

## COE SpaceMaster Line Delivers Space-Saving Blank Production Solution to Tier One Auto Stamper... Without Large Looping Pit or Costly Building Expansion

A leading Tier One stamper was squeezed into a corner with limited space for expansion and a greater need for improved and efficient stamping capabilities. To solve the problem, the stamper's employees specified a unique concept...the internal production of blanks from coil stock vs. buying blanks from outside vendors. The solution also gained the company control over raw material inventory and cost, opened up needed floor space, helped to reduce finished goods inventories, and gave them better control over their production scheduling.

The company builds full vehicle frames and sheet-metal stampings for several major US and non-US automotive manufacturers. They operate 24 stamping presses and lean manufacturing plays a very important part of their overall manufacturing strategy.

Their Pressroom Manager says they had to develop a dedicated blanking line to produce blanks that are eventually bent into C-channel frame segments in three separate downstream operations. But the problem was floor space availability for the line. A conventional blanking



line attached to a press would require a looping pit that was 20' to 25' long between the straightener and feeder, space they didn't have. Dedicating a press and coil feed line to the blanking operation was also not a fiscally smart choice. Expanding the building's square footage was also out of the question.

### SPACEMASTER TO THE RESCUE

For a solution to their limited space production problems, they turned to a unique space-saving **Compact Coil Line called the SpaceMaster Series 3** from COE Press Equipment. This system combines a coil car, coil reel, and feeder-straightener system all in one unit. Coe also provided a **hydraulic production shear** to cut blanks and a **single-**

**station drop stacker complete with a cranesaver chain conveyor system** to coordinate stack handling. The end result...a stand-alone system that produces blanks for several downstream operations.

In this new line, blanks range in sizes up to 14.25" wide x 209" long x .220" thick. The feed length is controlled by the servo-driven feeder-straightener to maintain a shear tolerance of +/- 0.003". The material is uncoiled, flattened and indexed by the feeder-straightener, then sheared and stacked. Each finished stack contains a maximum of 56 blanks. The banded stacks are efficiently removed from the system by forklift.

Efficiency of the blanking operation is assured by optimizing the incoming coil

sizes. The SpaceMaster is capable of handling 12,000 lb. coils that are 72" OD and 21" ID. **During an eight hour shift, the company can easily run through 12 coils.** At the maximum feed length of 209", the shear runs at a productive rate of four strokes per minute. With a 171" blank length the system is capable of five strokes per minute. Coil loading and threading operations are enhanced with the hydraulic traveling coil car and a hands-free threading system. This system consists of push-button operated hydraulic hold-down arm with a motorized endwheel, lower hold-up table, material debender roll, and a material steering roll to thread the leading edge of the coil into the feeder-straightener.

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The Pressroom Manager states, **"The amount of floor space we saved with the Coe SpaceMaster system is significant.** We looked at multiple vendors to supply the equipment but felt that Coe had the best solution...and they were competitively priced. Coe not only had experience with the coil feed line, but also with the stacking part of the system. They developed entire system solution to be able to feed the coil out, shear it to length, and then stack it. **This capability, along with meeting all their schedule and delivery dates, that's why we chose COE."**

### **REDUCTION IN INVENTORY, BETTER CONTROL OF RAW MATERIALS**

Before the Coe line was added, the company said they had to maintain an inventory room with several weeks' worth of blank inventory that took up a 30' x 60' area. They also had to keep close track of the inventory to make sure they had the correct blanks and the right amount for each job lot size. Inventory could prove problematic because of the JIT nature of their operations. **Now with the new Coe line that eliminates this inventory and produces just enough blanks for one day, they can use this storage space for other projects.**

They say that the Coe line also

gave them other important benefits such as better control of raw materials. "Another big advantage with this new line was keeping the raw material near the line in coil form that also allows us to reduce our overall inventory. We don't have to worry about having pallets of blanks in excessive numbers. **It also allows us to bring in only enough coiled raw materials into the plant for a two week build schedule, instead of having to forecast out for a month and having raw material blanks in transit and then in storage.** Now we can just look at the schedule and produce the blanks that we need when we need them from coil."

Prior to the installation of the Compact Coil Line, company press operators had no prior experience with coil processing and blanking systems. So they looked to Coe to help them with the integration of the components and for training. They found that their employees learned how to operate the equipment quickly. **"Within a half hour we had the operators up and running the equipment.** The computer control interface was also very easy to operate," they added.

Automotive manufacturers are always challenging their suppliers to build products that are more cost effective, faster, and better. Costs



must come down and quality must go up. They add, "We have to make sure we can manufacture the product and sell it at a profit. We also have to meet the customers' requirements and keep costs down by lowering inventory and being more flexible with equipment. The Coe lines give us this flexibility."

