POWERTECH POST DRIVER

Model: PPD-100

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	Handle	2	Stop Switch	3	Combination Switch
4	Fuel Bubble	5	Fuel Tank Lid	6	Fuel Tank
7	Throttle Switch	8	Piling Socket	9	Lubricating Oil Filling Port
10	Air Filter	11	Starter	12	Throttle Cable
13	Support Plate	14	Muffle	15	Oil filler cap
16	Grip	17	Front placket	18	Damping Spring
19	60-78mm sleeve	20	Retainer		

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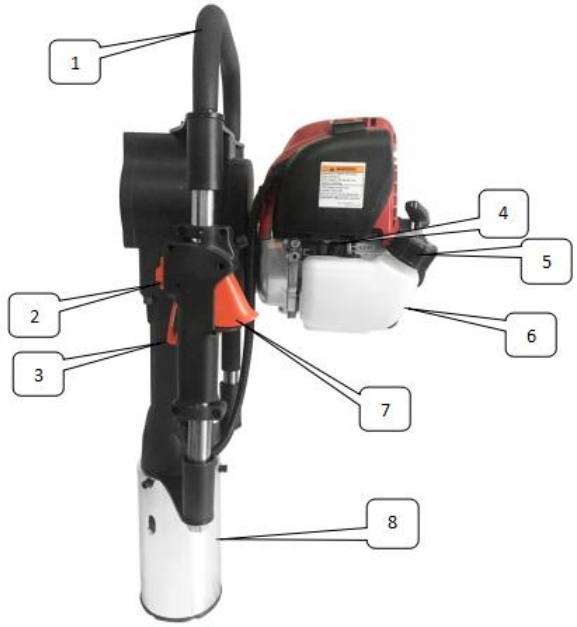


Fig.1

Fig.2

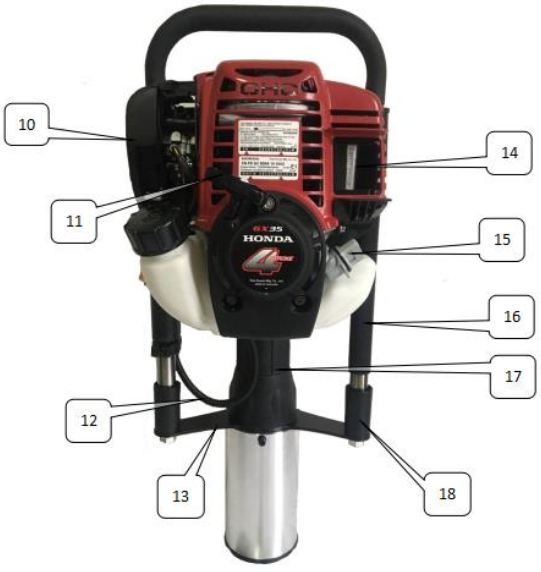


Fig.3

Fig.4

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 4.1for 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 run at half to three-quarter throttle.

3.2.1 Engine-type handheld gasoline post driver which is light weight and designed for driving posts into ground.

3.2.2 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.

3.2.3 It can regulate impact energy and impact frequency and drive a variety of posts between 20-100mm (inclusive) in diameter.

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

3.2.5 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.5. If inadequate oil level, add to the upper limit.

