

Today's

August 2023

Industrial

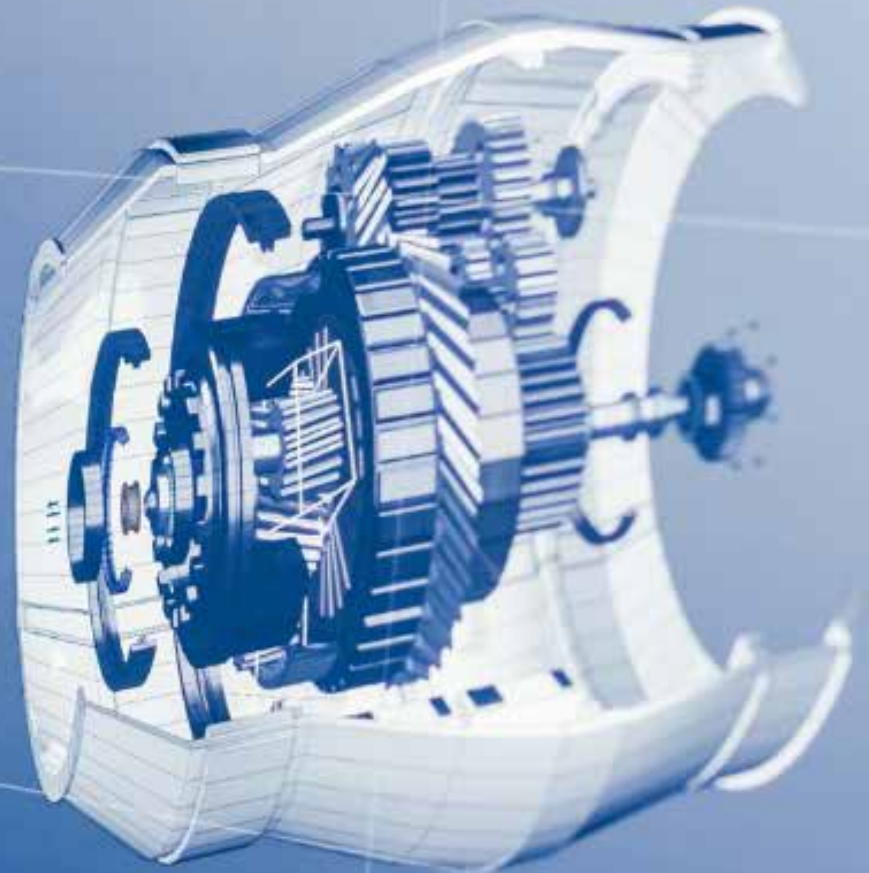
Products & Solutions™

The Complete Purchasing Guide for Today's Industrial Market

www.tipsmag.net

**Unlocking
the Value
Potential
of Additive
Manufacturing**

**FALCON Steel &
Poly Funnel for
Dispensing
& More**



jESCOHYDRATILT™ DUMPERS



HYDRAULICALLY CONTROLLED HOPPERS

These units are ideal where control of the quantity of material dumped or the rate of discharge is critical. They operate off the hydraulic system of your forklift and come complete with male quick-disconnect hoses for easy attachment to the forklift.

jESCO® PARTITIONS



DIAMOND WIRE MESH ENCLOSURES

Send us the footprint of your project and allow our engineers to assist you on your next project!

Division 10 22 13.



CONVERT YOUR FORKLIFT INTO A WORK PLATFORM!

Available in 40", 72", 96", and 120" lengths.

jESCO® WORK PLATFORM



jESCOGARD®

PROTECTIVE GUARD RAILING

These versatile guards act as both a visual and physical barrier to help protect people and property such as aisles, docks, conveyors and other equipment. Bolted rails are designed and tested to stop a 10,000 lbs load impacting at 4 mph from breaking through. Lift-out rails shown. All hardware is included.



Call 800-529-6697
Visit www.JescoOnline.com

jESCO
— Since 1932 —

Jesco Industries, Inc.
Ph: 517-542-2903 Fax: 517-542-2501
PO Box 388 Litchfield, MI 49252-0388

FEDERAL KNIFE, INC.

Industrial Cutting Knives



1-800-23-KNIFE (800-235-6433) • 812-364-1418 (fax)
P.O. Box 509 • 785 County Line Road • Palmyra, IN 47164



REPLACEMENT SHEAR BLADES DELIVERED FROM STOCK

Shear Blades or All Equipment Makes:

- CINCINNATI • WYSONG & MILES • HTC • ACCUR-SHEAR •
- PACIFIC • AMERICAN HERCULES • NIAGARA • PEXTO
- AMADA • STEELWELD/CLEVELAND CRANE
- BETENBENDER • ATLANTIC / HACO
- LODGE & SHIPLEY / COLUMBIA • CENTURY • HERR-VOSS
- STANDARD • EDWARDS/ PEARSON • ADIRA • GATTI • LVD
- DI-ACRO / ELGA-HYDRA • HYDRAPOWER • STAMCO
- BERTSCH • GUIFIL • SAFAN • DARLEY • RHODES
- MORGAN • SUMMIT • DREIS & MANY OTHERS

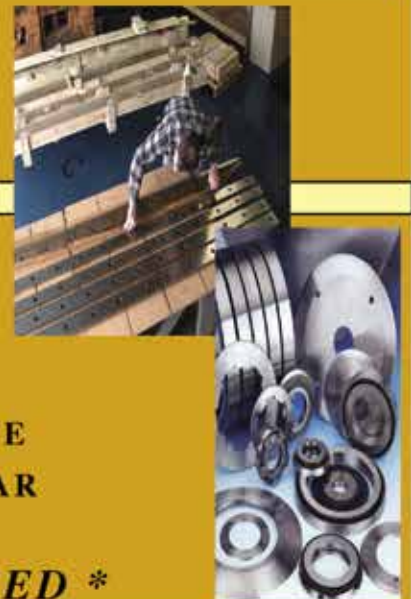
Precision Blade Sharpening Is Our Specialty!!

