



WATER EQUIPMENT

CRANE[®]

BUILDING SERVICES & UTILITIES

 **WASK**

Specialist fittings and equipment for the utilities industry

AQUASTOP • HYDRANT WIZARD[®]

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General and Product Information

Introduction

Wask is a leading supplier of specialist fittings and equipment to the Gas and Water industries and has been serving the Utilities' market for over 120 years. The Company's products are used in many countries throughout the world. WASK is a business name of Crane Ltd.

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 by offering new designs to meet the varying and challenging needs of each market. Development collaboration with leading international utility companies has led to cost effective designs for some particularly demanding applications.

This catalogue contains product application and other information on two such products: Aquastop and Hydrant Wizard.

Description

The constant need to reduce costs and the increasingly stringent legislation regarding customer service and the conduct of street works has exposed a demand for high-performance water pipeline maintenance equipment. Among the equipment offered in this catalogue are the WASK Aquastop water main stopping system and the Hydrant Wizard to facilitate the maintenance and replacement of fire hydrants. Both these products use Hydra-bags developed by Sarco Stopper Limited.

Quality Assurance

WASK operates a Quality Assurance system which is certified to comply with BS EN 9001:2000. On-site engineering and test facilities enable to Company to monitor quality at all stages of production while the use of Pro-Eng and CNC systems in the manufacture of the Company's products ensure 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 before being permitted to use this equipment. WASK and its distributors are able to offer such training.

Spares & Services

WASK strongly recommends that only genuine WASK spares are used on Aquastop and Hydrant Wizard. WASK authorised distributors stock a full range of spares and can offer a refurbishment service. For further details contact WASK Sales Office.

Health & Safety

WASK complies fully with the COSHH 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 purposes 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 MUST BE USED STRICTLY IN ACCORDANCE WITH WASK INSTRUCTIONS AND YOUR EMPLOYER'S WORKING PROCEDURES.

Note

Trademarks: WASK, Aquastop, Hydrant Wizard, PECAT, Teeset and Flexgrip are registered trade marks of Crane Limited. Hydra-bag is a trade mark of Sarco Stopper Limited.

