



PERFORMANCE · EFFICIENT · RELIABLE

C90

Vibratory Plate Compactor — Gasoline Type

OPERATION MANUAL

For your safety, BEFORE operating or servicing this machine, YOU MUST READ and STUDY this manual carefully. Keep this manual readily available for reference.

C90 Product Identification	
Model	C90 Vibratory Plate Compactor
Product Type	Walk-Behind Vibratory Plate Compactor (Gasoline)
Power Source	4-Stroke Air-Cooled Gasoline Engine
Serial Number	_____

IMPORTANT: This manual contains important safety, operation, maintenance and product information. Read all instructions before operating this machine. Keep this manual with the machine at all times. The contents and data in this manual are subject to change without further notice.

Table of Contents

1. Preface
2. Intended Use & Features
3. Technical Parameters
4. Main Structure
5. Working Principle
6. Safety Precautions
7. Operation & Maintenance
8. Troubleshooting
9. Documents Supplied with the Machine
10. Certificate of Approval
11. After-Sales Service & Product Warranty
12. Contact Information

1. Preface

Thank you for your trust in the STARVOX gasoline vibratory plate compactor.

For the best performance of this machine, we recommend that you read this manual carefully, understand the maintenance and operation methods listed in it and the safety precautions, and follow them strictly. If anything in this manual is not clear, contact your dealer — we will be very glad to participate in the discussion and offer our opinions and suggestions for improvement.

For your own safety and to protect against injury, carefully read, understand and observe all safety instructions described in this manual before operation. Please keep this manual properly for future reference. With the continuing improvement of STARVOX products, there may be differences between the contents described in this manual and the actual product. The actual product prevails.

2. Intended Use & Features

The STARVOX C90 vibratory plate compactor is widely used for the compaction of various small building foundations, various backfill foundations, roads, squares and pipeline trenches, and for the repair of asphalt concrete pavement. It is especially effective for the compaction of non-cohesive sandy soil, gravel and crushed stone, achieving results that other compactors cannot deliver.

The machine features a compact structure and attractive appearance, and is easy to move. Compared with the frog-type rammer, it offers higher working efficiency, better compaction quality, smooth operation and labor saving. It is the upgraded replacement product of the traditional frog-type rammer.

3. Technical Parameters

Item	C90 Specification
Engine	Single-cylinder, 4-stroke, air-cooled gasoline engine (168F class), recoil start
Rated Power	5.5–6.5 HP (4.0–4.8 kW) / 3600 rpm
Centrifugal Force	13 kN
Vibration Frequency	5600 vpm
Travel Speed	15–20 m/min
Max. Compaction Depth	30 cm
Operating Weight	68 kg (net) / 75 kg (gross)

Note: Performance parameters are typical values for the standard C90-class configuration; the nameplate on the machine governs.

Packing Information

Item	Specification
Product Name	Vibratory Plate Compactor
Model	C90 (factory model FCP90)
Packing Dimensions	900 × 450 × 1110 mm (0.449 CBM)
Weight	75 kg gross / 68 kg net
Material	Q235 steel
Year of Manufacture	2026

4. Main Structure

The STARVOX C90 vibratory plate compactor mainly consists of the handle, throttle cable, gasoline engine, water tank, vibratory exciter (vibration case) and base plate, with a transport wheel kit for short-distance moving.



Figure 1 — C90 Main Structure

Part Name	Function
Handle	Guiding and controlling the travel direction and speed of the machine
Throttle Cable	Adjusts the engine speed from the operating position
Gasoline Engine	Power source: single-cylinder, 4-stroke, air-cooled
Water Tank	Supplies water to wet the plate when compacting asphalt (prevents sticking)
Vibratory Exciter	Drives the eccentric block to generate the excitation (vibratory) force; grease nipples are fitted at both ends
Base Plate	Transmits the vibratory force to the material being compacted

5. Working Principle

The machine is powered by a gasoline engine. Through the transmission device, the engine power is transmitted to the vibration case, which drives the eccentric block to rotate at high speed and generate the excitation force, thereby producing the vertical (up-and-down) vibration of the machine and its self-propelled movement.

