

**SUBSEA HPU**  
**2.6 KW**  
**PRODUCT SHEETS**

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



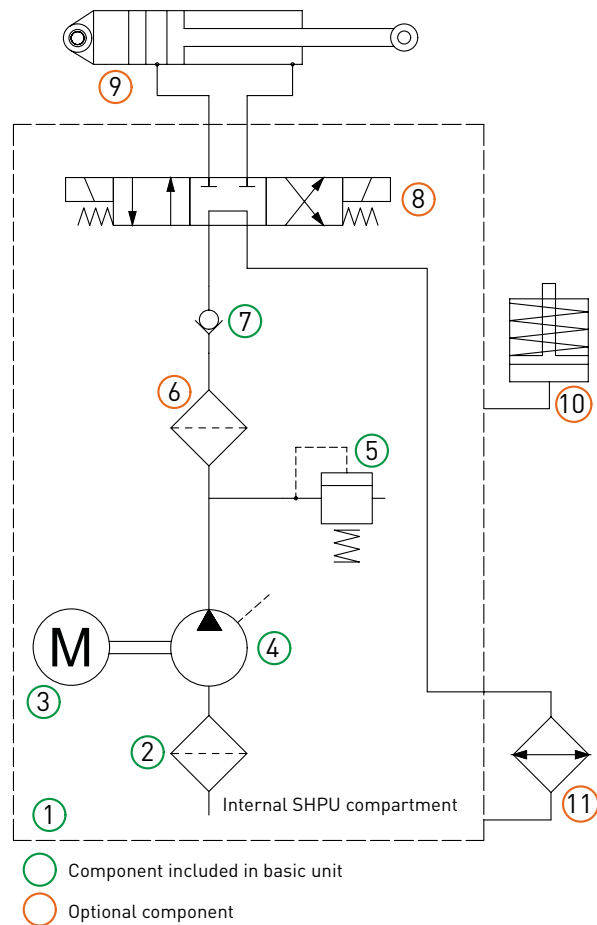
# GENERAL

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.

The 2.6 kW subsea HPU is a self-contained unit which, in its basic configuration, contains the following:

- Housing / fixed volume oil reservoir (1)
- Suction filter (2)
- Electric motor (3)
- Hydraulic pump (4)
- 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 2.6 kW SHPU.

Please note that for the correct functioning of the SHPU a subsea pressure compensator is in any case required.



# 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 can provide advice on a case-by-case basis.
- Subsea pressure compensator / reservoir (10) (image B). In order to compensate for hydrostatic pressure, oil expansion, and differential volumes caused by hydraulic consumers (e.g. cylinders), a subsea pressure compensator / reservoir is in any case required. 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.



A

External box cooler



B

Subsea pressure compensator / reservoir



C

Hydraulic consumers

## TABLE A - OVERVIEW OF PUMP OPTIONS

PUMP	PUMP PERFORMANCE				
	Pump capacity [cc/rev]	Motor running at 50 HZ – 1396 rpm		Motor running at 60 HZ – 1680 rpm	
	Maximum flow capacity [l/min]	Maximum operating pressure [bar]	Pump capacity [l/min]	Maximum operating pressure [bar]	
1.1	1.4	260	1.7	260	
1.5	2.1	260	2.6	260	
2	2.8	260	3.5	260	
2.5	3.5	260	4.3	260	
3.15	4.4	260	5.4	215	
4	5.6	205	6.9	170	
5	7.1	165	8.7	135	

