James Fisher and Sons plc
Pioneering Sustainably

James Fisher and Sons
Decommissioning toolbox

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James Fisher is a global provider of decommissioning services that utilises a range of leading equipment to deliver on projects safely, on time and within budget.

Through expert engineering and experienced personnel, we have curated a decommissioning suite of assets to service even the most difficult projects across the energy sector.

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Diamond Wire Saw

James Fisher and Sons hydraulic diamond wire saw (DWS) cutting equipment has been designed and manufactured to excel in safety, quality, durability and ease of use to ensure total customer satisfaction.

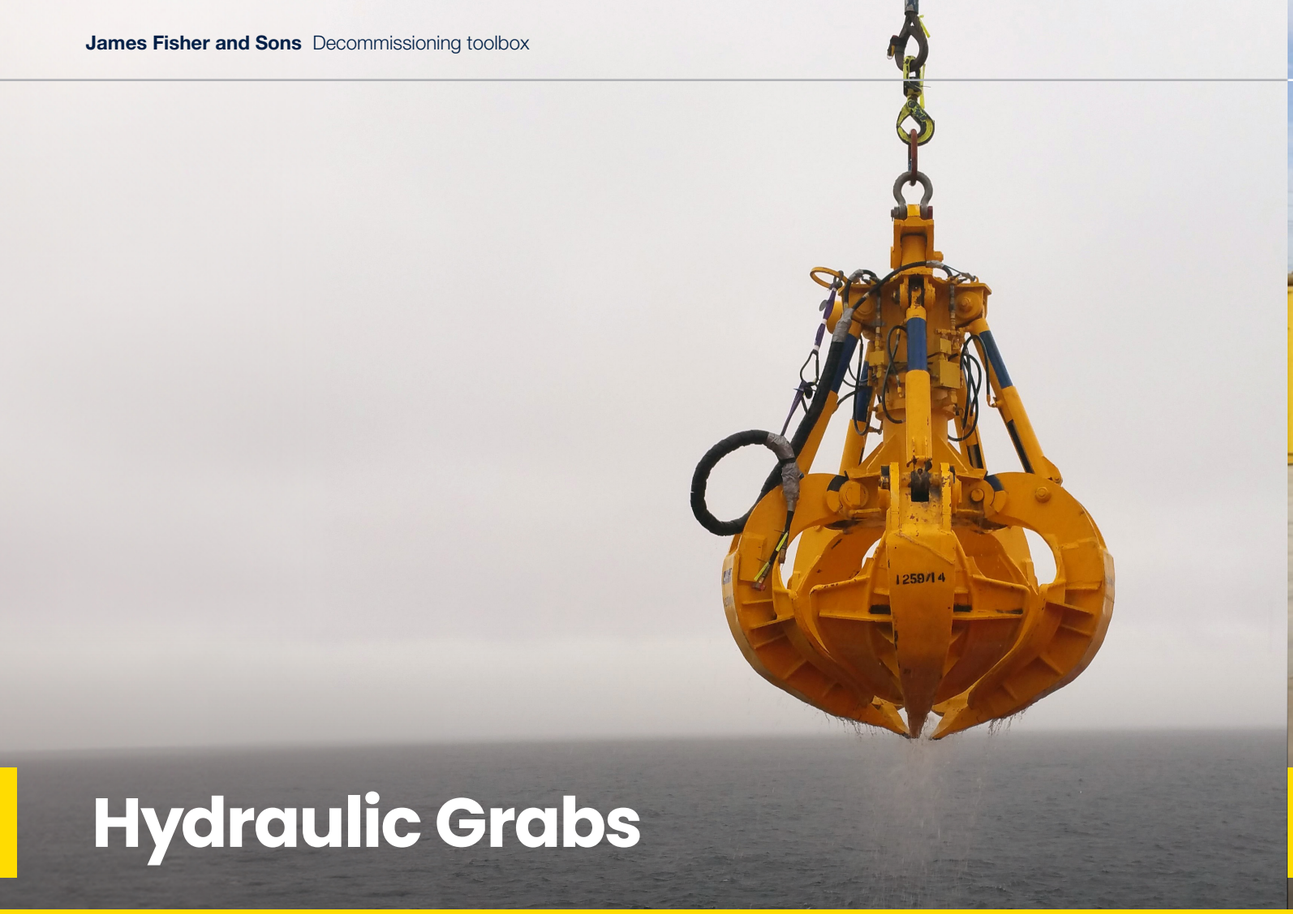
The DWS range has been specifically designed for ‘subsea’ pipe-cutting operations of varying materials and thicknesses.

