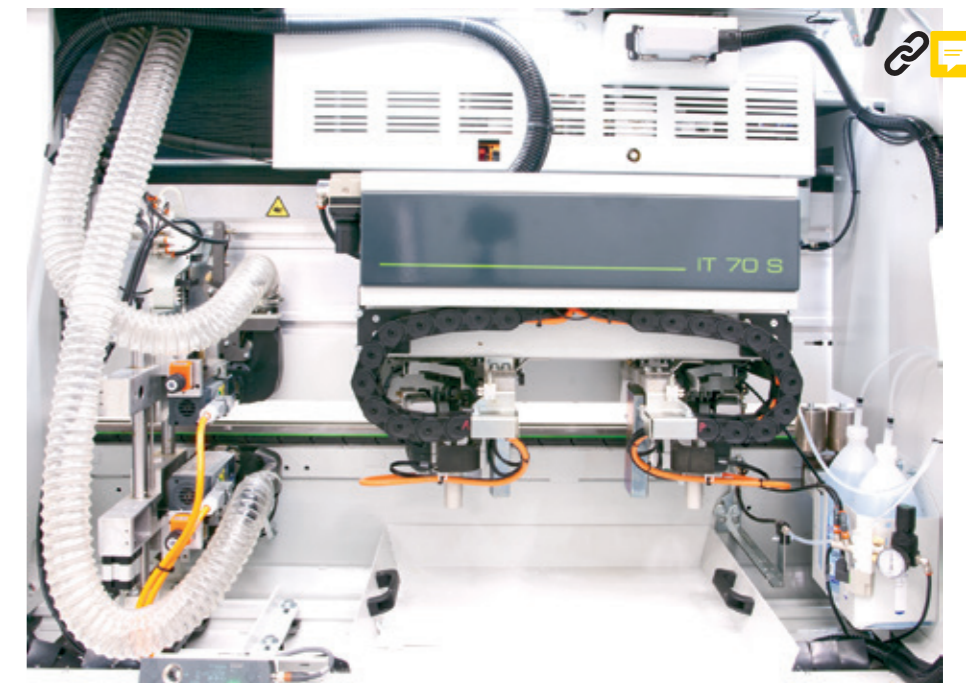
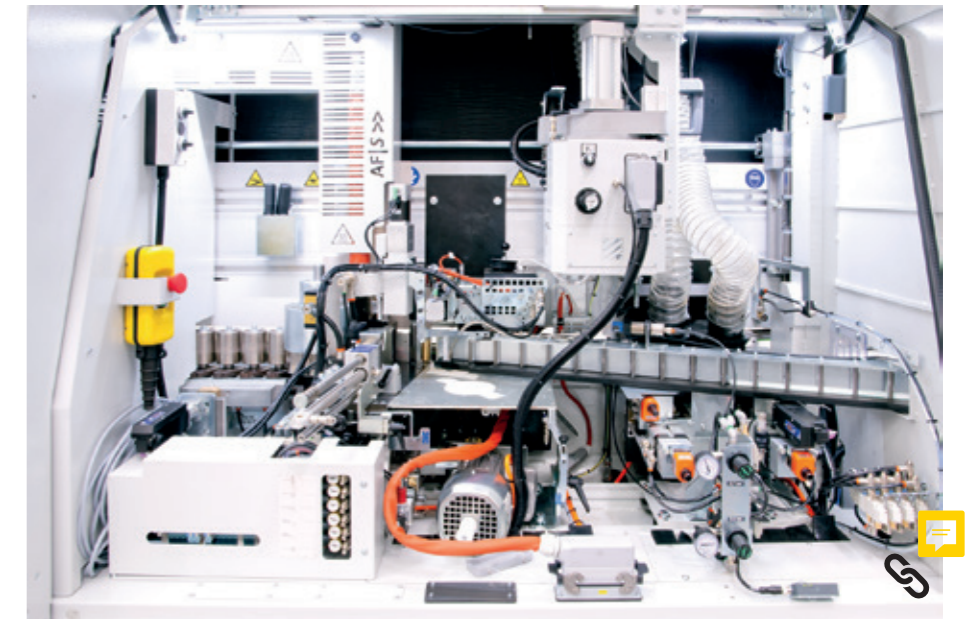


Main Image: The Biesse Stream A
Right: The Stream A can be equipped with both the hybrid glue head and Airforce for the application of laser edging tapes.



