TOGGLEBLOK® VALVE

AUTOMATED WATER POLLUTION CONTAINMENT DEVICE

SANDFIELD© PENSTOCK SOLUTIONS

PREVENT AND CONTAIN WATER POLLUTION WITH SANDFIELD PENSTOCK SOLUTIONS

Safeguard your site and the environment with the latest in pollution containment systems. Whether you're designing a new facility or looking to protect an existing site, our solutions, including the industry-leading ToggleBlok® Valve, help you stay compliant, prevent costly fines, and ensure business continuity.

TOGGLEBLOK® - THE NEXT GENERATION IN WATER POLLUTION CONTAINMENT

Smart, Reliable, and Cost-Effective Pollution Control

The ToggleBlok® Valve is a cutting-edge water pollution containment device designed to protect your site and the environment with maximum efficiency and minimum disruption.

Powered by solar energy and connected to the GSM network, this smart valve offers automated and remote activation, ensuring a rapid response in an emergency. Its modular design makes it simple to retrofit into existing drainage systems, eliminating the need for costly and invasive civil works.

We have over 30 years of designing the very best pollution containment valves.

Please contact us to discuss your current site

Regards

Dave

INDEX

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Titton, Stourport-on-Severn. DY13 9QB
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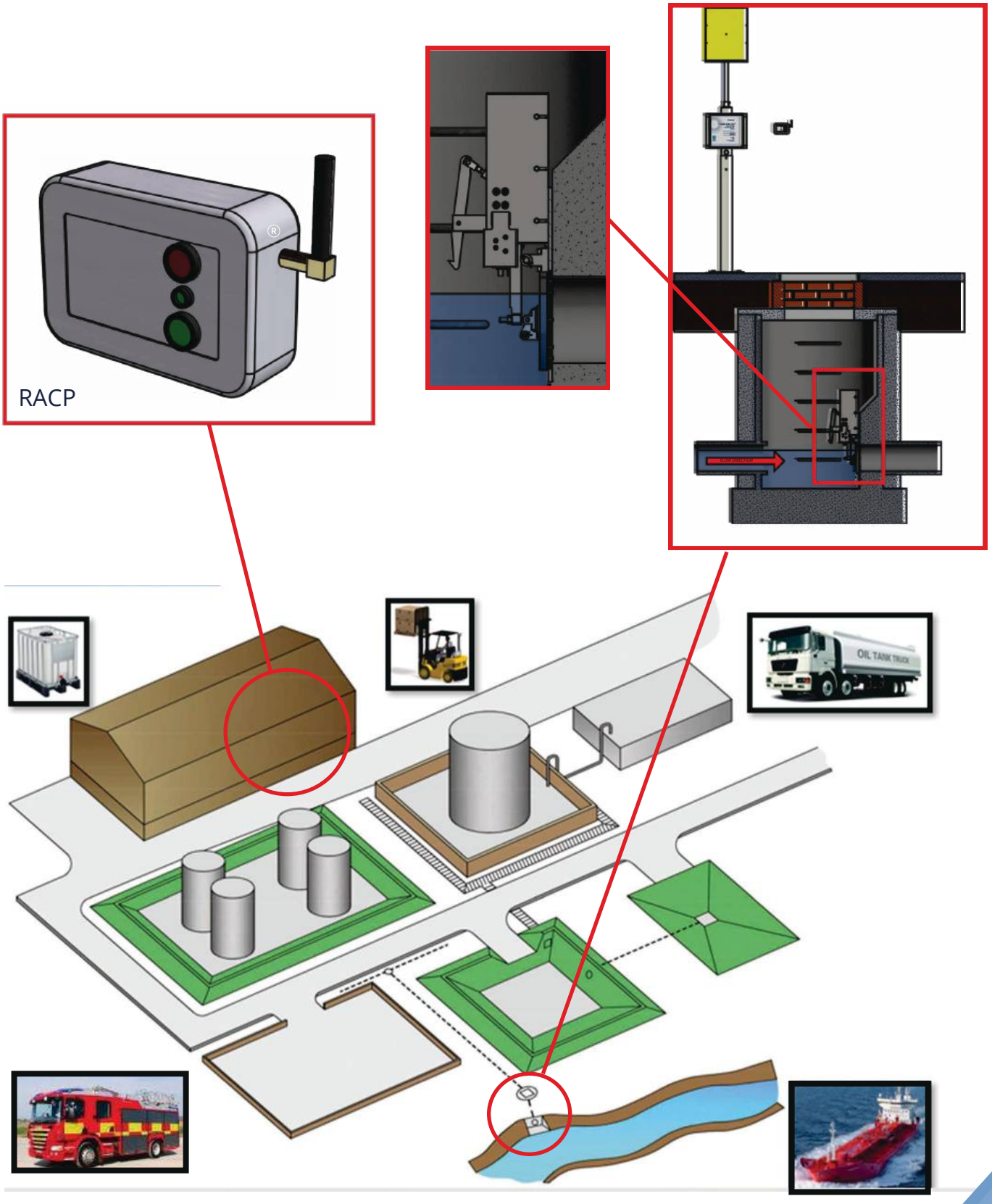
TOGGLEBLOK® SYSTEM



AUTOMATED TOGGLEBLOK® SYSTEM

The automated ToggleBlok® system is a drop seal system, which closes the drain within 10 seconds. The valve is stand alone, powered by a 12V battery, with mains or solar charging. The system may be activated simply by pushing a button, e-stop, SMS message, or auxiliary alarms such as fire alarm, interceptor, turbitiy , pH or level alarm. The system can also link into our own wireless RACP.

System Features

1. Automated System for flood prevention and water pollution prevention.

2. Stand alone system, battery powered, mains or solar charging. No need for UPS.

3. Remote activation and local operation, via remote call point (hardwired or wireless) or SMS.

4. Link to monitoring systems eg. fire alarms, pH monitors, high level alarms, oil monitors.

5. Closes the drain with 10 seconds.

6. Robust drop seal design.

7. Pneumatically operated, valve will remain mechanically locked once deployed.

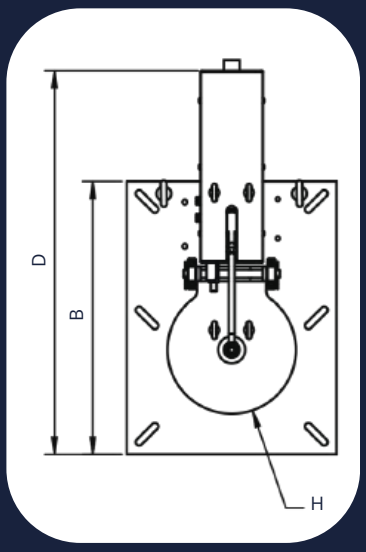
8. System indicates open/closed position and remote reporting via SMS or local LED.

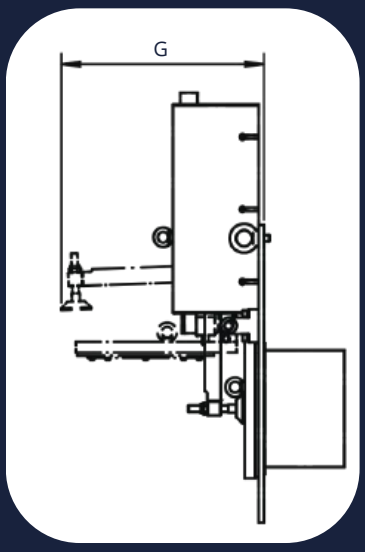
9. Simple test procedures.

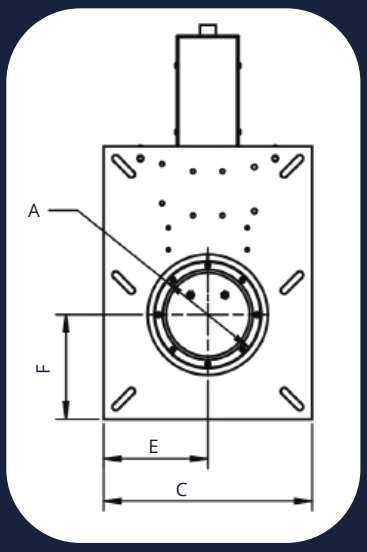
10. No other services required, complete stand alone.