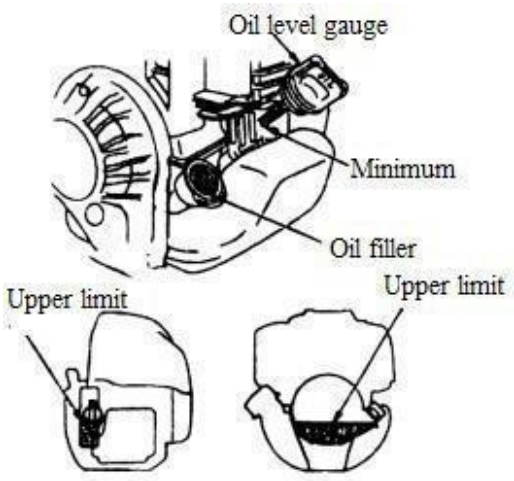
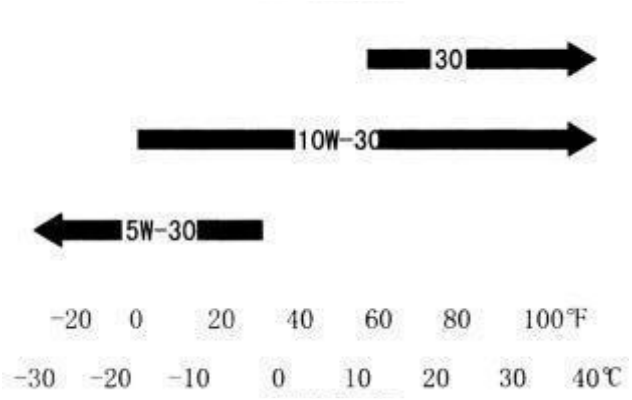


Fig. 5

4.1.3 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. 6 below is SAE Engine Oil Consistence Table.

SAE Engine Oil Viscosity Grade



Environmental temperature

Fig. 6

4.2 Post adapter and sleeve

4.2.1 Install adapter, specifications of 100mm which are suitable for the post size. See Fig.7 & Fig.8

Fig.7

Fig.8

4.2.2 For driving posts below 80mm, it's better to use the small sleeve. Insert 80mm plastic sleeve into 100mm adapter and then use retainer to fix. See Fig.9 and Fig.10

Fig.9

Fig.10

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, as shown in Fig. 11)

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.

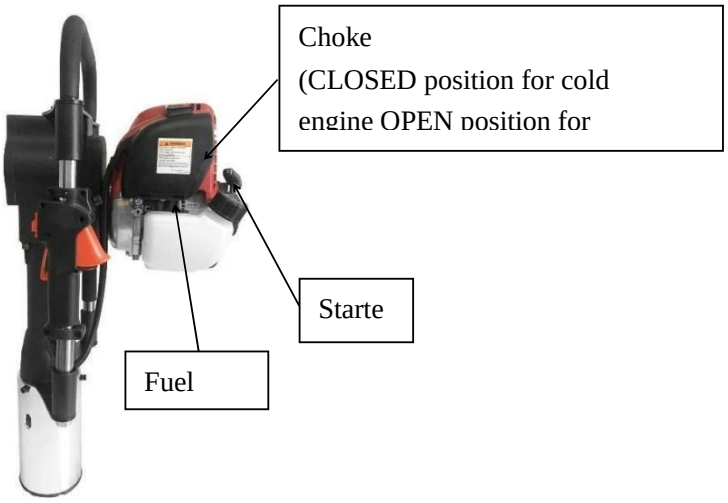


Fig.11

5.3 Don't pull the handle of the starter 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 petrol post driver use shall mainly be at low to medium speed for the first 20hours of operation and the maximum throttle shall not be used in order to extend the service life.

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

6.3 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.12.

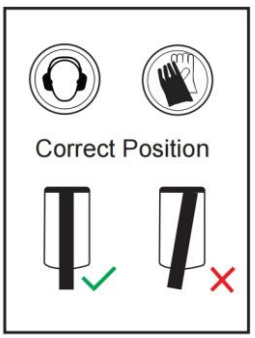


Fig.12

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 in Fig.13.

Fig.13

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.14

Fig.15

Fig.16

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. 17.

