

March/April 2010

RESOURCE

Engineering & Technology for a Sustainable World



Outstanding Innovations

- AGCO Corporation • Alo North America, Inc. • Bobcat Company
- Carlos Mainero y Cia. • CLAAS of America, Inc. • CNH • Deere & Company
- Hartco LLC • Harvest Tec, Inc. • iFind Systems, Inc. • Innoquest, Inc.
- Krause Corporation • Kubota Tractor Corporation • McLanahan Corporation • Miller St. Nazianz, Inc.
- Reinke Manufacturing Company, Inc. • Sauer-Danfoss, Inc. • The CP Products Company, Inc.
- T-L Irrigation Company • Valmont Irrigation • Y-TEX Corporation

Strength through Partnerships



In January, the annual AE50 awards were presented in Orlando, at AgConnect, a new agricultural machinery trade show organized by the Association of Equipment Manufacturers (AEM). ASABE was a key sponsor of this first AgConnect. In partnership with AEM, ASABE also co-located the annual Agricultural Equipment Technology Conference (AETC) at the same venue, providing an opportunity for ASABE to reach a new audience. The AE50 awards were presented as part of AETC, and the winners were also recognized during the opening ceremonies of AgConnect, with each winning entry featured in a slide presentation. Several thousand attendees, many of them not members of ASABE, were made aware of the contributions of our profession to the agricultural equipment industry. The ASABE booth, located at the entrance to the exhibition area, provided information to many attendees who stopped to browse the literature and displays. This extends a long-time partnership that ASABE and AEM have had in developing standards for agricultural equipment. Collaborations like this one greatly strengthen our Society, and we should continually seek partnerships that extend the outreach of the Society.

As I viewed the exhibits at AgConnect, I noted that, while the basic functions of the agricultural equipment were similar to the machinery I saw at shows 30 years ago, there were some major differences. The first difference, of course, was size. A second difference was the extensive use of electronics for sensing inputs and for controlling the equipment. Our profession has made many contributions in both of these areas, and we have led many innovations in the second. Also noticeable on the show floor were the numerous companies providing instrumentation and software for collecting data on the go, and using those data for decision making and control of many machine functions. Our profession has also been at the forefront of many of these developments. Seeing the evidence of our work under the bright lights of the exhibit hall reminded me of how far we've come.

Ron Yoder, P.E.
ryoder2@unl.edu

*An update: As this issue of **Resource** goes to press, the Executive Officer position has been announced in the appropriate venues, and a search committee—Ron McAllister (chair), Bob Gustafson, Donna Hull, Sonia Jacobsen, Art Johnson, Ann Kenimer, Brady Lewis, and Barrie Smith—has begun screening applications. Interviews are planned during the month of March.*

events calendar

ASABE CONFERENCES AND INTERNATIONAL MEETINGS

To receive more information about ASABE conferences and meetings, call ASABE at (800) 371-2723 or e-mail mtgs@asabe.org.

2010

- June 13-16 **9th International Drainage Symposium.** (Held in association with the annual meeting of CSBE/SCGAB.) Quebec City, Canada.
- June 20-23 **ASABE Annual International Meeting.** Pittsburgh, Pennsylvania, USA.
- Sept. 12-15 **International Symposium on Air Quality and Waste Management for Agriculture.** Dallas, Texas, USA.
- Nov. 14-17 **TMDL 2010: Watershed Management to Improve Water Quality.** Baltimore, Maryland, USA.
- Dec. 5-8 **Irrigation Symposium.** Phoenix, Arizona, USA.

Attend Foundation Events at the ASABE Annual International Meeting

Benefit Celebration Dinner Tuesday, June 22

Following the prestigious Fellows Induction Ceremony, enjoy dinner at the Omni William Penn Hotel. Since 1916, the Omni William Penn has captivated guests with its striking beauty and charming elegance. For information contact Linda Young, young@asabe.org, or the ASABE web site.



Silent Auction, June 20-23

Come and bid! Universities provide items representing their schools. ASABE Sections donate brimming baskets reflecting various parts of the country. Corporations and individuals contribute artwork, hand-made gifts, books, electronic equipment, and much more. To donate, please visit www.asabe.org and click on Foundation.

RESOURCE

Engineering & Technology for a Sustainable World

March/April 2010

March/April 2010

Vol. 17 No. 2

Magazine Staff: Donna Hull, Publisher, hull@asabe.org; Sue Mitrovich, Managing Editor, mitro@asabe.org; Glenn Laing, Contributing Editor, laing@asabe.org; Melissa Miller, Professional Opportunities and Production Editor, miller@asabe.org; Sandy Rutter, Consultants Listings, rutter@asabe.org.

Editorial Board: Chair Rafael Garcia, USDA-ARS; Secretary/Vice Chair Brian Steward, Iowa State University; Past Chair Suranjan Panigrahi, Purdue University.

Board Members: Thomas Brumm, Iowa State University; Victor Duraj, University of California, Davis; Joshua Sander, University of Illinois, John Yagow, John Deere Harvester Works; Jeong Yeol Yoon, University of Arizona; Joseph Zulovich, University of Missouri.

Resource: Engineering & Technology for a Sustainable World (ISSN 1076-3333) (USPS 009-560) is published six times per year—January/February, March/April, May/June, July/August, September/October, November/December—by the American Society of Agricultural and Biological Engineers (ASABE), 2950 Niles Road, St. Joseph, MI 49085-9659, USA.

POSTMASTER: Send address changes to *Resource*, 2950 Niles Road, St. Joseph, MI 49085-9659, USA. Periodical postage is paid at St. Joseph, MI, USA, and additional post offices.

SUBSCRIPTIONS: Contact ASABE order department, 269-932-7024.

COPYRIGHT 2010 by American Society of Agricultural and Biological Engineers.

Permission to reprint articles available on request. Reprints can be ordered in large quantities for a fee. Contact Donna Hull, 269-932-7026. Statements in this publication represent individual opinions.

Resource: Engineering & Technology for a Sustainable World and ASABE assume no responsibility for statements and opinions expressed by contributors. Views advanced in the editorials are those of the contributors and do not necessarily represent the official position of ASABE.

2010 AE50 AWARDS

- | | | | |
|-----------|------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------|
| 4 | 1260 Early Riser® Planter , Case IH | 17 | IntelliView™ III Monitor with Smart Cameras , New Holland |
| 5 | 130 FB Coppice Header , New Holland Agriculture | 17 | Kubota RTV1140CPX , Kubota Tractor Corporation |
| 5 | 400 Series Windrower , John Deere | 18 | LINER 4000 , CLAAS of America, Inc. |
| 6 | 44 Super Magnum Sand Pump , McLanahan Corporation, Ag Systems Division | 18 | Load Command™ , John Deere Des Moines Works |
| 6 | 5M Series Tractors , John Deere Agriculture and Turf Division | 19 | Loader Control System , Alo North America, Inc. |
| 7 | 7200 PrecisionCut™ Trim and Surrounds Mower , Deere & Company | 19 | M126X Power Krawler Tractor , Kubota Tractor Corporation |
| 7 | 7500 and 8500 E-Cut™ Hybrid Fairway Mower , Deere & Company | 20 | M8540 Power Krawler Narrow-Cab Tractor , Kubota Tractor Corporation |
| 8 | 760 CG Varifeed™ Grain Header , New Holland Agriculture | 20 | Mainero 2340 Roll-Type Grain Extractor , Carlos Mainero y Cia. S.A.I.C.F.I. |
| 8 | 8R and 8RT Series Tractors , John Deere Agriculture and Turf Division | 21 | Massey Ferguson 1600 Series Compact Tractors , AGCO Corporation |
| 9 | AGCOMMAND , AGCO Corporation | 21 | Miller Condor G40 and G75 Series Sprayers , Miller St. Nazianz, Inc. |
| 9 | Austoft 8000 Series Sugar Cane Harvester , Case IH | 22 | ORBIS 900 , CLAAS of America, Inc. |
| 10 | AutoTrac™ RowSense™ Universal , Deere & Company | 22 | OSPE Electrohydraulic Steering Unit , Sauer-Danfoss, Inc. |
| 10 | Bobcat® M-Series Excavators , Bobcat Company, a wholly-owned subsidiary of Doosan Infracore International | 23 | PU 380PRO , CLAAS of America, Inc. |
| 11 | Bobcat® M-Series Loaders , Bobcat Company, a wholly-owned subsidiary of Doosan Infracore International | 23 | Reinke Three Wheel Flex Base , Reinke Manufacturing Company, Inc. |
| 11 | Boomer™ 8N Tractor , New Holland North America | 24 | RPM Preferred with Touch Technology Control Panel , Reinke Manufacturing Company, Inc. |
| 12 | Case IH Precision Hoe™ 800 Air Hoe Drill and New Holland P2070 Precision Hoe Drill , CNH America LLC | 24 | SideWinder™ II Armrest , New Holland Agriculture |
| 12 | Challenger® MT600C, Massey Ferguson® 8600, and AGCO® DT Series Tractors , AGCO Corporation | 25 | SpotOn™ Sprayer Calibrator , Innoquest, Inc. |
| 13 | Challenger® C Series Track and Articulated Tractors , AGCO Corporation | 25 | Triple Stream Tip , The CP Products Company, Inc. |
| 13 | DISCO 8400RC Plus , CLAAS of America, Inc. | 26 | Ultimate Melon Cuber™ , Hartco LLC |
| 14 | DynaFlex™ Flexible Cutterbar Draper Header , AGCO Corporation | 26 | Ultra Linear System , T-L Irrigation Co. |
| 14 | Dynamic Bale Weight System for Large Square Balers , New Holland Agriculture | 27 | Valley BaseStation2-SM , Valmont Irrigation |
| 15 | E Premium Tractor Series , John Deere Agriculture and Turf Division | 27 | Valley GPS Guidance , Valmont Irrigation |
| 15 | GLADIATOR™ Precision Tillage System , Krause Corporation | 28 | Wandering Shepherd , iFind Systems, Inc. |
| 16 | Harvest Tec Bale Identification System , Harvest Tec, Inc. | 28 | XP 820 Insecticide Cattle Ear Tag , Y-TEX Corporation |
| 16 | iGuide™ , Deere & Company | | |

DEPARTMENTS

- | | |
|-----------|-----------------------------|
| 2 | From the President |
| | Events Calendar |
| 29 | Index of Winners by Company |
| 30 | Professional Opportunities |
| 31 | Professional Listings |

Resource is pleased to sponsor the AE50 awards program—celebrating companies for developments in the areas of agricultural, food, and biological systems. Our winners take center stage in this issue, dedicated to the gifted engineers and co-workers who creatively harness and manage company resources and talent to pursue exciting innovations.

