



SUCTION PUMP SPREAD
SAPS-007(S)



The SAPS-007 and SAPS-007S suction pump skids are part of our high-performance shallow-water suction pump systems. The SAPS-007 series are in particular suitable for the simultaneous installation of multiple suction piles like suction pile jacket foundations or suction pile cluster installations up to water depths of 150m. The individual control of the suction pressure and subsequent penetration in each pile makes accurate leveling possible. The main characteristics are:

- a high flow capacity
 - SAPS-007 up to 300m³/hour
 - SAPS-007S up to 500m³/hour
- differential pressure up to 7.5 bar
- integrated vent valves and installation sensors,
- light weight electrical umbilicals.

The SAPS-007 series are powered and controlled from a control container located on the deck of the installation vessel. One control container is capable of the combined operation of up to four individual pumps.

Pump performance

For establishing pressure difference and subsequent suction pile penetration, water needs to be pumped from the suction pile.

Our SAPS-007 suction pump skid consists of two parallel configured 150m³/hour pumps, allowing for flow rate maximization up to 300m³/hour or pressure optimization up to 5bar. Whereas our SAPS-007S pump skids consist of two 250m³/hour pumps, which can operate in both parallel as serial mode, allowing for flow rate maximization up to 500m³/hour or pressure maximization up to 7bar.

The result is a flexible and redundant system for suction pile installation and short suction durations.

Integrated systems

The connection and subsea disconnection of the SAPS-007 is done swiftly with remotely operated hydraulic pins.

Vent valves are required to release air and water from the suction pile when lowering the suction pile through the splash zone up to self-weight penetration in the seabed. We integrated a 20" vent valve in our pump skid.

The integrated monitoring equipment provides life data on suction pressures, verticality and penetration, which can be evaluated against the client's survey data.

Our low-cost pump skid interface consists of a standard 20" pipe attached to the suction pile. For the eventual closing of the suction interface we use ROV installable closing hatches. The pump skid has additional hydraulic connections for project bespoke equipment like lifting shackles or additional venting capacity.

Electrical umbilicals

Unique are the pump skid's electrical power supply using light weight umbilicals, which are deployed with powered sheaves or umbilical winches. Other systems use heavy hydraulic hoses, which are more difficult to handle and have a significant risk on oil spills and subsequent delays when damaged.

The SAPS-007 pump skids and umbilical racks or umbilical winches are transported in 20ft standard offshore containers. The 20ft control container is equipped with a workshop and spare parts.

SPT OFFSHORE OWNS AND OPERATES REMOTELY CONTROLLED SUCTION PUMPS FOR WATER DEPTHS FROM 10M UP TO 3,000M. THESE PUMPS ARE PURPOSELY BUILT FOR THE INSTALLATION OF SINGLE PILES, SUCTION PILE CLUSTERS (SPCS), PLATFORM FOUNDATIONS OR SUBSEA STRUCTURE FOUNDATIONS.



SPECIFICATIONS SUCTION PUMP SPREAD SAPS-007(S)

● Pump Skid

- weight: 3mT
- dimensions: 2.9 x 1.1 x 1.8m (SAPS-007)
2.9 x 1.1 x 1.55m (SAPS-007S)
- max. water depth: 150m
- max. water flow: 300m3/hr (2x150m3) (SAPS-007)
500m3/hr (2x250m3) (SAPS-007S)
- max. diff. pressure: 5 bar (SAPS-007)
7 bar (SAPS-007S)

- vent valves: 1 no's x 20"
- suction inlet size: 20"
- free hydr. functions: 4 to 6 (SAPS-007)

- umbilical
- Standard length: 100m
- diameter: 44mm

- power requirements
- pumps: 440V
60Hz
125 kVA per pump skid
- computers: 230V
50Hz

- control software
 - installation data storage in log files
 - monitoring capabilities
 - pile X/Y inclination
 - pressure ambient
 - pressure internal
 - differential pressure
 - discharge valve position
 - internal soil plug by echo sounder
 - spare hydraulic functions control
 - spare computer for full redundancy
- control container
 - control room (for max 4 pump skids)
 - electrical switch board
 - frequency converter
 - 440V and 230V separator transformer
 - workshop
 - full set of spares