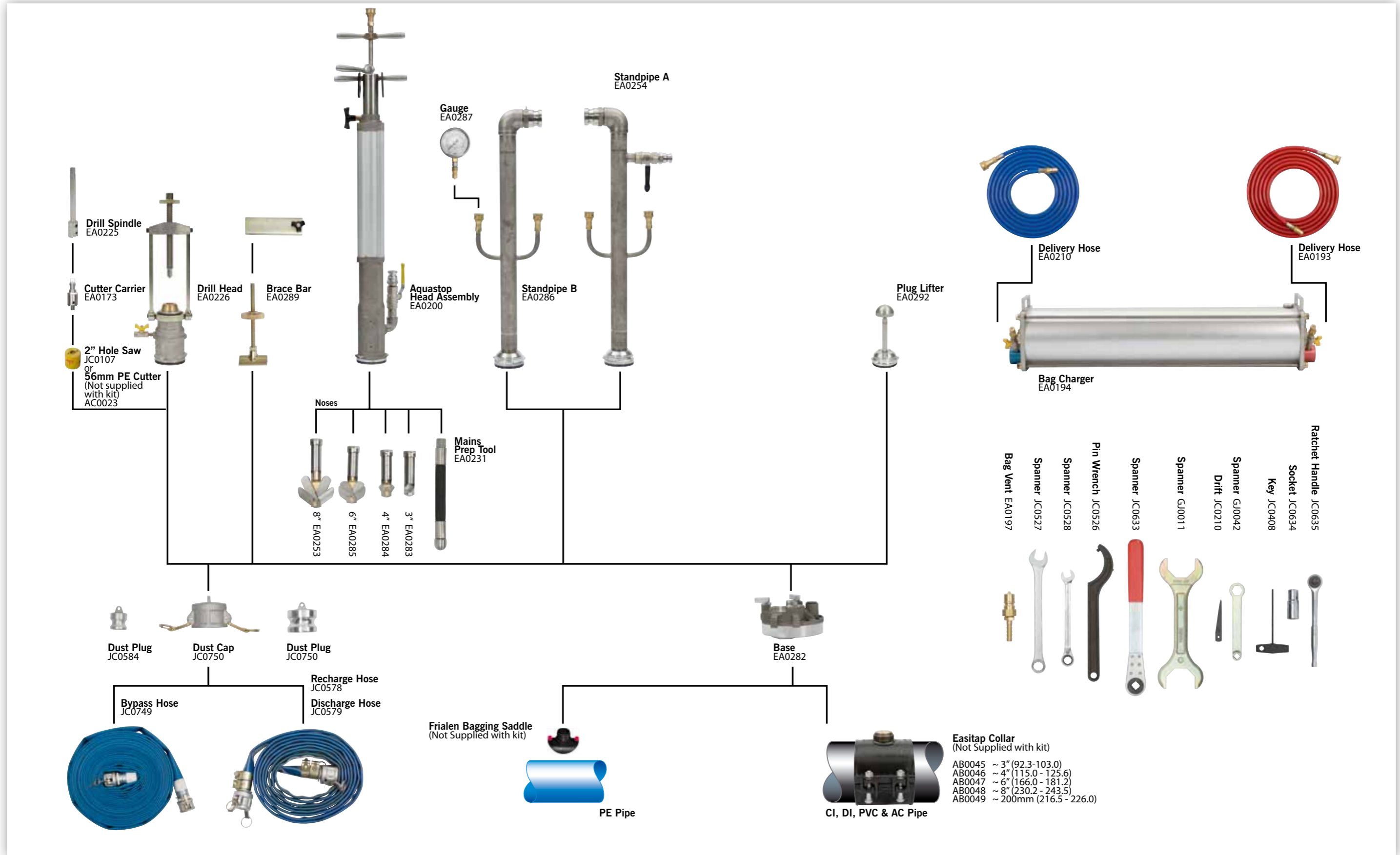


Descriptions and illustrations in this publication are for general guidance only. No responsibility can be accepted for errors, omissions or incorrect assumptions. Please refer to the product itself if more detailed information is required. Owing to its continuing programme of product development, WASK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

Other Products

WASK supplies a wide range of fittings and equipment for gas and water distribution including the PECAT range of mains fittings for MDPE and HDPE pipe; Crimp and Flexgrip fittings for gas and water service pipe. Equipment for the gas industry includes the Teeset drilling, tapping and ferrule insertion machine; the Bagpipe gas bagging-off system, By-Pass and Purge/By-pass equipment.

Aquastop Component Map



Aquastop

Line-stopping a water main enables a comparatively short section of the main to be isolated for maintenance or repair thus minimising the disruption to customers' supplies.

Inflatable line-stopping systems similar to those used in the gas industry were not suitable for use on water mains. Until the development of the WASK Aquastop system, only 'paddle' or 'plug' stopping systems could accommodate the higher pressures and the greater density of water in a distribution main.

Previous systems generally required the main to be fitted with a size off size, full-encirclement tee to reinforce the pipe weakened by drilling the large opening required to receive the stopper. The tee also retained the completion plug which closed the access hole once the operation was complete.

With the development of higher pressure stopping bags, WASK Aquastop equipment is able to line-stop Cast and Ductile Iron (including mortar lined), PE and PVC water pipes up to 8" (200mm) diameter and 8 bar pressure. The use of inflatable Hydra-

bags, made by Sarco Stopper Ltd, enables the access hole in the pipe to be comparatively small: approximately 2" diameter, which can be closed by means of a screwed plug retained in the tapped boss of a Viking Johnson EasiStop collar.

The bags are inflated with water to avoid turbulence damage while they are being inflated. Pressure to inflate the bag is derived from the main itself; no separate power source is required. The specially designed and patented pressurisation unit always maintains the bag pressure at a constant differential over that in the main, thus ensuring that under- or over-inflation of the bag cannot occur even with rapidly and widely fluctuating mains pressures.

