SELECTION GUIDE 2026

HYDRAULICS AND BEYOND

POCLAIN

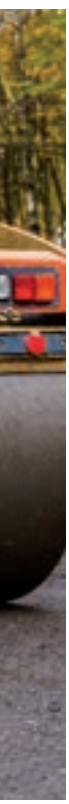
POCLAIN

SOLUTIONS FOR THE MOST DEMANDING MARKETS

Poclain specializes in the design, manufacturing and marketing of high torque travel drive and tool drive transmissions.

Our internationally recognized expertise allows us to expand on highly diversified markets such as the construction, agricultural, public works, material handling, industrial, environment and on-road markets. Poclain's development is driven by our innovative spirit and our ability to anticipate the needs of a wide range of cutting edge applications.

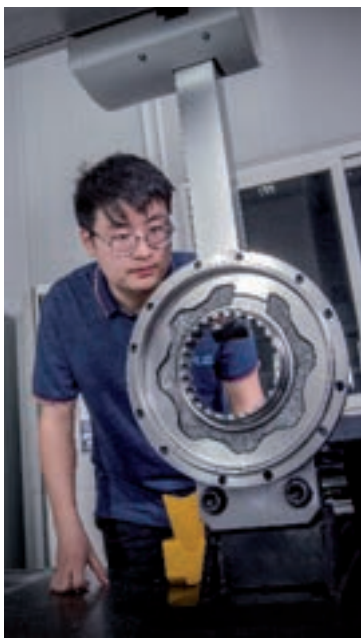
- > Construction
- > Agricultural
- > Mining
- > Forestry
- > Environment
- > Material handling
- > Industry
- > Marine
- > On-Road
- > Etc



A CLOSE PROXIMITY PLAYER
THROUGH OUR WORLDWIDE PLANT LOCATIONS

Poclain hydraulics is an industrial company concerned about sustainable development issues. For this reason the Group has decided to develop a responsible growh based on respect of the environment in each production site (ISO 14001 and ISO 50001) and to commercialize recyclable and low carbon solutions.

> 7 Plants in Europe
> 2 Plants in Asia
> 1 Plant in America



CZECH REPUBLIC
(Hydraulic Motors)

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619 00 Brno
Tel.: +420 543 563 121

CHINA
(Hydraulic Motors, Pumps and Valves)

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Factory Building n° 11,
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Shanghai 201611
Tel.: +86 21 37 00 34 15

FRANCE
(Hydraulic Motors)

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60410 Verberie
Tel.: +33 3 44 40 77 77

FRANCE
(Pistons)

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74460 Marnaz
Tel. : +33 4 50 18 32 62

GERMANY
(Electric Motors)

MOTEG GmbH
Alter Kirchenweg 87
24983 Handewitt
Tel. : +49(0)4608-28597-0

ITALY
(Hydraulic Pumps)

POCLAIN HYDRAULICS
INDUSTRIALE SRL
Via Baccolini 2,
Spilamberto, 41057 MO
Tel.: +39 059 959 711

INDIA
(Hydraulic Motors)

POCLAIN HYDRAULICS PVT LTD
No: 131 / 2, Kothapurinatham Road
Mannadipet Commune Panchayat
Thiruvandarkoil
Pondicherry - 605 102
Tel.: +91 4132641444 / 2641477

SLOVENIA
(Hydraulic Valves)

POCLAIN HYDRAULICS D.O.O
Industrijska ulica 2
Žiri 4226
Tel.: +386 (0)4 51 59 100

SLOVENIA
(Inverters)

EMSISO D.O.O
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SI-2211 Pesnica pri Mariboru
Tel.: +386 2 4612907

USA
(Hydraulic Motors and pumps)

POCLAIN HYDRAULICS INC
1300 N Grandview Parkway
P.O. Box 801
Sturtevant, WI 53177
Tel.: +1 262 321 0676

OUR ENVIRONMENTAL
AMBITIONS AND OBJECTIVES FOR 2030

Poclain is a responsible company, with the ambition to remain the partner of choice for our clients, while meeting the expectations of all stakeholders.

- **All products from our design offices are eco-designed**
- **Reach 0 landfilled waste**
- **Reach 70% recycled material rate (by mass) in our inputs**
- **Reach 80% of low-carbon energy;**
- **Reach 99% of recyclable material for outgoing products and packaging**
- **Reduce water consumption by 30% at our sites located in drought-prone areas (India and Italy)**
- **Reduce water consumption in the group by 15%**

With our new Environmental ambition we have added two SDGs to our CSR Charter:

CLEAN WATER AND SANITATION

- Sustainable water resource management
- Prevention to avoid any risk of pollution

CLIMATE ACTION

- Impact of our activities and sites
- Adapt Products and Product offerings
- Sustainable Supply Chain

Overall Score

69/100

Percentile

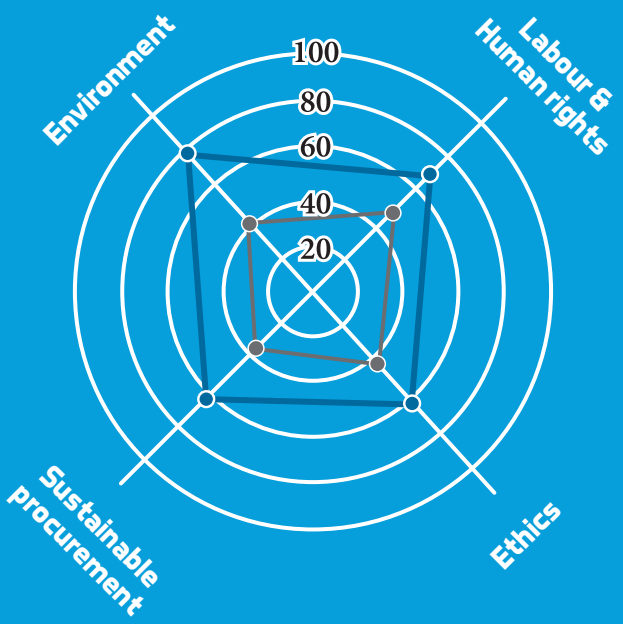
86th

SILVER | Top 15%

ecovadis

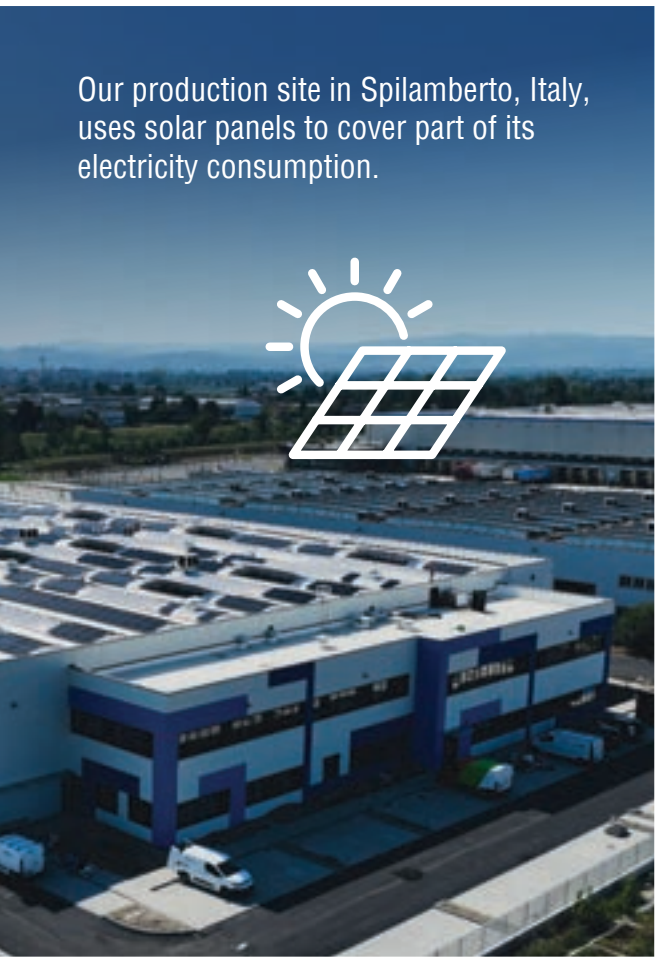
Sustainability Rating

APR 2025



POCLAIN GROUP RECEIVED A SILVER MEDAL FOR ITS CSR PERFORMANCE.

This award means that POCLAIN is in the TOP 15% of companies evaluated by EcoVadis over the past twelve months.



Our production site in Spilamberto, Italy, uses solar panels to cover part of its electricity consumption.

Poclain's commitment to the Paris Agreement

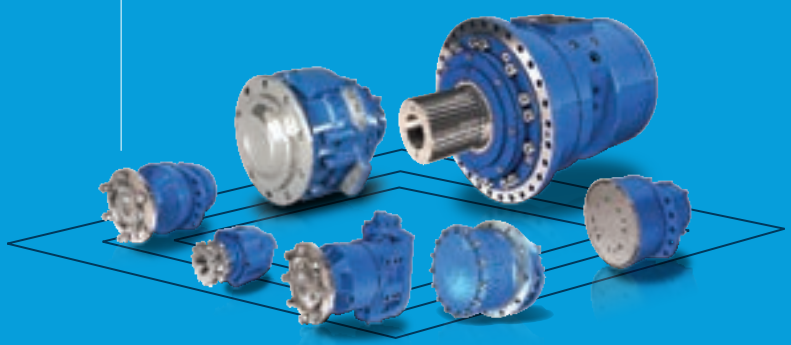
Beyond the EcoVadis initiative, Poclain has set ambitious 2030 goals aligned with the Paris Agreement:

- Reduce Poclain's absolute scope 1 and 2 emissions by at least 42% compared to 2022 levels. Scopes 1 and 2 encompass the emissions generated by the group, as well as those associated with the purchase of electricity, steam, heat, or cooling;
- Obtain ISO 140001 and ISO 50001 environmental and energy management certification for all Poclain plants by 2026.
- Support customers in transitioning from diesel-powered to emission-free machinery using electro-hydraulic and electric transmissions;
- As part of our SBTi engagement, we are actively looking to collaborate further with our Clients and value chain to offer the most efficient transmission in terms of CO_2.

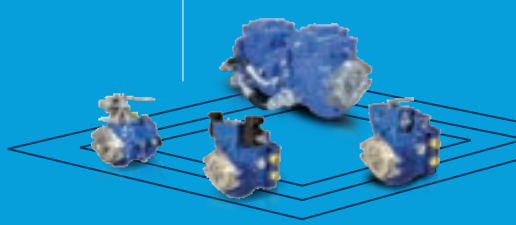
REFERENCE OFFERS 11

FULLY ENGINEERING

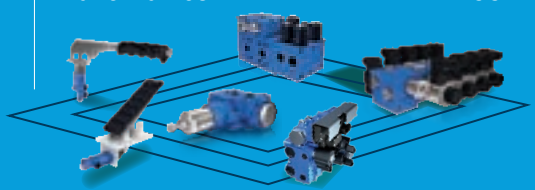
MOTOR RANGE 79



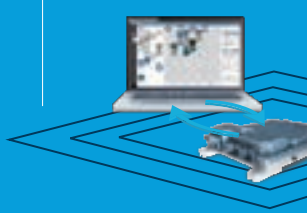
PUMP RANGE

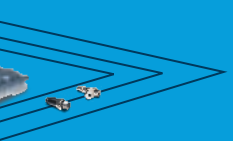


VALVE RANGE 152



ELECTRONIC





REFERENCE OFFERS

REFERENCE OFFERS

SPEED UP YOUR MACHINE'S TIME TO MARKET

Poclain Hydraulics offers turnkey hydrostatic solutions for off- and on-road applications.

Our expertise enables us to understand your requirements and provide a precise solution for them.

By placing the design of your hydrostatic systems in our hands, you save design time and shorten your new machines' time to market.

The reference offers are available on Poclain Hydraulics web site.

- **> Construction**
- **> Agricultural**
- **> Mining**
- **> Forestry**
- **> Environment**
- **> Material handling**
- **> Industry**
- **> Marine**
- **> On-Road**
- **> Etc**

COMPACT ALL-IN-ONE TRANSMISSION SOLUTIONS FOR LIGHT COMPACTION (<6 TONS)

YOUR MAIN BENEFITS

FLEXIBLE DESIGN

- Easy integration thanks to motor compactness.
- Mounting of both drive and vibration motors on the same side (hollow shaft) allows single bracket design to use compactors close to buildings.

PRODUCTIVITY

- Optimize traction control in any condition with high gradability.
- Excellent accuracy at low speed thanks to direct drive.
- Fuel cost saving due to higher efficiency.

RELIABILITY

- Technology proven on field over decades.
- Poclain as market leader in hydrostatic transmission for light compaction.

OUR REFERENCE OFFER

PROPEL DRIVE SOLUTIONS FOR SINGLE AND DOUBLE DRUM COMPACTOR, COMBI-ROLLER, WALK BEHIND ROLLER & TRENCH COMPACTOR

Modular MS02-MS05 motor:

172 to 750 cm³/rev.
for extra small / small frame up to 5 tons

More information
> Page 92

Compact MK04-MK05 motor:

272 to 670 cm³/rev.
for extra small / small frame up to 5 tons

More information
> Page 104

¾ duty PM pump:

Wide pump control range inluding direct or servo mechanical and electro proportional control up to 420 bar

More information
> Page 144

Piloting valve:

Brake control and speed shifting

More information
> Page 154

Options:

- **VE exchange valve**
  Flushing valve
- **FD-M flow divider**
  For instance for combi rollers

VE valve

FD-M valve

More information
> Page 154

WHAT DO YOU GAIN?

- Environmentally friendly with reduced fuel consumption (CO_2 emission).
- High surface finishing quality thanks to direct drive : no backlash, excellent accuracy at low speed.
- Ideal for vibration thanks to a high resistance to shocks.
- Never get stuck on soil or asphalt thanks to Poclain traction control solutions.
- Maintenance free.
- Full system from one supplier.

ROBUST DRIVES
FOR HEAVY COMPACTORS (>7 TONS)

YOUR MAIN BENEFITS

FLEXIBLE DESIGN

- Easy integration thanks to motor compactness.
- Mounting of both drive and vibration motors on the same side (hollow shaft).

PRODUCTIVITY

- Optimize traction control in any condition with high gradability.
- Excellent accuracy at low speed thanks to direct drive.
- Fuel cost saving due to higher efficiency.

RELIABILITY

- Technology proven on field over decades.
- Poclain as market reference in hydrostatic transmission for heavy compaction.

OUR REFERENCE OFFER

PROPEL DRIVE SOLUTIONS FOR SINGLE AND DOUBLE DRUM COMPACTOR, COMBI-ROLLER AND SPLIT DRUM

Modular MS motor:

Drum drive motor with strong parking brake and short heavy bearing support

More information
> Page 92

Compact MK motor:

Drum drive with hollow shaft for split drum compactors

More information
> Page 104

Options:

- **VE exchange valve**
  Flushing valve (can be integrated in motor cover)
- **FD-H heavy duty flow divider**
- **VMA traction control valve**
- **Retarder valves for electrohydraulic transmissions**
- **Internal motor case flushing**

VE valve

FD-H valve

VMA valve

More information
> Page 154

WHAT DO YOU GAIN?

- Environmentally friendly with reduced fuel consumption (CO_2 emission).
- High surface finishing quality thanks to direct drive : no backlash, excellent accuracy at low speed.
- Ideal for vibration thanks to a high resistance to shocks.
- Motor robustness qualified at 450 bar.
- Never get stuck on soil or asphalt even on steep grades.
- Maintenance free / easy repair.

THE LEADING MARKET SOLUTION FOR EFFICIENT COMPACT SKID-STEER LOADERS

YOUR MAIN BENEFITS

PRODUCTIVITY

- High torque for ground drive to push on any terrain.
- Very low pressure drops at high speeds to get work faster done carrying larger loads.
- Soft shifting for good driving experience.

FLEXIBLE DESIGN

- Compact motor size allows the motors to be mounted across from each other and enables large cabins or comfort.
- Complete range of motor products with several orientation and mounting options.

RELIABILITY

- Technology proven in the field for decades.
- Poclain is the market leader in hydrostatic transmission for skid-steer loaders.

OUR REFERENCE OFFER

FOR SKID-STEER LOADERS (2,5 to 4,5 tons)

High pressure direct drive motors up to 450 bars

Dedicated ML motor:

- ML04 (262 to 447cm³/rev.) for mid frame (2,5 to 3,5 tons op. weight)
- ML06 (420 to 842 cm³/rev.) for large frame (3,5 to 4,5 tons op. weight)

More information > Page 120

Modular MS motor:

- MS02 (172 to 398 cm³/rev.) for small frame (2,5 to 3 tons op. weight)
- MS05 (260 to 820 cm³/rev.) for mid / large Frame (3,5 to 4,5 tons op. weight)

More information > Page 92

Tandem ¾ duty PM pumps:

reaching up to 420 bar with a displacement range from 25 to 52 cm³/rev.

More information > Page 144

Options

- **Pump controls:** electronic or hydraulic pilot actuated
- **Various size of sprockets** (9 to 16 teeth; for various chain pitches from 80 to 120)
- **Single or dual speed motors**

WHAT DO YOU GAIN?

- Exceptional torque transfer to the ground for exceptional traction.
- High energy efficiency frees up power for attachments.
- All ML motors also available in dual displacement with 1,5 ratio for high torque at small displacement, good traction in rabbit mode.
- High comfort using dual speed motors with unique soft shifting behavior.
- ML range with smallest space claim thanks to compact claw brake technology.
- Rugged design with integrated hot oil shuttle valve to cool closed loop oil.

HIGH PRODUCTIVITY
DIRECT DRIVES FOR COMPACT TRACK LOADERS

YOUR MAIN BENEFITS

PRODUCTIVITY

- High Efficiency to reduce heat generation & handle heavy duty cycle.
- More torque to the ground and more power available for tools.

FLEXIBLE DESIGN

- Flexible mounting patterns for motors (axial or radial ports).
- Internal multidisk parking & emergency brake for easy integration.
- Designed to fit inside the track.

RELIABILITY

- Motor designed for CTL application to avoid dirt ingression and eliminate maintenance.
- High load capacity bearings to withstand extreme shock loads.

OUR REFERENCE OFFER

FOR COMPACT TRACK LOADERS FROM 2 TO 5 TONS

Track drive solution developed for small and medium frame compact track loaders

Dedicated MT07 motor:

495 to 915 cm³/rev.
for small / mid frame
(2,5 to 5 tons op. weight)

More information
> Page 124

MT02-MT03 motors:

172 to 500 cm³/rev.
for extra small frames
(2 tons op. weight)

More information
> Page 92

Tandem ¾ duty PM pumps:

reaching up to 420 bar with a displacement range from 25 to 52 cm³/rev.

More information
> Page 144

Options

- **Radial or axial ports on motors**
- **Pump controls:**
  electronic or hydraulic pilot actuated

Soon coming

- **MT05 and MT10**

WHAT DO YOU GAIN?

- Unique patented sealing system to withstand harsh environment: Self lubricated duo-cone seal with scraper means no maintenance required / no oil refills in seal chamber.
- High energy efficiency frees up power for attachments, even at high speeds.
- 1,5 ratio between small & large displacement means outstanding torque in small displacement for great traction also in rabbit mode.
- High driver comfort with dual speed motors thanks to unique soft shifting behavior.
- Lower noise than planetary drives.
- Longer operation in high power modes due to lower energy losses/less overheating compared to planetary drives.

ALL IN ONE TRANSMISSION FOR MINI TRACK LOADERS

YOUR MAIN BENEFITS

VERSATILITY

- Compact drive components allow to build Mini Track Loaders for small residential sites.

FLEXIBLE DESIGN

- High load capacity bearings to withstand extreme shock loads.
- Pumps can be belt or directly engine driven with hydraulic or electronic controls.

RELIABILITY

- Poclain is the market leader in hydrostatic transmissions for mini track loaders.
- Duo cone seal keeps dirt out.
- Much less heat losses versus orbital technology (gerollers).

OUR REFERENCE OFFER

FOR MINI TRACK LOADERS

Compact track drive solution specifically designed to integrate into the small space available in the track frame

Dedicated MT02-MT03 motors:

172 to 500 cm³/rev.

More information
> Page 124

Modular MS02 / MSE02 / MSE03 motor:

172 to 500 cm³/rev.
with reinforced duo cone seal

More information
> Page 92

Tandem PM10-PM20 pumps:
up to 2 x 28 cm³/rev.

More information
> Page 144

Tandem PM10-PM20 pumps:
up to 2 x 21 cm³/rev.

More information
> Page 144

Options

- **Pump controls:**
  Manual, hydraulic or electric
- **Parking brake on request**
- **Dual displacement on request**

WHAT DO YOU GAIN?

- Shortest pump on the market for easier integration and super compact motors.
- Excellent logistics with motors and pumps available from 4 different plants (USA, Italy, India, China).
- Self lubricated duo-cone sealing with external scraper and large seal chamber avoiding case oil overheating for strong ruggedness in harsh environments.
- Efficient operation using a closed loop circuit with Integrated hot oil shuttle valve in motor or pump to keep oil temperature under control.
- Compact claw brake technology with MT range.

ALL-IN-ONE
TRANSMISSION SYSTEM FOR MINI WHEEL LOADERS

YOUR MAIN BENEFITS

PRODUCTIVITY

- Optimized traction control in any condition.

FLEXIBLE DESIGN

- Easy integration with free space between wheels available for lifting equipment (no axles, no cardan shafts and no transfer case).

RELIABILITY

- Poclain hydraulics is market leader in hydrostatic transmission for mini-loaders.

OUR REFERENCE OFFER

FOR ARTICULATED CHASSIS FROM 1,5 TO 3 TONS

Modular MS motor:

Wheel motor for articuled chassis with or without brake

More information
> Page 92

MG motor:

Steerable wheel motor for rigid chassis with or without brake

More information
> Page 110

¾ duty PM pump:

Wide pump control range

More information
> Page 144

Piloting valve :

Brake control and speed shifting

More information
> Page 161

Flow divider :

More information
> Page 163

Options

- **Hydraulic automotive control**
- **Electronic automotive control with embedded software (auto gear shift available)**
- **Flushing valve**
- **Integrated multi-disc parking brake**
- **Parking brake valve**

WHAT DO YOU GAIN?

- High maneuverability with simple and reliable wheel drive solution.
- Reduction of ground damage thanks to anti-skid system.
- Environmentally friendly with reduced fuel consumption (CO_2 emission) and noise reduction.
- Less parts to manage and reduced maintenance cost compared to axle solution.
- Increased operator safety & stability due to a lower center of gravity (vs axles machines).
- Enhanced operator satisfaction through great transmission reactivity thanks to direct drive (no backlash).
- More flexibility in the machine design features (narrow dimensions).

ALL-IN-ONE
TRANSMISSION SYSTEM FOR SITE DUMPERS

YOUR MAIN BENEFITS

FLEXIBLE DESIGN

- Easy integration with free space between wheels.

PRODUCTIVITY

- Optimized traction control in any condition.

RELIABILITY

- Poclain hydraulics as market reference & leader in hydrostatic transmission for site dumper.

OUR REFERENCE OFFER

FOR ARTICULATED CHASSIS FROM 1,5 TO 4 TONS

Modular MS02-MS05 motor:

In-wheel motor with or without brake

More information > Page 92

3/4 heavy duty PM pump:

Up to 52 cm^3/rev.

More information > Page 144

Piloting valve :

Brake control and speed shifting

More information > Page 161

Twin-Lock steering valve:

More information > Page 156

Service brake valve and inching:

More information > Page 166

Options

- **Hydraulic automotive control**
- **Electronic automotive control with embedded software**
- **Integrated multi-disc parking and service brake**
- **Parking brake valve**

WHAT DO YOU GAIN?

- Short & simplified design process with full system pre-tested.
- High maneuverability with simple and reliable wheel drive solution versatility.
- Reduction of ground damage thanks to anti-skid system.
- Environmentally friendly with reduced fuel consumption (CO_2 emission) and noise reduction.
- Less parts to manage and reduced maintenance cost compared to axle solution.
- Increased operator safety & comfort due to a lower center of gravity (vs axles machines).
- More flexibility in the machine design features (narrow dimensions).

DIRECT DRIVE FOR EXCAVATO
THE POCLAIN LEGACY

YOUR MAIN BENEFITS

PRODUCTIVITY

- High efficiency: more responsive machine and energy savings.
- Start swing in a steep slope.
- Robustness and reliability.

SAFETY

- Accurate swing movement.
- On road top braking performances.
- Circuit and components protection thanks to integrated valves: pressure relief and anti-cavitation.

COMFORT & ERGONOMICS

- Low cabin height and low center of gravity.
- Backlash free.
- Shockless & anti-rebounce performances.
- Auto park brake application.

OUR REFERENCE OFFER

SWING DRIVES FOR MINI-EXCAVATORS AND WHEEL EXCAVATORS AND BRAKE VALVES FOR WHEEL EXCAVATORS

Swing Drive

MS motor:

Up to 2 800 cm³/rev.

Up to 450 bar

Anti-rebound valve

More information
> Page 92

MZ motor:

Up to 920 cm³/rev.

Up to 450 bar

Shock less and anti-rebound

More information
> Page 116

Translation

MT motor for translation:

Desgined for Track

Integrated Park Brake

Up to 500 cm³/rev.

Up to 450 bar

More information
> Page 124

Full braking system:

For wheel excavator transmission

More information
> Page 166

Options

- **Standard or shockless pressure relief valves**
- **Brake by wire (Support Obstacle Detection System)**
- **Integrated automatic parking brake for swing**
- **Close loop version also available for wheel excavators**
- **Automatic debraking**

WHAT DO YOU GAIN?

- Complete power transmission offer.
- High Efficiency
  - Match with open loop architecture
  - Enhanced Autonomy (electrification)
- Machine Integration
  - Compactness
  - Down sizing thanks to higher pressure
- Reliabilty
  - Validated up to 450 bar
  - No maintenance

GET ADDITIONAL TRACTION IN ANY CONDITION

YOUR MAIN BENEFITS

MANEUVERABILITY

- Fully integrated design with optional steerable motor solution.

PRODUCTIVITY

- Additional torque in front wheels.

COMFORT & SAFETY

- Full power hydraulic brake valve: parking and service brake.

OUR REFERENCE OFFER

FOR MOTOR GRADERS

- Two non-steerable or steerable motors in front wheels.
- Free-wheeling valve for engagement/disengagement on-the-fly.
- Depending on tandem or single pump solution, an optional heavy-duty flow-divider is available for traction control.
- Hydraulic braking valves

Modular MS08, MS11 and MS18 motor:

In-wheel motor

More information
> Page 92

Brake valve

More information
> Page 166

Freewheeling valve

More information
> Page 159

Traction control flow divider

More information
> Page 163

Options

- CreepDrive mode
- Steerable wheel motor

More information
> Page 110

WHAT DO YOU GAIN?

- Additional traction on-demand up to 30 km/h, forward and reverse.
- Engagement and disengagement on-the-fly.
- Quick responsiveness.
- Precise operation at low speed.
- Traction control to prevent wheels skidding in case of single hydraulic pump solution.
- Efficient hydraulic braking system for main transmission.

THE STATE OF THE ART
DIRECT DRIVE

YOUR MAIN BENEFITS

PRODUCTIVITY

- Full torque from low speed (<1RPM).
- Heavy duty (qualified at 500 bar).
- High efficiency direct drive.

RELIABILITY

- Poclain motor designed to withstand harsh working environment and heavy duty work accepting peak pressure and peak power.

COMFORT & SAFETY

- Compact and low weight.
- Low inertia with enhanced control in acceleration and deceleration.

OUR REFERENCE OFFER

MS motor:

- Compact and modular design.
- Multi speed motors - shifting.
- Parking brake multi disc
- Up to 15 liters

More information > Page 92

MHP motor:

- High transmission ratio
- 2 or 3 gear shifting
- Up to 3.5 liters

More information > Page 82

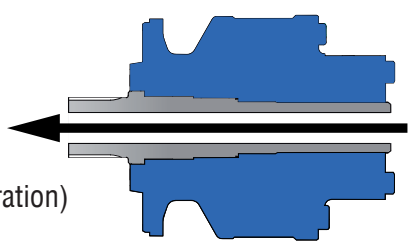
More information > Page 158

Circuit selection valve:

- Tracks and Push Pull / Drill rotate circuits selection Valve
- Push Pull Low Speed / High Speed Valve (serial/parallel circuit selector)
- Low pressure drops at high flow
- Detent and sensors prevent moving machine while drilling

Options

- **Freewheeling**
- **Parking brake**
- **Encoder**
- **Hollow shaft**
  (for drill fluid circuit integration)



WHAT DO YOU GAIN?

- Enhanced productivity in demanding working conditions.
- Precise operation in various ground environment thanks to direct drive.
- Superior comfort of operation thanks to smooth speed change and absorption of shock load and pressure peak.
- Easier integration thanks to compact design and the hollow shaft configuration for drilling fluid.
- Large range of speed for the push pull function.
- Up to 500 bar to reach your performance.
- Maintence free drive.

THE STATE OF THE ART
DIRECT DRIVE FOR VERTICAL DRILLS

YOUR MAIN BENEFITS

PRODUCTIVITY

- Full torque from low speed (<1RPM).
- Heavy duty (qualified at 500 bar).
- High efficiency direct drive.

RELIABILITY

- Poclain motor designed to withstand harsh working environment and heavy duty work accepting peak pressure and peak power.

COMFORT & SAFETY

- Compact and low weight.
- Low inertia with enhanced control in acceleration and deceleration.

OUR REFERENCE OFFER

**UP TO 200 kN.m TORQUE WITH A SINGLE UNIT,
600 kN.m WITH MULTI MOTORS.
LARGE DISPLACMENT MOTOR UP TO 40 LITERS**

Various functions covered :

- CutterHead
- Winches
- Augers rotation (CFA)
- DTH feeding motors
- Push Pull
- Transmission

MS motor:

Up to 15 liters

**More information
> Page 92**

MHP motor:

For applications requiring high ratio small to large gears

Up to 3,5 liters

**More information
> Page 82**

Valve for open loop circuit:

Counter balance valve, charging valve and automatic park brake application

Freewheeling valve to control multi motors

Track / Drilling Circuit selection valve

**More information
> Page 154**

Options

- **Hydrobase Configurations for the most compact offer** (customers add their own bearing support and shafts)
- **Speed sensor**
- **Parking brake for winch functions**

WHAT DO YOU GAIN?

- Maximum output for your tool.
- Enhanced productivity in demanding working conditions.
- Top power density up to 450/500 bar.
- Precise operation in various ground environment thanks to direct drive.
- Higher speed with the same power unit thanks to freewheeling.
- Lower noise than planetary drives.

ALL-IN-ONE SOLUTIONS FOR SMOOTH AND EFFICIENT LOAD HANDLING

YOUR MAIN BENEFITS

FLEXIBLE DESIGN

- Flexible solutions with in-wheel motors, valves and pumps.
- Easy integration thanks to motor compactness and multifunctioal valves.

PRODUCTIVITY

- Optimize traction control in any condition with high gradeability.
- Excellent accuracy at low speed thanks to direct drive.
- Fuel saving due to high efficiency.

RELIABILITY

- Technology proven on-field over decades.
- Poclain as market leader in hydrostatic transmission solutions for forklifts with in-wheel motors.

OUR REFERENCE OFFER

FOR ROUGH TERRAIN FORKLIFTS AND TELE-HANDLERS, TRUCK MOUNTED FORKLIFTS AND SIDE LOADERS.

Modular MS02-MS05 motor:

In-wheel motor with or without parking brake

More information
> Page 92

MG02-MG05 motor:

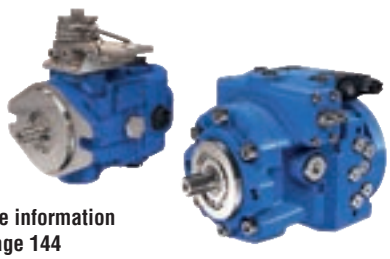
In-wheel steerable motor with or without parking brake

More information
> Page 110

¾ duty PM pumps:

Up to 52 cm³/rev.

Wide pump control range inluding mechanical and electro proportional control



More information
> Page 144

Brake valve

More information
> Page 166

Steering valve for 4-way forklift trucks

More information
> Page 154

Traction control flow divider

More information
> Page 154

Combo (multifunction) valves:

Traction control, Freewheeling, Hot oil exchange, piloting valves, etc

Options

- **Selector valve**
  for additional tool functions on the forks

More information
> Page 154

- **Parallel/series switching valves**

WHAT DO YOU GAIN?

- The most efficient wheel drive solution with direct in-wheel motors.
- Never get stuck with proven traction control solutions.
- Free-wheel for extra speed in 2 wheel drive mode.
- Steering valves for 4-way drive machine (side loader).
- Maintenance free solution.

PERFECT FEED MOTOR FOR FORESTRY
CUT-TO-LENGTH PROCESSORS

YOUR MAIN BENEFITS

RELIABILITY

- Work with the market leader in this segment.

PRODUCTIVITY

- High productivity level is achievable with high average speed and shift on the fly to optimize the machine power.

LIFETIME

- Operate your harvester head throughout its lifetime without downtime.

OUR REFERENCE OFFER

FOR HARVESTER HEADS FROM 0.4 TON TO 5 TONS

Compact and light solution to provide best in class design of harvester head with high power potential

Optiflow MS02 to MS05 motor:
172 to 750 cm^3/rev.
Up to 850 rpm (+50% max. speed)
Up to 50 kW (-50% pressure drops)

More information
> Page 96

MS02 to MS11 motor:
172 to 1 687 cm^3/rev.
Up to 580 rpm
Up to 50 kW

More information
> Page 94

Options

- **High resistance to pressure peaks**
- **Environmentally friendly with oil compatibility and lead-free materials**
- **Reman program possibility**
- **Selection of reinforced bearing supports that match lifetime harsh requirements**
- **2 speed solutions with quick shifting spool and high switching frequency**

WHAT DO YOU GAIN?

- With optimized performance from Poclain motors, you will enhance your productivity, increase fuel savings, and reduce CO_2 emissions for the entire life of your product.
- Ease your development with proven solutions and achieve the best time to market.
- Optimized design with compact and light products for high performance levels.

ALL-IN-ONE
TRANSMISSION SYSTEM FOR TRACK DRIVE RICE HARVESTERS

YOUR MAIN BENEFITS

PRODUCTIVITY

- High efficiency.
- More torque to the ground and more power available for the tools.
- Precision and high steering performances.
- Autonomous control system compatibility.

DESIGN

- Fit the track.
- Better overall weight machine balance.
- More space available for tools.

RELIABILITY

- Designed for paddy field.
- Maintenance free.
- High performance closed loop architecture.

OUR REFERENCE OFFER

COMPLETE TRANSMISSION SYSTEM FROM 5 TO 8 TONS RICE HARVESTER

Modular MS motor:

Designed for track drives in paddy fields

0,5 to 1,3 liters

Reinforced Multi Layer Sealing

Parking Brake

More information
> Page 94

Tandem 3/4 duty PM30 - PM50 pump:

Reaching up to 420 bar with a displacement range from 25 to 52 cm^3/rev.

Accurate electronic control

More information
> Page 144

Piloting valve:

Parking brake actuation

More information
> Page 161

WHAT DO YOU GAIN?

- Enhanced maneuvrability and traction performance in demanding working conditions.
- Precise operation in various ground environment thanks to direct drive and easy control providing good performance in straight lines.
- Compatible with autonomous configurations.
- Enhance track lifetime.
- Unique motors multi layer sealing system to withstand harsh environment of the paddy field.
- Lower noise than planetary drives.
- Maintenance free. No clutch and no gear versus «HST»-type integrated transmissions that are less robust.
- More space for tools.

THE STATE OF THE ART
TRANSMISSION SYSTEM FOR SHREDDERS

YOUR MAIN BENEFITS

DESIGN

- Easy integration thanks to motor compactness.
- Easy accessibility for shredding tool servicing.

PRODUCTIVITY

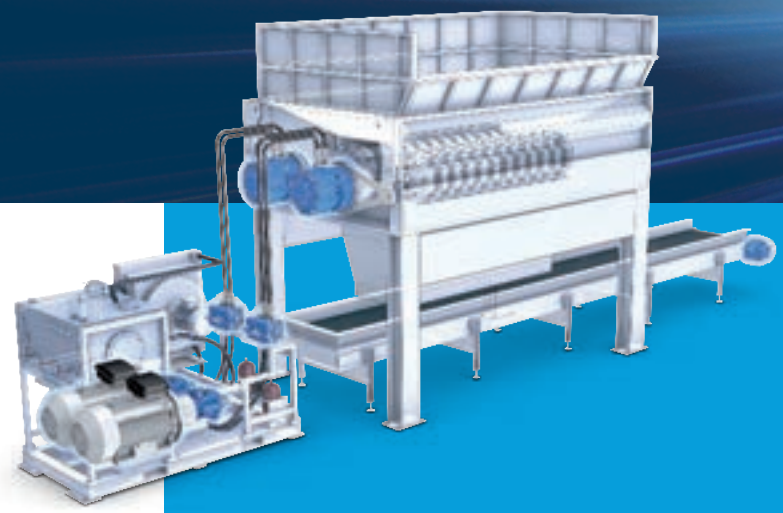
- Maximum output.
- Energy saving through higher efficiency .

RELIABILITY

- Proven direct drive technology.
- Robust drive.

OUR REFERENCE OFFER

FOR HEAVY DUTY SHREDDERS



MI & MS motor:

Up to 40 liters - 200 kN.m

MI motors
More information
> Page 128

MS motors
More information
> Page 92

Protection valve:

Cross-Over Relief and
Anti-Cavitation Valves mounted
close to the motors (flangeable)

More information
> Page 161

Torque arm:

Options

- **Female splined shaft**
- **Shrink disk mount**

WHAT DO YOU GAIN?

- Maximum output of your shredder.
- Fast solution proposal for your machine.
- Robust but compact drive solution.
- Tool/shaft maintenance friendly solution.
- Maintenance free drive.
- Technical support for the hydraulic drive.

THE STATE OF THE ART
DIRECT DRIVE FOR MATERIAL BULK HANDLING

YOUR MAIN BENEFITS

PRODUCTIVITY

- Full torque from low speed (<1RPM).
- Heavy duty (qualified at 450 bar).
- High efficiency direct drive.

RELIABILITY

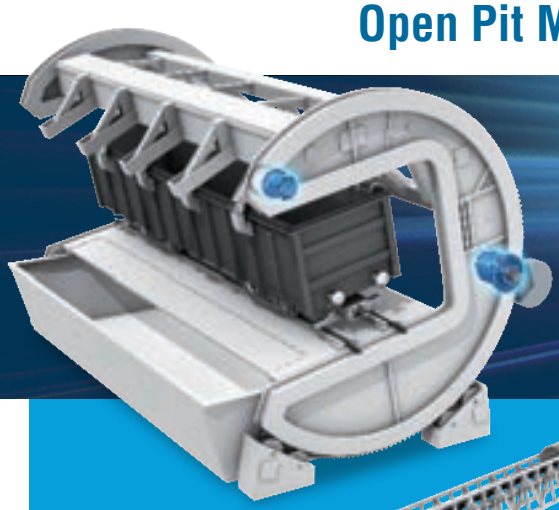
- Poclain motor designed to withstand harsh working environment and heavy duty work accepting peak pressure and peak power.

COMFORT & SAFETY

- Compact and low weight.
- Low inertia with enhanced control in acceleration and deceleration.

OUR REFERENCE OFFER

UP TO 200 kN.m TORQUE WITH A SINGLE UNIT, 800 kN.m WITH A REDUCTION GEAR



Various functions covered :

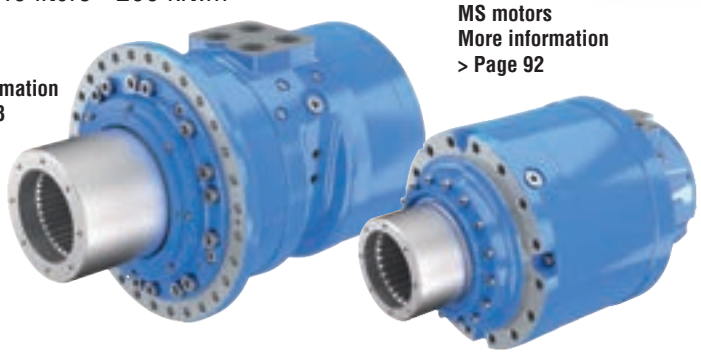
- Bucket Wheel
- Slew Drive
- Tilting drives

MI & MS motor:

Up to 40 liters - 200 kN.m

MI motors
More information
> Page 128

MS motors
More information
> Page 92



Protection valve:

Cross-over relief and anti-cavitation valves mounted close to the motors (flangeable)

More information
> Page 161

Torque arm:

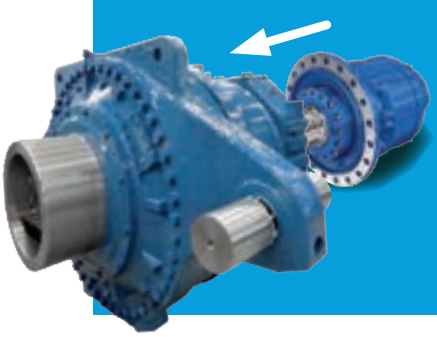
WHAT DO YOU GAIN?

- Maximal output for your tool.
- Robust and compact drive solution.
- Tool/shaft maintenance friendly solution.
- Technical support for the hydraulic drive.
- Maintenance free.
- Fast solution proposal for your machine.
- Motor robustness qualified at 450 bar.

Options

- For applicaion that need more than 200 kN.m

- Poclain Hydraulics motors can be connected to a gear box to achieve the following values:
- Equivalent displacement from 40 000 to 180 000 cm^3/rev. [2,440 to 10,984 cu.in/rev.]
- Maximum torque 600 000 N.m [442,540 lbf.ft]
- Maximum power 600 kW [805 HP]



FULLY ENGINEERED SOLUTIONS

FULLY ENGINEERING SOLUTIONS

Poclain Hydraulics offers fully engineering hydrostatic solutions for off-road and on-road applications.

Our expertise in hydraulics, mechanics and electronics enables us to understand your needs and provide value to your customers.

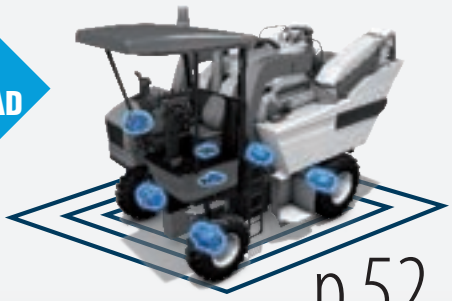
FULLY HYDROSTATIC ANTISKID

TWIN LOCK

p.50

ELECTRONIC ANTISKID

SD-CT OFF-ROAD



p.52

ON-DEMAND HYDROSTATIC ASSIST DRIVE

ASSIST DRIVE

p.54

AUTOMATIC ENGINE RPM MANAGEMENT

ECODRIVE

p.56

By entrusting us with your hydrostatic systems, you will save development time and cost, paving the way for more efficient, productive and safe machines.

