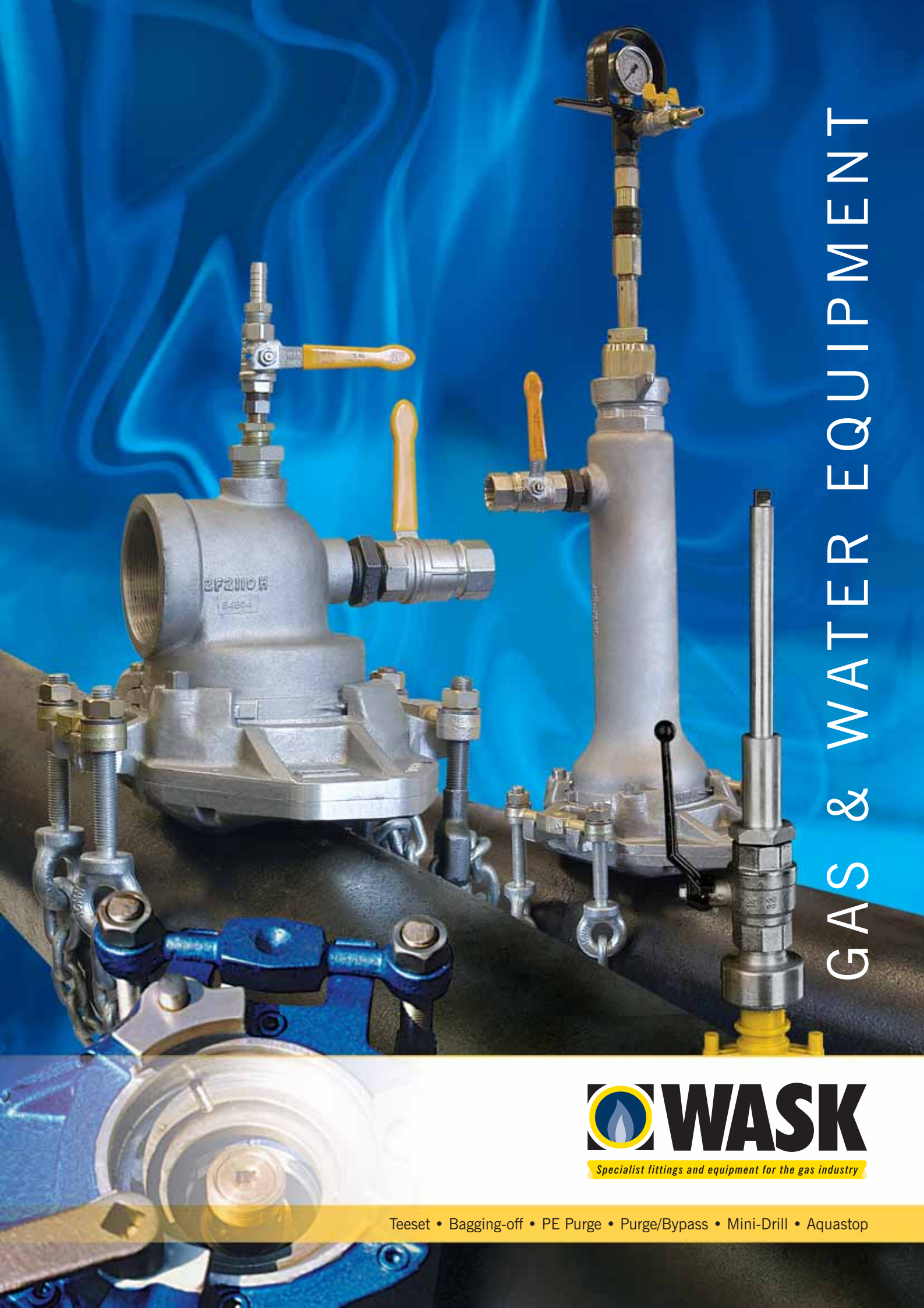


GAS & WATER EQUIPMENT

WASK

Specialist fittings and equipment for the gas industry

Teeset • Bagging-off • PE Purge • Purge/Bypass • Mini-Drill • Aquastop

Contents

Gerneral & Product Information

Introduction

WASK is a leading supplier of specialist fittings and pipeline equipment to the Gas and Water Industries. With it's head office in CRANE, WASK has been service the Utilities market for nearly 120 years. The Company's products are used in many countries throughout the world.

WASK has earned a reputation for supplying technically innovative and high quality products, and has an on-going commitment to Product Development. The Company is continually upgrading its product portfolio and offering new designs to meet the varying and challenging needs of the market. Development collaboration with leading International Utilities has led to jointly patented designs for some particularly demanding applications.

This catalogue contains product application and other information on Drilling, Tapping, Ferrule Insertion, Bagging-off and Ancillary Equipment for use on gas and water mains.

Description

The constant search for safer working practices, together with the increased used of Polyethylene (PE) in gas distribution systems and the increase in distribution pressures, has provided a demand for high performance pipe maintenance equipment. Among the equipment offered in this catalogue are the well established WASK Teeset, Aquastop, Bagging-off systems up to 2 bar and Purge Tools.

Quality Assurance

WASK operates a Quality Assurance system which is certified to comply with BS EN ISO 9002:1994. On site engineering and test facilities enable the Company to monitor Quality at all stages of production while the use of the latest Pro-Eng and CNC systems in the manufacture of the Company's products ensures consistently high standards of product quality.

Additional Information

For further details of these products or any products in the WASK range, please contact the Sales Office.

Training

WASK recommends that operators are fully trained in the use of this equipment.

Spares & Services

WASK stocks a full range of spare parts. WASK strongly recommends that only genuine WASK spares are used on WASK equipment. WASK has a network or authorised service agents who are able to offer a refurbishment service.

For further details contact WASK Sales Office.

Health and Safety

WASK complies fully with the COSSH Regulations 1988 for the supply of products to its customers. The materials used in the construction of these products are safe when handled and used for the purpose for which they were designed. The products must not be modified, heated (except during the course of welding where specifically designed for that purpose) nor exposed to corrosive or other aggressive chemicals or agents.

THESE PRODUCTS ARE TO BE USED STRICTLY IN ACCORDANCE WITH WASK INSTRUCTIONS AND YOUR EMPLOYER'S WORKING PRACTICES.

Note

Descriptions and illustrations in this publication are for general guidance only. No responsibility can be accepted for any errors, omissions or incorrect assumptions. Refer to the product itself if more detailed information is required. Owing to the continuing programme of product improvement, the Company reserves the right to amend any published information or to modify any product without notice.

Other Products

Also available from WASK is a wide range or fittings for gas distribution. These include the Pecat range of mains fittings for MDPE and HDPE pipe, CRIMP and Flexigrip Service Fittings and the Transgrip range of Flange Adaptors.

