Automatic Bulk Adhesive Feed System Provides Benefits to Manufacturers

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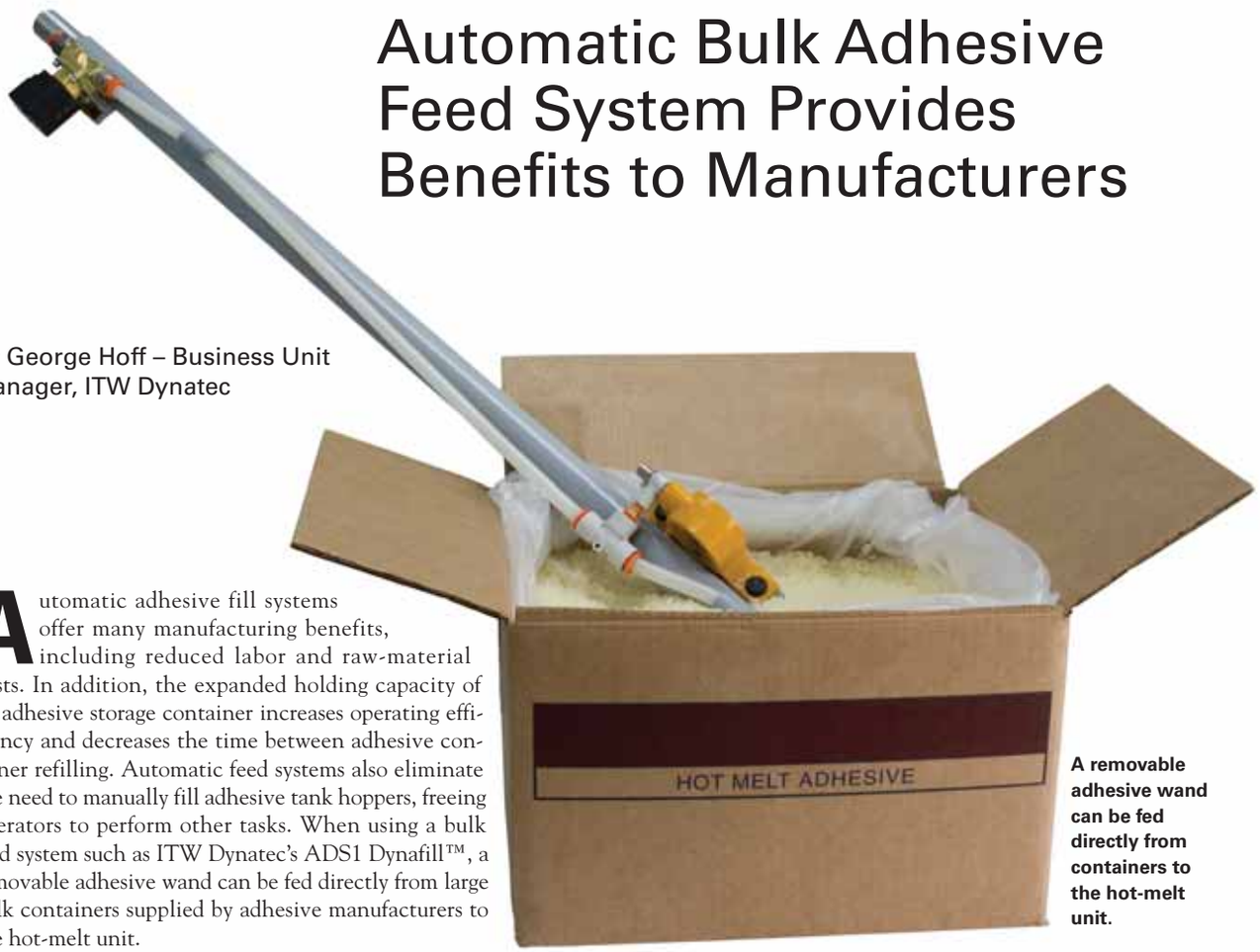


A removable adhesive wand can be fed directly from containers to the hot-melt unit.

Automatic adhesive fill systems offer many manufacturing benefits, including reduced labor and raw-material costs. In addition, the expanded holding capacity of an adhesive storage container increases operating efficiency and decreases the time between adhesive container refilling. Automatic feed systems also eliminate the need to manually fill adhesive tank hoppers, freeing operators to perform other tasks. When using a bulk feed system such as ITW Dynatec's ADS1 Dynafill™, a removable adhesive wand can be fed directly from large bulk containers supplied by adhesive manufacturers to the hot-melt unit.

