POWERTECH POST DRIVER

Model: PPD-120

CE

WARNING

PLEASE ENSURE YOU READ AND UNDERSTAND THE BELOW BEFORE OPERATING YOUR MACHINE!

Powertech Post Drivers – Important Information/Do's & Don'ts

1) Use Honda Premium 4 Stroke 10W30 engine oil. Honda GX50 engine oil capacity is 130ml while the GX35 engine is 100ml. **DO NOT OVER FILL!!**

2) Post Driver Oil - You can also use Honda 10W30 engine oil to fill the Post Driver oil reservoir (PPD-120 & 100). Remove the Sight Glass to top up the Post Driver oil. The PPD-120 & 100 Post Drivers are not completely sealed – Oil seepage from inside the Chrome Sleeve/Anvil area is a part of normal operation. **DO NOT BE ALARMED.** Top up Post Driver oil as required, do not run dry.

3) **VERY IMPORTANT!** Daily Check - Because of the amount of vibration these machines are exposed too, bolts can work loose and need to be checked regularly. Remove any loose bolts and apply Loctite 263 Thread Locker (Red)

4) **DO NOT DRY RUN** the unit when not on a post. It must be on a post in the working position with downward pressure before you pull the throttle. Dry running may cause the unit to jam or the anvil becoming dislodged.

5) While using your driver find a range between 30-50% of full throttle. This is the most effective strike rate, depending on ground conditions. (i.e., the 'sweet spot') Apply firm downward pressure on the driver, let the driver do the work, not you!

6) **VERY IMPORTANT!** Please take the time to read the owner's manual and highlight the important bits or anything you weren't aware of.

7) The 'HULK' PPD-120 comes with a 120mm alloy strainer post guide fitted. To drive smaller standard steel or Maxy posts etc you need to fit the 100mm alloy guide and sleeve insert. Please ensure when you reinstall any bolts on you Post Driver you apply Loctite 263 Thread Locker (Red) Failure to do so will cause the bolts to vibrate loose and cause damage.

8) **DO NOT** drive small posts with the larger Sleeves/Guides as this may cause damage or excessive ware. The sleeve must be a snug fit around the post you are driving.

User Manual

Thank you for purchasing the PowerTech Post Driver and welcome to the Service and Operators manual. Please be sure this manual is read and understood completely before operating or carrying out any maintenance, failure to do so may result in personal injury or mechanical damage to the unit. If you need further information or any clarification on anything described in this manual, please contact your local dealer immediately.

Contents

1. Name of Main Parts

No.	Name of Part	No.	Name of Part	No.	Name of Part
1	Air filter	2	Fuel can lid	3	Fuel can
4	Throttle button	5	Throttle cable	6	Damping spring
7	Muffler	8	Oil filler cap	9	Lubrication indicator
10	Grip	11	Front placket	12	120mm adapter
13	Gear cover	14	Stop switch		

