TechnipFMC

UH-4 Unihead®

Standardised solutions improving well economics

Surface Technologies

Surface Technologies is a market leader in the design and delivery of products and services to the oil and gas industry. We are defined by technological innovation, reliability, product quality and integrated services, making us the partner of choice.

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.

Photographer/Aker BP

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 systems

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

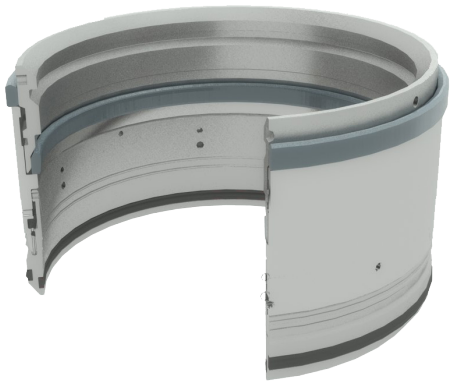
- Conventional wellhead
- Unihead® (UH-2, UH-3, UH-4, UH-5)
- SPAR, TLP and SXS

System	Working pressure	Hanger / packoff retenion	Sealing technology	Nominal sizes	Temperature rating
Conventional	2,000 psi thru 20,000 psi	Lockscrew	Elastomer and Rough Casing Metal Seal (RCMS)	7⅛" thru 21¼"	-75° F to 350° F
UH-1	5,000 psi, 10,000 psi	Lockscrew	Elastomer	11", 13-⅝"	-75° F to 250° F
UH-2	5,000 psi, 10,000 psi	Internal latch	Elastomer	11", 13-⅝"	-20° F- 250° F
UH-3	5,000 psi, 10,000 psi	Internal latch	Hybrid PI-metal end cap	11", 13-⅝"	-75° F - 350° F
UH-4	5,000 psi, 10,000 psi	Internal latch	Single metal to metal	13⅝", 18¾"	-75° F - 250° F
UH-5	5,000 psi, 10,000 psi, 15,000 psi	Internal latch	Dual metal to metal	13⅝", 18¾"	-75° F - 400° F

UH-4 Unihead®

UH-4 Unihead® packoff

Annular packoffs are one of the most important features of any wellhead system. Our UH-4 Unihead system uses the field proven UWD-15 single metal-to-metal packoff technology, which is common across surface and subsea. For surface applications, the only change is the addition of test seals for the ability to regularly test the packoff throughout the life of the well. More than 4,800 of these packoffs have been installed worldwide in extremely harsh environments validating their performance. Rigorous qualification testing has been performed exceeding the requirements of API 6A PR2 Appendix F.



UWD-15 Single Metal Sealing Packoff

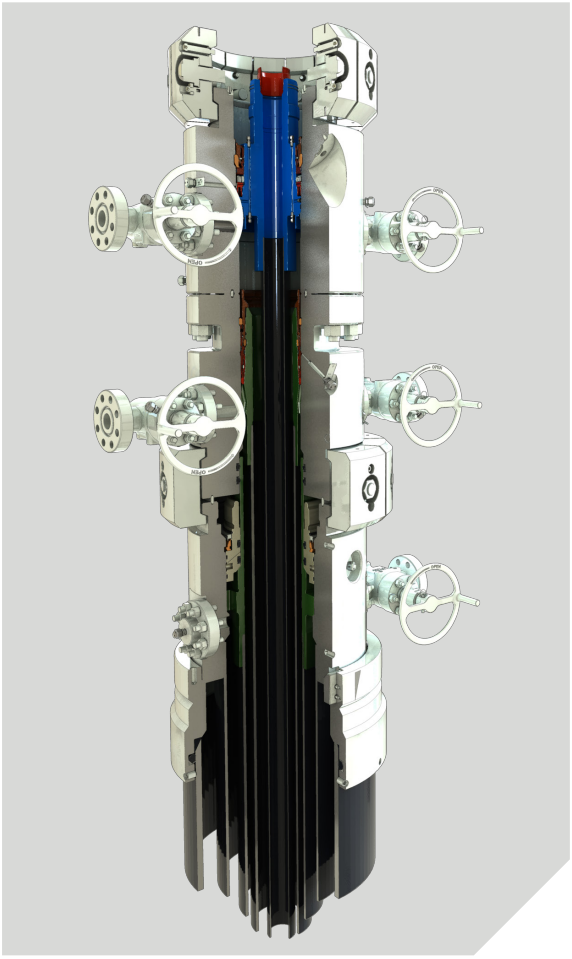
Qualification testing of UWD-15 Single Metal to Metal Packoff

