

Drive & Control profile

Switch from Steel to Aluminum on Blowmolder Takeout System Saves Time, Cuts Costs for KASS Automation



The bolt-together construction of the Rexroth aluminum framing line reduced the build time for KASS machine frames from weeks to days compared to using welded steel.

Holding seven patents in downline extrusion equipment, principals at KASS Automation Systems of Carrollton, TX, have produced over 1,000 machines for blowmolding production lines worldwide. A designer, engineer, and manufacturer of blowmolding automation solutions, KASS is recognized throughout the plastics industry

for its development of takeaways, spin trimmers, and deflacers which are considered industry standards. Recently, with the help of distributor Minarik Corp. and Bosch Rexroth's Linear Motion and Assembly Technologies group, KASS decided to switch from using welded structural steel framing on its extrusion shuttle blowmolder takeout systems to

Challenge

Help plastics automation machine builder cut costs and speed delivery of takeout systems

Solution

Bosch Rexroth Extruded Aluminum Framing Systems

Benefits

- Manufacturing time for machinery frames drops from weeks to days
- Extruded aluminum framing costs 25% less than painted and welded steel
- Proves stable and wear-resistant even in polyvinyl chloride (PVC) applications, which can be corrosive to welded steel
- Using aluminum frames eliminates need for additional fixtures
- Modularity of aluminum framing makes minor in-field adjustments fast and easy
- Proven durability in demanding 24-hour-a-day applications

Rexroth's extruded aluminum framing, cutting time and saving money on machine assembly.

The Lowdown on Aluminum Downline

In the world of plastics blowmolding, takeout systems like the KASS T200E offer a simple solution for container handling from the mold to the conveyor where the containers are kept oriented and vertical. Compatible with the Bekum and Battenfeld-Fisher shuttle-type blowmolding machines and others, the T200E can accommodate a broad spectrum of containers with no change in parts required. Standard machines can handle containers from five inches to 12 inches in height and depths from 1.25 inches to six inches. The T200E is easily adjusted to handle container size changeovers, and containers beyond these sizes are accommodated through minor modifications. In addition, screw-type legs provide six inches of height adjustment for alignment with other downline equipment, and movable, modular aluminum extrusion guide rails change to fit various container widths.

For KASS, extruded aluminum framing and takeout systems combine to form cost-effective, timesaving solutions to blowmolding production challenges. The KASS T200E takeout system, for example, automatically removes blowmolded containers from the molds of a blowmolding machine and transfers the containers in the desired orientation to a conveyor.



Screw-type legs allow six inches of height adjustment for alignment with other downline equipment, while the rigid Rexroth framing and connector system provides superior vibration resistance.

Without the takeout system, the molds would open and the containers would drop randomly onto a conveyor. The containers

would then have to be arranged using additional operations. In the worldwide race to stay competitive, automation of these downline processes increases productivity and reduces repetitive and costly labor. The takeout system eliminates this additional orientation step. The T200E provides a steady stream of oriented containers ready for the next downline operation with options including a detabbing unit, tail cooling clamp unit, narrow container base trays, and frame mounted scrap conveyor. Overall, it's the simple T-slot design of Rexroth's aluminum framing that enables the T200E to precede virtually any other downline function. Choosing from a broad line of profiles and connectors, KASS engineers can easily insert T-bolts into T-slots and tighten, and there is no additional welding or grinding required.



KASS switched from welded structural steel framing on its extrusion shuttle blowmolder takeout systems to Rexroth's extruded aluminum framing, cutting time and saving money on machine assembly.

Using the extruded aluminum framing on the machine also saves time and additional steps compared to the traditional structural steel framing KASS previously used. Larry Zeleznak, KASS sales manager, estimates that manufacturing time for machinery frames dropped from weeks to days when the company changed from welded structural steel to Rexroth aluminum framing.

“Sometimes the steel welder’s lead time would be even longer, depending on their workload,” explained Zeleznak, “Precision mounting holes also had to be added after the frame was welded,” he added. In addition, to compensate for minor warping during the welding process, Zeleznak said KASS used post-fabrication drilling fixtures to add tapped holes for mounting machine components. “We used three locating fixtures for these purposes, and the fixtures cost hundreds of dollars each to fabricate,” he said.

Comparatively, according to Zeleznak, extruded aluminum framing takes only five to six days to fabricate from start to finish.



The T200E can handle containers from five inches to 12 inches in height and depths from 1.25 inches to six inches.



The Rexroth extruded aluminum framing proved its durability and alleviated concerns from KASS about machine vibration and shock to the frame from repetitive motion.

KASS has control of the timeframe since it has the capability of machining the extrusion in-house. Its Rexroth vendor, Minarik, stocks all of the material KASS requires. Zeleznak said the cost of using extruded aluminum framing is about 25 percent less than the welded and painted structural steel frame. But cost savings aren’t the only benefits to KASS.

“Since the extrusion is modular, we can stock a few sizes of the extrusion and quickly turn it into the final product we need,” said Zeleznak, who noted KASS uses four different profiles of the Rexroth framing. Because of the modular nature of the extrusion, KASS simply mounts the components on the required side and uses a spacer to lengthen the frame on the T200E’s longer version. The T200E measures 32-inches wide and 36-inches high

with a vertical height adjustment of six inches and an overall length of up to 147 inches. The modularity of the framing system also allows KASS to easily make final location adjustments to mounted components by simply sliding the component along the extrusion to the desired position and then tightening the fasteners.

