

Instruction
manual

MODEL
C31151

Oilfree
Portable
Air Compressor



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PORTER-CABLE
PROFESSIONAL POWER TOOLS

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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 frame.
Record these numbers in the spaces below and retain for
future reference.

Model No. _____

Type _____

Serial No. _____

Part No. D28379-002-0

GLOSSARY

Become familiar with these terms before operating the unit.

CFM: Cubic feet per minute.

SCFM: Standard cubic feet per minute; a unit of measure of air delivery.

PSIG: Pounds per square inch gauge; a unit of measure of pressure.

Code Certification: Products that bear one or more of the following marks: UL, CUL, ETL, CETL, have been evaluated by OSHA certified independent safety laboratories and meet the applicable Underwriters Laboratories Standards for Safety.

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 a certain low level the motor will restart automatically. The low pressure at which the motor automatically restarts is called "cut-in" pressure.

Cut-Out Pressure: When an air compressor is turned on and begins to run, air pressure in the air tank begins to build. It builds to a certain high pressure before the motor automatically shuts off - protecting your air tank from pressure higher than its capacity. The high pressure at which the motor shuts off is called "cut-out" pressure.

Branch Circuit: Circuit carrying electricity from electrical panel to outlet.

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 misuse, because the air compressor is undersized for the required air demand. Maximum compressor pumping time per hour is 30 minutes.

SPECIFICATIONS

Model No.	C3151
Horsepower Peak	3.5
Bore	2.375"
Stroke	1.350"
Voltage-Single Phase	120
Minimum Branch Circuit Requirement	15 amps
Fuse Type	Time Delay
Air Tank Capacity (Gallon)	4.5
Approximate Cut-in Pressure	110 PSIG
Approximate Cut-out Pressure	150 PSIG
SCFM @ 90 PSIG	6.0

CAUTION This air compressor can be operated on a 15 amp circuit if:

1. Voltage supply to circuit is normal.
 2. Circuit is not used to supply any other electrical needs (lights, appliances, etc.)
 3. Extension cords comply with specifications in owners manual.
 4. Circuit is equipped with 15 amp circuit breaker or 15 amp time delay fuse.
- If any of the above conditions cannot be met, or if operation of the air compressor repeatedly causes interruption of the power it may be necessary to operate it from a 20 amp circuit. It is not necessary to change the cord set.

** A circuit breaker is preferred. Use only a fuse or circuit breaker that is the same rating as the branch circuit on which the air compressor is operated. If the air compressor is connected to a circuit protected by fuses, use dual element time delay fuses.

ACCESSORIES

Accessories for this unit are available at the store the unit was purchased.

ASSEMBLY

Unpacking

1. Remove unit from carton and discard all packaging.

INSTALLATION

HOW TO SET UP YOUR UNIT

Location of the Air Compressor

Locate the air compressor in a clean, dry and well ventilated area. The air compressor should be located at least 12" away from the wall or other obstructions that will interfere with the flow of air. The air compressor pump and shroud are designed to allow for proper cooling. The ventilation openings on the compressor are necessary to maintain proper operating temperature. Do not place rags or other containers on or near these openings.

GROUNDING INSTRUCTIONS

WARNING RISK OF ELECTRICAL SHOCK. In the event of a short circuit, grounding reduces the risk of shock by providing an escape wire for the electric current. This air compressor must be properly grounded.

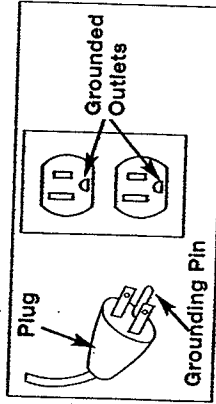
The portable air compressor is equipped with a cord having a grounding wire with an appropriate grounding plug (see following illustrations). The plug must be used with an outlet that has been installed and grounded in accordance with all local codes and ordinances.

1. The cord set and plug with this unit contains a grounding pin. This plug MUST be used with a grounded outlet.
- IMPORTANT:** The outlet being used must be installed and grounded in accordance with all local codes and ordinances.

