

THE **SAL** JOURNAL

Year 9, Issue 2 2011



**ARE WE
HOT OR COLD?**

How engaged is the SAL Team?

POWER THROUGH EFFICIENCY

APPLICATION FOCUS

THE LOWEST TEMPERATURE, THE HIGHEST SPEED: GS The THRUST Series

CONTENTS

**3 ARE WE HOT OR COLD?
HOW ENGAGED IS THE SAI TEAM?**

**4 STEEL SEALS: ADVANCED TECHNOLOGY
MEETS GREEN EFFICIENCY**

**5 SAI JAPAN LTD.
SUCCESS IS IN THE AIR**

6 NEW PRODUCTS READY FOR THE MARKET

**7 THE LOWEST TEMPERATURE, THE HIGHEST SPEED:
GS The THRUST Series**

8 2011 EVENTS

WELCOME TO THE SAI JOURNAL!

Dear Readers,

This issue focuses on the temperature. The temperature is critical when it comes to machines, but is also very important for human life, as well as for organizations.

In hydraulics, the high temperature can lead to failure of the weakest elements of the system or it can shorten the life support organs of sub-components. Likewise low temperature can be devastating for example, operating a hydraulic system that stood long time the low-temperature environments with oil at high temperature can lead to the destruction of the machine due to thermal shock.

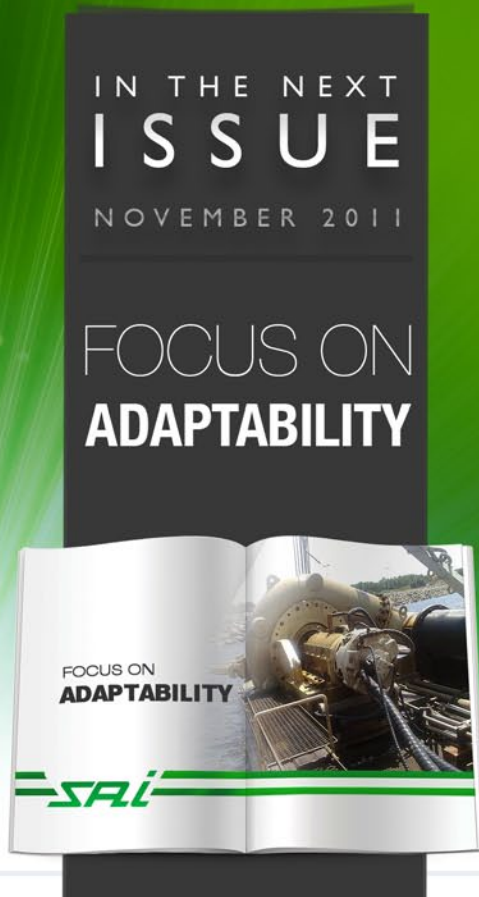
SAI has always helped the machines manufacturers in their search for broader operating temperature fields, trying to make its products easily adaptable to various thermal conditions faced out in the field.