Section 1: Teeset Equipment For Gas

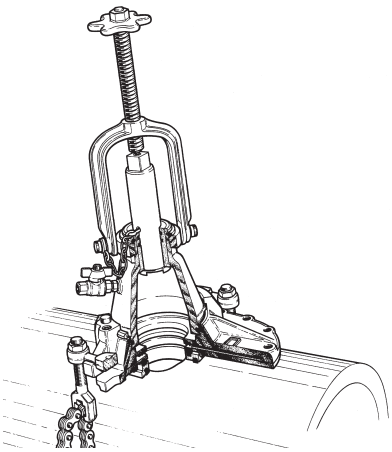
Teeset drilling, tapping & fitting installation

Description

The Teeset machine allows for the drilling and tapping of gas main pipes in the same manner as a central action drill stand but, by the addition of a simple sliding gate valve in the base of the machine, allows up to 1" equal top entry service tees and 2" nipples for two part service tees to British Gas Specification PS/F2 to be fitted safely to live mains without loss of gas. The machine will also fit plugs, bushes, side entry tees, standpipes, bag pipes, main spraying heads etc, under no gas conditions.

The Teeset machine is approved by British Gas meeting all the requirements of British Gas Specification PS/E1. Overall working dimensions are only 425mm (16 ¾") high x 280mm (11") long x 280mm (11") wide, with handling weights of body at 4.5kg (10lbs); drilling head and tap at 7 kg (15lbs) and fitting head at 4.5 kg (10 lbs). The complete shipping weight in box is only 30 kg (66 lbs).

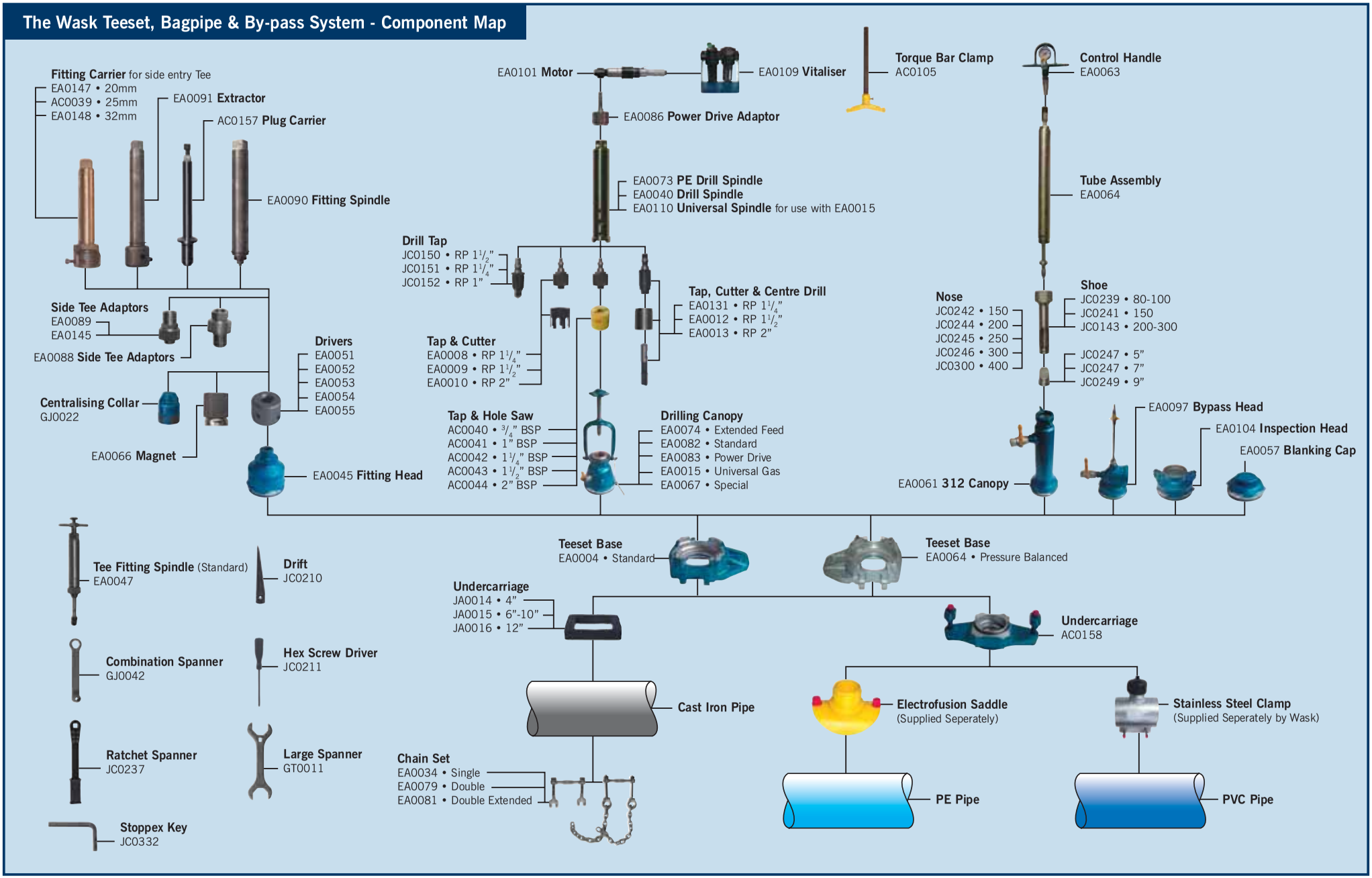
A Fitting Head, Spindle and a range of Carriers enable fittings such as Service Tees and EMID plugs to be inserted into a previously drilled and tapped main.

