

THE **SALi** JOURNAL

Year 10, Issue 2 2012

WELCOME TO

SALi

POWER THROUGH EFFICIENCY



ALTERNATIVE FLUIDS?

*Increase
your productivity
with SAL efficiency*

IT'S MINE LIFE

POWER THROUGH EFFICIENCY

APPLICATION FOCUS

P2 G+R09 MAXIMIZE TORQUE MINIMIZE SPACE

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WELCOME

TO THE SAI JOURNAL!

*Dear Reader,
It gives us pleasure in presenting you the latest SAI Journal.*

The theme of this issue is Mining and everything relating to mines.

Nowadays, the increased demand for raw materials generated by the industrial development within the emerging countries is making the mining sector a major market for our products and services.

Operational efficiency and safety demands components of a quality that can offer machine designers the confidence that they will achieve optimum performance and reliability from their component selection.

Also, with environmental issues becoming increasingly more important, mining operations are turning greener every day meaning that equipment and operational strategies have to adapt to have a lower impact on the world we live in.

Similarly, the approaches which are typical of mining generally have metaphorical application in other "ecosystems" such as the business environment.

In fact, every company is striving to maximise the extraction of added value from its services and products, by employing a similar focus and approach to those required in mining for resources that lay deep underground.

The extraction, the selection, and the refinement of the values present in every company require strategy and a good methodology, but most of all require people.

Without valuable people it is impossible to extract value from an organisation.

SAI is focusing on people offering both technical and inter-personal skill training in order to create the right team.

Likewise SAI is constantly developing processes through which the integration of modern communicational tools, can create additional value for SAI customers.

Thus, what we really need now is to receive comments and feedback from you on what is really valuable to you!

*Enjoy reading!
Vittorio Pecorari*





IT'S MINE LIFE

... The latest SAI products offer increased power density, higher rotational speeds, lower heat generation, continuously variable displacement control and a level of efficiency which is second to none. These characteristics are making SAI Hydraulic Motors “precious” products that are gathering the attention of new customers every day ...

One definition of Mining is - the process or business of extracting ore or minerals from the ground. Mining, in a wider sense, can be the extraction of any resource that cannot be grown or created. Mining has been a part of human life since pre-historic times and remains importantly so to the present day. We still rely heavily on resources that are currently extensively mined such as oil, gas and coal, as well as metallic and non-metallic minerals. Any modern company can be seen as a mine. Today, many resources are of a different nature, not necessarily laying deep underground. Within any given company or organisation there are human resources that require mining and nurturing, for them to be utilised more effectively.

It is a mine of ideas, it is a mine of knowledge, it is a mine of experiences, it is a mine of information or, in other words, it is a mine of real value. It is therefore important within a company to dig, to collect, to select, and to extract all these valuable resources in order to develop the tools that can improve the potential of the company itself. First of all, a question must be asked: “how does one distinguish what is valuable from that which is not?” The answer to this

key question is relatively simple and straightforward. In a company, the valuables are those things that the customer really desires. This first notion is extremely important to discriminate all the activities that form the basis of the company’s success from those that are only burying the “value”. Nowadays, customers require products and services more and more specifically tuned to their individual needs with the highest level of efficiency. Therefore, everything that is not of value to the customer has to be reviewed as it represents a potential waste of resources.

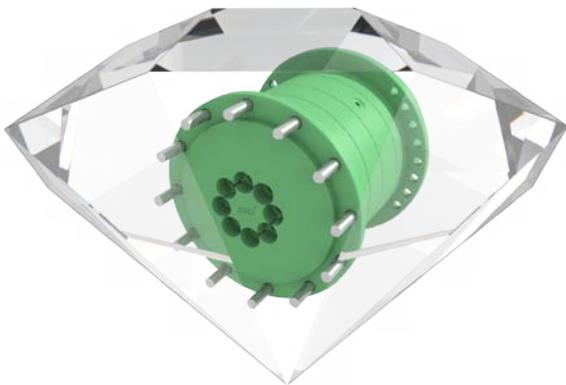
By focusing on the product itself, it becomes clear how it’s “value” increases when it offers the customers new ways of being used, additional functionality, better performances and higher efficiency. All of these features come from a program of continuous, and sustained investment in Research and Development. The latest SAI products offer increased power density, higher rotational speeds, lower heat

