Tenaris Casing Drilling Integrated Service (CaDIS™)

An integrated solution for casing drilling



Tenaris

Casing drilling advantages

The casing drilling technique transforms the way a well is built.
By drilling and casing simultaneously, it minimizes flat time, reduces operational risks, and unlocks formations not viable with traditional drilling methods.



Applicability to vertical and deviated wells.
Provides a consistent solution across any well section or diameter.



Savings in time, operations and economic optimization.
Allows for economic optimization of operations by lowering costs per well or drilling more wells in less time.



Reduction of HSE risks.
Reduces operational time with no need of tripping operations, minimizing exposure to HSE risks.



Improvement of wellbore cleaning efficiency.
Reduces annular clearance, increasing drilling fluid velocity and triggering the wellbore strengthening effect, which reduces formation permeability and minimizes mud losses.



Reduction of fluid losses.
Mitigates fluid losses in highly complex formations or those not viable with traditional drilling methods.



Improvement of cement quality.
Reduces wellbore exposure time to fluids and optimizes annular geometry, enabling a more effective cementing operation.

Technical challenges

Reduce dynamic effects
such as bit bouncing, stick and slip, and bending.

Reduce high vibrations and mechanical specific energy
to maximize rate of penetration (ROP).

Avoid undetectable vibrations and dynamic effects
that can lead to connection failures by precision on operative parameters control.

Reduce casing wear damage
during drilling due to lateral forces and rotation.

Minimize the risk of damage from overtorque:
pin nose and shoulder deformation.

Reduce deviation
from target trajectory due to limited verticality control solutions.

CaDIS™ - Tenaris's integrated solution for casing drilling

CaDIS™ is an integrated solution for casing drilling offered by Tenaris that combines proprietary technologies, engineering services, on-site assistance and digital and AI tools to enhance the reliability of these operations.

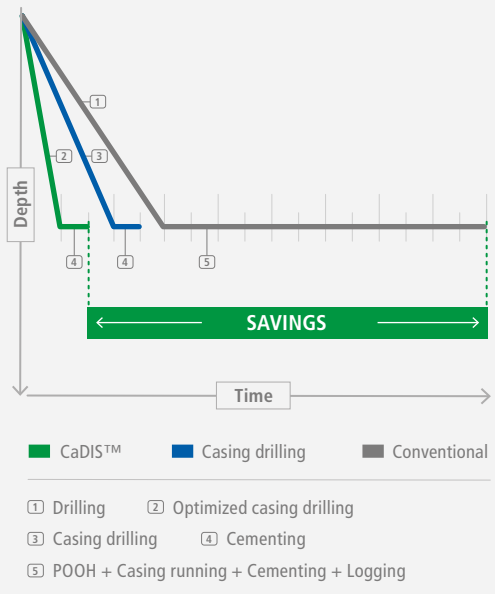
Operational reliability and well integrity
through digital tools that combine data from high-performance well sensors with machine learning algorithms to avoid fatigue failures and optimize ROP in real time.

Comprehensive technical support
from the planning phase to on-site assistance during drilling. Design and delivery of the complete drill string for casing drilling service, including BHA design, torque, drag and fatigue simulations, and centralizer installation.

Portfolio of technologies
including proprietary connections and steel grades, specially designed for casing drilling operations.

Real-time data access
for customers worldwide via internet and a proprietary cloud-based platform.

CaDIS™ savings





With CaDIS™, by accurately measuring torque and identifying harmful casing vibrations, operators can optimize drilling parameters to reduce energy losses, maximize energy transfer to the bit, and achieve higher rates of penetration.

CaDIS™ key components

1. TenarisHydril CDJ™



Designed for CaDIS™ applications, CDJ™ incorporates a proprietary thread geometry optimized for casing drilling in demanding wells.

CDJ™ stands as the optimal choice for casing drilling, offering a unique combination of over-torque capacity, fatigue performance, and operational reliability, making it the most suitable connection for this type of operation.

