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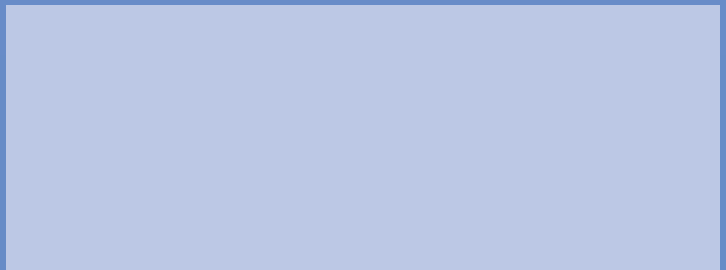
AMERICAN TOOL, DIE & Stamping NEWS™



Special Report:

Presses and Press Technology

Preventive Maintenance for Scrap Handling Conveyors



American Tool, Die & Stamping News

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Cover courtesy of Accurate Die Design

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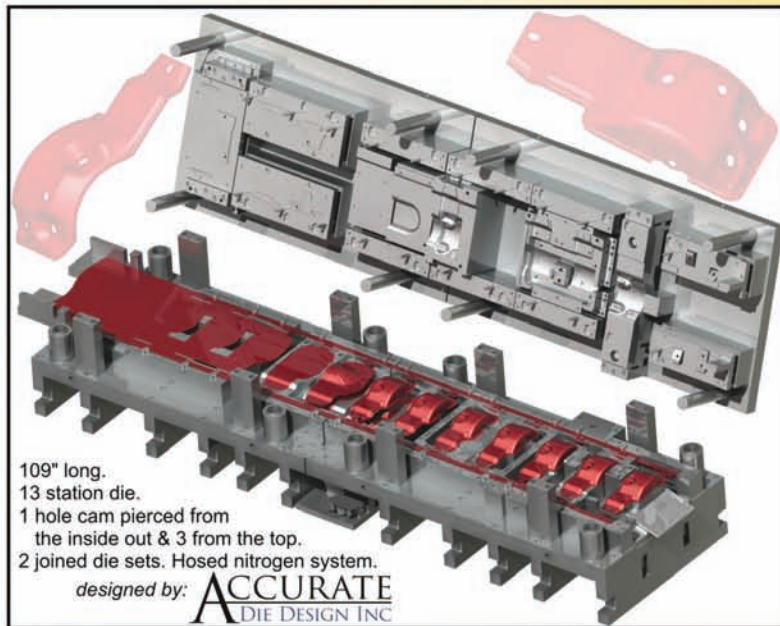
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“Lean Manufacturing should start with Lean Design”

For Estimating, Flat Blank Prediction & 3D Die Design Use **Logopress3™** with **SolidWorks™**



- **FEA / Flat Blank Prediction software** that requires absolutely no formal training
- **3D Die Design software** with ease of use that is highlighted by our users
- Spend less time and money on design and development
- Build dies faster with fewer, or even zero mistakes
- Mistakes and debugging time both cost money
- Automatically creates 2D drawing files
- Sold in 30 countries around the world



"The combination of Logopress3 and SolidWorks has substantially improved our company's ability to respond more quickly and accurately to requests from customers for quotations. Our tool and die professionals have used advanced Logopress3 features, such as the automatic nesting function, to reduce the time of creating optimal strip layouts. Our professionals have achieved time savings in some instances of up to 75% when creating strip layouts and estimating material usage compared to prior practices."

Anthony L Chirchirillo
CEO

Chirch Global Manufacturing, LLC

"I can design small dies using Logopress3 twice as fast as I can using SolidWorks alone. With big dies, the difference isn't quite as high as that, just because there's more thinking involved with big dies."

Mike Schmit
Oldenburg Metal Tech, Inc.

"Once you've turned that corner from 2D to 3D you'll never go back. I know I never would. I've designed a few dies with Logopress3 so far and I know they went faster than they would have with (2D CAD)."

Bill Brunner
Strattec Security Corporation

LOGOPRESS

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Estimating and Die Design Technology

Getting Ready to Compete in This New Decade

By Raymond Proeber, President, Accurate Die Design, Inc.

One of the things that the past decade will be remembered for nearly as much as anything else is the technology that came with it, particularly in the area of communications. One of the direct results of this was that a true global economy reached every shore. The borders that were in place due to the lack of efficient communication are gone. So how do companies in the United States compete with other countries that have considerably lower labor costs, and how can domestic businesses survive and thrive?

