

# HYDROLINE

# 2

Poclain Hydraulics' Magazine

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March 2014

CreepDrive Motor 2  
High Torque Capabilities and Highway Speed  
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POCLAIN HYDRAULICS  
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◆ Poclain Driving Values for the Future

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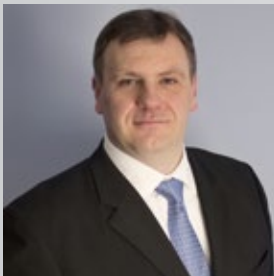
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## EDITO



We are working together in exciting times as our world is changing.

Our global markets are getting closer and closer every day. The communication speed is continuously increasing, making the volume of information very difficult to read and analyze. On the other hand, the global economy is stabilizing. Some countries like the United States (USA) are remaining steady with light growth outlooks and some countries are still working on resolving some of the economical aftermath of 2008.

Change is guaranteed as economies are reinventing their business model and therefore their sales revenues and businesses adapt. Innovation addresses a lot of the needed change with new products developed based on more demanding specifications, answering business and consumer

demands and securing future performance.

We at Poclairn Hydraulics have committed to our new strategy and are working towards addressing this changing environment. Our strong new Vision for 2017 therefore foresees many innovations in products but also in communication methods through our new webpage and Social Media.

All of the products exhibited at the IFPE/Con-Expo fair are clearly part of this new vision, and particularly the new range of "High Performance" products such as the heavy-duty PW pumps which enable us to develop high-performance systems for our customers.

It is with great pleasure that we exhibit at the IFPE/Con-Expo fair, to be able to show you our latest innovations and complete range of solutions from a component to a complete system. Let us serve you even better by assisting you in evaluating your expectation in strengthening your construction business.

Markus Rauchhaus, General Manager Poclairn Hydraulics Inc.

# OUR SUBSIDIARIES

## Poclain Hydraulics Inc.

The Poclain Hydraulics North American facility – Poclain Hydraulics Inc. is located in the state of Wisconsin, approximately 30 miles south of Milwaukee.

The Yorkville location employs about 230 people, including machining, production, after market, sales, service and general office personnel. This location supports the distributor and customer base in the United States and Canada.

2013 was another record year for Poclain Hydraulics Inc. with over 65,000 motors produced and over \$110M in external sales. For 2014 the focus is on keeping up with high demand and preparing for future growth.

The North American team has concentrated on many things including: overall equipment efficiency (OEE), machine investment, short interval management (SIM), quick response quality control (QRQC), safety, and the improvement of organizational processes all in an effort to prepare for the future.

These arrangements will help us prepare for higher internal production and larger distribution of products manufactured in our sister Poclain Hydraulics facilities. We expect our number of these (distributed) motors to significantly increase by 2017. To meet the challenges of this future growth, we are making improvements today in the areas of customer logistics, quality, production flow, and plant layout.



**Poclain Hydraulics comercio de produtos e serviços hidráulicos LTDA** was created in April 2006 and based in Sao Paulo, BRAZIL. The subsidiary is responsible for the commercial and technical activities in Latin America.

Poclain Hydraulics distributors are located in Brazil, Argentina, Peru, Chile, Mexico, Uruguay and Poclain Hydraulics Latin America works very closely with them.

Poclain Hydraulics' Latina America operates in the areas of coffee harvesters, sprayers, mining machines, forestry machines, olive harvesters, small compactors.

2013 has been a record year for the Brazilian market, as the agricultural market has been very strong.

# THE PM RANGE

## Pumps Designed to Serve our Customers

In response to an ever more demanding market, Poclain Hydraulics has developed this new pump with optimized performance and user-comfort, which will integrate easily into all machine environments.

Anti-pollution standards are increasingly strict for our customers. Reducing fuel consumption levels is a major issue for machinery manufacturers.

The new PM range was developed to respond to these constraints, with our engineers focusing on a number of optimization areas.

In order to maximize driver comfort and improve their working environment, Poclain Hydraulics has used the latest generation of simulation and testing tools to reduce noise pollution from this pump.

Furthermore, in order to optimize user comfort and safety, our engineering and design department has come up with a coherent and flexible range, offering a choice of controls compatible with all market applications; ranging from servo-mechanical, hydraulic, automotive to electronic with or without mechanical swashplate position feedback.