The Dynafill system continuously monitors the adhesive levels in hot-melt system hoppers; without the use of bulk-feed systems, operators must constantly monitor hopper levels by manually opening the lid and looking at the current volume. This process introduces many variables into the manufacturing process, such as labor costs to monitor and fill the hopper, failure to fill the hopper, and even the chance of spillage or thermal shock to the adhesive. With an automatic feed system, adhesive levels and temperatures remain steady, providing less risk of char and other degradation. The ADS1 is a closed, positive-pressure system that virtually eliminates contaminants that lead to char and nozzle clogging by reducing adhesives' exposure to the environment. Thus, fewer replacement parts are required and downtime and maintenance are also reduced.

Purchasing adhesive in larger quantities for a bulk-feed system can mean volume discounting. In addition, the system can reduce power consumption, decrease adhesive degradation and waste, and reduce scrap. A safer work environment is also achieved, as operator exposure to molten adhesive when refilling the equipment's hopper tank is eliminated. The ADS1 features a positive-pressure, self-contained design that minimizes contamination, resulting in improved performance and reduced equipment downtime.

The ADS1 Dynafill can be installed out of the box with simple plug-and-play components. The unit's control box is attached to the lid assembly, which eliminates the need for separate mounting and saves time and money. The lid assembly is sized to drop into most hot-melt adhesive hoppers and can easily be moved to other hot-melt units. With 120 or 240 Vac standard electrical configurations, the ADS1 requires little to no wiring.

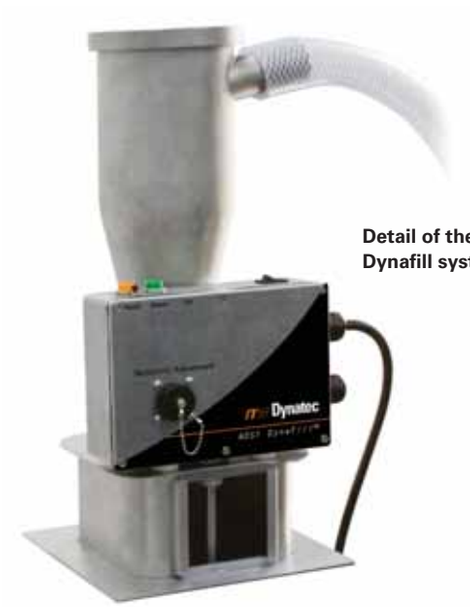
USING AN AUTOMATED FILLING SYSTEM

Operating on 20 cfm at 50 psi air pressure when feeding, the Dynafill automatically draws and transfers adhesive to the tank hopper when the level falls to a pre-set minimum. Even low levels of adhesive are drawn through a suction wand immersed in the adhesive bin and delivered under positive-pressure to the tank hopper, ensuring little to no waste. A vibrator installed on the wand keeps the adhesive flowing freely. A capacity sensor immersed in the adhesive tank's hopper responds to a low level pre-set by transmitting a signal to the DynaFill system to draw adhesive through the wand and deposit it in the hopper. When the hopper reaches the pre-set maximum adhesive level, the sensor discontinues the signal to the system and adhesive transfer is stopped.

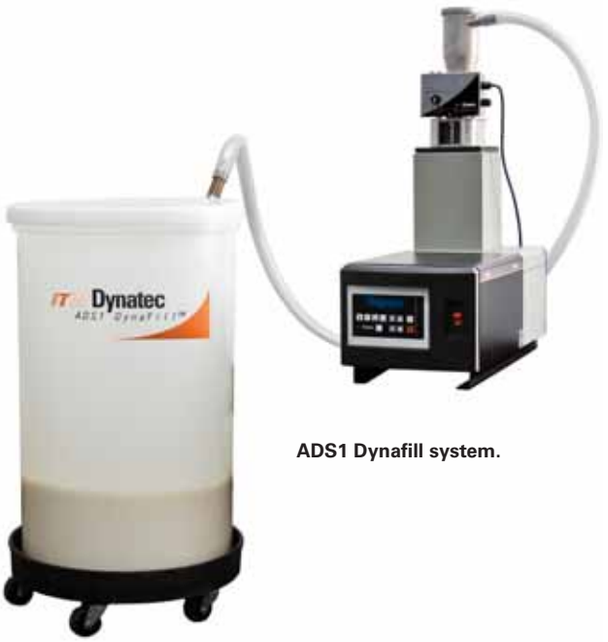
The DynaFill system can feed a hot-melt unit from up to 20 feet vertically and up to 100 feet horizontally, accommodating adhesive sizes up to a half-inch slat. The flexibility of locating the ADS1 up to 100 feet away from the hot-melt equipment allows for additional floor space considerations.