Sterilisation is straight forward and should be carried out each time the equipment is used. The water to inflate the bags is kept separate from that in the main and should be renewed for each operation. Disinfected water should always be used to prevent contamination of the main should a bag become damaged during the stopping operation. The system also incorporates a by-pass which, although not capable of delivering

the main's full capacity, enables adequate supplies to be maintained during periods of low demand.

The bag insertion equipment is pressure balanced without the need for long lead-screws or an hydraulic pump.

The standard equipment comprises two bag insertion units, each with its own pressurisation unit, together with all necessary hoses, standpipes, valves and couplers. Consumables, not supplied with the kit, include the cutters, the stopping bags and VJ EasiStops. The bags, which are designed for single use, are supplied in sealed packs.

The equipment can be transported in a small van. A double stop-off, for example on each side of a fracture, can be deployed within half an hour of the main being exposed.

Details of Equipment

Aquastop is supplied ready to be used on a range of pipe materials from 3" to 8" nominal diameter.

The standard equipment comprises the following main components:

- 4 off Mini-Drill Base Units capable of fitting to the bossed outlet of a Viking Johnson EasiStop Saddle.
- 2 off Aquastop Heads complete with 3", 4" 6" and 8" Nose Assemblies.
- 1 off Mini Drilling canopy and spindle.
- 1 off Set of Aquastop 2" Standpipes, 20m Bypass, Recharge & Vent hoses.
- 2 off Aquastop Bag Pressurisation Units and Connecting hoses.
- 1 off Plug Installation Kit.

Consumable Materials, available separately:

Cast Iron, Ductile Iron and PVC: A Viking Johnson EasiStop is used to attach the Aquastop equipment to the main.

PE: Frialen SPA/TL electro fusion Saddle for 110mm through 250mm PE pipe.

The boss of both types of saddle has an external thread to receive the Mini-Drill base unit and an internal thread to receive a completion plug. The completion plug is supplied with the saddle.



Aquastop can be used in a number of configurations depending on the type of flow-stopping operation required. The type and quantity of pipe entries and the appropriate closure fittings are as follows:

Cast Iron, Ductile Iron, Steel and PVC:

Single flow-stop:

1 off EasiTap and 1 off service ferrule required.

Double flow-stop with by-pass:

4 off EasiTaps required.

PE

Single flow-stop:

1 off Frialen saddle and 1 off Frialen tapping tee required.

Double flow-stop with by-pass:

4 off Frialen saddles required.

When the flow-stopping operation is complete, the pipe is sealed by fitting the completion plug, supplied with the saddle, into the saddle boss and fitting the cover cap.



Range and use of equipment:

Aquastop may be operated at a maximum pressure of 8 barg and flow rates up to 10 litres/sec.

The size of the nose assembly must be selected to suit the pipe size and type as follows:

3" nominal mains:

Range 71.6mm to 88.0mm inside diameter.

- BS4772 Class K9 & K12 Ductile Iron
- BS78 Class AB & CD Cast Iron
- BS1211 Class B, C & D Cast Iron
- BS3505 Class C, D & E uPVC
- WIS 4-31-06 8 Bar & 12.5 bar metric uPVC
- WIS 4-31-08 12 bar & 16

bar metric & imperial MOPVC
• WIS 4-32-03 110mm SDR11, 90mm SDR17 & 90mm SDR11 PE

4" nominal mains:

Range 96.2mm to 109.0mm inside diameter.

- BS4772 Class K9 & K12 Ductile Iron
- BS78 Class AB & CD Cast Iron
- BS1211 Class B, C & D Cast Iron
- BS3505 Class C, D & E uPVC
- WIS 4-31-06 8 Bar & 12.5 bar metric uPVC
- WIS 4-31-08 12 bar & 16 bar metric & imperial MOPVC
- WIS 4-32-03 110mm SDR17, 125mm SDR17 & 125mm SDR11 PE

6" nominal mains:

Range 143.6mm to 160.5mm inside diameter.