BOOSTED HYDROSTATIC BRAKE

BOOSTED BRAKE

p.58

DUAL LINE TRACTOR-TRAILER BRAKING

TRACTOR BRAKING

p.60

ALL WHEEL DRIVE FOR TRUCKS

ADDIDRIVE

p.62

CONSISTENT LOW SPEED DRIVE

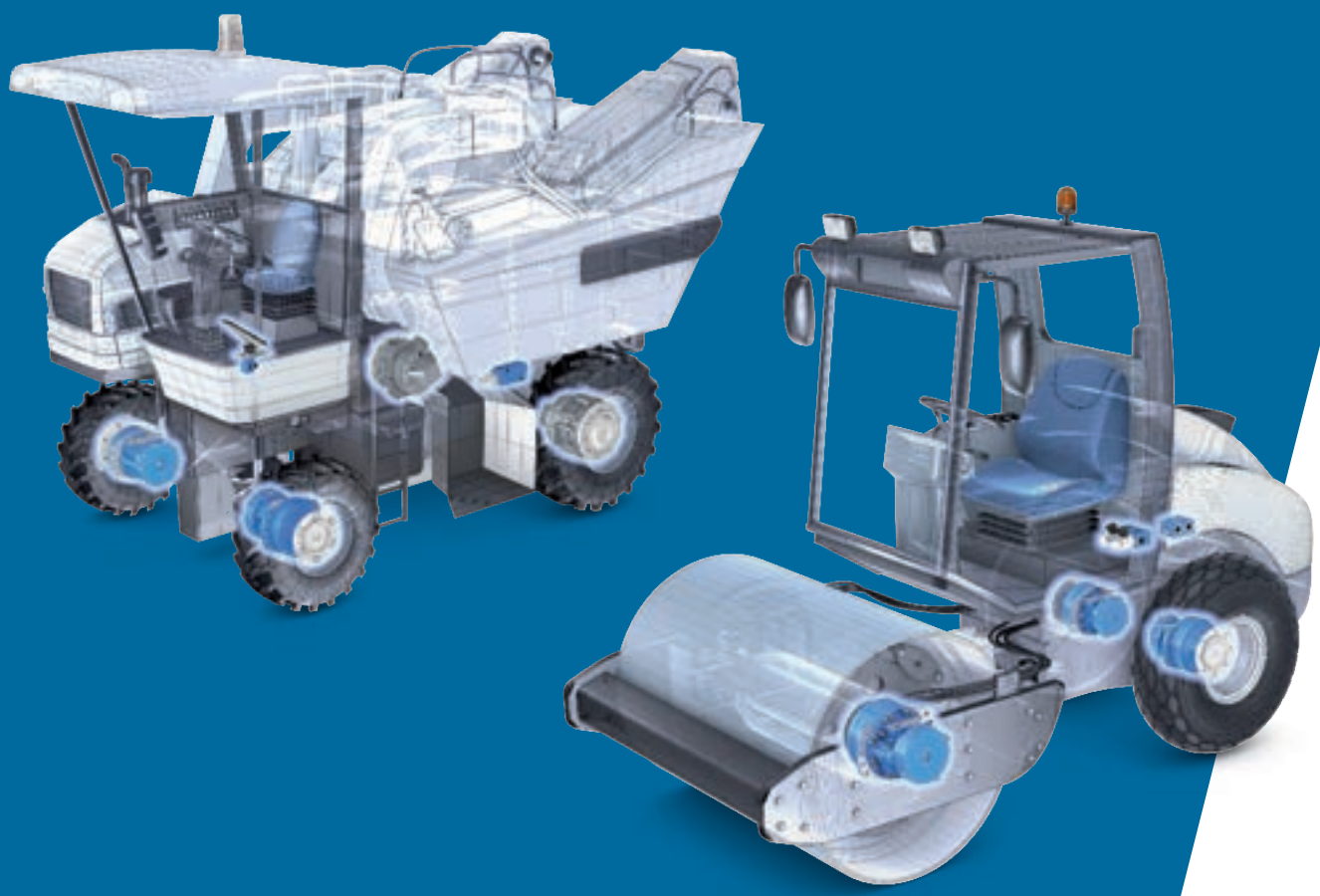
CREEP DRIVE

p.64

FULLY HYDROSTATIC ANTISKID

ENHANCE THE CROSSING CAPACITY OF YOUR MACHINES

- The TwinLock™ solution transfers the torque from the wheels that are slipping to the wheels with the greatest grip. It is the ideal compromise between a parallel circuit and a series circuit.
- This solution is applicable on all machines with at least three-wheel drive.



TWINLOCK™

Twin-Lock™ motors
The Twin-Lock™ solution is available from MS02 to MS50 and MHP11/13/17/20/27motors.

More information
> Page 80

Hydraulic pump
With our wide range you will find the pump that meets the full needs of your application.

More information
> Page 144

By-pass valve
This valve can be used to by-pass one half of a Twin-Lock ™ motor to create a two speeds machine.

KVC-3/2 (NG10)

More information
> Page 163

Twin-Lock™ valve
Two valves are available in order to facilitate steering when Twin-Lock™ is used.

VDP
with a mechanical control

More information
> Page 156

PR-TL-SV
with a hydraulic control

Ground protection
Avoid wheel slippage and damage to ground.

Better productivity
Greater productivity of the machines due to better off-road performance.

Proactive operation
Provide excellent responsiveness of the solution with instantaneous torque transfer from the wheel with poor grip to the wheel with strong grip.

Reduced maintenance
Simplify maintenance with a 100% hydraulic solution requiring no electronic control.

AUTOMATIC ELECTRONIC ANTISKID

ENHANCE THE TRACTION POTENTIAL OF YOUR MACHINES

- The speed sensors incorporated in the hydraulic motors continuously measure the rotation speed of each powered wheel. The ECU compares those speeds and if necessary reduces hydraulic flow to the wheel that is skidding thanks to the antiskidding valve.
- This solution is applicable on all machines with at least two drive wheel drive.

SD-CT OFF-ROAD

Hydraulic motors + Speed sensor

Any motor equipped with speed sensor or predisposition for speed sensor can be used.

More information > Page 80

Hydraulic pump

With our wide range you will find the pump that meets the full needs of your application.

More information > Page 144

Ground protection

Avoid wheel slippage and damage to ground.

Better productivity

Greater productivity of the machines due to better off-road performance.

High flexibility

Excellent flexibility of the solution, effective torque transfer from the wheel with poor grip to the wheel with strong grip.

Antiskidding VMA valve

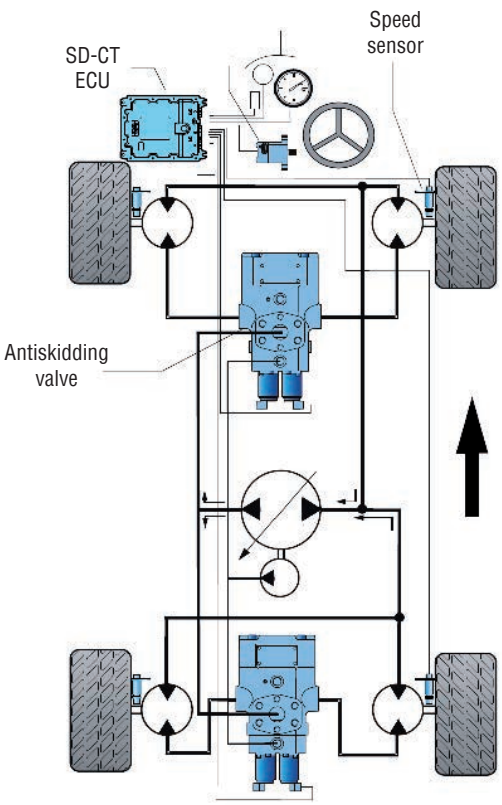
It provides regulation of the input flow of the two motors on the same axle.

More information > Page 157

SD-CT ECU + Embedded software

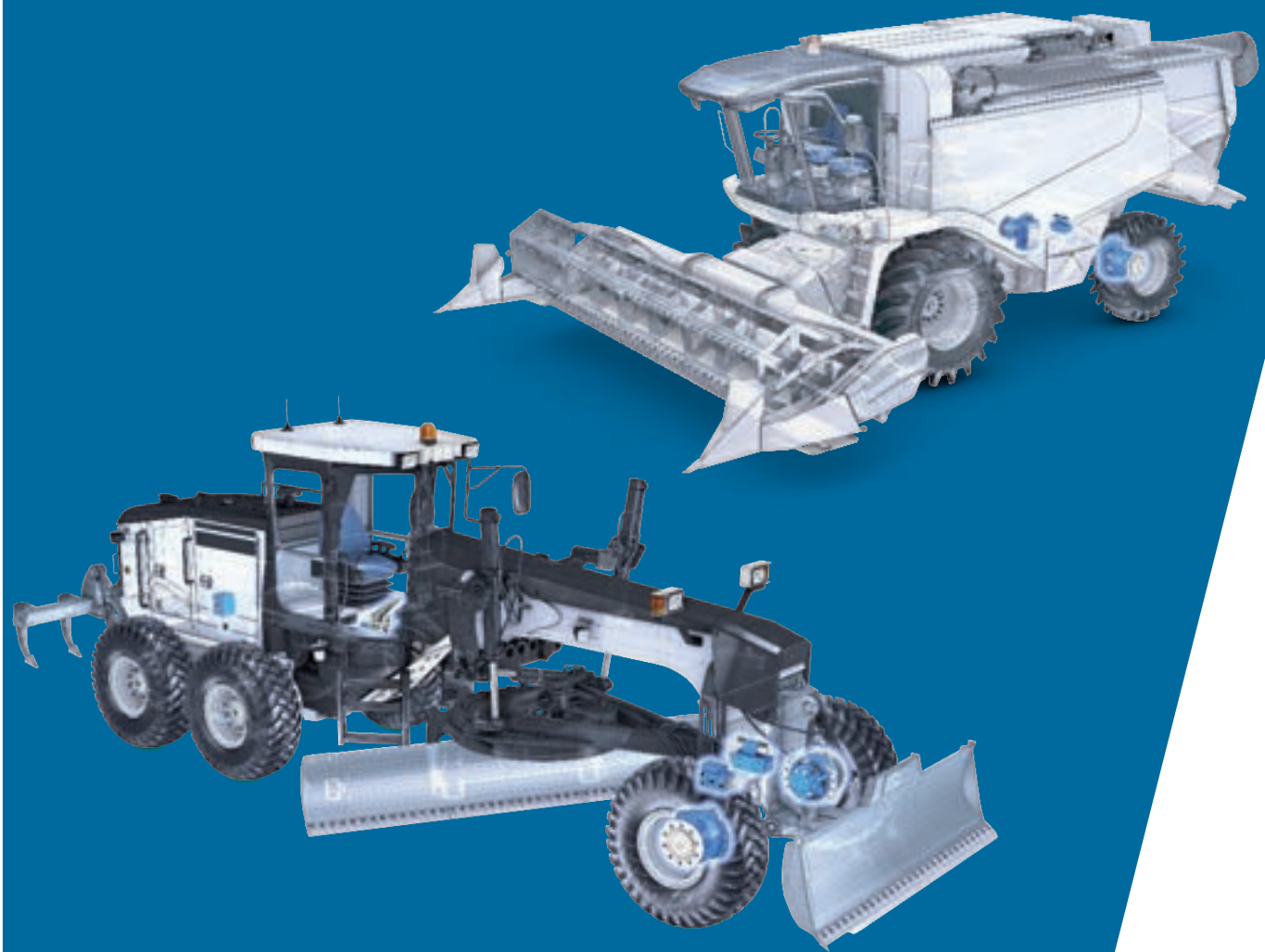
The SD-CT ECU and its embedded software set-up, calibrates, controls and diagnoses the hydrostatic transmission.

More information > Page 174



ON-DEMAND HYDRAULIC TRANSMISSION
FOR OFF-ROAD MACHINES

Poclain Hydraulics offers an on-demand hydraulic transmission that provides the additional traction needed for working in difficult traction conditions like on muddy soil and/or on steep slopes. The system improves the machine's steerability on all soil conditions, bringing the best-in-class steering angle.
Poclain's hydraulic 4WD not only prevents the machines from getting stuck, but also helps users boost their productivity and decrease the TCO.



ASSIST DRIVE

Hydraulic motor
With our wide range you will find the motor that meets the full needs of your application.

More information
> Page 80

Variable displacement closed loop pumps
Any pump can be used for this solution.

More information
> Page 144

Freewheeling valve VDF
Manages smoothly the engagement/disengagement sequences of the hydraulic motors.

We can also provide combo valve that includes in one block free wheeling and flow divider functions.

More information
> Page 159

Easy integration
The solution is easy to integrate and compatible with a wide range of machines. The solution is based on free-wheeling technology inherent to Poclain motor technology (radial pistons) and mastered with more than 30 years of field experience.

Low consumption
The 4WD is activated only when needed, without impacting fuel consumption when used in 2WD.

Low maintenance
The solution reduces tire wear and prevents machine ground damage.

AUTOMATIC ENGINE RPM MANAGEMENT

REDUCED CONSUMPTION AND NOISE IMPACT

- The EcoDrive™ solution is applicable to all machines with an electronic pump control and internal combustion engine controlled by CAN Bus.
- Completely automatic, the EcoDrive™ function requires no particular action from the driver and always selects the best combination of engine speed and pump displacement.
- Machines fitted with the EcoDrive™ function are much more eco-friendly, with reduced fuel consumption, CO_2 emissions and noise impact.

GREEN HYDRAULIC SOLUTIONS

ECODRIVE

Hydraulic motor
With our wide range you will find the motor that meets the full needs of your application.

More information
> Page 80

Hydraulic pump
Any pump equipped with an electrical control can be used for this solution.

Green Machine
EcoDrive™ reduces fuel consuption up to 15%, effectively reducing CO_2 emission.

Easy Machine
EcoDrive™ is totally automatic and allows the driver to keep his mind on the job.

Quiet Machine
By reducing engine speed, EcoDrive™ reduces machine noise emission.

SD-CT ECU + Embedded software
The ECU continuously receives the engine load information through CAN bus and adapts the engine speed and the pump displacement to achieve the lowest possible rpm while meeting the load and power requirements.
Actual engine power always matches engine power required by machine operation.

More information
> Page 174

BOOSTED HYDRAULIC BRAKE
MORE SAFETY FOR YOUR MACHINES

- Boosted Brake™ offers increased hydrostatic braking capabilities. It meets regulation requirements in terms of braking distances, while reducing dynamic brake usage and minimizing engine loading.
- Applicable to all machines subject to high and/or repeated deceleration, both on the road and in the field, Boosted Braking™ is especially recommended for machines with a low engine braking capability.

BOOSTED BRAKE

Hydraulic motor
MHP 11 to 27, MS18-E18 and MS35 can be equipped with Boosted Braking function.

More information
> Page 80

Hydraulic pump
Any pump equipped with an electrical control can be used for this solution.

More braking capacity

Reduces braking distances in road mode and off-road mode.

Lower maintenance costs

It preserves (or limits use of) friction brakes and requires no maintenance.

More engine protection

Saves engines from over-speed. It maintains hydrostatic braking capability even for Tier IV / Stage 4 engines with poor load retaining capability. Maintenance operations are therefore less frequent.

Easy integration

The solution is integrated into the hydraulic motors without any extra piping.

A simple spool is integrated into the motor

Motor without Boosted Brake
Half of the hydrostatic braking torque is used when the motor is in half displacement.

Motor with Boosted Brake
All the hydrostatic braking torque is used even if the motor is in half displacement.

GET THE MOST OUT YOUR BRAKING SYSTEM
FOR TRACTORS AND TRAILERS

Poclain Hydraulics smart components meet the EU2015/68 regulation requirements and help you get the most of your braking system:

- Simplify product stock, improve performance and ergonomics with software parameters rather than hardware

- Think outside of the box with potential additional functions such as « hill Start » and « jackknifing » prevention

DESIGNED FOR EU2015/68

DUAL LINE TRACTOR-TRAILER BRAKING

Tractor steering assist brake valve

- Four wheel braked tractor
- Automatic connection right/left

More information
> Page 171

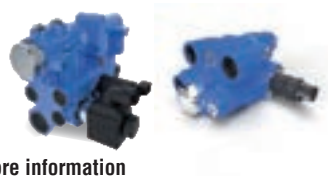
Tractor parking/emergency brake valve

- Parking brake modulating valve
- Park lock option

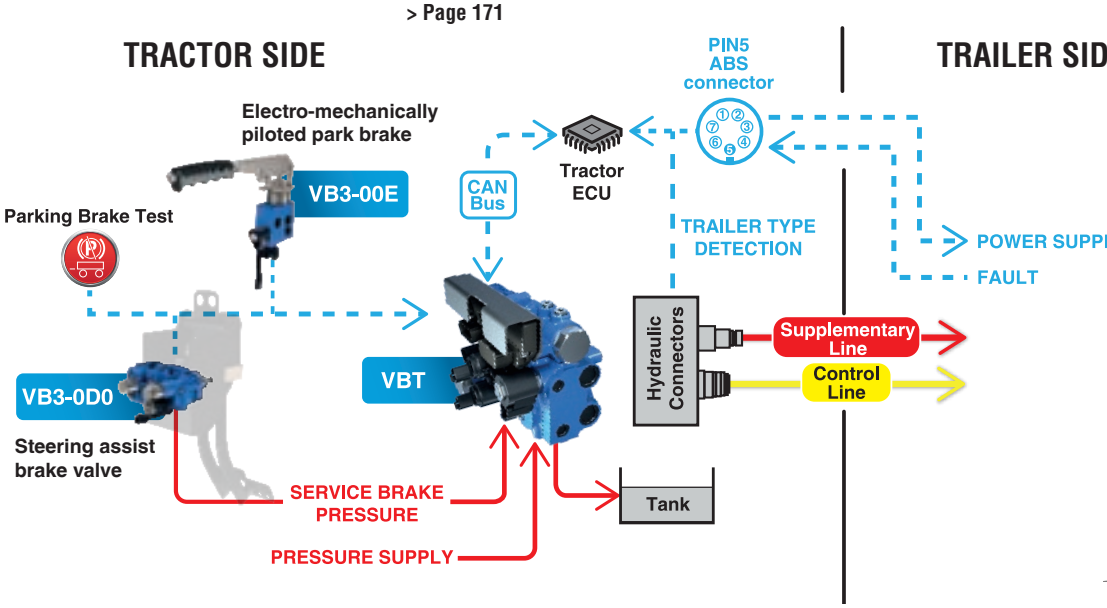
More information
> Page 166

Dual line trailer brake valve

- A single control line valve (VBT) across your range of tractors
- A single architecture to cover every used or new trailer (single line, dual line, CUNA)
- Designed for UTAC certification
- Leakage detection on the control line and leakage stop
- Enhanced park brake test function
- Automatic re-fill of the trailer accumulator each time the tractor stops



More information
> Page 171



PIONEERING ALL-WHEEL-DRIVE SOLUTION

GO ANYWHERE WHATEVER THE WEATHER

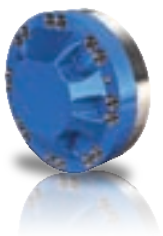
- Pioneering All-Wheel-Drive solution combining the best of off-road and on-road worlds
- Already adopted by various truck manufacturers
- Suits all types of trucks
- Integral solution reducing development time
- Peace of mind thanks to higher efficiency

ADDIDRIVE

Two architectures to choose: Closed or Open Loop

MF Hydraulic motor

Fitted on the front wheels, the MF motors provide traction or retaining torque as needed.



More information
> Page 134

SD-CT200 ECU + Embedded software

The ECU manages communication and additional functions.

- Automotive standards / IP67 Protection / PI-d / SIL2.
- Compatible with the CAN truck network.

More information
> Page 174

Variable Pump

Powered by the engine or the gearbox PTO, the pump generates and provides hydraulic power to the MF motors.

Control valves

The control valves ensure the safety and management of the activation, release and free-wheeling of MF motors.

- Addiflow™ valve for closed loop

- Directional & LS management valves for open loop

Performance

- Increased payload capacity compared to a mechanical all-wheel drive truck
- Easier to drive over obstacles with or without load
- Allows for closer approach to work site
- The boost at start function helps the truck to start in difficult conditions, in forward and reverse directions, without forcing the clutch
- Limited impact on fuel consumption compared to a standard truck

Safety and reliability

- No risk of getting stuck due to traction loss thanks to the transfer of the rear torque to the front
- Automatic disengagement at 30 kph [18.6 mph]
- Better maneuverability thanks to traction on the main axle when driving around corners and in the event of poor traction when driving in a straight line
- Adapted to extreme temperatures from -40°C to +40°C [-40°F to +104°F]

Comfort

- Easy access to the driver's cabin, with all the comfort of a standard truck
- Lower center of gravity to improve driver comfort
- Enhanced turning radius compared to a standard truck or mechanical all-wheel drive
- Stable truck and trailer coupling

Versatile

- Compatible with all truck brands and models
- Compatible with the existing trailer fleet
- Enables one truck to be used for various tasks

CONSISTENT LOW SPEED DRIVE

FOR UP TO 44T (97,000LB) TRUCKS WORKING AT UP TO 12KPH (7,5MPH)

- Hybrid mechanical-hydraulic transmission for vehicles that travel at normal speed and work at low speed.
- Allows vehicles to work at very low constant speed in both forward and reverse.
- When the system is disengaged, the vehicle is able to drive at normal on-road speed with no additional losses.

CREEPDRIVE

CDM motor
Provides torque to the main driveshaft.

More information
> Page 138

Variable Displacement PM Pump
Powered by the engine or the gearbox PTO, the PM pump generates and provides hydraulic power to the CDM motor.

More information
> Page 144

Exchange valve VE60
Allows to deflect a part of oil to the cooling system.

More information
> Page 160

KVC3/2 piloting valve
Pilots the speeds change (automatic shifting managed by ECU - SmartDrive).

More information
> Page 163

SD-CT-300 ECU & Embedded Software
The ECU manages communication and additional functions.

More information
> Page 174

CreepDrive electronic kit:
- The electronic kit includes the ECU SmartDrive, the joystick, the display with “stop and start buttons”, and needed cables and connectors to facilitate the integration into customer’s dashboard.
- The CreepDrive electronic kit is compatible with pumps with electroproportional control with mechanical feedback.

Versatile
- Fits wide range of trucks
- Use the same vehicle for both work and travel mode
- Compatible with both: manual and automatic gearbox
- Compatible with diesel, gasoline and LNG

Easy integration
- Simple design, easy to install and mount on the chassis
- No impact on original truck kinematics
- No impact on chassis stifness

Simple maintenance
- Reduces brakes, clutch and transmission wearing
- No need for specific maintenance: the maintenance is done simultaneously with mechanical transmission’s maintenance.

Improved work quality
- Simple system use allows the driver to concentrate on auxiliary functions, rather than maintaining the constant speed
- Independent of the engine speed: allowing all engine power for auxiliary systems to perform work effectively
- Low noise level, thanks compatibility with low engine rpm

ELECTRIFICATION SOLUTIONS

ELECTRIFICATION
INNOVATION MADE EASY

Offer electric machines now, combining innovation and simplicity.
Accelerate your time-to-market with solutions that provide the best total cost of ownership, while contributing to a sustainable future.

zero emission

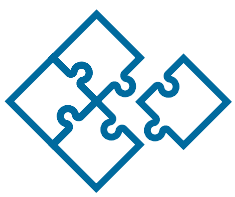
HIGH-PERFORMANCE ELECTRIFICATION SOLUTIONS

Poclain adresses e-mobility applications with an extensive suite of solutions.

OUR SOLUTIONS

- MMA Motors
- emDrive Inverters
- Electro-hydraulic Transmissions
- ePowertrain
- eFlow - Electropump (closed and open loop)
- eWheel
- Hybrid Solutions (Combining ICE and electric drive)
- Engineering support

System platform + Engineering services



OEMs BENEFITS

- Easy integration, easy adoption
- No compromise on performances
- High ruggedness from time-proven experience of off-road application
- Accelerated time to market thanks to our engineering support
- No oversize of battery thanks to high efficiency drivetrain
- One supplier for a complete transmission: We take responsibility for performance, reliability and aftersale

END USER BENEFITS

- Reduced total cost of ownership
- Better productivity
- Zero emission - Access to restricted areas
- Better comfort - Reduced vibration and noise emission
- Low maintenance

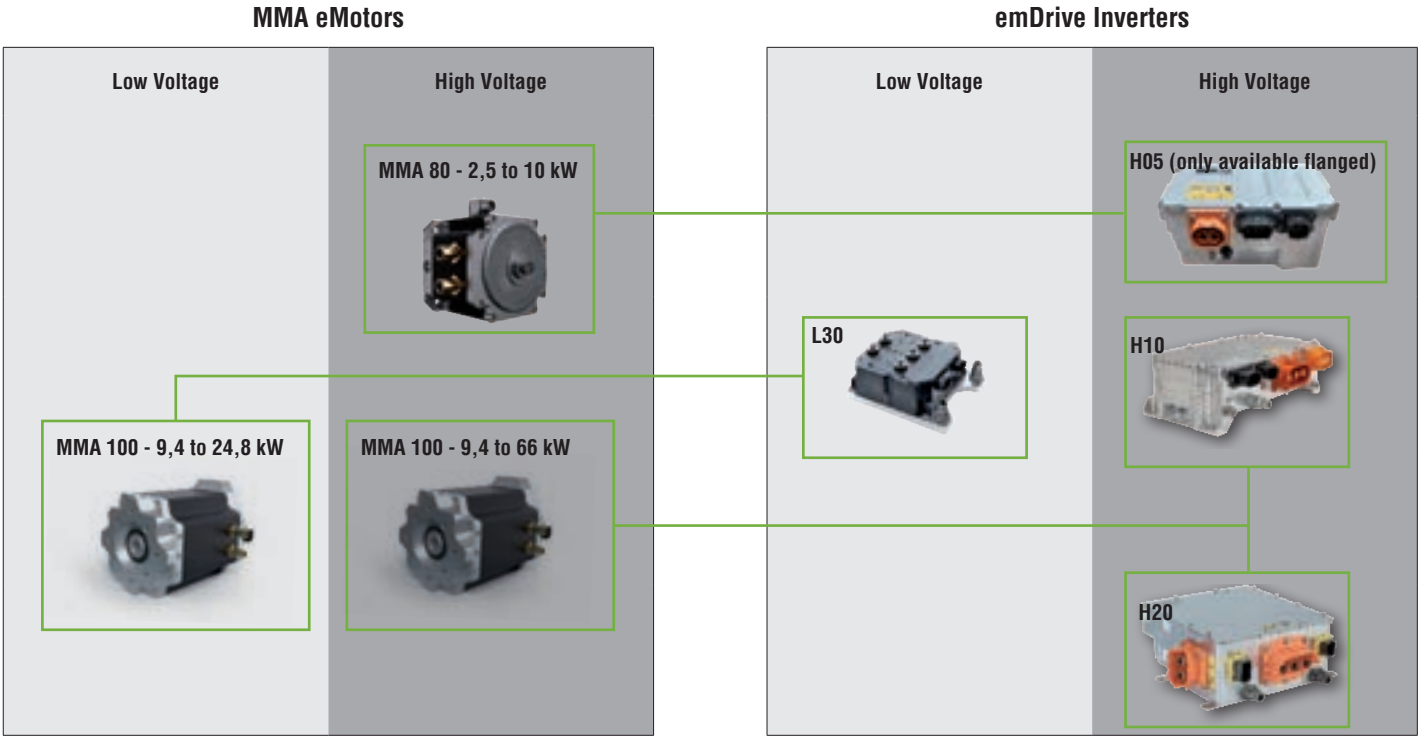
MMA high-power density electric motors

MMA emotor is a high power and torque density PMSM (Permanent Magnet Synchronous Motor) electric motor for propel or work functions electrification. It can be mounted in very small spaces offering best in class efficiency.
This motor is built in Plensburg (Germany) by our sister company, MOTEG, part of the Poclain Group.

- From 5 to 65 kW Continuous, 175 Nm peak – 48V to 850 VDC
- Low and high voltage - liquid cooled
- High power density, efficiency, low noise and vibration
- Efficiency map tailored to auxiliaries or propel type of application
- Customer-specific solutions for flange and shaft
- Perfectly suited to emDrives motor controller

		MMA 80	MMA 100
		400 and 800 V DC	48, 96, 400 and 800 V DC
		Continuous Power kW [HP]	Continuous Power kW [HP]
Standard Speed - RPM	1 500	2,5 - 5,0 [3.35 - 6.71]	9,4 - 16,5 [10.61 - 22.13]
	2 000	3,4 - 6,7 [4.56 - 8.98]	12,5 - 22,0 [16.76 - 29.5]
	2 500	4,3 - 8,3 [5.77 - 11.13]	15,7 - 24,8 [21.05 - 33.26]
	3 000	5,2 -10 [6.97 - 13.41]	18,7 - 33,0 [25.08 - 44.25]
High Speed - RPM	5 000	2,0 -13,3 [2.68 - 17.84]	31,4 - 55,0 [42.11 - 73.76]
	6 000	6,0 -16,0 [8.05 - 21.46]	37,7 - 66,0 [50.56 - 88.51]
Use for propel		•	•
Use for auxiliaries		-	•
Dimensions (LxHxW) mm [in]		140 to 220 x 150 x157 [5.51 to 8.66 x 5.91 x 6.18]	250 x 325 x 204 x 204 [9.84 to 12.8 x 8.03 x 8.03]

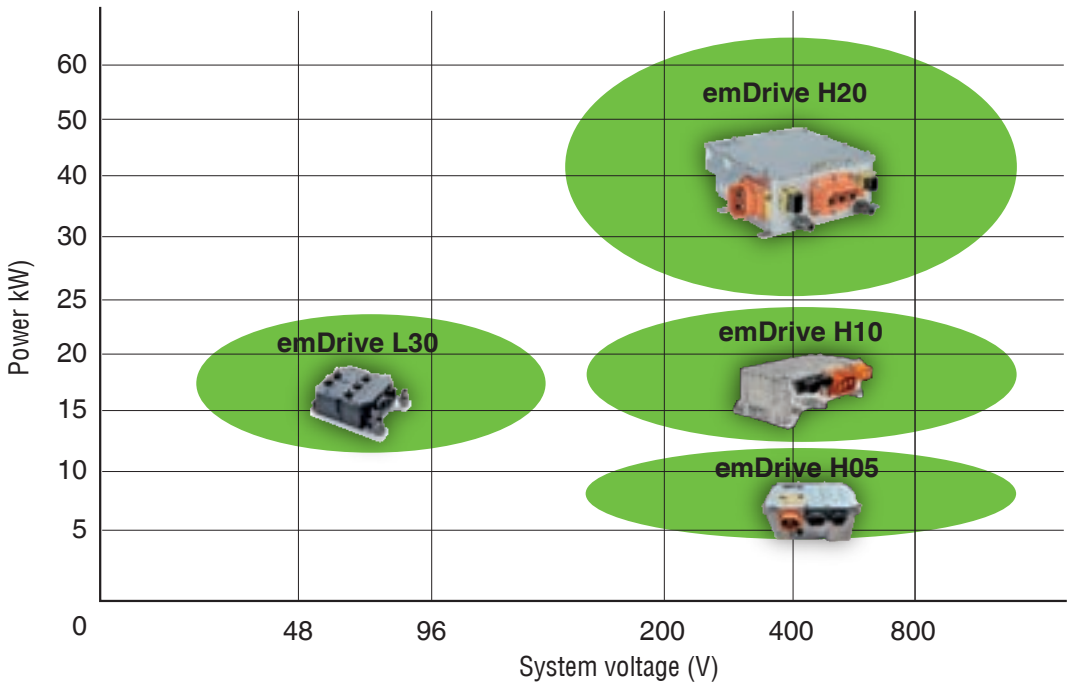
The MMA eMotors are perfectly suited to emDrive motor controllers.



emDrive DC/AC inverter range

The inverters are produced by our sister company, EMSISO, based in Maribor (Slovenia), pat of the Poclain Group.
Low & high voltage, safe and efficient inverters for mobile applications.
emDrives are perfect for various applications, whether you're working on diesel-electric, hybrid, or fully electric powertrains.
These versatile inverters improve integration, performance and efficiency without compromise on safety.

- From 5 to 80kW Continuous – 48 to 850 VDC
- Compact Design: Offers high continuous current within a compact form factor (highpower density)
- Functional Safety (FuSa): ISO 13849, ISO 25119, ISO 19014
- Efficiency Improvements: optimized control algorithms to enhance vehicle autonomy.




EmDrive L30


emDrive H05


emDrive H10


emDrive H20

Motor type		Induction, Permanent Magnet (PMSM, IPM), Sychronous reluctance					
Nominal DC voltage option	V	48	96	H05 not available as stand alone yet. Part of eFlow electropump	200...420	200...800	200...420	200...800
Rated current S2 - 1 min	Arms	650	450		150	75	400*	210*
Rated current continuous S2 - 60 min* **	Arms	450	300		100	60	210*	170*
Dimensions liquid cooled	mm [in]	105 x 65 x 201 [4.13 x 2.56 x 7.91]			96 x 271 x 183 [3.78 x 10.67 x 7.20]		102 x 316 x 253 [4.02 x 12.44 x 9.96]	
Cooling option		Air or liquid					Liquid	

* Depends on modulation type and switching frequency
** Preliminary
*** Liquid cooled version

eFlow - Electropump

Power up your efficiency with Poclain's eFlow: the smart choice for your electrohydraulic solution.
Enhance your work functions and electrohydraulic systems with our perfectly synchronized inverters, eMotors, and low-noise closed and/or open loop pumps.

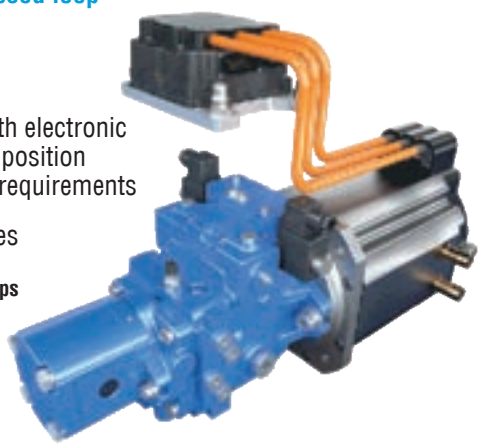
Closed loop pumps can be used for propel and open loop pumps are suited for auxiliairies functions.

eFlow for closed loop: up to 105 l/min, 420 bar - 48 to 850 V
eFlow for open loop: up to 100 l/min, 250 bar - 48 to 850 V

Example of eFlow for closed loop

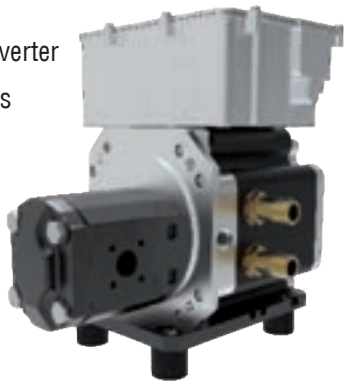
- MMA 100 eMotor
- L30 emDrive inverter
- PM pump for propel with electronic control and swashplate position sensor to match safety requirements
- Gear pump for auxiliaries

More information on PM pumps
> Page 144



Example of eFlow for open loop

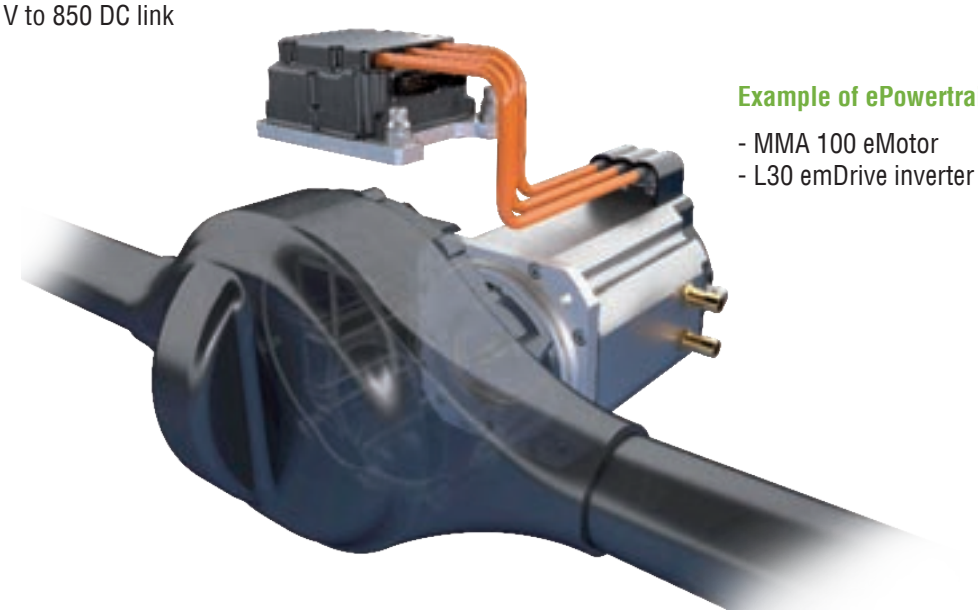
- MMA 80 eMotor
- Flanged H05 emDrive inverter
- Gear pump for auxiliaries
- Silent pump design



ePowertrain

Electrify your axles with the best-in-class power and torque density solution.
Unlock the potential of your axle with ePowertrain's perfectly paired inverters and eMotors. Trust in Poclain's high-value solutions for unmatched performance and dependable support.

Up to 80 kW, 130 Nm peak - 48 V to 850 DC link



Example of ePowertrain

- MMA 100 eMotor
- L30 emDrive inverter

ELECTRO-HYDRAULIC (e+h) TRANSMISSION

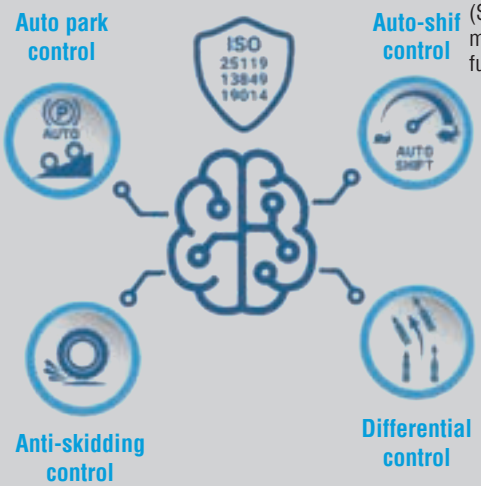
It is a versatile low voltage system for both machine transmission and power distribution to auxiliaries in one e-motor configuration.

It is comprised of rugged hydraulic motors based on cam-lobe in-wheel technology and state-of-the-art eFlow (electropump) combined with our advanced embedded control software: eDrive Transmission Control.

eDrive Transmission Control

With eDrive transmission control maximize the efficiency and productivity of your electrohydraulic machines.

Leveraging Poclain's expertise in transmission management and off-highway applications, eDrive Transmission Control optimizes numerous functions of your electro-hydraulic machines. Tailored to your specific needs, the software is embedded in the emDrive inverter.

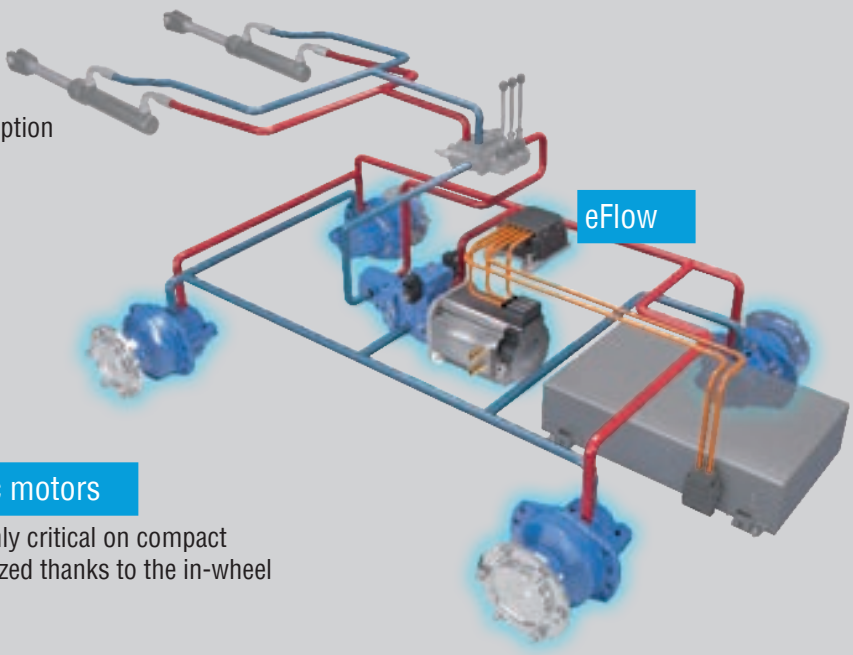


Valuable functions enabled by eDrive:

- Electronic differential
- Speed and torque regulation
- Anti-skid control
- Park brake management hill start)
- Autoshift to optimize energy consumption of hydrostatic transmission

Safety compliance to:

- ISO 25119
- ISO 19014



MS, MG or MK hydraulic motors

The machine integration, highly critical on compact equipment, is strongly optimized thanks to the in-wheel ultra-compact configuration

- Displacement range: 172-750 cm³/rev. [10.5-45.7 cu.in/rev]
- Max. pressure: 450 bar [6,526 PSI]
- Max. torque: 4 770 N.m [3,518lbf.ft]
- Max. power: 29 kW [39 HP]
- Max. speed: 590 rpm
- With or without brake

More information about our hydraulic motors > p.80

eWheel

Optimize your machine propulsion with the all-in-one eWheel electric drive solution

At Poclain, we believe that a complete transmission solution is a significant advantage for the future of zero-emission off-road machinery. This has driven us to launch an all-in-one electric drive solution that not only enhances the performance of your machine's off-road operations but also streamlines its development, empowering your transition to e-vehicles and fostering your ability to innovate.

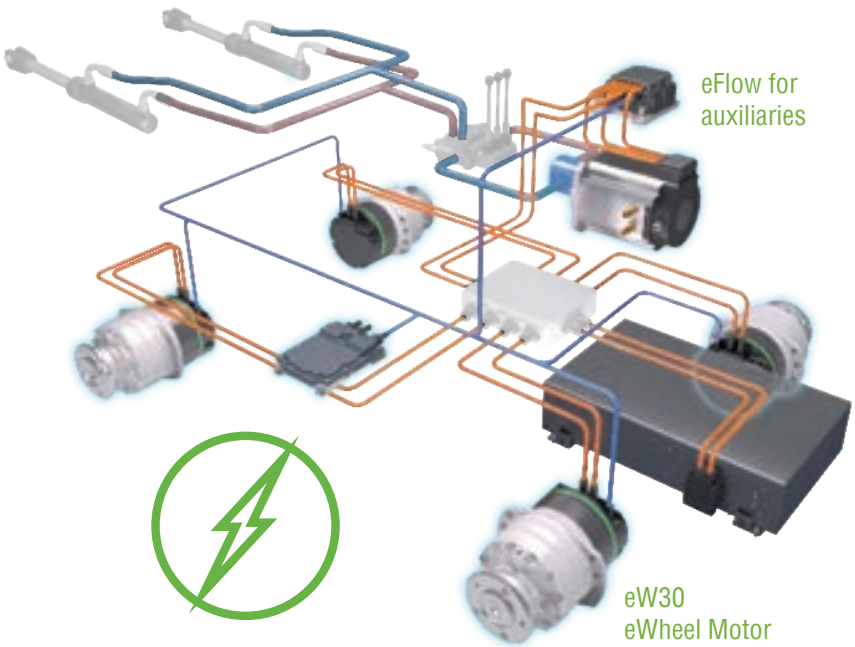
This solution simplifies electrification through fully integrated components, offering the flexibility of low and high-voltage configurations to suit diverse needs. It offer the same mechanical interface as with hydrostatic transmission to ensure seamless machine integration. By maximizing drivability and control, our electric drive solution optimizes each wheel's performance and delivers superior off-road capabilities.