*Shear blades made from high quality tool
steels "performance matched" to your
unique cutting application.*

*Call one of our product specialists
for more information.*

www.federalknife.com

sales@federalknife.com



WE WILL BEAT ANY

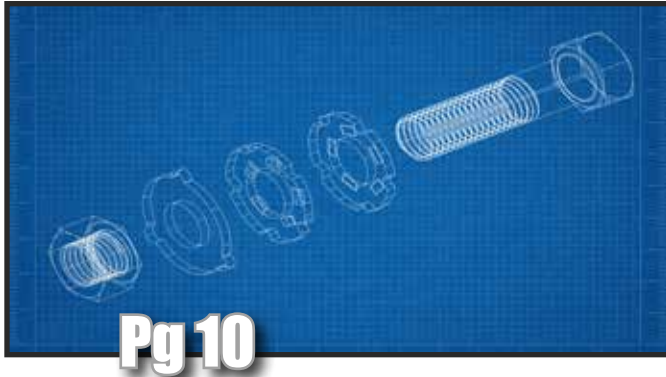
COMPETITOR'S QUOTED PRICE
FOR NEW REPLACEMENT SHEAR
BLADES

BY 5% OR MORE GUARANTEED *

*** PRESS BRAKE TOOLING * METAL SLITTERS * SLITTING SUPPLIES * 1-800-23-KNIFE ***

TIPS Contents • August 2023

PG 4	Environmentally Friendly Bio-Air Tool™ Lubricants Eliminate Reportable Incidents & Clean Up Costs
PG 10	Unlocking the Value Potential of Additive Manufacturing
PG 14	FALCON Steel & Poly Funnels for Dispensing & Pouring Into Drums, IBCs, & More
PG 16	Providing Flexibility in Batch Control
PG 20	Ad Index



The test tools you need - for the information you require.



From monitoring equipment, tools and test instruments to the need for on-going calibration requirements and the training to understand everything - there is no wonder the maintenance professional is overwhelmed. With the availability of new and upcoming technology, information overload can quickly set in when trying to put together the best maintenance solution. **That's where we come in.** EDE can demystify electrical testing programs, offer support, training programs and the high tech equipment to make your maintenance activities straight forward and motors and generators doing what they are supposed to do - run. We will help you **Find the Way.**

• 970/292-8207 • www.edeinst.com •



Today's Industrial Products & Solutions.

Vol. 23 Issue 8

PRESIDENT

Glen Hobson
205-441-5591
glen@tipsmag.net

ASSOCIATE PUBLISHER

Bart Beason
205-624-2180
bart@tipsmag.net

ADMINISTRATIVE DIRECTOR

Steven Hobson
steven@tipsmag.net

EDITOR

Brandon Greenhill
brandon@handfmedia.net

CREATIVE/ WEB DIRECTOR

Jacklyn Greenhill
jacklyn@handfmedia.net

P.O. Box 1568 • Pelham, AL 35124
Phone: 205-441-5591 • Fax: 205-624-2185
www.tipsmag.net
info@tipsmag.net

SDP

Southern Digital
Publishing

Today's Industrial Products & Solutions™ is published ten times a year on a monthly basis by Southern Digital Publishing, Inc. *Today's Industrial Products & Solutions™* is distributed free to qualified subscribers. Non-qualified subscription rates are \$57.00 per year in the U.S. and Canada and \$84.00 per year for foreign subscribers (surface mail). U.S. Postage paid at Birmingham, Alabama and additional mailing offices.

Today's Industrial Products & Solutions™ is distributed to qualified owners and managers in the industrial industry. Publisher is not liable for all content (including editorial and illustrations provided by advertisers) of advertisements published and does not accept responsibility for any claims made against the publisher. It is the advertiser's or agency's responsibility to obtain appropriate releases on any item or individuals pictured in an advertisement. Reproduction of this magazine in whole or in part is prohibited without prior written permission from the publisher.

POSTMASTER: Send address changes to
Southern Digital Publishing, Inc. P.O. Box 1568
Pelham, AL 35124
PRINTED IN THE USA

REDEFINING COMPREHENSIVE ROOFTOP SAFETY

TURN-KEY SAFETY RAIL SOLUTIONS FROM START TO FINISH
INSPECT | SPECIFY | BUILD | INSTALL



SRC Mobile Safety Rails set the industry standard for OSHA compliant safety solutions to prevent falls and injury.



PROTECT LIVES.
BE OSHA COMPLIANT.
CONTACT US TODAY.



SafetyRailCompany
Fall Protection for Life and Compliance

SAFETYRAILCOMPANY.COM | 888.434.2720



Environmentally Friendly Bio-Air Tool™ Lubricants Eliminate Reportable Incidents & Clean Up Costs

Renewable Lubricants presents patented, ultimately biodegradable Bio-Air Tool.™ Lubricants which have better natural lubricity than petroleum-based oils but are safer for employees and the environment. Because they are bio-based, there is no danger of polluting the air, water, soil, or work environment with spilled lubricant. Unlike petroleum-based product, should a leak occur operators can simply wipe it up and throw away the towels or rags – no reporting is required, nor is expensive disposal. They emulsify water for improved lubricity and corrosion protection in moist conditions. Bio-Air Tool™ Lubricants can be fed through an airline lubricator or with a squirt directly into the tool through the



SAFELY Lifts Up To 500 lbs!

