



## QUICK START GUIDE

The PL1220 can be used to engrave, mark, and cut a variety of materials. It is sold as a turn key package, with everything included to run the machine, straight out of the box. All that is needed is a PC to run the included RDWorks software package.



**WARNING:** To avoid set-up problems, to prevent potential damage to the machine, and to prevent injury – read through the entire set-up section prior to proceeding.

**WARNING:** Do not connect to a power supply until the set-up is complete. Do not perform any of the following steps, installations, or adjustments with the machine connected to a power source unless directed to do so.

**USE CAUTION:** The machine is heavy and requires at least 2 persons to lift it into position.

**NOTICE:** All shipping related claims for loss or damage goods must be made to Laguna Tools within twenty-four hours of delivery.

# 1.

## VENTILATION (EXHAUST/FUME EXTRACTION) SET-UP

The machine must be ventilated during operation. You will need 3 band clamps, 2 ducting coils or other duct-work, the blower unit, and a flathead screwdriver to fasten the clamps.

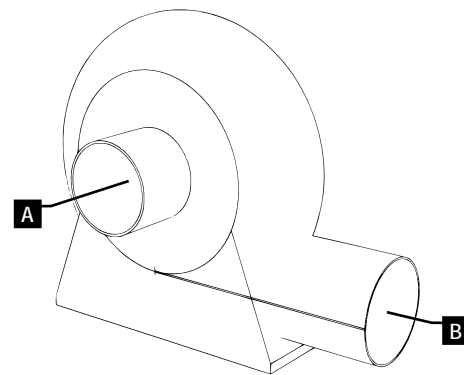


Figure 3-1: Set-up Diagram for Blower Unit

- A** Exhaust inlet
- B** Exhaust outlet

### Set-up Procedure

1. Connect the exhaust intake to the rear of the laser machine with 1 (of 2) ducting coils.
2. Fasten the ducting coils together with the included band clamps.
3. Connect the exhaust outlet to the second ducting coil with a band clamp.
4. The exhaust must, safely and legally, take the fumes from the laser machine away from any individuals who could inhale the fumes.

**NOTICE:** It is a good idea to use a power strip with an on/off switch to give power to all components at the same time, and to turn the machine (systems) on and off easily.

**WARNING:** Do not connect to a power supply until the set-up is complete. Do not perform any of the following steps, installations, or adjustments with the machine connected to a power source unless directed to do so.

**WARNING:** The fan can tip over if not fastened to a base.

**NOTICE:** The use of an indoor fume extractor can be very helpful in isolating and control the fumes emitted from laser cutting and engraving.

# 2.

## WATER CHILLER SET-UP

You will need 7 liters of distilled or deionized water, the water chiller tubing, the alarm cable, and one of the power cables.

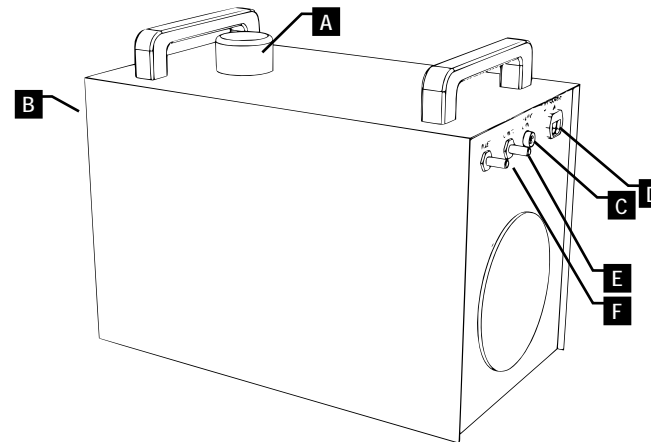


Figure 3-2: Set-up Diagram for Chiller Unit

- A** Water Inlet, and Cap
- B** On/Off Switch and DRO of Temperature
- C** Alarm Cable Connector
- D** IEC320-C13 Receptacle
- E** Inlet, to be connected to laser machine outlet
- F** Outlet, to be connected to laser machine inlet

### Set-up Procedure

1. Place the chiller in its location.
2. Unscrew the cap [A] and fill the unit with 7 liters of water. There is no fill limit, so measure it out before filling.
3. Connect the water inlet to the machine outlet according to the connection diagram.
4. Connect the water outlet to the machine inlet according to the connection diagram.
5. Connect the alarm cable to the laser machine [C].
6. Do not connect to power until set-up is complete.

**NOTICE:** The chiller will leak water out the inlet and outlet ports, so use caution when moving.

**WARNING:** Do not connect to a power supply until the set-up is complete. Do not perform any of the following steps, installations, or adjustments with the machine connected to a power source unless directed to do so.