# SUBSEA HPU 2.6 KW SPECIFICATIONS

## GENERAL

	METRIC	IMPERIAL
Material housing	AISI 316 L	
Dimensions	See detailed drawings	
Weight (unsubmerged, excl. oil)	80 kg	176 lbs
Weight (unsubmerged, incl. oil)	100 kg	220 lbs
Internal oil volume (approx.)	23 l	6 gal
Maximum operating depth	1000 msw	3281 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>	1.42 - 8.7 l/min	0.38 - 2.3 gal/min
Maximum continuous pressure range <sup>1</sup>	135 - 260 bar	1958 - 3771 psi
Minimum required compensator volume <sup>2</sup>	> 1.1 l	> 0.29 gal
Fluid compatibility	Mineral based oils <sup>3</sup>	
Recommended viscosity range	12 - 100 mm <sup>2</sup> /s	0.46 - 3,88 ft <sup>2</sup> /h
Permitted (not continuous) viscosity	up to 750 mm <sup>2</sup> /s	up to 29.0 ft <sup>2</sup> /h
Filtration size suction	10µ	
Hydraulic connection P	Male stud coupling - GE G <sup>3</sup> / <sub>8</sub> " - S ED Ø12	
Hydraulic connection T	Male stud coupling - GE G <sup>3</sup> / <sub>8</sub> " - S ED Ø12	
Hydraulic connection compensator	Male stud coupling - GE G <sup>3</sup> / <sub>8</sub> " - S ED Ø12	
Air bleed	1 x G <sup>1</sup> / <sub>4</sub> " (plugged)	
Fill / drain connection	1 x G <sup>1</sup> / <sub>2</sub> " (plugged)	
Miscellaneous	1 x G <sup>1</sup> / <sub>2</sub> ", G <sup>3</sup> / <sub>8</sub> " (spare) (plugged)	

## ELECTRICAL

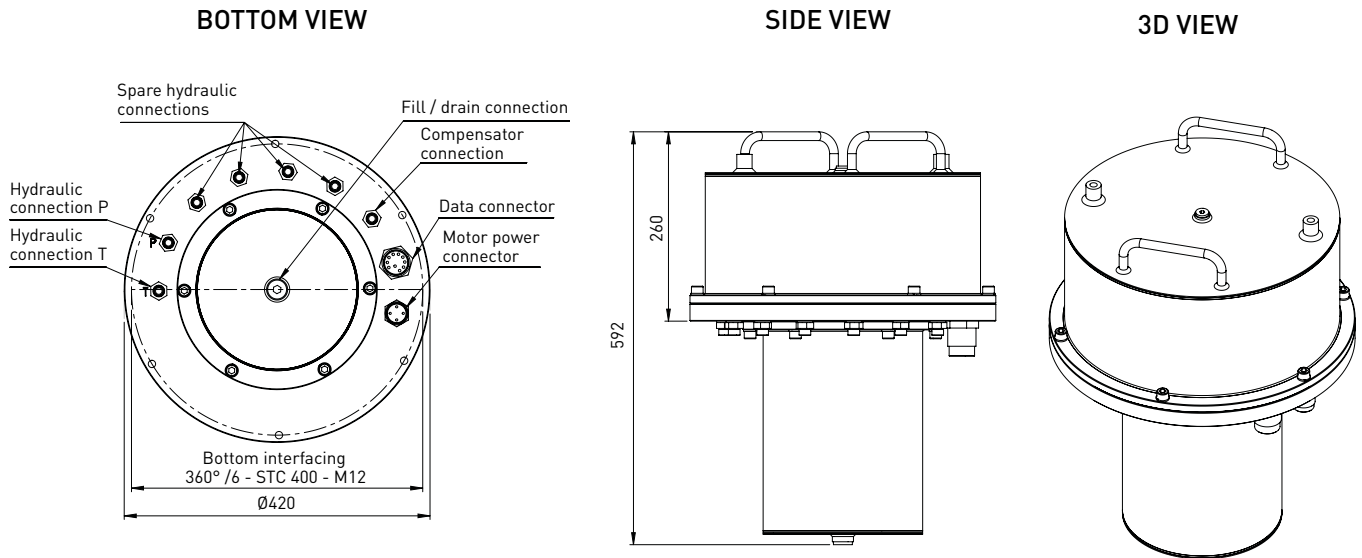
Shaft power E-motor	50 Hz: 2.6 kW @ 1396 rpm, 60 Hz: 2.6 kW @ 1715 rpm
Power supply (50 Hz)	3 phase, 400 V, 5.58 A
Power supply (60 Hz)	3 phase, 460 V, 4.95 A
Motor power connector	Subconn metal shell, 4 pole, type BCR 2004M
Motor and sensor data connector	Subconn metal shell, 8 pole, type BCR 2408M

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

<sup>2</sup> Indicated compensator minimum differential volume is solely based on differential volume requirement caused by thermal expansion of internal SHPU oil volume. Additional compensation volume might be required (due to oil content in remaining hydraulic circuit and actuators). Please consult our sales engineers to discuss your specific case.

<sup>3</sup> Contact our sales department for other types of 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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