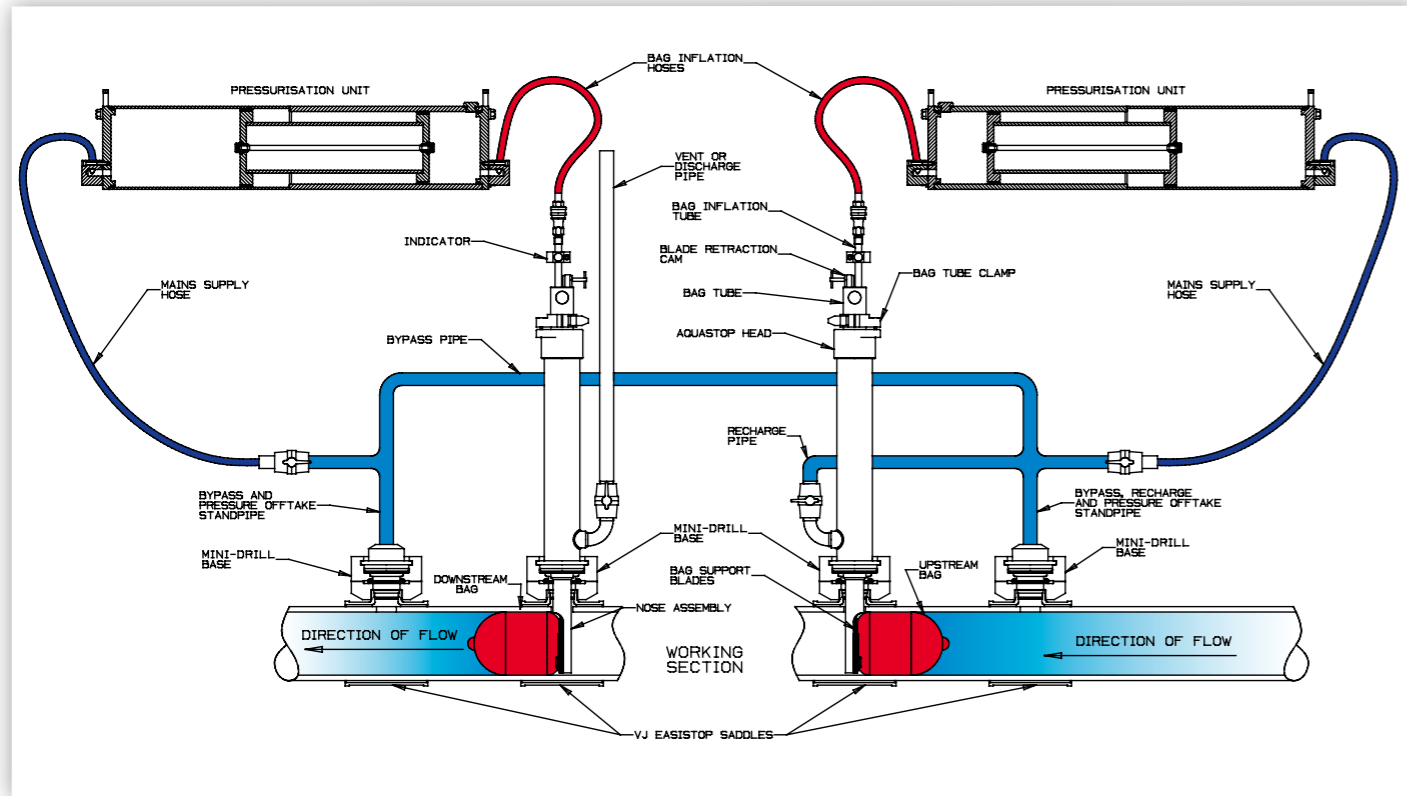
- BS4772 Class K9 & K12 Ductile Iron
- BS78 Class AB & CD Cast Iron
- BS1211 Class B, C & D Cast Iron
- BS3505 Class C, D & E uPVC
- WIS 4-31-06 8 Bar & 12.5 bar metric uPVC
- WIS 4-31-08 12 bar & 16 bar metric & imperial MOPVC
- WIS 4-32-03 200mm SDR11, 180mm SDR17 & 180mm SDR11 PE

