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TRUMPF

03

CZECH REPUBLIC

Safety in Jablonec nad Nisou

A BREATH OF FRESH AIR FOR MANUFACTURING

IMAGES: Tobias Ebert

With TRUMPF at its side, **Czech ventilation and heat recovery specialist Atrea** is breaking new ground. Because its production is so specialized, many steps were previously carried out by hand – for years, manual work simply seemed the safest bet. Now, TRUMPF has brought **automation to the shop floor,** presenting an exciting challenge for both partners. The rewards are clear: **Atrea is slashing costs** in areas that once seemed out of reach and now produces every single component of its systems under its own roof.

Integrated solutions: Daniel Morávek designs ventilation and heat-recovery systems – manufactured with the aid of numerous TRUMPF punching tools.

"The best ventilation systems are the ones nobody even notices," says Daniel Morávek, CEO of Atrea, a Czech specialist in ventilation and heat recovery systems. He speaks from experience: Atrea built the ventilation system for the V Tower in Prague – the Czech Republic's tallest residential building – and delivered heating and ventilation for Amber Gardens, Romania's first luxury passive housing development. The soon-to-be-completed Danube Flats, Vienna's tallest residential building, also makes use of Atrea technology, and Atrea ventilation systems can be found in hospitals, schools and cinemas. Its showcase projects include Škoda's factory kitchen, the largest kitchen in the Czech Republic and among the largest in Europe. Here, staff prepare more than 30,000 meals a day in a 1,000-square-meter facility that even includes a dedicated "dumpling room".

> " Developing new products and **boosting productivity** are crucial. "
>
> Daniel Morávek, CEO Atrea

From manual work to high-tech production

"Large-scale kitchens produce heat, odors and steam. We keep the air fresh – without drafts, so staff don't get cold," says Daniel. His turnkey systems deliver on that brief. All Škoda's chefs see on the ceiling are LED panels and rows of ventilation grilles, but

Unique: Atrea's systems are highly complex. Many parts look alike, yet each one plays a unique role in the production process.

hidden behind them are thick ducts, aerosol separators, filters and two large heat recovery units. Atrea's software controls and monitors the ventilation system via a high-tech cloud-based interface accessible from anywhere in the world. The systems can be adapted to almost any type of building – and it's this versatility that makes production so demanding. "Many of our system components look alike, but each one is slightly different," says technical director Marcel Jenček. For years, Atrea chose to play it safe by having machine operators manually oversee the line: swapping out parts, recalibrating, and preparing machines for each new component. But several years ago, Daniel decided to boost efficiency on the shop floor by investing in TRUMPF automation – and the results were a breath of fresh air.

For more than 20 years, Atrea has relied on TRUMPF for new machinery. The company purchased its first bending machine in 2000, shortly after it began exporting ventilation systems to Germany. "That really boosted the quality of our systems," says Daniel. The task then was to build a production process that delivered the efficiency of mass production – despite the bespoke demands of each product. "We wanted fully automated production with minimal staffing of the machines. That also meant linking to a warehouse system to keep materials flowing smoothly," he says.

Daniel is the second generation of his family to head up the company. His father Petr Morávek founded Atrea in 1990 in the laundry room of their family home – shortly after the Velvet Revolution, the collapse of the Soviet Union and the dissolution of Czechoslovakia. Before that, Petr had worked for a large state-owned enterprise. It was the era of cheap nuclear power, when ventilating a hall meant simply throwing open the doors – even in winter, when temperatures dropped to minus 20 degrees. Radiant heaters warmed the incoming air, while fans kept it moving. Petr quickly recognized how much energy this approach was wasting, and his first step was to insulate the hall. That insight led to the idea for his first heat recovery system. The principle was simple: each unit had two fans, one for air intake and one for exhaust. The warm indoor air simultaneously heated the cold air coming in from outside. "The modern systems we use today still work on a similar principle, only now they're far more efficient," says Daniel. Today's units are also much more complex, he adds, but back then his father's ideas were viewed with a great deal of skepticism: "Nobody thought it was a good idea at the time."

