TECHNOLOGY GUIDE

Spray coating: switching from a manual to an automated process

Should I carry on spray coating manually or invest in a machine?

Several small woodworking shops are faced with this dilemma. The key aspects that owners will usually address are related to the required investment and ROI expectations, to floorspace availability and to the need to lay off staff as an unpleasant consequence.

IN THIS WHITE PAPER, YOU WILL DISCOVER THE ADVANTAGES AND SAVINGS OF AUTOMATIC SPRAYING COMPARED TO MANUAL SPRAYING.

What are the drawbacks of manual spray coating?

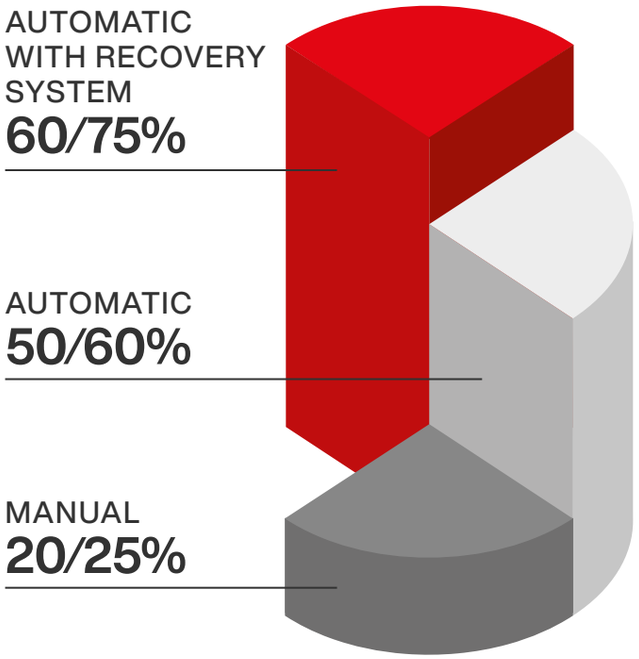
In a small woodworking shop, with between 1 and 10 employees on the payroll, the owner must reckon with significant waste of coating, substrate and unprofitable time spent re-working poorly finished surfaces.

At its best, manual spray coating techniques generally achieve just 25% transfer efficiency leading to disproportionate expenditure for coating products. Revenue potential is further reduced because output is limited to available manpower and the frequent need to re-spray. Initially, the investment in an automatic spray coating machine will put off the owner, who may also feel uneasy about the potential need for workforce reduction.

Yet, the economic benefit of automation will immediately impact the two major overhead costs: lacquer volume and labour costs.

There may also be an issue with space in the workshop, therefore, generally speaking the switch from manual to automated spray coating is not always as simple and straightforward as we would like it to be.

TRANSFER EFFICIENCY



What are the benefits of an automated process?

Starting with the space issue, we advise a machine performing multiple processes to limit the floorspace occupied to a single footprint.

With a machine installed, manual spray coating tasks will be minimised to almost disappear, meaning fewer employees, so again, the concern regarding space will be compensated by fewer staff.

Turning to economics, **decreased labour requirements and lacquer consumption enables companies to pay off the initial investment,** according to their output and other relevant factors: it is not a question of whether this will be the case, but *when* it will be.

The solution in detail

THE FOLLOWING ARE THE MAIN REASONS FOR CHANGING TO AN AUTOMATED PROCESS:

1. **Transfer efficiency goes from around 20/25% to 50/60% - and in some instances, even more.** This results in huge savings in terms of coating product consumption and costs compared to manual spraying techniques.

2. **Not only is transfer efficiency increased, quality and consistency are also improved.** Once the machine is programmed to carry out a given procedure, it will achieve a consistent output in a shorter processing time: every part will be produced to the exact same quality standards, every single time. A machine never needs coffee, a break, training, or encouragement.

3. **One operator is enough to manage the workload on a single machine,** and even loading and unloading tasks can be automated to minimise manual intervention.

