

Portable Dental Unit

PC2635

Operational Manual



Notice: Before Operating the unit, please read the manual carefully and reference it for future maintenance procedures.

1. Keep working area clean

Do not operate unit in humid or dark area. Keep unit away from flammable liquids, gas or dusty areas. The equipment should be operated in a dry, well ventilated, cool room. The working surface should be a flat sterile environment.

2. Be aware of electric shocks

While operating the portable unit; be sure to keep it away from other electrical articles, such as metal pipes, heating pipes, wires and other appliances.

3. Keep unit away from children or non trained staff

Keep any non-operating personnel away during the operation of the unit.

4. Do not use the product for any extended period of time. Be sure to operating, the unit in accordance to the standardized electrical voltage and frequency.

5. Maintain the unit regularly

The unit should be inspected regularly; ensuring that all wiring, cables and attachments are properly stowed when not in use and in good working condition. Any damages to any of the wiring, cables or attachments are to be replaced immediately. The unit should be kept clean and dry; there should not be any noticeable oil leaks on any surface of the machine.

6. Be sure to turn off the unit and unplug the power cord when not in use.

7. Do not over pressurized the air tank

Under normal working conditions; the unit is designed to pressurize to 6 Bar. The unit is designed to safely pressurize up to 8.8 Bar.

8. Warning: Third party, parts, accessories and attachments

Do not use any non-genuine; or non-original parts, accessories or attachment with the unit. Any replacement parts should come from the original manufacturer. Use of any non-approved third party accessories or attachment may result in damaging the unit or causing personal injury.

Power Voltage: The power voltage should be noted in the voltage label located on the power cord. Power voltages higher than the recommended amount may result in personal injury and or damage to the portable unit. Power voltages lower than the recommended amount may result in false starts and or damage to the motor.

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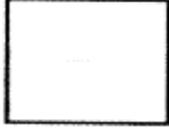
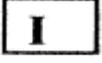
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1. Overview

Thank you for purchasing our portable dental unit PC2635! We at TPC have gone to great lengths to research, develop and test this unit for your use. We have done extensive electrical testing for efficient power consumption and mechanical durability; so that the operator will have a safe, maintenance free experience. We put great detail into the compact and mobile design; that allows the operator to work in tight spaces such as clinics and hospitals for the treatment of oral health. Equipped with a self-contained air compressor, air tank, air filter and regulator, clean water bottle, three way syringe, high speed hand pieces, tubing and foot-control pedal; this portable dental unit can supply dry clean air for high & low speed turbines, and clean water to irrigation. This unit is lightweight, easy to operate and easy to maintain.

2. Symbols

Read the operator instructions

	Warning Shock Hazard		
	Warning High Temperature Parts		
	Warning the compressor can automatically start unexpectedly		
	Electrical Shock		High Voltage
	No Touching		B Type Instrument
	Ground Protector		ON
			Off

3. Operational Overview

Motor Working Principles: The PC2635 has an oil-free air compressor, which compresses the air with a micro-reciprocating piston. Compressed air discharge enters into the air tank; a pressure gauge displays the pressure in the tank. When the pressure inside the tank reaches 80-bar, power is automatically shut off by the pressure switch turning off the compressor. When the pressure inside decreases to 5-bar, power is turned on by the pressure switch and the compressor starts again. The cycling of air pressure happens automatically and repeatedly. In addition to the compressor, check valve, drain valve, safety valve and solenoid valve are installed on the air tank.

Operating Principles: The compressor in the portable dental unit is an oil-free compressor which provides stable, dry, clean air for your high and low speed hand piece turbines. Air for the hand pieces is activated by the foot control; air for the three way syringe is activated by the air button on the syringe assembly; water for the three way syringe is activated by the water button on the syringe assembly.

