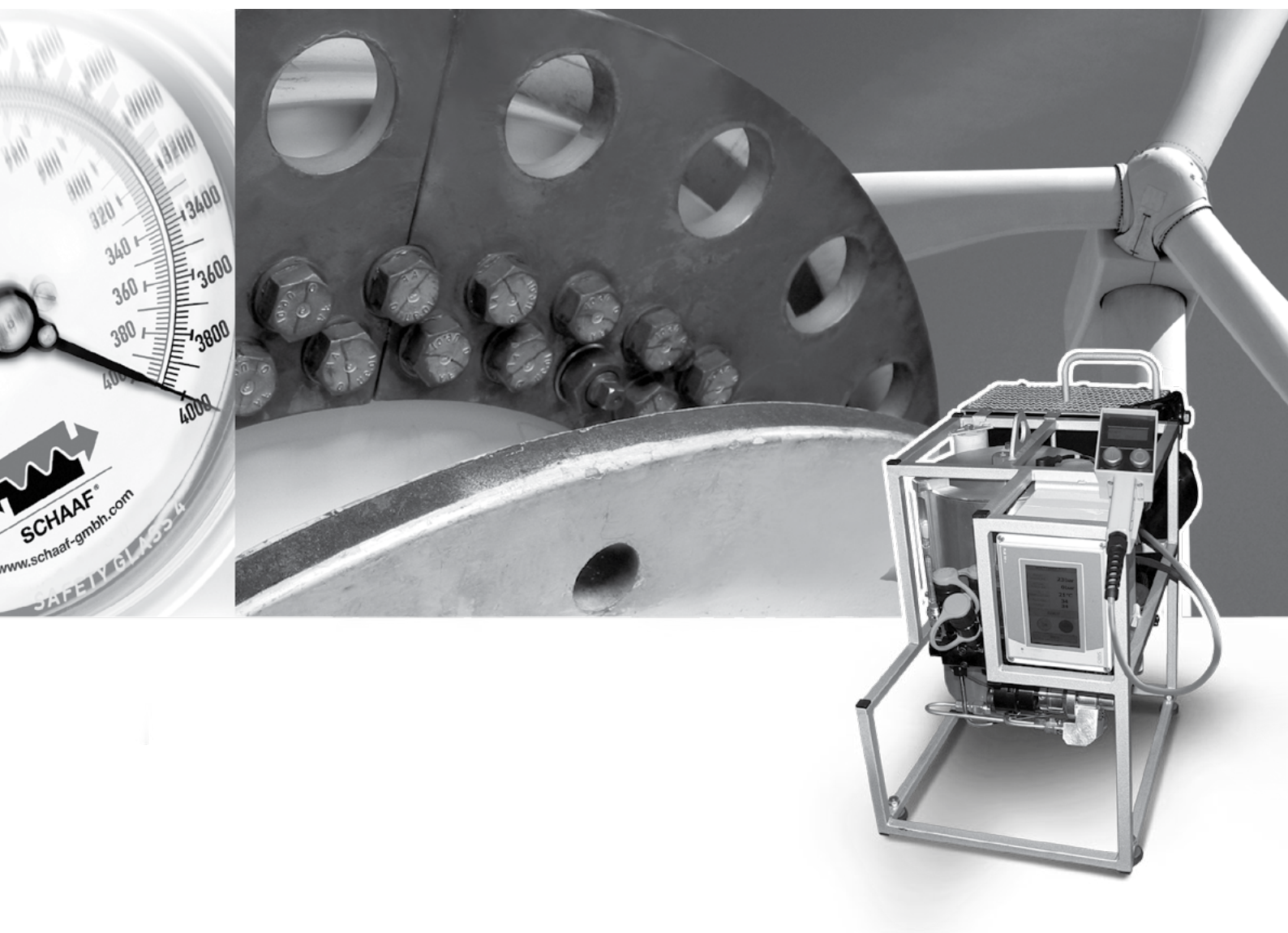


HDE 4000-D

**Electrohydraulic high-pressure unit
without pressure intensifier in mobile design**



HDE 4000-D / DM –
4000 bar direct power
in smallest space.



Electrohydraulic High-pressure unit HDE 4000-D

Required type code

Please only check one value per box.