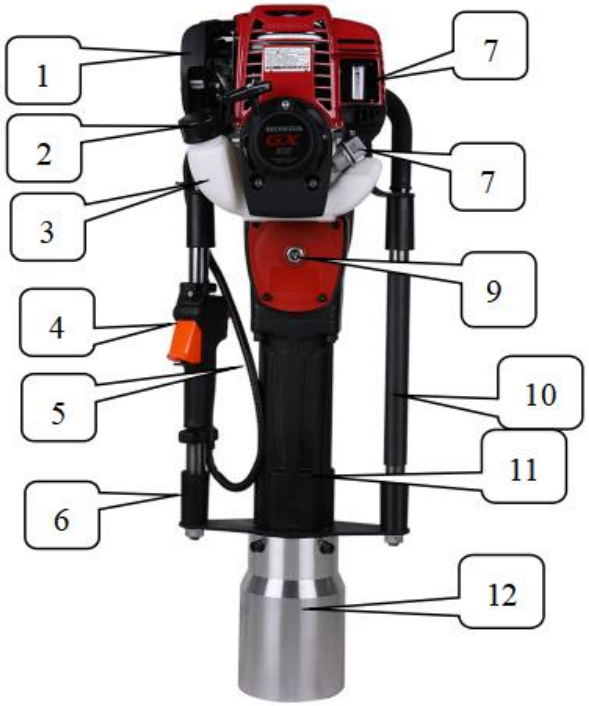


Fig.1

Fig.2

2. Description for Safe Operation

1. Operator must wear slip-resistant safety shoes and suitable clothing. He or she must wear safety glasses, hard hat, and ear protection.
2. While operating the machine, be in a balanced and stable position. The operator shall not perform any other tasks while operating the machine.
3. After starting the machine, DO NOT operate only using one hand.
4. When lifting the machine DO NOT engage the throttle. (DRY RUNNING WILL DAMAGE THE MACHINE)
5. Non-staff shall be away from the operating area to avoid injuries.
6. Operate the Post Driver at a medium speed.
7. Keep the handle dry and clean from grease, oil or fuel mixture.
8. If operation needs to stop midway; be sure to turn off the engine.
9. Be sure to check whether throttle fastening screws of the connector are tight before use. If loose, tension the screws.
10. DO NOT use 2 stroke fuel mixture, refer to Chapter 4.1 for recommended fuel.
11. Unleaded fuel is highly flammable. Therefore, replenish fuel in a well-ventilated environment. During fuel filling, engine must be turned off.
12. DO NOT add too much fuel. The fuel shall not exceed the neck of the fuel tank. If fuel spills, do not start the machine until the machine and area is clean.
13. After refueling, tighten the fuel cap. During work, check fuel tank regularly for damage or leakage. If damage is found, shut down the machine immediately.
14. Reserve fuel needs to be stored away from any ignition source and the operating area.
15. The Post Driver is NOT to be used in closed off areas such as tunnels, trenches or indoors, it's necessary to guarantee normal air circulation to avoid waste gas poisoning and suffocation.
16. Prevent quick acceleration or braking so damage does not occur to the unit
17. Before transport, empty fuel from the fuel tank to avoid leakage.
18. Non-qualified maintenance personnel are prohibited from dismantling the Post Driver to avoid structural damage to parts, shortened service life and accidents.

3. Main Purpose and Function

3.1 Use: Post driving Star Pickets, Wooden Stakes and Posts.

3.2 Function

For optimal performance machine should be used at half to three-quarter throttle

3.1.1 Engine-type handheld petrol post driver which is light weight and designed for driving posts into the ground.

3.1.2 The product conforms to the design of man-machine engineering, reduces working strain of the operator to the greatest extent, and boasts simple and comfortable operation. The operator can achieve 360° all-around operation.

3.1.3 It can regulate impact energy and impact frequency and drive a variety of posts between 20-120mm (inclusive) in diameter.

3.1.4 Advantage: Eliminate the use of machines such as generators, air compressors and manual post drivers.

3.1.5 The operating handles of the machine are rubber and plastic sponge with 2-way dampening springs fitted which greatly reduce the recoil force.

4. Preparation before Use

4.1 Engine Oil

4.1.1. To avoid damage to the engine, before starting check whether the engine oil is adequate or needs replacement; check engine oil level every 10hrs of operation.

4.1.2. The engine shall be placed horizontally. Unscrew the oil cap and check the oil level as shown in Fig.3. If inadequate oil level, add to the upper limit.

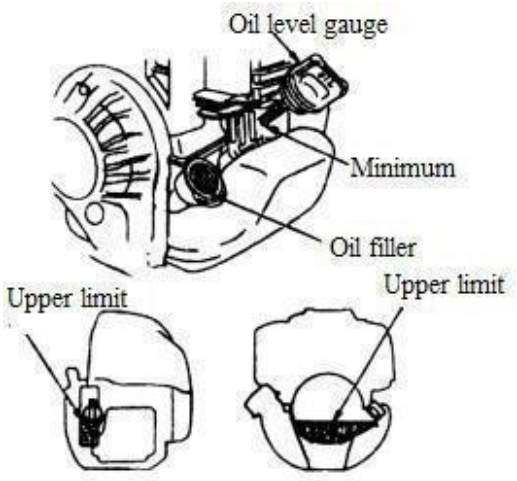
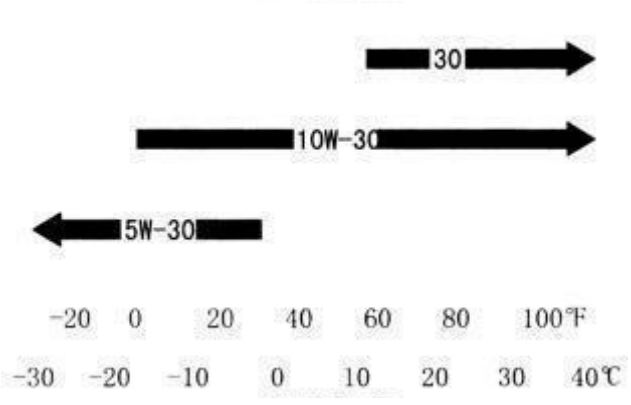


Fig.3

4.1.3. The recommended environmental temperature of the machine is -15℃ - 40℃. Recommend use of SAE 10W-30 engine oil which equals to API classification SE, SF, and SG. Fig. 4 below is SAE Engine Oil Consistence Table.

