JIGSAW

Real Time Fuel Management

FUELLING YOUR FUTURE

JIGSAW

Real Time Fuel Management

Our Mission …

Jigsaw Fuel Management was established in 2007 specifically to develop a new generation of fuel management system. The developers had many years of experience designing what were at the time the best fuel management systems on the market.

The aim was to exploit the convergence of reliable Internet access and low cost, reliable mobile data communications to develop a fuel management system which had not been possible until this time.

The resulting system has changed the face of fuel management. Jigsaw now manage more than a Billion litres of fuel a year with sites not just in the UK, but across the globe.

Jigsaw strive to make the most reliable systems anywhere. The systems use switch mode power supplies to combat mains fluctuations, they are not based around PC's and they do not use membrane keypads to ensure long term reliability. The enclosure is fabricated stainless steel so that it will stand up to the rigours of any environment.

Our Partners …

Jigsaw have developed a network of distributors who not only understand the fuel management market, but can also support your pumps and gauging equipment so that you can be confident that all work is carried out to the latest standards by professionals.

Jigsaw have teamed up with the foremost commercial pump suppliers to develop integrated versions of the system building on many years of reliable pump technology.

Our Customers :

Jigsaw supply systems to a wide variety of industries. By far the largest group is general Haulage, but Jigsaw also supply systems for fuelling Trains, Mining equipment, Aircraft and Ground Support equipment, Ports and Harbours for both water craft and dockside loading equipment, Car Hire, Bus and Coach companies. Jigsaw usually supply systems for static fuel delivery points, but, because the data connection uses the mobile phone network, its just as simple to manage refuelling on floating pontoons and mobile refuelling bowsers.

Our Products …

- **Eclipse** - 2 or 4 Pump, AlphaNumeric Key-pad, Large Character display, Pump Integrated Versions and Retrofits available.
- **Nova** - Single pump, Numeric Keypad
- **TankGuard** - Tank Stock Management System - wide range of gauges supported.

Our Range of ID Options :

- RFID Tags - Including non-Jigsaw Tags
- Magnetic Cards (eg Fuel Cards)
- Jigsaw EasyFuel - Nozzle ID System
- Jigsaw Midas - Auto Mleage Capture
- Jigsaw FuelGuard - Auto ID/ Auto Mileage
- Jigsaw LaserPlate - Bar Code Reader
- Jigsaw FuelWand - Remote Tag Reader
- Jigsaw TeleTag - Auto ID/ Auto Mileage

JIGSAW ECLIPSE

Real Time Fuel Management

- Clear User Interface
- Full Alphanumeric Keypad
- Clear, Large Character, Back Lit Display
- Accurate, Fully MID Approved for Resale
- Large Range of ID Options
- All Stainless Steel Construction
- Manage up to Four Pumps
- Real Time Tank Gauge Interface

FUELLING YOUR FUTURE

JIGSAW ECLIPSE

Fuel Management Terminal

Not Just another Terminal …

The Jigsaw Eclipse has been designed to be the first of a new generation of real time, web based fuel management systems. The Eclipse does not rely on being polled, as with older systems, but automatically connects to a central server in real time. Stock figures are always correct and you can see fuellings on the web site as they occur.

Calling on many years experience designing fuel management systems, weaknesses have been designed out, and reliability designed in resulting in a system which will give a lifetime of dependable service.