Max. pump pressure (pmax)

100	1000 bar / 100 MPa (14.500psi)
160	1600 bar / 160 MPa (23.200psi)
250	2500 bar / 250 MPa (36.250psi)
300	3000 bar / 300 MPa (43.500psi)
400	4000 bar / 400 MPa (58.000psi)
---	Specify different pressures in bar

Output ratio High-Pressure Pump

075	Output ca. 0.03 – 0.3 Litres/min. (pmax 4000 bar)
100	Output ca. 0.10 – 0.5 Litres/min. (pmax 4000 bar)
125	Output ca. 0.15 – 0.7 Litres/min. (pmax 4000 bar)
150	Output ca. 0.18 – 0.8 Litres/min. (pmax 4000 bar)
185	Output ca. 0.33 – 0.9 Litres/min. (pmax 3000 bar)

Motor size

115	Drive motor 1.5 kW, 1 phase 230V 50Hz (Standard design)
322	Drive motor 2.2 kW, 3 phase 400V 50Hz
330	Drive motor 3.0 kW, 3 phase 400V 50Hz

Oil tank size

01	Filling and effective capacities: ca. 6 / 1 Litres
04	Filling and effective capacities: ca. 10 / 4 Litres
10	Filling and effective capacities: ca. 16 / 10 Litres
XX	Special oil tank according to customer's specification

High-Pressure connections

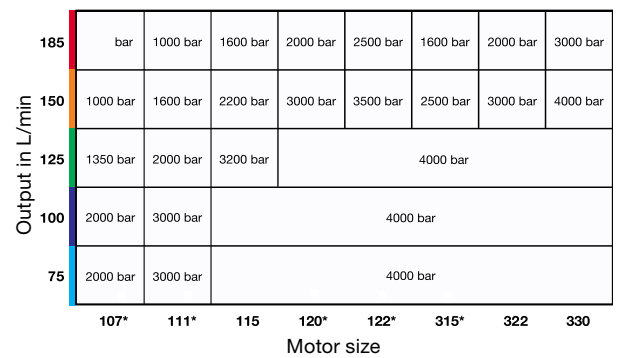
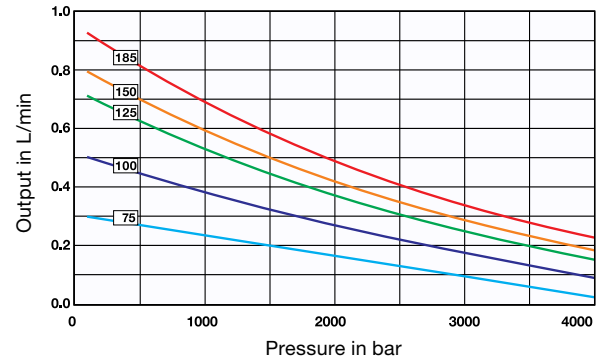
01X	1 High-Pressure connection
02X	2 High-Pressure connections
04X	4 High-Pressure connection
VRX	Supply / return distributor
XXX	Special manifold according to customer's specification

High-Pressure connection coupling

C6 / ... pcs	Coupling Socket CVK16 (pmax 1600 bar)
KA / ... pcs	Adapter M14 x 1,5 AG 60° DK (Screwed connection for high pressure hose, pmax 1600 bar)
C2 / ... pcs	Coupling Socket CVK25-2 (pmax 2500 bar)
MA / ... pcs	Adapter G 1/4" AG 60° DK (Screwed connection for high pressure hose, pmax 3000 bar)
S4 / ... pcs	Coupling Socket SVK40 (pmax 4000 bar)
XXX / ... pcs	Special connections according to customer's specification

Language of pump labelling, software and documentation

DE	Monolingual - German
GB	Monolingual - English
---	Other languages (enter ISO code)





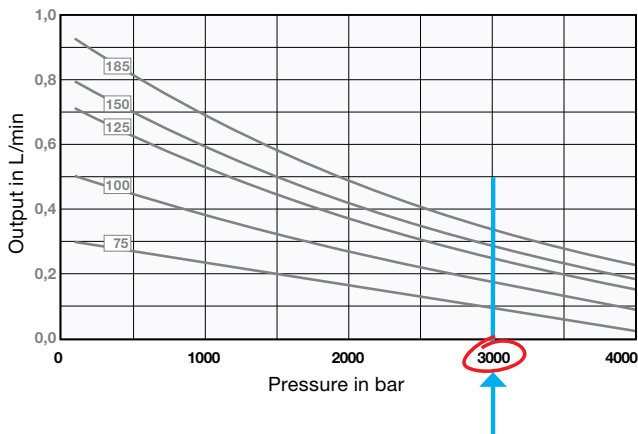
Electrohydraulic High-pressure unit HDE 4000-D

