



Wellhead technology

Standard solutions creating customer success



Technology delivering customer success

Industry leading wellhead technology

TechnipFMC has a proven track record focusing on customers, challenging conventions, minimising non-productive time and delivering sustainable and successful economics with our standardised solutions.

Global capabilities

TechnipFMC is a world class equipment and service provider. We offer the best solutions to help exploration, production, and service companies succeed in achieving their drilling, completion, efficiency and safety goals. We also offer a suite of complementary aftermarket services.

TechnipFMC's extensive commitment to producing the highest-quality equipment and systems through advanced designs and manufacturing techniques is on full display at each of our plants. We use lean principles to deliver zero-defect cost-effective solutions. And we constantly explore new ways to optimise our customers' success by reducing complexity and the cost of ownership.

We have the expertise, contacts and resources worldwide to help our customers 24/7.



Our drilling technology

Experience faster time to production, lower operating costs and reduced non-productive time through field-proven standardised drilling systems

Field proven from cost effective conventional to high performance Uniheads®

TechnipFMC's structured and comprehensive portfolio delivers a broad set of standardised drilling products with cost and time efficient solutions, delivering the perfect balance of functionality and reliability for all our customers' well applications.

The technology is fully validated through rigorous test protocols that align with API standards, and when required exceed those limits providing a greater level of reliability for customer operations coupled with many years of field use, this ensures our technology meets our customer's requirements of reliability and quality.

We continually invest in research and development to meet the evolving needs of our industry. All innovations are subjected to exhaustive laboratory and field tests to ensure their reliability and integrity before they are released to the marketplace.

Safety and reliability

TechnipFMC's standardised equipment and renowned sealing technology help eliminate the threat of working under suspended loads, minimise BOP manipulation, reduce installation risks and improve safety throughout the drilling process.

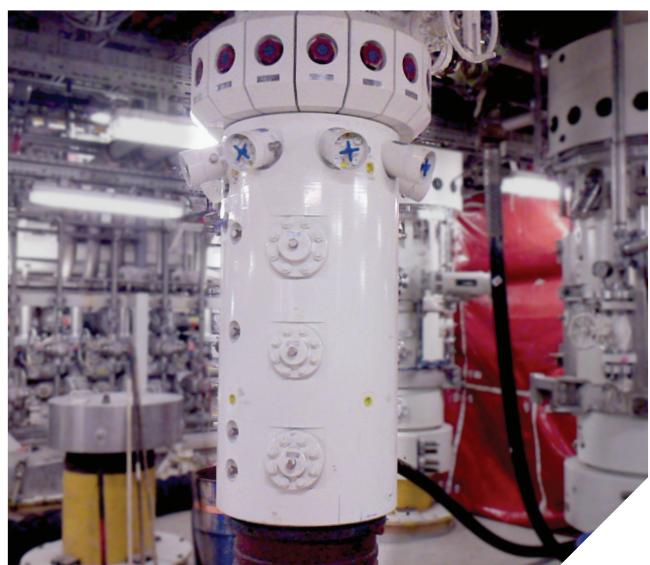
Our ability to address complex project challenges comes from a strong track record of project management expertise. We deliver projects on time, reducing installation risks and never compromising on quality or safety.

Shorter time to production

Non-productive time (NPT) can have a major impact on well economics. Our drilling technology mitigates risks through our robust design verification and validation program, optimising well integrity and minimising NPT and the risks associated with the drilling and equipment installation process.

TechnipFMC's stocking programs ensure our standard components and sub-assembly products are available and ready to be installed to help boost your productivity and accelerate time to first oil.

We deliver top-rated field execution services 24/7, with trained, competent technicians to make sure the job is done right and safely.



Surface wellhead system

TechnipFMC offers a fit for purpose range of drilling products covering simple onshore and offshore drilling to complex operations in harsh well conditions and environments.

Onshore technologies

- ▶ Conventional wellhead
- ▶ Unihead (UH-1, UH-2, UH-3, UH-4, UH-5)

Some systems can be installed on land and offshore platforms.

