

RedRocet News



A MEMBER OF THE **Hudaco** GROUP

The official Deutz
Dieselpower Newsletter

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Dear Colleagues



It is that time of the year where we can look back with 20:20 vision on what had transpired with business and our own lives. It is also nice to reflect on our responses to those influences, the plans we had for the year 2010 and what has come of them.

The past year for DDP has been one of abated breath – one where we kept our fingers crossed for an upturn in global economy, that the Word Cup would be a success, that resource prices will stay at levels where our main customers can still keep on operating, that the rand does not strengthen dramatically, etc. These are factors that can influence DDP's results substantially and are determinants that affect the way we do business. Sales in DDP started slow during the first two quarters of 2010, and one could clearly see a positive turn-around in some market segments after the World Cup. Sales results showed a consist-

ent increase from July and that can only transpire in a good start for the year 2011. The genset and industrial market segments did not respond well to these stimuli and are still bobbing along at the bottom end of the response curve. DDP made adjustments along the way to keep people employed as long as possible but in the end we had to take more drastic steps at the Kimberley and Port Elizabeth branches. It was important to maintain Deutz presence in these areas and that is the reason why the branch in Port Elizabeth was downsized appropriately and the Kimberley branch (with a service partner in close proximity) were closed.

There were however also a lot of positive initiatives. DDP launched a very successful HIV/Aids workplace program in Johannesburg where we achieved a 100% attendance at the voluntary counselling and testing session. The most profound success however is that 59% of the people never tested before, and they now know their status. This exercise will be rolled out to the major branches in 2011.

This workplace program needed to be kept dynamic and that is why we introduced the on-site clinic. This clinic, apart from primary healthcare and chronic disease screening, provides basic counselling and a referral service for troubled employees. Another positive intervention was to send all sales support people to Cologne,

Germany for product and market training and by all accounts it went very well. The content of the training course was concentrated on the latest product technology and sales techniques on how to sell value – the Deutz war cry. Feedback from the personnel was that it was long overdue and an experience that they will not easily forget.

Furthermore, we have also introduced a Field Service department in Johannesburg. It was introduced in January 2010 with the appointment of a Field Service Foreman and it turned out to be an extremely successful intervention. Customers are overjoyed with the increased focus on serving them better and this department can only grow to bigger heights in 2011. This is again testimony to the gaps in the value chain that still exists out there – all we need to do is to get to know the customer's needs in the same way as if we are employed by them, and then react to those needs.

Looking back, I can thus say that it has been a very fruitful and exciting year and I am grateful for your contribution and commitment to this great company. To those of you who have already celebrated your religious festivals – I trust you had a lovely and blessed one. To those that celebrate Christmas – have a merry and blessed Christmas. Lastly to those that take a break – have a good one, travel safely and I am looking forward to see you back at work in the New Year.

Best wishes!

Ossi

SHEQ Management System



SHEQ News

Deutz Dieselpower (DDP) had their ISO re-accreditation audit during the first week of May the 3rd to 7th. We are

proud to announce that we have been re-accredited on the new ISO standards namely: ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007.

A new Monitoring and Measurement Programme (MMP) has been implemented into our current Environmental Management System ISO 14001:2004. The purpose of this programme is to ensure that all DDP staff participate in minimizing the environmental aspects and impacts and maintain environmental protection within DDP. This will include the reduction of pollution within our grease traps, lowering

noise levels, lowering of resource usage for example reduced water and electricity consumption.

DDP Johannesburg in collaboration with Global Occnet has also implemented a clinic stationed at Tunney Road to better serve our staff with general health and safety ailments. The clinic will initially start out with the monitoring of chronic conditions, minor illnesses, do medical examinations and personal health assessments. The clinic facilities and HIV awareness will be rolled out to all DDP branches within 2011.