The saw uses a continuous loop, diamond cutting wire together with a hydraulic drive and feed system to advance the wire into the workpiece.

The DWS can be operated by a variety of methods: Deck controls, Diver controls or by ROV via hot stabs. Optional extras include: Buoyancy modules, Hot stab set, Deck or Subsea control panel, Alternative wire types designed to suit the most difficult of materials and coatings.

Our range of diamond wire saws are available in:

Diamond Wire Saw	6-20”
	16-38”
	26-60”
	36-64”



Hydraulic Grabs

Our grab equipment offers versatile operation from the vessel's back deck using a control stand or remotely via ROV hotstabs.

Additionally, each grab is equipped with emergency release valves, ensuring the load can be quickly and safely released in the event of a hydraulic failure.

Our range of grabs include:

Orange Peel Grab	5.6Te 10Te 15Te
Clamshell Grab	3Te 10Te
Universal Grab	5Te 20Te

For more information, including spec sheets for our range of grabs, please contact **info@jfdecom.com**

Hydraulic Shears

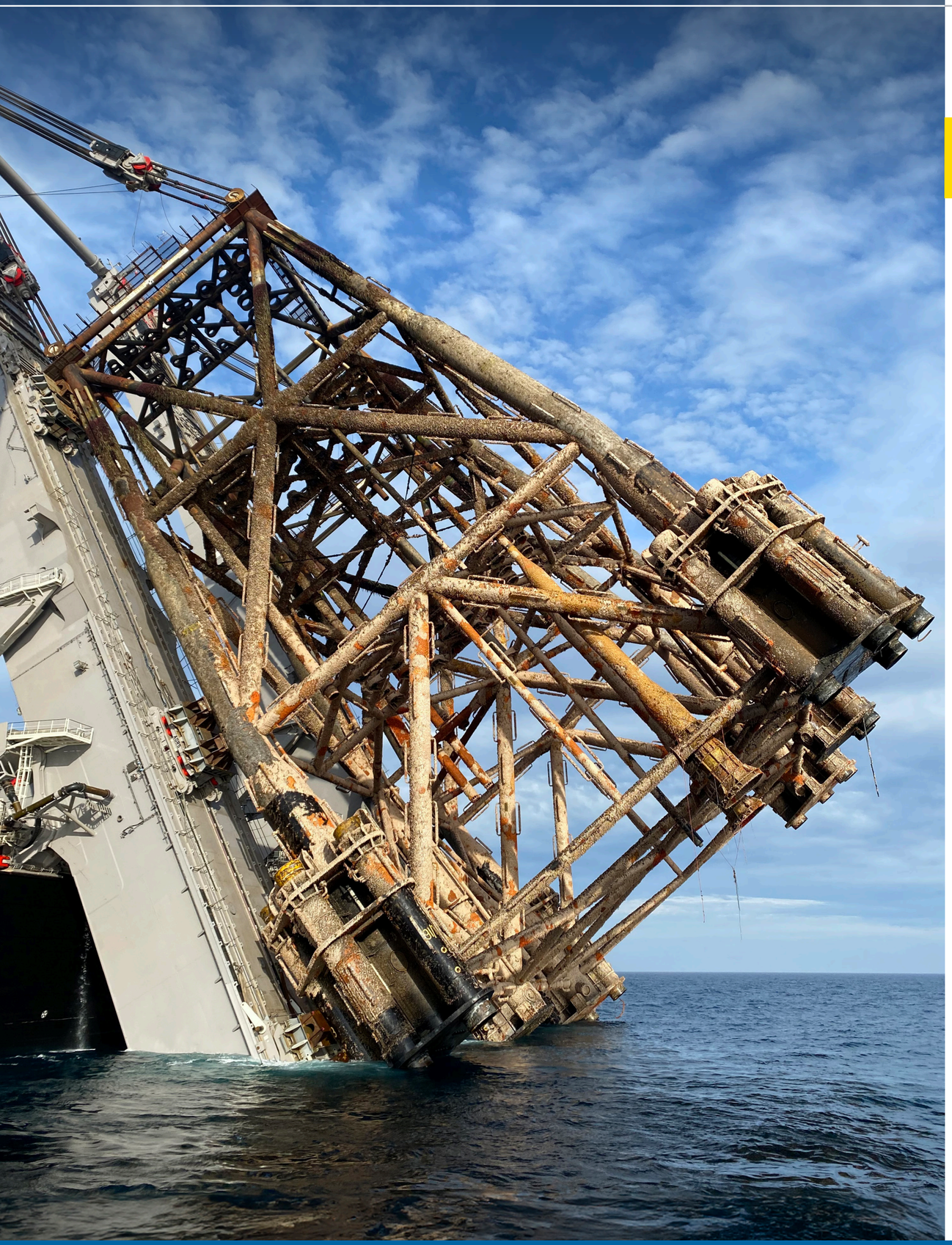
Our demolition shears excel when precision cuts are less of a priority. These hydraulic subsea shears can be operated from the back deck via a control stand or remotely via ROV hotstabs.

