

SUCTION PILE TECHNOLOGY



Suction Pump Spread
SAPS-007

SPT Offshore



SPT Offshore operates suction pump spreads SAPS-007 comprising a Suction Pump Unit (SPU), a 20 ft control container, four (4) umbilical sets and one (1) spare of 250 m stored on umbilical racks. The SPU is capable of operating in water depths up to 150 m and is fully remotely operated from the control container, using hydraulic components and electronic data monitoring systems.

Venting of air and water with in the suction pile is accomplished through one (1) large hydraulically operated vent valve (20") built in the pump itself. Hydraulically operated pins accommodate the connection between the suction pump and the suction pile. This connection enables easy release of the pump from the pile after the suction operation.

The suction connection consists out of a 20" flange to flange connection with radial rubber O-rings guaranteeing a seal with minimum losses.

The control container contains a full set of spare parts that in case of an electronic or hydraulic failure the SPU can be repaired above water. In that case the SPU will be retrieved from the Suction Pile using the diver/ROV operated pin over-ride.

The SPU incorporates two identical electrical water pumps which are capable of operating simultaneously as well as separately. The result is a fully redundant system. In dual operation the maximum flow is 300 m³/hr and pressures up to 5.0 bar can be generated.

The SPU is built in a robust steel frame and can be docked on top of a suction pile using a docking frame and four(4) supports.

The SPU is equipped with the following electronic instrumentation for monitoring the installation operation:

- Pressure sensors - internal, ambient and differential pressure
- Inclinometers - SPU roll & pitch
- Echo sounder - internal soil plug height
- Gyro (optional) - SPU heading

The total Suction Pump Spread can be transported in the following packages:

- One (1) 20 ft control container
- One (1) 20 ft open top container with the four (4) SAPS-007 SPUs
- One (1) 20 ft open top container with the five (5) umbilical racks

On the SPU hydraulic connections are available for operating hydraulic subsea equipment. Up to 6 connections per SPU can be used to operate valves, hydraulic shackles and or hydraulic pins.



Specifications Suction Pump Spread SAPS-007

Pump skid

- Weight: 3mT
- Dimensions: 2.9 x 1.1 x 1.8m
- max. water depth: 150m
- max. water flow
 - 1 pump 150m³/hr
 - 2 pumps 500m³/hr
- max. diff. pressure: 5.0 bar
- vent valves: 1 no's x 20"
- suction inlet size: 20"
- free hydr. functions: 4 to 6

Umbilical

- length: 250m
- 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