SAE Engine Oil Viscosity Grade



Environmental temperature

Fig. 4

4.2 Post adapter and sleeve

4.2.1 Install adapter, specifications of 120mm which are suitable for the post size.See Fig.3 & Fig.4

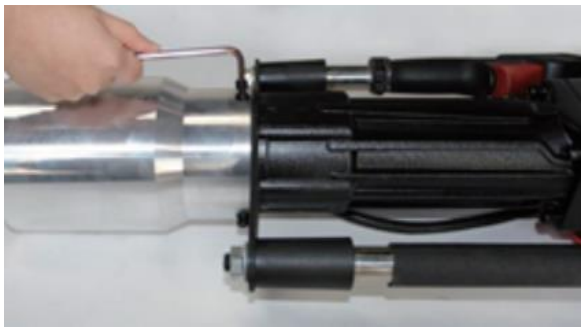


Fig.3

Fig.4

4.2.2 For driving posts below 100mm, it's better to use the small sleeve. Change 120mm adaptor to 100mm adaptor, then insert smaller plastic sleeves. (78mm, 60mm, 55mm, 45mm sleeves optional). As Fig.5 &Fig.6

Fig.5

Fig.6

Warning:

Pounding posts that are significantly smaller than the adaptor or sleeve will result in instability while using post driver. This may result in injury to the operator and will result in damage to Post Driver. Ensure there is minimum distance on either side of the post so it fits neatly in the barrel. Where there is too much clearance on each side, use a smaller sleeve.

4.3 Fuel

4.3.1 Use unleaded fuel only. (DO NOT USE 2 STROKE FUEL MIXTURE)

4.3.2 When the engine is stopped, add fuel in well-ventilated area away from any ignition sources.

4.3.3 If the engine has just been operated, wait for the unit to cool down before adding fuel.

4.3.4 DO NOT over-fill fuel tank. The fuel shall not exceed the neck of the fuel tank. If fuel spills, clean the area completely before starting the machine. Tighten the fuel tank cap after refueling.

5. Starting

5.1 Before starting the machine, press the transparent semi-circle fuel bubble repeatedly until the carburetor is filled with fuel. Approx. 5 pumps. (If the engine is cool, close the choke). Open the choke after starting.

5.2 Control and grip the top handle tightly with one hand while the other grabs the starting cable. After one swift pull DO NOT let the starter cable go back freely, hold it tightly to avoid injury resulting from quick release.

5.3 Don't pull the handle during operation, parts are rotating at high speed and it may damage the unit.

6. Operation

6.1 When the engine has warmed up, press throttle button to the appropriate regulatory position according to the required impact energy.

Note: With a new gasoline post driver use shall mainly boast low to medium speed for the first 20 hours of operation and the maximum throttle shall not be used in order to extend the service life.

6.2 Operating speed of the gasoline engine shall be at medium speed.

6.3 High-speed operation of the post driver during non-post driving is prohibited and will damage the machine.

6.4 Ensure the post is in a vertical position and the post driver is on in a parallel plane to the post. The correct position as Fig.7.

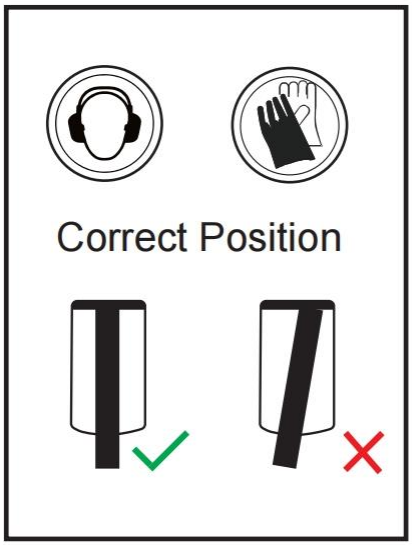


Fig.7

7. Turning off the Machine

7.1 Release throttle button and carry out idle running of the machine for 3-5 minutes.

7.2 Push the Stop Switch to the position of cut out. See the position of Stop Switch below. Fig 8

Fig.8

8. Technical Maintenance

8.1 Air Filter

Check air filter regularly. Soot deposits blocking the filter element of the air filter will reduce power of the engine and the service life. If the filter has too much soot deposit, clean it with warm water and detergent then wipe dry with a cloth and reinstall the air filter. The filter should be replaced if damaged. Particularly if in extreme environments of dust, maintenance cycle shall be shortened accordingly.