- 13⅝ - 15,000 psi from the top, and 10,000 psi from the bottom, -75° F to 250° F
- 18¾ -15,000 psi from the top, and 10,000 psi from the bottom, -75° F to 250° F

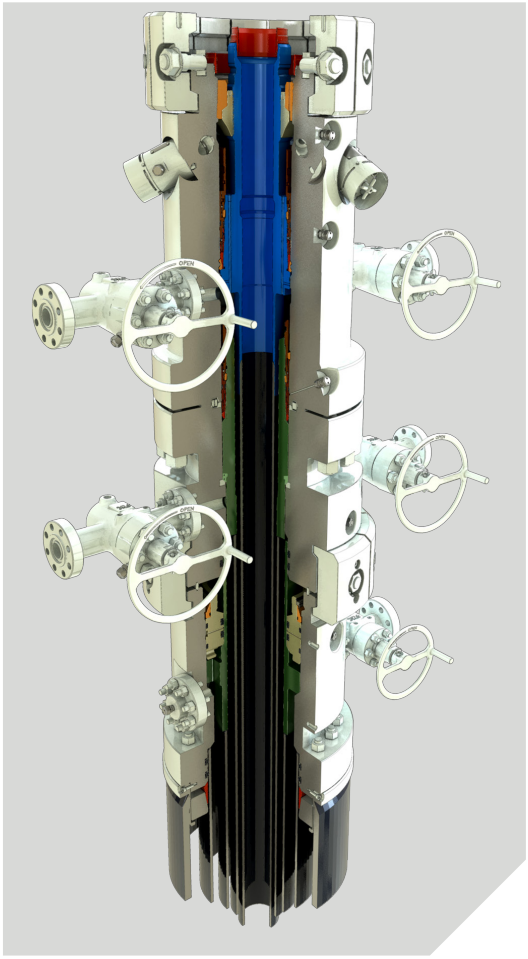
UH-4 Unihead® systems

TechnipFMC's UH-4 Unihead system take its origins from our UWD-15 Subsea Unihead. First demarinised in 1995 to meet the rigours of the North Sea, the 18¾-inch system has become the Unihead® of choice with drilling managers around the world. The 13⅝-inch subsea "Slim Bore" UWD-15 was demarinised in 1996, providing single stack and twin stack options to the operators. Sharing technology developed for deepwater solutions, the Surface UH4 shares design and operational features with the subsea version.

Since the introduction of the technology in the late 1990s, TechnipFMC has continually improved the metal sealing technology to handle demanding global environments. We have enhanced the installation tooling to improve installation times, reduce nonproductive time (NPT) and help our customers cut well costs.

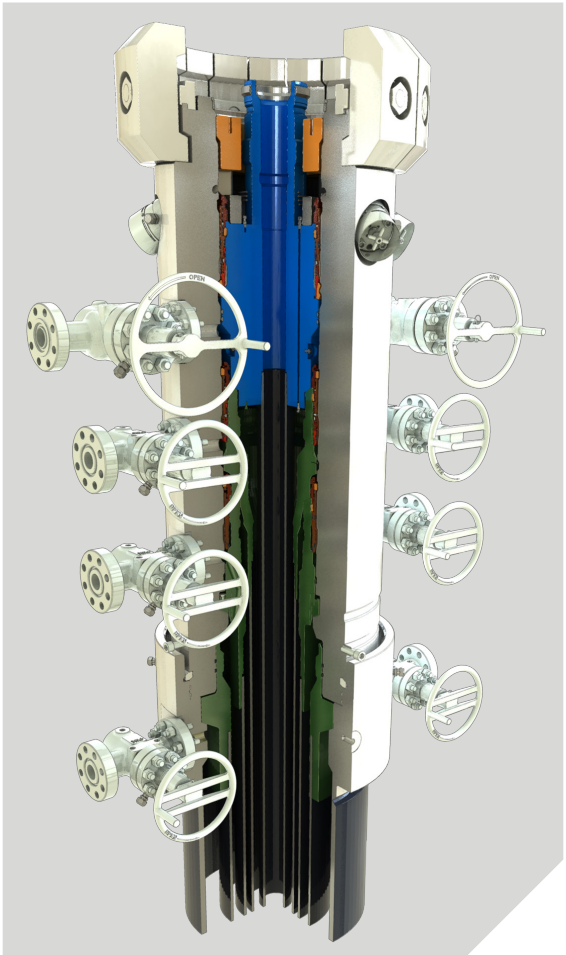


13⅝" UH-4 Unihead® with independent load shoulders



13⅝" UH-4 Unihead® with nested load shoulders

Available in 5,000 and 10,000 pressure ratings, the UH-4 caters to a wide range of casing programs. Typically the most common casing is 30” x 20” x 13⅜” x 9⅝” x tubing. However, 18⅝-inch, 14-inch and 10¾-inch can be employed while using the same metal sealing packoff. A wide range of conductor sizes can also be used. The 13⅝-inch system can use either a single stack (18¾-inch) or a twin stack BOP, while the 18¾-inch system uses a single stack 18¾-inch BOP.



