

# SUBSEA HPU

## 8.6 KW

### PRODUCT SHEETS

Compact and rugged subsea HPU  
that can be applied to a wide range of  
subsea applications



## GENERAL

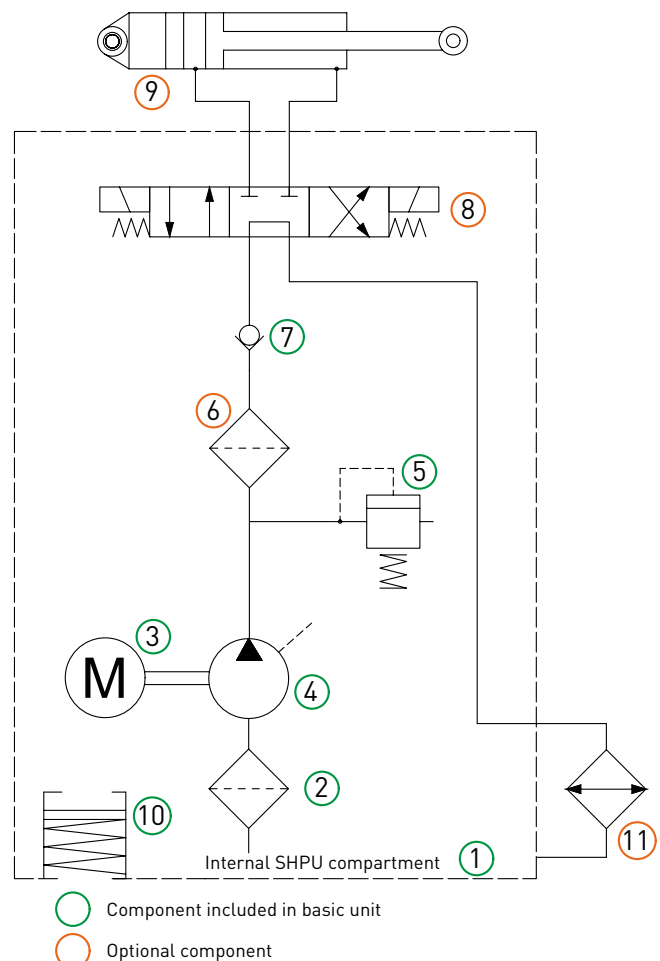
**Our standardized subsea power units are field proven, highly reliable subsea power packs that can be applied to a wide range of subsea applications. Our designs are based on numerous years of field experience gained from installing SHPUs on our ROVs and subsea tools – which operate under harsh conditions – and our plug-and-play power packs come in a wide variety of possible configurations and options.**

As a result of the integrated subsea pressure compensator, the 8.6 kW subsea HPU is a truly plug-and-play solution. The compensator, integrated into the rugged stainless steel housing, compensates for external hydrostatic pressure, oil temperature variations and can, to a certain extent, accommodate oil volume variations caused by external actuators such as hydraulic cylinders. This means no additional pressure compensator is required and as a result a highly compact solution can be implemented.

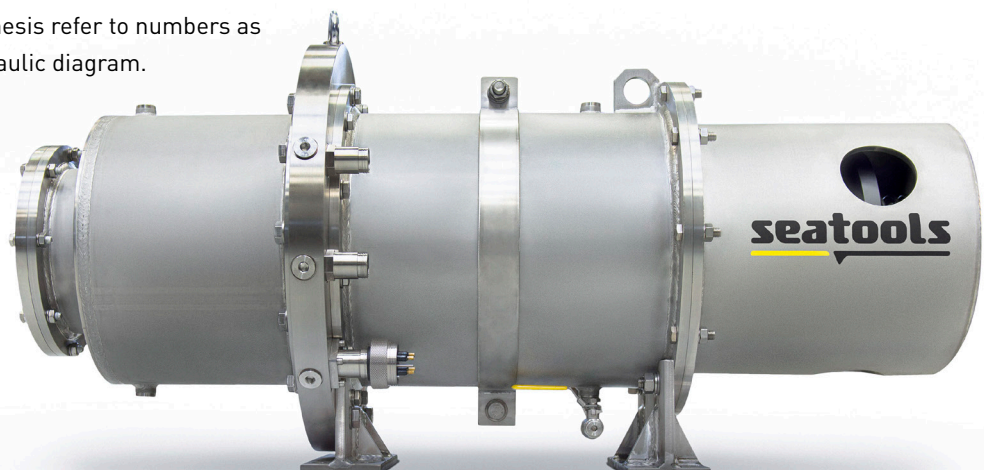
In its basic configuration the unit contains the following:

- Housing / fixed volume oil reservoir (1)
- Suction filter (2)
- Electric motor (3)
- Hydraulic pump (4)
- Pressure compensator (10)
- Overpressure relief valve (5)
- Check valve (7)
- Piping
- Sensors:
  - Water ingress
  - E-motor temperature
- Hydraulic and electric connectors

Numbers in between parenthesis refer to numbers as indicated in the general hydraulic diagram.



