



Royle Systems Group

Loose Tube Secondary Coating Line

Specifications:

Design Speed:	400 MPM
Compounds:	PBT, Nylon, PVC, PP, PE
Number of Fibers:	1-24
Construction:	Loose tube
Diameter of Fiber:	0.1-0.9 mm
Diameter of Buffer:	0.9-6.0 mm
Gel Compounds:	Thixotropic
Extruder Size:	45 mm 24:1 L/D

Features:

- Individually dancer controlled payoffs with unique tension system
- 45mm extruder with multi-purpose stockscrew
- Advanced excess length control
- Industrial graphical user interface (GUI) that is recipe driven and SPC capable
- Unique dancer/accumulator and zero scrap dual takeup system

The loose tube secondary coating line consists of the fiber optic payoff system, 45mm extruder with bubble-free gel injection system, hopper dryer, loader, color proportioning system, autoLine computer control system, fiber optic crosshead, three zone cooling trough, wet capstan, diameter measuring system, belt wrap capstan with integral load cell, dancer/accumulator and two takeups. The versatile secondary coating line can also incorporate line components to enable production of simplex, duplex, sub-units, and filler rods.



Individually dancer controlled payoffs with unique tension system

The fiber payoff system is designed to payoff optical fibers in a uniform and coordinated fashion at a constant feed rate. Fiber tension is controlled via individual electronically controlled pneumatic dancers that trim the speed of each AC vector payoff station. The system is upgradable for "launch on the fly" applications to allow continuous operation of loose tubes.



45mm extruder with multi-purpose stockscrew

The 45mm 24:1 L/D extruder is equipped with a fully enclosed gear housing having self-lubricated helical reduction drive and heating/cooling system featuring heating units with high velocity air cooling by motorized blowers. The stockscrew is designed for processing nylon, PBT, PVC, PE, and PP.



Advanced Excess Length Control

A key feature of any loose tube line is the ability to control and repeat excess length. Excess length is controlled by accurate payoff tension, tempered cooling of the polymer, closed loop tension control, midspan capstan, "free air cooling" to minimize post extrusion shrink back, and accurate takeup tension. Royle's three zone cooling trough system and closed loop tension control between the 610 mm wet capstan and the 610 mm belt wrap pullout capstan with integral load cell assures controlled polymer cooling and accurate line tension. Once process parameters are established for each loose tube construction, they are entered into recipe and repeated on all subsequent production runs.



Industrial graphical user interface (GUI) that is recipe driven and SPC capable

The graphical user interface features a color CRT operator interface for annunciation and monitoring of all critical parameters. The system features a LandSpan modem communication system which allows remote diagnosis, program updates, downloads, and routine maintenance direct from Royle's factory, process monitoring, data acquisition for quality assurance, process documentation through report generation and alarming capabilities.



Unique dancer/accumulator and zero scrap dual takeup system



Royle's takeup solution allows reel changeover at operating speeds and the manual cutting feature overcomes the attenuation losses and accompanying scrap that is common with automatic dual takeups. The combination dancer/accumulator is designed to trim the master speed reference to the takeups, to provide additional free air cooling as well as to provide ample storage for reel changeover. A remote touchscreen display conveniently located between the accumulator and the takeups houses the sequence logic and facilitates the changeover. The accumulator stores approximately 150M of product when set in the accumulate mode of operation. The standard takeups accommodate DIN 800 reels with optional capacity to DIN 1250.

Additional Features

- Versatile payoffs and crosshead design allow production of simplex, duplex, and sub-units
- Ability to produce dummy filler rods
- Precision servo motor/drive system
- Allen Bradley PLC
- Full complement of accessories available - fiber oscillators, aramid yard payoffs or servers, etc.