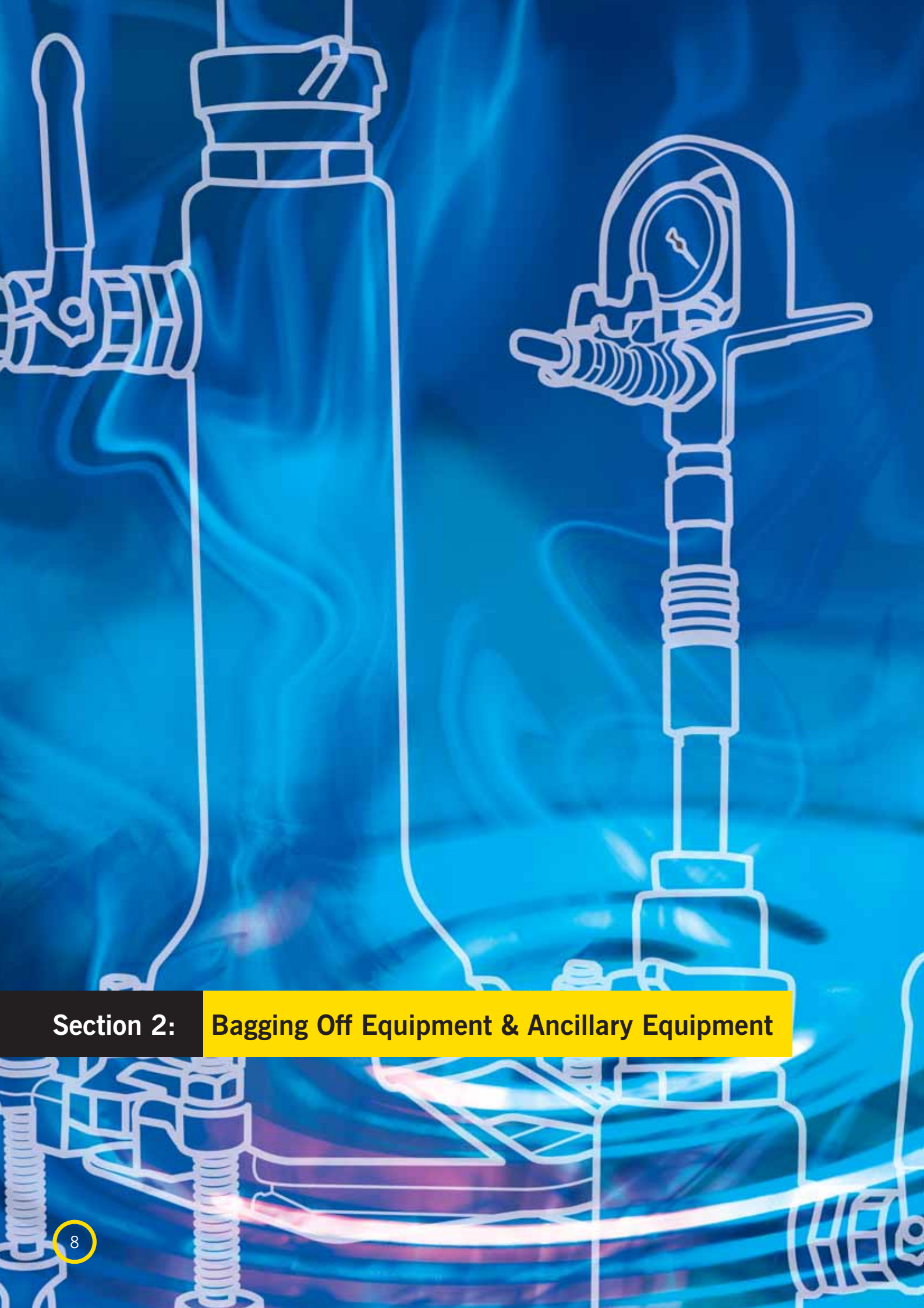


Some of the safety features of this machine are:

- The machine is light and well balanced to facilitate easy location on the main.
- Positive spindle locking device.
- Design of bridle makes it impossible to drill through the valve plate in the shut position with a parallel thread tap.
- Combined head lock and purge valve minimises the risk of accidental head removal with valve open to pressure, or head removal with pressure inside.
- Large easily replaceable 'O' ring seals, ensure gas tightness of machine.
- Sturdy alloy steel drill spindle running in bronze bearing, ensures maximum rigidity and long life with minimum maintenance.
- PTFE Coated stainless steel valve plate working between wiper type sealing rings ensure trouble-free valve operation.
- The machine is suitable for use at pressures up to 2 bar (30 psi), and will fit mains from 80 to 300 mm (3" to 12") as supplied. With a longer securing chain and a pair of extension lugs (available as additional equipment) the machine can be fitted to any large size main. TAPS ARE NOT SUPPLIED WITH THE MACHINE, but are available as additional equipment. A variety of additional equipment is available at extra cost for inserting side entry tees, plugs, standpipes, bagging-off equipment, pipe saddle (clip) drilling, fastening to large mains, air motor drive etc.

The Wask Teeset, Bagpipe & By-pass System - Component Map





Section 2: Bagging Off Equipment & Ancillary Equipment

Gas Bagging-off & Ancillary Equipment

Introduction

The Bagging-off Equipment utilises the base of the Teeset Drilling Machine to provide a safe and comprehensive method of flow-stopping polyethylene (125mm to 400mm), ferrous 3" to 12" cast iron, 80mm to 400mm ductile iron and PVC (125mm to 400mm) live gas mains under gas free working conditions.

The Bagpipe equipment comprises a Canopy enclosing the Bagtube which is mounted on the Teeset base, enabling a Stopper Bag to be inserted through a tapping into the main and inflated to stop the flow of gas. Sets of interchangeable Noses and Shoes permit the Stopper Bag to be correctly positioned relative to the centre line of the main. Positive support of the inflated Stopper Bag against the gas pressure is provided by the Nose and Shoe assembly.

In the event of the Stopper Bag failure, replacement is simple, quick and safe.

Specifications

British Gas PS / E1

Design & Performance

By utilising the base of the Teeset Drilling Machine, this latest generation equipment enables a temporary flow of gas to be provided around a section of polyethylene or ferrous main which is undergoing maintenance or repair.

Supplied in kit form, the equipment provides the means to connect a fullbore 3" bypass around a mains maintenance operation subject to the maximum size of drilled and tapped hole allowed by regulations. The pressure limitation is 350 mbar with rigid bypass, rated with that of the Drilling Machine. Flexible "Riders" are available for low pressure applications.

Incorporated within the Bypass Head is a 1" vent and purge valve and a $^{3}/_{8}$" valved pressure test probe which can be inserted through the main tapping into the full gas flow.

Gas Bagging-off & Ancillary Equipment

Operational Data

Before commencing a flow-stopping operation, it is recommended that reference is made to industry Codes of Practice for bagging-off gas mains to ascertain limiting pressures, allowable tappings, dimensions etc, which may override any information given below.

Normal size of main								
PE	(mm)	63	125	180	250	315	355	400
Ferrous	(in)	2	3/4	5/6	7/8	9/10	12	16
	(mm)	50	80/100	150	200	250	300	400
Maximum allowable main pressure								
PE	(psi)	4	4	4	3	1.5	1.5	1.5
	(mbar)	300	300	300	200	100	100	100
Ferrous	(psi)	5	5	4	4	3	1.5	1.5
	(mbar)	350	350	300	300	200	100	100
Minimum distance from secondary tapping to primary tapping to bypass tapping								
PE	(in)	18	18	20	22	24	24	26
	(mm)	450	450	500	550	600	600	650
Ferrous	(in)	16	16	18	20	22	24	26
	(mm)	400	400	450	500	550	600	600
Cut hole diameter								
PE	(MM)	56	56	56	56	56	56	56
Tapping size BSP parallel thread to BS 21								
Ferrous	(in)	1	1	1 1/2	1 1/2 (7), 2(8)	2	2	2
Bag inflation pressure								
PE	(psi)	15	8	8	5	4	4	3
	(mbar)	1000	550	550	350	300	300	200
Ferrous	(psi)	15	10	8	8	5	4	3
	(mbar)	1000	700	550	550	350	300	200

Ancillary Equipment

Inspection Head

Used with the Universal Base to view the internal condition of a main through an integral Perspex window. (Low pressure only).

