Turnkey drive & control solutions for winches
Our 50 years of experience make it easy to make a winch

We designed our first Hågglunds hydraulic motor with winches and marine cranes in mind. This was in the late fifties and we named our motor Viking. Since then, our experience in designing motors for hydraulic winch drives has grown continuously – and our products and services have developed accordingly. Today we have an exceptional depth of knowledge, which we’re more than happy to share with you.

As we’re used to saying: our drive is your performance.

Your winches move heavy loads and are exposed to very large forces, sometimes unforeseen. We understand how crucial it is that nothing breaks down during a load operation. That’s why we offer you nothing but the most robust and durable drive systems. Our solutions are engineered for tough environments and the demanding applications of both today and tomorrow.

**Perfect for constant tension**
The unique design of a Hågglunds hydraulic motor from Bosch Rexroth gives it the special features that make it an ideal match for winch applications.

The motor’s high starting efficiency – up to 98% for the Viking model – is combined with an extremely low moment of inertia. This creates an excellent winch motor for constant tension applications. Simply adjust the hydraulic pressure and you adjust your winch’s pulling force. Due to the motor’s very low moment of inertia, changes in speed or direction occur directly, which makes your winch highly responsive.

**Tough, compact and safe**
The hydraulic motor design ensures that speed is no problem at full load (torque). Neither is frequent starting and stopping. In an emergency situation, a Hågglunds motor will even stop instantly thanks to its low moment of inertia. This responsiveness minimizes the transfer of stresses and strains, for example to ropes and mechanisms.

The motor’s low-speed operation and flat design, in combination with a band brake or multi-disc brake, allow your winch to have a smaller footprint than it would with traditional high-speed hydraulics or a direct electric drive – solutions that both require a gearbox. When no gearbox is necessary, you save on maintenance and achieve a more efficient winch design.

Being a low-speed direct drive motor, a Hågglunds motor emits little noise. Mounted directly on the winch drum, together with brakes and valves, it thus contributes to quieter running. Moreover, it offers freewheeling capacity in a very compact solution.
The use of these types of hydraulic drives for this kind of winch design is different from the standard drives. This type of constant tension winch particularly, is relatively small but still powerful and user-friendly. There are not many companies making them to these specifications. The drilling winch, on the other hand, is a heavy hoisting winch with small dimensions, which has been entirely manufactured under Class for Offshore Standards.

ANTOINE DE JONGE, PROJECT ENGINEER AT MAASKANT SHIPYARDS, about the use of a Hägglunds Viking motor and a Hägglunds Compact motor with MDA brake for the custom-made offshore winches they are delivering for Fugro’s deepwater drilling vessel M/V Bucentaur.
The lady of the seas has been constantly improved

The Hägglunds Viking motor is our grand lady of the seas – elegant in its simplicity, and specifically designed for winch drives and other marine applications. For 50 years it’s been further developed and improved in close cooperation with our customers. The Viking and its freewheeling function have been proven reliable, and the motor can be specially coated for marine environments.

Low moment of inertia and quiet operation are just two of the benefits that make the Hägglunds Viking so popular. Without the use of electronics, it offers the best winch tension control available today – which is why it’s so frequently used for guideline winches and Launch and Recovering Systems for ROVs. Like other Hägglunds drives, it can also be found aboard research ships, fishing boats, pipe-laying vessels and oil exploration vessels, as well as on jack-up rigs and in semi-submersible applications.

The Hägglunds Viking has a rotating motor casing, which makes it possible to mount the band brake directly on the motor. This means even more compact design, plus hours saved on engineering and production. All the components – motor, band brake and brake cylinder – have DNV type approval.

Reduce design hours with easy kit building

We can deliver the motor with the mounting bracket, brake, cover and counter bracket. Once you add your drum, you’ve produced your winch. This way you reduce both engineering and production hours, as well as the risk of mistakes.

How fast can you design your Hägglunds Viking winch solution?
Use the quick selection diagram.

Minimal maintenance

With few components, no gearbox and a generous rated service life, our Hägglunds CA motors (see following pages) need only a minimum of maintenance. Since the systems have a modular design and are based on serial-produced standard components, maintenance and service can be quickly and easily provided.