TOGGLEBLOK® OFF SEATING SYSTEM
On headwall or inlet to chamber

Dimensions
Available in 150, 225, 300, 375 bore sizes. (Larger sizes available on application)







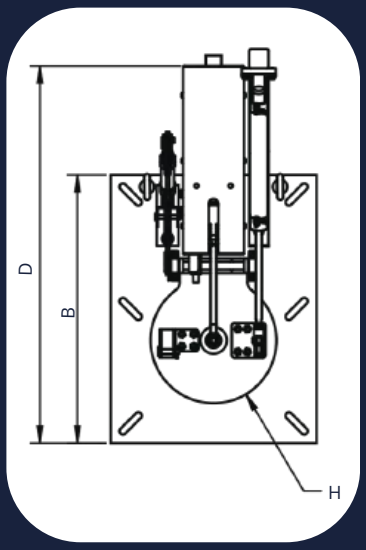
VALVE SIZE	DIMENSIONS							
	A	B	C	D	E	F	G	H
TBV 150	150	397	270	640	135	114.5	336	R90
TBV 225	225	555	425	780	212.5	212.5	378	R130
TBV 300	300	630	500	950	250	250	450	R167.5
TBV 375	375	782.5	600	1093	300	300	532	R212.5

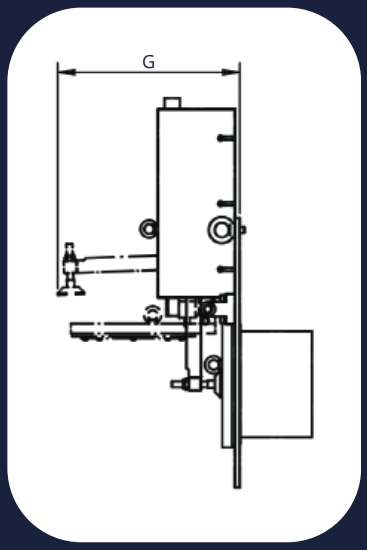
Valve Specification

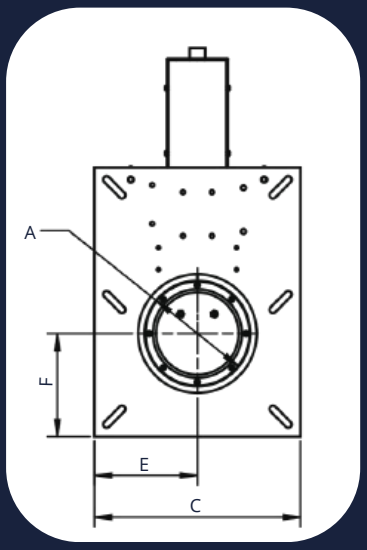
1. Stainless steel with HDPE flap.
2. Pneumatically operated, mechanically locks when closed.
3. Light weight modular design.
4. Lift eyes on larger valves to assist lowering into chamber.

TOGGLEBLOK® ON SEATING SYSTEM
Outlet to Chamber

Dimensions
Available in 150, 225, 300, 375, 450, 525, 600, 675 bore sizes
(Custom sizes available on application)







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TBV 375	375	782.5	600	1093	300	300	532	R212.5
TBV 450	450	850	700	1245	350	350	613	R250
TBV 500	500	910	760	1345	380	380	664	R280
TBV 600	600	1025	900	1460	450	450	761	R325
TBV 675	675	1087.5	950	1572.5	475	475	836	R362.5

Valve Specification
1. Stainless Steel with HDPE Flap.
2. Pneumatically operated, mechanically locks when closed.
3. Light Weight Modular Design.
4. Lift eyes on larger valves to assist lowering into chamber.
5. Spring or automatic reset.

TOGGLEBLOK® CONTROLS

Control Box

Wall mounted Control Panel Enclosure

Control Panel Front

Floor Mounted Stand with Solar PV Panel

GRP Roadside Enclosure

Manual Overide Kit

Control Box Specifications

1. IP66 Enclosure.
2. Local, Remote Call point or SMS activation / Auxillary.
3. Wall or Stand Mounted.
4. 12v Battery Powered.
5. Mains or Solar charging.
6. To be positioned no more than 30 m from valve (greater distance on application).
7. Manual close/open buttons with 5 second delay to prevent accidental activation.
8. Activation Audible Alarm.
9. Open and Close LED Indicators.
10. LED and Audible Failure Indicator.
11. SMS command and activation alerts enabled based on mobile signal available.
12. Suitable for auxiliary activation / alarm connection Eg. monitoring equipment/ Fire alarms. Volt free. No contact required.
13. Manual override kit available.
14. BMS Interface.
15. Also available in GRP floor mounted enclosure.

REMOTE ACTIVATION

The ToggleBlok® can be remotely activated with a number of different methods, either by SMS to nominated mobile phones, an e-stop, auxilliary panel, BMS or the RACP (remote call point).

SMS

The ToggleBlok® System allows upto 8 mobile phone devices to log into the ToggleBlok® System these users are able to open and close the valve and are given notifications if the valve has been operated.

E-STOP

E-stop, is a wired emergency close button which allows the valve to be closed remote from the panel with a simple and quick activation. The E-stop maybe placed on or any distance from the control panel. The valve must be opened at the control panel or via SMS.
Care should be given to the placement of E-Stops to prevent accidental activation. (ES)

AUXILIARY CONTROL

Auxiliary control is a wired panel which maybe located in a security office or control hub. The auxiliary control replicates the control panel and the valve maybe opened and closed from this point.
The auxiliary control unit also indicates if the valve has a fault. (AC)

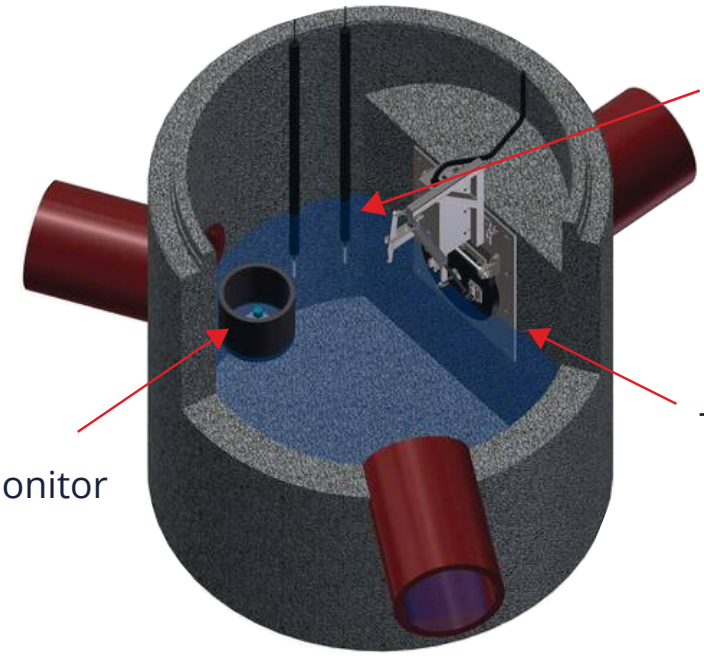
BMS INTERFACE

The controller may also be provided with a BMS interface to link into the companies existing BMS. The volt free alarm will indicate to the BMS when the valve has been opened or closed.

RACP REMOTE CALL POINT / RADIO

The RACP unit is a wireless remote activation point, works via mobile phone signal using SMS. RACP units should be used in remote locations or where it is impractical to cable the control unit.
The RACP require a mobile phone signal and signal strength should be checked particularly when positioned inside a building.
A booster aerial can be used to improve the signal.
The RACP controller can be linked to any device with a volt free, normally open contact. The RACP units may also be used to remotely link the ToggleBlok® Valves with other monitoring devices. This turns existing monitoring devices into a trigger for the ToggleBlok® Valves.
Up to 8 valves can be activated with each RACP unit.