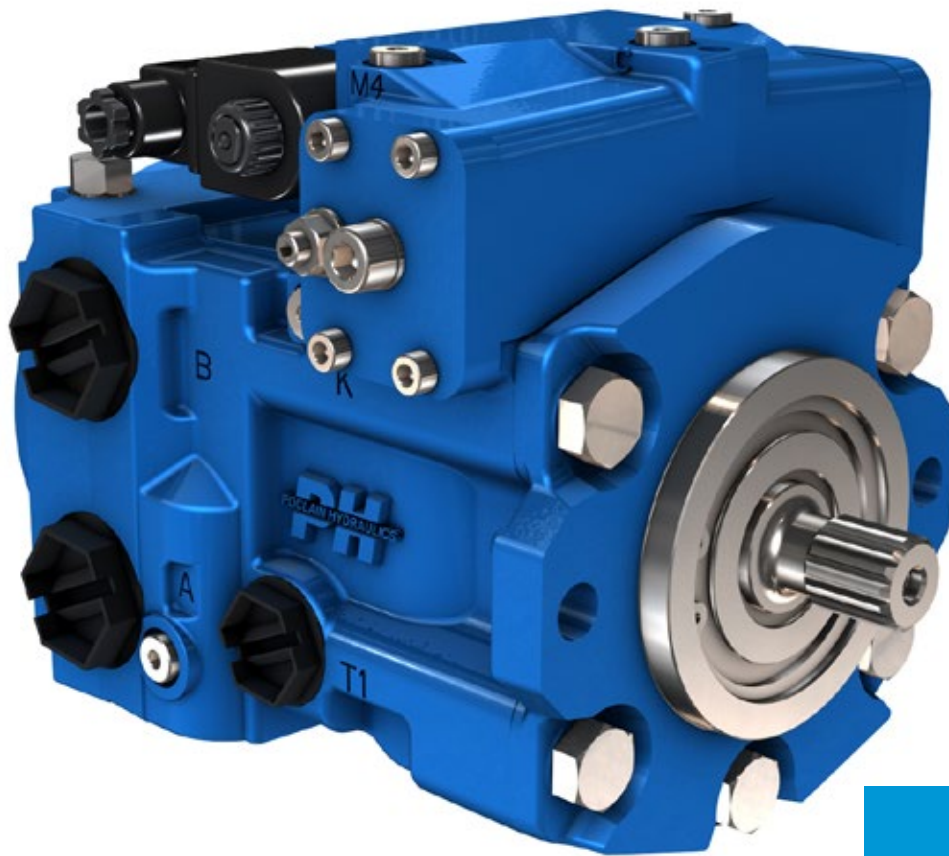
### PREVIEW

Unveiling of the first pump in the range on the market (the PM50) at the Conexpo show in the United States from March 4 to 8 2014.

		PM30	PM50	PM70
<b>Max Displacement</b>	<b>cc [cu in]</b>	28-32 [1.70-1.95]	46-52 [2.81-3.17]	65 [3.97]
<b>Peak Pressure</b>	<b>bar [PSI]</b>	350 (absolute) [5080]		
<b>Rated Pressure</b>	<b>bar [PSI]</b>	250 (absolute) [3630]		
<b>Max Speed</b>	<b>rpm</b>	3600	3600	3400

The controls available on the pumps:

- Mechanical servo control with feed-back
- Hydraulic servo control
- Hydraulic servo control with feed-back
- Hydraulic Automotive control
- Electrical on-off servo control with return spring
- Electro-proportional control
- Electro-proportional control with feed-back



PM50

## Additional Functions are also Available

Overall dimensions are an increasing constraint for machinery manufacturers. This pump will meet your needs through its extremely compact design and reduced length. Additional functions such as flushing and anti-stall can also be incorporated in these pumps, making it even easier to integrate into your system.

At the end of 2013, Poclair Hydraulics has also displayed its new range of High Performance components. This High Performance offer is based on a new set of components, exclusively developed from a viewpoint of unequalled individual performance. Our new heavy-duty pump ("PW pump") has been designed with five major concerns in mind: quality, energy efficiency, compactness, power density and precision.