8.2 Fuel Filter

If the fuel filter is partially blocked the post driver will have a reduced speed and weaker impact energy.

Method: ①Open the fuel cap. Remove the fuel filter from the fuel tank with a hook and clean as required.

②When cleaning the fuel filter, clean the fuel tank at the same time.

Fig.9

Fig.10

Fig.11

8.3 Carburetor

When the machine is not being used for more than a week, be sure to completely drain the fuel. Method: Pull out the fuel inlet pipe, press the rubber bubble repeatedly for the fuel to discharge, and press the fuel inlet pipe back into position when fuel is completely drained.

8.4 Spark Plug

To ensure normal operation of the engine the spark plug gap must be correct. Remove carbon sediment with a wire brush if required and set the correct gap. spark plug gap should be 0.6-0.7 mm. See Fig. 12.

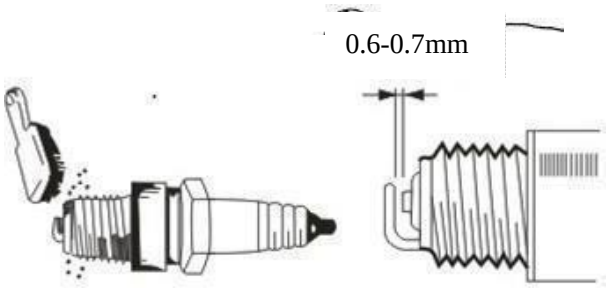


Fig.12

8.5 Muffler

Regularly remove dirt on inlet and outlet of the muffler by cleaning with detergent.

8.6 Gearbox lubrication

Check gearbox grease regularly, remove and apply grease to gears as required, clean and replace with new grease as per maintenance cycle. (EP2 Grease)

8.7 The Cylinder Cooling Fin

Regularly remove dust to ensure cylinder cooling. The petrol post driver is air-cooling type. If dust accumulates on the cylinder cooling fin, the cooling effect will be influenced directly, which will lead to overheating and failure of the cylinder.

8.8 Filling of impact cylinder lubrication

After working for 100 hours, change oil for the impact cylinder. (L-HM 46 Hydraulic Oil) Fill until oil starts to trickle from fill point. See Fig. 13,14,15 The impact cylinder will leak small amounts of oil past the impactor for lubrication and is considered normal operation, please check oil level before use as per maintenance schedule and top up as required.

Fig.13

Fig.14

Fig.15

9. Failure Analysis and Troubleshooting

Diagnostics & Problem Solving

Example 1: Difficulties starting engine in cooling state

Check whether the spark plug is damp	→Clean and wipe dry the spark plug
↓	
Check whether the spark plug produces spark	→Replace the spark plug
↓	
Check if too much fuel has been supplied	→Let unit sit for 5mins, Reduce the fuel supply

Example 2: Difficulties restarting after a sudden stop

Check fuel level or if the carburetor is blocked	→Refill the fuel tank or clean the carburetor
↓	
Check if the fuel filter is blocked	→Clean or replace the fuel filter
↓	
Check amount of carbon deposit on the spark plug	→ Remove carbon deposit from the spark plug and clean the filter element

Example 3: Slow speed and weak power

Carbon deposit in the cylinder or muffler	→Remove carbon deposit
↓	
Check oil tube and or air intake is blocked	→Clean
↓	
Air filter is blocked	→Clean the filter

Example 4: Abnormal sound

Carbon deposit found in the combustion chamber	→Remove carbon deposit
↓	
Serious internal component failure	→Replace

Example 5: The machine is working normally but the work efficiency is very low

Rubber ring of the impact piston is aged and worn	→Replace

Please contact your local sales agent or dealer for further technical information.

