

STARVOX

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600C

Walk-Behind Double Drum Vibrating Roller
OPERATOR'S MANUAL

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

Model 600C Walk-Behind Double Drum Roller	Drum Width 24 in (600 mm)
Engine Changfeng CF178 Diesel, 9 HP	Serial Number _____

IMPORTANT: This manual contains important safety, operation, maintenance and warranty information. Read all instructions before operating this machine. Keep this manual with the machine at all times.

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1. Preface

Thank you for choosing the STARVOX 600C Walk-Behind Double Drum Vibrating Roller. This operator's manual will guide you through the correct operation, maintenance and safety procedures for your machine.

For your own safety and to protect against injury, carefully read, understand and observe all safety instructions described in this manual before operating or servicing the equipment. Following the operating requirements in this manual will keep your machine in the best operating condition and extend its service life.

Keep this manual — or a copy of it — with the machine at all times. This machine is built with user safety in mind; however, it can present hazards if operated or serviced improperly. Follow all operating instructions carefully.

With the continuing improvement of STARVOX products, there may be differences between the contents described in this manual and the actual machine. Users should pay attention to any such differences. If you have questions, contact your authorized STARVOX dealer.

Intended Use

The STARVOX 600C is a light walk-behind double drum vibrating roller. It is designed to compact asphalt, sand, soil, gravel, and sub-base materials. It is also used to level lawns and playgrounds. The machine features a hydraulic system with variable displacement plunger pump and constant displacement hydraulic motor for smooth, reliable performance.

This machine is intended for professional and trained operators in compaction applications. It is not designed for use on public roads without appropriate local authorization.

2. Safety Alerts

Regular maintenance and careful operation are essential for safe use of this machine. Read all safety alerts carefully and master the skills of maintenance and operation before beginning work.

2.1 Operator Qualifications

Only qualified, trained personnel may operate this machine.

- Compaction task: Operator must receive training on compaction techniques before operating.
- Loading and unloading: Operator must receive training on safe loading and unloading procedures.

2.2 General Safety Precautions

- Read this manual carefully to understand and master all operating methods, functions, and the meaning of all labels and warning signs on the machine.
- Comply with all applicable rules, regulations and site-specific safety requirements.
- Be familiar with the working site in advance, including hazards, obstacles and emergency exits.
- Be familiar with all functions and controls of the machine before starting work.
- Operate the machine only within its rated capacity and intended range.
- Check the machine before each use. Ensure all functions are operating correctly.
- Pay attention to bystanders and other workers at all times during operation.
- Do not touch hot engine components. Allow the engine to cool before performing any service.
- Do not modify the equipment without authorization from STARVOX.

2.3 Fire Prevention

WARNING: Fuel and oil are flammable. Do not smoke or use matches or lighters near the machine. Stop the engine before refueling. Keep the machine away from open flames.

- Refuel only when the engine is stopped and cool.
- Keep a fire extinguisher accessible at all times.
- Do not store flammable materials near the machine.

2.4 Pre-Operation Safety Checks

- Clean the machine before operation. Remove any debris, dirt or oil buildup.
- Check all liquid levels (engine oil, fuel, hydraulic oil, water) and top up if necessary.
- Inspect for leaks of hydraulic oil, fuel or water. Do not operate if leaks are found.
- Ensure the forward/backward handle is in the neutral (middle) position.
- Ensure the vibration switch is in the OFF position.
- Lock the manual lock lever before starting.

2.5 Exhaust Gas Warning

WARNING: Exhaust gas is poisonous. Never inhale exhaust gas. Ensure adequate ventilation at all times during operation. Do not operate the machine in enclosed or poorly ventilated spaces.

2.6 Battery Safety

WARNING: The battery produces flammable gas and can cause an explosion. Do not smoke near the battery. Battery electrolyte contains sulfuric acid and can destroy clothing and skin. In case of contact with skin or eyes, rinse immediately with plenty of water and seek medical help.

- During battery inspection and service, turn off the engine and set the start switch to OFF.
- Ensure all wire connections are tight.
- Do not charge or use the battery if the electrolyte is below the minimum line. Add distilled water immediately if needed.
- Disconnect the negative terminal before performing any electrical repairs or welding.

2.7 Loading and Unloading

- Use a hard climbing board with appropriate width, length and thickness for safe loading and unloading.
- Do not use a redirector on the climbing board.
- Use ropes with adequate strength for lifting. Lift the machine vertically.
- The climbing angle must not exceed 15 degrees.
- After loading, firmly fix the machine in place. Insert wheel chocks on both sides of the drums.
- During loading and unloading, the manual lock lever **MUST** be in the locked position.