Shani Ellis



Training



Training And Test Equipment For Common Rail Engines

The Tier III Common Rail System has become more common in new equipment as Deutz, a responsible engine manufacturer conforms to the latest emission legislation to ensure better emissions and a brighter future for all. Fuel cleanliness is absolutely essential for the common rail system as water droplets and dirt particles will cause malfunction of the high pressure pumps, electronic injectors and other components and jeopardising engine operation. When storing injection fuel lines, ensure the original packaging remains intact until usage and that caps and locking plugs are fitted to open fuel lines to prevent any dirt ingress. Deutz have specifically designed a high efficiency fuel filtration system to assist with the supply of clean fuel, therefore the use of non-genuine filters is not recommended and will affect the manufacturers warranty should they be used within the warranty period. The Tier III Common rail System is fitted to the Deutz 2012/2013/2015 and due to the complexity of the Electronic and Fuel Systems, the service, maintenance and repair practises requires highly skilled and Deutz-trained technicians to conduct these tasks successfully. It could appear that repairs done by untrained technicians has been successful but might after a short period of engine operation fail again rendering very high repair and downtime costs. The solution to prevent such incidences is to attend technical training at our training facility in Elandsfontein and on the use of specialised testing equipment to conduct tests on the engine whilst fitted to the machine. The test equipment is sophisticated and the function thereof will be explained during the training programme. Both theoretical and practical training are given on a common rail engine to ensure that all participants receive the required hands-on experience. The test equipment has to operate under the high fuel pressure loads of up to 2000 bar and the safety aspects around the servicing and maintenance of the common rail fuel system is carefully addressed during the training session.

The testing equipment will help to reduce time spent to determine the cause of engine malfunctioning related to the common rail injection system, and is an important tool for the field service and workshop technicians.

Here are some examples of the test equipment:

Signal Transmitter (Part No 02937495)

This is a hand held unit sending impulses to the injector to identify if the injector is working.



Hydraulic Pressure Generation (Part No 02937496)

This tester works in conjunction with the signal transmitter to test injector spray pattern.

High pressure Test Bar (Part No 02937498)

Whilst the engine is still intact this equipment can test the pressure within the common rail.



Serdia Interface

The serdia interface with connection cable is needed to connect to and read the ECU data on the Laptop. The Serdia is available in different access levels depending on the user requirements.

Breakdown Box (Part No: EMPBREAKERBOXKIT)

The breakdown box allows the technician to bypass the vehicles wiring to determine if the fault is with the engine or vehicles wiring system.

The presence of the above testing equipment in the workshop and in the tool box of the field service technician together with the appropriate training given by DDP will help speed up the correct diagnosis on the common rail system and therefore greatly reduce the down time of the equipment. Should you wish to attend any of our product training courses please contact either Jannie Bekker or Attie Dadswell on 011 923-0600 or by email: jannie@deutz.co.za or attie@deutz.co.za

Attie Dadswell

Engine Maintenance



Do Proper Maintenance Or You Will Get Bitten

Like all technical products, diesel engines must provide their owners and users with the greatest possible benefit. "Benefit" being defined as "trouble free service and long life".

The correct maintenance and operation of a diesel engine is critical to achieve acceptable life cycle costs. In many operations diesel engines achieve less than 60% of their possible life. This is mainly due to poor maintenance and incorrect operation.

Where short term profit is the key consideration, a blinkered view often ensues and the wider prospective is often ignored. In this kind of atmosphere unacceptable risks are sometimes taken. The results can range from the wrecking of a tanker because someone did not do the maintenance properly, to a car or truck blowing out clouds of black smoke because no one has bothered to free a stuck fuel injector.

It is only the scale of the consequences that differs.

1. Should a diesel engine have to smoke?

Modern diesel engines have to fulfill some very strict requirements:

- High specific power output
- Low fuel consumption
- Low combustion noise
- Low gaseous pollutant emission
- Minimum black smoke

The unwanted black some arises from:

- Interference with fuel injection pump.

Attempts are often made to increase power output by injecting more fuel at the cost of greater smoke emission. Reduced service life due to greater mechanical and thermal stresses on the engine is one of the results as well as higher fuel consumption.

The question to be asked is why does the pump need to be calibrated at a cost only to change all the settings later?

2. Is it acceptable to allow a diesel engine to suck in dust?

It is often found that someone makes an economical decision as to the maintenance of air filtration systems. Maintenance staff are told to put into practice any means which will extend the life of the filters at the cost of losing engines. Dust kills engines.

Dust acts like emery on all high precision engine components.

- Dust in the combustion air leads to heavy wear on the piston rings, pistons and cylinders and valves. In the process both dust and the particles of material worn away enter the lubrication oil.

The service life given for an oil filter is estimated for normal engine operation and is shortened accordingly by heavier loads of impurities. In extreme cases clogging can lead to filter back pressure reaching excessive levels.



In this case a by-pass valve opens and unfiltered oil is returned to the oil system. This leads to heavy wear in all engine components lubricated by oil, such as bearing, gears and pistons as well as in components that maintain and control the flow of oil such as the oil pump and control valves.