CONTACT PERSON

Vittorio Pecorari President | president@saispa.it

generation, continuously variable displacement control and a level of efficiency which is second to none. These characteristics are making SAI Hydraulic Motors "precious" products that are gathering the attention of new customers every day. When it comes to services, these are far more "valuable" to customers when they are tailor-made, when they are "locally" available, and when they are application specific. For a company this means the development of an organisation that is flexible and responsive, which is geographically distributed and that possess a deep understanding of applications and customer needs, and that offers solid customer support. SAI's focus on a flexible organisation dates back more than twenty years, when it was decided to streamline the business through the establishment of a multiplicity of operational units instead of a single centralised conglomerate.

Likewise SAI has always placed great importance on the geographical expansion of the business, opening its own operations in emerging markets much earlier than our competitors offering local customers unparalleled services and support. All of this is very important and recently SAI has been focusing on these developments even more. However, as it is easily understandable, increasing the value of the products and the services offered, starts by increasing the value of the people within the organisation. Without people there is no organisation. That is the reason why SAI employs continuous training and development of its personnel through both specific and interpersonal skills training. The ever changing business environment requires people that can rapidly adapt and repeatedly create value for its customers rapidly changing needs. This is how SAI has organised its Mine Life!



... SAI EMPLOYS CONTINUOUS TRAINING AND DEVELOPMENT OF THE PERSONNEL THROUGH BOTH SPECIFIC AND INTERPERSONAL SKILLS TRAINING...

ALTERNATIVE FLUIDS?

INCREASE YOUR PRODUCTIVITY WITH SAI EFFICIENCY



Mines are among the most dangerous of work places. Machines that operate underground must feature extreme levels of quality and reliability, to guarantee the safety of the Miners.

SAI has recently increased the volume of its sales in the mining sector providing solutions that can meet the most demanding needs of the machine producers.

SAI motors, thanks to their design, are capable of running successfully on the whole range of special and fire resistant fluids available on the market; be they synthetic, bio degradable or water based 60:40 or even 5:95.

In most cases no changes are required to the standard motor configuration although the extremes of the working cycle of speed and pressure must be carefully considered due to the reduced lubricity of some of these fluids that causes a reduction of bearing lifetime.

With certain fluids, notably of the Phosphate Ester type, it is necessary to replace the rubber components with special materials to prevent swelling. This however, has the added advantage in that, for example special seals can withstand much higher working temperatures than standard seals can, and metallic seals are suitable also for extremely low temperatures.

Our Technical Dept. has a depth of experience in the study of applications operating with alternative fluids and is always prepared to provide customers with the professional support required during product selection.

The many successful applications we have been involved in over many years give us the confidence to propose SAI Motors wherever special fluids are to be employed.

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Marco Costaggu Technical Supervisor | technical.supervisor@saispa.it

SAI INDIA LIMITED

The SAI INDIA LIMITED is the SAI Hydraulic Motors subsidiary operating in the Indian market since 1989.



With more than 20 years of experience in the local territory, SAI INDIA is a leading company in the manufacturing of the high torque SAI radial piston hydraulic motors and drive units. SAI INDIA offers a complete modern engineering service, guaranteeing qualified assistance during the whole sales process. The brand new manufacturing plant, located in the Whitefield Industrial Area, is equipped with the most modern and technologically advanced machineries which allows to deliver products compliant to very high standards of quality. Thanks to its skilled engineers, constantly interacting with OEM companies in order to provide them with suitable customised products and throughout its excellent marketing network, we are proud of announcing that SAI INDIA is currently dominating its market, increasing its turnover year by year. Do you want to know the SAI INDIA secret? Well, simply make the customers' access to the company services much easier.

All Customers and potential Customers are welcome to visit the SAI INDIA LIMITED premises at 26/C, Doddanekkundi I.A. Phase 1 Post Mahadevapura Bangalore 560048 India



SAI INDIA LIMITED

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THE NEW BUSINESS ERA



The beauty of business is that you can debate hundreds of different techniques typically used to attract clients using traditional methods and, by employing modern technology, results should follow, but maybe they won't be the best results.

Every company has its own recipe for taking care of its customers as efficiently as possible providing service and assistance wherever it is required.