The products featured represent not only the diversity of the agricultural and biological engineering fields, but companies of all sizes and varying pursuits, bringing advanced technology to the marketplace in 2009. We celebrate machines, components, systems, and more—all enhancing and improving our everyday world.

AE50 winners join the ranks of thousands over the years, who have been honored for saving producers time, costs, and labor, while improving user safety as well. The honorees' engineering developments help farmers, food processors, and equipment manufacturers enhance quality and increase profits as well.

In June 1984, *Agricultural Engineering* (now *Resource*) included "A Forum for New Developments" in an issue on technology. Twenty-five techniques, advances, inventions,

and innovations were showcased. Items were drawn from product information solicited by the Society and screened by a panel. From this focus on identifying innovative technology, two years later the AE50 was born.

Product nominations poured in. And they continue to do so. Over the years, interest in new technology and innovative applications of existing technology remains a constant. Companies from around the world submit entries, and a panel of international engineering experts annually chooses up to 50 products that best advance engineering for the food and agriculture industries.

As was the case twenty-five years ago, many products featured are patented and names trademarked. Some may even become household words. Others may be further improved as technology advances, and perhaps, with time and change, will win another AE50. But all honorees featured this year—and through the years—strived for excellence, and we are pleased to showcase the results of their ingenuity, tenacity, and labor.

Congratulations AE50 Winners!

AE50 1260 EARLY RISER® PLANTER

Case IH
Racine, Wisconsin, USA
262-636-6011
www.CaseIH.com

The Case IH 1260 Early Riser® Planter provides significant improvements in machine stability, maneuverability, serviceability, and convenience in both the planting and transporting positions. Important features include the bi-fold links for a wide draft stance in planting position for maximum tracking over uneven terrain and an overall transport length that is 4 to 8 m (13 to 26 ft) shorter than other large-frame planters; caster-style wing wheels that shift up to 4,536 kg (10,000 lb) off the tractor hitch in transport while increasing ground clearance; an integrated wing lock system that allows the planter wings to float with ground terrain in transport position and be secured in a safe operating position without the use of mechanical linkage; and a hydraulic steerable rear axle that reduces the turning radius to only 6 m (20 ft).



AES 130 FB COPPICE HEADER

New Holland Agriculture
New Holland, Pennsylvania, USA
866-639-4563
www.newholland.com

The New Holland 130 FB Coppice Header is a new high-capacity specialty header designed to harvest and process fast-growing, woody biomass crops, such as short-rotation coppice willow and poplar grown as a renewable fuel source. Compared to previously available methods, the 130 FB Coppice Header used with the New Holland FR9000 Forage Harvester achieves twice the harvesting capacity and can process trees of double the normal diameter into biofuel-ready wood chips of desired lengths. The harvester can cut 2 ha (5 acres) per hour, resulting in up to 120 tonnes (132 tons) of harvested wood chips per hour from trees up to 15 cm (6 in.) in diameter. No changes are needed to feed rolls or chopper drum on the base unit when using the Coppice Header. Operators can harvest one or two rows at a time, depending on the crop, and can adjust the cutting length from 6 to 66 mm (0.2 to 2.6 in.) to meet end-user specifications.



AES 400 SERIES WINDROWER

John Deere
Moline, Illinois, USA
641-683-7134
www.deere.com

With the increase in ground speed to 34 kph (21 mph) larger tire size (480/80 R38), and the new IntelliAxle with torsional axle suspension and rear steering assist system, customers get more done and experience less operator fatigue with the 400 Series windrower from John Deere. This windrower allows the customer to travel faster over rougher ground with increased controllability and handling. Some of the major machine enhancements include increased field and transport speeds, touch point adjustments, and the IntelliAxle with torsional axle suspension and rear steering assist system. The windrower also boasts increased serviceability and a John Deere Tier 3 PowerTech E engine. The 400 Series windrowers are available in two configurations: a 125 hp A400, designed for auger platforms, and the 200 hp R450, designed for use with John Deere's proven rotary platforms.



AE50 44 SUPER MAGNUM SAND PUMP

McLanahan Corporation
Agricultural Systems Division
Hollidaysburg, Pennsylvania, USA
814-695-9807
www.sandmanuresolutions.com

Built specifically to meet the needs of sand-bedded dairies, McLanahan's nitrile-lined 44 Super Magnum Sand Pump is a vertical shafted, centrifugal pump designed to withstand the rigorous demands of pumping sand and manure with minimal wear on the wet-end components. It utilizes replaceable, nitrile linings to protect the split casings and a nitrile-lined impeller to extend wear life in abrasive environments, as compared to a conventional manure pump. The shafts and bearings operate in an oil bath and are separated from the pumpage by a mechanical seal. A typical sand bedded dairy uses 22.7 kg (50 lb) per cow per day of sand bedding. In this type of harsh pumping environment, this pump will decrease maintenance costs and downtime associated with pump repairs.



AE50 5M SERIES TRACTORS

John Deere Agriculture and Turf Division
Moline, Illinois, USA
309-765-8000
www.deere.com

The 5M series is John Deere's next generation of utility tractors. The new platform includes a new transmission design and vehicle configuration to meet global utility tractor customer requirements. The transmission, key to the vehicle concept, was designed to make space for the operator's feet in front of the transmission, keeping the operator low, and providing additional fuel tank space. All transmission options include wet clutches, eliminating the need for the clutch housing behind the engine. The mid-frame design pushes this vehicle to a high level of front



loader integration, important for the U.S. market where the loader is the main application. The hydraulic pump mounted on the transmission eliminates the need for many hydraulic lines going back and forth from an engine-mounted pump and control valves on the rear of the tractor.

AE50 7200 PRECISIONCUT™ TRIM AND SURROUNDS MOWER

Deere & Company
Moline, Illinois, USA
309-765-8000
www.johndeere.com

The 7200 PrecisionCut™ Trim and Surrounds mower with Width-on-Demand and Reach-Trimming System gives the customer the ability to change the overall width of cut or improve the ability to safely trim difficult-to-reach areas from the operator's seat by the simply toggling the control switch. The narrower width of cut is recommended for undulating terrain and tight turns where more cutting unit overlap is required, to make sure that no uncut grass is left behind. The wider width of cut setting is recommended on flat terrain with long straight runs. This maximizes productivity by offering a choice of the width that best suits the terrain. With the Reach-Trimming System, one of the front cutting units can be shifted outward to extend the cutting unit beyond the outer edge of the tire for trimming. Shifting only one cutting unit helps keep the machine's center of gravity more consistent, maintaining the machine's overall stability.



AE50 7500 AND 8500 E-CUT™ HYBRID FAIRWAY MOWER

Deere & Company
Moline, Illinois, USA
309-765-8000
www.johndeere.com

The John Deere 7500 and 8500 E-Cut™ Hybrid Fairway Mower incorporates hybrid technology for fairway applications. The drive system for the five cutting units is completely electric, eliminating the use of hydraulic drive and hydraulic leaks that damage fine turf in fairways. The hybrid technology uses a 48 V alternator to power the cutting units via brushless electric motors. This system allows for maximum run time and cut quality versus the use of a battery system used in other golf mowing applications. In addition to the elimination of hydraulic

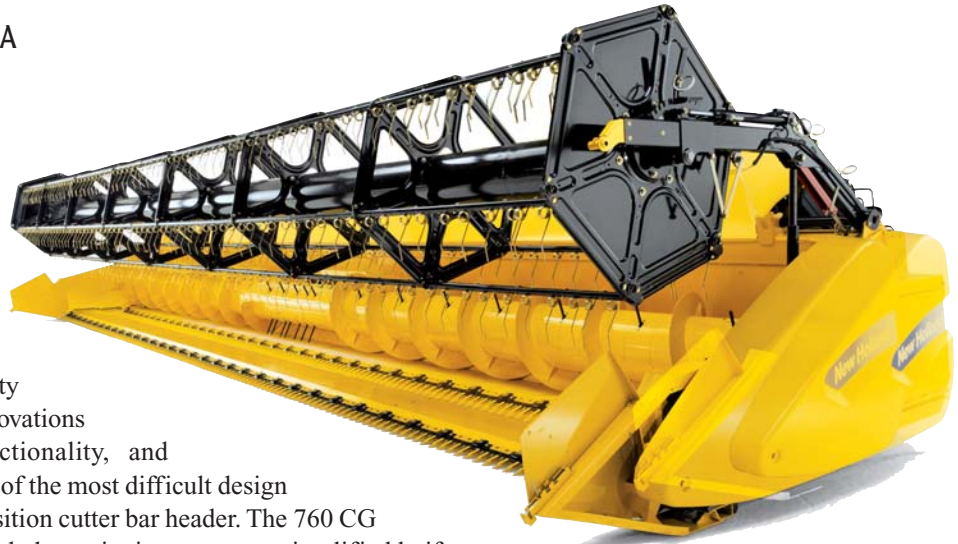


leak points, the E-Cut™ Hybrid Fairway Mower can be operated at a reduced engine speed for noise reduction, as well as fuel savings up to 30 percent as compared to hydraulic units, and still maintain the same cut quality from start to finish.

AESO 760 CG VARIFEED™ GRAIN HEADER

New Holland Agriculture
New Holland, Pennsylvania, USA
717-355-3553
www.newholland.com

The New Holland 760 CG Varifeed™ Grain Header introduces significant innovations, improving on its smooth feeding and multi-crop flexibility that allows the 10.7 m (35 ft) wide header to feed the highest capacity combines on the market. These innovations lower operating costs, add functionality, and provide improved solutions to some of the most difficult design issues associated with a variable-position cutter bar header. The 760 CG Varifeed™ features a constant-force belt-tensioning system, a simplified knife protection system, enhanced floor travel V-guides, and a method to retain auger fingers in the auger when they are broken. These features combine to provide less downtime for the operator, lower cost of ownership, and high-capacity harvesting in a variety of field conditions.