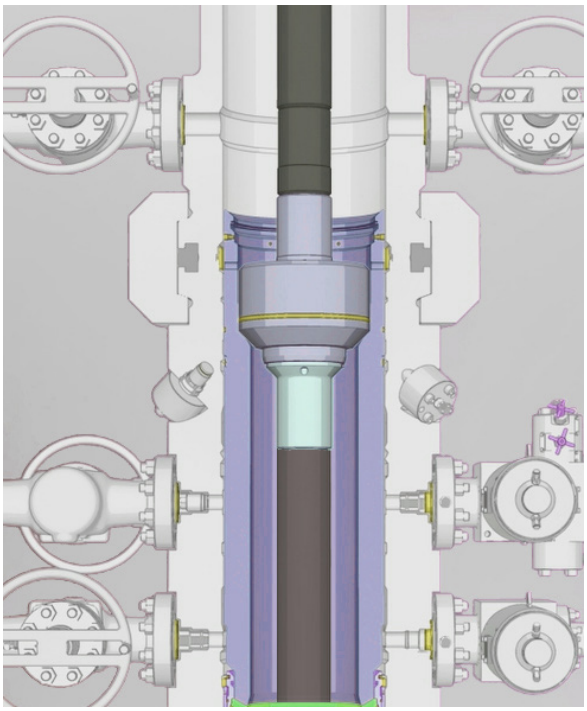
18¾” UH-4 Unihead® with
nested load shoulders

UH-4 Unihead® features and benefits

Since first introduced in the North Sea in 1995, the UH-4 System has been constantly evolving. Our goal is to lower installation costs, improve safety and reduce non productive time (NPT).

Trip Optimisation/Trip Reduction/ Minimal Trip tooling package

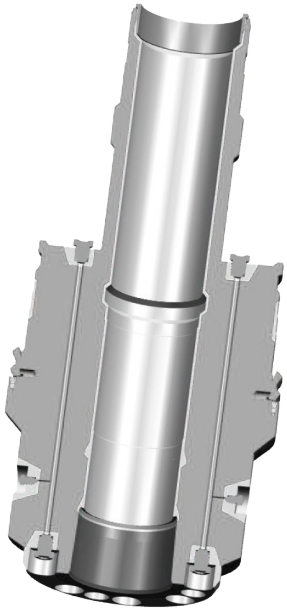
- Multipurpose tools to improve functionality and operating costs
- No rotation of tools (all are stab-in, stab-out with the exception of the Casing Hanger Running Tools which employ ACME running threads)
- Elimination of J-slots on bowl protectors
- Elimination of cup testers
- Single trip tubing hanger running tools
- Production casing bowl protector left in place to facilitate BOP test
- Elimination of sharp v-threads on annulus outlets; all annulus connections use ACME VR plugs
- Optimization of production and drilling with all identical annulus outlets the same (minimising spares, commonality of equipment, 1 set of drilling valves, all BOP tests performed at maximum pressure rating)
- More efficient wash tools
- Minimum of eight hydraulic or electric lines accommodated



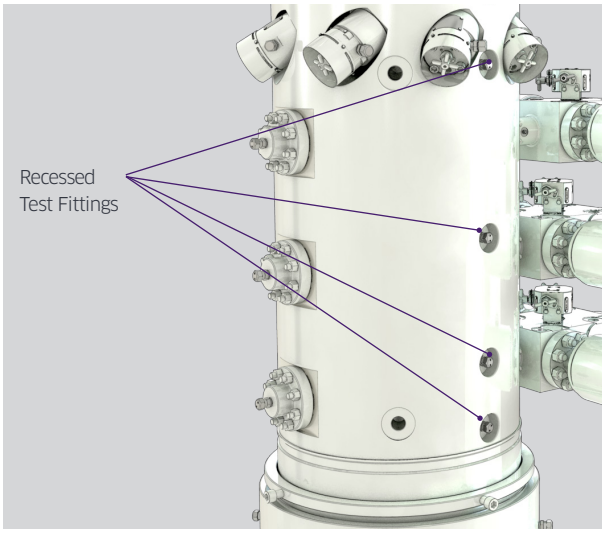
BOP Testing in Bowl Protector

Minimized NPT

- Assembled and tested equipment and tools
- Easy installation; control lines in tubing hanger - large bore control line galleries for rapid feed through of control lines. With recessed lower profile to protect from tonging application and gas lift in the production annulus
- Fewer trips, saving time.
- LP riser quick connector (5 mins make-up compared to a standard API flange)
- Angled tangential exit block outlets and installation rods make for safety
- Ability to reconnect tubing hanger running tool to downhole lines after breaking out connection



