



HENGLI HYDRAULIC

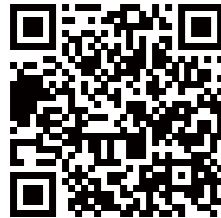
As a benchmarking company of Chinese high-end hydraulic transmission industry, Hengli Hydraulic is always devoting to the innovation and development in the following four areas: production design, manufacturing process, quality improvement and management improvement. We, Hengli Hydraulic, is making effort to realize the intelligent manufacture at the same time the high-efficiency and energy saving of the hydraulic components and try to reshape the "Made in China" image through technology innovation. Meanwhile we are committed to creating a new pattern of the world's hydraulics industry and contribute to global technological innovation.

Hengli Hydraulic is dedicated to designing and developing hydraulic transmission products and solutions that meet the real needs of local customers for the global market based on the diverse market demands, in particular the field of mobile machinery and tunnel engineering. We, Hengli Hydraulic, take advantage of our years of application experience to provide the customer the most optimized solutions, thus establish strong partnerships with our customers and maintain a sustainable development in a competitive market.

What we provide

- Hydraulic Cylinder
- Hydraulic Piston Pump & Motor
- Hydraulic Control Valve for Mobile Machinery
- Industrial Valve
- Hydraulic Pump Unit and System
- High performance Hydraulic Test Bench
- High-precision Casting
- Pneumatic Components and integrated System
- Cold-drawn Seamless Steel Pipe
- Surface Coating-Thermal Spray Treatment

For more detailed information, please visit our website at www.henglihydraulic.com



We are looking forward to working with you!

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HENGLI HYDRAULIC



Precise Control, Convenient Operation Excavator-specific Hydraulic System Solutions

HVSE / HVME Multi-way Main Control Valve
HP3V/HP5V / V90N Series Piston Pump
HM5X Series Motor



Efficient - Quality - Reliable

www.henglihydraulic.com

Hydraulic system solution for small size excavator

Suitable for excavator ranging from 1.5T to 15T

The small size excavator applies a load sensing system, whose post valve compensation can realize a method of flow distribution. Even if the output flow of the pump is insufficient to meet the flow demand of each loop, all the loops can still smoothly perform compound control actions at the same time without being affected by the pressure of each loop. The system will reduce the flow in the same proportion to compensate for changes in flow demand. The post-valve compensation system is a trend for compact, efficient and complex mobile hydraulic systems and the actuators are optimally controlled regardless of inlet flow or number of actuators.

Solutions

• Mini excavators ranging from 1.5T to 2T

- 1*HVSE09 series flow sharing multi-way control valve
- 1*HP5V series piston pump, rated displacement 28

• Mini excavators ranging from 2.6T to 4T

- 1*HVSE09 series flow sharing multi-way control valve
- 1*HP5V series piston pump, rated displacement 45
- 2*HL-4TH series pilot joystick
- 1*PVH1 series pilot pedal
- 1* MHSTE5G series pilot oil supply valve bank
- Whole set of hydraulic cylinders

• Excavators ranging from 7.5T to 9T

- 1*HVSE18 series flow sharing multi-way control valve
- 1*HP5V series piston pump, rated displacement 76/105
- 2*HL-4TH series pilot joystick
- 2*HL-4TH series pilot joystick
- 1* MHSTE5G series pilot oil supply valve bank
- Whole set of hydraulic cylinders

• Excavators ranging from 5T to 6.5T

- 1*HVSE12 series flow sharing multi-way control valve
- 1*HP5V series piston pump, rated displacement 76
- 1*HM5X series swing motor, rated displacement 27
- 2*HL-4TH series pilot joystick
- 1*PVH1 series pilot pedal
- 1* MHSTE5G series pilot oil supply valve bank
- Whole set of hydraulic cylinders

