

POCLAIN HYDRAULICS' MAG

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Activate the HIGH PERFORMANCE
mode of your machines
Discover all about our New Products



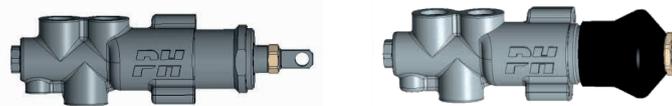
 **POCLAIN**

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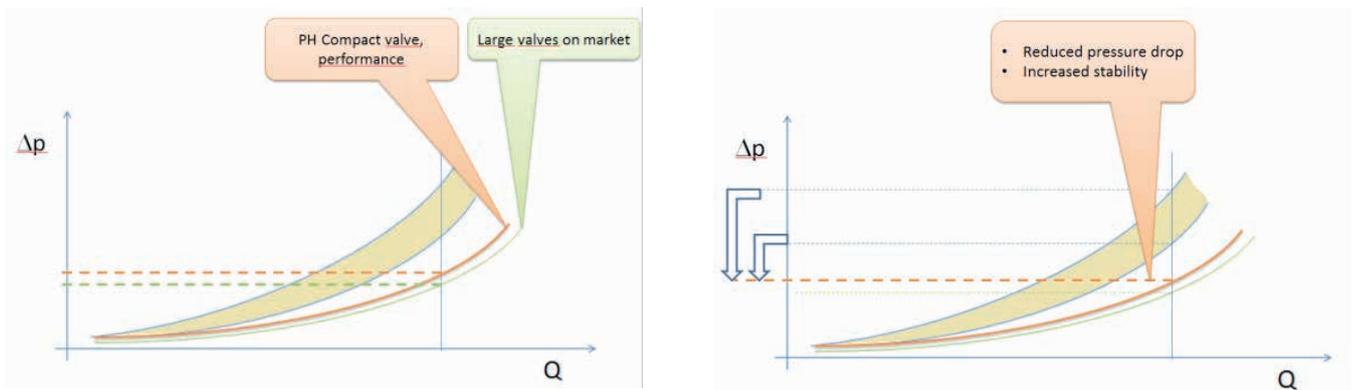
INTRODUCING A NEW GENERATION OF BRAKE VALVES

Among the wide range of valves manufactured by Poclairn Hydraulics, the VB family used for power braking is without doubt the most famous. This family has been completely reengineered in order to propose an improved generation, starting with single brake circuit valve VB-010 and park brake VB-002.



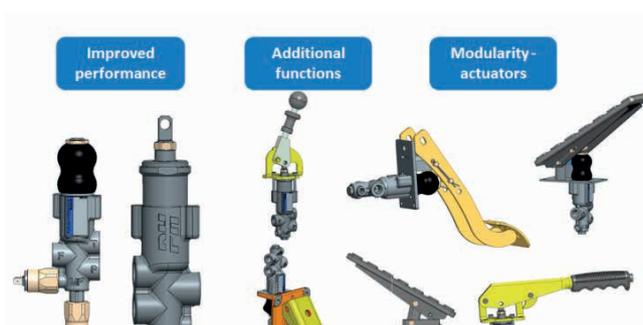
We have achieved enhanced performance by improving the design of the die-cast bodies, as by optimising all the internal components.

Though compact in size, this new generation of brake valves offers performance and stability levels comparable to those of larger competitive products.



The new VB-010 and VB-002 feature :

- Reduced weight
- Higher performance
- Increased inlet max pressure (250 bar)
- Reduced pressure drop
- Higher reactivity.



The new models are largely interchangeable with their predecessors and can be fitted to the same pedals and levers.

THE SHANGHAI ASSEMBLY PLANT SERVES THE ASIA-PACIFIC MARKET

Established in 2010, Shanghai is the 8th plant of Poclain Hydraulics. With two assembly lines running and a third one recently installed, it will soon be the only facility in the Group that produces three lines of products: braking valves, pumps and motors.

The assembly lines are supplied with semi-knock-down's (SKD) from other plants of the Group. The equipment and procedures meet the same high standards as other Poclain Hydraulics factories in order to deliver a world-class product to Asian markets: not only China, but also Japan, Korea, South-East Asia, Australia

and New Zealand will be supplied from Shanghai for a large part of their needs in the near future.

Being closer to our customers to perform better service and offer shorter leadtimes, two key ingredients for success in Asia-Pacific, has driven our choice to establish an assembly plant in the region.

Poclain is further expanding its footprint in Asia-Pacific, a region that has been the fastest-growing in the recent years and should continue to develop at a steady pace.



PWe - WITH CAN CONTROL

The PWe is the latest generation Heavy Duty pump with electronic control designed by Poclain Hydraulics. Based on the PW pump developed within the High Performance program, the PWe pump with its embedded Electronic Control Unit (Smart Drive CT30) and set of sensors provides safety, accuracy and high performance.

