

# ADVANCE E-3015B HIGH SPEED SERVO FIBER LASER CUTTING MACHINE DUAL 5'X10' PALLET SHUTTLE TABLE





#### ADVANCE E3015-B FIBER LASER PRICING SUMMARY

#### **1** ADVANCE CUTTING SYSTEMS Fiber Laser Cutting Machine

- High Speed Helical Rack & Pinion Drive System
- Ball Screw Z Axis
- AC SERVO Drives
- 5,511 IPM (140m/min) Rapid Traverse Speed
- FS-CUT CNC Control with Cyp-Cut Programming Software
- Wireless Remote Machine Control
- Cutting Head <u>AUTO Focus</u>
- Dual Pallet Shuttle Tables
- Red Diode Laser Pointer
- Laser Generator
- Class 1 Enclosure for Laser Power Supply



# SPECIFICATIONS:

| FIBER LASER MODEL         | <u>E-3015B</u>                  | E-4020             | E-4060            |  |  |
|---------------------------|---------------------------------|--------------------|-------------------|--|--|
| Max Cutting Area is       | <u>60" x 120",</u>              | <u>72" x 144",</u> | <u>72" x 240"</u> |  |  |
| X/Y MAX POSITIONING SPEED | 5,511ipm                        |                    |                   |  |  |
| X/Y MAX ACEL.             | 1.0g or faster                  |                    |                   |  |  |
| Z AXIS MAX POSITIONING    | 1,181ipm                        |                    |                   |  |  |
| MAX SHEET WEIGHT          | 1,600lbs. / (0.8 tons)          |                    |                   |  |  |
| TABLE EXHAUST             | Zoned Downdraft                 |                    |                   |  |  |
| CNC CONTROL               | FSCut V2.0- Windows 10 PC Based |                    |                   |  |  |
| DRIVES                    | High Speed AC Drives            |                    |                   |  |  |
|                           |                                 |                    |                   |  |  |



- Cutting Table with Clean-Out Drawers
- Cutting Table with Automatic Lubrication System



## **Cutting Thickness**

| Material              | 1000W    | 1500W    | 2000W    | 3000W    | 4000W    | 6000W    |  |  |
|-----------------------|----------|----------|----------|----------|----------|----------|--|--|
| Max Cutting Thickness |          |          |          |          |          |          |  |  |
| Carbon                | 10mm     | 12mm     | 16mm     | 20mm     | 22mm     | 22mm     |  |  |
| Steel                 | (0.394") | (0.472") | (0.63")  | (0.787") | (0.886") | (0.886") |  |  |
| Stainless             | 5mm      | 6mm      | 8mm      | 10mm     | 12mm     | 16mm     |  |  |
| Steel                 | (0.197") | (0.236") | (0.315") | (0.394") | (0.472") | (0.63")  |  |  |
| Aluminum              | 3mm      | 4mm      | 6mm      | 8mm      | 10mm     | 16mm     |  |  |
|                       | (0.118") | (0.157") | (0.236") | (0.315") | (0.394") | (0.63")  |  |  |
| Brass                 | 2mm      | 4mm      | 5mm      | 6mm      | 8mm      | 10mm     |  |  |
|                       | (0.079") | (0.157") | (0.197") | (0.236") | (0.315") | (0.394") |  |  |

1000, 1500 and 2000-Watt Laser

3,000, 4,000 and 6,000 Watt Laser







## FSCut CNC Control System



#### CypCut Control Platform

• The equipment uses FSCUT laser cutting control system, equipped with a large screen display. Based on a Windows operating system, FSCUT integrates many laser cutting modules with special functions. Equipped with a wireless keyboard and mouse, the operation is simple and easy.

• We provide full-featured CypCut cutting software. This software is feature-rich and highly simplifies and optimizes the cutting process, significantly improving operator efficiency and productivity.

• CypCut provides common drawing functions that can be readily accessed from the left drawing toolbar. Most of these drawing functions are similar to AutoCAD, and they are also very intuitive to use. The software has a variety of user-friendly graphical operating functions that are simple and quick to get started.





CypCut software supports graphic data formats such as AI, DXF, PLT, Gerber, and LXD, accepts international standard G codes generated by Master Cam, Type3, and other software, and automatically optimizes when external files such as DXF are opened/imported, saving time and efficiency.