- Ergonomic
- Portable
- Lightweight
- Meets OSHA & ASME Requirements

Customized Safety Lifting Devices For Any Application

Available in both
CHAIN & CABLE
Configurations



The Sky Hook is your personal safety lifting solution, preventing lifting injuries while saving you both time and money!

800-4-SKYHOOK

800-475-9466 • 208-365-5770

www.skyhookmfr.com

SKY HOOK

ATTCO, Inc. OSA
by SYCLONE ATTCO SERVICE

quick coupling air connection. Available in 22 and 32 weights, they feature low toxicity and super high viscosity index of the HOBBS, making them ideal for rotary and reciprocating air tools such as chipping hammers, impact wrenches, air motors, grinders, reamers, drills, and more.

Bio-Air Tool™ Lubricants meet the Environmental Protection Agency (EPA) 2013 Vessel General Permit (VGP) guidelines for Environmentally Acceptable Lubricants (EALs) and should be used where low toxicity, biodegradability, and non-bioaccumulation properties are required. In addition to being safer for the environment, they are safer for employees. It exceeds the acute toxicity (LC-50/EC-50{1000 ppm) criteria adopted by the US Fish and Wildlife Service and the US EPA.

Renewable Lubricants, Inc. began as a research and development company in 1991, developing high performance products that would directly replace petroleum-based products. Starting from a single corn-based engine oil developed in the inventor's garage, the company now offers more than 250 products and has over 100 worldwide patents. They manufacture their products as environmentally friendly as possible without sacrificing performance. For more information on Renewable Lubricants, Inc., contact Benjamin Garmier at (330) 877-9982, or info@RenewableLube.com, or visit www.RenewableLube.com •

LTBLtech, LLC - Call: 615.593.0510

DOCK RIGHT
LASER DOCKING TECHNOLOGY
Dock Right Laser System, Div. of LTBLtech, LLC
LOSS PREVENTION FOR THE 21ST CENTURY
www.LTBLtech.com

LTBL TECH "The Original"
LIGHTCOP
- Loss Prevention For The 21st Century -

LASER LINE'S

PROJECTED SIGN'S

Because Painting & Taping Sucks!