2. Make sure the outlet being used has the same configuration as the grounded plug. **DO NOT USE AN ADAPTER.** See illustration.

3. Inspect the plug and cord before each use. Do not use if there are signs of damage.

4. 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.



DANGER IMPROPER GROUNDING CAN RESULT IN ELECTRICAL SHOCK.

Do not modify the plug provided. If it does not fit the available outlet, a correct outlet should be installed by a qualified electrician.

Repairs to the cord set or plug MUST be made by a qualified electrician.

Extension Cords

Using extension cords is not recommended. The use of extension cords will cause voltage drop resulting in power loss to the motor and overheating. Instead of using an extension cord, increase the working reach of the air hose by attaching another length of hose to its end. Attach additional lengths of hose as needed.

- 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 product
 - 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 OR 16 AWG.)

Voltage and Circuit Protection

Refer to the Parts Manual for the voltage and minimum branch circuit requirements.

Certain air compressors can be operated on a 15 amp circuit if the following conditions are met.

1. Voltage supply through branch circuit is 15 amps.
2. Circuit is not used to supply any other electrical needs (lights, appliances, etc.).
3. Extension cords comply with specifications.
4. Circuit is equipped with a 15 amp circuit breaker or 15 amp time delay fuse. **NOTE:** If compressor is connected to a circuit protected by fuses, use only time delay fuses. Time delay fuses should be marked "D" in Canada and "T" in the US.

If any of the above conditions cannot be met, or if operation of the compressor repeatedly causes interruption of the power, it may be necessary to operate it from a 20 amp circuit. It is not necessary to change the cord set.

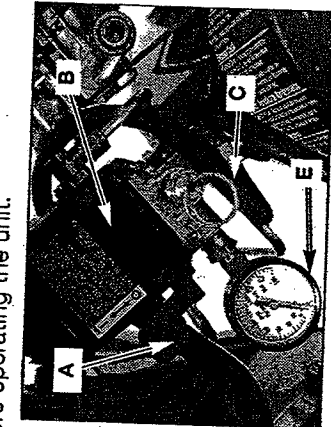
OPERATION

Know Your Air Compressor

READ THIS OWNER'S MANUAL AND SAFETY RULES BEFORE OPERATING YOUR UNIT. Compare the illustrations with your unit to familiarize yourself with the location of various controls and adjustments. Save this manual for future reference.

Description of Operation

Become familiar with these controls before operating the unit.



On/Auto/Off Switch (A): Turn this switch ON to provide automatic power to the pressure switch and OFF to remove power at the end of each use.

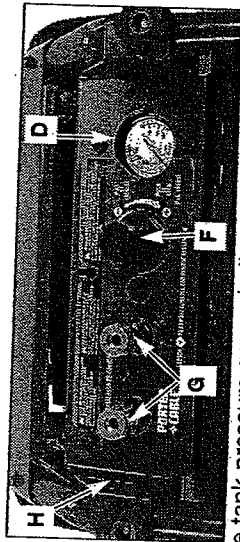
Pressure Switch (B): The pressure switch automatically starts the motor when the air tank pressure drops below the factory set "cut-in" pressure. It stops the motor when the air tank pressure reaches the factory set "cut-out" pressure.

Safety Valve (C): If the pressure switch does not shut off the air compressor at its "cut-out" 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).

Outlet Pressure Gauge (D):

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.

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



Regulator (F): Controls the air pressure shown on the outlet pressure gauge. Pull the knob out and turn clockwise to increase pressure and counterclockwise to decrease pressure. When the desired pressure is reached push knob in to lock in place.

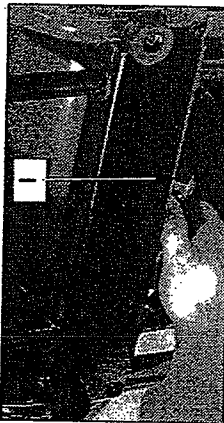
Universal Quick-Connect Body (G): The universal quick-connect body accepts the three most popular styles of quick-connect plugs- Industrial, automotive (Tru-flate), and ARO. One hand push-to-connect operation makes connections simple and easy. The two quick connect bodies allow the use of two tools at the same time.