4. Main Functions

- 4.1 The air filter and regulator: The filter separates moisture from the compressed air. Water in the air tank is collected at the bottom of the tank where it can be discharged. The pressure regulator controls and maintains the air pressure within the air tank. You can adjust the air pressure by raising the handle of the regulator from 1 to 8 bar. Clockwise rotation will increase pressure, and counter clockwise rotation will reduce the pressure.
- 4.2 Pressure gauge: The pressure gauge automatically controls the pressure within the air tank by automatically starting and stopping the compressor.
- 4.3 Safety valve: In the event that the pressure gauge does not shut off the compressor beyond the maximum pressure of 8.8 bar; a safety valve will automatically open to relieve pressure.
- 4.4 Overload protector: In the event there is an electrical surge; an overload protector will automatically disconnect the motor. This will prevent the motor from surging, burning or breaking.
- 4.5 Drain valve: To drain the accumulated water in the tank after extensive use; turn the valve counter-clockwise to release water.
- 4.6 Handpieces: Please read your handpiece operating instruction before operating your handpieces on the PC2630. When using the high speed, adjust the pressure to around .22MPa ~ .25MPa, where the speed of the bur is no more than 300×10^3 revolutions per minute.
When using the low speed handpiece, adjust the pressure to around .25MPa ~ .30MPa, where the speed of the bur is no more than 14,000 revolutions per minute.

Note:

(1) Please be careful when threading the handpiece to the connector; do not use excessive force.

(2) When using the handpiece, please install the drill or chuck to simulate actual cutting pressure.

- 4.7 Three Way Syringes: Hold down the ring collar to insert an air/water syringe; release the collar ring when inserted to hold the syringe tip. To release the tip, depress the ring collar; remove the tip, then release the collar ring. The air/water syringe must be fully inserted up to the indication line.
- 4.8 Clean water bottle: The clean water bottle will supply the water for the high & low speed handpieces and the three way syringe. Distilled water should be used to prevent handpieces and three way syringes clogging from hard water mineral deposit buildup. When adding water, please turn off the net bottle switch, rotate the bottle clockwise to remove the bottle, after filling bottle, to tighten turn bottle counter-clock wise.

Notice: Before adding water, please turn off the net water switch.

- 4.9 Air System: Prior to packaging, the oil-free compressor has passed all quality tests. Open the pressure switch will start the air compression. The air compressor pressure gauge should slowly rise from 0 bar to 8 bar. When the pressure in tank drops below 5 bar, the air compressor should start automatically until the pressure build up to 8 bar.

Notice: Do not operate or disassemble this equipment without professional guide in order to avoid injury or unit damage.

5. Operation and Maintenance

- 5.1 Operation: The machine should operate in normal room temperature from 5-40°C and relative humidity not greater than 80%. Surrounding area of the machine should be clean, dry free of corrosive gas, well ventilated with indirect sunlight.

Notice: The machine should be placed firmly, evenly leveled on a hard flat surface.

After Opening: Check to see if the machine is in good condition and has all its components outlined in the packing list.

First Check if drain valve is off and pressure switch is in the “off” position. Check the condition of the power supply. Insert the plug of the machine into the power supply socket. Installation of the unit is complete.

Second connect air supply hose to the quick connectors.

Third, hand the air/watery syringe assembly and the handpiece hoses on the handpiece hangers.

Fourth add water to the clean water bottle by removing and connecting the bottle.

5.2 **Test Run The Machine**

5.2.1 Close the drain valve and the air outlet ball valve. Turn the operation handle pressure switch to “On” and the machine will start immediately. The reading on the pressure gauge should slowly rise indicating the air pressure building in the tank. When the pressure inside the tank reaches 8 bar, the pressure switch will activate and the power supply to the compressor will automatically shut off.

5.2.2 To detect an air leak, observe the pressure gauge on a full tank to see if the reading on the gauge drops. If there is no detectable air leak; open the air outlet valve next to test the pressure switch. When the air pressure drops below 5 bar; the compressor should automatically start to build pressure again. If the unit can automatically stop and start, then the machine is functioning normally.

5.2.3 If the portable unit if functioning normally, you can turn the pressure switch to the “off” position and pull the plug out of the power socket. This will conclude the test run of the portable unit.

5.3 **Draining of the air tank**

The frequency at which you should drain the air tank of water will depend on the humidity and frequency of use. Under normal the unit would need to be drained once every 2-3 days.

To drain the air tank, connect the drain pipe to the drain valve. Turn the drain knob slowly counter clockwise; this will drain the air tank of the atmospheric water that had condensed at the bottom of the air tank. After all the water is drained from the tank, turn the drain knob slowly clockwise to close off the drain valve.

5.4 **Draining of air filter:**

To drain the air filter, located in the middle of the clear canister; first open the drain valve, to relieve all air pressure in the tank. When the air pressure reaches 0 bar, the water in the relief valve will automatically be released.

5.5 **Air inlet filter core replacement**

An air filter is installed on the air inlet of the motor to prevent dust from entering the air compressor; it also helps to reduce noise. The filter core will need to be checked and replaced regularly. To replace the air filter; open the lid to the lid on the air filter, remove the old filter core, install a new filter and close the lid.

5.6 **Handpiece Maintenance**

Routine handpiece maintenance including; oil and lubricant should prolong the life of a handpiece.

5.7 **Handpiece Nozzle Cleaning**

Weekly handpiece, air & water nozzle maintenance should prolong the life of the handpiece.

5.8 **Handpiece Sterilization**

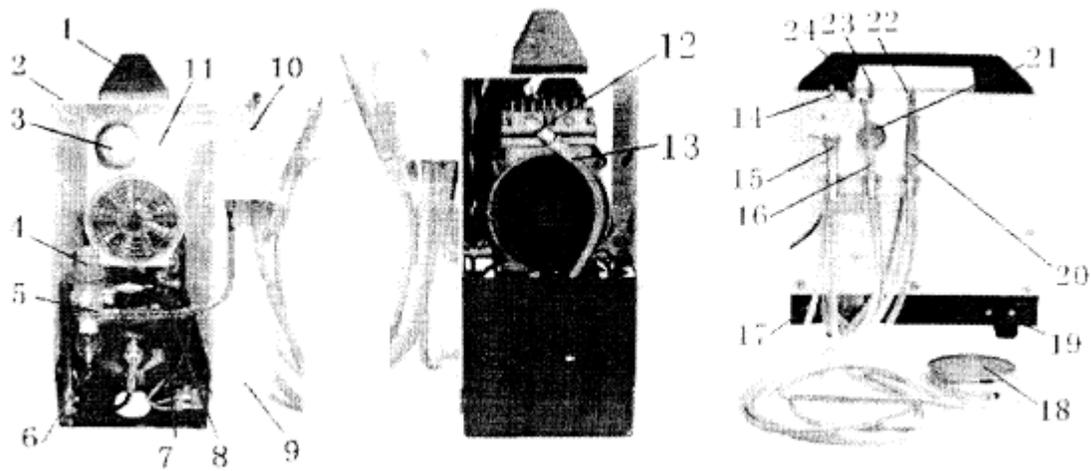
Spray the handpiece with water or alcohol before sterilization. Disinfect the handpiece by soaking and wiping the exterior. Bag and seal the handpiece and sterilize in autoclave at 2 bar pressure at 134°C for 4 minutes; or 1 bar of pressure at 121°C for 18 minutes.

Notice: After each patient, all oral instruments must be sterilized.

5.9 **Three-Way Syringe Sterilization**

First remove the Air/Water syringe tip, before sterilization. Disinfect the Air/Water assembly by soaking and wiping the exterior. No sterilization is necessary. Use a barrier such as an Air/Water syringe cover to avoid cross contamination.

6. Operating Diagram



1. Handle	10. Turbine	19. Plug
2. Metal Cover	11. Motor	20. Low-Speed HP tube
3. Air Intake	12. Elbow connector	21. Handpiece pressure
4. Air Filter and Regulator	13. Braided pipe	22. Low speed/high speed transferring switch
5. Elbow Connector	14. Clean water switch	23. Handpiece water adjustor
6. Pressure Gauge (40mm)	15. Three way syringe	24. Handpiece air adjustor
7. Tank	16. High-Speed HP tube	
8. Pressed drain valve	17. Power switch	
9. Water Bottle	18. Foot pedal	

7. Standard Configuration

4-Hole handpiece tube	2 pcs PU pipe
Three Way Syringe	1 pc
Clean water bottle	1 pc
Oil free air compressor	1 pc

8. Technical Specifications

Power (KW)	0.55	Tank (L)	4
Air Flow (L/min)	115	G.W (KG)	31
Speed (r/min)	1400	N.W (KG)	26
Capacitor (VF)	25	Overload Protector	8A
Noise (dB)	52	Dimension (L x W x H)cm	54 x 33 x 48