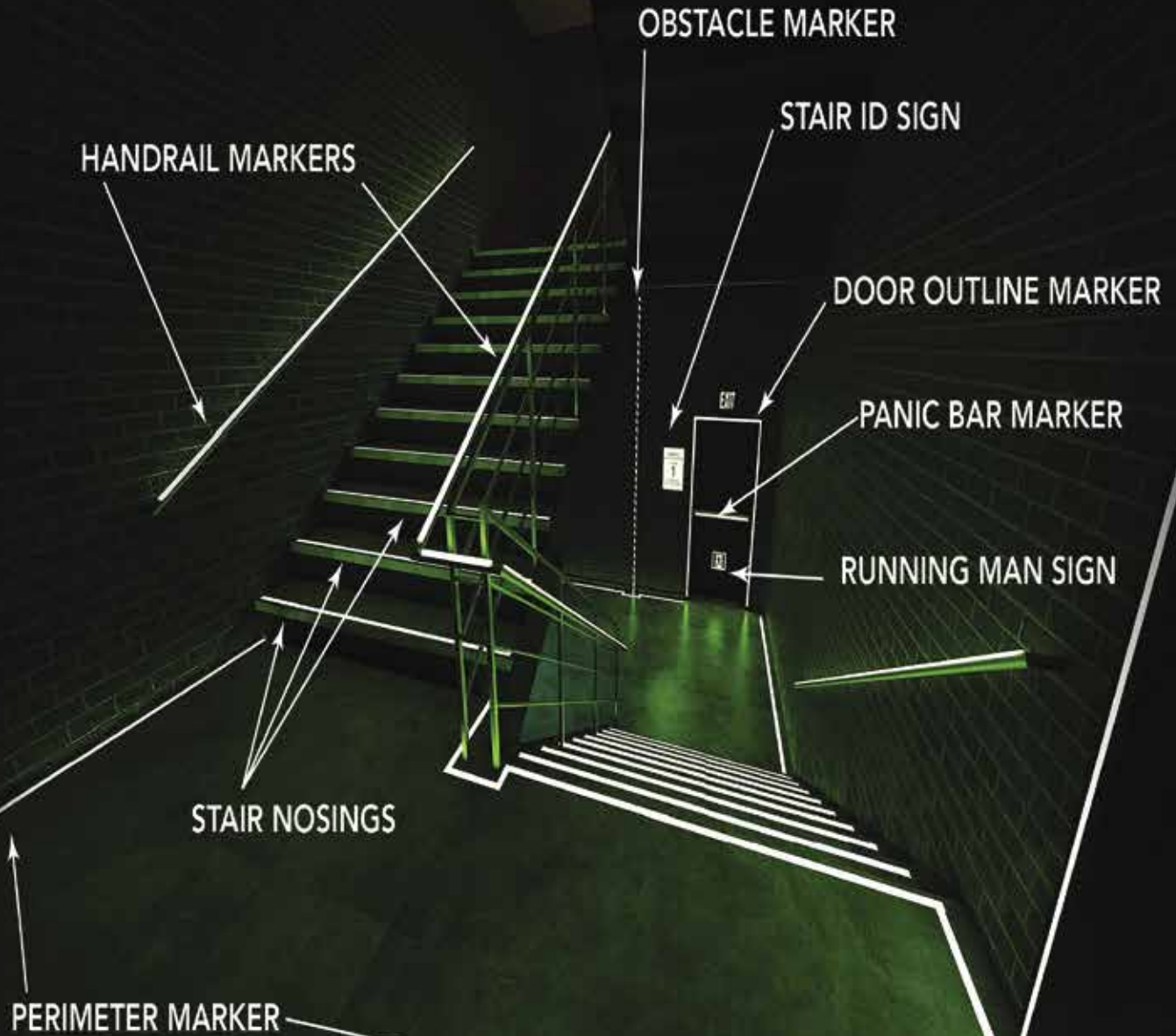
Visit us on the web - www.LTBLtech.com

The advertisement features a collage of images showing laser lines being projected onto a forklift and a warehouse floor, and a light cop sign projecting a stop sign onto a floor. A person is visible in the bottom left corner, standing near the laser lines.

Safe-T-Nose®

LEAVE NO DOUBT • THIS WAY OUT • EXIT SAFELY

SAFETNOSE.COM • 1-855-723-6673



**IFC/IBC REQUIRED EGRESS
MARKINGS AND SIGNS**



Unlocking the Value Potential of Additive Manufacturing

Still seen primarily as a prototyping technology, additive manufacturing is getting a boost from AI and machine learning software that can help with AM decision making.

Hard to believe that 3D printing has been with us for more than 40 years. Yet, additive manufacturing (AM), which can deliver enormous value, is still greatly underutilized. When properly implemented, the technology can reduce material waste and energy costs, improve part reliability, decrease lead times, reduce or eliminate the need to carry inventory and optimize the production of legacy parts.

However, transitioning to AM requires not only a change in mindset but more importantly, the ability to quickly and easily identify which parts are best suited for the additive manufacturing process. This is where AI and machine learning are now bridging the gap between traditional AM –where most of its value materializes in the form of functional prototypes – and more advanced additive manufacturing operations.

“We have upwards of a million part numbers,” says Werner Stapela, head of global additive design and manufacturing at Danfoss – an international leader in drives, HVAC, and power management systems. “So, it would be impossible for us to manually analyze each one to determine whether additive manufacturing would either add value or reduce costs.”

Companies, like Danfoss, that are looking to automate the process of identifying which parts should be moved to additive manufacturing are increasingly relying on new industrial 3D printing software that

INDUSTRIAL ROOFTOP SAFETY MADE SIMPLE

TURN-KEY SAFETY RAIL SOLUTIONS FROM START TO FINISH
INSPECT | SPECIFY | BUILD | INSTALL



SRC Mobile Safety Rails set the industry standard for OSHA compliant safety solutions to prevent falls and injury.



PROTECT LIVES.
BE OSHA COMPLIANT.
CONTACT US TODAY.



SafetyRailCompany
Fall Protection for Life and Compliance

SAFETYRAILCOMPANY.COM | 888.434.2720

can quickly determine AM feasibility. The platform that Danfoss utilizes helps manufacturers unlock the benefits of industrial 3D printing by providing a technical and cost-saving analysis.

AM mindset

“We have been utilizing 3D printing for decades, mostly for prototyping, but the Castor3D software allows us to focus on our end components and more specifically the costs associated with that,” adds Stapela.

The software’s algorithm and machine learning can scan thousands of parts at once by analyzing CAD files. It evaluates five factors: materials, CAD geometry, costs, lead time, and strength testing to identify suitable parts for AM. The software can also make design for additive manufacturing (DfAM) suggestions regarding part consolidation and weight reduction opportunities.

“The software delivers a lot of detail. For instance, it will tell you whether your costs be reduced with an improved design or by selecting a different material,” explains Omer Blaier, Co-founder of Castor. “So, let’s say a manufacturer determines that a lower-cost material is more important than the strength. The platform would then recommend a material better suited for your design.”

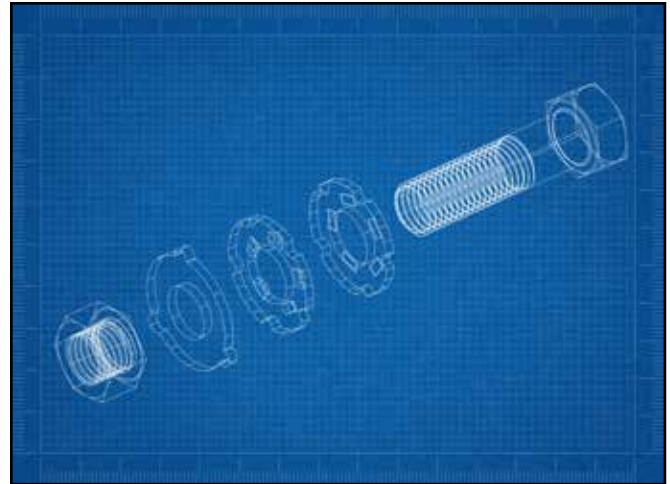
For Danfoss, there has always been a desire to increase its AM processes, both for DfAM on its new products, as well as its existing product lines and legacy parts.

“There are a lot of big companies out there trying to get engineers to think about additive manufacturing when designing a new component,” add Blaier. “We come at it from the other side trying to find opportunities within your current designs.”

Connecting the entire process

Few organizations, if any, have a larger library of part designs than the U.S. military, which is increasingly looking to AM as a potential solution to a number of challenges. For example, both the Air Force and Navy are in the process of creating an end-to-end digital manufacturing solution that slashes cycle times from weeks to hours, thus greatly decreasing project costs.

