Mid-Line Tie-In Sled

The proactive approach to faster pipeline tie-ins

Oil States Midline Tie-In Sleds are installed with the original pipeline and allow a future tie-in to be made quickly and efficiently, without costly offshore spreads and without shutting off product flow. The sleds, which were developed by Oil States and Mentor Subsea Technology Services, Inc., are an economical solution whenever the future tie-in location is known before the original pipeline is laid.

Modular and ready-to-go
Mid-Line Tie-In Sleds are modular units that consist of flowline piping, a collet connector hub for future tie-in, a block valve to isolate the future tie-in line, a Piggable Y Fitting to combine the flowline and future tie-in line, and mud mats. The Sleds are welded into the pipeline like an ordinary joint of pipe and may be installed during conventional S-Lay or J-Lay operations. The sleds are equipped with mud mats for support on the seafloor. The mats remain folded in a vertical position until the sled clears the stinger.

The tie-in can be performed from an Oil States’ ROV support vessel and is made using a jumper with an Oil States Collet Connector at each end. One connects to the PLEM on the newly laid flowline, the other to the hub on the Mid-Line Tie-In Sled. Once the jumper is landed on the PLEM and the Tie-In Sled, an ROV is used to make up and test both Collet Connectors. After commissioning, the ROV opens the block valve, and the new flowline is ready for service.

A versatile, economical solution
The Mid-Line Tie-In Sled provides maximum flexibility and can be configured for vertical or horizontal jumper connections. The optional Rotating Porch (for horizontal jumpers) and Metal-Sealed Rotary Pipeline Swivels eliminate residual torsion in the pipeline so that the sled can be landed on bottom with a near-vertical orientation.
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**Ordering Information**

Please provide the following information on any purchase order or request quotation:

- Trunk line size, wall thickness and grade
- Branch tie-in size, wall thickness and grade
- Piggable Y configuration; symmetrical or asymmetrical

![Image of Mid-Line Tie-In Sled](image1)

The Mid-Line Tie-In Sled is installed as an integral part of the pipeline during the S-lay or J-lay operation.

![Image of ROV deploying mud mats](image2)

An ROV deploys the mud mats after the sled clears the stinger. A bouyancy module provides a righting moment to help the sled land upright.

![Image of ROV releasing buoyancy module](image3)

The ROV releases the buoyancy module, and sled installation is complete.

**The Future Tie In**

![Image of lateral tie-in](image4)

The lateral tie-in is made using a hard-pipe jumper with Oil States Collet Connectors.

![Image of jumper landed on sled](image5)

The jumper with Collet Connectors is landed, with one end on the sled porch and the other on a PLEM connected to the branch lines.

![Image of ROV actuating Collet Connectors](image6)

After the ROV actuates and tests the Collet Connectors, the running tools are retrieved and the tie-in is complete.

![Image of 24-inch x 16-inch x 12-inch Inline Tee Sled](image7)

24-inch x 16-inch x 12-inch Inline Tee Sled with Mud Mats

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