3. Product Identification and Specifications

3.1 Overall Structure — Component Names

The following diagram identifies the main components of the STARVOX 600C Walk-Behind Double Drum Vibrating Roller:

Parameter	Specification
1	Turning Front Wheel
2	Scraper Bar
3	Hydraulic Oil Tank
4	Oil Filter
5	Engine (Changfeng CF178 Diesel)
6	Sling Rack / Lifting Point
7	Water Tank
8	Forward and Backward Handle
9	Vibration Switch
10	Safety Lever (Throttle)
11	Throttle Lever
12	Scraper Bar
13	Manual Lock Lever
14	Rear Wheel / Drum
15	Start Switch (Ignition)
16	Lock Spanner (Handle Folding)

3.2 Technical Specifications

Parameter	Specification
Engine Model	Changfeng CF178 Diesel, EPA Tier 4 Final compliant
Engine Power	9 HP (6.7 kW) at 3,000 rpm
Starting Method	Manual pull start + Electric key start
Drum Width	24 in (600 mm)
Drum Diameter	16.9 in (430 mm)
Vibration Frequency	70 Hz (4,200 vibrations/min)
Centrifugal Force	25 kN (5,620 lbf)
Amplitude	Verify with factory
Travel Speed	0 to 2.5 mph (0 to 4 km/h)
Gradeability	30%
Water Tank Capacity	5.3 gal (20 L) with adjustable flow 0–2.5 L/min
Fuel Tank Capacity	7.9 gal (30 L)

Hydraulic Oil Tank	4.8 gal (18 L)
Operating Weight	1,168 lbs (530 kg)
Net Weight	1,113 lbs (505 kg)
Shipping Size	53 × 31.5 × 52.8 in (1,350 × 800 × 1,340 mm)
Shipping Weight	1,168 lbs (530 kg)
40 ft HQ Container	36 units
Certifications	CE, ISO 9001, EPA Tier 4 Final, ESG Committed
Warranty	12 months whole machine + 6 months wear parts

3.3 Recommended Fluids and Lubricants

Parameter	Specification
Engine Oil	Low temperature: SAE 10W-30 High temperature: SAE 40
Hydraulic Oil	Wear-resistant VG46 grade hydraulic oil
Lubricating Grease	Heat-resistant lithium saponified grease
Fuel	Diesel fuel meeting applicable national standards

4. Controls

4.1 Control Device Identification

Familiarize yourself with each control before starting the machine.

Parameter	Specification
Forward and Backward Handle	Three-function lever: forward travel, backward travel, and stop. Also provides stepless speed control.
Throttle Lever	Controls engine speed. Push down to increase RPM; pull up to decrease.
Vibration Switch	ON position: activates drum vibration. OFF position: vibration stops.
Manual Lock Lever	LOCKED: immobilizes the machine when parked. UNLOCKED: allows machine movement.
Lock Spanner	Handle folding latch. Pull to lock/unlock for transport storage.
Start Switch (Ignition)	Turns engine on/off. In OFF position, key can be removed and all electrical systems shut down.
Water Tank Valve	Opens/closes sprinkler system for drum cooling during asphalt compaction.

4.2 Throttle Operation

The throttle switch controls engine speed:

- Press down the throttle switch to increase engine speed.
- Lift up the throttle switch to decrease engine speed to stop.

NOTE: When starting the engine, press down the throttle switch to the full throttle position. Run the engine at idle for 2–3 minutes to warm up before operating.

4.3 Lock Spanner (Folding Handle)

- To fold for transport: pull back the lock spanner until it locks automatically in the folded position.
- To unfold for operation: pull back the lock spanner to the run position. The spanner locks automatically when fully extended.

4.4 Manual Lock Lever

WARNING: When the machine stops, you **MUST** lock the manual lock lever! When the machine starts moving, you **MUST** unlock the manual lock lever!

5. Operation

5.1 Pre-Operation Inspection

Before each use, perform the following checks:

- Ensure the forward and backward handle is in the middle (neutral) position.
- Ensure the vibration switch is in the OFF position.
- Ensure the manual lock lever is in the locked position.
- Check engine oil level. Add oil if level is below the indicator scale.
- Check fuel level in the fuel tank.
- Check hydraulic oil level — it should be at the center or above the liquid indicator.
- Check the water tank level before opening the sprinkler system.
- Inspect all components for damage, wear or leaks. Do not operate if defects are found.
- Check battery state and tighten loose bolts if necessary.
- Ensure no persons or obstacles are near the machine before starting.

