

SUBSEA HPU

37 KW

PRODUCT SHEETS

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



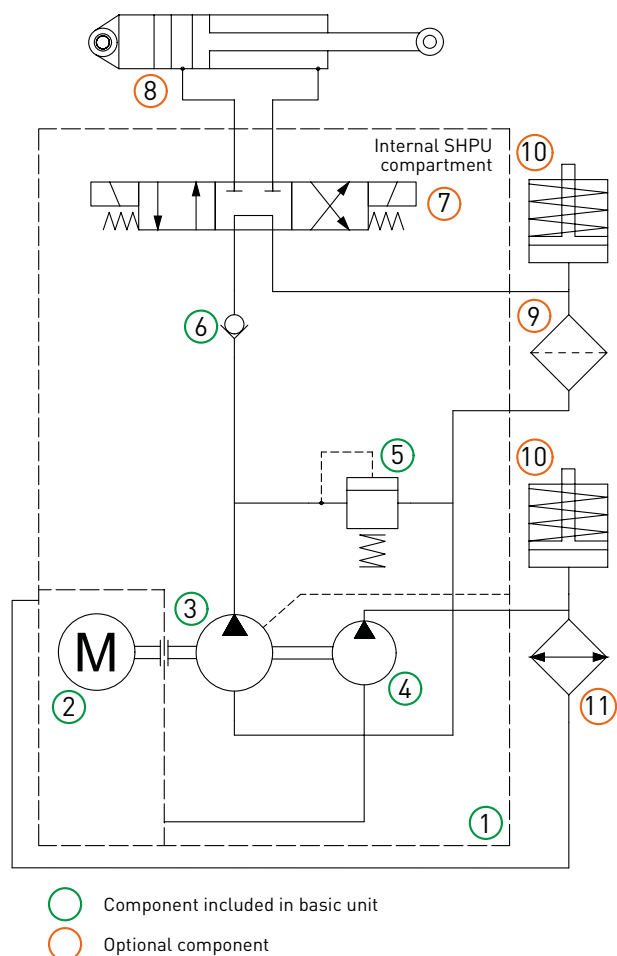
GENERAL

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

- Housing / fixed volume oil reservoir (1)
- Electric motor (2)
- Main hydraulic pump (3)
- Cooling (gear) pump (4)
- Overpressure relief valve (5)
- Check valve (6)
- Piping
- Sensors:
 - Water ingress motor
 - Liquid detection pump compartment
 - E-motor temperature
- Hydraulic and electric connectors

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

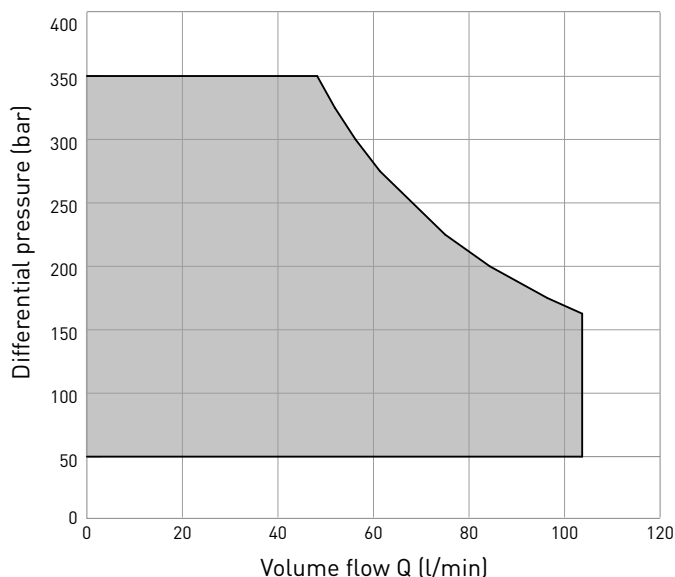


The illustrated hydraulic diagram is for explanatory purposes and does not represent the actual hydraulic diagram of the 37 kW SHPU.

POWER CONTROL

The 37 kW SHPU features a power control regulation including pressure cut-off. The power control maximizes the displacement of the pump depending on the operating pressure so that the available drive power optimally utilized. The precise control with a hyperbolic control characteristic is illustrated in the power diagram on the right.

The pressure cut-off adjusts the pump displacement back to its minimum displacement when the (pre-set) pressure cut-off setting is reached. Setting range for the pressure cut-off ranges from 50 to 350 bar



SELECTION & OPTION LIST

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

- External box cooler (11) (image A). For most environmental conditions and applied duty cycles an external box cooler will 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), subsea pressure compensators / reservoirs are 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.
- Return filter (9) (image C). In order to ensure hydraulic system cleanliness, Seatools offers a wide range of both supply and return filters.
- Hydraulic consumers (8) (image D) such as accumulators, cylinders, and hydro motors.
- Control components (7). 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