8" nominal mains:

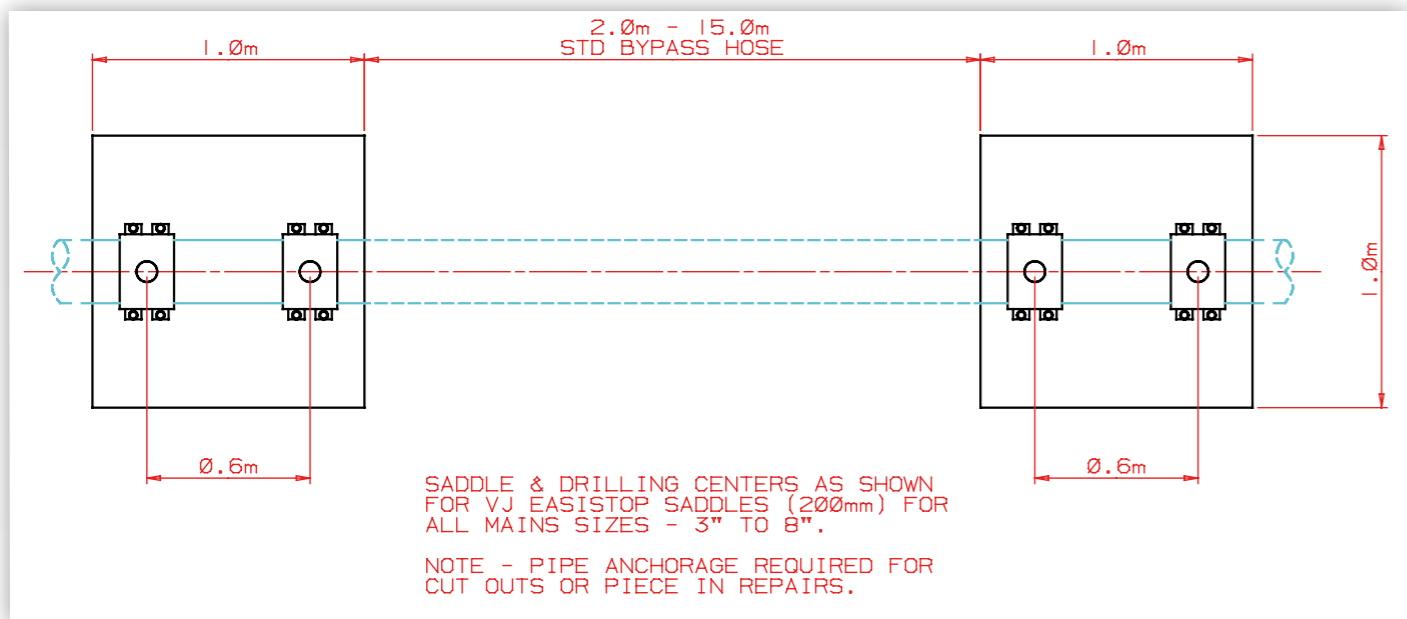
Range 195.6.xmm to 213.9mm inside diameter.



Aquastop Operation Diagram



Aquastop Excavation Layout



EasiTap Saddles for Aquastop

EasyTap saddles, made by Viking Johnson, have been developed as the most efficient method of preparing a water main to receive the WASK Aquastop stopping system.

The saddle is easy to fit and is designed to remain permanently on the pipe. The mechanical strength and sealing ability of the EasiTap saddle is beneficial on a corroded main.

Function:

The function of the EasiTap saddle is to:

- Provide an water-tight attachment on which the Aquastop equipment can be safely and quickly mounted;
- Support the Aquastop equipment during use without causing undue stress on the main;
- Receive the completion plug and completion cap to close the aperture so that the Aquastop equipment can be removed after completion of the stopping operation;
- Provide mechanical support for the main around the entry point.
- Provide a re-usable entry point.