Remote Console (H): Permits remote air regulation and control closer to work area, includes two high-flow Industrial/automotive style compatible quick-connects, outlet pressure gauge, and a high-flow regulator.

Cooling System (not shown): 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 Compressor Pump (not shown): Compresses air into the air tank. Working air is not available until the compressor has raised the air tank pressure above that required at the air outlet.

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



Check Valve (L): 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.



Air Intake Filter (K): This filter is designed to clean air coming into the pump. This filter must always be clean and ventilation openings free from obstructions. See "Maintenance".

Pressure Release Valve (M): The pressure release valve located on the side of the pressure switch, is designed to automatically release compressed air from the compressor head and the outlet tube when the air compressor reaches "cut-out" pressure or is shut off. The pressure release valve allows the motor to restart freely. When the motor stops running, air will be heard escaping from this valve for a few seconds. No air should be heard leaking when the motor is running, or continuous leaking after unit reaches "cut-out" pressure.



How to Use Your Unit

How to Stop:

1. Set the On/Auto/Off lever to "OFF".

Before Starting

Break-in Instructions

⚠ WARNING 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 and when the check valve or a complete compressor pump has been replaced.

1. Make sure the On/Auto/Off lever is in the "OFF" position.

NOTE: If quick connect is installed, pull coupler back until it clicks to prevent air from escaping through the quick connect.

2. Plug the power cord into the correct branch circuit receptacle. (Refer to Voltage and Circuit Protection paragraph in the Installation section of this manual.)
3. Open the drain valve fully (counter-clockwise) to permit air to escape and prevent air pressure build up in the air tank during the break-in period.
4. Move the On/Auto/Off lever to "ON/AUTO" position. The compressor will start.
5. Run the compressor for 15 minutes. Make sure the drain valve is open and there is minimal air pressure build-up in tank.
6. After 15 minutes, close the drain valve (clockwise). The air receiver will fill to "cut-out" pressure and the motor will stop.

The compressor is now ready for use.

Before Each Start-Up:

1. Place On/Auto/Off lever to "OFF".
2. Pull regulator knob out, turn counter-clockwise until it stops. Push knob in to lock in place.
3. Attach hose and accessories. **NOTE:** The hose or accessory will require a quick connect plug. To use remote console, see "How to Use Remote Console" paragraph in this section.

⚠ WARNING 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.

How to Start:

1. Turn the Auto/Off lever to "AUTO" and allow tank pressure to build. Motor stop when tank pressure reaches "cut-out" pressure.
2. Pull the regulator knob out and turn clockwise to increase pressure. When the desired pressure is reached push knob in to lock in place. The compressor is ready for use.

NOTE: Always operate the air compressor in well-ventilated areas free of gasoline or other combustible vapors. If the compressor is being used to operate a sprayer DO NOT place near the spray area.

How to Use Remote Console:

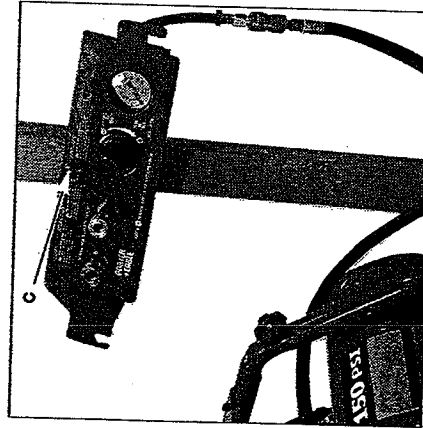
When needed the remote console allows remote air regulation and control closer to the work area.

CAUTION Reduce air pressure in tank to 60 psi maximum before removing or connecting portable control panel and when connecting hose to tank quick-connect coupler.

1. Turn knobs counter clockwise to loosen knobs securing control panel.
2. Slide console up and away from frame, disconnect air hose from quick connect (a), and remove console.



3. Connect air hose (sold separately) to quick connect plug (b) and quick connect (a). The console can then be brought closer to the work site to rest on the console brackets (d) or be temporarily mounted using the mounting hole (c).