You cannot prevent dust, but you can protect your engine against it:

- Correct filtration is essential
- Correct maintenance is another
- Make sure there are no leaks in the air intake system
- Monitor your lube oil for contaminants
- Replace damaged parts immediately

3. The correct lubricating oil for your engine

Lubricating oil is a direct maintenance cost. It is often purchased without regard for the manufacturers' guidelines.

Lubricating oil is a topic which deserves coverage all of its own, however in this context the following are prerequisites are paramount for engine durability:

- Use only those lubricating oils which conform to the prescribed grade
- If the engine is to be used in severe operating conditions, use only high quality oils.
- Carry out oil changes at the prescribed intervals. Lubricating oils themselves are also subjected to 'wear'
- Take account of the fuel's sulphur content
- Lubricating oil additives are unnecessary
- Observe specified viscosity
- Use the manufacturer's specified oil filters
- Discuss any oil related problems with your supplier

4. Coolant maintenance

Engines need to be cooled – water due to its high specific heat capacity is particularly suited to this task, but it also needs maintenance. Water is simply not water.

The quality of the world's water varies considerably. Water is enriched with dissolved minerals and salts, organic and inorganic materials, microorganisms, etc., which all influence the water's corrosiveness and tendency to form calcium deposits.

Thus to improve the suitability of water as a coolant, it can be mixed with:

- Anticorrosive oil
- Chemical additives
- Antifreeze

Maintenance: The additives in cooling water, in particular in anti-corrosive additives, are used up during the operation of the engine.

The loss of coolant due to leaks or evaporation, the ingress of raw water or combustion gases etc. weakens or removes the protection offered by the additives. It is essential to replace the cooling water when:

- There has been an ingress of a large amount of raw water
- There is marked opacity as a result of corrosion particles or other entrained articles
- The emulsion has broken, indicated by floating oil

Effective cooling is vital to the successful operation of an engine. Maintain your water!

The above points are only the tip of the iceberg. Maintenance embraces much more. To any artisan, engineer, fleet owner, end user it should be a way of life.

Maintenance is not an unnecessary cost, it has an attitude all of its own.

Correct maintenance management is imperative to ensure satisfactory engine life. If this is not done correctly you will not achieve maximum engine life and ultimately increase the operating costs of the equipment!

Have a positive attitude and all will be well. Ignore it, don't do it, it bites.

Hardest hit will be your pocket!

Lionel Salmon

Risk Management



EDP News

Deutz Dieselpower is busy creating a BCP plan BCP is short for Business Continuity Planning. BCP is a term that covers both disaster recovery planning (DRP) and business resumption planning. BCP is the preparation and testing of measures that protect business operations and also provide the means for the recovery of technologies in the event of any loss, damage or failure of facilities. Basically it is a plan we create so that in the event of a disaster where for example the building burns down we know how to get the company up and running in the shortest amount of time. We are planning to complete the project by 30 June 2011.

Every business can experience a serious incident that can prevent it from continuing normal business operations, and this can happen at any time. This can range from a flood or explosion to a serious computer malfunction or information security incident.

The BCP team has a responsibility to recover from such incidents in the minimum amount of time possible.

This recovery process requires careful preparation and planning.

Navneet Budhoo

Marketing



Electra Mining Show 2010

DDP exhibited at the Electra Mining Show during the week of the 4th – 8th of October 2010 at the Nasrec Exhibition Centre (JHB). Our exhibit concentrated on mining and diesel power generation products and services. Our show case products were the engine ranges D914 L04, BF4M2011C, TCD2012 L06 2V and BF6L914 EMR, highlighting the new exhaust emission compliant models, and related exhaust emission reduction technology (DVERT®)

This year's exhibition was very well attended throughout and by a very impressive and diverse market sector. The highlight was the high level of understanding of the new EU and EPA legal exhaust and engine noise reduction standards and the resultant influence on the price, availability and machine envelop design and development.

We all believe this development will have the greatest effect on research and development (R&D) with regards to engine design and resultant machine / equipment designs.



Our focus continued to be aligned to the ever changing demands for quality aftermarket service and real value-add service options. Coupled to this we had a massive emphasis on the promotion of using genuine Deutz spare parts to ensure and maintain market leading engine operating performance levels. We look forward to embracing all these new developments and turning them into real customer value added service and support.