TOGGLEBLOK® LINKED TO MONITORING DEVICES



Fire Alarm

During a fire, the fire fighting water used eg sprinklers and other fire suppression will mix with stock and rainwater to produce a liquid cocktail of polluting run off. It is essential to isolate the drainage as early as possible to prevent a pollution release. Connecting your ToggleBlok® system into your fire alarm interface is simple to do. By taking the volt free normally open signal from the fire alarm panel or interface and connecting into the ToggleBlok® panel. The ToggleBlok® will now close after 5 seconds of the fire alarm being activated.

pH

pH is a measure of hydrogen ion concentration. Pure water has a hydrogen ion concentration of 10 -7 moles per litre at standard conditions (25°C), resulting in a pH of 7. The greater the hydrogen content the more acidic a liquid is.

pH is a common system that a business may use to monitor the water leaving their site as part of a discharge consent parameter. Most pH monitors will come with analogue relays. These relays can be configured to operate the ToggleBlok® to close if the pre-set alarm limit is reached for >5 seconds.

TOGGLEBLOK® LINKED TO MONITORING DEVICES

Turbidity

Turbidity is monitoring the suspended solids in water. Often used to monitor for dirty water from construction surface water run-off, such as clay.
Dairy sites often monitor surface water drains for turbidity. Milk will turn the water white triggering the analogue alarm. Turbidity and PH controllers are normally dual control systems, allowing for one control connected to multiple probes. Most Turbidity monitors will use analogue relays. These relays can be configured to operate the Toggle-Blok® to close if the pre-set alarm limit is reached for >5 seconds.

Oil Separator Alarm

Since 2005 all oil separators have to be fitted with an alarm system to monitor the level of hydrocarbons trapped by the oil separator. Older separators will benefit from installation of an alarm system. The key benefit of a high oil alarm is the fact you can understand if you are losing oil into the drainage system. Once the storage capacity is reached the alarm will alert you to the need to clean the separator. Our oil separator alarms can be linked directly into our Toggleblok® valve controller. Should you suffer a spillage of hydrocarbons into the drainage, the high oil alarm can be used to stop flow into or out of the separator.

Flood Monitoring

These systems come in many variations, from simple mains powered level alerts to solar and battery powered systems. The high-level alarms can be used to trigger a Toggleblok® to close or even open. If your business is using Toggleblok® for controlling a flow you may find installing an additional flood alarm will provide added indication that drains when the ToggleBlok® is shut and drains are backing up.

Remote Activated Call Point (RACP)

Our RACP controller can be linked to any device with a volt free, normally open contact, turning your monitor into a wireless trigger to activate up to 8 ToggleBloks®. All the RACP needs is a SIM card and a reliable mobile phone network to operate your valves.

VALVE SYSTEM SPECIFICATION

ToggleBlok® is the preferred valve due to its proven reliability, effective sealing capabilities, and ability to minimise environmental risks, ensuring compliance with pollution control standards. No alternative valve types, such as penstocks, will be accepted, as these could compromise system integrity, leading to leakage and environmental harm.

Automated System for Drain Closure

The system must automate the closure of drains effectively, ensuring reliable operation in emergency situations. Effective closure means achieving a complete seal within 10 seconds, preventing any leakage or back flow that could cause environmental harm.

Battery-Powered System with Solar/Mains Power Supply

The valve must operate using a battery-powered system that is supported by either solar power mains connection to keep the battery charged.

7-Day Active Operation Without Charging

The system should remain functional for up to 7 days without any battery charging, ensuring continuous operation during power supply interruptions.

Low Battery Alert via SIM

The system must include a SIM-based alert to notify operators of a low battery status, minimising risk of system failure.

Closure Time of 10 Seconds

The valve must be capable of closing the drain within 10 seconds to respond swiftly to emergency situations.

Robust Drop Seal Design

The valve must utilise a robust drop seal design to ensure a reliable and secure closure, minimise risk of leaks.

Outlet or Inlet Chamber Installation

The valve must be fitted to the outlet or inlet of the chamber, ensuring an optimal position for effective drain isolation. Positioning at the outlet allows for complete control of flow exiting the chamber, preventing back flow and ensuring reliable isolation of contaminants.

Valve Dimensions

The valve fitted must have the equivalent orifice as the drainage pipe it is fitted to, smaller orifice should not be fitted.

Pneumatic Operation and Mechanical Locking

The valve must be pneumatically operated, or alternatively operated by another suitable method should remain mechanically locked once deployed to ensure that it cannot be accidentally reopened.

Activation via Monitoring Equipment or Fire Alarm

The system should be capable of activation by other monitoring equipment, such as the fire alarm system, providing flexibility in how the drain closure is triggered.

Remote Activation and Local Operation

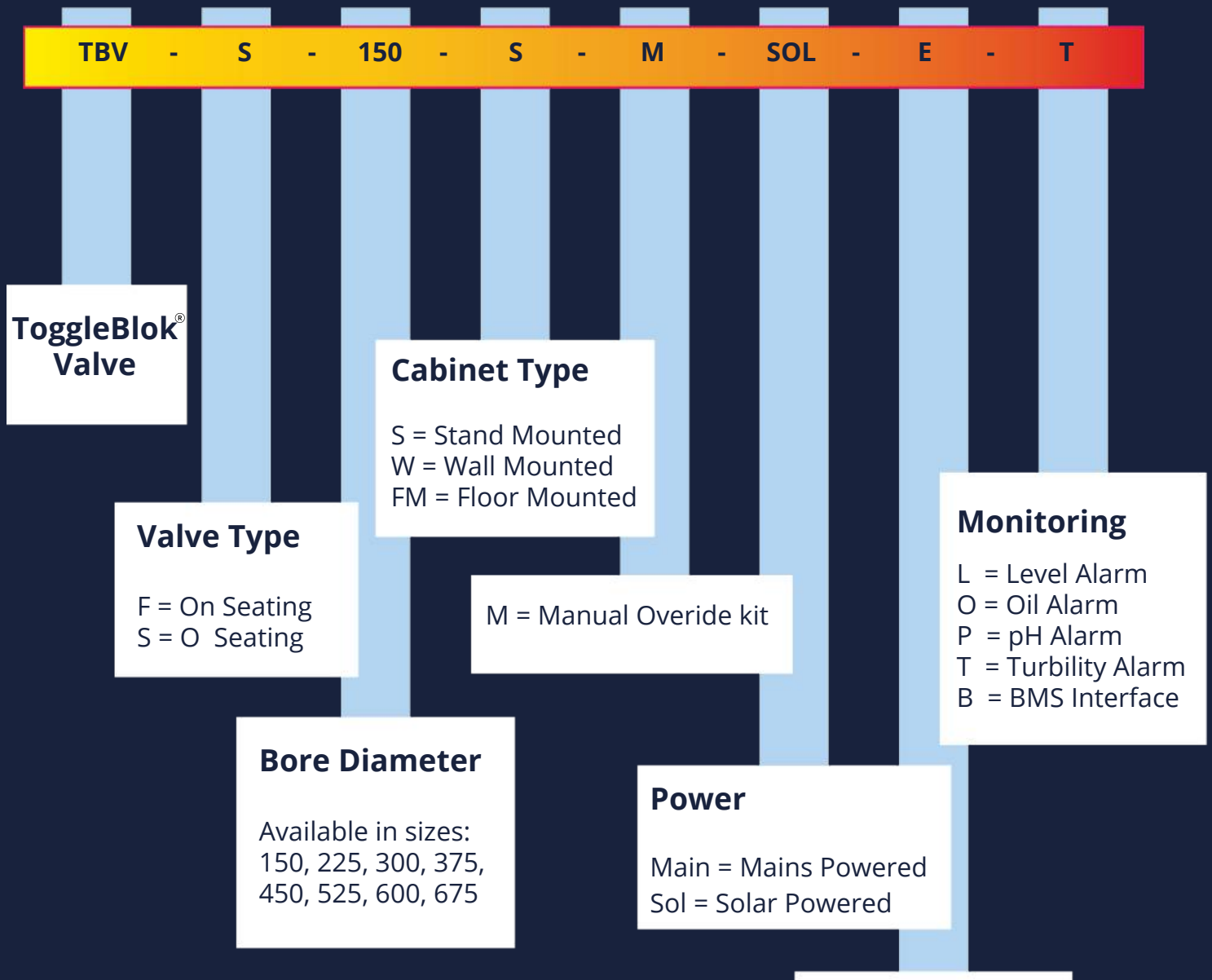
Activation should be possible via remote call points, SMS, or radio, in addition to local operation, ensuring multiple methods of deployment in case of an emergency. Remote call points are ideal for manual activation at a secure location, SMS allows for convenient activation from any mobile device, and provides reliable activation when other communication methods might fail.