Designed for versatility, our shears are suitable for both subsea and topside cutting, with the added option of fitting intensifiers to reduce HPU size.

Our range of hydraulic shears include:

Hydraulic Shears	1344Te 1500Te 1950Te 2345Te 2510Te 2835Te

For more information, including spec sheets for our range of hydraulic shears, please contact **info@jfdecom.com**



Abrasive Water Jet Cutting

We are committed to continually innovating our equipment portfolio, and our Abrasive Water Jet Cutting (AWJC) spread is no exception.

Our AWJC system uses ultra-high-pressure water mixed with garnet to sever steel greater than 600mm from the nozzle with localised dewatering. It is ideal for cutting multi-string well arrangements, casings, piles and tubulars, both internally and externally.

- Ultra High Pressure Pump
- Abrasive Mixing Unit (Optional Twin AMU)
- Switch Box (Twin AMU only)
- Control System and HPU
- Air Compressor
- Air Receiver
- Garnet Container
- Hose Reeler
- Overboarding Chute/Deployment Frame

AWJC Cutting Heads

We offer a large range of cutting heads, optimising internal accessibility.
Below sizes are internal clamping range:

DCH I	7”
DCH II	9-5/8” - 20”
PCH	16”-36”
DCH III	30”-50” // 50”-72”
DCH IV	70”-96” // 96”-118”
External Cutting Tool (ECT)	24”-32”
External AWJC Chain Manipulator	Sizing to suit range of external diameters
Larger Diameter cutting heads and bespoke designs available upon request	

Recovery tooling

We provide our customers with a comprehensive range of equipment designed for the retrieval of materials from the seabed. At James Fisher Decommissioning, we offer a variety of recovery tools tailored to meet your project requirements.

Our precision-engineering equipment allows recovery of various materials from the seabed for either subsea relocation or safe handling on deck.

Drill Pin & Lift Tool (DPLT)	Size Range: 24” - 72” Lifting Capacity: 60Te
Ball Grab	Size Range: 20”-30” Lifting Capacity: 120Te Size Range: 30”-50” Lifting Capacity: 250Te
Wellhead Picker	Single Lift: 150Te Four Leg Lift: 400Te
Casing Recovery Tool	Size Range: 218mm - 502mm Lifting Capacity: 350kg (minimum extension) - 1000kg (maximum extension)
Packer Lift Tool	Internal Diameter: 7.75” Size Range: 203mm - 315mm Lifting Capacity: 20Te Internal Diameter: 8.25” Size Range: 216mm - 485.7mm Lifting Capacity: 20Te

