



Royle Systems Group

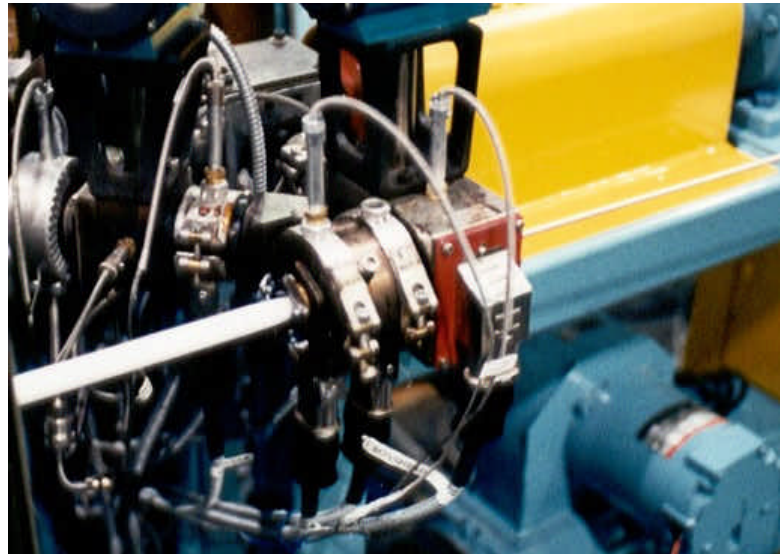
N2 Injection Lines for RF and Microwave Cable Applications

Technical Specifications:

Applications:	RF, Mobile, Radiating, CATV
Conductor Diameter:	2.0-6.0 mm CCA
Copper Tube Diameter:	4.0-19.0 mm Smooth or Corrugated
Foam Dielectric Diameter:	9.0-50.0 mm
Void Rate:	Up to 80%
Design Speed:	100 mpm
PO Reel Diameter:	630-1800 mm
TU Reel Diameter:	800-2800 mm

Features:

- Liquid cooled (7) zone 120 mm 38:1 L/D foam extruder with unique stockscrew technology
- Sophisticated nitrogen injection system with multiple ports
- Advanced autoLine process control system
- Line components designed specifically for manufacturing high frequency cables



Royle's RF/CATV line includes traversing payoff(s) and takeup(s), input capstan with integral cleaning & sizing station, preheater, skin-foam-skin extrusion grouping, autoLine Level 5 process controls, 4-zone temperature controlled cooling system, diameter, capacitance, & eccentricity measuring system, closed-loop load cell tension control system, caterpillar CATV capstan, and precision drive system.

Liquid cooled (7) zone 120 mm 38:1 L/D foam extruder with unique stockscrew technology

The single 38:1 L/D extruder with proprietary stockscrew technology and liquid cooling system assures accurate melt temperature & pressure control, separation of plasticating and foaming sections, and homogenous mixing of nitrogen gas and compound ingredients to produce fine, closed-cell structures. An integral polymer gear pump is included to ensure output and SRL stability. The compound environment control system features drying facilities, weight-loss metering of ingredients, paddle mixing chamber, and vacuum loading facilities.



Sophisticated nitrogen injection system with multiple ports

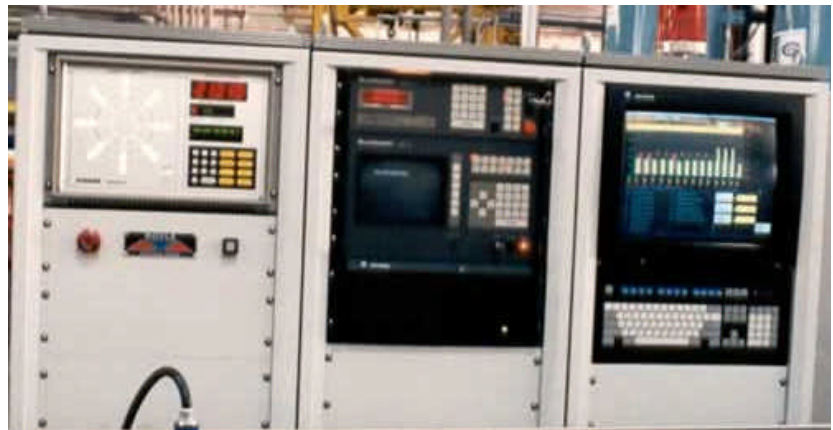


Royle's air-driven piston booster system integrates seamlessly with many nitrogen supply systems including bulk liquid or gas in addition to standard commercial gas cylinders. The system utilizes high accuracy non-pulsing regulators and stainless components and incorporates a

gas receiver to isolate the extrusion process from the high pressure booster. The filtered gas is delivered at sonic velocity through multiple injector stems & ports strategically positioned in the extruder barrel. Advanced electronic circuitry allows use of one or more ports simultaneously and crossover on the fly.

Advanced autoLine process control system

Close control of all operating parameters is assured through the use of Royle's proven autoLine Level 5 control system that incorporates precision drives, Eurotherm temperature controls, PLC, Pentium graphical user interface, and integration of all quality & measuring devices. An integral high speed modem located in the control panel enables telephone connection to Royle for software updates, remote troubleshooting, or routine maintenance. Real-time and historical trending for SPC/SQC is included in the standard scope of supply.



Line components designed specifically for manufacturing high frequency cables



To the extent possible, Royle has eliminated rollers and transmissions and has taken extreme care in the design of all line components to avoid periodicities and SRL problems. The dual wheel input capstan with integral load cell and sizing/cleaning station has been designed to perfectly calibrate the inner conductors and to work in combination with the specially designed caterpillar CATV capstan to accurately control line tension. The CATV capstan has no transmissions or gear reducers, no rollers, and features a long gripping length to minimize the clamping force per unit area.