GPDR

2-CYCLE GASOLINE POWERED PILE DRIVER

ASSEMBLY & OPERATING INSTRUCTIONS

READ ALL INSTRUCTIONS AND WARNINGS BEFORE USING THIS PRODUCT.

This manual provides important information on proper operation & maintenance. Every effort has been made to ensure the accuracy of this manual. These instructions are not meant to cover every possible condition and situation that may occur. **We reserve the right to change this product at any time without prior notice.**

IF THERE IS ANY QUESTION ABOUT A CONDITION BEING SAFE OR UNSAFE, DO NOT OPERATE THIS PRODUCT!

HAVE QUESTIONS OR PROBLEMS? DO NOT RETURN THIS PRODUCT TO THE RETAILER - CONTACT CUSTOMER SERVICE.

If you experience a problem or need parts for this product, visit our website http://www.buffalotools.com or call our customer help line at **1-888-287-6981**, Monday-Friday, 8 AM - 4 PM Central Time. A copy of the sales receipt is required.

FOR CONSUMER USE ONLY – NOT FOR PROFESSIONAL USE.

KEEP THIS MANUAL, SALES RECEIPT & APPLICABLE WARRANTY FOR FUTURE REFERENCE.

⚠ DANGER

Carbon Monoxide Gas: When in operation, the exhaust from this product contains poisonous carbon monoxide gas. Carbon monoxide gas is both odorless and colorless AND may be present even if you do not see or smell gas. Breathing this poison gas can lead to headaches, dizziness, drowsiness, loss of consciousness and eventually death.

- Use this product ONLY outdoors in non-confined areas.
- Keep at least several feet of clearance on all sides to allow proper ventilation for this product.

⚠ WARNING

WARNING: CALIFORNIA PROP 65: According to the State of California, engine exhaust and some of its constituents from this product are know to contain chemicals known to cause cancer, birth defects, or other reproductive harm.

⚠ WARNING

WARNING: CALIFORNIA PROP 65: According to the State of California, this product contains or emits chemicals known to cause cancer, birth defects and other reproductive harm.

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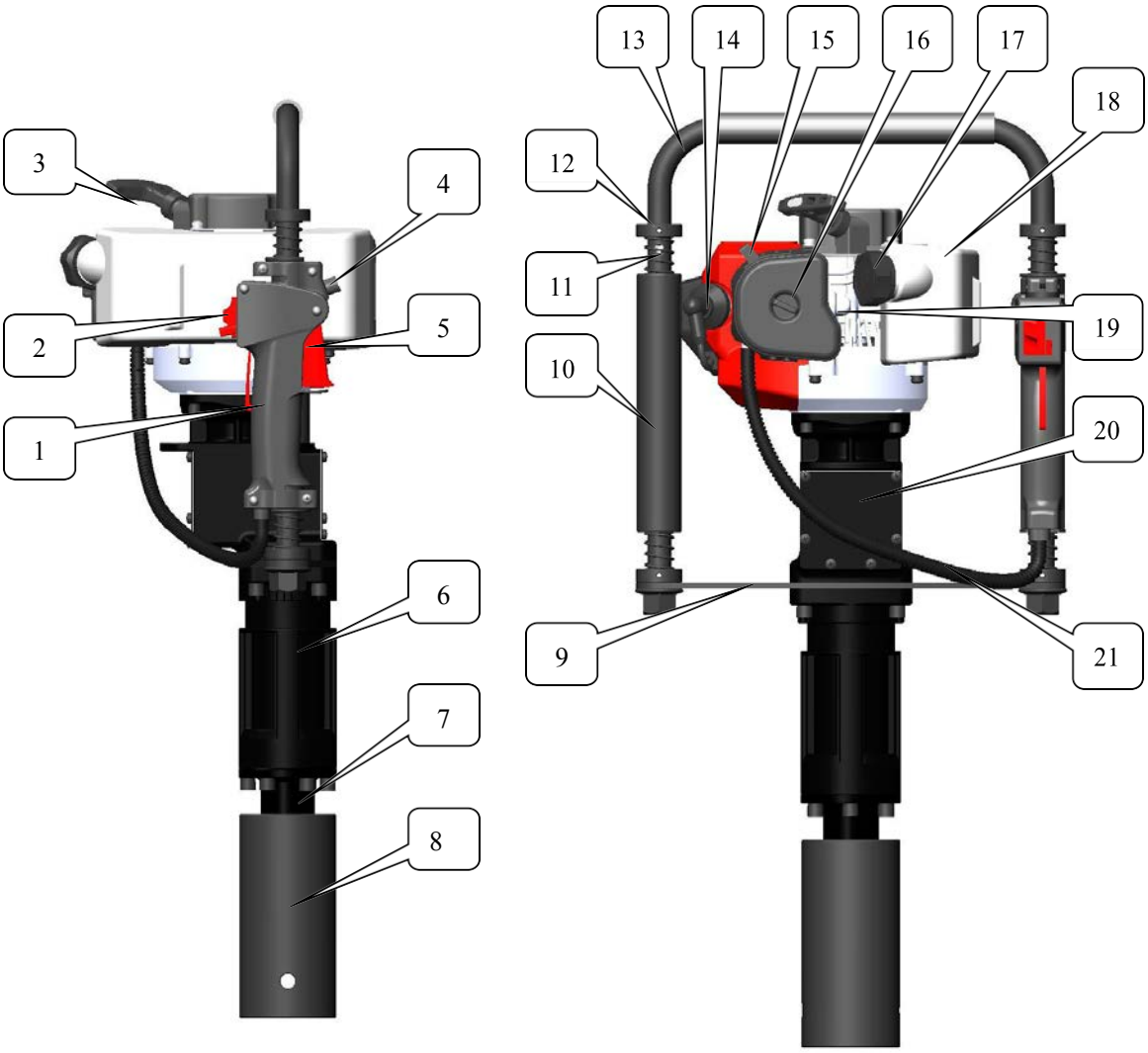


