



Weatherford®

OverDrive™ Casing Running and Drilling System



Drilling



Evaluation



Completion



Production



Intervention

Well construction

- Cementing services
- Tubular running services

Drilling hazard mitigation

- Drilling-with-casing (DwC™)

Expect *More*

Enhancing safety and efficiency in casing running, drilling-with-casing (DwC™) and cementing operations through innovative technology and multidisciplinary expertise

The **OverDrive™** Casing Running and Drilling System

We started with simple power tongs and, over six decades, built the largest tubular running service company in the world.

We leveraged that experience with **the industry's largest R&D team:** a US\$23-million, 100-engineer annual commitment dedicated to our tubular running business alone.

Building on our extensive field expertise and focused R&D efforts, we developed the *OverDrive* system: a highly versatile, industry-leading casing running, drilling-with-casing (DwC™) and cementing technology. The result: **safer and more efficient operations.**

More Performance Setting new operational standards

The *OverDrive* system represents a major enhancement to the safety, efficiency and performance of well-construction operations.

Integrated with any top drive, the technology combines conventional power tongs, bails, elevators, weight compensator, torque-turn/monitoring, and fill-up and circulating tools into one system. Safety is improved by remote-control capabilities and reduced personnel and equipment requirements.

The *OverDrive* technology extends the functionality of the rig's top drive from drillpipe to casing, enabling simultaneous rotation; reciprocation/push-down; and circulation of the casing string. This capability provides a significant advantage in reaching total depth in high-angle, extended-reach and problematic wellbores.

Engineered to excel in a range of offshore and onshore operations, the *OverDrive* system brings all our expertise together into industry-leading technology capable of meeting the needs of today's drilling environments.





More Innovation

Turning experience into progress

The *OverDrive* system's top-notch performance is the result of an advanced design based on decades of tubular running experience.

Technology features:

- Integrated safety interlock system prevents dropped casing strings.
- Active hydraulic compensation system neutralizes tool and joint weight.
- Wireless remote-control system enables operations in any rig-floor environment.
- Integrated TorkSub™ electronic load cell provides precise torque monitoring during connection makeup, reaming and drilling.
- Electronic dump interface enables torque control for premium connections.
- Remotely operated, single-joint elevators reduce manual handling of tubulars.
- Fail-safe hydraulic gripping system ensures secure grip of casing during rotation, reciprocation and push-down operations.
- Integrated driller and operator control panels enhance safety and running efficiency.