AESO 8R AND 8RT SERIES TRACTORS

John Deere Agriculture and Turf Division
Moline, Illinois, USA
309-765-8000
www.deere.com

The John Deere 8R Series of tractors consists of six models from 225 to 345 PS-rated engine hp, featuring all-new commandView II cab, providing improvements to comfort, ease of use, visibility, and storage. Comfort improvements include increased airflow, 360° lighting, premium sound system, and increased seat swivel. CommandARM™ controls and CommandCenter™ display provide logically grouped controls that move with the seat to manage tractor functions.



Three new from-the-ground-up 8RT series row crop track tractors feature a redesigned operator station, track undercarriage, and tractor suspension system for operator comfort. The machines have increased transport speed of 40 kph (25 mph), the first infinitely variable transmission available with a track tractor to precisely match required field speeds, increased hitch lift capacity, and increased fuel capacity. The AirCushion™ track suspension consists of a walking-beam configuration with an air bag support and damping shock absorber. The new tractor provides row crop versatility with one chassis to support row spacing from 1.8 to 4 m (72 to 160 in.).

AGCOMMAND

AGCO Corporation
Duluth, Georgia, USA
770-813-9200
www.agcocorp.com/technology.aspx

The objective of AGCO's AGCOMMAND system is to provide customers with a low-cost, easy-to-use data recording and fleet management solution that can be installed on all their machinery.

The AGCOMMAND system is a plug-and-play device that configures itself to an agricultural machine and automatically determines real-time machine status information, which is used for many precision farming efficiency reports. The AGCOMMAND system allows instant access to a machine's performance data taken from the CANBUS (or other machine sensors) via a GPRS (mobile telephone network) module and a remote AGCO server. The GPS position of the machine is also integrated into the data stream so that vital machine performance and location data can be analyzed by the user, owner, farm manager, or fleet manager from either an office PC or any internet-enabled wireless device (pocket PC, PDA, or smart phone) via a secure AGCO internet website.



AUSTOFT 8000 SERIES SUGAR CANE HARVESTER

Case IH
Racine, Wisconsin, USA
262-636-6011
www.caseih.com

The Case IH Austoft 8000 Series is the first commercially available sugarcane harvester to feature a totally integrated data logging system, while offering best-in-class harvester throughput and superior cane cleaning abilities. The 8000 Series is designed to relieve growers of manually managing large equipment fleets by automatically generating Excel spreadsheets with all pertinent harvesting and machine operation data. The 8000 Series takes into account the needs of the world's largest sugarcane growers. Over the last 20 years, sugarcane production has grown over 40 percent worldwide, largely due to the expansion of the ethanol industry in Brazil. Today, over 85 percent of the sugarcane farms in Brazil harvest areas of at least 9,712.5 ha (24,000 acres). Worldwide, the large farm size is more the rule than the exception, as mechanized growers discover the advantages and expanded efficiencies that come along with economies of scale.



AES[®] AUTOTrac™ RowSense™ UNIVERSAL

Deere & Company
Moline, Illinois, USA
888-476-7827
www.JohnDeere.com

The AutoTrac™ RowSense™ Universal strives to keep the corn head in the row under the toughest conditions. The system works by fusing together GPS data from the StarFire™ receiver with data from a single mechanical row sensor located on the corn head. By fusing these two data sources, the result is an automatic guidance system for combine harvesters with high performance. The AutoTrac™ RowSense™ Universal improves efficiency in down corn conditions and on curved rows, reduces operator fatigue, and reduces crop loss with increased accuracy and efficiency on every pass across the field. The AutoTrac™ RowSense™ Universal allows the corn grower to get more done, in less time and at less cost, during the corn harvesting operation. The AutoTrac™ RowSense™ Universal is a universal guidance option for older John Deere combines or non-John Deere machines that do not have integrated AutoTrac™. It is compatible with all combines that are approved for use with the AutoTrac™ Universal Steering Kit as well as select models of John Deere and non-John Deere corn heads.



AES[®] BOBCAT® M-SERIES EXCAVATORS

Bobcat Company, a wholly-owned subsidiary of
Doosan Infracore International
West Fargo, North Dakota, USA
701-241-8700
www.bobcat.com

The new Bobcat® M-Series compact excavators (also known as mini excavators) combine proven quality with new standards for performance and production. Known as the M-Series, the new E32 and E35 excavators are reengineered to deliver greater performance in a lighter machine, leveraging a modular platform strategy that shares common major components between zero tail swing and conventional models. The new M-Series excavators include enhancements that save precious time and labor, improve operator comfort, and improve robustness. Backed by industry-leading cycle times, the M-Series advanced hydraulic system provides more usable power, consistent and smooth operation, and predictable results for the operator. Some new features include Auto Shift travel, Auto Idle, and fingertip controls, all available on a single unit.



AESO BOBCAT® M-SERIES LOADERS

Bobcat Company, a wholly-owned subsidiary
of Doosan Infracore International
West Fargo, North Dakota, USA
701-241-8700
www.bobcat.com

The Bobcat® M-Series skid steer loaders and compact track loaders are versatile compact tool carriers that deliver performance in a smaller package. With stronger hydraulics for improved attachment performance, better tractive effort for digging and pushing, improved ergonomics for operator comfort, and increased fuel capacity for long days, M-Series loaders are meant for intense work in a variety of agriculture, construction, landscaping, mining, recycling, and rental applications. These machines include a cab-forward design that brings the operator closer to the work area and have a larger door for improved operator entry and exit. Other operator ergonomic improvements include increased size of windows and door for improved visibility, increased operator space envelope, best-in-class pressurized cab, greater availability of seat adjustments, improved engine mounting to reduce noise and vibration, and joysticks that move with the seat on models with Selectable Joystick Controls.



AESO BOOMER™ 8N TRACTORS

New Holland North America
New Holland, Pennsylvania, USA
888-290-7377
www.newholland.com/na

This compact tractor is a modern-day version of the original 8N tractor with a strong emphasis on retro-tech styling, comfort, efficiency, serviceability, and ease of operation. The gauge-style instrument cluster, ergonomically designed seat, tear-drop headlights, and single-piece front hood all provide modern and efficient adaptation of the original components, just like recent examples from the auto industry. Owners can customize the Boomer 8N to their own needs and preferences with chrome accessories and a custom line of matching attachments. A single-foot “Go” pedal for combined transmission and engine speed control and a single brake pedal on the right-hand side of the platform deliver drives-like-a-car operation. The ergonomically designed single-lever forward and reverse shuttle control, infinite tilt-telescoping steering wheel, and adjustable fore/aft/swivel seat gives operators the comfort they need to operate the Boomer™ 8N for productive long hours.





CASE IH PRECISION HOE™ 800 AIR HOE DRILL AND NEW HOLLAND P2070 PRECISION HOE DRILL

CNH America LLC
Burr Ridge, Illinois, USA
262-636-6011
www.cnh.com

The CNH Precision Air Hoe Drill, available as the Case IH Precision Hoe™ 800 Air Hoe Drill and the New Holland P2070 Precision Hoe Drill, delivers the precise seed and fertilizer placement demanded by producers growing high-value, small-seeded crops on large acreages. Patented and patent-pending features include a swing link design, allowing a more compact opener and frame contour length, and individual parallel link row units mounting to the frames for precise seed placement.

Trip force and packing pressure for the row units can be adjusted to accommodate varying field conditions. Weight distribution on the frame sections is adjusted and controlled through a patent-pending hydraulic cylinder mounted on the front of each frame section; the same cylinders fold the unit into and out of field position. On the 18 and 21 m (60 and 70 ft) models, a patent-pending foldaway wing frame allows for maximum versatility in transport position while maintaining a compact transport envelope.



CHALLENGER® MT600C, MASSEY FERGUSON® 8600, AND AGCO® DT SERIES TRACTORS

AGCO Corporation
Duluth, Georgia, USA
877-525-4384
www.agcoiron.com
www.masseyferguson.com/8600
www.newfromchallenger.com

AGCO has extended its range into a new power sector: up to 275 PTO hp and 350 maximum ISO engine hp. These tractors are also the first to feature e3 selective catalytic reduction (SCR) clean air technology and deliver compliance without compromise. This process converts the nitrogen oxide (NOx) gases that normally

exit the exhaust into nitrogen and water with dramatic fuel savings over other technologies. The Dynamic Tractor Management System coupled with our continuously variable transmission (CVT) provides simple and efficient operation, allowing the tractor to automatically adjust to loads, to maximize fuel efficiency. The redesigned cab has 3.3 m³ (116.5 ft³) of interior space, along with OptiRide cab suspension, and a new seat-mounted control console.





CHALLENGER® C SERIES TRACK AND ARTICULATED TRACTORS

AGCO Corporation
Duluth, Georgia, USA
877-525-4384
www.newfromchallenger.com

The Challenger® C Series track and articulated tractors combine the greatest ISOBUS 11783 compatibility with power and performance as a standard feature. ISOBUS 11783 compatibility allows most compatible and all compliant tools to seamlessly integrate into the tractor systems, creating a package solution and eliminating the need for multiple con-

trollers and cluttered operator environments. This improvement over the B Series tractors reduces the time required to switch between implements, allows powerful component interaction, and reduces the cost associated when switching tractors or implements by providing one common console in the tractor cab. The move to ISOBUS compliance extends the capabilities of the CAN architecture on which all of the vehicle's electronic components communicate. Much like modern computers, ISOBUS compatibility allows for plug-and-play between these components, the vehicle, and any compliant implement or system such as a planter, sprayer, or guidance system.