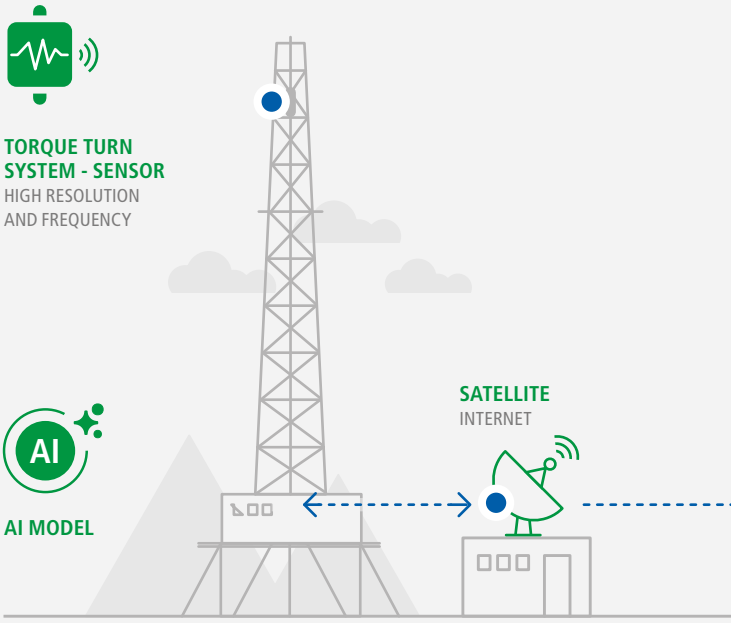
Features

- Delivers exceptional running reliability and robust make-up behavior, ensuring smooth surface operations during casing running.
- Provides high torque capacity for rotation, enabling safer and more controlled casing drilling while maintaining stable torque behavior throughout operations.
- Its proprietary thread profile significantly enhances fatigue resistance, lowering hoop stresses and extending connection life across multiple operational cycles when compared to standard buttress compatible connections.

2. CaDIS™ monitor

- Real-time data access for customers worldwide, available upon request via satellite internet and a proprietary cloud-based platform.
- Accurate torque measurement in real-time during drilling and make-ups.
- ROP optimization by understanding the casing limits and the actual vibration and torque parameters.

CaDIS™ monitor components



3. CaDIS™ quill

- Alternative running tool for casing drilling operations that allows torque transmission from the top drive to the bit.
- Designed with special tolerances that allow multiple uses.
- Easy-to-install tool on a drilling rig, with no need for special buck-on units or hydraulic connections.
- Capable of drilling the full well without adjustments or repairs.

