

# CRITICAL INFO . . .

MAXIMIZE YOUR INVESTMENT BY PROVIDING  
DETAILED INFORMATION ABOUT . . .

## COIL FEED REQUIREMENTS

by Chris W. Nantau

Colt's New 50,000 sq. ft. manufacturing facility near Toronto, Ontario Canada

2005 looks to be another challenging year for the metal forming industry. Increased material costs, insurance, labor and utilities keep reducing the "bottom line". Manufacturers must look for ways to reduce waste, increase up-time and make good parts. Negotiating part cost reductions or give-backs with customers adds another twist to the formula. Off-shore manufacturers are now a serious threat to all North American manufacturers, from tooling to finished products. One thing is for sure, everyone in the metal forming industry is looking for ways to improve processes and become leaner, more profitable manufacturers.

Today's automotive & appliance parts require more complex tooling and higher strength materials. Metal forming equipment must also keep up with current & future requirements.

Proper selection of metal forming equipment, including consideration for future requirements, is critical for the long-term success of any stamping operation. Presses are becoming larger and faster, with link and servo drives offering variable, customized slide velocities. High strength materials with yield strengths up to 90+ ksi are becoming more common. In die tapping, welding, sensing and inspection are now widely used. Transfer systems are now available in numerous configurations to retro fit onto existing older presses, to accommodate heavier payloads and operate on large bed presses (250" to 300+").

The same is true for coil feed systems. High strength materials,

wider & heavier coils, longer feed lengths, increased speeds with repeatable accuracy and automated set-up and adjustment based on part number have taken coil feed equipment to the next level. With so many variables and options available, it is very important to review your requirements carefully. Equipment manufacturers should ask a myriad of questions to properly evaluate your needs in order to recommend the best combination of equipment at the best value. In the following paragraphs, we will look at some of the terminology used and information required to properly select coil feed equipment for metal stamping & forming operations. However insignificant some of the information may seem, it is an important part in completing the puzzle.

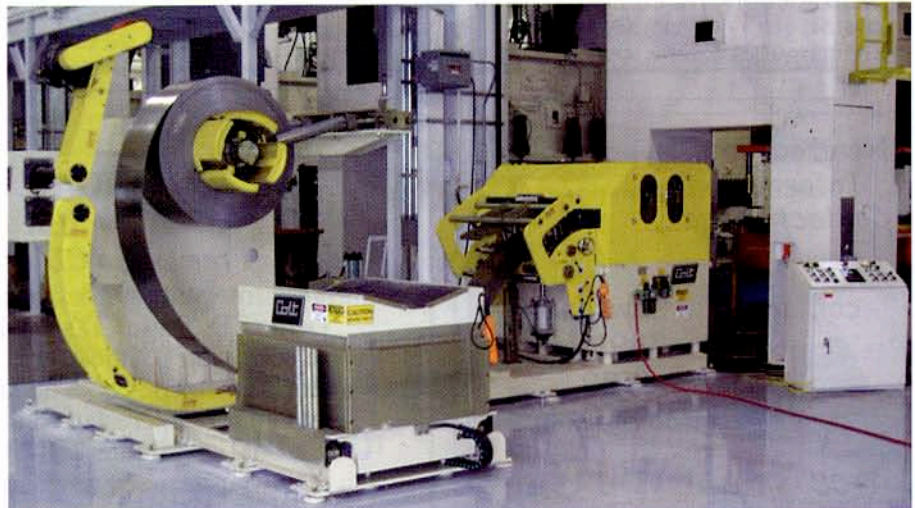
**Coil weight:** All coil handling devices such as a Un-coiler / Reel or Cradle are rated by not only coil width, O.D. & I.D. but of course

maximum coil weight. This determines the frame type of the machine for load carrying ability and also the H.P. required if it is powered. Coil weight is limited to the maximum lifting capacity of your overhead crane, lift truck etc. If there are plans to upgrade your plants lifting capacity, don't overlook future potential to run heavier coils. Maximum coil weight can be estimated by using a standard coil weight chart. If we know the width, O.D., I.D. and material type we can determine the weight.

**Maximum Coil O.D.:** This is important when sizing the frame of the Un-coiling devise to provide adequate spindle to floor clearance, size of backing plate and for cradle units, proper coil containment.

