TechnipFMC

UH-2 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-2 Unihead®

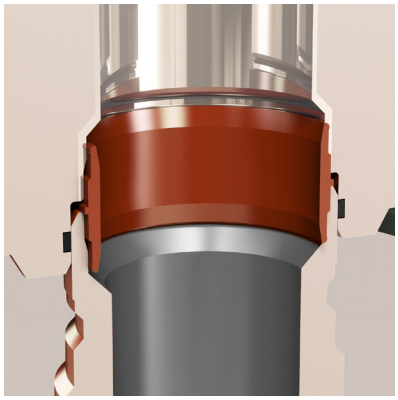
UH-2 Sealing technology

The foundation of any wellhead system is the sealing technology and its integrity over the productive life of the well

TechnipFMC has a solid track record of investing in the development of new seal technologies. We continue to invest in metallic and non-metallic seal technology to handle all well conditions globally from low pressure oil wells to high pressure and high temperature gas wells. Our seal technologies have been designed to be reliable, robust and practical while delivering trouble-free seal integrity throughout the life of the well. Our seal capabilities cover 2,000 psi through 20,000 psi and temperatures from -75° F to 400° F.

FS Seal

S Seal



Straight Bore Metal Seal (SBMS)

The UH-2 product family offers a variety of non-metallic and metallic seal technologies covering a wide range of well conditions:

- S & FS Seals for machined and rough casing have been designed in-house using proprietary elastomer compounds (NBR, HNBR and FKM)
- Elastomer compounds have undergone stringent Rapid Gas Decompression testing per industry standards and our own internal test protocols
- Immersion testing has been carried out using various fluids to validate the suitability of the elastomer compounds for drilling and completion service
- Dovetail, L-Packing and compression packing for installation tooling
- Straight Bore Metal Seal (SBMS) for gas tight sealing between the tubing hanger neck and christmas tree
- Fire testing conducted on our metal-to-metal seals

Both metallic and non-metallic seals have been qualified in accordance with API6A PR2F.

UH-2 Unihead® system

The UH-2 Drill-Through Unihead® is a compact and unitised wellhead system that offers rig time savings, better well control and safer operations for rig crews.

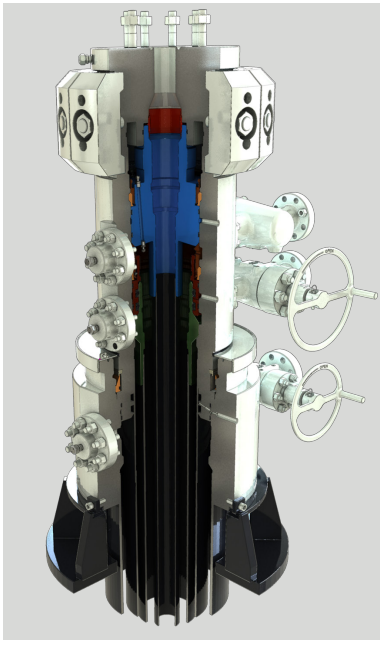
Since its market introduction in 2007, the UH-2 Unihead® system has provided many benefits to our clients, including a significant reduction in installation time and nonproductive time (NPT) and improvements in overall safety. We listened to our clients' feedback on equipment performance and delivered with the UH-2 Unihead®.

The UH-2 Unihead® system can be used as an alternative to our conventional spooled system or our UH-1 Unihead® system.

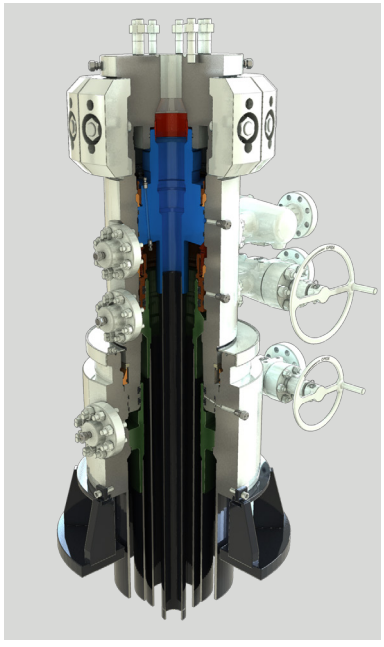
Advantages

- Offers internal latch packoffs and heavier load capacity
- Caters to single or twin stack BOPs and reduces BOP manipulation
- Saves up to 40 hours of rig time per well compared to conventional wellheads
- Improves pressure integrity with fewer through-wall penetrations