# NEW MEDIUM DUTY FLOW DIVIDER

## Filling Up the Gap

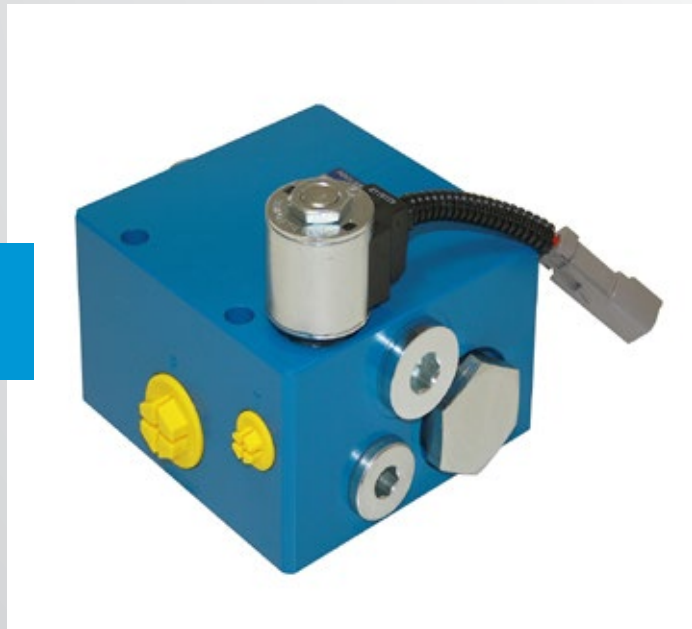
Poclair Hydraulics is introducing a new medium duty flow divider/combiner FD-M in order to fill the gap in its product portfolio. The flow divider has been designed to fit perfectly into small-and medium-sized machines where high flow and very high pressure are not needed.

The new FD-M is optimized for applications that normally use system pressure 350 – 380 bar [5080 - 5510 PSI] at a controlled flow under 100 L/min [26.4 GPM] and bypass flow rate up to 150 L/min [39.6 GPM]. For limited time, pressure can even reach up to 420 bar [6090 PSI] (only limited duty cycle).

### Advantages of FD-M

The compact, single block design of the 2way FD-M is the result of design modularity. This concept allows an easy upgrade of the dividing function from 2 to 4 outputs. Due to its size, the FD-M can be easily be used as hydraulic differential lock or traction control of vehicles in different fields of industry (like small tool carriers, rollers, forestry trailers, etc.).

2way flow divider  
(FD-MZ-1A09-E008-008-313)



# HYDROSTATIC SYSTEMS

*For Additional Mobility and Fuel Savings*



Find all our  
**Construction**  
applications



[www.poclain-hydraulics.com](http://www.poclain-hydraulics.com)

# CREEPDRIVE™ MOTOR 2

## High Torque/Low Speed Capabilities and Highway Speed

Poclain Hydraulics' CreepDrive™ motor offers customers who require both high torque capabilities and highway speeds a new size in the CreepDrive™ motor line.



### ADVANTAGES

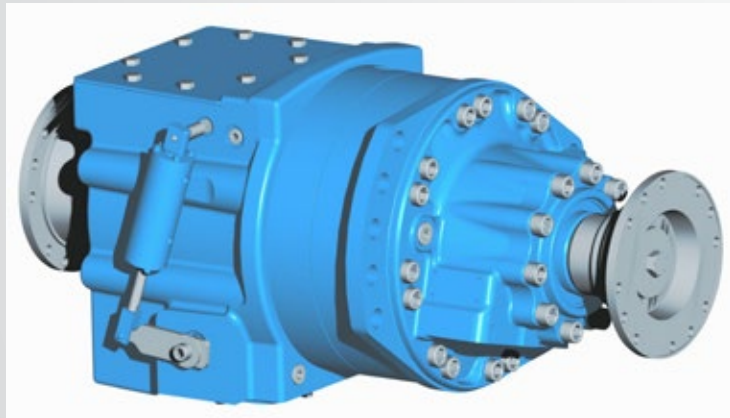
Extra low speed and steady operation.

Easy installation and integration: retrofit and remote control compliant, no specific development.

Preserves brakes, clutch and transmission wear.

Light and compact to fit any mechanical transmission brand.

