

NEWS RELEASE

Mi-Tech Steel Installs 72" Precision Servo-Feed Multi-Blanking Line

Madison, MS - Mi-Tech Steel has installed a high-production close-tolerance Multi-Blanking Line in its new Madison, MS. coil-processing facility near Jackson, MS. The line is capable of converting 60,000# x 72" wide surface-critical exposed automotive quality cold rolled and coated coil in gauges from .018" through .075" into panel flat precision tolerance blanks from 12" to 72" wide x 12" to 144" long. The Multi-Blanking Line features a computer controlled Hydraulic Leveler, a multi-head quick-change Turret Head™ Slitter, a microprocessor controlled precision Servo Feed, a 100 cycle-minute Hi-Speed DC Mechanical Shear, and an automatic 6-strip Multi-Blank Stacker. The line is capable of producing precision-tolerance blanks to ± 0.005 " length and ± 0.002 " width tolerances.



60,000# x 72" x .018"/.075" Precision Multi-Blanking Line

Precision Hydraulic Roller Leveler

A massive 4-post computer controlled shape correction Hydraulic Leveler is employed to produce panel flat blanks and sheets. The Leveler is equipped with seventeen 1.500" diameter work rolls in a 5-Hi roll arrangement supported by nine back-up flights. The work rolls are positioned by 18-hydraulic cylinders (9-entry and 9-exit). Each cylinder is independently adjustable to provide precise roll positioning and roll bending necessary for the elimination of strip shape defects such as coil-set, center-buckle, and wavy-edges. A 2.80 GHz 40 GB HD computer precisely adjusts each cylinder via position data from linear voltage transducers installed in each cylinder. Work roll positioning is automatically accomplished based upon material thickness and yield strength data entered into the computer terminal by the operator. Work roll gap and roll bend adjustments can be made while running. A computer memory allows the operator to "save" work roll position parameters via job number for future recall, a time-saving feature when processing partial coil orders. The Leveler will automatically position the work rolls and back-ups to the exact roll gap and roll bend positions employed when the coil was previously run. Periodic Leveler "calibration" is automatically accomplished in 5-minutes without any tools.

Braner/Loopco Levelers employ no reversing motors, screw jacks, sliding wedges, or tilting top frames to position the work rolls. As a result, work roll positioning is precise and maintenance is minimized.



1.500" x 17-Roll x 9-Flight x 5-Hi Hydraulic Leveler

Pushbutton Tooling Lock-Up Turret Head™ Slitter

Multi-blank and side-trim slitting is accomplished by a quick-change 2-head precision Turret Head™ Slitter that allows Mi-Tech to prepare a tooling set-up while the line is in production. The ability to prepare a slitter set-up while the line is running offers a huge productivity advantage over multi-blank slitters that require the line be shut down while making a set-up. The Turret Head™ Slitter is equipped with a "pushbutton" tooling lock-up system that employs hydraulic cylinder powered tooling lock-up clamps instead of the common grease gun actuated threaded lock nut. The pushbutton system reduces set-up time and eliminates lock nut maintenance and worn arbor threads. As with all Turret Head™ Slitters, the slitter heads are exchanged in one-minute.



Turret Head™ Slitter

Special Multi-Blanking Tooling:

While most multi-blanking lines are shut-down for 15-35 minutes preparing the next slitter set-up, the Mi-Tech slitter is set-up while the line is running. Once the set-up is completed, exchanging slitter heads takes one-minute. In order to complete a slitter set-up in the 30 minutes or so it takes to process a multi-blank order, the slitter is equipped with a tooling package designed specifically for multi-blanking. Unlike coil-to-coil slitting lines that commonly generate from 10 to 20 cuts as narrow as 1", multi-blanking lines typically produce from 2 to 4 strip multi-blanks wider than 5". The new multi-blank tooling package allows a 2 to 4 strip multi-blank set-up to be completed in 15-minutes by reducing the number of spacers used in a set-up. For

example, a set-up for four (4) 6.2510" wide x 22-gauge multi-blank strips requires only 55 spacers. A set-up to produce two (2) 29.880" wide 20-gauge multi-blank strips requires only 52 spacers. Those set-ups are easily completed in 15-minutes while the line is running. By comparison, a coil-to-coil slitter set-up for eleven 3.125" wide and eight 2.871" wide x 18-gauge strips requires 283 spacers and 45-minutes to set-up. The Turret Head™ Slitter equipped with the multi-blank tooling produces multi-blanks to a width tolerance of ± 0.002 ".



Pushbutton Lock-Up

Precision Electronic Servo Feed:

The Multi-Blanking Line is equipped with a Precision Servo Feed that feeds and measures strips for cut-off. The Servo Feed employs high-traction non-marking feed rolls driven by an electronic AC servo system to feed and precisely measure the strip. The microprocessor motion control system generates consistent sheet and blank length tolerances of ± 0.005 " at high-cyclic rates. The motion control system receives feed roll position data from an electronic encoder, and the information is instantly utilized for accelerate, decelerate, and full stop commands based upon the feed length. The motion control system automatically computes the ideal production speed based upon the part length entered into the operator data panel. An adjustable acceleration/deceleration control is provided to compensate for various material surface conditions.



Precision Servo Feed w/DC Shear

Continuous-Stroke DC Shear:

The Mi-Tech line is equipped with a variable-speed bow-tie mechanical Shear, which complements the high-cyclic rate capability of the Servo Feed. The Shear can operate in a "single-cycle" mode when processing pattern length sheets, and a "continuous-cycle" mode when processing shorter blanks and multi-blanks. Synchronized with the Servo Feed, the DC Shear can operate at a rate of up to 100 cycles-per-minute in the continuous-cycle mode. A variable-speed DC motor drives the upper shear ram through a clutch-brake and crank shaft. The DC motor is run at a constant RPM and the clutch-brake is "single-cycled" when processing pattern length sheets. When processing short blanks, the clutch-brake is locked-up and the Shear ram cycles non-stop. The Servo Feed cycle and the DC Shear cycle are synchronized to produce the precise part lengths at high-cyclic rates.

Auto Reject Multi-Blank Stacker

The Mi-Tech Stacker is capable of automatically stacking pattern sheets and up to six (6) multi-blanks. The multi-blank strip dividers are automatically positioned by an AC servo drive. An "air float" system prevents the sheets from sliding sheet-on-sheet during stacking. Non-prime sheets and blanks are diverted from the Stacker and directed to a reject station located behind the Stacker.



Servo Feed, DC Shear & Stacker



Solid Block multi-blank package



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