5.2 Engine Start-Up

1. Turn the throttle lever to full throttle position.
2. Turn the start switch to the START position to start the engine. Release the key immediately — it will return to the ON position automatically.

WARNING: Do not crank the starter for more than 15 seconds at a time. If the engine fails to start, wait at least 30 seconds before attempting again. Excessive cranking will damage the starter motor.

5.3 After Starting the Engine

3. Do not operate the machine immediately. Allow the engine to warm up at low speed for 2–3 minutes.
4. Ensure the exhaust color is normal and there are no unusual sounds or smells.
5. Check that all controls respond correctly.

5.4 Machine Travel

WARNING: Before running the machine, ensure that there are no persons or obstacles nearby.

6. Unlock the manual lock lever.
7. Gently push the forward/backward handle to move the machine. Do not push the handle too quickly — use smooth, gradual movements.
8. The machine will stop moving when the forward and back handle is returned to the middle position.

5.5 Machine Stopping

9. Return the forward and back handle to the middle position — the machine will stop.
10. Turn the throttle switch to the bottom position. The engine will stop after 2–3 minutes of idle.
11. Turn the start switch to the OFF position. Remove the key.
12. Lock the manual lock lever.
13. Insert wheel chocks under both drums to prevent movement.

WARNING: Avoid stopping on slopes. If you must park on a slope, place wheel chocks in front of the drums to prevent the machine from sliding.

5.6 Vibration and Compaction

14. Turn the vibration switch to the ON position. The machine will begin vibrating.
15. Turn the vibration switch to the OFF position to stop vibration.

WARNING: Stop vibration when the machine stops moving. Stop vibration immediately if the machine runs into mud or soft ground.

5.7 Sprinkler System

16. Fill the water tank before opening the sprinkler valve.
17. Open the sprinkler valve switch to activate the water spray on the drums.

ATTENTION: In cold weather, drain the water tank completely after each use to prevent freezing. The drain plug is located under the water tank.

5.8 Fender Adjustment

To adjust the drum fender:

18. Loosen the screw bolt on the fender.
19. Move the fender up or down to ensure it sits tightly against the drum.
20. Tighten the screw bolt securely.

5.9 Cold Weather Operation

Take the following steps to prevent cold weather faults:

- Use fuel and oil of low viscosity appropriate for cold temperatures.
- Keep the battery away from extreme cold. Battery efficiency is reduced and the battery may freeze in very low temperatures.
- Ensure the battery is fully charged before each use in cold weather.
- Cover the battery or remove it from the machine and store it in a warm place overnight.

6. Maintenance

IMPORTANT: Always stop the engine before performing any maintenance. Disconnect the negative terminal of the battery when servicing the electrical system or performing electric welding.

6.1 Maintenance Schedule

Parameter	Specification
Every 10 hours	Check engine oil level. Check fuel level in fuel tank.
Every 50 hours	Check hydraulic oil level. Inspect battery; check and tighten all bolts.
Every 100 hours	Change engine oil. Clean fuel filters. Clean air filters.
Every 200 hours	Replace hydraulic oil filter. Inject grease into the drums.
Every 500 hours	Replace hydraulic oil in the hydraulic oil tank. Inject butter to the steering rotating support, steering cylinder axis pins and hinge parts.

6.2 Engine Oil Change

21. Run the engine until the oil is warm.
22. Open the oil drain plug and drain the engine oil completely.
23. Tighten the drain plug securely.
24. Add new engine oil through the oil filling port to the correct level.
 - Low temperature: SAE 10W-30 engine oil
 - High temperature: SAE 40 engine oil

6.3 Hydraulic Oil Check and Change

Check the hydraulic oil level indicator regularly — the oil level should be at the center or above the indicator.

To change hydraulic oil:

25. Run the engine until the hydraulic oil is warm.
26. Open the drain plug and drain the hydraulic oil completely.
27. Clean the inside of the hydraulic tank.
28. Add new hydraulic oil (wear-resistant VG46) to the correct level.
29. Start the engine and run at idle for 2–5 minutes. Turn off and check the oil level again. Add oil if necessary.