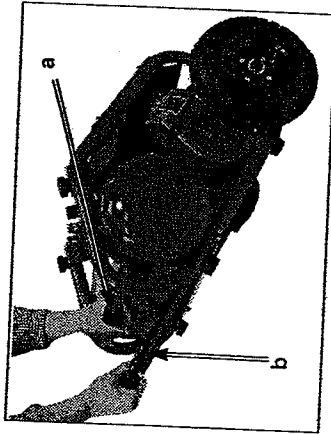


WARNING Can cause serious injury or death. Tank may contain 150 PSI of air pressure. Never connect accessories to unregulated air. Never operate tools or accessories above marked maximum pressure.

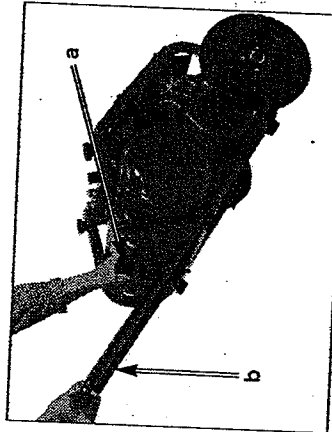
How to transport unit

The unit has a handle (a) for carrying and a handle (b) for pulling.

1. Grasp carrying handle (a) to lift unit.



2. Slide handle (b) out until it locks into place.



3. Pull unit as shown, do not push unit. **NOTE:** When transporting do not lift the unit to the point where it would tip over backwards.



IMPORTANT: Only use pulling handle to pull unit, use the carrying handle to lift and carry unit.

MAINTENANCE

Customer Responsibilities

	Before each use	Daily or after each use	Frequently	Yearly
Check Safety Valve	●			
Drain Tank		●		
Air Filter			● ¹	
Air compressor pump intake and exhaust valves				●
1- more frequent in dusty or humid conditions				

▲WARNING Unit cycles automatically when power is on. When performing maintenance, you may be exposed to voltage sources, compressed air, or moving parts. Personal injuries can occur. Before performing any maintenance or repair, disconnect power source from the compressor and bleed off all air pressure.

To ensure efficient operation and longer life of the air compressor outfit, a routine maintenance schedule should be prepared and followed. The following routine maintenance schedule is geared to an outfit in a normal working environment operating on a daily basis. If necessary, the schedule should be modified to suit the conditions under which your compressor is used. The modifications will depend upon the hours of operation and the working environment. Compressor outfits in an extremely dirty and/or hostile environment will require a greater frequency of all maintenance checks.

NOTE: See "Operation" section for the location of controls.

To Check Safety Valve

▲WARNING If the safety valve does not work properly, over-pressurization may occur, causing air tank rupture or an explosion.

1. Before starting compressor, pull the ring on the safety valve to make sure that the safety valve operates freely. If the valve is stuck or does not operate smoothly, it must be replaced with the same type of valve.

To Drain Tank

1. Set the On/Auto/Off lever to "OFF".
2. Pull the regulator knob out and turn counterclockwise to set the outlet pressure to zero.
3. Remove the air tool or accessory.
4. Pull ring on safety valve allowing air to bleed from the tank until tank pressure is approximately 20 psi. Release safety valve ring.
5. Drain water from air tank by opening drain valve (counter-clockwise) on bottom of tank.

▲WARNING 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.

6. After the water has been drained, close the drain valve (clockwise). The air compressor can now be stored.

NOTE: If drain valve is plugged, release all air pressure. The valve can then be removed, cleaned, the reinstalled.

Air Filter Inspection and Replacement

▲WARNING Hot surfaces. Risk of burn. Compressor heads are exposed when filter cover is removed. Allow compressor to cool prior to servicing.

▲CAUTION Keep the air filter clean at all times. Do not operate the air compressor with the air filter removed.

A dirty air filter will not allow the compressor pump to operate at full capacity. Before you use the compressor pump, check the air filter to be sure it is clean and in place.

If it is dirty, replace it with a new filter.

1. Remove the air filter cover.
2. Remove the air filter from filter cover.
3. Place new air filter into filter cover. Refer to the "Repair Parts" for the correct part number.
4. Replace air filter cover and lock into place.