The CreepDrive™ system totally designed and manufactured by Poclain Hydraulics is a hybrid mechanical-hydraulic transmission designed for vehicles that work at very low speed but travel at normal speed on road. Vehicles equipped with a CreepDrive™ features two independent transmissions: one hydrostatic and one mechanical. Shifting from one to the other is simply done by activating a switch. The mechanical transmission is used for traveling on the road, while its hydraulic counterpart is used for working at low speed.



The annual accumulated quantities of these vehicles are significant and their environmental impact is real, even if it receives little media coverage. Shifting into hydraulic transmission at low revs reduces wear on clutches and brakes, limits particle emissions and lowers fuel consumption, while guaranteeing a constant speed.

Poclain' Hydraulics' Design Group put the new High-Flow technology to use in CreepDrive™ 2. The result is a 40% increase in speed and 160% increase in torque generated by the hydrobase. The new motor also includes a dual displacement hydrobase that allows downsizing the pump for similar speeds. The resulting power is two and a half times what it is on existing CreepDrive™ 1 motor.

This motor is under final development and will be shown for the first time at the Conexpo tradeshow.



# BROWN INDUSTRIES

## CreepDrive™ Motor for High-Rail

Brown Industries, LLC, in Lawrence Kansas, has been building special truck van bodies for over 65 years. In 2011, Stuart Seeger started the "Rail Equipment" division that offers on-rail material handling trucks and rail ribbon welding trucks with a crane.

Since the beginning, Brown has used Poclair's CDM, our creep drive system for its on-rail vehicles including, CDM creep drive motor (1,000 cc [61.02 cu in] with 150 to 170 bar [2175 to 2465 PSI] average operating pressure), 100 cc [6.10 cu in] P90 heavy duty pump, VE60 loop exchange valve and Smart Drive electronics. This system gets incorporated with a wireless radio remote control package provided by Hetric.

Why Poclair CDM creep drive in lieu of other remote drive systems? "Poclair creep drive offers ease of operation and control of the system," says Stuart. Up to this point, Brown Rail installed several systems in material handlers and rough terrain ribbon welding machines that include a state-of-the-art crane from Effer. Several more of these ribbon welders are on order for early 2014. "I think we will double creep drive installs in 2014," Stuart indicates. When asked about using Poclair's upcoming CDM2, "Yes, we are excited by the CDM2, I have customers looking for more speed and power"

*Our thanks to Stuart SEEGER for his help to build this article.*



# JOHN DEERE

## Skid Steers Fitted With MS Motors



Since its creation in 1837, John Deere has always been ready to listen to those whose work is linked to the land: farmers, breeders, landowners and builders. As leader of the world market in agricultural equipment and a major player in construction machinery, the world-renowned company has nonetheless never lost sight of its founder's fundamental values: integrity, quality, commitment and innovation.

For several years, Poclain Hydraulics has been a prime partner of John Deere C&F (construction & forestry) for the supply of hydraulic motors (MS motor range), designed for its 2-speed Skid Steer Loaders (models 318E, 320E and 326E).

Gregg ZUPANCIC (Product Marketing Manager, Skid Steer & Compact Track Loaders – Deere & Company) points out

that John Deere's performance on the SSL market positions the company amongst world leaders.

Poclain Hydraulics is taking part in the development of new John Deere machines through increasing involvement right from design stage, working in close collaboration with John Deere's design and application engineers. Poclain Hydraulics' presence on the 3 continents (sales subsidiaries and production plants) enables it to meet the expectations of each of these markets as closely as possible. Naturally, geographic proximity to the customer is a necessity both for sound understanding of needs and expectations and for ensuring increasingly rapid delivery times. The joint objective is simple: providing the end customer with a reliable product and meeting the most demanding quality standards at the best possible price.



### A STRONG EXPERIENCE

Poclain Hydraulics' historic know-how, enabling to produce and market this range of motors for over 10 years for all major SSL manufacturers, ensures that John Deere can offer its customers machines that combine all the required qualities.