DISCO 8400RC Plus

CLAAS of America, Inc.
Omaha, Nebraska, USA
402-861-1000
www.claasofamerica.com

The CLAAS DISCO 8400RC Plus is an 8.3 m (27.25 ft) triple-disc mower with roller conditioner. The roller conditioner uses two rubber rolls in a chevron design to crimp the crop for faster dry down. The bottom roll is driven and, in turn, drives the top roll through its intermeshing design—a simple power transfer concept that eliminates gearboxes and drive shafts. The rolls are spring loaded, and the gap and pressure settings are adjustable. This unit also incorporates the new CLAAS Active Float hydraulic floatation system, which allows the mowing cutterbars to float and follow the ground contours in the field. Active Float can be adjusted to increase or decrease the pressure to make the cutterbar lighter or heavier during operation. The heavy-duty cutter bar is protected with Safety Link, which protects the cutterbar from internal



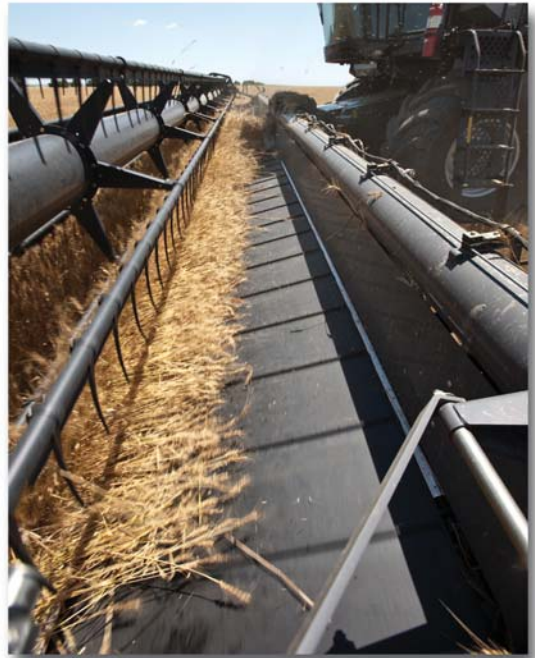
damage when the cutterbar comes in contact with any external objects.



DYNAFLEX™ FLEXIBLE CUTTERBAR DRAPER HEADER

AGCO Corporation
Duluth, Georgia, USA
877-525-4384
www.agcoiron.com
www.masseyferguson.com/dynaflex

The AGCO DynaFlex™ flexible cutterbar draper header brings high technology and productivity to the harvesting of a variety of crops, including soybeans, cereal crops, milo, and canola. DynaFlex is the first flexible cutterbar draper header to use independent dampened tilt arms, linked with hydraulic cylinders to an accumulator system, to provide 20.3 cm (8 in.) of cutterbar flexibility. Precise hydraulic pressure settings allow for smooth cutting in all conditions and can be adjusted from the cab. The DynaFlex features a built-in 10° cutterbar tilt adjustment and a patented, balanced, and timed dual-sickle drive incorporating an exclusive dual-shaft drive, providing as much as 400 percent more torque over belt or hydraulic drives. Mounting requires no adapter, eliminating the complexity of hydraulic pumps, motors, and hoses common with competitive draper platforms. The result is 25+ percent greater harvesting performance over flexible cutterbar auger headers of the same size.



DYNAMIC BALE WEIGHT SYSTEM FOR LARGE SQUARE BALERS

New Holland Agriculture
New Holland, Pennsylvania, USA
866-639-4563
www.newholland.com

This system is fully integrated into the New Holland BB9060 or BB9080 Large Square Baler to provide highly accurate on-the-go bale-weighing capabilities, without any need to slow down or stop baling. The key to the system is the isolated weighing table and algorithms that provide a highly accurate (± 2 percent) single-bale weight while operating at normal speed in the field. The system, incorporated into the



baler's roller chute, weighs each bale, feeding the data to the New Holland InfoView® II or IntelliView™ III monitor, to show individual bale weight and total bale weight count for a job. This detailed information allows the operator to record production and adjust the machine to the perfect bale weight for any crop or moisture conditions. A custom operator can provide baling services by a more accurate bale-per-ton measure, allowing the end user (dairy, livestock, or biomass industry) to more precisely use the bale for feeding, mix rations, or industrial needs.

AESO E PREMIUM TRACTOR SERIES

John Deere Agriculture and Turf Division
Moline, Illinois, USA
309-765-8000
www.deere.com

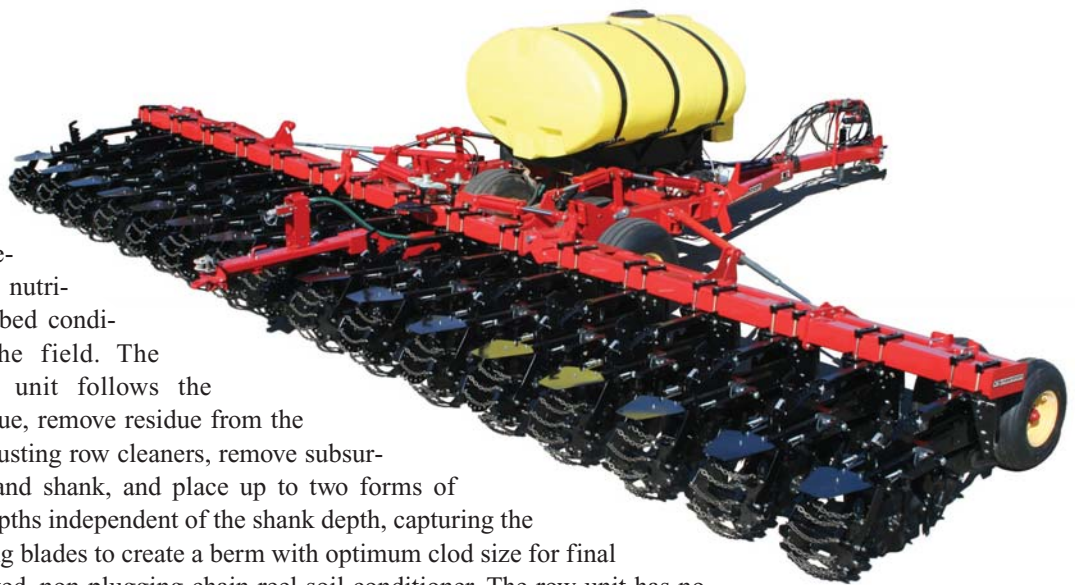
The John Deere 7430 and 7530 E Premium tractors provide more engine performance combined with improved fuel efficiency and external electrical power supply through two 230 V and 400 V power sockets (5 kW when stationary). Both tractors have been designed to run the engine auxiliaries independently from the engine. For the first time, electrical power is used to control the various auxiliary drives at the appropriate time, at the right speed, and only when needed. Motivation for this new system is to provide just the required energy independent from the combustion engine speed. Additionally, intelligent control of auxiliary drives helps to reduce the fuel consumption of the vehicle, especially under part-load conditions. A power outlet for supplying external loads to drive electrical driven tools is provided.



AESO GLADIATOR™ PRECISION TILLAGE SYSTEM

Krause Corporation
Hutchinson, Kansas, USA
620-663-6161
www.krauseco.com

The Krause GLADIATOR™ provides on-row residue management, conservation tillage, precise nutrient placement, and non-stop seedbed conditioning in one pass through the field. The GLADIATOR's ST-PRO™ row unit follows the contour of the ground to cut residue, remove residue from the tillage strip with automatically adjusting row cleaners, remove subsurface soil compaction with point and shank, and place up to two forms of fertilizer (NH₃, liquid or dry) at depths independent of the shank depth, capturing the soil with adjustable, floating closing blades to create a berm with optimum clod size for final seed bed preparation with a patented, non-plugging chain reel soil conditioner. The row unit has no daily maintenance points and requires no tools for adjustment. The GLADIATOR™ features a frame and toolbar that rotates the row units and folds forward, unlike conventional over-center vertical fold systems.



HARVEST TEC BALE IDENTIFICATION SYSTEM

Harvest Tec, Inc.
Hudson, Wisconsin, USA
715-386-9100
harvesttec.com

The Harvest Tec bale identification system installed on large square balers acquires the high and average moisture, the time and date of baling, the field position that the bale came from, the bale weight, and writes that information to a tag with an RFID chip. The tag is a permanent vinyl material wrapped around the bale twine. The system includes a loader-mounted scanner that reads the bale information without line of sight, within 4.6 m (15 ft), displaying it to the operator and recording it to a memory file. File information can be downloaded on a field basis from the baler or on a group basis from the loader. With this system installed, hay can be tracked and sorted based on the known properties, providing a tool for precision control in the production of a crop with high variability.



iGUIDE™

Deere & Company
Moline, Illinois, USA
641-683-7134
www.deere.com

The John Deere iGuide™ is a passive implement guidance system that automatically guides an implement onto the guidance line without using implement steering components, as found with active implement guidance systems. With iGuide™, the tractor compensates for implement inaccuracies by pulling the implement onto the correct path. iGuide™ allows the accuracy of the automatic guidance system to move from the tractor to the implement. The system uses GPS data from a John Deere StarFire™ receiver with RTK signal level, located on the implement, to allow the tractor to guide the implement through the field with additional accuracy, even on curved passes and sloping terrain. This additional accuracy at the implement allows growers to see up to 60 percent improvement in input placement when compared to running AutoTrac™ alone.



AES INTELLIVIEW™ III MONITOR WITH SMART CAMERAS

New Holland
Turin, Italy
717-355-3553, in North America
www.newholland.com

This Intelliview™ III Monitor with Smart Cameras integrates up to three cameras with the in-cab monitoring system of the New Holland CX8000 and CR9000 combine harvesters to automatically provide live video views of key combine field operations on one central touch-screen monitor. The cameras can be configured to link to specific functions, such as shifting into reverse or engaging the unloading tube, through the combine's CANbus system. A full-screen view of activity automatically appears on the main machine monitor screen when that function is activated, giving the operator all needed information in one convenient location. For safety of operation, the monitor switches from camera to normal screen view automatically when an alarm or error pops up. All New Holland flagship combines are prewired for the system, and the monitor is camera-ready.