Offshore technologies

- ▶ Conventional wellhead
- ▶ Unihead (UH-2, UH-3, UH-4, UH-5)
- ▶ SPAR, TLP and SXS

System	Working pressure	Hanger / packoff retention	Sealing technology	Nominal sizes	Temperature rating
Conventional	2K thru 20K	Lockscrew	Elastomer and Rough Casing Metal Seal (RCMS)	7½" thru 21¼"	-75° F to 350° F
UH-1	5K, 10K	Lockscrew	Elastomer	11", 13-½"	-75° F to 250° F
UH-2	5K, 10K	Internal latch	Elastomer	11", 13-½"	-20° F - 250° F
UH-3	5K, 10K	Internal latch	Hybrid PI-metal end cap	11", 13-½"	-75° F - 350° F
UH-4	5K, 10K	Internal latch	Single metal to metal	13⅜", 18¾"	-75° F - 250° F
UH-5	5K, 10K, 15k	Internal latch	Dual metal to metal	13⅜", 18¾"	-75° F - 400° F

Conventional wellhead

TechnipFMC offers a comprehensive range of conventional API 6A drilling equipment covering a wide range of applications from 2,000psi to 20,000psi.

This level of technology provides our customer the best balance between fit for purpose designs and cost.



Benefits

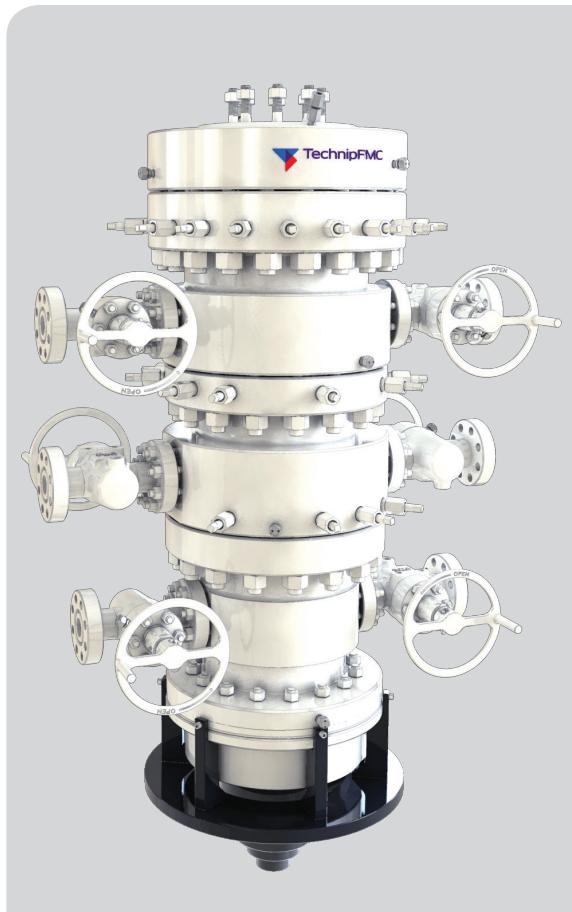
- ▶ Minimised CAPEX investment
- ▶ Interchangeability options
- ▶ Robust and fit for purpose installation tooling
- ▶ Stocking programs supporting short lead-times
- ▶ Field proven C-21/22/29 heads and casing hangers
- ▶ C-100/200 series of hanger with high-load capabilities
- ▶ C-22-EG casing heads and spools reducing complexity
- ▶ Single and dual completions
- ▶ Elastomer and metal-to-metal sealing technology
- ▶ Unique rough casing metal seal for sealing on raw casing
- ▶ Reduced need for field installation support
- ▶ Rig crews familiar with conventional flanged style drilling equipment

UH-1 Unihead® system

TechnipFMCs' Unihead® systems offer safer operation, rig time savings, through-bore installation efficiency and reduced height compared with conventional wellheads.

Time saving solution

Focused on onshore drilling, our simple and robust Unihead® system uses our standard C-22 casing head and delivers many benefits, including improved safety, reduced height, versatility and faster drilling times.



Benefits

- ▶ Uses mandrel hangers for casing suspension, saving rig time
- ▶ Minimises BOP handling as production hanger, packoff and completion run through BOP
- ▶ Provides greater flexibility with multiple casing programs possible
- ▶ Offers maximum 10,000 psi working pressure
- ▶ Shares common tooling with conventional system
- ▶ Reduces installation time
- ▶ Comes in 11" and 13 5/8" nominal sizes
- ▶ Eliminates need for field welding with sliplock casing head options

UH-2 Unihead® system

The UH-2 Unihead® family uses an innovative internal latch mechanism to provide positive lockdown and integrated load shoulder.

Compact solution

The UH-2 drill-through Unihead® is a compact and unitised wellhead system that offers rig time savings, better well control and safer operations. This reliable system installs as a single unit and enables drilling, running casing, cementing and installing hangers and packoffs through the BOP stack.