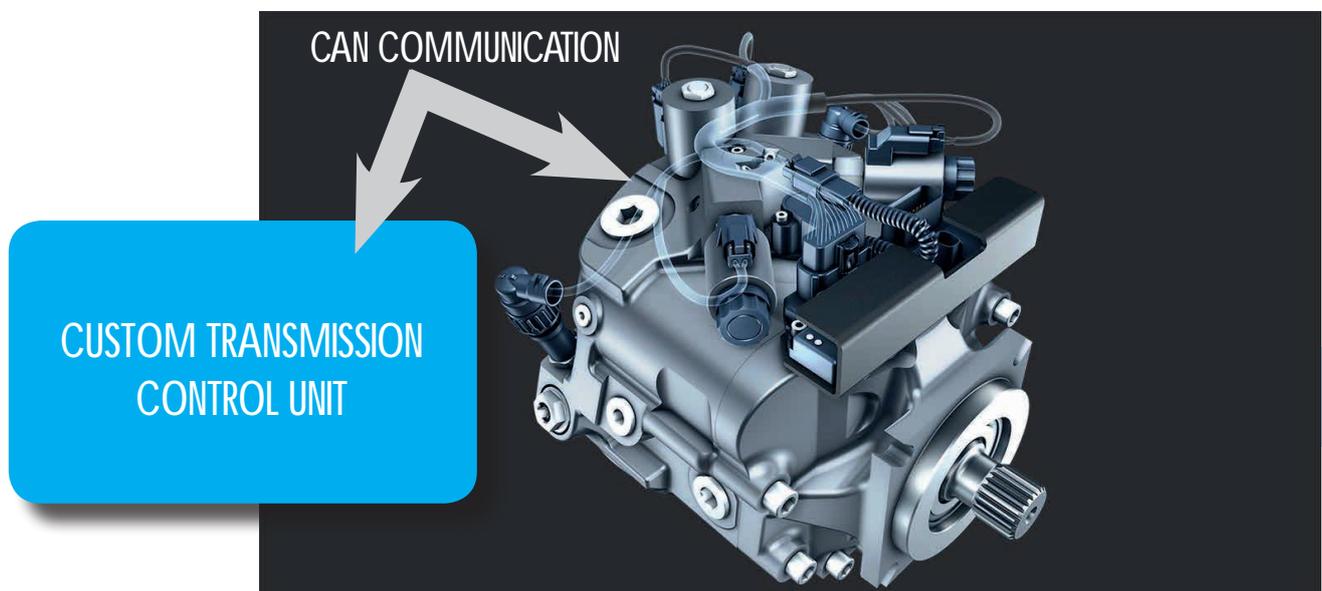
The PWe is designed to be easily integrated into your machine and to ensure in a few steps the expected high levels of performance and safety for your application.

The PWe's on-board electronic control unit can withstand the harshest environments, including proximity to the internal combustion engine. The IP69K type electrical connections and the factory-installed harness are tested at the end of the assembly line before delivery. The 2 integrated CAN bus allow to share information with the rest of the machine (internal combustion engine, displays,

hydraulic components...), configure and diagnose your machine.

The PWe is a plug-and-play solution. The associated electronic devices are delivered plugged onto the pump and wired to the pre-programmed ECU. The system is ready to be connected to the joystick that drives the machine. It allows to reduce development costs and to speed up the machine's time to market.

The PWe can also be controlled by our customer's own proprietary Electronic Control Unit via a CAN bus that complies to the J1939 standard. The CAN bus controls the displacement of the PWe so that its high level of performance and accuracy is reached as easily as by sending a percentage on a CAN Bus. No need to be expert in loop current control and pump stroke calibration. The PWe ECU takes care of this, and is able to communicate diagnostic information with a dashboard screen where temperature, pressure and speed can be monitored.



POCLAIN HYDRAULICS SELECTED BY D2R FOR THEIR ROAD-RAIL EXCAVATORS

Based in Luxemburg, D2R specializes in road-rail excavators which are approved by the French national railway company (SNCF).

D2R's machines are known for their load capacity, comfort and driving smoothness. D2R recently decided to equip its 23 tons excavator with hydrostatic transmissions, a solution that has become a standard for all railway market players.

Poclain Hydraulics was selected on the basis of the performance level of its

transmissions and its experience in the rail industry, where it has a proven record in providing efficient traction systems for inspection platforms and wagon tippers.