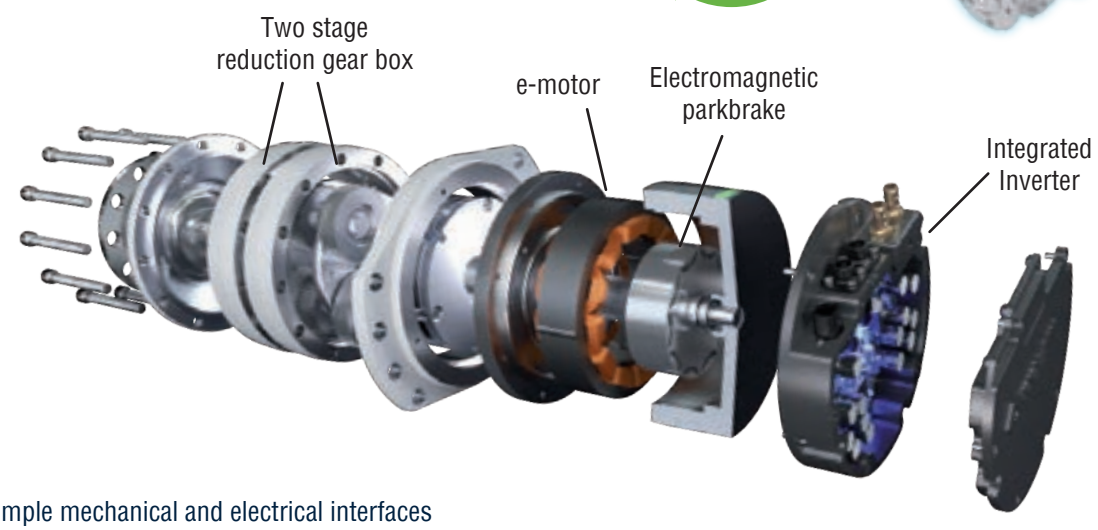
With its ability to enhance in-field performance, reduce the number of components, and improve efficiency, the solution not only supports sustainability but also boosts productivity. Furthermore, it offers exceptional total cost of ownership, providing long-term value to your customers and end-users.

The first Poclain all-in-one full electric drive solution relies on the eW30 eWheel motor.

With a power output of up to 7kW and a torque of 2200 Nm at a 48V DC link, the eWheel is specifically designed for off-highway heavy-duty applications.

The eWheel includes in one envelop an inverter, an e-motor, a cooling circuit, an electromagnetic parkbrake and a two stage reduction gear box with a rotaring shaft.





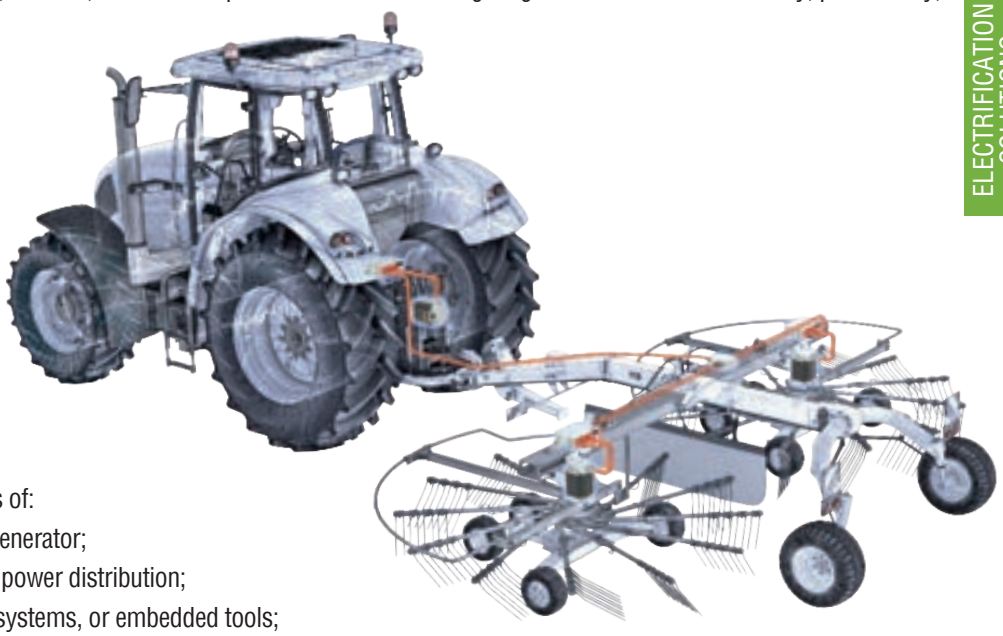
Its simple mechanical and electrical interfaces ensure easy integration, while its robust design guarantees unmatched efficiency and durability in all operating conditions. eWheel will be available in serial production end of 2026.

Step up to hybrid with Poclain

The pressure to reduce emissions and fuel consumption in Non-Road Mobile Machinery (NRMM) is stronger than ever. Stricter regulations, rising fuel costs, and increasing demand for cleaner operations are reshaping the industry. While full electric solutions hold promise, they remain limited by battery size, weight, and autonomy constraints — particularly in heavy-duty applications.

Why hybrid?

NRMM presents unique challenges. Tractors, excavators, harvesters, and other heavy-duty equipment operate for long hours in demanding environments. Providing sufficient energy storage using batteries alone often leads to impractical solutions — oversized, heavy, and expensive machines that compromise usability.
While hydrogen and full battery-electric solutions are advancing, hybrids currently offer the best compromise between performance, cost, and sustainability for heavy-duty applications. By combining the robustness of traditional internal combustion engines (ICEs) with the efficiency of electrified functions, hybrids provide a pragmatic, efficient, and scalable path forward — delivering tangible benefits in sustainability, productivity, and operating costs.



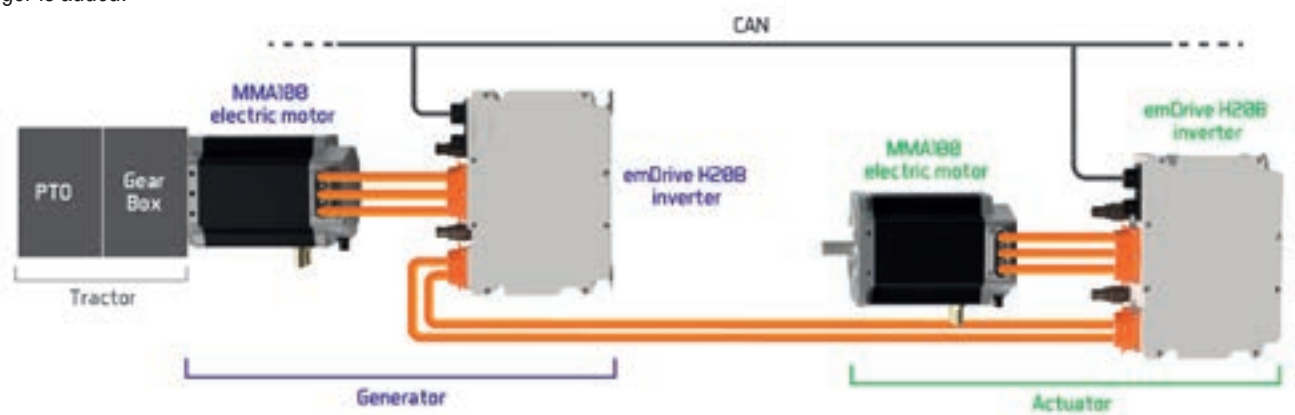
System architecture

A typical hybrid transmission for NRMM consists of:

- An internal combustion engine (ICE) driving a generator;
- A DC bus serving as the backbone for electrical power distribution;
- Electrified functions, such as traction, auxiliary systems, or embedded tools;
- Energy management ensuring optimal allocation of power and smooth shifting between ICE and electric modes.

The decentralized architecture enables each actuator to draw only the power it needs, reducing energy losses compared to centralized hydraulic systems.
It can be enriched with a buffer Li-Ion battery system interfaced between the DC Bus inverter and the electric actuators, thus bringing further optimizations as well as additional working modes:

- Operate the ICE at its most efficient working point (RPM/torque point). At low power workload, it can even be disabled;
- Offer a zero-emission mode for indoor applications, relying purely on battery power. This opens the path to plug-in hybrid design, if an onboard charger is added.



Hybrid solutions bring operators key benefits…

- Fuel and emissions savings: Up to 30% less diesel consumption translates into lower operating costs and reduced carbon footprint;
- Increased productivity: Reduced noise and vibration enable longer daily operation and higher operator comfort;
- Simplified maintenance and reduced costs: ICE Service intervals are extended, electric components are natively self protecting and enable faster diagnosis and servicing thanks to their connectivity.

… and strategic value for OEMs

Hybrid solutions are a strong differentiator and align OEMs with the increasingly strict environmental regulations. Their high adaptability makes them compatible with a range of voltage levels, applications, and machine sizes. They also offer a future-proof transition toward full electrification when battery technologies mature.

Conclusion

Hybrid transmissions represent a powerful transition technology for non-road mobile machinery. They reduce fuel consumption, cut emissions, improve operator experience, and simplify maintenance — all while preserving the reliability and autonomy of diesel-powered machines.

Poclain's hybrid expertise

Poclain has developed a portfolio of solutions tailored for hybrid Non-Road Mobile Machinery up to 870VDC systems. They target the electrification of tractor-mounted implements and, auxiliary systems in forestry and mining equipment, as well as the hybridization of low-power drivetrains in compact construction machines.

Key advantages include:

- High efficiency architecture thanks to unique control software (excellent DC link stability and eMotor control);
- Simplified mechanical and electrical integration, even in tight spaces, thanks to highly compact inverters, e-motors and generators with adaptable interfaces;
- Simplified system integration. Communication is CAN-based (J1939, CANopen) and uses the UDS protocol for diagnostics, flashing, and preventive maintenance. It complies with off- road machinery functional safety standards such as ISO 25119, and can host customer application software in its inverters;
- Rugged components and connectors designed to meet the harsh conditions of off-road applications. The sensorless control option is also available for greater resistance to shocks and vibrations.

Engineering Support

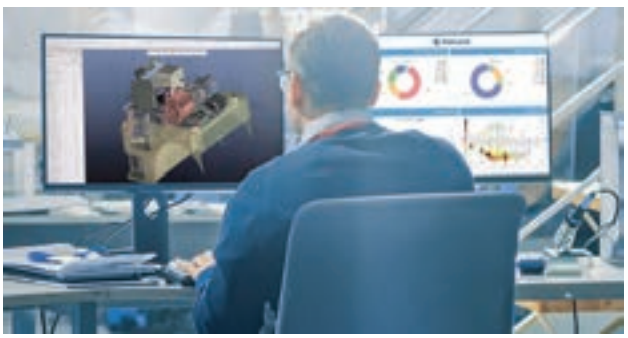
Choose and implement perfectly calibrated electric transmission solutions

With our extensive experience in your applications and electric transmissions, as well as our expertise in system engineering, we help you integrate the best solutions seamlessly and accelerate your time to market. Trust our dedicated team of engineers to turn your challenges into opportunities.

Service can be tuned from support to the delivery of a validated transmission

Typical tasks- Tuning of eDrive to the application

- Duty cycle measurements / load analysis
- Electric/Hydraulic sketch review
- System integration support: Interface Vehicle ECU (VECU) to Transmission ECU (TECU) communication validation
- Machine on-site commissioning



MOTORS

HYDRAULIC MOTORS
HIGH TORQUE RADIAL PISTONS

HIGH PERFORMANCE

Displacement range	933 to 3 526 cm³/rev. [56.9 to 215.2 cu.in/rev.]
Max. Speed	548 rpm
Max. Power	280 kW [375 HP]

MHP

p.82

MODULARITY AND VERSATILITY

Displacement range	172 to 15 000 cm³/rev. [10.5 to 915 cu.in/rev.]
Max. Speed	700 rpm
Max. Power	240 kW [322 HP]

MS

p.92

COMPACT

MK

Displacement range	272 to 2 812 cm³/rev. [16.6 to 171.5 cu.in/rev.]
Max. Speed	160 rpm
Max. Power	70 kW [94 HP]

p.104

STEERABLE WHEEL MOTORS

MG

Displacement range	172 to 2 812 cm³/rev. [10.5 to 171.6 cu.in/rev.]
Max. Speed	510 rpm
Max. Power	90 kW [120 HP]

p.110

SWING DRIVE

MZ

Displacement range	213 to 750 cm³/rev. [13.0 to 45.7 cu.in/rev.]
Max. Speed	470 rpm
Max. Power	29 kW [39 HP]

p.116

SKID-STEER DRIVE

ML

Displacement range	174 to 842 cm³/rev. [10.6 to 51.4 cu.in/rev.]
Max. Speed	483 rpm
Max. Power	30 kW [40 HP]

p.120

TRACK DRIVE

MT

Displacement range	172 to 915 cm³/rev. [10.5 to 55.8 cu.in/rev.]
Max. Speed	580 rpm
Max. Power	41 kW [55 HP]

p.124

INDUSTRIAL

MI

Displacement range	7 000 to 40 000 cm³/rev. [426.9 to 2,441 cu.in/rev.]
Max. Speed	140 rpm
Max. Power	600 kW [804 HP]

p.128

HYDROBASE FOR WHEEL HUBS

MF

Displacement range	627 to 1 328 cm³/rev. [38.2 to 81 cu.in/rev.]
Max. Speed	150 rpm
Max. Power	47 kW [63 HP]

p.134

CREEP DRIVE

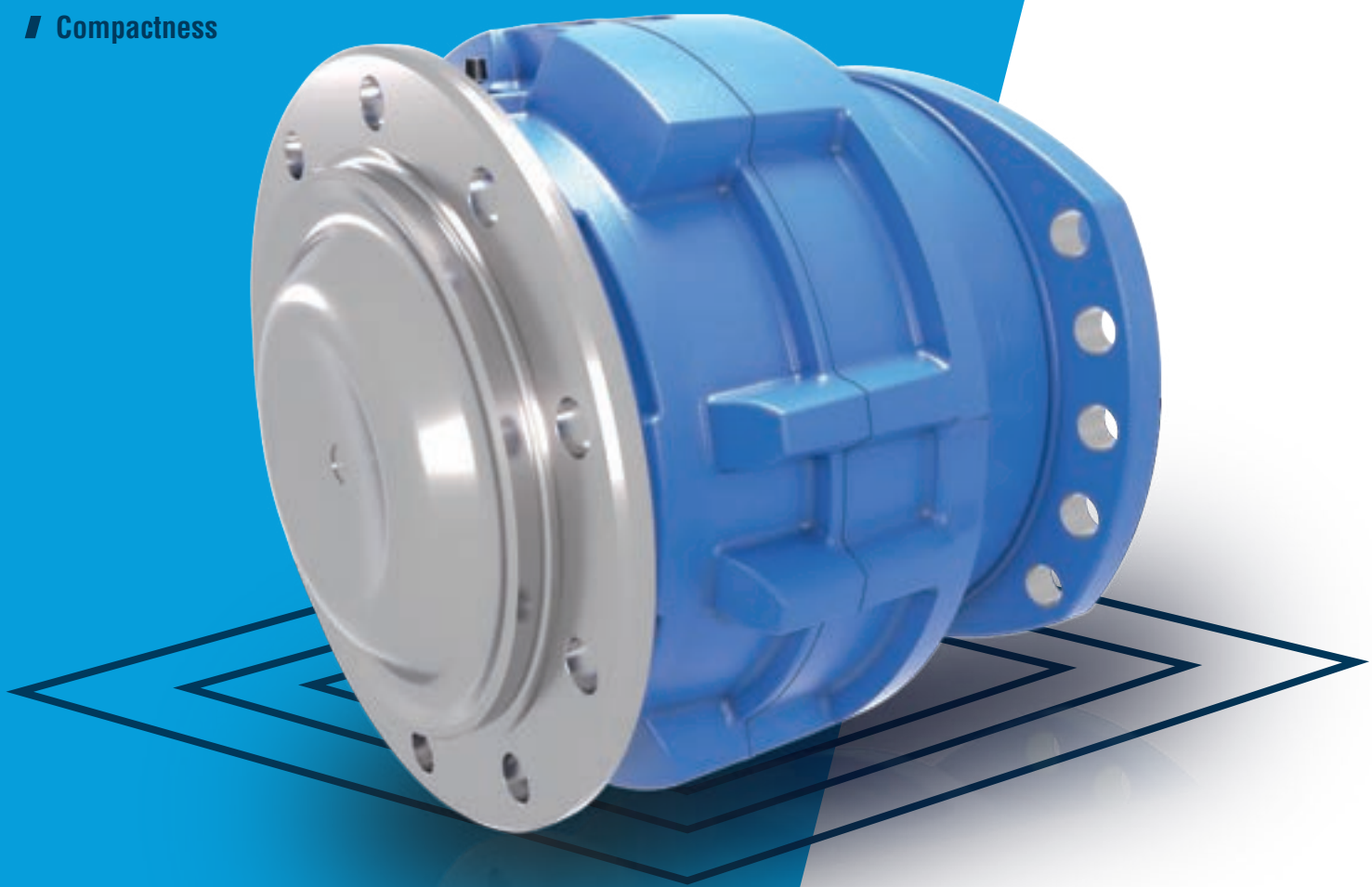
CDM

Displacement range	667 to 2 424 cm³/rev. [40.7 to 148.1 cu.in/rev.]
Max. Speed	315 rpm
Max. Power	40 kW [54 HP]

p.138

HIGH PERFORMANCE MOTORS
FOR THE MOST DEMANDING APPLICATIONS

- Higher speed and power
- High efficiency
- One, dual, three or four displacements
- With or without brake
- Compactness



MHP

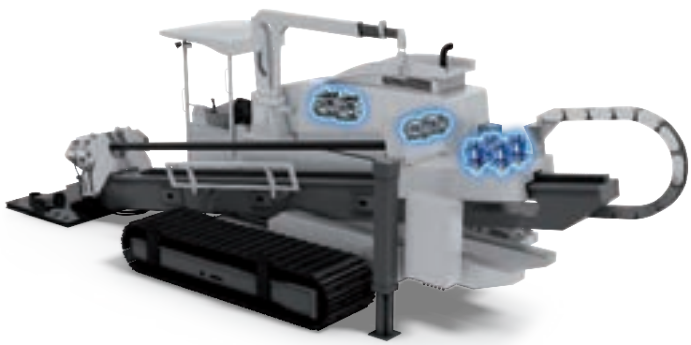
MHP11 ▪ MHP13 ▪ MHP17
MHP20 ▪ MHP27

From 933 to 3 526 cm^3/rev. [56.9 to 215.2 cu.in/rev.]
Up to 28 059 N.m [20,695 lbf.ft]
Up to 500 bar [7,252 PSI]
Up to 548 rpm
Up to 280 kW [375 HP]

Performance

		Max. Pressure bar [PSI]	Max.Speed RPM	Displacement range cm³/rev [cu.in/rev]	Max. Torque* N.m [lbf.ft]	Max. Power** kW [HP]
Single displacement motors	**MHP11**	450 [6,527]	324	933 - 1 401 [56.9] - [85.5]	10 000 [7,376]	104 [139]
	MHP13	500 [7,252]	520	900 - 1 542 [54.9] - [94.1]	12 258 [9,041]	151 [202]
	MHP17	500 [7,252]	379	1 200 - 2 238 [73.2] - [136.6]	17 792 [13,123]	249 [334]
	MHP20	500 [7,252]	505	1 416 - 2 427 [86.4] - [148.1]	19 313 [14,244]	200 [268]
	MHP27	500 [7,252]	340	1 893 - 3 526 [115.5] - [215.2]	28 059 [20,695]	280 [375]
Dual displacements motors* **	**MHP11**	450 [6,527]	318	311 - 1 401 [19.0] - [85.5]	10 000 [7,376]	106 [142]
	MHP13	500 [7,252]	548	300 - 1 542 [18.3] - [136.6]	12 258 [9,041]	158 [212]
	MHP17	500 [7,252]	398	400 - 2 238 [24.4] - [85.4]	17 792 [13,123]	241 [323]
	MHP20	500 [7,252]	520	531 - 2 427 [32.4] - [148.1]	19 313 [14,244]	190 [255]
	MHP27	500 [7,252]	345	710 - 3 526 [32.4] - [215.2]	28 059 [20,695]	230 [308]
Three displacements motors	**MHP11**	450 [6,527]	293	311 - 1 401 [19.0] - [85.5]	10 000 [7,376]	105 [141]
	MHP13	500 [7,252]	491	300 - 1 542 [18.3] - [136.6]	12 258 [9,041]	154 [206]
	MHP17	500 [7,252]	360	400 - 2 238 [24.4] - [85.4]	17 792 [13,123]	250 [335]
	MHP20	500 [7,252]	480	354 - 2 427 [21.6] - [148.1]	19 313 [14,244]	175 [235]
	MHP27	500 [7,252]	330	473 - 3 526 [28.9] - [215.2]	28 059 [20,695]	215 [288]
Four displacements motors	**MHP20**	500 [7,252]	435	354 - 2 427 [21.6] - [148.1]	19 313 [14,244]	175 [235]
	MHP27	450 [6,527]	316	473 - 3 526 [28.9] - [215.2]	28 059 [20,695]	215 [288]

*Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm³/rev.) x max. pressure (bar)
**Max. power obtained at max. speed
*** Symetrical valving available in configuration without boosted brake



Bearing support types

	Wheel flange	Wheel flange service brake	Wheel flange parking brake	Wheel flange combined brake	Male splined shaft	Male splined shaft parking brake	Female splined shaft	Shaft for shrink disc
					NF-E22-141 DIN 5480	NF-E22-141 DIN 5480	DIN 5480	
MHP11	●	●	●		●			
MHP13	●	●	●		●	●		
MHP17	●	●	●		●	●		
MHP20	●	●	●	●	●	●	●	●
MHP27	●	●	●	●	●	●	●	●

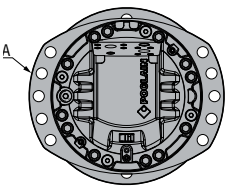
Chassis fixation types

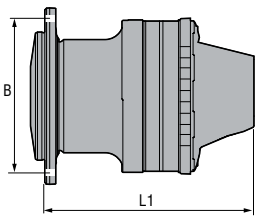
	On the valving cover Two lugs	On the bearing support Two lugs	On the bearing support Four lugs	On the bearing support
MHP11	●	●		
MHP13	●	●		
MHP17	●	●		
MHP20	●	●	●	●
MHP27	●	●	●	●

Dimensions

Thanks to its compactness and modularity, the integration of the MHP motor on customers machine is more easily facilitated, which helps to cut design and assembly cost for the OEMs, while allowing them to offer versatile and customized solutions to their end-customers.

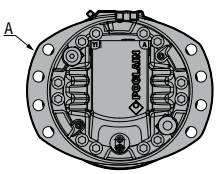
Wheel flange motor

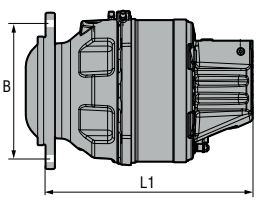




		MHP11	MHP13 MHP17	MHP20 MHP27
L1 max.	mm [in]	360,4 [14.19]	387,4 [15.25]	458,1 [18.03]
dia. A max.	mm [in]	377 [14.84]	377 [14.84]	425 [16.73]
dia. B max.	mm [in]	275 [10.83]	275 [10.83]	275 [10.83]
Weight max.	kg [lb]	- [-]	- [-]	170 [375]

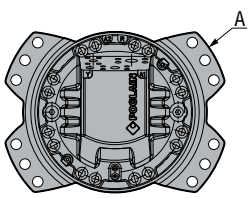
Wheel flange motor with P17-P20 parking brake or S17-S20 service brake

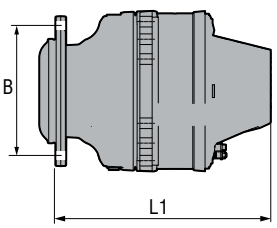




		MHP11 (P17 - S17)	MHP13 MHP17 (P17 - S17)	MHP20 MHP27 (P20-S20)
L1 max.	mm [in]	392,3 [15.44]	420,4 [16.55]	430,7 [16.96]
dia. A max.	mm [in]	377 [14.84]	377 [14.84]	425 [16.73]
dia. B max.	mm [in]	275 [10.83]	275 [10.83]	335 [13.19]
Weight max.	kg [lb]	- [-]	- [-]	- [-]

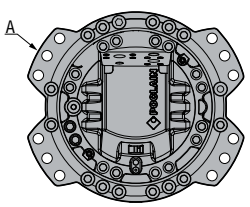
Wheel flange motor with P27 parking brake

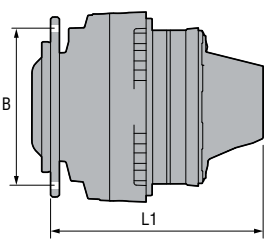




		MHP20 MHP27
L1 max.	mm [in]	456,1 [17.96]
dia. A max.	mm [in]	483 [19.01]
dia. B max.	mm [in]	335 [13.19]
Weight max.	kg [lb]	231 [509]

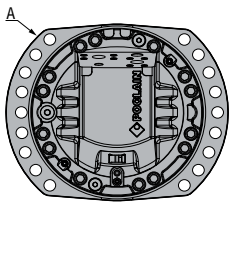
Wheel flange motor with C27 combined brake

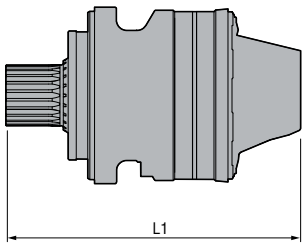




		MHP20 MHP27
L1 max.	mm [in]	456,1 [17.96]
dia. A max.	mm [in]	482 [18.98]
dia. B max.	mm [in]	335 [13.19]
Weight max.	kg [lb]	240 [529]

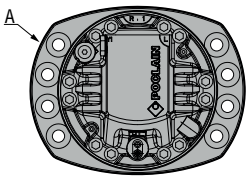
Male splined shaft motor

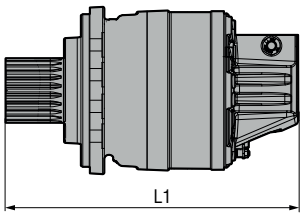




		MHP11	MHP13 MHP17	MHP20 MHP27
L1 max.	mm [in]	415 [16.33]	444 [17.48]	568 [22.36]
dia. A max.	mm [in]	375 [14.76]	375 [14.76]	425 [16.73]
Weight max.	kg [lb]	- [-]	- [-]	136 [299]

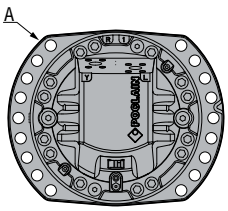
Male splined shaft motor with P17-P20 parking brake

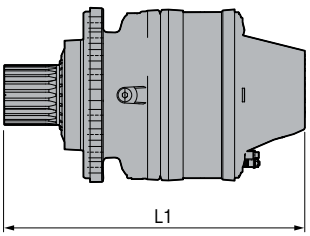




		MHP13 MHP17 (P17)
L1 max.	mm [in]	541 [21.30]
dia. A max.	mm [in]	393 [15.47]
Weight max.	kg [lb]	- [-]

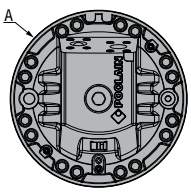
Male splined shaft motor with P27 parking brake

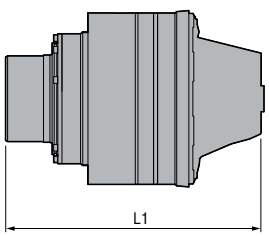




		MHP20 MHP27
L1 max.	mm [in]	599 [23.58]
dia. A max.	mm [in]	425 [16.73]
Weight max.	kg [lb]	230 [507]

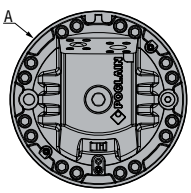
Female splined shaft motor

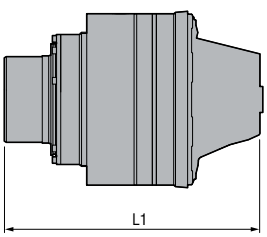




		MHP20 MHP27
L1 max.	mm [in]	502 [19.76]
dia. A max.	mm [in]	340 [13.38]
Weight max.	kg [lb]	157 [346]

Shrink disc motor





		MHP20 MHP27
L1 max.	mm [in]	495 [19.49]
dia. A max.	mm [in]	340 [13.38]
Weight max.	kg [lb]	157 [346]

Brakes

Multidisc parking brake mounted in the bearing support

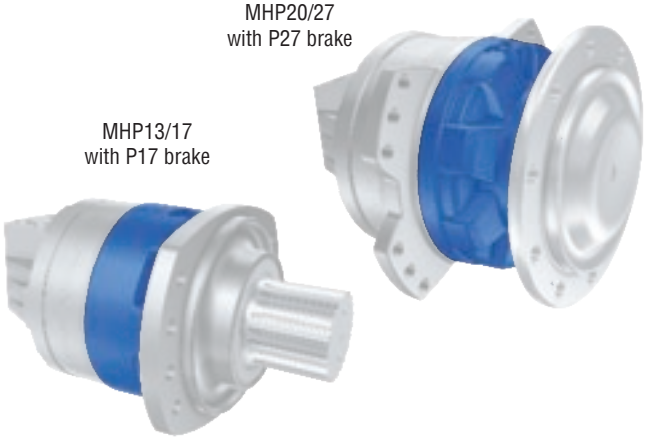
- Parking brake release pressure: 16 to 30 bar [232 to 435 PSI]
- Negative brake

Mini. parking braking torque

	N.m [lb.ft]	MHP11	MHP13	MHP17	MHP20	MHP27
P17	16 000 [11,801]	●	●	●		
P20	21 700 [16,005]				●	●
P27	29 200 [21,537]				●	●

MHP20/27
with P27 brake

MHP13/17
with P17 brake



Multidisc service brake mounted in the bearing support

- Pressure to obtain max. service braking torque: 120 bar [1,740 PSI]
- Positive brake

Average service braking torque

	N.m [lb.ft]	MHP11	MHP13	MHP17	MHP20	MHP27
S17	21 300 [15,710]	●	●	●		
S20	25 000 [18,439]				●	●

MHP13/17
with S17 brake

Multidisc combined brake mounted in the bearing support or in the cover

The C27 combined brake available on MHP 20 and MHP 27 motors, combines service and parking brake ability and offers powerful and reliable braking performance thanks to its closed design (wet discs technology) not sensitive to external pollution.

- Parking brake release pressure: 100 to 130 bar [1,450 to 1,885 PSI]
- Negative brake

- Pressure to obtain max. service braking torque: 70 bar [1,015 PSI]
- Positive brake

Mini. parking and average braking torque

	Parking	Service		
	N.m [lb.ft]	N.m [lb.ft]	MHP20	MHP27
C27	18 000 [13,276]	32 000 [23,602]	●	●

MHP20/27
with C27 brake

TWIN-LOCK™ : FULLY HYDROSTATIC ANTI-SKID SOLUTION

Increase the off-road capability of your machines

Wheel adherence is a critical factor with off road vehicles. Lose adequate wheel contact with the ground and you can lose control of your machine, put it temporarily out of service, cause premature tire wear, dramatically increase fuel consumption or churn up the site. Poclain Hydraulics, a specialist in hydrostatic transmission, has designed and developed Twin-Lock™ to increase the performance of its hydrostatic drive systems on difficult ground conditions and steep gradients.

Motor sizes

- MHP11
- MHP13
- MHP17
- MHP20
- MHP27

More information > 50

BOOSTED BRAKE

More security for self-propelled machines

Improve the braking performance of self-propelled machines by using the entirely hydrostatic braking capacity of hydraulic motors. The technology - Boosted Brake - meets the braking requirements for machines running at 40 kph [24.8 mph].

On a self-propelled machine running at 40kph [24.8 mph] the hydrostatic brake must be combined with a friction brake to meet European regulations of deceleration.
Poclain Hydraulics has developed a technology - Boosted Brake - to increase the hydrostatic braking capacity of self-propelled machines.

Motor sizes

- MHP11
- MHP13
- MHP17
- MHP20
- MHP27
- MS-MSE18
- MS35

More information > Page 58

Built-in features

Temperature control

	MHP11	MHP13	MHP17	MHP20	MHP27
High efficiency (zero clearance pistons/ring)	●	●	●	●	●
Additional case flushing port	●	●	●	●	●

Speed

	MHP11	MHP13	MHP17	MHP20	MHP27
High speed / Low pressure drop (Butterfly valving)	●	●	●	●	●
Predisposal for speed sensor	●	●	●	●	●

Reinforcement

	MHP11	MHP13	MHP17	MHP20	MHP27
PEEK bushing (against high temperature)		●	●	●	●
Monobloc cover	●	●	●	●	●

High pressure connection

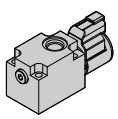
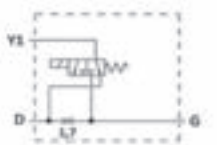
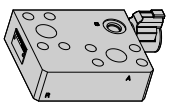
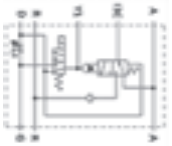
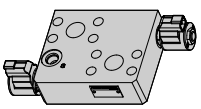
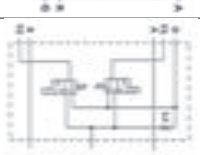
	MHP11	MHP13	MHP17	MHP20	MHP27
Flat ports for valve	●	●	●	●	●

MHP20/27
with flat ports

Flanged valves

Designed with a flat porting surface, the MHP 20 and MHP 27 motors can receive valve blocks, which can be flanged on the cover in order to enhance the control (electrical command for displacement shifting) and simplify the piping on the machine.

MHP20/27
with three displacements
piloting valve

	Piloting	Max. operating pressure	Max.flow	Hydraulic schematics
		bar [PSI]	L/min [GPM]	
	2nd displacement	500 [7,252]	30 [7.92]	
	2nd displacement + Boosted brake	150 [2,175]	15 [3.96]	
	Three displacements	500 [7,252]	30 [7.92]	

Optional features

Temperature control

	MHP11	MHP13	MHP17	MHP20	MHP27
Exchange valve	●	●	●	●	●

Speed

	MHP11	MHP13	MHP17	MHP20	MHP27
Speed sensor	●	●	●	●	●

Reinforcement

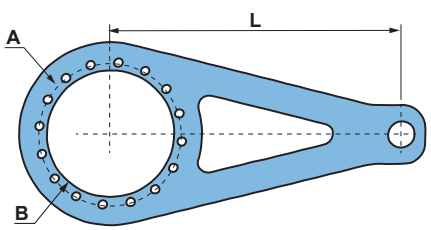
	MHP11	MHP13	MHP17	MHP20	MHP27
Extra long life (Diamond™)	●	●	●	●	●

High pressure connection

	MHP11	MHP13	MHP17	MHP20	MHP27
SAE Flange	●	●	●	●	●
Metric	●	●	●	●	●
UNF	●	●	●	●	●
GAS	●	●	●	●	●

Torque arms and shrink discs

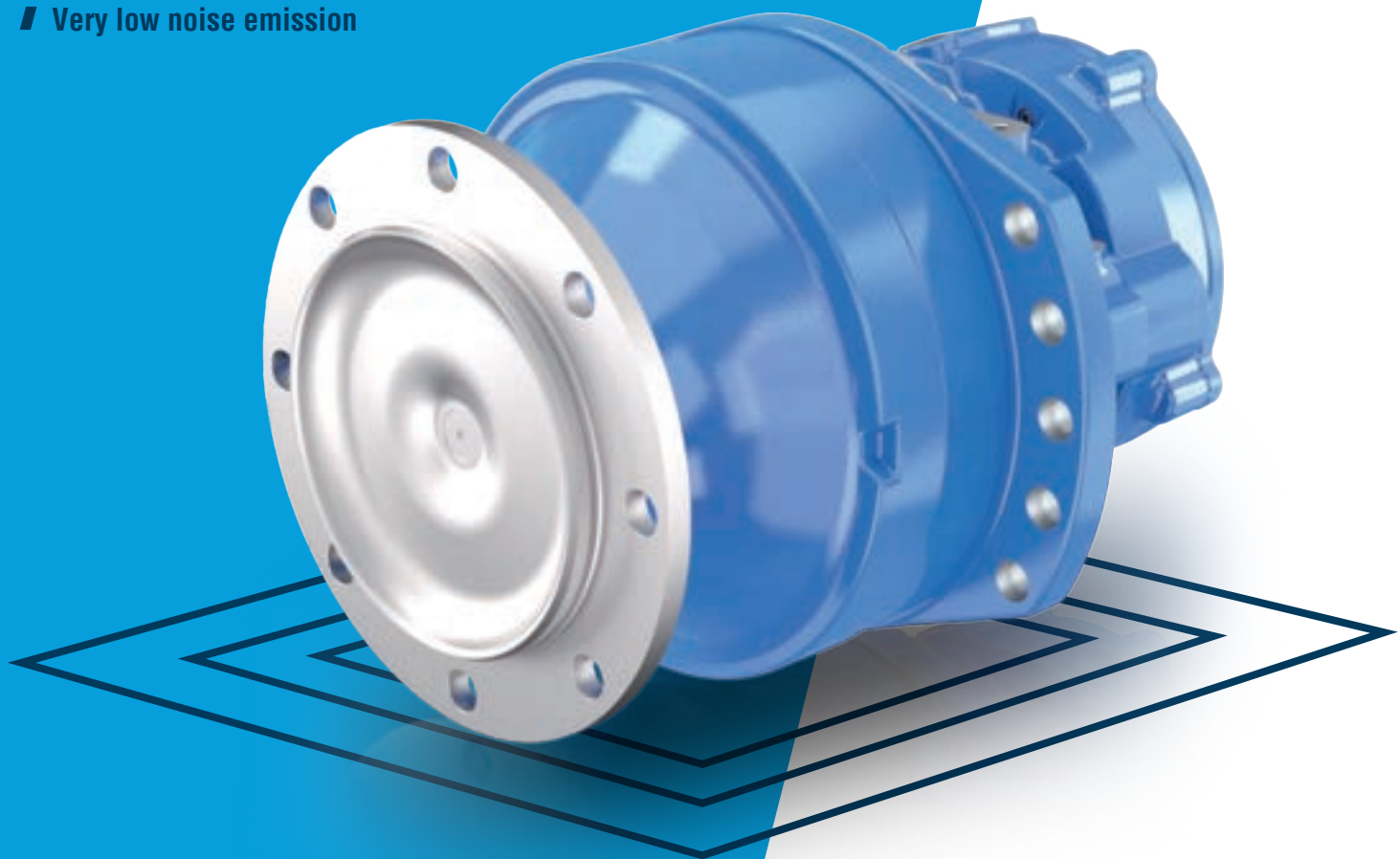
To ease the integration of our motors into your machines,
Poclain Hydraulics can supply motors with adapted torque arms and shrink discs.



