Manual / Instruction

PortaForce Portable Rebar Bender/Bending Machine Including Hydraulic Pump & Hoses Operations Manual



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1. Precautions of using portable steel bending and straightening machine

Before using a portable steel bending straightening machine, ensure to carefully read the safety instructions in the specifications for proper operation. The operations and safety precautions outlined are intended for the specified purpose. Users are accountable for all safety aspects resulting from any unauthorized methods or operations not detailed in the instructions, which are self-inflicted.

In this instruction, the "warning" section details precautions that can lead to personal accidents from disobeying the rules. The "note" section outlines precautions that could cause machine damage or malfunctions from rule violations.

1.1 Warning

1.1.1 Do not use the product for any purpose other than as instructed.

1.1.2 Follow the guidelines for safe and proper operation. Do not allow children, inexperienced users, or those not trained in operating bending machines to use it. Professional users and production operators can operate it after receiving guidance and training. It is forbidden for untrained individuals to use the machine for bending steel.

1.1.3 Moisture can decrease motor insulation and lead to electric shock. Avoid bending steels in rainy, damp, or wet areas, or where water or oil can enter the machine.

1.1.4 To avoid electric shock, use residual current devices and ensure ground wires are installed with double-insulated products.

1.1.5 When using catheters, warming appliances, microwave ovens, or refrigerators with a frame, avoid touching the "ground wire" to prevent electric shocks.

1.1.6 Ensure work tables and workplaces are well-lit at all times. Regularly tidy up to prevent accidents caused by clutter.

1.1.7 When using a portable bending straightening machine, there may be sparking during operation, and when opening or closing switches. Hence, avoid operating near flammable substances like paint, coating, oil, gas, or adhesives. Also, be cautious when using catheter frames, heating appliances, microwaves, and refrigerators to prevent electric shocks. Do not use the machine in enclosed spaces or poorly ventilated areas like tunnels.

1.1.8 Except for operators, avoid getting close to the workplace or touching dynamic tools, wires, and other electrical hazards, especially by children.

1.1.9 Please ensure you dress neatly while operating the machinery. Loose clothing, open cuffs, head towels, knitted gloves, ties, necklaces, and other accessories can pose a danger as they could get caught in the machine's rotating parts. Avoid wearing them.

1.1.10 Please wear a helmet and safety shoes with rubber soles for your safety.

1.1.11 Use goggles to shield your eyes when operating. Also, wear both a dust mask and a dust collector in dusty situations.

1.1.12 Bending is normal wear and tear; check for any damage before use. If broken, replace promptly. Always use the recommended bending method to prevent accidents. Also, ensure to use the product within its specified lifetime.

1.1.13 When fitting the bends and accessories, ensure to use the specified tools correctly in the correct position using the proper methods. Avoid twisting too tightly or loosely. Each screw and accessory has a crucial role; do not remove them.

1.1.14 Before operating, make sure to check if any screws are loose or have fallen off. If loose, tighten them promptly; if fallen off, please repair them promptly.

1.1.15 Please pack the screwdriver, wrench, pliers, and other tools used for installation and component checks. Remember to remove these tools to prevent them from flying during startup and causing accidents. Confirm before starting and ensure to check the rotating fixture before operation.

1.1.16 Please indicate the voltage on the sign. Exceeding this voltage can lead to abnormally high motor speed, potentially causing damage to the motor, body, bending, and posing a safety risk. Conversely, using low voltage can also result in motor faults.

1.1.17 Please confirm if the switch is disconnected before plugging in the power to avoid any sudden starts of the machine.

1.1.18 Please avoid moving the machine while it is connected to a power supply. An accident may occur if something accidentally presses the switch, even if you're not touching it directly.

1.1.19 Regularly check the soles of your feet to maintain a stable posture. Working with improper posture can lead to safety risks.

1.1.20 If you notice the machine is faulty or not functioning correctly, stop at once, inspect, and carry out repairs.

1.1.21 Avoid using machinery and accessories beyond their capabilities and operating them recklessly. Improper operation can damage the machine and pose a safety risk, so please take precautions.

1.1.22 When the machine is running, avoid touching or getting close to moving parts to prevent injury.

1.1.23 After use, remember to inspect and clean the bending, consumables, and spare parts. If checking or in case of a power failure, ensure to switch off the bend switch and unplug

from the power supply.

1.1.24 To ensure safe, efficient, and continuous use, remember to perform regular checks. If the machine requires repairs, hand it over to someone with the necessary repair expertise and technology. Also, always use the specified components when replacing parts.

1.2 Notes

1.2.1 Accidental falls or collisions can deform, crack, or break the frame, so please be cautious. If there's a mishap, thoroughly check before use and ensure safety. If any issues arise, promptly arrange for repairs.

1.2.2 Gripping wires or tubing to relocate items and yanking wires to unplug from the socket can harm them, causing breakage or short circuits. Avoid bending, exposing to high temperatures, or using force on the wire. If damaged, cease operation and seek repairs promptly.

1.2.3 Please ensure to clean the machine regularly to maintain its optimal condition. Remember to wipe it after each use, not just when it's dirty. Also, make sure to clean the wire to prevent deterioration from oil or grease.

