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BREAKING NEWS



Gearbox Motor braKe 3 Forces



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NEGAWATTS—"the cheapest, cleanest, fastest energy source available".

There is a renewable energy resource that is clean, economic, abundant and readily available. It allows the reduction of carbon emissions, less dependence on foreign oil and reduced energy costs and, unlike coal and oil, it does not pollute the atmosphere. This miraculous resource is called **energy efficiency**, and is often ignored in the big talk about alternative fuels, nuclear revival, and the green economy. It is a simple concept: waste less energy. Or better put, consume less energy to achieve the same amount of energy output. It would be much less costly and destructive and much quicker to reduce demand through improved efficiency rather than increasing supply through more new power plants. A push to save these "negawatts" instead of building more megawatts could help save considerable amounts of money. Efficient energy use is achieved primarily by more efficient technology or processes rather than by changes in individual behaviour. Doing less with less may be admirable, but efficiency is doing the same, or even more, with less. Several studies have found that a global effort to increase efficiency with existing technologies could have "spectacular results" (something like a 20%

unit having continuous adjustment which can vary its driving characteristics to meet the needs of the load will give significant energy savings. Just by reducing the weight of a vehicle will significantly improve fuel economy. Hence the increasing use of composite materials in modern car bodies. Another advance offered by hydraulics to the mobile machinery market is the use of regenerative braking systems. These can recover energy which under "normal" conditions would otherwise be dissipated. All the above can be achieved,

GREENDAYS!

saving of world energy demand by 2020). There are two ways to save energy without any deprivation - use more efficient machines, and use these machines more productively. Improved efficiency is the main way forward in tackling global warming, energy dependence and price volatility. It may not be the final solution, but it is currently the best we have. We should not be investing billions in clearly inferior solutions until we have fully explored this. Many motors operate at constant parameters, but a

provided that the components used have two vital features: high mechanical and high volumetric efficiencies. SAI has always been "green", not only because of the colour of its logo, but also because the design and the unique characteristics of its motors have always offered a level of efficiency superior its competitors. High volumetric and mechanical efficiency, combined with the availability of displacement adjustment makes SAI the market leader for enabling dramatic improvement of transmission

efficiency. Several projects developed in recent years have been guided by this one thought - that of increasing the efficiency of the driven machine. Speaking of standards, certain types of hydraulic motor, although extremely competitive on price, are pitiful in terms of efficiency. This results in considerable losses and heat generation leading to higher

overall operating costs. The definition of more stringent standards in terms of efficiency would result in banning the use of some of these motors, not because they are unable to do the job, but simply because they consume too much energy. In these difficult economic conditions, all parties should be striving towards making improvements in terms of technological development. Defining a minimum level of efficiency for the entire sector would offer a far better perception of the hydraulics industry as a whole.





Mobile mining machinery



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SAI is the best choice for you to improve YOUR mining technology, helping towards the enablement and optimisation of extraction methods deep underground. One typical example is that of the dual displacement BD1 hydraulic motors supplied to our Polish distributor, IOW TRADE.



improvement in working conditions for machine operators who work in very severe conditions of up to 40°C with humidity levels of 100%, a salty atmosphere in which it would otherwise be impossible to breath. This gives the miners the possibility to work continuously in safety thanks to the continuous storage that allows the combination of both the basic and the technically

The motors are used on 20 machines which carry explosives underground. Enabling the achievement of a maximum speed around 28 km/h, the motors are used as service stock; this means they are stored underground ready

BD1's stored underground for any use the machine may require. Current mining technology has developed an alternative motor machinery replacement system. This way there is a continuous

advanced features of mine production. SAI is never far away, look deep underground and you will find our hydraulic motors, even 1400m under your feet

INTRODUCTION TO EVENTS OF NEXT SEASON

SAI Events 2009	
April 20-24 MDA (Hall 019 Stand D14)	Hannover, Germany
April-May 27-2 AGRISHOW (Italian Hall Stand 401)	Ribeirao Preto, Brazil
June 2-6 CTT (Hall 4 Stand 308)	Moscow, Russia
June 9-12 NORSHIPPING (Hall D Stand D03/32B)	Oslo, Norway



