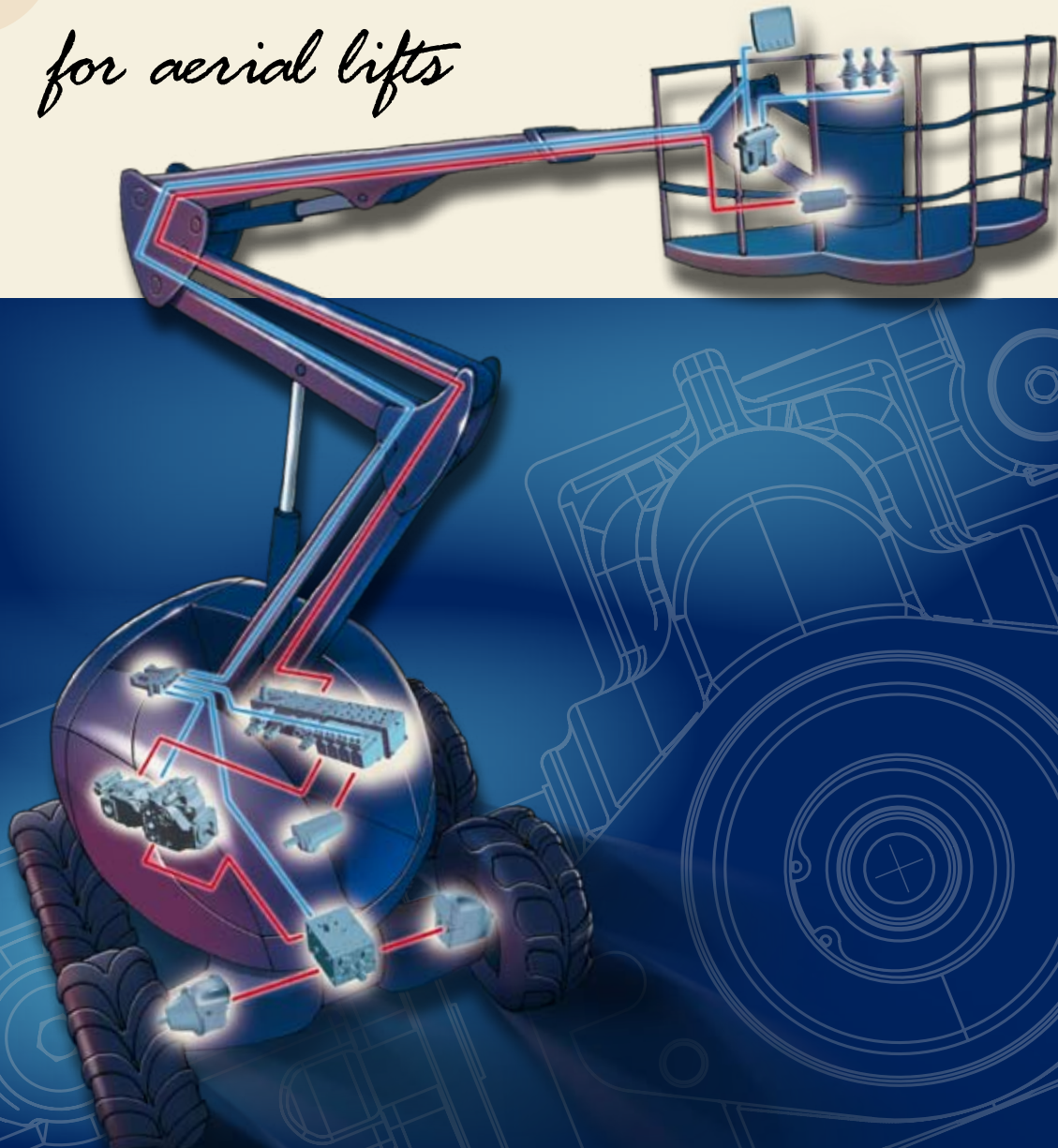


*Mobile solutions
for aerial lifts*



**SAUER
DANFOSS**

What really matters is inside®



The Sauer-Danfoss system development phase model:



- Detailed project plan
- Technical system specifications

- Different system proposals
- Evaluation and selection of approach

Lift your machine to the highest level

There is no denying it. The aerial lift industry is dominated by a very high level of competition. Your customers want easy maintenance, high maneuverability, and low noise levels – all at a competitive price. They also want electronic solutions that facilitate overall system control and monitoring, thereby increasing operator comfort. Aerial lift customers want more and more. We deliver just that.

Our product portfolio includes sophisticated electrohydraulic steering systems, high performance electro-proportional and on-off sectional and cartridge style valves, as well as open and closed circuit propel solutions. We also offer a range of microprocessor electronic controls that make life easier for machine operators. Sauer-Danfoss will help lift your machine to the highest level of performance, productivity, and safety.



DESIGN PHASE

- Sizing and selection of compatible components
- Advanced simulation tests and system FMEA

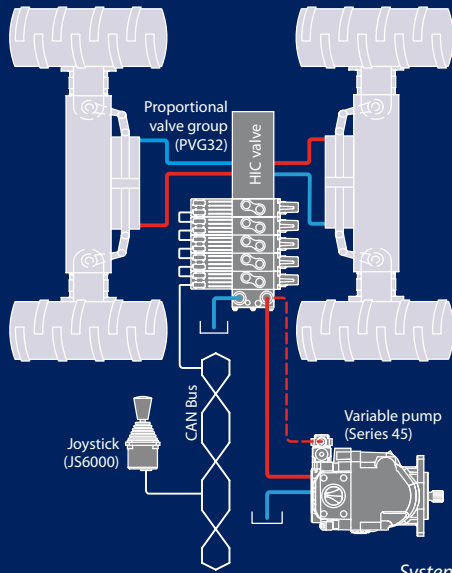
IMPLEMENTATION

- Installation in prototype
- Real-life work condition tests at Sauer-Danfoss' on-site test track
- Careful system performance analysis for optimization and trouble-shooting