PART INFORMATION

No.	Name	No.	Name	No.	Name
1	Combination Switch	2	Stop Switch	3	Starter
4	Regulating Switch	5	Throttle Switch	6	Hammer Case
7	Hammer Socket	8	Piling Socket	9	Support Plate
10	Grip	11	Damping Spring	12	Positioning Sleeve
13	Handle	14	Spark Plug	15	Intake Switch
16	Air Filter	17	Fuel tank Cap	18	Fuel tank
19	Fuel Bubble	20	Steel Cover	21	Throttle Cable

SPECIFICATIONS

Engine type	Single cylinder, air cooling, 2 stroke, cylinder diameter × stroke: 36×32mm
Fuel	Mixed oil (Gasoline: two-stroke engine oil=25:1)
Fuel tank capacity	1.05669 quart
Weight	28 lbs
Displacement	32.7CC
Max power/speed	0.9KW/9000r/min
Max torque/speed	1.45N.m/5000r/min
Fuel consumption	≤0.50L/h
Impact frequency	1700~2230 RPM
Impact energy	30~45J
Carburetor type	MZ10.7
Spark plug type	L6T

READ SAFE OPERATION REQUIREMENTS ⚠WARNING

1. The operator must wear slip-resistant safety shoes and suitable clothing. For long-time operation, he or she must wear goggles, the helmet and earplugs.
2. While operating the machine, please keep balance of body; the user shall stand in front of Air Filter and operate the machine. While operating the machine, do not smoke, eat or chat.
3. After starting the machine, do not carry out one-handed operation.
4. While lifting the machine, do not pull Throttle Switch.
5. Non-staff shall stay away from operating area to avoid injury.
6. Select the medium speed to operate pile driver.
7. Keep the handle dry and clean without greasy oil or fuel mixture.
8. If operation is stopped midway: turn off the engine.
9. Always check whether fastening screws of the connector is tightened before use. If it's loose, you must tighten the screws before use. DO NOT USE pure gasoline (without adding appropriate two-stroke engine oil).
10. Gasoline is highly flammable. Therefore, replenish fuel in a well-ventilated environment. During fuel filling, gasoline engine must be turned off.
11. Do not over fill. The oil shall not exceed the neck of oil filer of Fuel Tank. If fuel spills, wait until the fuel volatilizes completely and then start the machine.
12. After refueling, tighten the oil lid. During operation, check whether Fuel tank is damaged and spills frequently. If damage is found, turn off the machine immediately for replacement.
13. While pile driver is used in closed areas of work environment such as tunnels, trenches and deep groove, it's necessary to guarantee normal air circulation to avoid waste gas poisoning and suffocation.
14. Forbid quick acceleration or braking so as not to damage the machine.
15. Before transport, empty fuel inside Fuel Tank to avoid leakage.
16. Non-professional maintenance staff are prohibited from dismounting pile driver to avoid structural damage of parts, shortened service life of pile driver or accidents.