The up-and-down vibration makes the material being compacted resonate: the material particles flow relatively to one another and wedge into each other, so that the density increases. When the surface layer has been compacted, this compacted layer in turn transmits the vibration to deeper layers, thus achieving a relatively large compaction depth and ideal compaction effect.

6. Safety Precautions

(1) Working Area

- Keep the work area clean and well lit. Cluttered and dark areas invite accidents.
- Do not operate the machine in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.
- Keep bystanders, children and visitors away while operating the machine, so as to prevent loss of control.

(2) Personal Safety

- Stay alert, watch what you are doing and use common sense when operating the machine.
- Do not operate the machine while tired, or under the influence of drugs, alcohol or medication.
- When operating the machine, maintain a high degree of vigilance. Do not use the equipment when tired, or under the influence of drugs, alcohol or medication.
- Use personal protective equipment: always wear safety goggles, dust mask, anti-slip safety shoes, safety helmet and hearing protection.
- Switch off the engine when inspecting, maintaining or replacing parts. Only original spare parts may be used for replacement; the specific method must follow the maintenance section of this manual.

(3) Specific Safety Rules

WARNING: To avoid any accident, please read the equipment manual carefully. In particular, observe the following:

- Do not touch any part of the machine while the vibration force is in operation.
- Do not use the machine in places with exposed flammable liquids or gases.
- Do not allow inexperienced or untrained personnel to use this equipment alone.
- Always keep the plate compactor clean and dry.
- Before working, make sure that all cables and bolts are in a safe condition.
- If any abnormal condition is found during work, stop the machine immediately for inspection; operation may continue only after the problem has been eliminated.
- Read the engine manufacturer's operating manual carefully. Do not work in enclosed rooms — the exhaust gas is toxic. When refueling, let the engine cool down for 3 minutes first.
- Vibration machinery may cause health risks. Wear anti-vibration (insulated) gloves and other necessary safety equipment. In addition, the user should take a rest once every hour of work, so as to work more efficiently.
- The rubber parts used for vibration isolation must be kept intact. If they are damaged, they must be replaced immediately. Operators must also comply with other applicable laws and regulations.
- If the machine surface temperature exceeds 60 °C (ambient temperature plus 60 °C) during work, stop the machine immediately for inspection. If a bearing is damaged, replace it

immediately.

7. Operation & Maintenance

7.1 Getting Started

1. Check whether the gasoline is sufficient (always use high-quality gasoline, and engine oil dedicated to gasoline engines). Press the primer bulb (transparent plastic cap) on the carburetor with your finger until it is full of gasoline and the fuel returns to the tank.
2. First, lift up one end of the machine and use the swing arm to position the travel wheels under the rear of the machine, then carry out a full inspection of all parts: turn the exciter pulley or the travel wheels by hand — rotation must be flexible, without obvious radial movement or axial play; tighten all fastening bolts one by one, especially the vibration case bolts, which must not be loose.
3. After starting, the machine must run smoothly without abnormal noise before work begins; otherwise, stop the machine immediately for inspection.
4. When compacting loose soft soil, spread and level it first. The spreading thickness generally should not exceed 200 mm; otherwise the machine may sink into the soil layer and fail to work normally.
5. When working on loose materials or going uphill, press the handle downward to increase the forward speed of the machine.
6. Grease nipples are fitted at both ends of the vibratory exciter. Apply grease at least once per shift to guarantee the service life of the heavily loaded bearings running at high speed (ensure the vibration-case bearings are well lubricated).

7.2 Operation Notes

1. After the machine has accumulated 80 hours of work, carry out a full inspection and maintenance, focusing on the fit between the vibration-case bearings and the housing, and check whether all fastening bolts are loose. Replace parts immediately in case of serious wear.
 2. Pay attention to the running condition of the machine at all times during work. If abnormal noise occurs or the temperature at the vibration-case bearings is too high, stop the machine for repair.
 3. When the machine is disassembled and reinstalled, all fasteners must be tightened; no looseness is allowed.
 4. To move the machine, use the swing arm to position the travel wheels under the base plate before moving.
 5. When carrying the machine, use the handles at both ends of the base plate; do not lift the machine by the handlebar.
- When compacting sand and gravel foundations, the particle size of stones should be less than 6 cm. Operating on hardened concrete or asphalt pavement is not allowed, to prevent machine damage. When compacting asphalt pavement, sprinkle water on the surface at all times to prevent the base plate from sticking (use the water tank).

