

THE **SAI** JOURNAL

Year 9, Issue 1 2011

Data acquisition service:
**SAI PROVIDES IT
DIRECTLY
IN THE FIELD**



**SAI
AT WORK**



POWER THROUGH EFFICIENCY

APPLICATION FOCUS

FLOOD DEFENCE: WATER IS NO LONGER A PROBLEM TO SAI MOTORS

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SAI PROVIDES IT DIRECTLY IN THE FIELD

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WELCOME

TO THE SAI JOURNAL!

Dear Readers,

This issue is focusing on Infrastructure. Infrastructure is an important part of life and is essential for business and businesses generally. Within SAI, attention to the internal organisation and infrastructure has always been a key element of our history. Decisions made in the past, that sometimes may have been seen as unconventional, are now the basis upon which the successes of recent years are based.

In this day and age, the infrastructure of any company should incorporate an amount of automation allowing it to benefit from the overall efficiency which automation provides. In many cases this can be achieved by making use of the extensive range of SAI hydraulic motors and related products.

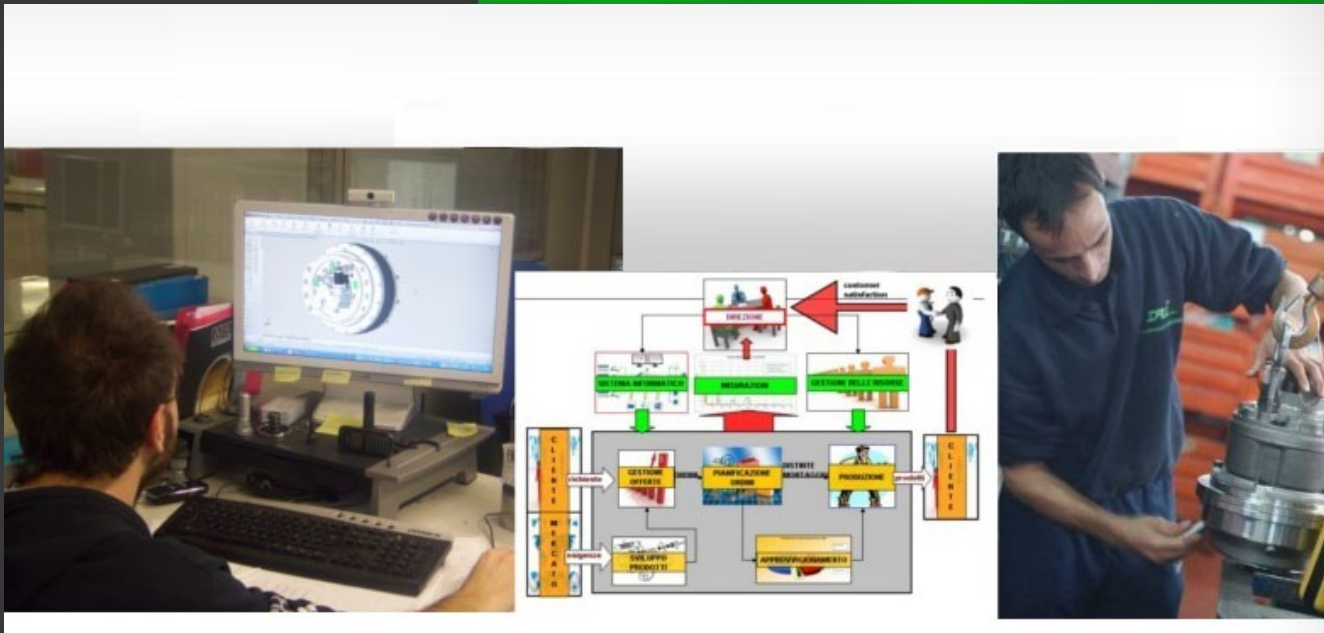
The development of the SAI company itself, and its infrastructure is still ongoing.

*Despite the fact that our **Canadian and USA operations are this year celebrating their 40th and 30th anniversaries respectively**, they have just started on a brand new course that will change their role and business model over the coming years. During the last two years a brand new manufacturing facility has been created with state of the art machines and several new products tailor-made for the American market. These products are due to be presented at the forthcoming CONEXPO-CON/AGG exhibition in Las Vegas.*

So now enjoy reading and thank you very much for your continued support and feedback.

Vittorio Pecorari





SAI at WORK

... In recent years, SAI has invested substantially in order to improve both the hard and the soft infrastructure of the company with the combined aim of creating an environment within which the design, manufacturing and sales of the new range of motors could flourish...