4. **It takes little time for the operator to become familiar with an intuitive, electronic control panel**, with PLC and software. Featuring a 12” colour touchscreen display, the graphics are clear and easy to understand, even with very little training.

How do I make the right choice if I decide to switch to an automated process?

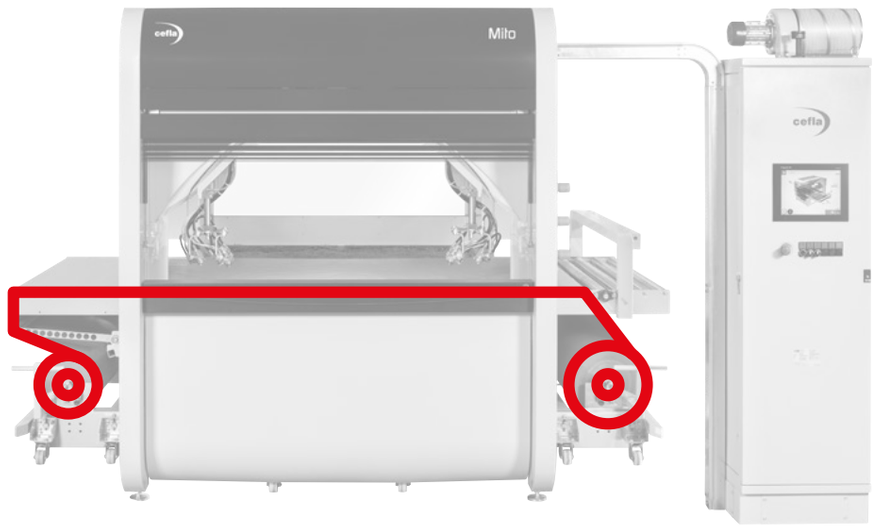
Considering that automation will ensure more consistent quality, improved revenue potential and shorter delivery times, it is important to choose the right machine based not only on current performance, but on the improved performance that you can expect after switching from manual to automated spray coating.

What are the opportunities open to me?

Prima, **Mito** and **Easy** are three automatic, oscillating (aka reciprocating) spray coating machines. For a workshop without automated curing or drying solutions, no additional cost or space is required to add this technology. Machines seamlessly fit into the production process without affecting the current curing/drying procedure.

PRACTICAL SOLUTIONS

Each machine can be fitted with a paper belt placed on the conveyor running through the spray cavity.
This helps minimise the time needed to clean the machine between jobs. Apart from manual positioning and disposal of the paper, the loading and unloading of the paper belt is handled automatically by a device at the inlet and outlet to/out of the machine.



Prima

Prima is a first step going (and growing) from a manual to an automatic process.

A moderate investment is all it takes to obtain an efficient, one-arm, reciprocating spray coating machine featuring a device for on-shift colour changes, a 12” display on the control panel and a paper conveyor system, with automatic pay-off and take-up.
Operators are required to manage the equipment, loading and unloading of workpieces and for simple cleaning procedures.

MATERIAL LOADING / UNLOADING
CAN BE MANAGED BY ONE
OR TWO OPERATORS

Prima Video

Case studies

More info

Mito

Mito is a reciprocating spray coating machine perfect for small and medium outputs.

It is equipped with a high-precision reading barrier, which scans workpieces entering the spray cavity to program the trajectories and minimise lacquer consumption. Mito can be fitted with one central or two lateral arms. The patented “Airsphere” plenum ensures a perfectly clean air flow into the spraying zone, eliminating overspray residues during processing.
In addition to the paper belt, Mito can be fitted with a carbon fibre CFB conveyor, ideal when using recoverable water- or solvent-based paints.

