Our Fleet

Apache II

An advanced pipelay vessel with an excellent track record
Apache II is one of the most reliable pipelay vessels operating in the offshore industry.

The Apache II is a true workhorse of the Technip fleet, bringing quality and efficiency to all of her subsea projects. The well-proven pipelay system from her predecessor, the Apache, is combined with modern vessel technology through her Sawkon designed hull.

Since entering service in April 2010, the Apache II has proven herself time and time again on client projects, strengthening Technip’s reputation as the market leader in the offshore oil and gas sector.

**Capabilities**

The unique reel lay method for the installation of small and medium diameter pipelines offers significant advantages over other methods of pipelay. Reel lay provides clients with a cost efficient, high quality technique suitable for laying pipe in deep or shallow water.

This is a technique that has been successfully applied in many offshore operational areas worldwide. The Apache II can lay pipe from 2” to 16” diameter. Due to the Apache II’s extensive experience of reeled pipe-in-pipe products, she was chosen to install Technip’s innovative Electrically Trace Heated Pipe-in-Pipe (ETH-PiP) technology on its pilot project in the Total Islay field in the North Sea. The complex project was successfully completed ahead of schedule.

**Station Keeping**

The Apache II has 2 main “Azimuth” thrusters aft combined with a swing up azimuthing thruster and 2 transverse tunnel thrusters fitted forwards. These enable the vessel to maintain effective station keeping during pipelay operations. The station keeping system is DNV approved and assigned AUTR EO DK(+), confirming the capability of the vessel to maintain pipelay operations in a wide range of environmental conditions.

**Integrated Control System**

The Apache II is fitted with a control and alarm monitoring system from Wartsila which monitors all machinery for power generation and propulsion and integrates with the DP system. Contained within the system is a Kongsberg SDP21 KPOS fully redundant duplex Dynamic Positioning (DP) system, incorporating purpose designed pipelay functions. Up to 4 radio positioning systems can be interfaced with the DP system to provide position information.

This system includes 4 DGPS, taut wire for shallower waters, an MDL fanbeam system and a Kongsberg HiPAP hydro acoustic position measuring system.

**Machinery and Propulsion**

The Apache II is powered by a diesel-electric power plant consisting of 4 Wartsila generator sets of 3,200 kW each. Power is fed to 2 main distribution boards for use around the vessel.

The 2 main electric controllable pitch azimuthing thrusters aft produce a total of 7,000 kW power. These thrusters were installed as part of an upgrade, and allow Apache II to produce up to 132 Te bollard pull in RPM (revolutions per minute) mode. This enables her to lay heavier pipe unaided. She also has a forward retractable azimuthing thruster which produces 1,500 kW power and there are 2 forward transverse tunnel thrusters producing 3,000 kW total power.

**Additional Machinery**

Additional power is provided by 2 deck mounted diesel generator sets providing 3,000 kW total electrical power. These generators are stand-alone units providing dedicated power to pipelay equipment but can also be used to supplement general vessel electrical requirements.

**Cranage**

The Apache II is equipped with 2 MacGregor Hydramarine 100 Te knuckle boom construction cranes with active heave compensation. The cranes are mounted on the port side and provide the capability for tandem subsea lifts. A Hydralift crane is also fitted on the starboard side for deck lifts up to 27 Te.

**Main Reel**

The main reel is mounted vertically amidships having a horizontal axis of rotation. The main reel is designed to be used with pipes up to 16” diameter. The reel can produce 100 Te of laying tension at the outer rim and 150 Te of tension at the drum (inner wrap) when used in the standard configuration.
Pipe capacity

Main Reel
- Capacity: 2,000 Te
- Flange diameter: 25 m
- Hub diameter: 16.5 m
- Width between flanges: 6.55 m

Auxiliary Reel
- Capacity: 650 Te
- Flange diameter: 13.00 m
- Hub diameter: 8.84 m
- Width between flanges: 6.55 m

using 4 hydraulic drive motors. Upon specific request and provided that hydraulics upgrades are carried out, the reel has the capability to add a fifth motor to drive the wheel. In this configuration the reel can produce 92 Te of laying at the outer rim and 190 Te of laying tension at the drum (at the inner wrap).

Auxiliary reel

The vessel is equipped with an auxiliary reel (SPR 650) which is also mounted vertically with horizontal axis and is positioned immediately forwards of the main reel. The auxiliary reel is driven using 4 electric motors with variable frequency drive (VFD) controls and can produce 37 Te of laying tension at the outer rim and 54 Te of laying tension at the drum (inner wrap). The reel can be used for pipes up to 8” diameter but is primarily used for smaller diameter pipes such as “piggy back” lines or it can also be used for umbilicals.

Pipe ramp

The ramp structure is 32 m long and 9 m wide. Hinged at its after end, the ramp angle is adjustable from 20° to 60° by means of a hydraulically operated truss arrangement. Additional rollers on the levee winch can permit pipeelay angles up to 72° for deepwater installation.

Pipe clamp

This is a vertically adjustable hydraulic clamp capable of supporting up to 180 Te of axial tension. The clamp is adjustable to fit all pipe sizes from 4” to 16” diameter.

Abandonment/recovery winch

The abandonment and recovery winch is located aft of the reel at main deck level. Powered by a Caterpillar 3412 diesel engine it can spool 2,900 m of 52 mm diameter wire / 1500 mm of 72 mm diameter wire and develops 163 Te tension at outer wrap.

The winch is normally equipped with 52 mm diameter wire, but can accommodate diameters of up to 71 mm for project specific operations.

Ramp enclosure

The 9 m long enclosure, situated between the pipe clamp and tensioner provides environmental protection for the workforce and ensures the correct conditions exist to perform high quality welding. It is equipped with a sliding roof to enable safe access for laydown assemblies.

Accommodation

The accommodation provides full modern facilities for up to 118 personnel, split between 47 double and 24 single person berths. Onboard facilities include full medical, office, conference and internet facilities and gym. The accommodation is fully compliant with Det Norske Veritas and Norwegian Maritime Directorate requirements for worldwide operations, with respect particularly to amenity and noise standards, and is also fully ISPS (International ship & port facility security code) compliant.

Helideck

A helideck and reception is provided for personnel transfers. The helideck is internationally classed to CAA requirements and is suitable for Super Puma and Sikorsky helicopter operations.