USE AND FUNCTION

3.1 Use: Use for outside piling operation of farms, orchard fences or barriers.

3.2 Function

3.2.1 Lightweight and low discharge capacity.

3.2.2 Reduces working strength 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 apply to a variety of piles less than 68mm in diameter.

3.2.4 Advantage: Save the trouble of using heavy machines such as generator, air compressor, and trucking-lorry.

3.2.5 The operating handle of the machine is rubber and plastic sponge handle which can greatly reduce the recoil force of the machine. It's installed with two-way Damping Spring which makes the user more comfortable.

PREPARATION BEFORE USE

4.1 Piling Socket Assembly

Fig. 1) Locate Pile Driver, Piling Socket & Inner Pile Head.
Fig. 2) Attach Piling Socket by screwing it onto Pile Driver.
Fig. 3) Make sure Piling Socket is secure.

Fig. 4) Insert Inner Pile Head.
Fig. 5) Insert Piling Socket Pin then rotate. Using a mallet, hammer into Piling Socket until secure.
Fig. 6) Piling Socket is assembled.

Fig. 7) To disassemble, remove Piling Socket Pin by using a mallet.
Fig. 8) Remove Piling Socket Pin.
Fig. 9) Unscrew Inner Pile Head.

4.2 MIXING GAS/OIL FUEL

Use only quality gasoline and two-stroke special engine oil

Recommended mixing ratio:

Condition	Gasoline : 2-Cycle Engine oil
Operation within 20 hours	20:1
Operation of over 20 hours	25:1

1. Fuel must be mixed in a container outside in a well ventilated area.
2. Fill certified fuel container 1/4 full of recommended fuel.
3. Add recommended amount of 2 cycle oil.
4. Screw container cap on straight and tight.
5. Shake the container to mix fuel and oil.

6. Unscrew gas cap slowly to vent, add the remainder of fuel requirements
7. Wipe away any spilled fuel or oil and allow to evaporate before moving or transporting.

STARTING

Before starting the new machine, press the transparent and semi-circle fuel bubble repeatedly (Fig.12) until Carburetor is filled with fuel. (If the engine is cool, close the air door. Open air door after starting.)