Undercarriages (PE and Ferrous Mains)

Permits the Universal Base to be fitted to a PE main using a Fusion Saddle and to ferrous mains fitted with pressure drilling saddles and Repair Clamps.

Blanking Cap

Used as a temporary (overnight) cap to prevent the ingress of dirt into the Universal Base and as an anti-tamper device.

Extension Lugs, Chain supports and Spreader Plates

Components used to maintain the required chain angles on mains of diameters greater than 12 inches during drilling operations.

Swarf Magnet

Used immediately after drilling a ferrous main for the removal of swarf.

Drill Taps

A comprehensive range of long life Drill Taps and Holesaws are available to suit all pipe materials.

Sales and Services

WASK recommend that all equipment is visually inspected after each use and serviced at nine monthly intervals.

Drilling Machines, Bagging-off, Bypass and Ancillary Equipment may be obtained direct from WASK or from appointed distributors. Names and addresses are available on request.

Mains Completion Plugs

Emid Mains Completion Plug

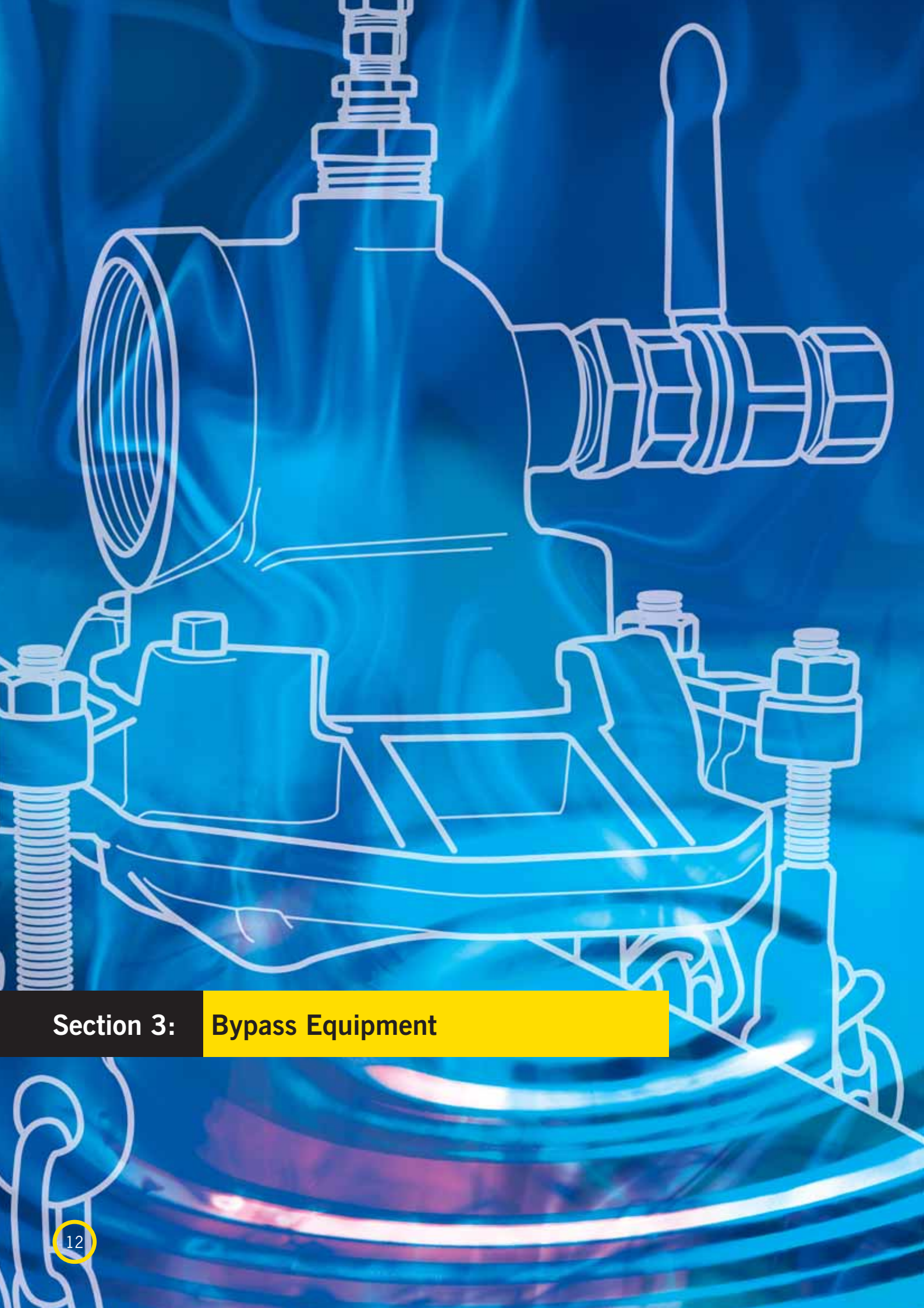
Malleable iron, suitable for the closure of tapped holes in distribution mains up to 2 bar pressure.

Size Rs	Part No. Galvanised	Part No. Black
$^{3}/_{4}$"	AY0014	AY0001
1"	AY0015	AY0003
$1^{1}/_{4}$"		AY0005
$1^{1}/_{2}$"	AY0016	AY0006
2"	AY0017	AY0007

Non-Tap Plug

Manufactured under licence from British Gas plc. Designed for the closure of non-tapped holes following flow stopping operations. Spare gaskets available separately.

