Maximising Your Performance
Maximising Your Performance

CONTENTS

Introduction to the Group Page 3
Group performance Page 5
Divisional profiles

IPU Engine Starting Page 6-7
IPU Engine Control Page 8-9
IPU Engine Heating Page 10-11
IPU Oil Conditioning Page 12-13
IPU Fuel Conditioning Page 14-15
Single Sourcing Page 16-17
IPU Product test and training facility Page 18-19

IPU Group design and manufacture high quality engine starting, engine control, fuel and oil conditioning products for critical diesel and gas engine applications. Our engineered solutions provide reliability and confidence where you need it most – for power generation, the oil and gas industry, offshore and marine, industrial and off highway applications. By applying our knowledge and expertise we help you to be certain of your equipment productivity, performance and safety.
Engineering a higher standard of service
Through good market knowledge combined with a passion for service, we have established a solid reputation for delivering our promises. We believe passionately in developing every aspect of our business by supporting all of our people towards continuous improvement – backed by a range of recognized quality and lean programmes, we consistently deliver reliable and high specification diesel engine products.
Our diesel engine solutions, components and services will help you to:

- Increase the prospect of guaranteed power when crisis occurs
- Utilise new technology to improve control and management of engine applications
- Specify a wide choice of proven solutions from a single, convenient source
- Reduce operating and maintenance costs
- Deal effectively with environmental concerns and reduce waste
- Protect your investment in equipment, fuel and lubricants

An eye to the future

IPU Group is a dynamic business with an impressive record of growth across all divisions. To continue this growth we are developing forward-looking strategies by exploring tomorrow’s technology, establishing new partnerships and anticipating market and customers’ demands in the future.

With a clear direction and supportive management team, our people are dedicated to solving the technical challenges our customers face in the future. By offering state of the art engineered solutions, outstanding product support, excellent value and, by always going the extra mile, we aim to be...
Engine Starting

The Starting division design, manufacture, assemble and distribute Air, Spring, Hydraulic & Nitrogen starting solutions for diesel engines up to 320 litres. IPU starting solutions provide independent or black-start capability in sub-zero and demanding environments anywhere in the world, particularly in hazardous or explosive offshore environments.

OVERVIEW OF STARTING SOLUTIONS

Spring Starters
- Spring starters are suitable for engines up to 14 litres
- Simple alternative or back-up start system for most applications
- Easy & reliable bolt-on starter compatible with a large variety of different engines
- Resistant to salt water and extremes of temperature

Air Start Motors
- Air start motors to suit all diesel engines
- Pre-engaged or inertia options for both marine and offshore
- Operates between 3-30 bar pressure
- ATEX certified

Hydraulic Starter Motors
- Available to start engines up to 80 litres
- ATEX approved models specially designed for starting engines in potentially explosive atmospheres
- The starter meets the requirements of EN1834-1
- Certified against the requirements of ATEX Directive 94/9/EC
- Available for a wide variety of engine makes and types
Air Start Packages
- Air start packages are suitable for air starter motor applications and direct on head starting
- Standard or custom built solutions including air starter, compressors, air receivers, control panels and, if required, installation and on-site commissioning

Hydraulic Start Packages
- Hydraulic starting systems are suitable for engines up to 150 litres
- Independent or back-up start system in sub-zero conditions or hazardous areas

Nitrogen Start Packages
- Suitable for engines up to 320 litres
- Compact, primary or back-up starting using exchangeable bottles for hazardous area applications

Our equipment and knowledge has been tested in some of the harshest environments on earth. From the deep mines of South Africa to the wild seas of Northern Europe and the impenetrable Bering Sea ice flows we have provided the starting solutions that others could not.
Engine Control

The Engine Control division represents a wide range of electronic products and components for diesel and gas engines and their applications from stand by power generation, industrial engines, off-highway vehicles, construction machinery and marine engines.

OVERVIEW OF ENGINE CONTROL SOLUTIONS

Electronic Governing
- Range of options from basic single speed isochronous governors to sophisticated multi-engined load sharing / power control systems
- Electronic governors respond quicker when load is being applied to the engine

Generator Control Solutions
- Range of options from cost effective simple key or push start to fully automated AMF controllers and synchronising systems
- Compatible with J1939 ECU’s, remote operation, multi-set applications, import & export power control and G59 protection

Industrial Engine Controllers
- The InteliDrive (ID) from ComAp is a highly flexible sophisticated engine controller, which features outstanding control, monitoring and protection for diesel and gas engines as well as peripheral equipment

Replacement Parts for Stationary Gas Engines
- Motortech design and manufacture specialist engine replacement parts and accessories for stationary gas engines
- The range includes a huge selection of thousands of parts from consumable items such as spark plugs to high specification control and management systems
Remote Control and Monitoring

From GPRS, Ethernet, RS485 and RS232 you can receive a stream of data enabling you to make decisions, about your remote equipment. You can receive alarm announcements as they happen, monitor a wide range of engine performance parameters and accurately assess failure modes.