To reach our objective we count on passionate and professional people, new ideas and a wealth of experience in the field of fluid power.

At SAI, we hold the belief that the secret of success is putting our customers first and never forgetting that their sole satisfaction is our goal!

Thanks to the wide range of hydraulic components and systems offered for various applications, and due to the close collaboration between the Sales Dept., designers and machine manufacturers, we are able to provide our customers with highly efficient and customized solutions.

To facilitate the most efficient use of our products, we always adopt a specific approach to the analysis of any given application, deeply involving the Engineering Dept. in project development, resulting in us being able to guarantee the complete fulfilment of our clients' specific needs in addition to ensuring the quality of the finished product.

Our Marketing and Sales activities are also prominent in the constant release of promotional material that accompanies the launch of any new product to the market.

New promotional methods have been planned in order to assist our worldwide sales network, in the search for new customers and to reach a larger target audience by drawing attention to the main technical aspects that make our products so attractive whenever, and wherever, extremes of efficiency and quality are required.

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R09

PLANETARY GEARBOX, RIDUTTORE PLANETARIO
R09



Technical Parameter / Parametri Tecnici

		R09	
Maximum Torque / Coppia Massima in Iniezione	Nm	600	
Max. Output Torque / Coppia Massima in Uscita	Nm	600	
Cont. Torque Limit / Limite Coppia Continua	rpm	133	
Max Output Speed / Velocità Massima in Uscita	rpm	133	
Approximate Mass / Massa Approssimativa	kg	59	
Case Oil Capacity / Capacità Olio Coppia Olio	l	0,8	
Max Working Pressure / Pressione Max in Circolazione	bar	Peak / Pico	0,5
Recommended Oil / Olio Raccomandato		SAE 68 EP	

¹ With gearbox breather valve and separate lubricating oil. / Con valvole di sfogo sul riduttore e lubrificazione separata.

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121078.2

R09 GEARBOX

New generation planetary gearbox, it is a very compact unit featured by high mechanical efficiency able to convey remarkable high starting torque. Particularly suitable for applications requiring accurate transmission control.

Description: Very compact planetary gearbox
Gearbox code: R09
Mass: 59 kg
Reduction Ratio: 6.231:1
Data sheet: 121078.2



TS 8

TS 8



TECHNICAL PARAMETERS PARAMETRI TECNICI

		2700		3600		5000		6000		6700		7400	
Equivalent Displacement / Cilindrata Equivalente ¹⁾	cm ³ /rev	2667	3536	4950	5700	6300	7120						
Stroke / Corsa	mm	38	44	52	56	60	62						
Stroke (C/C)	mm	58	58	58	56	56	58						
Specific Torque / Coppia Specifica	kg/cm ²	42,45	34,62	29,53	32,28	32,54	31,68						
Pressure Rating / Pressione Nominale	bar	400	400	400	400	350	300						
Peak Pressure / Pressione di Pico	bar	400	400	400	400	400	400						
Case Oil Capacity / Capacità Olio Coppia Olio	cm ³	120 ¹⁾	120 ¹⁾	90	90	90	90						
Max. Output Speed / Velocità Massima in Uscita	rpm	120 ¹⁾	120 ¹⁾	115	115	115	115						
Max. Output Torque / Coppia Massima in Uscita	Nm			4300									
Case Torque Limit / Limite Coppia Continua	Nm			3000									
Peak Torque / Pico di Coppia	kgf			220									

TS 8

Approximate Mass / Massa Approssimativa	kg	380
Case Oil Capacity / Capacità Olio Coppia Olio ¹⁾	l	5,5
Max Working Pressure / Pressione Max in Circolazione	bar	Peak / Pico
		5
		Cont.
		1

¹⁾ Equivalente displacement = stroke (C/C) x displacement (cc) x number of pistons (N) x 0,125
²⁾ For higher speeds plus correct Oil Technical Data. / Per velocità più alte consultare l'olio Tecnico SAI.
³⁾ This value, the stroke and the gear tooth are the depending oil. / Questo valore, il passo e il numero di denti sono in relazione alle diverse oli di lubrificazione.