Other features and benefits include:

- **Reduced power consumption**. The ADS1 limits the need to open the hot-melt machine's reservoir lid during the filling operation, an action normally required during man-



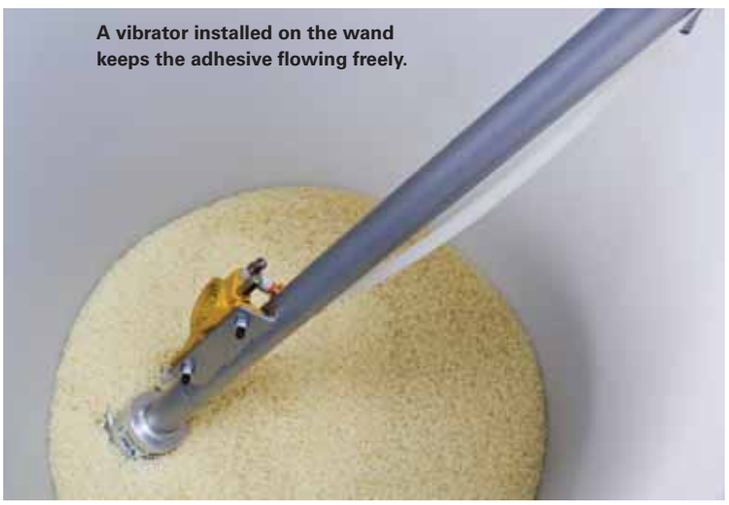
Detail of the ADS1 Dynafill system.



ADS1 Dynafill system.

ual feeding of a hot-melt system. Frequently opening the lid allows heat to escape, which then requires the hot-melt system to cycle for additional heating. The ADS1 contains and maintains the heat within the hot-melt system and reduces the need for additional heating cycles.

- **Reduced thermal shock**. In a manually fed hot-melt system, the unit can go unattended and the adhesive level can run low within the system. This process is inefficient and leads to wasted energy and heat. When the tank is refilled after running too low, it can shock the hot-melt system into overshooting the need for heat. The ADS1 eliminates the risk of allowing the system to run low; an efficient level is constantly maintained in the hot-melt system.
- **Reduced adhesive waste.** The ADS1 provides an enclosed system that virtually eliminates adhesive spills and waste. During manual feeding of a hot-melt system, adhesive is occasionally spilled onto the floor or overflows from the adhesive reservoir. With the ADS1, the adhesive level is properly maintained at all times to eliminate overfill. The metal lid fits securely and prevents adhesive from spilling onto the floor during dispensing.



A vibrator installed on the wand keeps the adhesive flowing freely.

- **Reduced product waste**. Most hot-melt systems have ongoing issues with filter and nozzle clogging, due to contaminants and adhesive char. When nozzles clog, the production line must be stopped and improperly sealed product scrapped. The ADS1's enclosed system keeps contaminants in the work environment from entering into the hot-melt system. Common contaminants include fiber, paper particulate, and miscellaneous objects such as screws and other work-related materials.
- **Safety**. Splash back while filling a hot-melt reservoir is one of the main causes of operator adhesive burns. Since the ADS1 takes the operator out of the process of filling the reservoir, the potential for splash back and burns is reduced. In addition, there is less operator exposure to harmful fumes.
- **Floor space requirements**. The ADS1 can accommodate adhesive transfer up to 100 feet away. This allows the system to be positioned in an area that has easy filling and maintenance access. In a manual-filling process, 50 lb. boxes are commonly lifted into place so the operator can scoop adhesive to fill the hot-melt system. In some cases, the operator must use a ladder to reach the hot-melt system for filling. The ADS1 bulk-feed system eliminates the use of adhesive boxes and the need to scoop and climb to fill the hot-melt system. The ADS1 system offers an optional caster base that allows operators to simply move drums to the loading area when they need to be refilled from a bulk container.
- **Cleanliness**. In industrial areas, materials that can cause tripping or slipping must be kept off the floor. Since the ADS1 is an enclosed system, it avoids the waste and safety hazard of spilled adhesive onto the floor and work areas around the hot-melt system.

CONCLUSION

Automatic adhesive fill systems offer several manufacturing benefits, including reduced labor and raw material costs, greater holding capacity, and increased operating efficiency.

For more information, visit www.itwdynatec.com or phone (800) 966-6358.