Specification:

- Internal and external thread on boss.
- Bolt torque/Spanner details: M16, 95 to 110 Nm, 24mm A/F
- Material Specifications:
 - o Housing: Ductile Iron to BS EN 1563:1997 Symbol EN-GJS-450-10.
 - o Bridging Plate: Stainless Steel to BS1449 part 2:1983 Grade 304S15.
 - o Gasket: Grade E, 60 IRHD EPDM to BS2494:1990/W+D.
 - o Bolts: Steel to BS EN ISO 898-1:1999, Property Class 4.8.
 - o Nuts: Steel to BS4190:2001, Grade 4
 - o Washers: Stainless Steel to BS1449 Part 2: 1983 Grade 304S15
- Coating:
 - o Housing: Rilsan Nylon 11 to WIS 4-52-01 (Part 1)
 - o Bolts & Nuts: Sheraplex to WIS 4-52-03
- Approvals:
 - o All water contact materials are WRAS approved for use with potable water.
 - o Full product is WRAS approved for use with potable water.



Sizes

Part No.	Nominal Diameter	Diameter Range	Bolts: No., Diameter, Length	Weight (kg)
AB0045	3"	92.3 to 103.0	4 off M16 x 95mm	5.0
AB0046	4"	115.0 to 125.6	4 off M16 x 95mm	6.0
	5"			
AB0047	6"	116.0 to 181.2	4 off M16 x 95mm	8.3
	7"			
AB0049	200mm	216.5 to 226.0	4 off M16 x 95mm	10.0
AB0048	8"	232.2 to 243.5	4 off M16 x 95mm	10.8
	9"			

EasiTap saddles are not recommended for use on PE pipe (for which Frialen saddles are available) or on Asbestos Cement pipe.

Hydrant Wizard

This version of Aquastop® has been designed to enable defective fire hydrants to be exchanged. Fire hydrants are usually situated in the road surface and it is usually more cost effective to replace them than to attempt an in situ repair. Previous practice involved shutting down the main either by closing valves or using traditional line-stopping techniques. However, valves could often be some distance away so that supplies to customers would be interrupted. Both methods of shutting down and restoring the supply could disturb sediment in the main leading to complaints regarding water quality.

In the WASK Hydrant Wizard system the flow of water in the main is not affected. A simple plate valve is fitted to the 'leg' between the hydrant and the main through which a small hole is drilled under-pressure. A small stopping bag is inserted and inflated. Inflation is controlled by means of an Aquastop style pressurisation unit but, whereas the pressure for Aquastop is taken from a separate tapping in the main, the bag inflation pressure for the hydrant stop equipment is taken through the bag entry hole.

When the bag is fully inflated, the defective hydrant can be replaced. The supply to the new hydrant is restored by deflating and removing the bag. The access hole can then be plugged. At no time is the flow in the main affected.

The operating pressure is 6 Bar and a 3" diameter hydrant leg can be stopped.

