

Product catalogue Häggglunds CB

Radial piston hydraulic motor



Power to be flexible

Serving heavy-duty applications in numerous ways, the compact Hägglunds CB shows that size is no measure of versatility.

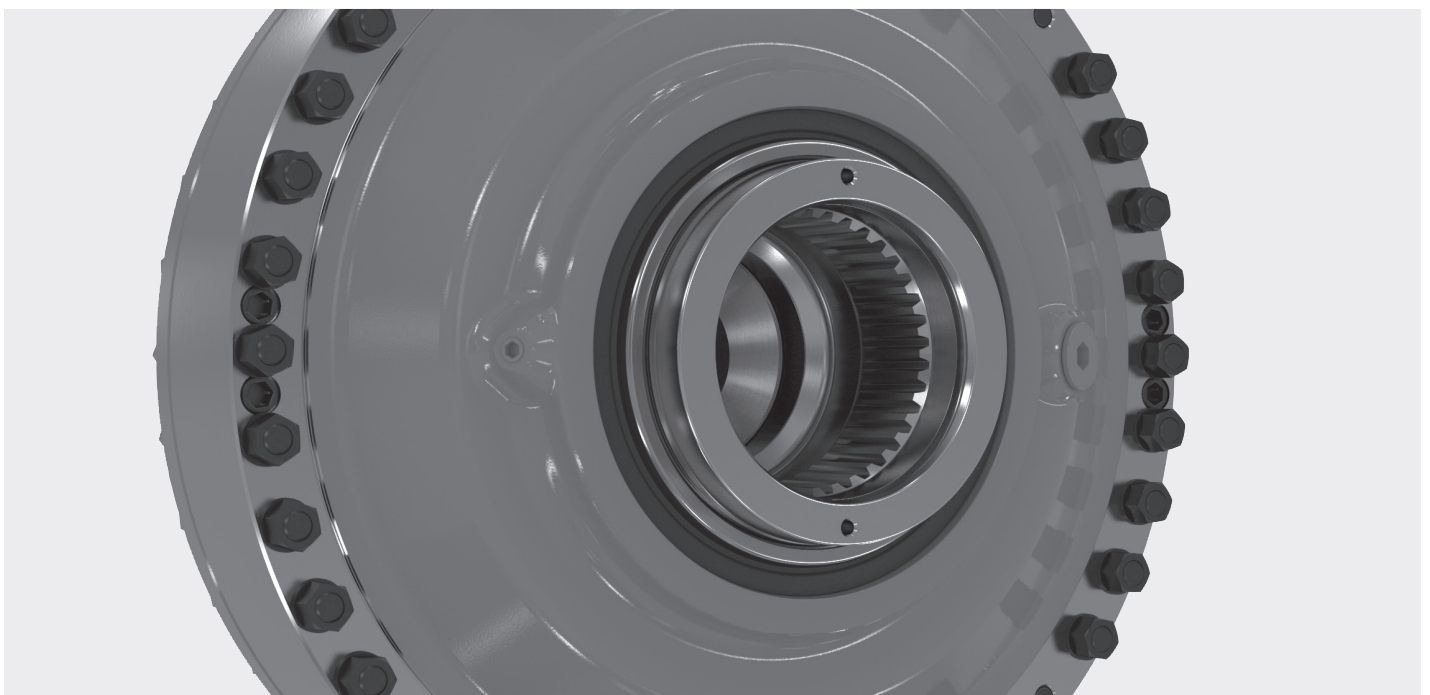
The Hägglunds CB range is suitable for many heavy-duty applications such as shredders, feeders and roll mills. Some of its many benefits are the space saving design and the versatile mounting possibilities.

The wide range of sizes and displacements enables optimisation of the drive system when selecting the motor and the hydraulic pump combinations. The hole through the motor is another advantage, which can be very useful in some applications, for instance in drilling and boring.

The motor reacts quickly and the heavy duty design can take shock loads and stop instantly when required. Hägglunds CB is truly a tough, economical and reliable drive.

Features

- ▶ High power density
- ▶ High torque density
- ▶ Energy efficient
- ▶ Flexible, many sizes, few mechanical interfaces.
- ▶ Insensitive for shock loads
- ▶ Very low moment of inertia
- ▶ Small footprint (total occupied volume)
- ▶ Freewheeling possibility
- ▶ Through hole diameter 110 mm

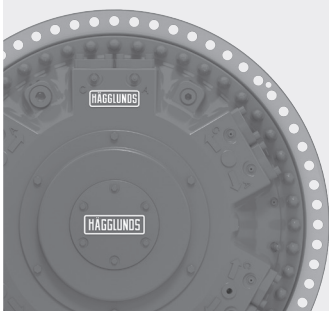


The drive behind your success

A Hägglunds hydraulic direct drive is a drive system beyond the ordinary. In far less space than other drives – and with far less weight and complexity – it delivers flexible, reliable power.

With a Hägglunds drive, your machine has unlimited access to high torque. Yet it's also protected from torque stresses. You get the power and stamina to do more, but with less strain, less wear and less maintenance hassle.

Put simply, you get a drive that goes the distance. And behind it is a company that goes the distance with you.



Benefits of a hydraulic direct drive

- ▶ Robust design without gearbox or couplings
- ▶ Compact installation with the motor on the driven shaft
- ▶ Full torque throughout the speed range – without oversizing
- ▶ High starting torque that can be sustained indefinitely
- ▶ Infinite variations within the speed range
- ▶ Smooth acceleration and deceleration
- ▶ Unlimited starts and stops without overheating
- ▶ Nearly instantaneous emergency stops
- ▶ Built-in protection against shock loads
- ▶ Perfect load sharing between multiple motors



Powerful simplicity

A Hägglunds direct drive system comprises a hydraulic motor and a flexibly placed drive unit, overseen by a control and monitoring system. This simple configuration withstands the challenges of virtually any application or environment.

Mounted directly on the driven shaft, the compact motor supplies reliable power. The force and direction of the motor's rotation is determined by the fast-acting hydraulic pumps in the drive unit, while the control and monitoring

▲ From the bitter cold of Siberia to the blistering heat of Africa, Hägglunds direct drive systems withstand the challenges of any environment and any type of industry. The drive units can be supplied in a wide range of power levels and configurations, and are function-tested before delivery.

system provides information and advanced functionality. Supporting these components is a wide range of valves and accessories, creating even greater flexibility in installation and operation.

Your path to performance



A Hägglunds solution is a total solution – of which the drive system itself is only one part. It's a complete answer to your needs, built as much on knowledge, experience and commitment as it is on drive technology.

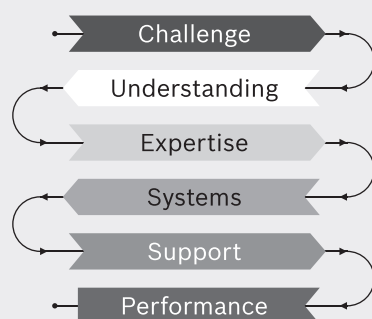
It begins with listening, as we work to understand the nature of your challenge. Our vast experience gives us the insight required, but also the knowledge that every challenge is unique. That's why we put all our skills, equipment and innovation to work in solving yours.

The drive you receive is built with quality, delivered with confidence and supported with dedication. What you experience is full peace of mind, supplied not just by our drive technology, but also by the people behind it.

Strength through service



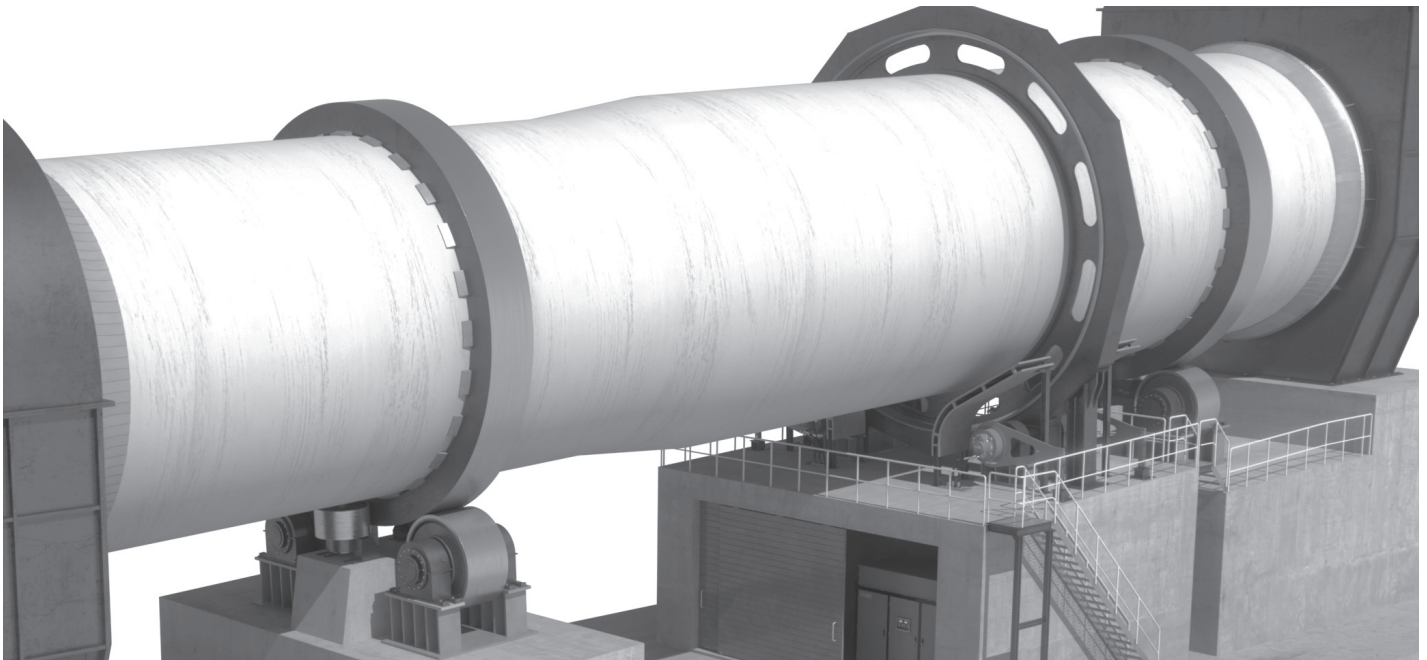
The journey



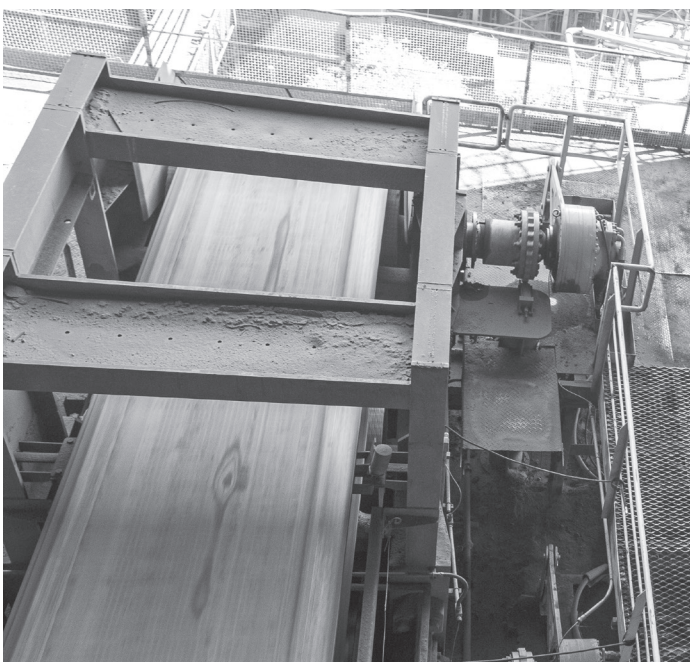
What makes your solution truly complete is the support you receive throughout your drive's life cycle. Everything needed to optimize performance – from original Hägglunds spare parts to expert field service and cutting-edge upgrades – is readily available through Bosch Rexroth's global organization.

In a performance agreement, we can combine the right support and services for your specific needs. Together with our representative, you tailor the agreement that best matches your drive and performance criteria.