### The Poclain Hydraulics MS-2Speed motor fitted to John Deere's SSLs offers the following:

- Compact and integrated design
- Possibility of dual displacement (2C)
- Integral built in brake system
- High motor efficiency (low power losses)
- Dedicated bearing support for John Deere assembly
- Volumetric efficiency remaining constant with the time
- Integrated hot oil exchange
- "Soft Shift" displacement spool system
- Low noise
- John Deere speed sensor assembly



**Poclair Hydraulics' motor offer covers a wide range of skid steer loaders :**

**SSL - Rated SAE load**

	590 - 680 kg [1,300 - 1,500 lbs]	680 - 770 kg [1,500 - 1,700 lbs]	770 - 910 kg [1,700 - 2,000 lbs]	910 - 1140 kg [2,000 - 2,500 lbs]	1140 - 1680 kg [2,500 - 3,700 lbs]
<b>MS Offer</b>	MS02 Displacement* 172 to 255 cc [10.49 to 15.56 cu in]	MSE02 Displacement* 266 to 398 cc [16.23 to 24.29 cu in]	MS05 Displacement* 376 to 560 cc [22.94 to 34.17 cu in]	MSE05 Displacement* 530 to 750 cc [32.34 to 45.77 cu in]	MS11 Displacement* 837 to 1259 cc [51.08 to 76.83 cu in]
<b>ML Offer</b>				MLO6 Displacement* 420 to 630 cc [25.63 to 38.44 cu in]	MLE06 Displacement* 702 to 842 cc [42.84 to 51.38 cu in]

Note:

\* Maximum displacement might vary in function of displacement ratio and sprocket definition.



The MS - 2C: A motor enabling the displacement speed to be increased instantly and easily by the driver (thanks to «soft shift») using a unique displacement reduction system, thus avoiding over-sizing the pump and overloading the exchange valves: this makes it easier for John Deere to fit the motor because of its smaller overall size and lighter weight. The parking brake is also built into the motor.

**“MS-2speed motors help to optimize productivity”**

“Time is money”, as Gregg ZUPANCIC says: the versatility and reliability of John Deere machines are the main reasons given by end users for choosing them. The Skid Steer Loaders fitted with Poclair Hydraulics MS-2speed motors help to optimize productivity and their ease of use.

With no compromise between speed and torque, facilitated integration and maintenance reducing the machine’s time spent

off the road and when required for work in very cold conditions (such as snow clearing operations), John Deere SSLs can rely on the capacity of the MS-2C motors to operate at extremely low temperatures.

In a rapidly expanding world market for SSLs (100,000 units per year predicted for all manufacturers), John Deere and Poclair Hydraulics are both sure to be central players!

*Our thanks to Gregg ZUPANCIC for having kindly agreed to take part in the writing of this article.*



# Realize Fuel Savings

**PH**  
**POCLAIN HYDRAULICS**  
Poclain Driving Values for the Future

**WELCOME**

**Gasoline**

Self Serve

Regular

0 0 0 0/0

Plus

0 0 0 0/0

Supreme

0 0 0 0/0

**Diesel #2**

0 0 0 0/0

# BERGKAMP

## Poclair Hydraulics Inc.'s First Customer

It's been nearly thirty years since Poclair Hydraulics sold their very first H25 wheel motors to Bergkamp in Salina, Kansas, used for the ground drive on one of their continuous slurry seal and micro surfacing paver. They are known to be one of Poclair Hydraulics's first customers in North America.

This application eventually went to using MS18 wheel motors and finally, MS25's. There are dual rear axles on the M1 continuous paver which utilize (2) motors per side and plumbed in a parallel, closed loop circuit. The Poclair Hydraulics motors are capable of handling very high axial and radial loads.

The truck weighs nearly 75,000 lbs (over 34 tons,) fully loaded and capable of travel at a max speed of 15 mph (24 kph.).

Bergkamp is an international leader in the design and manufacturing of asphalt pavement preservation equipment for contractors and government agencies. Bergkamp equipment has a reputation for quality, performance, and operator-friendly features. Bergkamp is a customer that receives Poclair product through one of our North American distributor, SunSource.