Engine Shutdown Solenoids
- The dual coil engine shutdown solenoid is designed to allow a solenoid to be held energised for long periods of time without overheating. A highly efficient compact solenoid approximately half the size of a comparable single coil dc solenoid.

BiFuel Solutions
A dual fuel system for diesel engines from ComAp; the InteliBiFuel system is a safe and dependable product, offering an easy and simple conversion to provide maximum power with minimum cost.

Suitable for a variety of diesel engines and gen sets. This technology will give you the opportunity to dramatically reduce diesel fuel costs by replacing up to 60% of the diesel fuel with gas. No modification of the engine is required for this conversion and in the event of no gas, the engine reverts back to full diesel operation at all times.

The Engine Control team of sales engineers has extensive market experience in engine and generator applications and is fully qualified to advise on the suitable selection of a wide range of products and solutions.
Engine Heating

IPU Group represents Kim Hotstart diesel engine pre-heating solutions. These specialist engine block heaters are designed to pre-heat diesel engines making them easier and quicker to start, deliver full power immediately as well as reduce engine wear, emissions and fuel consumption.

Engine Coolant Pre-heating

- Tank style coolant heaters are an externally mounted one piece, heavy duty, pressure die cast aluminium tank with a bolt on flange element assembly
- The heaters are designed to preheat the coolant by the thermo-sython principle – as the coolant is heated in the chamber, the warmed coolant rises and is forced upwards through the piping into the engine coolant block
- Various wattages and voltages available
- Also available – Direct immersion heaters which fit directly into the coolant block via a core plug and for larger applications forced circulating heating systems incorporating pumps
Diesel and Oil Heating

- Oil heaters offer an immediate flow of warm oil – heating critical engine parts by convection
- Stops destructive condensation and the forming of sludge in oil

Battery Heating Pads and Blankets

- Battery warming pads and thermal blankets help to keep the battery warm which helps to improve cranking power in the coldest conditions
- Engineered to maintain batteries at 80°F/27°C to ensure full cranking capability
- A fully charged battery has around 40% cranking power at 0°F compared to 100% cranking power at 80°F

The IPU Engine Heating experts can specify the perfect solution for your application from a wide range of engine coolant heaters including tank style, direct immersion and forced circulating systems. Ranges of oil and battery pad heaters are also available.
Oil Conditioning

The IPU Group Oil Conditioning division is a specialist team with extensive knowledge of all forms of engine and industrial filtration.

Overview of Oil Conditioning Solutions

Extended Oil Life System (EOLS)
The IPU Extended Oil Life System combines the dual action of filtration and evaporation to remove harmful solid and liquid contamination from a wide variety of oils.

- Extends oil life by up to 4 times
- Reduces wear and damage to the engine
- Reduces oil usage and disposal costs
- Minimises the likelihood of unpredictable maintenance

On-Site Analyser (OSA)
The OSA oil analyser is a portable oil sample ‘laboratory in a box’ providing comparable diagnostic capability to that of a traditional laboratory – without the same major investment.

- Online oil diagnosis using innovative reporting software
- Accurate and proven system
- Ideal oil analysis solution for fleet operator or remote locations

Oil Condition Sensor
The oil condition sensor measures the dielectric constant or relative permittivity of the oil with the sensor functioning as a variable capacitor and the oil forming the dielectric. The sensor is able to accurately measure any deterioration in the oil quality from the accumulation of solid and liquid contaminants.
Remote Oil Condition Monitoring
Monitoring of oil condition is essential for owners and operators of expensive/critical pieces of equipment or plant to avoid expensive equipment failure and downtime.

The IPU Logger, when used in conjunction with a ComAp InteliDrive Mobile Logger, allows remote monitoring and tracking of a whole series of engine parameters and, with the addition of an oil condition sensor, IPU Logger gives you live, minute by minute, measurements of lubrication oil contamination and spoilage.

IPU Oil Conditioning products can help to extend the life of engine, transmission and hydraulic oils by removing harmful contaminants and by monitoring and analysing contamination levels and properties.