Application examples



▲ Kiln



▲ Belt conveyor



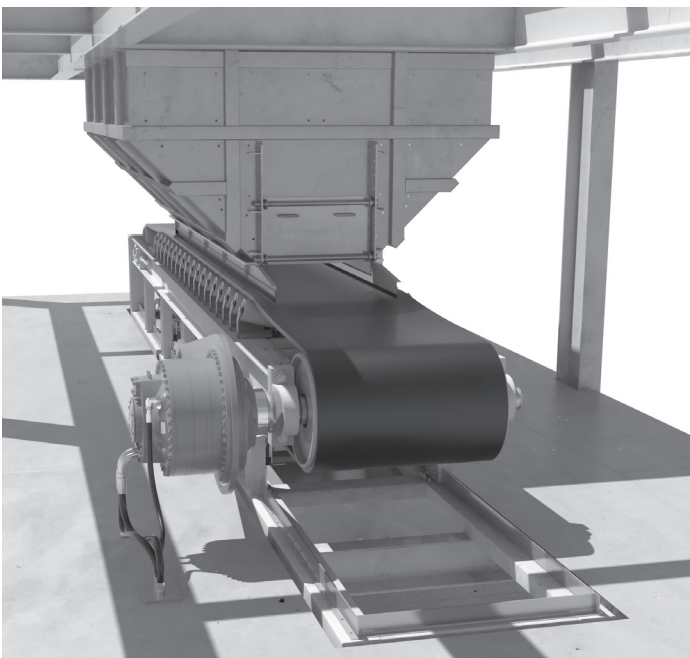
▲ Pre-Shredder



▲ Internal mixer



▲ Twin roll press



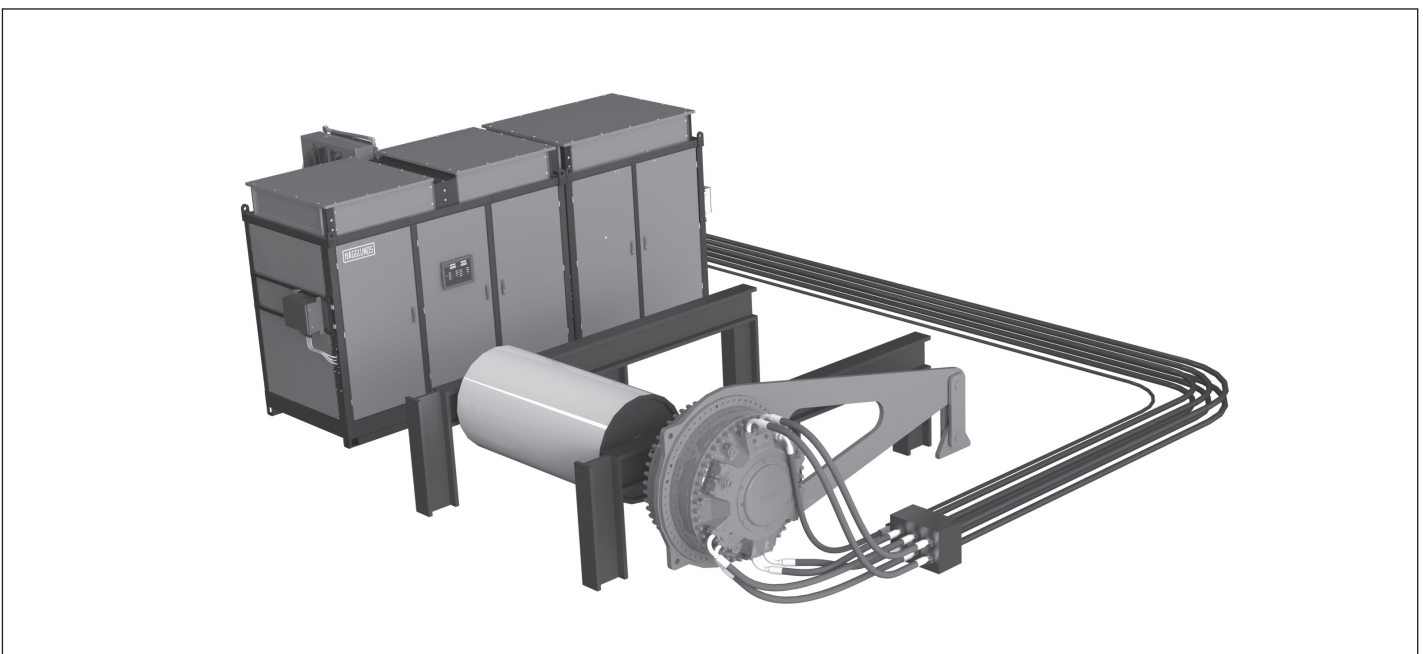
▲ Belt feeder



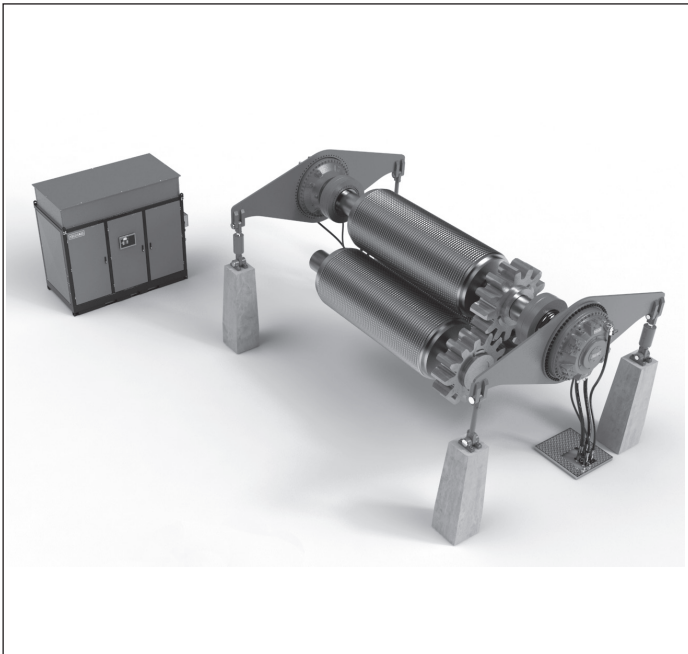
▲ Roll mill

A truly flexible solution

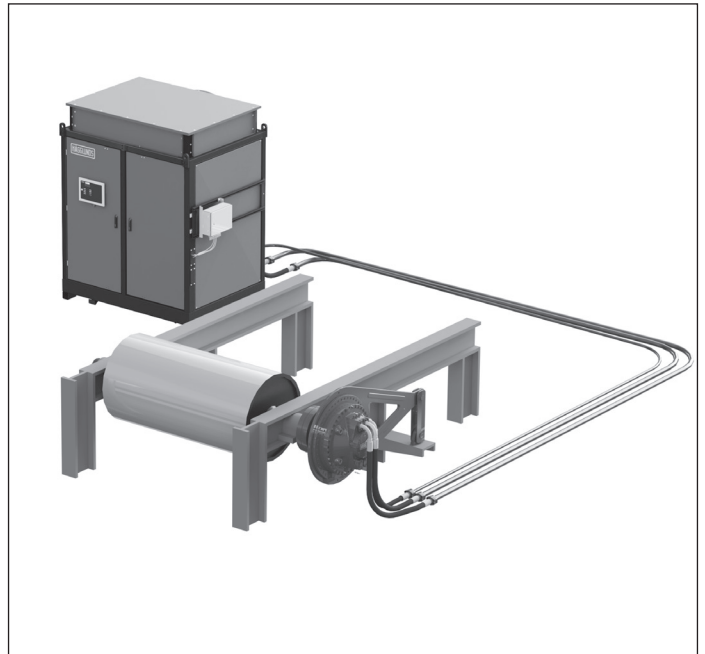
- ▶ The hydraulic motor needs only a few additional components to form a complete direct drive system. Yet there are unlimited combinations and configurations to produce any solution within the Hägglunds direct drive performance range. Perfect load sharing characteristics enable multi-motor and/or multi-pump combinations to suit the application.
- ▶ Users can simply adjust the torque, speed and hence power provided by the motor by varying the pressure and flow. Load sensing and power limiting enable functionality unavailable from other solutions, and there are system features such as extremely fast pump compensators to provide rapid response and reduce stresses and strains on the machine.
- ▶ The enclosed motor is ideal for work in harsh environments such as dusty mining sites, ship decks, explosive zones at chemical plants and climates with wide temperature variations and the Hägglunds drive unit can be placed at any convenient location, e.g. outside the explosive zone.
- ▶ Mounted directly on the driven shaft, the motor provides compact installation and supplies reliable power to the machine.
- ▶ The motor can be separated from the drive unit, which enables freedom of application. The drive unit can be positioned away from both motor and machine, without foundation requirements.
- ▶ The motor, like the rest of the direct drive system, is fully function-tested before delivery and requires only a short commissioning time. Installation can usually be undertaken during a normal shutdown period so that no production losses are experienced.
- ▶ Our control system, Hägglunds Spider, monitors the health of the motor and provides all the necessary start/stop logic and machine control techniques. It is mounted, wired and fully programmed on the drive unit prior to delivery.



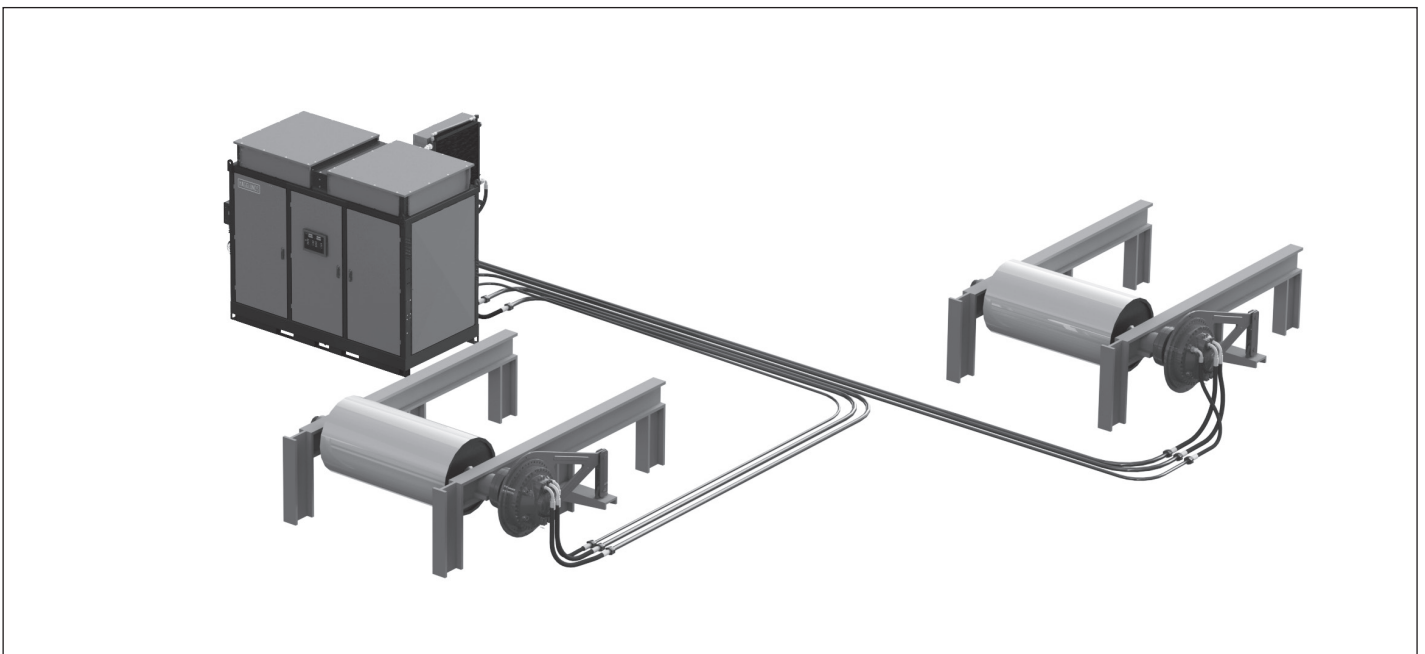
▲ Large size drive unit – one motor



▲ Load sharing



▲ Small size drive unit – one motor



▲ Medium size drive unit – two motors

Functional description

Hägglunds direct drive system

A complete Hägglunds direct drive system from Bosch Rexroth comprises the drive unit with electric motor, pump and tank, the control system, the hydraulic motor with accessories and the piping system. The hydraulic motor type Hägglunds CB is described in this publication.

A Hägglunds hydraulic motor from Bosch Rexroth is at the center of a complete direct drive system. The full solution also comprises a drive unit with electric motor, pump and tank, as well as a piping system and control system. The complete direct drive system is a closed hydraulic loop that provides highly dynamic drive characteristics.