Tubing hanger showing large bore control line galleries



Safety By Design

- Sunken bleeder plugs recessed and fixed in place to protect from dropped objects
- Casing hanger running tool capacity exceeding top drive, reducing uncertainty of equipment limitations and capacities should operational conditions change

Photographer/Aker BP

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.

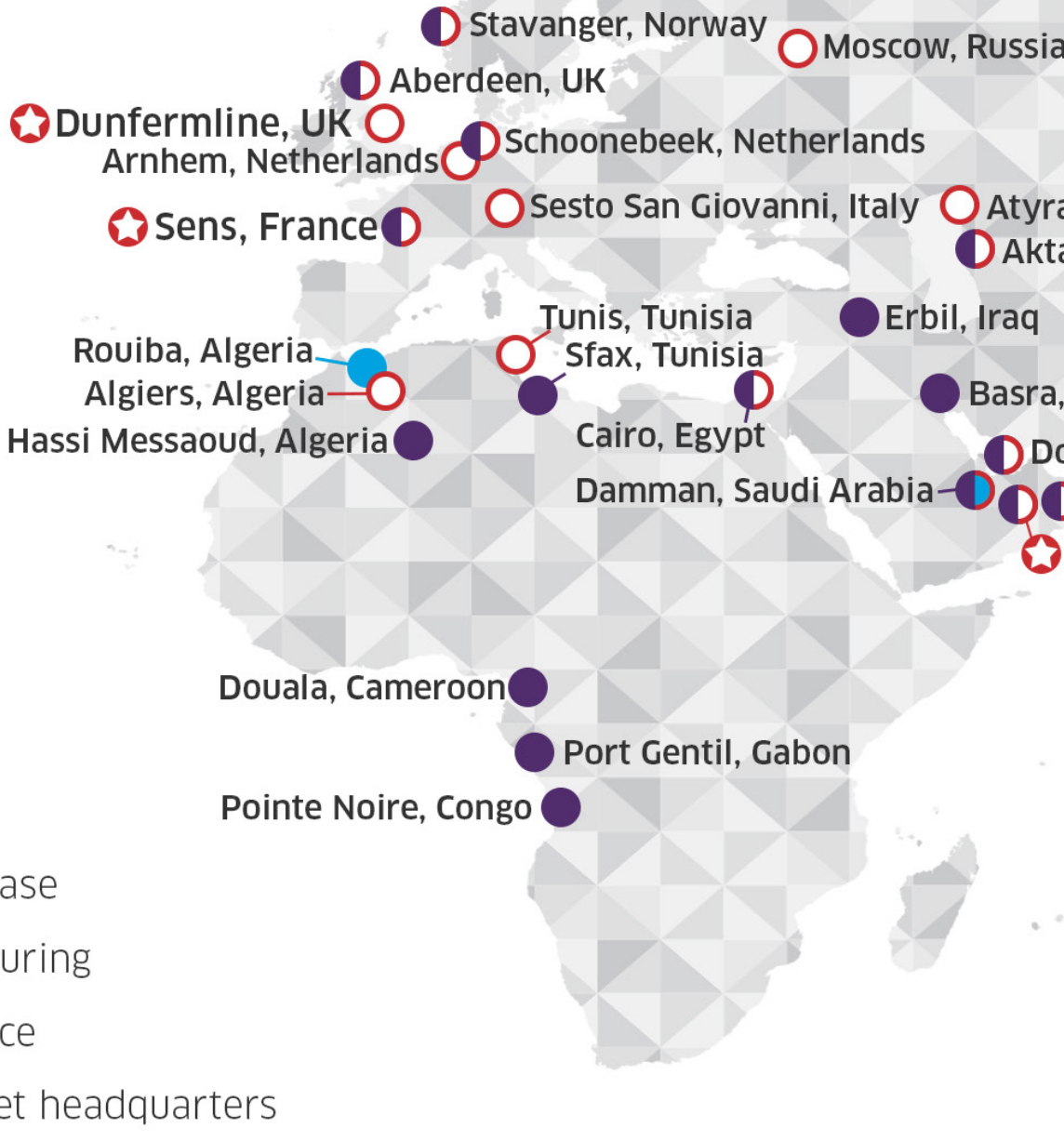
Life-of-Field services

- Installation and workover support
- Cold casing cutting
- Bolting service
- Asset integrity and maintenance
- Wellhead and Christmas tree decommissioning

