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# Instruction manual

## **Pancake Compressor**

MODEL CF1400



To learn more about Porter-Cable visit our website at:

http://www.porter-cable.com

PORTER+CABLE
PROFESSIONAL POWER TOOLS

#### **IMPORTANT**

Please make certain that the person who is to use this equipment carefully reads and understands these instructions before starting operations.

The Model and Serial No. plate is located on the main housing of the tool. Record these numbers in the spaces below and retain for future reference.

Model No. \_\_\_\_\_

Type \_\_\_\_

Serial No.

Part No. 888970-799

#### **IMPORTANT SAFETY INSTRUCTIONS**

**AWARNING** When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the following:

#### READ AND FOLLOW ALL INSTRUCTIONS.

There are certain applications for which this tool was designed. Porter-Cable strongly recommends that this tool NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the tool until you have written Porter-Cable and we have advised you.

Technical Service Manager Porter-Cable Corporation 4825 Highway 45 North P. O. Box 2468 Jackson, TN 38302-2468

#### **GROUNDING INSTRUCTIONS**

The air compressor is equipped with a cord having a grounded wire with an appropriate grounding plug. The plug must be used with an outlet that has been installed and grounded in accordance with all local codes and ordinances. The outlet must have the same configuration as the plug. See illustration. DO NOT USE AN ADAPTER.

AWARNING IMPROPER GROUNDING CAN RESULT IN SEVERE ELECTRICAL SHOCK.

Inspect the plug and cord before each use. Do not use if there are signs of damage. Do not modify the plug that has been provided. If it does not fit the available outlet, the correct outlet should be installed by a qualified electrician.

If these grounding instructions are not completely understood, or if in doubt as to whether the compressor is properly grounded, have the installation checked by a qualified electrician.

### IMPORTANT SAFETY INSTRUCTIONS (cont'd)

• SAVE THESE INSTRUCTIONS •

#### AWARNING



IMPROPER OPERATION OR MAINTENANCE OF THIS PRODUCT COULD RESULT IN SERIOUS INJURY AND PROPERTY DAMAGE. READ AND UNDERSTAND ALL WARNINGS AND OPERATING INSTRUCTIONS BEFORE USING THIS EQUIPMENT. HAZARD WHAT CAN HAPPEN HOW TO PREVENT IT.



