



# Royle Systems Group

## Sheathing Line



### Technical Specifications:

Application:	PE & PVC Sheathing of Power Cables
Compound:	PVC, PE
Core Diameter:	13 - 135 mm
Sheath Thickness:	1.0 - 7.5 mm
Sheath OD:	15 - 150 mm
Line Speed:	0 - 40 MPM
Extruder Size:	200 mm 24:1 L/D
PO Reel Diameter:	1800 - 4000 mm, 20,000 kg
TU Reel Diameter:	1800 - 4000 mm, 20,000 kg

### Features:

- Input Caterpillar Capstan and Pullout Capstan
- 200 mm 24:1 L/D Extruder
- Oil Heated Crosshead(s)
- autoLine Computer Control

## Input Caterpillar Capstan and Pullout Capstan

Two rugged, heavy duty caterpillar capstans work in combination to ensure accurate tension control of the heavy power cable products. The input capstan ensures constant tension of the core into the crosshead to enable extrusion of a consistent wall thickness. The pullout capstan ensures a constant tension and speed throughout the balance of the line to hold the tight wall thickness tolerance desired by all users.

Each caterpillar capstan consists of capstan belts, pneumatic belt application and tensioning devices, and the drive are fitted internal to the frame. The belts are guarded by a Plexiglas cover which is electrically interlocked to prevent opening during running while allowing the operator to visually monitor the cable. This unit is designed to be mounted directly to the floor without the requirement of special foundation work.

Both belts are applied against the cable by a series of pneumatic cylinders via roller assemblies, thus allowing for splices to pass through the capstan without losing pulling capability. Tiebars connecting the upper and lower assemblies ensure that the cable centerline remains constant. Belt clamping force through the cylinders is adjustable by an operator controlled regulator.

The belts are tensioned pneumatically via two sheaves on each belt assembly resulting in constant tension and ease of maintenance. The belts are driven at constantly matched speeds through the reducers. A cable guide assembly is provided at both the entry and the exit ends of the capstan. Each assembly has two vertical and two horizontal rollers which are adjustable a screw assembly which maintains a constant centerline height.

### **Specifications:**

Track Opening:	200mm
Max. Tension:	2200 kp
AC Vector Motor:	25 HP

## 200 mm 24:1 L/D Extruder



One Royle Gen 2000 Alufin heavy-duty extruder comes complete with a fully enclosed gear housing having self-lubricated opposed helical reduction drive. The lubricating oil is fed by gravity to integral roller thrust bearing mounted in its own housing to isolate extrusion pressure and torque overload from gear reduction drive. Comes complete with spacer ring and water-cooled feed section (equipped with safety guard) and cylinder with bimetallic lining and insulating jacket. Also includes Alufin heating/cooling system consisting of Alufin cast heaters with external fins for increased cooling and internal high-temperature resistance heaters, high-velocity air cooling by motorized blowers connected to plenum chamber and air duct assembly, and temperature sensing thermocouples for each control zone. The system is automatically controlled remotely, and comes with a flow cooling pipe and rotary joint for stockscrew. All above assembled and mounted on heavy-duty fabricated steel base, prewired, prepiped and shrouded.

### Specifications:

Model:	200 mm 24:1 L/D
Heating/ Cooling Zones:	5
L/D Ratio:	24:1
Reducer Model #:	630 K

### Oil Heated Crosshead

Due to the large size of the conductors used in power cables, the physical size and mass of the sheathing crosshead is large. Temperature control within the crosshead is of paramount importance especially near to the polymer flow passages and at the guider tube since the large conductors act as a heat sink, drawing heat from the head. Royle's power cable sheathing crosshead overcomes the temperature control issues through the use of temperature controlled fluid that is circulated deep into the crosshead through drilled passages. Royle is able to introduce the temperature controlled fluid to the guider tube, die holder, and deep into the crossbody thereby ensuring that the polymer flow passages are heat-controlled with excellent stability.

One Alurobe Safelock crosshead consists of circulation and electric heaters, three control thermocouples, and all internal fixtures. The velocity section will be electrically heated (zone 3), and the guider tube (zone 2) and crossbody/ die holder (zone 1) are drilled with passages for liquid temperature control. Crossbody/ die holder is fitted with an electric heater for startup preheat only.

**Specifications:**

Model:	250 mm on 200 mm
Alurobe ST	
Core OD:	135 mm
Cable OD:	150 mm

**autoLine Computer Control**

One autoLine control system for total control of all electronically settable control parameters, recipe capability for each product. Color CRT for display for annunciation and monitoring of all critical parameters. Full PID control on all heat/cool loops. The system is provided with several display screens that allow the operator to see parameter set points, actual process variables, and monitored data. Alarms for all parts of the process system are available for annunciation of problems. All data is continuously obtained and updated. The system can also provide trending displays to permit the process engineer to view various data points over a period of time. All data can be instantaneously dumped to a remote printer for status reports or dumped on variable time schedules. Printouts can be conformed to your requirements.

### **Specifications:**

Extruder Size and Type:	200mm 24:1 L/D Alufin
Enclosure Straight Format:	NEMA 12
Temperature Control Accuracy:	+/- 1 deg C
Temperature Control Zones:	8
Hardware:	Pentium Computer with VGA color CRT

### **Other Line Components**

All of the other line components are designed to be rugged, heavy-duty units to allow reliable and long lasting service. The payoffs and takeups are typically floor traversing models rated for 4000 mm reels and 20 ton capacity. The cooling troughs are typically 250 mm flat bottom troughs, insulated, and with height adjustment capability. Temperature control is available, as are chilling facilities, depending upon application and local climate. A cable transport system is essential to lift the starting end of the cable out of the cooling trough preventing water from entering the core. This would consist of a moving carriage, track and support for connecting to the trough support stands, and an electric hoist with clamp. The transport system runs the entire length of the cooling troughs and is very convenient for transporting the starting end of the cable to the far end of the trough system.