



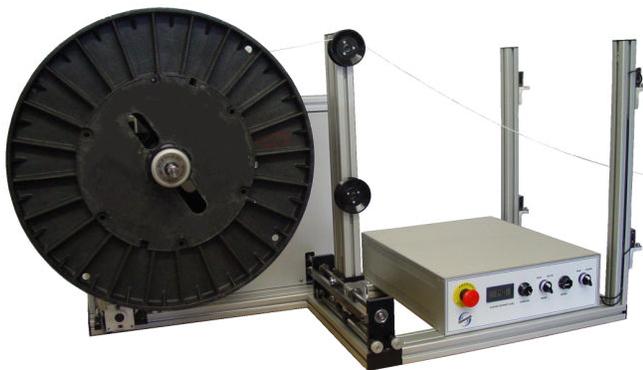
Take-ups & Payoffs

Showmark Standard & Custom Solutions

Showmark manufactures a variety of payoff and take-up units. Our payoffs smoothly feed your product with a variety of tension control methods while our takeup systems produce spools or coils with neat and even rows of material. Our systems have been used with delicate materials such as optical fiber, extremely fine wire, solder, and wax filament. Tensions can be kept below 10 grams if necessary. We are equally capable of feeding and winding heavier cables, plastic tubing, or strip materials. Let us know if you don't see a solution that meets your needs. Custom systems are the norm at Showmark.

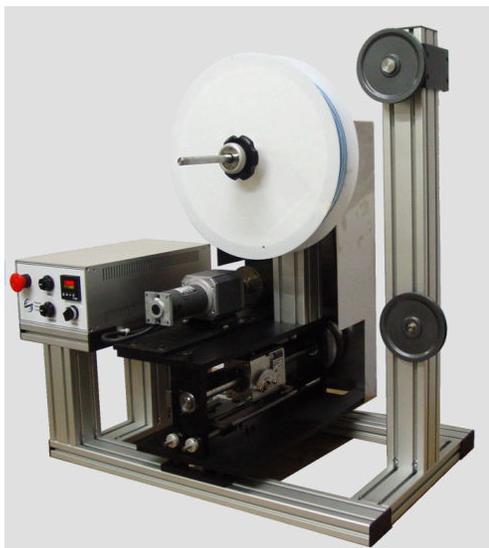
Standard Take-up Systems

Standard Takeup Systems use a reliable traversing guide unit to steer the material onto the rotating take-up spool. The traverse can be sized to handle many types of materials from fine filaments to heavy cables. In addition, the pitch rate and spool width are very easy to adjust – even on the fly. Systems can be sized for spool diameters from 1 to 50 inches and almost any width and weight. Options include: electronic tension control, length tracking, tachometer, and wire break detection.



Simple Take-up System (STS)

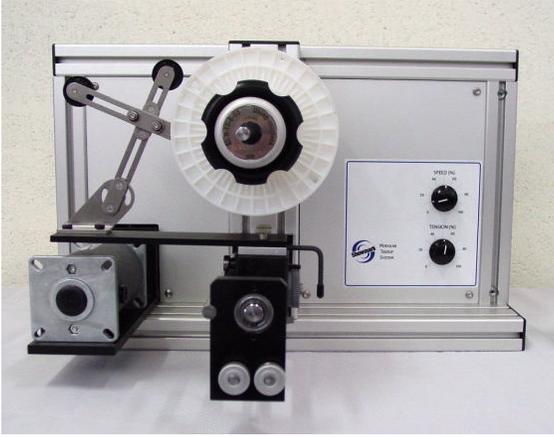
The STS is a compact and simple to use take-up unit that produces neatly wound spools of material. It uses the same reliable traversing wire guide as our Standard Take-Up Systems. Options include: Open-Loop Tension Control, Length Counter, wire break detection, various shaft sizes, and spool adapters.



Moving Take-up Unit (MTU)

The take-up spool on a Moving Take-up Unit (MTU) is carried by a traversing system as it rotates. As a result, the material travels in a straight line onto the spool without any twisting. This is ideal for delicate materials or flat wire and strip materials. The system can also produce a neater wind. MTU's can be made for large or small spools of almost any width. The system shown includes a length counter/controller and an electronic slip clutch system for tension control. The pitch rate and traversing window are very easy to adjust and can be done while the system is moving.

Modular Take-up System (MTS)

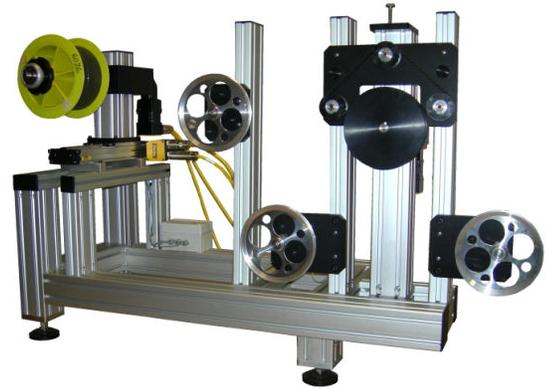


The MTS is a very flexible solution for single or multi-wire take-up applications. Each MTS module can operate as a complete single axis take-up system; or several modules can be stacked together to create a multi-wire take-up system. Each module provides independent controls for speed, tension, and spool dimensions. This results in excellent wind quality regardless of variations in wire-to-wire line speeds and tension. For the ultimate in flexibility, a multi-wire MTS system can be taken apart, moved around, and reassembled in a variety of configurations. Options include: Closed-Loop Tension Control, Length Counters, and Tachometers.



Programmable Payoff and Take-up Systems

Showmark designs and builds sophisticated payoff and take-up systems for applications that require high precision and programmability. These systems typically employ servomotors with closed-loop tension control using solid state tension transducers or dancer arms for feedback. Motor driven actuators provide micron precision traversing motion. Control and setup is accomplished through a dedicated touchscreen or computer interface, push buttons, a computer server, or exchange of I/O with other devices. The system to the right winds .001" diameter tungsten wire with less than 10 grams of tension for a solar cell manufacturer.



Additional Payoff Systems

Showmark can design a payoff system for your specific needs. Systems can be purely mechanical, or they can include open or closed-loop tension control with motor assistance. We can also integrate the controls of our payoff and takeup systems with those of your manufacturing and inspection systems.



Basic Payoff with Closed-Loop Tension Control



Payoff unit for fishing line skeins and textile hanks. The linkage adjusts to accommodate different diameter loops.