As well as live measurement of data including:
- Engine RPM
- Engine Load
- Engine Torque
- Oil Pressure
- Coolant Temperature
- Fuel Temperature and Consumption
- Total Hours Run
- ECU Fault Codes

The ComAp Data Logger collects information via the engine J1939 communication system, it holds the data until a predetermined transmission time, or an alarm condition is seen.
Fuel Conditioning

The IPU Fuel Conditioning division provides a complete range of products and services designed to detect and eradicate harmful diesel fuel contamination. The range includes products for bulk fuel storage, on application fuel system protection and mobile solutions.

OVERVIEW OF FUEL CONDITIONING SOLUTIONS

Mobile Fuel Polishing
The IPU fuel-polishing buggy is a lightweight mobile unit ideal for on-site cleaning of fuel tanks, drums and bowers and incorporates the state-of-the-art Parker Racor FBL fuel filter separator element to remove potentially damaging particulate contaminants and water from the diesel fuel. Tank mounted systems are also available from IPU.

• Polishes fuel removing virtually 100% water with particle filtration down to 2 micron depending on filter element used
• Protects the engine from failure and unscheduled shutdowns due to contaminated fuel
• High rate of fuel flow enables quick & effective filtration

Racor Water / Fuel Separators
Racor fuel filter water separators are designed for use on diesel, petrol and other internal combustion engines and have been protecting engines from water, particles and other contaminants for over 30 years.

• Turbine and Spin-on series both feature see-through collection bowls and the ability to replace filter elements
• Engineered filter media protects fuel injection systems and reduce the chance of premature engine failure or wear

Fuel Additives

Diesel ADV +
Advanced fuel maintenance from IPU Group specially formulated to give long term stability for stored fuel. This multifunctional additive will protect your investment in fuel and equipment and will:
• Stabilise stored fuel
• Improve engine performance
• Deliver better fuel economy

Predator™ 8000 Fuel Biocide
Predator 8000 is a broad spectrum fuel biocide for treatment prevention of microbial growth in fuel tanks and systems. Suitable for diesel (including bio-diesel blends) FAME, gas, oil and Residual Fuel Oils it can be used at a standard dose rate as part of a fuel quality management programme, or an increased does rate to kill off existing ‘diesel bug’ contamination.
Diesel Defence Fuel Polishing Systems

The range of Diesel Defence fuel-polishing systems offers a simple and reliable solution to the problem of keeping stored fuel ‘clean and dry’ and free from contamination. The constantly recirculated fuel is efficiently filtered to remove water and particle contaminants, maintaining optimum fuel condition at all times.

All units are designed to run on a ‘stand alone’ basis and are available with basic 7 day timer or advanced remote control and monitoring.

Diesel Defence fuel polishing units will protect diesel fuel quality on any day or bulk storage tank and are ideal for standby gen-set, fire pump, agricultural, construction or marine use.

Fuel Purifier

The IPU Fuel Purifier acts as a ‘first line of defence’ against contaminated fuel on applications where fuel quality is unpredictable. Ideal for rental, plant and agricultural applications, the Fuel Purifier will remove harmful water contamination from even the dirtiest, most contaminated fuel preventing expensive damage and equipment down time.

Fuel Testing Service

Using state of the art equipment and globally recognized methods and standards, the IPU Fuel Testing Service will provide you with accurate, reliable fuel quality reports. We can even interpret the results for you and recommend a corrective action plan. On site, instant, tank side testing is also available for diesel bug detection and fuel cleanliness.

Using the latest fuel testing and diagnostic techniques, the IPU Fuel Conditioning team can identify precise causes of fuel contamination problems and, drawing on significant experience in the fuel industry, recommend a fuel management programme suitable for any application.
Specialist component sourcing for engines and generators

IPU now provide a specialist single source service for leading engine and generator manufacturers who have taken the decision to concentrate on their core business whilst commissioning IPU to source and supply a range of components and parts.

Overview of Single Sourcing

- Rapid response to enquiries
- Large worldwide supplier base for sourcing enquiries
- Comprehensive range of stocks held
- Expert engineering support

If you need it, IPU Group will be able to source it. We already supply gen-set manufacturers, gen-set hirers, boat builders, engine manufacturers and the offshore industry in Europe, the Middle and Far East, Scandinavia and America.

