

AVL Industrial Dobby Loom with Compudobby 1

This is an automated, 60 inch, 24 shaft loom driven by compressed air and with the AVL Compudobby version 1. The loom is driven by an attached windows XP PC connected via serial and parallel ports (included in sale, with LCD display) and the Weavepoint weaving design programme (included in the sale). There are two, 1 yard sectional warp beams with a rail and tension box for use during warping. A particular feature of these looms are the sandpaper covered front beam, auto advance and braked back beam which allows continuous weaving with no stopping to advance the warp.

The loom can be operated with a light tension on the warp and minimal friction on the warp threads. I have been weaving soft alpaca yarns that would not normally be thought suitable for weaving.

The loom weaves at about 30 picks per minute. It has four shuttle boxes at each side which technically means that four colours can be woven at once, but in practice I have never used more than 3 as the top boxes are a little too tight. The shuttles use end feed bobbins which allow a smooth flow of yarn and the loom detects and stops when a bobbin is about to run out of yarn. I have used the loom for small production runs of 20-40 throws of 1.8 to 2.0 metres. The time to weave each throw is approximately:

- 40 minutes for a boucle yarn set at 6 epi/ppi
- 1 hour for 4 ply yarn set at 12 epi/ppi
- 1 hour 30 for 2 ply yarn set at 18 epi/ppi.

The ppi is infinitely variable via a mechanical sliding arm.

The loom is about 30 years old. The link to the current version is [here](#), the major differences between this loom and a new one are:

- Compudobby 1 vs Compudobby 4 (the compudobby 4 communicates via modern means)
- The black control box on the front of the loom which manually steps through the programme has changed.

We have owned and operated the loom for about 12 years. During this time we have replaced most of the air cylinders and the light sensors.

Included in the sale is:

- AVL Electric Bobbin Winder (manual)
- Motocona Cone Winder on stand
- AVL Cone Rack
- 4 AVL End Feed Shuttles (1 modified)
- Numerous pirns.

The loom requires a serious air compressor to run (see the AVL site). We have a 3 phase compressor that we have been using for sale, but we believe that you can also get a single phase compressor that will work.

Operating the Loom

Here is an honest appraisal for experienced weavers who have not operated an automated loom.

Although very experienced weavers can weave as fast as this loom, the automation allows the weaver to wind bobbins or the next warp simultaneously with production weaving and is less physically demanding. There is a constant tension at the selvedge and a constant pick rate (but see below). The 24 shafts allow a vast array of drafts (handweaving.net is a valuable resource) and I make use of them to have borders all around a piece and a threading which allows several different patterns to be woven. Weavepoint is an amazing drafting tool, I have only scratched the surface.

The loom produces professional and consistent weaving and lessens the stress on your body and muscles, but you cannot realistically leave it untended.

The challenges that are particular to an automated loom are:

- Setting the tension on the shuttles. The honex tensioners are finely adjustable and are good for wide pieces. They are more difficult to get right for narrow pieces and I often use a more primitive tensioner. Expect to experiment at the beginning of a run. Too much tension and the edges draw in too far and put too much strain on the warp threads.
- Setting the pick rate, tension on the braked back beam and the cloth take up roller, these need to be synchronised.
- The shuttle box springs and the picker air pressuers needs to be adjusted for even slight changes in humidity. This is easy but I find it easier to stop weaving for the day when the evening draws in, rather make the adjustments and then have to change them back next day.
- For this loom which is made of wood, humidity control is important. It has worked much more reliably since insulating the barn but I haven't needed to install a dehumidifier.

These are the things you have to watch for. I find that the loom cannot run unattended as it will always do something wrong when your back is turned.

Typical issues are:

1. A warp thread breaks. If it is a selvedge thread, the selvedge draws in, for other threads, the broken thread tends to catch with the adjoining threads creating havoc. In either case, the loom needs to be stopped as quickly as possible and the problem corrected. The loom can be put into manual mode and reversed to undo the weaving and then redone manually beating the picks in. Droppers could be put on the selvedge threads which would stop the loom if a thread breaks and in retrospect I should have done this. I usually reinforce the selvedge threads either with a stronger thread or I add extra twist to the yarn. You can also use light fishing line about 1/4 in in from the selvedge to prevent the threads breaking.
2. The bobbin thread breaks, this is usually because the bobbin has been incorrectly wound. The loom does not recognise this and can weave quite a distance very quickly. This can be corrected by disconnecting a few things, winding the warp back and taking the computer back to the right spot in the pattern. The bobbins need to be wound tightly and evenly which requires a bit of practice. Better to rewind a bobbin than spoil a piece of weaving.
3. For multi-shuttle weaving, the thread from one shuttle can get trapped by another one. Experimenting with the side where each shuttle starts mitigates this problem.