Living lab in the family home

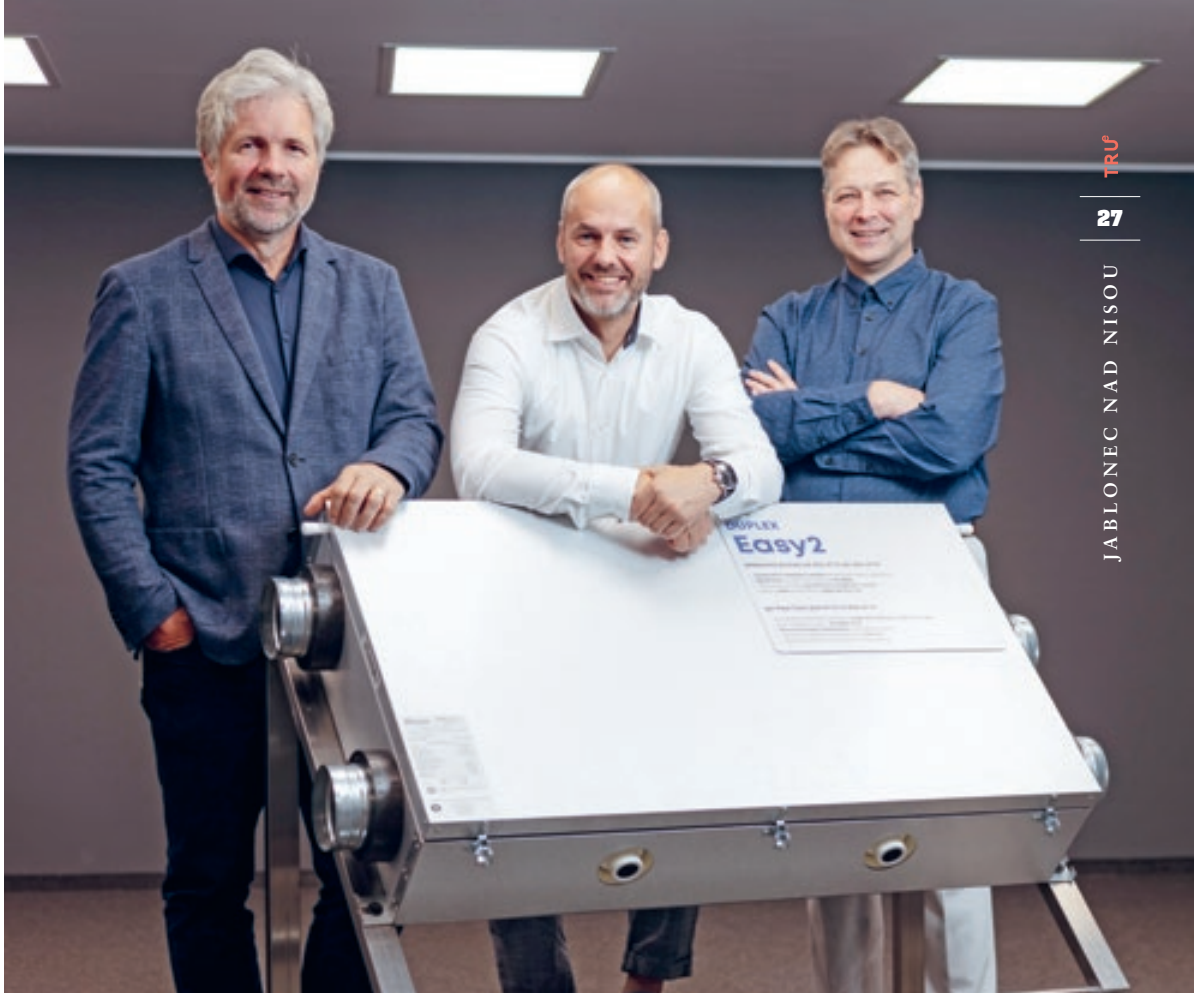
After all the political upheaval, Petr continued pursuing his goal, spending two years in the family home developing his original concept. This led to his technological developments for passive houses and low-energy homes. Yet the family faced great uncertainty in those early days. While Petr built the new company, his wife, Tat'ána Morávková, initially kept her job at another firm – but two years later she was finally able to join the family business.

> " The machines are **more compact,** use **less energy** and are **cleaner to maintain**. "
>
> Daniel Morávek, CEO Atrea

Today, Atrea's production facilities are based in Jablonec nad Nisou in northern Czechia – 40 kilometers from the Škoda plant, 80 kilometers from Prague and 20 kilometers from the German border. In 2014, the family built a 20,000m² production hall to their own specifications. The aim is to deliver solutions that are sustainable not only for their customers, but also for Atrea itself. To cut energy

IMAGES: Tobias Ebert

Manual work: Automation has eliminated the physically demanding aspects of machine operators' work, freeing up time to spend on other tasks.



