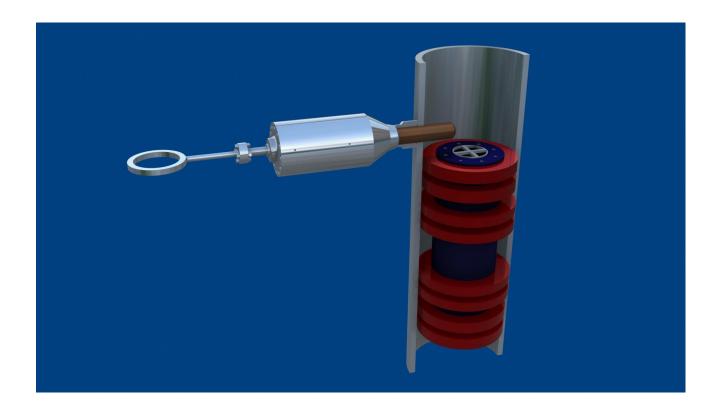


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Moffat Pig Retainer™



The *Moffat Pig Retainer*™ (sometimes known as a Pig Lock) provides a reliable mechanism to prevent pigs moving inside a pipeline during Pig Launcher / Receiver installation and removal operations. A high yield pin is extended and withdrawn into the barrel by means of a Remote Operated Vehicle (ROV) rotary interface. This pin reacts against the nose of the pin to hold it in position during deployment or retrieval. Depending on the pig size the pin can retain a pig under a differential pressure of up to 10 BAR.

Design Code: API 6A (ISO 10423), API 17D/H, ASME B31.8, ASME VII DIV. 2, PD 5500 and PED

(Others available upon request)

Pipeline Sizes: Up to 36" Nominal Bore

Pin Engagement: Up to 1/4 Inside Diameter of Pipeline

Pressure Range: 6,000 PSI (414 BAR), 10,000 PSI (690 BAR) and 15,000 PSI (1035 BAR)

Max Water Depth: 3,000m

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Web: www.f-e-t.com/products/drilling-and-subsea/subsea-technologies/moffat

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Key Features

ROV Interface - Pig retainers are provided with simple rotary interfaces that can be turned using the manipulator arm of an ROV. The device can also be supplied with any of the torque bucket interfaces listed in ISO 13628-8 (e.g. Hi-Torque, Class 4, etc.). A wide range of manipulator handles are also available.

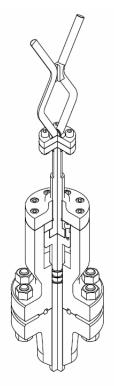
Permanent or Temporary Service - Material trim and sealing technology can be selected to provide a cost-effective solution for temporary service or can be increased to suit up to 25 years permanent subsea installation.

Ease Of Use - The ROV interface is simply turned through a number of turns clockwise to extend the pin and anti-clockwise to retract it.

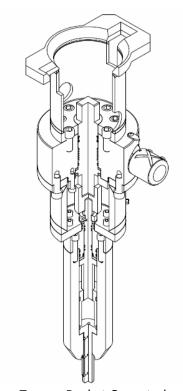
Mounting method - The pig retainer needs to be welded to the outside of the pipeline. For this purpose the bottom of the device is fabricated complete with a self-compensating 'Weldolet' or 'Flangeolet' nozzle. This nozzle will be made from a material that is compatible with the pipeline and should be specified at the time of order. Full welding and assembly instructions are available.

Position Indicator - The pig retainer ROV actuator is designed to be able to be run against the stops. When it is desirable to have a visual indication of the pig-lock pin engagement then an external gear operated position indicator option is available.

Moffat Pig Retainer™



Manipulator Operated 'Fish-Tail' Handle (With Flangeolet)



Torque Bucket Operated (With Position Indicator & Weldolet Prep.)



Moffat, based in the North-East of England, offers design and fabrication services for a significant range of pipeline products aimed at the petrochem, process, offshore and subsea markets both in the United Kingdom and Overseas.

The company has engineering experience and expertise to provide a wide range of bespoke engineered products including: pig launchers & receivers, manifold skids, suction pile hatches (hinged or butterfly), filter separator packages and pull-in heads.

Ancillary subsea equipment associated with the above is also supplied by the company and includes: Moffat Subsea Stab ConnectorsTM, Moffat Surplussing $Valves^{TM}$, subsea ball / check valves, pig retainer (lock) devices and ROV valve interfaces.

A prime component of the success of the company is the commitment to quality and health and safety. Moffat holds accreditation for quality to ISO 9001 and for Health and Safety to OHSAS 18001.

The customer base covers both end-users and EPC contractors including:

ACERGY
AKER
BEL VALVES
BIBBY OFFSHORE
BHP
BJ SERVICES
BP
CHEVRON
DAEWOO
EXXON MOBIL
VETCOGRAY (GE OIL AND GAS)
HALLIBURTON

MCDERMOTT
OCEANEERING
ONESUBSEA
PETROBRAS
SAIPEM
SAPURA ACERGY
SHELL EXPLORATION & PRODUCTION
SUBSEA 7
TECHNIP FMC
VECTOR INTERNATIONAL
WEATHERFORD

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