Four MS motors, equipped with heavy duty bearing supports, drive directly the railway excavator wheels. The new transmission system fulfills all the requirements of D2R: movement accuracy, ease of operation and capacity to withstand harsh environment as well as intensive work conditions.



 freshgarden design

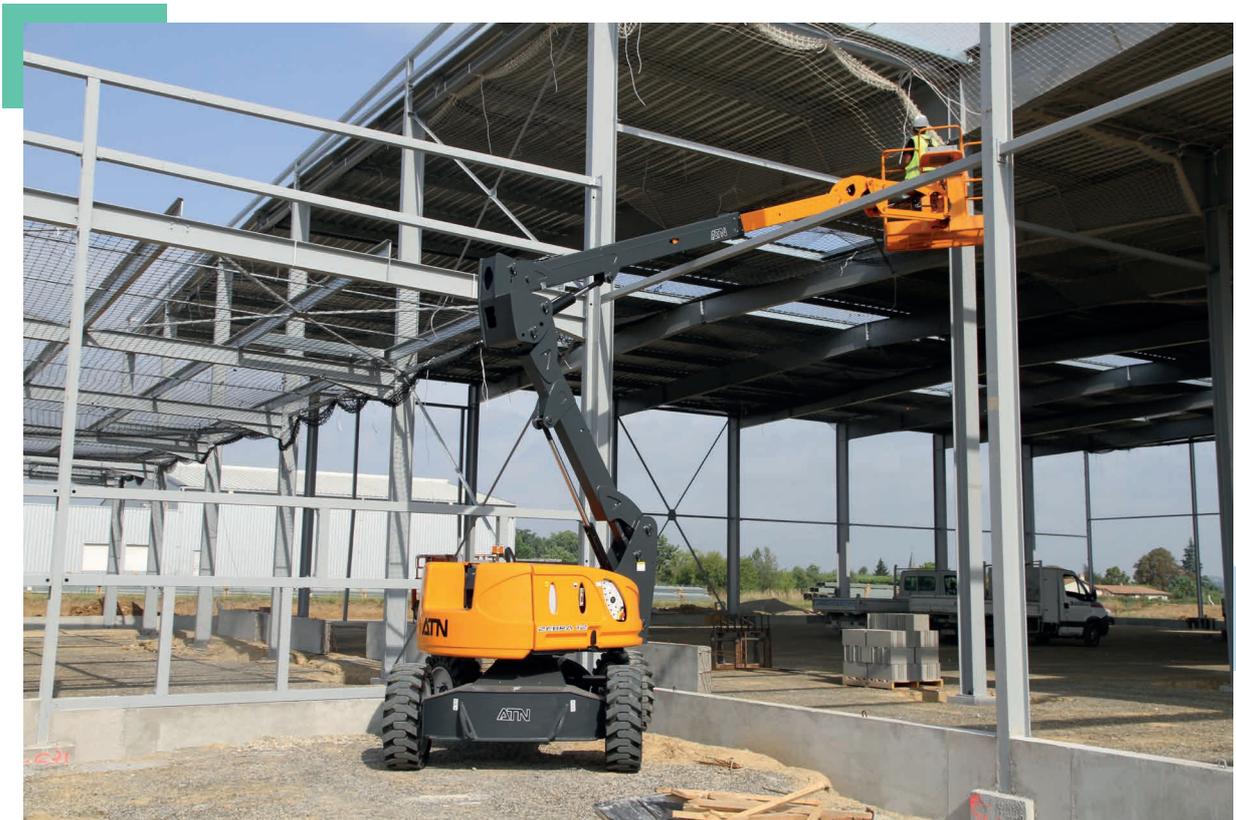
ATN CHOOSES POCLAIN HYDRAULICS ONCE AGAIN FOR ITS NEW GENERATION ARTICULATED AERIAL WORK PLATFORM

Based in South Western France, ATN manufactures aerial work platforms for the rental market. Their machines are rugged and easy to maintain; they range from compact boom lifts for warehouses to all terrain scissor lifts for the outdoors.

Poclain Hydraulics and ATN have been working together for several years on different machines such as the CX15 scissor lift and the Z16 articulated boom lift. Since the beginning ATN has relied on Poclain Hydraulics' expertise in complete systems for their ground drives. The Poclain Hydraulics system includes 4 two-speed wheel motors, a medium duty closed loop pump, valves for traction control (flow divider) and pilot functions

(brake and wheel motors displacement switch activation).

Today Poclain Hydraulics is proud to announce that we were selected for the new Zebra 12 articulated aerial work platform ground drive. The performance of the machine is outstanding: its boom can reach 8.5 m horizontally and it boasts high ground clearance and drive speed. Poclain Hydraulics was able to work on the complete transmission and support ATN with extensive services such as on-site transmission recommendations and commissioning the machine at start-up.



