

WIRE AND CABLE INDUSTRY

DSI/Dynamatic[®] serves the wire and cable industry virtually from start to finish of a widely varied end product. At the beginning of the wire-making process, DSI/Dynamatic[®] drives are applicable in the continuous casting process, driving casting wheels and forming rollers. Further down the line, the wire is shaped, drawn annealed and then insulated, and at that point branches off into two further categories. For some of the insulated wire, this is the end of the line, as it is spooled up and packaged for dispensing to the end customer as single-conductor, insulated wire. The rest of the wire output is further processed into more complex products, such as multi-conductor cable.

The cabling process involves additional operations requiring DSI/Dynamatic[®] Eddy-Current drives and specially coordinated drive systems. First, several single, insulated wires are brought together in a stranding operation to form a “unit.” This unit may consist of several to many pairs of insulated wire, all twisted and bound together. Twisting and binding operations may then be repeated as many units are brought together and formed into a final cable. A further and final insulation operation will occur during the cable making sometimes preceded by steel or aluminum jacketing to weatherproof the cable.

Typical Customers

DSI/Dynamatic[®]'s history in the wire and cable industry is extensive. Many of our customers are cable manufacturers. Some of these equipment users are involved in the manufacture of raw material used in the wire industry. A typical customer casts the material, shapes, and draws it to provide basic rod and bar stock for the various manufacturers of wire and wire products. We also find most of the major steel companies involved in the production of raw material for ferrous applications such as wire, rope, guide wire, steel tire cords, etc. Copper mines and refineries are involved in much the same process in the production of nonferrous raw material for wire production.

The basic ferrous and nonferrous rod stock obtained from these primary manufacturers is then purchased by the wire and cable manufacturers.

The following charts, are intended to provide you with an encapsulated analysis of the wire and cable industry in both the OEM and user segments, showing the type of applications our Eddy-Current drives fit, the general control feature requirements, environmental considerations, and drive type recommendation for each of the basic machine and system types.

Table 1
WIRE AND CABLE INDUSTRY
TYPICAL ENGINEERED SYSTEMS NORMALLY SOLD TO USERS

Type of Line	Drive Function	Control Philosophy	Recommendations & Advantages
Insulating	Extrusion of insulate, speed control, payoff, take-up	Extruder in cascade with capstan, payoffs, take-ups, dancer position	Eddy-Current — simple, adaptable to custom logic, etc.
Drawing	Gauge reduction, annealing, spooling	Speed control wire drawing, dancer trim annealer, dancer position or dancer trim take-up	Eddy-Current, depending on requirements of wire drawing machine
Repair Lines	Remove defective unit from cable; replace with new unit and re-manufacture the cable. Scrap winding, untwisting, retwisting, rebinding, etc. Multipurpose equipment.	Complex and very special — usually one of a kind. Sometimes involves position synchronization between unwind and winder. Reversing, slow speed operation, many modes for flexibility. Selsyns often used for position control.	Any type drive may fit depending on individual situation. Advantage: one of three types readily available to meet any requirements.

Table 2
WIRE AND CABLE INDUSTRY
TYPICAL REQUIREMENTS AND DRIVE ADVANTAGES—BASIC MACHINES

Machine Application	Control Features & Performance	Recommended Drive Type: Advantages
Payoffs & Take-Ups	Dancer (position or trim), speed tracking modes, high stability	Eddy-Current— All mods readily available, ease of maintenance
Annealing	Line cascade, dancer trim, standard regulation	Eddy-Current, depending on environment
Insulators (Extruders)	Prolonged low speed operation, high breakaway torque, torque limit, standard regulation	Eddy-Current — simple and reliable
Capstans, Main	Speed controlled master drive, good regulation (% to 1/4%), line function coordination logic	Eddy-Current—readily available mods, compact, easy to maintain and interface
Capstans, Auxiliary	Torque controlled helper drive, speed controlled jog	Eddy-Current available, ready for use as standard
Tinning	Torque control, multiple motors on common regulator, forced vent required on controls	Eddy-Current generally not applicable
Twisters, Stranders	Accurate tracking and high regulation accuracy	Eddy-Current
Wire Mills, Formers	Cascade with dancer trim, some torque controllers only	Eddy-Current
Inspection, Respooling	Dancer position payoff with constant FPM take-up, reversing	Eddy-Current— for simplicity
Metal Sheathing	Line cascade with dancer trim, standard regulation, 10 hp and less	Eddy-Current—smaller horsepower, economical, simple controls

The Dynamatic® name has been associated with various wire and cable applications for many years. For further information or details on these and more conveyor applications, please contact sales@dynamatic.com.