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Purchasing a Laser Welder for your shop

The decision to purchase a laser welder is an important one and should be considered carefully. The investment you make may be the highest priced tool you ever purchase for your shop and as such needs to be the right one. Laser welders are wonderful tools that can result in a multitude of benefits including;

- Reduced repair times
- Stronger repair joints
- The ability to repair eyeglass frames
- Easy costume jewelry repairs
- Titanium welding
- The ability to create unique custom designs

With these benefits in mind and the financial implications for your shop, what should you look for in a laser welder? The following are some questions you should consider to insure the best solution for your particular situation.

1. Features & Functionality:

- How much room do you have in your shop for a laser welder? The answer will dictate whether you shop for a full sized (pedestal mount) system or a smaller desktop model.

- How much power do you need? With powers available in the range of 25 joules to as high as 150 joules, it can be confusing. Full sized pedestal units typically range from 60 to 150 joules while the desktop units are under 60 joules. The general rule of thumb is that if you do more than 50% of your work on silver, then you should choose a laser with more than 80 joules of power. Many vendors have introduced higher and higher powered lasers which are way above what is needed for laser welding on jewelry. The power in a single laser shot that is fired will typically be 2 to 8 joules. So why would you need an 80, 100 or even 150 joule laser capability? To do actual work on a piece you do not! The real reason is that with a higher upper end capability, your flashlamp (which is the consumable item that powers the lasing function) would last longer than with a lower power laser. Unfortunately, many vendors will tell you that you need 120, 130 or 150 joules. The most common sized laser welder sold over the last 15 years is an 80 joule energy unit.

- What is the quality of the laser pulse? It's important to have consistent power, energy distribution and diameter of the laser pulse shot when fired into a material. Vendors have many features that address this issue. Be sure to look for a supplier that offers a specific solution to this issue such as the Sweet Spot Resonator® from Rofin Baasel.

- How easy is the laser to use? Are the controls laid out in a logical and easily accessible way? Be sure to try out a laser before you decide to purchase one. Attend one of the many trade shows and sit down and give it a test drive. Make sure you feel comfortable with the idea of using the laser welder. Don't rely on a vendor "expert" to show you the laser. You need to try it for yourself.

2. Training:

- Does the laser vendor offer training? You WILL need training to insure your success with the transition to laser welding. Make certain that the vendor offers full training for laser welding on JEWELRY. Many vendors do not and you will not get the full benefit of your laser welder. Being trained on how to weld together nuts, bolts and ball bearings is NOT sufficient training. Ask questions about the specific training agenda and if you will be training on jewelry welding.

- Does the vendor offer technical support about actual jewelry welding situations? Many vendors sell laser welding systems but not all have experience in the welding of jewelry. Make sure the vendor has personnel experienced in JEWELRY applications that can answer your questions.

3. Support & Maintenance:

- What kind of experience does the vendor have? How many lasers welders have they sold and do they have a list of references you can speak with?

- What kind of maintenance is required? All lasers have consumable items that will need to be changed periodically. Ask what these are and how often they need to be changed. Be sure to understand what the total annual costs will be for maintenance.

- Will you be able to perform the maintenance tasks yourself or will service calls be required at additional cost? Be sure to find out where the closest service engineer is located in the event you need assistance.

- What is the warranty included with the equipment? Be certain of what is included (or not included) in the warranty.

4. Financing:

- What options are available for purchasing the laser welder? Will the vendor extend payment terms directly or offer leasing through third parties?

- Can you finance directly through your own bank or credit organization?

- If you lease a laser, what are your options for purchase at the end of the lease term?

Ask these questions and make sure you feel comfortable with the answers you receive. A laser welder is a major investment in your business and can offer one of the best returns on investment of any equipment brought into your shop.