The system will also help to untangle complicated



supply chain issues because components could be designed in one part of the world and printed anywhere else on the planet, or even in space, with a push of a button.

The front end of these systems requires the same type of AM decision-making software that automatically identifies suitable parts.

“We are talking about millions, or even billions, of parts in its arsenal. There was just no way the U.S. military could go through each one of those manually and figure out which components could be additively manufactured, which ones should be, and which ones can be improved by moving them into an AM process,” explains Scott Shuppert, CEO of CAD / CAM Services.

A Texas-based prime contractor for the U.S. federal government, CAD / CAM Services was brought in to integrate several commercial-off-the-shelf technologies into what the Air force calls the ‘Factory of the Future.’ This integration will enable the Department of Defense and other large manufacturers to manage and scale their AM processes.

Capitalizing on additive manufacturing

“By bringing in the Castor software into our enterprise-wide solution, we are seeing organizations cut their costs by an average of 40-60%,” adds Shuppert.

As an example, Stanley Engineered Fastening (SEF), which has a diverse portfolio of fastening products serving numerous industries, was looking to lower costs on its production floor, improve

"As a safety professional, you always want your workers to have access to leading edge safety tools that improve safety and focus.

Working with **COOLSHIRT SYSTEMS** over the past two years allowed me to help design a tool **by linemen for linemen.**

The **A.R.C. Hybrid Cooling System** by **COOLSHIRT SYSTEMS** allows linemen to remain more focused and less fatigued by reducing their core body temperature in extreme environments, therefore reducing the possibility of unintended accidents."

-James "Jim" Bonner
Compliance Coordinator- Retired
Alabama Power



A.R.C. Hybrid Cooling System

Complete Arc Rated Portable Cooling Solution

Developed in conjunction with major power companies for use in extreme heat conditions, the **A.R.C. Hybrid Cooling System** uses liquid cooling to reduce fatigue, injury, and heat stress related illness.

Designed specifically for use by linemen, the **A.R.C. Hybrid Cooling System** features a compact design with a custom woven strap mounting system. The use of S-hooks offers the versatility of mounting inside or outside of the bucket.

Designed with portability in mind, measuring **6" x 6" x 20"** and weighing in at **less than 10 lbs dry**. The unit is entirely self-contained and built to last with a 20,000 hour pump.



A.R.C. Hybrid Cooling System
2002-0017



COOLSHIRT
TEMPERATURE CONTROLLED GARMENTS

part production lead times, and increase manufacturing flexibility.

As part of that, the production line at Stanley's manufacturing facilities around the world is made up of highly customized parts, with complex geometry, and runs at low annual production volumes. It would take about 8 weeks for a new part to be produced and tested. Costs would quickly escalate when the process required multiple iterations.

Wanting to transition some of the processes over to AM, Stanley went looking for a platform that could automate the selection of high-end 3D printing for end-use parts. It was also looking to produce parts using more sophisticated materials like aluminum, titanium, and steel.

"Not only were we able to produce the first Stanley Black & Decker 3D-printed metal production part," explains Moses Pezarkar, a Stanley manufacturing engineer. "We were able to reduce lead



times from 8 weeks to 9 days and decrease our costs by 50%."

The engineering team at Stanley has since ramped up the number of parts the software system is analyzing to further capitalize on additive manufacturing.

Advertisement for Jesco Industries, Inc. featuring the company logo, contact information, and images of various industrial equipment. The logo is green and white, with the text "jesco" in a large, bold font and "Since 1932" below it. The contact information includes "Jesco Industries, Inc.", "950 Anderson Rd PO Box 388", and "Litchfield, MI 49252-0388". There are several images of industrial equipment, including a yellow metal frame, a yellow metal structure, and a yellow metal rack. A red circular seal says "Jesco does it best!". The bottom of the ad features the text "Visit JescoOnline.com" and "Call 800-529-6697".

Marching forward

With potentially dramatic cost and time savings, business leaders are looking to further expand AM's footprint in their production process. Aerospace and medical equipment industries are leading the way regarding AM for end-use parts. In addition, machinery, industrial equipment, oil and gas, as well as energy are beginning to take advantage of AM beyond prototyping.

A major shift has also come from an educational standpoint where universities are increasingly adopting more 3D-printing curricula and buying 3D printers. This promises to deliver more AM-minded design engineers into the workforce. This, along with AM decision-making software systems, promises to speed up the adoption of AM beyond prototyping.

Maddox is the one-stop shop for your transformer needs

Founded by a team of industry veterans focused exclusively on the transformer and transformer-related needs of industrial and commercial clients.



Sell

Maddox stocks and sells the highest quality transformers from dry types and padmounts to substations.

Rent

With thousands of units in stock, Maddox rents out transformers for the temporary power needs of customers across North America.

Repair

With shops on both coasts Maddox inspects, tests, and repairs transformers to ensure that they are in top working condition.

Purchase

We offer a great price that includes handling all the transportation and environmental issue.

FALCON Steel & Poly Funnels for Dispensing & Pouring Into Drums, IBCs, & More

DENIOS-US introduces the new FALCON line of steel and poly funnels for the fast, safe, and efficient pouring of materials into IBCs, drums, plunger cans, spray bottles, and other chemical containers. They are well suited to guide the flow of liquids and powders into small openings on other contains, making them ideal for the safe, fast, and efficient filling or refilling of plunger cans, spray bottles, drums, totes, and more. DENIOS funnels are a useful addition to any facility using liquid containers. For more information on the FALCON stainless steel Funnel visit <https://bit.ly/FalconSSFunnel>.