Infrastructure is the basic physical and organizational structures needed for the operation of an organisation.

Whether the organisation is a society or an enterprise, it needs services and facilities for it to function effectively.

For a company, the term typically refers to the technical structures that support it, such as buildings, power supply, telecommunications, and so forth. Viewed functionally, infrastructure facilitates the production of goods and services enabling the movement of materials from, within and to the factory, and also the distribution of finished products to its markets.

The infrastructure then is the environment within which the business activity is operated. Traditionally business infrastructure meant physical objects needed for the company. Nowadays, great importance is given to the intangible infrastructure that allows a company to perform its operations faster and with higher reliability – such is the case for ICT systems – the tools that are providing improved and detailed information to customers, suppliers or business partners in general – via websites, internet directories and so forth.

In recent years, SAI has invested substantially in order to improve both the hard and the soft infrastructure of the company with the combined aim of creating an environment within which

the design, manufacturing and sales of the new range of motors could flourish. Highly sophisticated engineering tools, including 3D CAD-CAM systems, FEM and CFD simulators, coupled with new flexible machines that allow fast prototyping, have boosted the creativity and the effectiveness of the design departments. Better data acquisition systems as well as more advanced test benches have given SAI the capability to go even deeper into the analysis of the behaviour of motors in various working conditions both during in-house testing as well as during the validation of any particular application directly on customers' machines. The strategic partnerships established with our suppliers of machines and machine tools on a worldwide basis, have enabled us to standardise manufacturing methods worldwide resulting in absolute uniformity of manufacturing in all of the various plants based in the USA, Italy, India and China. New manufacturing methods and machines, along with the increased capacity and analysis capability, have generated more expertise and know-how and the manufacturing sy-

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DATA ACQUISITION SERVICE: SAI PROVIDES IT DIRECTLY IN THE FIELD

stems, which are now basically aligned to those of the automotive industry, offer a higher quality and reliability to our customers especially those involved in high volume manufacturing. The new IT systems grant a wider spread of information through remote access offering a more detailed picture of delivery and order processing.

The improved availability of information through the re-designed web site and the easy accessibility to SAI personnel through new communication methods such as e-mail, chat and VOIP, results in a faster, more efficient response to any kind of enquiry. The higher number of exhibitions and trade show events which we attend offer a wider platform for our customers to meet us and for them get to know more about our products and services. The new subsidiaries established in recent years, are all equipped with state of the art assembly and test benches which perform at the same level regardless their location. This, together with a increased number of locations for service and technical support closer to our customers, results in a much broader after sales support. A greater focus on training has increased the proficiency of our employees who are now more acquainted with the various workings of the business even when it is not directly related to their own specific role. All the above has been done with the aim of increasing the efficiency of SAI operations and to improve the way our business is run. However, the infrastructure represents only the environment within which the business can flourish. Whilst infrastructure is a requirement for the business, it does not guarantee that the business will thrive. What makes the biggest difference is the people within the organisation. Their dedication, motivation and passion are the key to the overall success of the company. The ultimate goal should be that our customers enjoy doing business with SAI and that they should benefit from what SAI can offer their business.



SAI, thanks to the cooperation with R&D srl, is able to offer a complete sales and after sales service, whereby it is possible to define performance and efficiency (mechanical & volumetric) of its hydraulic motors in both static and dynamic conditions.

SAI's engineering department in following a very strict Quality procedure, usually appoint R&D to test the products in order to map motor performance. The tests can take place on a continuous, 24 hour a day basis, and allow the detection of even the most minimal defects helping to establish a realistic prediction of component life.

The programmable test benches, especially the inertial ones, make it possible to simulate the same working conditions that a hydraulic motor would have to endure, on vehicles for example, by reproducing the effect of violent acceleration and deceleration. The data capture system works through multi-channels (transducers), that acquire the information directly from the sensors and are thus able to convert a physical quantity to an electric signal readable by the computer system.

The software allows the acquisition and immediate processing of the data received from the sensors. The software can also be set up to capture data without the presence of any operators. With the parameters defined, the system can be left to work automatically, the end result being presented in the form of an easily read Excel file which can be manipulated for graphical presentation. This also allows for in depth analysis and comparisons of all the gathered data.

SAI is now able to offer the data acquisition service directly in the field, no cable needed, the data can be captured by USB or from the WEB.

SAI never leaves you on your own, assistance is always available whenever and wherever you need it!