RELEASE PHASE

- Final review
- Final report
- Documentation
- Start-up help

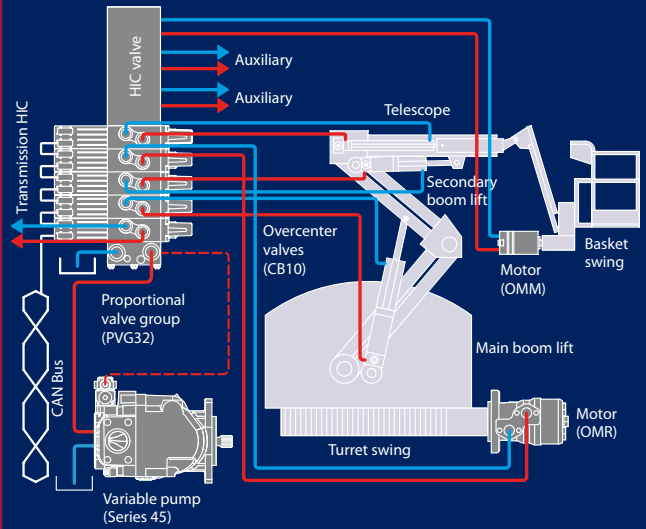
STEERING



System example

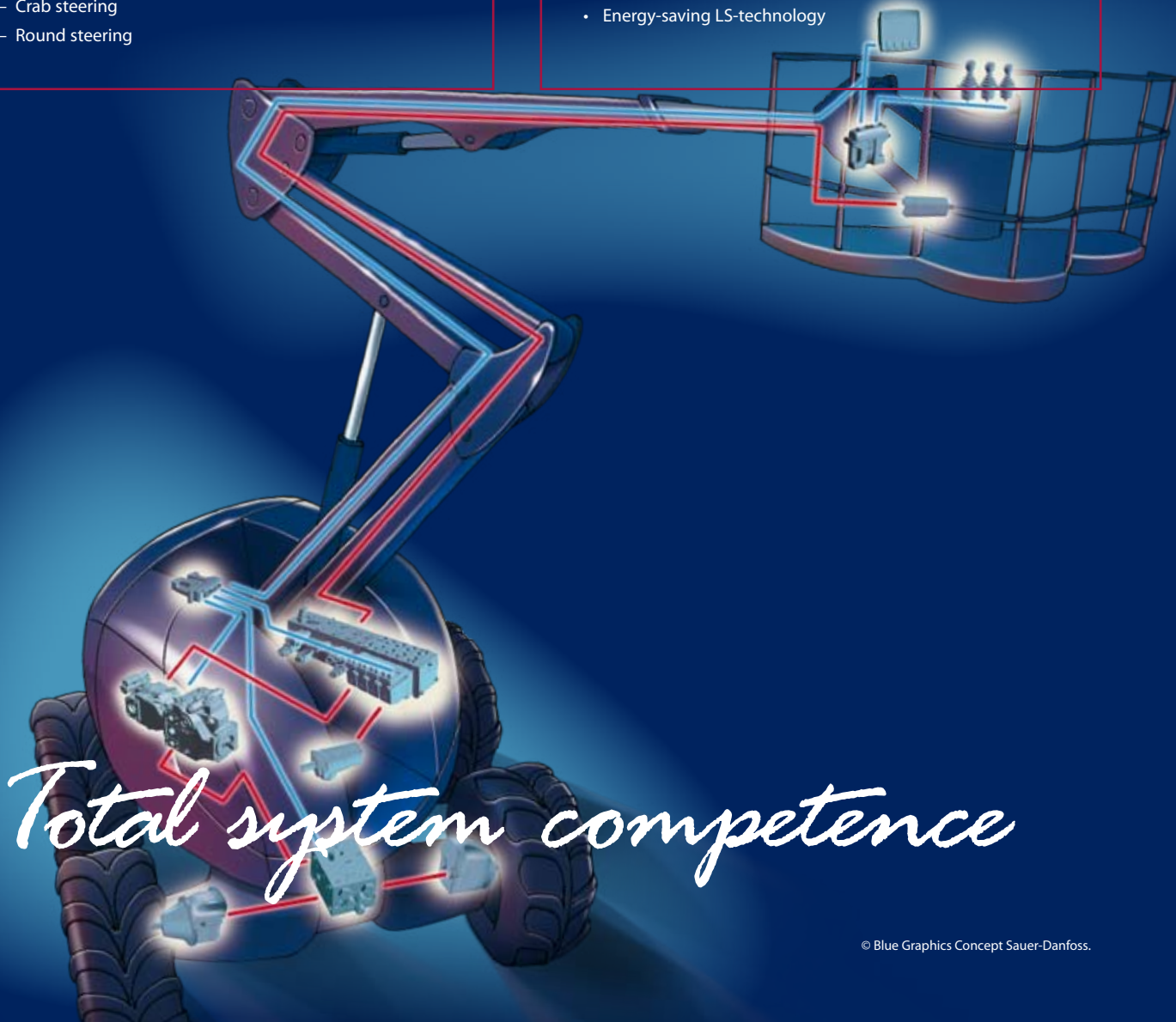
- Cost-effective, electro-hydraulic 2-wheel and 4-wheel steering solutions:
 - Front-wheel steering
 - Rear-wheel steering
 - Crab steering
 - Round steering

