

PRODUCT GUIDE

Electronic edition – Drive power applications





The interactive simulator provides a taste of the new IntelliVision, with demo and preview options illustrating screen information and function.



**simulator
ONLINE**

InteliVision

InteliVision is a new generation colour display unit for either InteliGen^{NT} / InteliSys^{NT} or InteliDrive controllers. It is designed as a simple, easy to use Plug and Play solution, which also features our unique TRENDS monitoring as a standard feature.

It is the first colour display in the Power Generation field. More info on page 54.



www.comap.cz/intelivision



SWITCHED ONTO INNOVATION

InteliDrive® MOBILE

The InteliDrive Mobile is a highly flexible sophisticated mobile electronic controller, which features outstanding control, monitoring and protection for diesel and gas engines as well as driven technology.

The new controller offers range of specific functions suitable for mobile applications as hydraulic system control, communication with sensors and operational devices control.

Most commonly, these tailored applications meet the specific control requirements of mobile hydraulics, engine driven compressors and pumps.



InteliCompact^{NT}

InteliCompact^{NT} models are new integrated controllers for gen-sets operating in both standby and parallel modes. Functionality, optimized for ease of use, installation and configuration, includes built-in synchronizer and digital isochronous load sharer.

... more on page 14

ATION



more on page 40



IntelIATS^{NT}

The new IntelIATS^{NT} controllers are designed to monitor the incoming AC mains supply (1 or 3 phases) for under voltage, over voltage, under frequency, over frequency and voltage unbalance.

... more on page 8



WELCOME TO OUR PRODUCT GUIDE

Following the positive feedback from our first Product Guide we have updated the second issue with more information on an ever-growing range of control products. In the meantime, our design and development teams have worked very hard to create exciting new control solutions to meet customers' application needs – all of which are detailed in the new guide.

We hope you find it just as useful and practical as before. Inside you will find technical information, product features and functions, alongside customer feedback on how the products have performed in the field. Hearing what you think is very important to us, so if you would like to share your experience of using our products please let us know by emailing your story to info@comap.cz

Overall the offers a comprehensive guide to our entire range of products and accessories. I hope you find it both helpful and invaluable.

Regards
Libor Mertl – Managing Director



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IA-NT, IL-NT, IC-NT, MC-NT, IG-NT,
IS-NT, IGS-NT, IM-NT, ID, IV ...

What do all those abbreviations mean? It's easy. Go to page 62!



Applications

Power generation applications

66

This section demonstrates the flexibility and capability of ComAp power generation control solutions by illustrating a wide range of applications including single gen-sets, multiple sets operating in parallel and complex CHP (cogeneration) applications. Each example shows how ComAp control products integrate seamlessly to deliver a complete and effective control and monitoring package for both typical and complex power applications.

Drive power applications

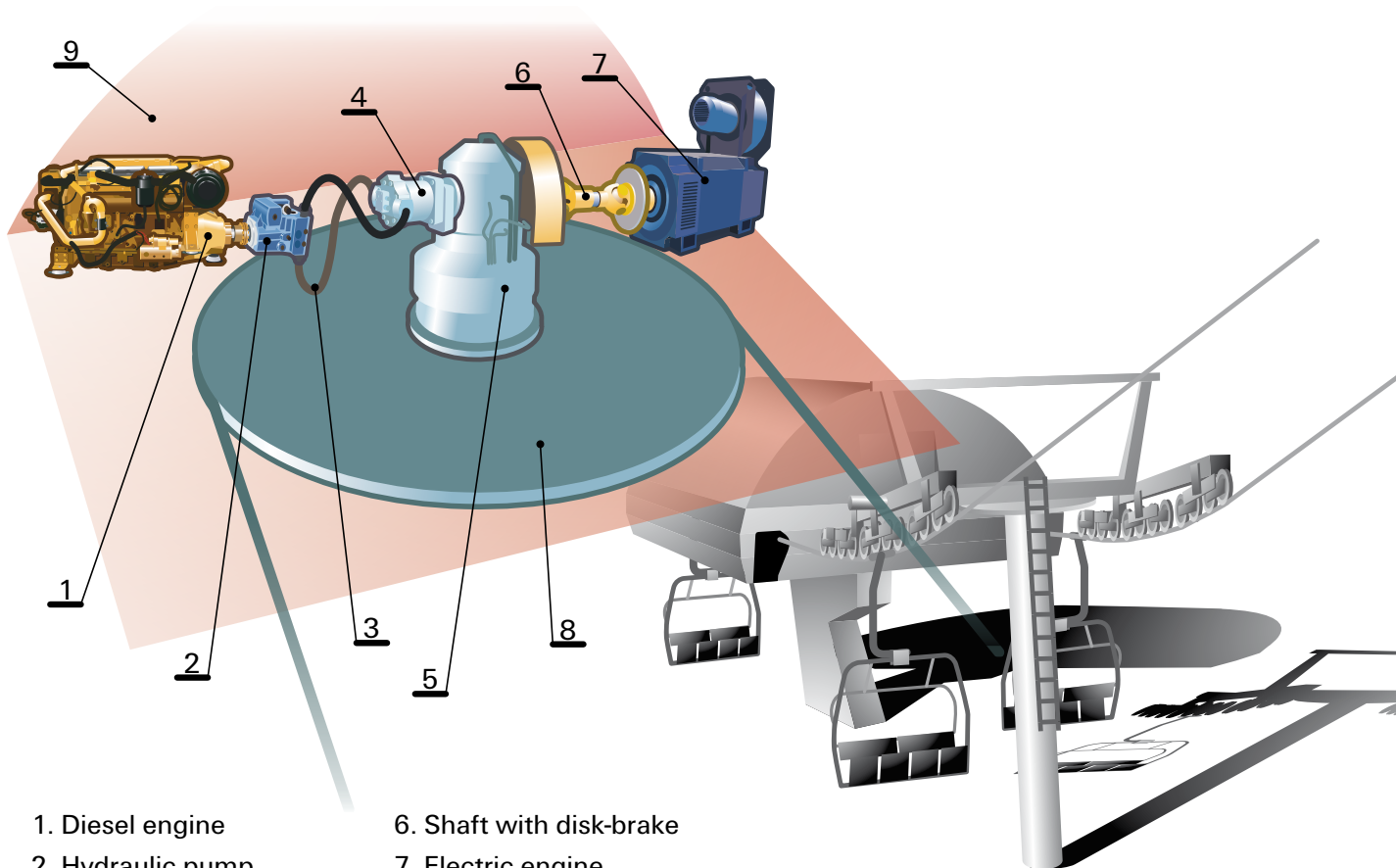
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ComAp drive power control products are suitable for a wide range of diesel engine powered plant and equipment. The following applications are just a small selection to demonstrate the versatility of ComAp drive power products and accessories for use in this demanding market.