An edge on quality

Looking for that all-important invisible glue line? Biesse has a few clever units on its edgebanders that can help you achieve better-looking products.

The importance of an invisible, or near invisible glue line between edging tapes and panels has never been greater than it is today, especially if you are producing slab doors and fascias but for those who are super critical about their quality, how do you ensure you are getting the best from your machine? It's a question Biesse's designers and engineers have

pondered long and hard and what they've come up with is a raft of clever solutions that can be added to most machines in the Biesse range from the Akron 1300 up.

"The only true way to get zero glue line is to use an Airforce-type machine that releases the functional layer on a laser tape with heat," Malcolm Storey, Biesse UK's Edgbanding Brand Sales Manager told me.

"But when most people refer to a zero glue line, what they mean is usually something that is less visible than the standard glue line they are getting from EVA. We've introduced a number of changes to our machines that ensure a near invisible glue line:

"One of the big changes we've made to the Akron and Stream A ranges is the introduction of a hybrid glue head. With a hybrid glue head you can run EVA or PUR on the same machine rather than having separate glue tanks and you don't have to take anything off the machine to switch from one to the other.

"There are two types of hybrid glue head: a small one that takes 850gm in the pot and an extended version that takes 1.5 kilos. We combine the smaller glue head

with a pre-melting unit that feeds EVA or PUR as required so the head doesn't have to be quite so large.

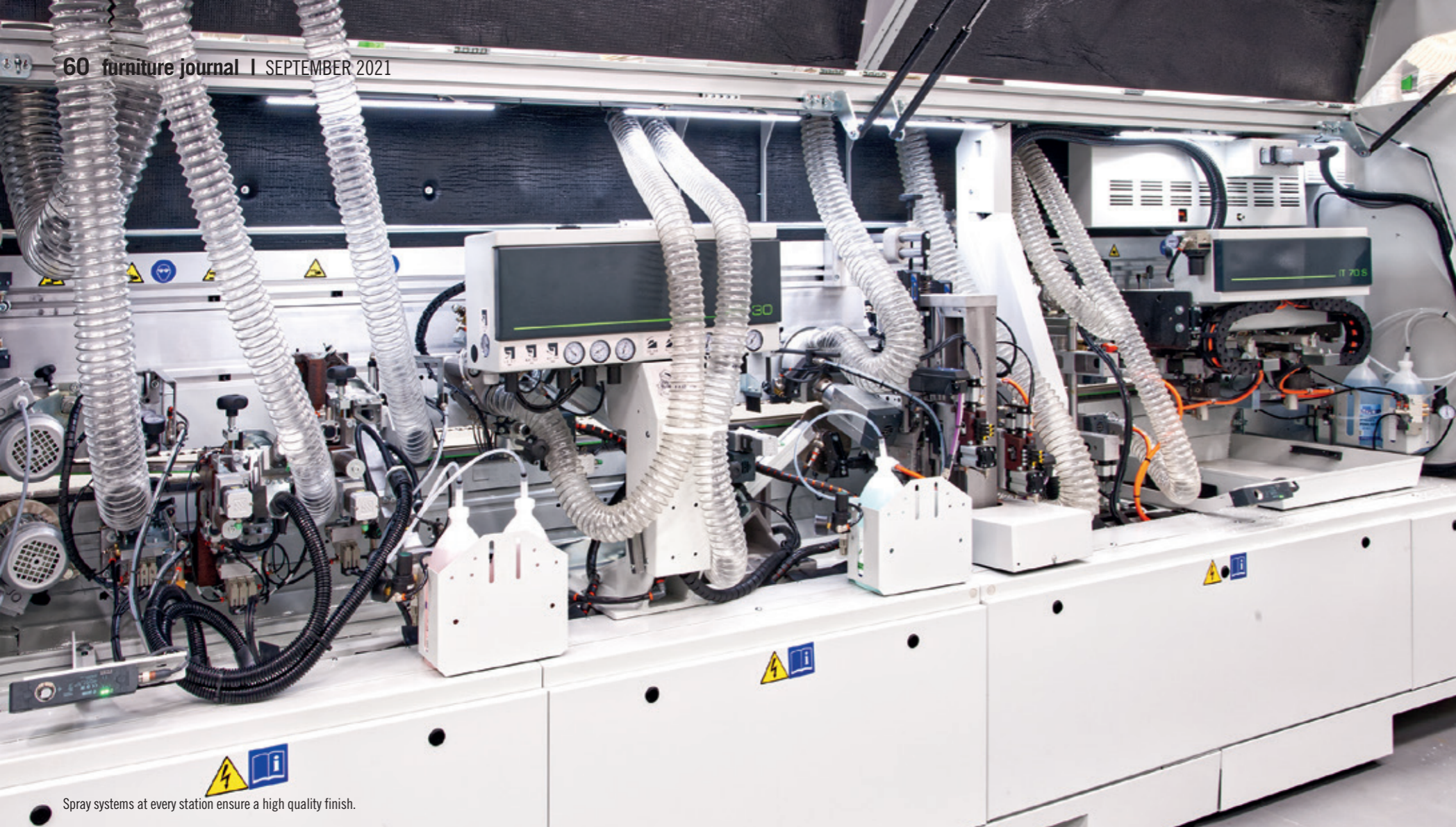
"The new design of the head requires less maintenance. If an operator can maintain the glue head easily without taking it off the machine he is more likely to clean it more frequently rather than waiting until there is a problem before stopping the machine – and that's a major contribution towards achieving a better glue line.