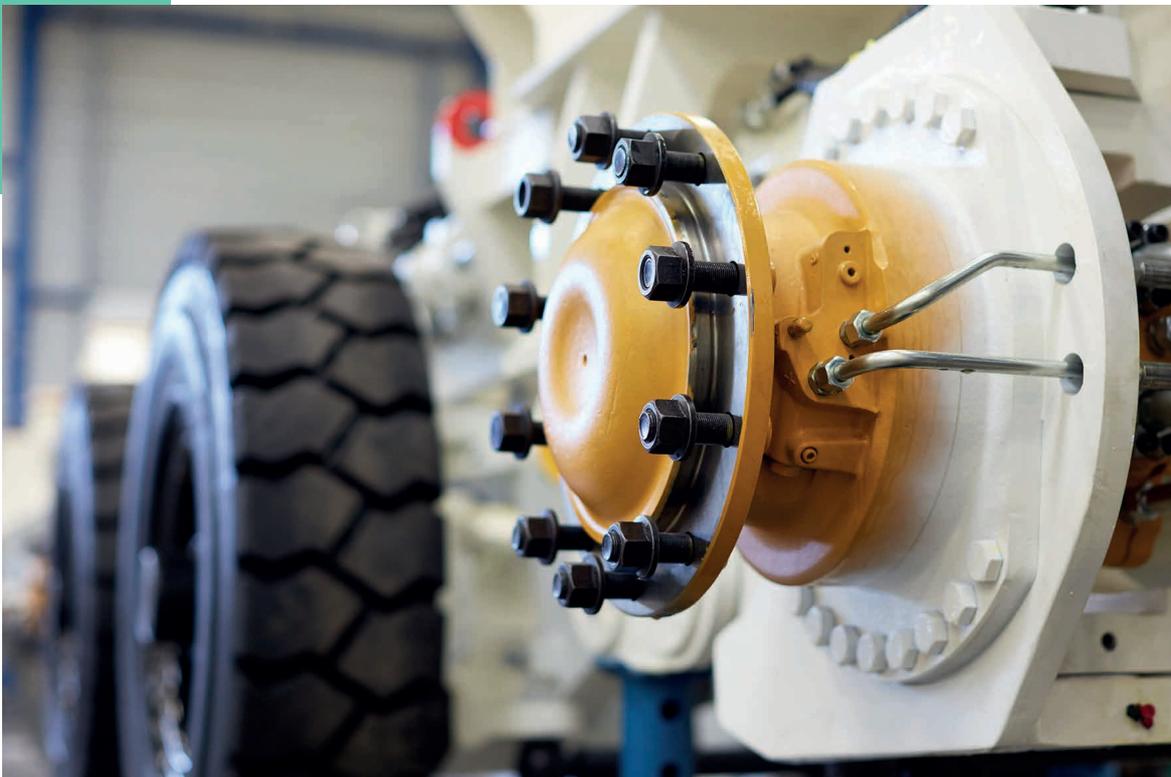
TMS SMART JOBSITE SOLUTIONS

Based in France, Techni-Métal Systemes SAS (TMS) designs and produces tyre-wheel, non-track-bound special vehicles which are used on tunnel jobsites to transport personnel, segments, extracted materials and other rolling stock.

TMS has chosen Poclain high torque low speed motors to equip their multi-purpose transport vehicles. These high performance vehicles work on under exceptional constraints: high precision manoeuvring (15 meters minimum turning radius) and

200 tons maximum payload with grades of 10% or more. The vehicles adapt to the nature of the equipment they transport: materials, sub-assemblies, cranes, concrete mixers and pumps, etc.

The platforms that make up the vehicles are modular and can feature up to twenty-four wheels, each one equipped with a Poclain Hydraulics static and dynamic brake system. TM appreciates the performance and security that come with our solutions.

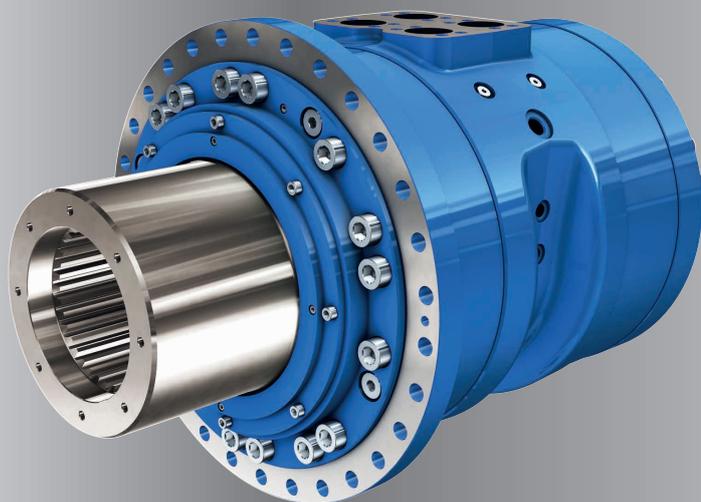






MI250:

THE NEW HIGH-CAPACITY MOTOR



CHARACTERISTICS

- Weight: <950 kg (2094 lb)
- Overall length: 900 mm (35 in)
- Diameter: 520 mm (20.5 in)
- Displacement: 17,500 cc/rev (1037 cu.in/rev) to 30,000 cc/rev (1830 cu.in/rev)
- Max. speed at 30,000 cc/rev (1830 cu.in/rev): 60 rpm
- Max. pressure: 350 bar (5075 psi)
- Max. torque: 140,000 Nm (1,240,000 lbf.in)
- Efficiency over 90%

2 or 4 DN28 ports with flat port for flanges valves

AVANT TECNO

AVANT TECNO is a Finnish company specialized in agricultural machinery particularly renowned for their tool loaders which ease the everyday load carrying, clearing and mowing jobs on farms.

The company is increasingly relying on Poclain Motors for its articulated tool carriers and has thus decided to extend their use to some of their smaller machines. AVANT TECNO's 500 series, for example, are now equipped with four MSE02 motors. Using our serial piping connections, the hydraulic circuit includes a full diff lock system between both front

and rear motors, which can be extended as an option between right and left sides through the use of our latest generation of flow dividers capable of handling up to 350 bars max pressure and an inlet flow of 200 l per minute.



POCLAIN ADDS AN EXCHANGE VALVE TO ITS HIGH PERFORMANCE RANGE

Poclain Hydraulics launches the VE-60, a new generation of High performance (HP) hot oil exchange valves for closed loop hydrostatic circuits. The casted version of VE-60 is lighter (weight reduced by 35 %), more compact and has improved performance. In addition with those improvements the VE-60 HP can be flanged on MHP motors and PW pumps, which makes it the perfect exchange valve

for the High Performance product range. The VE-60 has a casted body and is validated for up to 500 bar maximum pressure and a nominal flow of 60 liters per minute.

Exchange valves regulate the temperature in a closed loop circuit. The principle of this valve consists of taking hot oil from the low-pressure side then sending it to the cooling system.



	Weight [kg]	Qrange [l/min]	Δp [bar] at 60 [l/min]	Relief pressure [bar]	Max. pressure [bar]
VE60	2,4	5 - 60	10	12-18 ; 20-30	500



AddiDrive™

On Demand AWD for Trucks

- Gives more efficient traction power without impact on the chassis and preserves dynamic performance of the standard vehicle
- Improves the productivity by optimizing the vehicle versatility and payload
- Activated only when needed, allows energy savings compared to AWD vehicles
- Contributes to the vehicle safety and driver comfort on difficult fields or in poor conditions



ROMANIA: ON GRADINARIU

The snowblower clears roads blocked by snow by scraping it off the ground and blowing it to the side through a loading chute. The machine must travel fast to arrive on the blocked road section rapidly and free the access to isolated areas. It can work alone or as part of a chain of trucks carrying out the same or other tasks.

When the actual slowblowing takes place, emphasis is on constant slow speed. The maximum work speed is 5 km per hour. Poclain's CreepDrive™ hydrostatic transmission allows the truck to combine fast travel speed and constant slow work speed.

Adapted to extreme conditions

The snowblowing attachment is mounted to the front of the machine. The truck is equipped with sound and visual warning devices to meet the security requirements.

The machine is designed to start with temperatures as low as -35° C.

A hybrid transmission

The vehicle integrates a mechanical transmission for the travel mode and a hydrostatic one for the work mode. A switch enables the driver to shift from one to the other, either inside the cab or using a remote control.

CreepDrive™ benefits:

- Working speed is constant, regardless of engine rpm
- Ideal for bad road conditions and uneven surfaces
- Easy installation and integration: light and compact to fit any mechanical transmission
- Prevents brakes, clutch and transmission from wearing



POCLAIN'S CREEPDRIVE™ SNOWBLOWERS

Snowblower specifications

Cleaning width: 2.40 m

Snow drift max. height: 1.20 m

Clearance distance: 15.1 m

MAN TGM 18.280 4x4 BB chassis

The water tank, water pump and accessories (portable PSI) are installed on a frame especially designed for easy placement in special vehicle bin. Bin and frame construction allow quick assembly / disassembly of equipment (quick installations). In this respect, the framework is provided with four telescopic arms, which allows downloading and stationing equipment when truck is used only for snowblower function or for transporting goods and materials.

Other features:

- Low pollution engine
- Safe crew cabin
- Audible & visual warning signals
- Special lights for good vision
- 4x4 chassis
- Hydrostatically driven snow-blower
- All controls accessible to vehicle driver through a special panel located inside the cabin



GRADINARIU

GRADINARIU IMPORT EXPORT designs and builds custom vehicle superstructures on serial trucks. The snowblower, which turns into a fire truck in the hotter days, is a special development for the Romania firefighters.