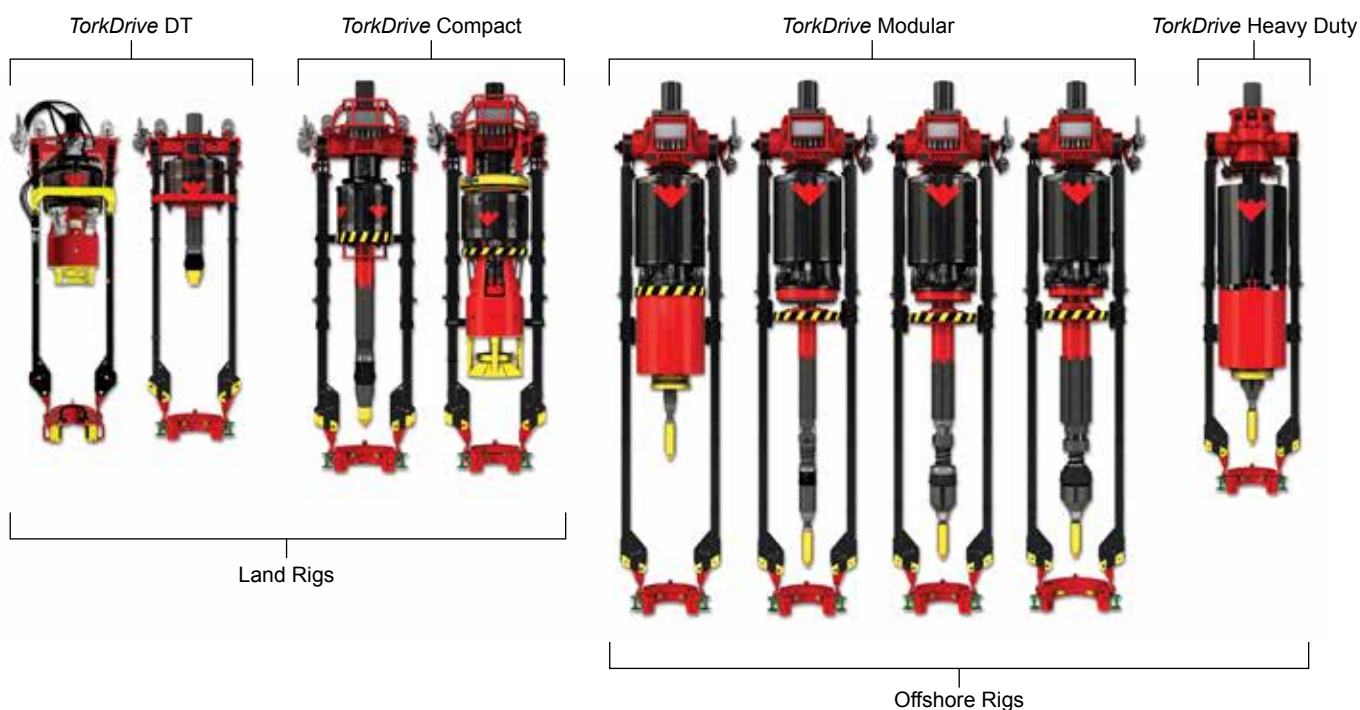
OverDrive System Advantages

- Remote-control capability eliminates the stabber from the derrick and minimizes casing-crew personnel requirements and manual handling of equipment on the rig floor.
- Joint compensator enables connection makeup and breakout without thread damage.
- Simultaneous rotation, reciprocation and circulation capability enables real-time hazard mitigation in predrilled well sections and DwC™ operations and ensures best cementing practices for wellbore integrity.
- Integral fill-up tool enables fast switching between fill-up and circulating modes.
- High-volume circulation and fluid recovery improves DwC and reaming-with-casing operations.

More Applications

Tackling a wide range of reservoirs, from simple to complex

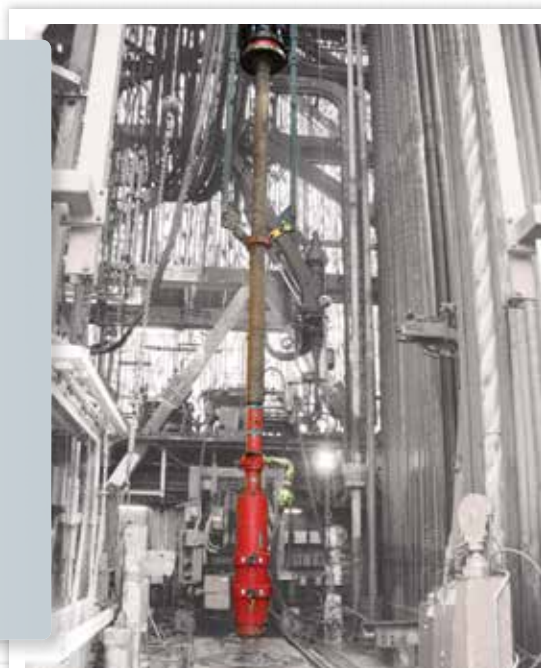
The TorkDrive™ tool is the primary OverDrive™ system component. Weatherford offers a broad portfolio of *TorkDrive* tools that extend the technology's capabilities to virtually any drilling environment.



Operating Scenarios

Since the *OverDrive* system's debut in 2006 as a premier casing running technology, its benefits have been extended to DwC™ and cementing operations. The system advances well-construction operations in all three scenarios:

- **Casing running.** The *OverDrive* system eliminates manual handling and enables portable rig mechanization and real-time hazard mitigation.
- **Drilling with casing.** The *OverDrive* system enables drilling through potential hazards (lost-circulation zones, pressure transitions, unstable formations).
- **Cementing.** The *OverDrive* system rotates and reciprocates the casing string while cementing to improve cement placement and bonding.