• Excavators ranging from 13T to 15T

- 1*HVME180 series multi-way control valve in mono-block design / HVSE25 series flow sharing multi-way control valve
- 1* HP3V series double pump, rated displacement 75 / HP3V series piston pump, rated displacement 140
- 2*HL-4TH series pilot joystick
- 2*HL-4TH series pilot joystick
- 1* MHSTE5G series pilot oil supply valve bank
- Whole set of hydraulic cylinders

HVME180B series multi-way control valve in mono-block design



A new generation of hydraulic system components for small size excavator

Hengli Hydraulic provides a complete hydraulic system consisting of piston pump, multi-way control valve, hydraulic motor, pilot control elements and hydraulic cylinders for the manufacturers of excavator. According to the customer's requirement, functions like the arm regeneration (not available for HVSE 09 type), anti-nodding, boom lock, travelling synchronization can be generated to the multi-way control valve together with pressure compensator in slide valve design, all these improvements contributes to comfortable operation, high efficiency and low power consumption. The HP5V series piston pump can bear a continuous working pressure of 320 bar with compound control electric proportional power control, load sensing and power cut off control, which can ensure the safety of the whole hydraulic system and maximize the working efficiency of the excavator for high excavating capacity.

HVSE series flow sharing multi-way control valve

- High operational coordination and high efficiency
- Compact structure and lightweight
- Precise control, excellent fine-movement performance
- Low pressure loss and low hydraulic oil consumption
- Comfortable operation
- Adjustable sequence for each work section

Diameter	Rated flow (L/min)	Max working pressure at oil ports				Pilot pressure a/b (bar)
		P /LS (bar)	A/B (bar)	T (bar)	TS (bar)	
09	90 (ΔP=15bar)	320	350			
12	120 (ΔP=15bar)	320	350	30	<3	<35
18	180 (ΔP=15bar)	320	350			

HVME series multi-way control valve in mono-block design

- Mono-block design, small size and light weight
- In-block oil confluence for high efficiency
- Priority line for better motion coordination

Diameter	Rated flow (L/min)	Standard pressure (bar)	Boost pressure (bar)	Control method
180	180×2	343	343	Positive flow control
180B	180×2	-	378	Positive/negative flow control

HP5V series variable displacement axial piston pump

- Compact design with about 25% weight reduction than HP3V series
- Increased power density by approximately 29% compared to HP3V series
- Up to 29% power density increase compared to HP3V series
- Spherical valve plate design for strong anti-contamination ability and high volumetric efficiency
- Various controller available: electric proportional displacement controller, pressure controller, torque controller etc.
- Front and rear heavy load bearings with an average life time of 10,000 hours
- Optimized flow passage, low noise

Displacement (cm ³ /rev)	Rated pressure (bar)	Peak pressure (bar)	Rated speed (r/min)
28	320	350	3000
45	320	350	2700
76	320	350	2400
105	320	350	2200

HP3V series variable displacement axial piston pump in double pump design, rated displacement 75

- Suitable for heavy duty working conditions in open loop
- Composite controllers available: flow controller, pressure controller, electric proportional power controller, torque controller etc.
- High efficiency, long life time and continuous pressure up to 350 bar
- Compact design with PTO, various flange & connector available for different auxiliary pumps
- Special housing structure design for low noise requirements

Displacement (cm ³ /rev)	Rated pressure (bar)	Peak pressure (bar)	Rated speed (r/min)
75×2	350	400	2450

HM5X series swing motor

- Suitable for high pressure open/closed loop
- Compact design with mechanical brake and accessory valves highly integrated around rotating parts
- Clockwise and counter-clockwise rotation direction available, the mounting flange can be directly connected to the gear box
- Low maintenance cost with hydraulic oil lubrication

Displacement (cm ³ /rev)	Rated pressure (bar)	Peak pressure (bar)	Rated output/ max brake torque (N·m)
27.4	206	250	101

