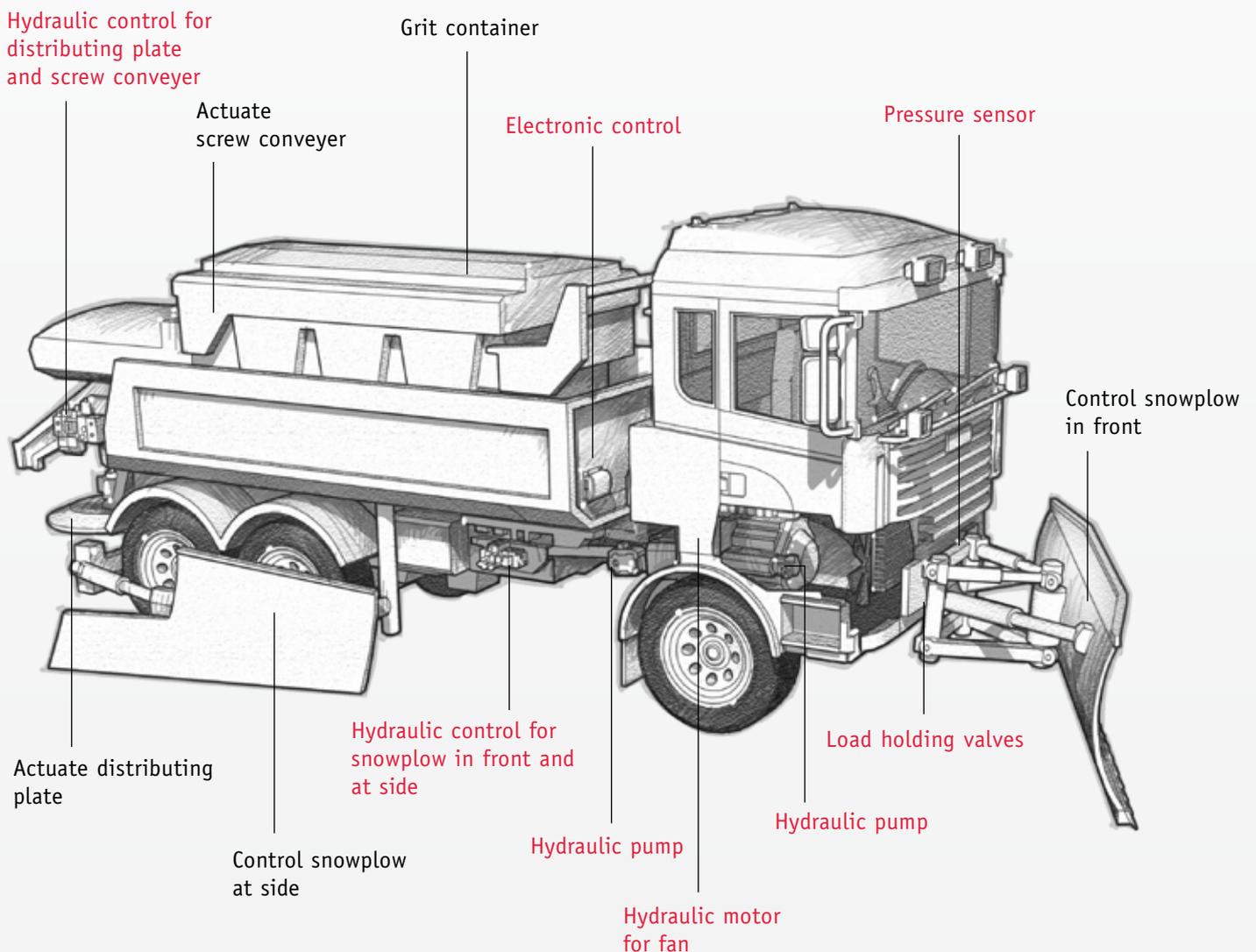


Designed to clear snow and ice – for safer driving conditions.



Municipal vehicle manufacturers face a range of challenges, such as ensuring that their machines comply with the latest exhaust emission standards, keeping noise emissions to a minimum and expanding the range of control tasks that can be performed. But with support from HAWE Hydraulik that covers everything from development and design, through to implementation, plus a sophisticated modular system, you know you are in good hands.

HAWE Hydraulik: powerful yet efficient drive solutions.

State-of-the-art technology makes work a pleasure.

Snow removal vehicles and snow ploughs used as modular construction systems for trucks, tractors and universal vehicles can be seen hard at work in winter. Their role is to ensure safe road and rail traffic conditions when there is snow and ice on the ground, making surfaces slippery and dangerous. Without them, some places would even be completely cut off and isolated. They are usually fitted with a front plough and sometimes also a pivoting side plough.