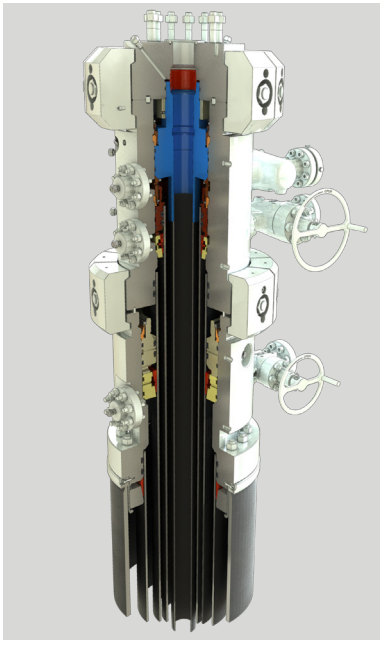
Available with light or heavy casing programs:



Onshore / Basic
(Available in 5,000 psi or 10,000 psi)



Onshore / Medium
(Available in 5,000 psi or 10,000 psi)



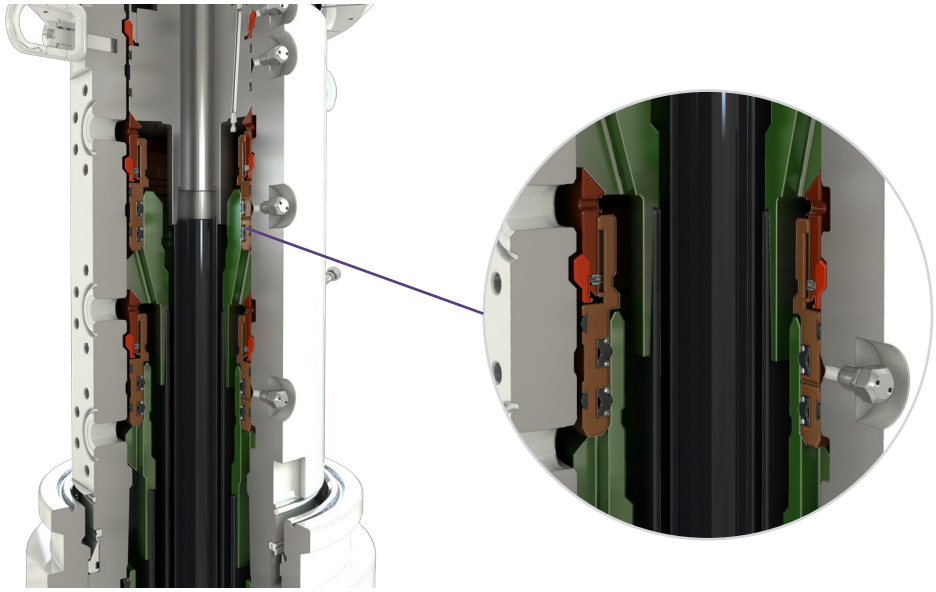
Offshore / Advanced
(Available in 10,000 psi)

UH-2 internal latch packoff

A significant design innovation in the UH-2 Unihead® system is the internal latch packoff. The packoff uses an expanding latch ring retention mechanism, replacing lockdown screws.

The latch ring can be set and unset from the rig floor through the BOP stack, saving significant rig time compared to the lockdown screws system. Once engaged, the latch ring then becomes an independent load shoulder for the next hanger.

Intermediate and production casing string packoffs are identical. Contingency packoffs are different, but use the same set of installation tools. We use a positive latch design that clearly indicates latch engagement and proper packoff installation.



Internal packoff features include:

- Eliminates lockdown screws reducing leak paths
- Creates independent load shoulders
- Fits all hanger sizes
- Uses FS and S elastomeric seals with integral non-extrusion rings
- Installs through the BOP, improving safety

UH-2 offshore system

Available only in a standard 10,000 psi, the UH-2 offshore system caters to a wide range of casing programs including the common 30" x 20" x 13⅜" x 9⅝" x tubing casing as well as 10¾, 18⅝, and 14-inch casing with the same proprietary UH-2 elastomer sealing packoff.