**Coil I.D. :** Un-coiler mandrels have a standard "safe" range of expansion from minimum to maximum, in order to hold the coil by the Inside Diameter. It is important to

Continued on Page 39



Colt Automation Space-Saver, Compact Feed Line

know the range of coil I.D. being used, to size the mandrel accordingly.

**Minimum & Maximum Coil Width:** Minimum & Maximum width along with material thickness, will determine the size and type of system being selected and the construction of the components.

**Material thickness:** One of the most important factors is minimum and maximum material thickness. The range of thickness and the corresponding width, material properties and yield strength are needed in order to select the best combination of system components for optimum performance.

**Type of Material:** There are many types of materials used today. All have different characteristics and need to be processed in a way to maintain their integrity. Material type and yield strength must be provided. We also need to know if we are handling surface critical materials, such as pre-painted or class A surfaces, etc. There are many options available to accommodate different materials.

**Pass-line Height:** There are many variations in pass-line heights, dictated by tooling & bolster height, especially when you look at the used press, retrofit market. The pass-line height and amount of adjustment required are important considerations.

**System performance:** Feed length, available feed angle (press angle in degrees of crank rotation) and press speed range (SPM) are needed to properly size drives to optimize performance. It is always helpful to know the range of feed lengths, from minimum to maximum, with corresponding material width, thickness and press speed.

**Controls and Communication:** Operations such as gagg tooling, batching, job storage, two-way communication with the press,



Heavy Duty conventional feed lines for today's high strength materials

master control of the line, etc. can be handled by today's advanced feed control systems. Any information that

you can provide up front, will help determine the extent of the controls package and options available.

**Additional information:** As a manufacturer of coil feed systems, you can never receive too much information regarding a customer's application. It is a "Win Win" situation if you can provide as much in-

formation as possible, such as, anything relating to the process (blanking, forming, progressive die, transfer, etc.), additional equipment used in the line, type/ size/ tonnage of press, type of parts produced, voltage required, available floor space, etc. the list goes on.

Colt Automation Ltd, of Oakville, Ontario Canada takes the time to ask the right questions to capture all of the critical information needed.

Continued on Page 40



40,000 lb. 60' wide HD Space-Saver feed system for major Tier 1 Manufacturer

Critical Info . . . Continued from Page 39

Colt has been building coil feed system solutions since 1965. We can prepare a detailed proposal, offering recommendations for best performance and value, utilizing our 40 years of industry experience.

Colt Automation builds complete coil feed systems from 6" – 84" wide, handling material up to .625" thick, and coil weights up to 70,000 + lbs.

Here is a brief overview of Colt Automation's products:

- Powered or Non-Powered Un-coilers, for material up to 84" wide with capacities up to 70,000+ lbs utilizing a heavy duty twin mandrel design.
- Stationary or traveling Coil cars up to 84", 70,000 + lb. capacity.

- Peeler / Threader units that offer hands free threading of new coils to straightener pinch rolls.
- Powered Straighteners up 84" wide and .625" thick material.
- Threading tables to guide the leading edge of a new coil to Feed Rolls.
- Electronic Servo Roll Feeds from 6" – 84" wide, available with optional advanced control features.
- Space-Saving Feed Systems from 12"- 72" wide up to 70,000+ lbs. coil weight for most applications and materials.

We provide state of the art control packages, with the capability to fully integrate our feed systems into any

press line. Colt Automation is a Certified System Integrator, in North America, for Bosch/Indramat. All Colt equipment is built in our new Oakville, Ontario facility, complete with engineering, electrical, controls, fabrication, assembly and testing.

We back our equipment with factory trained technicians, fully equipped to travel throughout North America.



Colt Automation can send you a copy of the Coil weight chart for reference. Contact Colt Automation with your coil feed system requirements or visit our web-site to submit an on-line electronic RFQ form and let us send you a detailed quotation based on your application. Chris W. Nantau, National Sales Manager; [cnantau@coltauto.com](mailto:cnantau@coltauto.com), Colt Automation Ltd. [www.coltauto.com](http://www.coltauto.com), Ph: (905)-829-2230, Fax: (905)-829-3325.