*Our thanks to Jason BERGKAMP, Bill COOPER and Marques FAIR.*



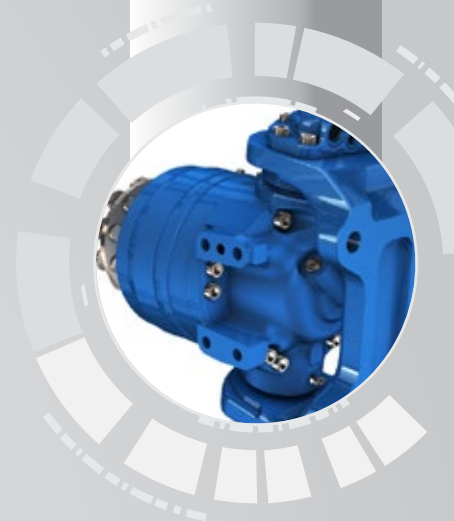
# MG05 MOTOR

## Integrated Hydraulic Pivot for Easy Integration

One of the main areas of development for Poclain Hydraulics motors has always been to build products that are easy to integrate, which enable shorter development times for customers. With this in mind, Poclain Hydraulics has completed its range of MG steerable-wheel motors with the introduction of the new MG/MGE05, offering a displacement from 376 to 750 cc [22.94. to 45.77 cu in].

With its built-in hydraulic pivot, the MG/MGE05 is easily integrated into a hydraulic system, offering simplified management of hydraulic hoses independent of the motor's rotational movements around its pivot axis.

The MG/MGE05 is supplied with its C-Frame used for direct mounting on a chassis, offering a turnkey solution for all vehicles fitted with a hydrostatic transmission (loaders, lifting platforms, etc.).



This new MG/MGE05 motor is also highly modular, with the possibility of using all the bearing supports currently available on the MS range, including a drum brake. It also features a new bearing support with a built-in wet parking brake, offering a maximum braking torque of 4,500 N.m [3320 lbf.ft].

The new distribution on the MG/MGE05 available in single or symmetrical dual speed displacement, offers a high-speed and high-efficiency solution which, together with a maximum pressure of 450 bar [6530 PSI], will surely satisfy customers seeking a high-performance, economical drive.

## A COMPLETE RANGE

The full MG range now covers the 200 to 2500 cc area [12.2 to 152.56 cu in]: MG02, MG05, MG11, MG21.

# EXPORT AWARD

## A Gold Trophy for Poclain Hydraulics in India

Poclain Hydraulics PVT, the Indian Poclain Hydraulics subsidiary, is proud to announce that it has been awarded the "GOLD TROPHY FOR TOP EXPORTER – Medium Enterprise" by EEPC-India for the fiscal year 2011-12. This prestigious award has been given to Poclain Hydraulics PVT for its exports from India in the fiscal year April 2011 to March 2012.

EEPC-India is the Engineering Export Promotion Council of the Government of India. The AWARD and GOLD TROPHY were handed over by State Ministers to Ferdinand LAVANA, Plant Manager accompanied by GANESAN, Assistant General Manager. The ceremony was held at Trivandrum, Kerala, on 24th September 2013.



Earlier in December 2011, PHPVT received a "Silver Shield for STAR PERFORMER in the category of Pumps, Compressors, Hydraulic and Pneumatic Power Engines and Parts – Medium Enterprise". This award was for the fiscal year 2009–2010, which is a fitting achievement for all the work carried out.

The GOLD TROPHY has been awarded for the best engineering export-related performance of all medium-sized enterprises in the South Indian Region – an excellent accomplishment for the ramp-up period. CONGRATULATIONS to the Poclain Hydraulics PVT team for achieving this high-level performance and compliments to everyone who contributed to this performance, which resulted in this prestigious award for Poclain Hydraulics India.



### POCLAIN HYDRAULICS PVT

Poclain Hydraulics in India specializes in the production of the smallest cam-lobe radial piston motors available in the Poclain Hydraulics range. More than 95% of its production is exported.



# HYDRAUCOM

## FRANCE HYDRAULIQUE Group

The first commercial relations between Poclairn Hydraulics and our Group go all the way back to 1985. At the time a newly founded French company, Hydro R novation, was interested in hydraulic repair work on all brands, with a particular interest in components made by Poclairn Hydraulics – Pumps – Motors. All these components are used in motors in the building and public works, shipping, manufacturing and agricultural industries.

Our business relationship with this company was stepped up during the 1980s. Our partnership was then cemented by the certification of two companies in our Group: Hydro R novation three years ago and France Hydraulique – Midi-Pyr n es more recently. Group companies have full national coverage in France and repair more than 4,000 components each year, including a significant number of components for Poclairn Hydraulics.