Hydraulic system solution for medium and large excavator

Suitable for excavator ranging from 20T to 60T

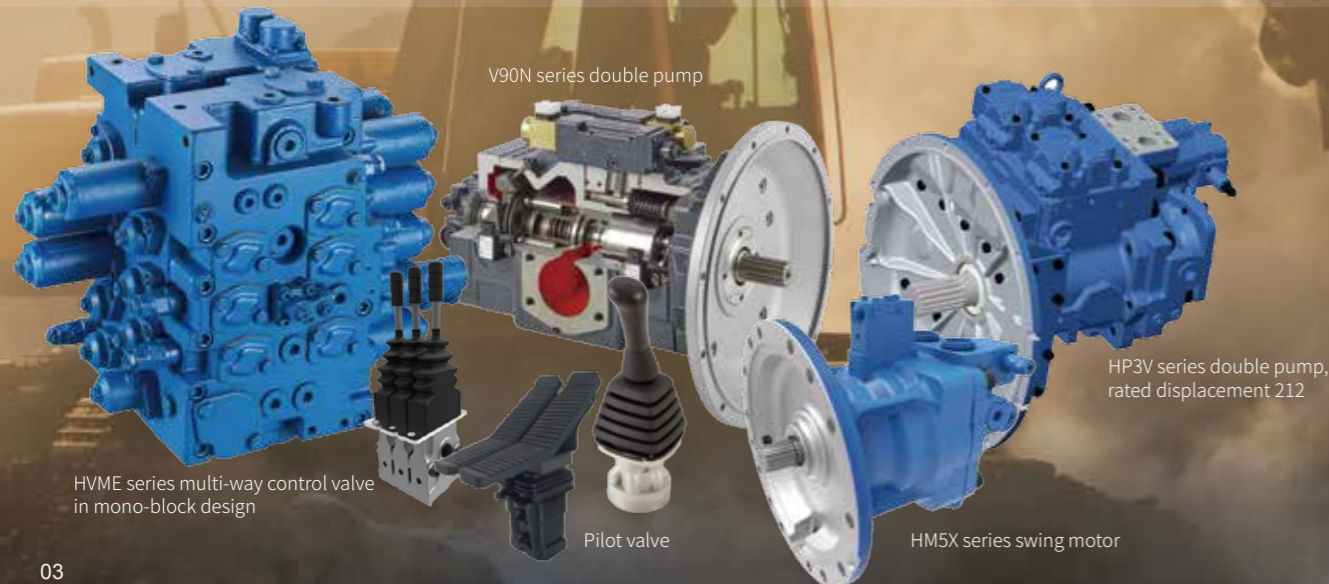
The medium and large excavator applies a positive flow control or a negative flow control system, the essential difference locates in the source of the pump displacement control signal.

In the negative flow control system, the signal collection point is at the outlet of the control valve in the main oil loop of the multi-way valve and the displacement of the pump decreases with the increase of the negative flow control pressure; in the positive flow control system, the signal collection point locates at the output control pressure of joystick and the displacement of the pump increases as the operating pressure increases.

Solutions

- Excavators ranging from 20T to 36T
 - 1*HVME270 series multi-way control valve in mono-block design
 - 1*V90N series double pump, rated displacement 130/180
 - 1*HM5X series swing motor, rated displacement 130/180
 - 2* YDVH1 series pilot joystick
 - 1* MFD series pilot oil supply valve bank
 - Whole set of hydraulic cylinders

- Excavators ranging from 36T to 60T
 - 1*HVME400 series multi-way control valve in mono-block design
 - 1*V90N series double pump, rated displacement 180
 - / 1*HP3V series double pump, rated displacement 212
 - 1*HM5X series swing motor, rated displacement 180
 - 2* YDVH1 series pilot joystick
 - 1* MFD series pilot oil supply valve bank
 - Whole set of hydraulic cylinders



HVME series multi-way control valve in mono-block design

V90N series double pump

HP3V series double pump, rated displacement 212

Pilot valve

HM5X series swing motor

Mature product application solution

Hengli is experienced in providing product application solutions for medium and large excavators with positive or negative flow control systems. With the swing priority valve, the straight travelling valve and the flow regeneration valve etc. integrated on the multi-way control valve and mono-block design for minimum the pressure loss in the flow pass, the power consumption of the excavator can be reduced. The double pump design for the main pump provides advantages as overall compact design and convenient operation. Besides the pump can be directly installed with the help of the flange to save installation time and the whole set of components contribute to saving commissioning time. Hengli will provide suitable system solutions to customers according to the working condition of the different size of the excavators. All Hengli products are applied with light weight and compact design to save the installation space. The complete set of machine components matching and optimized system contributes to comfortable operation, low system power loss, high efficiency and low power consumption.



