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Comgrow CK-Air-assist

Comgrow Air Assist for Laser Cutter and Engraver User Manual

Model: CK-Air-assist | Brand: Comgrow

1. INTRODUCTION

The Comgrow Air Assist system is designed to enhance the performance of laser cutting and engraving machines. By providing a focused stream of air, it effectively removes smoke and debris from the laser's path, protects the laser lens, reduces surface temperature of the material, and results in cleaner cuts and engravings.

This manual provides detailed instructions for the proper installation, operation, and maintenance of your Comgrow Air Assist system.



Image 1.1: The Comgrow Air Assist pump and its included accessories.

2. SAFETY INFORMATION

Please read and understand all safety warnings and instructions before operating the Comgrow Air Assist system. Failure to do so may result in injury or damage to the equipment.

- Always ensure the air assist pump is placed on a stable, level surface.
- Do not block the air intake or exhaust vents of the pump.
- Ensure all electrical connections are secure and conform to local electrical codes.
- Keep the air assist system away from water or other liquids.
- Always disconnect power before performing any maintenance or adjustments.
- Use appropriate personal protective equipment (PPE) when operating laser equipment, including eye protection.

3. PACKAGE CONTENTS

Verify that all items listed below are present in your package. If any items are missing or damaged, please contact

Comgrow support.



Image 3.1: Visual representation of the accessory list.

1. Air Pump x1
2. XT Shield x1
3. XT Blow Head x1
4. Z1 5W Blow Head x1
5. Extended Square Bent x1
6. Square Bent x1
7. Variable Coupling x1
8. $\Phi 10$ Air Tube x1
9. Z1 Pipe Support x1
10. XT Pipe Support x1
11. M3*30 Screws x2
12. M3*10 Screws x2
13. Phillips Screwdriver x1
14. $\Phi 6$ Air Tube x1
15. High Temperature Resistance Masking Tape x1
16. M3*3 Screws x1
17. Spanner x1
18. Zip Tie x6

4. SETUP AND INSTALLATION

The Comgrow Air Assist is designed for easy installation and is compatible with various laser heads, including Comgrow and xTool D1/D1 Pro models. Follow these steps for proper setup:

1. **Identify Your Laser Module:** Determine which blow head and pipe support are appropriate for your specific laser module (e.g., XT Blow Head for xTool, Z1 5W Blow Head for Comgrow Z1 5W).
2. **Attach Blow Head and Support:** Secure the chosen blow head to your laser module. Use the corresponding pipe support and screws (M3*30 or M3*10) to firmly attach it. Ensure all screws are tightened.
3. **Connect Air Tube:** Connect the appropriate air tube ($\Phi 10$ or $\Phi 6$) from the blow head to the air pump's output nozzle. Use zip ties to manage the tubing and keep it clear of moving parts.
4. **Power Connection:** Plug the air pump into a standard 110VAC power outlet. The pump features an adjustable airflow control dial.