High starting torque

Our direct drive technology lets you work with full torque at standstill, without time restrictions. Since the Hägglunds Viking has virtually no stick slip, hoisting a suspended (full) load takes only a few extra bar/psi. This eliminates the cost for overdimensioning of the hydraulic piping and oversizing of the pump.
Our solutions

Winches

Compact and lightweight
Our direct-mounted solutions provide the highest possible flexibility. You can’t build in a more compact or lightweight manner. Minimum space is required around the winch and the drive unit is located where convenient space is available – in a safe and secure place.

Frequent starts and stops
There’s no limit to the number of consecutive starts and stops your winch can make when equipped with a hydraulic direct drive. Additionally, the winch can run at any speed within its speed range – constantly, without any limitations.

Reliability
In 50 years of experience, the operating principle of our hydraulic direct drives has proven to be good practice for winches. The engineering and design of our systems is based on providing a long life with a minimum of necessary maintenance.

Example:
Request 160,000 N or 36,000 lbf pulling force (approx. 16.3 metric tons)
From the bottom scale, move upwards to your preferred drum diameter, in this case 400 mm or 15.8”. From there draw a line horizontally to the right, crossing the torque scale. In this case the value indicated is 40,000 Nm or 29,500 lbf-ft. Continue to the right until you cross the motor selection lines. In this example, the 64-16300 motor type is chosen. From this intersection, draw a line straight down to read the required hydraulic pressure: 155 bar or 2250 psi. In this diagram you can vary the pressure, drum diameter and motor type to optimize your solution. Since this is a quick selection guide, please ask your Hägglunds product specialist at Bosch Rexroth to make an exact calculation free of charge. We will determine if the selection can provide the lifetime you expect from your design.

Note: When dimensioning the winch, do consider existing regulations on drum – ropediameter ratio.
The compact Hägglunds CA motor is a newer sibling to the Hägglunds Viking. Designed in the eighties, the Hägglunds CA has an even higher power density and is fit for continuous use. With the possibility of mounting the motor on one side of the winch frame and the multi-disc brake on the opposite side, we can promise you the most compact build ever. And the smaller the drive, the more space capacity you have.

Hägglunds CA motors are perfect for small and compact winch frames – especially in winches that are used around the clock. Thanks to a modular construction kit system, you can produce a simple winch frame while we support you with the optimum combination of motor, brake and standardized hydraulic valves for the functions you need. This will reduce your engineering and production hours. To really make things easy for you, we even supply the drawings of the adapter shaft – which you can send to a manufacturer of your choice.

For Hägglunds CA motors we also offer a multi-disc parking brake (MDA). This is a fully enclosed, oil-filled multi-disc brake. The brake is intended as a parking brake, but it can also be used as a dynamic brake in the event of an emergency. The brake type has DNV type approval as well.

**New possibilities – continuously**
We take great pride in our continuous improvement of products, solutions and designs, all of which are tested 24/7 in our own unique hydraulic laboratory in Sweden. Now we’ve taken yet another step with our new range of Hägglunds CBM hydraulic motors, which offer the highest torque-to-weight ratio in the world.

Still more new solutions are on the way. As a customer with any of our products, you naturally benefit from all the knowledge gained in our never-ending development process.
A global partner with local support

Whether you need complete drive solutions or upgrades of existing equipment, you can always count on our assistance and support. Our goal is to become your partner, which entails fully understanding your business and giving you full access to our range of expertise and specialist knowledge. All in order to give you the most optimal solutions and the highest possible availability.

Taking responsibility for the whole solution includes responsibility for even the smallest component parts. In this case it means original parts and tailored support. Bosch Rexroth is your guarantee of quality and a one-stop solution, giving you everything you need from a single supplier. Our worldwide organization provides engineering, installation and service, regardless of geographical location. This translates into quick and well-coordinated global support for quotations, installation and on-site service or assistance when needed. When you enlist us for maintenance, you know that the work will be carried out by local, trained personnel with solid product knowledge.

Easy to upgrade

We have supplied and installed drive systems for winches based on Hägglunds solutions for more than 50 years. The experience accumulated over the decades has given us a solid understanding of how to configure each function for optimal result.

Furthermore, our flexible and modularized systems are designed with future upgrades in mind. When you need to increase production, you can easily make additions and adjustments to the modularly designed drive system with minimal production disruption and optimal result.