Position Indication and SMS Reporting

The system should indicate the valve's position (open or closed) and provide remote reporting via SMS ensuring that all stakeholders are promptly informed of the valve status.

ORDER CODE GUIDE FOR TOGGLEBLOK® VALVE PRODUCTS

Example showing break down of order code:



Ordering example:

TBV-F-375-FM-M-MAIN-F-L

TBV Toggleblok® Valve
F On Seating
375 Bore Diameter 375mm
FM Floor Mounted Control Box
M Manual Override
MAIN Mains Power
F Fire Alarm
L Level Alarm

MANUAL TOGGLEBLOK® SYSTEM

Where automation is not required, the ToggleBlok® Valve may also be activated manually. The valve can be operated by a hand or foot pump and will close in less than 5 second

System Features

1. Manual System for flood prevention and water pollution prevention.

2. Operated by hand or foot-pump.

3. Closes the drain within 5 seconds.

4. Robust drop seal design.

5. Pneumatically operated, valve will remain mechanically locked once deployed.

6. Simple test procedures.

7. No other services required, complete stand alone system.

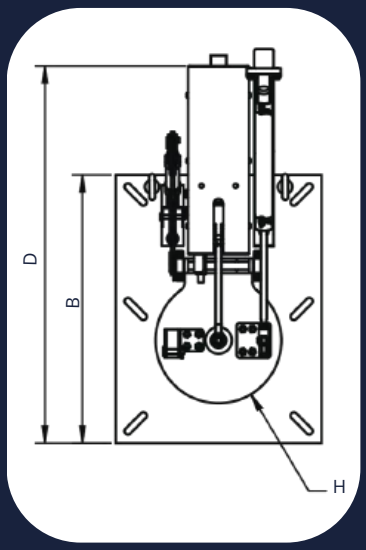
Manual pump and Storage Box

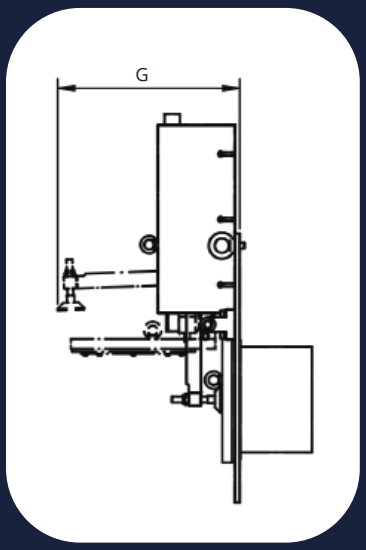
MANUAL TOGGLEBLOK® ON SEATING SYSTEM

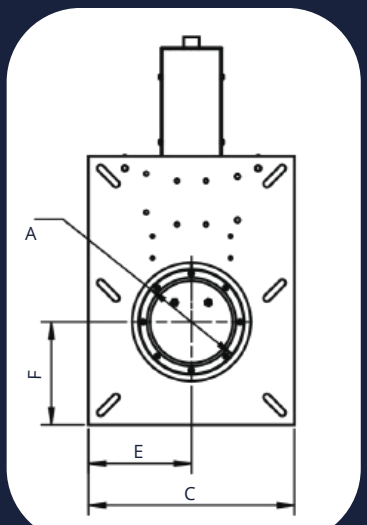
Outlet to Chamber

Dimensions

Available in 150, 225, 300, 375, 450, 525, 600, 675 bore sizes
(Custom sizes available on application)







Valve Size	DIMENSIONS							
	A	B	C	D	E	F	G	H
TBV 150	150	297	270	640	135	114.5	336	R90
TBV 225	225	555	425	780	212.5	212.5	378	R130
TBV 300	300	630	500	950	250	250	450	R167.5
TBV 375	375	782.5	600	1093	300	300	532	R212.5
TBV 450	450	850	700	1245	350	350	613	R250
TBV 500	500	910	760	1345	380	380	644	R280
TBV 600	600	1025	900	1460	450	450	761	R325
TBV 675	675	1087.5	950	1572.5	475	475	836	R362.5

Valve Specification

1. Stainless Steel with HDPE Flap.

2. Pneumatically operated, mechanically locks when closed.

3. Light Weight Modular Design.

4. Lift eyes on larger valves to assist lowering into chamber.

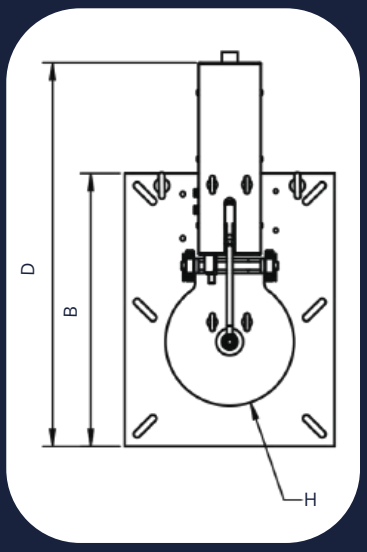
5. Manual open and close.

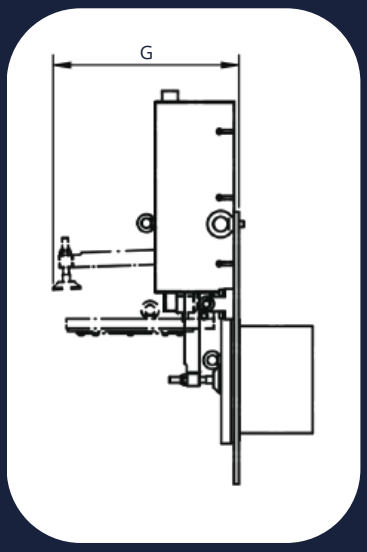
MANUAL TOGGLEBLOK® OFF SEATING SYSTEM

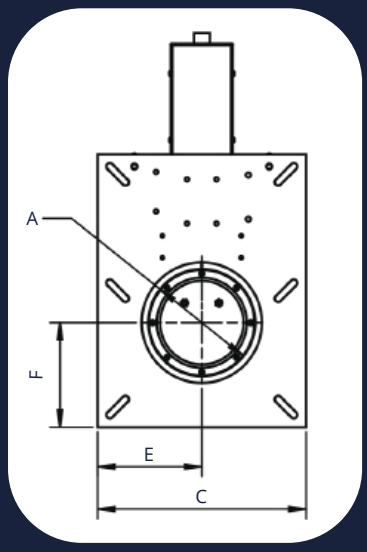
On Headwall or Inlet to Chamber

Dimensions

Available in 150, 225, 300, 375 bore sizes. (Larger sizes available on application)







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Valve Specification

1. Stainless steel with HDPE flap.
2. Pneumatically operated, mechanically locks when closed.
3. Light weight modular design.
4. Lift eyes on larger valves to assist lowering into chamber.
5. Manual open and close.