HAZARD	WHAT CAN HAPPEN	HOW TO PREVENT IT
RISK OF BURSTING	AIR TANK THE FOLLOWING CONDITIONS COULD LEAD TO A WEAKENING OF THE TANK, AND RESULT IN A VIOLENT TANK EXPLOSION:	LES ES EN VIEU ME DE COMPENSANTE DE
	FAILURE TO PROPERLY DRAIN     CONDENSED WATER FROM THE TANK,     CAUSING RUST AND THINNING OF THE     STEEL TANK.	DRAIN TANK DAILY OR AFTER EACH USE. IF TANK DEVELOPS A LEAK, REPLACE IT IMMEDIATELY WITH A NEW TANK OR NEW COMPRESSOR OUTFIT.
	2. MODIFICATIONS OR ATTEMPTED REPAIRS TO THE TANK.	NEVER DRILL INTO, WELD, OR MAKE ANY MODIFICATIONS TO THE TANK OR ITS ATTACHMENTS.
	3. UNAUTHORIZED MODIFICATIONS TO THE PRESSURE SWITCH, SAFETY VALVE, OR ANY OTHER COMPONENTS WHICH CONTROL TANK PRESSURE.	THE TANK IS DESIGNED TO WITHSTAND SPECIFIC OPERATING PRESSURES. NEVER MAKE ADJUSTMENTS OR PARTS SUBSTITUTIONS TO ALTER THE FACTORY SET OPERATING PRESSURES.
	ATTACHMENTS & ACCESSORIES	NAME OF TAXABLE PARTY O
	EXCEEDING THE PRESSURE RATING OF AIR TOOLS, SPRAY GUNS, AIR OPERATED ACCESSORIES, TIRES AND OTHER INFLATABLES CAN CAUSE THEM TO EXPLODE OR FLY APART, AND COULD RESULT IN SERIOUS INJURY.	FOLLOW THE EQUIPMENT MANUFACTURERS RECOMMENDATION AND NEVER EXCEED THE MAXIMUM ALLOWABLE PRESURE RATING OF ATTACHMENTS. NEVER USE COMPRESSOR TO INFLATE SMALL LOW-PRESSURE OBJECTS SUCH AS CHILDREN'S TOYS, FOOTBALLS, BASKETBALLS, ETC.
RISK OF EXPLOSION OR FIRE	IT IS NORMAL FOR ELECTRICAL CONTACTS WITHIN THE MOTOR AND PRESSURE SWITCH TO SPARK.	ALWAYS OPERATE THE COMPRESSOR IN A WELL VENTILATED AREA FREE OF COMBUSTIBLE MATERIALS, GASOLINE OR SOLVENT VAPORS.
	IF ELECTRICAL SPARKS FROM COMPRESSOR COME INTO CONTACT WITH FLAMMABLE VAPORS, THEY MAY IGNITE, CAUSING FIRE OR EXPLOSION.	IF SPRAYING FLAMMABLE MATERIALS, LOCATE COMPRESSOR AT LEAST 20 FEET AWAY FROM SPRAY AREA. AN ADDITIONAL LENGTH OF HOSE MAY BE REQUIRED.
	CAMPAGNAGANA SENSON NO N	STORE FLAMMABLE MATERIALS IN A SECURE LOCATION AWAY FROM COMPRESSOR.
	RESTRICTING ANY OF THE COMPRESSOR VENTILATION OPENINGS WILL CAUSE SERIOUS OVERHEATING AND COULD CAUSE FIRE.	NEVER PLACE OBJECTS AGAINST OR ON TOP OF COMPRESSOR. OPERATE COMPRESSOR IN AN OPEN AREA AT LEAST 12 INCHES AWAY FROM ANY WALL OR OBSTRUCTION THAT WOULD RESTRICT THE FLOW OF FRESH AIR TO THE VENTILATION OPENINGS.

RISK OF ELECTRIC SHOCK



YOUR AIR COMPRESSOR IS POWERED BY ELECTRICITY, LIKE ANY OTHER ELECTRICALLY POWERED DEVICE, IF IT IS NOT USED PROPERLY IT MAY CAUSE ELECTRIC SHOCK.

NEVER OPERATE THE COMPRESSOR OUTDOORS WHEN IT IS RAINING OR IN WET CONDITIONS.

NEVER OPERATE COMPRESSOR WITH COVER COMPONENTS REMOVED OR DAMAGED.