OUR TOOLS VS. OUR COMPETITOR'S

It is very important to recognize the fact that it is possible for all of the other companies around the world to purchase and use virtually all of the same technology that domestic companies have access to here in the U.S. This is true of computer hardware and software, as well as machinery. Nobody would argue the fact that it is quite impossible for Americans to compete here in the U.S. with devel-

oping nations in terms of wages. But what is available here in the U.S. that developing nations do not have is much more experience working in this industry. The question becomes how to capitalize on that. It is absolutely vital that American companies not fall behind other countries in taking advantage of technology and automation in order to increase productivity.

EXPAND BEYOND MANUFACTURING?

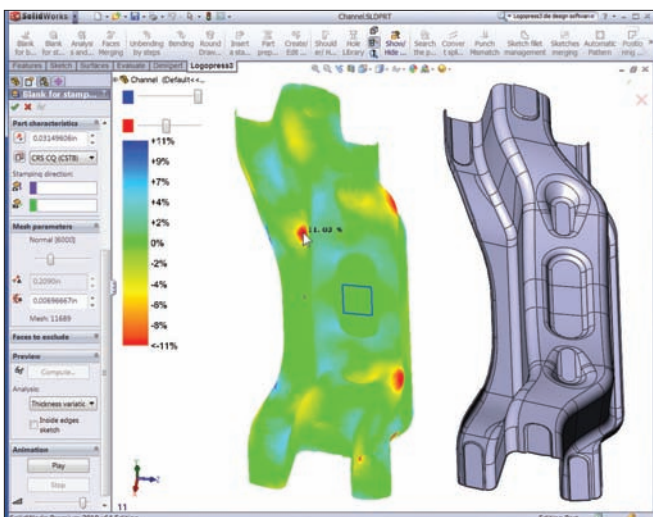
One of the buzzwords of the past decade has been "lean." Most often, this word has been associated with "lean manufacturing." But shouldn't companies be taking advantage of "lean estimating" and "lean design" prior to lean manufacturing? One of the definitions for "lean" in Merriam Webster's dictionary is "containing little or no fat." If a company is doing things the same way they were 5 years ago in their estimating and/or design departments, chances are they contain too much fat.

SPECIALIZED SOFTWARE – LOGOPRESS3

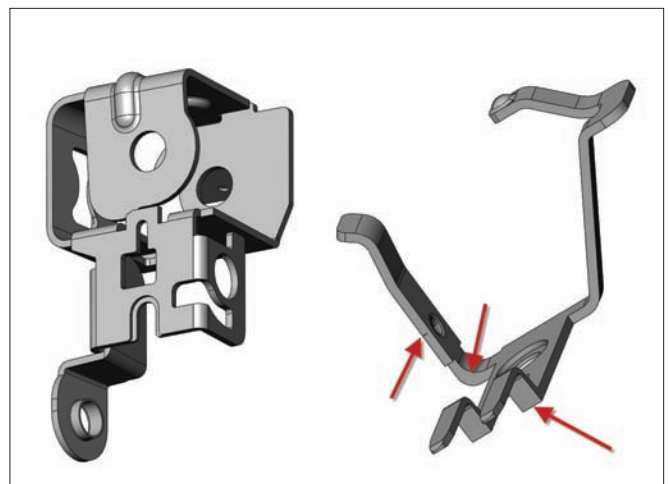
Companies can save considerable time on their estimating and tool design by using software that is specifically developed for our industry, rather than using software that is made for the masses. The company Logopress was founded more than 20 years ago for the single purpose of developing and marketing a die design software package that had been started 3 years prior and was now ready for market. This package would later become known as Logopress2 (because it was 2D) and today is known by the name of Logopress3 (because it is 3D). Logopress has been developing die design software longer than any of their 3D competitors and is the only company who develops 3D die design software exclusively.

LOGOPRESS3 + SOLIDWORKS

SolidWorks has sold more than one million (1,000,000) seats of their 3D CAD solid modeling software. Most

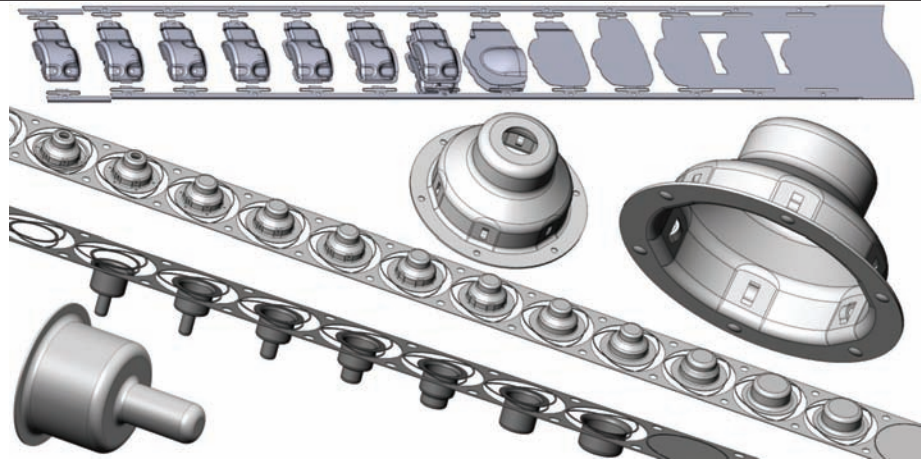


Without requiring any formal training, Logopress3 BLANK provides thinning results for complex stamped parts as well as showing stress, strain and also generating the flat blank.



