

Operation & Safety Instructions

1. Operation Procedure

1.1 Machine Startup

- (1) Turn on the air switch
- (2) Turn on the computer
- (3) Release the emergency stop switch
- (4) Turn on the key switch (alarm light turns red)
- (5) Open marking software
- (6) Press the RUN start button
(alarm light changes from red to green)
- (7) Turn on the galvanometer power switch (SCAN)
- (8) Turn on the laser power supply (LASER)
(The alarm light changes from yellow to green)

1.2 Machine Shutdown

- (1) Turn off the laser power supply (LASER)
- (2) Turn off the galvanometer power supply (SCAN)
- (3) Close marking software
- (4) Turn off the key switch (KEY)
- (5) Press the emergency stop switch
- (6) Turn off the computer
- (7) Press the air switch

2. Safety Instructions

- (1) Personnel who have not been trained by our company are strictly prohibited from operating the machine.
- (2) Avoid direct exposure to laser radiation, as it may cause serious burns.
- (3) Do not look directly at the laser beam.
- (4) To ensure operator safety, maintenance work must be performed only after the machine is powered off.
- (5) Disconnect the main power supply before any maintenance.

- (6) The machine should be placed in a dust-free, smoke-free, and humidity-free environment.
- (7) Keep the working area well ventilated.
- (8) Do not place flammable or explosive materials around the machine to prevent fire hazards.
- (9) Do not operate the machine under abnormal conditions.
- (10) If any abnormal situation occurs, immediately turn off the main power and contact our company.
- (11) Our company is not responsible for any damage caused by illegal operation, failure to stop the machine, or failure to report issues in time.
- (12) The motor lifting control switch (MOTOR) must not be operated continuously.
- (13) Only use it when adjustment is required.
- (14) The MOTOR switch must be released immediately after the required position is reached to avoid motor damage.
- (15) To ensure normal machine operation, do not turn on the SCAN and LASER switches before starting the computer.
- (16) Before shutting down the machine, please turn off the LASER switch first, and then shut down the computer.

3. Anti-Freeze & Anti-Condensation Requirements

- (1) Recommended environmental humidity: $\leq 70\%$
- (2) Recommended temperature range: $5^{\circ}\text{C} - 30^{\circ}\text{C}$
- (3) Best working environment temperature: $20^{\circ}\text{C} - 25^{\circ}\text{C}$

Important Notes

- (1) When the ambient temperature is lower than 5°C , the cooling water may freeze. Frozen water may expand and cause serious damage to the cooling system, including burst pipes and equipment failure.
- (2) Below 5°C , antifreeze must be added to the cooling system.
- (3) The recommended antifreeze concentration is at least 25%, and up to 35%.

Recommended Antifreeze

Recommended ratio:

1 part antifreeze : 1 part water

Recommended brands:

- DOWFROST™ HD
- DOWTHERM™ SR-1
- DOWTHERM™ 4000

High Temperature Warning

When the ambient temperature exceeds 30°C, condensation may occur, which may cause electrical and optical component failures.

It is strongly recommended to install air conditioning in the workshop to maintain a stable operating environment.

Important Notice

Damage caused by freezing, condensation, or poor environmental conditions is not covered under free warranty service.