Air Compressor Pump Intake and Exhaust Valves

Once a year have a Trained Service Technician check the air compressor pump intake and exhaust valves.

SERVICE AND ADJUSTMENTS

▲WARNING

Unit cycles automatically when power is on. When doing Maintenance, you may be exposed to voltage sources, compressed air or moving parts. Personal injuries can occur. Before performing any Maintenance or repair, unplug the compressor and bleed off all air pressure.

ALL MAINTENANCE AND REPAIR OPERATIONS NOT LISTED MUST BE PERFORMED BY TRAINED SERVICE TECHNICIAN.

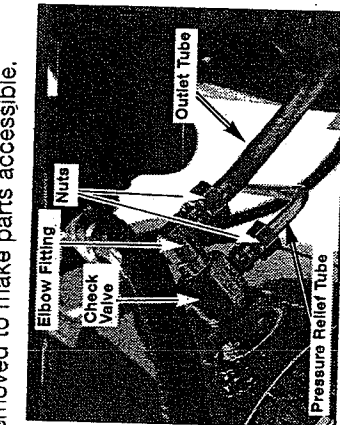
▲WARNING

- Before servicing:
- Unplug or disconnect electrical supply to the air compressor.
 - Bleed tank of pressure.
 - Allow the air compressor to cool.

To Replace or Clean Check Valve

1. Release all air pressure from air tank. See "To Drain Tank" in the Maintenance section.
2. Unplug outfit.

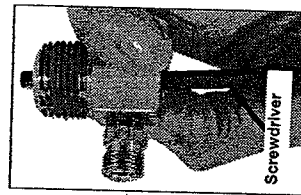
NOTE: If needed the top panel may be removed to make parts accessible.



3. Using an adjustable wrench loosen outlet tube nut at air tank and pump. Carefully move outlet tube away from check valve.
4. Using an adjustable wrench loosen pressure relief tube nut at air tank and pressure switch. Carefully move pressure relief tube away from check valve.
5. Unscrew the check valve (turn counterclockwise) using a 7/8" open end wrench. **Note** the orientation for reassembly.

6. Unscrew elbow fitting from the check valve (turn counterclockwise) using an adjustable wrench. Note the orientation of the elbow fitting for reassembly.

7. Using a screwdriver, carefully push the valve disc up and down. **NOTE:** The valve disc should move freely up and down on a spring which holds the valve disc in the closed position. If not, the check valve needs to be cleaned or replaced.



8. Clean or replace the check valve. A solvent, such as paint or varnish remover can be used to clean the check valve.
9. Apply sealant to the check valve threads. Reinstall the check valve and elbow fitting (turn clockwise).
10. Replace the pressure release tube. Tighten nut.
11. Replace the outlet tube and tighten nut.
12. Perform the Break-in Procedure. See "Break-in Procedure" in the Operation section.

STORAGE

Before you store the air compressor, make sure you do the following:

1. Review the "Maintenance" section on the preceding pages and perform scheduled maintenance as necessary.
2. Set the On/Auto/Off lever to "OFF".
3. Turn the regulator counterclockwise and set the outlet pressure to zero.
4. Remove the air tool or accessory.
5. Pull ring on safety valve allowing air to bleed from the tank until tank pressure is approximately 20 psi. Release safety valve ring.
6. Drain water from air tank by opening drain valve on bottom of tank.

▲WARNING

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.

7. After the water has been drained, close the drain or drain valve. **NOTE:** If drain valve is plugged, release all air pressure. The valve can then be removed, cleaned, then reinstalled.
8. Wrap electrical cord onto the cord wrap as shown.



9. Protect the air hose from damage (such as being stepped on or run over).
10. Push pulling handle into place for storage.
11. Store the air compressor in a clean and dry location.

TROUBLESHOOTING

⚠WARNING Performing repairs may expose voltage sources, moving parts or compressed air sources, moving parts or compressed air sources. Personal injury may occur. Prior to attempting any repairs, unplug the air compressor and bleed off all air tank air pressure.