The UH-2 system also accommodates the full-hole and slim-hole casing programs as well as a full range of conductor sizes.

The 13⅝-inch offshore system is primarily designed for a single stack 18¾-inch BOP, but a starter head with a 20-inch bowl is available for two stack BOP configuration or Mudline Suspension System (MLS).

Features and benefits

Flexibility and reduced installation time

- 10,000 psi maximum working pressure
- 20-inch Sliploc or buttress starter heads
- Option for larger bowl if using MLS
- Starter head upper connection 20¾-inch, 3,000 psi Speedloc®
- Slim-hole and full-hole casing program options
- 13⅜-inch casing hanger landed in starter head, run through BOP
- Made up to starter head using 20¾-inch, 3000 psi Speedloc®
- Fluted casing hangers and packoffs run through BOP. saving wait time on cement
- Emergency slip hangers available in case of stuck casing
- Facilitates BOP test with short bowl protector left in place

Safety and reliability

- Internal latch UH-2 packoff
  - Eliminates lockdown screws, reducing leak paths
  - Ensures safe installation through the BOP
  - Creates independent load shoulder
  - Fits all hanger sizes
  - Uses proprietary FS and S elastomeric seals with integral non-extrusion rings
  - Available as separate contingency packoffs
- Eliminates J-slots on bowl protectors; Stab in/out design

UH-2 onshore system

Available in 5,000 psi and 10,000 psi, the UH-2 Unihead® onshore system caters to a wide range of casing programs including the common 30" x 20" x 13⅜" x 9⅝" x tubing casing as well as 10¾,, 14, and 18⅝,-inch caing with the same proprietary UH-2 elastomer sealing packoff.

A wide range of conductor sizes can also be used. The 13⅝-inch cnshore system uses a twin-stack BOP 20¾-inch 3,000 psi, 21¼-inch 2,000 psi and 13⅝-inch 5,000 psi or 10,000 psi).

Features and benefits

Flexibility and reduced installation time

- Drilled with two-stack BOP (20¾-inch, 21¼-inch and 13⅝-inch)
- 5,000 psi and 10,000 psi maximum working pressure
- 18⅝-inch and 20-inch Sliploc and buttress starter heads, 20.140-inch and 18.595-inch bowl
- Starter head upper connection 20¾-inch, 3000 psi API hub (compatible with Speedloc® II clamp)
- Slim-hole and full-hole casing program options
- Basic system: 13⅜-inch casing is threaded into the Unihead® and run through the low pressure diverter with the Unihead®
- Medium system: 13⅜-inch hanger runs through the diverter and lands in starter head, Unihead® is then nippled up
- Quick stab connected to starter head
- Fluted casing hangers runs through BOP, saving wait time on cement
- Emergency slip hangers available in the case of stuck casing
- Facilitates BOP test with short bowl protector left in place

Safety and reliability. Working to eliminate NPT

- Internal latch UH-2 packoff
  - Eliminates lockdown screws, reducing leak paths
  - Ensure safe installation through the BOP
  - Creates independent load shoulders
  - Fits all hanger sizes
  - Uses proprietary FS and S elastomeric seals with integral non-extrusion rings
  - Available as separate contingency packoffs
- Eliminates J-Slots on bowl protectors; Stab in/out design

UH-2 value proposition

Value proposition

- Low-cost Unihead® option: same flexibility, safety and operating costs benefits of a Unihead at a lower cost
- Saves 40 hours of rig time compared to conventional system:
  - Fast make up of starter head to Unihead®
  - Speedloc II clamp connection is used on the starter head and Unihead for drilling, with more time savings than API flanged connections
  - Uses mandrel hangers, eliminating wait time on cement
  - No lifting of BOPs to cut casing
  - Field proven packoff – installs and tests first time every time
  - Efficient tooling to ensure smooth wellhead running
- Safer than conventional wellheads due to fewer BOP manipulations working under suspended load to cut casing
- Globally standardised and field-tested UH-2 Unihead® system
- Standardised global tool pool available near you

Features

- Internal latch – no lockdown screws
- Independent load shoulders
- Fast makeup Speedloc® clamps
- Fluted mandrel casing hangers
- Elastomeric packoffs using our seal technology
- Flexible design with standardised product across slim-hole and full-hole casing programs
- Onshore and offshore configurations
- Inbuilt safety features across UH-2 product range

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.