Emergency drive for sky lift



- | | |
|------------------------|--------------------------|
| 1. Diesel engine | 6. Shaft with disk-brake |
| 2. Hydraulic pump | 7. Electric engine |
| 3. High pressure hoses | 8. Driven bullwheel |
| 4. Hydraulic motor | 9. Drive station |
| 5. Reducer | |

Description:

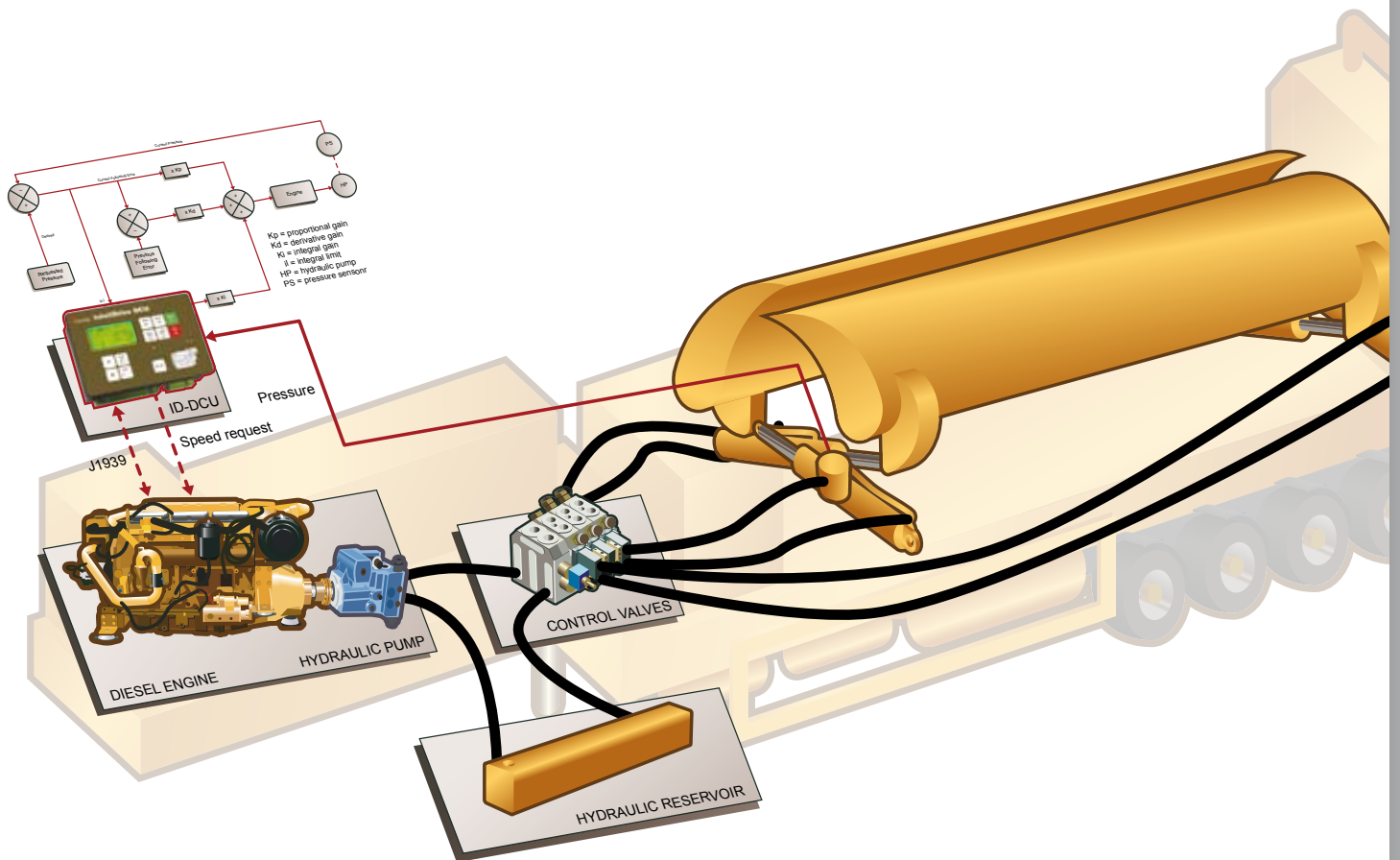
- The drive station of the chairlift is normally geared by a big electric motor with frequency converter by means of a short shaft and a big reducer.
- Diesel engine is used as an emergency drive in case of mains failure. It drives the lift via an engine-mounted hydraulic pump and hydraulic motor on the reducer.
- Engine is controlled and protected by ID-Lite, which communicates with engine's electronic injection control unit via CAN communication bus.

Scope of supply:

- 1× IntelliDrive Lite



Hydraulic of shearing machine



Description:

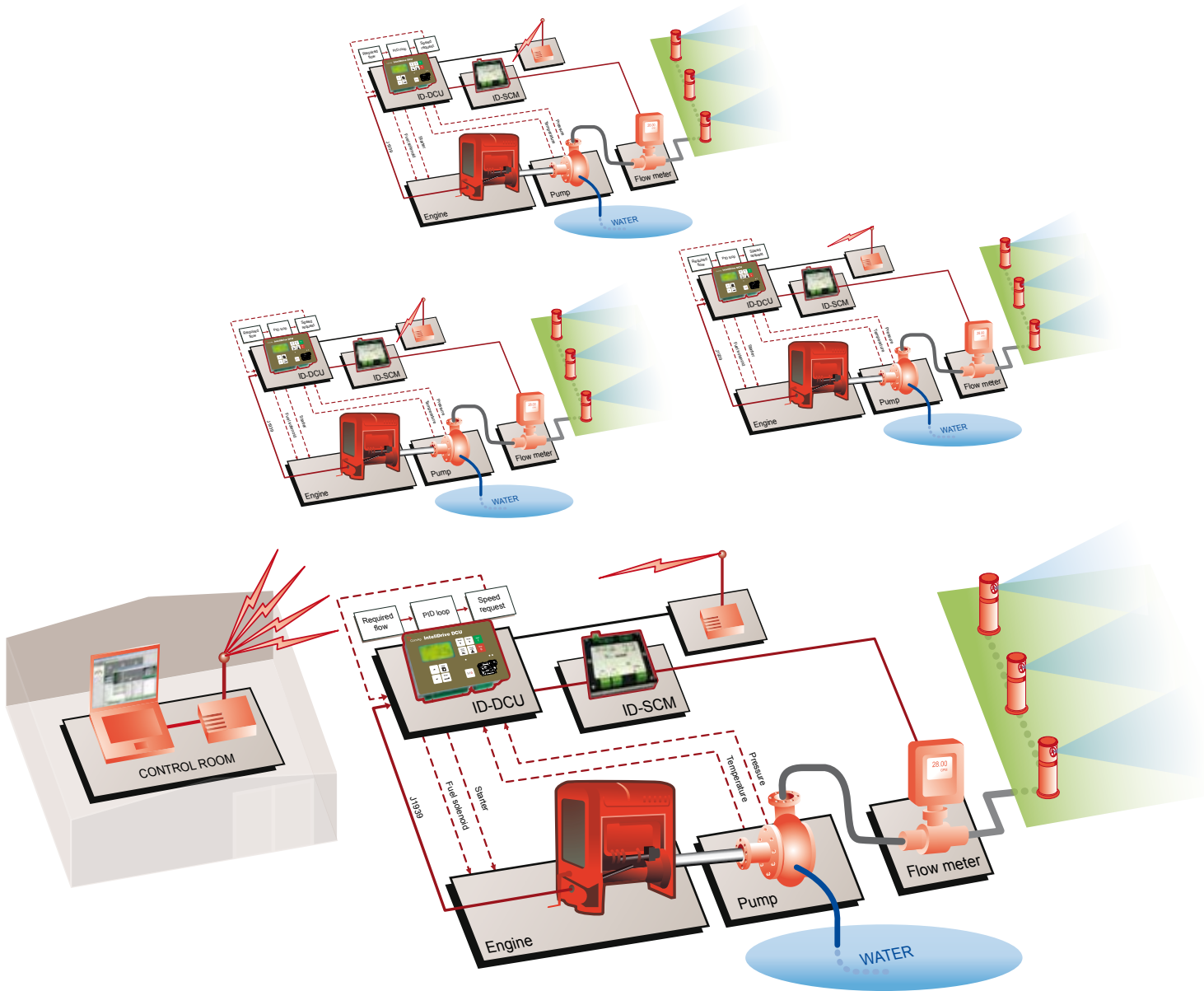
- Mobile hydraulic shear balers and fragmentizers, which are driven by diesel engines with electronic fuel injection and meet all of the latest emission standards.
- Subject machines are mainly used to compress scrap-metal and cut it into pieces, very useful for further processing.
- The ID-DCU Industrial oversees the complete, control, monitoring, fault-logging and protection of the machine operation.
- All information is visualized on the screen, including faults transmitted via CAN from the engine mounted ECU.
- The hydraulic sequences are controlled via integrated and enhanced PLC logics, as well as the engine-speed load is controlled via PID-loops.
- The advanced bi-directional CAN-Bus communication helps simplify the wiring to the engine.

Scope of supply:

- 1 × ID-DCU Industrial



Irrigation pump system



Description:

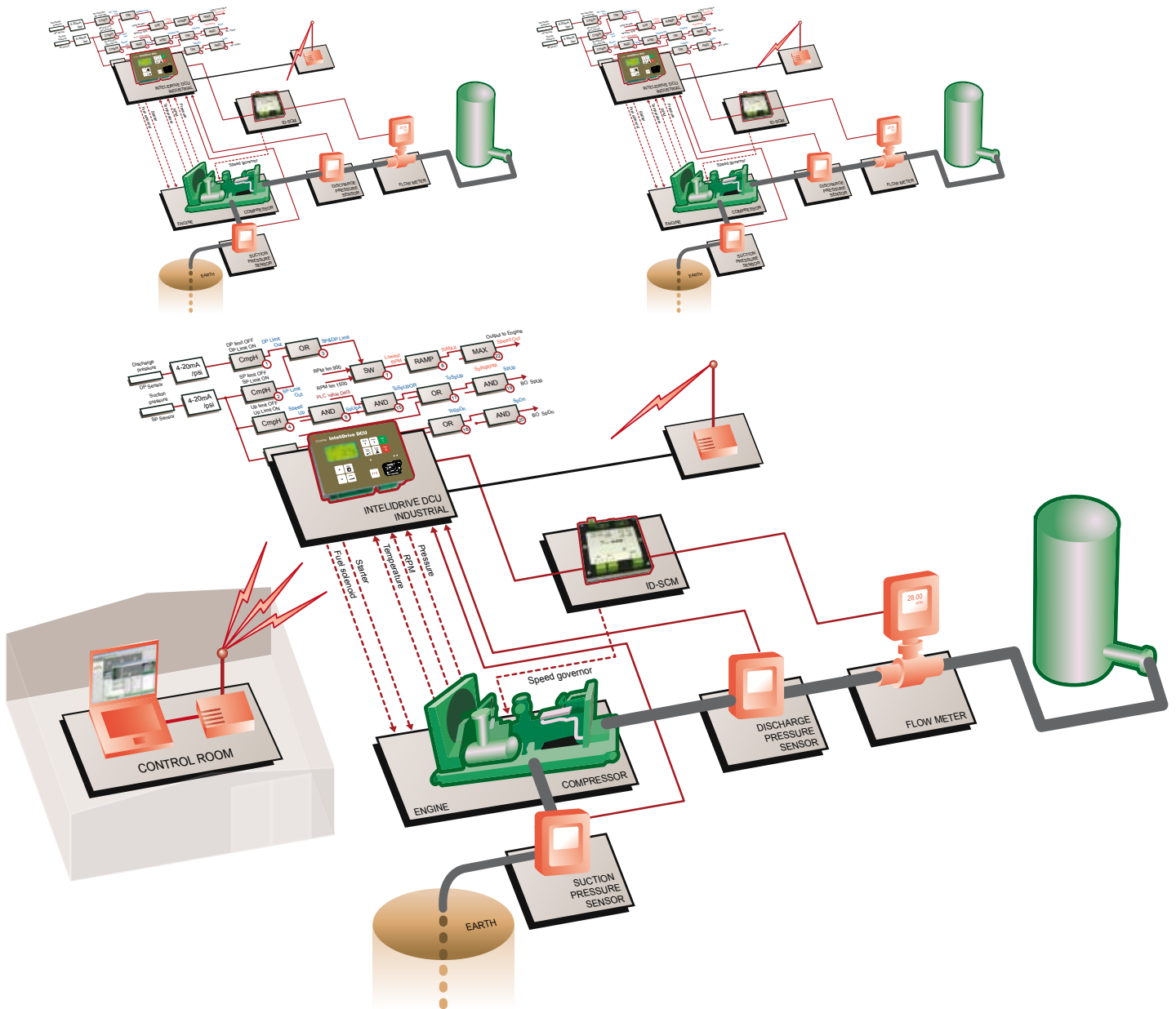
- Systems involving large numbers (over 10) of engine driven irrigation pumps controlled and monitored from one supervision point by radio or GSM modems.
- IntelliDrive makes complete control, monitoring and protection of the engine.
- Water flow from a pump is measured by flow-meter with impulse output. Frequency of pulses, that is directly proportional to flow of water, is measured by module ID-SCM.
- Variable speed engine enables to change water flow according momentary need.
- Required flow is received via radio or GSM modem from a central supervision point and maintained by PID loop build in IntelliDrive.