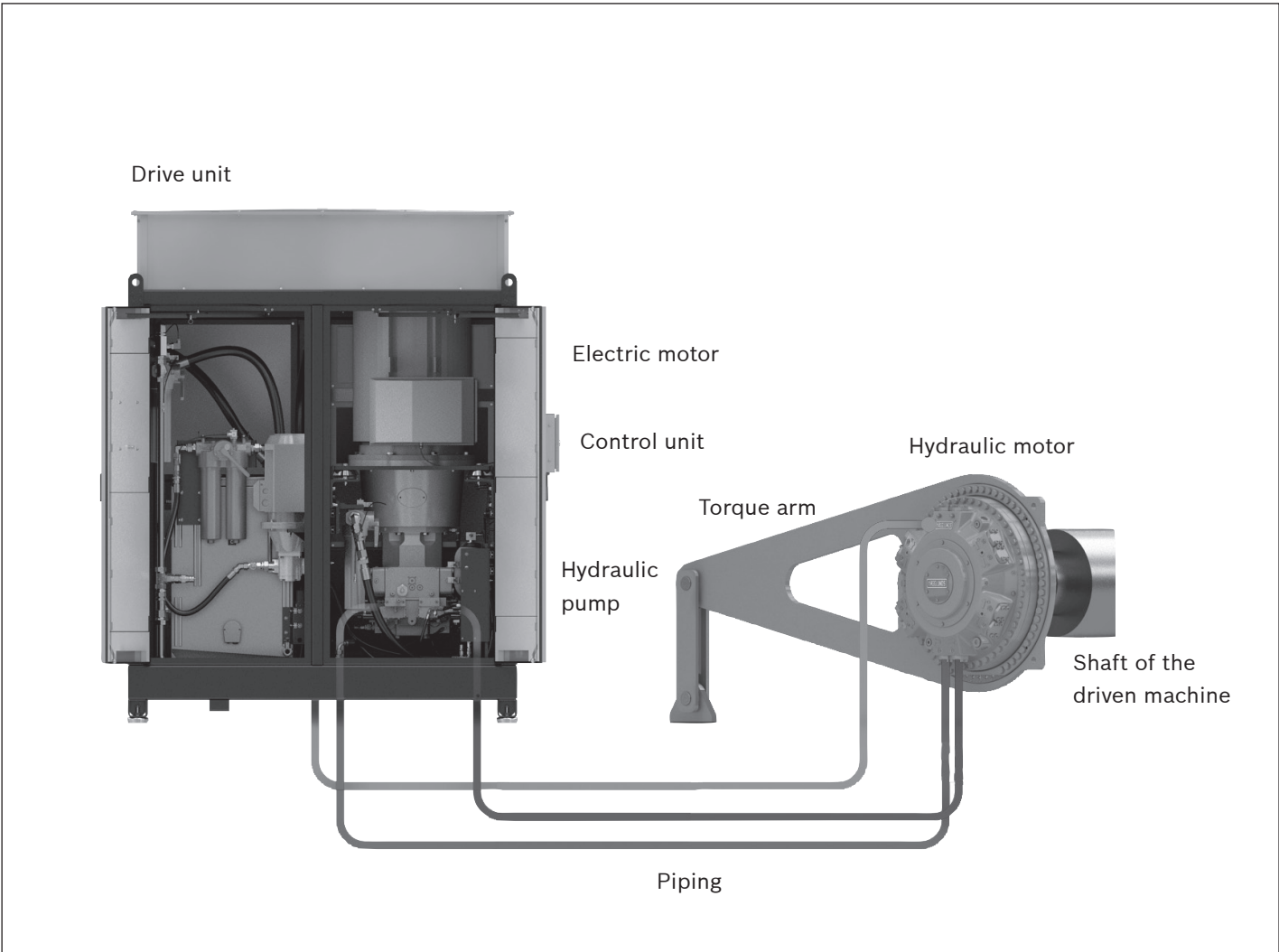
The hydraulic motor supplies the needed torque to the machine and the load sets the pressure level in the system. The motor rotates at the required speed, determined by the oil flow from a hydraulic swash plate pump in the drive unit. The motor is connected to the pump by means of piping and/or hoses in a closed-loop hydraulic system. The drive unit is constructed as a sound-insulated cabinet, with cooler and control system mounted on the outside for easy access.

At the hydraulic motor the oil is distributed through the valve plate to the pistons in the cylinder block, 50% of them with high pressure and 50% with charge pressure. The oil pressure forces the piston assemblies outwards radially against the cam ring. This produces a balanced and smooth rotation with extremely high torque that drives the machine. Because the speed of rotation is controlled by the flow of oil from the pump, it is possible to start the machine with full torque.

The rate and direction of the oil flow are steered by the angle of the pump swash plate, controlled via a signal from the control system. The hydraulic motor's speed is proportional to the swash plate angle. If the swash plate passes over-center, the flow is reversed and so is the direction of the hydraulic motor. Both the hydraulic motor and the pump have a very low moment of inertia, which makes it possible to change speed, stop or reverse direction quickly.

The pump is driven in turn by an electric motor, running efficiently at fixed speed. The electric motor is started in an unloaded, neutral condition to limit the load on the electrical power grid. After start, the system ramps up the flow to the required direction and flow rate.

A proportion of the return flow in the system is exchanged for oil conditioning by means of cooling and filtering. The filtration philosophy in a Hägglunds drive system is a clean tank, which means that all return and drain flow to tank is filtered. The health status in the hydraulic circuit is monitored by the control system, which sets the flow needs and is the communication link to the factory system.



Functional description Hägglunds CB motor

Bosch Rexroth's hydraulic industrial motor Hägglunds CB is of the radial piston type with a rotating cylinder block/hollow shaft and a stationary housing. The cylinder block is mounted in fixed roller bearings in the housing. An even number of pistons are radially located in bores inside the cylinder block, and the distributor directs the incoming and outgoing oil to and from the working pistons. Each piston is working against a cam roller.

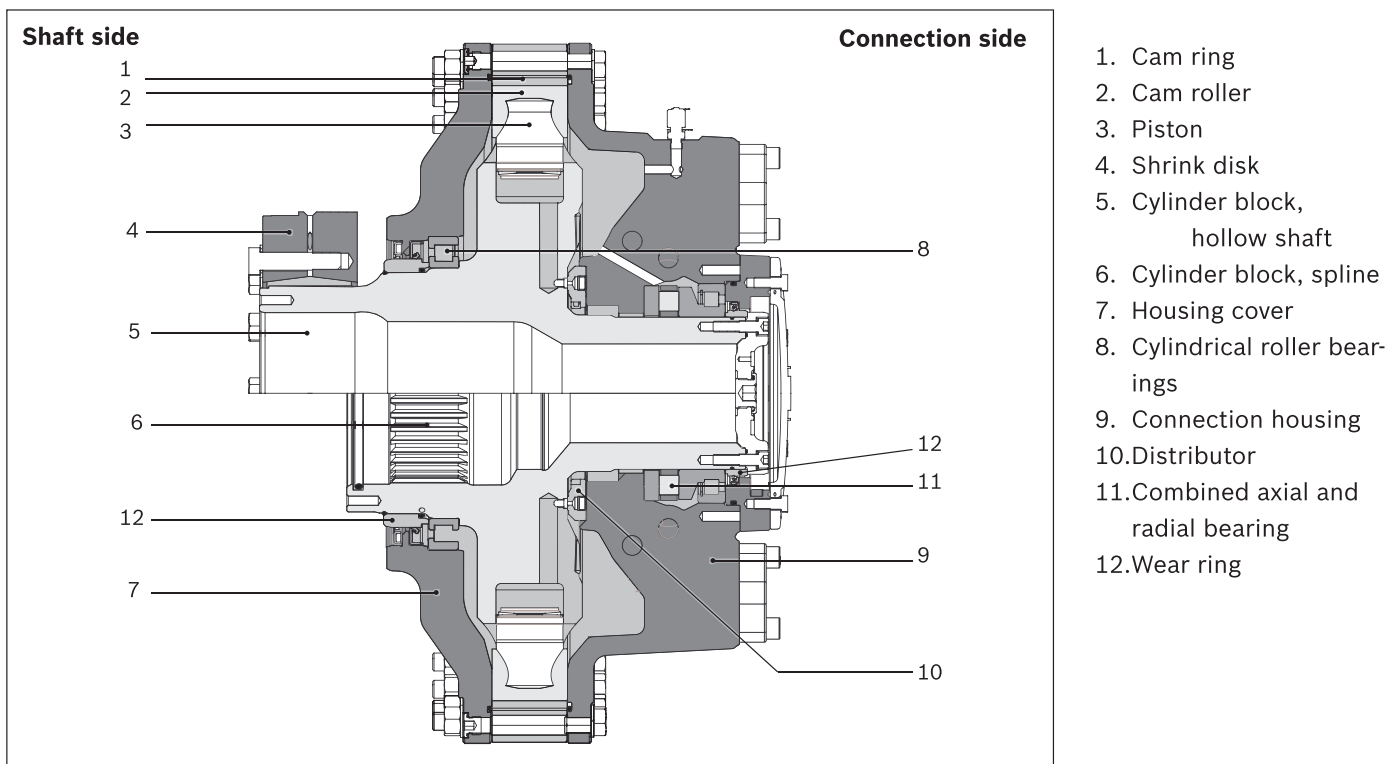
When the hydraulic pressure is acting on the pistons, the cam rollers are pushed against the slope on the cam ring that is rigidly connected to the housing, thereby producing a torque. The cam rollers transfer the reaction force to the pistons which are guided in the cylinder block. Rotation therefore occurs, and the torque available is proportional to the pressure in the system.

Oil main lines are connected to ports A and C in the connection housing and drain lines to one of the D-ports in the motor housing.

The motor is connected to the shaft of the driven machine through the hollow shaft or spline of the cylinder block.

Quality

To assure our quality we maintain a Quality Assurance System, certified to standard ISO 9001.



Configuration options

Options for Hägglunds CB

- ▶ Kit for harsh and marine environment
- ▶ Temperature sensor
The temperature sensor is mounted in the motor case and operates according to the hydraulic fluid temperature variation.
- ▶ Early warning kit (incl. magnetic plug)
By regularly inspecting the magnetic plug a malfunction of the hydraulic system can be detected and corrected. The magnetic plug can also be used for early detection of wear or spall damages in the motor.
- ▶ Marine environment (sealing and stainless steel wear ring)
- ▶ Submerged
 - Valid for CB 280 to CB 1120
 - Max depth 70 meters
- ▶ Marine painting
- ▶ Hydraulic shaft coupling
- ▶ Configuration for through hole
Through hole kit makes it possible to flush through the driven shaft or to draw electric cables through the motor.
- ▶ Coated motor
- ▶ Low noise
- ▶ A wide range of accessories for increased flexibility

Motor data

Table 1a: Metric motor data Hågglunds CB motor

Frame size	Nominal size	Specific torque	Displacement	Maximum torque ¹⁾	Maximum speed	Maximum operating pressure ²⁾	Maximum operating power ³⁾
		Nm/bar	cm ³ /rev	kNm	rpm	p bar	kW
CB 280	240	240	15100	79	68	350	530
	280	280	17600	92	58	350	530
CB 400	240	240	15100	79	125 ⁵⁾	350	970
	280	280	17600	92	105	350	950
	320	320	20100	110	94	350	970
	360	360	22600	120	82	350	960
	400	400	25100	130	75	350	970
	440	440	27600	131	65	320 ⁴⁾	820
	480	480	30200	129	62	290 ⁴⁾	660
	520	520	32700	130	57	270 ⁴⁾	670
	560	560	35200	129	53	250 ⁴⁾	630
	CB 560	440	440	27600	140	65	350
480		480	30200	160	62	350	970
520		520	32700	170	57	350	960
560		560	35200	180	53	350	970
CB 840	600	600	37700	200	45	350	880
	640	640	40200	210	41	350	850
	680	680	42700	220	40	350	890
	720	720	45200	240	37	350	870
	760	760	47800	250	34	350	840
	800	800	50300	260	34	350	890
	840	840	52800	280	32	350	870
	CB 1120	880	880	55300	290	34	350
920		920	57800	300	33	350	980
960		960	60300	315	32	350	990
1000		1000	62800	330	31	350	1000
1040		1040	65300	340	29	350	980
1080		1080	67900	355	28	350	980
1120		1120	70400	370	27	350	980

¹⁾ Calculated as: Metric= Ts • (350-15) • 0,98

²⁾ The motors are designed according to DNV-rules. Test pressure 420 bar. Peak pressure 420 bar maximum , allowed up to 10 000 times.

