

AVK CONNECT

BACK TO BASICS-CHAPTER 3

NON RETURN VALVES PAGE 1 of 2

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DUTY. Non return valves are primarily fitted in pumping applications (but not limited to) where the valve is used to prevent the return flow of media. This range consists of a basic flap design which is secured to the valve shaft internally. This shaft can be extended through the valve body and fitted with an adjustable lever and weight. This adds mass to the door allowing a quicker closing time. The closing speed of a check valve can sometimes be critical to the system preventing hydraulic surge. Standard non return valves are suitable on a wide range of media; potable water to raw sewage. The standard non return valve detailed in this chapter CANNOT be described as a NON slam recoil variety. For specialist requirements please contact AVK UK who manufactures a full range of NON slam recoil valves.

NAMES. The most common terms used for these products are; non return valve, reflux valve, swing check valve. Not to be confused with the NON SLAM recoil valve which is a higher specified product and is covered in another chapter.

HISTORICAL. Many traditional UK manufacturers designed their own water-work patterns with varying face to face dimensions. BS5153 1974 was then industry adopted and standardised key specifications including face to face dimensions. In 2001 this standard was withdrawn and superseded with EN 12334 specifying the face to face dimensions according to EN558-1. Not all sizes have been affected and some face to face dimensions remain as the old BS5153 standard. Care should be taken when replacing older valves ensuring face to face dimensions match up.

SEALING TYPES. AVK UK offers a resilient seated valve, as shown left, DN50– DN300. This refers to the seating face of the valve which has a rubber coated disc and allows for drop tight closure. Additionally AVK UK offers DN50 –DN1000 as metal seated valves.



DESIGNS TODAY. Through innovation, AVK UK manufacture various designs for today's markets. These are mainly split into 4 categories;



S41/39
DN50 to DN300 Metal
seated non return valves



S41/20
DN50 to DN300 Resilient
seated non return valves



S41/39LD
DN350 to DN600 Metal
seated non return valves



S641/01
DN700– DN1000 Metal
seated non return valves

RELEVANT STANDARDS.

EN12334, EN12266-1, BS EN 1092-2, BS EN 1074-3

FLOW DETAILS. To ensure a long and maintenance free usage, non return valves should be sized according to flow and not typically pipeline size. Door flutter and over wear of the valve stem can occur should the valve be incorrectly sized. Standard non return valves should be limited to 2 to 2.5 metres/sec pipeline velocity.

WORKING PRESSURES AND TESTING.

16 bar rating as standard. All non return valves are body tested to 1.5 x working pressure and seat tested to 1.1 x working pressure. Test pressure and durations are carried out in line with EN12266-1.



If in doubt ask - 01604 601188

For more information on this product range contact:
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All documentation for non return valves are available on the AVK UK website

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SIZE RANGE. AVK UK offers a DN50 to DN1000 standard non return valve.

INSTALLATIONS. Non return valves should be sited not less than 6 times the valve diameter downstream of any elbows, tees etc. Please refer to AVK UK installation and maintenance instructions for full details.

VERTICAL APPLICATIONS. Smaller diameter valves (<600mm) can be mounted vertically on clean water applications only with upwards flow. Lever and weights would require to be fitted to suit this application - suitably guarded - a mandatory health and safety requirement (* see below innovations)

TEMPERATURE. Non return valves are suitable for use on media to a maximum temperature range of -10° to $+70^{\circ}\text{C}$.

VALVE VARIANTS; The series 41/39 (metal seated) and 41/20 (resilient seated) valves are available in 4 variants:-

Basic Valve – this valve has no lever weight fitted.

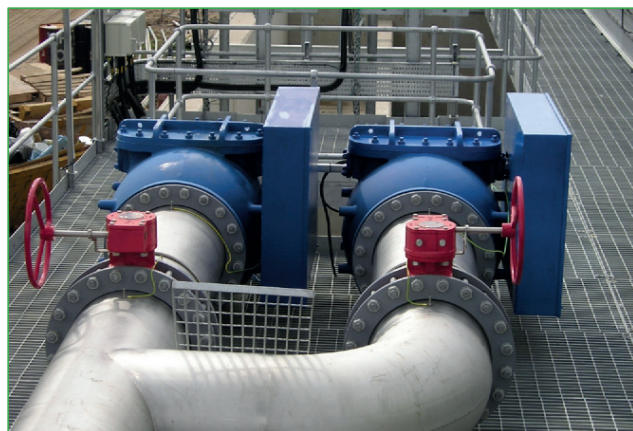
Free end shaft – this valve has an extended shaft protruding from the valve body and can be retrofitted with a lever and weight.

Lever and weight (LW) – The valve is supplied with lever and weight components. All moving parts must be guarded * - a mandatory health and safety requirement.

Lever and weight with guard (LWG)– The valve is supplied with lever, weight and guard components. All moving parts must be guarded *- a mandatory health and safety requirement.

SWITCHES. Where a switch is required to show end of travel position, this can be supplied as a proximity or a standard limit switch. Care should be taken to identify atmospheric conditions in particular zoned requirements and ensure that this information is made clear at time of enquiry. Note also that cable lengths typically come in 1 to 2 metres lengths as standard. Longer cable lengths (10 metres) can be supplied where a zoned area demands, however this must be requested at time of enquiry. Switches can be retrofitted - please refer to AVK UK operation and maintenance manuals for health and safety requirements.

LEVER AND WEIGHT LOCATION. AVK UK standard orientation allows for the lever and weight of the extended shaft to be on the right hand side (RHS) of the valve in direction of flow. Variants are available on request should site layout require the lever and weight to be on left hand side (LHS). This must be requested at time of enquiry.



* AVK UK RECENT INNOVATIONS

Where the valve is fitted with a lever and weight a safety guard is mandatory under health and safety legislation. AVK UK can now offer a light weight yet robust plastic design with a clear cover allowing full visibility of moving parts inside. This can be suitable for even the most severe atmospheric applications e.g. coastal environment.

(Note; ensure valve and bracket specification is aligned).

Available only for valve sizes DN50 –DN300 at this time.

The conventional mild steel coated design is still available for all sizes.



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