**USE CAUTION:** Only use deionized or distilled water. (Tap water or bottled water has minerals in it that will affect the performance and life of the laser tube.) DO NOT USE ANY TYPE OF CHEMICAL COOLANT.

# 3.

## AIR PUMP SET-UP

The air pump needs to supply air to the nozzle to direct fumes away from the focal lens. To install, you will need the air pump, the quick set adapter, and a ¼" air hose.

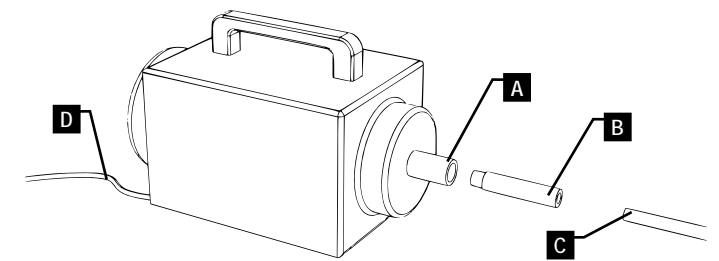


Figure 3-3: Set-up Diagram for Air Pump

- A** Air Pump Adapter Insert
- B** Quick Set Adapter
- C** ¼" Air Hose
- D** Power Cable

### Set-up Procedure

1. Screw the quick set adapter into the air pump adapter insert.
2. Press in the ¼" air hose.
3. Do not connect to power until set-up is complete.

**WARNING:** Do not connect to a power supply until the set-up is complete. Do not perform any of the following steps, installations, or adjustments with the machine connected to a power source unless directed to do so.

**NOTICE:** Make sure the air hose fits all the way into the adapter. The connection should leak very slightly – this is normal.

**NOTICE:** It is a good idea to use a power strip with an on/off switch to give power to all components at the same time, and to turn the machine (systems) on and off easily.

# 4.

## MACHINE SETUP

After the machine has been moved to where it will be used, remove the zip ties on the belts and install the exhaust adapter. You will need tools to remove the zip ties, and an Alan key to install the adapter.

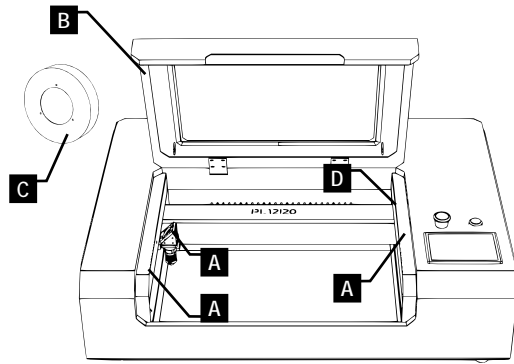


Figure 3-4: Set-up Diagram for Laser Machine

- A** Zip Ties
- B** Fume Extraction Adapter Location
- C** Power Switch
- D** Interlock Sensor

### Set-up Procedure

- Remove all zip ties [A] from the Belts and Laser Head Assembly. There is one on each belt to prevent movement in transit, and one on the laser head assembly.
- Install the Fume Extraction Adapter [C] on the rear of the machine with the included Alan keys.

**WARNING:** Do not give power to the machine until setup is complete. The machine will not turn on without the chiller running.

**NOTICE:** The laser will not fire if the door is open. The switch detecting an open door located at [E].

**USE CAUTION:** Be careful not to cut or nick the belts when removing zip ties

# 5.

## CONNECTIONS

- With the power still unplugged, make all connections according to the connection diagram. Make sure water and air connections are not leaking.

- Exhaust System: Use a flat head screwdriver to install the Exhaust Ventilation system to the machine.

**NOTICE:** You will need to remove the rear panel in step 3 to verify connections. Only loosely attach the ducting.

- Cooling System: Press fit the rubber water hoses from the cooling system (water chiller) to the laser machine.
- Air Pump: Press fit the air hose from the air pump to the machine.

- Remove the rear panel.

**NOTICE:** The panel can be opened with all connections made.

- With panel removed, check that all systems are working by powering them on individually. Do not give power to the laser machine during this check.

- Exhaust System: Make sure the ducting is installed and will not come loose. Make sure the fan will not tip over.
- Cooling System: With the rear panel removed, water in the chiller, and all connections made, give power to the chiller and make sure there are no leaks or faulty connections. Confirm that the water is flowing from right to left (towards the first mirror). Perform the "pinch test": Pinch any line from the chiller to the laser and make sure the alarm sounds.
- Air Support System: Ensure that air is flowing to the laser head assembly.

- Give power to the machine and all components.
- Hardware Setup Complete

**WARNING:** Make sure that the power supply matches the machine's requirements as stated on the plate. The PL1220 is prewired for 110V but can be converted to 220V. Please call Customer Support for instructions.