AES KUBOTA RTV1140CPX

Kubota Tractor Corporation
Torrance, California, USA
www.kubota.com

The Kubota RTV1140CPX utility vehicle, with easily transformable one-row or two-row seating capability and high-capacity hydraulic dump bed, provides high versatility for agricultural operations management. The key innovation of this seating transformation system is a moveable seatback/cargo screen mechanism, mounted on the OSHA-compliant ROPS, to allow easy and seamless transitions when converting from one- to two-row seating options. This utility vehicle combines multiple-passenger seating capability with the ag-tractor technologies of a hydrostatic transmission and diesel engine. This hydrostatic transmission/diesel engine combination, introduced in 2004, serves as a utility vehicle configuration for typical agricultural uses, such as low-speed controlled spraying, towing of farm tractors/implements, removal of snow/manure, hauling of feed and materials, etc. The vehicle also features a newly modified variable hydrostatic transmission (VHT Plus) that delivers easier gear shifting and smoother transmission-assisted deceleration, as well as the new 24.8 hp Kubota diesel engine that provides 15 percent more horsepower than previous-generation RTV900s.



AESO LINER 4000

CLAAS of America, Inc.
Omaha, Nebraska, USA
402-861-1000
www.claasofamerica.com

The CLAAS LINER 4000 is a 15 m (49.2 ft) rotary, center-delivery rake. Its innovative folding, simple-to-use monitor, and heavy-duty rotors make it a heavy-duty rake built for efficiency. The internal rotors run in an oil bath and have three bearing supports for the heavy-duty arms. Each rotary basket can contour three-dimensionally to match the ground. In addition, when the rotors are lifted, the front of the basket lifts first, so that it does not dig into the ground. The simple-to-use monitor can lift and lower the rotors in sequence, individually, and set the overlap or windrow width. The hydraulic system is a constant-flow system, so a push of the button on the monitor begins the system. The large rotary rake folds up with the touch of a button and shrinks below 4 m (13 ft) for transport; no tine arms need be removed.



AESO LOAD COMMAND™

John Deere Des Moines Works
Moline, Illinois, USA
866-993-3373
www.JohnDeere.com

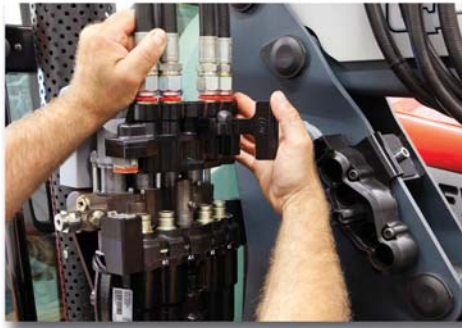
The Load Command™ option has been added to the John Deere 4930 sprayer to provide faster tank fill, easy tender vehicle hookup, minimal chemical exposure and spillage, and automate loading. A key feature is the coupler, which minimizes chemical spill from gallons to a couple of fluid ounces. The tender arm eliminates handling heavy hoses and provides universal mounting. During loading, the operator swings the arm away from the tender vehicle and positions the couplers together. The system detects that the couplers are joined and then inflates an air seal, locking the couplers. A plunger on the sprayer coupler actuates into the spring-return plunger on the tender vehicle, opening the passageway as the on-board pump begins loading. When the system detects that the tank is full, the pump shuts down, the plunger closes, the couplers unlock, and the arm disconnects as the operator drives away. Load Command™ can fill the 4,542.5 L (1,200 gal) tank as fast as three minutes.



AESO LOADER CONTROL SYSTEM

Alo North America, Inc.
Niagara Falls, Ontario, Canada
800-361-7563
www.aloloaders.com

The Alo Loader Control System consists of a hydraulic valve, joystick, and either cable or wires (depending on the configuration) to operate a front-end loader. The major feature of the system is its ability to improve the double-action functionality of the loader cylinders. The oil flow is proportional to the joystick input so that the operator will not sense the weight of the item being moved, and the lower and raise speeds of the loader stay virtually the same whether the loader is fully loaded or unloaded. A second major feature is that the implement and lift circuits both use low-pressure regeneration. The oil flow is reused when dumping and lowering, so the cylinders are always full of oil, even on tractors with low hydraulic flow. The benefit is that the tractor requires less energy to operate the loader.



AESO M126X POWER KRAWLER TRACTOR

Kubota Tractor Corporation
Torrance, California, USA
310-370-3370
www.kubota.com

The Kubota M126X Power Krawler tractor combines a rear crawler track system with a standard M-Series tractor chassis, increasing tractor traction and stability while providing better flotation and less soil compaction. The synthetic rubber track features hard rubber lugs that provide a smoother, quieter ride at higher speeds than typical steel lugs, and also delivers superior stability and straight-line performance, making for a smoother ride. The Kubota rear crawler design is central to the Power Krawler's performance capabilities. Both sides of the tractor are kept in contact with the ground via independently oscillating crawlers. The procedure for changing crawler tracks is user friendly due to the split-type drive sprocket design. The Power Krawler also boasts a year-round environment-controlled cab and offers the engine from Kubota's popular M-series tractors, while engineered specifically for increased performance in rolling terrain and maneuverability in agriculture work.



M8540 POWER KRAWLER NARROW-CAB TRACTOR

Kubota Tractor Corporation
Torrance, California, USA
310-370-3370
www.kubota.com

Kubota's M8540 Power Krawler narrow-cab tractor brings the benefits of a rear crawler track to an M8540 narrow-cab tractor chassis, increasing traction and stability while maintaining low clearance, reduced overall width, and high horsepower in a compact tractor. With the narrow tractor market growing in the United States, Kubota has employed the rear crawler design concept in a standard narrow tractor, providing smooth riding, greater stability, and low ground pressure. This unique track system allows both sides of the tractor to keep in contact with the ground via independently oscillating crawlers. The maintenance and process for changing crawler tracks is user friendly due to the split-type drive sprocket design with rotating pins. The Power Krawler's features build on the standard narrow tractor, with a year-round environment-controlled cab, a low overall height of 2.3 m (92 in.), and the power of Kubota's M-series engine, which increases the performance and maneuverability in narrow-row applications.



MAINERO 2340 ROLL-TYPE GRAIN EXTRACTOR

Carlos Mainero y Cia. S.A.I.C.F.I
Bell Ville, Córdoba, Argentina
54-3534-426-924
www.mainero.com.ar

The Mainero 2340 grain extractor outloads 2.7 and 3 m (9 and 10 ft) silo bags without adjustments or attachments to fit both sizes. It reduces labor cost and required time to extract an entire bag by as much as 50 percent when compared to other roll-type extractors. This extractor begins and finishes the extraction without shoveling, thereby eliminating the most difficult physical work. It is transported in working position, ready for extraction, eliminating manpower and time. Its new system rolls the bag in two vertical spindles, allowing the tractor-machine set to move on the grain mass with the tractor transmission in neutral. Once extraction is finished, the bag bales are effortlessly taken out from the spindles. All controls are operated from the cab: spindle forward or reverse rotation, spindle speed, spike auger transport positioning, vertical auger folding, working-transport height, etc. The same frame is offered in three versions: rear mounted, front mounted, and pull-type.



MASSEY FERGUSON® 1600 SERIES COMPACT TRACTORS

AGCO Corporation
Duluth, Georgia, USA
877-525-4384
www.masseyferguson.com/1600

These tractors offer six models and 22 configurations with the power, performance, and comfort to meet exacting yet highly varied operator needs. The 1600 Series offers all-steel and cast-iron construction for durability, plus high-capacity performance with 35 to 60 engine hp, and the choice of four easy-to-operate transmissions including the 8x8 SynchroShuttle, the 12x12 PowerShuttle, 12x12 DynaQPS™, and a three-range hydrostatic transmission. The tractors are powered by Tier-IV-interim-compliant Iseki 3- or 4-cylinder liquid-cooled diesel engines. Advanced operator comfort features are a major emphasis, including customer-inspired ergonomics and control placement; a larger operator's area; a form-hugging, deluxe, spring-suspension seat; large armrests; and a platform resting on rubber isolation mounts to minimize vibration. Operators have an uncluttered layout, color-coded controls, and easy-to-read gauges, as well as four headlights for better night visibility and a one-piece hood that flips up for easy service access.



MILLER CONDOR G40 AND G75 SERIES SPRAYERS

Miller St. Nazianz, Inc.
St. Nazianz, Wisconsin, USA
920-773-2121 or 800-247-5557
www.millerstn.com

The Condor G40 and G75 Series sprayers have 14 new features and 38 product improvements over the previous generation of sprayers. Features include restyling with color scheme change, hood with front-mount hinge for unrestricted engine access, and added standard equipment, including cruise control, deluxe high-back seat, toolbox in the left-side cowling, remote pump switch, integrated control-panel ground-fill station, two additional front-of-the-machine work lights, and adjustable fixed-tread width bars for front and rear axles.

The Miller Spray-Air™ air boom system, up to 36.6 m (120 ft) wide with dual fans on the G75, may be optioned to either model. The SmartDrive® hydrostatic front-wheel assist system from Poclain® is available on the Condor G75 and features on-demand engagement and disengagement, as well as the ability to run engaged full time. To increase the productivity potential for the G40, a 4,542 L (1,200 gal) tank option has been added. Also available are a fixed axle and an auxiliary light kit.



AES ORBIS 900

CLAAS of America, Inc.
Omaha, Nebraska, USA
402-861-1000
www.claasofamerica.com

The ORBIS 900 is a 12-row, 9 m (30 ft) corn, milo, and sorghum forage harvester head. It can fold flat for road transport to the V-shaped crop flow. The folding mechanism takes a 9 m (30 ft) header down to approximately 3.4 m (11 ft), giving the operator clear visibility while driving. The V-shaped crop flow funnels the crop to the center for smooth feeding and excellent chop quality. The very low starting torque makes for easy starting and can be engaged at full throttle. The large drums on the ends add to the smooth feeding and pull the stalks away from the other uncut rows for less cob loss. Knives operating in the same direction gather and shatter the stalk for better rot down. The standard auto contour precisely adjusts the head up and down on each end.