	L min. mm [in]	A dia. mm [in]	B dia. mm [in]	Mounting	Thickness mm [in]
MHP20/27	500 [19.68]	290 [11.42]	255 [10.04]	8 x M20	25 [0.98]

MODULARITY AND VERSATILITY
A SOLUTION FOR EVERY NEED

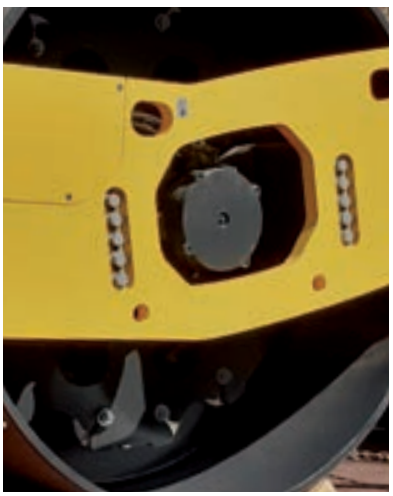
- Large range of motors
- Direct drive
- High radial and axial load capability
- Single or dual displacement
- With or without brake
- Very low noise emission



MS / MSE

MS/MSE02 ▪ MSE03 ▪ MS/MSE05
MS/MS08 ▪ MS/MSE11 ▪ MS/MSE18
MS25 ▪MS35 ▪ MS50 ▪ MS83 ▪ MS125

From 172 to 15 000 cm^3/rev. [10.5 to 915 cu.in/rev.]
Up to 77 000 N.m [56,792 lbf.ft]
Up to 450 bar [6,530 PSI]
Up to 900 rpm
Up to 240 kW [322 HP]



Performance MS Standard

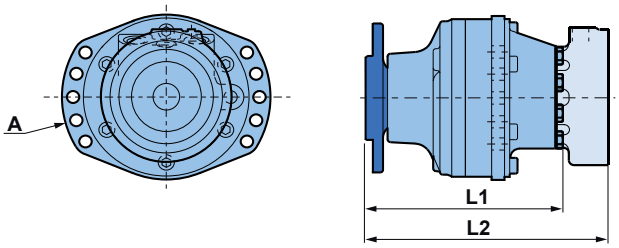
		First displacement*				Second displacement**			
	Max. Pressure bar [PSI]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
MS02	450 [6,527]	172 - 255 [10.5] - [15.6]	1 800 [1,227]	580	18 [24]	86 - 128 [5.2] - [7.8]	916 [676]	590	12 [16]
MSE02	400 [5,802]	332 - 398 [20.2] - [24.3]	2 500 [1,843]	265	22 [29.5]	166 - 199 [10.1] - [12.1]	1 260 [930]	340	16,5 [22]
MSE03	350 [5,076]	450 - 500 [27.4] - [30.5]	2 780 [2,050]	155	22 [30]	225 - 250 [13.7] - [15.2]	1 390 [1,025]	183	16,5 [22]
MS05	450 [6,527]	260 - 560 [15.9] - [34.2]	4 000 [2,950]	350	29 [39]	130 - 280 [7.9] - [17.1]	2 000 [1,475]	360	19 [25]
MSE05	400 [5,802]	503 - 750 [30.7] - [45.7]	4 770 [3,518]	250	29 [39]	252 - 375 [15.4] - [22.9]	2 390 [1,762]	300	19 [25]
MS08	450 [6,527]	467 - 934 [28.5] - [57.0]	6 690 [4,934]	235	41 [55]	234 - 467 [14.2] - [28.5]	3 345 [2,467]	250	27 [36]
MSE08	400 [5,802]	1 043 - 1 248 [63.6] - [76.1]	7 945 [5,859]	125	41 [55]	522 - 624 [31.8] - [38.1]	3 970 [2,928]	110	27 [36]
MS11	450 [6,527]	730 - 1 259 [44.5] - [76.8]	9 000 [6,638]	200	50 [67]	365 - 630 [22.3] - [38.4]	4 500 [3,319]	200	33 [44]
MSE11	400 [5,802]	1 263 - 1 687 [77.0] - [102.9]	10 700 [7,891]	170	50 [67]	632 - 844 [38.5] - [51.4]	5 370 [3,960]	190	33 [44]
MS18	450 [6,527]	1 091 - 2 099 [66.5] - [128]	15 000 [11,063]	170	70 [94]	546 - 1 050 [33.3] - [64]	7 520 [5,546]	170	47 [63]
MSE18	400 [5,802]	2 340 - 2 812 [142.8] - [171.6]	17 900 [13,202]	90	70 [94]	1 170 - 1 406 [71.4] - [85.8]	8 950 [6,601]	110	47 [63]
MS25	450 [6,527]	2 004- 3 006 [122.3] - [183.4]	21 500 [15,857]	145	90 [121]	1 002- 1 503 [61.1] - [91.7]	10 760 [7,936]	145	60 [80]
MS35	450 [6,527]	2 439 - 4 198 [148.8] - [256]	30 000 [22,126]	140	110 [148]	1 220 - 2 099 [74.4] - [128]	15 000 [11,063]	140	73 [98]
MS50	450 [6,527]	3 500 - 6 011 [213.5] - [366.6]	43 000 [31,715]	205	140 [188]	1 750 - 3 006 [106.7] - [183.3]	21 528 [15,878]	225	93 [125]
MS83	450 [6,527]	6 679 - 10 019 [407.4] - [611.1]	71 755 [52,924]	200	200 [268]	3 340 - 5 010 [203.7] - [305.5]	35 880 [26,464]	145	135 [181]
MS125	320 - 450 [4,641 - 6,527]	10 000 - 15 000 [69] - [915]	77 000 [56,792]	130	240 [322]	5 000 - 7 500 [305] - [457.4]	53 715 [39,618]	105	160 [215]

*Available for single or dual displacement motors
**Only available for dual displacement motors
***Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm³/rev.) x max. pressure (bar)

Dimensions MS Standard

1C : Single displacement
2C : Dual displacement

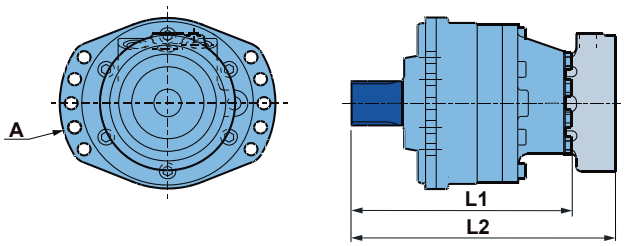
Wheel motors



			MS02 MSE02	MSE03	MS05 MSE05	MS08 MSE08	MS11 MSE11	MS18 MSE18	MS25	MS35	MS50	MS83	MS125
L1	1C	mm [in]	214,5 [8.44]	249,5 [9.82]	289,5 [11.40]	305,9 [12.04]	335,8 [13.22]	395 [15.55]	450,2 [17.72]	451,2 [17.76]	511 [20.11]	591 [23.26]	739 [29.09]
	2C	mm [in]	252,5 [9.94]	251,5 [9.90]	289,5 [11.40]	306,7 [12.07]	335,8 [13.22]	375 [14.76]	455 [17.91]	497 [19.56]	511 [20.11]	591 [23.26]	739 [29.09]
L2 max.*	1C	mm [in]	266 [10.47]	292 [11.50]	344 [13.54]	385 [15.15]	420,3 [16.54]	496 [19.52]	544 [21.41]	584 [22.99]	650 [25.59]	780 [30.71]	906 [35.67]
	2C	mm [in]	304 [11.97]	303 [11.93]	344 [13.54]	385,2 [15.16]	420,3 [16.54]	477 [18.78]	584 [22.99]	630 [24.80]	650 [25.59]	780 [30.71]	906 [35.67]
A dia. max.		mm [in]	235 [9.25]	235 [9.25]	300 [11.81]	335 [13.19]	375 [14.76]	425 [16.73]	485 [19.09]	485 [19.09]	485 [19.09]	555,5 [21.87]	565 [22.24]
Weight max.**		kg [lb]	34 [75]	35 [77]	55 [121]	79 [174]	110 [242]	160 [352]	280 [617]	269 [592]	325 [716]	546 [1,201]	563 [1,239]

* Wheel motor with the longest multidiscs brake.
** Full displacement wheel motor with multidiscs brake.

Shaft motors



			MS02 MSE02	MSE03	MS05 MSE05	MS08 MSE08	MS11 MSE11	MS18 MSE18	MS25	MS35	MS50	MS83	MS125
L1	1C	mm [in]	258,1 [10.16]	- -	312 [12.28]	332 [13.07]	380 [14.96]	432 [17.00]	520 [20.47]	560 [22.04]	678 [26.69]	822 [32.36]	822 [32.36]
	2C	mm [in]	289,5 [11.4]	- -	312 [12.28]	341 [13.42]	380 [14.96]	432 [17.00]	538 [21.18]	560 [22.04]	705 [27.75]	822 [32.36]	822 [32.36]
L2 max.*	1C	mm [in]	310,5 [12.22]	- -	370 [14.56]	403 [15.86]	458,5 [18.05]	532,3 [20.95]	652 [25.67]	660 [25.98]	817 [32.16]	955 [37.60]	962 [37.87]
	2C	mm [in]	338 [13.3]	- -	370 [14.56]	418 [16.45]	458,5 [18.05]	532,3 [20.95]	670 [26.37]	660 [25.98]	850 [33.46]	955 [37.60]	962 [37.87]
A dia. max.		mm [in]	235 [8.07]	- -	300 [11.81]	335 [13.19]	375 [14.76]	425 [16.73]	485 [19.09]	425 [16.73]	485 [19.09]	565 [22.24]	565 [22.24]
Weight max.**		kg [lb]	36 [79]	- -	55 [121]	85 [187]	114 [251]	147 [324]	255 [561]	269 [592]	353 [778]	527 [1,159]	573 [1,261]

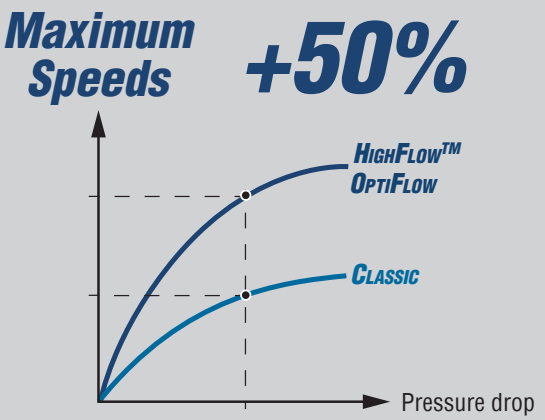
* Shaft motor with the longest multidiscs brake.
** Full displacement shaft motor with multidiscs brake.

HighFlow™ and OptiFlow

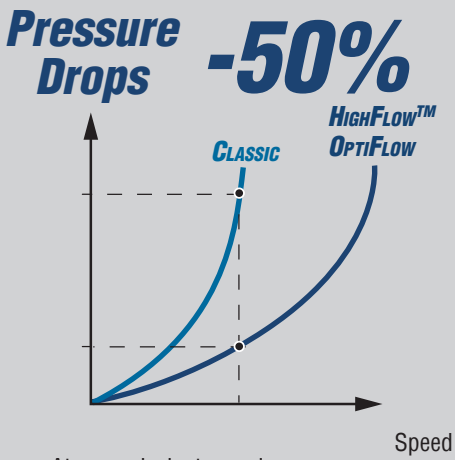
Maximum productivity with a minimum consumption

The MS HighFlow™ and OptiFlow motor range has all the successful qualities of the MS Classic range.
They are modular, robust and they offer additional performance in term of speed.

The MS OptiFlow motor keeps the same dimensions as the MS Classic motor.



At an equivalent pressure drop,
a HighFlow™ or OptiFlow motor can reach higher speeds.



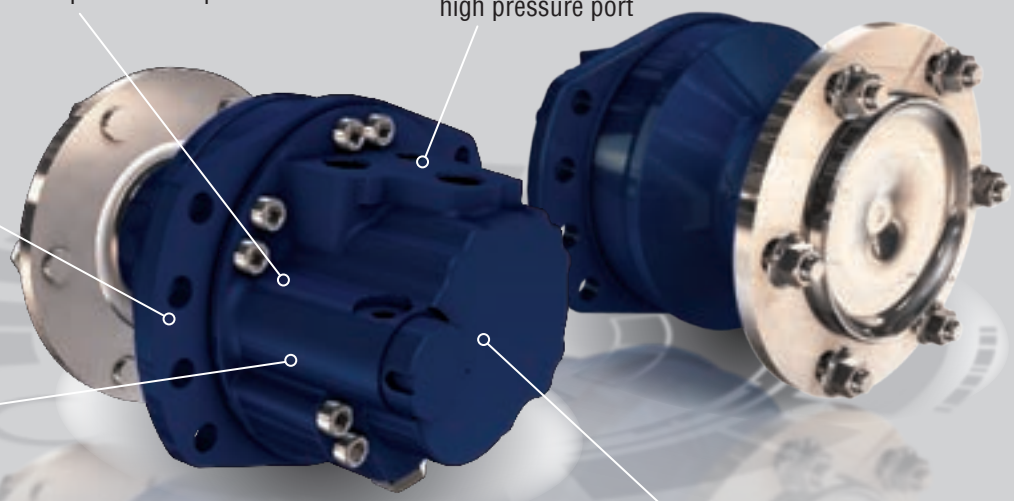
At an equivalent speed,
a HighFlow™ or OptiFlow motor reduces pressure drops.

Performance MS HighFlow™ and OptiFlow

		First displacement*				Second displacement**			
	Max. Pressure bar [PSI]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
MS02	450 [6,527]	172 - 255 [10.5] - [15.6]	1 800 [1,227]	850	18 [24]	86 - 128 [5.2] - [7.8]	916 [676]	900	12 [16]
MSE02	400 [5,802]	332 - 398 [20.2] - [24.3]	2 500 [1,843]	440	22 [29.5]	166 - 199 [10.1] - [12.1]	1 260 [930]	470	16,5 [22]
MS05	450 [6,527]	260 - 560 [15.9] - [34.2]	4 000 [2,950]	700	50 [67]	130 - 280 [7.9] - [17.1]	2 000 [1,475]	630	30 [40]
MSE05	400 [5,802]	503 - 750 [30.7] - [45.7]	4 770 [3,518]	380	50 [67]	252 - 375 [15.4] - [22.9]	2 390 [1,762]	370	30 [40]
MS08	450 [6,527]	467 - 934 [28.5] - [57.0]	6 690 [4,934]	450	41 [55]	234 - 467 [14.2] - [28.5]	3 345 [2,467]	450	27 [36]
MSE08	400 [5,802]	1 043 - 1 248 [63.6] - [76.1]	7 945 [5,859]	210	41 [55]	522 - 624 [31.8] - [38.1]	3 970 [2,928]	220	27 [36]

*Available for single or dual displacement motors
**Only available for dual displacement motors
***Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm³/rev.) x max. pressure (bar)

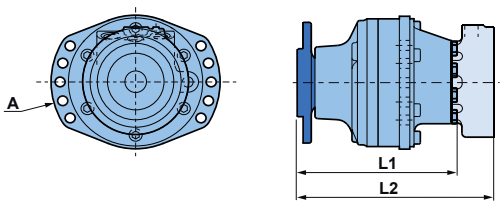
MS02
OptiFlow



Dimensions MS HighFlow™ and OptiFlow

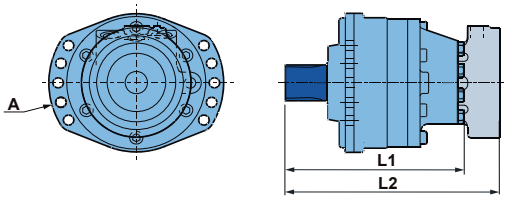
1C : One displacement
2C : Dual displacement

Wheel motors			HighFlow	OptiFlow	HighFlow	OptiFlow	HighFlow
			MS02 MSE02	MS02 MSE02	MS05 MSE05	MS05 MSE05	MS08 MSE08
L1	1C	mm [in]	247,9 [9.76]	226 [8.90]	312 [12.28]	278,7 [10.97]	295 [11.61]
	2C	mm [in]	256,6 [10.10]	-	332 [13.07]	-	336,8 [13.26]
L2 max.*	1C	mm [in]	310,4 [12.22]	-	380,5 [14.98]	-	383,2 [15.08]
	2C	mm [in]	318,2 [12.53]	-	400,5 [15.76]	-	425 [16.73]
A dia. max.		mm [in]	235 [9.25]	235 [9.25]	300 [11.81]	300 [11.81]	335 [13.19]
Weight max.**		kg [lb]	39,5 [87]	25 [55]	57,5 [127]	52 [114]	89,5 [197]



* Wheel motor with the longest multidiscs brake. ** Full displacement wheel motor with multidiscs brake.

Shaft motors			HighFlow	OptiFlow	HighFlow	OptiFlow	HighFlow
			MS02 MSE02	MS02 MSE02	MS05 MSE05	MS05 MSE05	MS08 MSE08
L1	1C	mm [in]	258,1 [10.16]	236,2 [9.29]	331,5 [13.05]	306,7 [12.07]	340 [13.38]
	2C	mm [in]	289,5 [11.4]	-	351,5 [13.84]	-	356 [14.02]
L2 max.*	1C	mm [in]	310,5 [12.22]	-	400 [15.75]	-	392 [15.43]
	2C	mm [in]	338 [13.3]	-	420 [16.53]	-	409 [16.10]
A dia. max.		mm [in]	235 [8.07]	235 [9.25]	300 [11.81]	300 [11.81]	335 [13.19]
Weight max.**		kg [lb]	41,5 [91]	27 [60]	60,5 [133]	55 [121]	90,5 [199]



* Shaft motor with the longest multidiscs brake. ** Full displacement shaft motor with multidiscs brake.

Bearing support types

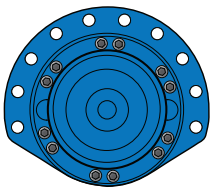





	Wheel flange	Male splined shaft	Keyed shaft	Female splined shaft	Shaft for shrink disc	Dual sprocket shaft
		NF E 22141 DIN 5480		DIN 5480		
MS02-E02	●	●	●			●
MSE03	●					
MS05-E05	●	●	●			●
MS08-E08	●	●	●			
MS11-E11	●	●				
MS18-E18	●	●	●		●	
MS25	●	●			●	
MS35	●	●			●	
MS50	●	●		●	●	
MS83	●	●		●	●	
MS125	●	●		●	●	

Chassis fixation types

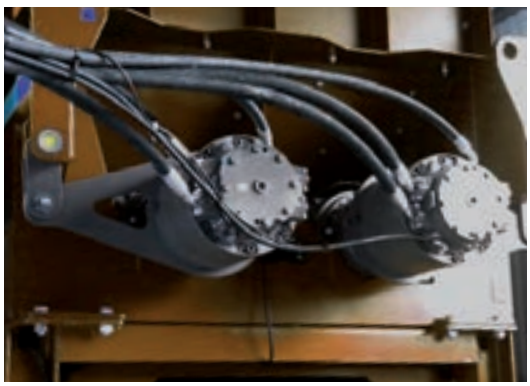


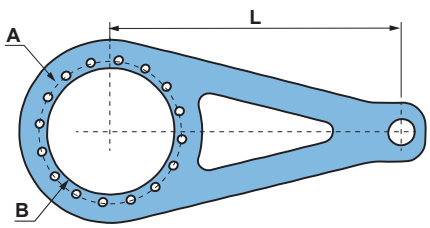



	On the valving cover Two lugs	On the bearing support Two lugs	On the bearing support Circular	Horse shoe
MS02-E02	●	●		
MSE03	●	●		
MS05-E05	●	●		●
MS08-E08	●	●		
MS11-E11	●	●		
MS18-E18	●	●		
MS25	●	●		
MS35	●	●	●	
MS50	●		●	
MS83	●		●	
MS125	●		●	

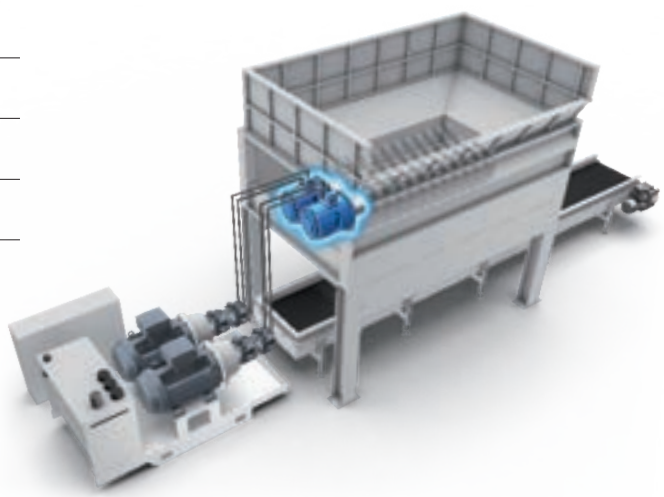
Torque arms and shrink discs

To ease the integration of our motors into your machines,
Poclain Hydraulics can supply motors with adapted torque arms and shrink discs.





	L min. mm [in]	A dia. mm [in]	B dia. mm [in]	Mounting	Thickness mm [in]
MS35	500 [19.68]	290 [11.42]	255 [10.04]	8 x M20	25 [0.98]
MS50	600 [23.62]	340 [13.39]	300 [11.81]	12 x M20	40 [1.57]
MS83	800 [31.5]	380 [14.96]	340 [13.38]	16 x M20	40 [1.57]
MS125	800 [31.5]	394 [15.51]	352 [13.85]	16 x M24	40 [1.57]



MS125 motor
with shrink discs

Brakes

Multidisc parking brake mounted at the rear of the motor

- T brake: brake with reinforced rear plate
- Parking brake release pressure: 12 to 30 bar [174 to 435 PSI]

MS05
with T04 brake

Max. parking braking torque

	N.m [lb.ft]	MS02 MSE02	MSE03	MS05 MSE05	MS08 MSE08	MS11 MSE11	MS18 MSE18	MS25	MS35	MS50	MS83	MS125
T03	2 500 [1,840]	●	●									
T04	4 220 [3,110]			●								
T09	9 000 [6,640]				●							
T14	11 840 [8,730]					●						
T20	19 000 [14,016]						●		●			
T30	30 000 [22,130]							●	●	●		
T83	42 000 [30,980]									●		
T80	72 000 [53,104]										●	●

MOTORS

Multidisc parking brake mounted in the bearing support

- Parking brake release pressure: 16 to 30 bar [232 to 435 PSI]
- Negative brake

MS08
with S08 and T09 brakes

Mini. parking braking torque

	N.m [lb.ft]	MS05/E05	MS11/E11	MS18/E18	MS35
P05	4 500 [3,320]	●			
P17	16 000 [11,801]		●		
P20	20 000 [14,751]			●	●
P27	19 800 [14,604]			●	●

MS18
with S20 or P20 brake

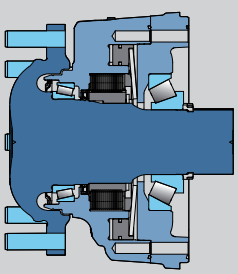
Multidisc service brake mounted in the bearing support

- Pressure to obtain max. service braking torque: 120 bar [1,740 PSI]
- Positive brake

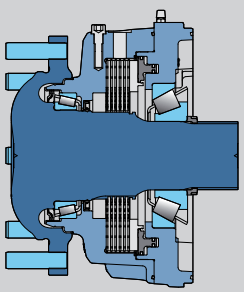
Average service braking torque

	N.m [lb.ft]	MS05/MSE05	MS08/MSE08	MS11/E11	MS18/E18	MS35
S08	6 000 [4,425]	●	●			
S17	22 000 [16,226]			●		
S20	25 000 [18,439]				●	●

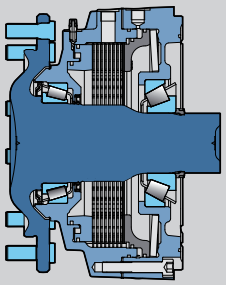
Parking brake
on the bearing support (P)



Service brake
on the bearing support (S)

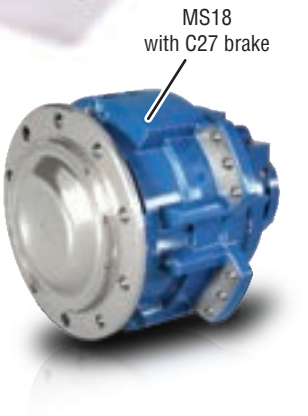


Combined parking & service brake
on the bearing support (C)



Multidisc parking and service brake mounted in the bearing support

- Parking brake release pressure: 12 to 30 bar [174 to 435 PSI] for C03 and 100 to 130 bar [1,450 to 1,885 PSI] for C27
- Negative brake
- Pressure to obtain max. service braking torque: 120 bar [1,740 PSI] for C03 and 70 bar [1,015 PSI] for C27
- Positive brake



Mini. parking and average service braking torque

		Parking	Service			
		N.m [lb.ft]	N.m [lb.ft]	MS02/E02	MS18/E18	MS35
C03	at the rear	2 645 [1,951]	1 580 [1,165]	●		
C27	in the bearing support	18 000 [13,276]	32 000 [23,602]		●	●

Caliper brake

Max. service braking torque

mm	N.m [lb.ft]	MS02 MSE02
Dia. 302	1 930 [1,423]	●

MS02
with caliper brake

BOOSTED BRAKE

More security for self-propelled machines

Improve the braking performance of self-propelled machines by using the entirely hydrostatic braking capacity of hydraulic motors. The technology - Boosted Brake - meets the braking requirements for machines running at 40 kph [24.8 mph].

On a self-propelled machine running at 40 kph [24.8 mph] the hydrostatic brake must be combined with a friction brake to meet European regulations of deceleration.
Poclain Hydraulics has developed a technology - Boosted Brake - to increase the hydrostatic braking capacity of self-propelled machines.

Motor sizes

- MS-MSE18
- MS35
- MHP11
- MHP13
- MHP17
- MHP20
- MHP27

More information > Page 58

Optional features

Temperature control

	MS02-E02	MSE03	MS05-E05	MS08-E08	MS11-E11	MS18-E18	MS25	MS35	MS50	MS83	MS125
Exchange valve	●		●	●	●	●		●			
High efficiency (zero clearance pistons/ring)	●	●	●	●	●	●	●	●	●	●	●
Additional case flushing port	●	●	●	●	●	●	●	●	●	●	●

Speed

	MS02-E02	MSE03	MS05-E05	MS08-E08	MS11-E11	MS18-E18	MS25	MS35	MS50	MS83	MS125
High speed / Low pressure drop (Butterfly valving)	●	●	●	●	●	●	●	●	●	●	●
Speed sensor	●	●	●	●	●	●	●	●	●	●	●

Reinforcement

	MS02-E02	MSE03	MS05-E05	MS08-E08	MS11-E11	MS18-E18	MS25	MS35	MS50	MS83	MS125
Extra long life (Diamond™)	●	●	●	●	●	●	●	●	●	●	●
PEEK bushing (against high temperature)	●	●	●	●	●	●	●	●	●	●	●
Reinforced back plate	●	●	●	●	●	●	●	●	●	●	●
Monobloc cover			●	●							

High pressure connection

	MS02-E02	MSE03	MS05-E05	MS08-E08	MS11-E11	MS18-E18	MS25	MS35	MS50	MS83	MS125
SAE Flange			●	●	●	●	●	●	●	●	●
Metric	●		●	●	●	●		●			
UNF	●	●	●	●	●	●		●			
Manifold interface			●	●	●	●				●	●
GAS	●	●	●	●	●	●		●			●

Hollow shaft (only for splined shaft motor)

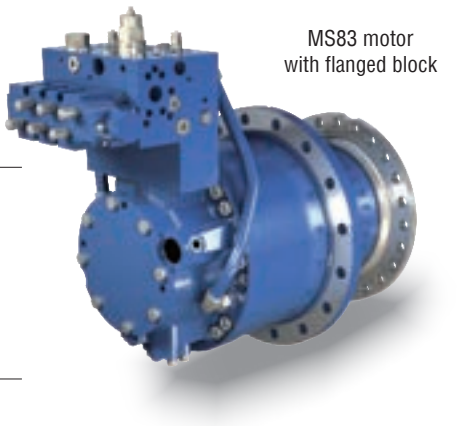
MS02-E02	MSE03	MS05-E05	MS08-E08	MS11-E11	MS18-E18	MS25	MS35	MS50	MS83	MS125
●		●	●	●	●	●	●	●	●	●

Flanged block for integrated power control unit

Single Poclain Hydraulics product: one part number, one source.

No hoses between the motor and the valve: less parts, les cost, less space, increased safety and better efficiency.

Modular design: all versions and options are available. Several functions in the same block



MS83 motor with flanged block

Available functions

- Anti-cavitation
- Cross-over relief
- Counter balance
- Free-wheeling
- Cold start
- Back pressure

TWIN-LOCK™ : FULLY HYDROSTATIC ANTI-SKID SOLUTION

Increase the off-road capability of your machines

Wheel adherence is a critical factor with off road vehicles. Lose adequate wheel contact with the ground and you can lose control of your machine, put it temporarily out of service, cause premature tire wear, dramatically increase fuel consumption or churn up the site. Poclain Hydraulics, a specialist in hydrostatic transmission, has designed and developed Twin-Lock™ to increase the performance of its hydrostatic drive systems on difficult ground conditions and steep gradients.

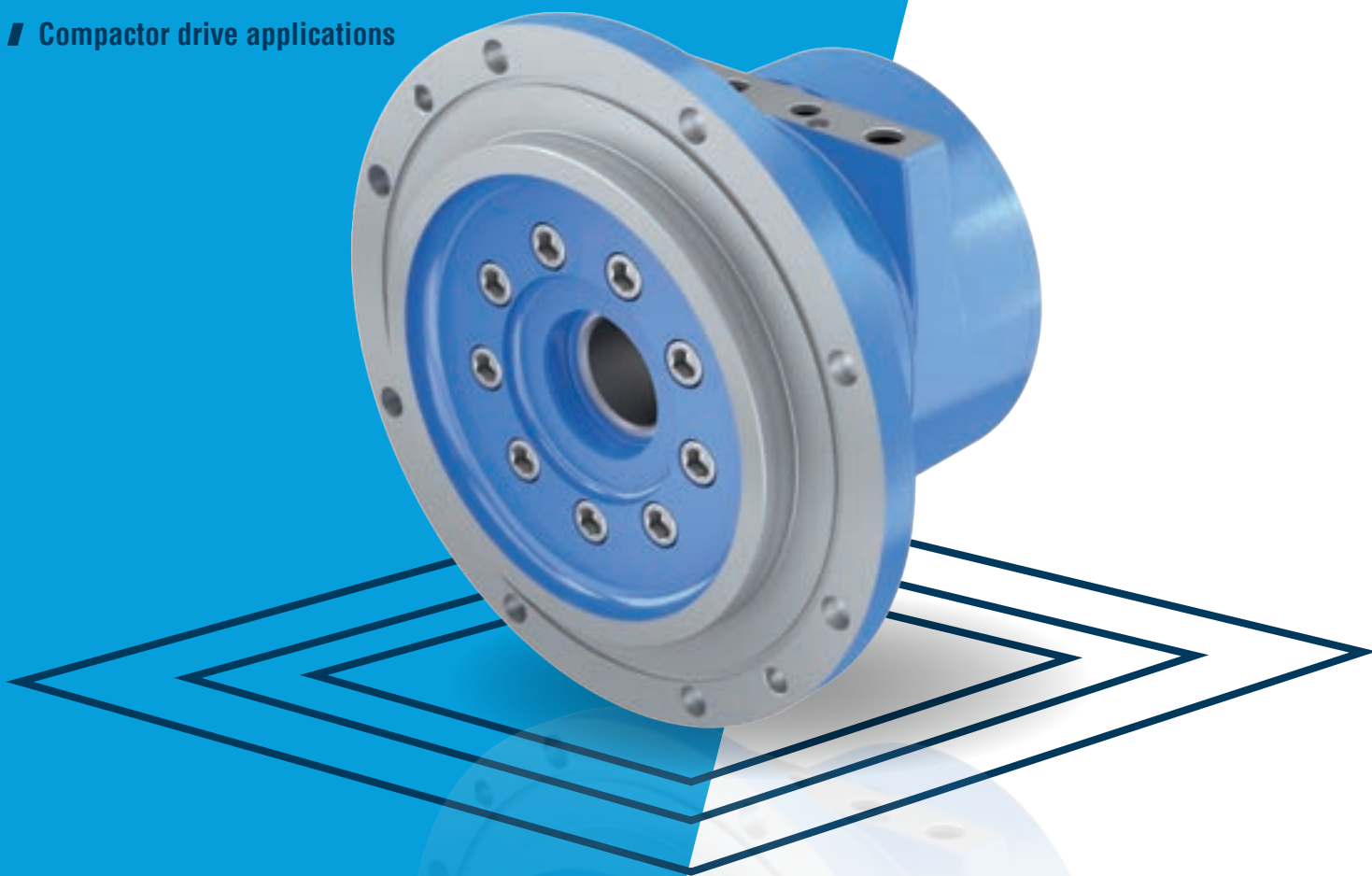
Motor sizes

- MS-MSE02
- MSE03
- MS-MSE05
- MS-MSE08
- MS-MSE11
- MS-MSE18
- MS35
- MS50

More information > Page 50

COMPACTNESS
THE SHORTEST AXIAL DIMENSION

- Ultra-short motors
- Large diameter 4 contact roller bearing
- Single or dual displacement
- With or without brake
- Compactor drive applications



MK / MKD / MKE

MK/MKD04 ▪ MK05
MK09 ▪ MK/MKE12

From 272 to 1 356 cm^3/rev. [16.6 to 82.7 cu.in/rev.]
Up to 9 710 N.m [7,162 lbf.ft]
Up to 450 bar [6,530 PSI]
Up to 130 rpm
Up to 41 kW [55 HP]

Performance

		First displacement*				Second displacement**			
	Max. Pressure bar [PSI]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
MK04	400 [5,802]	272 - 408 [16.6] - [24.9]	2 600 [1,918]	120	18 [24]	- -	- -	-	- -
MKD04	400 [5,802]	456 - 545 [27.8] - [33.2]	3 470 [2,559]	90	18 [24]	- -	- -	-	- -
MK05	400 [5,802]	272 - 670 [16.6] - [40.9]	4 265 [3,146]	130	22,5 [30]	- -	- -	-	- -
MK09	400 [5,802]	667 - 1 000 [40.7] - [61.0]	6 370 [4,698]	100	30 [40]	- -	- -	-	- -
MK12	450 [6,527]	627 - 934 [38.2] - [57.0]	6 690 [4,934]	100	41 [55]	313 - 467 [19.1] - [28.5]	3 345 [2,467]	100	27 [36]
MKE12	450 [6,527]	1 043 - 1 356 [63.6] - [82.7]	9 710 [7,162]	100	41 [55]	521 - 678 [31.8] - [41.4]	4 855 [3,581]	100	27 [36]

*Available for single or dual displacement motors
**Only available for dual displacement motors
***Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm³/rev.) x max. pressure (bar)

Chassis fixation types

	On the bearing support Circular	On the valving cover Two lugs	From rear of motor
MK04	●		
MKD04	●		
MK05			●
MK09			●
MK12		●	
MKE12		●	

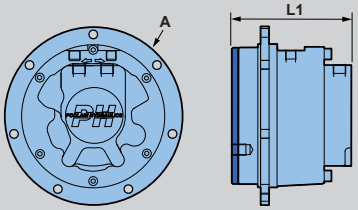
Dimensions

1C : One displacement
2C : Dual displacement

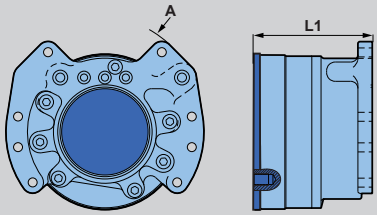
			MK04	MKD04	MK05 axial	MK05 radial	MK09	MK12 MKE12
L1	1C	mm [in]	174 [6.85]	176,2 [6,93]	165 [6,5]	146,5 [5.77]	247,6 [9.75]	249 [9.8]
	2C	mm [in]	- [-]	- [-]	- [-]	- [-]	- [-]	283 [11.14]
L2 max.*	1C	mm [in]	- [-]	- [-]	- [-]	- [-]	- [-]	- [-]
	2C	mm [in]	- [-]	- [-]	- [-]	203,5 [8.01]	- [-]	- [-]
A dia. max.		mm [in]	256 [10.08]	256 [10.08]	302 [11.89]	240 [9.45]	335 [13.81]	355 [13.19]
Weight max.**		kg [lb]	31 [68]	32 [70]	35 [77]	40 [88]	72 [158]	82 [180]

* Wheel motor with the longest multidiscs brake.
** Full displacement wheel motor with multidiscs brake.

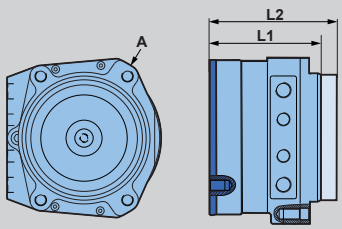
MK04 / MKD04



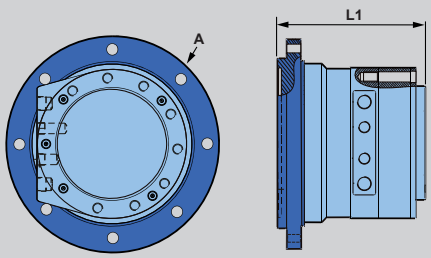
MK05 axial ports



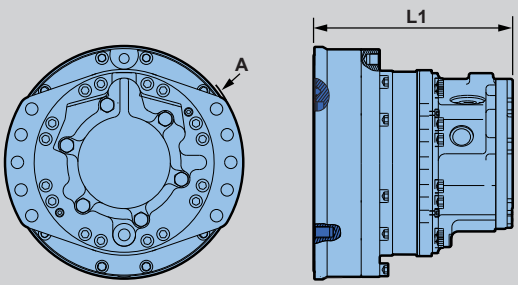
MK05 radial (with optional rear brake)



MK09



MK12-MKE12



Brakes

Multidisc parking brake mounted at the rear of the motor

- Parking brake release pressure: 12 to 30 bar [174 to 435 PSI]

Max. parking braking torque

	N.m [lb.ft]	MK05
T04	3 600 [2,655]	●
T07	7000 [5,160]	●

MK05 with brake mounted at the rear of the motor

Multidisc integrated parking brake

- Parking brake release pressure: 12 to 30 bar [174 to 435 PSI]

Max. parking braking torque

	N.m [lb.ft]	MK09
Integrated brake	6050 [4,460]	●

MK09 with integrated brake and hollow shaft

Multidisc parking brake mounted in the bearing support

- Parking brake release pressure: 12 to 30 bar [174 to 435 PSI]

Max.parking braking torque

	N.m [lb.ft]	MK12 MKE12
Brake in bearing support	9 000 [6,640]	●

Claw brake

- Parking brake release pressure: 17 to 30 bar [246 to 435 PSI]

Max. parking braking torque

	N.m [lb.ft]	MK04	MKD04	MK05*
Claw brake	3 170 [2,338]	●	●	
	3 500 [2,580]			●

* With axial ports

MK04 with Claw brake

Optional features

Temperature control

	MK04	MKD04	MK05	MK09	MK12
Exchange valve					
High efficiency (zero clearance pistons/ring)		●		●	●
Additional case flushing port	●			●	●

Speed

	MK04	MKD04	MK05	MK09	MK12
High speed / Low pressure drop (Butterfly valving)		●			
Speed sensor	●	●	●	●	●

Reinforcement

	MK04	MKD04	MK05	MK09	MK12
Extra long life (Diamond™)		●		●	●
PEEK bushing (against high temperature)	●	●	●	●	●
Reinforced back plate					●
Brake lock plate (for high speed motor fixation)				●	
Reinforced front flange	●	●	●	●*	●

* Standard

Hollow shaft

MK04	MKD04	MK05	MK09	MK12
●	●	●	●*	●

* Standard

MK12 with hollow shaft

MK09 with hollow shaft

STEERABLE WHEEL MOTORS

EASY MOTORIZATION OF STEERING WHEELS

- Integrated pivot
- Different steering angles
- Single or dual displacement
- With or without brake

MG / MGE

MG/MGE02 ▪ MG/MGE05
MG/MGE11 ▪ MG21 ▪ MG25

From 172 to 2 812 cm^3/rev. [10.5 to 171.6 cu.in/rev.]
Up to 20 139 N.m [14,854 lbf.ft]
Up to 450 bar [6,530 PSI]
Up to 510 rpm
Up to 90 kW [120 HP]

Performance

		First displacement*				Second displacement**			
	Max. Pressure bar [PSI]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
MG02	450 [6,527]	172 - 255 [10.5] - [15.6]	1 800 [1,227]	390	18 [24]	86 - 128 [5.2] - [7.8]	916 [676]	510	12 [16]
MGE02	400 [5,802]	332 - 398 [20.2] - [24.3]	2 500 [1,843]	200	22 [29.5]	166 - 199 [10.1] - [12.1]	1 260 [930]	275	16,5 [22]
MG05	450 [6,527]	260 - 560 [15.9] - [34.2]	4 010 [2,957]	420	29 [39]	130 - 280 [7.9] - [17.1]	1 862 [1,373]	420	19 [35]
MGE05	400 [5,802]	503 - 749 [30.7] - [45.7]	4 768 [3,517]	225	29 [39]	251 - 374 [15.3] - [22.8]	3 202 [2,361]	275	19 [35]
MG11	450 [6,527]	730 - 1 259 [44.5] - [76.8]	9 000 [6,638]	200	50 [67]	365 - 630 [22.3] - [38.4]	4 500 [3,319]	200	33 [44]
MGE11	400 [5,802]	1 263 - 1 687 [77.0] - [102.9]	10 700 [7,891]	170	50 [67]	632 - 844 [38.5] - [51.4]	5 370 [3,960]	190	33 [44]
MG21	400 [5,802]	1 674 - 2 519 [102.1] - [153.6]	16 030 [11,823]	138	80 [107]	837 - 1 260 [51.0] - [76.8]	8 020 [5,915]	138	53 [71]
MG25	450 [6,527]	2 340 - 2 812 [142.8] - [171.6]	20 139 [14,854]	110	90 [120]	1 170 - 1 406 [71.4] - [85.8]	10 070 [7,427]	110	70 [94]

*Available for single or dual displacement motors
**Only available for dual displacement motors
***Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm³/rev.) x max. pressure (bar)

MOTORS

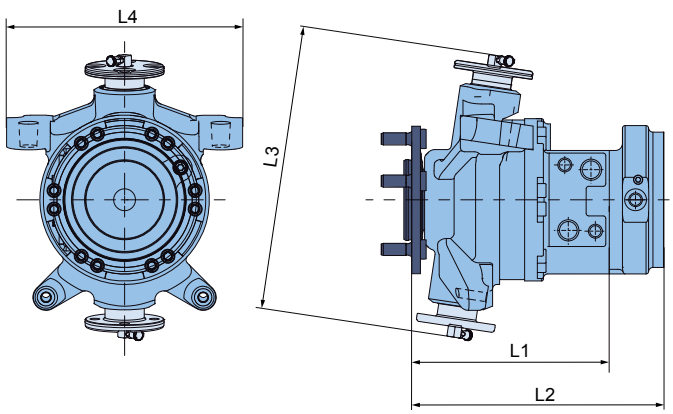
Dimensions

1C : One displacement
2C : Dual displacement

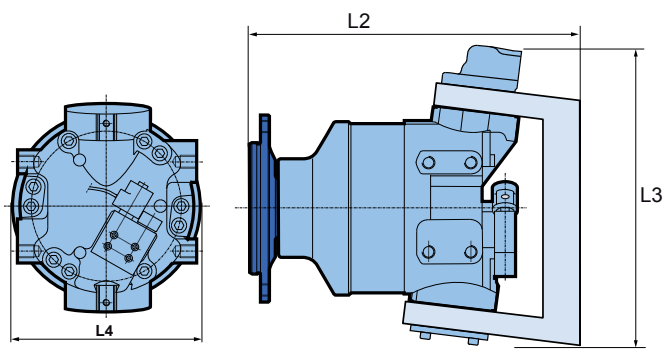
			MG02 MGE02	MG05 MGE05	MG11 MGE11	MG21	MG25
L1	1C	mm [in]	215,1 [6,47]	- -	- -	- -	- -
	2C	mm [in]	251,4 [9.90]	- -	- -	- -	- -
L2 max.*	1C	mm [in]	262,9 [10.35]	426 [16.77]	513 [20.20]	554 [21.81]	584 [22.99]
	2C	mm [in]	290,4 [11.43]	426 [16.77]	513 [20.20]	554 [21.81]	584 [22.99]
L3		mm [in]	326,5 [12.85]	442 [17.40]	505 [19.88]	505 [19.88]	554 [21.81]
L4		mm [in]	270 [10.63]	224 [8.81]	314 [12.36]	314 [12.36]	473 [18.62]
Weight max.**		kg [lb]	47,8 [105.2]	97 [213]	210 [463]	230 [507]	232 [511]

* Wheel motor with the longest multidiscs brake.
** Two displacements wheel motor with multidiscs brake.

MG02-MGE02



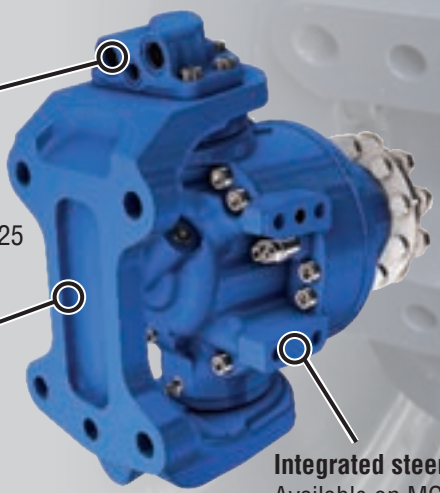
MG05-MGE05 / MG11-MGE11 / MG21 / MG25



PLUG AND PLAY MOTOR

Easy integration onto the chassis

The MG motor optimizes the design of motorized steering wheels. The integration of the pivot function, steering attachments and bevel stops on the casing of the MG motor, simplify the assembly of motorized steering wheels on a chassis.