TOGGLEBLOK® CHAMBERS

ToggleBlok® Chambers are now available with pre-installed ToggleBlok® Valves which can be delivered directly to site.

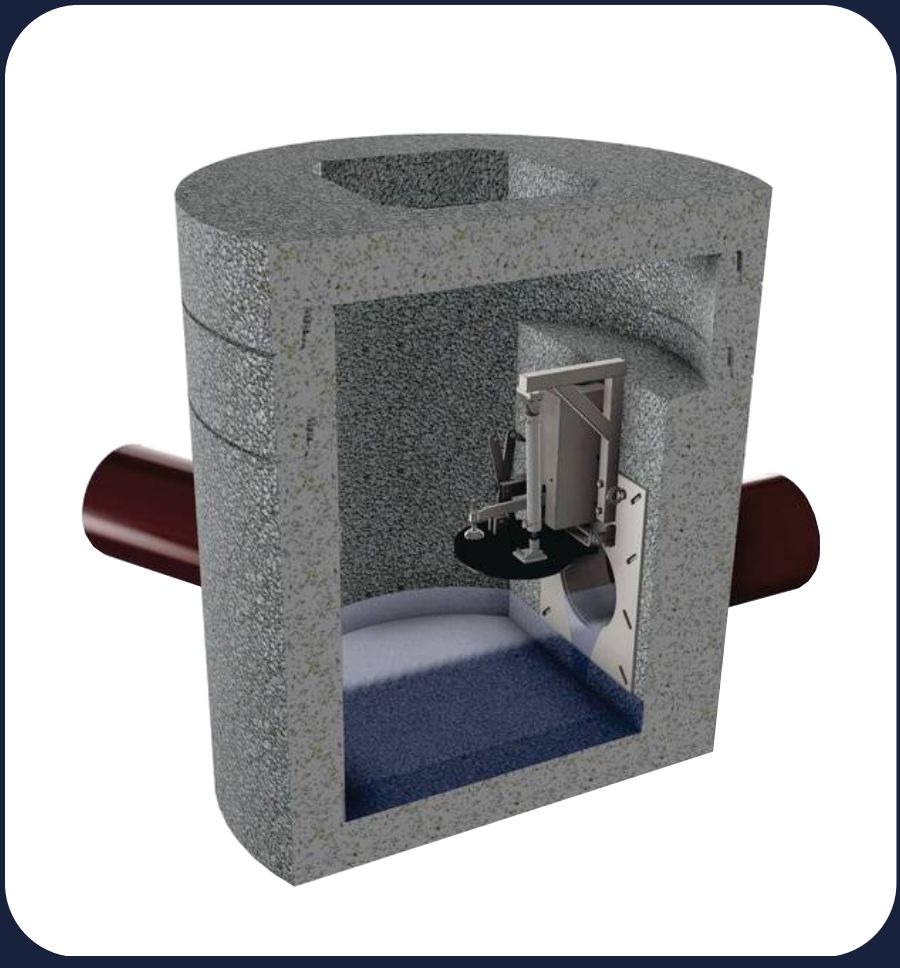
The ToggleBlok® Chambers simplify the installation process, eliminating the requirement for confined space working, speeding up the installation time and removing the requirement to coordinating with different contractors.

Controls can be installed by a single person during final stages of construction programme.

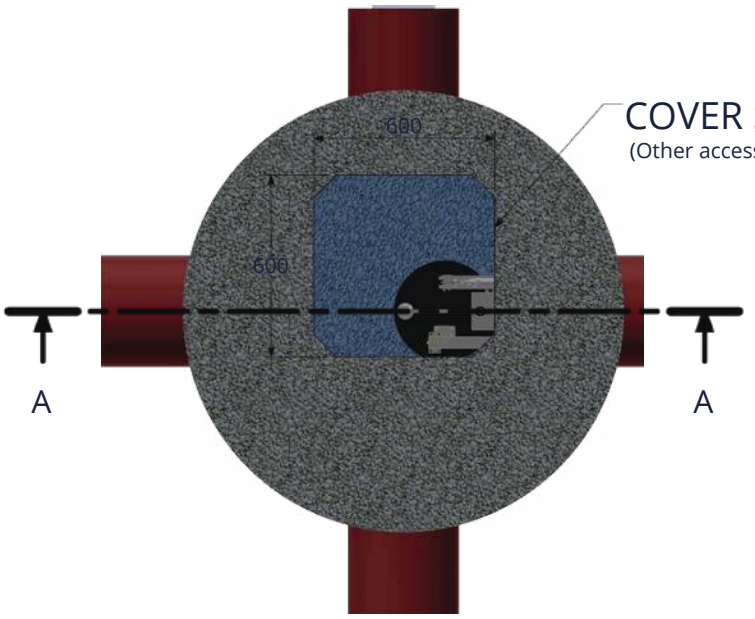
The valve will be installed in a closed base chamber with the valves fitted to the inlet or outlet.

Plastic chambers are also available.

Additional rings are available to achieve the required invert levels and also the cover slab/biscuit.

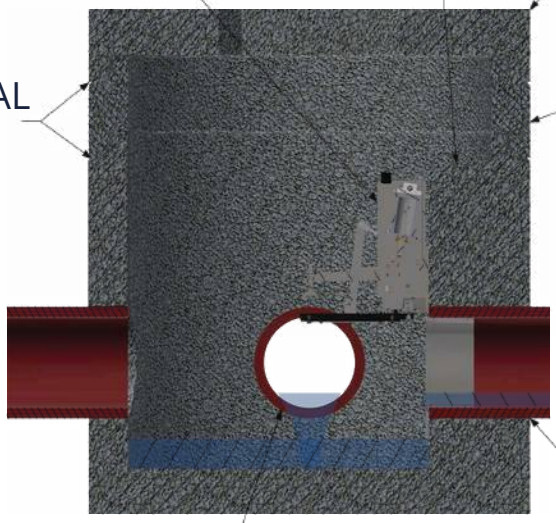


CHAMBER DIAGRAM



COVER SLAB ACCESS HOLE
(Other access hole sizes available on request.)

A-A (1 : 25)



PRE-INSTALLED WITH TOGGLEBLOK® VALVE

FLAT HEADWALL

COVER SLAB / BISCUIT

LOAD BEARING SEAL TO ALL JOINTS

CHAMBER RING
(4 HEIGHTS AVAILABLE)