“The aluminum extrusion has proved to be a clean, simple industrial solution that prolongs the life of the machinery, reduces maintenance, and keeps the plant looking well-maintained,” commented Zeleznak. “Our customers do not have to worry about paint chipping or rust, and it works in all the environments our equipment is used in, even when the blowmolder is running PVC containers, which are highly corrosive to steel frame components.” Zeleznak also noted

that wiring and pneumatic lines are easily concealed and protected within the extruded tube and T-slots, enhancing the safety of the machine. “Aesthetically, aluminum extrusion adds to the overall organized and well-engineered look of our machines,” he added.

For KASS customers, one of the biggest benefits is the ability to lengthen the machine (going from the shorter version to the longer version) in the field. In the past lengthening the machine typically required the customer to buy an entirely new machine. Now, customers can make field modifications by adding aluminum structural framing profiles and connectors to the existing machine using the simple T-slot design. No welding, grinding or additional work is required, so customers can quickly return the machine to production.

Making the Switch

When weighing the pros and cons of switching from steel to aluminum, KASS was concerned about vibration and shock to the frame from the repetitive motion and long stroke lengths on some axes. “Our machines are solidly built,” stated Zeleznak, “so we did not want to simplify the system in one area only to complicate it in another.” Zeleznak’s concerns were quickly allayed, however, as the aluminum framing proved its durability in some of the most demanding 24-hour-a-day applications.

Minarik suggested the switch to aluminum extrusion after

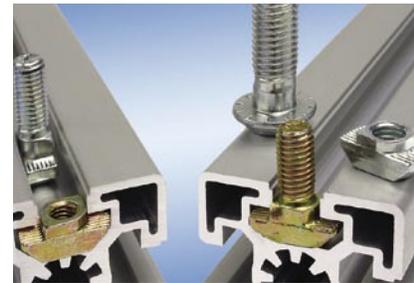


Bosch Rexroth uses quick-load connectors that fit anywhere along the T-slot, making it easy to add accessories or fixtures anywhere on a machine frame.

considering the variety of extrusion sizes that fit KASS’s requirements and the potential benefits. “We were very impressed by the way Minarik helped in implementing the change to Rexroth aluminum extrusion,” reflected Zeleznak. “In fact, we are making plans to use their support to implement changes to many of the frames in our line of blowmolding automation equipment.”

Zeleznak explained that Minarik was an integral part of convincing KASS to switch to aluminum. Minarik’s Hugh Zinsmeyer, who worked closely with KASS engineers throughout the process, said he knew aluminum extrusion would help KASS in multiple areas. Zinsmeyer said he specifically recommended Rexroth because of the product quality, flexibility, options for accessories, and the overall strength of the product after assembly.

Switching to aluminum framing also helped simplify supplier logistics. “KASS was challenged with multiple vendors, including a weld shop for frame fabrication, a machine shop for precision



Extra-wide T-slots and larger center bores support heavier connectors—saving time and money by requiring fewer fasteners.

surfaces, and a painting shop for final finishing—all before they could begin the final assembly of the machine,” said Zinsmeyer. “By convincing KASS to switch from welded steel to Rexroth aluminum framing, we were able to help significantly streamline the process. Now, KASS can design, build, and ship their machines to customers faster than ever before.”

One example is CKS Packaging, Inc., headquartered in Atlanta and ranked in 2004 as one of the Top 20 Blowmolders in North America by *Plastics News*. CKS serves the dairy, water, juice, food, agricultural, industrial, and household chemical and toiletries markets and is one of the fastest growing plastic bottle manufacturers in the United States. The company was one of the first to use the redesigned T200E takeaway incorporating Rexroth aluminum framing.

Bill Beard, CKS operations manager at the Kansas City facility said this is the first T200E at his plant. The machine runs off an eight-cavity, shuttle-type blowmolding line to remove

cosmetic and industrial bottles from the molds and transfer them to the downstream line. The bottles range in size from 8oz. to 38oz. Beard said, "The T200E with integrated KASS vacuum conveyor system has allowed us to automate jobs that could not be automated with the older style takeaway system it replaced. The aluminum framing makes the machine lighter and easier to work with."

Today, machinery manufactured by the KASS team, like the T200E, spin trimmers, rotary trimmers, and deflashers, can be found in 18 countries throughout the world, manufacturing containers for cosmetics, household and laundry care, edible oils, food products, lubricants, and a wide range of non-food items such as ice chests and portable safes. The KASS team has designed, manufactured and installed equipment downline from virtually every type of blowmolding machine on the

market with intelligent, cost-effective solutions for every company size from the single blowmolder to the multi-plant conglomerate. Their machinery can be found in many notable companies like Owens-Brockway, Continental Plastics, Amway, Graham Packaging, Regioplast, Igloo, Gott Industries, Alpha Plastics, Schoeneck Containers, Hilite International, Pharmafab, CKS Packaging and more.

"KASS is committed to offering leading technology for the blowmolding industry," concluded Zeleznak. "The Rexroth aluminum framing helps us to manufacture a better product and to be more competitive. Our business at KASS requires us to constantly work at improving our existing machinery lines and to develop the best new machinery on the market, and our relationship with Minarik and Rexroth has proved to be a real asset in accomplishing these goals."

Rexroth
Bosch Group