PROBLEM	CAUSE	CORRECTION
Excessive tank pressure - safety valve pops off.	Pressure switch does not shut off motor when compressor reaches "cut-out" pressure. Pressure switch "cut-out" too high.	Move On/Auto/Off lever to the "OFF" position, if the outfit does not shut off contact a Trained Service Technician. Contact a Trained Service Technician.
Air leaks at fittings.	Tube fittings are not tight enough.	Tighten fittings where air can be heard escaping. Check fittings with soapy water solution. Do Not Overtighten.
Air leaks at or inside check valve.	Check valve seat damaged.	A defective check valve results in a constant air leak at the pressure release valve when there is pressure in the tank and the compressor is shut off. Replace check valve. Refer to the "To Replace or Clean Check Valve" in the "Service and Adjustment" section.
Air leaks at pressure switch release valve.	Defective pressure switch release valve.	Contact a Trained Service Technician.
Air leaks in air tank or at air tank welds.	Defective air tank.	Air tank must be replaced. Do not repair the leak. ⚠WARNING Do not drill into, weld or otherwise modify air tank or it will weaken. The tank can rupture or explode.
Air leaks between head and valve plate.	Leaking seal.	Contact a Trained Service Technician.

PROBLEM	CAUSE	CORRECTION
Pressure reading on the regulated pressure gauge drops when an accessory is used.	It is normal for "some" pressure drop to occur.	If there is an excessive amount of pressure drop when the accessory is used, adjust the regulator following the instructions in the "Description of Operation" paragraph in the "Operation Section." NOTE: Adjust the regulated pressure under flow conditions (while accessory is being used).
Knocking Noise.	Possible defect in safety valve. Defective check valve.	Operate safety valve manually by pulling on ring. If valve still leaks, it should be replaced. Remove and clean, or replace.
Compressor is not supplying enough air to operate accessories.	Prolonged excessive use of air. Compressor is not large enough for air requirement.	Decrease amount of air usage. Check the accessory air requirement. If it is higher than the SCFM or pressure supplied by your air compressor, you need a larger compressor.
	Hole in hose.	Check and replace if required.
	Check valve restricted.	Remove and clean, or replace.
	Air leaks.	Tighten fittings.
	Restricted air intake filter.	Clean or replace air intake filter. Do not operate the air compressor with the filter removed. Refer to the "Air Filter" paragraph in the "Maintenance" section.
Regulator knob has continuous air leak.	Damaged regulator.	Replace.

PROBLEM	CAUSE	CORRECTION
Regulator not shut off air outlet.	Damaged regulator.	Replace.
Motor will not run.	<p>Motor overload protection switch has tripped.</p> <p>Tank pressure exceeds pressure switch "cut-in" pressure.</p> <p>Extension cord is wrong length or gauge.</p> <p>Check valve stuck open.</p> <p>Loose electrical connections.</p> <p>Possible defective motor or starting capacitor.</p> <p>Paint spray on internal motor parts.</p> <p>Pressure release valve on pressure switch has not unloaded head pressure.</p> <p>Fuse blown, circuit breaker tripped.</p>	<p>Let motor cool off and overload switch will automatically reset.</p> <p>Motor will start automatically when tank pressure drops below "cut-in" pressure of pressure switch.</p> <p>Check for proper gauge wire and cord length.</p> <p>Remove and clean, or replace.</p> <p>Check wiring connection inside pressure switch and terminal box area.</p> <p>Have checked by a Trained Service Technician.</p> <p>Have checked by a Trained Service Technician. Do not operate the compressor in the paint spray area. See flammable vapor warning.</p> <p>Bleed the line by pushing the lever on the pressure switch to the "off" position; if the valve does not open, replace switch.</p> <ol style="list-style-type: none"> 1. Check fuse box for blown fuse and replace as necessary. Reset circuit breaker. Do not use a fuse or circuit breaker with higher rating than that specified for your particular branch circuit. 2. Check for proper fuse. You should use a time delay fuse. 3. Check for low voltage conditions and/or proper extension cord. 4. Disconnect the other electrical appliances from circuit or operate the compressor on its own branch circuit.