AES OSPE ELECTRO-HYDRAULIC STEERING UNIT

Sauer-Danfoss, Inc.
Nordborg, Denmark
www.sauer-danfoss.com

Sauer-Danfoss's OSPE electro-hydraulic steering unit is designed to enable automatic steering in agricultural vehicles or vehicles needing electric interface for, as examples, Joystick or Quick steering features. It incorporates features designed to meet new safety legislation. Featuring OSP steering technology and an integrated electrohydraulic steering valve, the OSPE steering unit helps simplify hydraulic system architecture. The high level of integration minimizes the need for additional components and provides OEMs with a complete package. With a safe state, selectable reactive and non-reactive steering modes, load sensing and open center options, and variable steering ratio, the OSPE is ideal for demanding off-highway applications. To comply with revised safety legislation and new standards, such as ISO 25119, the OSPE steering unit offers a defined safe state. In the event of an electronic or hydraulic system malfunction, this option, which is activated by an external watchdog controller, can isolate the electrohydraulic section of the steering valve in order to protect the steering system. The safety function is designed to meet performance level d (ISO 25119), similar to SIL2 (IEC 61508), based on a cat2 architecture (ISO 25119).



AESO PU 380PRO

CLAAS of America, Inc.
Omaha, Nebraska, USA
402-861-1000
www.claasofamerica.com

The PU 380PRO is a 3.8 m (12.5 ft) heavy-duty forage harvester pickup head. A spiral-wrapped and welded auger is used to increase strength and balance while the pick up floats independently of the main frame for better ground contact. Replaceable-wear parts also provide a longer overall operating life, and power transfer is done via a gearbox on the end of the head versus a chain and sprocket. The friction clutch is a ratchet clutch that can slip many times without losing torque. In addition, auger lift is standard on the head, making it easier for the operator to access the feed rolls when a rock or metal has been detected.



AESO REINKE THREE-WHEEL FLEX BASE

Reinke Manufacturing Company, Inc.
Deshler, Nebraska, USA
866-365-7381
www.reinke.com

The Reinke Three-Wheel Flex Base is a three-wheeled tower base with hinge mechanism for use on center-pivot and lateral-move irrigation systems. The design uses a centrally located hinge on the tower base, along with hinged tower-leg plates to allow for 25° of upward, as well as downward, flexibility—for a total of 50° of articulation. This flexibility, and the addition of the third tire, allows for better flotation and a decrease in the severity of the ruts created by the equipment in the field, especially on undulating terrain. All three wheels are driven via a single center-drive motor.





RPM PREFERRED WITH TOUCH TECHNOLOGY CONTROL PANEL

Reinke Manufacturing Company, Inc.
Deshler, Nebraska, USA
866-365-7381
www.reinke.com

Reinke's RPM Preferred with Touch Technology control panel is an operator interface for center-pivot and lateral-move irrigation systems. The control panel has improved features and added functionality, including a start-sequence program and load management programming, which allows growers to more efficiently apply water to their fields. The RPM Preferred with Touch Technology control panel utilizes the Windows CE operating system, Visual Studio programming, and touch-screen technology to provide powerful yet user-friendly control and programming of irrigation equipment features.



SIDEWINDER™ II ARMREST

New Holland Agriculture
New Holland, Pennsylvania, USA
866-639-4563
www.newholland.com

The SideWinder™ II armrest by New Holland, launched on the T7000 Auto Command™ tractor, brings driver-focused ergonomics, convenience, and control to tractor controls—formerly available only on the most advanced self-propelled forage harvesters and combines. The Command Grip™ multi-function controller integrates all tractor and implement operations to control direction selection, speed programming and adjustment, cruise functions, IntelliSteer™ auto-guidance engagement, linkage, hydraulic remotes, and custom headland management. The Intelliview™ III Touchscreen on the SideWinder™ II armrest integrates the display of information, settings, and auto guidance—all accessible and adjustable at a touch by the operator—into a unique graphic interface. The armrest's two front pods can be customized. Customers can choose the electronic draft control mouse pod, the electro-hydraulic joystick pod, or a tray, according to the tractor configuration, and position them left or right.



AESO SPOTON™ SPRAYER CALIBRATOR

Innoquest, Inc.
Woodstock, Illinois, USA
800-637-1623
www.spotonproducts.com

The SpotOn™ Sprayer Calibrator is a handheld digital meter for accurately measuring the flow rate from individual spray nozzle tips. An innovative waterproof design with no moving parts allows this affordable (\$149.95) product to check tips in 10 seconds or less. Readings are displayed on the meter's LCD in gallons, ounces, or liters per minute. As the size and cost of sprayers continue to increase, so does the importance of verifying proper sprayer calibration and nozzle performance. With an accuracy of ± 2.5 percent, this durable and easy-to-maintain product is the tool for today's application technology calibration needs. The innovative use of low-pressure molding to waterproof the PCB while providing the housing for the electronics allows this product to be mechanically robust with a comparatively low price point.



AESO TRIPLE STREAM TIP

The CP Products Company, Inc.
Tempe, Arizona, USA
866-303-0600
www.cproductsinc.com

CP Products Company's Triple Stream Tip forms, at user-selected rates, three uniform solid streams of fluid, which hit the ground or crop at 25.4 cm (10 in.) intervals at a boom height of 50.8 cm (20 in.) and nozzle spacing of 50.8 cm (20 in.). An accessory tip that fits all three versions of CP's multiple-orifice sprayer turbo nozzles, it snaps into the nozzle, replacing one of three existing deflector tips. It is used for many crop applications of fertilizer and/or chemicals where straight streams of fluid are preferred. When used, for example, at 40 psi, and 16 kph (10 mph) on the six-orifice CP-65T-SL, rates range from 42.1 to 217.0 L/ha (4.5 to 23.2 gpa) depending on the orifice used. On the CP-56T-S, rates range from 60.8 to 254.4 L/ha (6.5 to 27.2 gpa); on the CP-65T-SH, the #10 orifice produces 269.4 L/ha (28.8 gpa). The tip consists of a single component molded of 30 percent glass-filled nylon with a #10 Viton® O-ring.



ULTIMATE MELON CUBER™

Hartco LLC
Llano, California, USA
888-U-SLICE-IT (888-875-4234)
www.meloncuber.com

The Hartco Ultimate Melon Cuber™ is an easy-to-use, stainless steel, commercial-grade appliance for cubing melons, including cantaloupe, honeydew, and watermelons. Processing time is reduced by as much as 75 percent while producing uniform melon cubes with greater shelf life and less waste. Edible product yield can be 20 percent greater than cutting with a knife, increasing production revenue. The process produces attractive melon bowls, which can be used for display or sale. The blade system cuts melons efficiently while minimizing exposure to sharp edges, increasing worker safety. The single-pass cutting process further enhances food safety by minimizing the risk of food contamination. The no-tip base with non-slip feet is accommodated by most kitchen work surfaces and accepts standard-size food containers. Interchangeable blade sets suit various melon sizes and varieties. The Ultimate Melon Cuber™ is easy to clean and dishwasher safe.



ULTRA LINEAR SYSTEM

T-L Irrigation Co.
Hastings, Nebraska, USA
800-330-4264, 402-462-4128
www.tlirr.com

The Ultra Linear System from T-L Irrigation Co. is designed to maximize irrigated areas using one machine. The Ultra can operate in either linear or pivot mode with a variety of guidance and water supply options available, allowing maximum flexibility for the end user. In linear mode, the system can use furrow, cable, concrete ditch, or buried wire to guide the system laterally. In pivot mode, the spans rotate around a stationary 4-wheel tractor pivot point, enabling adjacent parallel fields to be irrigated with one system. Water supply options include drag hose, side ditch, or straddle ditch configurations. The Ultra Linear System can also be towed to different

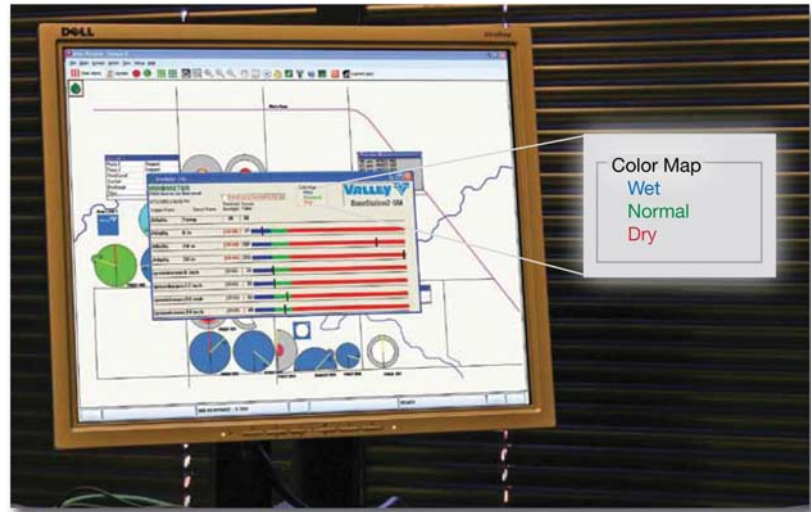


fields. Combined with the industry's only hydrostatically powered, continuously moving irrigation drive train and T-L's Precision Linear Control, the Ultra Linear System achieves maximum water uniformity for the end user.

AE50 VALLEY BASESTATION2-SM

Valmont Irrigation
Valley, Nebraska, USA
402-359-2201
www.valleyirrigation.com

The Valley BaseStation2-SM is designed specifically to allow remote monitoring and control of a grower's pivot or linear mechanized irrigation equipment based on soil moisture data received from Watermark soil moisture sensors. The BaseStation2-SM software integrates monitoring and control of irrigation equipment with soil moisture sensing information without having to switch back and forth between two or more software programs. One glance at the main status screen can provide the user with quick notification if any field is near a cautionary status range for soil moisture. The integration of the soil moisture monitoring and enhanced alarm notifications into the BaseStation2 product now means managers can more quickly and confidently make the necessary water management decisions for their farming operations.



AE50 VALLEY GPS GUIDANCE

Valmont Irrigation
Valley, Nebraska, USA
402-359-2201
www.valleyirrigation.com

Valley GPS Guidance allows the installation of Valley Corner and Linear Equipment Valley Linear to applications that might have been prohibitive in the past, allowing farmers to maximize the acreage under irrigated production. Valley GPS Guidance is easy to install and can quickly adapt to changes in farm practices or crop needs. It is compatible with the existing John Deere Starfire® RTK correction system, allowing growers to achieve higher profitability with lower overall investment. It eliminates hitting



installation barriers associated with buried guidance systems, such as subsurface rock, drain tiles, or buried pipeline. It also eliminates maintenance due to lightning, rodents, or tillage, which is often seen with buried guidance wire.