OUTLET DIAMETER TO CUSTOMER SPECIFICATION
*HEIGHT CAN BE CHANGED ON REQUEST

INLET DIAMETER, POSITION AND HEIGHT TO CUSTOMER SPECIFICATION
3 INLETS MAXIMUM

1200 CHAMBER

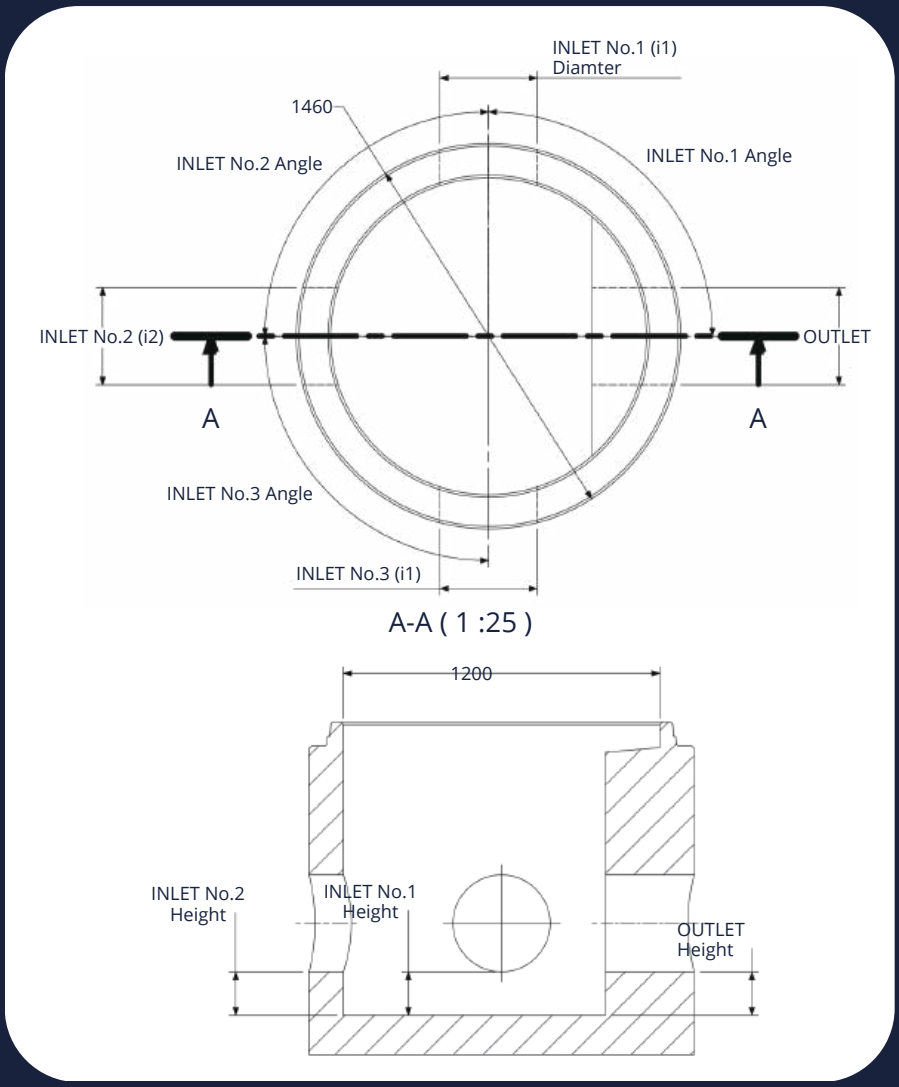
Suitable for installing 150, 225 & 300 valves.

Order code breakdown:

TBV size
-
Chamber Diameter & Ring Height
-
Inlet No.1: Diameter-Angle-Height
-
Inlet No.2: Diameter-Angle-Height
-
Inlet No.3: Diameter-Angle-Height
-
Outlet Diameter

Order Code Example:

TBV225_1200-500_i1-150-90-300_i2-200-180-300_300



1500 CHAMBER

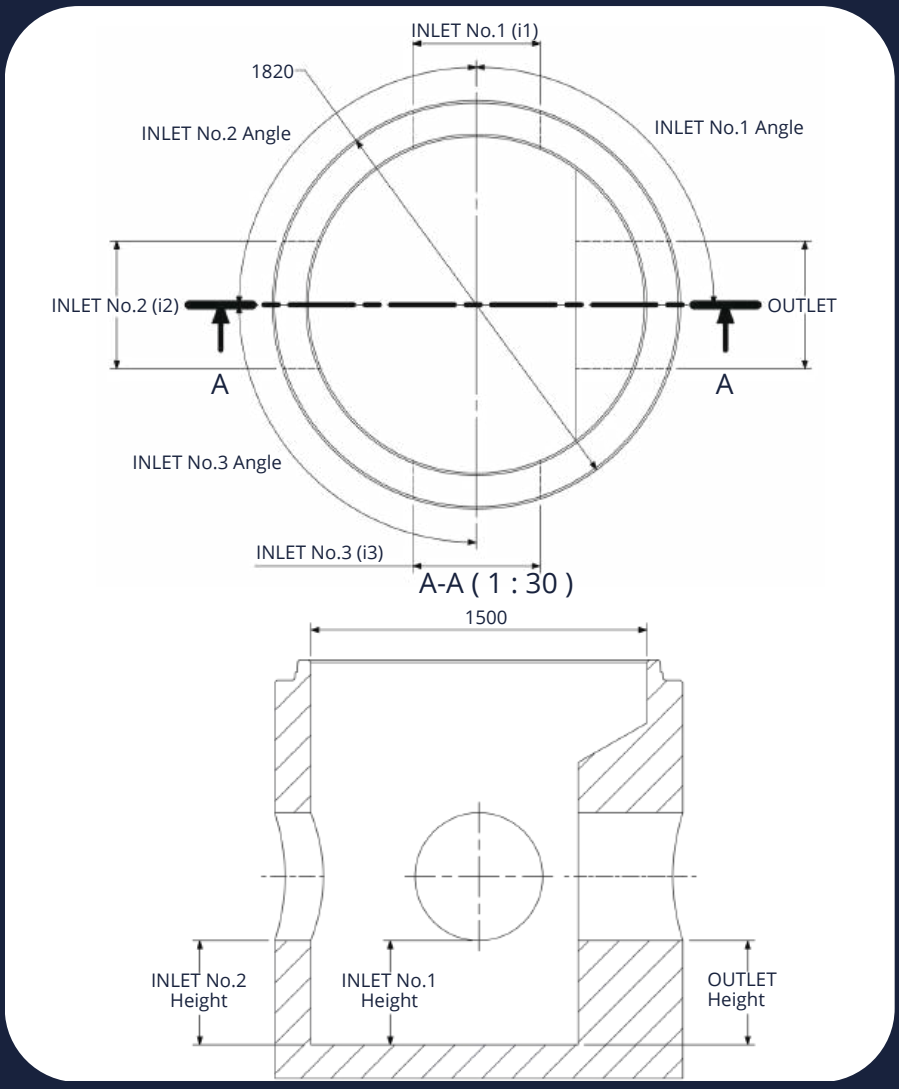
Suitable for installing 150, 225, 300, 375, 450, 500, 600 & 675 valves. Chambers greater than 1500mm are available on request.

Order code breakdown:

TBV size
-
Chamber Diameter & Ring Height
-
Inlet No.1: Diameter-Angle-Height
-
Inlet No.2: Diameter-Angle-Height
-
Inlet No.3: Diameter-Angle-Height
-
Outlet Diameter

Order Code Example:

TBV600_1500-1000_i1-150-90-300_i2-200-180-300_600



CHAMBER RING

1500 Chamber

Additional chamber rings are available to achieve the required invert levels.
Rings are available for 1200 & 1500 chamber.

Dimension A:

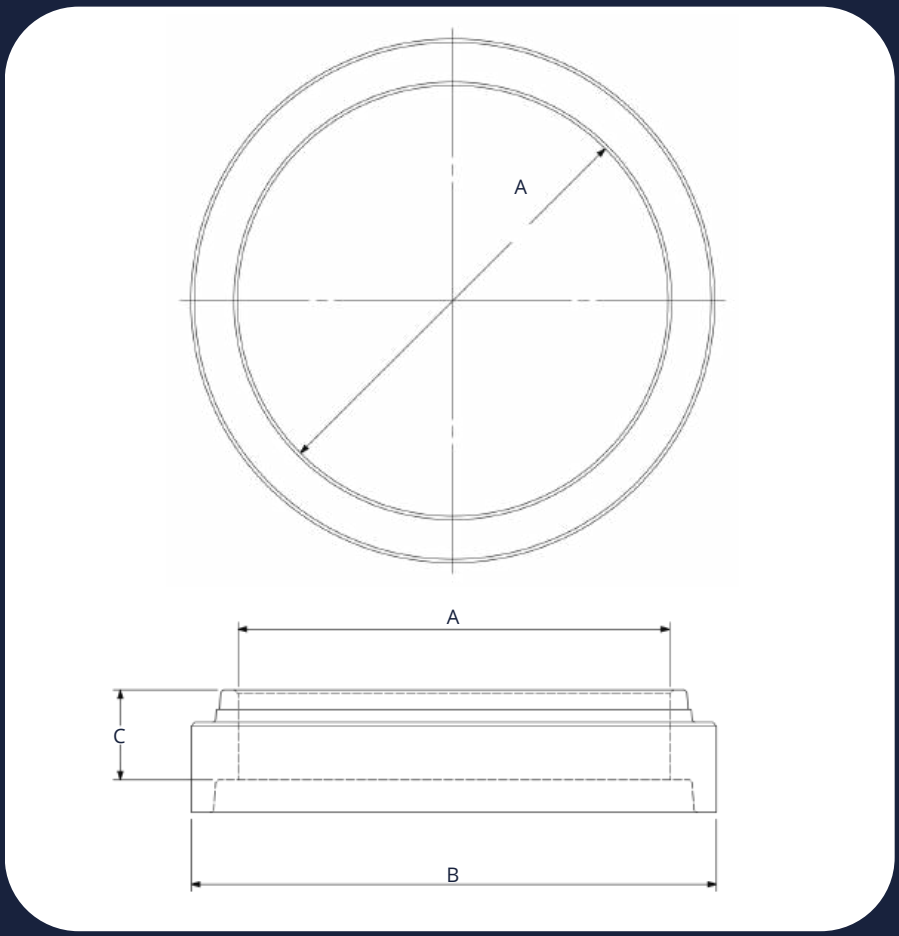
Available in 250, 500, 750, 1000

Order Code Example:

TBV225-1200/500-i1-150-90-300_i2-200-180-300_300

RING DIMENSIONS		
A	B	C
1200	1460	250, 500. 750, 1000
1500	1760	250, 500, 750, 1000

C

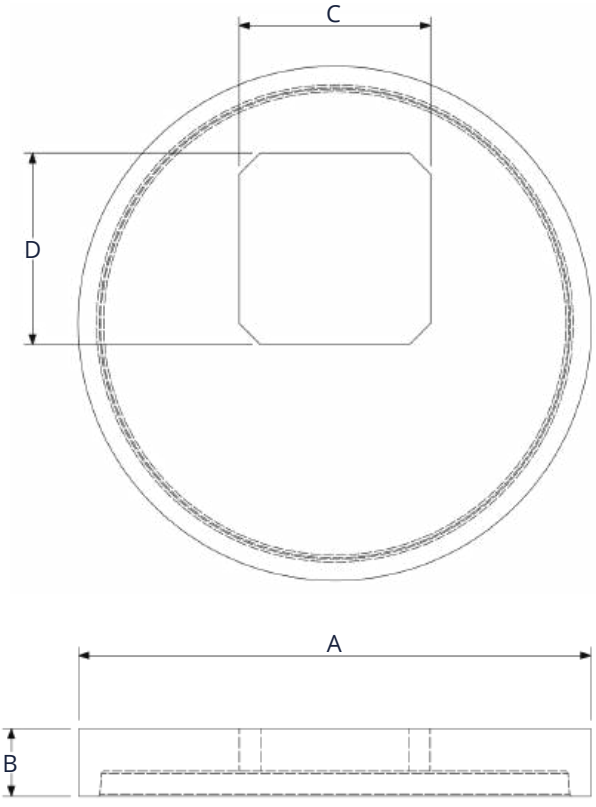


COVER SLAB/ BISCUIT

Cover slabs available for both 1200 and 1500 chambers.

1200 comes as standard with a 600 x 600 access hole.
1500 comes as standard with a 675 x 675 access hole.
Other access hole sizes available on request.

COVER SLAB DIMENSIONS				
Dimension	A	B	C	D
1200	1460	240	600	600
1500	1810	240	675	675



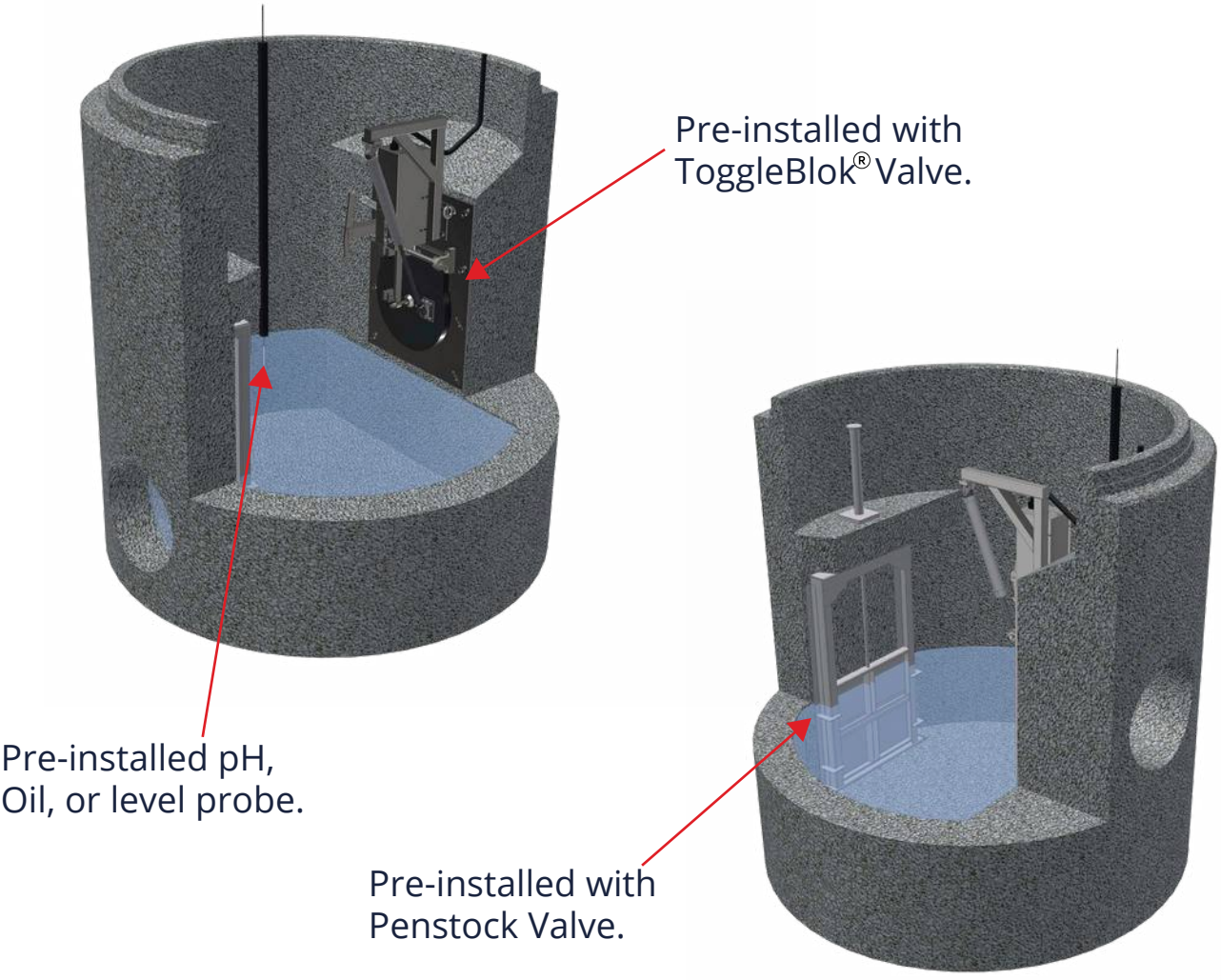
TURNKEY SOLUTIONS

With over 40 years experience with drainage control, monitoring and telemetry, Sandfield offer turnkey solutions either in our chambers or fitted to yours.

Below are just a few examples, many more can be found in our online case studies.

