RedShift Laser Parameter Tuning Checklist

Pre-Cut Inspection

- [ ] Lens is clean and free of debris
- [ ] Mirrors are aligned properly
- [ ] Focus is set correctly for material thickness
- [ ] Assist gas pressure is verified
- [ ] Nozzle is clean and undamaged
- [ ] Material is flat and secured
- [ ] Exhaust ventilation is on

Test Cut Procedure

- [ ] Use scrap material from same batch
- [ ] Start with "Optimal" speed (not "Max")
- [ ] Cut simple test shapes:
  - [ ] 50mm straight line
  - [ ] 20mm square
  - [ ] 20mm diameter circle
- [ ] Inspect results for:
  - [ ] Complete cut-through
  - [ ] Edge quality (smoothness, no charring)
  - [ ] Kerf width consistency
  - [ ] Dross on bottom

Parameter Adjustment

If cut doesn't go through:

- [ ] Reduce speed by 10%
- [ ] Re-test
- [ ] If still not through, reduce another 10% or increase power 5%

If cut is burned or too wide:

- [ ] Increase speed by 10%
- [ ] OR reduce power by 5%
- [ ] Re-test

Important: Only change ONE parameter at a time!

Results Recording

Record in your parameter library:

- [ ] Material type and supplier
- [ ] Thickness (measured)
- [ ] Power setting (%)
- [ ] Speed (mm/s)
- [ ] Focus position
- [ ] Gas type and pressure
- [ ] Result rating (1-5)
- [ ] Notes/observations
- [ ] Date tested

Troubleshooting Quick Reference

Problem	Likely Cause	Solution
Top cuts, bottom doesn't	Focus too high	Lower focus to mid-thickness
Burning/charring	Too much power / too slow	Reduce power or increase speed
Incomplete cut	Not enough power / too fast	Increase power or reduce speed
Tapered kerf	Focus wrong	Adjust focus position
Dross on bottom	Insufficient gas flow	Increase assist gas pressure