# Review of Laser Cutter Purchase

There have been a number of complaints about the purchase of the laser cutter so the trustees have decided to post a report on its purchase so that we can learn from any mistakes that might have been made and also put members’ minds at ease.

I must stress that this report is about the facts and the biggest fact is that we now have a functioning laser cutter in the space for members to use. This took a lot of hard work by a small group of members and trustees.

At the 2016 AGM I made a proposal for So Make It to buy a laser cutter. It was widely thought that a laser cutter was the single best purchase a makerspace could make and that it would attract new members as well as providing a great tool for our current members to use.

My proposal had a number of options that ranged from not buying one to specific amounts of money being spent and an option to let the trustees decide how much to spend.

I had already spoken to “Just Add Sharks” a supplier of laser cutters several times over the past few years about So Make It buying a cutter, so we had a comparable idea of price and wanted to spend around £2500 for an A3 sized 40W cutter. This was used to illustrate the type of machine we were after although it was pointed out that we would not exclusively buy from them and would investigate other options.

The membership voted for option 3 – “We need a laser cutter and am completely happy for the trustees to spend whatever they agree is needed (decided by a quorum)”

The agenda is here for reference:

<https://wiki.somakeit.org.uk/wiki/Meetings/Agenda/2016-04-02>

The trustees, with help from some members such as James Southern and Peter Collins, then spent over a month and a lot of effort looking at the various machine options available within our price range and some beyond.

The cheaper option of a direct import from China was considered but ruled out as we could not guarantee the machine would be safe. There were also a number of UK importers such as Just Add Sharks that would take the Chinese machines and make them safe but we still felt the risk involved was too high.

In parallel to this, Paul Davies contacted a number of laser cutting businesses about possible second hard machines and Peter Collins contacted a company called Trotec who recommended we contact another company called Boundstone engraving who had one of their laser cutters. The machine they had was too small (A2) and relatively low power (25w) however they had another machine made by Epilog, a well-known laser cutter manufacturer.

The machine, an **EPILOG Legend 36EXT**,was of a far better specification than we were originally looking at, with a handling size of A1 and with a 75w laser, but the price was significantly beyond our current budget and fell at £3500 after some negotiations. As the machine was originally bought by Boundstone at £32,400 in 2012 we decided this was a great opportunity to pursue.

Boundstone Engraving agreed we could visit the machine in Guildford first but there was not enough time and nobody was available. They needed to get rid of the machine quickly as it was taking up space that they could use for a larger model they had just purchased also from Epilog.

James B received an anonymous donation for £1000 towards the costs. An initial conversation was held at the space and a quorum of trustees agreed that we should go ahead. This was followed by a formal vote on the private trustees list for the sake of record keeping and transparency.

It was agreed that the purchase was to go ahead on the condition that we would not skimp on the important extras that were required such as compressor, extractor and ducting as well as getting all safety, training and materials in place before the machine was commissioned and available for members to use.

James S researched the machine and drew up a list of things for those collecting it to check.

Prior to collection, Paul withdrew the £3500 required for the purchase in cash having advised the bank beforehand. An objection was raised that this amount was a concern for both space funds and Paul’s safety, however he guaranteed that if the money was stolen or lost he would replace it. It was felt that because of the time constraints, we couldn’t send the money via BACS as there was not sufficient time for the payment to clear.

Dean, Paul and Dave each took a morning off work, hired a van with space funds and headed to collect. A demo was made with the machine working though there was not enough time to go over all aspect of James’ list due to time constraints on the group. They asked as many questions as they could including advice on software, room needed for ventilation and network capability but as Boundstone were a business the group didn’t feel they could take up much of their time.

The decision was made that the demo was satisfactory and the machine was transported to the makerspace.

Following its arrival, Dave and James S started the commissioning process with help from others.

The search for suitable ducting, compressor and extractor was started and some luck was found by Draper Tools donating a £300 extractor. Ducting was procured at a reduced rate and a compressor was purchased from Just Add Sharks.

It has been determined that there are still a number of problems to fix including replacing a few consumables and modification of the ducting to lower the noise levels as they have caused complaints from the neighbours. However, the laser is working and has already produced some fantastic stuff which you can see at the end of this document.

As laser training is being charged at £20 and laser time is being charged at 20p per minute we are confident any consumables can be replaced and the upkeep of the machine will more than pay for itself.

I personally want to thank everybody involved with the research, purchase and installation of the laser cutter as it is already proving to be a fantastic tool for our makerspace.

And now for some nice examples of things made so far….