1.2.4 Always pay attention to maintenance requirements to keep it in good working condition.

1.2.5 Please store machinery and accessories in the designated locations:

- Keep the hand out of children's reach or in a locked place.
- Maintain stable temperature and humidity.
- Store in a dry place with little rain, away from direct sunlight.
- Avoid placing the machine near flammable substances to prevent fire or explosions.

2. About the Hydraulic Oil

2.1 Warning

2.1.1 Applying hydraulic oil to the eyes can cause inflammation. Therefore, always wear protective goggles to shield against any contact with hydraulic oil during operation. Skin contact with the oil can also lead to inflammation, hence the importance of wearing protective gloves when handling it. Drinking hydraulic oil can result in diarrhea and vomiting, so it is strictly forbidden.

2.1.2 Emergency disposal

A. If oil gets in your eyes, rinse with clean water for 5 mins and see a doctor.
B. For skin contact, wash with soap and water.
C. If ingested, don't induce vomiting; seek medical advice.

2.1.3 Disposal of waste oil:

Please avoid disposing of waste oil in the sea, rivers, lakes, or near waterways and gutters. This not only poses a fire hazard but also pollutes the environment.

2.2 Notes

2.2.1 The machine has a motor, so avoid using it in rainy or snowy conditions.

2.2.2 When working at night, use soundproof walls or other acoustic insulation.

2.2.3 To fully utilize the machine's power, bend each part 100-300 times, and ensure all bolts and screws are tightened. Pay particular attention to the sealing screw between the bolt head frame and cylinder.

2.2.4 Pour hydraulic oil #15-46 into the hydraulic pump until the oil level reaches the oil window. Then, connect the hose (it's recommended to install the hose rolled up).

3. Operating Instructions

3.1 Notes

3.1.1 When checking, replacing parts, repairing, or not using, always remember to disconnect the power cord from the outlet.

3.1.2 Do not operate outside the specified voltage range. Deviating from the specified voltage may result in the steel being unable to bend, damage to the pump body, and other malfunctions. Please ensure the voltage remains within ±5% of the specified range. If voltage drop occurs over time, connect a booster to adjust it back to the specified voltage.

3.1.3 Avoid using materials stronger than steel for bending to prevent damage and potential accidents. Ensure safety by checking the steel bar's length adjustment before use. Firmly

reinforce the curved area to prevent damage and reduce the risk of physical harm.

3.1.4 Ensure your finger does not come close to the module when operating switches. Avoid placing your finger near the module to prevent injury. Replace any worn, damaged, or deformed modules promptly to avoid risks. Remember to unplug the power cord from the outlet when inspecting, cleaning, or replacing a module. Always be cautious to prevent accidental switch activation.

3.1.5 The optimal working oil temperature for the electric hydraulic pump is between 10°C and 50°C. It should run for a period without encountering stress conditions initially.

3.1.6 The electric hydraulic pump has been calibrated at the factory and should not be adjusted arbitrarily. If adjustment is required, it must be carried out by a trained professional.

3.1.7 Be cautious with fire. Hydraulic oil can easily ignite; keep it away from any flames and remember the following safety guidelines:

A. When the machine is in use and the body is hot, do not unplug the oil pump.

B. Wait for the body to cool before adding hydraulic oil.

C. Choose areas without flammable materials for adding oil and ensure no spills occur.

D. Clean up any spills promptly.

E. Refrain from smoking while adding oil or operating the machine.

F. After refilling the hydraulic oil, start the machine once you've left the refilling area.

3.1.8 According to proper usage guidelines, operate the machine safely. This machine is a portable tool used for bending reinforced concrete. Follow the operational instructions strictly for this purpose. Do not use the machine for any other purpose than its intended design. Keep the machine out of reach of children and never allow children to use it.

3.1.9 If an issue arises, stop using it right away. If you notice poor machine conditions or abnormalities during operation, stop immediately, inspect, and arrange for repairs.

3.1.10 Dress code: When operating, ensure you wear protective goggles, a safety helmet, safety shoes, leather gloves, and a dust mask. Always keep an eye on the machine while working. In particular, when cleaning, make sure to wear gloves to avoid any potential injuries.

3.1.11 When working at heights, remember to:

A. Please pay close attention to the conductor's position to prevent accidentally breaking wires in case of leakage.

B. Position the machine securely and stably.

C. On-site, attach the safety rope to buildings or scaffolding and firmly connect it to the machine's center to prevent any falls before operating.

3.1.12 Please do not exceed the machine's capacity when bending steel or using it for any other purpose besides rebar bending.

3.1.13 When moving the machine, make sure to hold it with both hands after disconnecting the power cord.

3.2 Warning

3.2.1 Please ensure to inspect the oil pump before use. The machine runs on hydraulic oil, and low oil levels will lead to reduced power output, impacting performance. If the body temperature exceeds 70 ℃, power will decrease, so allow time for cooling before operation. Note that the pump shell may become hot in summer, so be cautious.

3.2.2 During winter, starting may be tough due to the hydraulic oil solidifying. To address this, preheat for 30 to 60 seconds with no-load operation before bending.

