	D	E
FPR60H	1055	345	685	265	338

Sound Specification (According to 2000/14/EC)

Measured sound Power level	105 dB(A)
Guaranteed sound power level	108 dB(A)

Hand-Arm vibration Specification (According to ISO 5394, EN 1033 and EN500-4): 8.0m/s^2

FAIRPORT products are covered by warranty for a period of twelve (12) months from the date of purchase against defects in material or workmanship provided that:

- The product concerned has been operated and maintained in accordance with the operating instructions.
- Has not been damaged by accident, misuse or abuse.
- Has not been tampered with or repaired by any unauthorized person.

The owner is responsible for the cost of transportation to and from the authorized repairer and the machine is at the owners risk while in transit to and from the repairer.

Impact damage is not covered under warranty. Clutches are not covered under any warranty.

Engines are officially guaranteed by Honda. Please refer to the Engine Operator's Manual for engine warranty.

MAINTENANCE RECORD

PREVENTATIVE MAINTENANCE AND ROUTINE SERVICE PLAN

FAIRPORT rammer has been assembled with care and will provide years of service. Preventative maintenance and routine service are essential to the long life of your Rammer. After reading through this manual thoroughly, you will find that you can do some of the regular maintenance yourself. However, when in need of parts or major service, be sure to see your dealer. For your convenience we have provided this space to record relevant data about your rammer.

Invoice Number:		Type of Machine:	
Date Purchased:		Dealer Name:	
Serial Number:		Dealer Phone:	

REPLACEMENT PARTS USED					MAINTENANCE LOG	
PART NO.	DESCRIPTION	QTY	COST	DATE	DATE	OPERATION

EC DECLARATION OF CONFORMITY

WE, FAIRPORT CONSTRUCTION EQUIPMENT LTD, BLAGDEN ST, SHEFFIELD, SOUTH YORKSHIRE, S2 5QS

DECLARES THAT THE PRODUCT:

FPR60H
TRENCH RAMMER

CONFORMS TO THE FOLLOWING DIRECTIVES:
89/336/EEC, 98/37/EEC, 2000/14/EC,

NOTIFIED BODY:
AV Technology Ltd, AVTECH House, Arkle Avenue, Stanley Green Trading Estate, Handforth, Cheshire. SK9 3RW.

USES THE FOLLOWING STANDARDS:
BS EN 292-1, BS EN 292-2, BS EN 294, BS EN 500-1, BS EN 500-4

CONFORMS TO THE FOLLOWING STATUTORY INSTRUMENTS:
THE SUPPLY OF MACHINERY (SAFETY) REGULATIONS 1992 & AMMENDMENTS

COMPLIES WITH THE RELEVANT ESSENTIAL HEALTH & SAFETY REQUIREMENTS OF THE MACHINERY DIRECTIVE

DECLARATION
I certify that on completion of manufacture of the machine detailed above that a full conformity has been completed and relevant Health and Safety Requirements complied with.

NAME: **IAN MORRIS**

STATUS WITHIN COMPANY: **TECHNICAL MANAGER**

SIGNATURE: