

Aquacut Installation Instructions

Make sure the airline coming from the compressor to the Aquacut is regulated between 85 and 90 psi. **The airline must come directly from the compressor before any junction boxes that feed other dental equipment.** This will prevent cutting problems due to a lack of sufficient air pressure.

Connect the foot pedal to your Aquacut as follows ...

The clear foot pedal line connects to the white socket.
The black foot pedal line connects to the black socket.
The green foot pedal line connects to the green socket.
The yellow foot pedal line connects to the yellow socket.
The airline from your compressor connects to the blue socket.

NEVER hook any water lines to the rear or front of the Aquacut. Doing so will damage your Aquacut and may make it unusable without expensive repairs.

The foot pedal has 3 positions.

Position 1 only allows air to come from the tip of the hand piece.

Position 2 allows air and water to come from the tip of the hand piece.

Position 3 allows air, water and powder to come from the tip of the hand piece.

Pressing your foot down on the foot pedal's roller, controls the foot pedal's position. Position 1 is your first or top position. Position 2 is your second or middle position. Position 3 is your third or bottom position.

In position 3 you will hear the vibrator turn on. The vibrator allows powder to drop from the powder canisters into the dosing chamber and thus, into the tubing and to the hand piece.

The Aquacut knobs and their settings ...

The **SPEED** knob adjusts the volume of air coming into the Aquacut and this can be seen while looking at the ABC gauge. The gauge's needle should come to rest between B and C when using cutting powders and in the middle of A when using Sodium Bi-Carbonate for cleaning or Syc for polishing.

The **DOSING CHAMBER** knob is used to select the left or right dosing chamber. Normally the left dosing chamber is used for your cleaning powder and the right dosing chamber is used for your cutting powders.

The **POWDER** knob should initially be set to position 1.5 and adjusted up slightly if need be. This knob should never need to be adjusted above a setting of 3. Typically, it will work best at a setting of 1.5 to 2.

The **POWER** knob is initially set to OFF. Set this knob to position 1 to operate the Aquacut. Do NOT set it to position 2. You cannot cut or clean at this setting. Position 2 is designed around a future upgrade and is designed to use Helium.

Available Aquacut powders ...

Sodium Bi-Carbonate is in the clear container. Used for cleaning.

53-micron aluminum oxide is in the red container. Used for aggressive cutting.

29-micron aluminum oxide is in the blue container. Used for less-aggressive cutting.

The hand pieces ...

The silver hand piece is used with the Sodium Bi-Carbonate cleaning powder and the 29 or 53-micron cutting powders. This hand piece has a larger powder hole.

The green hand piece has a smaller powder hole and is used with the 29-micron powder. This hand piece is used in micro-dentistry when repairing small dots on a tooth. The 29-micron powder is used in areas where the mouth is more sensitive and requires a finer cut. **This hand piece CANNOT be used with Syc or Sodium Bi-Carbonate.**

Attaching the twin tubing to the silver hand piece ...

Remove the silver hand piece from its package. Remove the twin tubing from its package.

You'll notice on the twin tubing, one end has a check valve located inside the water tubing. This ensures water from the hand piece does not travel back into the Aquacut machine. The end of the tubing that does not have the check valve is the end that fits into the hand piece. Take this end of the tubing and insert it into the smaller diameter end of the plastic handle that comes with your hand piece. Allow the tubing to exit the other end of the plastic handle. Notice the tubing comes in two different diameters. The larger diameter tubing is pushed onto the larger stem at the base of the handle. Push it on until it butts up against the raised spacer between the larger and smaller stems. Next push the smaller tubing onto the smaller stem at the base of the handle until it also butts up against the raised spacer. Finally push the plastic handle onto the hand piece until it butts up against the hand piece. Set the hand piece in the hand piece holder located on the right side of the Aquacut for now.

Take the other end of the twin tubing and attach it to the front of your Aquacut. You'll notice two opening towards the lower left side, in the front of your Aquacut. The top opening is your water supply opening. Push the smaller diameter tubing onto

the stem located inside the smaller hole. Next, push the larger diameter tubing into the bottom hole. This hole is a pressure-type fitting and it grabs onto the tubing as you push it into the hole. This hole is where your air and powder will come from.

Keep in mind, water is not pushed through your Aquacut machine or hand piece, it is drawn through by a Venturi effect. The air coming from the hand piece actually pulls water from the water tank. This happens through the unique design of the disposable tip.

Attaching a disposable tip to the hand piece ...

The disposable tip consists of two parts, the tip itself and a small clear plastic tube.

Remove your hand piece from the hand piece holder. Hold it in one hand and grab a plastic tip in your other hand. The plastic tip has a small ring of plastic attached to it. Fold the ring over so it lies across the larger opening of the tip. Push the plastic ring and tip onto the curved part of the hand piece. Push it so it is held tightly onto the hand piece with the smaller plastic stem coming to rest above the metal stem on the hand piece.

Take the second part of the tip, the clear plastic tube and push it onto the plastic stem until it butts up against the end of the plastic stem. Finally, push the other end of the clear plastic tube onto the metal stem located on your hand piece.

NOTE: If you do not have water coming from your hand piece when using your Aquacut, first ensure you have water in your water tank and then replace the hand piece tip. Nine times out of ten the problem is a bad hand piece tip. Disposable tips do get worn from use and this can affect the Venturi effect that draws the water.

Place the hand piece back into its holder for now.

Open the blue lid on top of the Aquacut. Make sure both chamber lids are tight. Tighten if necessary and then close the blue lid.

At this point we are going to turn the Aquacut on without any water or powder in the machine. We want to set our knobs and ensure we have good airflow before continuing on with water or powder.

Set the **SPEED** knob so the ABC meter's needle points to the area between B and C. Set the **POWDER** knob to 1.5. Grab the hand piece from its holder and press the foot pedal through all 3 positions. Ensure you have good airflow by feeling the tip of the hand piece with your finger while testing all 3-foot pedal positions. Release the foot pedal when done.

When the foot pedal and your machine have been checked for good airflow, power the Aquacut down by turning the **POWER** knob to OFF. Place the hand piece back into its holder.

Next we will put water into the Aquacut, turn the machine on again and verify we have water coming from the hand piece.

Located on the front of the Aquacut in the lower right corner is a push button. Push this button in and the Aquacut will pop open a small amount. In the Aquacut are two clear plastic tanks. The tank on the left is not used at this time. The tank on the right is your water tank. With one hand open the Aquacut enough to remove the water tank with your free hand. At this time, notice the water feed tubing and how it enters the water tank. Remove the water tank.

Remove the lid on the water tank and fill the tank with tap water. Don't over fill it. Around a ½ inch from the top is good. In time you'll get a feel as to what level is good for you. Replace the lid. Now slightly open the Aquacut again with one hand while putting the water tank back inside the machine with your other hand. Before closing the Aquacut make sure the water feed tubing is placed back into the water tank. You'll need to assist the tubing into the water tank. Close the Aquacut by pressing down on the blue lid until the machine locks shut.

Turn the Aquacut on again by moving the POWER knob to position 1.

If you have a paper towel or cloth that is not white, place it beside the Aquacut. This will help when checking the water and seeing the powder coming from the disposable tip. Also, if you have a trashcan available, while learning/training with the Aquacut you can direct the flow from the tip into the trashcan to reduce any water and powder residue at this time.

Open the blue lid to allow you access to the water adjustment knob. Remove the hand piece from its holder. Hold the hand piece as if you were holding a pencil to write with.

Water will flow from the hand piece tip when you press the foot pedal to positions 2 or 3. For our test here press the foot pedal down to position 2.

Initially, it might take up to 20 seconds for water to come from the hand piece tip. It has to be drawn from the water tank and pulled through the water tubing to the hand piece tip. Once water comes from the hand piece tip it will always be instantly available, unless of course, you run out of water in the water tank.

The water adjustment knob is located in front of the left dosing chamber. If the knob is adjusted counter clockwise you decrease the amount of water flowing from the hand piece tip. If the knob is adjusted clockwise, the amount of water flowing from the hand piece tip increases. The knob should have been adjusted from the factory, but you can adjust the water adjustment knob if it is incorrect.

Water flowing from the hand piece should be adjusted to where it has a nice steady flow from the tip. Adjust the water flow knob down to where the water starts to sputter from the tip and then increase the knob back up until the water steadies out into a nice flowing cone. While still pressing the foot pedal to position 2, move the hand piece tip over the cloth you placed beside your machine to get an idea of what good water flow looks like.

Release the foot pedal, place your hand piece into its holder and turn the Aquacut off by turning the **POWER** knob to OFF.

Each time you turn the Aquacut off you can hear air escaping your machine. This is normal air runoff. When the air gauge is at minimum open the blue lid.

Place powder into the dosing chamber ...