Size Rs	Range
$1^{1}/_{2}$"	AW0003
3"	AW0005
4"	AW0007
5"	AW0009
6"	AW0011



Section 3: Bypass Equipment

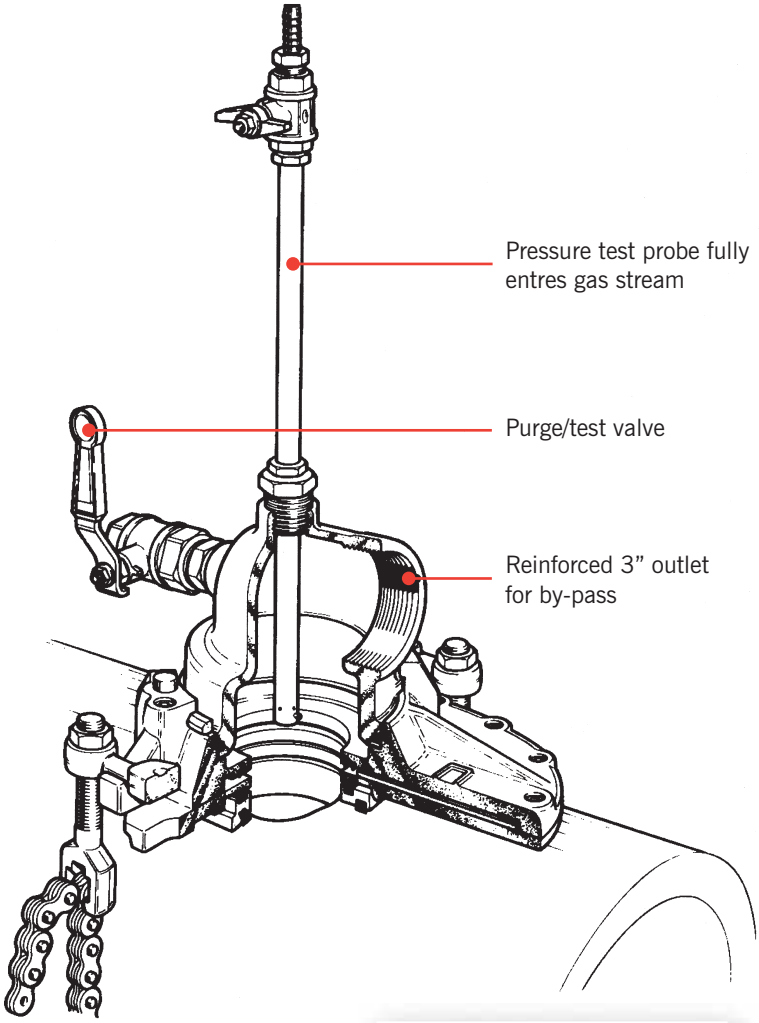
Bypass

Design & Performance

By utilising the base of the Universal Drilling Machine, this latest generation equipment enables a temporary flow of gas to be provided around a section of polyethylene or ferrous main which is undergoing maintenance or repair.

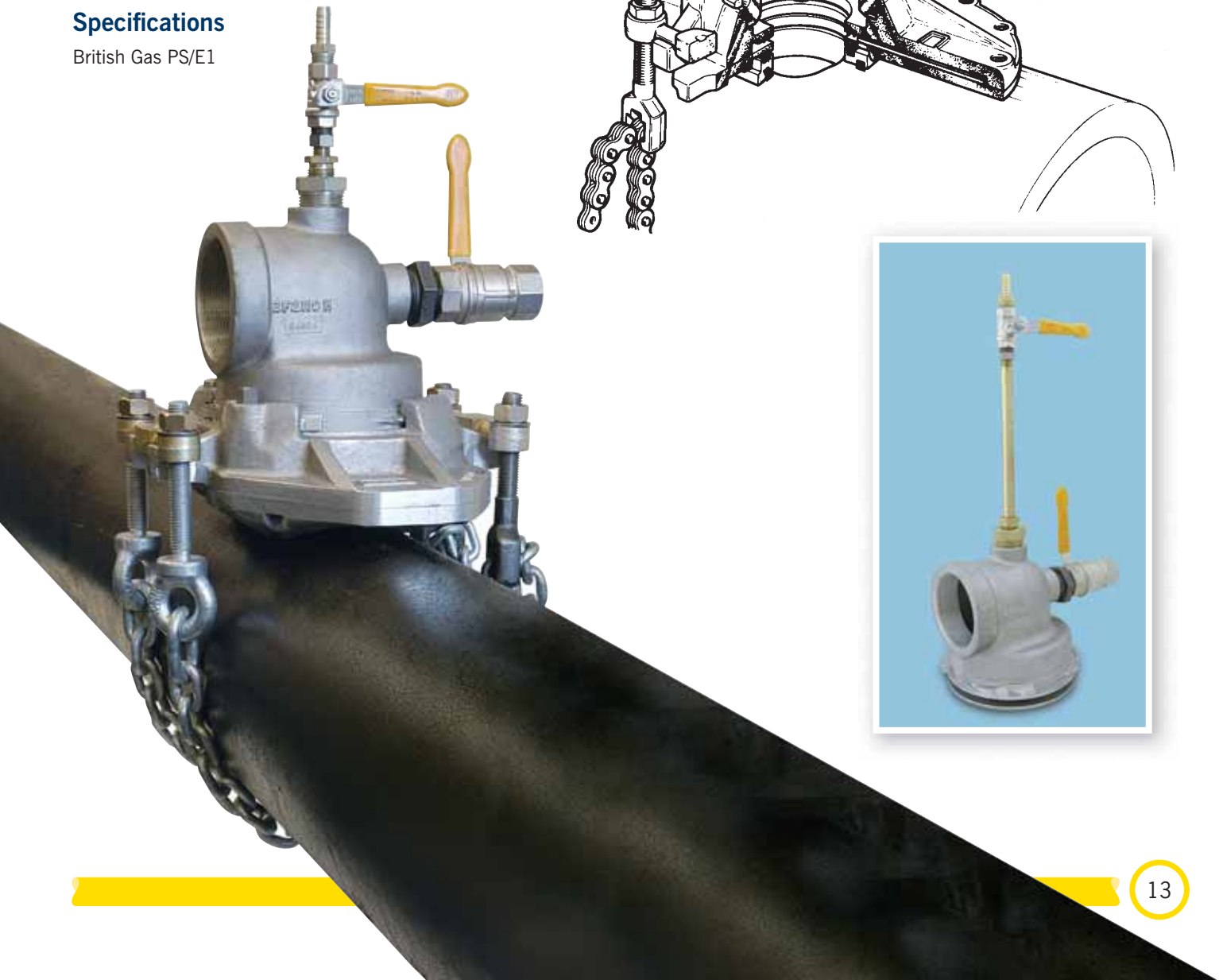
Supplied in kit form, the equipment provides the means to connect a full bore 3” bypass around a mains maintenance operation subject to the maximum size of drilled and tapped hole allowed by regulations. The pressure limitation is 7 bar with a rigid bypass, rated with that of the Universal Drilling Machine. Flexible “Riders” are available for low pressure applications.

Incorporated within the Bypass Head is a 1” vent and purge valve and a $^{3}/_{8}$” valved pressure test probe which can be inserted through the main tapping into the full gas flow.



Specifications

British Gas PS/E1



Section 4: 32mm PE Purge Tool

32mm PE Purge Tool

Introduction

Prior to commencing repairs on a section of polyethylene gas mains, all traces of gas must be eradicated to ensure that such operations can commence in safety – a process called purging.

Similarly, when commissioning a new length of PE main, purging is necessary to remove all traces of air from within the pipe – to prevent the possibility of creating a potentially explosive mixture.