WORK



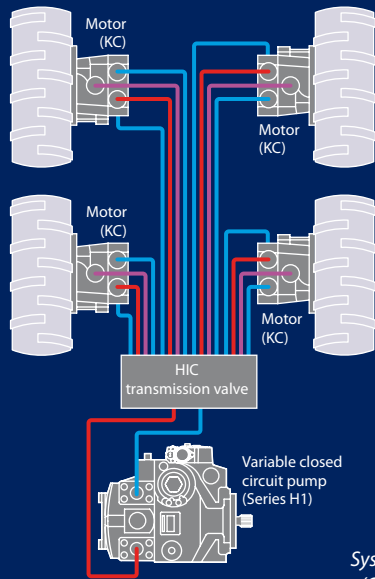
System example

- Modular valve design for customized work-function systems
- Remote control solutions; analog or via CAN Bus technology
- Range of supply options based on fixed or variable displacement pumps
- Energy-saving LS-technology



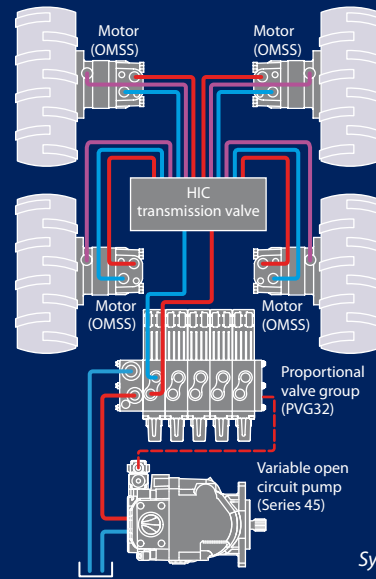
Total system competence

PROPEL - HYDRAULIC



System example
(Closed Circuit)

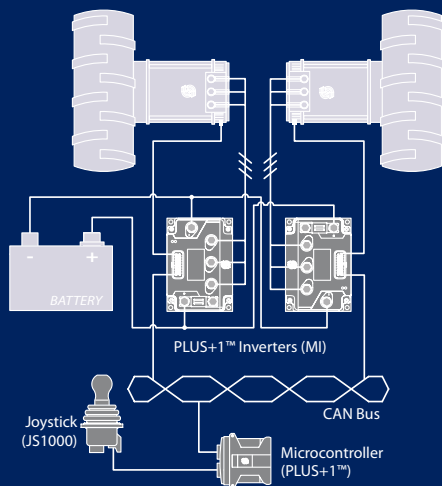
- Solutions for machines of all types and sizes
- Open and closed circuit systems
- 2-wheel drive, 4-wheel drive, anti-spin control
- Smooth proportional control
- Single- and two-speed wheel drives
- Motors with integrated brakes



System example
(Open Circuit)

- Orbital and piston motors for drive-through gearboxes as well as direct drive orbital motor solutions
- Single LS pump for both platform and propel functions
- Excellent controllability at steep gradients
- Patented meter-in/out propel valve section

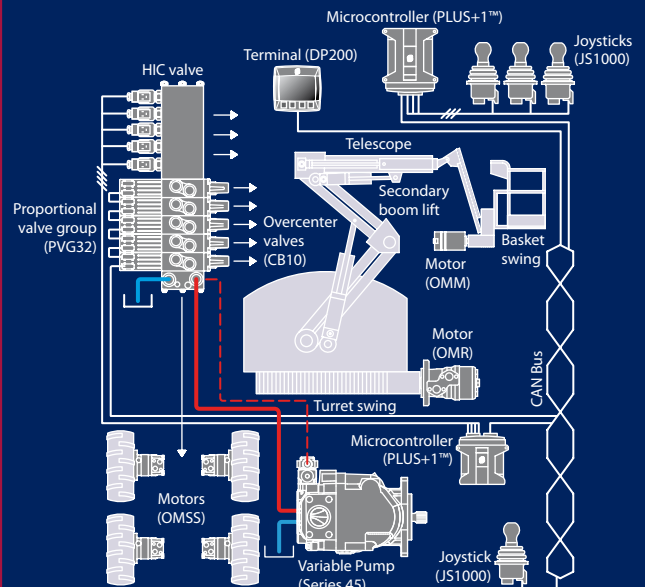
PROPEL - ELECTRIC



System example

- Anti-spin solutions
- Smooth proportional control
- Solutions with regenerative braking
- Good controllability at steep gradients
- Flux vector PLUS+1™ Inverters for easy motor setup and optimal drive performance