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121138.1

TS8 MOTOR

Seven piston hydraulic motor with integrated gearbox, also available with incorporated negative disc brake and/or wheel hub. Available with fixed, dual and variable displacement, featured by continuous torque of 35000 Nm, it is able to convey 7300 cc in 50 cm. It is the most compact solution in the market, perfect to improve performances compared to: radial CAM motors, axial piston motors + gearbox.
Description: 7 piston hydraulic motor and integrated gearbox
Motor code: TS8
Mass: 380 kg
Power: 220 kW
Data sheet: 121138.1 30



INTEGRATED SPEED SENSOR

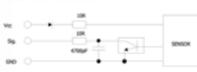
INTEGRATED SPEED SENSOR
SENSORE DI VELOCITA' INTEGRATO



Technical Parameters / Parametri Tecnici

Operating Temperature / Temperatura di Lavoro	-40°C / +100°C
Storage Temperature / Temperatura di Stoccaggio	-40°C / +100°C
Vibration Resistance / Resistenza a Vibrazione	1mm / 1000 Hz - 10g
Degree of Protection / Grado di Protezione	IP 68
EMC	E.C.T. - CLASS "C" - 1000mV, 1+4000Hz
Reverse Polarity Protection / Protezione da Inversione di Polarità	100mA PER 10
Overload Protection / Protezione di Sovraccarico	30mA PER 5
Overvoltage Protection / Protezione di Sovraccarico	30V PER 5
Short-circuit Protection / Protezione da Cortocircuito	TO SHORTCIRCUIT FOR 10 TO 100 VDC PER 1"
Output Transient Voltage Protection / Protezione di Transitorio di Tensione in Uscita	V _{cc} 50% Max 3A/5
Power Supply / Alimentazione	Min. 4,5 Vcc Max. 30 Vcc
Number of pulses per revolution / Numero di impulsi al giro	5

Sensor Scheme / Schema Sensore



The sensor is provided already assembled in order to make the installation easy for maintenance. For further information please contact SAI Technical Department. Il sensore viene fornito preassemblato in modo da poter essere installato con facilità in caso di manutenzione. Per ulteriori informazioni, si prega di contattare il dipartimento tecnico SAI.

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121203.1

Integrated Speed Sensor ACCESSORY

Bidirectional (H) or unidirectional (HU) speed sensor integrated in the distributor cover, featured by hall effect technology. It's capable of reading different impulses for each revolution of phonic wheel or gear wheel open collector (NPN).

Description: Integrated speed sensor
Accessory Code: H - HU
Power Supply: Min. 4,5 Vcc - Max. 30 Vcc
Data sheet: 121203.1



CONTACT PERSON

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P2G+R09

Maximize torque Minimize space

The mining industry has a very long history and is one of the leading sectors in the current worldwide economy.

SAI has a long and vast experience in this field and, over the years of meeting the specific requirements of its customers, has been able to develop solutions helping to increase the overall efficiency of mining machines in general.

Often such machines have special design parameters. They have to operate in very confined spaces, where tight manoeuvrability and a high degree of flexibility and accuracy are a priority in order to provide the highest productivity levels as well as fundamental operator safety.

One of the most successful recent applications is that of a very compact road heading machine, desi-

gned for the cutting, breaking up and loading of the many and varying types of underground rock. SAI powers both the loader conveyor and the vehicle's chain track with fixed displacement P2G motors each coupled to one of the newly introduced R09 planetary gearboxes. This forms a very compact unit capable of producing a remarkably high torque in a remarkably small space.

Despite the different degree of tractional rolling resistance with varying types of rock strata, and the inevitable high vibrational level generated by the machine, the P2G+R09, with its high mechanical and volumetric efficiencies, produces a high starting torque and enables accurate transmission control resulting in lower energy losses, lower

heat generation and higher flexibility even while the vehicle is operating in the most arduous conditions. The P2G+R09 is just one of the many solutions SAI can offer to the mining industry.

Fixed, dual or variable displacement motors which can be easily fitted to differentials, axles or drive units, with gearboxes and/or safety brakes are all readily available to improve the performance of YOUR machines!





29 May - 2 June 2012 Moscow RUSSIA



4-7 September 2012 Hamburg GERMANY



4-7 September 2012 Donetsk UKRAINE



10-14 September 2012 Johannesburg SOUTH AFRICA



3-6 October 2012 Piacenza ITALY



7-11 November 2012 Bologna ITALY



27-30 November 2012 Shanghai P.R.C.