- When compacting backfill, the water content of the soil should be less than 20%. The thickness of each cushion layer should follow the requirements of the technical personnel. Where a compaction degree of 95% or above is required, it is recommended not to exceed 20 cm per layer and, in general, not to exceed 30 cm, so as to achieve the best compaction effect.
- When hoisting and transporting, use the lifting ring on the base plate; do not drag the machine by the handle or the guard frame, so as not to damage the vibration-damping blocks.

7.3 Periodic Maintenance

1. Clean the machine body every day; check bolts and nuts; check and top up engine oil.
2. Replace the engine oil every week (50 hours; first change at 20 hours); clean the spark plug and the air filter.
3. Clean the oil filter every month (200 hours); clean and adjust the spark plug.
4. Every 250 hours, clean and adjust the carburetor; clean the cylinder head and adjust the valves.
5. For every maintenance operation, be sure to use original (factory) parts.
6. After each maintenance, carefully check that all safety devices are installed in place.
7. Every 12 months (or more frequently), send the machine to an authorized service point for a full overhaul.
8. Do not smoke near a full fuel tank; keep away from any other potential sources of danger.
9. The idle engine speed must not exceed 3000 rpm.

For more engine maintenance, read the engine operating manual.

8. Troubleshooting

Fault Phenomenon	Cause	Remedy
End covers of the exciter run hot — temperature at both ends of the exciter exceeds 60 °C	Bearing damaged	Replace the bearing
	Lubricating grease has failed	Replace the grease
	Grease nipple damaged — grease cannot be injected	Replace the grease nipple
Machine shakes violently and the base plate cannot work normally	Engine speed too low	Check the throttle position and engine speed
Engine overheats	Cooling fins clogged	Clean the cooling fins
	Engine oil insufficient or deteriorated	Check and top up / replace the engine oil; stop using until the fault is eliminated

Fault Phenomenon	Cause	Remedy
Excessive noise of the machine	Bolts loose at certain positions	Check and tighten
	Bearing damaged	Replace the bearing
V-belt loose	V-belt worn out	Replace the V-belt
	Vibration-damping block damaged	Replace the vibration-damping block

9. Documents Supplied with the Machine

1. Operation Manual of the Gasoline Vibratory Plate Compactor — 1 copy
2. Gasoline Engine Operating Manual (attached separately) — 1 copy
3. Certificate of Approval — 1 copy

10. Certificate of Approval

Product Model	C90 Vibratory Plate Compactor
Product Name	Vibratory Plate Compactor (Gasoline Type)
Factory Number	
Inspector	
Result of Inspection	This product has passed final inspection and is approved for delivery. Date: _____ Year ____ Month ____ Day

As our products are under continuous development, certain parts of the current product may differ from this manual. The actual product prevails; no further notice will be given.

11. After-Sales Service & Product Warranty

Thank you for choosing our products. We will provide you with quality pre-sales and after-sales support. When using our products, please read this manual carefully and perform maintenance in accordance with the requirements. If any quality problem occurs with the product within **three months**, contact your local dealer in time — we will provide you with timely service.

The following cases are not covered by free repair:

- Product damage caused by improper operation, such as running the engine without fuel, or without adding the specified amount of lubricating oil.

- Machine damage caused by failure to change the engine oil at the required intervals or by other improper human operation.
- Modification or refitting of the machine by anyone other than our company or our technicians.
- The user replacing any parts inside the machine by himself/herself.
- For equipment beyond the free warranty period or outside the scope of the free warranty terms, our company may still provide paid repair services; the cost of parts and maintenance will be charged accordingly.

Warranty Card

Product Name / Model	
Factory Number	Telephone:
Purchaser	Date of Sale:
Address	
Seller	Contact:
Seller Address	
Repair Record 1	
Repair Record 2	
Repair Record 3	
Repair Record 4	

12. Contact Information

Shanghai Junyuan International Trade Co., Ltd. | Brand: STARVOX Equipment

Email: service@starvox.com.cn