

Control Systems

Hydraulic Control A separate Hydraulic Power System will be supplied. The hydraulic power components including the motor driven pump, reservoir, valves and necessary controls will be integrally mounted on the common base.

All necessary control circuits with safety interlocking for the following system will be provided:

- Rider Roll Nip Control
- Core Chuck Control
- Core Chuck Lift Control
- Nip Cradle Control
- Roll Ejector Control

Automatic Rider Roll Nip Relieving - An electronic control system featuring ultra-sonic sensor for roll diameter sensing. Signal will be fed to PLC for roll diameter reference and also to computer control circuitry that electronically establishes the five (5) **required** operating parameters.

Automatic Drum Torque Control – Control circuit with a 0-10 volt DC signal is fed to the solid state drive. A resultant signal is fed to drum drive circuitry for programming the desired load (load sharing) in accordance with the roll diameter build-up. Features operator adjustment for starting load differential, length of program and minimum load. Drum load is displayed in percent on panel view screen.

Control Panel – Provide a new heavy gauge operator's panel with all auxiliary controls: Tension, Rider Roll Nip, Roll Eject, Slitters Engage/Disengage, Nip Cradle, Core Chuck Control.

Drive Controls – Such as Drum Load, Slitter Drive On/Off Selector, Speed Indicator, Speed Control is incorporated in the Allen Bradley PLC5 and will do all logical control.

Also, included is an Allen Bradley Panel View display incorporating several user-friendly color set-up screens that are very easy to operate. The machine operator does not need special computer skills to set up for easy selection of winding parameters in accordance with web grades.

Safety Equipment – Safety pilot operated check valves in hydraulic circuitry prevent movement in the event of line rupture, loss of pressure, or pump failure. Roll eject operation has safety interlocking systems to prevent personnel injury and equipment damage. Interlock switches and proximity switches to confirm core chucks are either engaged or disengaged.

Roll Eject Operation – Permissive Circuitry Provided

- Drive fully stopped
- Hydraulic unit operating with required system pressure
- Chucks disengaged
- Chucks fully raised
- Rider Roll fully raised and safety latches engaged
- Nip Barrier fully raised and safety latches engaged

Winder Run Mode Requirements Provided

- Chucks engaged
- Chucks relieve mode actuated
- Rider Roll lowered onto cores and nip load program initiated
- Nip cradle fully raised

All Safety guards for above equipment, where required, will be provided.

EMC warrants that the equipment will conform to the specifications set forth. Also, the equipment will be primed, painted machinery enamel and completely assembled to insure alignment accuracy.

Recalibrated Drive System

Drive – Two Motor Drum Drive System, MagneTek DSD Digital Drive. This system consists of a dual DC motor digital drive and also includes two (2) drive systems housed in NEMA 1 cabinets consisting of the following:

QTY, (2) 40 HP, 500V, 1750 RPM DC motors with blowers & encoders

QTY, (1) – Digital Drive Package Incorporating;
QTY, (2) – 60 HP DC Drives

Included is common control with all drives and automatic common control logic along with all necessary speed control for two drum winder systems. Includes a PLC5 Gateway to interface with EMC's Allen Bradley PLC for logic and numeric transfer.

DESCRIPTION AND COMMENTS ON PROPOSED SYSTEM

The **Basic System** is composed of 2-50 HP Drives

The proposed system has an LAN network and will have a gateway to interface with an AB PLC 3 or 5 via a 1771 remote I/O network.

Listed below is a Bill of Material of items included:

Item 001 – Control

QTY. (1) – Mounted Nema 12 blower/filtered 2 door enclosure (84”H x 74”W x 20”D) floor with the following mounted and wired:

- Main CB with outside operating door interlock for 460/3/60 incoming power.
- Oversized 115V, 1 phase, 60 Hz control transformer.
- PLC Gateway (PLC 5)
- Main E-Stop / Reset pb & circuit.

Rear Drum Drive

- 50 HP DSD412 regenerative drive.

Front Drum Drive

- 50 HP DSD412 regenerative.

Item 002-DC Motor – (Drums)

QTY, (2) - 40 HP, 1750 RPM, drip proof with blower & filter enclosure, 500 VDC armature, 300VDC field, 368AT frame.

Item 004 – PCDU

QTY, (1) - Portable Control Display Unit with cable.

Item 005 – CONNECTOR

QTY, (1) - DB25/RJ12 Up/Down Load adapter with 20ft. cable

Item 006 – MANUALS

QTY, (3) - Instruction Manuals with all dimension drawings, hardware, and software diagrams.

Item 007 – ISOLATION TRANSFORMER

QTY, (1) - 110 KVA 460/3/60 delta primary with +/-5% voltage tap, 460/3/60 wye secondary.

Unwind Stand – Two (2) shaft less adjustable unwind stands for roll width of 24” to 90” with 3”, 4”, and 6” core chucks.

Sole Plates – Will be thermal stress relieved and blanch ground. Counterbored holes are provided for anchor bolts. A ½” 13 NC tapped through hole is located close to each anchor bolt hole for leveling during setting and optical alignment. A total of four (4) pieces are required.

Assembly, Hardware & Painting – All necessary hardware will be furnished. Winder components will be fully assembled insuring correct fit and alignment requirements. All required surfaces will be primed and painted.



D C I – 2 Drum Winder
Mill Duty Shaftless Winding – narrow Width slitting capacity.
Paper Weight – 15 lb. to 130lb/3000SF
Face – 90"
Trim – 86"
Maximum Speed – 5000FPM
Drum Diameter – 26"
Rewind Roll Diameter – 72"
Core Sizes – 3" & up
Tension – 1-6.5PLI
Reel Diameter – 60"
Drum Motors – [2] 40HP
Recalibrated Drive - Included

Shaftless winding featuring Anti-friction Carriage Assemblies with trim width adjustment 22"-84". Automatic trim width adjustment. Large diameter drums provide improved roll structure control especially on lightweight paper grades.



- Horizontal Slitter threading featuring Free Standing Assemblies to better isolate possible vibration sources.
- Dual Spreader Rolls for on the run adjustment for any order requirements.
- Single Spreader Roll before slitters provided to promote a more uniform Cross machine web tension – improves slitting quality and slip separation.
- Tidland Class III Top Slitter holders.

- Sheet Threader provided to automatically thread web up to winder drums.

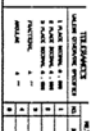


Shaftless floor pick-up unwind stands featuring Air Cooled Disc Brakes
Individual control stations provided. Controls provide roll centering to Winder





Diagram illustrating the optional rear view mirror assembly. The diagram shows a side profile of a person's head and neck. A dashed line indicates the line of sight from the rearview mirror. A label "OPTIONAL REAR VIEW MIRROR" points to the mirror assembly. The mirror is mounted on a bracket that can be adjusted to provide a rearward view.



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