

NEWS RELEASE

United Steel Service Installs New Shape Correction Stainless Slitting Line

Brookfield, OH - United Steel Service, Inc., a large coil distributor and processor headquartered in Brookfield, OH, has completed the installation and commissioning of a new state-of-the-art high speed single loop "shape correcting" coil slitting line complemented by an automatic slit coil packaging system in its newly expanded Brookfield, OH, facility. The state-of-the-art slitting and packaging line, custom designed and manufactured by Braner/Loopco, Schiller Park, IL, is designed to process .010" through .150" thick 300 and 400 series stainless



steel, high strength surface critical coated carbon steel coils, and light gauge tinplate, at line speeds to 1,000 FPM. The slitting line will process coils weighing up to 60,000# in widths to 60", while the packaging line will automatically handle 1" to 24" wide slit coils weighing up to 15,000#.

Surface Critical Coils: The slitting line was custom engineered to process high quality surface critical coils of stainless steel, coated carbon steels, and tinplate. Because protection of the strip surface was of paramount importance to United Steel Service, the slitting line was configured with the strip pass line set "high" rather than "low". The "high pass line" configuration has proven to be more appropriate for processing critical surface coil because all pass line and deflector rolls are positioned below the strip (not above), thereby precluding scuffing and marking of the strip surface. In addition, because the high pass line configuration eliminates *reverse bending* of the strip against the natural coil set, equipment induced coil breaks are eliminated and coils with non-oscillated straight side walls are easier to produce. All rolls and tables are covered with materials that prevent scratching or scuffing the strip. Strip tensioning is accomplished with two tensioning devices; a Pneumatic Pad type and a Non-Marking Roll type. The Pneumatic Pad Tensioner provides an efficient, effective, and easy to maintain means for processing a non-critical surface material while extending the life of the tension rolls. The non-marking Roll Tensioner, utilized for processing critical surface materials, is equipped with a new "non-diced" tension roll. The

new tension roll design is a big improvement over older "diced" tension roll designs because it produces greater traction and it eliminates "smut" contamination commonly caused from open grooves in diced or sliced tension rolls.

Strip Shape Correction: The United Steel Service slitting line is designed to produce close tolerance slit coil with superior shape and finish, and as such, it is equipped with Braner's patented 5-hi computer controlled shape correcting "Cluster Leveler". Positioned between the strip tension units and the exit wrap roll, the Cluster Leveler works the strip profile, eliminating undesirable strip shape conditions such as edge wave, center buckle, and cross bow. In addition, the Cluster Leveler rolls down undesirable slit edge burr producing a virtually burr-free slit strip. The Cluster Leveler is unique in that it utilizes a series of various diameter work rolls arranged in "clusters" to work the strip profile. The various diameter work rolls allow the Cluster Leveler to shape correct a broad range of strip gauge (.010" - .150") and yield strengths (mild carbon steel to stainless steel), much wider than is possible with a conventional leveler with one size work roll. The work rolls are arranged on close centers and are firmly supported on multiple flights of back-up rolls. All back-up flights are vertically adjustable, permitting the work rolls to be "bent". Work roll bending is critical for strip shape correction without the need for extreme strip tension.



Roller levelers lacking the ability to "bend" the work rolls require a huge amount of tension, a condition that has proven to "neck" (narrow) slit strips while simultaneously inducing "cross-bow" and "camber", thereby negating all the close tolerance benefits of a precision slitter head and precision shimless tooling. Utilizing the Cluster Leveler, United Steel Service is able produce high quality close tolerance slit coil having superior shape without strip necking, and without inducing cross bow and camber throughout a wide gauge and product range.

Efficient Operation: The new United Steel Service slitting line incorporates the newest "high pass line" slitter configuration, the latest technological improvement in coil

slitting line design. High pass line technology positions the slitter pass line at the coil OD instead of the coil ID, eliminating the struggle against natural coil-set while threading and running. During threading, the strip is never reverse bent against the coil-set thereby reducing coil threading time. High pass line technology also reduces coil threading time by positioning the Uncoiler and Recoiler on closer centers, significantly shortening the length of the line. In addition, this configuration allows the Exit Wrap Roll and the Overarm Separator to be arranged to "funnel" slit strips down, directly to the Recoiler mandrel and gripper bar thereby reducing strip lock-up time. And as mentioned before, "coil breaks" caused by reverse bending the strip under tension are completely eliminated.

Additional unique features that improve productivity and product quality include laser beam alignment of the master coil with the side guides and slitter; fiber-optic automatic edge control for tracking; side guides equipped with electronic position readouts and pushbutton positioning; a quick-change two head "Turret Slitter" capable of exchanging slitter heads in one minute; quick-change Tensioner and Overarm tooling arbors; and an Overarm separator that is adjustable sideways while running. A huge timesaving feature is Braner's unique "Magnetic Speed Load" that allows United Steel Service to change the Recoiler from 20" ID to 24" ID (and vice-versa) in one minute.



Packaging: Slit coils from 1" to 24" wide, weighing up to 15,000# are efficiently packaged on an automatic slit coil packaging system that down lays, straps, sorts, palletizes, and weighs the coils. The downender is fully automatic and "operatorless". After coil widths are entered into a keypad data terminal, the coil handling cycle is automatically accomplished. The downender retrieves each coil from the turnstile by traveling to the coil, lifting it off the arm, and laying the coil down onto the conveyor system. Power conveyor automatically advances the coil into a Coiltech/Signode strapper where 3 or 4 radial straps are applied and coil separation spacer sticks are placed. The strapped coil with the spacer sticks is automatically cen-



tered, then transported to the awaiting pallet via an automatic coil stacker. The coil stacker is equipped with an ID-OD coil grab that securely grips a coil during handling. A turntable with eight color-coded palletizing stations indexes to quickly sort out coil packages. After the proper number of coils are stacked onto a pallet, the finished package is discharged onto a weigh station where the weight of the completed coil package is established and recorded.



Robert K. Hutchison, Vice President, United Steel Service, Inc.

"When we decided to purchase a new slitting and packaging line to expand our business into new markets, we spent a great deal of time interviewing slitter builders, comparing technology, construction, reliability, and technical support. After careful consideration, we made a decision to go with Braner. The project was completed on time, and the equipment performance and factory support has exceeded our expectations. Since the slitter was commissioned, we have successfully slit and leveled a range of gauges and products from .009" tinplate, light and medium gauge coated carbon steel coils, as well as stainless coils up to .150" thick. Because of our satisfaction and success with the new 60" Braner, we decided to install a second Braner slitting line, this one for processing hot rolled and cold rolled coil up to 3/8"."



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