HVME series multi-way control valve in mono-block design

- Arm regeneration function
- Piston side of boom and road side of arm lock function
- Boom down movement regeneration, confluence function while lifting
- Swing priority circuit for better composited operation
- Straight travelling valve equipped
- Mono-block design for small size and light weight
- In-block oil confluence for high efficiency
- Bucket stock limit function

Diameter	Rated flow (L/min)	Standard pressure (bar)	Boost pressure (bar)	Control method
270	300×2	343	378	Positive flow control
270B	300×2	343	378	Positive/negative flow control
400	400×2	343	378	Positive/negative flow control

V90N series variable axial piston double pump

- Variable double pump suitable for heavy duty working conditions in open loop
- Compact rotating parts, the pump length is shorter than similar products
- Spherical valve plate design for strong anti-contamination ability and high volumetric efficiency
- Front and rear heavy load bearings with an design life time of 20,000 hours
- Steel-melted copper technology shoes with a double pull-up force as copper shoes
- Reserved Hall swash plate angle sensor mounting area
- Closed-loop precise control of flow to improve efficiency and reduce energy consumption
- Various controller available, composite controls of flow, pressure and torque possible

Displacement (cm ³ /rev)	Rated pressure (bar)	Peak pressure (bar)	Rated speed (r/min)	Installation length with gear pump included (mm)
130×2	380	420	2200	558.7
180×2	380	420	2100	612

HP3V series variable axial piston double pump, rated displacement 212

- Suitable for heavy duty working conditions in open loop
- Composite controllers available: flow controller, pressure controller, electric proportional power controller, torque controller etc.
- Compact design with PTO, various flange & connector available for different auxiliary pumps
- High efficiency, long life time

Displacement (cm ³ /rev)	Rated pressure (bar)	Peak pressure (bar)	Rated speed (r/min)
212×2	343	392	1800

HM5X series swing motor

- Suitable for high pressure open/closed loop
- Compact design with mechanical brake, relief valve, charge valve and anti-rotary valve integrated
- Clockwise and counter-clockwise rotation direction available, the mounting flange can be directly connected to the gear box
- Light weight and compact design improvement based on mature technology
- Improved output power