The advantages of IPU Single Sourcing

- Reduced vendor base, less administration
- Reduced warehousing and stocking fees
- Reduced logistic costs, fewer headaches
- Maximised efficiency
- You concentrate on your core business – we concentrate on what we are good at... source and supply

Case Study – Engine Manufacturer

A large multi-national engine manufacturer was seeking a company that could provide a strategic sourcing resource for both fast moving parts and niche purchases. The company was finding that its existing purchasing department was stretched and lacking in specialist knowledge of diesel engine components and accessories. The IPU procurement specialists were happy to step in to supplement the company’s existing sourcing team and provide a collaborative approach to supply chain management. IPU Group now source and supply many of the company’s mainstream engine related components and well as “hard to find” items, including:

Temperature sensors, coolant switches, fuel level gauges, start/stop switches, battery isolators, pumps, fuel filtration, engine coolant heaters.
A maintenance company providing engine servicing to marine, generator set and fire pump applications sought help with component sourcing. They were highly skilled engineers with expertise in engines and servicing, but they realised that they were paying over the odds for engine components and ancillaries through normal distribution channels. IPU were able to use their product sourcing knowledge and buying power to deliver a better service and cost reductions across a range of diesel engine and genset parts. IPU now supply this company a wide range of product including:

- Air shut off valves
- Fuel filters
- Level gauges
- Murphy gauges
- AMOT controls
- Chalwyn valves
- Pumps

Working in partnership with our OEM customers, we help source everything from senders, switches, gauges, instrumentation, pumps, control panels, magnetic pick-ups, level indicators and flow valves to a wide variety of components for engines and gen-sets.

MAKE IPU YOUR SINGLE SOURCE AND SUPPLY PARTNER
IPU Product test and training facility

The IPU training centre provides the ideal environment to learn more about ComAp and GAC generator control and management products. The courses are tailored to meet the need of each customer from familiarization training to more in-depth specialist training suitable for design, test, installation and commissioning engineers.

Our training facility has proved to be very popular and is designed to allow engineers to have real time, hands on training, where they can synchronize with another generator set or the mains in a live safe situation, as well as gain a better understanding of the set-up and software configuration of the controllers.
“The training has enabled us to establish the true capability of our units on the Eurofighter test and ensured we set-up the equipment to a higher standard in the future. The environment was very good and with the equipment wired up ready to go we were able to explore the full potential of the equipment in a way we wouldn’t be able to back at BAE Warton. There is no doubt that you get more out of this than reading the manual”.

Mike Alder – technical specialist at BAE SYSTEMS.
**USEFUL CONTACT NUMBERS**

<table>
<thead>
<tr>
<th>Engine Heating, Fuel Conditioning and Single Sourcing</th>
<th>Engine Starting</th>
<th>Engine Control</th>
<th>Oil Conditioning</th>
<th>Groundcare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrew Whitehouse&lt;br&gt;Office: +44 (0) 121 511 0400&lt;br&gt;Mobile: +44 (0) 7989 678317&lt;br&gt;Email: <a href="mailto:andrew.whitehouse@ipu.co.uk">andrew.whitehouse@ipu.co.uk</a></td>
<td>David Caddick&lt;br&gt;Office: +44 (0) 121 511 0400&lt;br&gt;Mobile: +44 (0) 7831 582978&lt;br&gt;Email: <a href="mailto:david.caddick@ipu.co.uk">david.caddick@ipu.co.uk</a></td>
<td>Piers Rendell&lt;br&gt;Office: +44 (0) 121 511 0400&lt;br&gt;Mobile: +44 (0) 7836 528937&lt;br&gt;Email: <a href="mailto:piers.rendell@ipu.co.uk">piers.rendell@ipu.co.uk</a></td>
<td>Kevin Davies&lt;br&gt;Office: +44 (0) 121 511 0400&lt;br&gt;Mobile: +44 (0) 7901 006465&lt;br&gt;Email: <a href="mailto:kevin.davies@ipu.co.uk">kevin.davies@ipu.co.uk</a></td>
<td>Clive Carter&lt;br&gt;Office: +44 (0) 121 511 0400&lt;br&gt;Mobile: +44 (0) 7970 383948&lt;br&gt;Email: <a href="mailto:clive.carter@ipu.co.uk">clive.carter@ipu.co.uk</a></td>
</tr>
</tbody>
</table>

Visit our Group website [www.ipu.co.uk](http://www.ipu.co.uk)

IPU Group, Churchbridge, Oldbury, West Midlands, B69 2AS England

T: +44 (0) 121 511 0400  F: +44 (0) 121 511 0401

© IPU Group November 2012