Unfortunately, conventional techniques have a number of drawbacks, when using standard fusion service tees as a purge point.

a) **Expensive** – requires tapping tees plus additional elbows and couplers to be fixed to the main to provide entry and exit points for the purge gases involved.

b) **Slow** – not only do these systems require several jointing operations but also the holes created by the service tee's integral cutters are relatively small and consequently purge rates are slow.

c) **Closure** – the sealing of a tapping tee requires an electrofusion cap and is permanent.

WASK, the leading name in manufacture of underpressure drilling equipment for both gas and water mains, has provided the solution to these problems – the PE PURGE TOOLS. These robust tools have been specially designed to fit onto the external threads used for the closure cap of a 32mm and 63mm diameter PE purge saddles allowing for quick, economical and totally safe controlled purging of polyethylene gas mains. These easy to operate tools operate the purge saddle's integral cutter, cutting through the pipe wall, via a central spindle. A full bore ball valve permits the removal of the integral cutter from the tee whilst under pressure – not possible with existing tapping saddles.

The spindle and bearing assemblies can then be removed from the closed valve and subsequent purging operations are totally controlled via the ball valve which allows the integral cutter to be reinserted into the saddle to act as an internal plug. The plastic closure cap seals the fitting following the removal of the tool.

Benefits of using the WASK PE purging tool include:

a) **Saves Times** – requires only one fusion joint per purge saddle, where as existing systems require several. Purging operations are quicker.

b) **Cost Effective** – utilises lower cost purge saddles compared to tapping tees and associated fittings.

c) **Safety** – use of a full bore valve permits the main to be isolated while removing the integral cutter from the purge saddle. Consequently the purging operation is under total control.

d) **Robust Design** – with full corrosion protection.

e) **Compatible** – with electrofusion purge fittings.

f) **Re-usable** – the purge point can be re-used.

g) **Pressure Monitoring** – the system can be used to construct a temporary pressure point.

h) **Risk** – the purge fitting has a low profile above the main minimising the risk of potential interference damage.

32mm PE Purge Tool

Operation

a) Remove the cap and electrofuse the purge saddle to the main in accordance with manufacturer's instructions.

b) Fit the spindle hexagon to the cutter in the PE purge outlet.

c) Slide the complete assembly, including the bearing, ball valve and adaptor over the spindle and tighten with hand pressure to seal the 'O' ring in the adaptor onto the top of the purge saddle.

d) Engage a ½" ratchet spanner onto the top of the spindle and rotate in a clockwise direction to punch the pipe utilising the purge saddle's integral cutter.

e) Withdraw (unscrew) the cutter completely from the purge saddle, then raise the spindle to the stop ring.

f) Close the valve.

g) Detach the bearing, spindle and cutter from the valve by rotating in an anti-clockwise direction with an open ended spanner.

h) Attach vent pipe and purge through the valve in accordance with industry procedures.

i) On completion of the purging, reassemble the bearing together with the spindle/cutter assembly back onto the valve.

j) Open the valve and return the integral cutter to the purge saddle. Detach the spindle from the cutter with a sharp pull upwards and then disengage the complete tool from the branch by rotating in an anti-clockwise direction.

k) Fit the PE closure cap and test for soundness.

Construction

Spindle and Bearing:

- **Mild Steel**

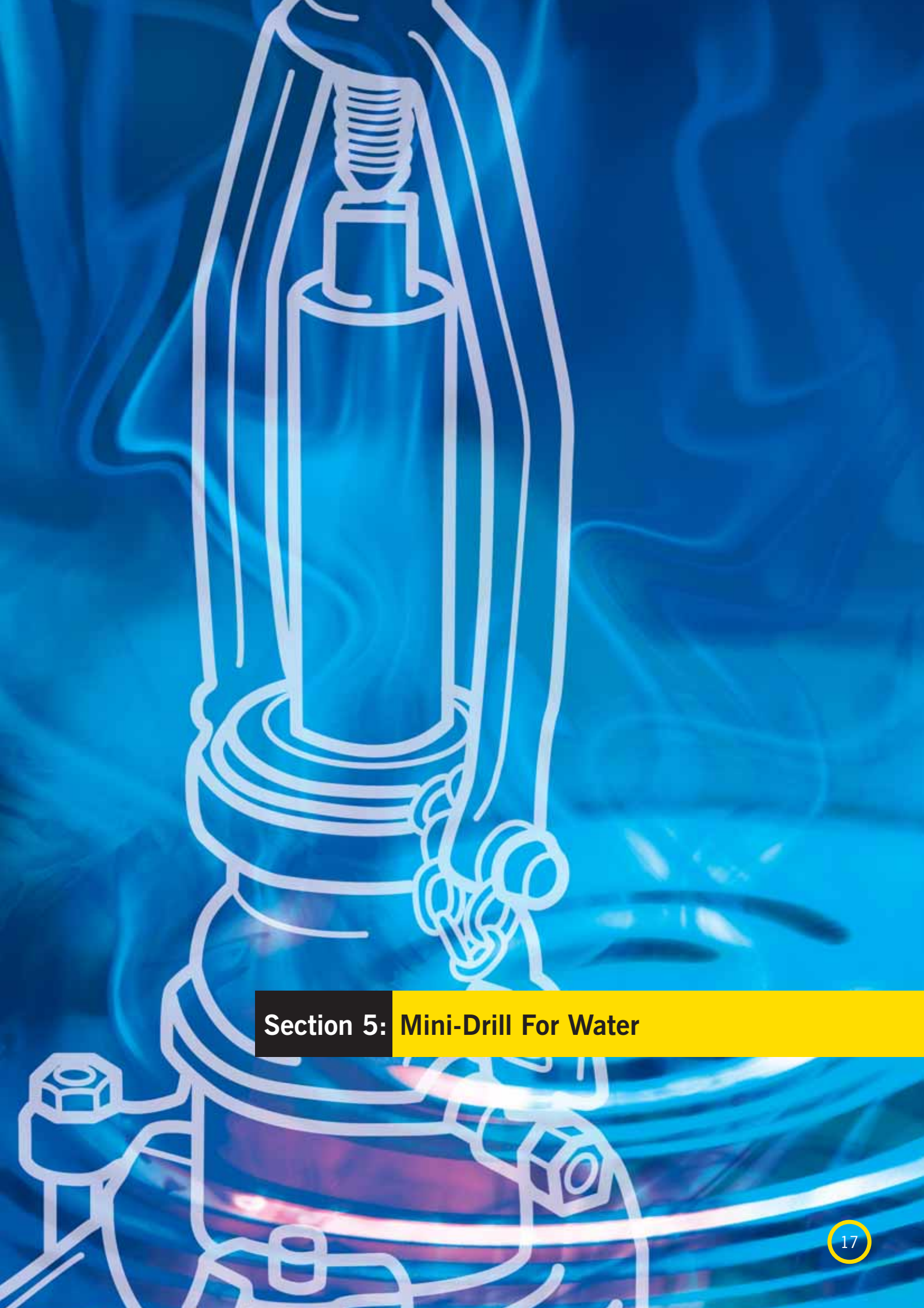
  BS 970 230 M07
  Electrozinc plating to BS 1706 Zn3

- **Valve Assembly:**

  Mild Steel, plated for corrosion protection

- **Adaptor:**

  Aluminium LM25 or Acetal



Section 5: Mini-Drill For Water

Mini-drill

Introduction

WASK are leading manufacturers and worldwide supplies of a range of underpressure drilling equipment for use with pipes of various materials and diameters.