### IMPORTANT SAFETY INSTRUCTIONS (cont'd)

HAZARD	WHAT CAN HAPPEN	HOW TO PREVENT IT
RISK OF ELECTRIC SHOCK	REPAIRS ATTEMPTED BY UNQUALIFIED PERSONNEL CAN RESULT IN SERIOUS INJURY OR DEATH BY ELECTROCUTION.  ELECTRICAL GROUNDING: FAILURE TO PROVIDE ADEQUATE GROUNDING TO THIS	ANY ELECTRICAL WIRING OR REPAIRS REQUIRE ON THIS PRODUCT SHOULD BE PERFORMED BY AUTHORIZED SERVICE CENTER PERSONNEL IN ACCORDANCE WIT NATIONAL AND LOCAL ELECTRICAL CODES MAKE CERTAIN THAT THE ELECTRICAL CIRCUIT TO WHICH THE COMPRESSOR IS
	PRODUCT COULD RESULT IN SERIOUS INJURY OR DEATH FROM ELECTROCUTION. SEE GROUNDING INSTRUCTIONS.	CONNECTED PROVIDES PROPER ELECTR CAL GROUNDING, CORRECT VOLTAGE AND ADEQUATE FUSE PROTECTION.
RISK FROM FLYING OBJECTS	THE COMPRESSED AIR STREAM CAN CAUSE SOFT TISSUE DAMAGE TO EXPOSED SKIN AND CAN PROPEL DIRT, CHIPS, LOOSE PARTICLES AND SMALL OBJECTS AT HIGH SPEED, RESULTING IN PROPERTY DAMAGE OR PERSONAL INJURY.	ALWAYS WEAR ANSI Z87.1 APPROVED SAFETY GLASSES WITH SIDE SHIELDS WHEN USING THE COMPRESSOR.  NEVER POINT ANY NOZZLE OR SPRAYER TOWARD ANY PART OF THE BODY OR AT OTHER PEOPLE OR ANIMALS.
RISK TO BREATHING	THE <u>COMPRESSED AIR</u> FROM YOUR COM- PRESSOR <u>IS NOT SAFE FOR BREATHING!</u> THE AIR STREAM MAY CONTAIN CARBON MONOXIDE, TOXIC VAPORS OR SOLID PARTICLES.	NEVER INHALE AIR FROM THE COMPRESSOR EITHER DIRECTLY OR FROM A BREATHING DEVICE CONNECTED TO THE COMPRESSOR.
	SPRAYED MATERIALS SUCH AS PAINT, PAINT SOLVENTS, PAINT REMOVER, INSEC- TICIDES, WEED KILLERS, ETC CONTAIN HARMFUL VAPORS AND POISONS.	WORK IN AN AREA WITH GOOD CROSS- VENTILATION. READ AND FOLLOW THE SAFETY INSTRUCTIONS PROVIDED ON THI LABEL OR SAFETY DATA SHEETS FOR THE MATERIAL YOU ARE SPRAYING. USE A NIOSH/MSHA APPROVED RESPIRATOR DESIGNED FOR USE WITH YOUR SPECIFIC APPLICATION.
RISK FROM MOVING PARTS	MOVING PARTS CAN CAUSE SERIOUS INJURY OR DAMAGE IF THEY COME INTO CONTACT WITH YOU OR YOUR CLOTHING.	DO NOT REMOVE THE PROTECTIVE COVERS FROM THIS PRODUCT. NEVER OPERATE THE COMPRESSOR WITH GUARDS OR COVERS WHICH ARE DAMAGED OR REMOVED.
	ATTEMPTING TO OPERATE OR REPAIR COMPRESSOR WITH PROTECTIVE SHROUDS REMOVED CAN EXPOSE YOU TO MOVING PARTS AND ELECTRICAL SHOCK.	ANY REPAIRS REQUIRED ON THIS PRODUCT SHOULD BE PERFORMED BY AUTHORIZED SERVICE CENTER PERSONNEL.
	A PORTABLE COMPRESSOR CAN FALL FROM A TABLE, WORKBENCH OR ROOF CAUSING DAMAGE TO THE COMPRESSOR WHICH COULD EXPOSE YOU TO HAZARD- OUS MOVING OR ELECTRICAL PARTS.	ALWAYS OPERATE COMPRESSOR IN A STABLE SECURE POSITION TO PREVENT ACCIDENTAL MOVEMENT OF THE UNIT. NEVER OPERATE COMPRESSOR ON A ROOF OR OTHER ELEVATED POSITION. USE ADDITIONAL AIR HOSE TO REACH HIGH LOCATIONS.
A THE STANDS OF	THE COMPRESSOR CYCLES AUTOMATI- CALLY WHEN THE PRESSURE SWITCH IS IN THE ON/AUTO POSITION.	ALWAYS TURN OFF THE COMPRESSOR. BLEED PRESSURE FROM THE AIR HOSE AND TANK UMPLUG FROM ELECTRICAL OUTLET BEFORE PERFORMING. MAINTENANCE OR ATTACHING TOOLS AND ACCESSORIES.
RISK OF BURNS	TOUCHING EXPOSED METAL SUCH AS THE COMPRESSOR HEAD OR OUTLET TUBE CAN RESULT IN SERIOUS BURNS.	NEVER TOUCH ANY EXPOSED METAL PARTS ON COMPRESSOR DURING OR IMMEDIATELY AFTER OPERATION.  COMPRESSOR WILL REMAIN HOT FOR SEVERAL MINUTES AFTER OPERATION.

#### **GLOSSARY**

SCFM or CFM: Standard Cubic Feet per Minute; a unit of measurement of air delivery.