...WHAT MAKES THE BIGGEST DIFFERENCE IS THE PEOPLE WITHIN THE ORGANISATION. THEIR DEDICATION, MOTIVATION AND PASSION ARE THE KEY TO THE OVERALL SUCCESS OF THE COMPANY...

CONTACT PERSON

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SAI HYDRAULICS INC.

SAI Hydraulics Inc. is delighted to announce the opening of its new Manufacturing Facility.



This expansion will allow them to provide the North American Market with an increased stock of products and high quality customer support, enabling the customisation of SAI motors, planetary gearboxes, brakes and related accessories, to suit the requirements of the clients. By focusing the production on the North American standards that their customers demand, the goal of SAI Hydraulics Inc. is to develop new and emerging markets as well as offering its existing customers an even better level of support. SAI Hydraulics Inc. is now able to provide a complete service from the design and engineering of the product, through to the production and after sales service requirements. Our US subsidiary is therefore your perfect partner for the SAI range of products which are ideally suited the diverse North American industries including Oil, Agriculture, and Construction, as well as many others. An invitation is cordially extended to all existing and potential customers to come and visit SAI Hydraulics Inc.'s new premises which are located in Linwood, PA, USA.

SAI HYDRAULIC INC.

welcomes customers and potential customers in
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INDIA & CHINA: SAI BUILDS ITS RENEWED SUCCESS

The 2011 exhibition season opened with the first edition of the BAUMA CONEXPO SHOW in India.



Having established and maintained a presence in the Indian territory since 1989, SAI could not miss the opportunity to attend this prestigious event.

The show exceeded all expectations by attracting more than 22,000 visitors from 69 Countries.

SAI is highly satisfied with the number of international attendees who visited its stand and enquired about its very latest product developments, including variable-speed and dual displacement hydraulic motors, integrated drive units, wheel drives and actuators.

During the late 2000's, India's economic growth averaged 7.5% per year and its consumer Market, currently 13th in the world, is expected to become the 5th largest by 2030.

The Indian population is constantly demanding more facilities and services and the international trade fair for Construction Machinery, Building Material and Construction Vehicles and Equipment got the same great success it previously received in the People's Republic of China where the 5th edition took place last November (2010).

At that time SAI was pleased to be part of a show where 1.858 exhibitors from 37 Countries met more than 150.000 visitors from 165 Countries.

Thanks to the rapid development of China's Construction Machinery Market, BAUMA China broke all records and allowed SAI to showcase its expansive range of products to the transmission and fluid power specialists who visited its stand.

Proud but not content at these successes, SAI will be also exhibiting at CONEXPO-CON/AGG, that will be held in Las Vegas, USA from March 22nd to 26th 2011 so put this date in your diary and visit the SAI drive experts in Hall S Stand 15450.

We look forward to seeing you!

CONTACT PERSON
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P1G Rotative Sensor



P1G
Rotative Sensor



TABELLA DI PERFORMANCE
PERFORMANCE TABLE

P1G	150	170	190	210	230	250	280
Component / Componenti	150	170	190	210	230	250	280
Max Pressure / Press. Max	20	25	30	35	40	45	50
Max Torque / Torque Max	20	25	30	35	40	45	50
Max Speed / Velocità Max	1500	1500	1500	1500	1500	1500	1500
Max Power / Potenza Max	48	48	48	48	48	48	48

Max working pressure / Press. max. in esercizio: 20 bar
Max torque / Torque max.: 20 Nm
Max speed / Velocità max.: 1500 rpm
Max power / Potenza max.: 48 kW

Available also with aluminum case

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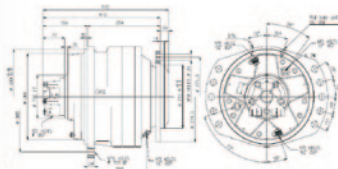
GK4



GK4



DIMENSIONAL DRAWING



CHARACTERISTICS

1. Max Displacement 3500 [cc/rev]
2. Max Peak Torque 15000[Nm]
3. Max Continuous Torque 8000[Nm]
4. Max Speed 70[rpm]
5. Reduction Ratio 5.6:1
6. Approximative Mass 210 [kg]
7. Approximative oil capacity 6 [lit]
8. Peak Power 59 [kW]



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R40

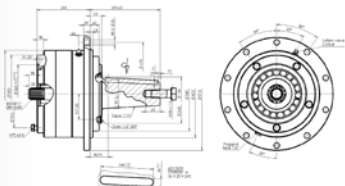


R40

CHARACTERISTICS

1. Reduction Ratio 6:1
2. Max Peak Torque 43000 [Nm]
3. Max Continuous Torque 35000 [Nm]
4. Max Speed 120 [rpm]
5. Applicable Motors' classes 4 and 5
6. Approximative Mass 240 [kg]
7. Max Casing Oil capacity 4.5 [lit]

DIMENSIONAL DRAWING



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P1G RS IP68 MOTOR

Five pistons fixed displacement high torque hydraulic motor featured by rear flanging. Its high volumetric efficiency is able to convey 48 kW as peak power. The P1G is available with the RS, rotary sensor, capable of reading different impulses for each motor revolution. The motor is now available also with the IP67 & IP68 treatments. For more information please read the article on page 7.