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O.L.I.O. SRL

Founded in 1983, the company OLIO srl manufactures high quality components for SAI S.p.A. hydraulic motors. OLIO is a highly equipped machine shop, which ideally compliments the SAI requirement for quality of the highest level. The OLIO commitment to quality is matched by a critical focus on customer service and technical support. When combined, this ensures that the staff at OLIO work closely with every customer to provide advice and guidance at each stage of development and production, thus enabling

the delivery of the most appropriate engineering solution; often to very tight, demanding deadlines. A constant focus on utilising the most modern, technically advanced machines together with a whole range of materials and treatments enables OLIO to be extremely competitive in today's demanding economic climate. One of OLIO's current challenges is to continue the devel-

opment and production of a wide range of planetary gearboxes and brakes featuring innovative and compact design for use with the SAI main product group – hydraulic motors.



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INDUCTIVE SENSOR



Newly developed proximity sensor, capable of reading different impulses for each motor revolution. Available on motor classes 05 & 2 (see article on page 4), it is supplied with a complete sub-assembly, the user can easily change the sensor cartridge allowing the efficient maintenance of the hydraulic unit it is applied on.

Description: Rotary sensor of the proximity type
 Item Code: Inductive sensor
 Mass: 83 kg
 Data Sheet: 090905.1P

TV2.5



Seven pistons, variable displacement hydraulic motor. The seven pistons allow to get a higher continue torque enabling higher power transmission stability. Based on the experience of BV variable displacement motor series, it can be provided with minimum displacement equal to zero. The TV2.5 can reach 100 kW as peak power. Its case is composed of three parts in order to guarantee extreme modularity and lightness.

Description: Seven pistons design, variable displacement hydraulic motor
 Motor Code: TV2.5
 Mass: 90 kg
 Power: 100 kW
 Data sheet: 080880.2P

GMK3F



Well proven concept, high quality and high performance. Very precise and extremely reliable this product can operate in most extreme applications from wheels to industrial fields. Based on GM motor series, the unit is available with two different reduction ratios. An hydraulic negative disc brake is fitted between motor and gearbox reaching a breaking torque of 2000Nm.

Description: Five piston design, fixed displacement hydraulic motor
 Motor Code: GMK3F
 Mass: 70 kg
 Power: 45 kW
 Data Sheet: 0808893.1P



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SWEEP YOUR DOUBTS AWAY... CHOOSE SAI!



As the leader in research, development and production of radial piston hydraulic motors, SAI regularly designs bespoke products and accessories for a wide range of industrial and mobile applications.

A perfect example of this was when Nilfisk, who manufacture the new generation sweeper pictured above, wisely chose SAI to be the development partner for this, their latest project. The machine is powered by a pair of SAI, P2G type motors, to which the front wheels are fitted. The motors incorporate service and parking brakes, which can also be used for dynamic braking should it be required, and an integral **rotary sensor** of the **proximity type**.

This **sensor**, feeds information back to the on board computer regarding the vehicle's road speed and direction of rotation.

The sweeper is controlled by the operator through vehicle's electronics (see the picture), enabling

tight manoeuvrability and a high degree of flexibility in both speed and position.

The electronic control system receives information from various points on the machine allowing the feed back of both acoustic and visual signals to the driver regarding, for example, reverse gear selection. It also prevents hazardous operational features such as the opening of the rear door or the lifting of the tank whilst the vehicle is moving.

The rotation sensor sub assembly is designed in such a way as to allow the

easy replacement of the sensor cartridge thus simplifying maintenance.

As a result of the current Market situation customers are looking to reduce costs without compromising quality and/or performance. SAI sees this as a challenge to continue improving its already high production standards, by offer-

ing to the Market a range of quality, technically advanced and economically priced products.

The integration of speed sensors and brakes in the hydraulic wheel motors fitted to the Nilfisk sweeper, is just one simple example of how SAI can be the partner to help **YOU** to resolve **YOUR** company's technical problems.

Sweep away your doubts... Choose SAI to get YOUR machines Powered Through Efficiency!