Hydraulic pivot for easy piping
- No movement of high pressure pipes
- Avoid pipe damage
- Optimized length of pipes
- On MG05/E05, MG11/E1, MG21 and MG25

C-Frame
Direct mounting on machine axle

Integrated steering bracket attachment
Available on MG05/E05, MG11/E11, MG21 and MG25

Brakes

Multidisc brake

- T brake: brake with reinforced rear plate
  (release pressure: 12 to 30 bar [174 to 435 PSI])
- P brake: brake mounted in the bearing support
  (release pressure: 16 to 30 bar [232 to 435 PSI])

Max. parking braking torque

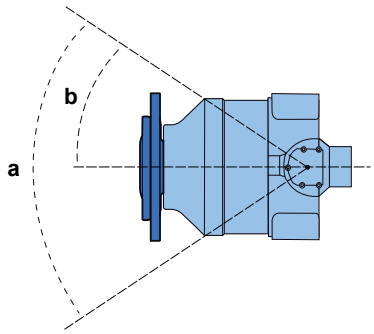
	N.m [lb.ft]	MG02 MGE02	MG05 MGE05	MG11 MGE11
T03	2 500 [1,840]	●		
P05	4 500 [3,320]		●	
P16	11 000 [8,113]			●

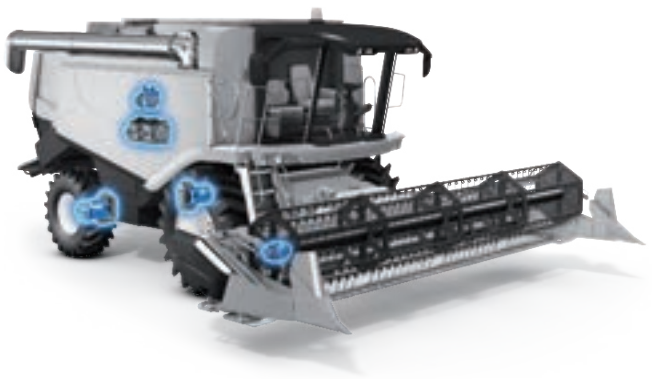
MG05 motor
with multidisc brake
in the bearing support

MG11 motor
with multidisc brake
in the bearing support

Steering angle

	MG05 MGE05	MG11 MGE11	MG21	MG25	MG02 MGE02
Angle a	90°	80°	80°	80°	The steering angles a and b can be differents within the limits of the customer's chassis conception and the hydraulics connections. The steering angle is adjusted with the steering stop screws.
Angle b	45°	40°	40°	40°	

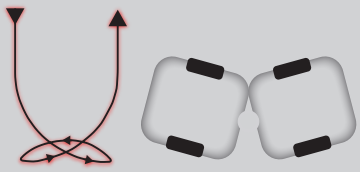




ENHANCED STEERING ANGLE

Compared to a vehicle equipped with an articulated chassis, a vehicle fitted with motorized steering wheels offers a better steering angle and can consequently perform u-turns in a smaller radius using fewer movements.

Articuled chassis



Chassis with motorized steering wheels

3 steering modes available:

On the front wheel for road transfers

Four wheel steer to tighten the turning radius

Crab steering for sideways machine move-ment

Optional features

Temperature control

	MG02-E02	MG05-E05	MG11-E11	MG21	MG25
High efficiency (zero clearance pistons/ring)	●	●			
Additional case flushing port	●				

Speed

	MG02-E02	MG05-E05	MG11-E11	MG21	MG25
High speed / Low pressure drop (Butterfly valving)	●	●			
Speed sensor	●	●	●	●	●

Reinforcement

	MG02-E02	MG05-E05	MG11-E11	MG21	MG25
Extra long life (Diamond™)	●	●	●	●	●

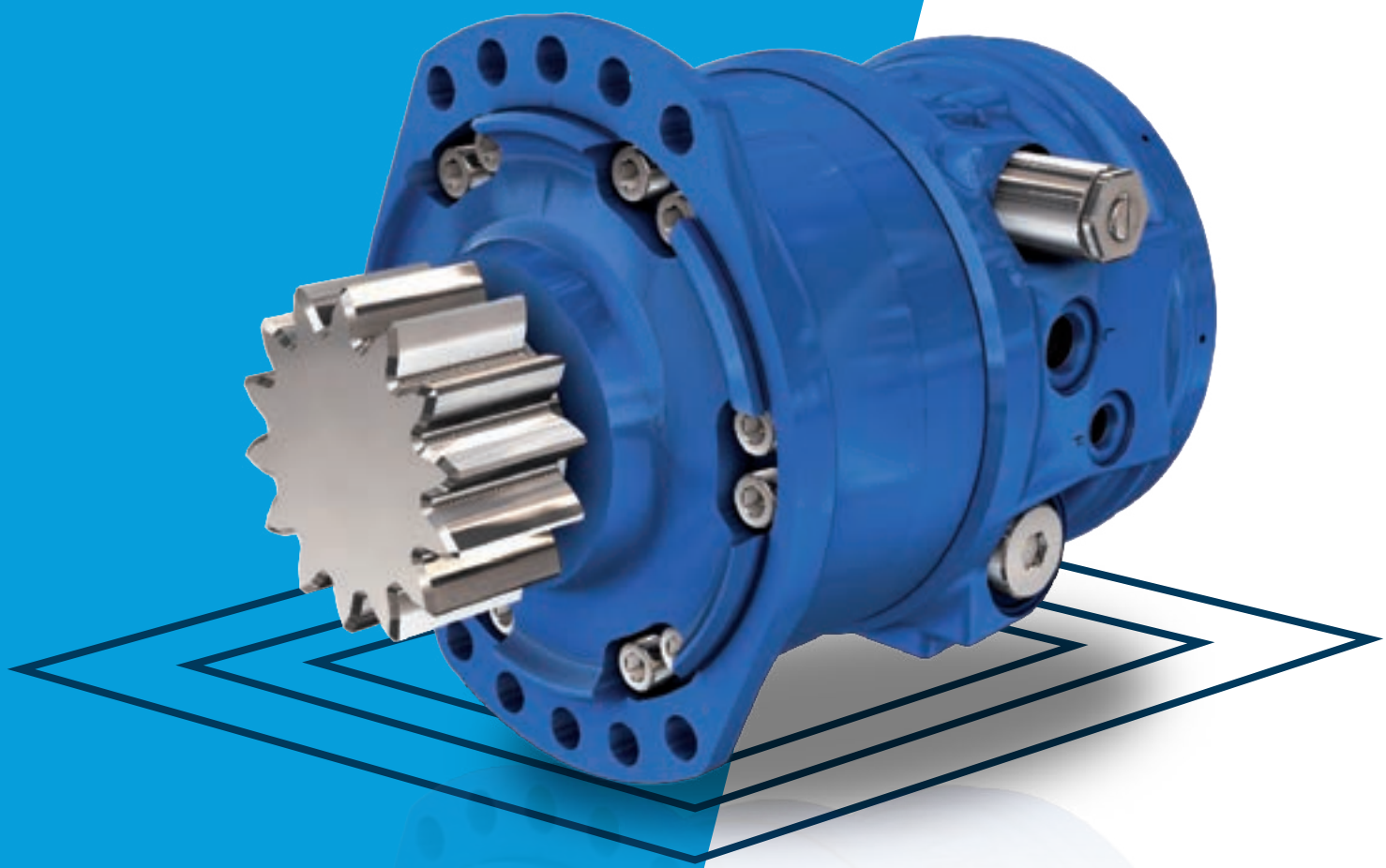
High pressure connection

	MG02-E02	MG05-E05	MG11-E11	MG21	MG25
SAE Flange	●				
Metric	●	●	●	●	●
UNF	●	●	●	●	●

SWING DRIVE

SMOOTH AND PRECISE SWING DRIVE

- Compact motors
- Large choice of pinions
- Integrated shockless or anti-rebound valves
- Integrated brake



MZ /MZE

MZ/MZE02 ▪ MZE03 ▪ MZ/MZE05

From 213 to 750 cm^3/rev. [13.0 to 45.7 cu.in/rev.]
Up to 3 100 N.m [2,286 lbf.ft]
Up to 260 bar [3,771 PSI]
Up to 470 rpm
Up to 29 kW [39 HP]

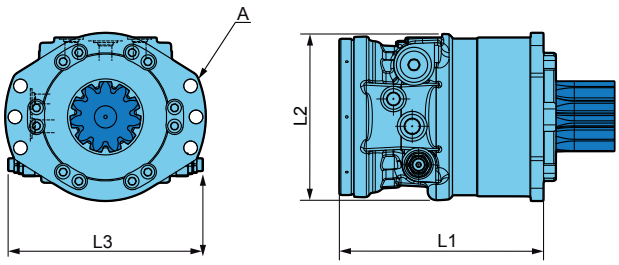
Performance

	Max. Pressure bar [PSI]	Displacement range cm³/rev [cu.in/rev]	Max. Torque* N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
MZ02	260 [3,771]	213 - 255 [13.0] - [15.6]	1 055 [778]	470	18 [24]
MZE02	260 [3,771]	332 - 398 [20.2] - [24.3]	1 650 [1,217]	265	22 [30]
MZE03	260 [3,771]	450 - 500 [27.5] - [30.5]	2 070 [1,526]	155	22 [30]
MZ05	260 [3,771]	468 - 560 [28.6] - [34.2]	2 320 [1,711]	240	29 [39]
MZE05	260 [3,771]	625 - 750 [38.1] - [45.7]	3 100 [2,286]	190	29 [39]

*Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm³/rev.) x max. pressure (bar)

Dimensions

		MZ02-MZE02	MZE03	MZ05-MZE05
L1	mm [in]	239 [9.41]	219 [8.62]	266,3 [10.48]
L2	mm [in]	195 [7.68]	195 [7.68]	228 [8.98]
L3	mm [in]	228 [8.97]	222 [8.74]	294 [11.57]
A dia. max.	mm [in]	340 [13.39]	302 [11.89]	300 [11.81]
Weight max.	kg [lb]	42 [93]	46 [101]	65 [143]



SMOOTH AND PRECISION

Built-in pressure relief and check valves

The built-in valves ensure smoother acceleration or deceleration of the turret. Coupled with the radial piston motor technology, these valves guarantee extremely accurate positioning of the mini-excavator boom.
The technical characteristics of the MZ motor - no gear box and low internal leakages - reduce turret drifting when operating on slopes.

Pressure relief valve with or without dynamic shockless behavior
Limits the pressure in the high pressure lines of the hydraulic motor.
Allows the absorption of the pressure peaks.

Check valve
Allows to compensate for leakages to prevent cavitation.

Pinion types

		MZ02-MZE02				MZE03		MZ05-MZE05	
Norm		NF ISO 53	NF ISO 53	NF ISO 53	NF ISO 53	NF ISO 53	NF ISO 53	NF ISO 53	NF ISO 53
Module		6	5	5	4,5	6	7	8	8
Number of teeth		14	17	14	11	14	12	12	11
Pitch diameter	mm [in]	84 [3.31]	85 [3.35]	70 [2.76]	49,5 [1.95]	84 [3.31]	84 [3.31]	96 [3.78]	88 [3.46]
Pressure angle		20°	20°	20°	20°	20°	20°	20°	20°

Brakes

Multidisc brake mounted at the rear of the motor

Max. braking torque

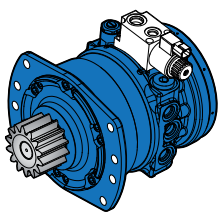
N.m [lb.ft]	MZ02-MZE02	MZE03	MZ05-MZE05
1 100 [810]	●		
1 830 [1,350]	●		
2 200 [1,620]		●	
4 910 [3,621]			●

Integrated multidisc brake

Automatic de-braking valve

De-braking valve controls time for braking / brake release of the hydraulic motor´s static brake.

	MZ02-MZE02	MZE03	MZ05-MZE05
Hydraulic		●	●
Electrical	●	●	



Electrical de-braking valve

FOR EXCAVATORS UP TO 24 TONS

MS Motors with pinion shaft

Thanks to its modular design, high performance and reliability, the MS motor is also a perfect solution for swing-drive of small / medium excavators.

	Displacement range cm³/rev [cu.in/rev]	Max. Torque* N.m [lbf.ft]	Excavator size
MS08	467 - 934 [28.5] - [57.0]	3 850 [2,840]	Up to 13 tons
MSE08	1 043 - 1 248 [63.6] - [76.2]	5 150 [3,796]	
MS11	730 - 1 259 [44.5] - [76.8]	5 200 [3,835]	Up to 18 tons
MSE11	1 263 - 1 687 [77.1] - [102.9]	6 950 [5,126]	
MS18	1 091 - 1 911 [66.6] - [116.6]	7 900 [5,827]	Up to 24 tons
MSE18	2 340 - 2 812 [142.8] - [171.6]	11 600 [8,556]	

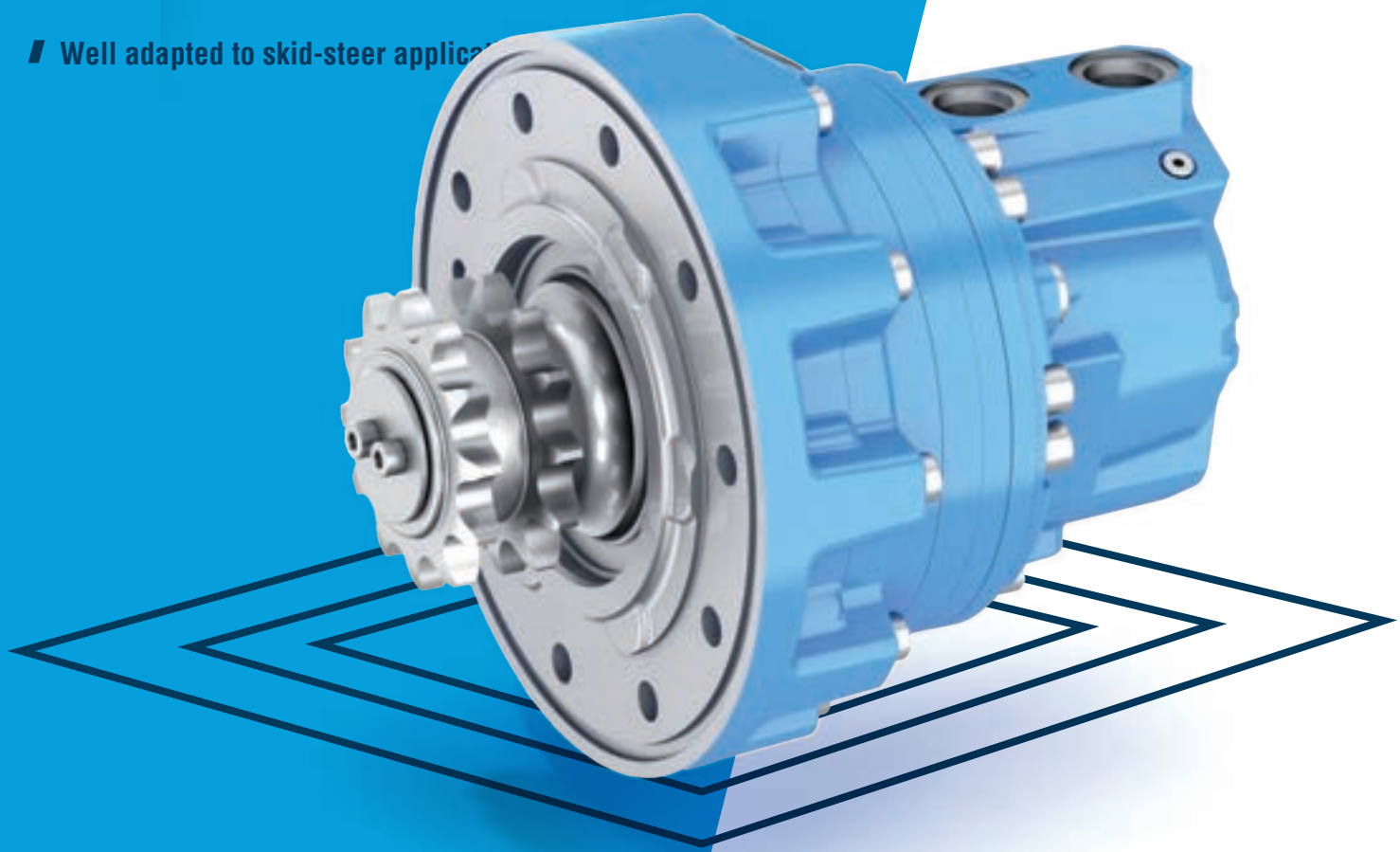
*Theoretical torque at 260 bar [3771 PSI]

More information > Page 94

SKID-STEER MOTOR

COMPACT SIZE FOR A CUSTOM FIT

- Compact motors
- Smooth speed shifting
- Integrated exchange valve
- Single or dual displacement
- Integrated brake
- Well adapted to skid-steer applica



ML / MLE

ML04 ▪ ML/MLE06

- From 174 to 842 cm³/rev. [10.6 to 51.4 cu.in/rev.]
- Up to 5 106 N.m [3,766 lbf.ft]
- Up to 450 bar [6,527 PSI]
- Up to 483 rpm
- Up to 30 kW [40 HP]

Performance

		First displacement*				Second displacement**			
	Max. Pressure bar [PSI]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
ML04	450 [6,527]	261 - 447 [15.9] - [27.3]	3 201 [2,361]	326	25 [33]	174 - 298 [10.6] - [18.2]	2 134 [1,574]	483	20 [27]
ML06	381 [5,526]	630 [38.4]	3 820 [2,817]	226	30 [40]	420 [25.6]	2 547 [1,875]	330	20 [27]
MLE06	381 [5,526]	702 - 842 [42.8] - [51.4]	5 106 [3,766]	203	30 [40]	421 - 561 [25.7] - [34.2]	3 402 [2,509]	322	20 [27]

*Available for single or dual displacement motors
**Only available for dual displacement motors
***Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm³/rev.) x max. pressure (bar)

Dimensions

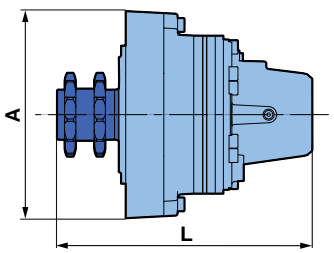
1C : One displacement
2C : Dual displacement

			ML04	ML06 MLE06
L	1C	mm [in]	336 [13.2]	330 [13.00]
	2C	mm [in]	336 [13.2]	340 [13.40]
A dia. max.		mm [in]	272 [10.7]	236 [9.29]
Weight max.*		kg [lb]	48.3 [106.5]	49 [108]

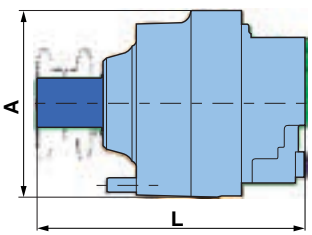
*Two displacements motor

The ML motors are designed for a skid-steer's small engine compartment.
While other motors require offset layout, these compact powerhouses can be mounted back-to back, allowing for symmetric vehicle design, increased parts commonality, and easier access or vehicle maintenance.

ML04



ML06



MORE COMFORT AND PRODUCTIVITY

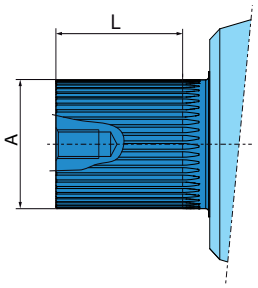
Softshift design and integrated exchange valve

The ML06 incorporates the patented SoftShift™ two-speed design that softens the shifting of the transmission, providing smoother operation and greater operator comfort.

Additionally, an integrated exchange valve sends hot oil to the cooler while providing trouble-free cold weather performance excellent for use in snow removal applications. The unique features of the ML06 motor provide greater overall productivity to skid-steer loader operation.

Splined shaft types

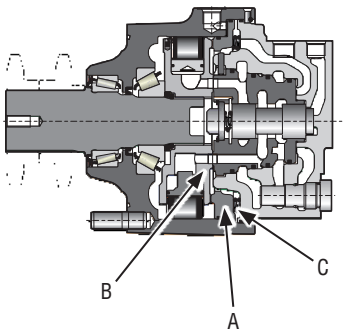
		ML06 MLE06	
Number of teeth		53	49
Standard		ANSI B92.1-1996	ANSI B92.1-1996
Accuracy class		5	5
Module		20/40	20/40
Pressure angle		30°	30°
L	mm [in]	67,8 [2.67]	67,8 [2.67]
A dia. max.	mm [in]	68,58 [2.70]	63,5 [2.50]



Integrated claw brake

Max. parking braking torque

N.m [lb.ft]	ML04	ML06
3 000 [2,213]	●	
4 500 [3,319]		●



This parking brake consists of two parts, one non rotating (A)acting as brake piston, one rotating (B) part of the cylinder block, each equiped with a row of teeth. In the absence of debraking pressure, the (C) spring maintains part A in contact with the cylinder-block, thus immobilizing it.

MS MOTORS

For small and big skid-steers

Poclain Hydraulics motors are designed to power skid-loaders of 600 kg [1,323 lb] to 1 800 kg [4,000 lb] SAE rated lift capacity.
The ML06 is best applied to loaders ranging betwen 800 kg [1,764 lb] and 1 250 kg [2,756 lb] capacity.

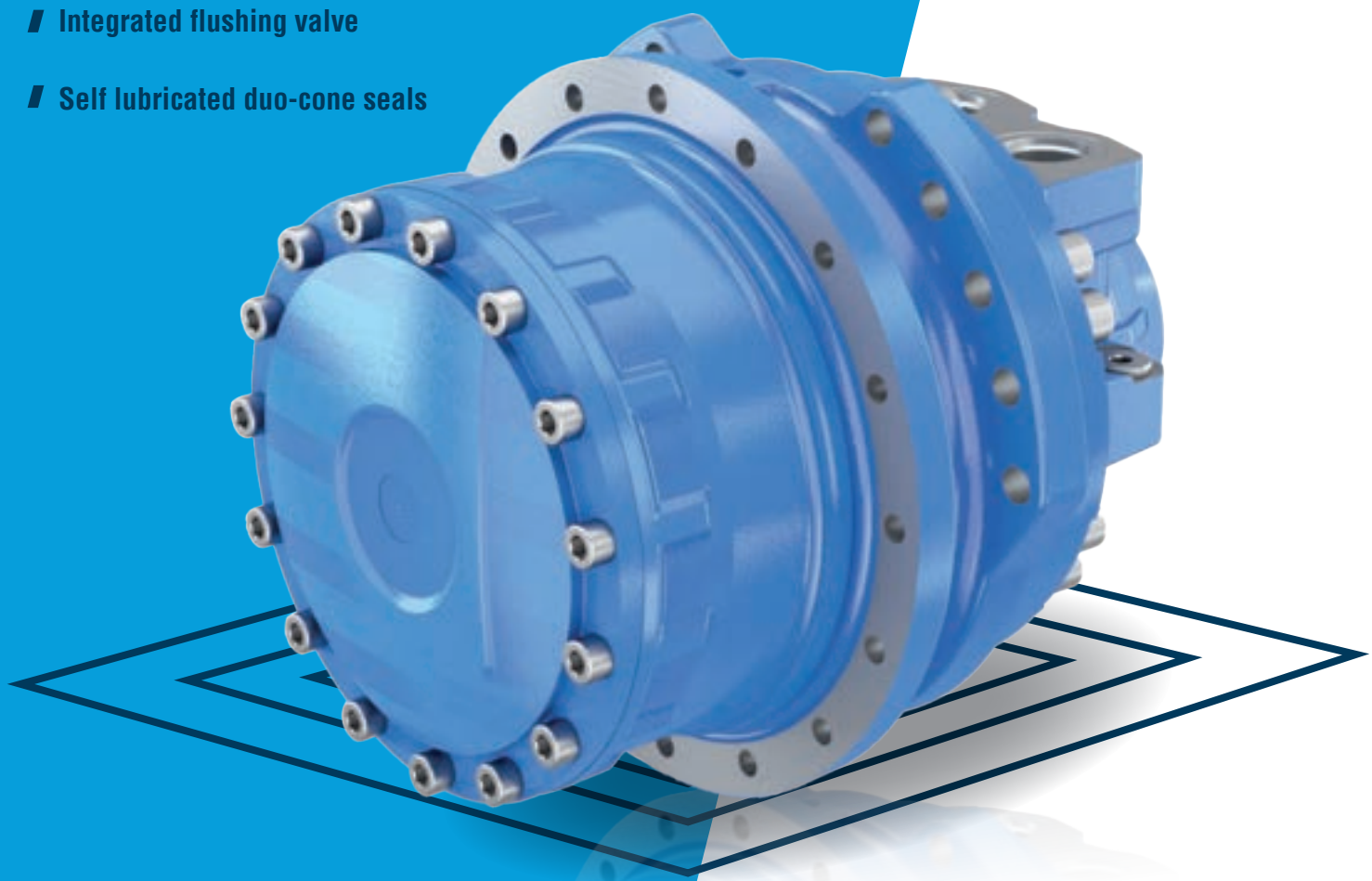
	Displacement range cm³/rev [cu.in/rev]	Max. Torque N.m [lbf.ft]	Skid-loader SAE rated lift capacity kg [lb]
MS02	172 to 255 [10.5 to 15.6]	1 800 [1,227]	600 to 800 [1,323 to 1,764]
MSE02	332 to 398 [20.2 to 24.3]	2 500 [1,843]	

More information > Page 94

TRACK DRIVE

COMPACT SIZE FOR A CUSTOM FIT

- Compact motor
- Balanced and flexible design
- Easy integration
- High brake torque capacity
- Integrated flushing valve
- Self lubricated duo-cone seals



MT

MT02 ▪ MT07

- From 172 to 915 cm³/rev. [10.5 to 55.8 cu.in/rev.]
- Up to 6 000 N.m [4,425 lbf.ft]
- Up to 450 bar [6,526 PSI]
- Up to 580 rpm
- Up to 41 kW [55 HP]

Performance

	First displacement*				Second displacement**			
	Max. Pressure bar [PSI]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]	Displacement range cm³/rev [cu.in/rev]	Max. Torque*** N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
MT02	450 [6,526]	172-398 [10.5-24.3]	2 500 [1,843]	580	22 [29.5]	86-199 [5.2-12.1]	1 260 [930]	590	16,5 [22]
MT07	450 [6,526]	495-915 [30.2-55.8]	6 000 [4,425]	270	41 [55]	329-610 [20.1-37.28]	4 370 [3,223]	270	32 [43]

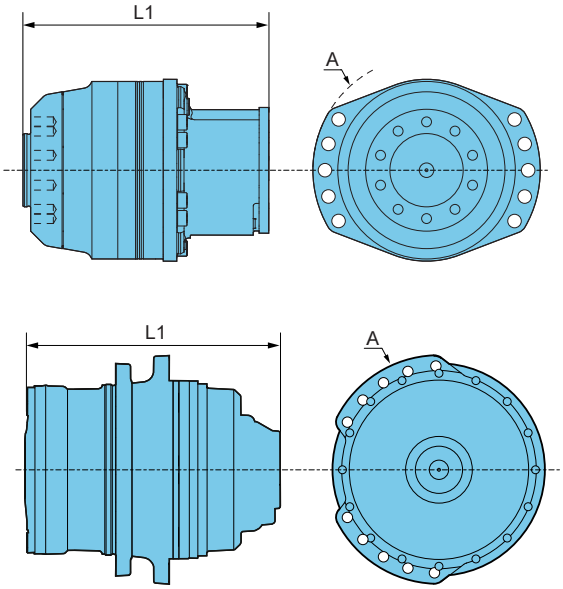
*Available for single or dual displacement motors
**Only available for dual displacement motors
***Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm³/rev.) x max. pressure (bar)

Dimensions

1C : One displacement
2C : Dual displacement

			MT02	MT07
L	1C	mm [in]	222 [8.74]	312,4 [12.3]
	2C	mm [in]	254 [10]	343,9 [13.5]
A dia. max.		mm [in]	235 [9.25]	308 [12.1]
Weight max.*		kg [lb]	31 [68.3]	71,3 [157.2]

*Two displacements motor

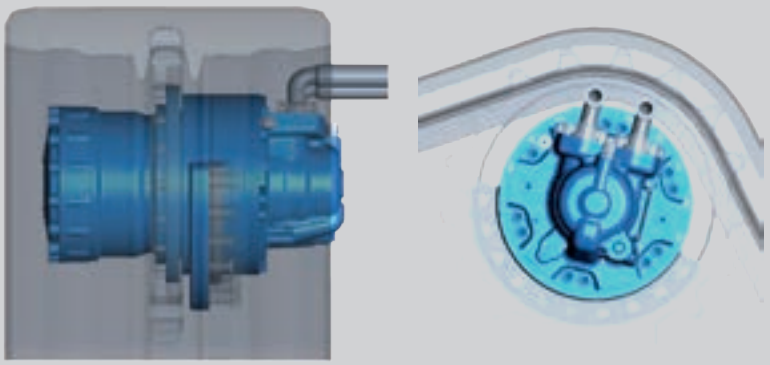


MOTORS

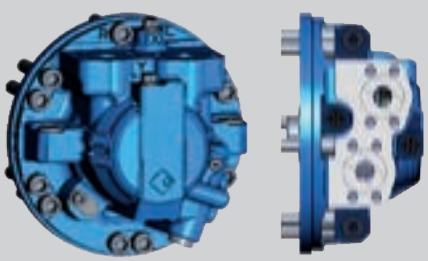
EASE INTEGRATION

Balanced and flexible design

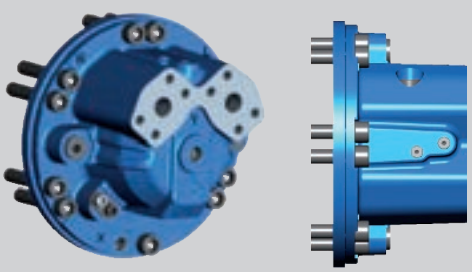
- Easily fits inside track
- MT02 is compatible with 190 mm [7.48 in.] track and MT07 with 320 mm [13 in.] track (minimum widths)



Radial ports cover (MT02 / MT07)



Axial ports cover (MT07)



Brake

Multidisc parking brake mounted in the bearing support

- Negative brake
- Integrated parking brake
- Designed to withstand emergency braking
- Multi-discs brake located in motor case
- Low number of seals

Max. parking braking torque

N.m [lb.ft]	MT02	MT07
3 300 [2,434]	•	
6 100 [4,499]		•

MT02 motor
with multidisc brake
in the bearing support

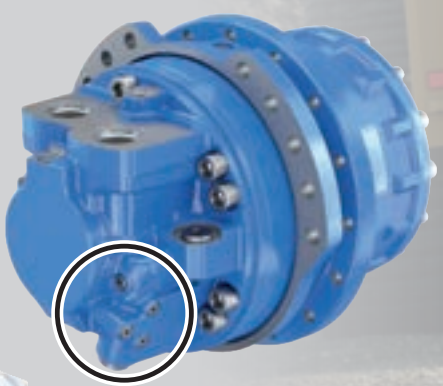
MT07 motor
with multidisc brake
in the bearing support

DESIGN TO LAST

Increase machine durability

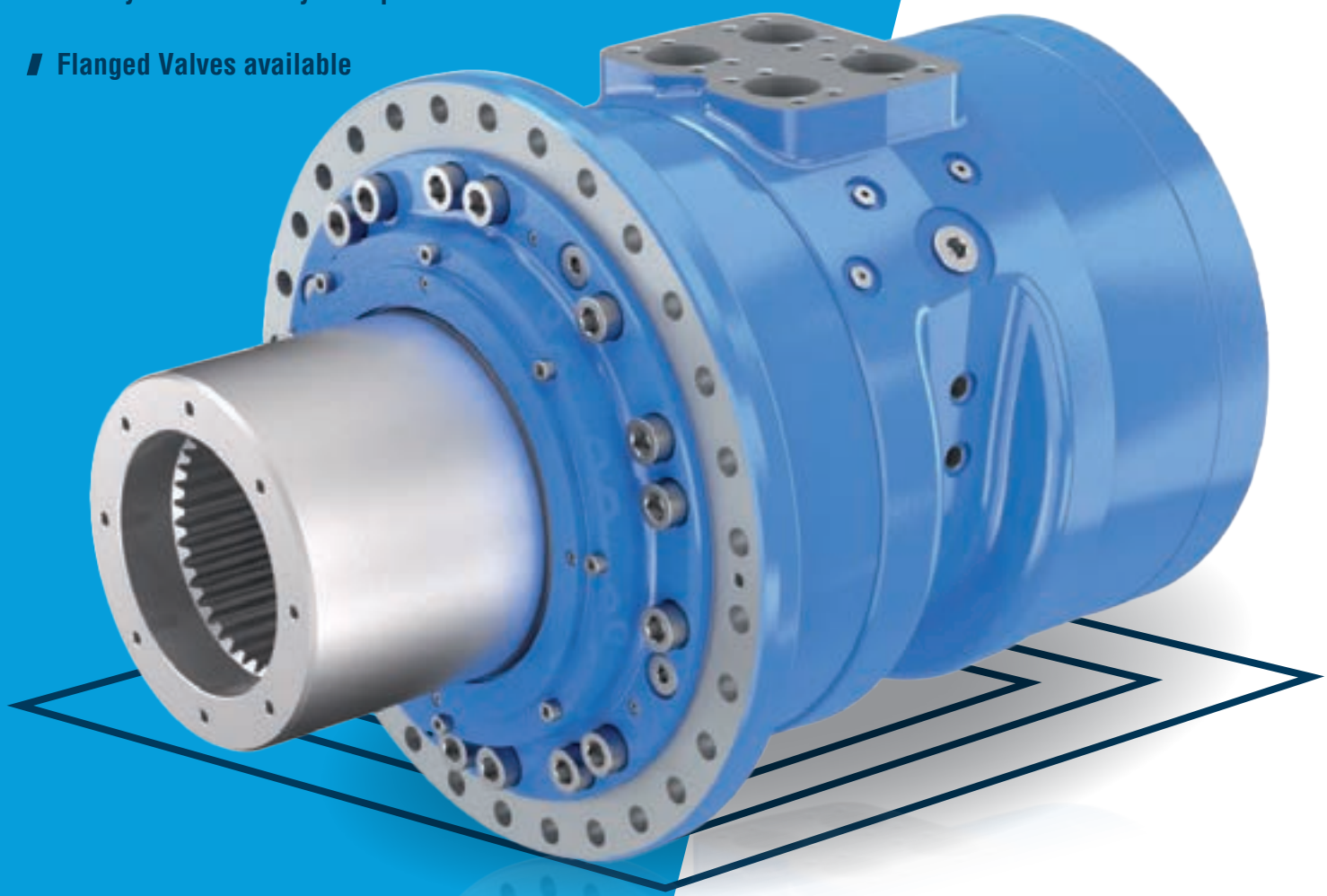
- High load capacity bearing to withstand extreme shock loads
- MT02: **44 kN.m [32,453 lbf.ft]** radial peak
- MT07: **110 kN.m [81,132 lbf.ft]** radial peak
- Unique patented sealing system to withstand harsh environment.
- Integrated flushing valve for motor cooling to reduce heat generation and handle heavy duty cycle.
- No maintenance required thanks to self lubricated duo-cone seal.

Integrated
flushing valve



INDUSTRIAL
PERFORMANCE AND LOW CONSUMPTION

- High Output Torque
- High Power Density
- Compactness
- Steady motion at very low speed
- Flanged Valves available



MI

MI88 ▪ MI250 ▪ MI330

From 7 000 to 40 000 cm³/rev. [426.9 to 2,441 cu.in/rev.]
Up to 200 000 N.m [147,512 lbf.ft]
Up to 450 bar [6,527 PSI]
Up to 140 rpm
Up to 600 kW [804 HP]

Performance

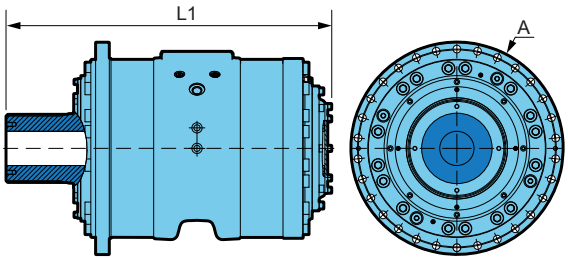
	Max. Pressure bar [PSI]	Displacement range cm^3/rev [cu.in/rev]	Max. Torque* N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
MI88	450 [6,527]	7 000 - 10 400 [426.9 - 634.3]	74 484 [54,936]	140	265 [355]
MI250	450 [6,527]	17 500 - 30 000 [1,037 - 1,831]	167 112 [123,255]	100	500 [671]
MI330	450 [6,527]	26 700 - 40 000 [1,629 - 2,441]	200 000 [147,512]	130	600 [804]

*Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm^3/rev.) x max. pressure (bar)

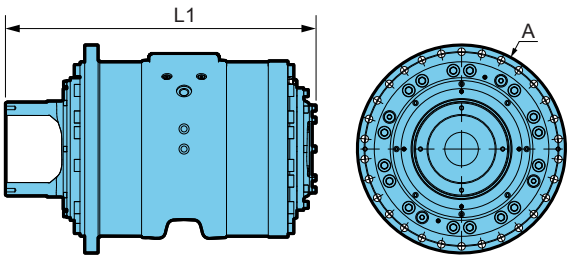
Dimensions

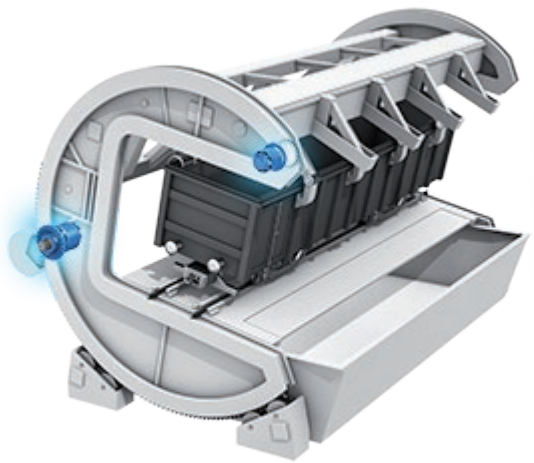
		MI88	MI250		MI330	
		(splined)	(splined)	(shrink disc)	(splined)	(shrink disc)
L1	mm [in]	631,5 [24.87]	950,8 [37.43]	925,3 [36.43]	1 014 [39.92]	957 [37.67]
A dia. max.	mm [in]	500 [19.68]	631 [24.84]	631 [24.84]	631 [24.84]	631 [24.84]
Weight max.	kg [lb]	352 [776]	920 [2,028]	940 [2,070]	976 [2,152]	964 [2,125]

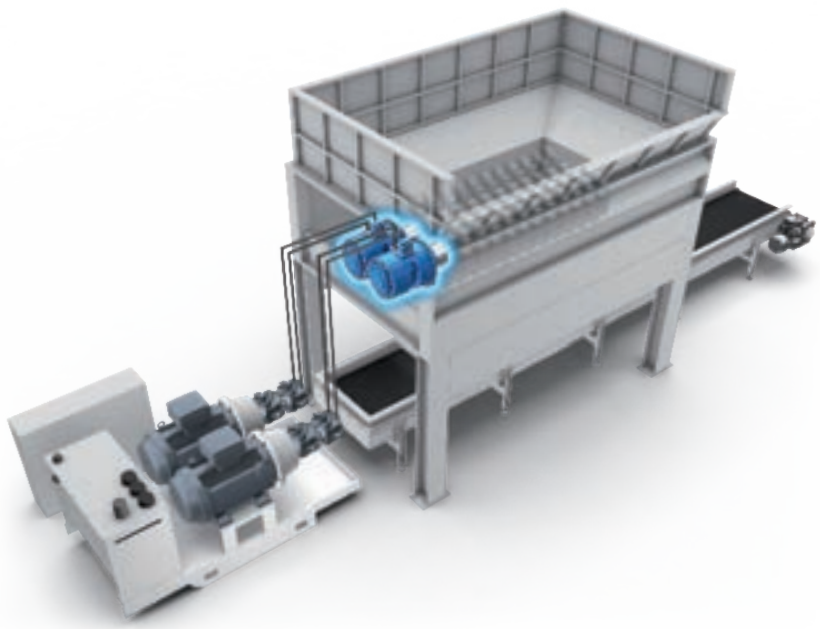
Male splined shaft motor



Shrink disc motor







Shaft types

		Female splines		Male splines		Shrink disc		Hollow shaft
		MI250	MI330	MI88	MI250	MI250	MI330	MI250
Norm		DIN 5480	DIN 5480	DIN 5480	DIN 5480	-	-	-
Module		5	5	5	5	-	-	-
Number of teeth		38	50	31	38	-	-	-
Nominal diameter	mm [in]	200 [7.87]	260 [10.23]	165 [6.50]	190 [7.48]	- -	- -	100 [3.94]
External diameter	mm [in]	- -	- -	169 [6.65]	200 [7.87]	280 [11.00]	319 [12.56]	- -
Internal diameter	mm [in]	- -	- -	- -	- -	200 [7.87]	260 [10.23]	- -

Female splined shaft with circular fixation

Shaft for shrink disc with circular fixation

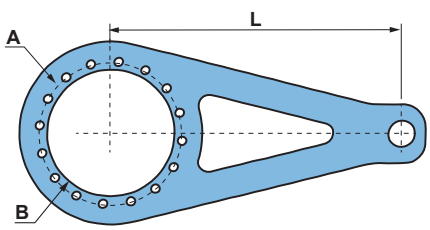
Female splined shaft with lugs fixation

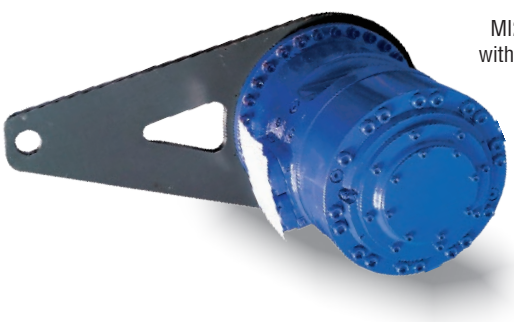
Male splined shaft with circular fixation

Hollow shaft

Torque arms and shrink discs

To ease the integration of our motors into your machines, Poclain Hydraulics can supply motors with adapted torque arms and shrink discs.