³⁾ Flushing of motor case is required. See section 4.10: *Flushing*

⁴⁾ **Note!** Max pressure <350 bar

⁵⁾ Viton seals are recommended for speeds above 110 rpm

Table 1b: US motor data Hägglunds CB motor

Frame size	Nominal size	Specific torque	Displacement	Maximum torque ¹⁾	Maximum speed	Maximum operating pressure ²⁾	Maximum operating power ³⁾
		lbf-ft/1000 psi	in ³ /rev	lbf-ft	rpm	p psi	hp
CB 280	240	12200	920	5700	68	5000	710
	280	14200	1070	67000	58	5000	710
CB 400	240	12200	920	57000	125 ⁵⁾	5000	1300
	280	14200	1070	67000	105	5000	1300
	320	16300	1230	76000	94	5000	1300
	360	18300	1380	86000	82	5000	1300
	400	20300	1530	95000	75	5000	1300
	440	22400	1690	97000	65	4600 ⁴⁾	1100
	480	24400	1840	95000	62	4200 ⁴⁾	890
	520	26400	1990	96000	57	3900 ⁴⁾	900
	560	28500	2150	95000	53	3600 ⁴⁾	840
CB 560	440	22400	1690	100000	65	5000	1300
	480	24400	1840	110000	62	5000	1300
	520	26400	1990	140000	67	5000	1300
	560	28500	2150	130000	53	5000	1300
CB 840	600	30500	2300	140000	45	5000	1200
	640	32500	2450	150000	41	5000	1100
	680	34600	2610	160000	40	5000	1200
	720	36600	2760	170000	37	5000	1200
	760	38700	2910	180000	34	5000	1100
	800	40700	3070	190000	34	5000	1200
	840	42700	3220	200000	32	5000	1200
CB 1120	880	44700	3370	210000	34	5000	1300
	920	46700	3520	220000	33	5000	1300
	960	48800	3680	230000	32	5000	1300
	1000	50800	3830	240000	31	5000	1300
	1040	52800	3980	250000	29	5000	1300
	1080	54900	4140	260000	28	5000	1300
	1120	56900	4290	270000	27	5000	1300

¹⁾ Calculated as: US= Ts • (5076-215) • 0,98

²⁾ The motors are designed according to DNV-rules. Test pressure 6000 psi. Peak pressure 6000 psi maximum , allowed up to 10 000 times.

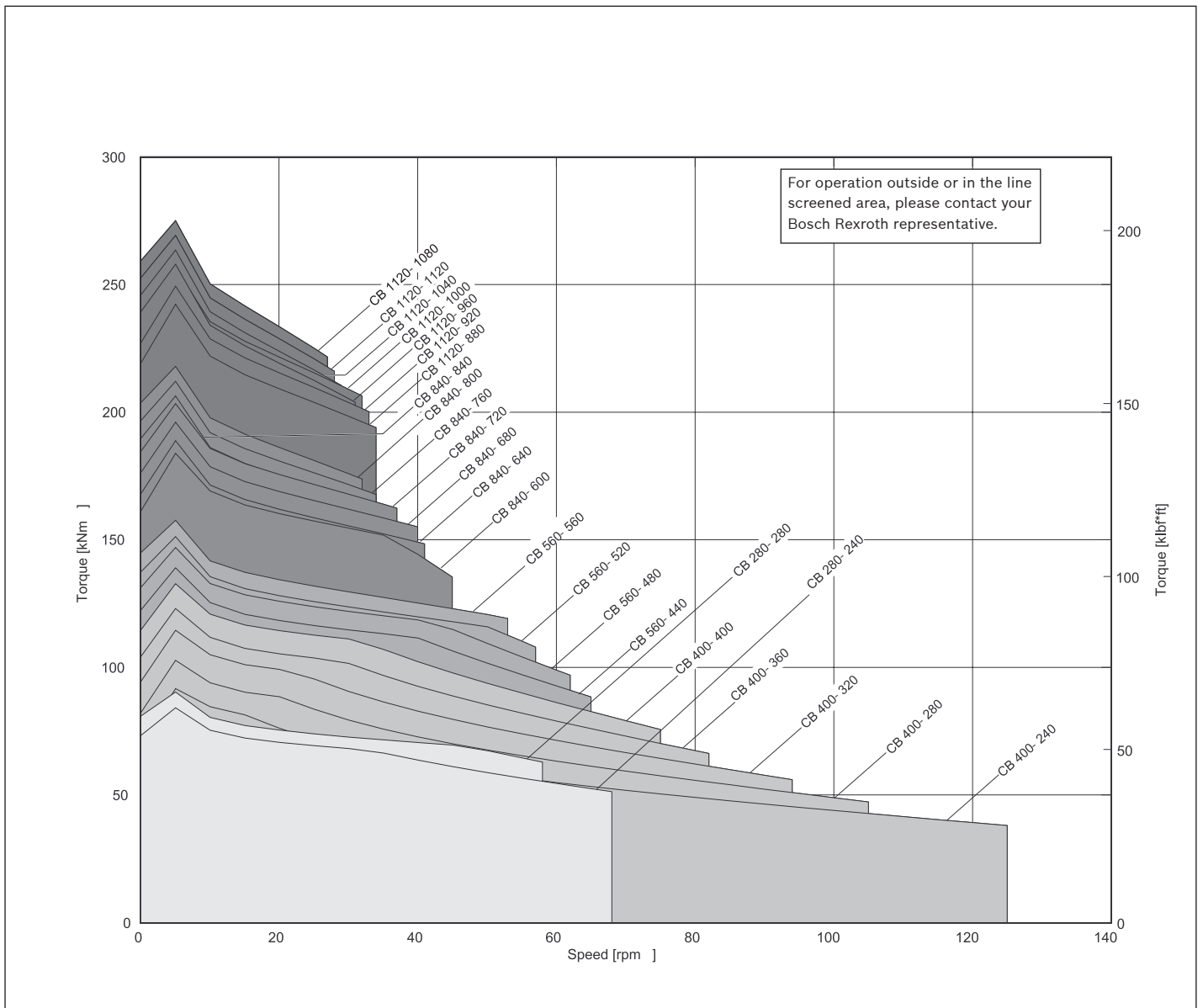
³⁾ Flushing of motor case is required. See section 4.10: *Flushing*

⁴⁾ **Note!** Max pressure <350 bar

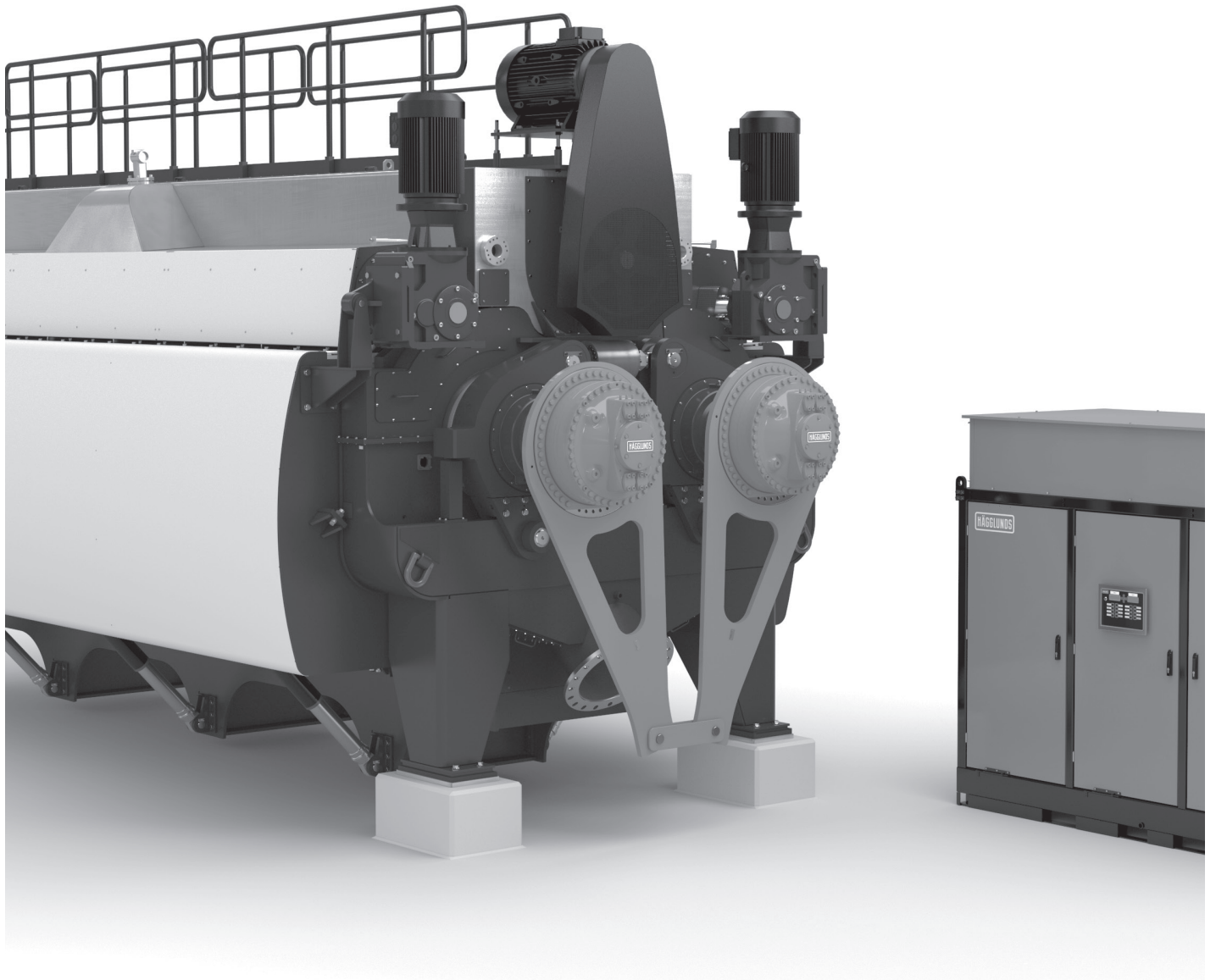
⁵⁾ Viton seals are recommended for speeds above 110 rpm

Quick selection diagram for Hägglunds CB motors

The diagram below represents the torque and speed, corresponding to a modified rating life L10aah= 40 000 h. Oil viscosity in motor case 40 cSt. Contamination level not exceeding ISO 4406:1999 18/16/13 (NAS 1638, class 7). The diagram is based on a charge pressure of 15 bar (218 psi).

