

# Aradhana AR-3015 CNC Laser Cutting Machine – User Manual (Simplified)

## 1. Machine Overview

The Aradhana AR-3015 is a fiber laser cutting machine designed for high-speed and precise cutting of metal sheets. It supports a cutting area of 3000 × 1500 mm, laser power ranging from 1–20 kW, and a maximum moving speed of 140 m/min.

**Key Features:** - Fiber laser cutting with CM, YK, and Varnish options - Repositioning accuracy:  $\pm 0.02$  mm - LED water cooling system - Bilateral drive with sprocket chain - Control system: Cypcut - Compatible with metals like stainless steel, carbon steel, aluminum, brass, copper

## 2. Safety Guidelines

- Always wear protective eyewear and gloves.
- Ensure proper ventilation to avoid fume accumulation.
- Keep hands away from laser path and moving parts.
- Do not operate without water cooling active.
- Emergency stop button must be accessible.

## 3. Installation & Setup

1. Place the machine on a flat, stable surface.
2. Connect AC 220V power supply.
3. Fill and check water cooling system.
4. Connect control system to computer and configure Cypcut software.
5. Load appropriate material onto the cutting bed and secure properly.
6. Check alignment and calibration.

## 4. Basic Operation

1. Power on the machine and control system.
2. Home all axes using the software.
3. Load cutting design (DXF/DWG file).
4. Set laser power, cutting speed, and focus based on material thickness.
5. Run a test cut to verify settings.
6. Start full cutting operation.
7. Monitor cutting process for smooth operation.
8. Upon completion, remove cut material carefully.

## 5. Maintenance

- Clean laser lens and mirrors regularly.
- Check water level and quality frequently.
- Inspect drive system for wear and lubricate as needed.
- Ensure proper software updates.
- Maintain clean and debris-free cutting area.

## 6. Troubleshooting

Issue	Possible Cause	Solution
Incomplete cutting	Incorrect laser power	Adjust power and speed
Poor edge finish	Dirty lens or misalignment	Clean lens, check alignment
Material not cutting	Laser head not focused	Adjust focus and recalibrate
Alarm on control panel	Program or material error	Verify cutting program and material setup

## 7. Operational Area

- Cutting metals: stainless steel, carbon steel, aluminum, brass, copper
- Sheet thickness: Various thicknesses depending on laser power
- Applications: Industrial metal fabrication, signage, promotional items, precision parts