



M.R. Snyder Company

Industrial Drive and Control Systems

Success Story # 4 – Aluminum Tension Leveler

Customer Situation:

- Customer purchased used equipment to retrofit that required new drive and control system
- Ten drives to be coordinated, 2000 connected horsepower
- New horsepower ratings required to be calculated based on speed and tension requirements
- Functional specification and drawings unavailable
- Must unwind, draw at 35,000 lbs tension up to ½% stretch at 1000 fpm, edge trim, and rewind aluminum sheet
- Must control all other machine functions including coil car, slitter, pumps, scrap pit, etc.
- Must have quick delivery and startup to meet production

Solution:

- 10 new AC flux vector drives on common DC bus for regeneration
- New panels built for drives and PLC
- Three HMI op stations with remote I/O for local connection of devices
- New MCC with remote I/O to control multiple pump starters
- Torque regulated, diameter calculation compensated payoff and rewinder with special designed wide constant horsepower range
- Torque share four entry side bridle rolls and four exit side bridle rolls to eliminate slippage while stretching sheet

Results:

- Four day total startup from I/O check to production
- Recipes provide better operator efficiency
- Diagnostics screens help quickly resolve problems



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- Cost effective common bus design shares motor and regen loads among drives and only draws 200 amps from the main service when running full production, providing significant energy savings
- Dynamic braking provides coordinated line stop without sheet break in three seconds for emergency stop
- Torque share design significantly reduces slippage and provides longer roll life and better product quality

MR Snyder services required:

- Coordinated drive system design
- Control system design
- Startup services
- Electrical panel design and assembly
- HMI Programming
- PLC Programming