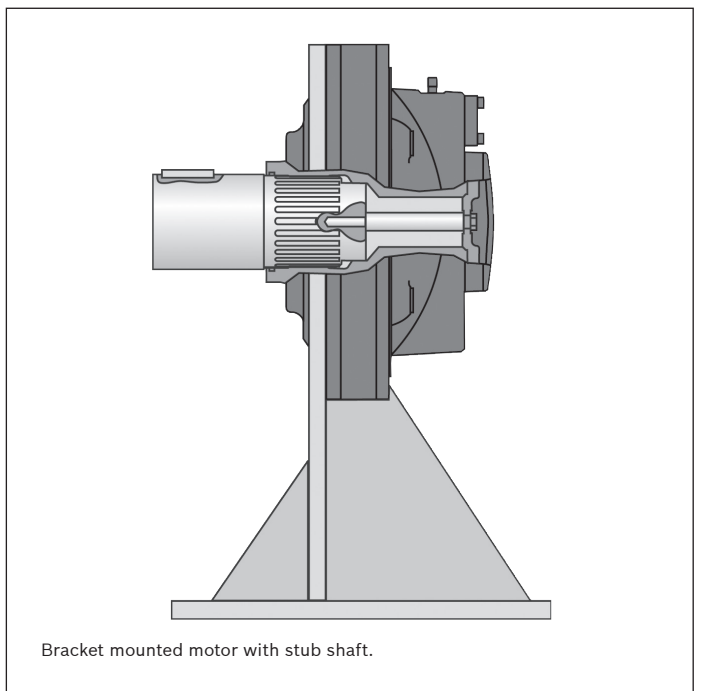
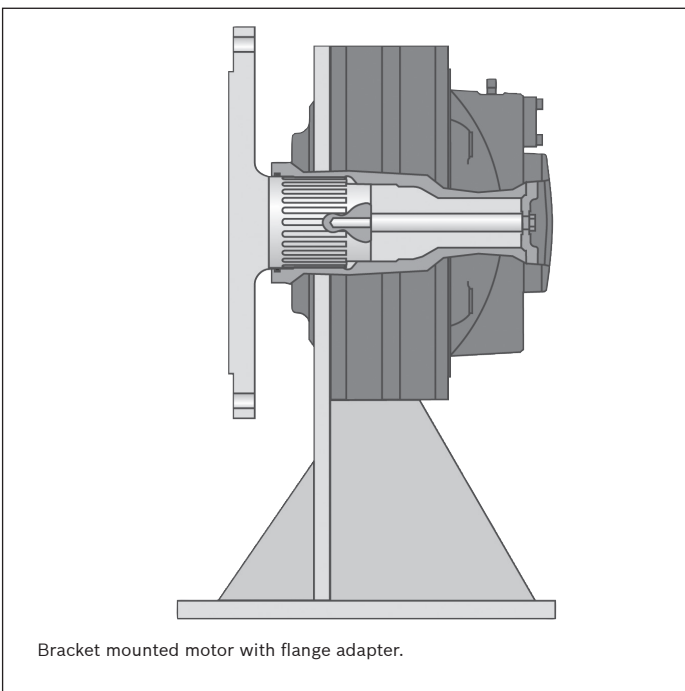
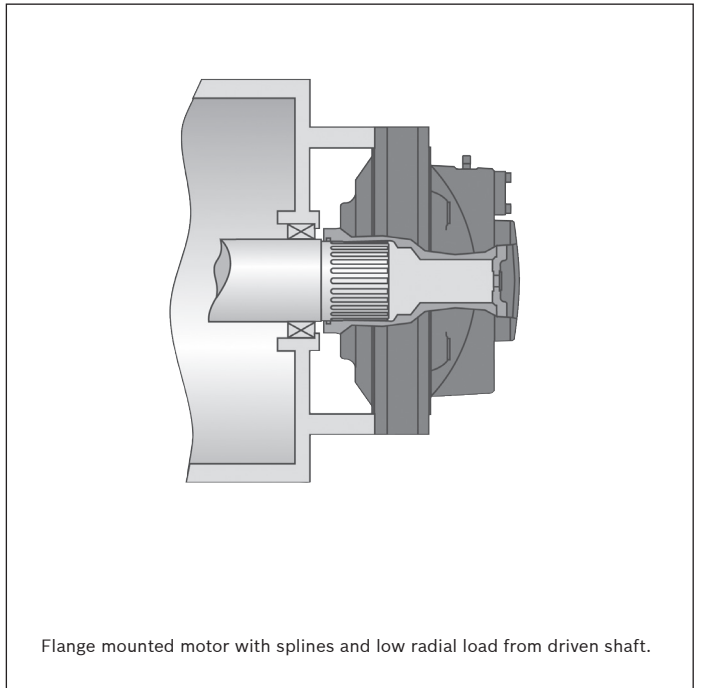
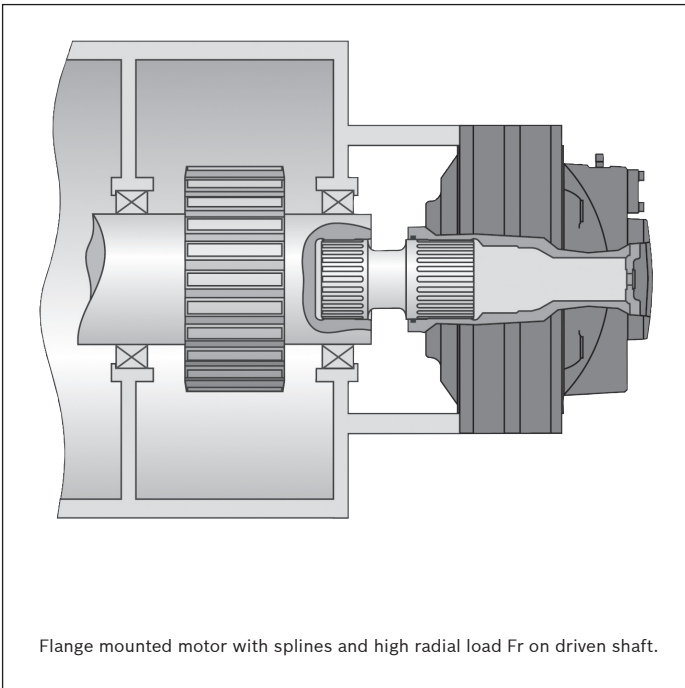


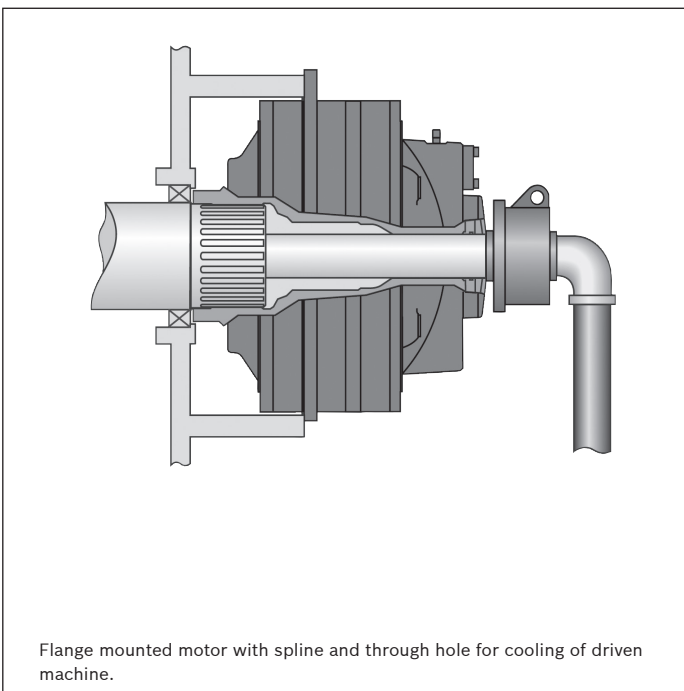
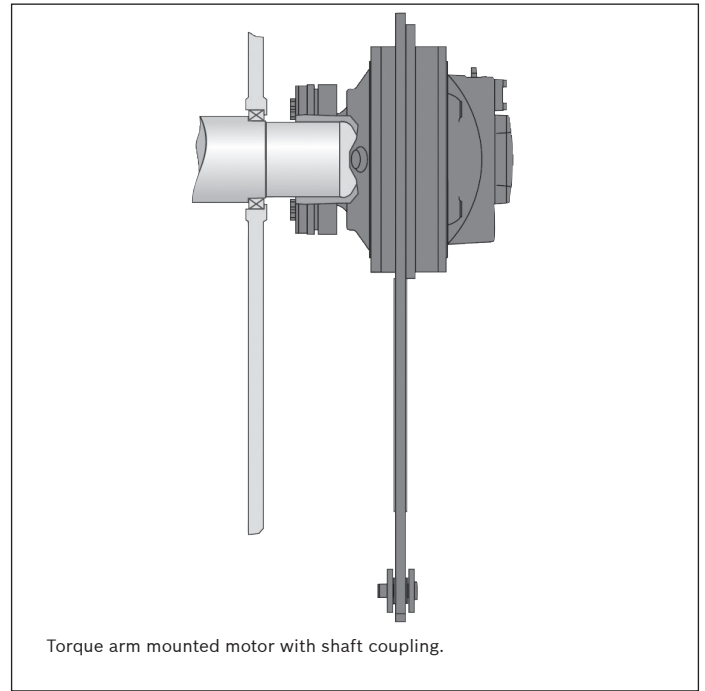
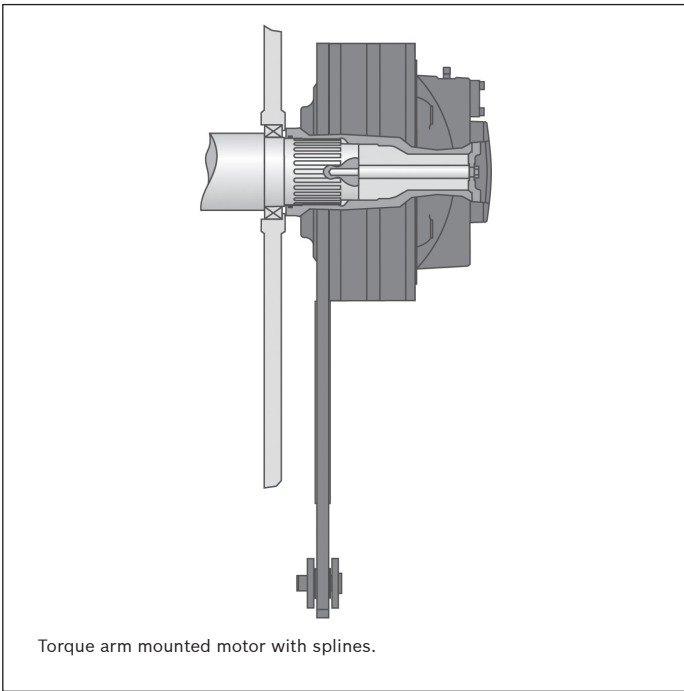
Quick selection diagram



Installation examples

The tough radial piston hydraulic motors are weight and space saving and offers versatile mounting possibilities





Accessories

A compact and efficient design can be achieved by means of our standard Hägglunds accessories program.

Hägglunds torque arms

Features:

- ▶ Easy mounting - no alignment problems
- ▶ Space saving - close mounting of motor to the driven machine
- ▶ Reduction of external force on driven shaft with double ended torque arm type DTC.

Single ended torque arms Hägglunds TCA

A shaft mounted gearless drive is achieved by utilizing the standard Hägglunds torque arm. Spline shaft for external load, or shaft for shaft coupling can be used.

Double ended torque arms Hägglunds DTCB

If the driven machine or the driven shaft can not stand the forces generated by a single ended torque arm arrangement. In such a case a double ended torque arm is the solution.

For more information see datasheet 15355.

Coupling adapter (only for CB 1120)

The coupling adapter includes shaft coupling and shaft adapter and is designed for a plain driven shaft. Mounting kit must be ordered separately.

Features:

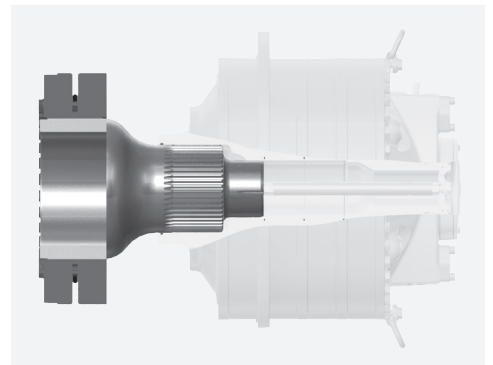
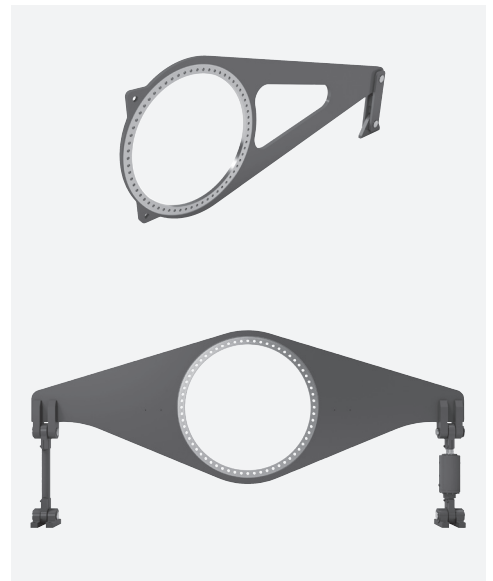
- ▶ Easy and fast mounting/dismounting of motor
- ▶ Oil lubrication give no wear of splines

BICA brake

The BICA brakes are designed for industrial applications together with Hägglunds CB motors. They are made for dry operation of the discs and are not allowed for hanging load applications. BICA brakes are designed to be mounted on motors CB 280 - CB 1120. They are designed to be used as parking brake only.

Features:

- ▶ Robust design, industrial HD design
- ▶ Possibility for on – off sensor
- ▶ Torque range between 48 – 160 kNm



Hägglunds speed sensors

Hägglunds SPDC

Speed sensing unit, Hägglunds SPDC, is a digital incremental encoder using magnetic sensing technology. The sensor generates two square wave signals with 90° phase shift for detection of speed and direction of rotation.

Features:

- ▶ Possibility with through hole
- ▶ Slim design fully integrated in motors.
- ▶ Non-contact, wear free sensing system
- ▶ Possibility to read directions of rotation from sensor
- ▶ 1856 pulses per revolution for good speed control possibility
- ▶ Protection class IP67

For more information see datasheet 15350.



Atex approved speed sensor Hägglunds SPDB2

Digital incremental hollow shaft sensor with torque arm mounting.

Features:

- ▶ ATEX/IECEX approved
- ▶ 1000 and 3600 pulses per revolution for good speed control possibility.
- ▶ Possibility to read directions of rotation from sensor
- ▶ Sensor is equipped with zero pulse
- ▶ Protection class IP65
- ▶ Optional cable set with junction box to simplify connection

For more information see datasheet 15352.