A quick note: If there is any air pressure remaining in either of the dosing chambers it will be next to impossible to remove the dosing chamber lids. To remove any remaining air in the dosing chamber press the foot pedal all the way to position 3 with the machine turned off. If there was any air remaining you will hear it escape. Move your **DOSING CHAMBER** knob to the other dosing chamber and press the foot pedal to position 3 again to remove any air in the other dosing chamber.

Position the **DOSING CHAMBER** knob so that it will be looking at the right dosing chamber.

Remove the right dosing chamber lid. We will now place cutting powder into the right dosing chamber.

Open your package of powders and grab the red 53-micron powder. Remove the bag it comes sealed in. You'll notice two yellow tabs on the red canister. They are there to keep the powder from spilling out when the canister is not being used. Remove the top yellow tab and place it out of the way. Remove the bottom yellow tab and place it out of the way. Save the yellow tabs. You can place them back into the canister when you store the canister. Take care at this time to not shake the red canister, as powder will start falling from the bottom of the canister.

You'll notice the top of the canister is not totally round. There is a flat section that has a ridge that goes from the flat section to halfway down the canister. This ridge of plastic will go into a slot in the dosing chamber. The slot in the dosing chamber is located near the front of the dosing chambers. Align the slot in the dosing chamber up with the ridge on the canister and allow the canister to enter and seat itself inside the dosing chamber. If you have to force the canister into the dosing chamber then the canister is not aligned correctly with the dosing chamber's slot.

Return the dosing chamber lid onto the dosing chamber. Make sure the lid is tight against the dosing chamber. Close the blue lid.

Practice cutting holes in glass slides ...

Grab a few glass slides from your accessory kit and place them on the cloth beside your Aquacut.

Turn your machine on by moving the **POWER** knob to position 1.

Ensure your air gauge is still reading between B and C. If not adjust your **SPEED** knob until it is so.

Make sure your **POWDER** knob is still set to 1.5.

Remove your hand piece from its holder. Hold the hand piece over the trashcan.

Now, press the foot pedal to position 3. You should get air, water and powder from your hand piece. Remove your hand piece from the trashcan and move it across the cloth and you should see a steady flow of water and powder on the cloth. If too little or too much powder is seen on the cloth make a slight adjustment with your **POWDER** knob. You should see a nice even flow of powder. No erratic powder spurts or powder clumps.

Press and release the foot pedal to position 3 when necessary while testing.

Release the foot pedal and grab a glass slide with your free hand. You should still be holding the hand piece with your other hand. Hold the glass slide over the trashcan and hold the hand piece again as if holding a pencil. Place the hand piece's tip against the glass slide and then raise it slightly until it no longer touches the glass slide. Place a finger of the hand holding the glass slide directly under the bottom of the glass slide where the hand piece tip is directly above the finger under the glass. Your finger at this time serves two purposes. It will show you your finger will not be cut or damaged when cutting a hole in the glass slide and it is a good indicator when a hole has been made in the glass, as you'll feel the burst of air, water and powder on your finger.

Practice cutting holes in your glass slides. You should be able to cut a hole in the glass slide in approximately 8 or 9 seconds or less. If it is taking too long, make sure you are close enough to the glass slide to cut.

A few things to keep in mind ...

Never move your Aquacut with water or powder still in the machine. Both will spill creating a mess. Simply, remove the water tank and any powders before moving.

When changing from cutting powder to a cleaning powder or vice versa, always purge the old powder from the tubing lines by switching the **DOSING CHAMBER** knob to the powder you now want to use and press your foot pedal to position 3 while directing the hand piece tip away from the patient for 5 to 10 seconds to clear the unwanted powder from the tubing. You can spray the unwanted powder into a trashcan or your cuspidor.

Always purge your Aquacut each evening of water and powder.

To purge water and powder from your machine, start by turning your machine off. Remove the chamber lids and remove any powder canisters from within the powder chambers. Replace the chamber lids and tighten firmly. Push the button on your Aquacut to open the top. Remove the water tank and discard the water in the tank. Replace the water tank back into your machine. Remember to help direct the water feed tubing into the water tank. Close the top of your Aquacut until it locks into place. Turn your machine on. Press your foot pedal to position 3 while holding the hand piece towards your wastebasket. Watch the disposable tip and when you no longer see any water or powder coming from the disposable tip release the foot pedal and turn the **DOSING CHAMBER** knob to the other dosing chamber. Press the foot pedal to position 3 again and watch for any water or powder coming from the disposable tip. When there is no water or powder coming from the disposable tip release the foot pedal. Turn your machine off. Store your powder. You can safely move your machine at this time.

Congratulations, you just installed your Aquacut and performed a successful demonstration of its cutting abilities.