Example of motor selection

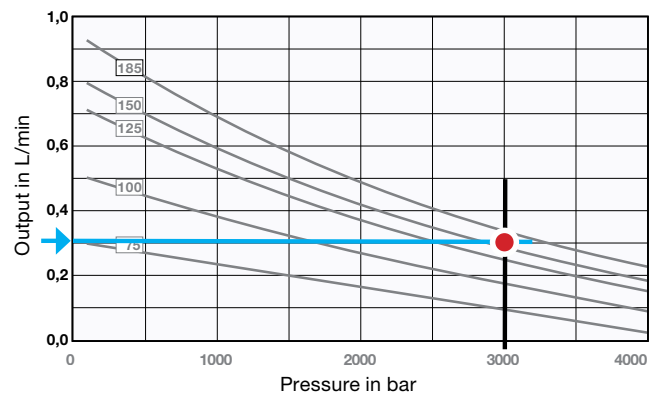
The HDE 4000-D has an oil cooled motor. So the unit can be operated at the specified performance limits for a longer time. If longer durations are required, or if the downtime between pressurisations is very short in duration, or continuous running mode or use at places with high temperatures an additional active oil cooler unit is recommended.

Determine the performance requirement in 4 steps

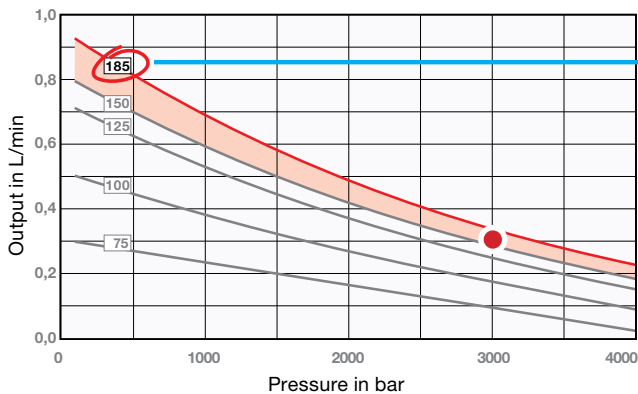
1. Determine maximum pressure (bar)



2. Determine maximum pumping capacity in L/min



3. Determine output ratio



4. Select motor size

185	700 bar	1000 bar	1600 bar	2000 bar	2500 bar	1600 bar	2000 bar	3000 bar
150	1000 bar	1600 bar	2200 bar	3000 bar	3500 bar	2500 bar	3000 bar	4000 bar
125	1350 bar	2000 bar	3000 bar	4000 bar				
100	2000 bar	3000 bar	4000 bar					
75	2000 bar	3000 bar	4000 bar					
	107*	111*	115	120*	122*	315*	322	330

Special fabrications

Special designs are optional. Please specify your requirements

* Not standardly available for HDE 4000-D (possible upon request).



Electrohydraulic High-pressure unit HDE 4000-D

Optional type code

A variant can be selected in each block. If no selection is made then the standard design will be supplied as described.

Mechanical pressure measuring device

The standard design is without a mechanical pressure gauge.		
	100	Additional pressure gauge 0 – 1000 bar, Ø100mm, class 1.0, filled with glycerine
	160	Additional pressure gauge 0 – 1600 bar, Ø100mm, class 1.0, filled with glycerine
	250	Additional pressure gauge 0 – 2500 bar, Ø100mm, class 1.0, filled with glycerine
	300	Additional pressure gauge 0 – 3000 bar, Ø100mm, class 1.0, filled with glycerine
	400	Additional pressure gauge 0 – 4000 bar, Ø100mm, class 1.0, filled with glycerine

Electronic pressure monitoring

The standard design is an electronic pressure transducer, 0 - 4000 bar. The actual pressure is indicated on the (remote) controller and is further processed by the control system.		
	DM2	A second identical pressure transducer with reciprocal monitoring (redundant system). The two pressure transducers monitor each other. Any deviation is automatically detected without delay. This means that the intervals between calibration of the pressure transducers can be lengthened or eliminated entirely. For critical applications maximum operational safety is achieved. Requires type T controller.

Oil level monitoring

The standard design has optical monitoring with a transparent oil sight glass.		
	S	Optical monitoring with additional electrical shutdown when the oil level falls to minimum. Requires type T controller.