A

B



Subsea pressure compensator / reservoir

Return filter



C



Hydraulic consumers

D

SUBSEA HPU 37 KW SPECIFICATIONS

GENERAL

	METRIC	IMPERIAL
Material housing	AISI 316 L	
Dimensions	See detailed drawings	
Weight (unsubmerged, excl. oil)	686 kg	1512 lbs
Weight (unsubmerged, incl. oil)	727 kg	1603 lbs
Internal oil volume (approx.)	46 l	12.1 gal
Maximum operating depth	75 msw	246 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 ¹	up to 103.7 l/min	up to 27.4 gal/min
Maximum continuous pressure range ¹	50 - 350 bar	725 - 5076 psi
Minimum required differential volume compensator ²	> 2.3 l	> 0.61 gal
Fluid compatibility	Compatible with both conventional and various bio-degradeable oils ³	
Recommended viscosity range	16 - 32 mm ² /s	0.62 - 1.40 ft ² /h
Permitted cold start viscosity	up to 1600 mm ² /s	up to 62 ft ² /h
Hydraulic connection P	1 x SAE 6000 PSI - Buttweld flange (with O-ring) - 1"	
Hydraulic connection T	1 x SAE 3000 PSI - Buttweld flange (with O-ring) - 2½"	
Hydraulic connection L	Male stud coupling - GE G½" - S ED Ø18	
Hydraulic connection from external cooler	Male stud coupling - GE G¾" - S ED Ø16	
Hydraulic connection to external cooler	Male stud coupling - GE G½" - S ED Ø16	
Air bleed	2 x G¼" (plugged)	
Fill / drain connection	1 x G1" (plugged)	
Miscellaneous	1 x G¼" spare, 1 x G¼" vacuum (plugged)	

ELECTRICAL

Shaft power E-motor	50 Hz: 37 kW @ 1475 rpm, 60 Hz: 37 kW @ 1775 rpm
Power supply (50 Hz)	3 phase, 400 V, 39.5 A
Power supply (60 Hz)	3 phase, 440 V, 60 A
Motor power connector	2 x Gisma series 10, size 5 - 4 x 5
Motor and sensor data connector	Subconn metal shell, 12 pole, type BCR2000M

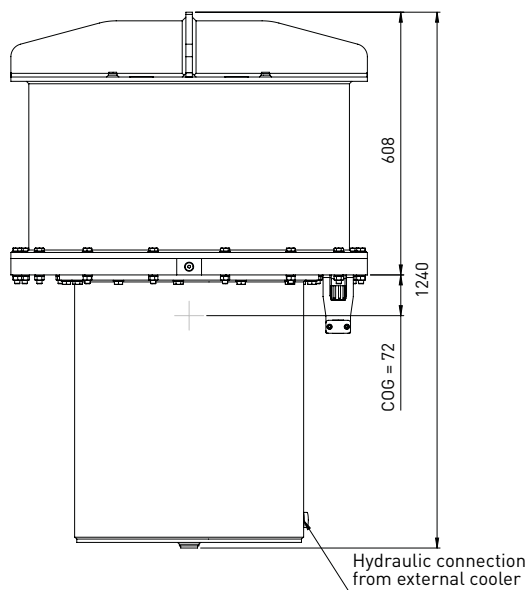
¹ Please refer to the power diagram for more information concerning possible flow rates and pressure ranges.

² Indicated minimum required differential volume applies solely to the cooling hydraulic circuit. For the main hydraulic circuit an additional subsea compensator / reservoir is required for pressure equalization and actuator differential volume accumulation. Please consult our sales engineers to discuss your specific case.

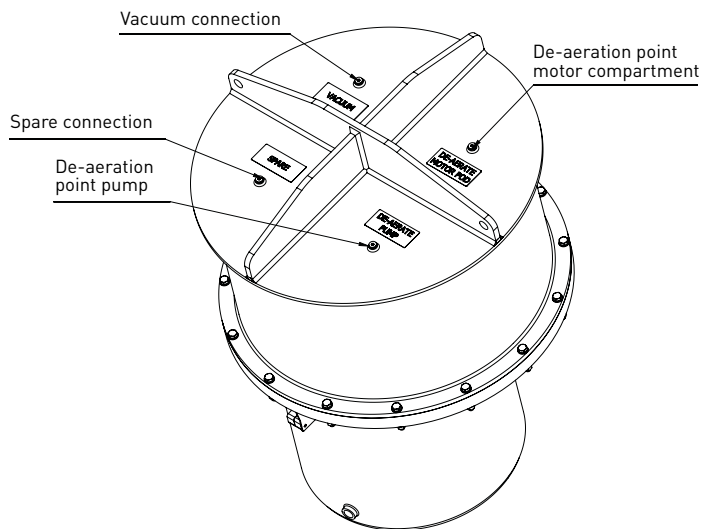
³ Contact our sales department for other types of fluids.

DIMENSIONS

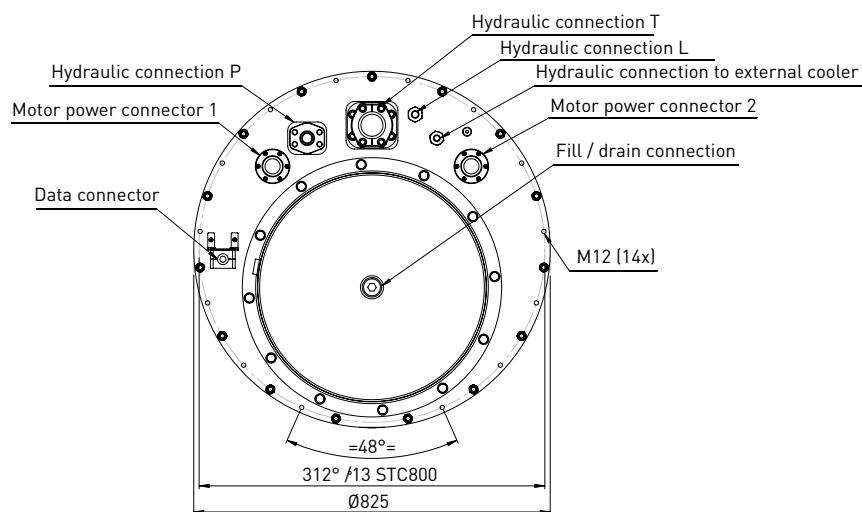
SIDE VIEW



3D VIEW



BOTTOM VIEW



3D CAD files in STEP format are available on www.seatools.com

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