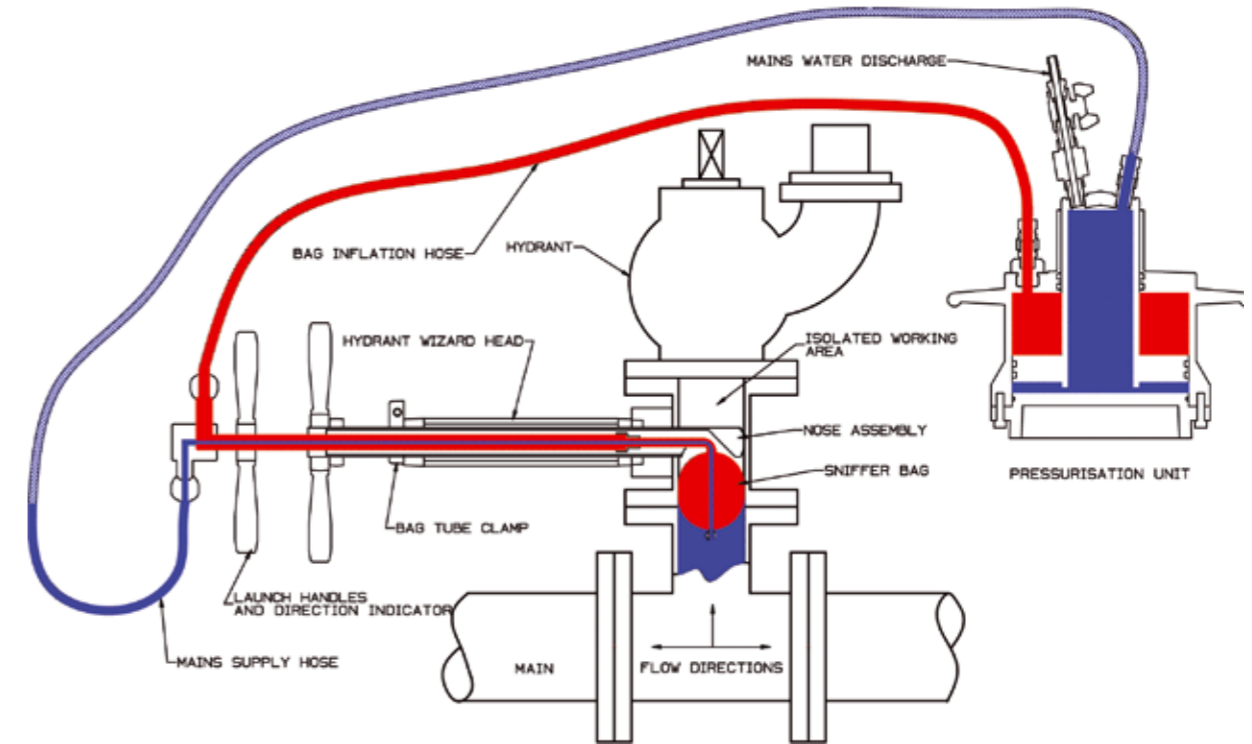


Benefits of using Hydrant Wizard:

- Only the hydrant is isolated; the flow in the main is not interrupted.
- Supplies to customers and water quality are unaffected throughout the operation. Sediment in the main is not disturbed and flow is uninterrupted.
- Excavation is restricted to the area around the hydrant minimising the cost of labour and materials.
- The small diameter access hole does not compromise the integrity of the pipe. The only consumable is a small plate valve which remains on the hydrant leg.
- The equipment is compact and lightweight and can be used in confined areas.
- No independent power source is required.