Scope of supply:

- 1× ID-DCU Industrial
- 1× ID-SCM
- 1× Radio or GSM modem (not delivered by ComAp)
- 1× Flow-meter (not delivered by ComAp)



Gas compressor



Description:

- Gas compressor is driven by a combustion engine.
- IntelliDrive makes complete control, monitoring and protection of the engine and compressor.
- Sophisticated control algorithm using built-in PLC modules accomplishes optimal running conditions for the compressor.
- Speed of the engine is determined according to the suction and discharge pressures of the compressor.
- Additional unload and by-pass valves are controlled by IntelliDrive in dependence on both suction and discharge pressures.

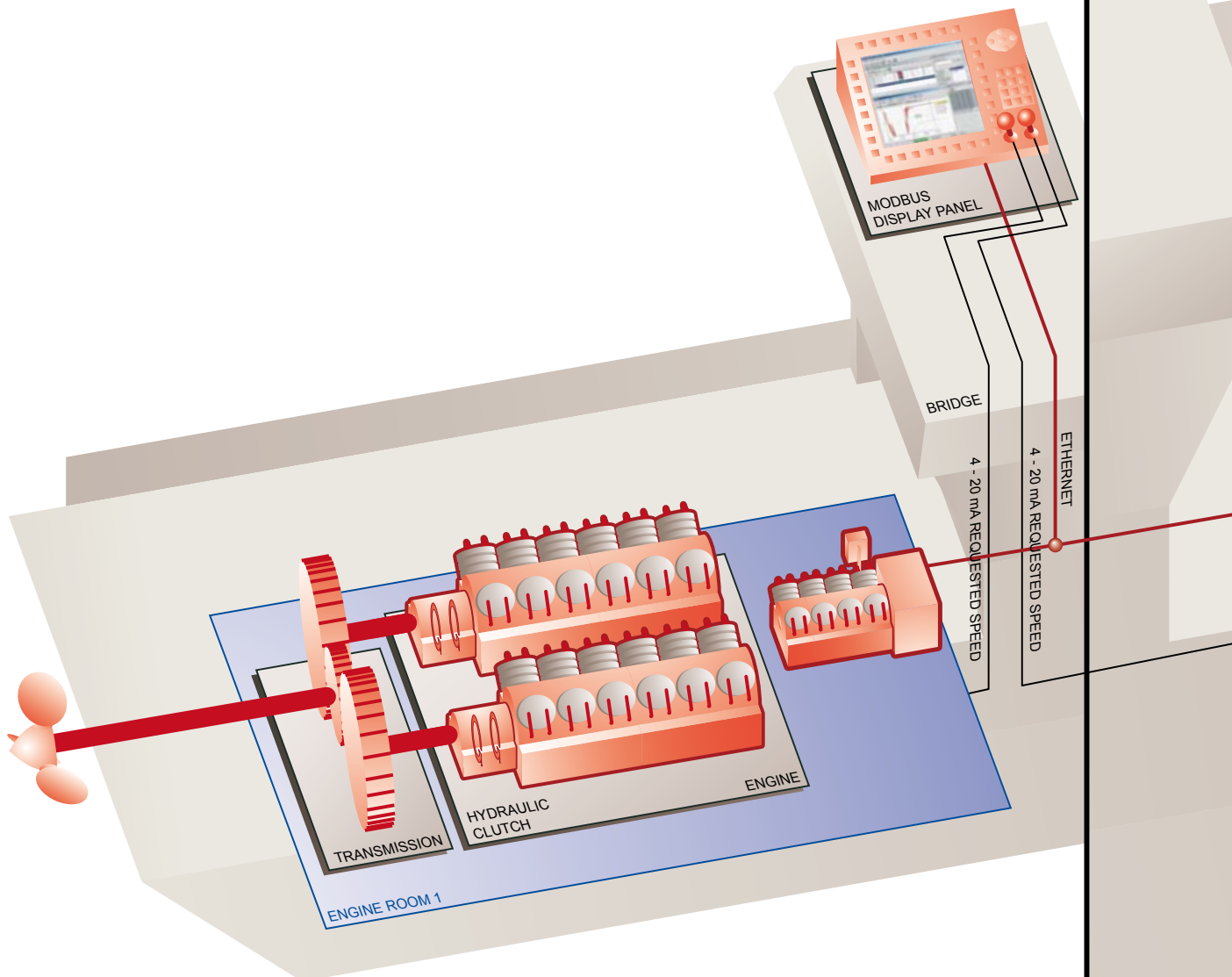
Scope of supply:

- 1× ID-DCU Industrial
- 1× ID-SCM
- 1× Radio or GSM modem (not delivered by ComAp)
- 1× Flow-meter (not delivered by ComAp)

Ship control system

Description:

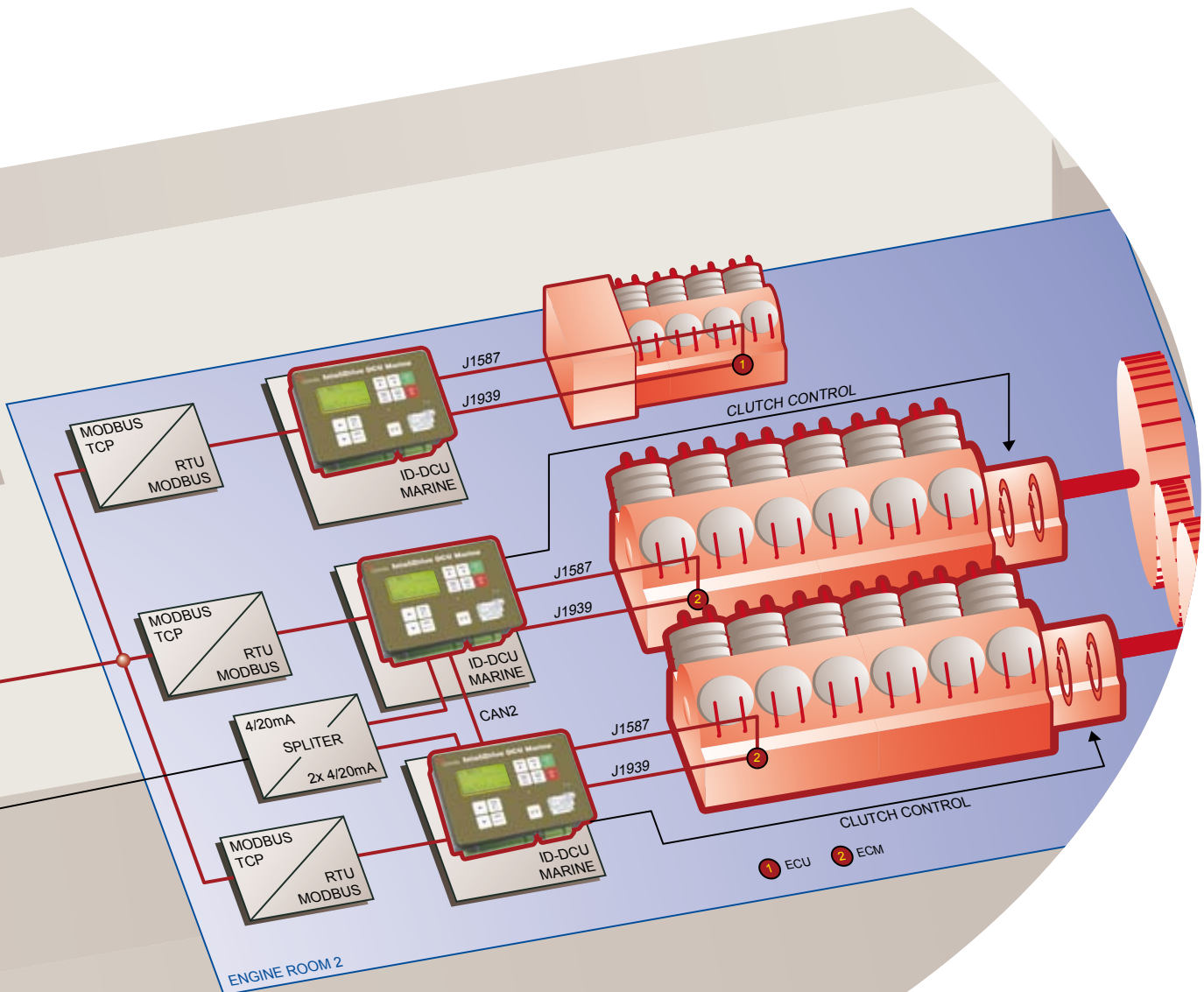
- Small ferries typically feature two propellers, one in bow and one in stern. Propellers can rotate by 360° to give requested maneuverability to the ferry.
- Each propeller is driven by two engines located in two separate engine rooms.
- In each engine room is also one auxiliary gen-set.
- Propulsion engines are controlled by IntelliDrive Marine, in PROP configuration, via J1939 bus. Redundant J1587 bus is used in case of J1939 failure.
- Requested speed is defined by 4-20mA signal from the bridge.
- IntelliDrive controllers make propulsion load-sharing to keep engines evenly loaded.
- Engines of auxiliary gen-sets are controlled by IntelliDrive Marine in AUX configuration.
- IntelliDrive controllers communicate to a ship's control and visualization system via Modbus RTU/TCP converter and Ethernet bus.
- Optimal configurable structure of IntelliDrive's Modbus message together with high communication speed of Ethernet bus gives immediate information on engine speed and torque required on the bridge of a quickly maneuvering ship.





Scope of supply:

- 6× ID-DCU Marine
- 6× ID-RPU
- 4× ID-COM
- 6× Modbus RTU/TCP converter (not delivered by ComAp)

