WATER MANAGEMENT

HDPE Spigot Mounted Flap Valves - DN100-630

Flap Valves from Fernco are a durable, engineered solution for reliable flood and backflow protection. Our comprehensive range of Flap Valves are manufactured from High-Molecular Weight Polyethylene (PE500 / HMWPE) and 316 marine grade stainless steel (1.4401) as standard.

Fernco's range of HDPE Flap Valves deliver excellent corrosion resistance, UV stability, and a long service life with minimal maintenance to meet the requirements of any project. All standard Fernco Flap Valves are rated to at least 7mWC (metre water column) on-seating pressure. The Flap Valves greatly exceed the performance requirements of BS7775 and Class 5 of DIN16569-4 and offer up to a 60-year design life.

wrc approved PT/574/0626

MADE IN BRITAIN

A Spigot Mounted Flap Valve is a passive non-return valve designed to prevent backflow at the end of piped drainage systems, particularly in environments prone to variable water levels such as rivers, estuaries, and flood-prone areas.

Fernco's Flap Valve range is designed to suit a wide variety of installation scenarios, pipe types, and site conditions. Available in multiple mounting configurations - including Wall, Spigot, Flange, Tidal and custom options - each valve is engineered for durability and performance, ease of installation and long-term backflow prevention.

The Fernco HDPE Flap Valve is a one-way passive non-return valve engineered to prevent backflow from endangering commercial and residential drainage. Installed at the discharge end of pipelines or culverts, it allows water to exit freely while automatically closing against reverse pressure, safeguarding the upstream system from flooding or contamination.

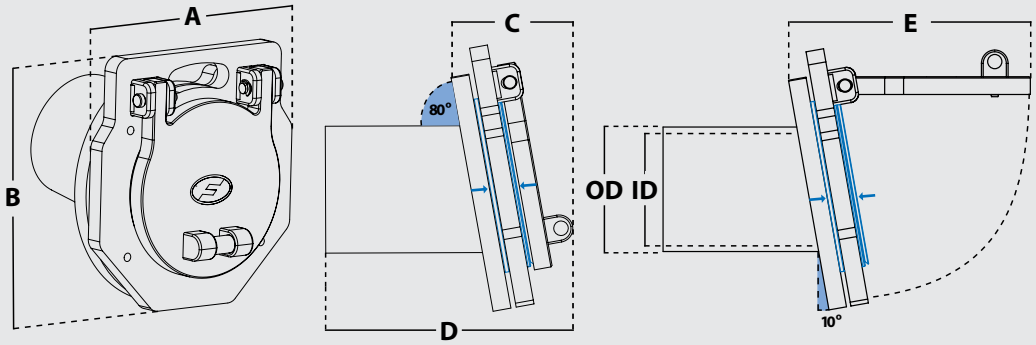
Manufactured from High-Molecular Weight Polyethylene (HMWPE / PE500), the Fernco Flap Valve range delivers exceptional durability and reliability, even in the harshest marine environments. The HMWPE construction makes the Flap Valves lightweight for ease of handling and installation yet robust enough to withstand the demands of tidal forces, submersion and flood-prone environments. Compared to cast iron alternatives, the Fernco Flap Valves offer a significant reduction in opening pressure, minimising the volume of stagnant water retained behind the gate while providing excellent long-term corrosion resistance.

The Flap Valves use a patented sealing technology that performs under both low and high pressures, while eliminating the variance in installation quality. An integrated EPDM sponge seal ensures a watertight seal between the mounting surface and valve, removing the need for any additional sealing materials.

Spigot Mounted Flap Valve

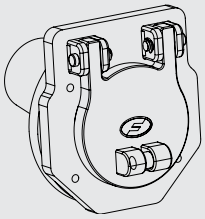
Technical Specifications

FVS150

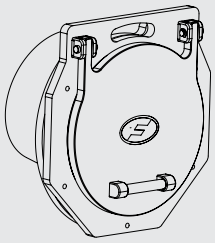


EPDM Co-extrusion seal
(FVS150+)