THE NEW HIGH REWARDED AT THE

LAMMA is the UK’s largest farm machinery, equipment and agricultural services show. The 2016 edition rewarded Poclairn Hydraulics’ High Performance motor, the MHP20, for “Best Product or Innovation for the Environment”.

The MHP motor is the result of many years of design and validation. It sets a new standard for cam-lobe hydraulic motors in terms of performance, reliability and fuel consumption optimisation. OEMs aim to increase performance and ruggedness, while improving fuel efficiency when they design their hydrostatic transmission.



They mirror: OEM’s seek to address farmers’ concerns, for whom fuel consumption and reduction of emissions has become critical issues. They want to optimise production costs while ensuring that their carbon footprint is minimal.

Taking advantage of its innovative and optimized design, the MHP motor greatly reduces the losses typical of hydraulic units : the motor boasts over 90% of overall efficiency, even when working at the highest speed (thanks to reduced displacement).

Available in two sizes, 20 (1,430 to 2,430 cc per rev) and 27 (1,890 to 3,520 cc per rev), the MHP motor is the keystone of the new HIGH PERFORMANCE range developed exclusively by Poclairn Hydraulics.

Thanks to advanced calculation and simulation tools, each motor part has been optimised, down to the slightest detail.



Enhanced Performance

Thorough testing for a power-packed motor
With the MHP motor, Poclairn Hydraulics introduces a new rotating group configuration, especially designed to enable high rotation speed (up to 370rpm) and power (up to 280kW), which are key to improving productivity and performance on mobile machinery.

The power level achieved with the MHP motor allows to redefine the limits of hydraulic transmissions. Machine weight can increase, without compromising on the maximum speed (on field and road) and gradeability.

PERFORMANCE MOTOR LAMMA TRADESHOW (UK)



Heavy duty applications

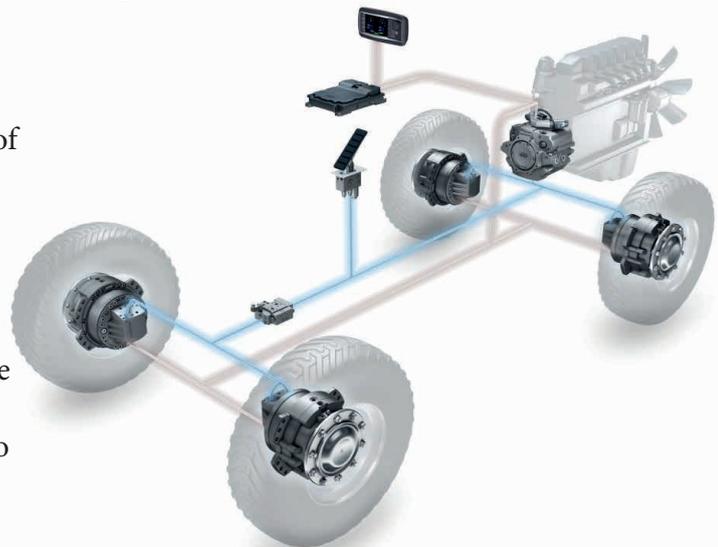
Besides its impressive performance levels, the MHP has been engineered and validated to withstand the extreme working conditions that farmers experience in the fields.

Designed with a closed cover and reinforced sealing protection, the MHP motor is able to withstand contact with chemicals, dirt, dust, water, shocks and other demanding operating conditions. With its sturdy chassis mounts (proposed either on cover or bearing support) and heavy duty bearing support, the MHP motor is able to handle high external loads. The OEMs are free to increase the machine weight, either to accommodate higher payload or heavier components, like the engine.

Powerful braking

The braking assembly completes the overall robustness of the MHP motor with the following attributes :

- Closed design to handle even the most aggressive chemicals without losing braking performance
- High service braking energy absorption (up to 1 Mega J) to stop even the heaviest machines at high speed
- High dynamic brake capacity that complies with mobile machinery braking regulations (e.g. TÜV)
- Braking torque (parking included) directly applied onto the wheel drive-shaft for increased safety



More pressure

500 BAR



More efficiency



More power



More speed



MS83 and MS125 : hydraulic motors that combine efficiency and speed

The MS83 and MS125 High Flow motors integrate new valving design, which reduces the pressure drop by over 50% and directly increases their efficiency during operation, even at low speeds.

At comparable output levels, the machine's overall energy consumption is reduced and users benefit from significant energy savings.

Pressure Loss Reduction



Designed with four hydraulic ports, the MS83 and MS125 High Flow motors also provide superior torque and up to 50% higher speed, even for the most heavy duty of applications. Machine manufacturers who are looking for performance will find in these new hydraulic motors a way to enhance their value proposal for end users by combining energy savings with higher productivity.