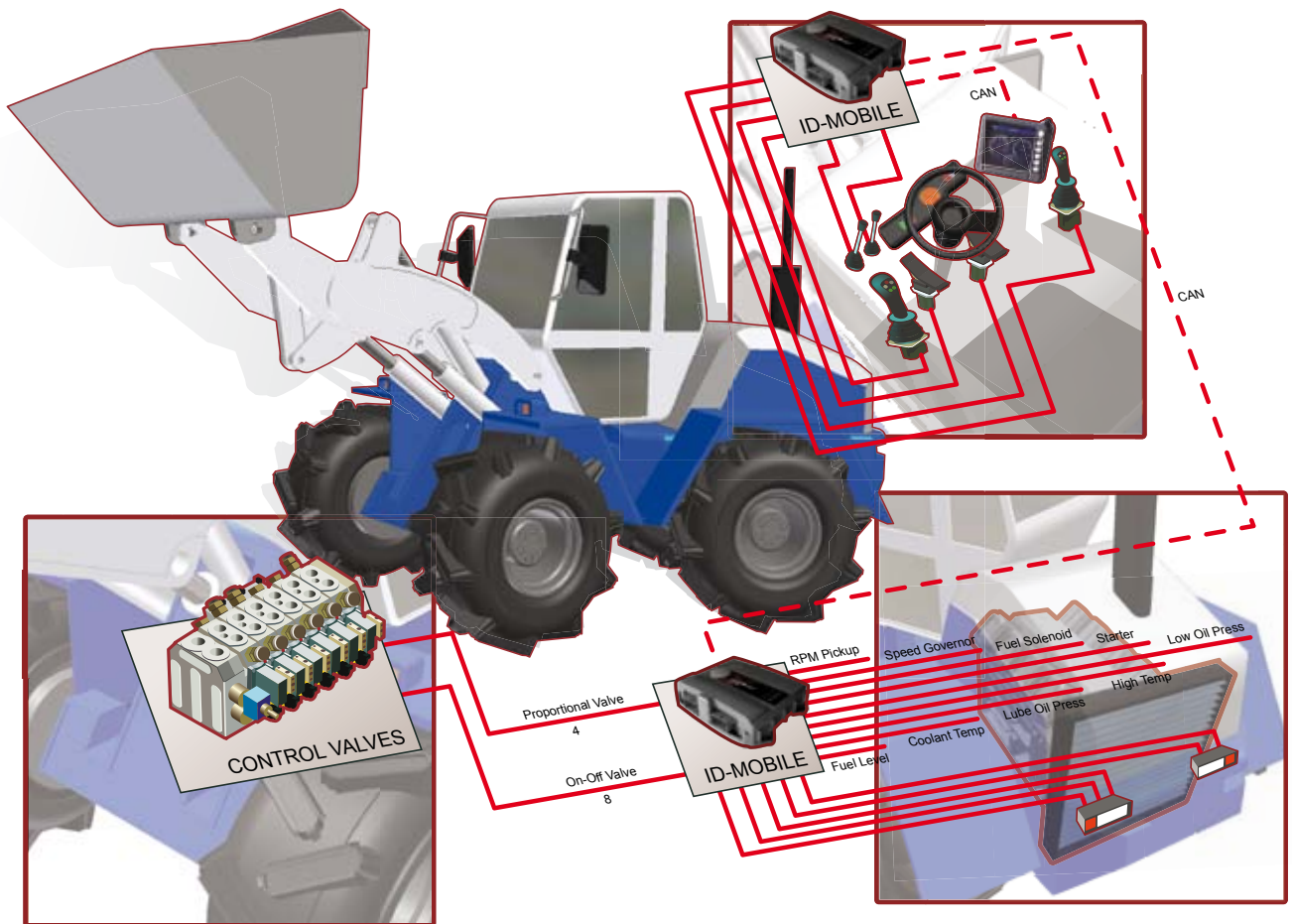


No ordinary engine controller features engine speed control, monitoring, propulsion and load sharing. With ID-DCU Marine you get all this and more!





Wheel loader



Description:

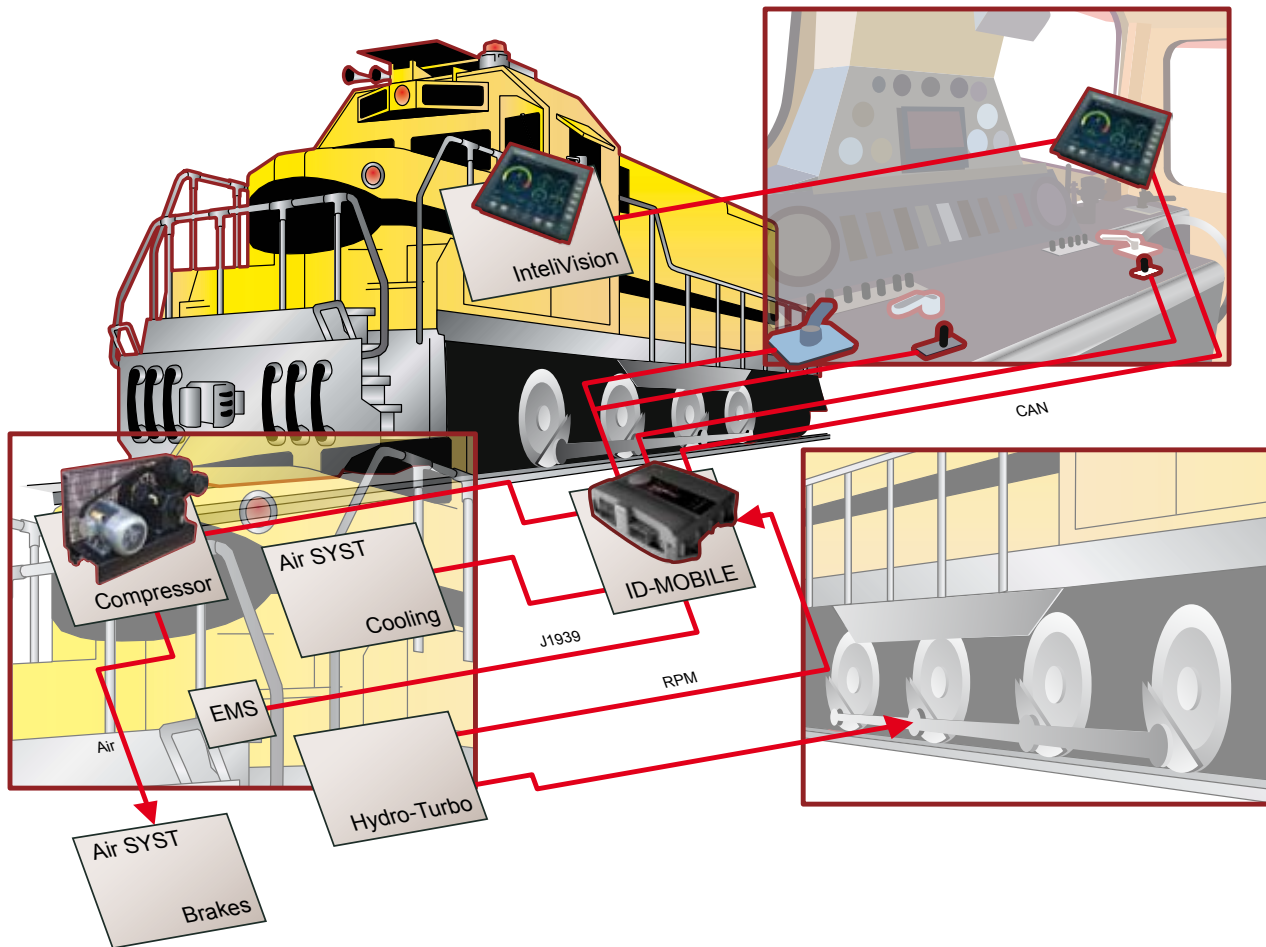
- Wheel loader application – where a standard (non-electronic) engine drives a hydraulic pump and produces high-pressure oil drives wheels through hydro-motors delivers power to all hydraulic cylinders and pistons.
- Two IntelliDrive Mobile (ID-Mobile) controllers are utilized in the application. The first one, located in the driver's cabin, receives commands from the driver via two joysticks and various switches giving him complete information on machine status via a large color screen and a few pilot-lights. The second IntelliDrive Mobile, located on the machine frame, controls and monitors the engine and various hydraulic control valves.
- Communication between the two IntelliDrive controllers and the on-board display is via CAN line. This makes the system wiring and integration very simple.
- All values, warnings and fault codes from the engine are displayed on the on-board display.
- Control of the bucket level is via proportional hydraulic valves, control of wheel speed with anti-slip protection is via PWM hydraulic valves and all other control loops are realized by standard integrated free configurable control blocks.