Terminal Features :

- Fully Integrated Communications
- Non-Membrane Alphanumeric Keypad
- 4 Line x 20 Character LCD Display
- Multiple ID Options
- Wide Voltage Range Switch Mode PSU
- All Stainless Steel Secure Enclosure
- Manages up to 4 Pumps Simultaneously
- Interfaces to most Tank Gauge Systems

Mounting Options :

- Plinth Mount (as shown)
- Pump Integrated (as shown)
- Wall Mounting Bracket
- Pump Top Mount
- Retrofit to a wide range of third party systems - simple door swap - use existing ID tags

ID Options :

- RFID Tags - Including non-Jigsaw Tags
- Magnetic Cards (eg Fuel Cards)
- Jigsaw EasyFuel - Nozzle ID System
- Jigsaw Midas - Auto Mleage Capture
- Jigsaw FuelGuard - Auto ID/ Auto Mileage
- Bar Code Reader - Jigsaw LaserPlate
- Jigsaw TeleTag - Auto ID/ Auto Mileage

MID Approval :

The Eclipse is fully MID (Weights and Measures) approved so may be used in both commercial and retail environments with equal confidence.

The system is approved with all the ID methods listed and with a wide range of dispensers.

JIGSAW
NOVA
Real Time Fuel Management

- Clear User Interface
- Robust Numeric Keypad
- Clear, Back Lit Display
- Mains or DC Operation
- Ideal for Mobile Refuelling
- Large Range of ID Options
- All Stainless Steel Construction
- Real Time Tank Gauge Interface

FUELLING YOUR FUTURE

JIGSAW
NOVA
Fuel Management Terminal

Real Time Fuel Terminal …

The Jigsaw Nova has been designed to be one of a new generation of real time, web based fuel management systems. The Nova doesn't rely on being polled, as with older systems, but automatically connects to a central server in real time. Stock figures are always correct and you can see fuellings on the web site as they occur.

The Jigsaw Nova has been designed with many of the software features of the Eclipse, but at a reduced cost so that single pump sites or mobile refuelling operations can benefit from Real Time Fuel Management.

Terminal Features :

- Fully Integrated Communications
- Robust, Numeric Keypad
- 4 Line x 20 Character Backlit LCD Display
- Multiple ID Options
- Plinth, Wall, and Pump Mounting Options
- All Stainless Steel Secure Enclosure
- Interfaces to most Tank Gauge Systems
- 12/24 V DC Version - Ideal for Mobile Re-fuelling

Mounting Options :

- Wall/Tank Mount
- Plinth Mount
- Pump Top Mount

ID Options :

- RFID Tags - Including non-Jigsaw Tags
- Jigsaw EasyFuel - Nozzle ID System
- Jigsaw Midas - Auto Mleage Capture
- Jigsaw FuelGuard - Auto ID/ Auto Mileage
- Jigsaw FuelWand Remote ID System

Mobile Refuelling :

The Jigsaw Nova may be powered from a vehicle battery and hence is ideal for mobile refuelling. When used with our Fuel Wand Hand Held ID Reader, and the Fuel Guard Auto Mileage Capture unit, you have a complete mobile refuelling solution, ideal for mines and quarries.
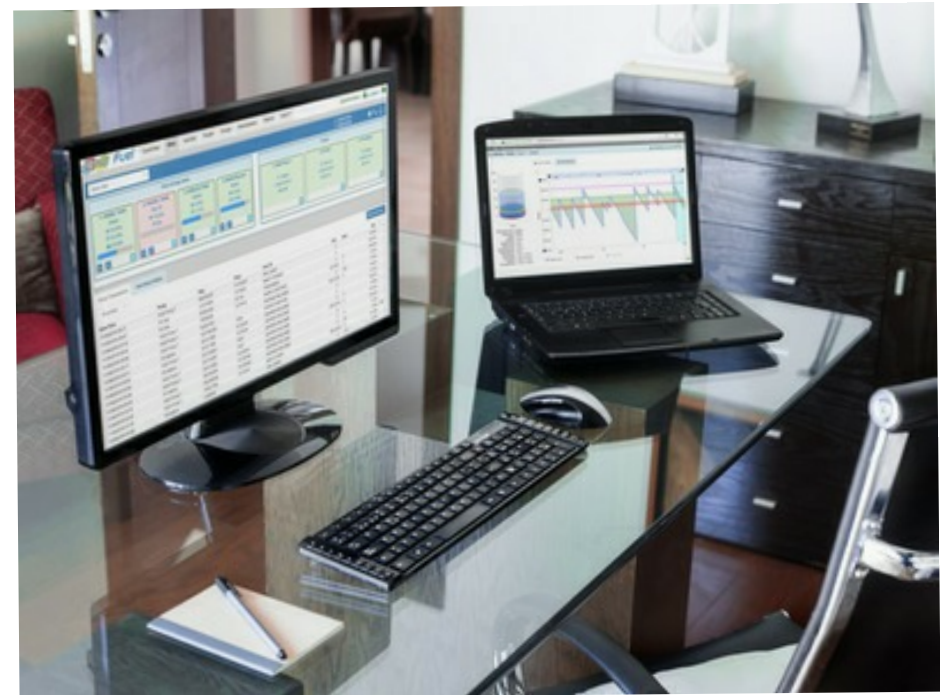
JIGSAW FUEL