PSIG or PSI: Pounds per square inch gauge.

CUT-IN PRESSURE: While the motor is off, air tank pressure drops as you continue to use your accessory. When the tank pressure drops to approximately 100 PSI the motor will restart automatically. The low pressure at which the motor automatically re-starts is called "cut-in pressure."

**CUT-OUT PRESSURE:** When you turn on your air compressor and it begins to run, air pressure in the air tank begins to build. It builds to approximately 125 PSI before the motor automatically shuts off. The high pressure at which the motor shuts off is called "cut-out pressure."

#### **DUTY CYCLE**

Porter-Cable air compressors should be operated on not more than a 50% duty cycle. This means an air compressor that pumps air more than 50% of one hour is considered misused, because the air compressor is undersized for the required air demand. Maximum compressor pumping time per hour is 30 minutes.

#### STORAGE

When you have finished using the air compressor:

- 1. Set the "ON/OFF" switch to "OFF" and unplug the cord.
- 2. Review the "Operating Procedures" section. Be sure to drain the water from the air tank.
- 3. Protect the electrical cord and air hose from damage by winding them loosely around the air compressor.
- 4. Store the air compressor in a clean and dry location.

#### **SPECIFICATIONS**

MODEL NO.	CF1400	
Horsepower	1.0	
SCFM @ 40 psig	3.7	
SCFM @ 90 psig	2.7	
Cut-In 100 PSI	100 PSI	
Cut-Out 125 PSI	125 PSI	
Bore	1.875"	
Stroke	1.250"	
Voltage/Hertz Phase	120/60/1	
Minimum Branch Circuit	15 Amp	
* Fuse Type	Time Delay Type "T"	
Amperage at Max. Load	15 Amps	
Tank Size	4 Gallon	

<sup>\*</sup> A circuit breaker is preferred. Use only a fuse or circuit breaker that is the same rating as the branch circuit the air compressor is operated on. If the air compressor is connected to a circuit protected by fuses, use time delay type "T" fuses.

#### **DESCRIPTION OF OPERATION**

Air Compressor Pump: To compress air, the piston moves up and down in the cylinder. On the downstroke, air is drawn in through the intake valves. The exhaust valves remain closed. On the upstroke of the piston, air is compressed. The intake valves close and compressed air is forced out through the exhaust valves.

Check Valve (B) Fig. 3: When the air compressor is operating, the check valve is "open", allowing compressed air to enter the air tank. When the air compressor reaches "cut-out" pressure, the check valve "closes", allowing air pressure to remain inside the air tank.

ON/AUTO - OFF Switch (C) Fig. 3: Turn this switch ON to provide power to the automatic pressure switch and OFF to remove power at the end of each use.

Pressure Switch (D) Fig. 3: The pressure switch automatically starts the motor when the tank pressure drops below the factory set "cut-in" pressure. It stops the motor when the air tank pressure reaches the factory set "cut-out" pressure.

Regulator (E) Fig. 3: The air pressure coming from the air tank is controlled by the regulator. Turn the regulator knob clockwise to increase pressure and counterclockwise to decrease pressure. To avoid minor readjustment after making a change in pressure setting, always approach the desired pressure from a lower pressure. When reducing from a higher to a lower setting, first reduce to pressure less than that desired, then bring it up to the desired pressure. Depending on the air requirements of each particular accessory, the outlet regulated air pressure may have to be adjusted while operating the accessory.

Outlet Pressure Gauge (F) Fig. 3: The outlet pressure gauge indicates the air pressure available at the outlet side of the regulator. This pressure is controlled by the regulator and is always less than or equal to the tank pressure. See "Operating Procedures".



Fig. 1

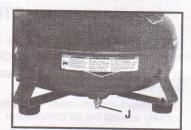


Fig. 2

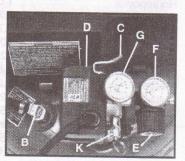


Fig. 3

Tank Pressure Gauge (G) Fig. 3: The tank pressure gauge indicates the reserve air pressure in the tank.

Cooling System: This compressor contains an advanced design cooling system. At the heart of this cooling system is an engineered fan. It is perfectly normal for this fan to blow air through the vent holes in large amounts. You know that the cooling system is working when air is being expelled.