The stainless-steel funnel is part of a full family of FALCON funnels for drums, totes, and other containers. DENIOS stocks the entire lineup of stainless-steel, carbon steel, and polyethylene (PE) FALCON Funnels in their Louisville factory for immediate shipment. For more information on the FALCON family of funnels visit https://bit.ly/FALCON_line.

About DENIOS

DENIOS is the world's leading manufacturer and supplier of products and services for occupational environmental protection and workplace safety. For nearly four decades they have been supplying legally compliant products, solutions, and custom services for handling hazardous substances. They serve North American customers from a 100,000-square-foot facility in Louisville, Kentucky which houses engineering, manufacturing, customer service, and administrative support. At this location, they manufacture everything from the original spill pallet which launched the Company, to highly engineered, fire-rated chemical storage buildings. For additional information on DENIOS US, visit www.DENIOS-us.com, or chat with a live representative online, or via email at info1@DENIOS-us.com, or call (877) 388-0187.

www.DENIOS-us.com •

Payroll People meet at a Tradeshow

Our payroll takes 2 minutes to prepare and keeps us compliant with the DAVIS BACON ACT

Our payroll takes many hours and 3 people to put together

We get an 80% savings in time and money with compliant client - compared to manually prepared payroll

Compliant client sounds great. My friend's construction company was heavily fined being out of compliant. He might go to jail!

I USE COMPLIANT CLIENT BY EMARS

WE MANUALLY PREPARE PAYROLL

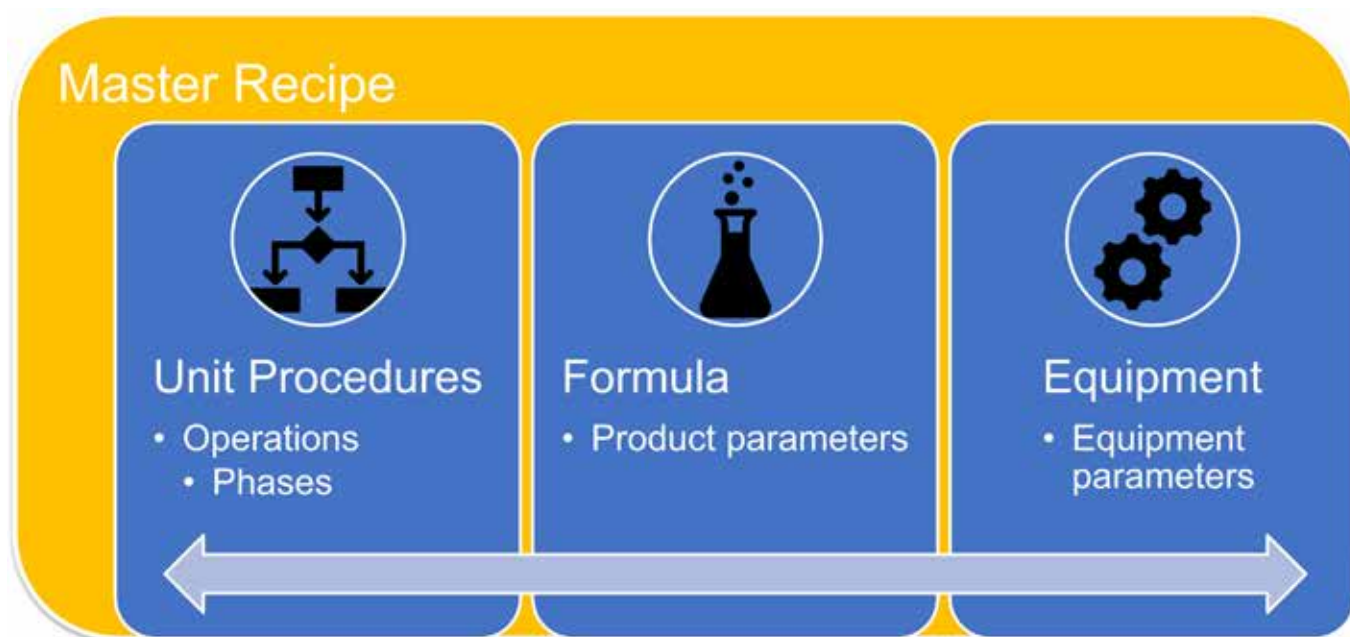
Our payroll is certified, worry Free and very inexpensive plus it is DOL APPROVED

- Encrypted
- Free Demo
- Works with Excel
- 55,000 + Client
- Web Based
- Paperless
- Works with Time Clock

Compliant
 **client**
by eMars

emarsinc.com
480-595-0466

Providing Flexibility in Batch Control



When the International Society of Automation first published its ANSI/ISA88 standards in 1995, the goal was to provide processors with standards and recommended practices as appropriate for the design and specification of batch control systems. This spurred the development and release of S88-based software solutions designed to simplify the process of implementing and modifying recipe procedures without complex software programming.

The goal of the software was to allow recipe creators or operators to modify recipe parameters, procedures, production schedules, batch start rules, equipment utilization, or to scale batch amounts more easily and at any time. The S88 standard also served to effectively separate the role of the control engineer (for programming) and recipe developers at the plant. At a chemical processing facility, that might be a chemist; at a brewery, it is the master brewer, for example.

“For years, if you were responsible for creating recipes in a plant, you had to also know how to program the control system. So, if it was your job

to build recipes, that [task] always involved programming until the S88 standard came along,” explains Bob Ard, Senior Advisor at Valmet. Valmet is a leading global developer and supplier of process technologies, automation, and services for many process industries.