Compatible with Comgrow and xToo* D1 laser module

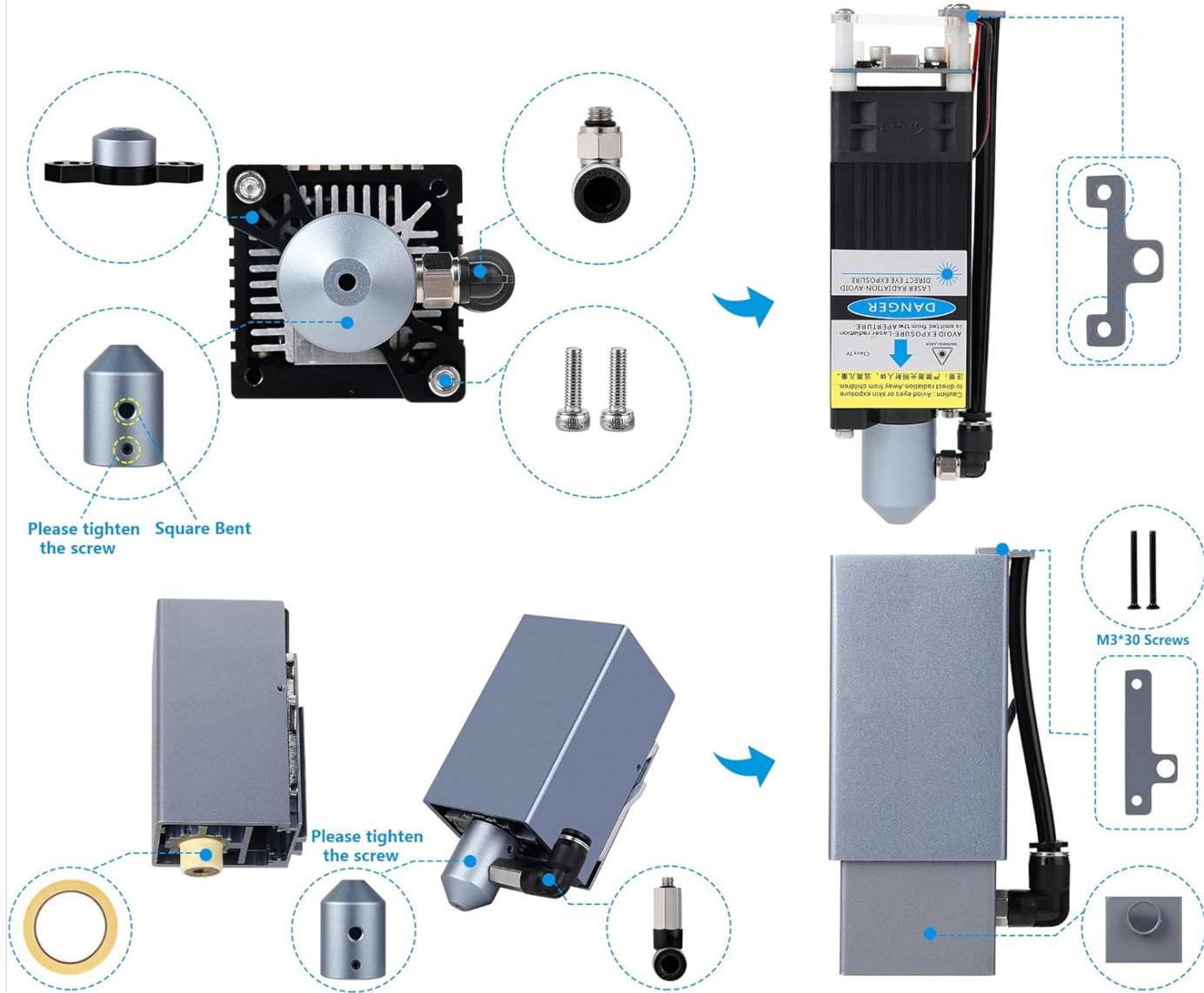


Image 4.1: Installation diagram for various laser modules, showing attachment points for the blow head and pipe support.

Comgrow Air Assist Contains with a 110vAC Power Supply



Image 4.2: The Comgrow Air Assist pump connected to a laser engraver, illustrating the power supply connection.

Note: Some laser modules may require minor adjustments or different focus distances after installing the air assist nozzle. It is recommended to recalibrate your laser's focus after installation to ensure optimal performance.

5. OPERATING INSTRUCTIONS

The Comgrow Air Assist pump provides adjustable airflow to optimize your laser cutting and engraving results.

5.1. Airflow Adjustment

The air pump is equipped with an adjustable airflow control, ranging from 0 to 25L/min. Turn the dial on the power cord to increase or decrease the airflow. The optimal airflow setting will depend on the material being processed and the desired outcome. Experiment with different settings to find the best balance for your specific task.



Image 5.1: The Comgrow Air Assist pump in operation, illustrating its key advantages.

5.2. Benefits During Operation

- Cleaner Cuts and Engravings:** The air stream blows away smoke and molten debris, preventing them from adhering to the material surface and resulting in sharper, cleaner edges.
- Reduced Scorching:** By dissipating heat from the laser's focal point, the air assist helps to reduce charring and scorching on the material, especially on wood and acrylic.
- Faster and Deeper Cuts:** Efficient removal of debris allows the laser to penetrate materials more effectively, potentially enabling faster cutting speeds and deeper cuts.
- Laser Lens Protection:** The constant airflow prevents smoke and dust particles from accumulating on the laser lens, extending its lifespan and maintaining optimal laser performance.

Cleaner Cuts With Air Assist



With Air
Assist



No Air
Assist



Image 5.2: A visual comparison demonstrating the improved cut quality achieved with air assist versus without.



Image 5.3: Illustrates how air assist contributes to achieving thicker and faster cuts compared to operations without it.