Workshop services

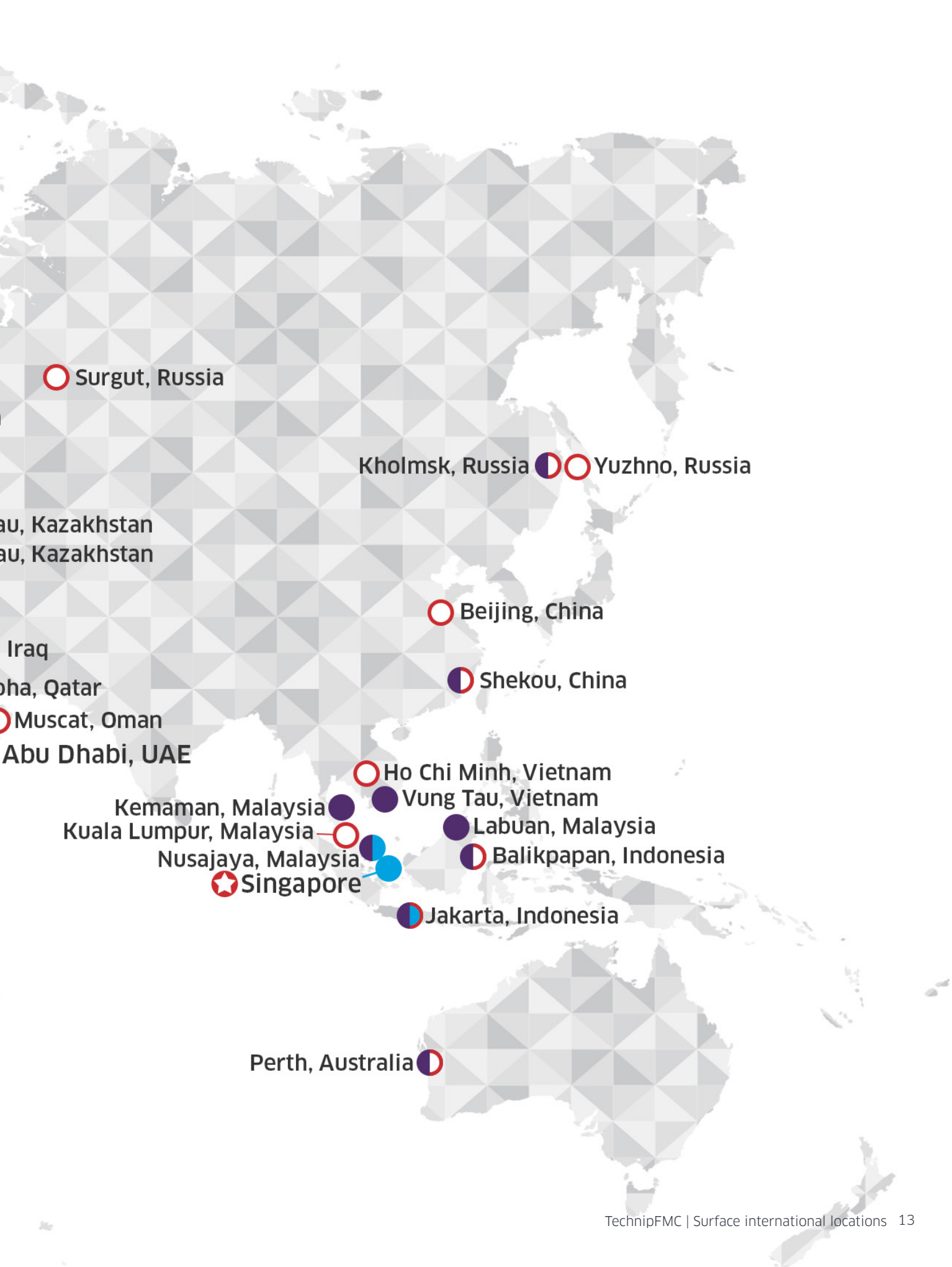
- Inventory management
- Preservation, storage and maintenance
- Inspection, refurbishment and repair
- Torquing service on hangers and landing strings
- Systems integration testing

Surface international locations



Legend

- Service base
- Manufacturing
- Sales office
- Geomarket headquarters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