## **FREE...FREE...FREE**

### **Gimme Those COE Customer Success Story DVDs!**

They're flying out of here like hotcakes...get 'em while you can! **Thirteen different videos are found on our Customer Success Stories DVD...**names of OEMs and contract stampers you're sure to recognize. Check out how they're using Coe equipment!

**If you're interested in Cut-To-Length/Blanking Line technology,** you can see how various COE lines are working at companies such as Dana Corporation, OSMI, Lide Industries, KTH Parts Industries, and Midway Products Group.

Give us a call (586-979-4400) or directly request the free DVDs by sending us an email request to [sales@cpec.com](mailto:sales@cpec.com) (ask for the video you want...and tell us a little about yourself in your email).



## Stampers Moving to Greater Processing Flexibility "Big Bed" Transfer Presses Utilize Multi-Mode Processing Via Unique COE Coil Feeding System

Feeding 2000+ ton presses can be quite a dilemma. But managing the cost and inventory of the material going into the press can key to the overall challenge.

One automotive supplier's plant runs two transfer presses (2200 and 2800 tons) outfitted with extremely flexible coil feed lines from COE Press Equipment. Impressive capabilities from this line include:

- Versatility to feed direct from coil...or process blanks using destackers to handle blanks produced off line...or with inline blanking via an oscillating shear.
- Additional productivity from coil changes completed in a couple minutes...and complete job changeovers in a fraction of the time it took blank fed lines to be set up.
- 78" coil width capabilities...material thickness up to .187" at 78" wide (.250" at 42" wide)...processing of newer high-strength steels is possible

A few interesting questions are answered by their Plant Manager.

**Q: On the 2800 ton line, the press primarily produces just the large SUV floor pans?**

A: "Originally yes, but due to the market's expanding need for big bed press bed services, it now only represents a small portion of the work done on that press."

**Q: So your die changes are pretty frequent?**

A: "We change over the press up to **six times daily**...and an **average part-to-part die change of less than 20 minutes** is our target. The rolling bolster configuration helps with this process. Additionally, we can **achieve coil**

**changes in 3 minutes.** Because we have separation of the program controls from the back end of the line to the front, we can begin loading the next job and start threading the coil through the straightener and feeder while we're tailing out the previous job. It saves us quite a bit of time!"

**Q: On overall "controllability" of the press line?**

A: "The entire line is automatically adjustable through the line controller. It's as simple as dialing in a part number. The only manual adjustment needed is adjusting the coil edge guides to set the coil width. And it took basic training by our press operators and the equipment suppliers...it all went very well."

**Q: How does the shear and conveyor/part handling equipment work?**

A: "The oscillating shear station allows us to produce square cut or trapezoid shaped blanks at a rate of up to 24 strokes/minute. The blanks then move to a magnetic, servo-controlled conveyor system. They can be rotated either 90 or 180 degrees, depending on the part orientation to the press. Precision sensors determine the exact blank position on the conveyor to ensure the appropriate location of the first station in the transfer press. The sensors give us forgiveness for conveyor belt slippage or any movement of the blanks on the belts."

**Q: You originally specified the line with a straight cut shear...why was this changed?**

A: "After a year's production, we brought in some work requiring custom blank stamping. **To avoid offline blanking operations, we**



**decided to go with an Oscillating Shear, which required a**

major overhaul of the line. We worked ahead on our inventory levels and timed the whole changeover during our July shut-down...and COE reengineered a better solution and delivered the whole thing to make us only be down for a two week period. The Oscillating Shear has helped to **keep the material utilization costs down and help us lower the overall cost of manufacturing.**"

**Q: Tell us about how you rebuilt an existing feed line to work with your 2200 ton transfer line?**

A: "As an older feed line became obsolete at a sister facility, we decided to bring this equipment in to pair up with a destacker (to process blanks for short run or tryout work). The feed line needed a few changes along the way, specifically a change in passline height and reworking the controls to a newer ControlLogix platform. Overall, we can run **.187" thick at 72" wide coil fed operations**, and we can destack *developed-shaped blanks up to 40" x 80" in size*. We can run production work on the press and, when needed, have the flexibility to change over to perform new die tryout for our customers...and that's important when you're in start-up mode."

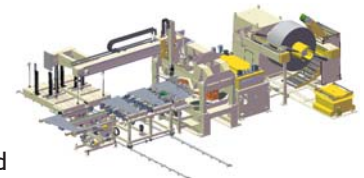
## The Next Generation In Direct Transfer Press Feed Systems

Our recently-introduced fully-integrated Compact Coil Line that includes the functions of coil feeding, blank feeding and destacking is getting a lot of attention in the industry.

This new "space saving" design fits within a 40' line length requirement. It combines a Compact Coil Line with an oscillating shear press and a blank destacker for processing blanks and coil strip in six unique modes:

- square-cut without rotate,
- trap-cut w/180° rotate,
- trap-cut w/90° rotate,
- coil feeding partial prog to transfer,
- coil feeding progressive die operations, and
- developed shaped blanks by destacker.

