NEWS RELEASE

Macsteel Service Centers USA Installs Cassette Leveler CTL

York, PA – Macsteel Service Centers USA has installed a high-production Braner/Loopco Cassette Leveler Servo Feed Cut-to-Length Line in its York, PA 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 parts. The CTL Line is equipped with Computer Controlled *Cassette Leveler*, a Precision AC *Servo-Feed*, and a variable speed *DC Shear* capable of producing close-tolerance parts at production rates exceeding 80-parts/minute.

60,000# x 72" x ¼" Cassette Leveler-Servo-Feed-DC Shear CTL Line

Cassette Leveler: A *"Cassette"* Leveler allows Macsteel to produce shape-corrected panel flat parts throughout a wide gauge and product range. Microprocessor controlled hydraulic back-up positioning cylinders are housed within a massive 4-post Leveler frame into which quick-change Leveler *Cassettes* are installed. The exchangeable *Cassettes* contain all the working Leveler parts…work rolls, back-up flights, and drive shafts, in a common housing installed into and removed from the Leveler frame. *Cassettes* are hydraulically locked into the Leveler frame, and adjustable *Cassette* back-up flights are automatically aligned with the hydraulic back-up cylinders. Work roll drive shafts are automatically engaged with the Leveler drive gear box as a *Cassette* is installed. Once a *Cassette* is installed, a microprocessor automatically accomplishes Leveler set-up based upon material specifications. The Cassette Leveler employs microprocessor controlled hydraulic cylinders rather than motor, gear reducer, sliding wedge, and jack screws to make Leveler work roll adjustments. The hydraulic cylinders are installed at the entry and exit ends of each back-up flight. Precision electronic linear transducers are employed to independently position each of the cylinders. Adjusting the entry end and exit end cylinder elevations causes the work rolls to be "tilted" front-to-back for coil-set correction. Adjusting back-up flight cylinder elevations from side-to-side accomplishes *"roll-bend"* for precise edge-wave and center-buckle shape correction. Hydraulic Leveler benefits include elimination of mechanical screw-wedge backlash and maintenance, automatic Leveler set-up, job set-up recall memory, automatic Leveler calibration, and *bullet-proof reliability*.

Precision Microprocessor Controlled Hydraulic Cassette Leveler

The Macsteel Cassette Leveler is equipped with a 3.000" x 17-roll x 5-Hi Cassette for leveling .250"-.060" gauges, and a 1.500" x 17-roll x 5-Hi Cassette for .075"-.019" gauges. 5-Hi Cassettes allow Macsteel to process cold rolled carbon steel, stainless, and aluminum coil. Cassettes are stored on a 2-Cassette Injector Car that exchanges Cassettes in about 2-minutes. A Power Cassette Maintenance Opener "opens" a Cassette to expose all working parts for periodic cleaning and maintenance.

4-Post Cassette Leveler with 1.500" Cassette Installed

1.500" Cassette leveling .024" embossed aluminum coil. The 3.000" Cassette is stored on the Injector Car ready to level .250"-.060" coil.

Precision Electronic Servo-Feed: A precise Electronic Feed driven by a high-cyclic rate precision AC servo feeds and meters leveled strip to ±0.005" length tolerances. The Servo-Feed draws the leveled strip from a free-loop and feeds the strip to a pre-set length through the Shear. Part lengths are precisely measured by an electronic encoder while a microprocessor automatically establishes ideal acceleration/deceleration rates. Part length and batch count are quickly entered into the digital operating system. Servo Feeds compare favorably to *"reciprocating mechanical feeders"* in productivity and reliability. Grabbing, releasing, sliding backwards, and re-grabbing consumes the majority of a reciprocating mechanical feeder cycle time. By comparison a Servo-Feed simply feeds forward and has few parts that wear and require maintenance. The Servo-Feed's quick non-reciprocating

Servo-Feed draws leveled strip from a free-loop between the Cassette Leveler and Servo-Feed

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operation, low acceleration/deceleration, few moving parts with an absence of chains, screws, clamps, and related mechanical parts gives it consistent close-tolerance accuracy with *"bullet-proof"* reliability and low operating cost..

No Shear Blade Scuffing: In addition to the Servo-Feed's precise length tolerance and high-cycle rate capability, the Servo-Feed employs a *"pull-back"* sequence that pulls the strip away from the Shear blade during the shear cycle to avoid blade scuffing. The Servo-Feed will feed-to-length and signal the Shear to fire. As soon as the Shear cuts through the strip, the Servo-Feed will reverse, pulling the strip away from the Shear blade a few thousandths of an inch so the blade doesn't *"scuff"* the leading strip edge as the Shear completes its cycle. Shear blade scuffing often results in leading edge damage and bent part ends.

Hi-Cyclic Rate Electronic AC Servo-Feed with "pull-back" sequence avoids Shear blade scuffing.

Continuous-Stroke Bow-Tie DC Shear: The Macsteel CTL Line employs a huge top driven bow-tie, DC motor Shear for cut-to-length. The high-speed Shear is capable of producing pattern length sheets in a 60-stroke/minute *"clutch-brake"* mode and smaller parts in an 80+ stroke/minute non-stop *"continuous-stroke"* mode. Operating in conjunction with the high cycle rate Servo-Feed, the non-stop shear cycle offers unrivaled productivity. When the Shear runs in the continuous-stroke mode, the DC motor driven crankshaft rotation is synchronized with the Servo-Feed. The

Loop Quads and Side Guides square the strip into the Servo-Feed and DC Shear

pull-back and feed cycle begins as soon as the upper shear blade cuts the strip on its down stroke, so the strip can be fed forward as the Shear ram is traveling up. The feed sequence continues well past Shear top dead center and stops as the shear blade approaches the strip on the down stroke. The simultaneous Servo Feed-DC Shear cycle expands the feed forward time window and results in a parts per-minute production rate much higher than the conventional start-stop feed-shear mode.

Reject Belt & "Flipper" Sheet Stacker: Cut parts are conveyed away from the Shear on a variable-speed Belt Conveyor.

Massive Continuous-Stroke DC Bow-Tie Shear Offers Outstanding Productivity.

The Belt Conveyor has the ability to direct cut parts into the Stacker or to a scrap cart for discarding head and tail ends. The Stacker carries cut parts on a set of non-marking roller *"flippers"* until the part is directly above the stack where it is released. The part supporting flippers are pivoted open and closed by air cylinders. An Elevating Stack Table automatically elevates close to the sheet release height to minimize part drop distance. An air float system generates an air film that helps support light gauge parts during the stacking sequence. Pushbutton adjustable side skirts and end stop contain the sheet stacks and produce solid-block packages. A Power Pallet Injector eliminates manhandling heavy pallets into the Stacker. Pallet size is programmed into a controller and the pallet is automatically injected and positioned in the Stacker.

Exit End View of Macsteel 72" x ¼" CTL Line

Sheet Pack Handling: In order to avoid production down-time due to finished product packaging, the Macsteel CTL Line employs Runout Conveyor capable of accumulating a dozen and more pattern sheet packages and twice as many smaller parts packs. A Rotating Sheet Pack Conveyor receives sheet packs from the Stacker and rotates 90-degrees to align with the Runout Conveyor.

Inspection-Reject Belt, Sheet Stacker, and Programmable Pallet Injector

Precise tolerance panel flat parts, solid-block sheet packs, productivity, and *bullet-proof reliability* made the Macsteel's choice of a Braner/Loopco Cassette Leveler Cut-to-Length Line a *"no-brainer".*

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