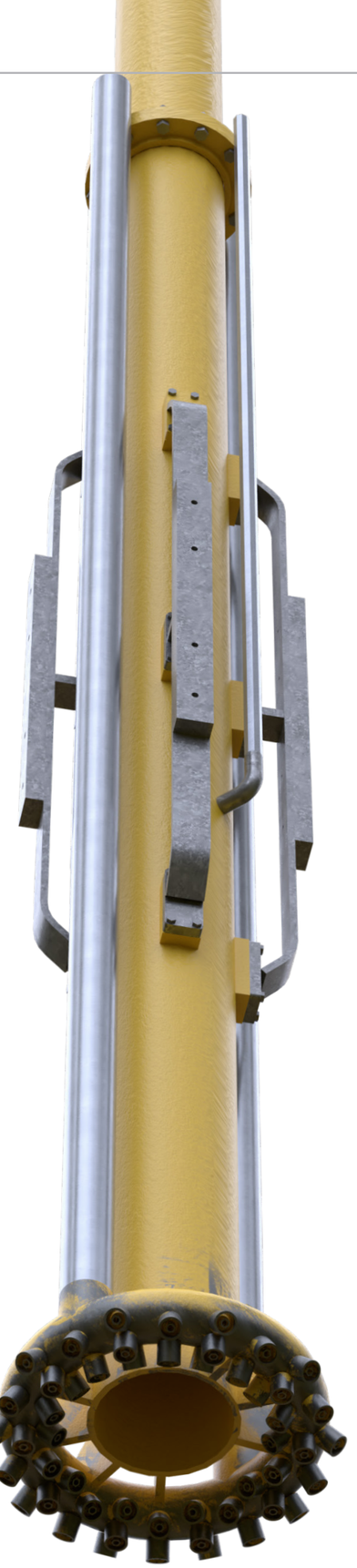
Soil Plug Removal Tool (SPRT)

The internal soil plug removal tool is the most efficient method of excavating inside various sized products, saving both vessel and operational time.

Fitted with an interchangeable head to suit application and supplied with a dedicated 1300cfm compressor, the tool is lifted via the crane from horizontal to vertical and in to location using its dedicated certified rigging.

The JFO internal soil plug removal tool is built in such a way that it can be easily adapted to suit our client requirements and installed topside or subsea.

- Shared deck spread with other tooling
- Shared personnel with other tooling spreads
- Operation is completely remote once installed
- Can remove 10” solids
- Interchangeable jetting heads
- Combined jetting and dredging in same tool
- Full 360° internal coverage



SEABASS (Open-Water Subsea Well Abandonment)

Our award-winning well abandonment tool, SEABASS has been meticulously designed to offer the decommissioning market a more efficient and cost-effective alternative to traditional rig-based plug and abandonment solutions.

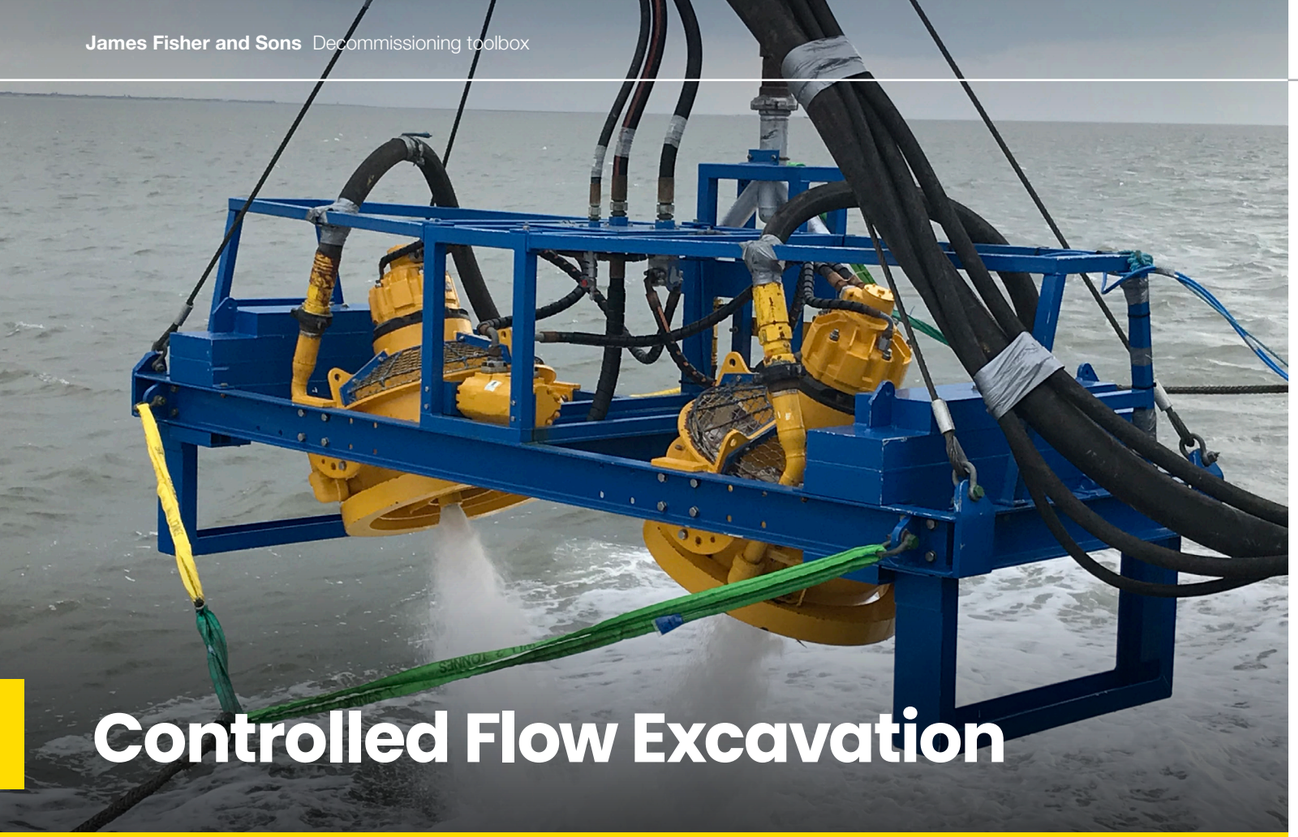
The SEABASS system allows circulation of contaminants and placing of environmental barriers to single or multiple annuli in a single trip, offering a potential time saving of 25% and negating the use of a costly MODU when comparing SEABASS to alternative methods.