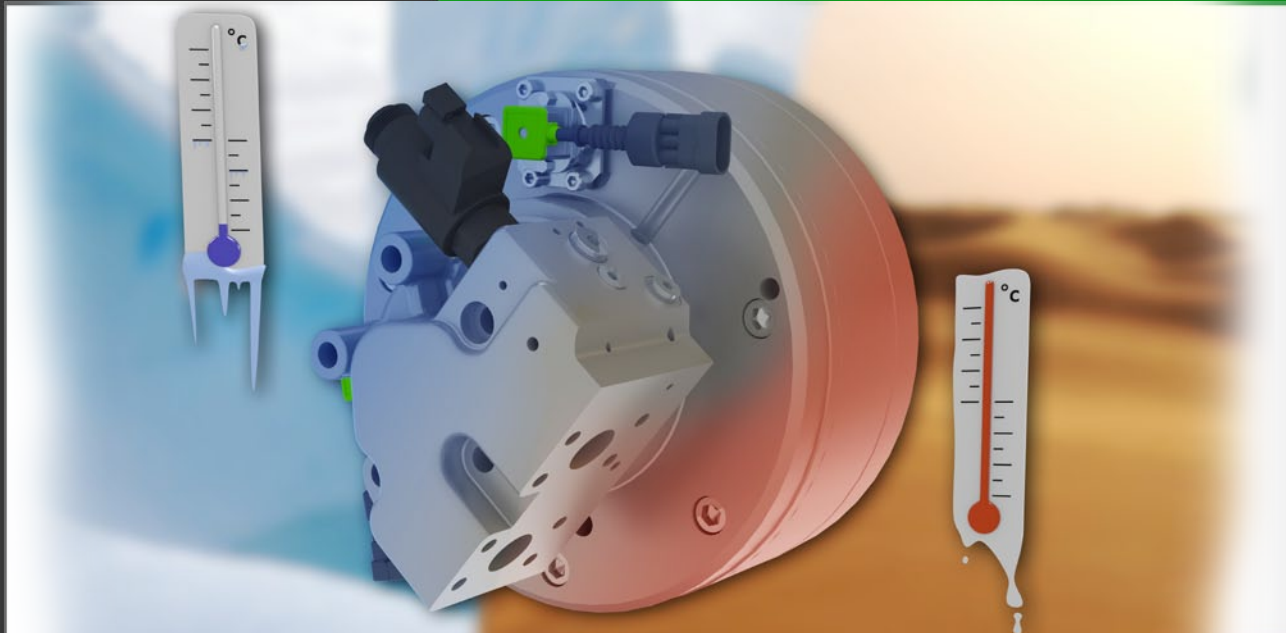
In the same way, companies and individuals must adapt to the "temperature" of today if they want to survive and live tomorrow. Companies today must strategically adjust their heating and cooling system so that they are able to meet the challenges that present themselves almost daily. Today the role of each employee must be redefined, each must be in the forefront of the change and must be responsible for his own adjustment. Organizations must have character, ability and vision, but above all must be able to adapt quickly.

This is our time and our industry and despite being difficult, it can be one of the best! The reason is this: without the extreme temperatures and the urgency that this global crisis has produced, many company would hardly have had the courage or the strength to make the necessary changes to make their tomorrow a better one.

So, dear readers, keep the temperature under control and continue to adjust it according to the times!

Vittorio Pecorari





Are we Hot or Cold?

How engaged is the SAI Team?

... Our aim is to integrate the views and feedback from our partners and make it part of our common business practice. This we believe is the basis on which, in recent years, the increased performance and productivity of our company has been built. In the current economic climate, this approach is particularly essential to avoid conflict between the strategy of our company and the needs of the market ...

We have passed the mid point of 2011 and the first half of the year is now behind us. The last months could be compared to a day at an Amusement Park - up and down the various attractions.

Propped up and then depressed by contradictory reports about the state of the economy. In these conditions, it's difficult to perceive what the future might hold.

This means that many companies are caught between the desire to react to the early signs of recovery, which had seemed to be emerging until recent gloomy forecasts, or to batten down the hatches in case a 'double-dip' recession rolls into view.

SAI is weathering this situation maintaining its focus which is well defined by its motto: "Power Through Efficiency".

We continue with our plan of developing first-class radial piston hydraulic motors that combine remarkable power density with very high volumetric and mechanical efficiency and a wide operational range.

SAI is moving quickly towards a more distributed presence in the global marketplace thanks to the increased number of SAI companies worldwide all the time carefully listening to what our business partners and associates are wanting from SAI.

Our belief is that, by keeping on doing this, the future will be bright. We have already successfully completed a flash recovery from the recession of 2009 by exceeding in 2010 the peak turno-

ver of 2008.

The first half of 2011 closed with remarkable results, showing a substantial and stable growth both in turnover and in orders received.