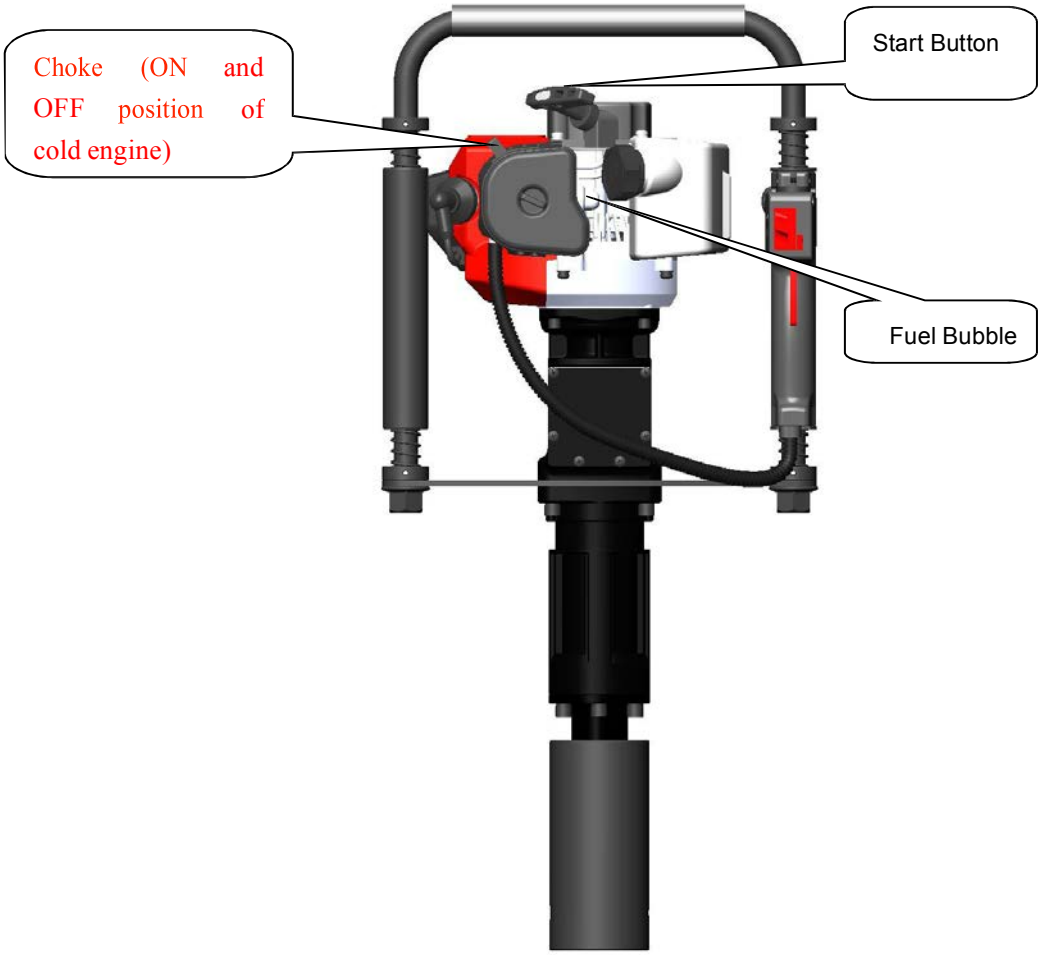


Fig.12

Set the machine upright according to Fig.12. Hold the upper part of handle tightly with one hand while the other pulls the pulling handle of starter for over 20 inches quickly. Do not let the recoil handle go back freely in repeated pulling. Instead, hold it tightly to avoid injury.
Start the engine and then open air door completely. After idle operation of 5 minutes, start normal work.

OPERATION

6.1 After engine is started, first carry out idle operation of 5 minutes to warm up the machine. When the engine is warmed up, press throttle handle to the appropriate regulatory position according to the required impact energy.
Note: The gasoline pile driver use shall mainly boast low or medium-speed for work in the first 24 hours of operation and the maximum throttle shall not be used in order to extend the service life.

6.3. Operating speed of gasoline engine shall be low or medium speed.

6.4. High-speed operation of pile driver during non-piling is prohibited.

TURNING OFF MOTOR

7.1 Release throttle handle and carry out idle running of the machine for 3-5 minutes. Pull Stop Switch to the position of flameout. See the position of Stop Switch in Fig.13.

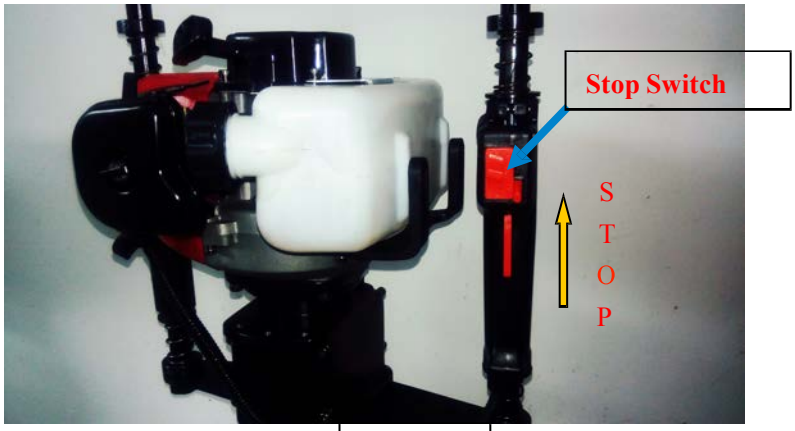


Fig.13

MAINTENANCE

8.1 Air Filter

Check air filter regularly. Soot deposit blocking filter element of air filter will reduce power of gasoline engine and service life. If the filter has too much soot deposit, clean it with warm water and detergent, and then wipe dry it with dry cloth, and then install the air filter. Filter should be replaced if damaged. If working in a d u s t y environment, maintenance cycle shall be shortened.

8.2 Fuel filter

If the fuel filter is blocked, pile driver will have reduced speed and weaker impact energy.

① Open the tank lid. Remove the fuel filter from Fuel tank with metal hook and clean it.

② When cleaning the fuel filter, clean the fuel tank at same time. See Fig.14, 15 and 16.