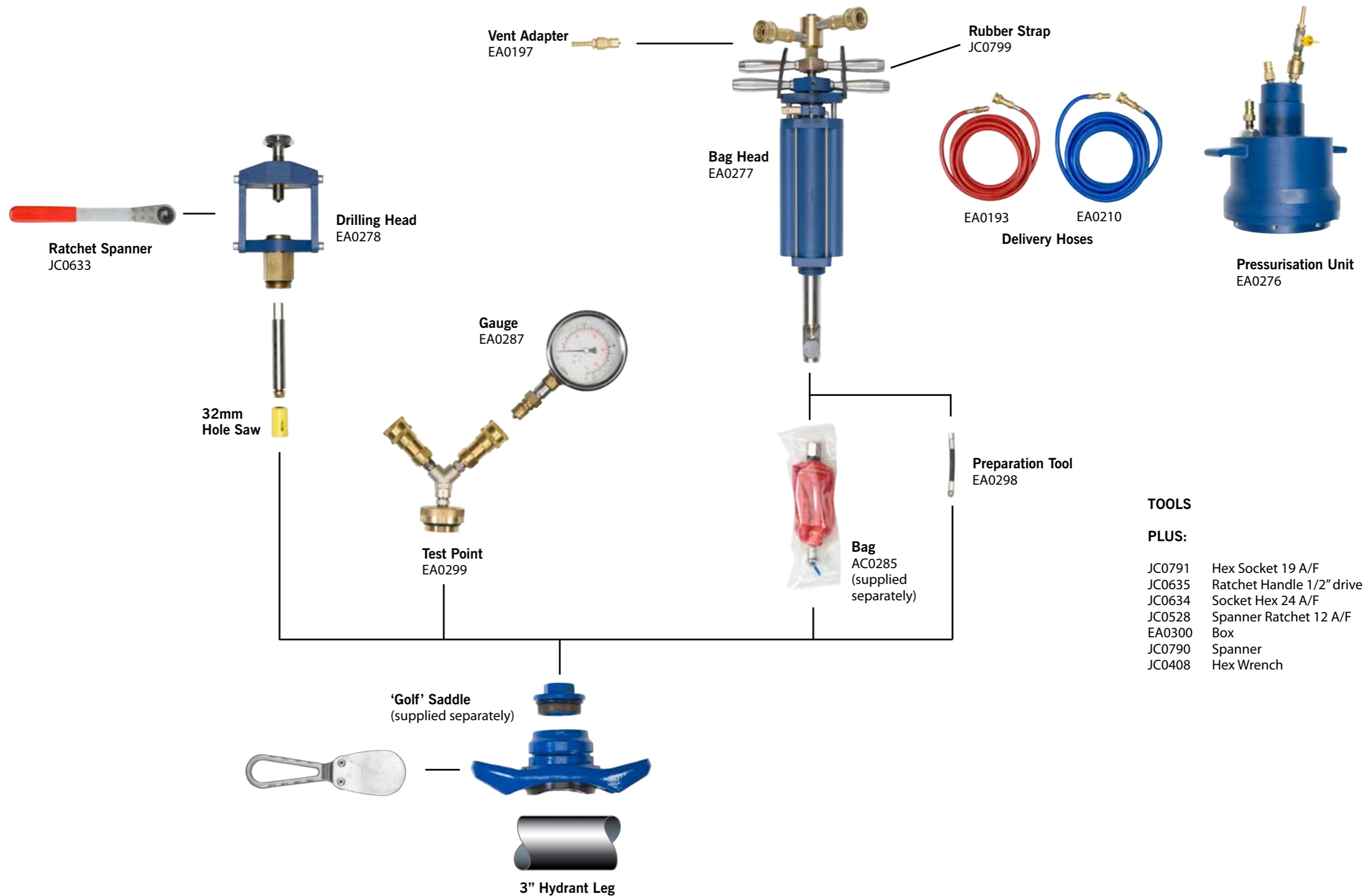
Hydrant Wizard®



AC0284 Hydrant Wizard

Part No.	DESCRIPTION	Unit Qty
EA0193	ASSY DEL HOSE 3/8 RED AQSP	1
EA0197	ASSY ADPT VENT BAG AQSP	1
EA0210	ASSY DEL HOSE 3.8 BLU AQSP	1
EA0276	PRESSURISATION UNIT	1
EA0277	ASSY BAG HEAD	1
EA0278	ASSY DRILL HEAD	1
EA0287	ASSY GAUGE 16 BAR	1
EA0298	PREPARATION TOOL	1
EA0299	ASSY PRESSURE TEST POINT	1
EA0300	ASSY BOX HYDRANT WIZARD	1
JC0408	KEY HEX 5 A/F T HANDLE	1
JC0528	12 A/F HEX RATCHET SPANNER	1
JC0633	19 A/F SQ RATCHET SPANNER	1
JC0634	HEX. SOCKET 24 A/F	1
JC0635	RATCHET 1/2" SQ DRIVE	1
JC0790	SPANNER OPEN ENDED 19 A/F	1
JC0791	SOCKET 19 A/F HEX EXTENDED	1
JC0799	RUBBER STRAP	2

Hydrant Wizard Component Map



TOOLS

PLUS:

- JC0791 Hex Socket 19 A/F
- JC0635 Ratchet Handle 1/2" drive
- JC0634 Socket Hex 24 A/F
- JC0528 Spanner Ratchet 12 A/F
- EA0300 Box
- JC0790 Spanner
- JC0408 Hex Wrench

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