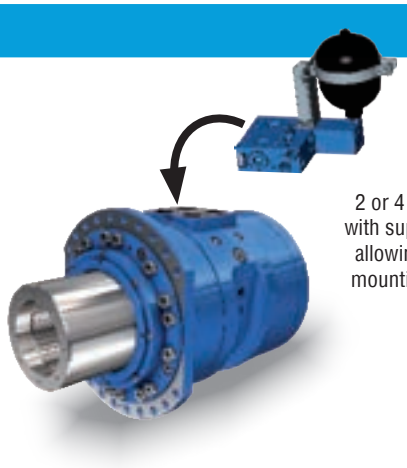
MI250 motor with torque arm

	L min. mm [in]	A dia. mm [in]	B dia. mm [in]	Mounting	Thickness mm [in]
MI88	800 [31.5]	450 [17.72]	375 [14.76]	16 x M24	40 [1.57]
MI250	1 250 [49.21]	580 [22.83]	520 [20.47]	30 x M20	40 [1.57]
MI330	1 500 [59.05]	580 [22.83]	520 [20.47]	32 x M24	40 [1.57]

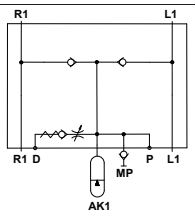
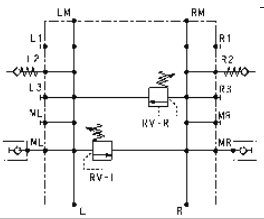
MI250 motor with shrink discs

Protection valve for MI250 and MI330

CORAC valve, which is directly flanged on the industrial motor (MS83, MS125, MI250, MI330, MHP), will offer enhanced protection of the motor against possible cavitation during operation, by ensuring sufficient back pressure in the motor (additional flow provided by the accumulator).
This valve is available with two positions for the accumulator (0° or 90°).



2 or 4 DN38 ports with support surface allowing for direct mounting of valves

	Max. operating pressure	Precharge pressure	Volume	Hydraulic schematics	
	bar [PSI]	bar [PSI]	L [G]	Anti-cavitation	Cross-over relief
Valve	420 [6,091]	-	-		
Accumulator	48 [696]	12 [174]	2 [0.53]		

MOTORS

MS AND MHP HYDRAULIC MOTORS

A full range of large displacement motors

To complete the MI range motors, Poclain Hydraulics offers a complete range of large size hydraulic motors with all the benefits of radial piston technology (high torque, efficiency, easy control, robustness,…) and a displacement of up to 15 liters.

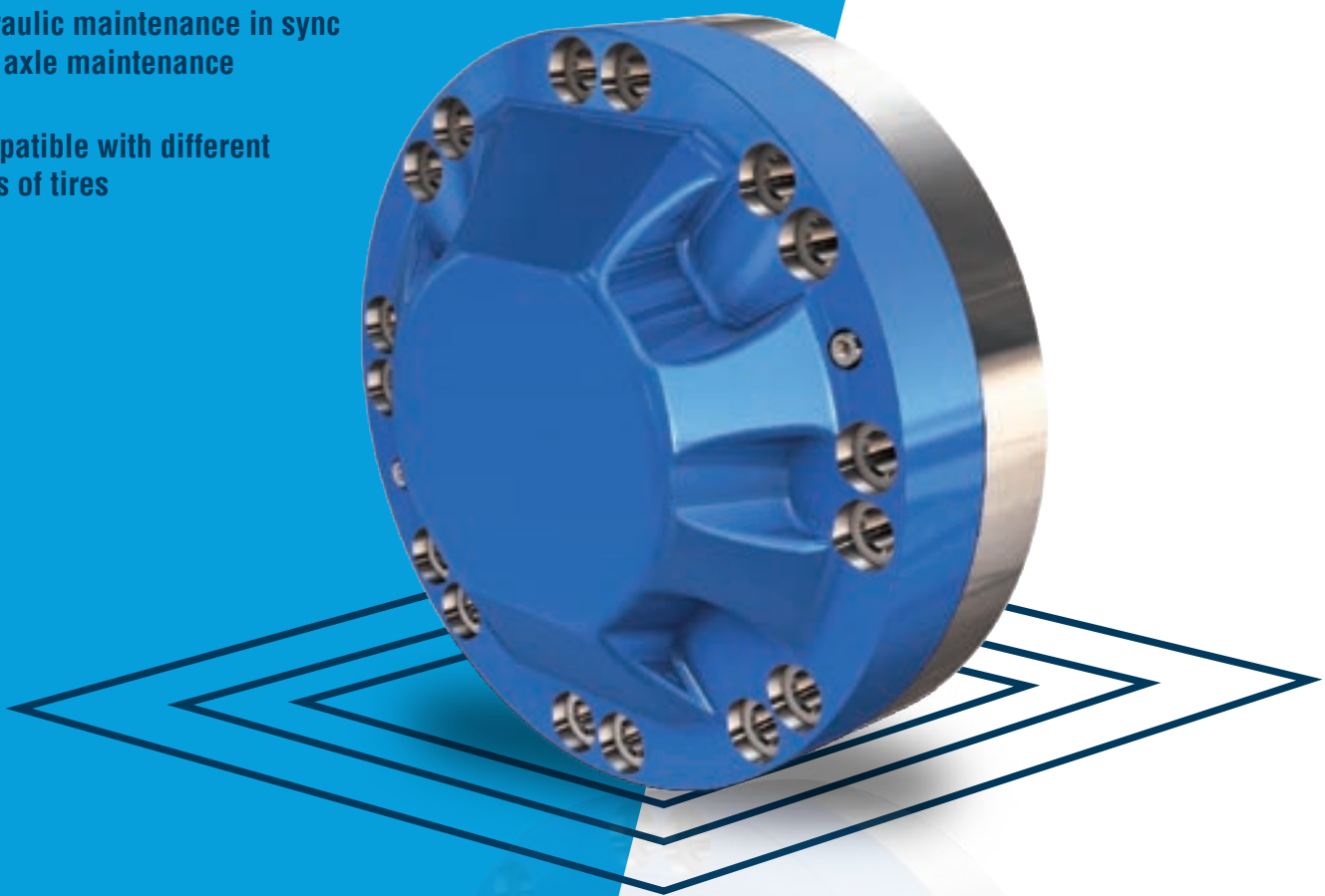
	Max. Pressure bar [PSI]	Displacement range cm³/rev [cu.in/rev]	Max. Torque N.m [lbf.ft]	Max. Speed RPM	Max. Power kW [HP]
MHP20 to MHP27	500 [7,252]	473 to 3 526 [28.9 to 215.2]	28 059 [20,695]	548	280 [375]
MS50 to MS125	450 [6,527]	3 500 to 15 000 [213.5 to 915]	77 000 [56,792]	200	240 [322]

More information MHP motors > Page 82
More information MS motors > Page 92

HYDROBASE FOR WHEEL HUBS

TO PROVIDE ADDITIONAL TRACTION OR RETAINING TORQUE

- Compatible with the original braking system (drum or disk)
- Does not affect kinematic steering or suspension
- No need to re-certify the axle
- Watertight design
- Hydraulic maintenance in sync with axle maintenance
- Compatible with different types of tires



MF / MFE

MF/MFE08 ▪ MF10

- From 627 to 1 328 cm^3/rev. [38.2 to 81 cu.in/rev.]
- Up to 9 513 N.m [7,016 lbf.ft]
- Up to 450 bar [6,530 PSI]
- Up to 150 rpm (1000 rpm in freewheeling)
- Up to 47 kW [63 HP]

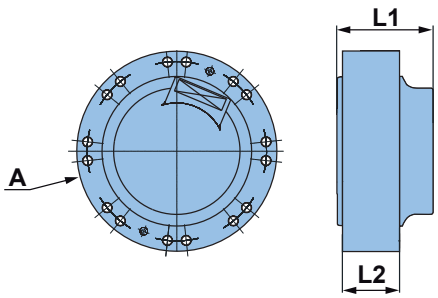
Performance

	Max. Pressure bar [PSI]	Displacement range cm^3/rev [cu.in/rev]	Max. Torque* N.m [lbf.ft]	Max. Speed RPM	Max. Speed freewheeling RPM	Max. Power kW [HP]
MF08	450 [6526]	627 - 934 [38.2] - [57.0]	6 689 [4,934]	150	1 000	41 [55]
MFE08	400 [5800]	838 - 1 248 [51.1] - [76.1]	7 945 [5,860]	112	1 000	41 [55]
MF10	450 [6526]	886 - 1 328 [54] - [81]	9 513 [7,016]	150	900	47 [63]

*Max. theoretical torque (N.m) : 1/(20 π) x max. displacement (cm^3/rev.) x max. pressure (bar)

Dimensions

		MF08-MFE08	MF10
L1	mm [in]	123,2 [4.85]	132 [5.19]
L2	mm [in]	73 [2,87]	130 [5.12]
A dia.	mm [in]	257 [10.12]	290 [11.42]
Weight	kg [lb]	29 [63.9]	24,5 [54]



Optional features

Temperature control

	MF08-E08	MF10
High efficiency (zero clearance pistons/ring)	●	●
Mechanical freewheeling	●	●

Reinforcement

	MF08-E08	MF10
Extra long life (Diamond™)	●	●

ALL-WHEEL DRIVE FOR TRUCK

Simple design that is easy to install

Customers have no other choice, but to opt for mechanical allwheel drive to improve the mobility of their trucks. This generates constraints and impacts their total cost of ownership, which results in:

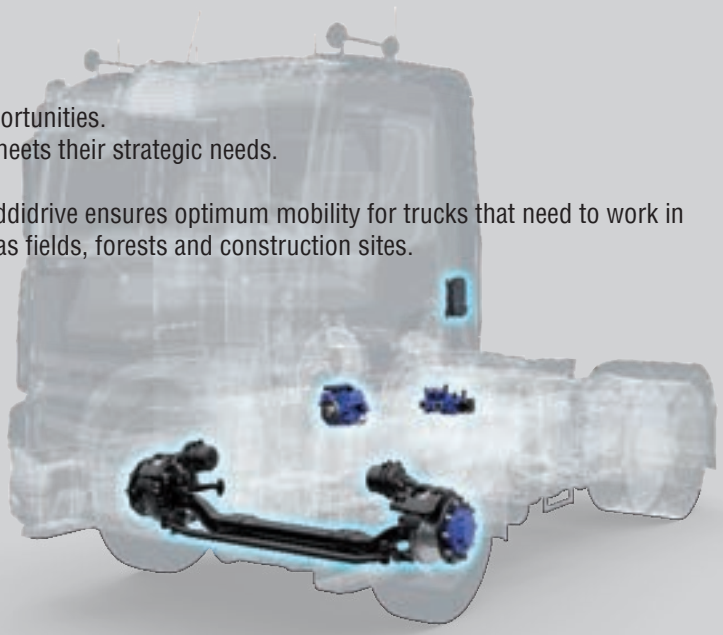
- increased fuel consumption;
- reduction in payload capacity;
- lower levels of comfort for the driver.

Addidrive enables customers to seize new market opportunities.
OEM's are provided with a proven technology which meets their strategic needs.

A genuine alternative to mechanical all-wheel drive, Addidrive ensures optimum mobility for trucks that need to work in harsh weather conditions and irregular terrain - such as fields, forests and construction sites.

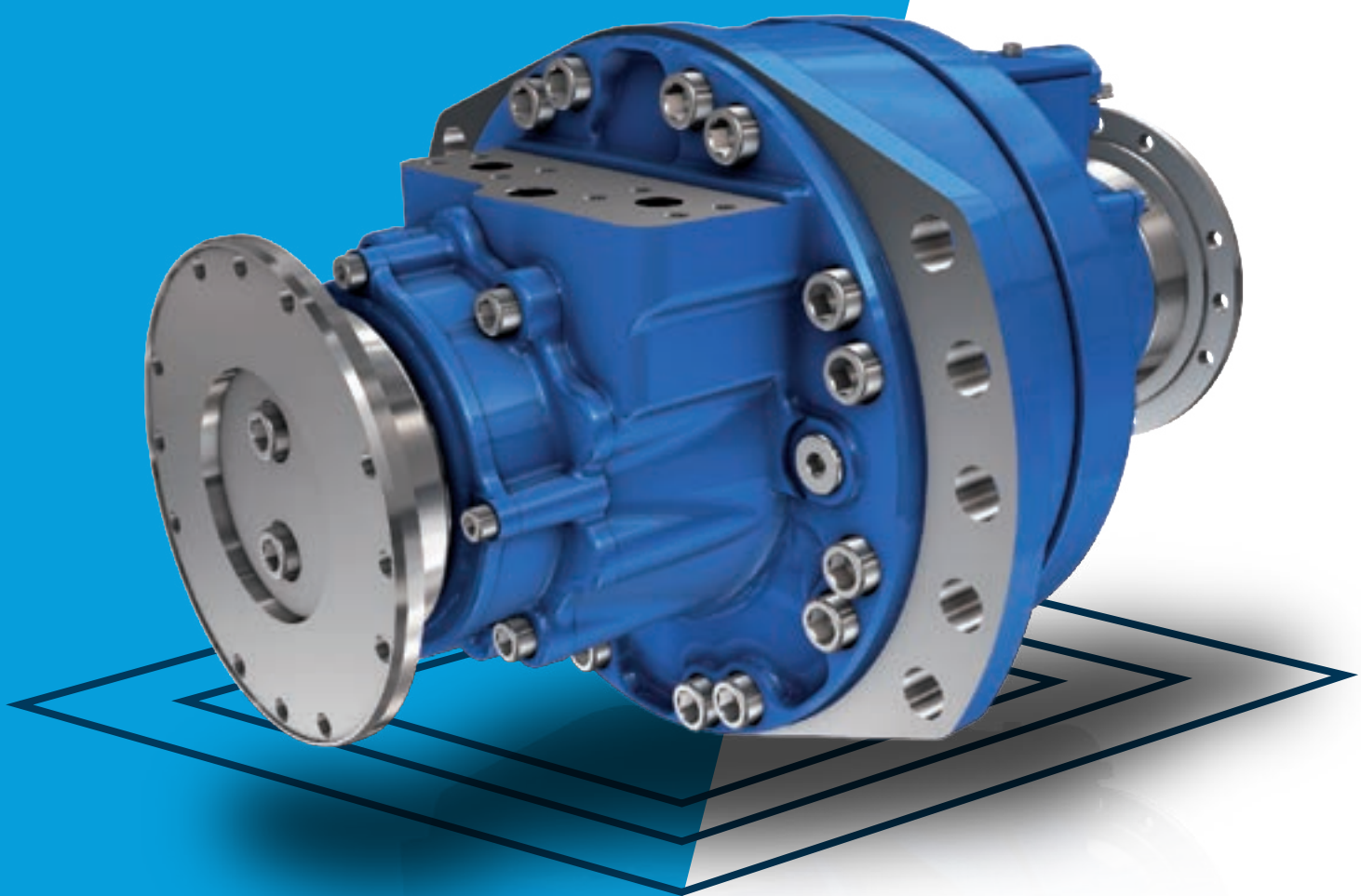
ADDIDRIVE TECHNOLOGY

More information > Page 62



CREEPDRIVE
TO WORK AT LOW AND CONSTANT SPEED

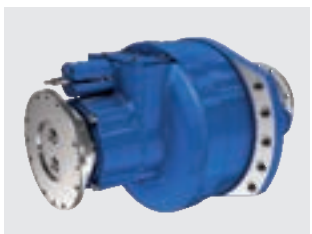
- Single or dual displacement
- Integrated clutch
- Watertight design
- Compact



CDM

CDM10 ▪ CDM20

From 728 to 2 424 cm^3/rev. [44.4 to 148.1 cu.in/rev.]
Up to 15 580 N.m [11,491 lbf.ft]
Up to 450 bar [6,527 PSI]
Up to 389 rpm (3,700 rpm in freewheeling)
Up to 175 kW [234.7 HP]



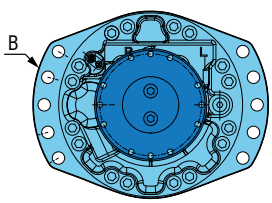
Performance

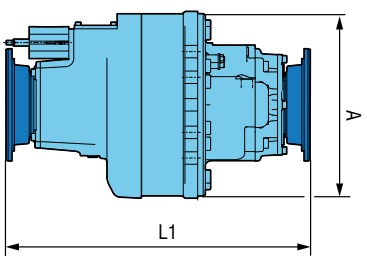
	Max. Pressure bar [PSI]	Displacement range First displacement cm³/rev [cu.in/rev]	Displacement range Second displacement cm³/rev [cu.in/rev]	Max. Torque output N.m [lbf.ft]	Max. speed CreepDrive mode RPM	Max. speed Freewheeling mode RPM	Max. Power kW [HP]
CDM10	450 [6,527]	728 - 1 352 [44.4] - [82.5]	- -	8 680 [6,401]	389	3 700	95 [127.4]
CDM20	450 [6,527]	1 416 - 2 427 [86.4] - [148.1]	708 - 1 214 [43.2] - [74.1]	15 580 [11,491]	363	3 700	175 [234.7]

Dimensions

		CDM10	CDM20
		Companion flange	Companion flange
L1	mm [in]	504 [19.84]	550 [21.65]
A dia. max.	mm [in]	329 [12.95]	329 [13.00]
B dia. max.	mm [in]	425 [16.73]	425 [16.73]
Weight max.	kg [lb]	130 [287]	160 [353]

CDM 10 and CDM20 with companion flange





Shaft types

	Companion flange					
	SAE 1650	SAE 1710	SAE 1810	XS 150	XS 180	XS 200
CDM10	●	●	●	●	●	-
CDM20	-	●	●	●	●	●

CREEPDRIVE SOLUTION

Consistent low speed drive

CreepDrive is a hybrid mechanical-hydraulic transmission for vehicles that travel at normal speed and work at low speed.
The system allows vehicles to work at very low constant speed regardless of the engine speed, allowing auxiliary systems to take the power they need to perform work effectively.
When the system is disengaged, the vehicle is able to drive at normal on-road speed with no additional losses.

- Can be integrated in all trucks from 12t up to 44t for multiple applications
- Compatible with diesel, gasoline and LNG
- Compatible with automatic and manual gearbox
- Fitted on trucks with or without CAN Bus

Benefits

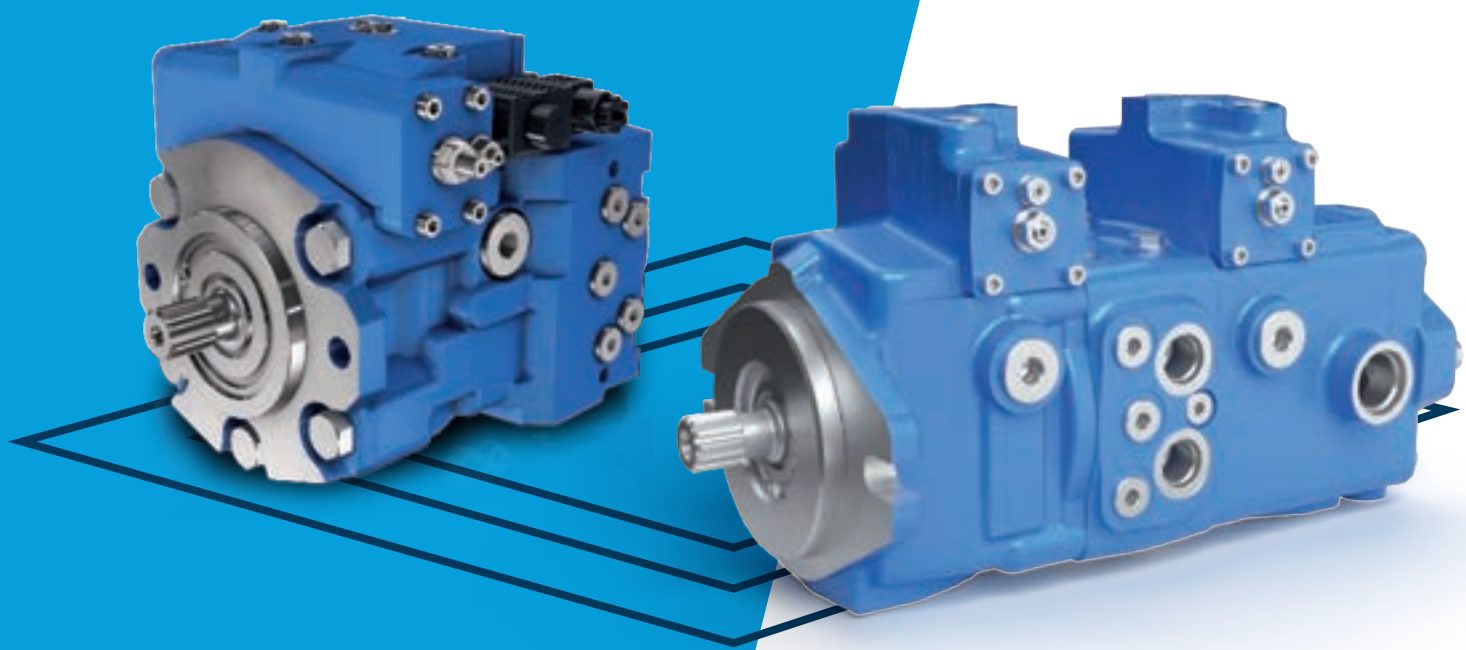
- Ability to work at constant speed from 0.4 kph to 12 kph [0.25 mph to 7.5 mph] in both forward and reverse
- Independent of engine speed
- Compatible with low engine rpm enabling low noise level
- Easy to install and mount on the chassis
- Does not affect the original truck kinematics
- No impact on chassis stiffness, the original chassis flexibility is guaranteed
- Reduces wear on the brake, clutch and transmission
- No need for specific maintenance: CreepDrive maintenance is done simultaneously with mechanical transmission's maintenances

More information > Page 64

PUMPS

MEDIUM DUTY PUMPS
DESIGN FOR PERFORMANCE AND EASY INTEGRATION

- Axial piston technology
- Variable displacement
- Compact design
- A large choice of controls
- All range available in tandem
- Available in back to back for PM10



PM

PMV0 ▪ PM10 ▪ PM20
PM30 ▪ PM50

From 7 to 52 cm³/rev. [0.43 to 3.17 cu.in/rev.]
Up to 82,8 N.m [733 lbf.ft]
Up to 420 bar [6,091 PSI]
Up to 3 600 rpm
Up to 99,8 kW [133.8 HP]

Performance

		PMV0	PM10	PM10 back to back	PM20	PM30	PM50
Displacement range	cm^3/rev [cu.in/rev]	7 - 18 [0.43] - [1.09]	7 - 20,4 [0.43] - [1.24]	18 - 21 [1.09] - [1.28]	21 - 27,4 [1.28] - [1.67]	25 - 34,2 [1.53] - [2.09]	40 - 52 [2.44] - [3.17]
Rated Speed	RPM	3 600	3 600	3 600	3 600	3 600	3 600
Max. Pressure	(Continuous) bar [PSI]	210 [3,045]	210 [3,045]	210 [3,045]	250 [3,625]	300 [4,350]	300 [4,350]
	(Intermittent) bar [PSI]	300 [4,351]	350 [5,076]	350 [5,076]	370 [5,366]	420 [6,091]	400 [5,801]
Max. theorical absorbed power	kW [HP]	12,7 - 30,5 [17.0] - [40.9]	14,9 - 42,6 [20.0] - [57.1]	14,9 - 42,6 [20.0] - [57.1]	32,6 - 44,4 [43.7] - [59.5]	48,0 - 65,6 [64.0] - [88.0]	76,8 - 99,8 [103] - [134]

Mounting flanges and shafts

			PMV0	PM10	PM10 back to back	PM20	PM30	PM50
Flange SAE A	**Splined shaft**	**9 teeth, pitch 16/32**	●	●				
		11 teeth, pitch 16/32	●	●				
	Key shaft mm [in]	**Diameter 15,875 [0.624]**	●					
		Diameter 18 [0.71]	●					
		Diameter 19 [0.75]		●				
Flange SAE B	**Splined shaft**	**11 teeth, pitch 16/32**		●				
		13 teeth, pitch 16/32		●	●	●	●	●
		14 teeth, pitch 16/32						●
		15 teeth, pitch 16/32				●		
	Key shaft mm [in]	**Diameter 19 [0.75]**		●				
		Diameter 25,38 [0.99]						●
Flange SAE BB	**Splined shaft**	**15 teeth, pitch 16/32**				●	●	●

Auxiliary mounting pads

		PMV0	PM10	PM10 back to back	PM20	PM30	PM50
German group 1		●	●				
German group 2		●	●				
Flange SAE A	**9 teeth coupling**		●	●	●	●	●
	11 teeth coupling		●		●	●	●
Flange SAE B	**13 teeth coupling**					●	●
Flange SAE BB	**15 teeth coupling**					●	●
No auxiliary mounting pad		●	●		●	●	●
Tandem fitting		●			●		
Tandem without charge pump						●	●

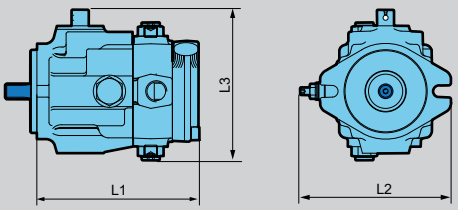
Dimensions

		PMV0	PM10	PM10 back to back	PM20	PM30	PM50
L1	mm	161,3	173	301	197	212,5	230,5
	[in]	[6.35]	[6.81]	[11.85]	[7.76]	[8.37]	[9.07]
L2	mm	152	144	174	174	221,7	218
	[in]	[5.98]	[5.67]	[6.85]	[6.85]	[8,72]	[8.58]
L3	mm	142,5	187,7	193	207,2	212,2	214,5
	[in]	[5.61]	[7.39]	[7.59]	[8.16]	[8.35]	[8.45]
Weight max.*	kg	9,5	18,8	27	23	29	32
	[lb]	[20.9]	[41.4]	[59.5]	[50.7]	[63.9]	[70.5]

*Depending on the controls and the options.

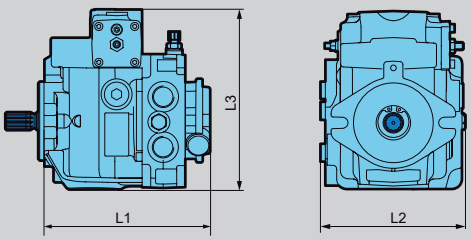
PMV0

with direct mechanical control and without auxiliary mounting pad



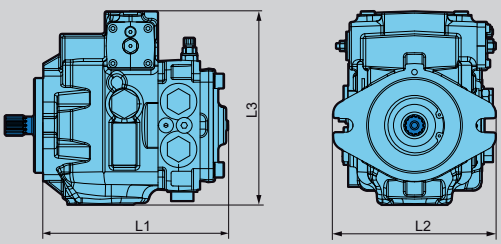
PM10

with hydraulic servo control and without auxiliary mounting pad

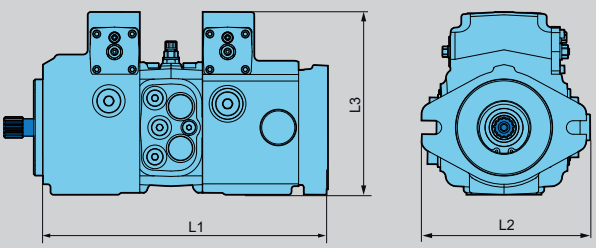


PM20

with hydraulic servo control and without auxiliary mounting pad

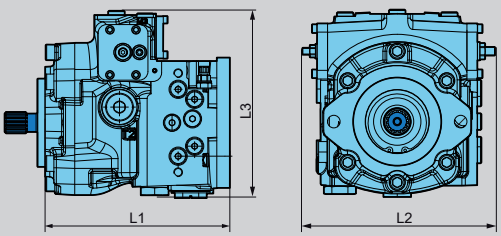


back to back with hydraulic servo control and without auxiliary mounting pad



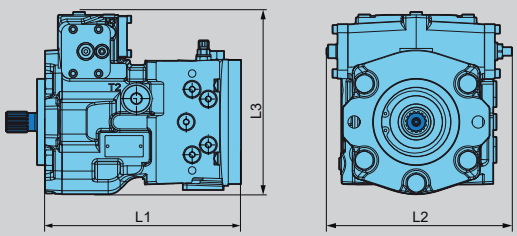
PM30

with hydraulic servo control and without auxiliary mounting pad



PM50

with hydraulic servo control and without mounting pad

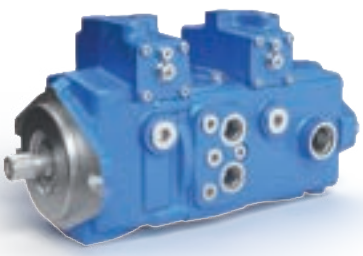


Controls

	PMV0	PM10	PM10 back to back	PM20	PM30	PM50
Direct mechanical (M)	●	●				
Direct mechanical with return spring (N)	●	●				
Direct mechanical with return spring and zero position setting (L)	●					
Mechanical servo control with feed-back (A)		●		●	●	●
Hydraulic servo control (S)	●	●	●	●	●	●
Hydraulic servo control with feed-back (T)		●			●	●
Hydraulic Automotive Control (D)		●		●	●	●
Electrical on-off servo control with return spring without electrovalve (B)		●			●	●
Electrical on-off servo control with electrovalve (C12/C24)		●				
Electrical on-off servo control with return spring and electrovalve (B12/B24)		●			●	●
Electro-proportional servo control (P)		●		●	●	●
Electro-proportional servo control with feed-back (Q)		●		●	●	●

PUMPS

PM10 back to back
with control S



PM20 tandem
with control S

PMV0
with control M

PM10
with control S

PM20
with control A

PM30
with control Q

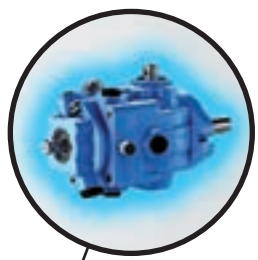
PM50
with control Q

Additional features

Please take in consideration that all combinations are not possible.

	PMV0	PM10	PM10 back to back	PM20	PM30	PM50
Electrical by-pass with brake engaged	●					
Screw by-pass in the cover (only for axial pump without charge pump)	●					
Lever by-pass	●					
Roller bearing	●	●	●	●	●	●
Low noise valve plate	●					
Pressure filter	●	●		●	●	●
Fluorinated elastomer seals	●	●		●	●	●
Filter on suction line	●					
Filter on pressure line with/without clogging indicator	●	●		●	●	●
External connections for filter		●		●	●	●
SAE Flange Ports					●	●
Mechanical Inching for control D		●		●	●	●
Hydraulic inching for control D		●		●	●	●
Neutral position switch (only with control A)		●			●	●
Safety Valve		●		●	●	●
UNF Threads ports	●	●	●	●	●	●
Pressure gauge ports on relief valve	●	●	●			
Flushing valve	●	●	●	●	●	●
Finishing coat	●	●	●	●	●	●
Customized identification plate	●	●	●	●	●	●
Speed sensor					●	●
Antistall valve		●		●	●	●
Pressure cut-off valve		●				
Brake inching					●	●
Fitting for rear power take off	●					
Ball bearing (for D2 and S2 shafts)	●					
Supergerotor	●					
Twin ports	●					

PMV0 with through shaft



VALVES

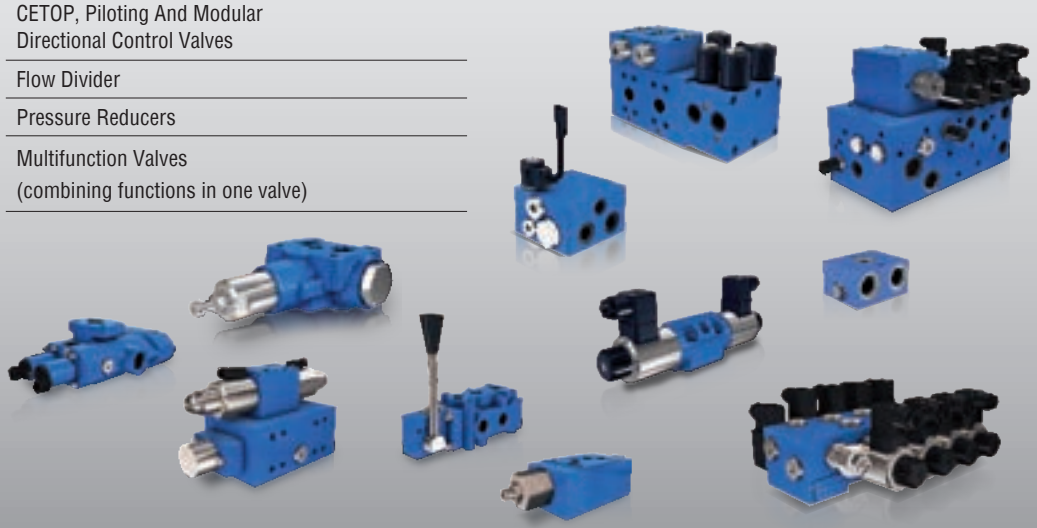
HYDRAULIC VALVES
FOR OPEN AND CLOSED LOOP CIRCUITS

DESIGNED FOR HYDROSTATIC TRANSMISSIONS AND TOOLS CONTROL

MOTION CONTROL VALVES

>p.154

- Steering Valves
- Traction Control Electronic Anti-Slipping Valves
- Traction Control Flow Dividers
- High Pressure Selector Valves
- Freewheeling Valves For On-Demand Hydrostatic Assist Drive
- Exchange Valves
- Hydrostatic Braking Valve For Electro-hydraulic Transmissions
- Serial Protection Valves
- Cross-Over Relief And Anti-Cavitation Valves
- Selector - Diverter Valves
- CETOP, Piloting And Modular Directional Control Valves
- Flow Divider
- Pressure Reducers
- Multifunction Valves (combining functions in one valve)

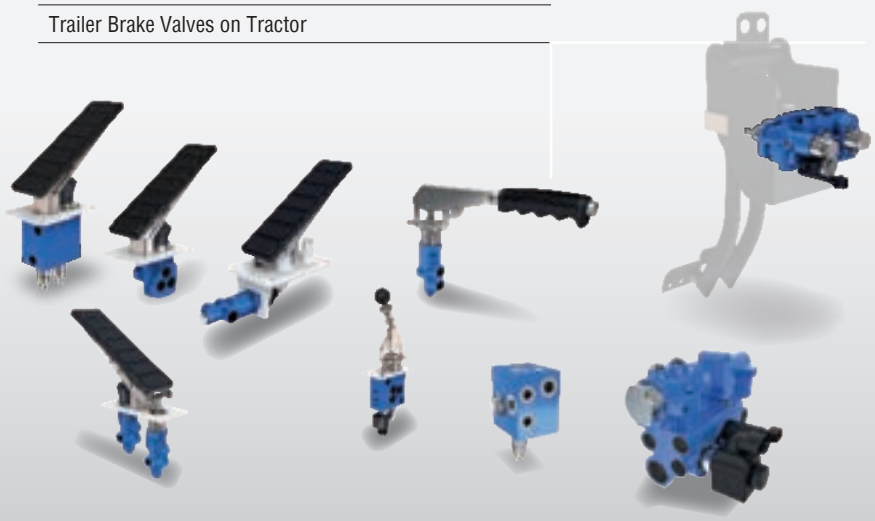


VARIOUS BRAKING FUNCTIONS

BRAKE VALVES

- Emergency and Parking Brake Valves
- Service Brake Valves
- Accumulator Charging Valves
- Service Brake and Accumulator Charging Valves
- Service Brake and Inching Valves
- Compact solution "All in one"
- Steering Assist Brake Valves
- Trailer Brake Valves on Tractor

>p.166

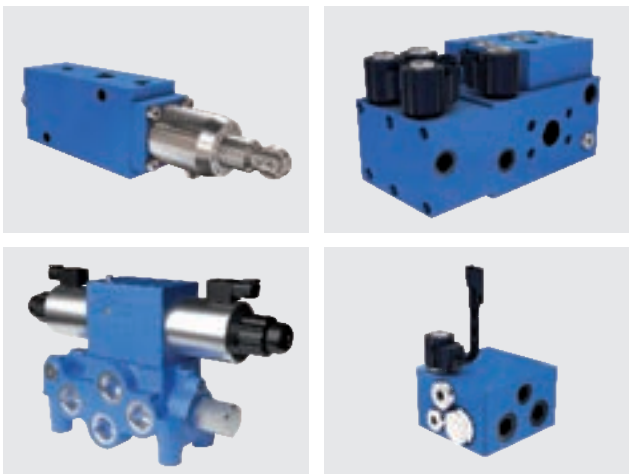


DESIGNED FOR HYDROSTATIC TRANSMISSIONS AND TOOLS CONTROL

SIZED TO OPERATE AT HIGH PRESSURE AND HIGH FLOW EFFICIENCY

- Steering valves
- Traction control electronic anti-slipping valves
- Traction control flow dividers
- High pressure selector valves
- Freewheeling valves for on-demand hydrostatic assist drive
- Exchange valves
- Hydrostatic braking valves for electro-hydraulic transmissions
- Serial protection valves
- Cross-Over Relief And Anti-Cavitation valves
- Selector - diverter valves
- CETOP, piloting and modular directional control valves
- Flow dividers
- Pressure reducers
- Multifunction Valves (combining functions in one valve)

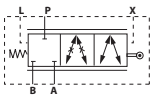
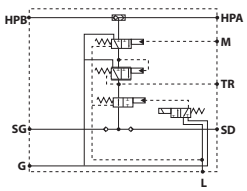
MOTION CONTROL VALVES



Steering valves

Twin-Lock™ valves

Twin-Lock™ is a unique proactive hydraulic traction control that automatically transfers torque to the wheels with the greatest ground adhesion. Since it eliminates the need for flow dividers, it dramatically reduces the heat generation and horsepower loss of conventional traction control systems.
Twin-Lock™ operates through a unique combination of serial and parallel connection between wheel motors.
The Twin-Lock™ valves prevent excessive pressure build-up in the serial lines, for instance when steering.

	Number of positions	Weight	Max. operating pressure	Nominal flow range	Operation	Connections*	Hydraulic schematics
		kg [lb]	bar [PSI]	l/min [GPM]			
VDP (Twin-Lock™) 	2	2,6 [5.8]	450 [6,526]	26 - 50 [7 - 13]	Mechanical	Metric BSPP	
	3	3,3 [7.3]					
PR-TL-SV (Twin-Lock™) 		9,5 [20.9]	450 [6,526]	30 - 50 [7.9 - 13]	Hydraulic	Metric	

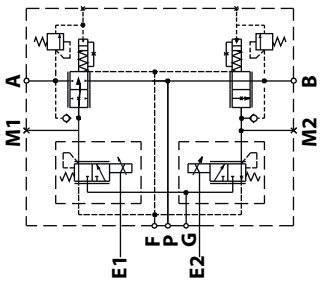
KVHP are high pressure directional control valves used in closed-loop circuits to change the turning direction of wheel(s).
The valve provides zero turning radius and/or sideway drive for forklift trucks.

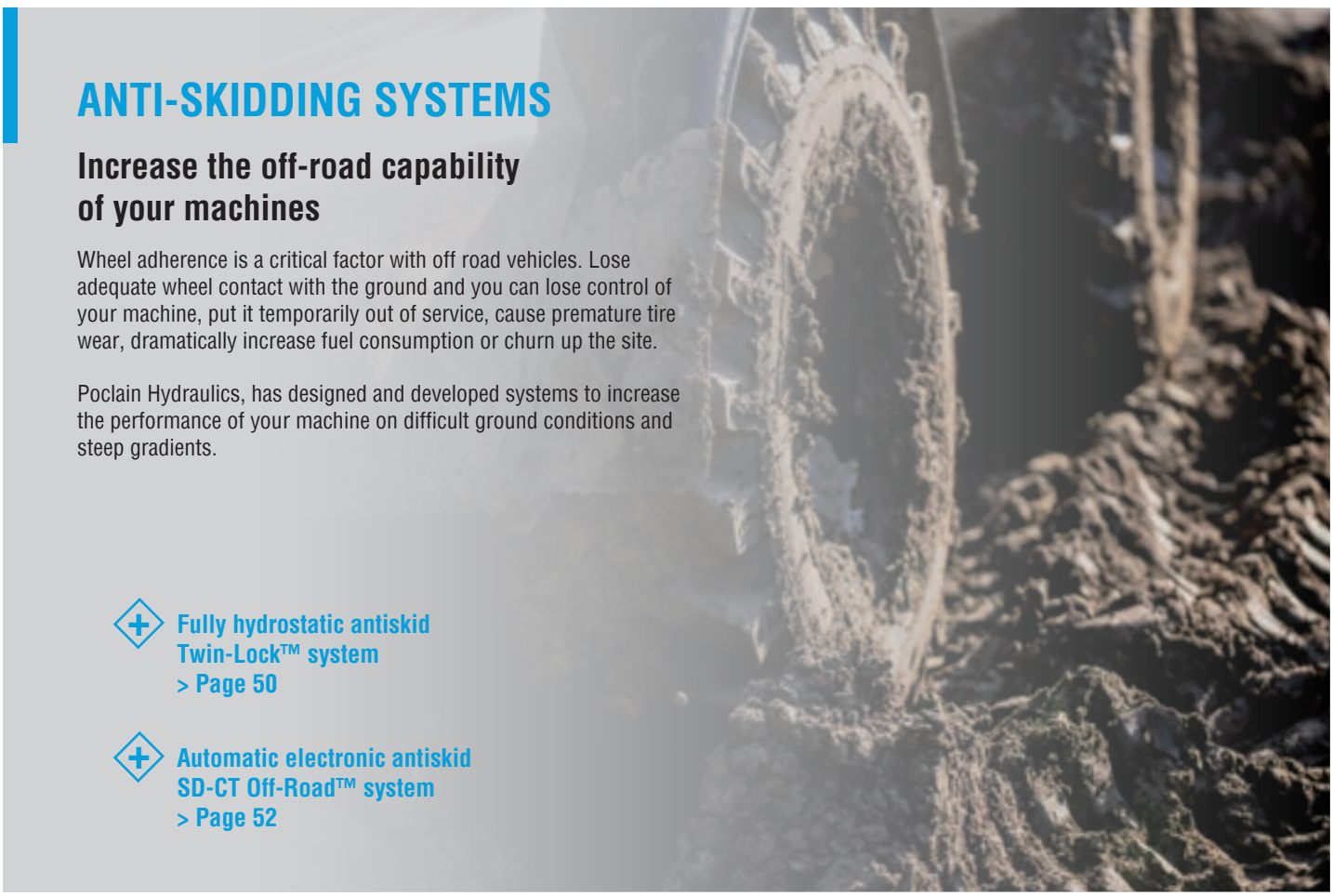
	Weight	Max. operating pressure	Max. flow	Operation	Voltage	Connections*	Hydraulic schematics
	kg [lb]	bar [PSI]	l/min [GPM]				
KVHP 	5 [11]	450 [6,526]	90 [23.8]	Electrical or Hydraulic	12 V DC or 24 V DC	Metric	

Traction control electronic anti-slipping valves

Electronic anti-slipping valves

VMA anti-slipping valve is an electronically managed traction control. By using wheel speed sensors for splippage detection and proportional valves for flow throttle, valve restricts flow only when slippage is detected. Entirely programmable, the system easily accommodates varying pump displacements and vehicle steering geometry to offer optimal performance.
VMA can be installed by OEMs on production vehicles or offered as a conversion kit (Poclain Hydraulics motors just need to be eqipped with a pre-disposition for a speed sensor).

