

VALVCHEQ FIGURE DC03 BACKFLOW PREVENTER

65 - 150MM

Double check valves for medium hazard rated applications.
Flanged and roll grooved end connections.



FEATURES

- Compact simple design.
- In-line and on-site serviceable.
- No special tools required for servicing.
- Lifting lugs to assist with installation.
- Designed and manufactured in accordance with AS 2845.1.
- FBE coated to AS 4158.
- Straight through flow path for maximum flow co-efficient.
- Top entry allows all parts to be accessed easily.
- Stainless steel internals for superior corrosion resistance.
- Fully restrained check valve assemblies for unrivalled safety.
- Ductile Iron body for high strength and impact resistance.
- Every valve is bench tested and tracked with unique serial number.
- All internal components are repairable or replaceable.
- All internal and external bolting is stainless steel.
- Conforms to testing requirements of AS/NZS 2845.3.
- Anti-tamper test taps
- Design conforms to all major international standards.
- Installations can be vertical and horizontal.

GENERAL APPLICATION

The DC03 provides protection from both backsiphonage and backpressure of the potable water supply from contamination in medium hazard applications.

TECHNICAL DATA

Size range: 65 - 150mm
 Temperature rating: 1°C - 60°C
 Working pressure: PN16
 End connections: Flanged AS 4087
 Roll grooved AS 2638
 Alternative flange drillings may be available on request

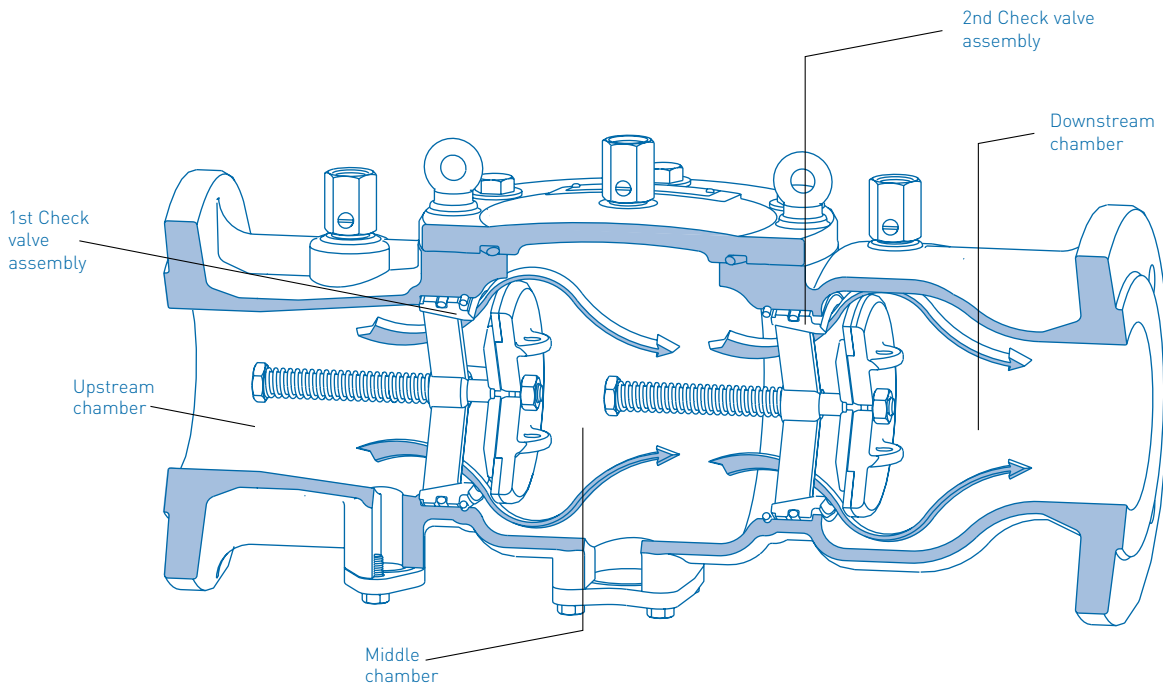


AS/NZS 2845.1 Lic WMKA 1324
SAI Global



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PRINCIPLE OF OPERATION

Double check valve consists of two independently acting non-return valves in series. They are arranged to be force-loaded in the closed position.