Complex parts and parts that are poorly modeled or too "dirty" for other means of unbending are accurately unbent in a matter of seconds, with the k-factor of each individual bend radius being automatically calculated.

The Logopress3 strip module manages complex automotive-type parts as well as linear bent parts. It also has a very robust round draw module within it. Strip layouts for round drawn parts can be created in a matter of minutes.



people in the industry now view SolidWorks as the de facto standard for 3D CAD. In 2000, Logopress decided to use SolidWorks as the 3D CAD software that they would integrate into because of the popularity of it and because of the great tools they made available to developers. Logopress3 requires SolidWorks and all three of their products are SolidWorks Gold Certified. It is available in versions specifically for estimators as well as for people who only need to flatten complex 3D forms. The full Logopress3 tool design package includes all of the software tools available from Logopress.

LOGOPRESS3 FOR ESTIMATING

The vast majority of models that most companies receive to quote or to design dies from are what is known as “dumb” imported models. That is, they came from another CAD system and have no history or features along with them. While SolidWorks will recognize some of these parts as sheet metal parts, Logopress3 brings many tools to the estimator, including the ability to work with many imported models (solids and surfaces) that are otherwise too “dirty” to be recognized by SolidWorks as sheet metal parts. Additionally, each individual bend and bend radius is treated individually and k-factors and bend allowances are automatically and accurately calculated. Complex shaped 3D parts (automotive type parts) are accurately flattened using Logopress3 BLANK, while also calculating stress, strain and thinning on the part. Overbends and springback

are automatically managed and the user has the ability to perform automatic blank nesting optimization to determine best material usage.

In addition to the flattening tools and other items mentioned above, the strip layout module includes a robust round draw module as well. Strip layouts for round drawn parts can be accurately created in a matter of minutes.

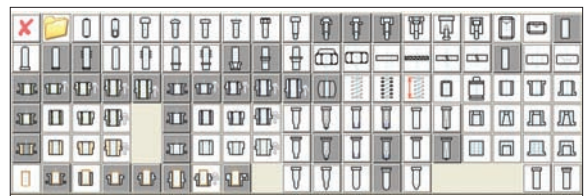
LOGOPRESS3 FOR DIE DESIGN

The Logopress3 strip module enhances SolidWorks performance by adding something called Station Marks, which eliminate the need for parts with large history trees in the strip. It also includes a command that allows the user to overlay a graphical preview of the previous station on the current station. The tonnage of the die is also calculated automatically.

The Logopress3 Tool Structure module includes an intelligent component library called 123GO Advanced that cuts all holes at the same time as inserting the component. This advanced intelligent component library contains virtually all the standard components that would get used in a die, and also allows for custom components that the user may create. Also included is a mate management interface, tool & die specific hole charts, Logopress3 bill of materials (BOM) and Animation with Dynamic Interference Detection. Imagine that after modeling the die, within

seconds you can press an icon and enter the press stroke, stripper travel and stock lift and watch the die operating as if it were in the press. This includes the strip advancing and detecting any collisions that would occur, for example, with a down-form not lifting high enough over a die insert that is located downstream in the die doing an up-form.

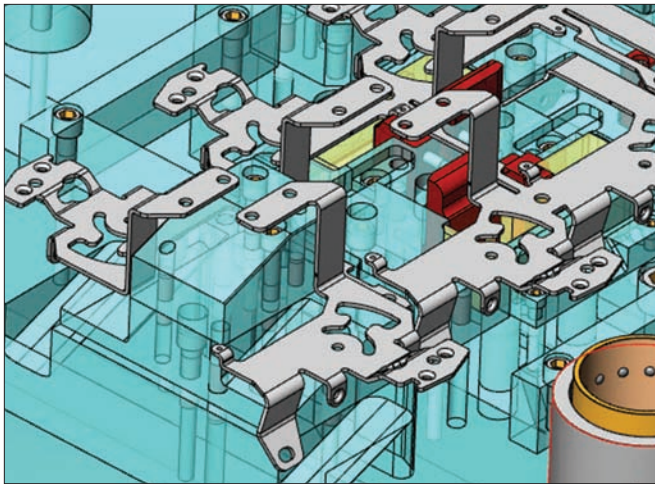
Using Logopress3 Filters you can quickly switch between various display states of the die such as strip only, strip and die side, punch side with strippers, etc. There are tools for automatically cutting the clearances through all plates throughout the die for cutting punches, as well as tools for heels, shoulders, locking punch tabs, and creation of form punches.