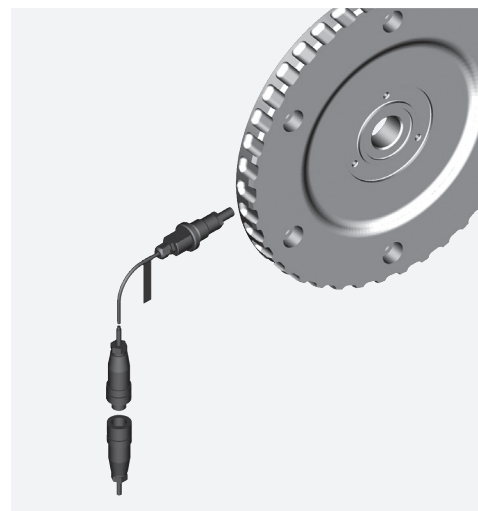
Inductive speed sensor Hägglunds SPDE with through hole kit

The Hägglunds SPDE speed sensor are available in two types, the standard type has a PNP output for direct driving of load or digital input and the ATEX/IECEX type (explosion proof) needs an isolation amplifier outside explosive area. The sensor is mainly intended for speed indication. Direction of rotation cannot be indicated.

Features:

- ▶ Non-contact, wear free system
- ▶ Robust design
- ▶ ATEX/IECEX -version available
- ▶ Through hole version available
- ▶ 40 pulses per revolution

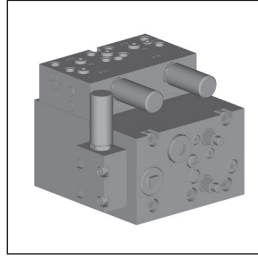
For more information see datasheet 15351.



Valves

Cross over valve Hägglunds COCB 700/1000

The cross over valve COCB is designed for use with Hägglunds CA, CB and CBM motors and provides cross line relief and cavitation protection.



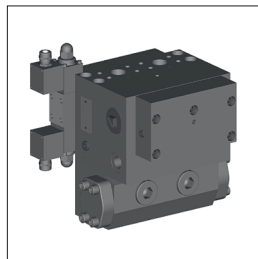
Features:

- ▶ Compact and robust design
- ▶ Mounted directly on Hägglunds motors
- ▶ Oil exchange system for closed loop (COCB 1000-3)
- ▶ Protects the motor from high pressure peaks
- ▶ Provides cavitation protection

For more information see datasheet 15376

Free circulation valve with free-wheeling Hägglunds VFCCA 1000

The free-circulation valve with freewheeling function is designed for use with Hägglunds CA, CB and CBM motors and provides a means of putting the motor safely into free circulation mode. The valve is also suitable for free-wheeling mode by disengaging the pistons and allowing the cylinder block to freely rotate on its bearings. The valve is normally mounted on the motor via an adapter.



Features:

- ▶ Compact and robust design
- ▶ Mounted directly on Hägglunds motors
- ▶ Free circulation function with minimal pressure drop
- ▶ Free circulation shift allowed up to 40 rpm
- ▶ Free-wheeling function
- ▶ Shifting from drive operation into free-wheeling allowed up to 10 rpm

For more information see datasheet 15381

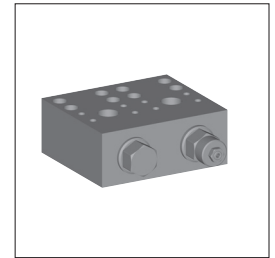
Counter balance valve Hägglunds VCBCA 480

The counter balance valve is designed for use with Hägglunds Compact motors CA and CB and provides a counter balance function on one or both motor lines

depending on the configuration. The valve can be mounted directly onto the motors

Features:

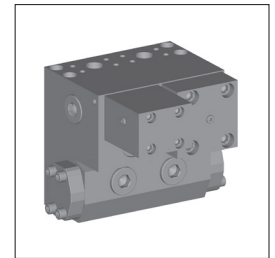
- ▶ Maximum flow 480 l/min
- ▶ Compact and robust design
- ▶ Mounted directly on Hägglunds motors
- ▶ Counter balance function with low pilot pressure
- ▶ Pilot pressure independent of load pressure



For more information see datasheet 15378

Counter balance valve Hägglunds VCBCA 1000

The counter balance valve is designed for use with Hägglunds CA, CB and CBM motors and provides a counter balance function on the motor high pressure line. The valve is normally mounted on an adapter which is included with the valve.



Features:

- ▶ Compact and robust design
- ▶ Mounted directly on Hägglunds motors
- ▶ Counter balance function with low pilot pressure
- ▶ Pilot pressure independent of load pressure

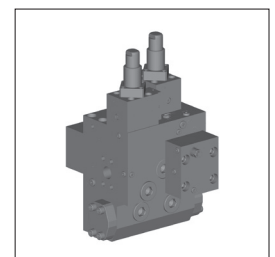
For more information see datasheet 15379

Four-way valve Hägglunds V4WCA 1000

The valve is designed for use with Hägglunds CA, CB and CBM motors and provides four way directional and flow control of the motor.

Features:

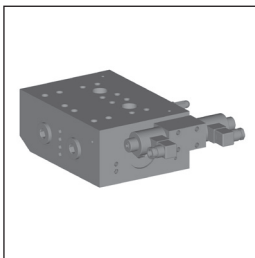
- ▶ Compact and robust design
- ▶ Mounted directly on Hägglunds motors
- ▶ Four way directional and flow control of motor
- ▶ Proportionally controlled flow of the motor
- ▶ Counter balance function on motor pressure line



For more information see datasheet 15382

Free-wheeling valve Häggglunds VFWCB 600

All Häggglunds motors in the compact series can be operated in freewheeling mode by retracting the pistons and allowing the cylinder block to freely rotate on its bearings. The valve is designed for use with Compact motors CA, CB and CBM and provides free-wheeling of the motor by means of disconnecting the motor from the main lines and connecting both motor ports to T which has to be drained to tank



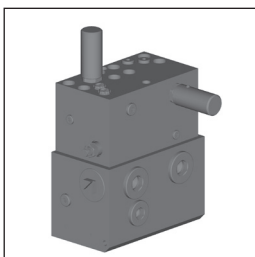
Features:

- ▶ Compact and robust design
- ▶ Multifunctional
- ▶ Mounted directly on Häggglunds motors
- ▶ Detent function on pilot valve
- ▶ Possible for remote control

For more information see datasheet 15380

Constant tension valve Häggglunds CTCA 1000

The constant tension valve CTCA is designed for use with Häggglunds CA, CB, and CBM motors.



Features:

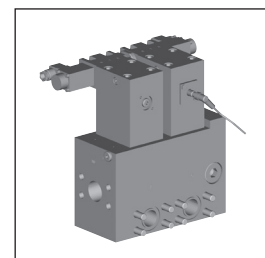
- ▶ Compact and robust design
- ▶ Mounted directly on Häggglunds motors
- ▶ Possible for remote control of constant tension pressure
- ▶ Multi-functional
- ▶ Constant tension function via high performance cartridge
- ▶ Dynamic braking with hot oil exchange
- ▶ Free circulation function with minimal pressure drop
- ▶ Provided with an anti-cavitation check valve

Hydraulic Quick stop valve Häggglunds VQCB 800

The hydraulic quick stop valve VQCB is designed to stop a roll mill rolls without stopping the electric motor and without any need of a mechanical brake. The stop is done by blocking the oil flow from the Häggglunds hydraulic motor.

Features:

- ▶ Compact and robust design
- ▶ Mounted directly on Häggglunds motors
- ▶ Fast response time



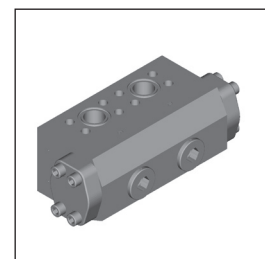
For more information see datasheet 15375

Valve adapters Häggglunds VA 1000

A range of valve adapters are available as accessories to the range of Häggglunds valves and motors.

Features:

- ▶ Compact and robust design
- ▶ Possibility to combine the valves and functions with each other
- ▶ Mounted directly on Häggglunds motors



For more information see datasheet 15383

Technical data

Quantity	Symbol	Metric	US
Power	P	= kW	hp
Output torque	T	= Nm	lbf-ft
Specific torque	T _s	= Nm/bar	lbf-ft/1000 psi
Rotational speed	n	= rpm	rpm
Required pressure	p	= bar	psi
Pressure loss	Δp	= bar	psi
Charge pressure	p _c	= bar	psi
Flow rate required	q	= l/min	gpm
Total volumetric loss	q _l	= l/min	gpm
Displacement	V _i	= cm ³ /rev	in ³ /rev
Mechanical efficiency	η _m	= 0.98*	

*Not valid for starting efficiency

Definitions

Rated speed¹⁾

Rated speed is the highest allowed speed for a charge pressure of 12 bar (174 psi) above case pressure. When a closed loop system is used, a minimum of 15% of oil is to be exchanged in the main loop.

Max speed

Maximum speed is the maximum allowed speed. Special considerations are necessary regarding charge pressure, cooling and choice of hydraulic system for speeds rated above.

¹⁾ Operating above rated conditions requires approval from Bosch Rexroth.

Accepted conditions for standard type of motor:

1. Oil viscosity 15 - 40 - 10000 cSt. See page 21.
2. Temperature -35 °C to +70 °C (-31 °F to +158 °F).
3. Running case pressure 0-3 bar (0-43,5 psi) Max case pressure 8 bar (116 psi)
4. Charge pressure (see diagram).
5. Volumetric losses (see diagram).

Sound

Background noise

The background noise can not normally be influenced but is usually known or easy to measure.

Pump unit:

The pump unit is a known noise level.

Pipe noise:

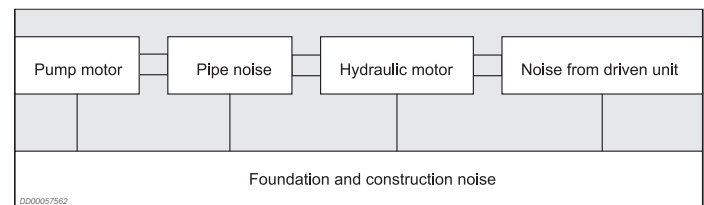
The pipe noise is probably the source of the majority of mistakes in installations: all pipe clamps should be of vibration insulating type secured to concrete ceiling, wall or floor. Securing to non-rigid metal structures or structures is likely to give resonance and should be avoided.

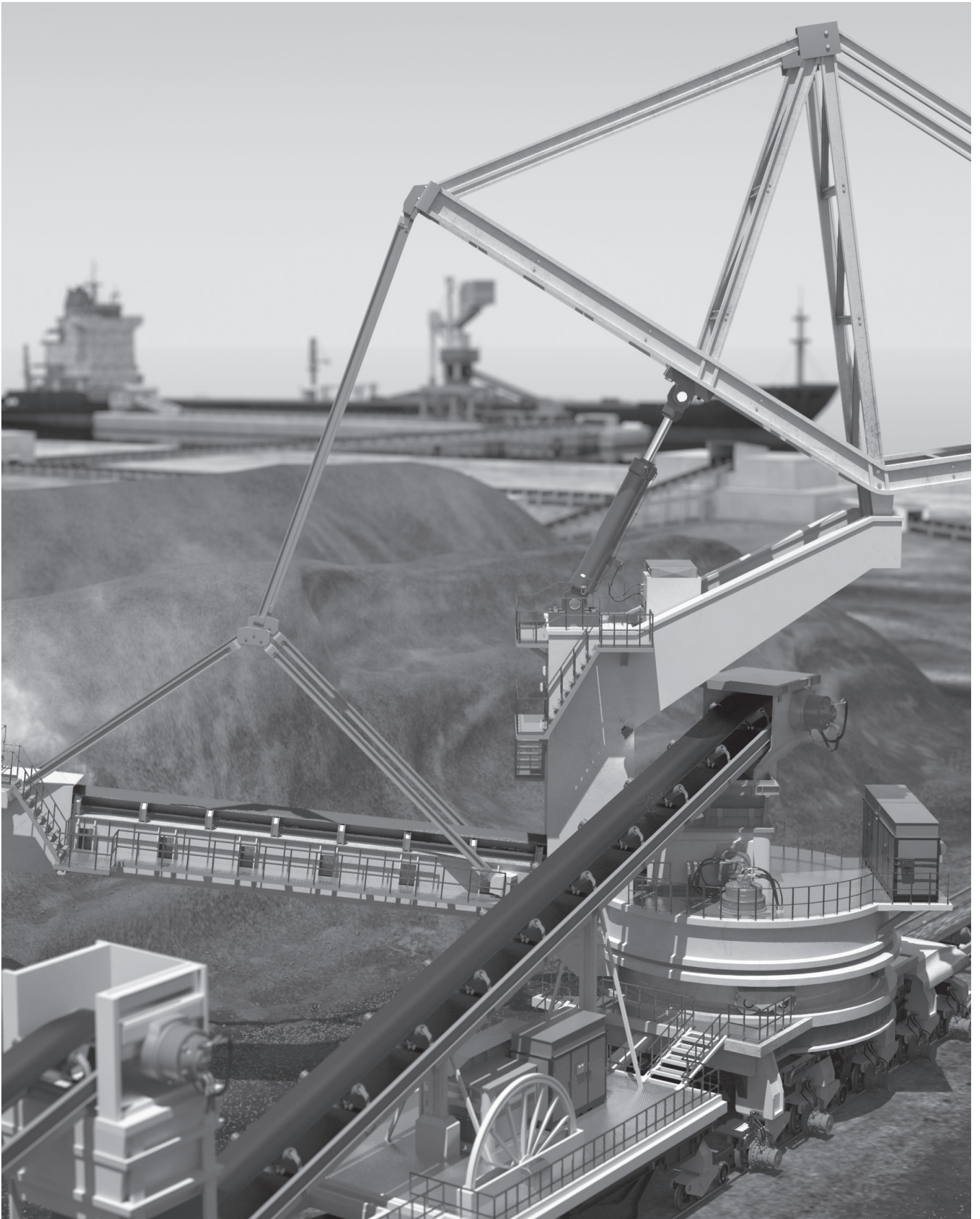
Hydraulic motor:

The hydraulic motor is a known noise level. Tables of sound data are according to subsection in the product-specific data sheet.