UNDER DYNAMIC FLOW CONDITIONS:

Water enters upstream chamber before the 1st check valves assembly. When water pressure is sufficient (minimum of 7 kPa) 1st check valve assembly will open allowing flow into and fill the middle chamber.

Once the middle chamber is full and pressurised (minimum of 7 kPa), the 2nd check valve assembly will open allowing flow though the down stream chamber.

UNDER THE CONDITION OF BACK-PRESSURE:

(PREMISES PRESSURE IS GREATER THAN SUPPLY PRESSURE)

Water pressure in down stream chamber and spring pressure force the 2nd check valve assembly closed.

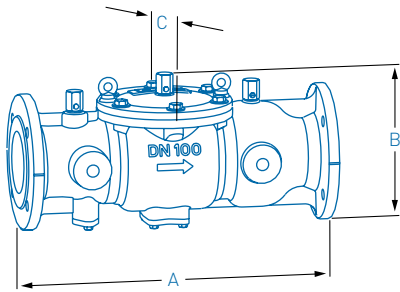
UNDER THE CONDITION OF BACKSIPHONAGE:

(NEGATIVE/LOW SUPPLY PRESSURE IN MAINS SUPPLY)

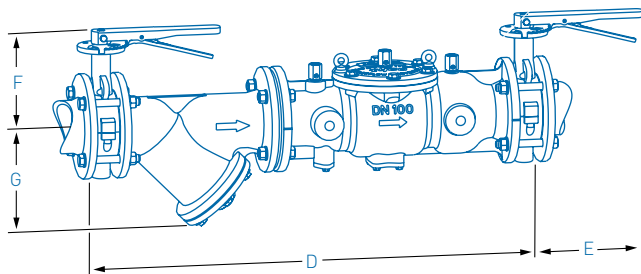
Water pressure in the up stream chamber before the 1st check valve assembly will dissipate and 1st check valve assembly will close under spring pressure.

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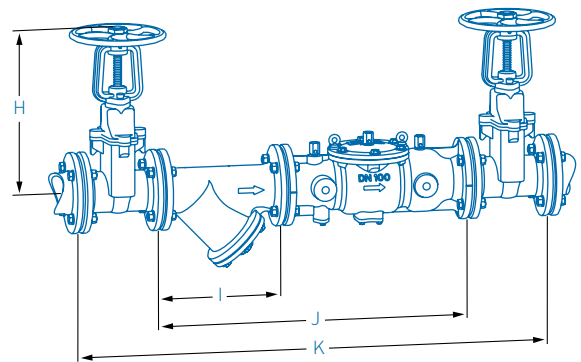
65 - 150MM



NOTE: Valve only (VO) illustrated.



NOTE: Butterfly valve (BFV) arrangement illustrated



NOTE: Resilient seated gate (RSGV) valve arrangement illustrated.

DIMENSIONS (MM)

Valve size	A	B	C	D	E	F	G	H	I	J	K	Mass (kg)		
												VO	BFV	RSGV
65	400	335	185	778	240	180	177	N/A	283	686	N/A	21	43.4	N/A
80	400	335	185	810	240	190	210	367	315	718	1130	21	49.2	72
100	535	382	230	1012	240	210	235	402	370	908	1372	38	78.4	138
150	685	480	300	1310	240	230	390	502	510	1198	1738	76	149	232

NOTE:

Dimension are nominal to ± 1 mm.

Butterfly valve actuators change from handles to gear operators on valve sizes 150mm and above.

Gear operation actuators available on request for butterfly valve arrangement.

Lockable actuators available on request.

VO = Mass of valve only.

BFV = Mass of complete arrangement with butterfly valves.

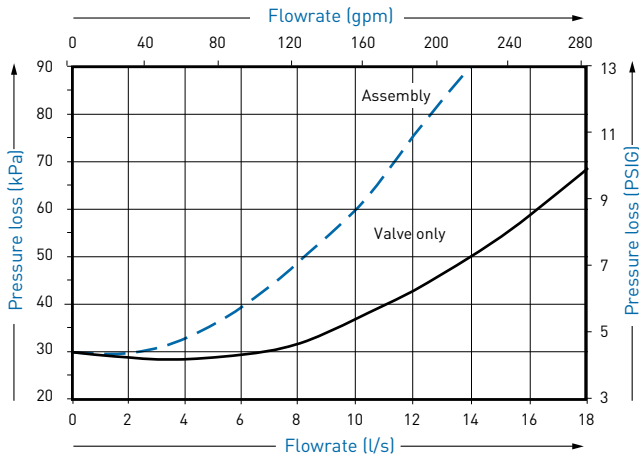
RSGV = Mass of complete arrangement with resilient seated gate valves.