CONTROLS



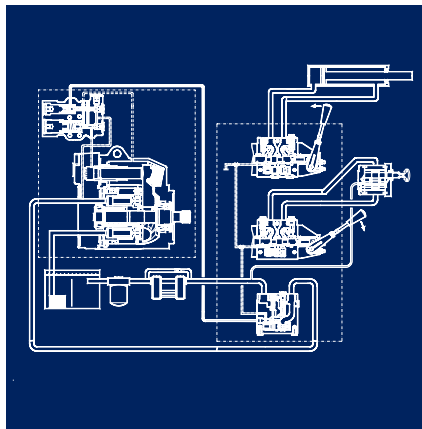
System example

- Integration of functionalities into user-friendly operation
- Custom-designed joysticks
- User-friendly set-up and service tools
- Wide range of microcontrollers and software solutions
- Full line of electronic displays with easy-to-use operator interface

Guidance and expert knowledge



Open to new ideas and new ways of doing things, Sauer-Danfoss system engineers design tomorrow's vehicle systems.



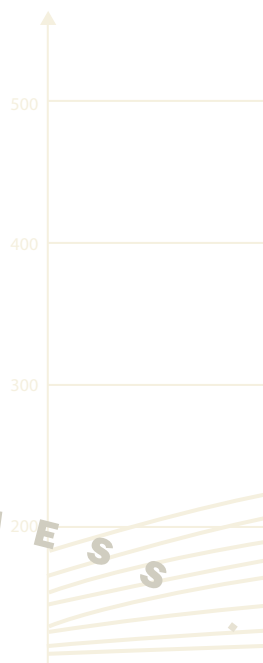
Sauer-Danfoss takes a systematic approach to machine design and is able to fully document every system solution project.



PLUS+1
by SAUER-DANFOSS

PLUS+1™ is a development system that enables you to customize machine control with the performance, operating, and service functions you need.

Using fast, effective calculation tools, we are able to test machine performance and energy usage in any possible way, thereby saving time and costs for our customers.



Frontier mentality

Sauer-Danfoss takes a comprehensive, systematic approach to machine development. Able to redesign the complete electrical and hydraulic system architecture on existing machinery, we find smarter solutions for tomorrow's advanced vehicle applications.

Our expert engineers have access to state-of-the-art technology and test facilities and they share an important quality: Frontier mentality. Open to new ideas, they will assist you through all the stages of a given system development project.

Project initiation

During the initiation phase we not only listen carefully to your goals, we also challenge existing views and come up with alternative ideas. We need to make sure that the end-result – your vehicle system – will be technologically reliable and economically feasible; for you and the end-user. That is our job and it starts long before any talk about final project specifications. The initiation phase is important. Choose Sauer-Danfoss, if you want an active partner on board from the beginning.



PLUS+1™ microcontrollers and I/O expansion modules are designed to provide flexible, expandable, and powerful machine management systems.



At our large on-site test track we can test vehicle system performance in any possible situation.



Drawing on the strength of a global organization, Sauer-Danfoss provides you with resources, support, and service on a local basis.

Customized machine control made easy

If you are looking for a tool that will allow you to rapidly develop a customized vehicle control system, you have come to the right place. PLUS+1™ – the new Sauer-Danfoss operating system network – combines machine controls and electronic diagnostics in an integrated operating network that connects the interactive control of pumps, motors, joysticks, inverters, and sensors. The system enables you to select from an array of microcontrollers, I/O modules, displays, joysticks, and software to easily and quickly customize machine operation. PLUS+1 is system customization made easy.