Scope of supply:

- 2× IntelliDrive Mobile
- 1× VGA Mobile display



Shunting loco



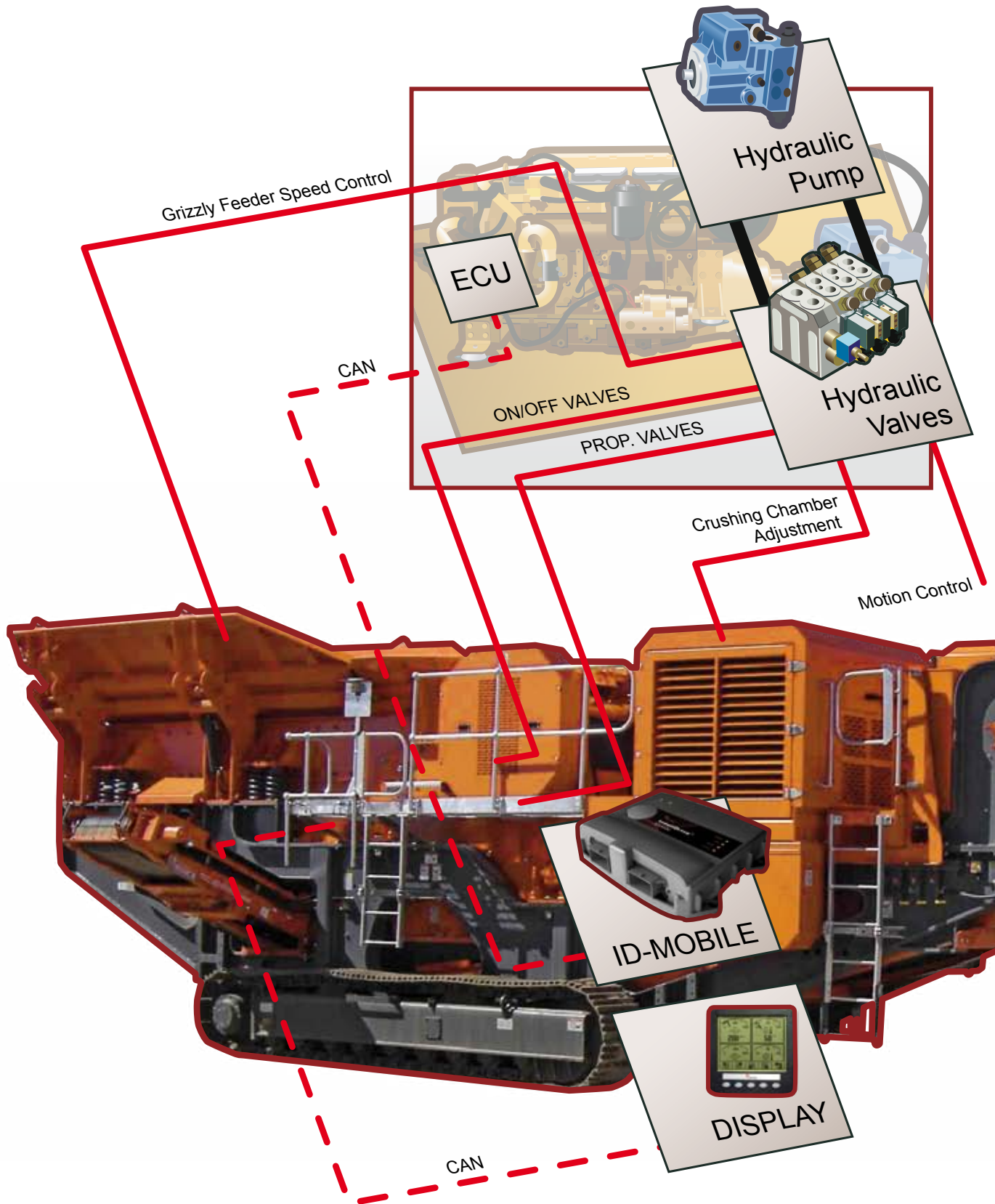
Description:

- The shunting locomotive re-power application uses an IntelliDrive Mobile (ID-Mobile) for the complete control, monitoring and protection of the Volvo D16 engine which drive a Voith Hydro – Turbo gear-box for propulsion via a system of push-rods. It is also used for a number of auxiliary functions which includes the air-system compressor or for the vehicle speed by monitoring the RPM in the Voith Hydro – Turbo.
- Full communication between engine, ID-Mobile and the two IntelliVision displays is achieved with J1939 CAN bus – making the system wiring and integration very simple.
- All values, warnings and fault codes from the engine (EMS) are displayed on the two large IntelliVision displays, located on both sides of the locomotive cabin.
- Smooth take-off and moving, with wheel-slip limitation, is controlled by Ramp function – made possible with the standard ID-Mobile integrated, free configurable PLC logic.

Scope of supply:

- 1× IntelliDrive Mobile
- 2× IntelliVision

Crusher



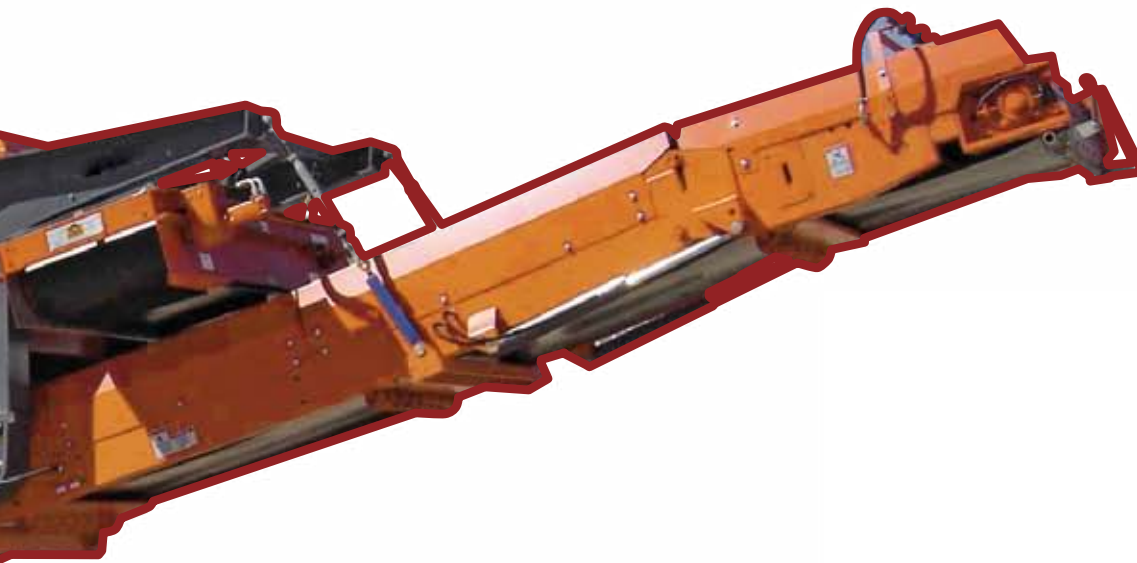


Description:

- Crusher application - where an electronic engine drives a hydraulic pump. The IntelliDrive Mobile (ID-Mobile) controller oversees the complete control, monitoring and protection of the engine and all driven machinery. The continuous speed control of a grizzly feeder together with the adjustment of the crushing chamber prevents the crusher from blockages and reduces wear on critical components.
- Communication between engine, IntelliDrive Mobile and a display is via CAN bus line. This makes the system wiring and integration very simple.
- Visualization of the most important parameters of the machine as well as selection of the operational mode of the machine is done by a display located near the IntelliDrive Mobile controller.
- Control of machine operation is realized by standard integrated, free configurable PLC logic.