The sales and marketing team is looking forward to Electra Mining 2012.

Rowan Michelson



Deutz Strategies For Tier IV Interim



Exhaust gas after treatment DPF (Diesel Particulate Filter)

Exhaust gas after treatment is necessary to fulfill the latest exhaust emission regulations. Deutz have two different strategies:

- Engine optimized for particulates, SCR-catalyst (Selective Catalyst Reduction)
- Engine optimized for NOx, Particulate trap system

Deutz engines for Tier IVi:

- Industrial Application (up to TCD7.8) => Particulate Trap System
- Agripower and TCD12.0V6 and TCD16.0V8 => SCR

Regeneration:

There are two options of Regeneration that can help to get rid of soot = combustion to CO2

Option 1: Active Regeneration

- Combustion with remaining oxygen in the engine exhaust
- Requires temperatures > 600°C
- Temperature level can only be reached with additional heat
- Temperature levels can only be reached with additional load/time/software model

Option 2: Passive Regeneration

- Combustion based on NOx
- Temperature range 250°C to 450°C optimal
- Continuous process during normal operation
- Requires NOx/Soot-ratio >50 => only possible below 130KW
- Requires load profile with sufficient exhaust temperatures

Passive Regeneration (CRT)

- Continuous Regeneration
- The passive CRT regeneration (Continuous Regeneration Trap) is a catalytic process and needs no burner.
- It is a temperature dependent process and starts at an average filter temperature of 250°C and reaches full functionality at 300°C
- It also depends on NOx/particulate ratio. This ratio should be >50.
- The CRT regeneration is suitable for applications with high loads.

Active Regeneration

Deutz EAT-System (Exhaust after Treatment) with active regeneration consists of a Diesel Oxidation Catalyst (DOC) and a Diesel Particulate Filter (DPF)

To reach the necessary temperatures for regeneration of the filter:

- A secondary injected fuel amount (HC) is mixed with the exhaust gas before arriving at the DOC.
- In the DOC an exothermic reaction of the HC and oxygen increases the exhaust gas temperatures up to 650°C

Partial Flow Burner:

- Mounted at the turbocharger outlet
- Increases exhaust gas temperature before the DOC (Light Off Temperature DOC appr. 300°C)
- Vaporizing of HC-Injection=>Energy of HC is transported as steam and not as drops.

Diesel Oxidations Catalyser (DOC)

Increases oxidation of:

- Unburned hydrocarbons (HC)
- Carbon monoxide (CO)
- Diesel injection system for regeneration
- NO to NO2, depending on coating after reaching 300°C

The following chemical reaction takes place: **HC, CO, NO+O2 is turned into CO2, H2O, NO2**

In the next issue we will discuss SCR System (Selective Catalytic Reduction)

Selby Mokgawa

Cycling For Charity



DDP Social Responsibility

DDP, along with other leading industry players – invited by Sandvik, was recently offered the fantastic opportunity to be part of a charity cycle tour to raise funds for Sunrise Creche, an orphanage based in Burgersfort. A group of 30 cyclists, supported by two motorbikes, two busses and four cars embarked on an adventure that would see them cycling almost 600km, traversing mountain passes, braving howling winds, pouring rain, hailstones and kamikaze traffic.

The adventure began at the Vaal River, Stonehaven with the first nights stopover 140km's away in the Free State town of Reitz. The team braved howling winds to arrive in the town of Reitz after 2 stops along the way to refuel and many hours of getting to know each other on the road. Day two brought grey skies and regular downpours before the team passed Sterkfontein Dam and crossed into KZN via Oliviershoek Pass – a further 150kms. Passing through some picturesque KZN areas, brought the team on Day three into Estcourt and to the foot of the daunting Griffens Hill mountain climb (a cyclists ultimate achievement). After conquering this climb, the team descended into Mooi River and onto the scenic midlands. Mother Nature did not grace the cyclists with clear skies as they passed through Nottingham Road towards Midmar and the group finally pulled over to end the tour at the Dam after a 180km epic journey through drizzle and mist!

The MTN Amashova Cycle race was the last leg of the tour which took the team from Pietermaritzburg, following the Comrades route to Durban – don't anyone ever try tell you that it is downhill from Pietermaritzburg to Durban – it is clearly not!!!!

Well done to the team for an outstanding event and the contribution they have made to help in improving the daily lives of those at the orphanage.

Rowan Michelson