Fuel Management Software

- Simple to Understand - Minimum Training
- True Real Time system - No polling required
- Unique Vision Tiles allow at-a-glance management
- Web Based (View Anywhere)
- Real Time View across all sites and assets
- No Dedicated On-Site Software
- Only a Browser Required for access
- Desktop, Laptop, Tablet and Phone Sensitive site
- Real Time Stock Management
- E-Mail and Text Prompts
- Automated Reports Generation

FUELLING YOUR FUTURE

JIGSAW FUEL

Fuel Management Software

Ground Breaking Software …

The Jigsaw Fuel Software has been designed specifically to reflect the benefits of Real Time Fuel Management. The colour coded user interface highlights any issues as they occur, and allows the causes to be investigated easily. The unique user interface is very simple and intuitive to use requiring only minimal training and little in the way of IT experience.
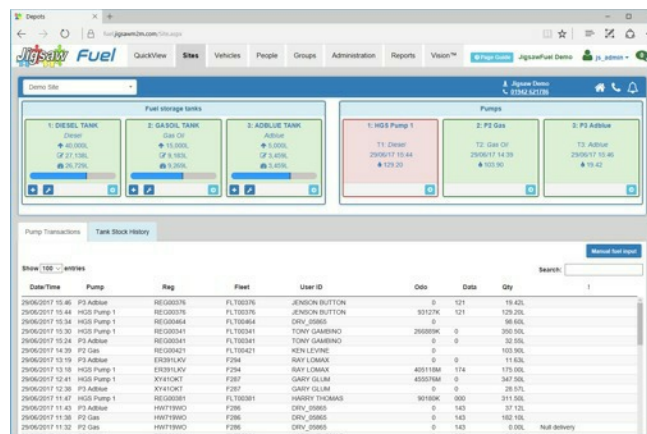
The software has been designed so that most functions can be accessed by no more than two mouse clicks.

Unique Features :

- Fully Centralised System - No on site server to manage.
- Software Updates Managed Centrally
- No Limit on Sites, Pumps, Tanks, Users or transactions - Large or small networks accommodated
- Configurable Report Templates that can beperiodically auto e-mailed
- Graphical Gauge and Book Stock Comparison
- Unique Vision Tiles - Configure the site with information relevant to your business.
- Server to Sever Data Links - Where compatible, Auto Mileage Update from your vehicle
- tracking system.

Clear User Interface…

Above all other factors, Jigsaw have designed the user interface to be as clear and simple as possible. The site is consistent so that if you see something in red, you know there is an issue - click that warning and you see the details. The site screen is the heart of the user interface. This shows the status of all pumps and tanks on the site along with a list of all the latest fuelling events.