The Mini-Drill has been specifically designed to overcome the drawbacks associated with many existing machines including excessive weight, cost and poor versatility. Several years of investment, research and development and close liaison with water engineers have resulted in a machine which has the capability of drilling, tapping, inserting and removal of ferrules (swivel type) up to 1", at mains pressure up to and including 16 bar (240lb/in2). In addition, the Mini-Drill can operate on a wide range of pipe materials including cast iron, ductile iron, steel, asbestos cement and PVC mains.

In conjunction with the wide range of undercarriages and sealing saddles available, this machine can drill and tap holes up to 1 ½" BSP* diameter. Using the chains supplied, the Mini-Drill can perform these wide variety of tasks on mains from 3" (80mm) to 12" (300mm) diameter.

Design

Durability and safety were the key parameters in the design of the Mini-Drill. The machine base is the primary interface with the pipe and features interchangeable saddles to ensure accurate machine location. The base comprises two halves, each manufactured from high grade, heat treated aluminium which provides the machine's characteristic high strength and low weight. The base incorporates a safety lock and automatic purging facility and also features a Teflon coated steel sliding valve plate which gives the operator the ability to isolate the pressure in the main from the drilling canopy. This feature also enables the insertion and removal of service fittings, plugs etc.

Benefits of using the Mini-Drill includes:

- **Versatility:**

  Not only will the Mini-Drill drill, tap and insert ferrules, but it can carry out these tasks on a wide variety of pipe materials.

- **Materials:**

  Advanced manufacturing methods have resulted in a machine which competes with pipeline access equipment at twice the price.

- **High Performance:**

  Manufactured to operate at pressures of 16 bar (water).

- **Reliability:**

  High percentage non-ferrous construction means that the Mini-Drill has a good resistance to corrosion. Additionally, the drilling spindle operations in a substantial bronze bearing, ensuring both long life and accurate drilling and tapping.

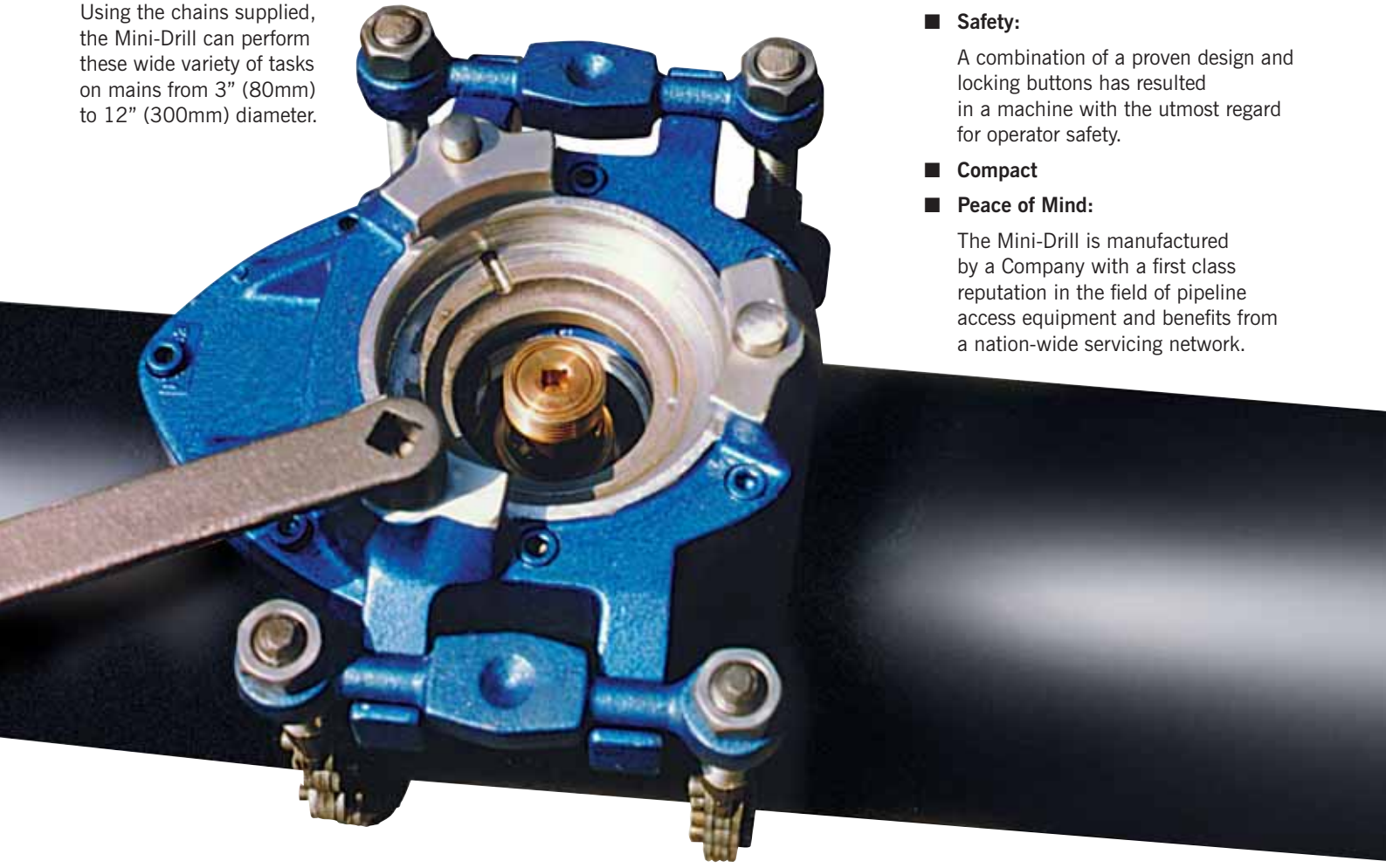
- **Safety:**

  A combination of a proven design and locking buttons has resulted in a machine with the utmost regard for operator safety.

- **Compact**

- **Peace of Mind:**

  The Mini-Drill is manufactured by a Company with a first class reputation in the field of pipeline access equipment and benefits from a nation-wide servicing network.