Air Intake Filter: This unit requires no air filter due to the unique design of the air intake system.

**Drain Valve (J) Fig. 2:** The drain valve is located at the base of the air tank and is used to drain condensation at the end of each use.

Motor Thermal Overload Protector: The electric motor has an automatic thermal overload protector. If the motor overheats for any reason, the thermal overload protector will shut off the motor. The motor must be allowed to cool before restarting.

Safety Valve (K) Fig. 3: If the pressure switch does not shut off the air compressor at its cutout pressure setting, the safety valve will protect against high pressure by "popping out" at its factory set pressure (slightly higher than the pressure switch cut-out setting).

#### INSTALLATION AND BREAK-IN PROCEDURES

#### LOCATION OF THE AIR COMPRESSOR

Your compressor comes to you completely assembled and ready for use. Operate the air compressor in a dry, clean, cool and well ventilated area. The air compressor pump and case are designed to allow for proper cooling. Clean or blow off dust or dirt that collects on the air compressor. A clean air compressor runs cooler and provides longer service. The ventilation openings on your air compressor are necessary to maintain proper operating temperature. Do not place rags or other containers on or near these openings.

#### **VOLTAGE AND CIRCUIT PROTECTION**

See SPECIFICATIONS Section of this manual.

#### **GROUNDING INSTRUCTIONS**

The air compressor is equipped with a cord having a grounded wire with an appropriate grounding plug. The plug must be used with an outlet that has been installed and grounded in accordance with all local codes and ordinances. The outlet must have the same configuration as the plug. See illustration. DO NOT USE AN ADAPTER.

# AWARNING IMPROPER GROUNDING CAN RESULT IN SEVERE ELECTRICAL SHOCK.

Inspect the plug and cord before each use. Do not use if there are signs of damage. Do not modify the plug that has been provided. If it does not fit the available outlet, the correct outlet should be installed by a qualified electrician.

If these grounding instructions are not completely understood, or if in doubt as to whether the compressor is properly grounded, have the installation checked by a qualified electrician.

#### **EXTENSION CORDS**

Use extra air hose instead of an extension cord to avoid voltage drop and power loss to the motor. If an extension cord must be used, be sure it is:

- A 3-wire extension cord that has a 3-blade grounding plug, and a 3-slot receptacle that will accept the plug on the compressor.
- · In good condition.
- No longer than 50 feet.
- 12 gauge (AWG) or larger. (Wire size increases as gauge number decreases.) 10 AWG and 8 AWG may also be used. DO NOT USE 14 AWG or SMALLER.

### ADDITIONAL REGULATORS AND CONTROLS

Since the air tank pressure is usually greater than that which is needed, a regulator is employed to control the air pressure ahead of any individual air driven device.

Separate air transformers which combine the function of air regulation, moisture and dirt removal should be used where applicable.

#### LUBRICATION

The bearings in this unit are sealed bearings which contain sufficient lubricant to last their lives. No other lubrication is required.

#### **BREAK-IN PROCEDURES**

**NOTE:** Serious damage may result if the following break-in instructions are not closely followed.

This procedure is required:

Before the air compressor is put into service, after replacing the check valve, and when the piston or the cylinder sleeve is replaced.

- a. Set the pressure switch lever to the "OFF" position.
- b. Plug the power cord into the correct branch circuit receptacle.

- Turn the drain valve (J) Fig. 2, opening it fully, to prevent air pressure build-up in the tank.
- d. Move the pressure switch lever to "ON/AUTO". The compressor will start.
- Run the compressor for 15 minutes. Make sure the drain valve is open and there is no tank pressure build-up.
- f. After 15 minutes, close the drain valve by turning knob. The air receiver will fill to cut-out pressure and the motor will stop. The compressor is now ready for use.

#### **OPERATING PROCEDURES**

#### **Preparation for Use:**

- 1. Before attaching air hose or accessories, make sure the OFF/AUTO lever is set to "OFF" and the air regulator is closed.
- 2. Attach hose and accessories.