Scope of supply:

- 1× IntelliDrive Mobile
- 1× Monochrome or colour display



Satisfied Customers Worldwide

USA

Boss Industries



"ComAp's compressor and engine control panel solution optimizes natural gas production on Boss's booster units by providing accurate process control using digital pressure transducers. Our customers are very happy with its event history capabilities as well as its compressor and engine protective features. We also value the fact that the ComAp ID-DCU panel is fully compatible with future electronic emission certified engines and control capabilities. BOSS Industries has standardized on the ComAp panel for our gas well booster compressor units."

Ed Ketcham
VP Sales
www.bossair.com



Canada

Simson-Maxwell



"When I first saw IntelliVision, I immediately recognized its potential for our power generation systems. The large easy to read color display and customer-friendly interactivity is precisely what our customers have been looking for. We have already installed systems with IntelliVision and received very positive feedback from our customers on the units performance."

Santokh Sahota
Engineering Manager
www.simson-maxwell.com



Netherlands

Sandfirden Technics



"All our generator sets and propulsion engines are equipped with a ComAp engine controller, ID-DCU Marine. They are approved by all major Ship Classification Companies. The units fulfill our high quality standards, have many applications and are widely used. Remote monitoring is one of them, which Sandfirden Technics is using in some cases."

Harry Jasper
Service Department
www.sandfirden.nl



Slovakia

ELTECO



"We admire ComAp products because of their innovative features. These include forward looking technological development of monitoring; the ability to solve non-standard customers' requirements and the huge spectrum of opportunities for running of power supplies."

Peter Šiška
Chief of Application and costing
estimation department
www.elteco.sk



About ComAp





ComAp

ComAp is a dynamic international company with a solid reputation for delivering innovative electronic solutions to the power generation, industrial engine and equipment markets. By providing customers with state-of-the-art products, ComAp has built a name for delivering excellent reliability and good value.

Excellent and reliable product solutions

ComAp specializes in creating electronic control and management solutions for use in the power generation industries and drive power markets. Our portfolio of products, software and accessories is designed to support emergency power, standby power generation and engine driven applications all over the world. We also work closely with our customers to develop unique customized and turn key solutions for ordinary and extraordinary applications delivering high standards of excellence on every project.



ComAp products represent some of the most reliable solutions on the market today. Every component and product undergoes the most rigorous standards during manufacture, with every stage being undertaken in accordance with international ISO 9001 certification. Our products are backed with the approvals from major Marine Certification

Societies. Accreditation at the highest-level breeds confidence, and every ComAp product is supplied with an appropriate warranty and after-sales support for complete peace of mind.

Professional partnerships

ComAp products are directly available in more than 60 countries, spanning almost every continent in the world. Through our professional and highly dedicated global distributor network we can satisfy customers' needs, however challenging.

Each ComAp distributor is carefully selected for their professionalism, product expertise and recognized quality standards and accreditation, and as such can advise customers on any matter relating to ComAp products and their applications.



People make the difference



ComAp's key strengths are flexibility, experience, knowledge and enthusiasm. This blend of values defines our personality and gives you the assurance of a truly honest and positive relationship. By

supporting our people, investing in their development and encouraging creativity, our teams work hard to find new opportunities, technologies and solutions that enable us to successfully help our customers solve their problems effectively.

At ComAp, we believe passionately in the importance of continuously developing new technology along with forward thinking software and hardware to maintain the enviable position as worldwide leader in communication and control for power generation and drive power applications.



At the heart of this process is a strong desire to exceed our customers' expectations by finding outstanding solutions for them and drawing upon the company's most valuable asset – people. Over 80% of ComAp employees are graduates with specialized electronic and programming knowledge appropriate to

the innovative development of market-orientated engine management systems. This unique know-how is matched by ComAp's significant investment at every stage of the research and development process, resulting in the creation of leading edge modern development facilities. ComAp consistently set high standards, reflected in our third place in the 'Best Employers Study in the Czech Republic' (conducted by Hewitt Associates) in consecutive years (2006 and 2007).

ComAp Systems

ComAp's expertise extends beyond innovative controllers to include a range of subsidiary businesses specializing in related services including bi-fuel conversions, power energy systems solutions and electronic component distribution.

These subsidiaries are located in key strategic regions around the world ensuring our customers benefit from local capability coupled with global reach. Most of them are named ComAp Systems and more information is available on each business at www.comapsystems.com.

Key Milestones

1991

Establishment of ComAp.

1993

Successful commissioning of four Gen-set Control Systems made by ComAp on Mediterranean islands.

1994

MX controller, the second generation of ComAp's gen-set control systems, was launched.

1996

PX, the revolutionary gen-set controller with configurable input and outputs, was developed.

1999

The strategic co-operation with HuegliTech Company significantly increased our distribution network.

2000

InteliGen, the first member of the Inteli family and flagship of our gen-set control systems, was released.

2001

ComAp Ltd. – 100% UK based ComAp subsidiary was established close to Bristol.

2002

InteliSys, our top end product dedicated to CHP and large engine control applications, was released. New mid-range product InteliLite was launched for AMF and MRS applications.

2004

InteliDrive controller for non gen-set, engine driven applications was released.

2006

ComAp LLC – ComAp subsidiary to promote products in the USA and Canada.

2007

InteliVision – the first color display unit in power generation field.

2008

InteliCompact – controller for simple paralleling gensets.



Manufacturer

ComAp, spol. s r. o.

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Local Distributor / Partner

The logo for HUEGLI, consisting of the word "HUEGLI" in a bold, sans-serif font with a stylized "H" and "G" that overlap.		HUEGLI TECH AG (LTD) <i>The Engine & Genset Control Company</i>
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<i>www.huegli-tech.com</i>		