In our organisation we have a systematic approach to listening to and gathering feedback. This applies to our internal organisation as well as to the business partners we deal with and with whom we share our vision and future plans. Our aim is to integrate the views and feedback from our partners and make it part of our common business practice. This we believe is the basis on which, in recent years, the increased performance and productivity of our company has been built. In the current economic climate, this approach is particularly essential to avoid conflict between the strategy of our company and the needs of the market.

We believe that it is imperative to know how our partners are feeling and what their needs and interests are, to ensure that the plan and the vision of the company match those requirements hence bringing about positive results.

Our employees are also extremely relevant. Organisations are

CONTACT PERSON

Vittorio Pecorari Managing Director | vittorio.pecorari@saispa.it

STEEL SEALS: ADVANCED TECHNOLOGY MEETS GREEN EFFICIENCY

based on people, therefore the people make the difference. SAI's team is engaged, energised, and passionate. Our approach is to be a team that is as connected as possible to the business environment in which we are immersed. Our approach is one of being Hot! We are passionate about what we do! It is very important to keep increasing the energy levels of our team.

SAI focuses on motivating everyone in order to obtain great results, and our team shares this energy among its members whilst doing business. The energy determines the "temperature" of what we deliver to the market. And everyone knows that temperature has a great impact on taste.

Similarly, we at SAI are convinced that the organisation needs a good environment in which to work as it's not possible to be healthy and strong in a damaged or spoilt environment.

Therefore we are focused on developing products that help our customer maximise the use of energy resources by reducing losses within their machines.

The capability of our motors to accept higher operating temperatures reduces the necessary power absorption of the cooling system. The high efficiency of SAI motors results in a reduction in heat generation allowing the use of smaller cooling systems. This has the effect of reducing the overall weight of the machine and consequently fuel consumption.

As mankind becomes more aware of the risks to our planet due to high energy consumption, these features are being increasingly appreciated by all.

That is why for the future SAI will continue to focus on increasing the temperature of our team and on reducing that of our planet. We want Hot people for a Cold world. How COOL is that?



As a result of its long experience in the international market, and close collaboration with machine designers and producers, the SAI engineering department has been able to satisfy one of the main market demands by developing the use of steel seals.

These components are essential to achieve the highest possible performance when the motors are fitted on machines working at high pressures and speeds, with consequent very high temperatures.

The steel rings are dynamic seals with confined dimensions used to seal between moving components. Due to a high resistance to temperature and the forces induced by high pressure, they do not warp, distort or extrude and as such minimise the heat generation due to the movement of the components. This ensures an overall longer life to the unit, and is a major improvement over plastic seals which are intended to be either static or dynamic, and have limitations when it comes to any high pressure and high speed applications.

This is another step forward for SAI, moving towards the so-called GREEN EFFICIENCY. Thanks to the steel seals the motor is able to work at high temperatures, reducing the power absorption on the cooling system.

As well as allowing a smaller heat exchanger (cooler) thus saving money which is of course attractive to all OEM's.

SAI thinks GREEN! Join us to save money and energy – Power Your World through the GREEN ENERGY of SAI EFFICIENCY!

... ORGANISATIONS ARE BASED ON PEOPLE,
THEREFORE THE PEOPLE MAKE THE DIFFERENCE.
SAI'S TEAM IS ENGAGED, ENERGISED AND
PASSIONATE...

CONTACT PERSON

Marco Costaggu Technical Supervisor | marco.costaggu@saispa.it

SAI JAPAN LTD.

SAI JAPAN Ltd. is the Japanese subsidiary of the SAI group that due to its constant growth has allowed the SAI brand to extend its already strong presence in the Far East.