Driven unit:

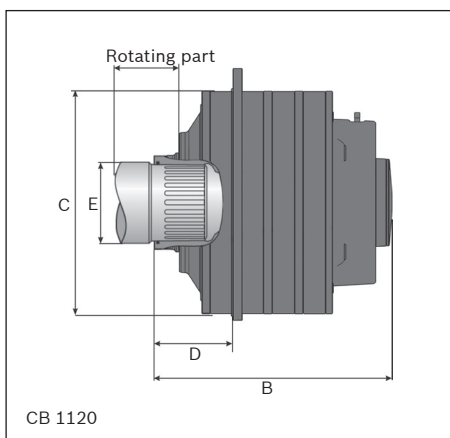
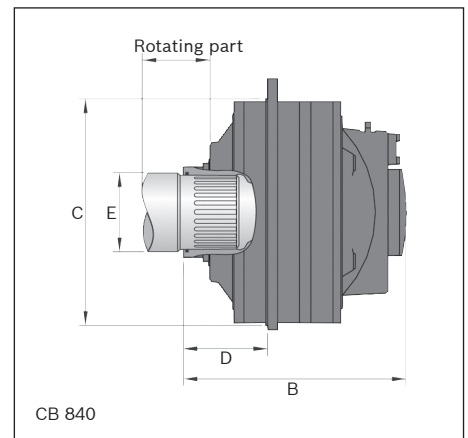
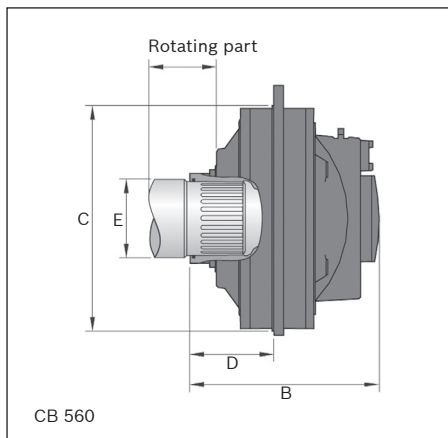
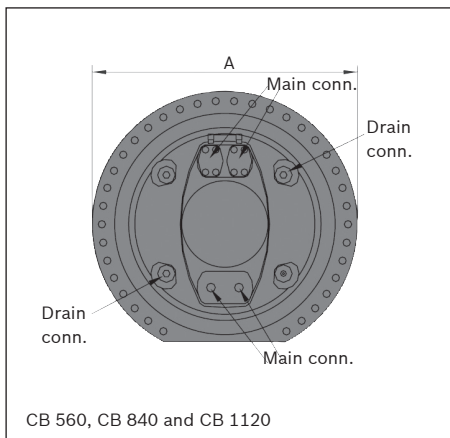
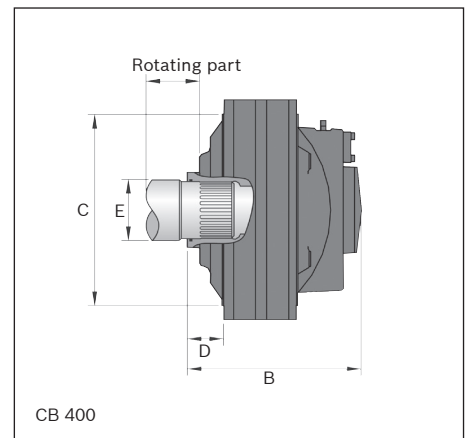
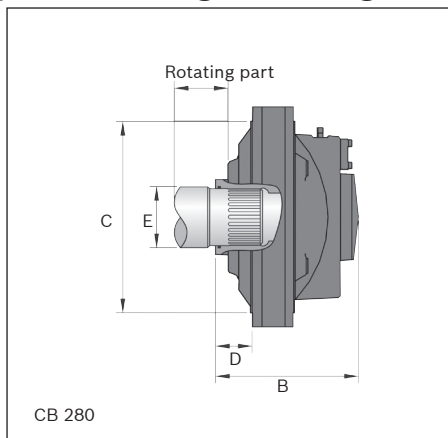
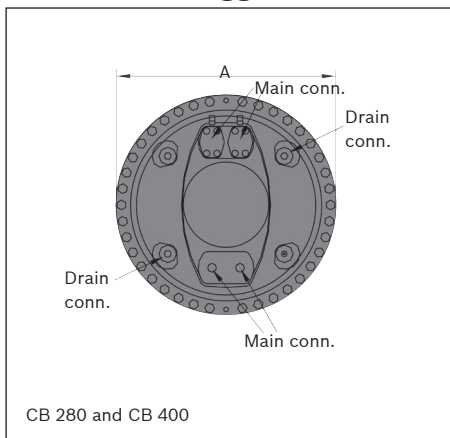
The driven unit is an unknown sound source (for us) but can through certain information probably be obtained from the supplier. When securing the torque arm of a hydraulic motor to the foundation or casing of a driven machine, it is highly important to study the construction of the foundation or casing. This may well be the most important factor to consider, since many structures may give rise to resonance, resulting in severe noise problems.





Dimensions

Dimensions Hägglunds CB with splines for flange mounting.

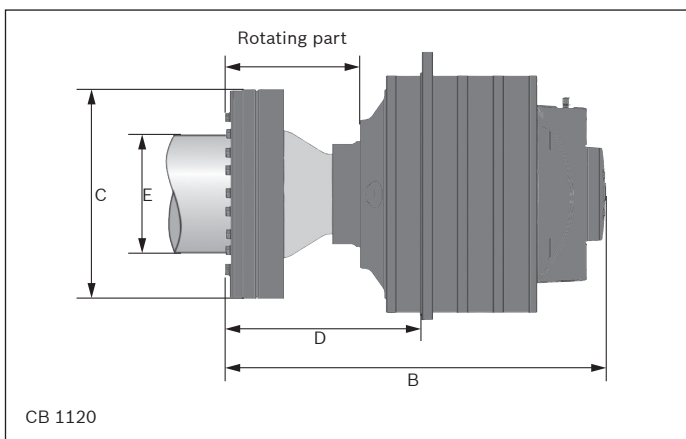
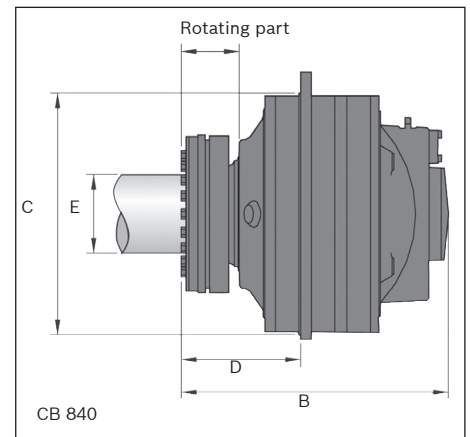
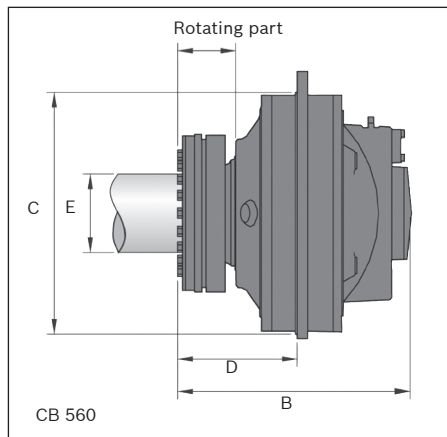
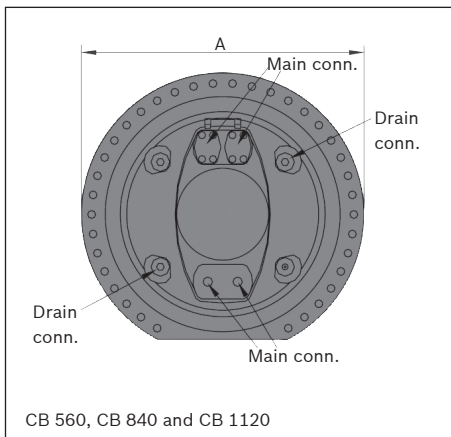
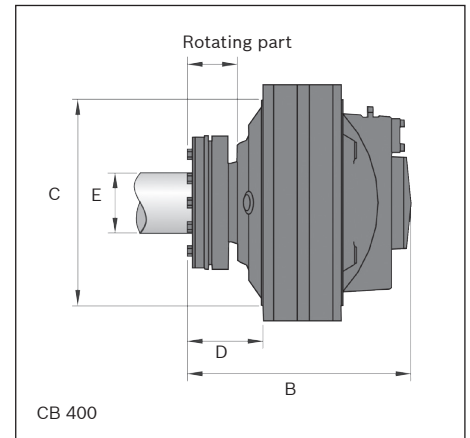
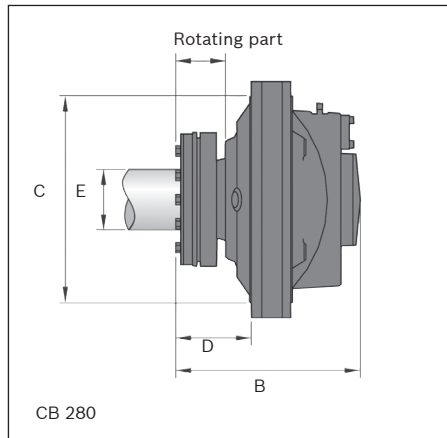
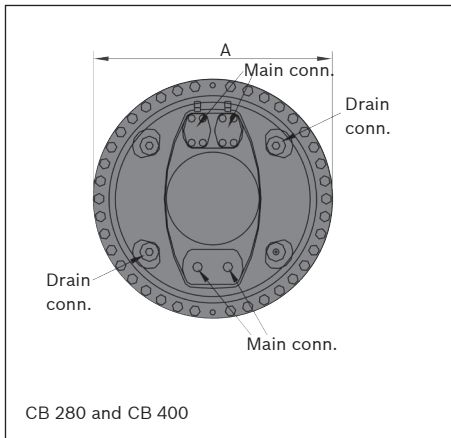


Motor type	A (mm)	B (mm)	C (mm)	D (mm)	E Splines diameter (mm)	Weight (kg)	Main conn.	Drain conn.
CB 280	782	494	680	130	N 200x5x30x38x9H	705	SAE 1 1/4" *)	G 1 1/4"
CB 400	782	612	680	189	N 200x5x30x38x9H	1060	SAE 1 1/2" *)	
CB 560	940	662	800	298	N 260x5x30x50x9H	1115		
CB 840	940	780	800	298	N 260x5x30x50x9H	1445		
CB 1120	940	897	800	297	N 260x5x30x50x9H	1770		

*) Both SAE 1 1/4" and SAE 1 1/2" can be used.

Note: For more detailed information about dimensions, see data sheet Hägglunds CB (15302)

Dimensions Hägglunds CB with hollow shaft, shaft coupling



Note: For more detailed information about dimensions, see data sheet Hägglunds CB (15302)

Note. Shaft adapter is only available as accessory

Motor type	A (mm)	B (mm)	C (mm)	D (mm)	E dw (mm)	Weight (kg)	Main. conn.	Drain conn.
CB 280	782	612	680	241	180	800	SAE 1 1/4" *)	G 1 1/4"
CB 400	782	740	680	251	200	1160		
CB 560	940	767	800	396	260	1290	SAE 1 1/2" *)	
CB 840	940	885	800	396	260	1620		
CB 1120	940	1257	800	650	340	2340		

*) Both SAE 1 1/4" and SAE 1 1/2" can be used.

Hägglunds direct drive systems for explosion-risk areas

When operating technical equipment in potentially volatile areas, special precautions must be taken to protect both people and machines. Hägglunds direct drive systems from Bosch Rexroth are a versatile way to meet explosion protection requirements.