Oil temperature monitoring

The standard design does not include oil temperature monitoring.		
	O	Continuous oil temperature monitoring at the pump intake with indication on the pump display. Requires type T controller.

Oil cooling

The standard design does not include a cooler unit, nor provision for the connection of a cooler.		
	V	Quick-coupling system for coupling of a separate cooler unit (the oil cooler unit can then be post ordered separately if required).
	K	Separate, removable oil cooler unit with quick-connector coupling system to allow connection when necessary.

Oil filter monitoring

The standard design does not include oil filter monitoring.		
	K	Continuous monitoring of the pressure upstream of the bypass filter with indication of dirty filter condition on the pump display. Requires type T controller.

Supplementary function module

The supplementary function module provides for more complex hydraulic control using the HDE4000D unit, such as for hydraulic torque wrenches, GripLoc couplings or lifting applications. The function module is simply plugged as necessary into a multiple quick coupling system fitted to the pump. The standard design does not include a quick-coupling system. The use of a supplementary function module strictly requires a type T electronic controller (electronic controller with touch panel).		
	HS	Separate removable control module for the control of single and double-acting hydraulic torque wrenches up to 700 bar, including quick-connector coupling system for coupling as necessary (requires supplementary software module S or A).
	G2	Separate removable control module for manual control of 2k GripLoc couplings up to 3000 bar, including quick-connector coupling system for coupling when necessary.
	VX	Only quick-coupling system (hydraulic/electric) for coupling of a separate control module.

Connector couplings for function module (when a function module is ordered)

Function module for double-acting consumers are always fitted with quick-connector coupling socket and nipple (stroke an return stroke of double-acting hydraulic torque wrenches or cylinders). If you have difficulty making your selection you can also specify the type of hydraulic tools or coupling systems that is used (please enter under special requirements).	
C5	Coupling Socket/-nipple C15 (pmax 1000 bar)
C6	Coupling Socket/-nipple C16 (pmax 1600 bar)
KA	Adapter M14 x 1,5 AG 60° DK (Screwed connection for High-Pressure hose, pmax 1600 bar)
G4	Connection Bores G1/4" (pmax 1600 bar, for installation of site couplings)
C2305	Coupling Socket/-nipple C230-5 (pmax 700 bar)
14	Connection Bores 1/4 NPT (pmax 700 bar, for installation of site couplings)
C2307	Coupling Socket/-nipple C230-7 (pmax 700 bar)
38	Connection Bores 3/8 NPT (pmax 700 bar, for installation of site couplings)
C2	Coupling Socket CVK25-2 (pmax 2500 bar)
MA	Adapter G 1/4" AG 60° DK (Screwed connection for High-Pressure hose, pmax 3000 bar)
S4	Coupling Socket SVK40 (pmax 4000 bar)
XX	Special connections according to customer's specification (any special design required, please enter under special requirements).

Electronic control hardware

The standard design includes a single electronic controller with 2 status lamps and electronic pressure indication.	
T	Electronic controller with 5.7" touch panel and multi-row text display in the remote controller
H	TSI (Tool Service Indicator) for monitoring of the service lifetime and maintenance indication for the individual components (series with type T electronic controller)

The following options can only be used in conjunction with the type T electronic controller

Universal data transfer interfaces (hardware)

UX	1x USB interface including software module for USB data storage and transmission (excluding PC software, interface according to SCHAAF standard)
UE	1x USB and 1x Ethernet interface including software module for data storage (excluding PC software, interface according to SCHAAF standard)

Elongation measuring device interfaces

Elongation measuring device interfaces (hardware) for detection of elongation with integral elongation measuring device on bolt tensioners (necessary for assembly documentation). The standard design does not include elongation measuring device interfaces.	
X / ... pcs	For elongation measuring device interfaces type X (please specify type of elongation measuring device on the bolt tensioners) / quantity of elongation measuring device interfaces operating simultaneously

Software

The standard design of the type T controller includes a basic software package for simple tensioning operations (bolt tensioners).	
BM	Software package with mounting documentation for simple tensioning operations (bolt tensioners, requires interface hardware UX or UE and elongation measuring device interfaces)
MS	STG software package with documentation for oil press fit units (master pump, requires UE interface hardware and elongation measuring device interfaces)
SS	STG software package with documentation for oil press fit units (slave pump, requires UE interface hardware)
XX	Special software package (internal sequential number)