Despite the terrible problems arising from the recent earthquake and Tsunami that so deeply affected the Country, the Japanese people found the strength to recover quickly. SAI Japan, being deeply involved in the local Market felt the pain and difficulties of that moment; however, the company kept on providing its assistance to existing and potential customers. Motors supplied to machines used in the disaster areas such as shredders, drilling machines, earth moving equipment, all of them customised and supplied very rapidly in order to deliver the machines as quickly as possible to the area of Fukushima. SAI Japan is the ideal partner for equipping your machines with the engineering experience and high technology of the new generation SAI motors. Thanks to their design, many models are interchangeable with most competitive types. The new variable displacement motors provided with the integrated electro proportional control are extremely reliable, allow a reduction in vibration and heat generation, improving the overall efficiency of the machine. These new products are particularly interesting for the Japanese market and are particularly useful for such applications as drilling machines, cranes, earth moving equipment, winches, hatch covers and dredging machines.

For any further information you're warmly invited to visit SAI Japan at Kisho ARK2 201-4-29-12 Kamiogi Sugunami Ku 1670043 Tokyo, or visit the website www.saijapan.jp

SAI JAPAN Ltd.

welcomes customers and potential customers in
Keisho ARK2 201
4-29-12 Kamiogi Sugunami-Ku-1670043 Tokyo

Web-site: www.saijapan.jp
E-mail: info@saijapan.jp
Phone: +81 333905500
Fax: +81 333905501

SUCCESS IS IN THE AIR

Industry and business had high expectations in 2011 and the results so far have exceeded every forecast. The SAI group proudly announces that in the first semester it has already taken part in 9 trade shows and has scheduled to participate in other 10 events worldwide in the second part of the year.



It is easy to find us, our green logo is the perfect representation of "Smart Efficiency". Efficient energy is what SAI motors provide to power your machines. This was the main theme of our last exhibition at the Hannover Messe, held in Hannover last April. The event was extremely successful, with an air of satisfaction and optimism from both by exhibitors and visitors alike.

The economy is slowly starting running again and automation is the future of industry. SAI's goal is to continually offer a range of advanced products combining an economic price with excellent quality, aimed at solving the most demanding challenges of today's machine designers in the international market.

SAI will keep on proudly presenting several new generation high performing products at many trade shows. Do not miss the opportunity to meet our experts, please come and visit us, and we will be always pleased to welcome you to our stands.

For more information please see page 8 or visit www.saispa.com

CONTACT PERSON

Marco Costaggu Technical Supervisor | marco.costaggu@saispa.it

GS7 HIGH SPEED MOTORS

GS7



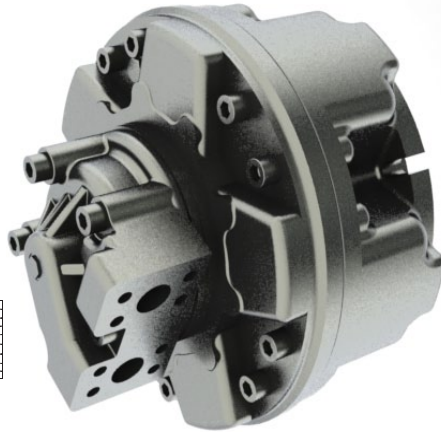
PERFORMANCE TABLE
TABELLA DELLE PERFORMANCE

GS7	1400	2000	2500	3000	3600	4300
Displacement / Cilindrata [cc/rev]	1373	2007	2471	2985	3611	4290
Bore / Albero [mm]	52	52	52	52	52	52
Stroke / Corsa [mm]	52	76	52	76	76	76
Specific Torque / Coppia Specifica [Nm/bar]	21.85	31.94	35.33	47.51	57.47	68.41
Pressure Rating / Press. Nominale [bar]	250					
Peak Pressure / Pressione di Picco [bar]	420					
Cont. Speed / Velocità Cont. [rpm]	450	450	450	450	375	300
Max Speed / Velocità Max. [rpm]	650	650	650	650	550	450
Peak Power / Potenza di Picco [kW]	400					

Approximate weight [kg]	300	300	300	300	300	300
Max. axial pressure [bar]	250	250	250	250	250	250
Max. working speed [rpm]	650	650	650	650	550	450

SAI Spa
41122 Modena Italia
www.saispa.com
email@saispa.it

Provisional leaflets subjected to change without notice. All data are real and calculated according to existing project.



