



Royle Systems Group

Tight Buffer
Line



Specifications:

Applications:	Riser, Plenum Grades
Design Speed:	300 MPM
Compounds:	Hytrel, PVC, FRPVC, PA 12
Diameter of Fiber:	0.250 mm
Diameter of Buffer:	0.900 mm
Extruder Size:	35 mm 24:1 L/D

Components:

- Individually dancer controlled payoffs with unique tension system
- 35mm extruder with multi-purpose stockscrew
- Cooling Trough
- Belt Wrap Capstan
- Takeup / Dancer
- AutoLine / AC Drive System

Fiber Payoff Series

Royle Systems Group has designed the FPO Series 2 fiber payoff system to payout optical fiber in a uniform and coordinated fashion. The system provides a compact and easy-to-use unit. The spool is positioned at a convenient working height and the string-up path is very simple.

Each spool has an independent drive system and offers a motor, which is controlled utilizing an integral dancer system complete with closed loop PID. This allows for accurate speed matching between the payoff and the process over a complete range of speeds and accelerations. For optimum coordination and performance, the unit controls the tension without regard to reel size and operates continuously from full to empty reels.

The payoff includes complete mounting in a cabinet with rear door access and forced air cooling. The face of the cabinet contains all of the operator controls for each payoff. A signal is sent to the master operator panel in the event that a fiber break occurs.

35mm extruder with multi-purpose stockscrew



The 35 mm 24:1 L/D extruder is equipped with fully enclosed gear housing having self-lubricated reduction drive, lubricating oil fed by gravity to integral roller thrust bearing mounted in its own housing to isolate extrusion pressure and torque overload from gear reduction drive. Includes spacer ring, water-cooled feed section (equipped with safety guard), and cylinder with bimetallic lining and insulating jacket. A Cerafin heating/cooling system consists of ceramic heaters with stainless housing for increased cooling and internal high-temperature resistance heaters. Also has high-velocity air cooling by motorized blowers connected to plenum chamber and air duct assembly, temperature sensing thermocouples for each control zone and automatic remote control.

Cooling Trough

The cooling trough is separated into 2 zones. One zone is made up of a retractable single pass, heavy gauge, stainless steel cooling trough, 3 meters long with baffles, rigid end flanges, and vertically adjustable support structure. Complete trough is covered, insulated and is provided with a drain box. There is a tempered water system complete with stainless steel reservoir for connection to the first zone. System has immersion heater, thermocouple and pump to provide water to the first trough zone. Temperature will be controlled by the computer system.

The second zone consists of a single pass, heavy gauge, stainless steel cooling trough, 9 meters long with baffles, rigid end flanges, and vertically adjustable support structure. Complete trough is covered, and is provided with a drain box. There is a cable drying section which includes a venturi style air dryer with air pressure regulator.

Belt Wrap Capstan



One belt wrap capstan complete with main support bracket for idler sheaves having one sheave positioned by means of a pneumatic cylinder to provide belt tension adjustment. Features a driven capstan wheel with guide flanges and rubber covered cable contacting surface which is directly mounted on the output shaft of a heavy duty reducer. All electrical and pneumatic devices are wired and piped to appropriate locations for convenient service connections. All above mounted on a heavy-duty fabricated steel base with protective shrouding to cover all moving parts.

Takeup / Dancer

The takeup is furnished with two precision brushless DC servo motors - one to drive the reel and the other to drive the traverse. The reel drive motor is trimmed utilizing an optional precision dancer system with adjustable tension levels.

The pintles can support reel weights up to 40 kg. The standard arbor is 25mm, however the unique design allows for easy arbor size changes. The reel is traversed on a fully supported dual shaft rail system with two integrated carriages and the linear servo motor is designed for extremely smooth and precise movement.

An operator control panel will be supplied containing an emergency stop pushbutton and four on / off pushbuttons wired to a terminal strip.

AutoLine / AC Drive System

One autoLine control system for synchronization of all control parameters with full integration between all elements and recipe capability for each product. System utilizes a color CRT for annunciation and monitoring of all critical parameters.

The drive panel will also include the solid state relays (SSR) for controlling the heaters. Each heat zone will be protected by an appropriately sized circuit breaker. All components including DC Drives, circuit breakers, SSRs, and associated controls are mounted in a NEMA rated enclosure with a main circuit breaker disconnect switch. All field wiring is brought to terminals and marked with wire numbers that match those on the engineering drawings. A wire run list is provided for installation purposes. The wire run list contains the source and destination location of all field runs as well as wire size and type.