Whether you have one fuelling site or fifty, the data is shown in the same clear format. On larger networks, the QuickView page comes in to its own. This highlights any issues across an entire network of sites all on one page.
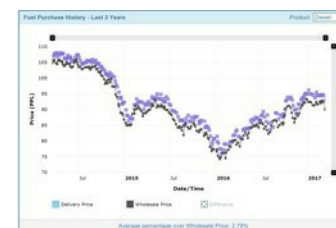
Real Time Stock Management :

As stock deliveries are entered, and transactions are received from your site, the fuel stock situation is updated on the web service. With a connected tank gauge, you get a real time comparison between book and gauge stock highlighting any issues in real time.

Jigsaw Vision ™ Tiles :

The Jigsaw Fuel system has the Unique Vision Tiles which show real time information answering specific questions the user may pose about vehicles, people, fuel stocks, efficiency and even CO2 emissions.

Here are a few of an ever growing suite of jigsaw Tiles :

- Annual Fuel Usage Plot - 3 Year Overlay
- Unique Fleet "Swarm" Plot easily highlights mis-performing vehicles
- Fleet Highest Fuel Usage
- Driver Highest Fuel Drawings
- Fuel Price Plot - Direct Comparison of your purchase price to UK Average Price.
- CO2 Emissions equivalence Tile
- Unfuelled Vehicle Tile - Updated every Minute - ideal for bus refuelling operations

Average UK Fuel Stock Price

Fleet Efficiency "Swarm" Graph

Real Time Support :

As your Support Agent can view the same data as you, at the same time, any issues raised can usually be resolved during a telephone conversation so that support is fast and efficient.
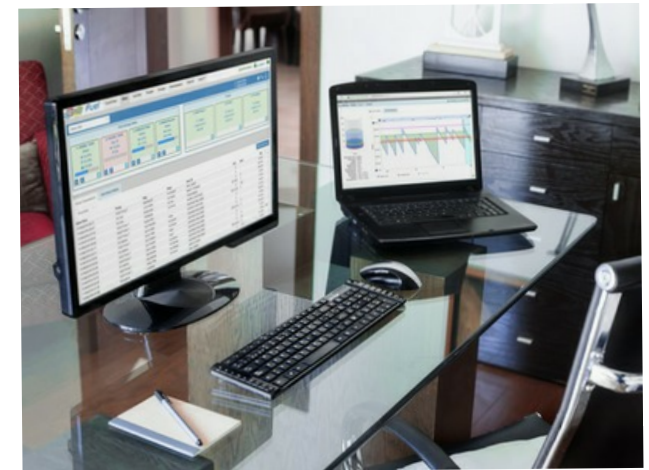
JIGSAW
TANKGUARD
Fuel Stock Management

- Clear Web Site - Minimum Training
- True, Real Time system - No polling required
- Systems update on Significant Stock Change
- Web Based (View Anywhere)
- Real Time View across all sites
- Interfaces to most common gauge types
  Only a Browser Required for access

Remote Stock Management

The Jigsaw TankGuard adds a near real time interface to any compatible electronic tank gauge system. The system reads the gauge constantly and updates the web site periodically, or on any significant stock movement (up or down).

The system doesn't just cater for the high end tank gauges but can accommodate even the most modest. Also, gauging isn't just limited to fuel or fuel oils but can be used on just about any liquid or even bulk powder and pelleted products.

TankGuard Web Service

The Jigsaw TankGuard Web service logs the data from the on site tank guard unit and presents it in a clear format, clearly showing low and critical stock levels, and graphing historic stock data. The system will also estimate the volume of deliveries in to the tanks, and predict when the tank will next need to be refilled.

The system can generate stock reports for any given date and time, and can even raise alarms if there is stock movements out of normal operating hours.
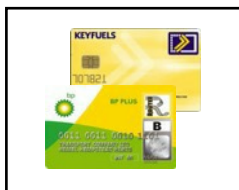
JIGSAW
ID OPTIONS

EasyFuel

Nozzle Based ID system - simply insert nozzle and fuel. ID Tag fitted to vehicles filler neck.

- No wires down fuel hose
- Optional OBD for auto-mileage capture

RFID Tags

Most common form of ID, easily fitted to vehicles key ring, very robust.