AESO WANDERING SHEPHERD

iFind Systems, Inc.
Novi, Michigan, USA
248-465-8627
WanderingShepherd.com

The Wandering Shepherd ear tag offers full-movement traceability for livestock. It quickly and automatically provides the government with required data if a disease outbreak occurs, and it also provides numerous benefits to ranchers and wildlife researchers. The device automatically records, stores, and sends its location data, reads temperature of livestock, and sends an alert if the temperature is above the normal range, notifying that the livestock could possibly have a disease. Other alerts include motion, geo-fencing, and device removal. Wandering Shepherd qualifies for government programs, like Age and Source Verification, as well as the mandatory Country of Origin labeling, increasing the value ranchers receive for their livestock in the market place.



AESO XP 820™ INSECTICIDE CATTLE EAR TAG

Y-TEX Corporation
Cody, Wyoming, USA
800-443-6401
www.ytex.com

The XP 820™ is a unique, slow-release ear tag containing abamectin (avermectins B_{1a} and B_{1b}) that provides long-lasting control of blood-feeding ectoparasites on pastured cattle. The XP820™ is the first tag worldwide to contain abamectin, a macrocyclic lactone compound. The ear tag releases a synergized solution over several months to the haircoat. No withdrawal period is required before slaughter. The patent-pending formulation contains piperonyl butoxide (a mixed-function oxidase inhibitor), which increases the potency of abamectin. The XP 820™ gives season-long control of horn flies, including strains resistant to pyrethroid and organophosphate insecticides. It also controls Gulf Coast ticks and spinose ear ticks and is effective against American dog ticks, cattle fever ticks, lone star ticks, and face flies.



index of winners by company

AGCO Corporation

- 9 AGCOMMAND
- 12 Challenger® MT600C, Massey Ferguson® 8600 and AGCO® DT Series Tractors
- 13 Challenger® C Series Track and Articulated Tractors
- 14 DynaFlex™ Flexible Cutterbar Draper Header
- 21 Massey Ferguson® 1600 Series Compact Tractors

Alo North America, Inc.

- 19 Loader Control System

Bobcat Company, a wholly-owned subsidiary of Doosan Infracore Intl.

- 10 Bobcat® M-Series Excavators
- 11 Bobcat® M-Series Loaders

Carlos Mainero y Cia. S.A.I.C.F.I.

- 20 Mainero 2340 Roll-Type Grain Extractor

Case IH

- 4 1260 Early Riser® Planter
- 9 Austoft 8000 Series Sugar Cane Harvester

CLAAS of America, Inc.

- 13 DISCO 8400RC PLUS
- 18 LINER 4000
- 22 ORBIS 900
- 23 PU 380PRO

CNH America LLC

- 12 Case IH Precision Hoe™ 800 Air Hoe Drill and New Holland P2070 Hoe Drill

Deere & Company

- 7 7200 PrecisionCut™ Trim and Surrounds Mower
- 7 7500 and 8500 E-Cut™ Hybrid Fairway Mower
- 10 AutoTrac™ RowSense™ Universal
- 16 iGuide™

Hartco LLC

- 26 Ultimate Melon Cuber™

Harvest Tec, Inc.

- 16 Harvest Tec Bale Identification System

iFind Systems, Inc.

- 28 Wandering Shepherd

Innoquest, Inc.

- 25 SpotOn™ Sprayer Calibrator

John Deere

- 5 400 Series Windrower

John Deere Agriculture and Turf Division

- 6 5M Series Tractors
- 8 8R and 8RT Series Tractors
- 15 E Premium Tractor Series

John Deere Des Moines Works

- 18 Load Command™

Krause Corporation

- 15 GLADIATOR™ Precision Tillage System

Kubota Tractor Corporation

- 17 Kubota RTV1140CPX
- 19 M126X Power Krawler Tractor
- 20 M8540 Power Krawler Narrow-Cab Tractor

McLanahan Corporation, Ag Systems Division

- 6 44 Super Magnum Sand Pump

Miller St. Nazianz, Inc.

- 21 Miller Conдор G40 and G75 Series

New Holland

- 17 IntelliView™ III Monitor with Smart Cameras

New Holland Agriculture

- 5 130 FB Coppice Header
- 8 760 CG Varifeed™ Grain Header
- 14 Dynamic Bale Weight System for Large Square Balers
- 24 SideWinder™ II Armrest

New Holland North America

- 11 Boomer™ 8N Tractor

Reinke Manufacturing Company, Inc.

- 23 Reinke Three-Wheel Flex Base
- 24 RPM Preferred with Touch Technology Control Panel

Sauer-Danfoss, Inc.

- 22 OSPE Electro-hydraulic Steering Unit

The CP Products Company, Inc.

- 25 Triple Stream Tip

T-L Irrigation Company

- 26 Ultra Linear System

Valmont Irrigation

- 27 Valley BaseStation2-SM
- 27 Valley GPS Guidance

Y-TEX Corporation

- 28 XP 820™ Insecticide Cattle Ear Tag

2010
AGRICULTURAL MACHINERY CONFERENCE

25 YEARS OF ENGINEERING ADVANCEMENT

U.S. Cellular CENTER
 Cedar Rapids, Iowa
www.amc-online.org

May 3rd to 5th, 2010
 Sponsored by the Mississippi Valley SAE,
 Quad Cities ASABE and Iowa ASABE sections.

AGRICULTURAL MACHINERY CONFERENCE

**UNIVERSITY OF FLORIDA
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
ASSISTANT/ASSOCIATE PROFESSOR
AGROECOLOGICAL MODELER**

Agricultural and Biological Engineering, Gainesville, FL. Position #00012990. This is a 12-month, tenure track position (75% research, 25% teaching) in the Agricultural and Biological Engineering Department, Institute of Food and Agricultural Sciences (IFAS), University of Florida. The focus of this position will be on conducting research related to climate variability and climate change, assessing climate impacts on agriculture and water resources, and developing models and analysis tools for applying advanced understanding of climate variability and forecasts to improve decisions and policies. A Ph.D. in Agricultural and Biological Engineering or a closely related field is required with training in quantitative methods for developing models of crop and/or other agroecological systems, a strong background and experience in research on climate variability and climate impacts on agricultural systems, and demonstrated capability to integrate models for application to broad climate-related problems. The candidate must also have experience in interdisciplinary research and systems analysis. A strong background in advanced statistical methods for working with dynamic models, such as parameter estimation, sensitivity analysis, and uncertainty analysis of comprehensive models is desirable. Experiences in working with cropping system models and with regional climate models are desirable. Applicants are required to apply on line by visiting <https://jobs.ufl.edu>, and search for Requisition #0803823. Be sure to attach a letter of application including a summary of interests, experience, and qualifications related to this position and a complete resume of professional experience including all publications. Also attach as "other" names of and contact information of four references who may be asked for letters of recommendation. The University of Florida is an equal opportunity, equal access, and affirmative action employer. Women and minorities are encouraged to apply.

**WASHINGTON STATE UNIVERSITY – PROSSER
IRRIGATED AGRICULTURE RESEARCH AND
EXTENSION CENTER, ASSISTANT PROFESSOR OF
AGRICULTURAL AUTOMATION ENGINEERING**

The Department of Biological Systems Engineering invites applications for a permanent, 12-month, tenure track, 100% research Assistant Professor. Required: Earned Ph.D. in Agricultural Engineering, Mechanical Engineering or related engineering field at the time of hire and coursework in machine design, automation, or control systems. Highly Desired: Record of research productivity and potential for obtaining extramural support; demonstrated ability to develop new technologies, systems and methods relevant to agricultural automation and mechanization; and interest in working with multi-disciplinary teams, including physical, biological and social scientists. Desired: Strong oral and written communication skills; ability to teach graduate courses in agricultural automation; and knowledge of agricultural production/processing systems. Application: Letter of application addressing all qualifications, a statement of vision for agricultural automation and mechanization research, a resume/CV, transcripts of academic work, and names and contact information of three references (including electronic mail addresses), preferably submitted by electronic mail to Dr. Qin Zhang; c/o John Anderson, Agricultural Automation Search, Department of Biological Systems Engineering, Washington State University, Pullman WA 99164-6120, jra@wsu.edu, (509) 335-6642, Fax: (509) 335-2722. For position description listing all qualifications and application process, visit: <http://www.hrs.wsu.edu/employment/fapvacancies.aspx> (Search #5277). Screening: April 1, 2010. EEO/AA/ADA.

Resource is published six times per year: January/ February, March/April/, May/June, July/August, September/October, and November/December. The deadline for ad copy to be received at ASABE is four weeks before the issue's publishing date.

Advertisements are \$125 per column-inch length (column width is 3.5 inches) and include free placement on the ASABE Career Center at www.asabe.org/membership/careercenter.htm. The minimum ad size is 2 inches—approximately 100 words—to qualify for the free online listing. For more details on this service, contact Melissa Miller, ASABE Professional Opportunities, 2950 Niles Road, St. Joseph, MI 49085-9659, USA; 269-932-7017, fax 269-429-3852, miller@asabe.org, or visit www.asabe.org/resource/persads.html.

**FACULTY POSITION
CONSTRUCTION SYSTEMS MANAGEMENT**

POSITION: Assistant Professor, 9-month, tenure-track faculty position; joint appointment in teaching (85%) and research (15%). Location is The Ohio State University, Columbus, Ohio.

RESPONSIBILITIES: Teach (85% time) undergraduate and graduate Construction Systems Management (CSM) courses to students in the College of Food, Agricultural, and Environmental Sciences. CSM courses may include, but are not limited to, construction safety, methods and materials, surveying and graphics, structures, estimating, scheduling, contracts and specifications, heavy construction, construction law, project management, sustainable construction, and CSM capstone. The specific courses will be determined by the specialty area of the faculty to be hired. The candidate will be expected to develop an externally funded research program in one or more areas associated with construction management and supporting techniques, and publish research results in high-quality scientific journals. The candidate will be expected to collaborate and interact with interdisciplinary faculty, programs and trade and professional organizations. The candidate will also be responsible for advising the CSM Student Club and Construction Management Competition team, supervising graduate students, advising undergraduates, assisting in development of Study Abroad opportunities, and providing service to the department, college, university, community, and profession.