Maximum Speed Increase



** For same speed of 55 rpm, pressure drops are reduced by 50% and for same pressure drops reachable speed can be increase by 50% in the case of a MS125 motor with 12 500 cc displacement (760 cu.in)*

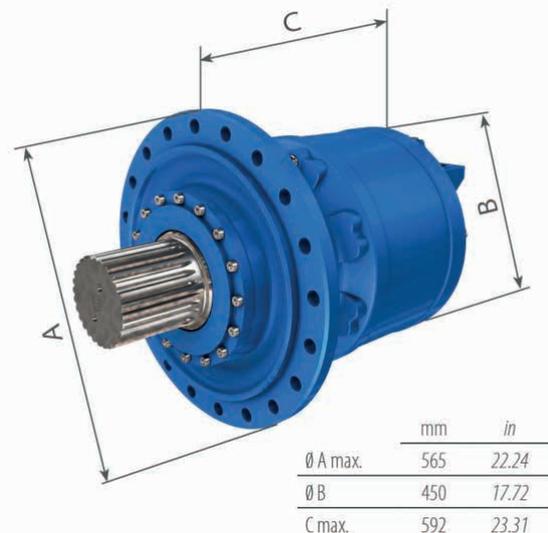
All these efforts to optimize performance have been carried out without compromising on the size, so these motors can meet the dimensional constraints of the application. Their compactness and reduced diameter facilitate their integration and help machine manufacturers reduce development time.

Customer benefits:

- Direct drive
- High power
- High torque
- High efficiency

Typical application examples:

- Shredders
- Marine Winches
- Industrial Applications (Rolling devices, Mixers, Injection moulding machines, etc.)
- Mining Applications
- Tunnel drilling



«BIG» HYDRAULIC MOTORS

	UNIT	MS83	MS125
Displacement	cc cu.in	6,679 to 10,019 408 to 611	10,000 to 15,000 610 to 915
Max. torque	Nm lbf.in	Up to 71,500 Up to 632,800	Up to 77,000 Up to 681,500
Max. power	kW hp	200 268	240 322
Max. pressure	Bar psi	450 6,527	320 - 450 5,076 - 6,527 (depending on the displacement)
Ports		<ul style="list-style-type: none"> • 4 flat ports 	
Interface (shaft)		<ul style="list-style-type: none"> • Wheel rim • Male and female splines • Shaft for shrink disc 	
Connections		PN400 DN32-X-NF ISO 6162-2 + 4xM14	
Compatibility with brakes		Compatible with the T80 (parking and emergency braking)	
Characteristics		<ul style="list-style-type: none"> • Symmetrical twin displacement • Flat ports • Additional drains 	

HIGH FLOW HYDRAULIC MOTORS

MI250 : the new high-displacement champion



Poclair Hydraulics is addressing the more demanding applications with a new hydraulic motor that combines high displacement with reduced size. This product offers all the benefits of radial piston technology with enhanced performance and ease of integration.

Displacement up to 30 liters

The MI250 has been designed to offer a displacement ranging from 17,5 to 30 liters.

The 30 liter displacement used at a maximum pressure of 350 bar (5076 PSI) enables it to generate a maximum torque of 140 kNm (1 240 000 lbf.in) for a power of 500 kW (671 HP). With reduced dimensions, the MI250 also offers higher available power density.

With an efficiency ratio of over 90%, the MI250 also contributes to energy savings, thus reducing its Total Cost of Ownership (TCO).

Easy to integrate :

Poclair Hydraulics has designed the MI250 with the strict constraints of machine manufacturers in mind : the reduced dimensions and weight of this high-displacement hydraulic motor facilitate its integration in all kinds of equipment.

For easy torque arm positioning, the MI250 is available with several shaft interfaces

(shrink discs or male splines) and has a flat port surface for direct mounting of valves.

Highly reliable :

The MI250 is based on the technology which Poclair Hydraulics has been using for 50 years in its radial piston motors. This proven design allows for great reliability and a lifetime adapted to the most demanding applications such as shredders, industrial machines, marine winches and drill.

Main characteristics :

- Weight: <950 kg (2095 lb)
- Total length: 900mm (35 in)
- Diameter: 520 mm (20,5 in)
- Displacement: 17,500 cc per rev (1040 cu.in per rev) to 30,000 cc per rev (1830 cu.in per rev)
- Max speed at 30,000 cc per rev: 60 rpm
- Max pressure: 350 bar (5075 PSI)
- Max torque: 140 kNm (1 240 000 lbf.in)
- 2 or 4 DN32 ports with flat port allowing for direct mounting of valves.
- Available with 2 drains and 2 pressure gauge ports.