- Simple to use
- Low Cost
- Use for Vehicle,
- Fueller or Driver ID
- Existing Third Party
- Tags may be used

FuelGuard

Fitted to vehicle and converts pulse train to mileage. Radio linked to Fuel Island Terminal.

- Auto Mileage or Hours Run capture
- Verifies vehicle is present before fuelling

Fuel Cards

Although not as reliable as RFID tags, If vehicle already issued with fuel card then may be used.

- No additional per
- vehicle cost
- All major card types accepted (mag stripe only)

Fuel Wand

Mainly used in mobile refuelling - tag fitted to vehicle/plant read by hand held FuelWand scanner.

- Ideal for Mobile refuelling Operations
- Simple to operate
- Identifies Fueller and vehicle

Dallas Keys

Used in several older systems, these may still be used when upgrading to Jigsaw.

- Robust Design
- Fit to vehicles key ring

Laser Plate

Radio Linked rechargeable bar code scanner reads ID and data bar codes.

- Bar code can be used to limit fuelling quantity
- Low cost ID

Midas

Jigsaw Midas gives Auto Vehicle ID and Auto Mileage Capture just a touch of the Midas key.

- Miles or hours Run vehicle unit
- Fueller and Vehicle identified and mileage transferred

TeleTag

Developed to optimise Bus Refuelling operations. Auto ID's fueller and vehicle.

- Speeds up refuelling operations
- Use with FuelGuard for a complete Auto ID/Auto Miles capture system

JIGSAW
SYSTEM OPTIONS

Data Import

If you use Fuel Cards offsite, then the Jigsaw Web Service can read a file from your card provider so that these are listed along with your on site fuellings. A full picture of all vehicle fuellings is essential in order to calculate MPG figures, and to spot poor vehicle performance or fuel theft.

Data Export

It is sometimes necessary for fuelling data to be exported to other software systems such as fleet management packages, SAP, accounting packages and the like. The Jigsaw system can export data in many formats from simple text files such as CSV through Scheduled FTP transfer to Direct, real time Web Service data transfers.

Telematics Interfaces

The Jigsaw system has been linked, server to server with several Telematics (Vehcile Tracking) servers. When a fuelling transaction is received on the Jigsaw server, it connects to the telematics server to recover the mileage at the time of fuelling.

Automatic Reports

Jigsaw provide a range of basic report styles which can be configured to each users requirements. The resulting template may then be saved and scheduled to automatically run periodically and be e-mailed to the relevant user.

Automatic Low Stock Warnings

The jigsaw system may be configured to automatically send e-mails to the relevant users when fuel stocks fall below the tank reorder value.

Pump Types

Normal - Pump started by authorisation, fuel drawn decrements from associated tank.

Debowser - Pump started by Auth, but fuel drawn adds to tank stock.

Integrated - FM Display switches to Large Character Fuel delivery Display during transaction.

Delivery - Forms stock delivery transaction - used to automatically monitor tank inlet.

ID Options :

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- Magnetic Cards (eg Fuel Cards)
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- Jigsaw LaserPlate - Bar Code Reader
- Jigsaw Fuel Wand - Remote Tag Reader
- Jigsaw TeleTag - Auto ID/Mileage Capture

Access Options :

- Logged Fueller Mode - Fueller logs on once at start of fuelling shift - types in vehicle ID before each fuelling

- UnLogged Fueller Mode - As Logged fueller, but Fueller ID presented at each fuelling.

- Data Entry - Two unchecked data prompts - eg "Enter Fleet", "Enter Collar Number", "Enter Job Number" etc.

- Odometer entry - Miles, Km or Hours - No check, Under Check or Range Checking (Mileage must be larger than last but not too large)

- Fuel Limits - By Transaction, by Day, by Week or by Month.

- Driver ID using second tag or typed ID entry.

JIGSAW - FUELLING YOUR FUTURE

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