Supplementary software module

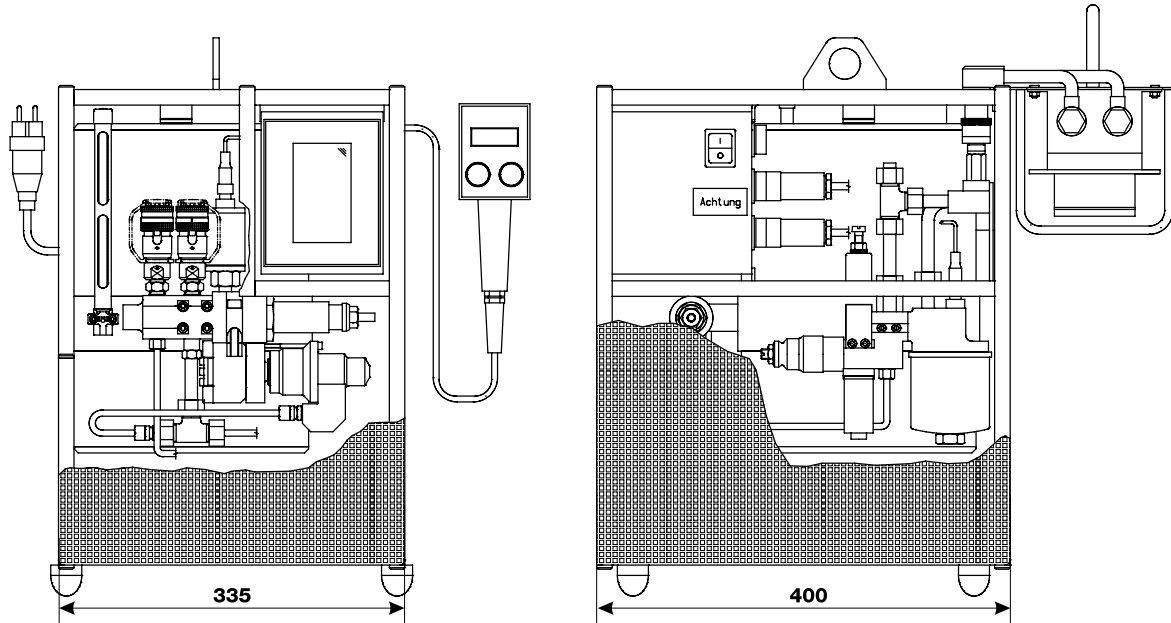
S	Software module for manual control of hydraulic torque wrenches (for controlling the function module for type HS hydraulic torque wrenches)
A	Software module for automatic control of hydraulic torque wrenches



Electrohydraulic High-pressure unit HDE 4000-D

Technical data

Further versions on request



	Standard	Special version
Operating voltage:	One-phase 230 V at 50 Hz	Assortment by performance chart
Nominal output:	230 V / 50 Hz Motor drive power: 1.5 kw	Assortment by performance chart, max. motor drive power: 3.0 kW
Hand control housing (remote control), connection cable:	Length: 5 metres	Length: ____metres, radio remote control
Electricity supply cable with CEE plug:	Length: 5 metres	Length: ____metres
Tank content:	2 litres	If required by customer up to max. 10 litres
Useful volume:	1 litre	Special oil tank or only tank connection possible
Hydraulic oil:	HLP ISO VG 32	Requirement by customer
Oil-level indicator:	Inspection Glass	Visual monitoring with electric deactivation
Oil temperature monitoring:	No monitoring	Permanent gauging of oil temperature in intake area
Motor temperature monitoring:	No monitoring (performance-related)	Measuring of motor winding temperature with automatic deactivation on max. value
Oil cooling:	No cooler (performance-related)	· Separately demountable oil cooler unit · Quick coupling system
Output:	0.05 – 1.0 l/min	Assortment by performance chart
Set-up:	Modular compact unit	Requirements by customer
Weight (filled with oil, without distributor, without mounting parts):	Approx. 40 kg	
Length:	335 mm	
Width:	400 mm	
Height:	490 mm	
Distributor:	According to type key	Distributor of various versions
Pressure gauge:	Electronic pressure monitoring Class 0.15 (standard design)	· Second pressure transducer (redundant system) · Additional mechanical pressure gauge
Packaging:		· Transport box, simple wood · Assembly box with hinged and swivel lock · Version according to customer's wishes

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SCHAAF has been developing and manufacturing high-pressure hydraulic tools since 1954.