Selecting, testing, documenting

A new vehicle system is not released when we believe it will perform the way it is supposed to. It is released when we know it will. We select components that we know are compatible, then we carry out a system FMEA. We install the components in a prototype, then we carry out a system performance analysis and real-life work condition tests at our on-site test track – or yours. We make a final review, then we hand over the documentation. That is the way we do it – selecting, testing, documenting.

The World-wide Sauer-Danfoss service organization

“Out of sight, out of mind”, goes a popular saying. That is not the Sauer-Danfoss way. True, we are serious about guiding, developing, testing, and delivering, but we are serious about after-sales service too. With more than 25 sales companies worldwide, local engineering expertise on all continents, and over 280 distributors around the globe, we are able to provide you with the after sales service you need, where you need it. And we will.

COMMITMENT

ION

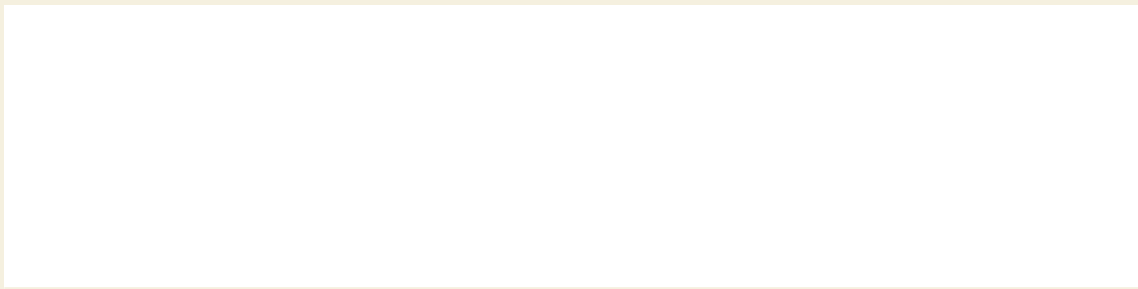
REL

Sauer-Danfoss is a comprehensive supplier providing complete systems to the global mobile market. We offer our customers optimum solutions for their needs and develop new products and systems in close cooperation and partnership with them. Sauer-Danfoss specializes in integrating a full range of system components to provide vehicle designers with the most advanced total system design.

- Open circuit axial piston pumps
- Gear pumps and motors
- Fan drive systems
- Closed circuit axial piston pumps and motors
- Bent axis motors
- Hydrostatic transmissions
- Transit mixer drives
- Hydrostatic transaxles
- Electrohydraulics
- Integrated systems
- Microcontrollers and software
- PLUS+1™ GUIDE
- Displays
- Joysticks and control handles
- Electrohydraulic and hydraulic power steerings
- Sensors
- Orbital motors
- Inverters
- Hydraulic integrated circuits (HIC)
- Cartridge valves
- Directional spool valves
- Proportional valves

Sauer-Danfoss provides comprehensive worldwide service for its products through an extensive network of Global Service Partners strategically located in all parts of the world.

Please contact the Sauer-Danfoss representative nearest you.



Sauer-Danfoss (US) Company
2800 East 13th Street
Ames, IA 50010, USA
Phone: +1 515 239 6000
Fax: +1 515 239 6618

Sauer-Danfoss GmbH & Co. OHG
Postfach 2460, D-24531 Neumünster
Krokamp 35, D-24539 Neumünster, Germany
Phone: +49 4321 8710
Fax: +49 4321 871 122

Sauer-Danfoss ApS
DK-6430 Nordborg, Denmark
Phone: +45 7488 4444
Fax: +45 7488 4400

Sauer-Danfoss-Daikin LTD.
Sannomiya Grand Bldg. 8F
2-2-21 Isogami-dori, Chuo-ku
Kobe, Hyogo 651-0086, Japan
Phone: +81 78 231 5001
Fax: +81 78 231 5004

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