		Weight	Voltage	Max. operating pressure	Max.restricted flow	Connections*	Hydraulic schematics
		kg [lb]		bar [PSI]	l/min [GPM]		
VMA In-line model		7,2 [15.9]	12 V DC or 24 V DC	450 [6,526]	20 [5.2] or 50 [13.2]	Metric UNF	
VMA Flanged model		11,9 [26.2]					



ANTI-SKIDDING SYSTEMS

Increase the off-road capability of your machines

Wheel adherence is a critical factor with off road vehicles. Lose adequate wheel contact with the ground and you can lose control of your machine, put it temporarily out of service, cause premature tire wear, dramatically increase fuel consumption or churn up the site.

Poclain Hydraulics, has designed and developed systems to increase the performance of your machine on difficult ground conditions and steep gradients.

Fully hydrostatic antiskid Twin-Lock™ system
> Page 50

Automatic electronic antiskid SD-CT Off-Road™ system
> Page 52

Traction control flow dividers

Flow divider controls the speed between wheels of the same axle or between different axles by dividing or combining the flow.
The flow divider is equipped with an electric or hydraulic controlled by-pass and can be used in open or closed loop circuits.

FD-H
Heavy duty range
(up to 500 bar)

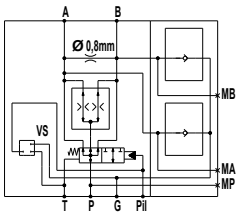
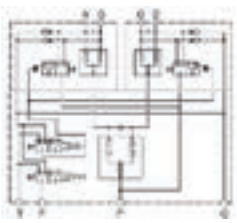

FD-H2-1


FD-H2-2

FD-M
Medium duty range
(up to 420 bar)


FD-M2

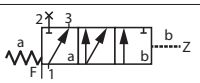
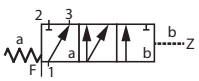

FD-M3
FD-M4

	Max. weight kg [lb]	Number of outlets	Division Ratio** (% of max. flow)	Max. operating pressure bar [PSI]	Max. by-pass flow (ratio 50/50) l/min [GPM]	By-pass control	Connections*	Hydraulic schematics
FD-H2-1 Heavy duty	19,0 [41.9]	2	50-50 60-40 70-30 80-20	500 [7,252]	200 [52.8]	Hydraulic or Electrical	BSPP, UNF	
FD-H2-2 Heavy duty					300 [79.3]			
FD-M2 Medium duty	8,0 [17.6]	2	50-50 70-30 60-40	420 [6,000]	150 [39.6]	Hydraulic or Electrical	UNF BSPP	FD-M4 
FD-M3 Medium duty	14,0 [30.9]	3	33-33-33	420 [6,000]	150 [39.6]	Electrical		
FD-M4 Medium duty	15,0 [33.1]	4	25-25-25-25 30-30-20-20 33,5-33,5-16,5-16,5	420 [6,000]	150 [39.6]			

*Connecting dimensions: Metric = ISO 9974; BSPP = ISO 1179; UNF = ISO 11926-1, CETOP = ISO 4401
** Others ratio are available on-demand

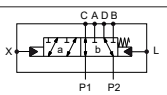
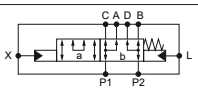
High pressure selector valves

- Two position flow directional control valve
- High flow bypass, very high pressure capability
- Circuit isolation
- Tool selection

	Weight kg [lb]	Max. operating pressure bar [PSI]	Max.flow range l/min [GPM]	Operation	Hydraulic schematics
VD-2V2H20	8.5 [18.7]	450 [6,526]	170 [44.9]	Hydraulic 12-24 V DC	
VD-3V2H25	8.5 [18.7]	450 [6,526]	300 [79.2]	Hydraulic	

VD-3V2H20


KV-6/2 directional control valves are used for selection between two hydraulic cylinders or two hydraulic motors that do not operate simultaneously. KV-6/2 valve is also available with a spool that allows to switch between series and parallel motor connection in closed loop hydraulic circuits.

KV-6/2-16-H	16.8 [37.0]	450 [6,526]	300 [79.2]	Hydraulic	
KV-6/2-16-H-F	16.8 [37.0]	450 [6,526]	300 [79.2]	Hydraulic	

KV-6/2-16-H


VALVES

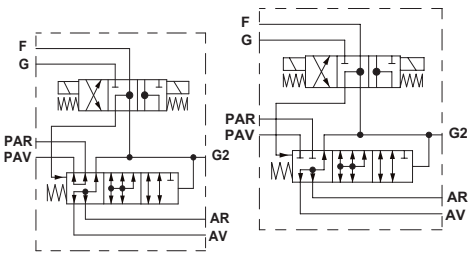
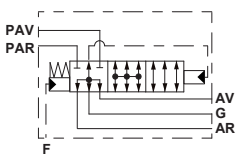
Freewheeling valves for on-demand hydrostatic assist drive

In an assist drive circuit, hydraulic motors are engaged when traction is needed, for instance, in rough terrain condition (off-road mode). At high speed (on-road mode) when traction condition is good, motors can be disengaged. Hydraulic motors can be engaged/disengaged (free-wheeled) either on a stationary machine or on-the-fly while the machine is moving.

The freewheeling valve connects the high pressure ports of the motor to tank and allows pistons to stay retracted inside the cylinder-block: the motor is then freewheeled.
A pump by-pass option is of interest if the pump is only dedicated to the assist drive function.

VDF-H15

VDF-H25

	Max.Weight	Max. operating pressure	Nominal flow range	Operation	Connections*	Hydraulic schematics	
	kg [lb]	bar [PSI]	l/min [GPM]			With pump by-pass	Without pump by-pass
VDF H15	9,1 [20]* 13,3 [29.3]**	500 [7,252]	150 [39.6]	Electro-hydraulic 12-24 V DC	Piped Metric, BSPP, UNF		
VDF H25	39,3 [86.6]	450 [6,526]	170 - 300 [44.9 - 79.2]				
VDF H25 for remote piloting							

* VDF-H15 with engagement/disengagement for stationary machine
** VDF-H15 with engagement/disengagement on-the-fly for moving machine

ASSIST DRIVE

On-Demand hydraulic transmission

Poclain Hydraulics offers an on-demand hydraulic transmission that provides the additional traction needed for working in difficult traction conditions like on muddy soil and/or on steep slopes. The system improves the machine's steerability on all soil conditions, bringing the best-in-class steering angle.

Poclain's hydraulic 4WD not only prevents the machines from getting stuck, but also helps users boost their productivity and decrease the TCO.

More information > Page 54

Exchange valves

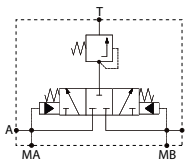
Compact exchange valves bleed hot oil from the low pressure side of a hydrostatic transmission circuit to be cooled, filtered or used as a source of oil for flushing pump and motor cases.
For all VE (except VE10), exchange pressure setting can be tuned by customer.


VE10

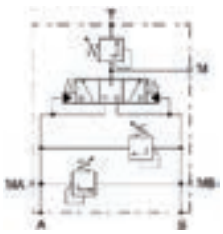

VE 30


VE 60HP Flanged


VE 60HP Piped

	Weight	Max. operating pressure	Max.exchange flow	Pressure relief setting	High pressure relief setting	Connections*		Hydraulic schematics
	kg [lb]	bar [PSI]	l/min [GPM]	bar [PSI]	bar [PSI]	Piped	Flanged	
VE 10	1,1 [2,4]	450 [6,526]	10 [2.64]	18 [261] or 20 [290] or 22 [319]		●		
VE 30	1,5 [3.3]	500 [7,252]	30 [7.9]	12 to 18 [174 to 261] 18 to 24 [261 to 348] 24 to 30 [348 to 435]		●	●	
VE 60 HP**	2,4 [5.3] Flanged 3,2 [7.1] Piped	500 [7,252]	60 [15.9]	12 to 18 [174 to 261] 18 to 30 [261 to 435]		●	●	

**Available types of exchange: adjustable, fixed by wire, locked

VES 60 	7,3 [16.1]	450 [6,526]	60 [15.9]	12 to 18 [174 to 261] 18 to 30 [261 to 435]	Up to 420 [6,091] (Factory setting)	●	●	

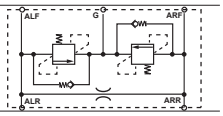
Hydrostatic braking valve for electrohydraulic transmissions

Emergency hydrostatic braking valve provide hydrostatic braking to electrohydraulic machines when their battery is not operational (when battery is full or in cold environment).

	Weight	Max. operating pressure	Max. flow	Operation	Voltage	Connections*	Hydraulic schematics
	kg [lb]	bar [PSI]	l/min [GPM]				
VCF 	11,5 [25.3]	450 [6,526]	70 [18.5]	Electrical	12 V DC	BSPP Flanged	

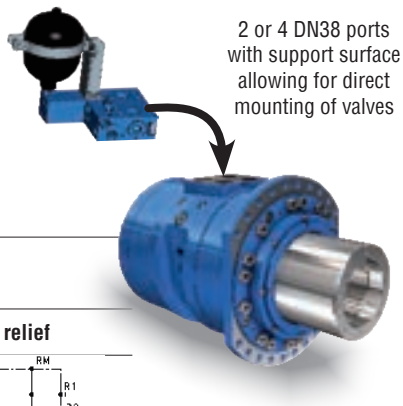
Serial protection valves

Serial protection valve connects motors in serial line and provides protection of the motors against cavitation and overpressure.

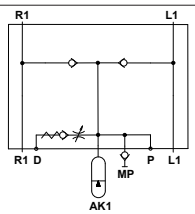
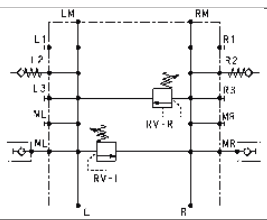
	Max. operating pressure	Max.flow serial line	Max.flow cross line	Pressure relief setting	Connections*	Hydraulic schematics
	bar [PSI]	l/min [GPM]	l/min [GPM]			
SP	420 [6,000]	110 [29.0]	63 [16.6]	Fix	UNF BSPP	
		160 [42.3]	75 [19.8]			

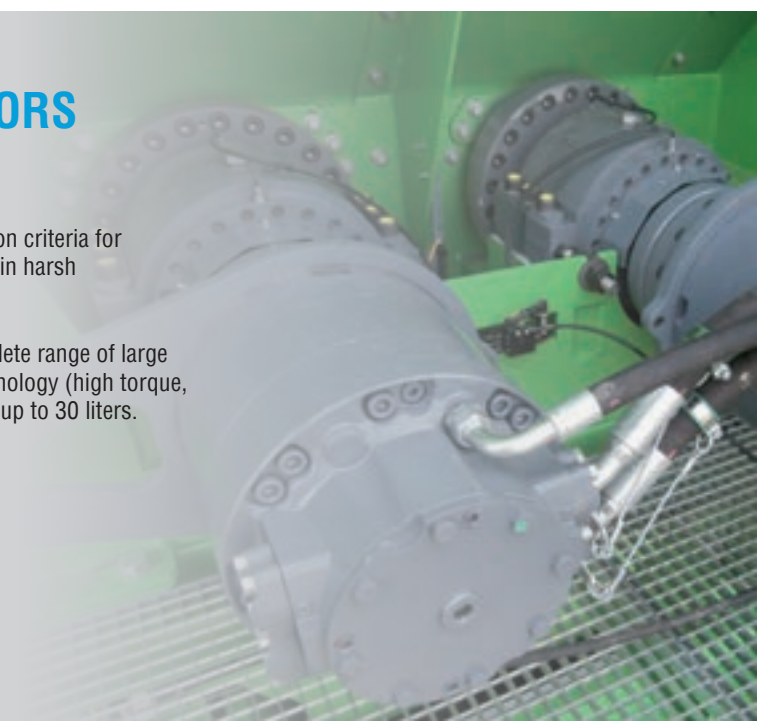
Cross-Over Relief and Anti Cavitation valve

CORAC valve, which is directly flanged on the industrial motor (MS83, MS125, MI250, MI330, MHP), will offer enhanced protection of the motor against possible cavitation during operation, by ensuring sufficient back pressure in the motor (additional flow provided by the accumulator).
This valve is available with two positions for the accumulator (0° or 90°).



2 or 4 DN38 ports with support surface allowing for direct mounting of valves

	Max. operating pressure	Precharge pressure	Volume	Hydraulic schematics	
	bar [PSI]	bar [PSI]	L [G]	Anti-cavitation	Cross-over relief
Valve	420 [6,091]	-	-		
Accumulator	48 [696]	12 [174]	2 [0.53]		



LARGE SIZE HYDRAULIC MOTORS

For industrial applications

Reliability, ease of integration and performance are key selection criteria for high displacement hydraulic motors, especially for application in harsh environments.

To meet these requirements, Poclain Hydraulics offers a complete range of large size hydraulic motors with all the benefits of radial piston technology (high torque, efficiency, easy control, robustness,…) and a displacement of up to 30 liters.

More information MHP motors > Page 82
More information MS motors > Page 92
More information MI motors > Page 128

Selector - diverter valves

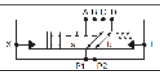
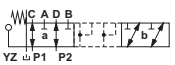
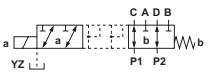
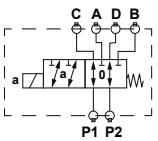
6/2 selector valves

Selector – diverter directional control valves are used for selection between two hydraulic cylinders or two hydraulic motors that do not operate simultaneously.

KV6K2

KV-6/2-6

KV-6/2-6

	Actuation	Size (NG)				Max. operating pressure	Flow rate	Non modular in line connection	Weight	Hydraulic schematics (examples)
		6	8	10	16	bar [PSI]	l/min [GPM]		kg [lb]	
KV	Hydraulic				●	450 [6,527]*	300 [79.3]	SAE, UNF	16,8 [37.0]	
KV	Mechanical	●				350 [5,077]*	60 [15.8]	Metric, BSPP, UNF	2,4 [5.3]	
				●		350 [5,077]*	120 [31.6]	Metric, BSPP, UNF	5,3 [11.7]	
KV	Electrical	●				350 [5,077]*	50 [13.2]	Metric, BSPP, UNF	2,5 [5.5]	
				●		350 [5,077]*	120 [31.6]	Metric, BSPP, UNF	5,5 [12.1]	
					●	350 [5,077]*	250 [65.8]	BSPP, UNF	22 [48.5]	
KV6K2	Electrical	●				350 [5,077]*	50 [13.2]	Metric, BSPP, UNF	2,9 [6.4]	
			●			350 [5,077]*	90 [23.8]	Metric, BSPP, UNF	4,8 [10.6]	

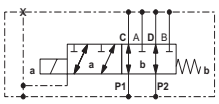
* 250 bar [3,626 PSI] without drain release.

6/2 selector valves for modular mounting

KVH-6/2-8

KVH-6/2-10 (N2)

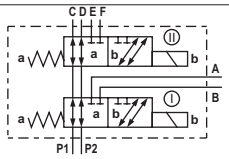
KVH-6/2-6 (N3)

	Actuation	Size (NG)			Max. operating pressure	Flow rate	Non modular in line connection	Weight	Hydraulic schematics (examples)
		6	8	10	bar [PSI]	l/min [GPM]		kg [lb]	
KVH	Electrical	●			315 [4,569]*	50 [13.2]	Metric, BSPP, UNF	2,7 [5.9]	
			●		350 [5,077]*	90 [23.8]	Metric, BSPP, UNF	3,8 [7.7]	
				●	315 [4,569]*	120 [31.6]	Metric, BSPP, UNF	5,5 [12.1]	

* 250 bar [3,626 PSI] without drain release.

8/3 selector valves

KV-8/3-6

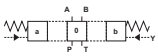
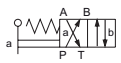
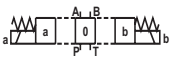
	Actuation	Size (NG)	Max. operating pressure	Flow rate	Non modular in line connection	Weight	Hydraulic schematics (examples)
		6	bar [PSI]	l/min [GPM]		kg [lb]	
KV	Electrical	●	250 [3,626]	50 [13.2]	Metric, BSPP, UNF	3,8 [8.4]	

CETOP, piloting and modular directional control valves

CETOP directional control valves

Valves for sub-plate connection to ISO 4401
4/2 and 4/3 version.

KV-5KL

	Actuation	Size (NG)		Max. operating pressure	Flow rate	Modular Mounting*	Weight	Hydraulic schematics (examples)
		6	10	bar [PSI]	l/min [GPM]		kg [lb]	
KV	Hydraulic	●		350 [5,077]	80 [21.1]	CETOP	1,4 [3.1]	
			●	350 [5,077]	130 [34.2]	CETOP	4,0 [8.8]	
KV	Mechanical	●		350 [5,077]	60 [15.8]	CETOP	2,0 [4.5]	
			●	350 [5,077]	100 [26.4]	CETOP	5,2 [11.5]	
KV (5KL)	Electrical	●		350 [5,077]	75 [19.8]	CETOP	2,2 [4.9]	
KV (5KO)	Electrical		●	350 [5,077]	120 [31.6]	CETOP	7,3 [16.1]	

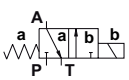
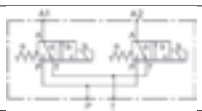
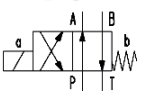
Piped valves for piloting functions and by-pass

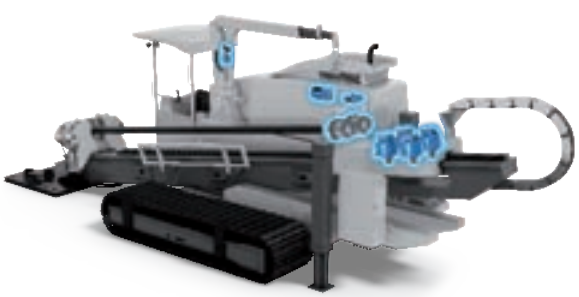
KVC-3/2

This valve (NG 10) can be used to by-pass one half of a Twin-Lock ™ motor to create a two speeds machine.

KVC2-3/2

This valve is often used to control parking brake actuation and displacement switch of motors.

	Actuation	Size (NG)			Max. operating pressure	Flow rate	Non modular in line connection	Weight	Hydraulic schematics (examples)
		4	6	10	bar [PSI]	l/min [GPM]		kg [lb]	
KVC-3/2-4	Electrical	●			160 [2 320]	16 [4.2]	Metric, BSPP	1,6 [3.5]	
KVC-3/2-10	Electrical			●	350 [5 077]	100 [26.4]	Metric, BSPP, UNF	7,1 [15.6]	
KVC2-3/2-4	Electrical	●			160 [2 320]	16 [4.2]	Metric, BSPP, UNF	3,5 [7.7]	
KVC-4/2-6	Electrical		●		210 [3 046]	40 [10.6]	BSPP	2.1 [4.6]	



*Connecting dimensions: Metric = ISO 9974; Gas = ISO 1179; UNF = ISO 11926-1, CETOP = ISO 4401

KVM valves for modular mounting

KVM are bankable directional control valves that enable very flexible and optimized solutions without base manifold and easy do adapt to any application. The KVM valve solution consists of inlet block with many options, directional control valves (on/off or proportional), vertical stacking valves (e.g. PO check valve) and end plate. For better machine efficiency they come also with load sensing ports.

KVM 4/2 

KVM 4/3 

KVM-VV 

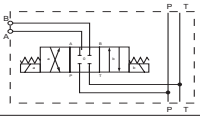
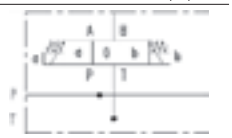
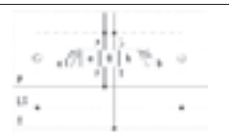
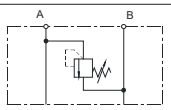
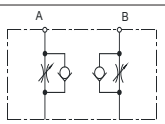
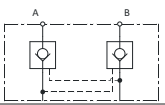
KVM-NDV 

KVM-NOV 

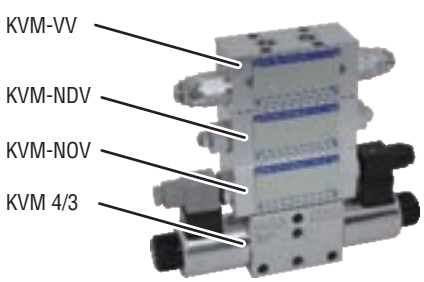
OB Inlet block 

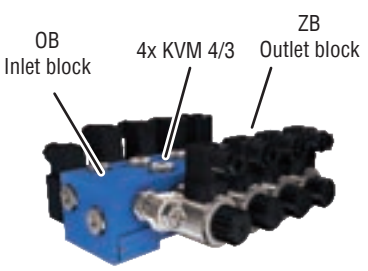
ZB Outlet block 

Screw set SET-KVM 

	Size (NG)	Max. operating pressure	Flow rate	Actuation	Modular Mounting*	Non modular in line connection	Weight	Hydraulic schematics (examples)
	6	bar [PSI]	l/min [GPM]				kg [lb]	
KVM-On/Off (4/2 and 4/3)	●	350 [5,077]	40 [10.5]	Electrical	Bankable	Metric, BSPP, UNF	2,4 [5.3]	
KVM6-PO (Proportional) (4/2 and 4/3)	●	350 [5,077]	30 [7.9]	Electrical	Bankable	Metric, BSPP, UNF	2,4 [5.3]	
KVM-PL (Load sensing signal)	●	350 [5,077]	40 [10.5]	Electrical	Bankable	Metric, BSPP, UNF	2,4 [5.3]	
KVM-VV (pressure relief valve)	●	350 [5,077]	40 [10.5]		Bankable		1,8 [4.0]	
KVM-NDV (Throttle with check valve)	●	350 [5,077]	40 [10.5]		Bankable		1,5 [3.3]	
KVM-NOV (Pilot operated check valve)	●	350 [5,077]	40 [10.5]		Bankable		1,4 [3.1]	
OB-Inlet block	●	350 [5,077]	40 [10.5]		Bankable	In line	1,2 to 4.5 [2.7 to 9.9]	
ZB-Outlet block	●	350 [5,077]	40 [10.5]		Bankable	In line	0,8 [1.8]	
Screw set SET-KVM	●							

Vertical stacking ⊕ Bankable mounting





*Connecting dimensions: Metric = ISO 9974; Gas = ISO 1179; UNF = ISO 11926-1, CETOP = ISO 4401

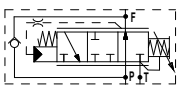
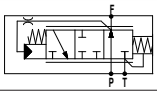
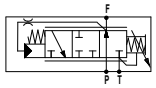
Flow divider

	Size (NG)		Max. operating pressure	Flow rate	Connections*	Weight	Hydraulic schematics
	6	10	bar [PSI]	l/min [GPM]		kg [lb]	
DTP	●		350 [5 076]	20 to 70 [5.3 to 18.5]	in line Metric, BSPP, UNF	1,7 [3.8]	
		●	350 [5 076]			2,7 [5.9]	

DTP

Pressure reducers

Pressure reducing valves limit the pressure in motor brake line or in auxiliary functions line.

	Type of setting	Weight	Pressure setting range	Max. operating pressure	Max.flow	Hydraulic schematics	
		kg [lb]	bar [PSI]	bar [PSI]	l/min [GPM]	With check valve	Without check valve
PR3-...-S 	Fix	0.7 [1.54]	10 to 120 [145 to 1,740]	250 [3,626]	30 [7.92]		
PR3-...-V 	Variable						

HIGH EXPERTISE IN VALVE DESIGN

Combined combo and multifunctions valves

Combo and multifunction valves bring several benefits:

- Better efficiency with optimal channeling and less piping
- Lower risk of leakages
- Increased safety with fewer hoses under high pressure
- Decreased costs associated with the elimination of piping, hoses and other components (fixation elements)
- Ports positioning, fixation, dimensions, and surface protection are adapted to the needs of the machine
- Less needed space on the machine
- Easy and quick to install into the machine

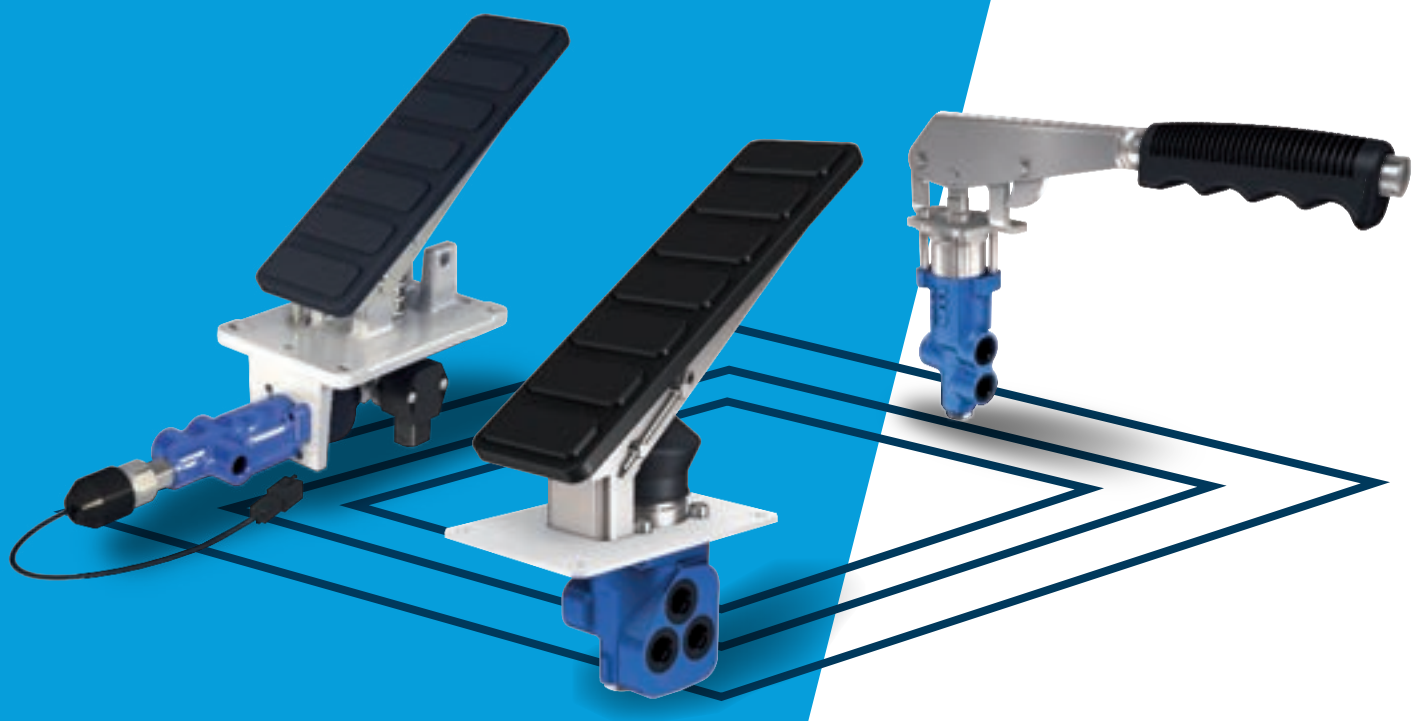
Flow divider and diverter

Combo freewheeling, flow divider, exchange, brake release

Combo valve flanged on PM pump

VARIOUS BRAKING FUNCTIONS
FOR ALL TYPES OF HYDRAULIC CIRCUITS

- Parking and emergency brake valves
- Service brake valves
- Service brake valves + inching
- Service brake valves with remote piloted hydraulic control
- Accumulator charging valves
- Service brake and accumulator charging valves
- Compact solutions «all in one»

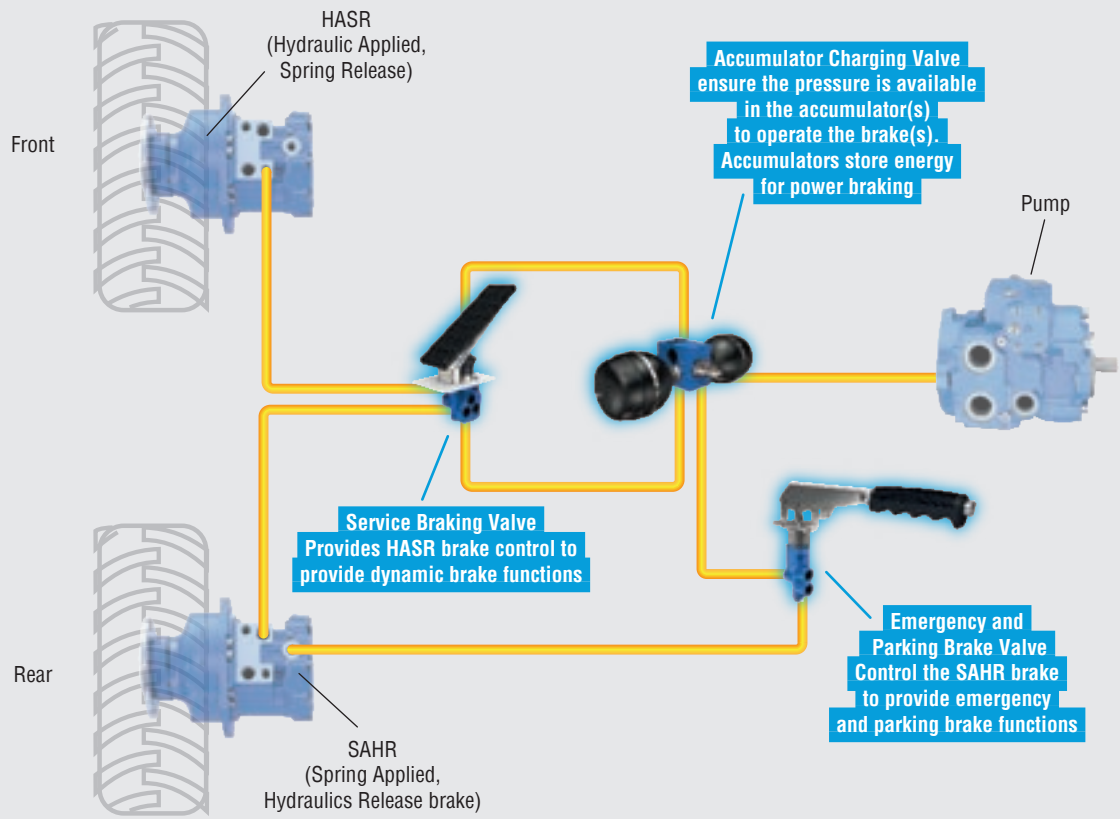


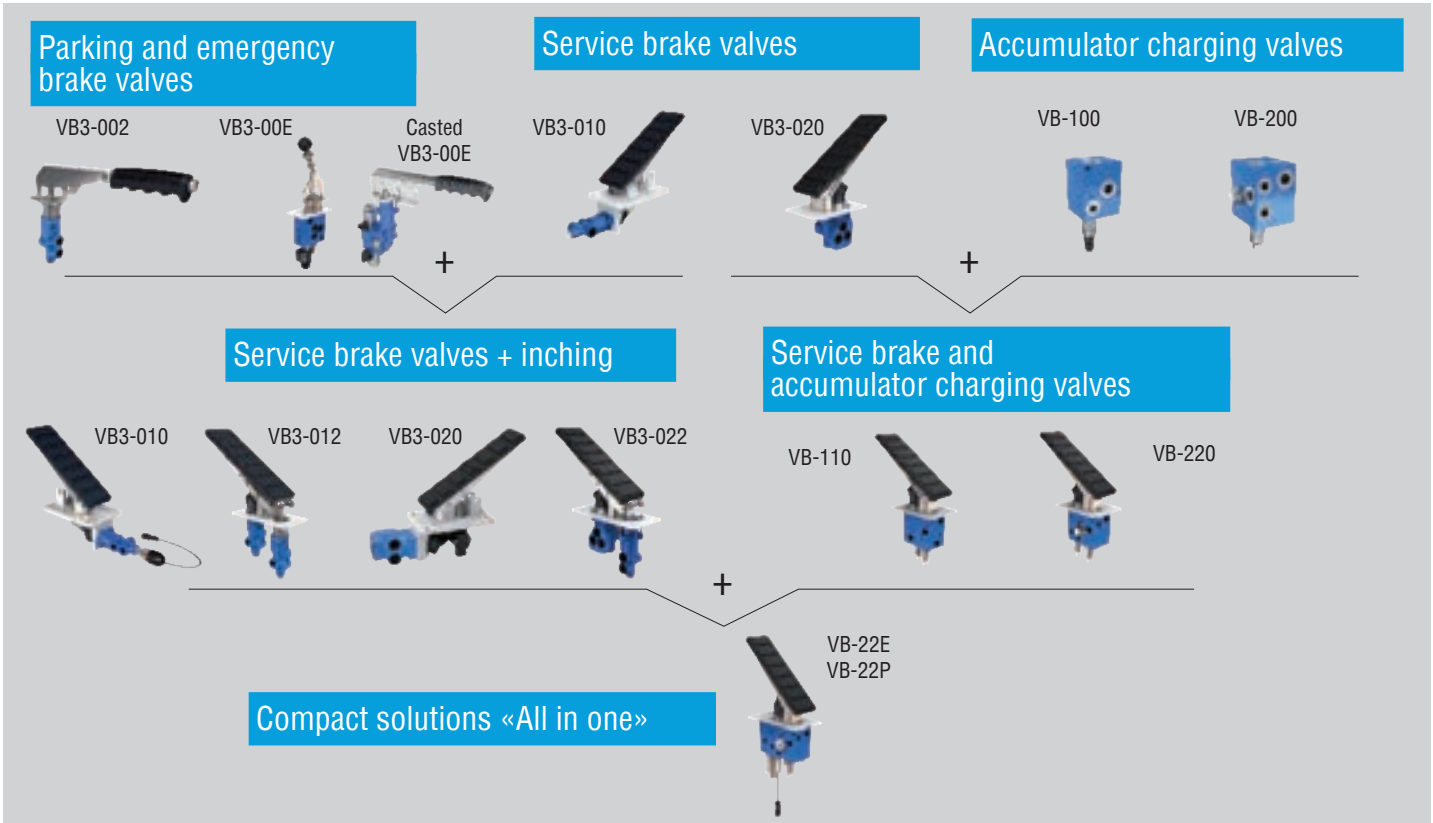
BRAKE VALVES

Advantages of hydraulic brake valves (power braking type) are numerous

- No need for an additional supply source (air compressor)
- Valves are fed by the hydraulic source on the machine
- Hydraulic accumulators are smaller than air reservoirs
- Faster response time thanks to available reserve of energy in accumulators
- Fewer risks of system contamination and no need for additional filters
- Comfortable and progressive feel

The Poclain Hydraulics braking systems can be adapted to handle your specific braking requirements.





Parking and emergency brake valves

	Weight	Max. inlet pressure	Brake operating pressure	Circuit	Control	Actuator
	kg [lb]	bar [PSI]	bar [PSI]			
VB3-002*	0,9 [2.0]	250 [3,626]	10 - 150 [145 - 2,175]	Single-circuit	Reverse modulating Hydraulic	Horizontal / Vertical lever Floor / Wall mount pedal
VB3-00E EU 2015/68	3,0 [6.6]		10 - 150 [145 - 2,175]	Single-circuit	Reverse modulating Electro-hydraulic	Horizontal / Vertical lever Wall mount pedal
 EU 2015/68						
VB-00M	3,8 [8.38]		30 - 120 [435 - 1,740]	Single-circuit	On-Off	Electrical and Manual
	4,3 [9.48]			Dual-circuit		

*** Available in high flow & high force pedal feedback (VB4-002)**

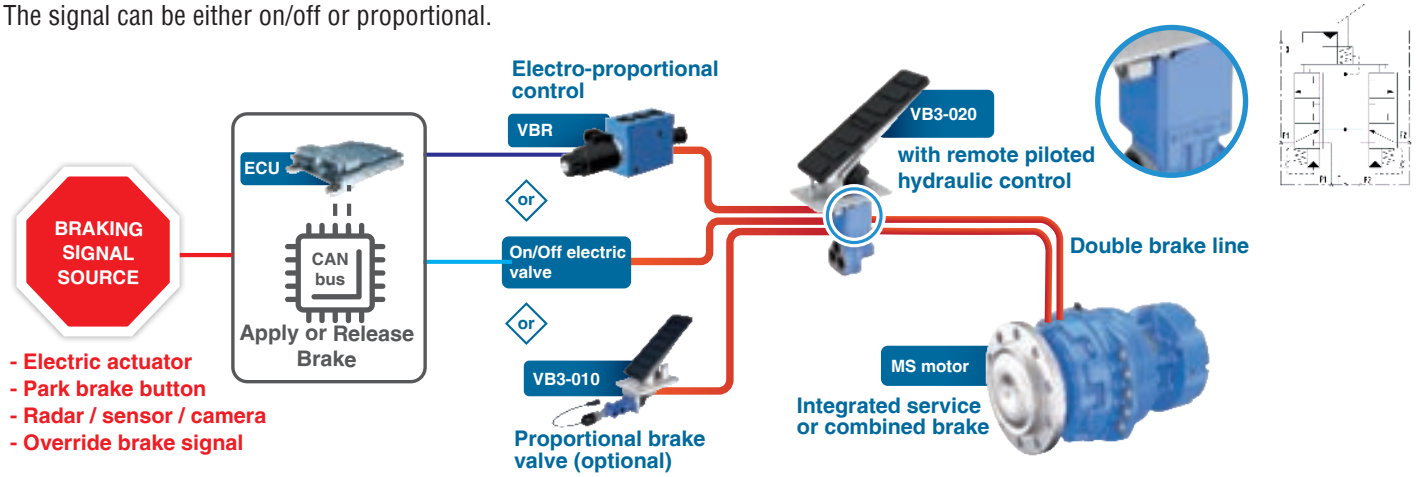
Service brake valves and inching

	Weight	Max. inlet pressure	Brake operating pressure	Brake type	Circuit	Control	Actuator
	kg [lb]	bar [PSI]	bar [PSI]				
VB3-010*	1,0 [2.2]	250 [3,626]	20 - 150 [290 - 2,175]	Service brake	Single-circuit	Modulating Mechanical	Floor / Wall mount pedal
VB3-020*	2,0 [4.4]		20 - 150 [290 - 2,175]		Dual-circuit	Modulating Mechanical	Floor / Wall mount pedal
VB3-012	3,5 [7.7]		20 - 150 [290 - 2,175]	Service brake and inching	Single-circuit	Combined VB3-002 + VB3-010	Floor mount pedal
VB3-022	4,1 [9.0]		20 - 150 [290 - 2,175]		Dual-circuit	Combined VB3-002 + VB3-020	Floor mount pedal

*** Available in high flow & high force pedal feedback (VB4, VB5) and with electrical inching and pedal position sensor.**

Service brake valves with remote piloted hydraulic control

VB3-020 can be equipped with a remote piloted hydraulic control allowing override hydraulic brake signal.
The signal can be either on/off or proportional.



Accumulator charging valves

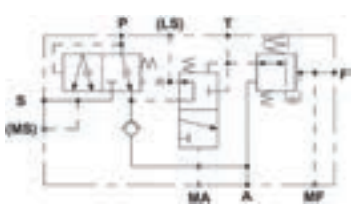
	Weight			Max. inlet pressure	Cut-in/ cut-out pressure range	Flow rate	
						To auxiliary	To accumulator
	kg [lb]	Circuit	Control	bar [PSI]	bar [PSI]	l/min [GPM]	l/min [GPM]
VB-100	2,2 [4.8]	Single-circuit	Hydraulic	250 [3,626]	110 / 130 [1,595 / 1,888] 120 / 140 [1,740 / 2,031] 135 / 160 [1,958 / 2,321] 160 / 190 [2,321 / 2,756]	45 - 120 [11.9 - 31.7]	2.75 - 15 [0.73 - 3.96]
VB-200	4.0 [8.8]	Dual-circuit	Hydraulic		170 / 200 [2,466 / 2,901] 180 / 210 [2,611 / 3,046]		

Compact solutions «All in one»

	Weight			Cut-in/ cut-out pressure range	Brake operating pressure	Flow rate		
						To auxiliary	To accumulator	
	kg [lb]	Circuit	Control	bar [PSI]	bar [PSI]	l/min [GPM]	l/min [GPM]	Actuator
VB-110	5,0 [11.0]	Single-circuit	Hydraulic	110 / 130 [1,595 / 1,888] 120 / 140 [1,740 / 2,031] 135 / 160 [1,958 / 2,321] 160 / 190 [2,321 / 2,756] 170 / 200 [2,466 / 2,901] 180 / 210 [2,611 / 3,046] 205 / 240 [2,973 / 3,481]*	30 - 120 [435 - 1,740]	45 - 120 [11.9 - 31.7]	2.75 - 15 [0.73 - 3.96]	Floor mount / Lockable pedal
VB-220	6.0 [13.2]	Dual-circuit	Hydraulic					
VB-22E	8.0 [17.6]	Dual-circuit + parking brake	Electro hydraulic					
VB-22P			Proportional Electro hydraulic					

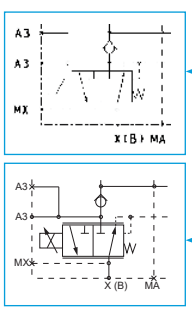
* Only available for VB-110 and VB-220 valves.

VB-110

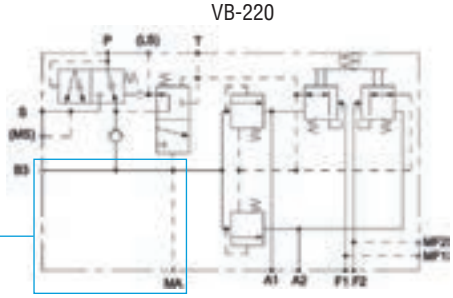


VB-22E

VB-22P



VB-220



TRACTOR AND DUAL LINE TRAILER BRAKING SOLUTIONS

Valves compatibility and modularity

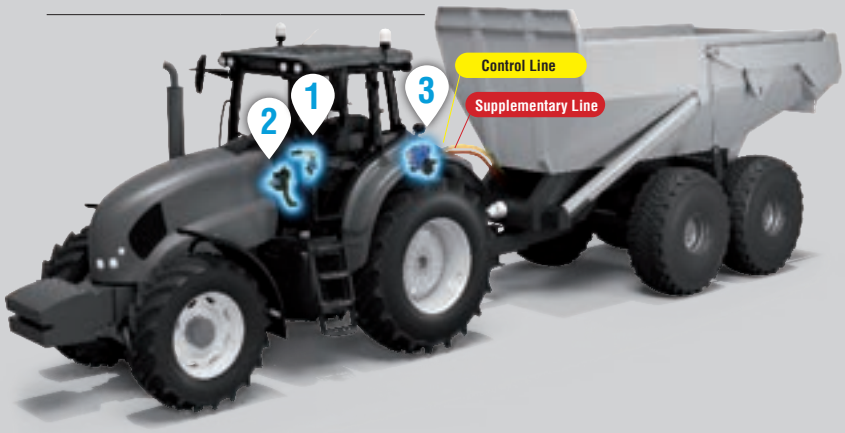
Whether you want to fit Hydraulic or Electro-hydraulic brake valves on your tractor/trailer, you can choose any of our products.
It is possible to mix and match hydraulic and electro-hydraulic components.