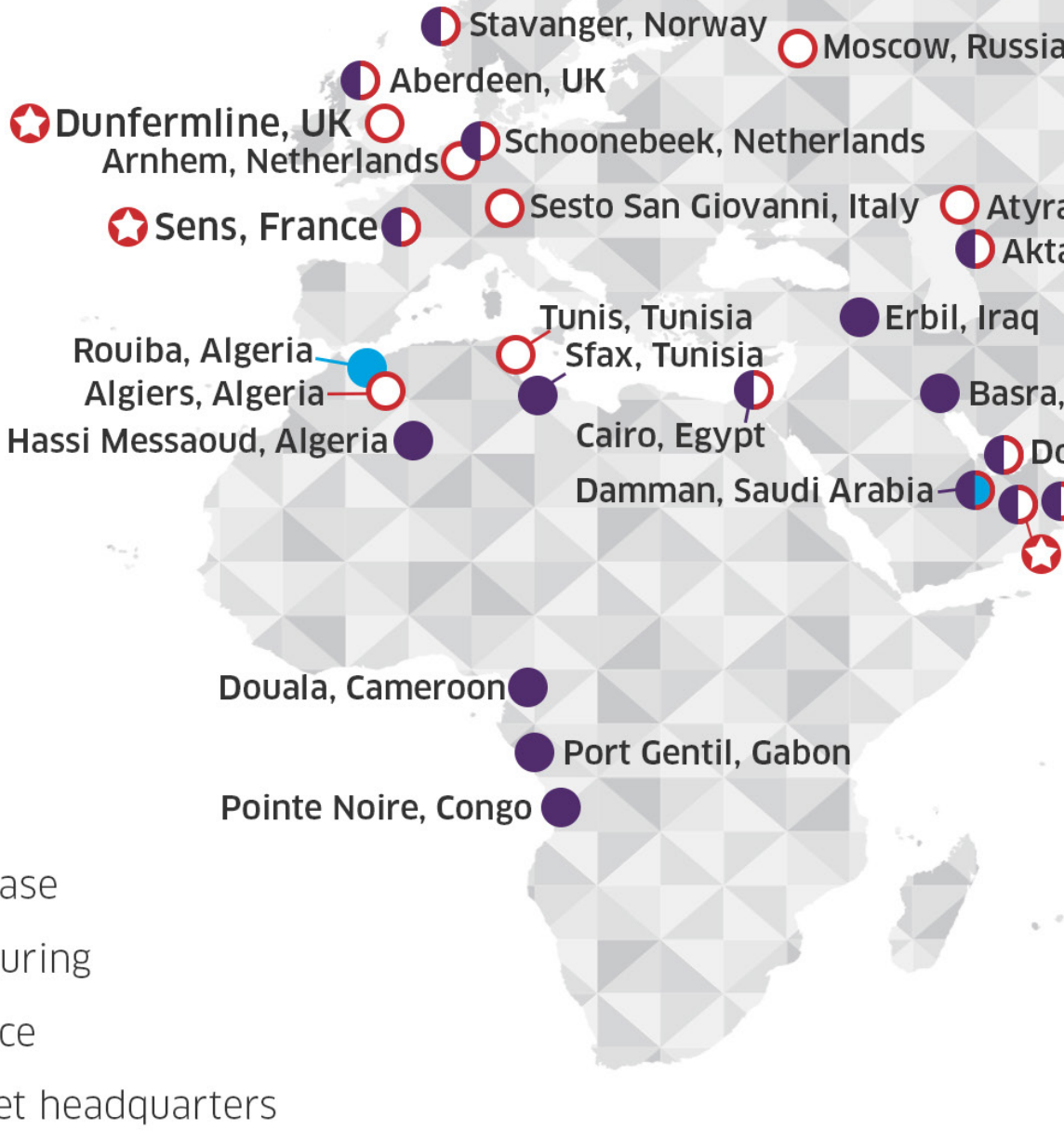
Life-of-Field services

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

Workshop services

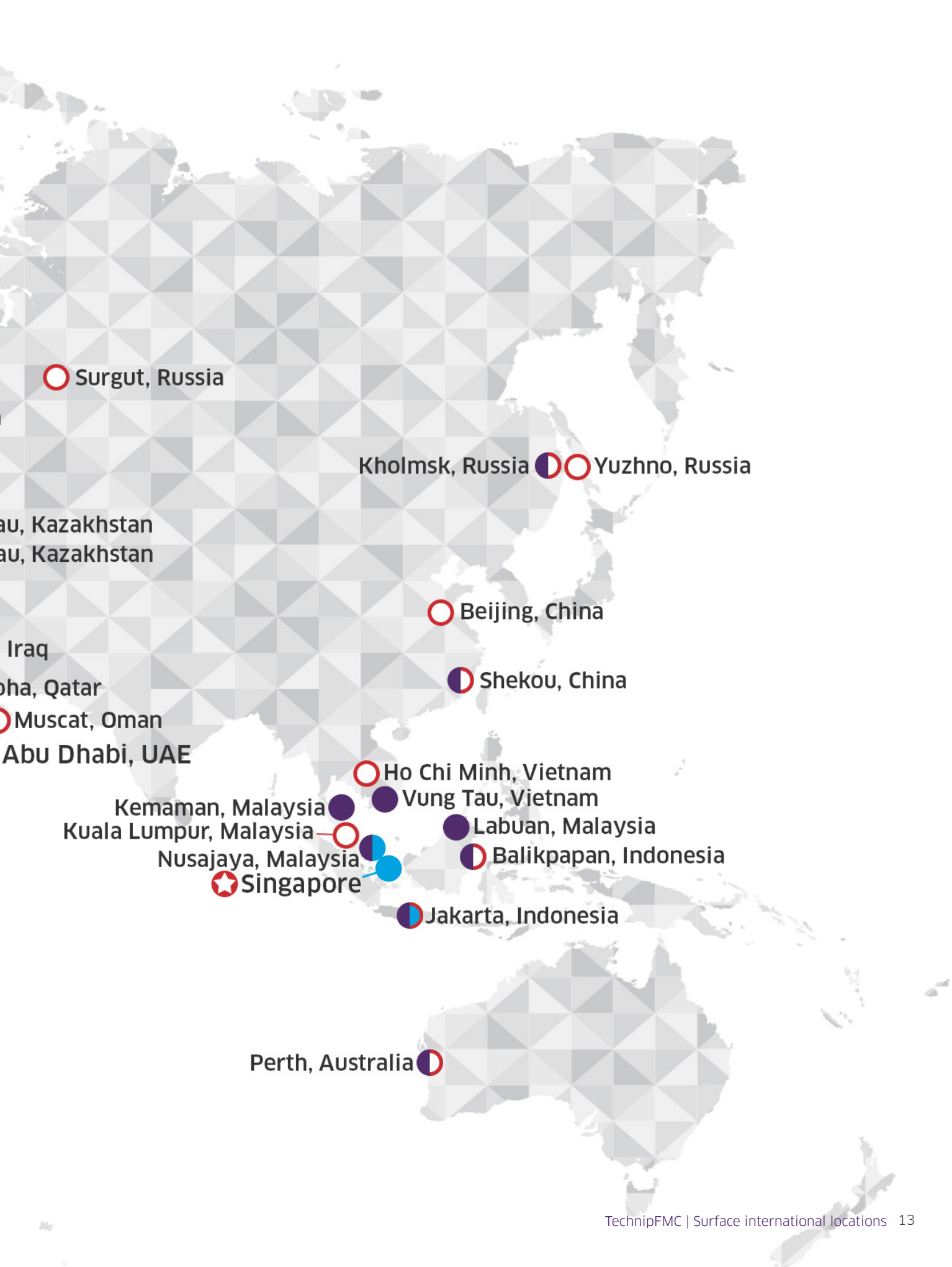
- Inventory management
- Preservation, storage and maintenance
- Inspection, refurbishment and repair
- Torquing service on hangers and landing strings
- Systems integration testing

Surface international locations



Legend

- Service base
- Manufacturing
- Sales office
- Geomarket headquarters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Version 1