Solutions for safe productivity

Where gas, steam, solvent mist or dust pose an explosion hazard, Hägglunds direct drive systems provide vital protection – not only of equipment, but also of life and limb. Yet these rugged drives from Bosch Rexroth do more than comply with legislated standards. Their ultra-reliable component performance ensures productivity throughout the machine life cycle.

Hägglunds direct drive systems comprise a wide range of components and solutions that meet national and international directives for explosion protection. In particular, they are approved for use in explosive areas according to the ATEX Directive 94/9/EC.

A Hägglunds direct drive system consists of a Hägglunds hydraulic motor and a Hägglunds hydraulic drive unit. Because the main components of the drive system can be separated and have individual approvals, there is high flexibility in the design and placement of the installation.

Explosion protection for your industry

Each industry has its own special requirements, both for safety and performance. Bosch Rexroth's global expertise is coordinated accordingly, so that we can offer you tailor-made solutions for your specific applications.

Explosive atmospheres involving zone 1 (2G) and zone 2 (3G) gas/air mixtures are particular areas of focus. However, Bosch Rexroth can offer proven performance and reliable explosion protection in a much wider range of applications all over the world.

Component approvals

Hägglunds hydraulic motors of the CA, CB, CBP and CBm series are possible to use in explosive areas. The hydraulic motors are limited to the gas (zone 1 and temperature class T4) and dust (zone 21), plus mining area M2. This approval is also valid for some of the hydraulic motor accessories, including the non-electric valves and torque arms. Other motor accessories, such as brakes and speed encoders, have approvals of their own.

The Hägglunds DUE drive unit has options for usage in explosive areas. The standard configuration is limited to the gas area of zone 2 and temperature class T4. Extended classification within the gas area is possible on request, as is explosion-proof classification for geographical regions outside Europe. The drive unit's modular assembly provides high flexibility for adapting to customer function requirements, despite the limitations set by the ATEX directive. The Hägglunds standard control system can be used if located outside the explosive zone, as long as the interface signals are handled via energy-limiting barriers. To communicate with the master PLC, RIO (Remote Input Output) via fieldbus is available upon request.

Sample industries and applications

Hägglungs direct drive systems from Bosch Rexroth can be tailored and installed to meet ATEX requirements in industries and applications such as:

Chemical production

- ▶ Chemical reactors
- ▶ Kneader systems
- ▶ Extruder systems
- ▶ Agitators
- ▶ Gear pumps

Mining

- ▶ Feeder units
- ▶ Bucket wheel excavators
- ▶ Clamping systems for conveyor belts

Drilling

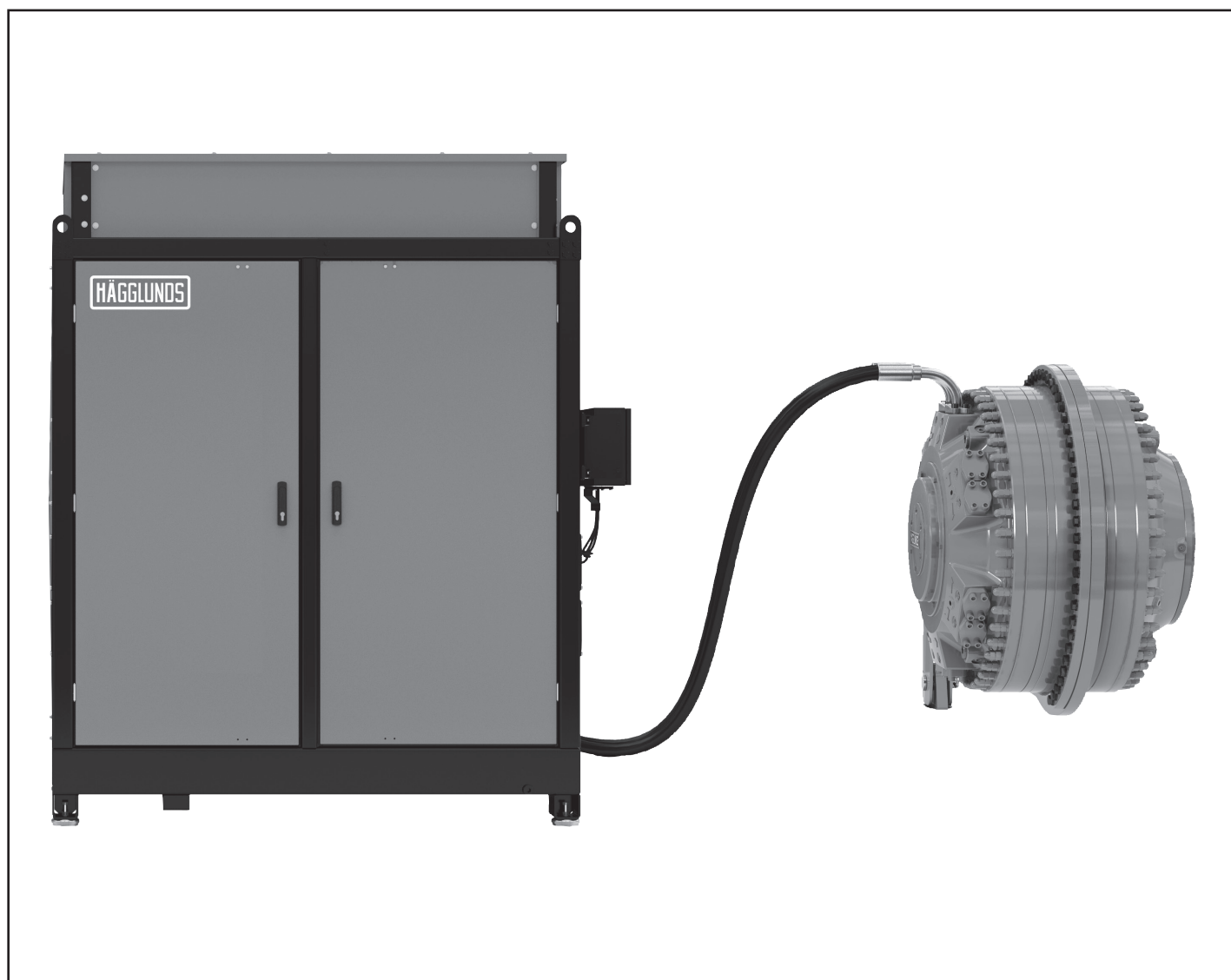
- ▶ Land-based drilling platforms
- ▶ Flushing pumps (drilling fluid)
- ▶ Lifting equipment for drilling rigs

Offshore

- ▶ Drilling platforms
- ▶ Oil refinery ships

Oil production

- ▶ Crude oil pumps



Ordering codes

In order to identify Hägglunds equipment exactly, the following ordering code is used. These ordering codes should be stated in full in all correspondence e.g. when ordering spare parts.

Example Hägglunds CB motor:

CB	0400	0280	S	A	O	N	O	C	00	00
01	03	04	05	06	07	08	09	10	11*	12*

01	Motor series	
	Compact	CB

03	Frame size	
	CB 280	0280
	CB 400	0400
	CB 560	0560
	CB 840	0840
	CB 1120	1120

04	Nominal size , specific torque, Nm/bar (see section 4.3)									
	Frame size 280						0240	0280		
							•	•		
	Frame size 400	0240	0280	0320	0360	0400	0440	0480	0520	0560
		•	•	•	•	•	•	•	•	•
	Frame size 560						0440	0480	0520	0560
							•	•	•	•
	Frame size 840			0600	0640	0680	0720	0760	0800	0840
				•	•	•	•	•	•	•
	Frame size 1120			0880	0920	0960	1000	1040	1080	1120
			•	•	•	•	•	•	•	

05	Mounting alternatives, shaft		
		C Shrink disk coupling	S Splines
	Frame size 280	•	•
	Frame size 400	•	•
	Frame size 560	•	•
	Frame size 840	•	•
	Frame size 1120	–	•

06	Motor prepared for tandem kit	
	Motor not prepared for TA kit	A

07	Displacement shift		
	Motor not prepared for displacement shift		0
08	Type of seal (see section 5)		
	NBR (Nitrile)	●	N
	FPM (Viton)	●	V
09	Through hole kit (see section 7)		
	No	●	0
	Yes	●	H
10	Increased robustness (see section 6)		
	No	●	0
	Yes	●	C
11	Modification *)		
			00-99
12	Design		
	Standard		00
	Special index *)		01-99

● = Available - Not available

*) To be filled in by Bosch Rexroth DC-HD/ENG

Hägglunds Original Service

Experts in drive system service, worldwide and close by



Hägglunds Original Service from Bosch Rexroth is the only true choice for service of your Hägglunds drive system. Ever since Hägglunds Drives became part of Bosch Rexroth, Rexroth has been the source for Hägglunds service, Hägglunds spare parts and Hägglunds drive system repairs. Only at Bosch Rexroth will you find the knowledge and insights that come from a half-century of servicing Hägglunds drive systems.

Why choose Hägglunds Original Service?

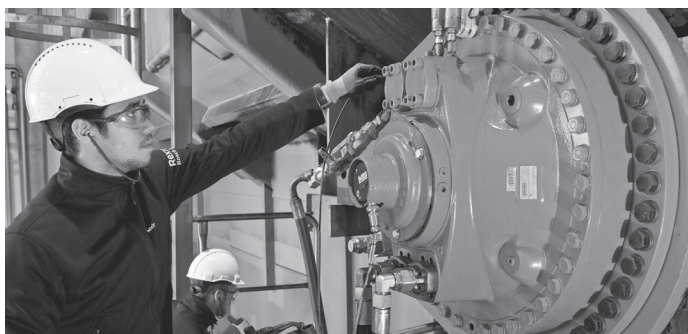
High-performance drive systems need high-quality service. Bosch Rexroth is home to certified Hägglunds service specialists, whose expert training is specific to Hägglunds drive systems. Not only do they service Hägglunds motors, they take a complete drive system approach to securing your uptime.

Hägglunds service experts are supported by dedicated workshops with specialized tools and the latest technology. Everything needed to service, repair, modernize or upgrade

Hägglunds drive systems is at their fingertips, including genuine Hägglunds spare parts direct from the factory.

Serving you globally and locally

As a truly global company, Bosch Rexroth can maximize uptime and ensure drive system performance anywhere in the world. Hägglunds Original Service is available locally wherever you are, with everything from commissioning and repairs to preventive maintenance, field service and beyond.



A full range of services for your Häggglunds drive system

As the source of Häggglunds drive systems, only Bosch Rexroth can bring you the full range of Häggglunds service options, based on the latest knowledge and technology.

Häggglunds field service

From inspections to preventive maintenance, Rexroth field service engineers are ready to meet your needs on site – wherever you happen to be. Our local Häggglunds service specialists have a complete understanding of your Häggglunds drive system, as well as your situation. With their unique training and equipment, they resolve your drive issues quickly and completely.

Examples of our field service include **start-up support, condition-based maintenance, fitness checks and emergency support.**

Häggglunds drive repairs

The rugged design and leading-edge technology of Häggglunds products are the result of world-class workmanship. That same workmanship is found in the unique tools and processes used by Rexroth experts to repair Häggglunds motors and drive systems. Our skilled Häggglunds service specialists are factory-certified to repair Häggglunds products, which gives you solid assurance that the work will be done right.

Our repair offering includes **fixed-price repairs, preferred repair lead times, reman exchange, product upgrades and more.**

Häggglunds spare parts

Only genuine Häggglunds spare parts deliver the same world-class performance as the Häggglunds drive systems you depend on. Our spare parts program, which can be combined with discounts and extended warranty options, gets Häggglunds parts to you quickly and reliably. Strategically located parts inventories, found at Rexroth service centers worldwide, ensure it.

Beyond Häggglunds parts themselves, we can offer **inventory management, dedicated spares and kits, and stocking of emergency units.**

Extended Häggglunds services

Rexroth can also provide a wide range of other services related to the Häggglunds drives and drive systems, incl:

- **Remote technical support**

You can turn to our Häggglunds experts for support by phone, e-mail, etc. Support time can be arranged by the hour or incorporated into a Service Agreement.

- **Modernization**

After a discussion of your needs, we can propose ways to upgrade your Häggglunds drive equipment and application, for example to reduce energy consumption or increase power density.

- **Customer training**

We can provide you with customized training packages, focused on maintaining your Häggglunds drive and getting maximum performance from your system.

Bosch Rexroth AB

SE-895 80 Mellansel, Sweden

Phone: +46 (0)660-870 00

documentation.mll@boschrexroth.se

www.boschrexroth.com/hagglunds

Your local contact person can be found at:

www.boschrexroth.com/contact

