



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.

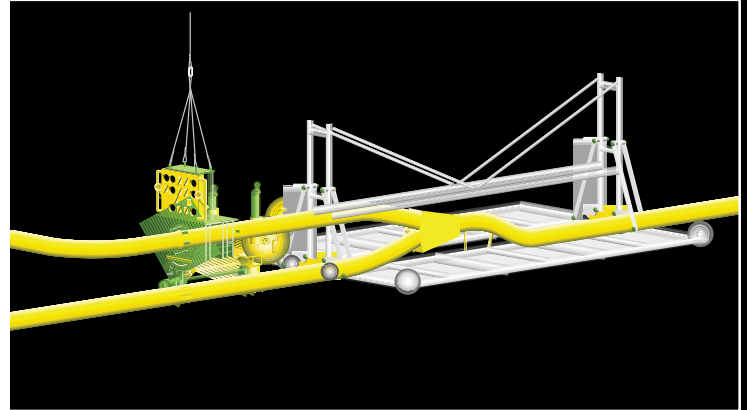
Modular and ready-to-go

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.



Installing an Oil States Collet Connector on a Mid-Line Tie-In Sled



Mud mats being installed on a 16-inch x 20-inch Mid-Line Tie-In Sled for installation in a water depth of 5,100 feet .





Mid-Line Tie-In Sled

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



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

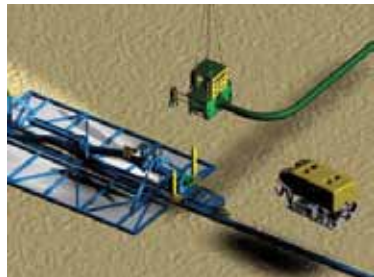


An ROV deploys the mud mats after the sled clears the stinger. A buoyancy module provides a righting moment to help the sled land upright.



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

The Future Tie In



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



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.



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



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

OIL STATES HOUSTON

MANUFACTURING, ENGINEERING & SALES:

6120 E. Orem Drive
Houston, Texas 77048USA
Tel +1 713 445 2210
Fax +1 713 445 2380
houstonstates@oilstates.com

Houston Ship Channel

16730 Jacintoport Blvd.
Houston, Texas 77015USA
Tel +1 281 247 7400
Fax +1 281 247 7401

SALES OFFICES:

North America

Oil States Industries, Inc.
1155 Dairy Ashford, Ste. 700
Houston, Texas 77079
USA
Tel +1 713 510 2200
Fax +1 713 510 2307

South America

Oil States Industries do Brasil Ltda.
Centro Empresarial Barra Shopping
Av das Américas 4200, Bl 8,
Cob 303CEP 22640-102
Barra da Tijuca, RJ Brazil
Tel +55 21 3385 4473

Europe & Eurasia

Oil States Industries, Inc.
Blackness Road
Altens Industrial Estate
Aberdeen, AB12 3LH
Scotland, UK
Tel +44 (0)1224 896190
Fax +44 (0)1224 896199

Oil States Industries, Inc.

36, Bd des Océans
13275 Marseille, Cedex 9
France
Tel +33 491 40 89 35
Fax +33 491 40 14 82

Oil States Industries, Inc.

Suite 5, 1 F. Amirov Street
Baku, AZ1000
Azerbaijan
Tel +994 12 4 981 125
Fax +994 12 5 379 125

SE Asia

Oil States Industries, Inc.
102 Bis/M Le Lai Street
Ho Chi Minh City, District 1
SR Vietnam
Tel +84 8 3925 3545
Fax +84 8 3925 0123

Middle East

Oil States Industries, Inc.
Fairmont, St. 712
Sheikh Zayed Road
Dubai, United Arab Emirates
Tel +971 50 5500954

Africa

Oil States Industries (Nigeria) Ltd.
No. 50c Glover Road
Ikoyi, Lagos
Nigeria
Tel +234 1 2718363
Fax +234 1 2718364



www.oilstates.com