Go to [http://www.cpec.com/Complete-DTP-Feed\\_Systems.html](http://www.cpec.com/Complete-DTP-Feed_Systems.html) for more on this "Next Generation" line. We look forward to talking to you about your processing requirements/desires. Or give us a phone call (586-979-4400) or an email ([sales@cpec.com](mailto:sales@cpec.com)).



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## Recent Orders and Shipments —

### Tower Automotive (Meridian, MS)

COE has shipped and commissioned two fully integrated Transfer Press Feed Lines for processing heavy-gauge steel to this Tier 1 supplier. Each line features a **CPRF-872 Roll Feed** with a powered rollout feature. The servo feed can be moved offline for destack feeding and multi-mode flexibility. A **SPG-PS-508-72 Power Straightener** is utilized to effectively process high-strength material up to **.187" thick x 72" wide x 85,000 PSI yield strength**. The straightener is specified with enhancements such as double-row backups, polished chrome rollers, 100 HP AC variable speed drive, and motorized breaker rolls. A **heavy-duty Peeler/Threader/Hold Down Station** and **Hydraulic Crop Shear** are provided for hands-free threading. The heavy-duty **CPR-60072 Coil Reel and Coil Car** are capable of handling coils up to **60,000 lbs. x 72" wide**. The reel is provided with top and bottom hold downs and a powered coil guide system for effective coil containment. Allen Bradley Control Logix PLC based machine controls and networking are provided for effective connection with the 3 Axis Transfer Press.



### Toyotomi (Springfield, KY)

COE has shipped and commissioned a **blanking line** from AIDA America, Dayton, OH for this Transplant Stamper. The line is fully integrated with a new 400 ton blanker and provided as a "turnkey system". It's designed to process materials up to **.100" thick x 48" wide x 90,000 PSI yield strength**. The line features a **CPRF-548 Roll Feed** with full width feed rolls and an air operated anti-backup roller assembly. The **CPDTH-4812 Thread Table** is designed to work with a 6' deep looping pit. A **CPPS-305-48 Power Straightener** is designed with oversize pinch rolls for pulling off heavy coil weights. It's also designed with single-row backup rollers and close center distances to effectively straighten high strength steel - HSS. A **CPPTH-48 Peeler/Threader/Hold Down Station** is provided for "hands-free" threading. The coil handling is achieved with a **CPR-PO-40048 Coil Reel and Coil Car** capable of handling a **48" wide x 40,000# coil**. A failsafe drag brake and automatic brake compensation features are included to enhance the safety and productivity of the line.



### Jier Machine Tool Group (Jinan, P.R. China)

SESCO Products Group has received an order for a **72" wide Oscillating Shear Die** from Jier Machine Tool Group, Jinan, P.R. China. The shear die will be integrated with a **S4-600 ton Blanking Press** to **produce trapezoid net shaped blanks**. It is mounted on a self-contained die set that is provided with necessary locating and clamping features to the bolster plate. It is also provided with heavy-duty swivel lifting rings. SESCO Products Group shear dies are designed to work as a "bump-die" with the cutting force being applied by the press ram. **Die oscillation +/- 30 degrees** is provided by a high-torque servo motor and helical gear reducer and is transmitted by precision rack and pinion gearing. Other features of the shear die include an entrance support table, self-centering material edge guides, shock dampening controls, wedge-type blade gap adjustment, and a variable speed pivoting exit conveyor system to transport blanks away from the shear die. include #5 matte chrome full width feed rolls, counterbalanced feed rolls, nylon covered catenary rolls, polished chrome straightener rolls, and nylon covered threading devices. Many of the line's productivity enhancement features include the **ServoMaster Controller** with 500 job memory, a peeler / threader / hold down station for hands-free threading, hydraulic threading and mandrel expansion, and a horizontal-top straightener for both top and bottom payoff of the coil.



### Macsteel Service Centers USA (Cincinnati, OH)

COE Press Equipment has recently shipped and commissioned **Cut-to-Length Line** to this **Steel Service Center** customer. The line is designed to process up to **.135" thick x 24" wide MCRS** with a **Hydraulic Production Shear** up to 35 SPM and linespeeds up to 100 FPM. The lines feature **CPRF-SM3-24 ServoMaster Feeder** mounted on a fixed height cabinet. The feeder was provided entrance and exit self-centering edge guides for accurate strip tracking. The **CPTT-2414 Thread Table** is a single-sided design for effective material threading. A **CPPS-350-24 Power Straightener** has (7) straightener rolls for effective coil set removal and oversized pinch rolls for effective pull-off operations. A **CPR-PO-15024 Coil Reel and Traveling Coil Car** provide effective coil staging and quick changeover capabilities. The coil reel is specified with a variable drag brake to prevent coil over run, hydraulic mandrel expansion and threading systems, and an air-operated hold down arm to prevent coil clockspring.



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