More Engineering Planning for the future

Product development

The *OverDrive* system is the product of Weatherford's long-term commitment to tubular installation technology. We have the industry's largest R&D program dedicated to the tubular running business alone. Combining this R&D capacity with decades of field experience, we can customize existing technologies and develop new ones to address reservoir challenges. The result is a revolutionary casing running and drilling system capable of exceeding conventional capabilities.

Project planning

Weatherford's competent well engineers and expert advisors can support the design, planning and integrated execution of your well-construction projects. We work with you to tailor and seamlessly combine technologies and services that ensure your operational objectives are met. Ultimately, we help you maximize value and minimize risk.



We have strategically placed state-of-the-art manufacturing and R&D facilities across the globe. Each of these facilities contains advanced competencies to design, build and test our technologies to meet your operational objectives, from cost reduction to a deepwater applications.

Understanding the challenges

Real Results

The OverDrive™ system has been successfully deployed in **many different applications across the globe** including: HP/HT, deepwater and extended-reach-drilling. Using this extensive field experience, we have enhanced the design of our equipment to optimize performance. Our global service capabilities ensure cross-discipline support and multidisciplinary engineering resources. We are well versed in well-construction challenges and have helped our clients achieve, and often exceed, operational objectives.



Offshore California

Challenge: Installing (floating) a 27,255-ft (8,307-m) liner on an ultra-extended-reach, high-angle well from a fixed platform. The operation also required simultaneous rotation and push-down of the casing string to reach TD.

Answer: The 650-ton *OverDrive* system, equipped with a proprietary gripping system, managed the buoyancy and pushed and rotated the string to planned depth — a record length to date.

U.S. Shale

Challenge: Installing high-integrity production casing strings through high-angle build sections and reaming to TD in long laterals.

Answer: The *OverDrive* system, featuring the *TorkDrive™* Compact tool, has been successfully employed on these smaller land rigs to reliably ream in production casing strings to TD, maximizing well production. The use of this system has also improved zonal isolation in the area by enabling operators to rotate and reciprocate the casing during cementing operations.

Argentina

Challenge: Running a 3 1/2-in., 13Cr casing to TD in openhole completions for onshore development wells to increase safety and efficiency for drilling without reducing running speed.

Answer: The application of the *OverDrive* system reduced personnel requirements and enabled the operator to successfully run the casing to planned depth. A total of 19,242 ft (5,865 m) of casing was run to TD at a maximum speed of 25 joints per hour.



Caspian Sea

Challenge: Reducing transition time between casing running and cementing operations to address problems with mud and cement losses, poor cementing placement and zonal communication.

Answer: The *OverDrive* system, integrated with a rotating and hoisting cementing head, helped minimize equipment rig-up time and enabled rotation and reciprocation of the casing string during cementing. The use of this integrated system greatly improved zonal isolation and minimized mud and cement losses.

Oman

Challenge: Overcoming a brittle shale section that was causing wellbore instability and complicating the ability to set casing at the planned depth.

Answer: Based on experience in similar reservoirs, Weatherford suggested deploying a DwC™ application to mitigate the problem area and avoid contingency strings. The *OverDrive* system, combined with the *Defyer*™ drillable casing bit, was deployed to effectively drill through the trouble section to the planned set point.

Australia

Challenge: Solving re-entry problems caused by large tidal changes, strong currents and poor visibility in the Bonaparte basin. Finding and re-entering the well when drilling the surface section in these conditions was difficult and time consuming.

Answer: Weatherford engineers developed a solution that entailed drilling, casing and cementing the surface section in a single trip, using the *OverDrive* system and *Defyer* drillable casing bit. The hole section was drilled and cased to 748-ft (228-m) target depth in only 6 hours.



OverDrive™ Casing Running and Drilling System

Expect *More*

Weatherford's *OverDrive* system is part of a broad range of tubular running services and products that enable safe and efficient running of tubulars, minimizing wellsite risk and reducing nonproductive time. To learn more about our field-proven technology and comprehensive services, contact an authorized Weatherford representative or visit weatherford.com/TRS.



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