Due to their weight, snow plough blades are pressed down firmly against the ground but can be lifted, lowered and pivoted using hydraulics. In order to prevent the blade becoming damaged due to uneven road surfaces, most of them can be tilted. Clearing capacity and ease of operation are by far the most important selection criteria for users, but it is also paramount that wear be kept to an absolute minimum. If spreader systems are also mounted at the rear for gritting and salting, the grit and salt need to be distributed as evenly and reliably as possible on the road surface.



Photo: markobe – fotolia.com

HAWE Hydraulik: efficiency and precision.

If serious power but also extreme precision are required, proportional control in line with the load-sensing principle is the perfect choice. This allows the snow plough blade to be lifted, lowered and pivoted smoothly and with extreme precision. If the plough blade meets with resistance and the pressure in the system increases as a result, the hydraulic control simply redirects the excess pressure to the tank. This type of precise control system is also ideal for controlling the angle of the hopper or impeller for distributing the salt or grit, allowing the driver to stay in the cab and concentrate on controlling the vehicle's speed and direction. The grit or salt can be safely and reliably released at the touch of a button via the control.

If the hydraulic system benefits from the valve control and a variable displacement pump, in addition to equal or improved performance, fuel can be saved. By using a pump with a larger displacement capacity at lower revs, the noise generated by the pump can also be reduced, while the pump's capacity regulator reliably protects your vehicle's gear mechanism from becoming overloaded. Electronic controls, harmonized with the aforementioned components, are also available from HAWE.

Working together to achieve even better results.

With over 60 years' experience in mobile hydraulics, HAWE Hydraulik markets several different concepts which make it easier for vehicle manufacturers to comply with the latest exhaust emission standards. The variable displacement axial piston pumps adjust the displacement capacity to match the hydraulic consumers' current requirements via the pivoting angle, helping to make the system more efficient and restricting heat generation. HAWE also offers a wide range of pumps in various sizes and compatible controller types.



Photo: aetb – fotolia.com

Efficient and reliable components, when you need them.

HAWE enables you to improve efficiency, reduce weight and operate economically with its modern, reliable and robust products, all of which form part of modular systems. Some of the items in our product range include:

One directional valve type for all functions:

It is a state-of-the-art and economical hydraulic control for all movements – the proportional directional spool valve type PSL according the Load-Sensing-principle. For all functions with a volume flow up to 50 l/min the directly controlled valve type EDL could be combined with the PSL in one valve bank. Requiring little space and various additional options directly integrated – these are additional advantages.

- Operating pressure (p_{max}): 420 bar
- Flow rate (Q_{max}): 240 lpm



Smart communications between components:

The PSL's on-board CAN technology minimizes the amount of wiring required and makes it easier to design smart systems. As you would expect, it supports all common communication protocols.

- Operating pressure (p_{max}): 420 bar
- Flow rate (Q_{max}): 200 lpm



Efficient hydraulic fluid supply:

The energy-efficient axial piston pump type V60N generates the necessary pressure and flow rate, continually adapting these to the current requirements. Various nominal sizes, controls and drive options offer maximum flexibility while minimizing space requirements.

- Operating pressure (p_{max}): 400 bar
- Geometric displacement (V_g): 130 cm³/rev.



Safety and precision:

Load-holding valves type LHT and releasable check valves prevent uncontrolled movements of the functions, and because they are leak-free, there is no need of re-adjusting. The availability of different versions (pipe connection, manifold mounting, screw-in cartridge) ensures the valve can be installed close to the actuator, maximizing speed of response and safety.

- Operating pressure (p_{max}): 450 bar
- Flow rate (Q_{max}): 250 lpm



Decentralized electronic control unit:

The flexible CAN node type CAN-IO 14 is a very compact and competitive controller for hydraulic applications. It can be used as CAN-Bus-Slave in combination with a PLVC or CAN-PSL or stand-alone with a user programmed C-program. Since the unit has protection class IP 67 and is designed for a temperature range from -40°C to 85°C, users of mobile machines can rely on it functioning perfectly even in harsh outdoor environments.



End-to-end service.

With five sales offices in Germany, 14 subsidiaries worldwide and around 30 expert partner companies, HAWE Hydraulik is bound to have a presence in your area.

HAWE Hydraulik offers the following benefits:

- Comprehensive individual advice and assistance
- Customized solutions
- Products designed and manufactured using state-of-the-art technology
- Many years of experience and expertise in hydraulic products and their uses
- Tailored service and maintenance contracts
- Layout, set-up, and maintenance/service on-site

If you have any questions, please get in touch. Our experts are always happy to help.

