

NEWS RELEASE

Macsteel Service Centers Installs Cassette Leveler CTL in Chicago

Chicago, IL – Macsteel Service Centers USA installed a high-performance Cassette Leveler/Precision Servo Feed Cut-to-Length Line in its Chicago metal distribution facility. The new Cut-to-Length Line converts 60,000# x 72" wide carbon steel, stainless, and aluminum coil in gauges from .019" through .250" into panel-flat close-tolerance sheets. The CTL Line features a Computer Controlled Two-Cassette Leveler, Precision AC Servo-Feed, and a Hi-Speed Hydraulic Shear.



Entry section quickly peels, guides, and threads 72" x .019"-.250" strip to the Cassette Leveler. A Guillotine Crop Shear removes coil heads and tails.

Hydraulic Cassette Leveler: Macsteel's "Cassette" Leveler produces panel flat laser quality strip throughout a wide gauge and product range. Microprocessor controlled hydraulic back-up cylinders are housed within a massive 4-post Leveler frame into which quick-change Leveler *Cassettes* are power injected and retracted. All working Leveler parts...work rolls, back-up bearings, and drive shafts are installed in a common *Cassette* housing installed into and removed from the 4-Post Leveler frame. The adjustable *Cassette* back-up flights are automatically aligned with the hydraulic back-up cylinders when the *Cassette* is locked in the 4-Post Frame. Work roll drive shafts automatically engage with the Leveler drive gear box as the *Cassette* is installed.



3' x 5-Hi Cassette installed in the 4-Post Leveler frame

Leveler set-ups based upon coil mechanical properties are automatically accomplished by microprocessor controller. Hydraulic cylinders rather than mechanical motor-reducer-sliding wedge-screw jacks accomplish Leveler work roll adjustments. Macsteel's Cassette Leveler employs 14-independently positioned hydraulic cylinders to position the back-up flights. Seven cylinders are installed at the entry and seven cylinders are installed at the exit end of each back-up flight. Precision electronic linear transducers are employed to independently position each cylinder. Adjusting the entry end and exit end cylinder elevations causes the work rolls to be "tilted" front-to-back for coil-set correction. Adjusting cylinder elevations from side-to-side accomplishes "roll-bend" for precise edge-wave and center-buckle shape correction. Hydraulic Leveler benefits include elimination of mechani-

cal screw-wedge backlash and maintenance, automatic Leveler set-up, pushbutton set-up memory, automatic Leveler calibration, and *bullet-proof reliability*.



Macsteel's Cassette Leveler is equipped with two (2) Cassettes. A 3.000" x 17-roll x 5-Hi Cassette levels .250"-.060" gauges, and a 1.500" x 17-roll x 6-Hi Cassette is used for leveling .075"-.019" gauges. 5-Hi and 6-Hi Cassettes allow Macsteel to process surface-critical coated carbon steel, stainless, and aluminum coil.



Leveler Cassettes are stored off-line on a-Cassette Injector Car. Cassettes exchange in about 2-minutes. A Power Cassette Maintenance Opener opens a Cassette like a book to expose all working parts for periodic cleaning and maintenance.

Precision Electronic Servo-Feed: An Electronic Servo Feed driven by a high-cyclic rate precision AC servo drive feeds and meters strip to precise length tolerances. The Servo-Feed draws the leveled strip from a free-loop and feeds the strip to a pre-determined length through a Hi-Speed cut-off Shear. Part lengths



Servo Feeds compare favorably to "reciprocating hitch feeders" in productivity, reliability, and longevity. Grabbing, releasing, sliding backwards, and re-grabbing consumes the majority of a reciprocating hitch feeder cycle time. By comparison a Servo-Feed simply feeds forward and has few parts that require replacement or repair. The Servo-Feed's quick non-reciprocating operation, low acceleration/deceleration, few moving parts with an absence of chains, screws, clamps, and related mechanical parts makes it an excellent performer with consistent close-tolerance accuracy, low operating cost, and bullet-proof reliability.

are precisely measured by an electronic encoder, while a micro-processor automatically establishes ideal acceleration/deceleration rates. Part length and batch count are entered into the digital operating system quickly and easily.

Servo Feed "Pull-Back" Sequence: In addition to the Servo-Feed's precise length accuracy and high-cycle rate capability, the Servo-Feed employs a "pull-back" sequence that pulls the incoming strip away from the upper Shear blade as the Shear blade leaves the strip after the cut. As soon as the upper blade cuts through the strip, the Servo-Feed reverses .003", pulling the incoming strip back from the Shear blade so the blade doesn't scuff the leading strip edge as the Shear completes its cycle. Shear blade scuffing often cause sheared edge damage, bent sheet ends, and down-time related to Shear blade cleaning.



Hi-Performance Electronic AC Servo-Feed features a high cyclic rate and a "pull-back" sequence that avoids Shear blade scuffing.

Hi-Speed Hydraulic Shear: Macsteel's CTL Line is equipped with a high-speed hydraulic cut-off Shear capable of 60-strokes/minute. The Shear employs PLC controlled hydraulic cylinders to drive the upper guillotine ram through its cycle. Four edge blades are mounted onto the guillotine ram and the lower blade holder. Horizontal blade clearance is adjustable for processing the entire .019" through .250" gauge range. Benefits of the Hydraulic Shear include excellent performance, a virtually silent shearing cycle, and low operating cost.



Hi-Speed Hydraulic Shear offers excellent performance and silent operation.

Inspection/Reject Belt: Cut sheets are carried away from the Shear on a variable-speed Inspection/Reject Belt Conveyor that provides a convenient station from which to visually inspect finished parts for surface finish and flatness. Sheets can also be easily removed from the belt for length and squareness verification. The Conveyor has the ability to direct cut parts to the Stacker, or on command divert to a Scrap Cart, which makes disposing of coil head and tail ends quick and easy.

Automatic Sheet Stacker: Cut sheets are sent from the Inspection/Reject Conveyor into an Automatic Sheet Stacker. Sheets are supported on a set of non-marking roller "flippers"



Inspection/Reject Conveyor carries sheets to the Stacker or diverts to a Scrap Cart

until the sheet is released directly above the stack. The sheet support flippers are quickly opened and closed by air cylinders. A Hydraulic Elevating Stack Table raises the sheet pack close to the sheet release height to minimize sheet drop distance. The Table automatically lowers as the sheet stack height builds-up. An air float system generates an air film that helps support light gauge sheets during the stacking sequence. Pushbutton adjustable side skirts and end stop contain the sheet stacks and produce solid-block packages. A Power Pallet Injector that positions fresh pallet into the Stacker minimizes pallet loading time. Pallet size is programmed into a controller and the pallet is automatically injected and centered in the Stacker.



Automatic Sheet Stacker produces solid block sheet packs.



In order to minimize production down-time related to sheet pack packaging, Macsteel's CTL Line employs Runout Conveyor capable of accumulating a dozen pattern size sheet packs and many more smaller packs. A scale mounted Rotary Conveyor Table is an efficient packaging station. The 360-degree Rotary Table speeds packaging, and sends finished packs to a runout-storage conveyor.

Precise tolerance, flat laser quality sheets, solid-block packages, superb performance, plus *bullet-proof reliability* made the Macsteel's choice of a Braner/Loopco Cassette Leveler/Servo Feed Cut-to-Length Line a "no-brainer".



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