The illustrated hydraulic diagram is for explanatory purposes and does not represent the actual hydraulic diagram of the 8.6 kW SHPU.



# SELECTION & OPTION LIST

For each SHPU the following configuration items can be determined:

- **Hydraulic pump.** Seatools can deliver the SHPU with a range of hydraulic pumps which allows for matching the desired hydraulic pressure and flow characteristics. Please refer to table A to review the options.
- **Hydraulic connections.** Instead of the standard hydraulic and electric connections as listed in the specifications table, the HPU can be delivered with a range of alternative hydraulic and electric connections. Please contact our sales department to discuss the possibilities.

The basic configuration of the subsea HPU can be further extended with the following components and auxiliary systems:

- External box cooler (11) (image A). Depending on the applied duty cycle and environmental conditions, an external box cooler might be required. Our sales engineers provide advice on a case-by-case basis.
- Subsea pressure compensator / reservoir (10) (image B). Although the 8.6 kW unit features an integrated pressure compensator, additional compensation volume might be required in case of a large hydraulic system. Seatools offers a wide range of field proven subsea pressure compensators and reservoirs with compensation volumes ranging from 0.6 to 1100 liters.
- Pressure filter (6). For maximum protection of components located immediately downstream, the SHPU can be delivered including a pressure filter.
- Hydraulic consumers (9) (image C) such as accumulators, cylinders, and hydro motors.
- Control components (8). The SHPU can be delivered with built-in control components such as directional valves, proportional valves, pressure valves etc..
- Instrumentation. Similarly to control components, additional instrumentation such as pressure sensors can be integrated into the subsea hydraulic power unit.
- Hydraulic filling valves, fittings and appendages.



External box cooler



Subsea pressure compensator / reservoir



Hydraulic consumers

TABLE A - OVERVIEW OF PUMP OPTIONS

## PUMP

## PUMP PERFORMANCE

Pump capacity [cc/rev]	Motor running at 50 HZ – 1450 rpm		Motor running at 60 HZ – 1750 rpm	
	Maximum flow capacity [l/min]	Maximum operating pressure [bar]	Pump capacity [l/min]	Maximum operating pressure [bar]
6	8.3	276	10.0	276
8	11.0	276	13.3	276
11	15.1	225	18.3	210
14	19.3	175	23.3	165
16	22.0	155	26.6	145

# SUBSEA HPU 8.6 KW SPECIFICATIONS

## GENERAL

	METRIC	IMPERIAL
Material housing	AISI 316 L	
Dimensions	See detailed drawings	
Weight (unsubmerged, excl. oil)	292 kg	644 lbs
Weight (unsubmerged, incl. oil)	345 kg	761 lbs
Internal oil volume (approx.)	60 l	16 gal
Maximum operating depth	150 msw	592 ft
Operating temperature range (submerged)	-4 to 30°C	25 to 86 °F
Storage temperature range	-18 to 50°C	-0.4 to 122 °F

## HYDRAULIC

Volume flow capacity range <sup>1</sup>	8.27 - 26.6 l/min	2.18 - 7.03 gal/min
Maximum continuous pressure range <sup>1</sup>	145 - 276 bar	2103 - 4003 psi
Fluid compatibility	Compatible with both conventional and various bio-degradeable oils <sup>2</sup>	
Recommended viscosity range	16 - 40 mm <sup>2</sup> /s	0.62 - 1.55 ft <sup>2</sup> /h
Permitted (not continuous) viscosity	10 - 750 mm <sup>2</sup> /s	0.39 - 29.0 ft <sup>2</sup> /h
Permitted cold start viscosity	up to 2000 mm <sup>2</sup> /s	up to 77.5 ft <sup>2</sup> /h
Filtration size suction	10μ	
Hydraulic connection P	Male stud coupling - GE G½" - S ED Ø16	
Hydraulic connection T	Male stud coupling - GE G½" - S ED Ø16	
Air bleed	2 x G½" (plugged)	
Fill / drain connection	2 x G½" (plugged)	