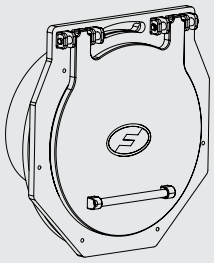
FVS90



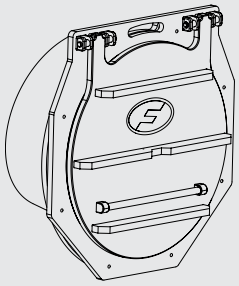
FVS315



FVS450



FVS630



Product Code	DN	Spigot OD (mm)	Spigot ID (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Pressure (mwc)	Weight (kg)
FVS90	100	90	83	212	235	125	264	234	7	2
FVS110	110	110	102	212	235	125	267	234	7	2
FVS125	125	125	115	254	268	130	267	260	7	3
FVS140	150	140	123	254	268	130	271	260	7	3
FVS160	160	160	148	274	291	135	279	274	7	3
FVS180	200	180	159	274	291	135	277	274	7	4
FVS200	225	200	184	340	349	144	284	327	7	5
FVS225	250	225	211	351	367	146	288	350	7	5
FVS250	280	250	235	379	392	150	293	374	7	6
FVS280	300	280	263	379	392	151	296	376	7	6
FVS315	350	315	300	429	442	157	300	425	7	7
FVS355	400	355	333	499	517	167	309	490	7	10
FVS400	450	400	375	544	565	173	307	543	7	13
FVS450	500	450	422	594	615	178	369	597	7	15
FVS500	525	500	469	649	667	195*	378*	648	7	18
FVS560	600	560	526	685	698	199*	393*	673	7	20
FVS630	630	630	591	754	770	224*	405*	748	7	26

**Dimension taken from end of Spigot to front plate strengthening ribs.*

Spigot mounted Flap Valves can be connected to a pipe in two ways.

1. By using a Fernco Shear Banded Coupling to connect the Spigot Flap Valve to the connecting pipe, this method will offer superior stability of the valve. The valve can be sized specific to the connecting pipe's outside diameter, therefore removing the need to seal inside the pipeline and restrict bore.
2. By inserting the spigot inside of the pipe and securing into position using a supplied EPDM sealing tape. For this option simply select the Spigot size (column Spigot ID) which will fit inside the pipe.

Please ensure supplied OD and ID measurements are accurate, so the correct bush can be specified with the Spigot Flap Valve.

HDPE Benefits

- The material's low level of relative molecular branching allows for tightly packed polymer chains, increasing intermolecular forces and resulting in a high strength-to-weight ratio.
- Exceptionally durable material that is resistant to impact and weather conditions.
- Very low moisture absorption rate, improving suitability in maritime and submerged environments.
- Recyclable material, while having no scrap value, eliminating the risk of theft.
- Resistant to most common chemicals, acids, bases and solvents due to the inherit chemical inertness of the material.
- The material is UV stable meaning it is resistant to degradation from sunlight exposure.
- Non-toxic, inert material that is safe for use in water systems.
- HDPE has an operating temperature of -30 degrees Celsius to 130 degrees Celsius.
- Lighter weight than traditional cast iron or stainless steel Flap Valves leading to safer, easier installation and lower costs.

Product Characteristics

Handle to aid installation & handling

Installation with a Fernco Shear Banded Coupling is the only WRc approved method of spigot Flap Valve installation

Cracking Head

	Spigot Mounted	
Nominal Diameter	**Maximum Opening Pressure (Cracking Head) Above Water*(mm)**	**Inclination (°)**
100	50	10
110	49	10
125	51	10
150	50	10
160	51	10
200	50	10
225	55	10
250	56	10
280	58	10
300	57	10
350	61	10
400	66	10
450	70	10
500	73	10
525	84	10
600	85	10
630	90	10

*These values do not take into account any disturbing external factors such as currents or bulky debris.

Product Specification for Spigot Mounted Flap Valve	
Product Code(s)	FVSXXX
Description	Spigot Mounted Flap Valves
Size Range	DN100 to DN630
Materials	HDPE Backplate and Flap EPDM integrated seal conforming to BS EN 681-1:1996 Stainless Steel (316) Glass filled nylon (GFN)
Standards	WRc Approved (when used with a Fernco Shear banded coupling) Fernco Flap Valves exceed the requirements of DIN19569-4, ISO 9001:2015 and BS7775
Recommended Max Temperature	Constant 80°c Intermittent 100°c