The SEABASS system has been carefully designed with the operator and vessel provider in mind to provide a safer, more reliable option that can improve quality and reduce operating time, essential for the later stages of well abandonment.

The system has dual failsafe safety valves, and a mechanical lock, coupled with a complete disconnect and reconnect system. In the event of a drive-off or well control situation the vessel can disconnect from the tool leaving well fluid and pressure locked within the wellbore. Re-engagement can be achieved by either vessel or rig with multiple recovery options including drill pipe. The system can be run open water from a rig and from a vessel, through a moonpool or over the side.

As a modular system, SEABASS can be adapted for both Subsea Wellheads and Mudline applications.

	SEABASS	**SEABASS^{MLS}**
Annuli	Single or multiple	Single or multiple
Wellhead	18-3/4” (others with adapter)	Mudline Suspension System (MLS)
Production Casing Sizes	9-5/8” or larger (7” with modifications)	7” or larger
Control System	>14 core Umbilical or greater	8 core Umbilical or greater
Circulation System	1-3/8” min ID and 5000 psi rating	1-3/8” min ID
Crane	Heave compensated	Heave compensated
Deployment	Moonpool or over the side or drill pipe open water	Moonpool or over the side or drill pipe open water
Water Depths	No Restrictions	No Restrictions



Controlled Flow Excavation

With dedicated local resources, James Fisher Offshore is strategically positioned to react promptly to fully support our customers' offshore requirements by mitigating operational downtime and reducing overall spend on cost critical projects.

Our diverse portfolio of CFE tooling spreads are engineered and proven to excel in the harshest subsea conditions across the global energy sectors.

Why use CFE equipment over alternative methods?

CFE advantages:

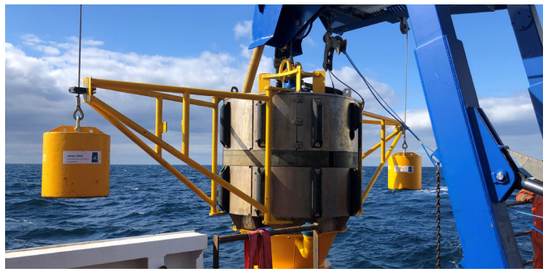
- Non-contact form of excavation / trenching, maintaining the integrity of the assets
- Low pressure / high volume
- No ROV / diver requirements for any CFE operations
- One CFE spread allows for multiple applications
- Capable of operating in 1.5m - 300m water depths in standard configuration
- Ability to trench a variety of product sizes from 1"- 60"
- Real-time sonar monitoring during excavation / trenching operations
- Counter rotating impellers allows for gyroscopic stability
- Designed to accommodate varying seabed compositions, including sand, clay, silt, mud, gravel, and rock dump
- 100% flow control

Twin R2000

The Twin R2000 controlled flow excavation tool generates two controllable columns of seawater which travel vertically down towards the seabed at a velocity of up to 10m per second. This tool has repeatedly proven itself to be ideally suited to shallow water projects on a variety of cable and pipeline sizes. The controllability of the water columns and localised excavation effect make the Twin R2000 the ideal solution when working in environmentally sensitive areas.