A complete intelligent component library is built into Logopress3. All holes are cut at the same time as the component is inserted into the assembly. The user can quickly change from one component to another or from one size to another. Hole types and sizes are managed automatically by Logopress3.

2D DRAWINGS & LOGOPRESS3

Some people think that they cannot design with 3D because they require 2D drawings on the shop floor, but they will be very happy to know that 2D drawings are very much a part of 3D design. In fact, Logopress3 has multi-



This complex 2-out die was designed without any mistakes. No development or debugging time was required.

Hole Tag	X	Y	Tb	Designation	Standard Components
A1	.7500	-5.2500		$\varnothing 1.1255(+0.0005,0)$ Thru All $\varnothing 1.312 \varnothing 0.187$ Bottom For Bushing	
A2	.7500	-7.5000			
A3	6.4500	-7.5000			
B1	1.3250	-3.0000		$\varnothing 2.125$ Drill Thru All	
C1	1.7500	-5.5000		$\varnothing 0.406$ Thru All $\varnothing 0.609 \varnothing 0.69$	Socket Head Cap Screw GENERIC INCH Ref: 375-16x2-SHCS
C2	1.7500	-5.0000			
C3	5.4720	-5.5000			
C4	5.4720	-5.0000			
D1	2.1700	-5.0830		$\varnothing 0.159$ (#21) $\varnothing 0.875$, TAP 10-32 $\varnothing 0.625$	Button Head Cap Screw GENERIC INCH Ref: 10-24x.825-BHCS
D2	2.1700	-9.1700			

Hole charts take only 20 seconds to add to a 2D drawing and include both tolerance as well as component information.

ple tools for automatically creating the 2D drawings for the 3D model. These tools enhance the tools already in SolidWorks and include automatic population of the information in the bill of materials (BOM) including sizes of parts, sorting of balloons and populating the title blocks of the drawings. SolidWorks along with Logopress3 make the creation of detail drawings very easy and fast, with considerable flexibility allowed for user preferences.

2D DESIGN VS. 3D DESIGN

Not everyone has switched yet from the 2D software that they have been using for the past two decades. However, just as it was inevitable that the switch would need to be made from pencils and a drawing board to 2D die design and/or estimating software, the same is true of the switch from 2D to 3D. A half-dozen years ago if someone wanted to argue that they could do their die design and estimating using 2D software faster than they could using 3D die design and estimating software, it was more difficult to argue the point. But today, when all benefits and results are measured, it is impossible to argue that 2D is as efficient as 3D

stamping industries.

SUPPOSED COMPLEXITY ROADBLOCK

There are a few possible roadblocks that people put in their way of moving to 3D estimating and tool design software. One of these is the concern about the learning curve. There is no doubt that riding a bicycle is easier than driving a car, but while a car is more complex, it is also far more efficient at getting you from here to there than a bicycle is. Many Logopress3 users report that after a couple of months they already consider themselves more efficient than they were with 2D tool design software and would never consider going back to 2D design. As far as for using it for estimating, this is dramatically faster and easier to use than 2D software for estimating, and the other significant benefit comes in the form of accuracy.

IS THERE AN EXPENSE ROADBLOCK?

It is true that 3D tool design software is more expensive than 2D software, but isn't a wire EDM machine considerably more expensive than the tools and machines necessary to section die blocks as done in the old

days? How many companies are still in business that section die blocks when they could wire EDM them? Is a car more expensive than a bicycle? How many ride a bicycle to work? Be careful when considering the hardware expense as well. Some people are turned off by having to spend \$5,000 on computer hardware, yet they are likely to be spending approximately that much each and every month to have a die designer on staff. Note that the computer hardware will last for years and doesn't require payment each and every month!

CONCLUSION

Computers are here to stay! So why not take advantage of the power and automation that they bring with them, particularly when software is available that is very specifically designed for this particular business rather than generically designed for the masses? A number of decades ago a saying went "Complacency is the beginning of the end." Today, more than ever, businesses need to make sure they are ready to compete on a global level.

In addition to providing die design services, Accurate Die Design provides 3-D software, training and support to the tool & die and metal stamping industries and is the U.S. Technical Center for Logopress3.

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