Benefits

- ▶ No lockdown screws, improving safety and reducing installation time
- ▶ Innovative latch ring and load shoulder mechanism
- ▶ BOP handling minimised as production hanger, packoff and completion are run through the BOP improving safety.
- ▶ Faster installation times
- ▶ Independent load shoulders for hangers
- ▶ Flexible wellhead connections including Speedloc II clamps
- ▶ 13 3/8" bowl providing improved clearance when running through BOP/riser
- ▶ 10,000 psi max working pressure
- ▶ Available in nominal 11" and 13" sizes

UH-3 Unihead® system

The UH-3 Unihead® wellhead system has all the features and advantages of the UH-2, but takes sealing performance to a new level with the Pressure-Intensified Metal End Cap seal (PI-MEC) for low temperature and corrosive environment applications.

Superior seal technology

Well conditions and harsh environments demand a resilient seal package able to withstand temperatures from -75 degrees F to 250 degrees F while achieving gas-tight seal integrity and resistance to Rapid Gas Decompression (RGD). Through extensive research and development plus qualification testing, we have been able to develop a superior seal technology with the Pressure Intensified Metal End Cap seal (PI-MEC) performing on a similar manner to a metal seal.



Benefits

- ▶ Same internal profile of the UH-2 and UH-3 systems providing full interchangeability with the production packoff and completions
- ▶ Proprietary seal technology developed in-house using proprietary rubber compounds
- ▶ Innovative pressure intensified design, increasing bulk modulus of the PI-MEC seal to prevent the ingress of gas into the elastomer
- ▶ System suited for arctic or high temperature well conditions
- ▶ Tooling fully interchangeable between UH-2 and UH-3
- ▶ Maximum working pressure 10,000 psi
- ▶ Nominal 11" and 13" sizes available

UH-4 Unihead® system

To meet industry demands for full metal-to-metal (M2M) sealing wellheads, TechnipFMC has developed a comprehensive range of innovative wellhead solutions for 13 $\frac{5}{8}$ " and 18 $\frac{3}{4}$ " applications.

Metal-to-metal sealing

The UH-4 drill-through Unihead is a critical application wellhead system with full metal-to-metal sealing capabilities. This system offers rig-time savings, better well control and safer operations for rig crews. Top-of-the-line materials and cladding ensure equipment will last through the life of the well with minimum unplanned maintenance and lost production.



Benefits

- ▶ Proven metal-to-metal seal technology with thousands of surface and subsea installations globally
- ▶ A range of global standards developed for our clients' well conditions
- ▶ Extensive product testing enhancing well integrity and minimising NPT
- ▶ Flexibility with a range of stuck pipe contingency solutions using both metal-to-metal sealing and elastomer
- ▶ Packoffs set under BOP pressure with no rotation (stab in/stab out)
- ▶ Hanger/packoff interface optimised to ensure elimination of alignment issues
- ▶ Standard and field proven tool package with single-trip options

UH-5 Unihead® system

TechnipFMC is renowned for technology innovation and the new UH-5 wellhead system is a prime example of listening to our customers and using our in-house expertise to develop an industry leading wellhead solution.

Unique value proposition

The foundation of any wellhead system is the sealing technology and the UH-5 uses a unique and unrivaled dual metal-to-metal packoff. The UH-5 packoff has a reputation for consistency and reliability with multiple installations successfully completed. The UH-5 wellhead solution and dual metal-to-metal packoff provides a unique value proposition by eliminating elastomers.



Benefits

- ▶ Dual metal-to-metal packoff with each seal independently tested
- ▶ Exceptional bidirectional sealing performance up to 15,000 psi and 400°F
- ▶ Packoff design eliminates need for elastomer test seals
- ▶ Standard wellhead configuration reduces complexity
- ▶ Full metal-to-metal stuck pipe/contingency solution available
- ▶ Installed through BOP and pressure set similar to UH-4 packoff
- ▶ Sealed with recessed seal areas and corrosion resistant alloy material
- ▶ Field-proven technology and tool package minimises nonproductive and installation time
- ▶ Enhanced well integrity through extensive product testing exceeds API PR2F

Global service and aftermarket support

Service has long been a key differentiator for TechnipFMC. We sustain our customers with a full range of services and aftermarket support 24/7 worldwide.

TechnipFMC supports client operations from our strategically located field bases, providing responsive service, quality equipment and local expertise. Competent technicians deliver superior service including installation, repair, maintenance and asset management. We offer extensive local inventories and rental options. Our commitment to HSE, value and service excellence helps our clients maximise their potential.



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