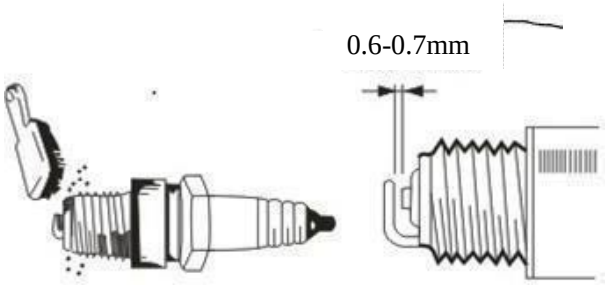


Fig.17

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.18,19, 20 The impact cylinder will leak small amounts of oil past the hammer block for lubrication and is considered normal operation, please check oil level before use as per maintenance schedule and top up as required.

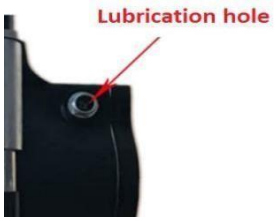


Fig.18

Fig.19

Fig.20

9. Failure Analysis and Troubleshooting

Diagnostics & Problem Solving

Example 1: Difficulties under cold start

Check whether the spark plug is wet and gap is correct	→ Clean and wipe dry, adjust gap if required
↓	
Check whether the spark plug produces spark	→Replace Spark Plug
↓	
Check if too much fuel has been supplied	→Let unit sit for 5mins, reduce the fuel supply

Example 2: Difficulties in restarting after a shut down

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

Example 3: Slow speed and weak power

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

Example 4: Abnormal sound

Carbon deposit found in combustion chamber	→Remove carbon deposit
↓	
Large abrasions in active components	→ Machine may require dismantle

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

Rubber ring of 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-100
L×W×H	73.5x29.5x34.5cm
Fuel	Unleaded Petrol
Fuel tank capacity	0.63 L
Weight	20KG
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.

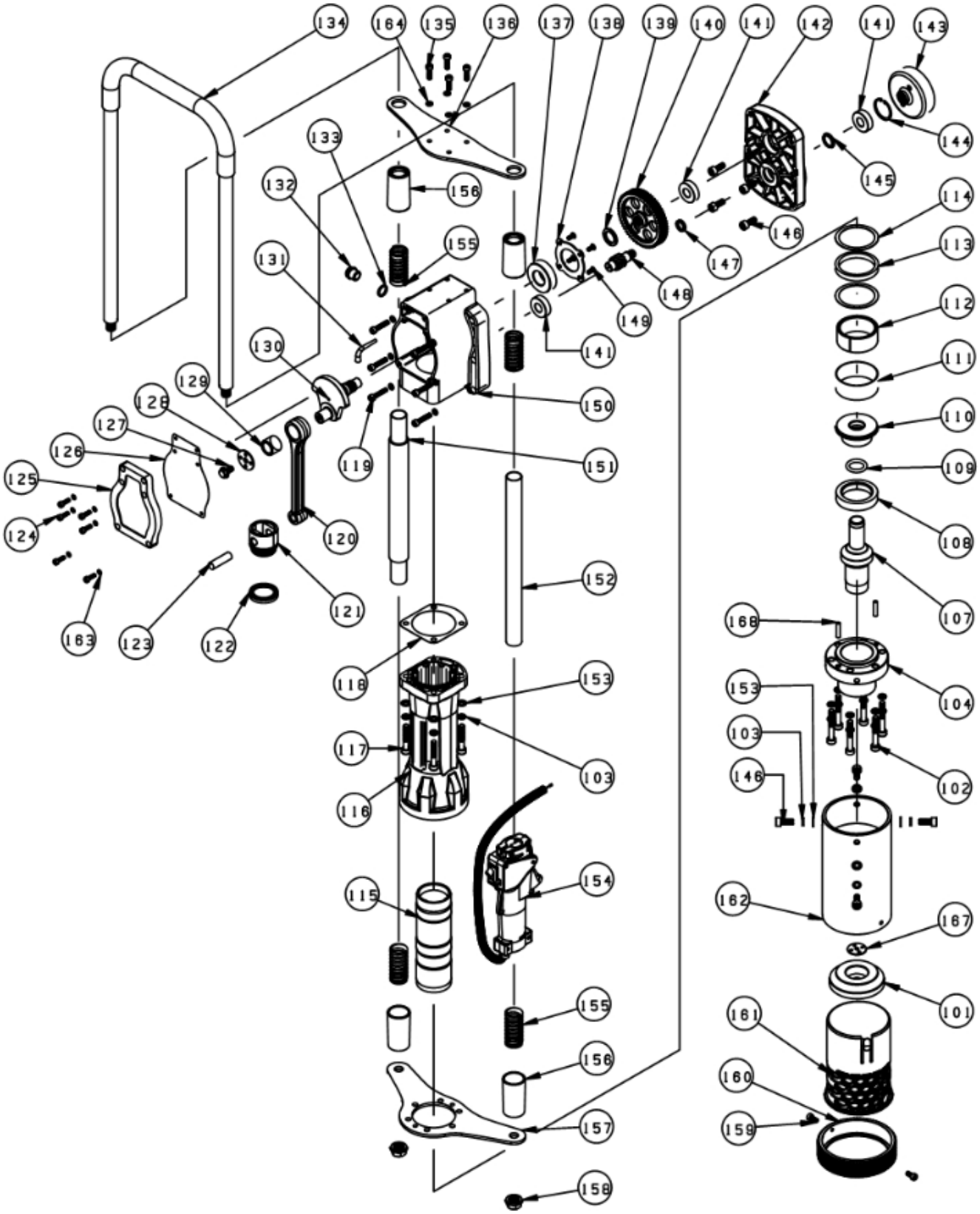
The PowerTech Post Driver unit comes with 12 months parts warranty. **Please note this excludes wear and tear items and only covers failures due to a manufacturing fault or defective part. Any damage or failure caused by operator abuse or misuse of the machine is not covered.**