AWARNING TOO MUCH AIR PRESSURE CAUSES A HAZARDOUS RISK OF BURSTING. CHECK, THE MANUFACTURER'S MAXIMUM PRESSURE RATING FOR AIR TOOLS AND ACCESSORIES. THE REGULATOR OUTLET PRESSURE MUST NEVER EXCEED THE MAXIMUM PRESSURE RATING OF THE TOOL BEING USED.

- 3. Turn the OFF/AUTO lever to "AUTO" and allow tank pressure to build. Motor will stop when tank pressure reaches "cut-out" pressure.
- 4. Open the regulator by turning it clockwise. Adjust the regulator to the correct pressure setting. The compressor is ready for use.
- 5. Always operate the air compressor in well ventilated areas; free of gasoline or other solvent vapors. Do not operate the compressor near the spray area.

#### After Use:

- 6. Set the "OFF/AUTO" lever to "OFF".
- 7. Turn the regulator counterclockwise to set the outlet pressure to zero.
- 8. Remove the air tool or accessory.
- 9. Pull ring on safety valve (K) Fig. 3, allowing air to bleed from the tank until tank pressure is approximately 20 psi. Release safety valve ring.
- 10. Drain water from air tank. Turn drain valve (J) Fig. 2, counterclockwise, to open.

AWARNING WATER WILL CONDENSE IN THE AIR TANK. IF NOT DRAINED, WATER WILL CORRODE AND WEAKEN THE AIR TANK CAUSING A RISK OF AIR TANK RUPTURE.

**NOTE:** If drain valve is plugged, pull ring on safety valve (K) Fig. 3, and hold until all air pressure has been released. The valve can then be removed, cleaned, and reinstalled.

11. After the water has been completely drained, turn drain valve to close. The air compressor can now be stored.

#### MAINTENANCE

#### **KEEP TOOL CLEAN**

Periodically blow out all air passages with dry compressed air. Inspect air intake filter and clean or replace as necessary. Clean all plastic parts with a soft damp cloth. NEVER use solvents to clean plastic parts. They could possibly dissolve or otherwise damage the material.

ACAUTION WEAR SAFETY GLASSES WHILE USING COMPRESSED AIR.

#### **FAILURE TO START**

Should your tool fail to start, check to make sure the prongs on the cord plug are making good contact in the outlet. Also, check for blown fuses or open circuit breakers in the line.

#### SERVICE AND REPAIRS

All quality tools will eventually require servicing or replacement of parts due to wear from normal use. These operations should ONLY be performed by either an AUTHORIZED PORTER-CABLE SERVICE STATION or a PORTER-CABLE SERVICE CENTER. All repairs made by these agencies are fully guaranteed against defective material and workmanship. We cannot guarantee repairs made or attempted by anyone other than these agencies.

Should you have any questions about your compressor, feel free to write us at any time. In any communications, please give all information shown on the nameplate of your compressor (model number, type, serial number, etc.).

# PORTER-CABLE LIMITED ONE YEAR WARRANTY

Porter-Cable warrants its Professional Power Tools for a period of one year from the date of original purchase. We will repair or replace at our option, any part or parts of the product and accessories covered under this warranty which, after examination, proves to be defective in workmanship or material during the warranty period. For repair or replacement return the complete tool or accessory, transportation prepaid, to your nearest Porter-Cable Service Center or Authorized Service Station as listed under "TOOLS-ELECTRIC" in the Yellow Pages of your telephone directory. Proof of purchase may be required. This warranty does not apply to repair or replacement required due to misuse, abuse, normal wear and tear or repairs attempted or made by other than our Service Centers or Authorized Service Stations.

ANY IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WILL LAST ONLY FOR ONE (1) YEAR FROM THE DATE OF PURCHASE.

To obtain information on warranty performance please write to: PORTER-CABLE CORPORATION, 4825 Highway 45 North, P.O. Box 2468, Jackson, Tennessee 38302-2468; Attention: Product Service. THE FOREGOING OBLIGATION IS PORTER-CABLE'S SOLE LIABILITY UNDER THIS OR ANY IMPLIED WARRANTY AND UNDER NO CIRCUMSTANCES SHALL PORTER-CABLE BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.