- In order to obtain high-quality acute and right angles, the software is equipped with real-time frequency and
  power curves, and the power of the laser radiation is automatically adjusted according to the speed of
  movement of the cutting head. When the cutting head is at zero speed (at the time when the corner is
  stopped), the output radiant power is equal to the minimum power set in the setting to prevent burnout of
  the corners.
- The engraving and cutting modes are set individually by the operator before the cutting starts. The operator can reconfigure the machine and enter new settings without having to stop the material handling process. Switching between modes occurs automatically, which increases the productivity of the cutting complex.
- CypCut software reads the special material library, selects the corresponding material library parameters according to different materials, and modifies the storage operation.
- CypCut provides 16 layers, and each layer can be individually set including cutting speed, laser power, air pressure, cutting height and other process parameters. The color of each layer is unique, which is convenient for browsing and configuring cutting graphics parameters.
- The simplicity of the CypCut software allows you to shorten the time the mid-level expert learns the basic work of the machine. The work cost of mid-level experts will be much lower than highly intelligent experts, which will have a positive impact on production costs. The software also allows monitoring and control of the installation system: tracking systems, cooling systems, lasers, and viewing node logs.
- The BCS100 self-contained capacitor height adjuster (abbreviated as BCS100) adopts a closed-loop control method to control the laser-cutting capacitor follower and provides a unique Ethernet communication (TCP/IP protocol) interface. It is easy to implement high-speed automatic tracking and sharing with CypCut software. Section perforation, progressive perforation, edge-seeking cutting, frog-leaping lifting, cutting head elevation setting, flight optical path compensation, etc. The BCS100 adopts a double-closed-loop algorithm with speed and position. Its performance, such as speed and accuracy, is significantly better than similar products from domestic and international markets.

#### **Cutting Database**

The laser system features an integrated cutting database with parameters for many common material and atypical material-cut conditions. The machine operator can make modifications to the cutting database at the control panel. The cutting database management software can list all of the available material files or can requested to display only those files that meet certain criteria. For example, the system can display only those materials of a particular type or thickness that fit in a process group. Using the cutting database management system, the operator can select the closest existing cutting data file as a starting point for the next cutting application or a different application (precision, standard, high speed, etching, etc.)



# Cutting Table / Zoned Downdraft / Shuttle Table Base



- Utilize state-of-the-art welding technology used to form the machine tool base.
- Heat treatment to strengthen the intensity and stiffness of the base.
- Mechanical stress relief.
- Patented machine base design: the structure matches industrial machine tool standards with high accuracy and rigidity and machine mechanical stress has been completely removed during the process of welding and machining.
- Machine frame has been designed and welded in beehive structure which effectively spread the thrusting force produced by motion of electric motor to every part of the machine so when in operation, the machine is extremely stable.





# Zoned Downdraft Table



The zoned downdraft table helps to extract the dust and metal particles while the machine is running to protect the laser equipment and keep the entire workspace in a clean condition. When the cutting head moves to each separate cell, it will automatically trigger the extraction function within that specific area and extraction from other cells will shut down. This design can focus the extraction power into only one working cell to increase the extraction capacity.

# Shuttle Table Drive



- Utilizes high intensity chain clusters which are extremely stable and reliable. The switching velocity of the exchanging cutting table is only 8-15 seconds.
- Double running mode prevents off-center running and collision and is convenient for loading and unloading materials, and ease of waste removal.



### Motion System – Servo Drive with Helical Rack and Pinion

The material remains stationary on the cutting table as the cutting head moves in the X, Y and Z-axes. This high precision three axis drive system consists of re-circulation ball lead screws in the Z-axis with dual high speed helical rack and pinion drives in the X & Y-axes. The result is faster part processing with a quieter and smoother drive system. In conjunction with the guides, the motion accuracy and positioning speeds provides exceptional performance.



### **High Speed Cutting Head**

- Auto Focus Cutting Head
- Motorized focus position adjustment for automatic machine setup and piercing work.
- Lightweight and slim design created for fast acceleration and cutting speed.
- Drift-free, fast-reacting distance measurement
- Permanent protective window monitoring
- Straight and angled design versions adapted to the machine concept
- Completely dustproof beam path with protective windows
- Display of operating parameters and interface for machine control. Pressure monitoring in the nozzle area (gas cutting) and in the head



#### **Pressure Regulator**

Automatic internal gas pressure regulator: The CNC control regulates the gas/air cutting pressure based on material type and thickness to produce an outstanding quality cut without wasting expensive O2 or NO2 gas. The automatic pressure regulation reduces gas consumption by 30%-40% while increasing the production capacity to 60% or higher.





The chiller system pumps the refrigerated water circulating inside the laser cutting system to keep the laser resonator, optics and cutting head at a constant low temperature. The chillers are designed with high accuracy temperature control and reliable performance to consume less energy than conventional chillers. Customer supplied distilled water is required to be added to the chiller at the initial installation and for routine maintenance.



# **Air-Conditioned Control Cabinet**

The machine is equipped with an air-conditioned control cabinet, which meets the EU and USA machine standard. An independent air conditioner reduces the heat generated by the electrical control panel and extracts dust and small particles, so the power supply runs safely and continuously.

### Laser Enclosure

The machine is supplied with an enclosure around the cutting table which helps to improve dust collection and protects from scattered beam reflection/refraction. The cutting area is still accessible through the interlocked doors and the cutting process can be viewed through the windows around the machine.

As standard the Shuttle table has a laser curtain around it that only activates when the tables are shuttling material in and out of the laser. Once the motion has stopped the curtain turn off so the operator can load and unload the sheets.



#### Consumables

The machine is supplied with focus lenses, cutting nozzles and slat tables. These items will need to be cleaned and replaced at a frequency dependent on usage. Additional consumables such as oils, lubricants and other items will need to be purchased by the customer on an as needed basis.



#### **Recent installs**