Fig.14

Fig.15

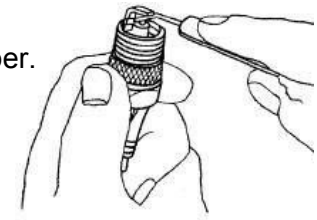
Fig.16

8.3 Carburetor

Fuel tank and carburetor generally have residual oil. After some time, the residual oil will become greasy oil which block up the oil line, causing that the engine can't be started. Therefore, when the machine is not used for more than one week, be sure to completely take the fuel out. Method: Pull out the oil inlet pipe, press rubber bubble of Fuel Bubble of Carburetor repeatedly for oil discharge, and press the oil inlet pipe back to its position when fuel in Fuel Bubble and oil return pipe is emptied.

8.4 Spark Plug

To ensure normal operation of the engine, spark plug gap must be proper. Remove sediment with a wire brush. Proper gap of Spark Plug is 0.5-0.7 mm.



8.5 Muffler

Regularly remove dirt on inlet and outlet of muffler, or clean dirt in it with detergent.

8.6 Gearbox and lubrication of impact part

Open the cover of left and right gear boxes, and lubricate the gear and the connecting rod regularly with lubricating oil to guarantee full lubrication of the machine as it's shown in Fig.18, 19, 20, 21, 22 and 23.

Fig.18

Fig.19

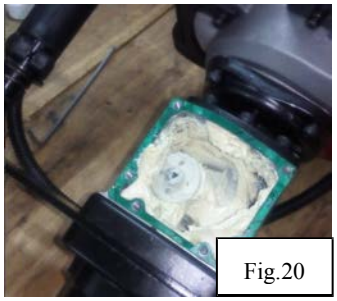


Fig.20

Fig.21

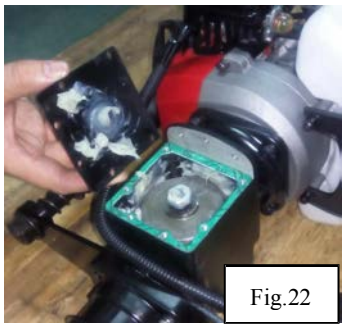


Fig.22

Fig.23

8.7 The cylinder heat sink

Regularly remove dust to ensure the cylinder cooling. The gasoline pile driver is air-cooled type. If dust accumulates on the cylinder heat sink, the cooling effect will be influenced directly.

TROUBLESHOOTING

Problem analysis and solving

Example 1: Difficulties in starting cool engine.

Whether Spark Plug is damp	→Wipe dry Spark Plug
↓	
Whether the spark plug produces electric spark	→Replace Spark Plug
↓	
Too much fuel absorbed	→Reduce the fuel supply

Example 2: Restarting after sudden stop

Whether fuel is used up or carburetor is blocked	→Refill Fuel tank or clean carburetor
↓	
Whether fuel filter is blocked	→Clean fuel filter
↓	
Too much carbon deposit of Spark Plug	→ Remove carbon deposit of Spark Plug and clean filter element

Example 3: Slow, weak power

Carbon deposit of the cylinder or silencer	→Remove carbon deposit
↓	
The oil tube and the Fuel Tank air vent blocked	→Clean
↓	
Air filter is blocked	→ Clean filter

Example 4: Loud Sound

Carbon deposit found in combustion chamber	→Remove carbon deposit
↓	
Serious abrasion in active components	→ Replace

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

Rubber ring of impact piston is aged and worn	→Replace or renew

Please contact customer service for instructions.