3.3 Preparation before operation

3.3.1 Organize and verify workplaces. Ensure that work tasks are completed according to the guidelines outlined in the relevant regulations.

3.3.2 Extend cables away from the power supply when increasing the lead length. For machines with high power, use short, thick wires without issues. If a wire is damaged, have it repaired.

3.4 Notes before using

3.4.1 Make sure to use the power supply according to the instructions on the signs.

3.4.2 Ensure the bolt module is securely installed by checking if it is loose. If loose, tighten it using a wrench. Using it while loose can cause damage to the module, the body, and could lead to unexpected accidents.

3.4.3 Check the electrical outlet before plugging in. If it's loose or wobbly, get it repaired to prevent overheating and accidents.

3.5 Using Method

3.5.1 The machine comprises a curved straight head, tubing, and electric hydraulic pump components.

3.5.2 Before using, check if the tube and fuel gauge are normal. Connect the quick connector by straightening the bent end and then attach the hose. It is recommended to install the hose in a rolled-up manner.Pay attention to the color of hose and the sign  .Placed before the split smooth steel bending machine unit, ensure readiness, switch on, start the pump, and pressurize the hydraulic oil to 30 Mpa as the load increases. Turn hand valve to the direction of oil inlet  , Turn the star switch to the left to bend the hook forward, or to the right to move it backward. Push the shaft forward to bend the steel to the correct angle. Adjust the visual size to achieve the desired bending angle. Use the manual valve handle when necessary. Remember

to unplug the power and remove the quick connector after finishing work.

3.5.3 The bending angle range of the bending straightening machine is 0-130 degrees.

3.6 Check and Maintenance

3.6.1 Check the oil level in the head before starting. The main reason for being underpowered by more than 70% is often due to insufficient hydraulic oil. Ensure to completely replace the hydraulic oil based on the level of contamination in the oil.

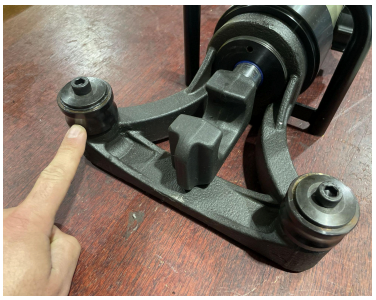
3.6.2 The electric pump utilizes 15# - 46# anti-wear hydraulic oil, with oil changes required every three months. To maintain the pump's proper function, cleaning should be done every six months.

3.6.3 Regularly clean the machine. Sweep away steel debris and garbage after each use.

A. Disconnect the power cord.
B. Wear leather gloves.
C. When using the air pump nozzle, remember that steel scrap can be as hazardous as a needle. To avoid danger to your eyes or inhalation, make sure to wear leather gloves during cleaning.

3.6.4 If left unused or stored for an extended period without a load, it is advisable to contact the seller before use.

3.6.5 Inspect and grease the roller bushes. Use an appropriately sized allen key to remove the bolts holding down each bush, thoroughly grease the inside of each bush, then replace and rotate each one to ensure it moves freely. Refer to the Parts and Specifications diagram on page 5 for bush locations.





4. Technical parameters and Troubleshooting Solutions

4.1 Technical Parameters

PortaForce PF32WB

Name	Parameters	Name	Parameters
Maximum bending diameter	32mm	The minimum bending diameter	4mm
Voltage	220/380V	Bending angle	0-130°
No-load power	750W/1500W	Bending speed	8-10s
High pressure	70Mpa	High flow	0.6L/min
Low pressure	7 Mpa	Low flow	3.52L/min/10L/min
Oil storage of hydraulic pump	3L/30L	Types of hydraulic oil	15#/46#Hydraulic oils
Gross weight	16KG/17KG	Weight of bender	14.5KG/15.5KG

PortaForce PF40WB

Name	Parameters	Name	Parameters
Maximum bending diameter	40mm	The minimum bending diameter	4mm
Voltage	220/380V	Bending angle	0-130°
No-load power	1500W/3000W	Bending speed	8-10s
High pressure	70Mpa	High flow	2.8L/min
Low pressure	7 Mpa	Low flow	3.52L/min/14L/min
Oil storage of hydraulic pump	3L/30L	Types of hydraulic oil	15#/46#Hydraulic oils
Gross weight	24KG	Weight of bender	20.5KG

4.2 Common Faults and Solutions

Malfunction	Reason	Solution
Abnormal	1. Can’t bend or straighten	Check the power and switch
	2. Bend and straighten slowly	Check if the wiring in junction box is fixed and the capacitance is damaged, three-phase motor losses phase.
Hydraulic pump with abnormal pressure	1.High pressure relief valve disorders	Adjust high pressure relief valve
	2. Solenoid valve leak	Clean inside and solenoid valve block core
	3. Plunger wear	Replace the plunger
	4. Bolt pump seal leak	Tighten bolts or replace the gasket
Hydraulic oil abnormal	1.Some of the plunger does not work	Cleaning the pump
	2. Concentration of hydraulic oil is too high	Replace hydraulic oil
	3. High and low voltage distribution valve leakage	Replace the valve core, lapping with grinding valve