SAI INTERVIEW



Krishnan Ventikasubramanian

The following interview is aimed at introducing SAI INDIA LIMITED Sales Manager, Mr Krishnan Ventikasubramanian, to you.

What is the strength of the company? What strategy allowed such a great success?

Established in 1989, SAI INDIA LIMITED, the Indian subsidiary of SAI Hydraulic motors, manufactures, markets and services world class high torque radial piston hydraulic motors and drive units. A strong domestic presence has made SAI INDIA a market leader in its product groups such as hydraulic motors and drive units for mobile and industrial applications catering to major OEMs within the country.

Apart from the above, working closely with our principals, SAI Hydraulic motors, has enabled SAI INDIA to be a dominant force in the Indian market today.

The Indian Market, despite the global crisis, keeps growing. What expectations do you have for the next months?

The Indian market has been no exception to the global crisis. The market has been volatile. All eyes are on the policy makers and monetary policies in the coming months to lift the sagging market sentiments. However the overall feeling is positive and we should be on a fast track growth by the second half of 2012.

Which Market sector is currently the most dynamic? What role does the mining industry have in the Indian Market?

Construction, agriculture, mining and industrial are the most dynamic markets in India for our company. With the latest developments and new products as a result of research and development, we now cater to applications with higher power demands. This coupled with the fact that our motors are amongst the most efficient, if not THE most efficient, gives us an opportunity to have a better market share than what we had in the past.

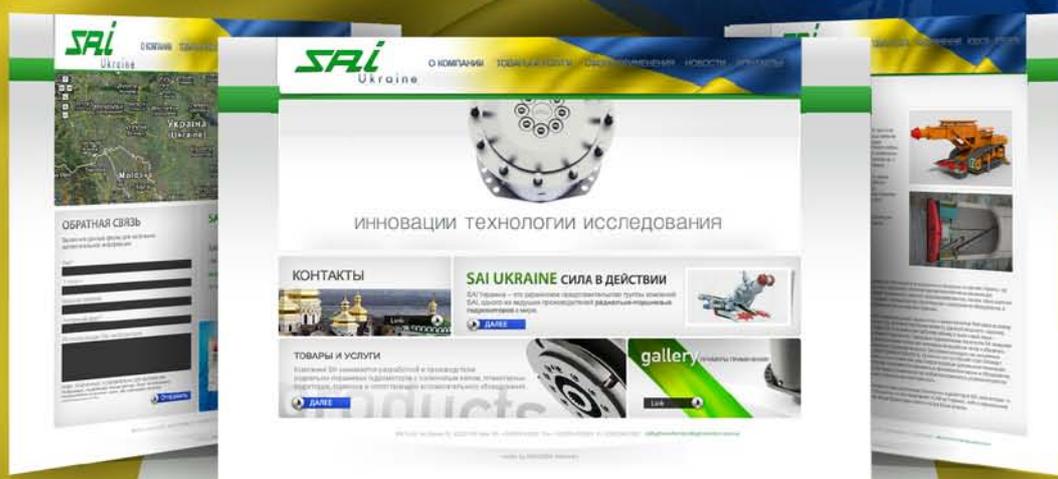
India's abundant mineral resources puts it in a favourable position as a mining hub. India ranks 3rd in coal, 4th in iron ore production. The mining industry attracts the highest FDI, ensuring that India provides business opportunities on an unprecedented scale. Mining will continue to be one of the most important markets in India in the coming years.

Which is the SAI INDIA approach to the current standards of quality required by the OEM companies?

We at SAI INDIA believe that Quality is more than just Seeing or Measuring. Quality shows in every action. We are an ISO 9001:2008 certified company. It is our endeavour to produce world class hydraulic drives and provide services to surpass customer expectations with total employee commitment and continuous improvement.

At SAI INDIA LIMITED we have an up-to-date manufacturing set up that is a replica of what is present in Italy which is state-of-the-art. With this approach, we are able to guarantee to our OEMs that a SAI product bought anywhere in the world has the same world class quality standards.

BREAKING
NEWS



<http://www.saihydromotors.com.ua>

NEW SITE ONLINE



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