

Specifying the Ideal Stretch-Wrap Machine for the Application

By Mark Collins, Vice President of Sales, Orion Packaging

Stretch wrappers are one of the easiest pieces of machinery to cost justify, use, and maintain. Easy, that is, if one understands the basics of specifying the correct stretch-wrap machine for the application.

Cost Justification — Material and Labor Savings

Stretch film is engineered to be elongated, which means that once it is stretched the true characteristics of the material emerge. Because of its engineered properties, the film has much higher puncture and tearing resistance when stretched. It also has greater load holding ability.

Stretch-wrap machines are cost justified on material, labor savings, and load unitization improvements with the majority of machines paying for themselves in one to two years. In terms of material savings, consider that today's high performance machines pre-stretch the material by 250 percent or more. This means that every foot of stretch film when off the roll, covers two-and-a-half-times more area than if the material was not stretched at all.

Compare "percent stretch" to the money a motorist would save over a year's time by improving an automobile's mileage from 10 miles per gallon to 35 miles per gallon, a 250 percent difference. Stretching the film offers that same type of saving — going farther at less cost. The material savings is highest when an organization upgrades from manual wrapping, only 10 to 20 percent stretch, or from an older stretch wrapping machine to a new semiautomatic or automatic machine capable of 250 percent or higher pre-stretch.



At one end of the labor spectrum, manual hand wrapping involves 100 percent direct labor. Semiautomatic stretch wrapping involves less direct labor — a worker attaches the stretch wrap to the pallet load, starts the machine, and then cuts the film tail at the end of the process. During the wrap cycle, the operator is free to attend to other tasks. Fully automatic wrapping equipment requires virtually no direct labor in the process. After the load is delivered via conveyor, the system automatically wraps the load, cuts and weighs down the film tail, and transports the wrapped load to a staging area ready for pickup.

Managers should also factor into the justification equation the productivity gains from faster stretch wrapping and the operational advantages of freeing workers for more value-adding duties. Machine wrapping can also offer a decrease in goods damaged during shipment and fewer worker issues, including falls, sprains, and repetitive motion injuries incurred during manual wrapping.

A less tangible but still important consideration is the improvement in customer and channel partner satisfaction from the quality and consistency from machine wrapped pallet loads.

One user example is the Annex Warehouse, which ships 50 to 100 pallets of bulk coffee per day. General Manager Buzz Romero wanted to streamline manual stretch wrapping in order to free personnel for other duties and decrease the time drivers waited for consignments. Following an in-plant trial, Romero purchased a semiautomatic turntable stretch wrapper for pallet loads averaging 1,500 to 3,000 pounds. He said the machine paid for itself within seven months of service. Pallets are now ready for shipment when drivers arrive. Romero said that workers are thrilled to be off manual wrapping duty.



Types of Stretch Wrappers

Turntable and rotary tower are the two basic designs of stretch wrapping equipment. Each of these two categories is available in either semiautomatic or fully automatic versions. Many manufacturers offer a hybrid of these models called portable automatics that combine the economy price of semiautomatic models with the automated film-tail treatment of fully automatic machines.

Turntable Key Features

Pallets are processed on the machine's turntable. As the turntable revolves, the pallet load is wrapped according to a predetermined cross-spiral pattern. Wrap pattern maximizes holding power while minimizing material use. Turntables come in two basic configurations, low profile or high profile. Low-profile machines are ideal in situations where pallets are primarily loaded by pallet jack — the load is rolled up a ramp to the turntable, which is only about three inches off the floor.

High-profile turntables are designed for loads delivered by forklift. The platform on high-profile machines is 10 to 14 inches above the floor. The added height — above the level of forklift wheels — helps protect the equipment from damage due to forklifts rolling over the turntable. High-profile turntables are square shaped with rounded corners, which allows the forklift to approach closer and more easily center a load.

When specifying a turntable machine, make sure it can handle the weight of the heaviest load to be wrapped. A key component of a turntable machine is its load-bearing base frame, which should be fully constructed of structural steel components running the full length of the frame. This feature gives the machine more rigidity and better stability on uneven surfaces.

Rotary Tower Key Features

When using rotary tower machines, the load is wrapped on the floor or on a conveyor. A rotary arm travels around the load, wrapping it in a cross spiral pattern. Rotary tower machines are ideal for unstable loads that might come apart if rotated on a turntable or for extremely heavy loads because the pallet can be placed on the floor under semiautomatic wrappers. Customers also use semiautomatic rotary tower machines in areas of the plant requiring frequent wash downs because the floor near the machine is accessible.

Rotary tower machines can be placed over a weigh scale so that the load can be weighed and wrapped at the same time. They can also be placed over conveyors and other equipment for greater operational flexibility. During operation, rotary tower machines have a larger footprint than turntable machines, although when the rotary arm is not in operation they take up less space.

When choosing semiautomatic or fully automatic equipment, look for structural steel construction, adequate safety features, state-of-the-art control, and easy access to service components.

Automation is the Key to Efficiency

Inline automatic stretch wrappers are integrated into the packaging line and are the most advanced in terms of control, communication, film delivery, and load handling. This solution is ideal for higher throughput production rates from 50 to 100 pallets per hour. These machines require the stretch-wrap equipment supplier to work closely with the end user and/or distributor to ensure optimum use of automation for high productivity.

A rule of thumb for stretch wrappers is that the higher the performance and the number of features, the higher the cost. Semiautomatic stretch wrapping turntable machines range



from \$6,000 to \$12,000 on average. Semiautomatic rotary tower machines range from \$14,000 to \$18,000. Fully automatic machines — turntable and rotary tower — range in price from \$35,000 to \$100,000.

Additional key features to look for include:

- High stretch from the power pre-stretch feature
- High performance Automatic Film Force-to-Load Control for optimized holding strength and protection against crushing
- Reliability in film delivery to minimize wrap tearing
- Heavy duty structural steel construction
- Easy loading of stretch film onto the machine
- An easy-to-use and understand operator interface
- Flexibility in terms of wrap patterns
- Low-maintenance AC-motor technology
- Straightforward maintenance procedures
- Same-day or overnight parts delivery
- A supplier with a reputation for excellence in customer service and support

For more information, contact PLAN Automation
+1 (416) 479-0777
www.planautomation.com