Section 6: AquaStop For Water

AquaStop

Introduction

Aquastop has been developed to stop water flow with minimal disruption – quickly, easily and at a low cost.

Aquastop is a revolutionary, unique new product designed to provide an easy low cost solution to stopping flow in an operating pipeline. Aquastop can be used to isolate piping systems for repair, alterations and renovation.

Based on proven technology, Aquastop is the result of 3 years research and development into a simple low cost method of flow stopping, enabling water mains repair, maintenance or renovation with minimal disruption to customers.

The system involves an inflatable Hydrabag inserted into the mains with specialist launch equipment, through a small diameter access hole. The bag is inflated by means of water pressure in the mains, through a specially designed pressurisation unit.

The system comprises of lightweight easy to use equipment, for small diameter mains at up to 6 bar pressure. Suitable for either single or double ended flow stopping operations. Hydrabag is a trademark of SARCO Stopper Ltd.

Small access holes mean simple, low costconsumables can be used.

Benefits of using AquaStop include:

Flow stop is achieved with minimal disruption to customers.

Equipment is lightweight and easily transported.

Minimises the extent of excavation and reinstatement, providing substantial savings in labour, materials and equipment.

Small diameter access holes (1" to 1 ½ ") do not weaken the integrity of the pipe, enabling the use of low cost consumables. The need for expensive stopple tees is eliminated.

Lightweight equipment enables easy, fast operation – even in restricted areas.

No additional, independent power source is required for kit operation.

Suitable for most pipes including cast iron, ductile iron, steel, PVC and PE.

Minimises the level of system chlorination required after the operation.

Operation

a) Dill and tap by-pass holes. Fit by-pass nipples and valves – connect by-pass.

b) Drill and tap bagging holes.

c) Fit bag and support blades to bagging unit, test and set bag.

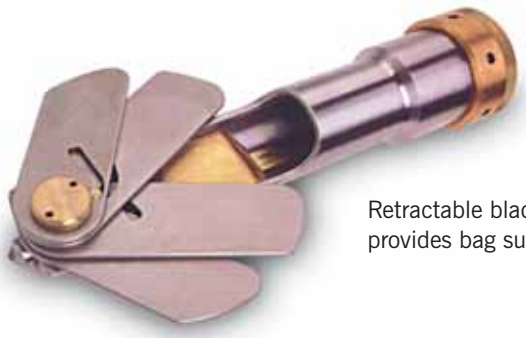
d) Withdrew bag with bagging unit, close blades.

e) Lower bag tube into main, open support blades, insert bag.

f) Connect inflation hoses to bag inflation tubes.

g) Inflate bags. At this point the main will shut off.

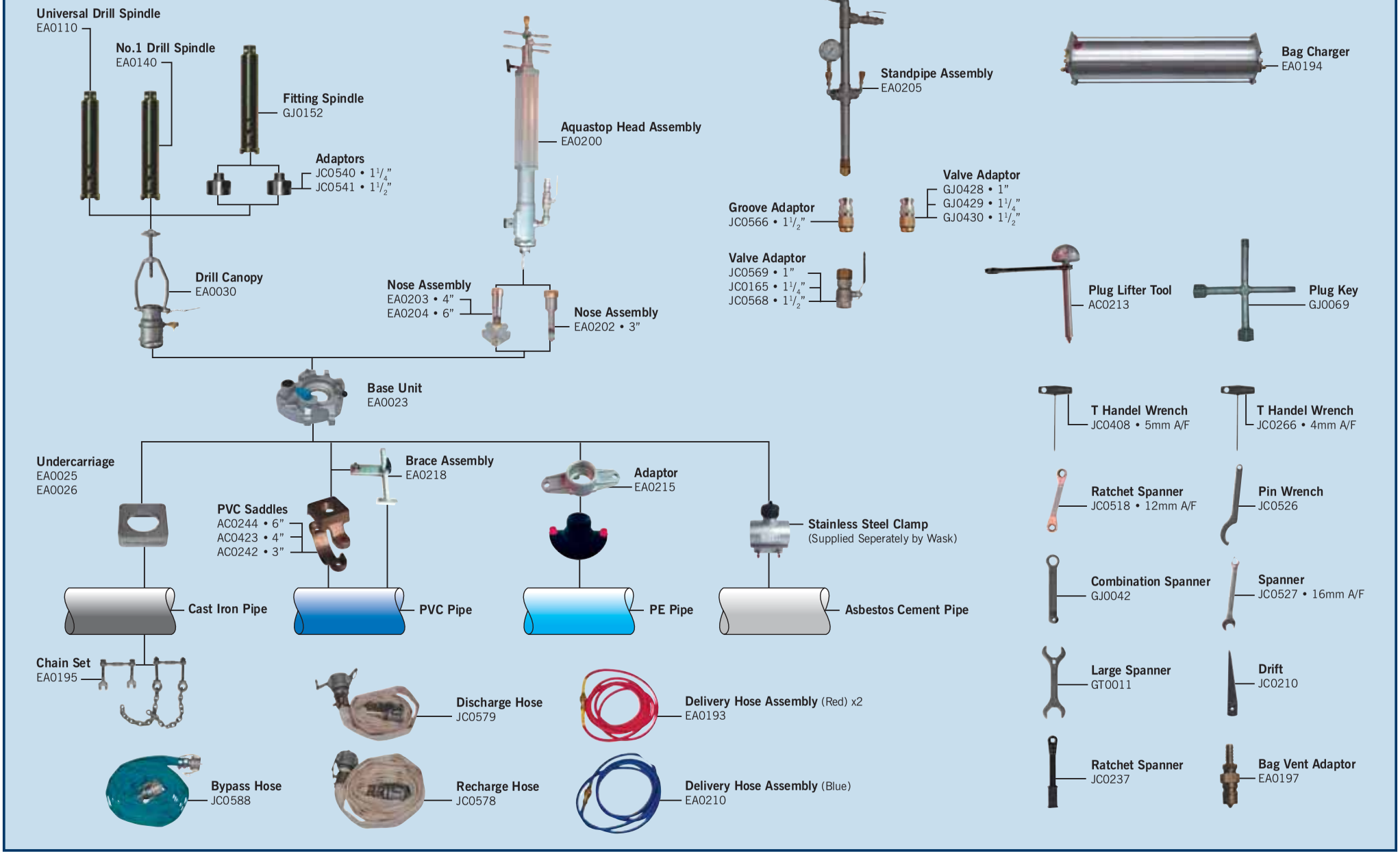
Hydrabags™ are inflated by mains water pressure.



Retractable blade mechanism provides bag support.

Maximum diameter of access hole is 1 $^{1}/_{2}$" for a 6" flow stop.

The Wask Mini-Drill & Aquastop System - Component Map



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WASK

Specialist fittings and equipment for the gas industry