Pollution Containment Chamber with Flow control

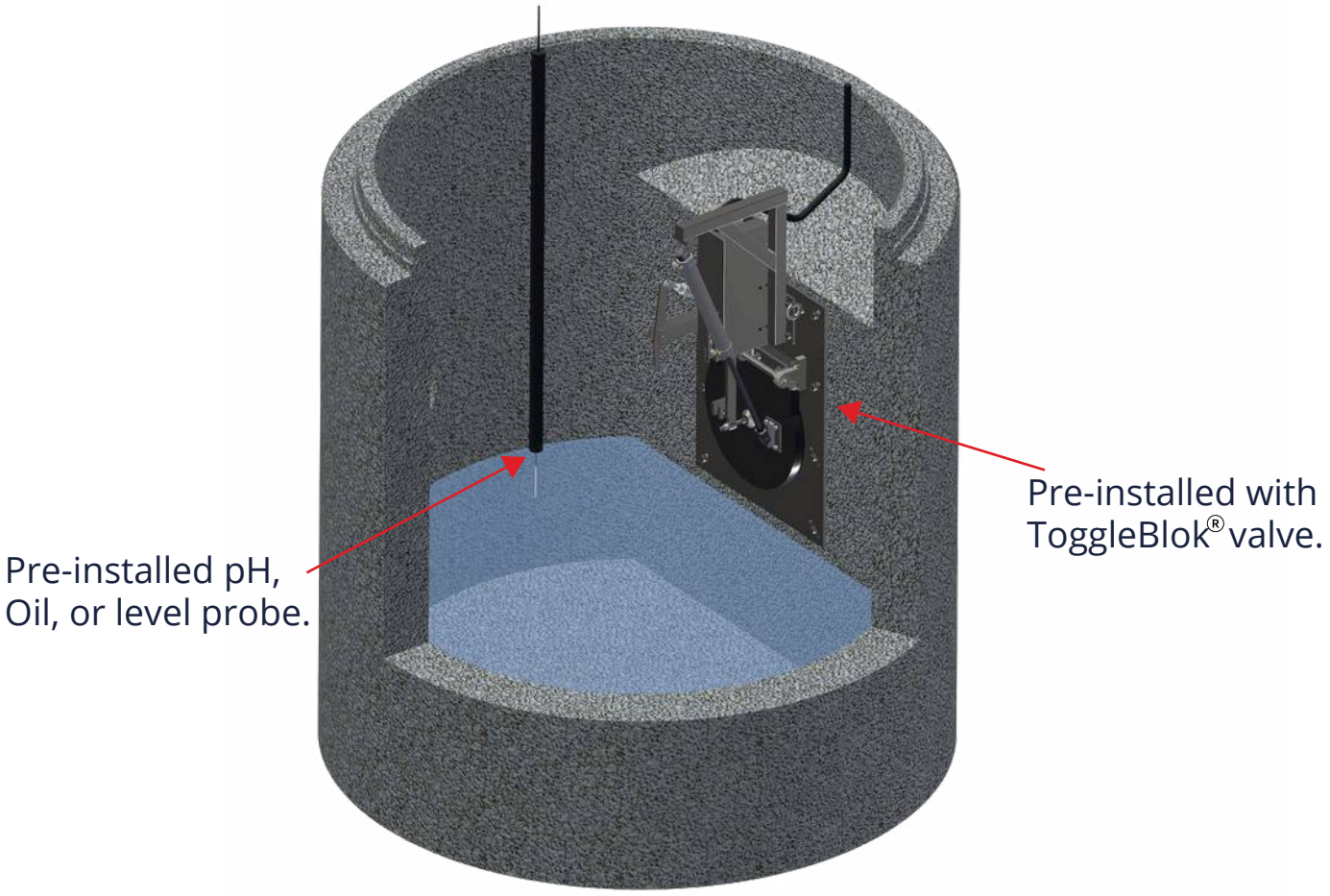
These chambers are fitted with both penstock valves or other flow control device and a ToggleBlok® Valve. The ToggleBlok® is the dead stop, the water can be monitored in the chamber.



TURNKEY SOLUTIONS

Monitoring Chamber with automatic activation.

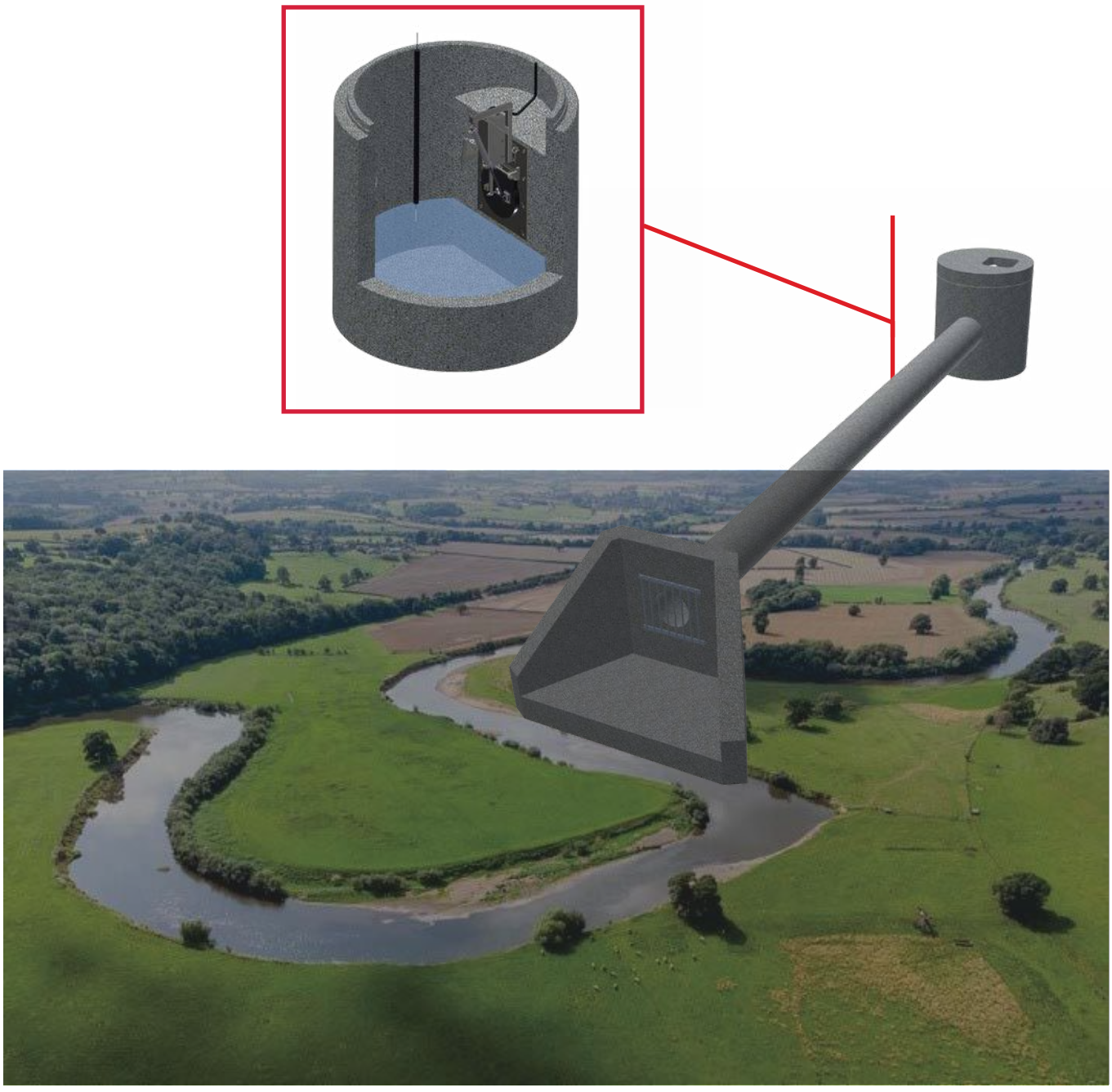
The chamber is supplied with monitoring devices and a ToggleBlok® valve is fitted to the outlet of the chamber. Water height, Oil, pH, Turbidity can be monitored in this system, once the alarm level is reached the Toggleblok® valve is activated.



TURNKEY SOLUTIONS

Automated Flood control system.

A high level probe is mounted within the River, once levels rise to predetermined level then the valve mounted in the off seating position automatically closes to prevent back flow up the pipework. Any contaminated water may then be pumped from the chamber and reprocessed or tankered away.



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