TwinProp and TR4000

The TwinProp and TR4000, an enhanced version of the TR2000 tailored for more powerful controlled flow excavation systems, represent the latest advancement in the well-established controlled flow excavation method. Counter-rotating impellers are used to produce two high volume columns to rapidly excavate the seabed. The two independent impeller housings can be adjusted to various angles and distances apart to best suit the application.
The TwinProp and TR4000 are deployed using a crane or a-frame.



The SP6000

The SP6000 is ideal for deployment on various vessels thanks to its compact design. The SP6000 works by producing a fully controllable column of water which has a maximum flow of 6000l/sec at a maximum velocity of 8m/sec, to excavate the seabed efficiently and precisely. Operational capability is further enhanced by its ability to work in water depths from 3m – 300m and the employment of real-time sonar monitoring and optional LARS*.

**Limited to 175m when deployed via LARS.*

LARS

We can offer our bespoke LARS equipment in support of our SP6000. LARS was specifically designed to allow the vessel crane to be used for multiple, simultaneous projects.

The T4000 and T8000

These impressive pieces of equipment generate a single high volume low pressure water column. The high-volume flow of water fluidises the seabed and disperses the soil rapidly. The patented shape and counter rotating impellers of the kit provide controlled flow excavation by combining a non-contact method with a remote-contact real-time sonar system and gyroscopic stability.

The T4000 has a max of 4000L/sec and the T8000 has a max of 8000L/sec at full flow velocity of up to 10m per second. The T8 is used for larger size pipelines, large sand waves and larger / deeper excavations.

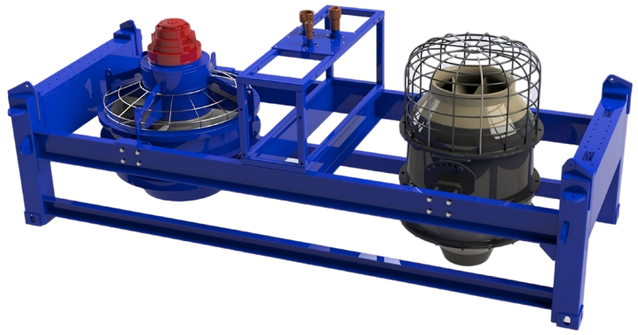
Twin T8000

The Twin T8000 excavation tool works in a similar way to that of the T8000, but with double the output. Working from depths of 7m, the tool can generate up to 16,000 litres of water per second.

JetFlow100

The JetFlow100 controlled flow excavation tool has been designed to cut through tough soils and clays without the requirement of additional jetting equipment. This innovative dual function tool also complies with DNV2.7-3 subsea lifting standards.

For more information on how James Fisher Offshore can add value to your offshore operations, please visit www.fisheroffshore.com/ or contact our business development team at info@jfdecom.com or call +44 (0) 1651 873 932.



Weight & Dimensions	
Weight	7500kg
Length	4870mm
Width	1900mm
Height	2125mm

Benefits
Removes the need for jetting equipment
Adheres to DNV2.7-3 subsea lifting standards
Can cut through soils/clays up to 100kPa while still providing mass flow excavation in one pass
Maintains compact deck footprint

Technical Information	
Model	JetFlow100
Water Depth	~2m to 300m
Mass flow nozzle exit pressure	88kPa
Max flow volume	4000l/sec
Max flow velocity	10m/sec
Soil strength (undrained shear strength)	Up tp 50kPa shear strength in standard format
High velocity nozzle exit pressure	213kPa
Max flow volume	1500l/sec
Max flow velocity	14m/sec
Soil strength (undrained shear strength)	Up to 100kPa shear strength in standard format

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For Decommissioning enquiries, please contact **info@jfdecom.com** or call **+44 (0) 1651 873 932**

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