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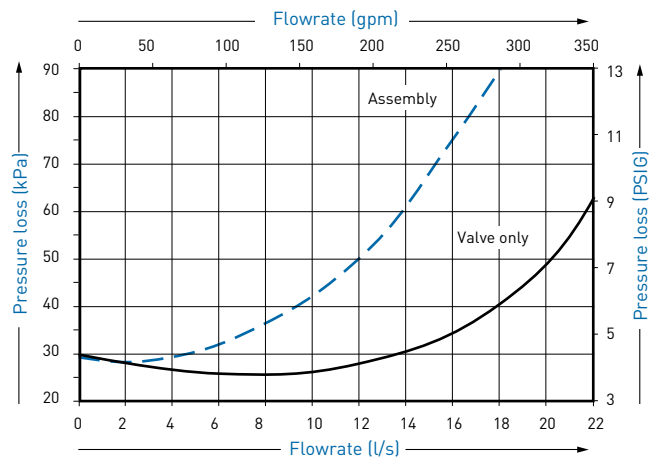
65 - 150MM

TYPICAL FLOW CHARACTERISTIC GRAPHS

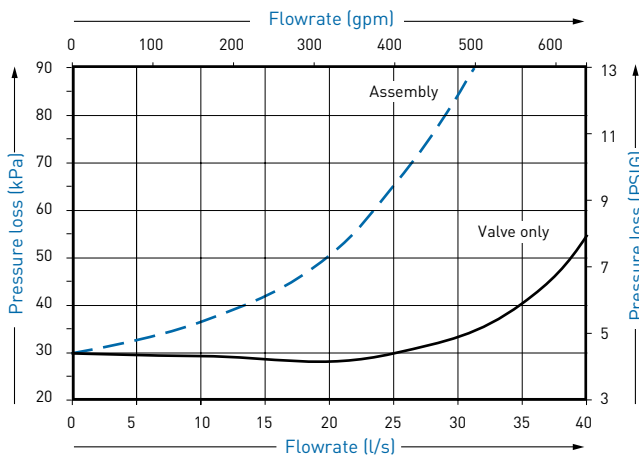
65MM VALVES



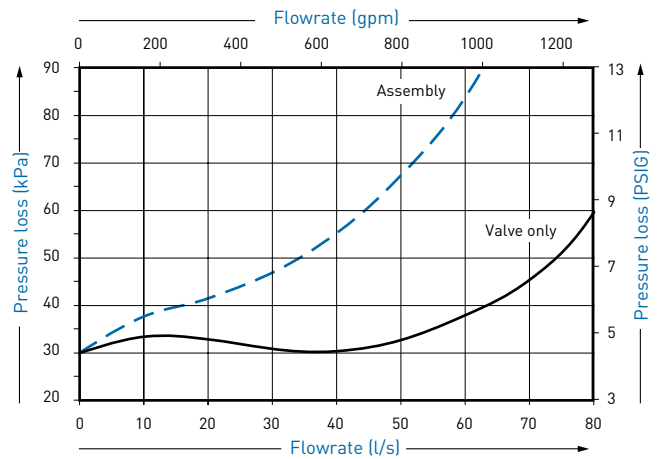
80MM VALVES



100MM VALVES



150MM VALVES



NOTE:

- — — Complete valve assembly
- — — Valve only

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TYPICAL SPECIFYING SEQUENCE

Example:	100	DC03	C	CO	BF
Valve size (mm)					
Figure no.					
End connections					
C = Flanged AS 4087 - Alternative drilling on request					
R/G = Roll grooved AS 2368					
Assembly					
VO = Valve only					
CO = Complete with isolation valves and FBE coated strainer					
FS = Fire service (supplied without strainer)					
Isolation					
BF = Butterfly valves					
BF G/Op = Butterfly valves gear actuated					
BF G/Op L = Butterfly valves gear actuated lockable					
RSGV = Resilient seating gate valves					

NOTE: All Pentair isolation valves come with the provision for locking.

