

## Maximizing your capital

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In today's competitive environment, lean manufacturing practices, methods to minimize waste in the press room and the growth of markets with stiffer, more specialized demands define just a few of the challenges facing stampers. Flexible press systems that are able to manipulate parts and increase production output while reducing waste can help stampers meet the demands of their customers while making the most of their capital expenditures. Press builders able to offer a diverse equipment lineup give stampers the ability to tailor systems to their individual needs.

A number of industries, particularly automotive and appliance, can require a stamper to invest in a transfer system to provide the necessary product support. And while a dedicated transfer press may be needed, straightside and gap-frame presses can also provide efficient, versatile transfer systems. For the stamper, choosing the appropriate transfer line can be challenging.

In addition to partnering with the right press builder, two basic criteria—part complexity and production volume—can provide stampers with a starting point for purchase decisions. Gaining a basic understanding of each of the transfer systems available can also help stampers make the appropriate decision based on their individual job requirements.

### **The transfer press system**

Transfer presses are best suited for lean manufacturing practices or just-in-time manufacturing demands, which require production of a maximum number of parts in a limited time frame. In addition, transfer presses can be used to meet the more specialized requirements of the automotive industry in-



cluding large, complex parts; complete assemblies; tailor-welded blanks; and parts from thinner, stronger materials.

A stamper who is considering a transfer press should use the following criteria as a basis for selection. A transfer press should have the ability to eliminate production problems so that it is not necessary to stop the press. The press should also be able to enhance the work ratio and increase unit/time productivity by reducing the time it takes to change a die and speeding up the production system. On presses outfitted with a blank hold device, blanks are automatically held while the blank stack is changed—eliminating the need to stop the press while changing stacks of blanks. Output can also increase with quick die changes.

Manufacturers can raise production speeds and efficiency to higher levels with the ability to manipulate parts. Stampers should look for a press equipped with an electronic servo transfer system. This allows the operator to adjust the motion profile for

the transfer pitch, the transfer bar clamp motion and the lift motion. Adjusting all three profiles and retiming them for each part or job, helps stampers achieve optimal operating speed.

Crank and link-motion options for transfer presses add flexibility by making it possible for the press to meet unique part production requirements. A straight crank drive can provide the additional transfer time needed to move parts across the die to the next station. Link motion can improve part quality by reducing punch velocity and holding pressure on the workpiece longer. An extremely rigid tie-rod frame and wider suspension point spacing can also provide resistance to slide tipping from off-center loads.

### **The straightside press system**

When stampers consider an automated press system, whether it be for coil-fed progressive-die operations, transfer-die operations with transfer feeds or if optimum slide velocity for drawing or forming operations is



# equipment investments



required, the press of choice should be a straightside. Double-crank straight-side presses (ranging from 300 to more than 3,000 tons) are used to produce massive parts requiring corresponding

stroke lengths. When used in a tandem line with automation they can deliver improved productivity as parts move from press to press.

The production, quality and throughput of deep-drawn or heavily formed parts can be maximized if the straightside is able to offer a constant slide velocity through the working portion of the press stroke. Wide-spaced connections are a critical feature that can help reduce slide tipping and maximize the accuracy with which the punch

enters the die. Highly rigid construction contributes to long die life and better part quality.

In a system of two or more presses, some straightsides can be run individually or, when extra tooling is required, as a single large transfer press by initiating the intermediate stage between the presses and running them in a continuous, synchronized operation. Transfer system programming can optimize the acceleration/deceleration curves for maximum productivity and