MAINTENANCE CYCLE

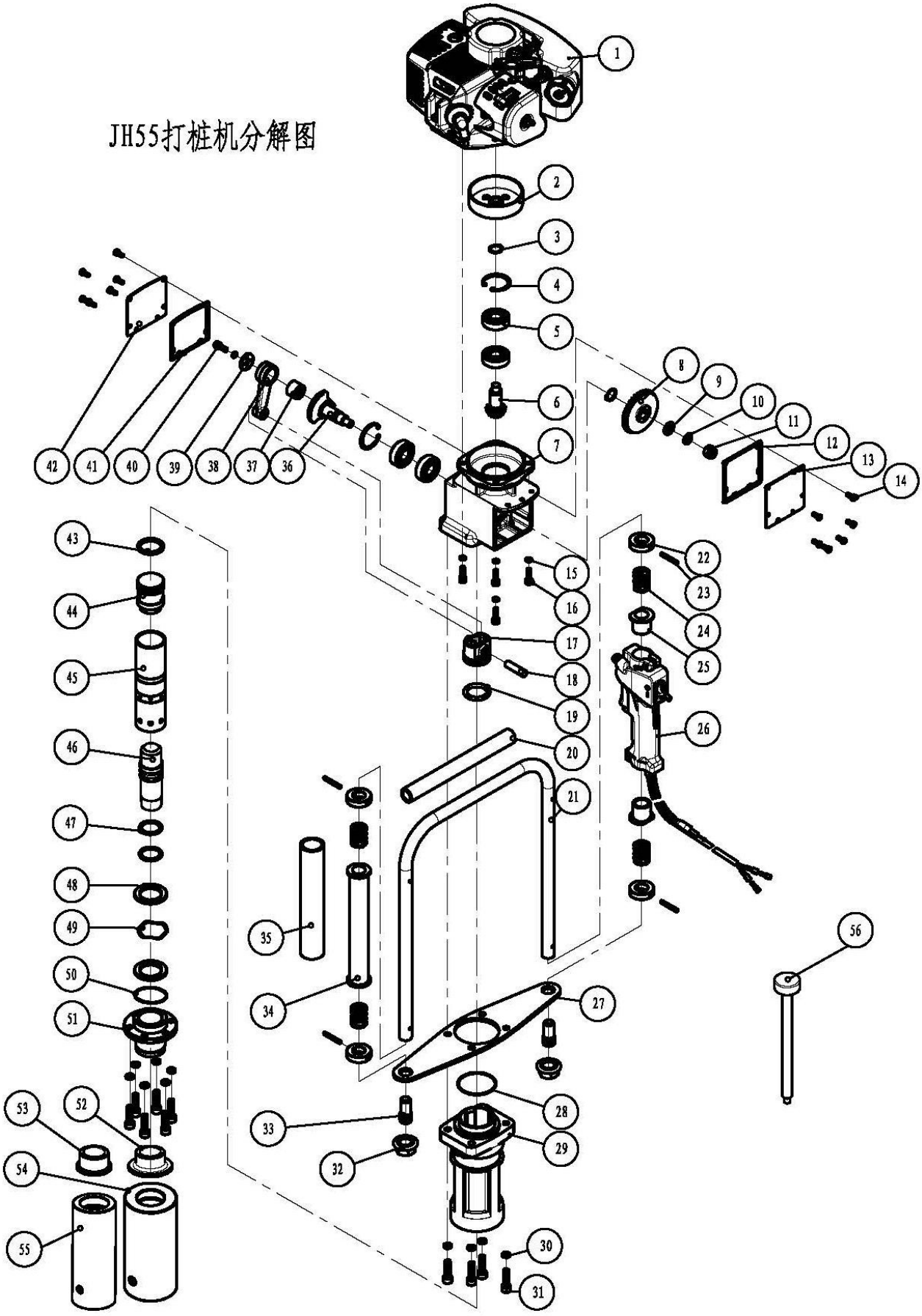
The following Data are given common use of the product. Under worse working conditions such as thick dust or long work hours of pile driver, the maintenance cycle should be shortened correspondingly.		Before work	After work or every day	After Filling oil	Every Week	Every Month	Temporary Failure	If necessary
The whole machine	Outlook check (state, tightness of screws)	√		√				
	Clean		√					
Control handle/stop button	Function check	√		√				
Air Filter	Clean				√			√
	Replace						√	
Fuel Filter	Check					√		
	Replace						√	
Petrol Tank/Petrol Tank cover	Clean		√	√				
	Check	√		√				
	Tighten							√
Gear Box/Cylinder	Clean					√		
	Add oil							√
Silencer	Check					√		
	Remove carbon deposit							√
Cylinder Cooling Fin	Check					√		
	Clean							√
Spark Plug	Check/Adjust the distance between electrodes					√		
	Replace							√
Screw and Nut	Check	√		√				
	Tighten							√