TROUBLE SHOOTING GUIDE

SYMPTOM: 1ST CHECK VALVE NOT HOLDING TIGHT (READING APPROACHES ZERO WITHOUT HOLDING).

Cause	Remedy
Debris fouling the check valve seal.	Inspect, clean, reverse or replace check seal.
Check valve seal damaged or perished.	Inspect and replace check valve seal.
Check valve O-ring damaged.	Inspect and replace O-ring.
Check valve stem O-ring damaged.	Inspect and replace O-ring.
Check valve seal ring damaged.	Replace first check valve assembly.

SYMPTOM: 1ST CHECK VALVE HOLDING BELOW 7 KPA.

Cause	Remedy
Debris fouling the check valve seal.	Inspect, clean, reverse or replace check seal.
Check valve seal damaged.	Inspect and replace check valve seal.
Check valve spring memory loss or damaged.	Replace first check valve assembly.
Check valve stem O-ring damaged.	Inspect and replace O-ring.

SYMPTOM: 2ND CHECK VALVE NOT HOLDING TIGHT (READING APPROACHES ZERO WITHOUT HOLDING)

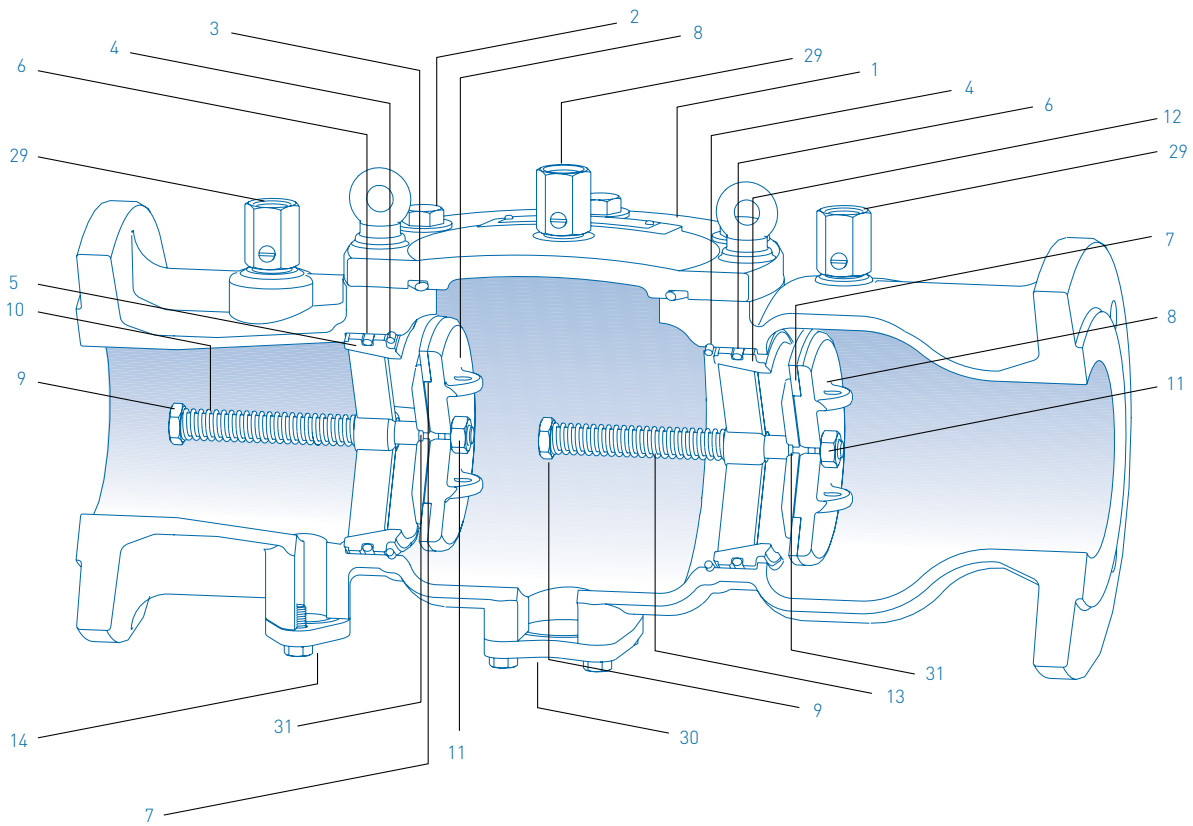
Cause	Remedy
Debris fouling the check valve seal.	Inspect & clean, reverse or replace check seal.
Check valve seal damaged or perished.	Inspect and replace check valve seal.
Check valve O-ring damaged.	Inspect and replace O-ring.
Check valve stem O-ring damaged.	Inspect and replace O-ring.
Check valve seal ring damaged	Replace second check valve assembly