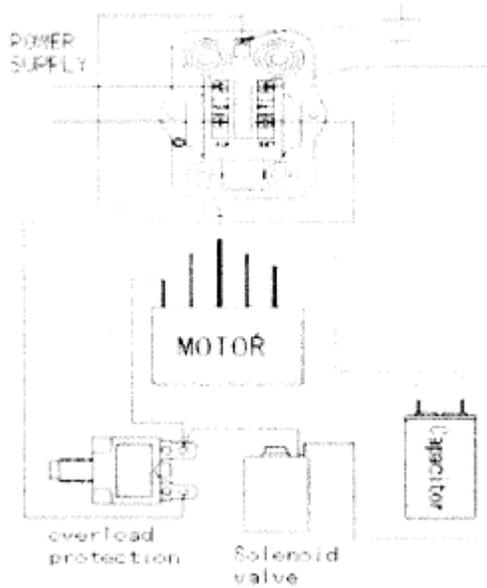
9. Portable Unit Troubleshooting

	Problem	Reason	Check	Tips
1	The power switch cannot be turned on	The power is not switched on	Check if the power supply is connected correctly	Connect the power supply correctly
		A fuse is blown	Check the patch board and the electric connection of the compressor	Replace the wire according to circuit diagram
2	Compressor cannot be started	The wire to the power supply has fallen off or an electric component is loose	Check the patch board and the electric connection of the compressor	Connect the wire according to circuit diagram
		The temperature of air compressor is too high	Touch the shell of the air compressor by hand	Cool the air compressor, use it until it is cooling
		The forward valve fails to work	Take off the tube which connects the inlet of the valve, check if there is a air leakage	Clean the valve
3	The air compressor keeps working and cannot be stopped	The unloading valve on the pressure switch fails to function	The unloading valve is exhausting when the air	Remove the unloading valve, exchange O-ring, clean tubing
		Leakage in the tube	Watch and listen for air leak or check leak with soap suds	Avoid leaking air
		Air leakage in automatic drainage of filter valve	Check if there is air leakage in automatic drainage of filter valve	Avoid leaking air

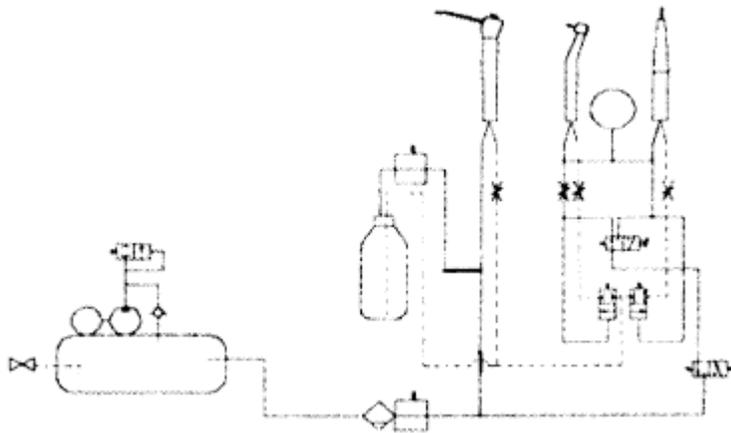
4	The compressor stops working, air pressure decrease immediately, compressor starts up again	Large air leak in tube	Watch and listen to the flow or check it with soap suds	Avoid leaking air
		The leakage in the forward valve connects to the gas can	No other air leakage, the pressure switch keeps working continuously	Remove the valve replace the O-ring and clean the valve core
5	Electriferous shell	The working surface is not leveled	Check the shell with the volt meter	Level the working surface
		The unit is damp	<5MΩ Check with volt meter, Insulating resistance <5MΩ	Use the device until it is dry
6	Cannot start up the compressor with the compressor shaking and noisy	The power pressure is too low	<99V Check the working power pressure with the volts meter.	Make the pressure rise or use a manostat
7	The handpiece cannot spray water while in use	The water in water tank has been used up	Check the water volume of the water tank	Replace the tank
		Air & water distributing valve is blocked	The three-way syringe water ports	Regulate the air/water distributing valve or clean the valve core
8	The handpiece leaks water when not in operation	Air & water distributing valve fails to function	Remove one side of the valves in handpiece, take out faucet, spring and valve core	Replace the valve core
		The foot switch is not restored	The pressure gauge does not decrease when foot switch is not depressed	Loosen the cover of foot switch, so
9	Air and water leakage in water/air adjustor	The valve core is tighten too far	Remove and check the component	Screw the valve core properly
		O-ring is damaged	Remove and check the valve core	Replace O-ring
		Thread connector is loose	Check if there is leakage in the thread connector	Tighten the thread connector

10. Air/Water Circuit Diagram

10.1 Electrical Circuit



10.2 Air and water circuit



11. Air/Water Circuit Diagram

1. PC2635	1 pc
2. Product manual	1 pc