Ard says now, with flexible batch control software, any programming is completed ahead of time and only for the lowest level of control tasks, such as opening and closing valves, increasing temperature, pH control, adding materials, etc. These fundamental building blocks are called Phases in S88.

A recipe developer can then group the Phases using a drag-and-drop interface to create an Operation. The order of Operations for a processing unit is defined in the Unit Recipe. All the Unit Recipes required to make the batch from start to finish are grouped in the Master Recipe.

The result of this S88-style approach is a safer, more intuitive process that reduces the amount of programming, simplifies the implementation and modification of new recipes, and ensures batch

cycles are more consistently executed with the proper timing and procedure.

Automating batch processes

According to Ard, the two primary automation methods used by Valmet are state-based control and S88 control using Phase logic and FlexBatch®, the company's proprietary software.

State-based control generally works best for continuous processes, while FlexBatch is preferred for batch processes. However, some continuous processes operate like a batch process. By the same token, all batch plants contain some processes that are continuous or run sequences that do not require recipe control.

Setting that aside, Bob Ard says the general rule of thumb is to use flexible batch control for recipe-driven Units and state-based control for all others.

"State-based control is ideal for running the infrastructure in the plant, such as the boilers, air compressors, and glycol chillers," says Ard. "I need those regardless of the product that I'm going to make and so I would automate those units using state-based control. But I would use FlexBatch control for the units that process the material to make the batch."

Batch processing challenges

With batch processing, one of the challenges is the communication and coordination between units – a task that state-based control can only resolve with significant programming.

Many batch processes consist of a "train" of Units where the batch material is introduced in the first Unit and passed from Unit to Unit. Each Unit is designed to process the material in some way, for example, heating, cooling, adding other materials, blending, separating, etc.

"With a batch process, you are constantly trying to coordinate activity between units, and that requires a lot of programming to do if you're going

to do it in state-based control," explains Ard.

In his book, tentatively titled "How to D3," Ard gives an example of batch processing by a brewery. The comprehensive guide to control system design is expected to be published in Q4 of 2023.

In a brewery, grain, water, hops, and possibly several other ingredients are processed by a series of Units. In this example, the Units would be a weigh scale, a mash tun, a lauter tun, a brew kettle, a whirlpool, and a fermenter.

The batch process would begin by milling and weighing the grain at a weigh scale. The program in the weigh scale follows a predefined series of steps to mill and weigh the recipe amounts of grains into the scale hopper.

The next Unit is the mash tun, where the starches from the grains are converted into sugars. When the mash tun is loaded, a recipe amount of water is metered into the mash tun at a recipe temperature. The mash tun produces a mash of sweet water with just the right sugar profile for the style of beer to be made.

The mash is then transferred to a lauter tun, which separates the grain from the mash while keeping the extract that is suspended in the water. The result is called wort, which is then transferred to the kettle.

The brew kettle boils the wort to evaporate enough water to reach the specific gravity identified by the recipe. Various hops are added to the kettle during the boil state. Some are added early in the boil state, while others are added near the end. Some beers might require the addition of fruit, honey, dextrose, spices, and other flavorings or sugars. The brew kettle then coordinates the transfer of wort to the whirlpool.

The whirlpool allows the coagulated proteins suspended in the wort to settle to the bottom of the tank. This material is called trub and you do not want it in your beer. The wort is carefully decant-

ed from the side of the tank and pumped through a cooler on its way to a fermenter. Yeast is pitched into the wort stream as it exits the cooler. The yeast work their magic in the fermenter to change wort into beer.

So, what are the benefits of using flexible batch control for this and other processes?

State-based control – pros and cons

The Valmet D3 DCS system is perfectly capable of state-based batch control of a process like brewing beer with – or without – FlexBatch. However, with state-based control, the procedures are hard-coded into a series of “States” within a program. The program sequences through the states to process material within the Unit. State-based control utilizes Recipe Data Files to provide the recipe formula values.

Each Recipe Data File is loaded into the first Unit in the sequence and passed down the line. Each upstream Unit monitors its downstream Unit to know when to transfer the recipe. The upstream Unit allocates the downstream Unit to the Batch, and each Unit deallocates itself from the Batch when its part of the process is completed.

Although state-based control techniques work well, the programming required to achieve the necessary coordination level can be extensive. If the products being made require different procedures, it can be even more labor intensive.

Flexible batch control – pros and cons

With FlexBatch, the first question is whether the software provides benefits beyond the baseline DCS system.

The FlexBatch software integrates recipe management and the manufacturing process so that product developers, engineers, and production staff can quickly develop, produce, schedule, and manage documented, executable recipes using intuitive graphical tools. The software is designed in accordance with the ISA-88 standard for batch control and reduces the dependence on control engineers.

The FlexBatch procedure editor gives recipe developers the ability to draw up procedure charts using a drag-and-drop interface to combine Phases into Operations, Operations into Unit Recipes, and Unit Recipes into a Master Recipe.

“The recipe developer can mix-and-match Phases using a procedure editor and draw procedure charts to establish the sequence of Phases and Operations in serial or in parallel, as needed,” explains Ard. “You don’t need to be able to program a DCS to draw or redraw the procedure chart,” says Ard.

New recipes and even modifications require no programming. Operators can force transitions (with sufficient privileges), schedule batches and equipment allocations, and watch live recipe procedure charts for greater awareness of batch execution.

“The live view of the FlexBatch procedure chart shows exactly what is happening with the process. Operators can clearly see which part of the recipe procedure has been completed, which part is currently executing, and what comes next. Providing that kind of visibility with state-based control requires a lot of graphics and additional programming,” says Ard.