Accessory List

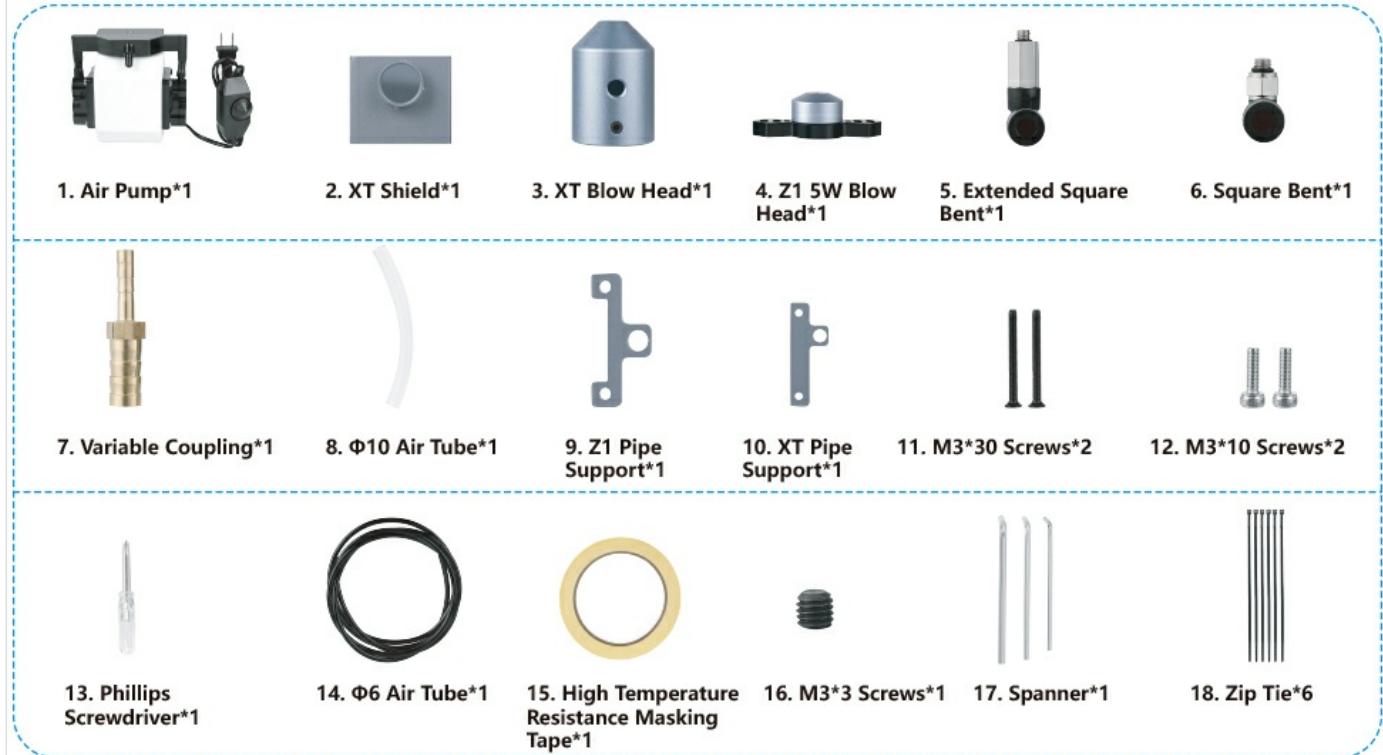


Image 5.4: A detailed comparison highlighting the benefits of air assist in smoke removal and laser head protection.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Comgrow Air Assist system.

- Cleaning:** Periodically wipe down the exterior of the air pump with a dry, soft cloth. Ensure the air intake and exhaust vents are free from dust and debris.
- Air Tube Inspection:** Check the air tubes for any kinks, blockages, or damage. Replace if necessary to maintain consistent airflow.
- Nozzle Inspection:** Ensure the air assist nozzle on the laser module is clean and free from any residue that might obstruct airflow.
- Electrical Connections:** Verify that all power connections remain secure.

7. TROUBLESHOOTING

If you encounter issues with your Comgrow Air Assist system, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No airflow from nozzle.	<ul style="list-style-type: none"> Pump not powered on. Air tube kinked or blocked. Nozzle obstructed. Pump malfunction. 	<ul style="list-style-type: none"> Ensure pump is plugged in and power switch is on. Check air tube for obstructions or damage. Clean the air assist nozzle. Contact Comgrow support if pump does not operate.

Problem	Possible Cause	Solution
Poor cutting/engraving quality despite air assist.	<ul style="list-style-type: none"> Incorrect airflow setting. Laser focus is off. Material parameters not optimized. 	<ul style="list-style-type: none"> Adjust airflow dial to an appropriate level for the material. Recalibrate laser focus, especially after installing the air assist nozzle. Review laser power and speed settings for the specific material.
Pump is excessively noisy or vibrating.	<ul style="list-style-type: none"> Unstable placement. Internal issue. 	<ul style="list-style-type: none"> Ensure the pump is on a stable, flat surface. The rubber feet should reduce vibration. If noise persists, contact Comgrow support.

8. SPECIFICATIONS

Feature	Detail
Product Dimensions	5.91 x 3.94 x 1.97 inches
Item Model Number	CK-Air-assist
Item Weight	5.3 ounces
Manufacturer	Comgrow
Airflow (Adjustable)	0 to 25 L/min
Power Supply	110VAC (standard)

9. WARRANTY AND SUPPORT

Comgrow products are designed for quality and reliability. For warranty information, technical support, or to report missing/damaged parts, please contact Comgrow customer service through their official website or the platform where the product was purchased.

Please have your product model number (CK-Air-assist) and purchase details ready when contacting support.