4. CaDIS™ centralizer

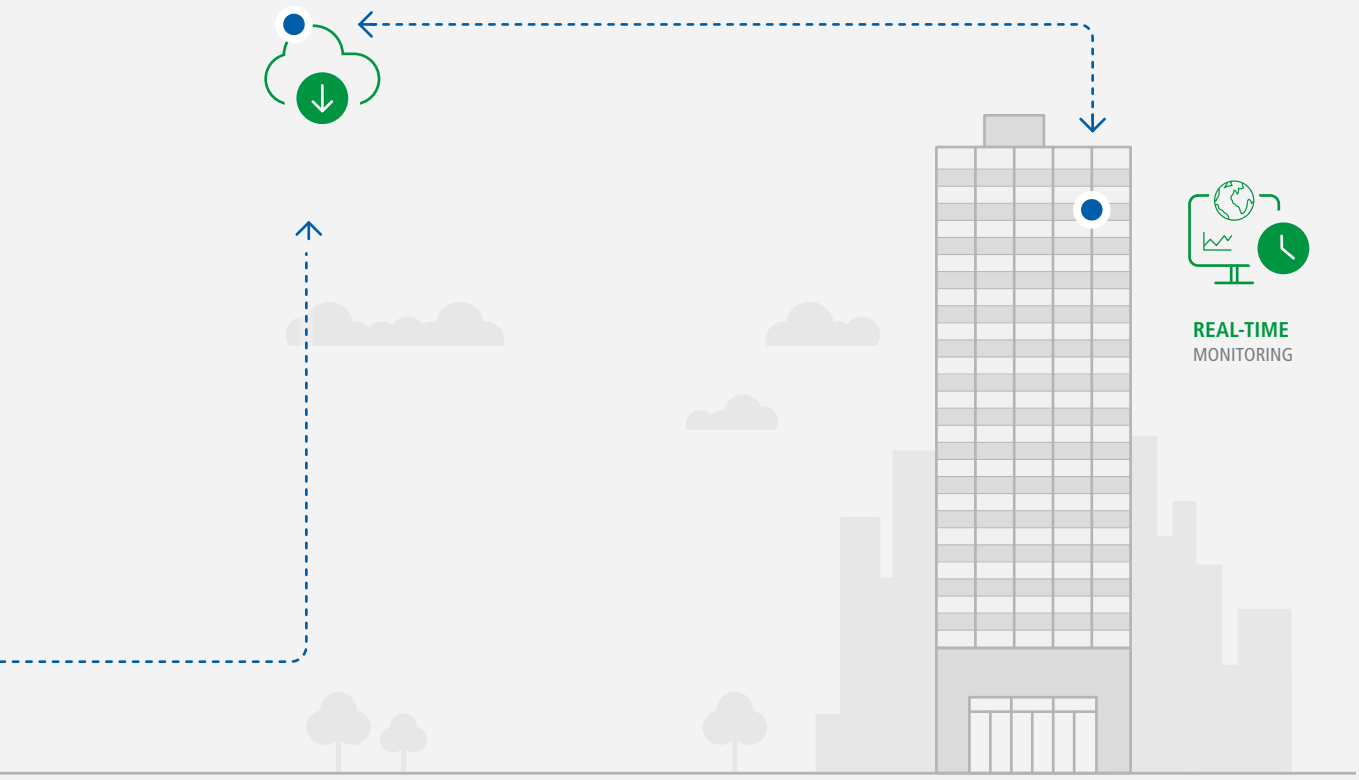
- Enhanced wellbore verticality.
- Better string stabilization (reduced lateral vibrations).
- Lower risk of differential sticking.
- More efficient hole cleaning & reduced friction.

5. CaDIS™ torque verification

Top drive torque verification before a casing drilling operation ensures optimal performance during drilling.

6. Torque drag and fatigue

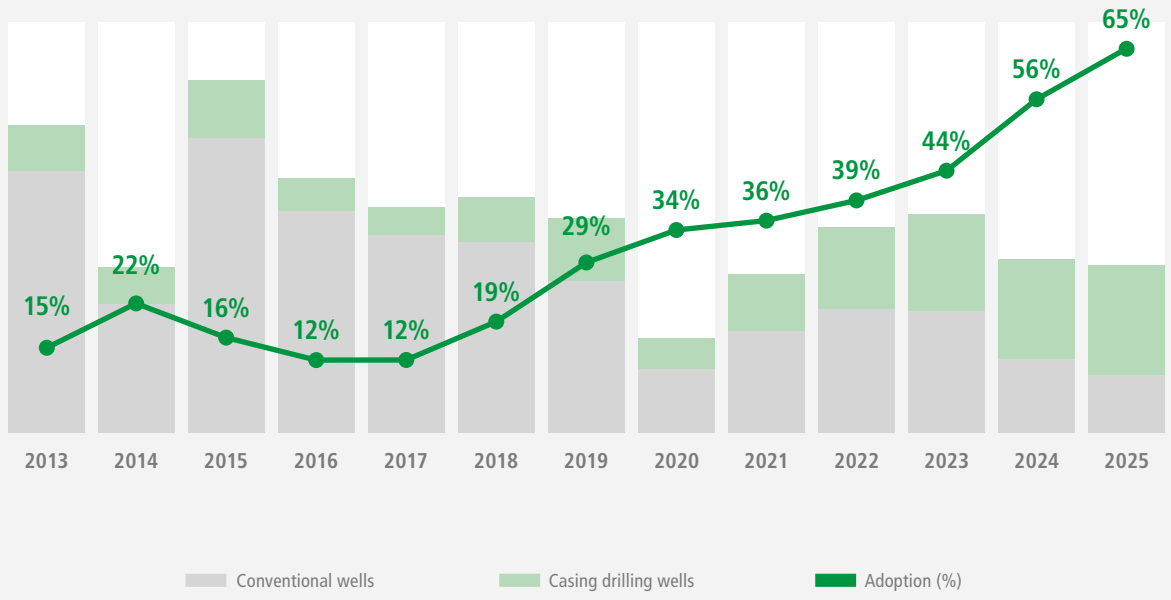
Analysis of the string's torque, drag and fatigue based on theoretical loads enables informed decision-making and reduces operational risks.