QUALIFICATIONS: Minimum qualifications include: a Ph.D. (or soon to be awarded) in construction management, civil engineering, or a closely related field. The candidate should have skills in project planning, construction management, building science and technologies, computer applications and related experiences. Desired qualifications include: Demonstrated ability to teach, perform academic research and publish results in high-quality scientific journals. P.E. or P.E. eligible is desired.

CLOSING DATE: Applicants are encouraged to complete an application as soon as possible. Review of applications will begin March 1, 2010 and continue until a suitable candidate is selected.

APPLICATION MATERIALS: Letter of interest, curriculum vitae, transcripts, statements of teaching and research accomplishments and interests, and names and contact information of three references. Application materials should be mailed to the address listed below.

CONTACT: Dr. Victoria Chen, Assistant Professor, Search Committee Chair, Department of Food, Agricultural and Biological Engineering; The Ohio State University, 590 Woody Hayes Drive, Columbus, OH 43210-1057

For additional information, contact Dr. Chen at chen.1399@osu.edu. For department information, please see <http://fabe.osu.edu/>

*THE OHIO STATE UNIVERSITY IS AN EQUAL OPPORTUNITY,
AFFIRMATIVE ACTION EMPLOYER*

DIETRICH & ASSOCIATES, Inc.
Integrated Product Development Services
 Vehicles, Implements and Tools
 Engineering, Design and Analysis
 Prototype Build, Test and Evaluation,
 24,000 sq. ft. Experimental Shop.

R. O. Diedrichs, P.E. Cedar Falls, IA
 319-266-0549 www.iowaengineer.com

Five-G Consulting
 D. Joe Gribble, A.E.
 Donald L. Gribble, P.E.
 Ted A. Gribble, P.E.

(903) 783-9995
 Fax (903) 784-2317
 6355 Lamar Road, Reno, Texas 75462
 eng@Fiveg.com • www.fiveg.com

Professional Engineering and Consulting Services for Dairies, Beef
 Feedlots, and All Types of Agricultural Waste Management Systems

Irrigation and Wastewater Systems, Sales and Engineering/Design
www.IRRIGATION-MART.com
 300 S. Service Road, E.
 Ruston, LA 71270-3440
 Ph: 800-SAY RAIN (729-7246)
 318-255-1832
 Fax: 318-255-7572
 info@irrigation-mart.com

ASABE MEMBER

Robin Robbins, Agronomist
Michael Pippen, Mechanical Engineer, P.E., CID, CAIS
Jay Robbins, Agricultural Engineer, P.E., CID, CAIS, TSP
Jackie Robbins, CEO, CID, Ph.D., Agricultural Engineer, P.E.

DeHaan, Grabs & Associates, LLC
 Consulting Engineers
 Mandan, ND; Lincoln, NE
 (701) 663-1116; (402) 742-4976
 www.dgaengineering.com

DANIEL L. DEHAAN, P.E. GREGORY G. GRABS, P.E.

- Dairy, Bison, Beef, Swine and Other Production Livestock Facility Layout, Design, Regulatory Permitting and Construction Development
- Best Management Practices, Waste Management Plans and Pollution Prevention Plans
- Environmental Audits and Assessments

INDUCTIVE ENGINEERING
 DALE GUMZ, P.E., C.S.P.
 10805 230th Street
 Cadott, WI 54727-5406

- Accident Reconstruction
- Mechanical & Electrical
- Safety Responsibilities
- Product & Machine Design

715-289-4721 dgumz@centurytel.net
 www.inductiveengineering.com

Mock, Roos & Associates, Inc.
 Engineers • Surveyors • Planners

Agricultural and Environmental Engineering
 Soil and Water • Citrus • Dairies • Waste Management
 Environmental Assessment • Best Management Practices
 Farm Structures • Pump Stations • Agri-Businesses &
 Farm Plans • Permitting and Design • Water Quality
 Monitoring • Mapping, CAD & GIS

Dale Wm. Zimmerman, P.E.
 President and Managing Principal
 5720 Corporate Way • West Palm Beach, Florida 33407
 Phone (561) 683-3113 ext. 214 • FAX (561) 478-7248

Miller Engineering Associates, Inc.
 James M. Miller PE, PhD, President

Idaho: Boise-Twin Falls Michigan: Ann Arbor
 888-206-4394 734-662-6822
 www.millerengineering.com
 e-mail: jmillier@millerengineering.com

Agricultural, Chemical & Mechanical Engineers:
 Guarding & Entanglement Accidents - Tractor & Harvester
 Safety - Silage & Grain Storage Accidents - Warnings, Labeling
 & Instruction Manuals - Worker Safety & Health (OSHA) -
 Chemical Application & Exposures - EPA RCRA, Clean Water,
 Compliance - Irrigation, Riparian & Hydroelectric - Dairy & Food
 Processing Safety - Equine & Bovine Accidents

currywille
CURRY-WILLE & ASSOC.
CONSULTING ENGINEERS P.C.

Animal and Livestock Facility Design
 Feed and Grain Processing and Storage
 Fertilizer/Pesticide Containment Design
 TSP/Manure Design
 Agricultural Research Facilities

AMES, IA Lakeville, MN
 515-232-9078 612-469-1277
 WWW.CURRYWILLE.COM

Agricultural Engineering Associates
 John A. George, P.E.
 L. Frank Young, P.E.

P.O. Box 4
 1000 Promontory Dr.
 Uniontown, KS 66779
 (620) 756-1000
 www.agengineering.com

- Full Service Agricultural Engineering Firm with four decades of Experience
- Livestock Production Facilities - All species and climatic zones including international experience in Eastern Europe, Asia, Africa, Central and South America
- Dairy Focus on Cross Ventilation, manure solids separation, and sand bedding recovery
- Planning and Design for animal comfort, cooling, and sanitation
- Renewable Energy - anaerobic digestion including integrated with Ethanol production
- TSP - all manure management technologies and CNMPS
- University and Research/Test Facilities
- Expert Witness - Environmental and Patents

Bill Hughes, P.E.
Innoquest, Inc.
 910 Hobe Road
 Woodstock, IL 60098
 815-337-8555 FAX 815-337-8556
 bill@innoquestinc.com www.innoquestinc.com

Engineering & Design Services for Sensors,
 Instruments, Controls, Enclosures and Mechanisms.

SMPMB
 SIMMONS PERRINE MOYER BERGMAN PLC

TIMOTHY J. VAN PELT
 Registered Patent Attorney

Attorneys and Counselors
 115 Third Street SE, Suite 1200
 Cedar Rapids, Iowa 52401-1266
 Telephone: (319) 366-7641
 (800) 691-1180
 Direct Dial: (319) 896-4044 Fax: (319) 366-1917
 tvanpelt@simmonsperriene.com

NOHR Engineering Company
 Rodney M. Nohr, P.E.
 Yankton, South Dakota 57078-4344
 Tel: 605-665-1214 Fax: 605-665-8060
 www.nohrengineering.com
 E-mail - r.nohr@nohrengineering.com

Bulk materials - Grain & Feed Storage - Handling & Process
 Systems including bins, silos, docks, and equipment -
 Agricultural, Commercial & Residential Structures, Vehicles,
 Equipment & Process -
 Failure, Cause & Origin Inspections, Opinions and Reporting

Mid-South Engineering Co.
 Biomass and Alternative Energy
 Consulting and Design Services

- Feasibility • Material Handling • Storage & Reclaiming • Heat Energy Design • Plant Design
- Mass & Energy Balance • Energy Conservation • Conversion Systems • Agricultural Services & more

Projects in 38 States & Globally
Bruce Westerman, PE Hot Springs, AR
 501-321-2276 www.mseco.com

Your personal or company consultant business card could appear here.

For information on rates, contact Melissa Miller,
Resource: Engineering & Technology for a Sustainable World, 2950 Niles Rd.,
 St. Joseph, MI 49085, tel: 269-932-7017;
 fax: 269-429-3852; miller@asabe.org.

An order form is available at
<http://www.asabe.org/resource/2008%20consultants%20listing%20and%20cards.pdf>

Loveland Enviro.com
 John McHugh PE, CID, CLIA, TSP

AGRICULTURE ENVIRONMENTAL MINING INDUSTRIAL

Design Irrigation Pumping
 Supply Waste Management Filtration
 Project Management Dust Control Chemigation
 Expert Witness Reclamation Automation

2000 S CR 29 (720) 935-3575
 Loveland, CO 80537 Jmchugh1958@hotmail.com

Score a **HOLE** in **ONE** for the **ASABE Foundation** at the **2010 Annual International Meeting**

*The 4th Annual Gale A. Holloway Memorial Golf Outing
Sunday, June 20, 2010, Grand View Golf Club*

Challenge your friends, colleagues, and fellow students to a friendly 18 holes of golf at the ASABE Annual International Meeting in Pittsburgh. Grand View Golf Club is a unique and challenging layout of 18 superbly designed golf holes that will test the skills of the accomplished golfer, while providing the novice golfer a pleasant, fun day on the links.

Our objectives are to have fun ... and to raise money for ASABE. Any team can win! The format will be Best Ball (Captain's Choice). Amendments will be available (at a small price, of course) to improve your score. They include Mulligans, red tees, and string. (Red tees and string not available to previous year's winning team.) Want to putt but not drive? Each team can have one member who putts in regular turn, but assigns his/her drives and fairway shots to other team members on a rotating basis.

The cost is \$100 per person (portion tax deductible), and the price includes 18 holes, cart, lunch, trophies, and prizes. Please register at www.asabe.org. For sponsorship information, visit the ASABE web site and click on Foundation.

Proceeds from the Foundation activities benefit ASABE members and the profession through a variety of activities, including Standards development, professional recognition, scholarships, electronic publishing, industry outreach, student competitions, and more.