"When you want to change your colour or glue type, there is a cleaning cycle in the program of the machine to make it easy. The unit heats up and when it reaches the temperature, there is a switch to rotate that opens the bottom of the glue head so the residue flows out of the hybrid pot into a

receptacle under the head. Once that's done, close it by rotating the switch and either apply a cleaning wax if you want to clean it right down or, if you are changing from EVA to PUR, just fill as required.

"The big plus from a customer's perspective is there is no cleaning of the glue head off the machine. Depending on how much adhesive there is in the pot, it takes no more than 15 minutes to change between adhesive types or colours. A lot of small to medium sized workshops are batch-size-one producers, so having the facility to change over on demand is very beneficial."

The hybrid glue head can also be combined with an NC-controlled glue gate that will enable you to regulate the quantity of glue on the coating roller relative to the



Spray systems at every station ensure a high quality finish.

board material. If you are running MFC you need more adhesive than if you are running MDF because the adhesive is absorbed into the core of MFC. On Biesse machines, it's possible to write a program for the different board material you are using that regulates the glue dosage automatically.

On older machines, one of the big pitfalls was always the build up of residue behind the glue gate. Debris picked up from the panel during processing builds up behind the glue roller and prevents optimum glue flow, adversely affecting glue line quality. "When the hybrid glue head is combined with the NC-controlled glue gate, the cleaning cycle is automatic," confirmed Malcolm. "On a timed intervention every 1.5 linear metres, the glue gate automatically closes and reopens to the setting in the program. It's constantly ensuring the glue roller is kept clean. Combine that with precise coat weights for the panel you're using and it makes a big difference to the glue line quality."

"Combined with the glue head, there are additional options we can add to the machine to improve the edge quality. We

start off by pre-milling the panel and preparing the edge for adhesive, this ensures there are no scorer lines and no chip marks. But before we pre-mill on a Biesse machine we apply anti-adhesive to the top and bottom of the panel. That prevents any glue spillage from bonding to the panel and becoming a problem. We are seeing a big improvement in glue line resulting from control of the adhesive quantity so the anti-adhesive is really for use further down the machine when the other units are working on the panel edge.

"Once the edge has been pre-milled and the adhesive has been applied, the panel passes through the end trim saws. Depending on the quality of work you need, we recommend an IT70 or an IT03 (on the Akron 1300) or an IT70 (on the Akron 1400) linear end trim saw that has no frictional copier running down the back and the front of the panel. Combined with the other features, you get a lot more control when cutting the edge tape on the first and second passes.

"Before we actuate the IN801 or IT70S end trim saws, we apply anti-static spray to