CaDIS™ in Argentina, a success story

Casing drilling technology adoption in Argentina in at least one section of the well has increased up to the 65% with the implementation of CaDIS™.

Casing drilling adoption in Argentina



Surface and intermediate casing

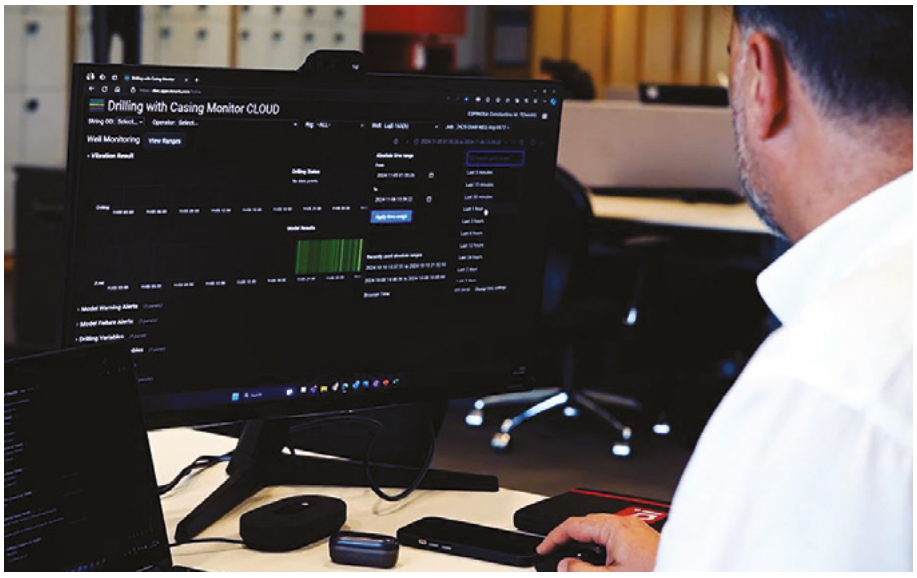
+2,800

Wells in 9 ⅝", 10 ¾" and 13 ⅜" diameters between 2013 and 2025

Production casing

+700

Wells in 5 ½" diameter between 2013 and 2025

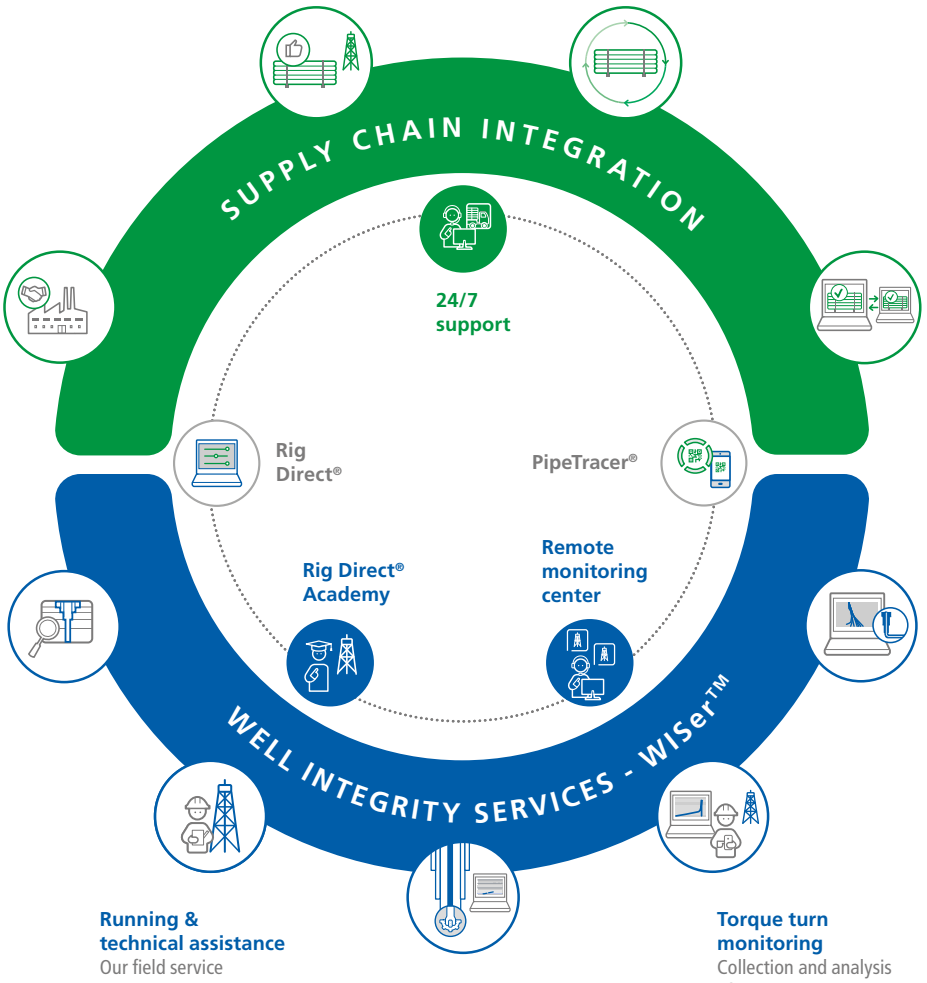


Rig Direct®: Creating value through service and technology

Rig Direct® is Tenaris's service model for OCTG pipe and accessories that offers a comprehensive, digitally integrated approach that boosts operational efficiency, lowers costs, and enhances reliability and well integrity for oil and gas operations.

RunReady™
Materials are delivered ready for running, minimizing on-site handling while improving rig efficiency and safety.

Material efficiency
Customers pay for the pipes and accessories they use, while surplus materials are transferred to the next well, minimizing surplus inventory and logistics.



DemandSync™
The production and management of pipes and accessories are scheduled according to customer drilling needs to minimize inventories and waste.

Systems integration
We integrate digital systems with our customers to streatmline processes such as dispatching and invoicing.

String design optimization
Our technical experts advise on material selection and string design to address the specific conditions of each well.

iRun Casing®
Cloud-native tool that processes rig EDR data to optimize casing installation safely through physics-based models and advanced analytics.

Running & technical assistance
Our field service specialists provide on-site support ensuring best practices are followed and our technologies are properly installed.

CaDIS™
An integrated solution for casing drilling that combines proprietary technologies, engineering services, on-site assistance and digital tools to enhance the reliability of these operations.

Torque turn monitoring
Collection and analysis of wellsite connection make-up data to maximize reliability and increase operational efficiency.

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For contact information, please visit
www.tenaris.com

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