AVAILABLE IN ONE- OR TWO-ARM VERSION, WITH CFB OR PAPER BELT

More info

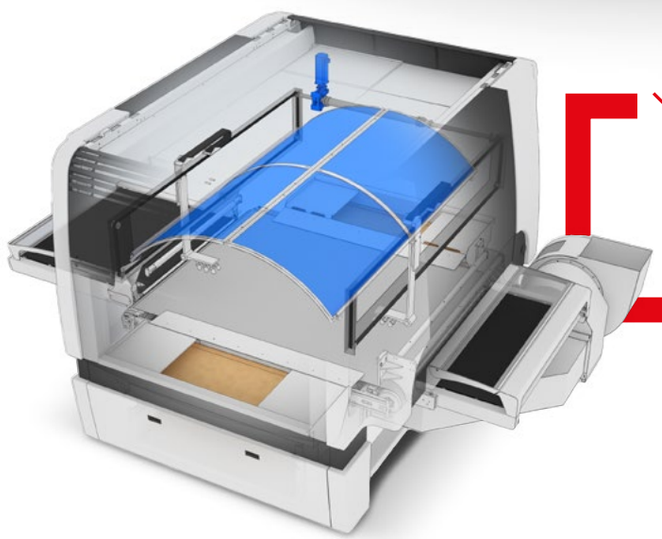
Easy

Easy is the automated spray coating solution when a medium to large volume output is required.

Easy to use and providing a top-quality finish, it can be integrated with optional features such as a patented paint recovery system and automatic belt centring device.

Oscillation of the spray-gun arms is powered by a brushless motor and positive drive belts.

Transfer efficiency is excellent and coating consumption is further optimised thanks to the reading barrier, software that works out the best spray trajectories, and the Cefla "Airsphere" patented air diffusion plenum, an innovative method for controlling the air flow inside the machine.



THE AIR FED THROUGH THE DELIVERY PLENUM PUSHES THE OVERSPRAY UP TO THE BELT AND FILTER SYSTEM INCREASING THE TRANSFER EFFICIENCY SIGNIFICANTLY

Easy Video

Case studies

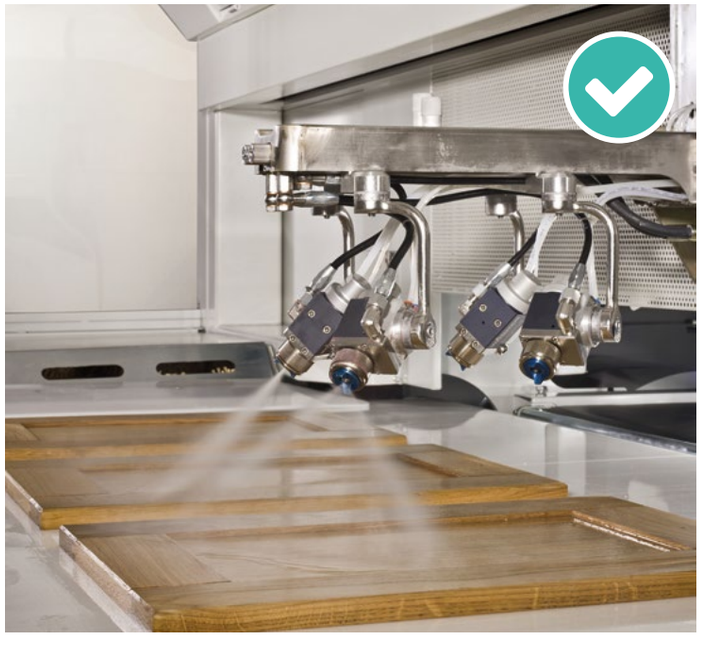
More info

In conclusion

Sticking to manual operations means accepting poor transfer efficiency, and having to make considerable efforts to ensure consistent quality and re-working all the pieces that need it.

It also means managing staff-related issues that affect productivity - possibly limiting your potential to expand your business and generate increased revenue.

AN AUTOMATED SPRAY COATING PROCESS WILL AVOID ALL THESE ISSUES, ENSURE CONSISTENCY AND EFFICIENCY, LOWER LABOUR COSTS AND MINIMISE WASTE. An investment in automation is an investment in your own business - for guaranteed returns in a calculable amount of time.



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CEFLA

Via Selice Prov.le, 23/A
40026 IMOLA (BO)
Italy

Tel. +39.0542.653111
Fax +39 0542 653128

cefla.com
ceflafinishing.com

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