A VALVE DEDICATED TO INDUSTRIAL APPLICATIONS

The CORAC valve is a Cross-Over Relief and Anti-Cavitation valve that can be flanged on Poclairn's largest motors (MS83, MS125 & MI250). Today available with flows from 200 to 1000 liters per minute (can be more on demand) and with a max pressure of 350 bar, this valve provides an effective protection to circuit components exposed to high cyclical loads and long pipes.

The development of the CORAC valve

reinforces Poclairn Hydraulics' position as a system provider for industrial applications. The combination of the CORAC valve with our largest motors provides a highly efficient hydraulic system in line with industrial requirements.

The CORAC valve, which is an assembly of standard valves, is yet another example that Poclairn Hydraulics is expert in creating an all-in-one valve that performs all the necessary functions in one compact block.



MEDIUM DUTY PUMPS

A New Size for the Pump Range: the PM30

As the existing PM50, the new PM30 pump is designed specifically for medium duty applications. It is efficient, user-friendly and economical. Our medium duty pumps meet all customers' expectations in terms of productivity, comfort, reliability and efficiency and are well suited for the most demanding markets such as mowers, wheel loaders, compactors and aerial work platforms.

Designed for performance and comfort:

End users can now take full advantage of performance and comfort when using their machines. The new range of PM hydraulic pumps provides all the necessary monitoring for any machine available on the market. Each unit, whether equipped with mechanical, hydraulic or electro-proportional control, has been redesigned with special emphasis on detail and efficiency. With the aim of further improving the working environment of the driver, particular care has also been taken to reduce noise levels. With these pumps, machines can comply with present and future regulatory requirements in terms of comfort, safety and performance.

Designed to last:

Reliability and durability are of utmost priority to end users. Designed to meet the highest quality standards and tested in severe conditions, both on test benches and on site, the new range of PM hydraulic pumps will for sure exceed your reliability requirements and thus reinforce your brand image as well as customer satisfaction.

Designed for easier integration:

Technical solutions imposed by the new anti-pollution standards reduce the space available in the engine compartment. The PM hydraulic pumps feature a reduced axial length and fully integrated additional functions such as exchange and anti-stall, resulting in an extremely compact design. This compactness offers Poclain Hydraulics' customers more flexibility in the design of their machines.



Hydraulic servo control



Electrical on-off servo control



Electro-proportional servo control

Designed for energy savings :

End users are now very concerned with the total cost of ownership of their machines and pay particular attention to fuel consumption costs. This is why each component of our new PM range has been designed to increase the overall pump efficiency and thus contribute to reach the energy consumption levels expected by the markets.

Specifications of the Poclain medium duty pump range :

		PM30	PM50
Max Displacement	cc (cu.in/rev)	25-35 (1.53 – 2.14)	40-52 (2.4 - 3.2)
Peak Pressure	bar (psi)	400 (absolute) (5801 absolute)	
Rated Pressure	bar (psi)	300 (absolute) (4351 absolute)	
Max Speed	rpm	3600	3600

PM50 with «Q control»: Electro-proportional Servo-control with Feedback System now Available

The arrival availability of the electro-proportional servo-control with feedback system on PM50 pumps is an opportunity for customers to design machines that offer optimal driving comfort. Thanks to its technology, the «Q control» enables an extremely accurate control of acceleration ramps, but also eliminates any sudden jolts when accelerating or braking.

The feedback system corrects displacement variations caused by varying pressure

encountered in a system during a working cycle. The speed of the machine is thus maintained whatever the movements and variations in pressure, which again increases its accuracy.

The user will be able to move with ease and position their machine with precision.

This control is perfectly suited to cutter-type applications, harvesting machines, finishing machines, sweepers, etc.

New in the Medium Duty Range: Speed Sensor Available for M2 and M3 High Speed Motors

The speed sensor option allows to monitor very accurately the motor's speed, especially for high speed models. This much-awaited option provides maximum precision in the control of the travel speed of the machine, whatever the pressure in the system. The user's comfort is thus increased.

This option is particularly useful for compactor-type vibration applications, electric generator drive units, drive units for fans in cooling systems, etc.



WHAT'S NEW



Poclain Hydraulics' international development strategy and sustained growth have led the group to add an assembly line to the existing plant in Pondichery, India, in January 2016.

The line can manufacture complementary motor sizes (up to size MSE18 with max. displacement of 2,800cc) that meet the local market needs. It integrates the latest technologies in terms of process control and traceability.

As from July 2016 the Pondichery facility will house a brand new paint line based on the liquid spraying technology for base and finish coating.

POCLAIN HYDRAULICS' COMING EXHIBITIONS

BAUMA Munich (Germany) // 2016 April 11-17
CIAME Qingdao (China) // 2016 October 26-28

NEW WEBSITE

Corporate: www.poclain.com