Partnership: Daniel Morávek, TRUMPF's Ludek Finda, and technical director Marcel Jenček (left to right) have worked side by side for nearly 25 years.

and maintenance costs, the company uses TRUMPF machines with servo drives. The key benefit is that the drive runs only during machining; otherwise, the hydraulics remain idle. "The machines are more compact, use less energy and are cleaner to maintain," says Daniel. In 2019, Atrea invested in new machines, Oseon production software and a connected STOPA storage system, a move they had been planning since 2016. Today, their TruPunch 5000 punching machine and TruLaser 3030 fiber laser cutting machine run fully automatically, with workers simply launching the required program, while the STOPA system keeps materials flowing on its own. "These machines make our production processes more flexible. Oseon tracks which parts are being made, no matter how similar they look, while the STOPA system changes over materials automatically and puts finished parts back into storage," says Daniel.

In the past, Atrea turned out around 100 parts an hour; today it's five to six times that – 85,000 to 100,000 parts a month. Toxsustain this pace, the company's five CNC programmers generate programs for some 600 to 800 distinct components every day. Before installing TRUMPF's automation solutions, Atrea outsourced around 70 percent of the parts for its products: "Today,

Automation: A fully automated STOPA storage system now organizes the entire material flow, dramatically boosting Atrea's productivity.

Customer details

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Machinery

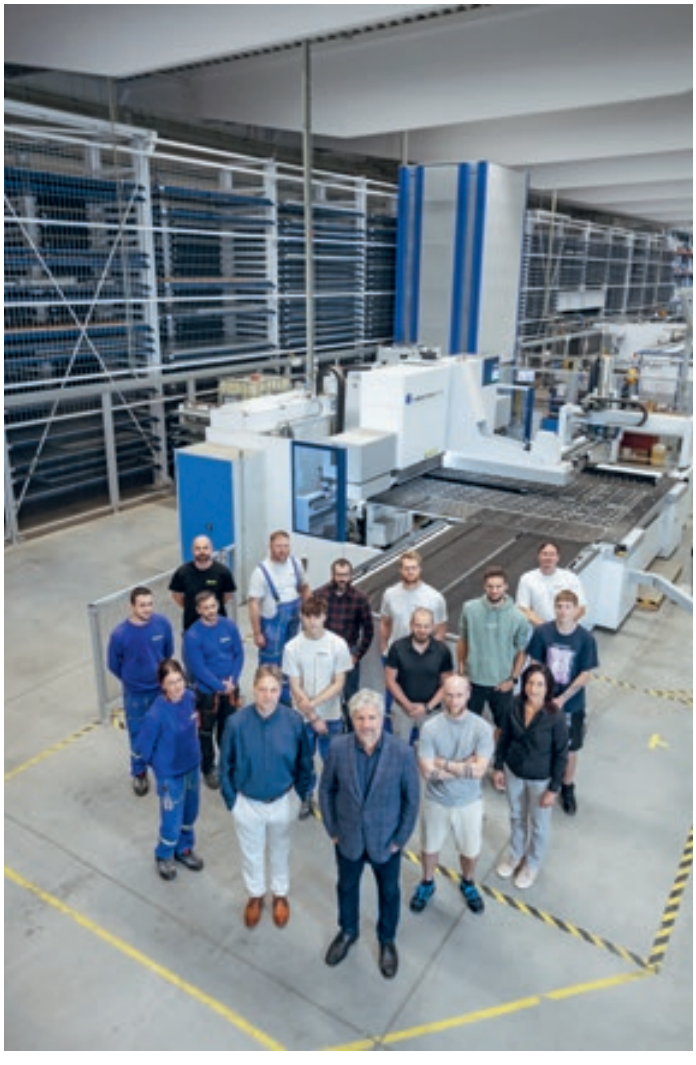
- 2x TruPunch 5000
- TruBend Center 7030
- TruBend Center 5030
- TruLaser 3030 fiber
- TruBend 5130
- TruBend 5085
- TruBend 3100
- 2x TruBend 7036

we manufacture 100 percent of our systems in-house," says technical director Marcel Jenček. Staff now take on very different roles from the physically demanding machine work of the past, and Atrea has a stronger platform for growth. In 2024, it integrated Czech heat-pump manufacturer Master Therm into the family-owned group – and it now has the capacity to handle a large share of Master Therm's production as well.

Looking ahead: R&D and expansion

Daniel has no intention of slowing down. Competition in the sector is fierce, and his company's in-house test lab, the Airlab, is constantly exploring new trends. "Developing new products and boosting productivity are the key to staying competitive," he says. Atrea plans to keep growing, and it already has plans for expansion and building permits at the ready. Daniel intends to double the company's manufacturing space.