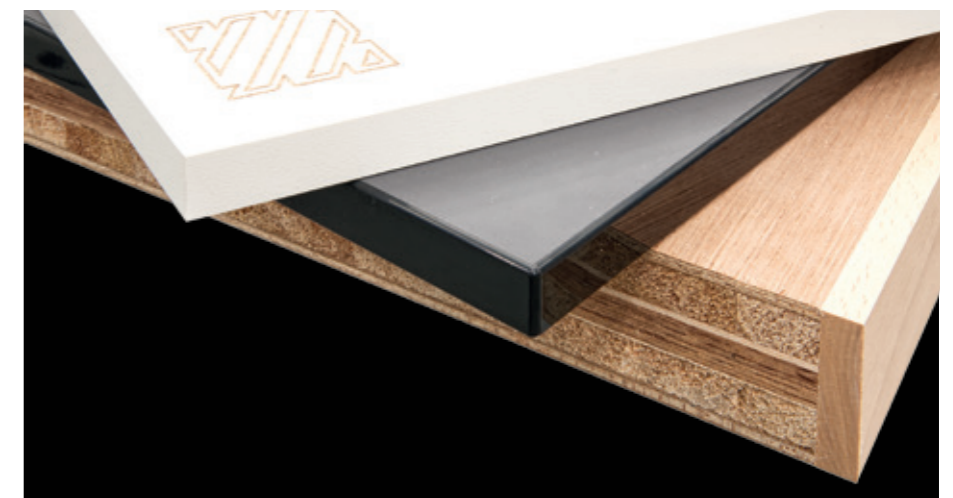
stop any chips building up on the top of the panel because any debris that goes through fine-trimming will be copied by the copying wheels. After fine trimming of the top and bottom radius or the chamfer, the panel passes through the AR30 corner-rounding unit – but again, before it arrives at the AR30 there's another spray application to the face of the edge that breaks the friction between the corner-rounding copier and the edge tape. This prevents any sticking of the corner-rounding unit during processing and any folding of the protective covers on gloss panels."

Edge scraping is carried out using Biesse's RB02 profile scrapers. The RB02 is NC-controlled to ensure it scrapes off just enough of the edge tape to ensure a perfect finish. "A lot of customers allow the edge scraper to do too much work and that's a mistake because they are not taking the fine-trimming of the panel down close enough when they are setting the machine up," Malcolm told me. "Because we have NC control on the fine trimmers and on the profile scrapers, the customer can easily set up the machine. For finishing high gloss

panels, very often we don't even engage the glue scrapers. The NC-controlled profile scraper is accurate enough."

If you are using heavily structured boards, depending on the adhesive you are using, Biesse machines have traditional glue scrapers after the profile scraper but they have combined them with a kit for delicate materials that provides reduced pressure on the glue scrapers on the top and bottom of the board. That's important because if you apply the pressure too strongly, especially across the grain, you can whiten the laminate. "We've eradicated that," said Malcolm. "We maintain the glue scraper functionality. Once the NC-controlled glue gate on the hybrid glue head is set correctly to provide the right amount of glue, the flat glue scrapers can be set to minimum or may not be needed at all. There is no glue overspill. It makes a huge difference."

"The hybrid head, the NC control on the glue gate and the fact we can run EVA and PUR on the same glue head have made the biggest differences to glue line. You can get a much thinner glue line with PUR than with EVA but people have always been wary



of PUR because of the internal housekeeping that was needed to get a good finish. We've taken that problem away from the customer."

If you are using a nested-based solution and you edge after drilling, your edge quality could also benefit from Biesse's Pro-Nesting solution, which is applied to the fine-trimming unit and the profile-scraping unit. Pro-Nesting ensures there are always three points of contact with the panel – the main copier and the smaller rollers either side of the copier – to prevent any dipping. It's not a device that needs to be switched on and off. It works in the background so your operator can forget about it.

A further contribution to improved glue lines is Biesse's Pro-Glue kit. This clever little device locks the copying movement of the hybrid or standard glue head so when the panel leaves copying the glue roller assembly doesn't move forward. "Normally, they are sprung-loaded to copy the panel," Malcolm told me. "When the panel has come off the copier, there can be a period in which the glue roller can move forward and possibly make contact with the board.

That should never happen if the machine is set up correctly but with the Pro-Glue kit, for the final 20mm the glue roller is locked in position pneumatically so it cannot float forwards. That prevents build up of glue on the corner – and it's perfect for kitchen doors where glue line is most important."

Of course, you could go the extra mile, move to laser edging tapes and eradicate the glue line entirely with Biesse's Airforce system – and, Malcolm confirmed, more manufacturers are wanting a combination of Airforce and the hybrid glue head on their straight-line edgebanders so they can run EVA, PUR and Airforce. Airforce can be specified on every machine in the Biesse range except the Akron 1100 and the Jade 200 ranges.

For more information on how to improve your glue line, or to discuss any edgebander in the Biesse range, call 01327 300366 or visit www.biesse.co.uk. Readers with the free Furniture Journal app will be able to watch videos of the Stream A, the hybrid glue head, glue pot cleaning on an Akron 1400 and the IT70S end trimming unit.