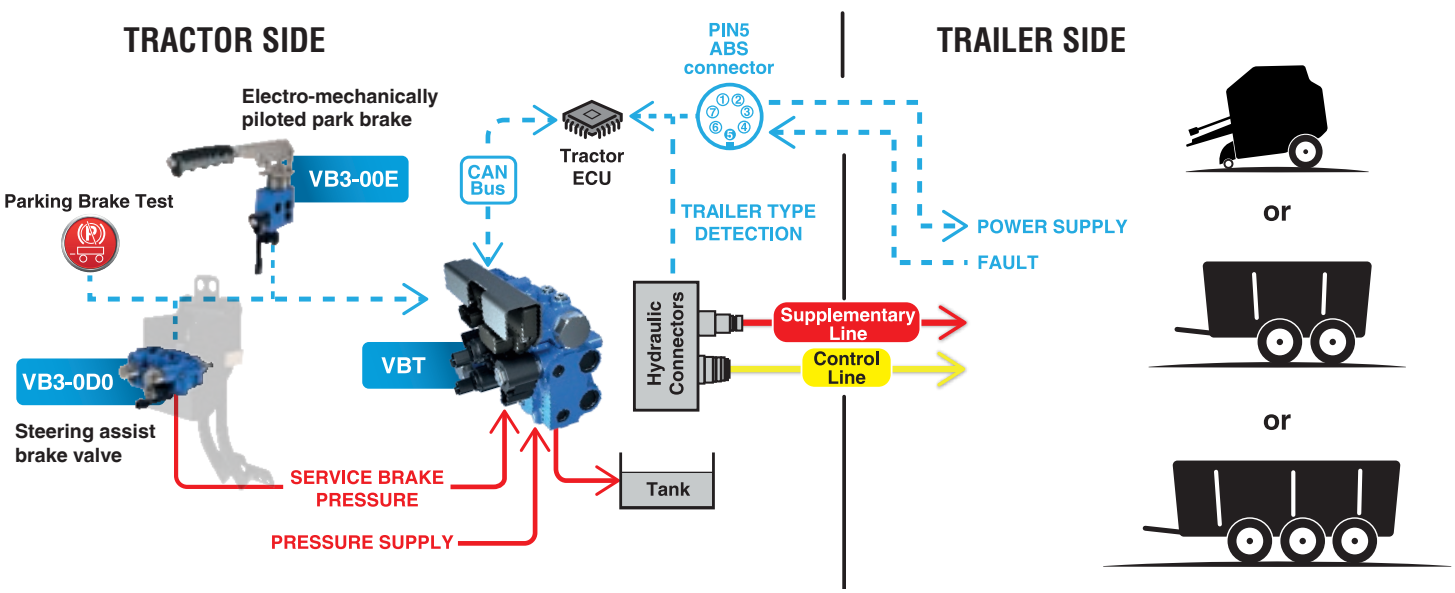
Poclain Hydraulics can design specific brake valves to answer your needs regarding space constraints, function integration, and/or develop specific performance characteristics.

		Hydraulic solution	Electro-hydraulic solution
1	Parking and emergency brake valves	VB3-002	VB3-00E
2	Steering assist valves	VB3-0B0 VB3-0D0	
3	Trailer brake valves	VFR-0HX	VBT SLM VFR-xEA

DESIGNED FOR EU2015/68

More information > Page 60





Steering assist valves

The VB3-0B0 and VB3-0D0 valves, combined with a double brake pedal, have the following functionalities:

- Off-road: steering assist braking for field work gives U-turn capability by braking the inner rear wheel. Each of the circuit selectors are associated with one of the pedals.
- On-road: mechanically linked pedals allow effective service braking.
- Dual circuit steering assist valve (VB3-0D0) acts on brakes in rear and front axles which improves driving control and safety.
- VB3-0D0 always allows independent braking in case of circuit leakage on one of the axles.

		Weight	Max. inlet pressure	Max. brake operating pressure
		kg [lb]	bar [PSI]	bar [PSI]
VB3-0B0	Steering assist brake (Single circuit)	7,0 [15.4]	250 [3,626]	150 [2,176]
VB3-0D0	Steering assist brake (Dual circuit)	7,0 [15.4]	250 [3,626]	150 [2,176]

Trailer brake valves

Trailer brake valves allow to apply the trailer brake pressure based on the tractor brake pressure. They supply auxiliary equipment and are therefor equipped with a priority spool in order to supply the trailer brakes when needed (i.e. the priority is given to the brakes).

The VFR Valves are simple single circuit trailer service brake, hydraulically or electrically piloted, mounted on the tractor.

The VBT and SLM* valves are electronically piloted valves with easy software control.
Valves and software package is designed for compliance to EU-2015/68 regulation on dual line trailer braking.

* Supplementary Line Module

For single circuit

or

For dual circuit

and

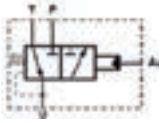
			Weight	Flow rate	
				To brake	To auxiliary
	Control	Circuit	kg [lb]	l/min [GPM]	l/min [GPM]
VBT	Electronic	Single	10 [22]	70 [18.5]	100 [26.5]
VBT + SLM		Dual	16 [35.2]	70 [18.5]	100 [26.5]
VFR-0HX	Hydraulic	Single	6,5 [14.3]	50 [13]	200 [53]
VFR-xEA	Electronic	Single	6,5 [14.3]		

Relay valves

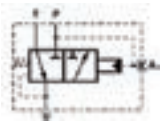
- For large volume brake actuation
- For long braking lines
- Fast tank return
- Remote electric actuation of service brake

	Weight	Max. input pressure	Max. flow rate to brake	Circuit
	kg [lb]	bar [PSI]	l/min [GPM]	
Relay-single	2,5 [5.5]	250 [3,626]	70 [18.50]	Single-circuit
Relay-dual	4,0 [8.8]	250 [3,626]	70 [18.50]	Dual-circuit

Relay valve



Quick return valve



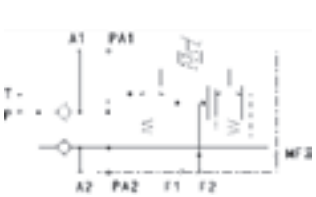
Electrically piloted brake valve

	Weight	Brake operating pressure	Max. flow rate to brake	Brake type	Pressure control
	kg [lb]	bar [PSI]	l/min [GPM]		
VBR-010	2,5 [5.5]	10 - 115 [145 - 1,667]	20 [5.28]	Service brake	Proportional

Customized VB valves

Special combo designs are custom made and bring several benefits to specific requirements of a customer:

- Protection of accumulators from AUX over pressure
- Adaptation of pushing elements on VB3-010 (roller, thread)
- Integration of two braking valves on one actuator
- Integration of additional remote hydraulic piloting on standard braking valves
- Customization of mechanical actuators according to customer needs
- Accumulators can be integrated directly to accumulator charging valve or piped to the brake valve



ELECTRONICS

ELECTRONIC MANAGEMENT
OF HYDROSTATIC TRANSMISSIONS

Ready-to-use solutions
Well suited to the architecture of your machine, our electronic solutions can be integrated without additional major investments. You control the costs and time-to-market of your machines.

Solutions that improve the performance and the control of your machines
The combined efficiencies of our Electronic Control Units and our software can optimize your machine by adjusting their performances exactly to your needs.

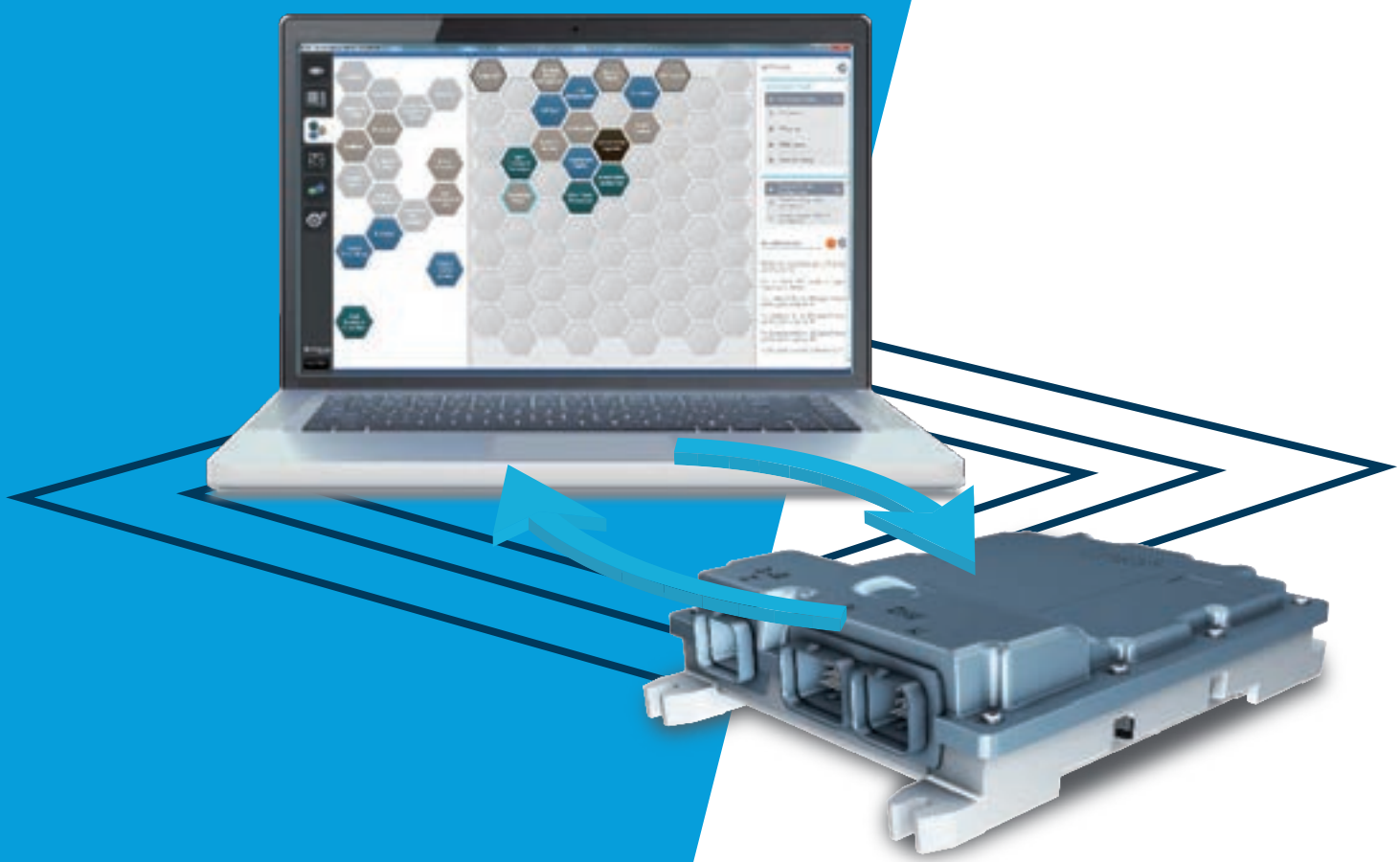
Customizable and easy to use
With intuitive ergonomic interfaces, the handling of our electronic solutions is simple and fast. It is easy to set up your own software to achieve the desired performance.

DESIGNED TO CONTROL THE MOST DEMANDING MACHINES

SMARTDRIVE CT

DESIGNED TO CONTROL
THE MOST DEMANDING MACHINES

- Off-road and on-road applications
- E13 10R-04 12836 certified
- Ag PI-d, PI-d, SIL2 performance levels
- Generic embedded softwares
- Configuration and diagnostic tools



SD-CT ECU AND SOFTWARES

SD-CT-200/300
CT-SUITE
CT-DESIGN
PHASES-CT

High level of performance

The SD-CT ECUs are designed for both on-road and off-road applications, offering certified electromagnetic compatibility through CE-marking. Regarding the Functionnal Safety the hardware is a Cat 2, the combination of Hardware and Software can achieve a performance level up to PL-d (ISO 13849) and Security Integrity Level up to SIL2 (IEC 62061).

Calculation power

SD-CT ECUs are made efficient by incorporating an electronic architecture built around a 32-bit microprocessor and a 8-bit auxiliary microprocessor. They have a calculation capability compatible with your machines' safety, comfort and energy efficiency requirements. These technical characteristics provide access to sophisticated software functions that guarantee efficient and accurate control of your applications.

Communication

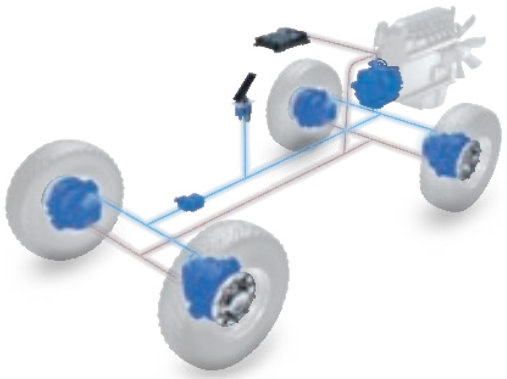
The SD-CT ECUs have large communication capabilities. The three integrated CAN buses allow you to share information (engine, hydraulic components, etc.), and configure and diagnose your machine without overloading the CAN buses.
Equipped with 40 high-power inputs and 22 high-power outputs, they provide accurate control of the hydrostatic transmission.

Robustness

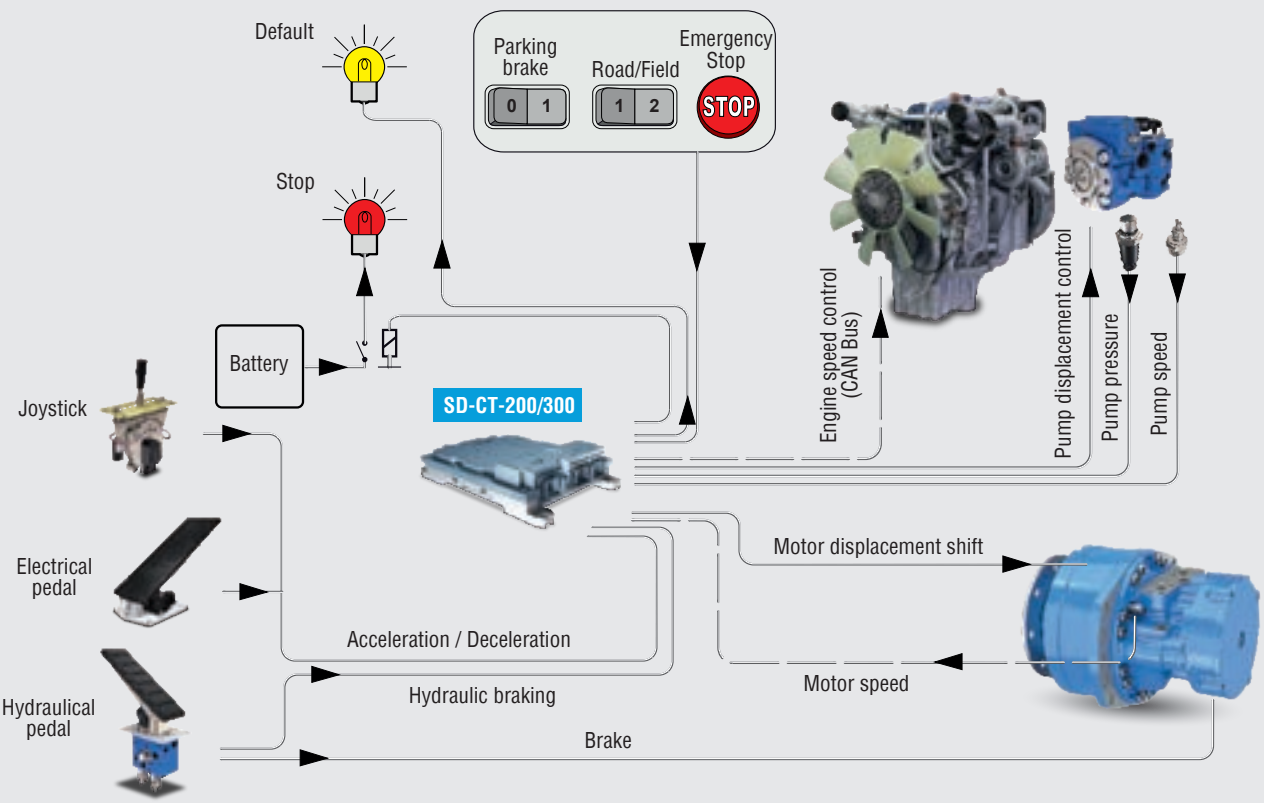
SD-CT ECUs are designed to be used in extreme conditions. Operational over a temperature range of - 40°C to +85°C [-40°F to 185°F], they also operate in the case of immersion of up to under one meter of water (IP67).
Their electromagnetic compatibility (EMC), certified 'E', makes them compatible with the most demanding uses.

SD-CT ECU characteristics

		SD-CT-200	SD-CT-300
Power supply	V	8 to 32	
Max. current	A	35,4	
Protection		IP67	
Microprocessor	bits	32 + 8	
Inputs	ANA	11	17
	FREQ	5	8
	UNIV	9	15
Outputs	STOR 2A	4	4
	STOR 2,6A	0	4
	PWM 2A	6	8
	LSD 4A	0	3
	LSD 5,2A	3	3
Supply output	5V	1	
Microcontroller		2	
CAN Bus		3	
Certification		E13 10R-04 12836	
Performance level		SIL2 level, Ag-PI-d PI-d (ISO 13849:2006) capable	
Operating temperature	°C [°F]	-40 to 85 [-40 to 185]	
Weight	kg [lb]	1,270 [2.76]	
Dimension L x l x h	mm [in]	236,2 x 180,4 x 56 [9.30 x 7.10 x 2.20]	



Example of hydrostatic transmission control



SD-CT ECU embedded functions

PROTECTION Prevent failure of the hydrostatic transmission	Over pressure limitation
	Over power limitation
	Engine over speed limitation
	Over temperature
PRODUCTIVITY Improve performance for increased productivity	Combine braking (dynamic + hydraulic)
	Anti-skid
	Travel / work mode
	Constant engine command for tools management
	2 pumps management (tandem or independent)
	Difflock management
	Set wheel circonference by CAN
SAFETY Ensure compliance with regulatory requirements	Safety start management
	Hill Start
	Automatic application of the parking brake
	Driver presence
	Brake lights
	Backing-up alarm (when going reverse)

COMFORT Improve comfort for better productivity	Anti-stall
	Cruise control / Speed control loop
	Electronic inching
	Motor displacement automatic shifting
	Enhanced shifting
	Command limiter
	Display management
	CAN broadcasting
ENVIRONMENT Reduce environmental impact	EcoDrive™
	Smart Automotive / Hydraulic automotive like
DRIVING ERGONOMICS	Friction joystick
	Acceleration joystick (CAN or Wired)
	Travel pedal and joystick

ECODRIVE™

Reduced consumption in work and road modes

The EcoDrive™ solution is applicable to all machines with an electronic pump control and internal combustion engine control by CAN Bus.
Completely automatic, the EcoDrive™ function requires no particular action from the driver and always selects the best combination of internal combustion engine speed and pump displacement.
Machines fitted with the EcoDrive™ function are therefore much more eco-friendly, with reduced fuel consumption, CO_2 emissions and noise impact.

More information > Page 56

CT-SUITE: A single ecosystem to simplify your user experience

Poclain Hydraulics provides CT-SUITE, a suite of intelligent software that brings together all the tools needed to design and diagnose your electronically controlled hydrostatic transmission simply and quickly.

CT-DESIGN

Generate your software without any skills in software programming.

PHASES-CT

Built your interface with the transmission software. You can adjust all the parameters and check the different status of the transmission over the time for the functionning of your machine.

DOWNLOAD CT-SUITE

Are you new here?

Feel free to create your account and ask for a license.

https://phases.poclain-hydraulics.com/downloadcenter/

Are you an OEM representative?

Ask for your specific license and access and get your activation code.

https://phases.poclain-hydraulics.com/downloadcenter/

You can also flash this QR code

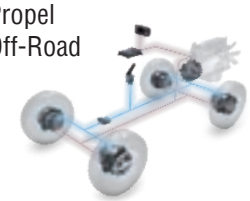
CT-DESIGN: Design your own management software

CT-DESIGN is a very ergonomic and easy to use interface to configure the software you will need for your application.

A Platform approach

The CT-DESIGN software offers functions especially created for target pumps and applications.

Propel Off-Road



AddiDrive

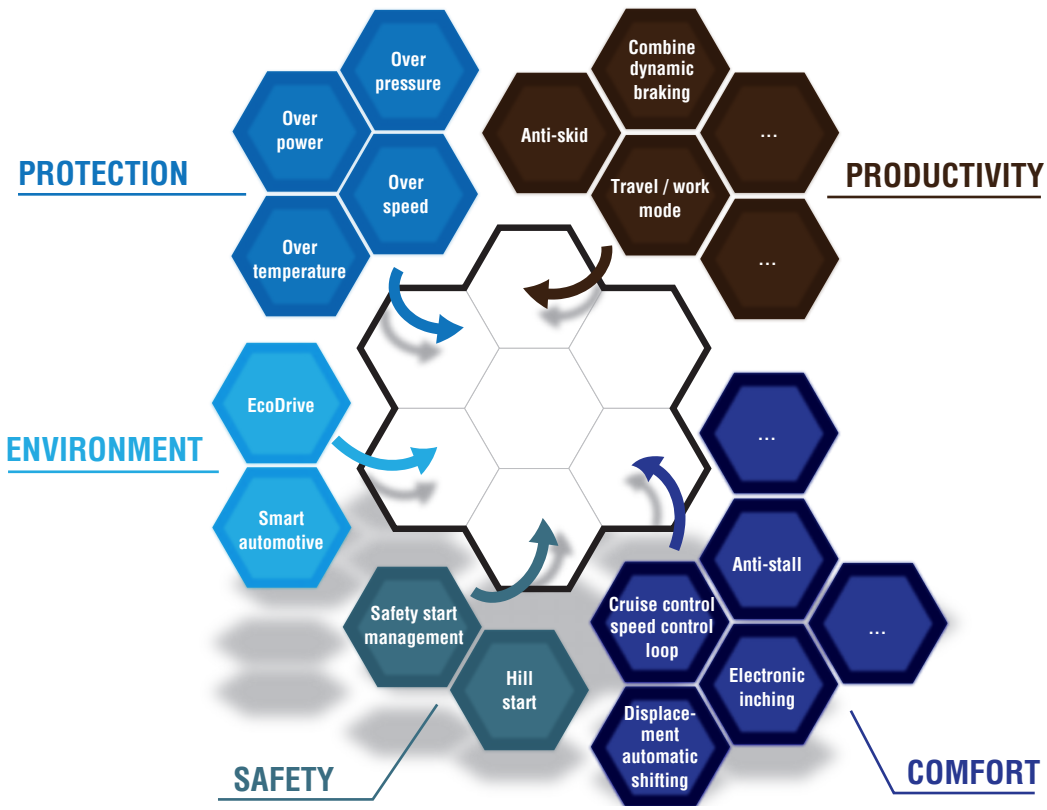
CreepDrive

Electromobility

Functions ready-to-use

With the CT-DESIGN software, Poclain Hydraulics is making access to electronically controlled hydrostatic transmissions easier by allowing OEMs to create their own management software.

Thanks to a library of fully tested software functions, each customer using CT-DESIGN can, without any further help, combine the necessary functions to generate their software in just a few clicks, and reduce development time and costs.

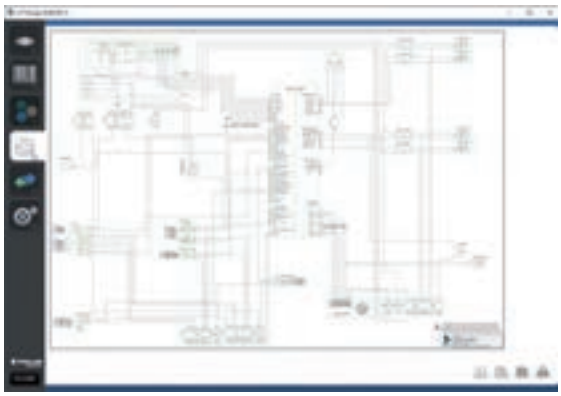


CT-DESIGN is a PC software that allows to design your dedicated software in four very simple steps. Starting from a list of generic functions, you can select which ones you would like to use for your application.
The generated software is then ready to use.

❶ Choose your platform

❷ Create your embedded software by selecting the functions you need

❸ Generate automatically the electronic wiring diagram



❹ Generate and save your embedded software, the electrical diagram, the summary of functions and the specification of your software corresponding to the design created.

PHASES-CT: Optimize and diagnose your hydrostatic transmission

Installed on a computer running a Windows OS and connected to a SD-CT 200/300 ECU via its USB/CAN-bus adapter, the PHASES-CT software can be used to carry out configuration, optimization and maintenance operations for the hydrostatic transmission systems in the best possible ergonomic conditions.

In particular, it allows the user:

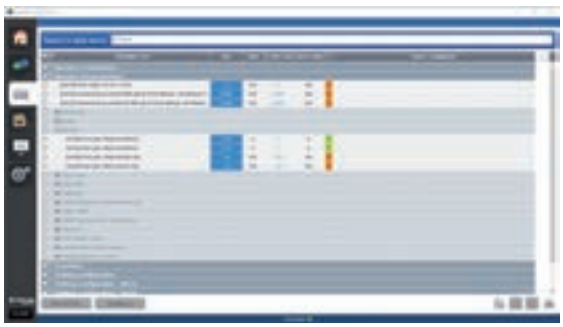
- to download the embedded software in the ECU
- to adjust and control the operating parameters of the ECU
- to calibrate and to check the operation of the sensors and driving devices connected to the ECU
- to diagnose the possible malfunctions of the hydrostatic transmission by displaying the error list

Its main characteristics are:

- a graphical interface, user friendly, multilingual and configurable
- the visualization of error messages
- direct access to software settings
- real-time monitoring of input and outputs values as well as their location on the ECU connectors
- real-time monitoring of 12 machine parameters simultaneously in a table or a graphic
- recording of monitoring curves

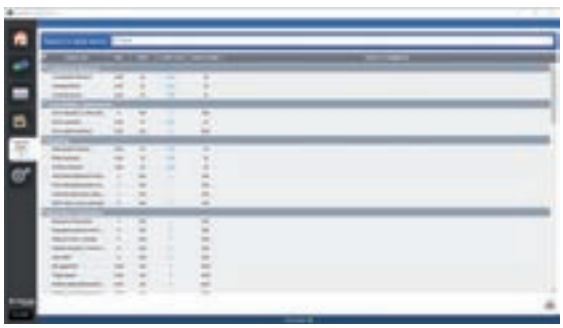
❶ Download software embedded in the SD-CT-30/200/300 ECU

❷ Adjust and control the parameters of your hydrostatic transmission



❸ Calibrate the various devices that drive your hydrostatic transmissions

❹ Diagnose your hydrostatic transmission



❺ Record and analyze the operating curves of your hydrostatic transmission

Sensors



		Pressure sensors	Speed sensors	Temperature sensors
		Allows to measure the pressure in the high pressure circuit from 20 to 600 bar [290 to 8,702 PSI]. Use to limit pressure and power to control the torque.	Installed in the motor, it allows to get rotation speed and direction information.	Allow to check oil temperature to avoid over temperature in the hydraulic circuit. Available in digital or analogic version.
Measurement range		40 bar [580 PSI] 160 bar [2,320 PSI] 600 bar [8,702 PSI]	0 to 15 kHz	-20 °C to +120 °C [-4 °F to 248 °F]
Output signal		Analog 0,5V to 4,5V ratiometric	Type : Push-Pull T4 : One frequency signal TD : Two shifted frequency signals TR : One frequency and one direction signals	Analog 0,5V to 4,5V ratiometric
Power supply	V	5V ±5%	8 to 32V	5V ±5%
Protection		IP67 / IP6K9K	IP67 / IP6K9K	IP67 / IP6K9K
Operating temperature	°C [°F]	Ambient : -40°C to +105°C [-40 to +221]	-40 to +125 [-40 to +257]	Ambient: -40 to +100 [-40 to +212]
Connector availables		DIN72585 Metripack 150 Deutsch DT04-3P	M12 connector Deutsch DT04-4P	M12 connector DIN72585

SERVICES

SYSTEM SIMULATION
FROM COMPONENT TO MACHINE

In an increasingly competitive and regulated environment, deeper machine optimization studies can be a decisive step in becoming more competitive and better meeting market requirements.

Poclain Hydraulics theoretical sizing tools are well suited in many cases, but there is a growing interest in more in-depth studies. This is the case when downsizing diesel engines, which is often necessary to satisfy stricter pollution standards, or machine electrification.

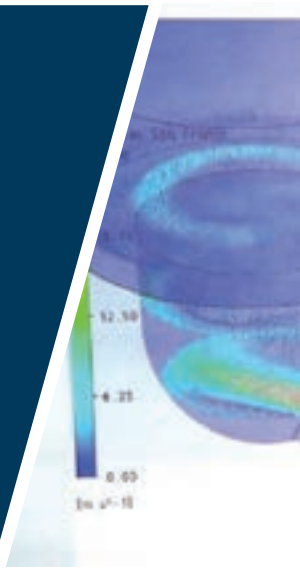
SYSTEM SIMULATION HELPS ADDRESS OPTIMIZATION NEEDS AND ANTICIPATES RISKS IN ADVANCED PROTOTYPING PHASES.

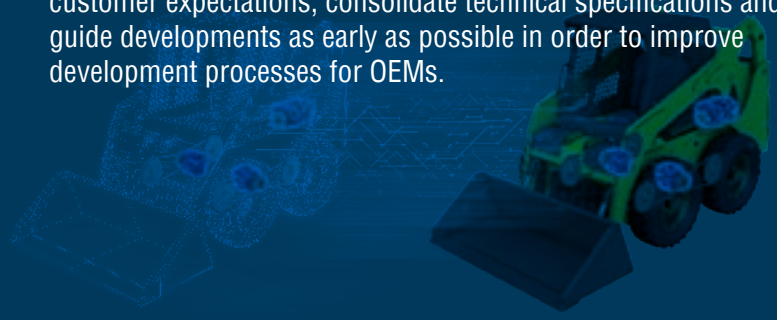
Simulation is a powerful tool for optimizing the machine performance, as it takes into account the specific system characteristics such as efficiencies, control strategies and hoses, as well as external elements such as the internal combustion engine, auxiliary consumption, tire data and ground adherence.

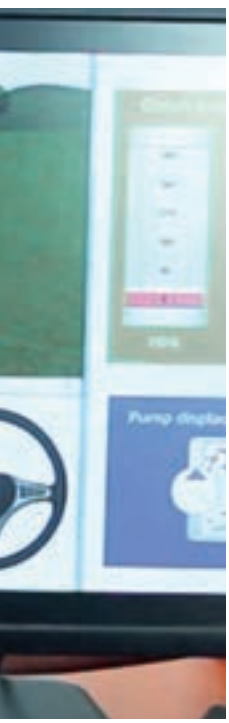
The machine behavior is analyzed according to specific scenarios and maneuvers, and results can be weighted over realistic operating cycles. We are then able to evaluate how each component of the system contributes to overall energy consumption, responsiveness, performance and driving comfort as well as their impact on the thermal behavior of the transmission.

BY CONFIRMING THE PERFORMANCE RESULTING FROM THE DESIGN CHOICES, WE CAN FOCUS DEVELOPMENT EFFORTS ON THE MOST RELEVANT ELEMENTS.

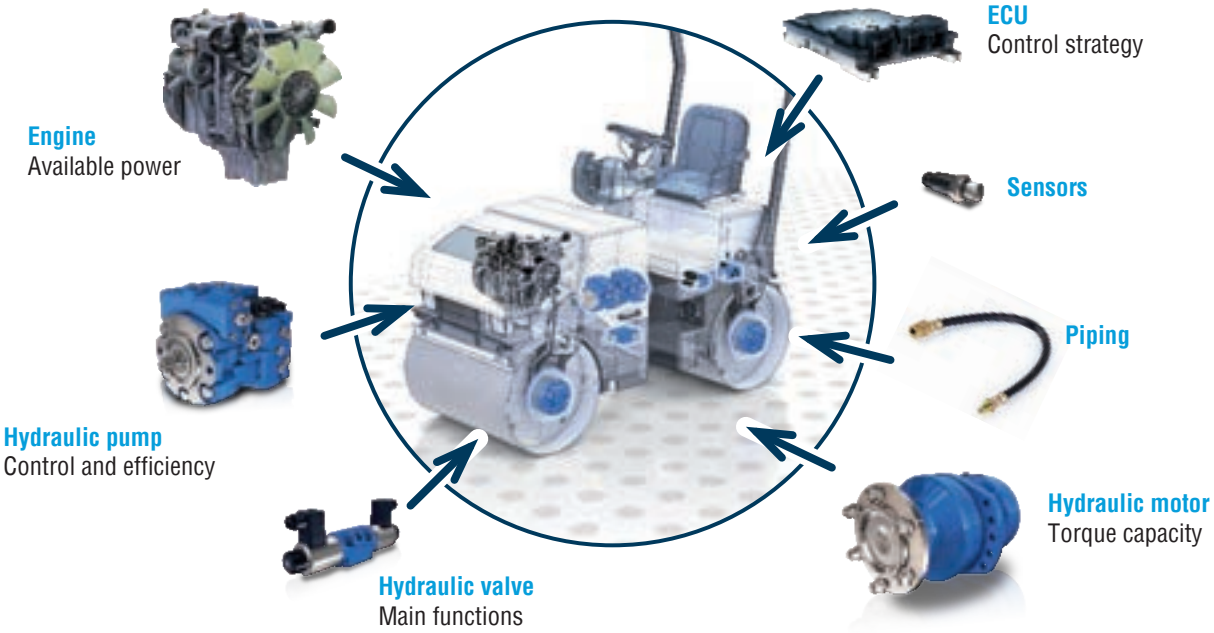
Simulation and virtual commissioning make it possible to anticipate customer expectations, consolidate technical specifications and guide developments as early as possible in order to improve development processes for OEMs.







ASSESSING THE SYSTEM PERFORMANCE



MAIN STEPS OF THE SYSTEM SIMULATION PROCESS

1. Identify deliverables and means to be implemented
2. Collect required data, detailed calculations and construct associated system models
3. Carry out the first simulations
4. Identify points of vigilance and areas for improvement. Optimization proposals and confirmation that we are in line with the initial request
5. Assessment of alternative solutions and recommendations based on the obtained results
6. Issue a report summarizing the initial requirements, the procedure, the assumptions made and the results of the simulations.

3D INTEGRATION SERVICE

TO EASE AND GUARANTEE YOUR PROTOTYPING

Whether for an industrial or a mobile application, most new projects call for prototyping. Carried out on-site by a field technician, it often requires craftmanship and time to integrate the components into their environment.

With the 3D integration service, Poclain Hydraulics brings you support and expertise to ease and guarantee a prototype according to your expectations, while reducing development time.

INTEGRATION STUDY BASED ON THE MACHINE 3D DIGITAL ENVIRONMENT

Poclain Hydraulics steps up prototyping with a handheld 3D scanner to instantly capture machine geometry, and by studying component and system integration in the digital environment.

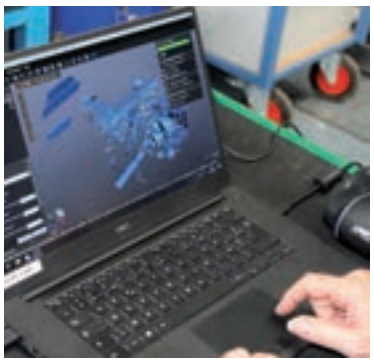
- Digitalization process managed by a Poclain Hydraulics technician specifically trained in scanning complex environments and 3D files post-processing software.
- Quick, precise, flexible and no contact process.
- Scanning can take place anywhere the machine is located, the machine does not need to travel.
- Instant capture of the geometry of the machine, even in areas where measurement is difficult or impossible.
- Functional elements' identification for accurate measurements, geometric evaluations and system integration studies.
- Component or full system integration study in the digital environment, with recommendations for proptotype production.

THIS FLEXIBLE DIGITALIZATION PROCESS HELPS YOU TO ANTICIPATE DIFFICULTIES AND GEOMETRY DEFAULTS BEFORE PROTOTYPING ON THE MACHINE. YOU CAN SAVE TIME BY REDUCING THE DELAY OF PRODUCING A RELIABLE PROTOTYPE, AND STAY FOCUSED ON YOUR CORE BUSINESS.

3 LEVELS OF SERVICES

1 3D scan of the machine environment

- Scan of the machine to generate the 3D digital environment.
- Creation of reference surfaces to identify the functional elements.
- 3D files delivered ready to be used for component or system integration study.

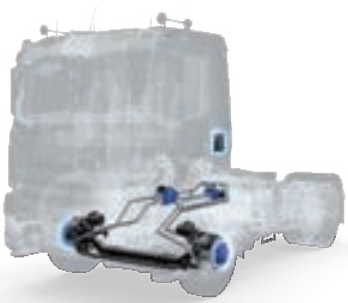


2 Components integration step

- Component integration study in the digital environment, taking machine real architecture into account.
- Anticipate difficulties before prototyping.
- Report with recommendations delivered to support prototyping and resolve integration interferences.

3 Full system integration proposal

- Component and system integration study in the digital environment.
- Poclain hydraulics expertise, from clarifying integration interferences up to full system integration.
- Report with technical recommendations delivered for prototype production support.



TEST TRACK RENTAL

MANAGE VEHICULE TESTING IN FULL AUTONOMY ON POCLAIN'S TEST TRACK

In the process of developing a vehicle, specific tests and scenarios are often necessary in order to qualify the machines or to prepare for a future homologation.
As a leader in hydrostatic transmissions, Poclain Hydraulics has equipped itself with a mobility area for on-road and off-road vehicles, which allows us conduct tests in optimal conditions that are adapted to the applications we serve.
This track, located at our Verberie site in France, close to Paris Charles de Gaulle Airport, can be made available to you exclusively, as part of a development project or independently, in order to allow you to test your vehicles.

ON-ROAD, OFF-ROAD, SLOPES AND WORKING AREAS

Our test track is suitable for both on-road and off-road vehicle testing.
Some areas are also reserved for work situation simulation.

A COMPLETE OFFER TO FULFILL YOUR VEHICLE TESTING NEEDS

STANDARD PACKAGE

In order to ensure that the tests run in good conditions, equipment and our support are at your disposal:

- Exclusive use of the test track
- Hangar for vehicle parking and protection
- Sprinkler system on areas needing to be watered
- Support with test session organization
- Punctual support during the test session (towing a vehicle, punctual advice to conduct the tests)
- First level mechanical assistance in Poclain Hydraulics workshop
- Ballasts for vehicle load

EXTENDED SERVICES

Depending on your needs, we are able to propose additional services to facilitate running tests or result analysis:

- Poclain Hydraulics assistance throughout the duration of the tests
- Connected Engineering : data acquisition and analysis
- Training on hydraulics
- Demo or training on vehicle driving
- Assistance for unloading and loading vehicles
- Refueling vehicles during tests
- Video shooting during tests
- Lunch service

We are at your disposal to study any other request that you may have in the context of the organization of your tests on our track.

CERTIFIED TRAINING CENTER

FROM THE BASICS OF HYDRAULICS TO THE COMMISSIONING OF A MACHINE

Poclain Hydraulics specializes in the design, manufacture and marketing of hydrostatic transmissions.

Our world-leading expertise enables us to provide customers with innovative solutions including hydraulic motors, pumps, valves and electronics that enhance vehicle performance, energy savings and safety.

In this high level technological environment, developing and maintaining the skills of your people is a must. With Poclain Hydraulics Training Center (PHTC), we are perfectly qualified to provide high-level trainings to our customers and partners, from the basics of hydraulics to the commissioning of a machine.
We also offer tailor-made and personalized training courses that meet specific customers' needs.

The courses are available face-to-face on site in your premises or in the various PHTC. They are also provided remotely via webinars.

Our priority is the satisfaction of the people we train.
As a token of our engagement, our Training Center has been certified with the French National Quality Certification Standard QUALIOPI, and our trainers are certified by the Federation of Professional Training.

Qualiopi processus certifié
RÉPUBLIQUE FRANÇAISE
ACTIONS DE FORMATION

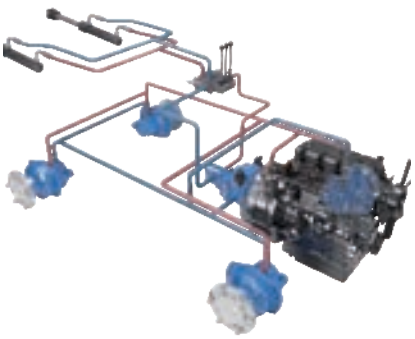
QUESTIONS OR TRAINING NEEDS?

PHTC_Contact@poclain.com

TRAINING COURSES THAT ADAPT TO YOUR NEEDS

PHTC
POCLAIN HYDRAULICS TRAINING CENTER

Products and systems



- Products and system overview
- Hydrostatic transmission awareness

From the fundamentals to the fine-tuning of hydraulic system

- Hydraulics & electronics fundamentals
- Pump, motor, valve & electronics offering
- Hydraulic circuits on mobile applications
- Sizing essentials: how to size a hydrostatic transmission
- Focus on solutions: swing drive, assistance & anti-skid, Twin-Lock…
- Fine tune a system: open lop circuit, Twin-Lock…

Assemble, install, repair

- Motor repair
- Start-up a machine
- Hydraulic symbols and circuits understanding

GLOBAL COMPANY
LOCAL SUPPORT

Our certified repair processes meet our demanding quality, safety and environment standards. Our network of 9 internal and 34 external Certified Repair Centers (CRC) cover all the main countries where our customers need local services.

To support customer service, our network relies on our after-sales department, which regularly distributes documentation about new products, updates existing brochures and supports the network via our product expert hotline (motors, pumps, valves and systems). We also offer reman replacement programs, express repairs and preventive maintenance programs.

Our after-sales customer logistics agents, located in all our subsidiaries, manage requests for original spare parts, which are distributed from our logistics platforms in the United States, Europe and Asia, to ensure the best customer satisfaction. Quotes are sent within 24 hours and we can arrange express delivery if required.

CERTIFIED REPAIR CENTERS

- Inspection
- Repairs and Tests
- Flash Repairs
- Spare Parts Sales
- Hot Line
- Technical Expertises
- After-Sales Training
- Repair Documentation

More information

To find the nearest Certified Repair Center go to our dedicated web page

SERVICES

POCLAIN eSHOP

YOUR ONLINE SALES AND SUPPORT HUB

At Poclain, we understand that efficiency and accessibility are key to your business. That's why we created **Poclain eShop**, our online platform designed to simplify your purchasing and support experience.

With **public access**, you can easily explore our product range, access essential technical information, and stay informed about the latest innovations.
For our selected customers, the **dedicated section offers** even more: more products, personalized pricing, order management, and additional support tools tailored to your needs.

By using Poclain eShop, you save time, streamline your procurement process, and gain **24/7 access** to the solutions that keep your business running.

Our commitment is to provide you with the right products, expert support, and a seamless online experience, ensuring your operations run smoothly and efficiently.

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A WORLDWIDE SALES NETWORK

More than 200 distributors in the world

More information

To find the nearest distributor visit our web page

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A02486C - 2026