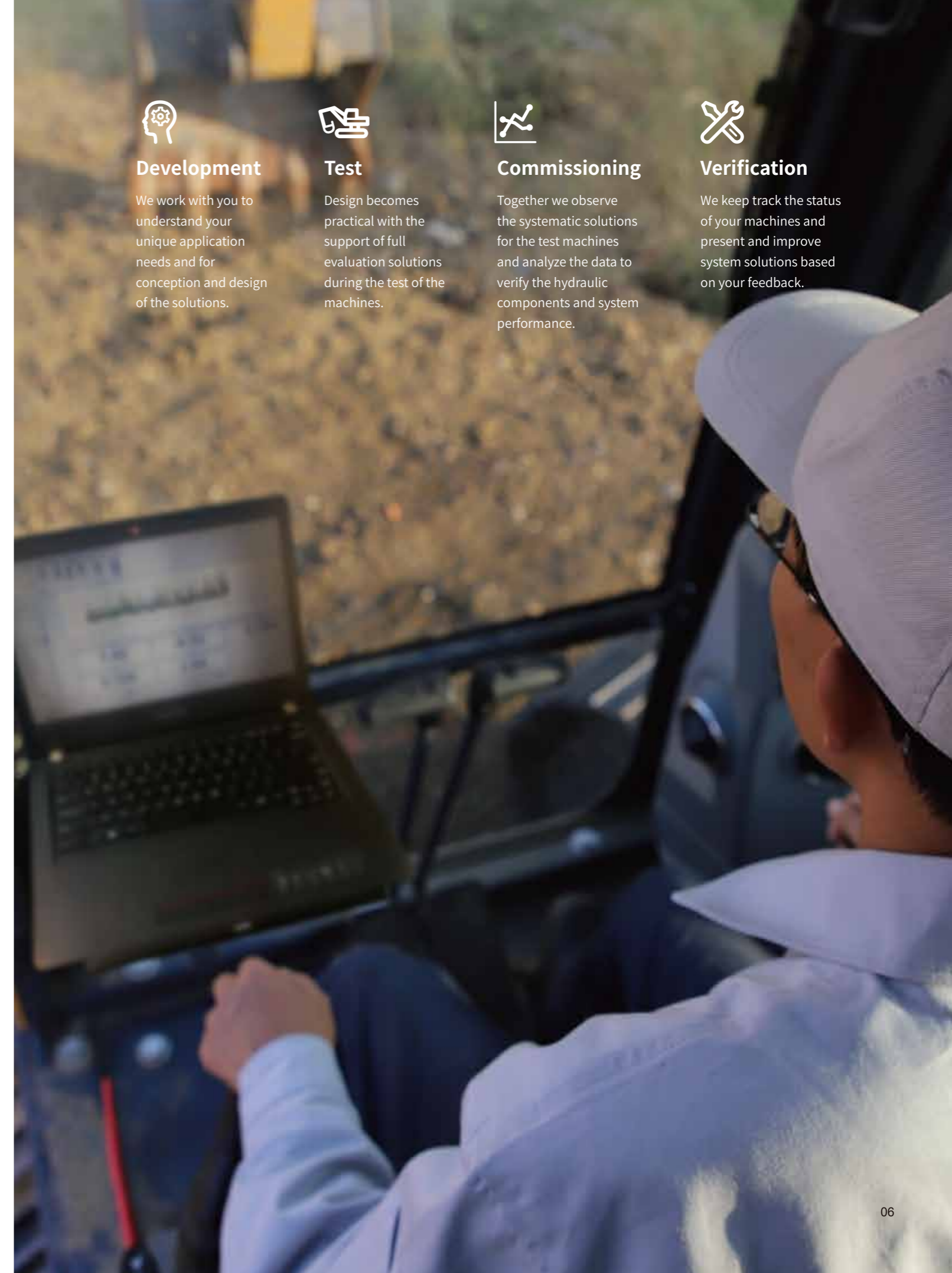
Maximum displacement (cm ³ /rev)	Rated pressure (bar)	Peak pressure (bar)	Rated output torque (N·m)	Maximum braking torque (N·m)
129.2	324	392	670	843
149 / 169 / 180	324	392	932	1250

Professional and experienced application engineers and R & D team

We, Hengli, not only focus on fulfilling customers' needs, but also make efforts to provide innovative solutions to create more value for our customers.

At Hengli Hydraulic Application and R&D Center, there' s a professional and powerful excavator application commissioning team, who can support our customers to achieve the perfect match between all the hydraulic components of the system and the engine and transmission components, ensuring the complete machine reaching the best performance. We are always devoted to create innovative solutions to create more value for our customers.

We are always ready working with you to meet the challenges and solve the problems. Together we can develop new ways to optimize critical machine systems and implement test validation and optimization. Together we can reduce the risks raised in system development, manufacturing and testing. Together with our efforts we can bring your innovative products to market quickly and economically to stand out from the competition and bring more market value.



Development

We work with you to understand your unique application needs and for conception and design of the solutions.



Test

Design becomes practical with the support of full evaluation solutions during the test of the machines.



Commissioning

Together we observe the systematic solutions for the test machines and analyze the data to verify the hydraulic components and system performance.



Verification

We keep track the status of your machines and present and improve system solutions based on your feedback.