PARTS LIST

Parts No.	Name	Qty		Parts No.	Name	Qty
1	Gasoline Engine	1		41	Left Gasket	1
2	Clamping Disk	1		42	Left Steel Cover	1
3	Circlips for Shaft A17	2		43	Hammer O-Circle	1
4	Circlips for Holes A40	2		44	Hammer	1
5	Deep Groove Ball Bearings 6203-2RZ	4		45	Impact Cylinder	1
6	Small Gear	1		46	Shock	1
7	Reduction Gearbox	1		47	Shock O-Circle	2
8	Big Gear	1		48	Crush Pad	2
9	Plain Washer 10	1		49	Waved Gasket	4
10	Spring Ring 10	1		50	Socket O-Circle	1
11	Thin Hexagon Nut M10	1		51	Impact Socket	1
12	Right Gasket	1		52	Inner Pile Head 67	1
13	Right Steel Cover	1		53	Inner Pile Head 53	1
14	Inner Hexagon Cheese-head Combination Screw M5×14	12		54	Piling Socket 69	1
15	Spring Ring6	5		55	Piling Socket 55	1
16	Inner Hexagon Cheese-head Screw M6×20	4		56	Piling Socket Pin	1
17	Impact Piston	1				
18	Impact Piston Pin	1				
19	Impact Piston O-Circle	2				
20	Soft Cover of Assist Handle	1				
21	Handle	1				
22	Positioning Sleeve	6				
23	Flexible Cylindrical Pin 4×35	6				
24	Damping Spring	4				
25	Guide Sleeve	2				
26	Combination Switch	1				
27	Support Plate	1				
28	Cabinet Seals	1				
29	Hammer Case	1				
30	Spring Ring8	10				
31	Inner Hexagon Cheese-head Screw M8×30	10				
32	Handle End Face Screw	2				
33	Outer Hexagon Flange Self-locking Nut M18×1.5	2				

34	Grip	1				
35	Handle Soft Case	1				
36	Impact Crank	1				
37	Needle Roller Bearing HK152316	1				
38	Shock Linkage	1				
39	Shield Ring	1				
40	Inner Hexagon Cheese-head Screw M6×16	1				

PARTS DIAGRAM



PARTS LIST

Parts No.	Name	Qty		Parts No.	Name	Qty
1-1	Cross Recessed Pan Head Combination ScrewM5×20	13		1-41	Air Filter Cover	1
1-2	Starter	1		1-42	Air Filter Press Plate	1
1-3	Starter Al Gasket	1		1-43	Filter Element	1
1-4	Type 1 Hexagon NutM8×1.25	1		1-44	Air Filter Base Com.	1
1-5	Start Reel	1		1-45	Carburetor	1
1-6	Type 1 Hexagon NutM8×1.25	1		1-46	Carburetor Gasket	1
1-7	Oil Seal	2		1-47	Air Inlet Tube	1
1-8	Right Crankshaft Box	1		1-48	Air Inlet Tube Gasket	1
1-9	Deep Groove Ball Bearing	2		1-49	Cylinder	1
1-10	Fuel Tank Assembly	1		1-50	Cylinder Gasket	1
1-11	Fuel tank Plain Washer	2		1-51	Piston Ring	2
1-12	Cross Recessed Pan Head Combination ScrewM5×16	2		1-52	Piston	1
1-13	Fuel tank Press Plate Jacket	1		1-53	Crankshaft Connecting Rod Assembly	1
1-14	Fuel tank Press Plate	1		1-54	Needle Bearing	1
1-15	Woodruff Key	1		1-55	Piston Pin	1
1-16	Crank Case Gasket	1		1-56	Piston Pin Shield Ring	2
1-17	Locating Pin 4×10	2				
1-18	Left Crankshaft Case	1				
1-19	Inner Hexagon Cheese-head Screw M5×30	4				
1-20	Igniter	1				
1-21	Magnetic Flywheel	1				
1-22	Hexagon Flange Face Looseness-proof Nut M8×1.25	1				
1-23	Steel Plain Washer	2				
1-24	Shoe Block Assembly	1				
1-25	Waved Gasket	2				
1-26	Clutch Bolt M8×10	2				
1-27	Air Deflector	1				
1-28	Locating Pin 5×10	2				
1-29	Fan Cover	1				
1-30	Cross Recessed Pan Head Combination ScrewM5×12	3				
1-31	Muffler Cover	1				
1-32	Hexagon Flange Face Bolt	2				

	M5×55					
1-33	Muffler	1				
1-34	Muffler Gasket	1				
1-35	Cylinder Top Cover	1				
1-36	Cylinder Cover	1				
1-37	Inner Hexagon Cheese-head Screw M5×20	4				
1-38	Spark Plug	1				
1-39	Cross Recessed Pan Head Combination ScrewM5×22	2				
1-40	Butterfly Screw M5×9	1				

PARTS DIAGRAM