The Covid-19 pandemic heightened people's awareness of the need for fresh, clean indoor air – a trend that makes him feel confident about the company's future: "Wherever people live and work, they always need fresh air."



Growth: Atrea is gearing up for growth. It currently produces its systems on a 20,000-square-meter site that employs some 400 people. Daniel Morávek plans to double that floor space.

IMAGES: Tobias Ebert

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A closer look:

Bending to perfection

Whatever the size or complexity of a sheet-metal part, **modern bending processes** set a high bar: customers expect better quality and greater throughput even as skilled labor becomes harder to find. **Automated bending systems** from TRUMPF help manufacturers meet this challenge head-on. They produce consistent results, ease the strain on operators where it counts, and deliver the first good part after just a short ramp-up. In this feature, we present three TRUMPF automated bending solutions tailored to different needs – **from short runs** with high part variety through to **fully automated series production.**

In brief

Better bending: how automation makes the difference

From compact entry-level setups to fully connected high-end cells, profitable sheet-metal bending today demands flexibility – whether coping with changing part geometries, tighter requirements or scarce resources. **TRUMPF offers automated, precise and flexible solutions to meet just about any challenge**. From complex large parts to short runs with frequent changeovers and end-to-end Smart Factory workflows, **TRUMPF bending systems** turn **automation** into a genuine **competitive advantage.**

TecZone Bend

When variety meets volume: TruBend Cell 5000

The **TruBend Cell 5000** is designed for anyone looking to produce a broad range of parts economically and at scale, whether in machine building, contract manufacturing or as a supplier. This automated bending cell doesn't just boost productivity; it also offers greater predictability regardless of which operator is at the controls. The combination of the TruBend 5000 press brake, BendMaster robot (for up to 40 or even 100-kilogram part weights), automatic tool and gripper change, and smart angle measuring systems (ACB Laser or ACB Wireless) ensures precision from the very first part. What's more, integrated interfaces make it easy to connect automated guided vehicles, enabling the end-to-end automation that is the hallmark of a true Smart Factory environment.

Quick start thanks to rapid offline programming

When time is tight and part geometries keep changing, offline programming solutions like TRUMPF's TecZone Bend and TecZone Fold make all the difference. Instead of creating programs manually, the software automatically calculates suitable bending sequences – fast, reliably and with real-time collision checking. This reduces pre-production effort and guarantees consistently high quality, even for frequent design changes. For operations with high part volumes or multiple one-off pieces, it's a genuine efficiency boost – especially when resources are stretched thin.

TecZone Bend

TecZone Fold

Compact, flexible, perfect for small parts: Flex Cell with TruBend 7050

Manually bending small parts can be time-consuming and labor-intensive, especially at medium to high volumes. **Flex Cell** offers a smart, straightforward solution: it transforms the manual **TruBend 7050** into TRUMPF's fastest mobile bending cell in next to no time. Docked to the bending machine in just a few simple steps, it takes over defined workflows autonomously, providing a compact, fast and reliable solution. The key benefit is that users can switch between manual and automated modes as needed, because the unit can be detached just as quickly as it was docked. With a footprint of less than 10 m², high loading capacity and up to 42 hours of autonomous operation, the Flex Cell offers truly impressive speed and versatility. And thanks to TecZone Bend software, programming the bending cell is now faster and more flexible than ever. While the machine is running, the complete bending and robot program can be created offline at the desk at the push of a button, including real-time collision checks. That slashes programming time from as much as two hours to just a few minutes and makes complex geometries feasible for the first time. The TruBend Cell 7000 boasts even greater speed: optimized for the smallest components, it offers ultra-fast cycle times and maximum autonomy.

Automatic swiveling, precise bending: TruBend Center 7030

Panel bending of large or complex workpieces takes experience – and muscle. The new **TruBend Center 7030** takes care of both, fully automatically. It is designed for companies that produce large sheet-metal components with high repeatability, for example in the enclosure manufacturing, HVAC or furniture industries. An angle drive with two synchronized linear axes enables an exceptionally precise bending motion. Even on mild steel up to three millimeters, the machine achieves robust, low-mark results, including radius bends and angles up to 135 degrees. The ACB Laser system ensures accurate angles while ToolMaster Bend handles automatic tool changes. Equipped with the SheetMaster loading and unloading system and integrated with a storage solution, the machine produces parts up to three meters long – continuously, reliably and efficiently. The new model is up to 30 percent faster than its predecessor and requires a lower upfront investment.

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