SYMPTOM: 2ND CHECK VALVE HOLDING BELOW 7 KPA.

Cause	Remedy
Debris fouling the check valve seal.	Inspect, clean, reverse or replace check seal.
Check valve seal damaged.	Inspect and replace check valve seal.
Check valve spring memory loss or damaged.	Replace second check valve assembly.
Check valve stem O-ring damaged.	Inspect and replace O-ring.

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PARTS LIST

No.	Description
1	Cover plate
2	Cover plate bolts
3	Cover plate O-ring
4	Check valve circlip
5	1st check valve seal ring
6	Check valve O-ring
7	Check valve seal
8	Check valve disc
9	Check valve stem
10	1st check valve spring
11	Check valve retaining nut
12	2nd check valve seal ring
13	2nd check valve spring
14	Sensor port plate
29	Test taps
30	Relief port plate
31	Check valve stem O-ring

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Complete safety and maintenance instructions for 65mm to 150mm medium hazard devices.

MAINTENANCE & TESTING REQUIREMENTS

Test after initial installation and annually for the life of the valve or service. Maintain in a working order and inspect for operational function at intervals not exceeding twelve months. The functions are to be carried out by authorised licensed backflow testers.

DISASSEMBLY INSTRUCTIONS

As per safety precautions slowly close isolation valves and then open all three test taps (29) to drain relief port.

Remove cover plate bolts (2) and washers.

Remove cover plate (1) and cover plate O-ring (3).

With screwdriver remove 2nd check valve assembly circlip (4) utilising cavity recess in the body casting.

NOTE: Please take care not to damage FBE coating with screwdriver.

To remove 2nd check valve assembly pull check valve stem (9) out and then up bringing the check assembly through the top entry of the valve.

With screwdriver remove 1st check valve assembly circlip (4) utilising cavity recess in the body casting.

NOTE: Please take care not to damage FBE coating with screwdriver.

To remove 1st check valve assembly take a screwdriver and lever the assembly out by utilising lug provided on check valve disc (8). Or slowly crack open inlet isolating valve and allow the water pressure to push the check valve assembly into the main valve body. Shut-off isolating valve and remove check valve assembly through top entry of valve.

Both check valve assemblies are mechanically the same, so the same procedure can be used for both assemblies. Fit spanner to the check valve stem head (9) and to the check valve retaining nut (11) turn retaining nut anti-clockwise and remove.

Remove check valve disc (8) to expose check valve seal (7) for servicing or replacement.

NOTE: When assembly takes place all components:-

- Lubricate all O-rings.
- Check valve seal (7) must be clean, free of any greases, moisture and debris upon assembly for a positive seal.

SAFETY PRECAUTIONS

In every instance of installation or removal from the pipeline, ensure the line is not pressurised and any hazardous liquid is drained away. Slowly close both isolating valves and then open test taps (29) to exhausted line pressure.

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Recommended specifications for double check valves for medium hazard rated applications.



- Main valve shall be manufactured in accordance with AS2845.1.
- Main valve shall be constructed from ductile iron and FBE coated to AS4158.
- All internals shall be constructed from stainless steel and to have a pressure rating of PN16 and a temperature rating of 60°C.
- Main valve body shall not form part of the wetted check valve sealing area or mechanism.
- All internal parts and elastomers are to be accessible through a top entry point of the main valve to allow inline maintenance. Valve connection shall be flanged to AS 4087 or roll grooved to AS 2368.
- Valve shall also be fitted with test points with BSPT threads to allow testing to AS/NZS 2845.3.



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