Description: Fixed displacement, 5 piston motor
Motor code: P1G RS IP68
Mass: 30 kg
Power: 48 kW
Data sheet: 111104.1

GK4 MOTOR

Advanced new generation five piston compact wheel motor with integrated gearbox, it extends the GK series. It is able to reach a torque of 15000 Nm and a peak power of 59 kW. Its maximum admissible radial load is 16000 N. The GK4 can operate in the most extreme applications from the mobile to the industrial fields.

Description: Fix displacement, 5 piston wheel motor
Motor code: GK4
Mass: 210 kg
Power: 59 kW
Data sheet: 111105.1P

R40 GEARBOX

New generation high torque planetary gearbox, it is able to reach till 43000 Nm as peak torque and 120 rpm as maximum speed. The maximum available radial load is 350000 N. It can be coupled to motor series 4 and 5.

Description: Single Stage Planetary Gearbox
Gearbox code: R40
Ratio: 6:1
Mass: 240 kg
Data sheet: 101066.1P



CONTACT PERSON

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FLOOD DEFENCE

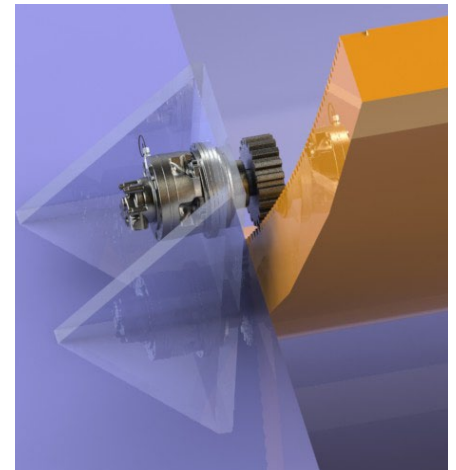
Water is no longer a problem to SAI Motors

With Global Climate change causing the extremes of drought and flood at various places throughout the world, among the many applications in which the latest generation of high performing SAI motors are being used is in the area of Flood Defence.

Modern Dams, able to accurately hold back and meter water flow, are excellent examples where the controllability of the SAI motor can be put to good use. Bulkheads, or other control elements can be moved steadily and precisely with either rotary, vertical or transverse motion. Due to the very nature of the size of the structures involved, and the immense power and weight of a body of retained water, these applications invariably feature extremely low speeds coupled with very high torques. SAI's 05, 1 or 2 sizes of motors coupled to planetary gearboxes often give the perfect solution. Compact yet powerful.

As an additional attraction, the smaller ranges of SAI motors are now available with the new RS (electronic Rotary Sensor) technology and also IP (Ingress Protection) treatment. The use of RS rotary sensors where 2 or more motors are fitted, maybe at each end of a gate of a Dam, enable the monitoring and maintaining of perfect synchronisation critical to the correct functioning of the whole dam system. Since the motors in such an application would work in a very wet and humid environment there is a need for special protection. This kind of treatment (IP), to European Certification EN 60259, basically consists of protection against solid materials (dust) and liquids. In the specific case mentioned here, dams, as the motors work in the constant presence of condensate, the necessary protection is IP67, which is also suitable for keeping the rotary sensors immersed up to one meter beneath the water level for short periods of time. SAI is now also capable of offering its motors with IP68 Certification. This spe-

cial treatment is perfect for all applications where motors are required to be constantly working under water. IP68 guarantees continuous protection of the motors at any depth and for any length of time – although other important factors must be taken into consideration in such circumstances!





22 - 26 March 2010 Las Vegas USA



4 -8 April 2010 Hannover GERMANY



2 - 6 May 2011 Ribeirão Preto BRAZIL



24 - 27 May 2011 Oslo NORWAY



31 May - 4 June 2011 Moscow RUSSIA



7-10 June 2011 Novokuznetsk RUSSIA



8-11 November 2011 Rotterdam THE NETHERLANDS



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