GS7 MOTOR

Five pistons fixed displacement high torque high speed hydraulic motor. Its high volumetric efficiency is able to convey 400 kW as peak power. The GS7 is supplied complete with disc cage on the crankshaft central roller bearing, whose main benefits are the reduction of heat generation and the increase of heat dissipation even when the motor works at very high speeds. For more information please read the article on page 7.

Description: Fixed displacement, 5 piston motor
Motor code: GS7
Mass: 300 kg
Power: 400kW
Data sheet: 110764.6

GFK5

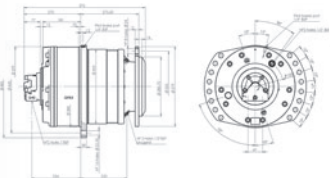
GFK5



CHARACTERISTICS

1. Max Displacement 3250 [cc/rev]
2. Max Peak Torque 19000[Nm]
3. Max Continuous Torque 9500[Nm]
4. Max Speed 110[rpm]
5. Reduction Ratio 5.6:1
6. Approximative Mass 230 [kg]
7. Approximative oil capacity 5 [lit.]
8. Peak Power 80 [kW]

DIMENSIONAL DRAWING



GFK5 MOTOR

Advanced new generation five piston compact wheel motor with integrated gearbox and brake, it extends the GK series. It is able to reach a torque of 19000 Nm and a peak power of 80 kW. The GFK5 can operate in the most extreme applications from the mobile to the industrial fields.

Description: Fixed displacement, 5 piston wheel motor with integrated planetary gearbox and brake
Motor code: GFK5
Mass: 230 kg
Power: 80 kW
Data sheet: 110932.2P

TV3.5

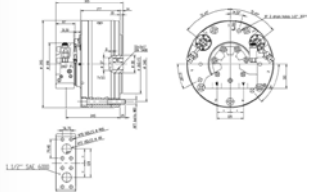
TV3.5



CHARACTERISTICS

1. Max Displacement 1200 [cc/rev]
2. Max Peak Torque 7760 [Nm]
3. Max Continuous Torque 6790 [Nm]
4. Max Speed 1800 [rpm]
5. All of the motors can be provided with minimum displacement equal to zero
6. Approximative Mass 120 [kg]
7. Approximative oil capacity 4 [lit.]

DIMENSIONAL DRAWING



TV3.5 MOTOR

Seven piston variable displacement hydraulic motor supplied with an electronic control kit including an integrated proportional cartridge valve, position sensor and potentiometer to achieve infinite steps of variation (till down to zero). Being extremely compact TV3.5 is featured by modularity and lightness to convey high power transmission stability.

Description: Variable displacement, 7 piston hydraulic motor
Motor code: TV3.5
Mass: 120kg
Power: 220kW
Data sheet: 090913.4P

SAI Spa
41122 Modena Italia
www.saispa.com
email@saispa.it

Provisional leaflets subjected to change without notice. All data are real and calculated according to existing project.



CONTACT PERSON

 Giovanni Pecorari Sales Director | giovanni.pecorari@saispa.it

THE LOWEST TEMPERATURE
THE HIGHEST SPEED

GS the THRUST series

The pleasure of ploughing the waves becomes absolute when the vessel can be controlled very easily not only in open sea but also in harbour, whilst mooring or setting sail.