6.4 Battery Maintenance

- Inspect the battery regularly. Replace if the case is cracked or the electrolyte is discolored.
- Check all cable connections. Ensure they are tight and free of corrosion.
- Keep the battery clean and dry.
- Do not charge the battery if the electrolyte is below the minimum line.

6.5 Air and Fuel Filter Cleaning

- Clean the air filter element regularly. Replace if damaged or excessively dirty.
- Clean the fuel filter regularly. Replace if clogged.

6.6 Grease Intervals

- Inject heat-resistant lithium saponified grease into the drums every 200 hours.

- Inject butter into the steering rotating support every 500 hours.
- Inject butter into the axis pins and hinge parts of the steering cylinder every 500 hours.

6.7 Electrical System Checks (Monthly)

- Check that all wiring is intact and undamaged.
- Check that all electrical connections are tight.
- Verify that all electrical devices are functioning correctly.

7. Storage

7.1 Short-Term Storage (Up to One Month)

- Park the machine on a hard, dry surface.
- Lock the manual lock lever.
- Remove the key and store it in a safe place.
- Insert wheel chocks under both drums.
- Clean the machine thoroughly, especially the piston rod of the steering cylinder.
- In cold weather: drain the water tank to prevent freezing.

7.2 Long-Term Storage (More Than One Month)

If the machine will not be used for more than one month, follow these additional steps:

30. Clean the machine thoroughly and park it in a closed area. If stored outdoors, cover the machine with a tarpaulin.
31. Inject oil and grease, change the engine oil, then check for any leaks.
32. Coat the exposed piston rod of the hydraulic steering cylinder with grease.
33. Disconnect the negative terminal of the battery, or remove the battery entirely.
34. Drain all water from the water tank.
35. Set the forward/backward handle to the middle position. Ensure the vibration switch is OFF. Lock the machine with the manual lock lever.
36. Insert wheel chocks under the drums to prevent movement.
37. Store the key in a safe place.
38. If long-term storage is required, start the machine at least once per month to prevent oil layer deterioration and corrosion. Charge the battery at the same time.

8. Troubleshooting

Parameter	Specification
Engine will not start	Battery low or discharged. Check battery connections. Check starter motor.
Starter motor overheating	Cranking time too long. Wait 30 seconds before retrying. Max 15 seconds per attempt.
Insufficient compaction force	Vibration frequency too low. Check vibration switch. Inspect drum bearings.
Machine will not move	Manual lock lever locked. Forward/back handle not in correct position. Low hydraulic oil.
Excessive vibration noise	Drum bearings worn or damaged. Grease drum bearings. Check for loose bolts.
Hydraulic system not working	Low hydraulic oil level. Hydraulic oil filter clogged. Check for hydraulic leaks.
Engine overheating	Cooling fins dirty or blocked. Engine oil level low. Operate at lower load.
Battery discharging quickly	Battery old or sulfated. Charging system fault. Check alternator and voltage regulator.
Water sprinkler not working	Water tank empty. Sprinkler valve closed. Sprinkler nozzle clogged.
Vibration switch non-responsive	Electrical fault. Check wiring and switch. Replace switch if defective.

NOTE: If problems persist after performing the above checks, contact your authorized STARVOX dealer. Do not attempt major repairs without proper training and authorization.

9. Warranty

9.1 Warranty Coverage

STARVOX Equipment warrants this machine against defects in materials and workmanship under normal use and proper maintenance for a period of 12 months from the date of original purchase. Wear parts are warranted for 6 months from the date of original purchase.

To obtain warranty service, contact your authorized STARVOX dealer. Have the following information ready:

- Machine model and serial number
- Date of purchase
- Description of the defect or problem

9.2 Warranty Does Not Cover

- Damage caused by misuse, abuse, neglect or improper maintenance.
- Damage caused by unauthorized modifications or use of non-genuine STARVOX parts.
- Normal wear items including (but not limited to) filters, belts, brake pads, and seals.
- Damage caused by operating the machine beyond its rated capacity.
- Transportation, hauling or delivery costs.
- Loss of use or consequential damages.

9.3 Warranty Registration

Complete and submit the warranty registration card to your STARVOX dealer within 30 days of purchase to ensure valid warranty coverage.

Keep your proof of purchase (invoice or receipt) in a safe place. It is required to verify the warranty start date.

9.4 Contact Information

For warranty claims, service inquiries, or parts ordering, contact your authorized STARVOX dealer or the STARVOX customer service team. Contact details are available at www.starvox.com or from your dealer.