10. Key Data of Product

Engine type	Original Honda GX50 OHC, 4-stroke
Model	PPD-120
L×W×H	831x292x324
Fuel	Unleaded Petrol
Fuel tank capacity	0.63 L
Weight	23kg
Displacement	47.9cm3
Max power	1.47kW/7000rpm
Max Torque	2.2Nm@5500rpm
Impact frequency	820-1200bpm
Impact energy	25-55 J
Fuel consumption rate	0.54 L/H @7000rpm
Carburetor type	Diaphragm-type
Spark plug type	Transistorized magneto
Starter system	Hand pull start

11. Declaration of Conformity

We declare under our sole responsibility that our post driver conforms with following standards or standardization documents: in accordance to the regulation of directives 2006/42/EC, 2014/60/EU

12. Warranty

The PowerTech Post Driver is fitted with a genuine Honda engine, please make sure you register the engine serial number with your local Honda dealer to claim the 3 year manufactures warranty.

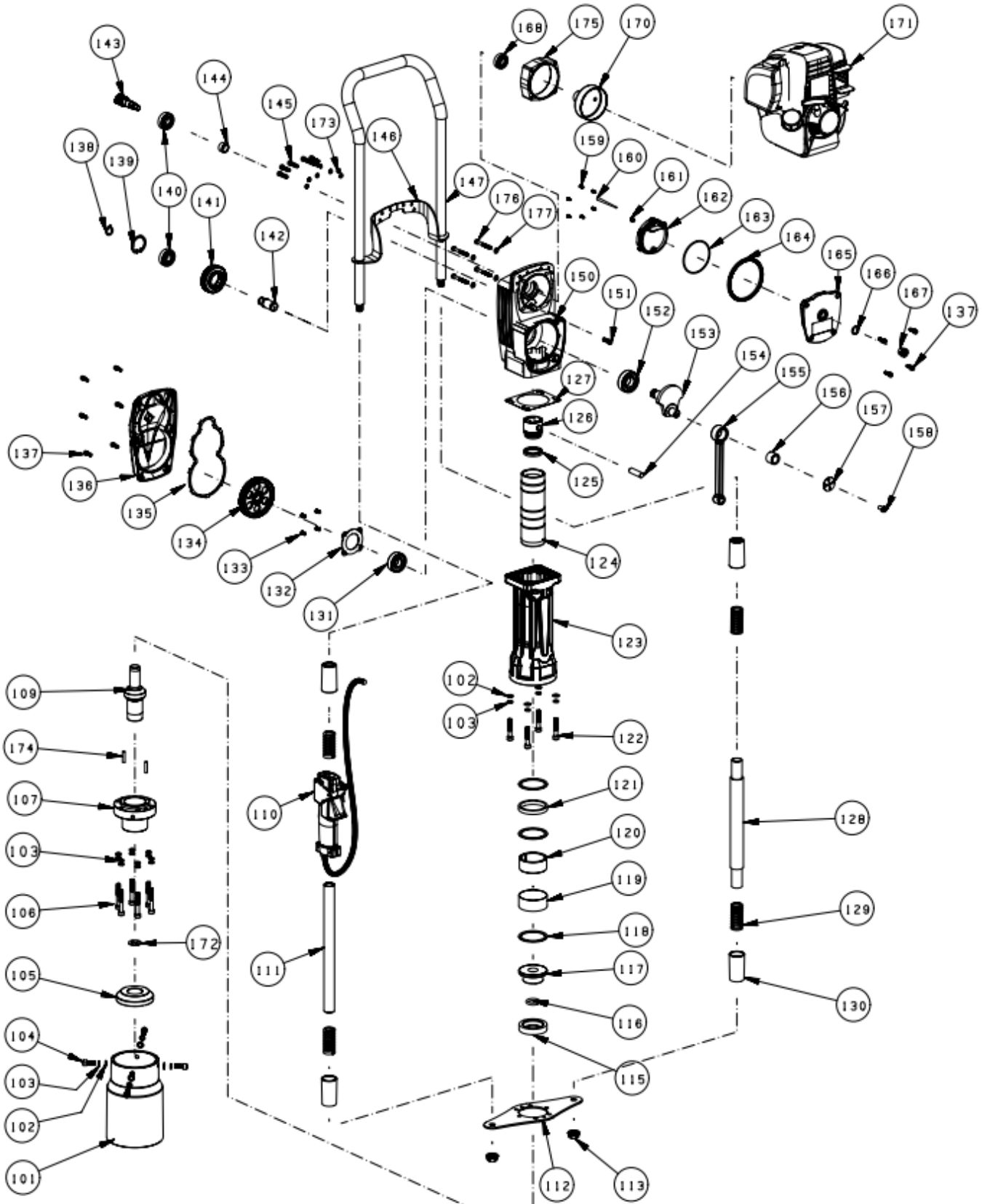
The PowerTech Post Driver unit comes with 12 months parts warranty. **Please note this excludes wear and tear items and only covers failures due to a manufacturing fault or defective part. Any damage or failure caused by operator abuse or misuse of the machine is not covered.**

13. Maintenance Cycle

Servicing & repairs are recommended to be carried out by an authorized dealer.