Over the years, we have upgraded our facilities and control resources, namely test benches, specific tooling for Poclairn Hydraulics and a disassembly bench for the brand’s motors. All reconditioned components are covered by warranty according to the standards of Poclairn Hydraulics. Our workshop personnel are assisted by Poclairn Hydraulics technicians.



We have a huge customer base, ranging from building and public works, agriculture, shipping and manufacturing. We also work on complex hydraulic control systems.

We have in-depth knowledge of and experience with all types of products and materials and provide advice and solutions to customers on the problems they encounter. We monitor all repairs made and in some cases can provide traceability, and we can also define products for new applications. This is our day-to-day mission, which goes far beyond simple repairs.

We are regularly asked to inspect and provide Poclairn Hydraulics – Pumps – Motors components.

We are very happy with the relationship of trust built up between our two companies.

Our professionalism in hydraulic maintenance and our willingness to continually improve the service we provide to our customers is recognized by many leaders in France.

Poclairn Hydraulics is a key partner for our business, which has grown since we stepped up our business relationship.

*We warmly thank Hydraucom’s Director, Olivier RIZZO, for his contribution.*

The logo features the text "HYDR RENOVATION" in a bold, sans-serif font, with "LA MAITRISE DES FLUIDES" in a smaller font above "OVATION". Below this, "FRANCE HYDRAULIQUE" is written. The logo is set against a circular background with a gear-like pattern.

# DISTRIBUTION NETWORK

## More than 150 Distributors Worldwide

We have been diligent over the years to develop a powerful network of distributors, today over 150 locations strong. Some are small companies with only one or two sites, but others are large groups with multiple branch offices and warehouses covering a large geography.

One thing is common about them all - they are chosen for their ability to provide the support expected by OEM's not served directly by Poclairn Hydraulics.



That support includes:

- Technical personnel; well trained in Poclairn Hydraulics products, and close to the customers
- Local stock of parts and components
- Repair service, including warranty repair in some cases
- Ancillary system components that Poclairn Hydraulics does not make – “one stop shopping”
- Logistic consolidation – just in time deliveries
- Volume purchasing power so they can offer better pricing to the local market

Increased Poclairn Hydraulics turnover has not been an obstacle for the commercial success of its distributors which still realizes 15 to 20% of the Group's turnover.

Poclairn Hydraulics' strategy enables its distributors to have a real input on the sale of valves, big industrial motors and programming of electronic control units.

**Find the complete list of our distributor's locations on our website:**

<http://www.poclain-hydraulics.com/en/contact-us/distributors>

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**HIGH PERFORMANCE**  
HIGH TECHNOLOGY HIGH POWER



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South Hall 3  
Stand 80940



**Poclain** Driving Values for the Future

# NEWS & AGENDA

## 2014 EXHIBITION AGENDA

Meet Poclain Hydraulics on its booth at:

- **CONEXPO** from the 4<sup>th</sup> to the 8<sup>th</sup> of March 2014 in Las Vegas (USA)
- **STT** from the 3<sup>rd</sup> to the 7<sup>th</sup> of June 2014 in Moscow (Russia)
- **CONEX** from the 24<sup>th</sup> to the 27<sup>th</sup> of September in Seoul (Korea)
- **IAA** from the 25<sup>th</sup> of September to the 2<sup>nd</sup> of October in Hanover (Germany)
- **EIMA** from the 12<sup>th</sup> to the 16<sup>th</sup> of November in Bologna (Italy)
- **BAUMA** from the 25<sup>th</sup> to the 28<sup>th</sup> of November in Shanghai (China)

## CERTIFIED REPAIR CENTER

Poclain Hydraulics is pleased to announce the selection of a new partner in Chile: Talleres Lucas, a company based in Santiago de Chile has just received its Poclain Hydraulics certification for the repair of our MS and MK motors range.



## THE YEAR OF ALL RECORDS FOR BRNO PLANT!

In November 2013, Brno plant was very pleased to reach sooner than expected the production of its 1,000,000<sup>th</sup> motor. Laurent Bataille, Poclain Hydraulics Chairman and Chief Executive Officer, was there the exact day of the production of this 1 000 000<sup>th</sup> motor. He took the opportunity to celebrate the event during the site review with all the employees; and to thank them for their commitment as they all participated in this success story.

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