USE THE RIGHT LEVEL OF ADJUSTMENT

Troubleshooting engraving and cutting results

Distinguish an object multiplier, shared settings and physical setup before choosing a retest.

Software practice and review

Keep **No Machine** selected and stay **disconnected** for project exercises. Supplied operation values are software examples, not tested material recipes. Keep originals and save your own work separately.

One object	Whole run	Setup
Power Scale	Units and override	Focus and material

Distinguish a single-object multiplier, shared run settings and physical setup evidence.

1. A layer at 60% with an object Power Scale 50% commands 30%. Change an object multiplier only when the brief calls for that object to differ.

2. Check shared speed, power, passes and units before increasing power. 20 mm/s equals 1200 mm/min. A session Power override can also affect the whole job.

3. For GRBL, match profile S-value Max to the actual $30 setting. Do not rewrite firmware to match a course number.

4. For an incomplete cut, compare the identified material/batch, thickness, focus, airflow and maintenance record. Keep stock fixed while deciding what happened.

5. A zero Laser S report during Hold or travel can be normal. It is not an optical-power measurement or proof of failed hardware. Keep every interlock working.

6. For dark/fuzzy detail, separate changed image/interval/power settings from lifted stock, dirty optics or loose hardware. Stop/isolate as directed for physical checks.

INDEPENDENT POWER SCALE TARGET

Independent Power Scale target

Open **power-scale-fix-start.lzrproj**. Keep the shared layer 60%, 1200 mm/min and one pass. The brief wants Middle square to command 45%, while its neighbors remain at 100% scale.

1. Calculate the multiplier before opening the case answer. Change only Middle square's Power Scale %.

2. Keep all three 20 x 20 mm shapes and their positions unchanged.

3. For offline Preview, temporarily enable the Line entry, turn Show Travel off and Shade by Power on. Shading depicts planned power.

4. Close Preview, return entry Output off, and save separately. Compare **power-scale-case-answer.lzrproj**; **power-scale-fix-answer.lzrproj** is the separate demonstration.

What Power Scale commands 45% from the 60% layer?

What do the neighbors command, and what should stay unchanged?

DIAGNOSTIC REVIEW AND ANSWERS

Diagnostic review and answers

A 20 mm/s record was entered as 20 mm/min, and override is reduced. Does the speed mismatch alone explain faint output?

Paused/Hold with Laser S 0 leads someone to blame the module and bypass the lid. What do you conclude?

Letters are dark, a corner is lifted, and both power and interval changed. What happens before a useful comparison?

Object target
45/60=0.75, so set 75% scale. The neighbors remain at 60% commanded power.

Units
20 mm/min is 60 times slower than 1200 mm/min. At unchanged command power that increases exposure in a simple comparison; investigate shared configuration and setup.

State
A held zero is a snapshot, not a failed-module diagnosis. Keep interlocks intact and use the exact stopped inspection procedure.

Comparison
Resolve support/flatness/focus, then compare one suitable parameter at a time under recorded conditions.

For a flare-up, stop promptly and follow the machine fire procedure. Stay with a running laser; do not keep adjusting a live job while a fire develops.

FILES AND COMPARISONS

Files and comparisons

One object weak
Folder one-object-weak. **power-scale-case-answer.lzrproj**, **power-scale-fix-answer.lzrproj**, **power-scale-fix-start.lzrproj**. Keep this chapter's inputs and comparisons together.

Use the comparison after your attempt. Check the specified dimensions, settings and object structure.