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-100 Post Driver



Parts highlighted in yellow are wear and tear items

No.	Name	Qty.	No.	Name	Qty.
101	Hammer block	1	135	M6X20 hexagon socket cap screws, washers	4
102	M8X55 Hexagon socket head screw	6	136	Upper support plate	1
103	ø8 spring washer	20	137	Bearing 6205	1
104	Flange adapter	1	138	Gland 6205	1
107	Impact hammer	1	139	Shaft Retainer	1
108	Large rubber band	1	140	Big gear	1
109	O ring (Shank adapter 23.6*5)	1	141	Bearing 6202	3
110	Shank adapter	1	142	Center cover	1
111	Broken ring gum cover	1	143	Clutch drum	1
112	Broken ring	1	144	Circlip 35	1
113	Small rubber band	1	145	Framework oil seal 25X19-3	1
114	Air cylinder gasket (59*69-1)	1	146	M8X20 Hexagon socket head cap screws	8
115	Air cylinder	1	147	Gland cover	1
116	Front placket	1	148	Gear shaft	1
117	M8x45 Hexagon socket head screw	4	149	M5X12 Sunk screw	4
118	Gasket for front placket	1	150	Gear box	1
119	M6x30 Hexagon socket head screw, spring washer assembly	6	151	Handle	1
120	Connection rod	1	152	Tube as handle	1
121	Impact Piston	1	153	Φ8 plain washers	8
122	Lip ring	1	154	Switch block	1
123	Round pin 12x44	1	155	Reduction spring	4
124	M5x16 Hexagon socket head screw	6	156	Spring pocket	4
125	Cover for gear box	1	157	Under support plate	1
126	Paper washer for gear box	1	158	M14 Flange gear nut	2
127	Flange hexagon screw M8x16LH	1	159	M6X12 Hexagon socket head screw	2
128	Pressing plate	1	160	Retainer	1
129	Quill bearing NK18/20	1	161	60-78mm piling sleeve	1
130	Eccentric shaft	1	162	100mm (4") adapter	1
131	Wick	1	163	ø5 spring washer	6
132	Oil leveler	1	164	ø6 spring washer	10
133	Oil leveler leather collar	1	167	spacer	1
134	Handle	1	168	6x27 straight pin	2