Although there is a cost for the FlexBatch licenses and server, it is offset by reduced DCS implementation time. Even the fundamental building block that still requires programming, the FlexBatch Phases, is easier to design, create, and maintain compared to state-based programming.

“Decades of experience demonstrate that a FlexBatch implementation requires up to 30% less programming,” says Ard.

Increasing demand for S88 flexible batch software Today, Ard says most processors expect an S88 flexible batch control software solution or will go elsewhere if one is unavailable.

The increasing demand was even cited as a key

factor in the decision by Valmet to acquire NovaTech Automation's Process Division – the original developer of FlexBatch – in January of 2023.

“What we were looking for was NovaTech's batch control capabilities, and the FlexBatch software is an essential part of that,” says Kari Huovila, VP, North America Automation Systems at Valmet.

Valmet expects that adding the batch control capabilities of FlexBatch will only strengthen its own existing Valmet DNA system and help the company enter new industries with a highly competitive solution.

“At this point, there really are no disadvantages of using FlexBatch for batch control,” concludes Ard.

For more information on Valmet and its process automation systems, please visit www.valmet.com or contact them at 410-753-8300.

www.valmet.com •

Get Cool!



Extend transformer life!

Increase transformer capacity up to 166%!

- expert technical assistance
- low sound levels
- energy-efficient motors
- large inventory
- one-piece cast aluminum blades
- galvanized or stainless steel guards



quality engineered, performance tested

p.o. box 187 germantown, wisconsin 53022 262.255.2310 www.krenzvent.com

"PROP THAT DOOR OPEN WITH THE PROPPER"

Commercial, Residential, Industrial, Hotel/Motel & Deliveries

- ❑ Compact, Lightweight - Only 5 oz.
- ❑ Magnitized for Convenient Storage
- ❑ Easy To Open, Folds When Not In Use
- ❑ Safe, Secure Design, Never Slips Off Hinge

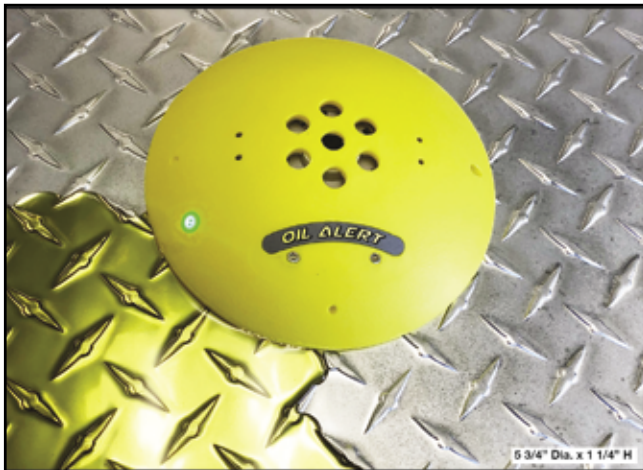


www.ProprierStopper.com

MADE IN USA 

Ad Index

Company	Pg.	Website
Coolshirt	11	www.coolshirt.com
Dorlen	20	www.dorlen.com
EDE	2	www.edeinst.com
eMars	15	www.emarsinc.com
Federal Knife	1	www.federalknife.com
Jesco	IFC, 12	www.jescoonline.com
Krenz Vent	19	www.krenzvent.com
LTBL	6, BC	www.ltbltech.com
Maddox	13	www.maddoxtransformers.com
Propper Stopper	19	www.propperstopper.com
Safe T Nose	7	www.safetnose.com
Safety Rail Co	3, 9, IBC	www.safetyrailcompany.com
Sky Hook	5	www.skyhookmfg.com



OIL ALERT[®] LIQUID LEAK DETECTOR

DETECT OIL LEAKS AND SPILLS...FAST!

- AVOID OPERATIONS SHUT-DOWN
- REDUCE ENVIRONMENTAL RISKS
- MINIMIZE COSTLY CLEAN-UP
- MONITOR OFF-SITE EQUIPMENT

A small amount of oil (1/32 inch) seeping under Oil Alert activates it's loud "on/off" alarm and/or relay contact output. The low profile dome shaped unit guards against undetected leakage in areas of oil lubricated / hydraulic equipment, stand-by generators, pressurized piping and fuel oil storage locations...

5 year Limited Warranty

DORLEN Products Inc.
6615 W. Layton Ave. Milwaukee, WI. 53220

Go to WWW.OIL-ALERT.COM
OR CALL: 1-800-533-6392
FOR MORE INFO!!



REDEFINING COMPREHENSIVE ROOFTOP SAFETY

TURN-KEY SAFETY RAIL SOLUTIONS FROM START TO FINISH
INSPECT | SPECIFY | BUILD | INSTALL



SRC Mobile Safety Rails set the industry standard for OSHA compliant safety solutions to prevent falls and injury.



PROTECT LIVES.
BE OSHA COMPLIANT.
CONTACT US TODAY.



SafetyRailCompany
Fall Protection for Life and Compliance

SAFETYRAILCOMPANY.COM | 888.434.2720

Why Laser Lines and Projected Signs?
Because, You're Sick of Painting & Taping!

NEW SOCIAL DISTANCING GOBO Images For LightCop.



DOCK RIGHT
LASER DOCKING TECHNOLOGY
Dock Right Laser System
LOSS PREVENTION FOR THE 21ST CENTURY
www.LTBLtech.com

LTBL TECH "The Original"
LIGHTCOP
- Loss Prevention For The 21st Century -



www.LTBLtech.com

615.593.0510