LaserBond 100 Liquid Ink Application Instructions

LaserBond 100 is an all purpose laser bonding material for producing black marks on most surfaces and materials. It can be used on a variety of substrates including glass, ceramic and metals such as stainless steel, brass, aluminum, copper, titanium, tin, nickel and many others. For best results, use between 50º and 90º F.

The liquid ink is a water-based concentrate and needs to be shaken vigorously for 1 – 2 minutes to insure that all ingredients are thoroughly mixed and then diluted with denatured alcohol by at least 1:1 for manual application using, preferably, a foam brush OR by at least 2:1 for application using an airbrush or spray gun and it is recommended that the spray be applied by holding the nozzle about 10" – 12" away from the surface and misting the ***LaserBond 100*** directly onto it using a side-to-side motion. Dilution ratios of up to 5:1 have proven to work successfully; however you should start with these lower dilution guidelines and increase the amount of denatured alcohol until a smooth and even coat is achieved. The dilution with denatured alcohol is important as it helps to break the surface tension and keeps the ***LaserBond 100*** from beading up or separating/streaking on the substrate surface.

Applying: Clean the substrate surface so it is free of any type of contamination or oils. It is very important that the ***LaserBond 100*** is applied to obtain **an even, smooth and thin coating**. Any variation in the coating thickness, such as drips, runs or brush marks, will translate into variations in the final appearance of the resulting mark. Spraying usually provides the best results when properly applied which may require a little practice to obtain the correct coating thickness – which should be no more than 0.002" - .003" (0.05mm) thick. A good exercise for developing a good spraying technique is to draw a line on white paper using a black marker and then spray only as much LaserBond 100 as is needed to make the line fade away. If the ***LaserBond 100*** coating is too thick, it will require more power to make the mark and the image resolution will decrease.

Drying: It is important that the ***LaserBond 100*** is allowed to completely dry and will air-dry in about 2 minutes. The drying time can be decreased by using a hair dryer, heat gun or a heat lamp.

Marking: This step may require some trial and error to optimize your laser for a particular substrate material. Keep in mind that all lasers react differently depending on the substrate, the type of laser, the laser power and speed, the lens and other factors. Softer metals such as aluminum, copper and brass require more power or slower speeds to obtain a permanent mark. It is recommend that at least 30 Watts of $C0_2$ laser power be used as shown below; however lower powers will also achieve good results. Please refer to our website: www.laserbondingtech.com to obtain additional Laser Settings and further information and instructions.

Caution: If metal surfaces have a protective lacquer coating, the ***LaserBond 100*** material **will not work**.

	Glass		Ceramic		Stainless Steel		Aluminum	
	30 Watt	**50 Watt**	**30 Watt**	**50 Watt**	**30 Watt**	**50 Watt**	**30 Watt**	**50 Watt**
Power	**30%**	**20%**	**50%**	**30%**	**100%**	**100%**	**100%**	**100%**
Speed	**30%**	**30%**	**50%**	**50%**	**50%**	**75%**	**5%**	**10%**
DPI/PPI	**800/800**	**800/800**	**800/800**	**800/800**	**500/1000**	**500/1000**	**1000/1000**	**1000/1000**

For galvo beam steered **Nd:YAG, DPSS or Fiber** lasers, **20 - 30 Watts** of power is recommended in order to use a marking speed of 300 - 500 mm/second or faster and hatch spacing should be 0.002" - .003" (0.05mm) with most F-Theta lenses. Again, you may need to run several tests to refine these recommended laser settings.

Clean up: After use, the ***LaserBond 100*** liquid ink may be cleaned up using a damp cloth or paper towel or it can be rinsed under plain tap water and it is safe to let the excess material go down the drain.