That's the main reason for choosing SAI to power any thruster steering drives or any other marine application requiring very high speed working in the most extreme climates. SAI offers high efficiency combined with compact design, high speed and high starting torques over an ever increasing range of products. The GS series, is able to guarantee advanced hydraulic power technology, incorporating the use of long life internal components; moreover from last January all the GS motors are supplied complete with disc cage on crankshaft central roller bearing, this feature offers two remarkable advantages when the motor is used at very high speeds: to minimize heat generation and

to maximize heat dissipation. This feature allows the continuous high speed use of the motor improving safety, strength and reliability; these extremes of performance are required for such drives. One of the most noticeable advantage of using the GS series is their capability of reaching high speeds without the need to be coupled to a gearbox. Hydraulic control guarantees a high level of manoeuvring making for ease of operation for vessels of whatever size. The operator is able to do precise manoeuvres using the powerful thrust according to his needs whilst getting the confidence of being in total control. Due to its mechanical design, freewheeling, even cavitation, is not a problem for SAI motors. They can be supplied capable of operating at freewheel speeds up to double the normal maximum operating speeds. The highest speeds are reachable without oil in the cylinders – vacu-

um freewheeling. The oil inside the motor case allows the lubrication of the internal components, minimizing the power absorption and hence heat generation whilst operating in the freewheeling mode. GS motors are available from the smallest size 03 (minimum displacement 25 cc/rev – peak power 22kW) to the largest size 7 (maximum displacement 4300 cc/rev – peak power 400 kW). Furthermore, thanks to their high reliability and versatility, GS motors can be used under the most extreme conditions even at the lowest temperatures in the polar seas. What is more, SAI motors are extremely easy to install, their well known efficiency has been developed over many years of continuous bench testing as well as acquisition data from field trials all of which gives the user the confidence of high quality and trouble-free performance.

KORMARINE 2011

26-29 October 2011 Busan SOUTH KOREA



8-11 November 2011 Rotterdam THE NETHERLAN-



9-12 November 2011 Rimini ITALY



10-12 Novembre 2011 Lima PERU'



13-19 November 2011 Hannover GERMANY



21-23 November Milan ITALY



23-27 November 2011 Bangalore INDIA

SAI

BREAKING
NEWS



SAI
BRASIL

<http://www.saihidraulica.com.br>

NEW WEBSITE ONLINE



WORLDWIDE



SAI HYDRAULICS INC.

168 E Ridge Road Linwood,
PA 19061 USA

Ph. +16104970190
Fax +16104970194
info@saihyd.com



SAI HYDRAULICS CANADA LTD.

6105 Blvd. Couture St. Leonard
Quebec CANADA

Ph. +1 51 43234552
Fax +1 51 43238780
saicanada@saihyd.com



SAI BRASIL LTDA

saihidraulica@saihidraulica.com.br
www.saihidraulica.com.br



SAI (GB) LTD.

Unit 8, Honywood Road Business Park,
Basildon SS14 3HW UK

Ph +44 1268272030
Fax +44 1268272040
info@saigb.co.uk



SAI MOTORS SOUTH AFRICA (PTY) LTD.

Suite 244 Postnet Private Bag X5061 Stellenbosch
7599 Western Cape SOUTH AFRICA

Ph. +27 (0) 219 050 835
Fax +27 (0) 866 468 306
info@saihydraulics.co.za



SAI OD (UKRAINE)

saihydromotors@saihydromotors.com.ua



SAI INDIA LTD.

26/C, Doddanekkundi I.A. Phase 1 Post
Mahadevapura Bangalore 560048 INDIA

Ph +91 8042605509
Fax +91 8042605506
marketing@saihydromotor.com



SAI HYDR. MOTORS SHANGHAI CO. LTD.

6 Jinhai Rd, Pudong Shanghai P.R.C.
CHINA (201206)

Ph. +86 2150315248
Fax +86 2150315246
saichina@saihydro.com



SAI JAPAN LTD.

Keisho ARK2 201 4-29-12 Kamiogi
Suginami-Ku-1670043 Tokyo JAPAN

Ph. +81 333905500
Fax +81 333905501
info@saijapan.jp



SAI SPA

Via Olanda 51, 41122 Modena (MO) ITALY
Ph. +39 059. 420111 Fax +39 059. 451260
saaispa@saaispa.it