The following data is given as a guide. Under severe working conditions such as dusty environments or extended working hours, maintenance cycle should be shortened accordingly. Please also refer to the Honda Service Manual supplied for technical information on the engine. Contact your local sales agent or dealer for further technical and spare parts information.		Before work	After work or every day	After Filling oil	Every Week	50hr Service or 6 months	100hr Service or 12 months	300hr Service or 24 months
The whole machine	Complete Check (condition, screw/bolt tensions, Throttle & cut out switch)	√			√	√	√	√
	Clean		√	√		√	√	√
Timing Belt	Check							√
Air filter	Clean				√			
	Replace						√	√
Fuel filter	Clean						√	
	Replace						√	
Valve Clearances	Check/Adjust							√
Gearbox Gears (EP2 Grease)	Check/Add					√		
	Replace grease						√	√
Gearbox oil (L-HM 46 Hydraulic Oil)	Check					√		
	Replace						√	√
Muffler	Check					√		
	Remove carbon deposit							√
Cylinder cooling fin	Check					√		
	Clean							√
Spark plug	Check/Adjust the distance between electrodes						√	
	Replace							√
Engine Oil (30, 10W30)	Check	√		√	√			
	Replace					√	√	√

14. Parts List and Exploded View of PPD-120 Post Driver



Parts highlighted in yellow are wear and tear items

No.	Description	Qty		No.	Description	Qty
101	Adapter 120mm	1		139	Circlip for hole	1
102	Ø8 Flat gasket	8		140	Bearing 6203	2
103	Ø8 spring washer	20		141	Mid gear	1
104	M8X20 Hexagon screw	4		142	Mid axle	1
105	Impact hammer	1		143	Axis	1
106	M8X55 Hexagon screw	6		144	Spacer	1
107	Metal head	1		145	M6*25 Hex cylinder head spring pad assy	6
109	Punch hammer	1		146	Upper support plate	1
110	Switch block	1		147	Lifting yoke	1
111	Tubular handle	1		150	Gear box	1
112	Under support plate	1		151	M6*20 Hexagonal cylinder screw	1
113	M14 flange screw nut	2		152	Bearing 6205	1
115	Big tendon seal	1		153	Eccentric shaft	1
116	O-ring (23.6*5)	1		154	Straight pin	1
117	Shank adapter	1		155	Connection rod	1
118	Gasket for cylinder(59*69-2)	3		156	Needle bearing 18/20	1
119	Cover for broken ring	1		157	Clip board for connection rod	1
120	Broken ring	1		158	M8*16 Flange hexagon screw	1
121	Small tendon ring	1		159	ST4*12 tapping screw	6
122	M8X45 Hexagon socket head screw	4		160	Wick	1
123	Front placket	1		161	One-way valve	1
124	Cylinder	1		162	Inside cover for tank	1
125	Double lip ring	1		163	O-ring 2.65*75	1
126	Piston	1		165	Outside cover for tank	1
127	Paper washer for front placket	1		164	T-type seal ring	1
128	Handle	1		166	leather collar for oil leveler	1
129	Damping spring	4		167	Oil leveler	1
130	Cover for spring	4		168	Bearing 6202	1
131	Bearing 6204	1		170	Clutch Drum for 4-stroke engine	1
132	Gland	1		171	Petrol engine	1
133	M5*12 sunk screw	4		172	Limitation washer	1
134	Big gear	1		173	Ø6 Flat gasket	6
135	Guard circle	1		174	6*27 straight pin	2
136	Gear box cover	1		175	Aluminum spacer for 4-stroke engine	1
137	M5*18Hexagonal cylinder head spring pad assembly	10		176	M6*50 Hexagonal cylinder screw	4
138	Shaft ring 17	1		177	Flat pad 6*12-2	4