Scan for installation video

Installation

Installation Guide - Spigot Mounted Flap Valve using Shear Banded Coupling

1. Ensure the pipe has a straight/flat end face.
2. Clean the outer pipe surface leaving a smooth surface for the coupling to seal onto.
3. Measure the coupling width, mark half this measurement on both the Flap Valve Spigot and connecting pipe.
4. If using a bush slide the bush onto the Flap Valve Spigot until the edge of the bush and the marked line are flush.
5. Slide the coupling over the bush until the end faces are flush and hand tighten the end clamp. If no bush is required, slide the coupling onto the Spigot until the edge of the coupling and marked line are flush then hand tighten the end clamp.
6. Butt the Flap Valve Spigot up to the main pipe, the coupling should now be in-line with the line previously marked on the pipe. Ensure the Flap Valve is in the correct orientation (hinge mechanism at 12 o'clock), then hand tighten the end clamp.
7. Tighten all clamp bands to the recommended torque (stated by the coupling label) in sequence across the width of the coupling, starting with the shear band.

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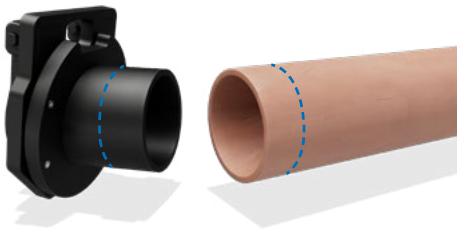

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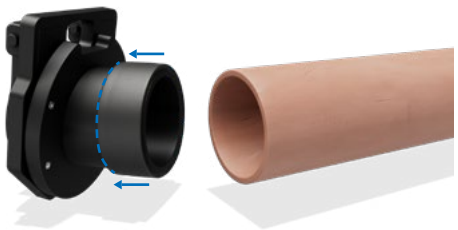

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Close Up

It is important that you confirm the OD and ID of the pipe you are installing onto, to ensure we can specify the correct Flap Valve.

Scan for installation video

Installation

Installation Guide - Spigot Mounted Flap Valve using Sealing Tape

1. Ensure the pipe end has a straight/flat surface for mounting.
2. Clean away any debris from the internal surface of the pipe.
3. Take the Sealing tape supplied with the Flap Valve, peel away the self-adhesive backing and wrap around the external surface of the Flap Valve spigot.
4. Ensure the outside diameter of the tape is now approximately 5mm larger than the internal diameter of the pipe to ensure a compressive fit.
5. Insert the spigot section of the Flap Valve into the pipe until the pipe end is flush with the Flap Valves back plate. When inserting, ensure the Flap Valve hinge mechanism is at 12 o'clock.

Installation of Spigot Flap Valves using sealing tape is not included in the WRc approval. The Spigot Flap Valve must be installed with a Fernco Shearbanded Coupling for the WRc approval to be valid.

General Information

Quality, Standards and Approvals

Fernco has been certified by the British Standards Institution (BSI) as a company of assessed capability, with a quality management system which meets the requirements of BS EN ISO 9001:2015

Fernco UK, part of a global group of companies, are the leaders in wastewater connection innovation; utilising the most advanced methods and techniques for precision-manufactured products, all of which comply with or exceed relevant British and European standards to ensure reliability and sustainability.

Fernco Flap Valves hold WRc Approved™ status. The WRc Approved™ scheme is recognised and established within the construction industry; providing suppliers, buyers and end-users confidence that the products are fit for purpose. The scheme reduces risks in procurement by ensuring quality, performance and installation processes have been tested with the most stringent of requirements, in conformance with BS7775 and Class 5 of DIN16569-4.

Fernco offers a range of Flap Valves designed to provide a robust and reliable solution for preventing backflow flooding that carry the assurance of WRc approval.

Environment

Fernco operate Environmental Management Systems which are certified to ISO 14001: 2015.

Supply

Fernco are proud members of the Builders Merchants Federation (BMF). All Fernco products are supplied through a national and global network of distribution and merchant partners. For stockist details, contact Fernco.

Technical Support

Fernco have a team of product experts on hand to support all customers with technical support and advice.

Contact Fernco Technical Department:

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Email: technical@fernco.co.uk

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International Sales:

Tel: +44 (0) 1226 344 105

Email: export.dept@fernco.co.uk

PROJECT SUPPORT

Need help with the specification or have an ongoing project?

Send your enquiries to projects@fernco.co.uk and our dedicated team will help you with your application.

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