



BLACKFIVE VALVES



**LOW CONTAMINATION
PISTON TYPE SAMPLING
VALVES AND ACCESSORIES**



BLACKFIVE ENGINEERING

LOW CONTAMINATION PISTON TYPE SAMPLE VALVES

INTRODUCTION

The Blackfive Series 5 piston type valves have no dead space in front of the piston and can be fitted flush with the vessel or pipe wall which provides a solution to the problems of taking samples for testing from pipelines or vessels, with the minimum of contamination between samples and the avoidance of blockages. The Series 5 valves can be fitted at low cost on the base or side of vessels and onto vertical or horizontal pipelines.

OPERATION

On the valve there is a rear crank type handle which is connected by a swivel joint to the piston. On the base of the valve there is a special flanged and angled side outlet with a raised groove to marry up with a large range of standard fittings for collection of the samples cleanly and safely. To operate the valve the crank

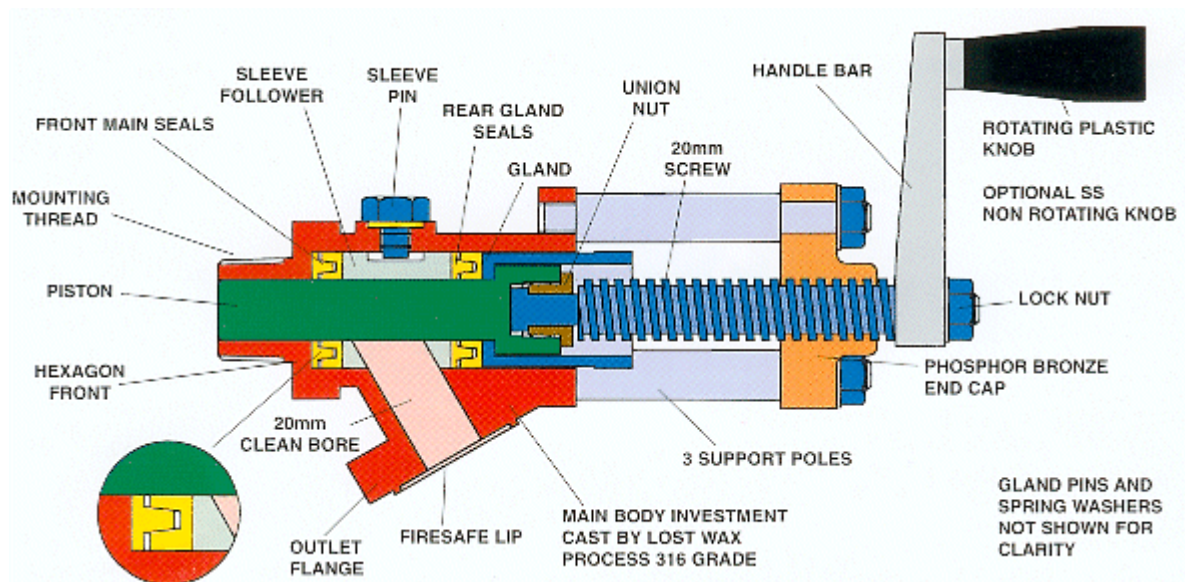
handle is turned anticlockwise to retract the piston rapidly at first until the red mark is showing and then to turn slowly to control the flow of sample when the piston passes the angled outlet.

When sufficient sample has been obtained the valve can be closed rapidly by turning the crank handle clockwise. The last turn of the handle puts pressure on the seals due to the chevron design to allow the operator to guarantee that the valve seals without having to call maintenance.