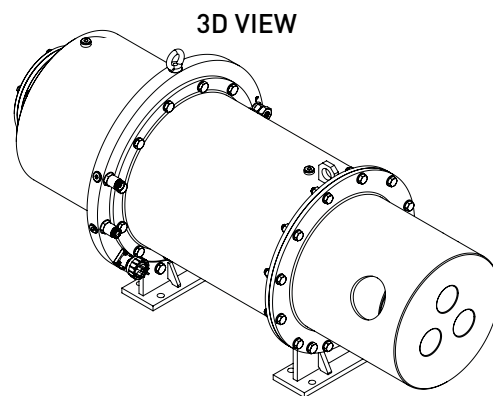
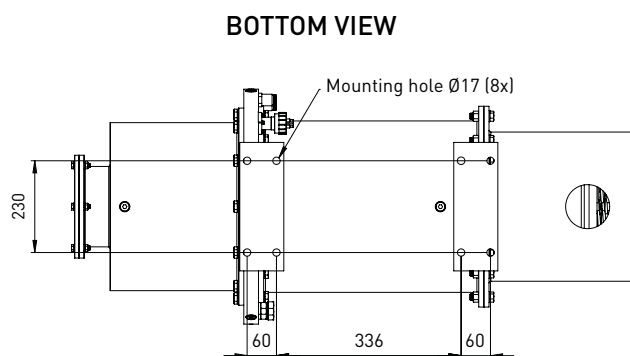
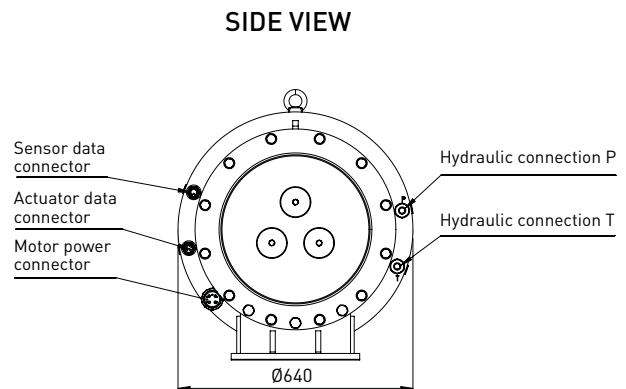
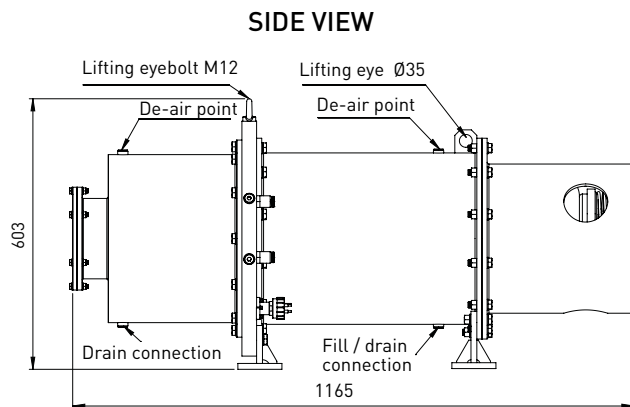
## ELECTRICAL

Shaft power E-motor	50 Hz: 7.5 kW @ 1450 rpm, 60 Hz: 8.6 kW @ 1750 rpm
Power supply (50 Hz)	3 phase, 400 V, 15 A
Power supply (60 Hz)	3 phase, 460 V, 14.6 A
Motor power connector	Subconn high power, 4 pole, type HPBH4M
Motor and sensor data connector	Subconn metal shell, 12 pole, type BCR2012M
Actuator data connector	Subconn metal shell, 4 pole, type BCR2004F

<sup>1</sup> Value is dependent on selected hydraulic pump and motor frequency, please refer to Table A for more details.

<sup>2</sup> Contact our sales department in case of bio-degradable fluids.

## DIMENSIONS



3D CAD files in STEP format are available on [www.seatools.com](http://www.seatools.com)

## RELATED SERVICES

### Client advisory

To ensure that the right size and type of SHPU is selected, we advise our clients during the selection process. We do so, required flow and pressure outputs, depth rating, allowable weight and size, applied hydraulic fluids, cooling, required redundancy, and quality standards into account. In addition, we provide advice regarding the installation and use of a SHPU in a subsea hydraulic system.

### Custom-made versions

Next to our standardized series, Seatools offers custom-made SHPUs that are tailored to your specifications. Please contact our sales department to request a customized subsea hydraulic power unit.

### Subsea hydraulic systems

Because of our subsea hydraulic engineering capabilities we are able to fully unburden our customers by delivering complete tailor-engineered subsea hydraulic systems. This includes all related systems such as mechanics, software, electronics, and controls.

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