

How to Protect Co2 Laser Tube in Winter --Antifreezing Issue of Laser cutting Machine in Winter

The northern parts countries are in winter now, the temperatures below the freezing, this condition will freezing the co2 laser tube cooling water, and causes the tube wall crack. Weather is cold, and at night temperature drops sharply. If the water in the tube is not empty, the cooling layer of the tube will freeze and expand, falling to break down, leading to the laser tube couldn't work properly. And if the tube is froze broken in winter, the laser machine will can not work. It will bring unnecessary losses and delay the production. So its important to prevent freezing in winter and prevent high temperature in Summer.

So how to prevent it in the winter? We'd like to show us warm remind to our new and old customers, who use Laser Cutting Machine with glass laser tube, that the antifreezing measures must be taken well. Hope the following points will help you in the winter to keep the safety using of co2 laser cutting machine.

1. Pay more attention to the weather forecast, keep the indoor temperature is not less than 0 degrees, especially the night temperature, to maintain the indoor temperature is not lower the ice threshold.
2. If the indoor temperature can not be controlled, you can put the cooling water out the laser tube after the daily work.

laser tube:

- (1) please let the silicone tube of inlet and outlet disconnect, blow clean the water inside the laser tube with your mouth or pump, you can also be blow clean by a small gas pump or air compressor. Please make sure the inside of laser tube no water.
- (2) If still has water inside the laser tube, laser tube can be removed, and then empty the water inside. (if so next time need to adjust the optical path, ensure that technicians can master this skill, or we don't advice use this method)
- (3) Keep the room warm. There should be air conditioner in the house to prevent freezing.
- (4) Add anti-freeze fluid to cooling system of laser cutting machine. In winter, we should add anti-freeze fluid to water chiller or bucket to avoid unnecessary trouble. Usually there is a dilution ratio for anti-freeze fluid. According to local temperature and instructions of the anti-freeze fluid, mix with water.
- (5) You can also use antifreeze instead of ordinary water for cooling cycle.

Water pump and water chiller:

- (1) Note (for water pump user): the black tube in water cycling device is water protection device. We should make sure to outwell the water, otherwise, water protection device should be damaged in cold days.
- (2) Prevent water pump freezing. Let out the water in water pump, keep the room warm or take it somewhere warm or add anti-freezing fluid to the bucket. (Mix with water according

to instructions)

(3) There is a dirt outlet and a turning head under the water chiller, it's convenient to let out the water. Then take the water chiller to somewhere warm and add clear water into it when using next time. Or take the water chiller somewhere warm that may not freezing. Or add anti-freezing fluid to the bucket. (Mix with water according to instructions)

3. Keep the circulating water clean. The laser tube cooling water is better use pure water or mineral water, if you use tap water, you need to always change the water in order to ensure that the water clean, to avoid dirty to block the laser cycle channel. CO2 laser tube is cooled by water, when it is around 25°C, energy of the tube will be strongest.

To avoid water pipe freezing and block. Blow out water in water pipe with mouse air pump or a small air compressor.

In order to avoid unnecessary losses, as your love machine "add warm clothing," thank you!

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