



LIGHTBURN LAYER GUIDE



SET IT RIGHT.
CUT CLEAN.
CREATE MORE.



SIMPLE REFERENCE FOR SETTING LAYERS CORRECTLY

BEFORE CUTTING A PAINT PARTY FILE

1 CUT LAYERS



These layers cut completely through the material.

Used for the outer shape and any pieces that need to be removed.

SETTINGS GUIDE

- Mode: **Line**
- Output: **On**
- Air Assist: **On**
- Speed: **Varies by material**
- Power: **Varies by material**

TIPS

- ✓ Use a bright color (Red is most common)
- ✓ Make sure this layer is ON
- ✓ Confirm pieces are selected before cutting

2 SCORE LAYERS



These layers score (or etch lightly) to create fold lines or bend guides.

Common for 3D projects and hinged designs.

SETTINGS GUIDE

- Mode: **Line**
- Output: **On**
- Air Assist: **On**
- Speed: **Slower**
- Power: **Lower**

TIPS

- ✓ Use a medium color (Blue or Green)
- ✓ Run a test on scrap material
- ✓ Adjust power for a light score, not a deep cut

3 ENGRAVE LAYERS



These layers engrave text, designs, or details into the surface.

Does not cut through the material.

SETTINGS GUIDE

- Mode: **Fill**
- Output: **On**
- Air Assist: **On**
- Speed: **Slower**
- Power: **Lower**

TIPS

- ✓ Use a dark color (Black is most common)
- ✓ Use Fill + Lines for best text results
- ✓ Test to get the right contrast and depth

4 PREVIEW CHECKLIST



Always preview your file before cutting to catch mistakes early.

A few seconds now can save a lot of material!

- All cut layers are set to LINE mode
- All score layers are LINE mode with lower power
- All engrave layers are FILL mode
- Correct colors are used for each layer type
- All layers are visible (eye icon is on)
- Preview the selected graphics
- Check for stray lines or duplicates

COMMON COLORS (EXAMPLE ONLY)

- Cut Lines (Red)
- Score Lines (Blue)
- Engrave Lines (Black)
- Notes / Reference (Green)



PRO TIP

Create a layer color + mode key template and save it with every project. It keeps your files consistent and easy to use!

LAYER ORDER MATTERS

LightBurn cuts in order from top to bottom (lowest layer number first).

Use the Layer List to organize the order you want operations to run.

*Plan well. Cut smart.
Create memories!*



LIGHTBURN POWER USER GUIDE



ESSENTIAL TIPS & BEST PRACTICES FOR FASTER PRODUCTION AND CLEANER FILES

1. FILE CLEANUP & OPTIMIZATION

FIXING DOUBLE OUTLINES

Double outlines cause longer cut times, duplicate cuts, burn marks, and poor fitment.

- Edit → Delete Duplicates
- Select Similar Shapes
- Always preview before cutting

REDUCING EXCESSIVE NODES

Too many nodes can slow your laser, create rough cuts, and cause jerky movement.

- Edit → Simplify Shape
- Adjust until shape is smooth
- Redraw simple objects when necessary

OPEN SHAPES

Open shapes can cause missing fills, unexpected cut paths, or engraving gaps.

- Edit Nodes to inspect
- Use Auto Join (T) with a small tolerance
- Use Close Path tool to close gaps

2. SPEED UP YOUR PRODUCTION

OPTIMIZE CUT ORDER

Recommended order for best results:

1. Engrave
2. Score
3. Cut Internal Details
4. Cut Outside Shape Last

Benefits: Better alignment, fewer shifting pieces, and cleaner results.

REDUCE TRAVEL MOVES

Unnecessary travel slows production and increases wear.

- Use Optimize Cut Path
- Group related objects
- Nest projects tightly

Benefits: Faster production, less machine wear, smoother motion.

NEST MULTIPLE PROJECTS

Nesting saves material and time.

- Use Tools > Nesting
- Adjust spacing as needed
- Leave enough room for smoke evacuation

Great for kits, ornaments, signs, and craft fair inventory.

3. LAYER ORGANIZATION SYSTEM

RECOMMENDED LAYER COLORS

- Red = Cut
- Blue = Score
- Black = Engrave
- Green = Reference

BENEFITS

- Faster troubleshooting
- Consistent workflow
- Fewer mistakes
- Easier to train others

TIP: Lock completed layers to avoid moving them by accident.

4. COMMON LIGHTBURN MISTAKES

MY LASER CUTS TWICE

Possible Causes:

- Duplicate vectors
- Duplicate layers
- Multiple operations assigned

Solutions:

- Delete duplicates
- Verify layer assignments
- Run Preview before cutting

ENGRAVING TAKES FOREVER

Possible Causes:

- DPI too high
- Excessive fill area
- Oversized artwork

Solutions:

- Lower DPI (200-300 is usually enough)
- Crop artwork to size
- Use Line mode when possible

PIECES DON'T LINE UP

Possible Causes:

- Material shifted
- Wrong cut order
- Design moved accidentally

Solutions:

- Cut inner shapes first
- Use pins or hold-downs when possible
- Lock completed layers
- Do a test cut

5. PAINT PARTY FILE DESIGN RULES

GOOD FILES

- ✓ Large paintable sections
- ✓ Thick lettering and fonts
- ✓ Simple shapes
- ✓ Easy assembly
- ✓ Minimal engraving
- ✓ Few layers
- ✓ Beginner friendly

AVOID THESE

- ✗ Tiny script
- ✗ Fragile details
- ✗ Hundreds of pieces
- ✗ Heavy engraving
- ✗ Overly complex assembly
- ✗ Designs hard for beginners

DESIGN FOR YOUR GUESTS,
NOT JUST YOUR LASER.

Simple sells. Easy to paint = happy guests!

6. PRODUCTION WORKFLOW

- 1 Import SVG
- 2 Check for duplicates
- 3 Assign layers
- 4 Run Preview
- 5 Test cut one piece
- 6 Cut full batch
- 7 Assemble sample
- 8 Package kits

ALWAYS TEST ON SCRAP
BEFORE CUTTING YOUR
GOOD MATERIAL!

7. ADVANCED LIGHTBURN FEATURES TO KNOW

OFFSET SHAPES

Create borders, shadows, and layered designs quickly.

BOOLEAN TOOLS

Use Weld, Subtract, Intersect, and Union to create complex designs.

ARRAY TOOL

Make multiple copies in rows or columns in seconds.

PRINT & CUT

Add registration marks for stickers, printable projects, and labels.

CAMERA SYSTEM

See your material on screen. Place designs perfectly. Use every inch of material.

VARIABLE TEXT

Create custom names, numbers, and labels fast.

GLOBAL SETTINGS

Save time by setting your most used preferences.

MACROS

Automate repetitive tasks and build your own shortcuts.

8. SETTINGS & FILE BACKUPS

BACK UP THESE ITEMS

- Device Settings
- Material Library
- Cut Settings
- Custom Buttons
- Templates
- Workspaces

HOW TO BACK UP

1. Edit → Preferences
2. Export Settings
3. Save to a safe location (USB, cloud, or external drive)
4. Transfer easily to another computer or machine



A FIVE-MINUTE BACKUP TODAY
CAN SAVE HOURS LATER.