MAIN FEATURES

- **LOW CONTAMINATION** - Design of the valve eliminates dead space and blockages which gives a reliable sample with zero or very low pre-run to waste. This will help to protect the environment by not having to dispose of waste sampling material.
- **SECURE VALVE SEALS** - Unique Chevron type design ensures that both the main valve seal and the gland seals are pressurised when closing to give a good seal thereby eliminating leaks and most importantly controlled by the operator. All seals within the valve in contact with the process are virgin PTFE enabling the valve to be used for temperatures up to 200°C.
- **CLEAN CONSTRUCTION** - Clean straight outlets with no threads to clog up and cause contamination on the outlet even with a secondary full bore valve fitted.
- **ATTACHMENTS** - Full range of shaped and straight welding bosses are available in stainless steel and mild steel to suit any size of vessel or pipework for fitting all sizes of valve.
- **LOW MAINTENANCE** - Design of the seals and gland assembly allows constant pressure on the seals to be maintained and therefore reduces attention of the maintenance due to valve leaks. Compared to other designs seals are easier to change in-situ without requiring special tools.
- **SAMPLE COLLECTION** - Wide range of secondary attachments specifically designed for bolting directly to the outlet flange of this range of valves are available to assist in collecting the samples in a clean and safe manner. No extra pipe threading and fitting is required.
- **RANGE OF VALVES** - Four sizes of valves are available with 10mm, 15mm, 20mm or 25mm pistons. Due to standardization of the major components all valves are similar price.
- **ALTERNATIVE USES** - All of the valves and in particular the 25mm valve can be used as a bottom outlet valve for small process vessels where a flush valve would be advantageous for the avoidance of blockages on the bottom of a vessel. A special distance piece is available to bolt directly to the side outlet to enable direct connection to be made to 1" NB conventional pipework to BS 1560 or ANSI B 16.5



SEALS

Special design of flexible low friction PTFE seals works by allowing the piston to travel through the seals with no rear pressure on the seals. Then when the valve is fully closed the last turn on the handle by the operator puts pressure on the seals which then expands the seals outward onto the body and inwards onto the shaft giving a very tight seal. Back pressure from the process also helps the sealing. When the valve is opened the seals are pulled backwards against the gland with the movement taken up by the spring washers. This releases the pressure on the seals and allows the piston to move back freely.

SAMPLE BOTTLES

Borosilicate Glass bottles in 100ml or 250ml sizes are available. The uncoated bottles are suitable for operation up to 200°C or coated suitable for operation up to 135°C and fitted with GL 45 caps for operation at either 135°C or 200°C. The coated bottles are Safety Bottles which in the event that the bottles containing the sample are accidentally knocked or dropped after sampling and prior to testing then the contents will not be lost pending the safe recovery of the damaged bottle.

FLUSH BOTTOM VALVES

The Series 5 valves can also be used as flush bottom valves on the base of small vessels or for low contamination take-off from large pipelines. A special adaptor is available to convert to 1" NB pipework. See picture opposite

DEVELOPMENT

Blackfive Engineering are constantly developing new products and can currently offer the above valves fitted with certified fire-safe secondary valves. A fully certified firesafe flanged piston valve with automatic closing in the event of a fire for the safe sampling from process plants handling flammable materials will be available shortly. Should this feature be required then please enquire for literature or a Quotation and delivery. As a primary manufacturer of valves Blackfive Engineering will consider any requests for Special valves including high penetration extended piston valves or valves with contact parts in Hastelloy or modifications to standard valves.



QUALITY ASSURANCE

All Blackfive Pipeline Safety Sample Valves are fully assembled and hydrostatically tested in our works to 30 Bar (435 lbf/in²) at room temperature before despatch.

Blackfive Safety Sample Valves are designed and manufactured in the UK. A system of quality assurance is in operation at works in Runcorn and materials used in manufacture of these valves are fully traceable. Complete pressure test certification is available with the valves upon request.

VALVES & ACCESSORIES



VALVE MODELS AVAILABLE

Model Number	Piston Diameter	Standard Mounting Thread	Alternative threads
5S10A	10 mm	3/4" BSPT	NPT Threads in all these sizes can be supplied to order but this must be stated on any enquiry or order
5S15A	15 mm	3/4" BSPT	
5S20A	20 mm	1" BSPT	
5S25A	25 mm	1 1/4" BSPT	

ACCESSORIES AVAILABLE

Part Number	Description
5S-A267	Short straight outlet
5S-A257	Straight vented bottle outlet
5S-A260	Flanged connection to 1" NB Pipe
5S-F44	Firesafe secondary valve

Part Number	Description
5S-A268	Long Straight Outlet
5S-A259	Angled Vented Bottle Outlet
5S-1058	PTFE Connection Washer
5S-X21	Sample Collection Bottles

Information given in this leaflet is made in good faith but does not constitute a guarantee. Due to future developments we reserve the right to alter the dimensions and information contained in this leaflet as required.

FOR FURTHER INFORMATION ON SIZES AND MODEL NUMBERS, PLEASE REQUEST SPECIFIC DATA SHEETS OR A QUOTATION



Blackfive Engineering Limited

16 Beeston Court, Manor Park,
Runcorn, Cheshire, WA7 1SS, UK

Tel: 01928 579140
Fax: 01928 579514