# 6.

## CONFIRMATION OF PROPER SET-UP TEST

You can now place a sample workpiece in the work area and pulse the machine to test that the laser is aligned and working properly.

- Place sample in work area
- Jog the laser head above the sample test piece.
- Fire the laser machine by pushing the pulse command.



**WARNING:** Make sure to remove all zip ties located on the belts prior to jogging the laser head.

# 7.

## SOFTWARE

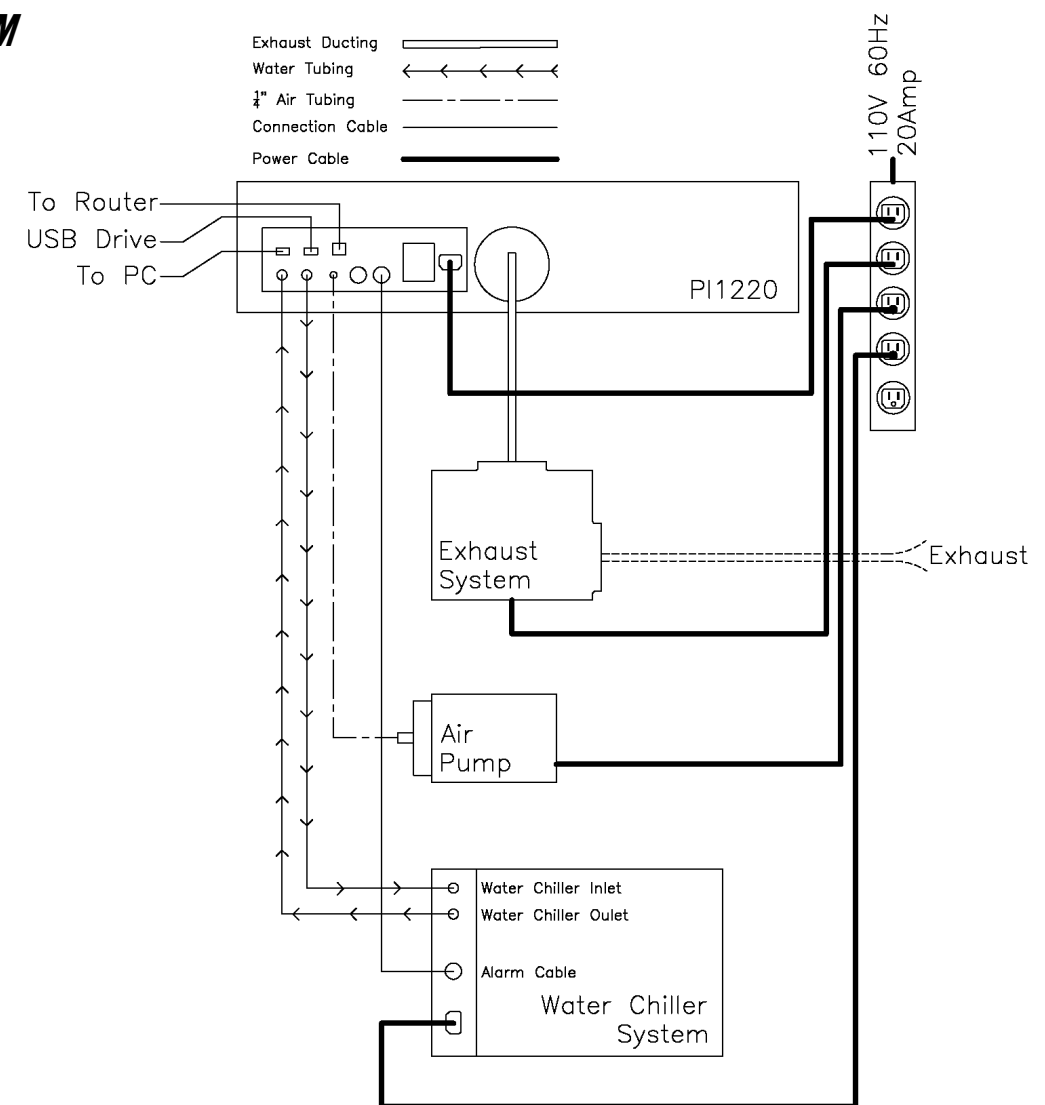
Continue With chosen software installation. Refer to the owner's manual to connect and install RDWorks V8.

**NOTICE:** Please refer to the RDWorks v8 software manual for software related guidance aside from this initial setup.

**NOTICE:** If you plan to use the laser machine with a USB stick only, it is still recommended that the RDWorks software (on PC) is initially synced to the factory preset machine settings.



## CONNECTION DIAGRAM



## LAGUNA LASER

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