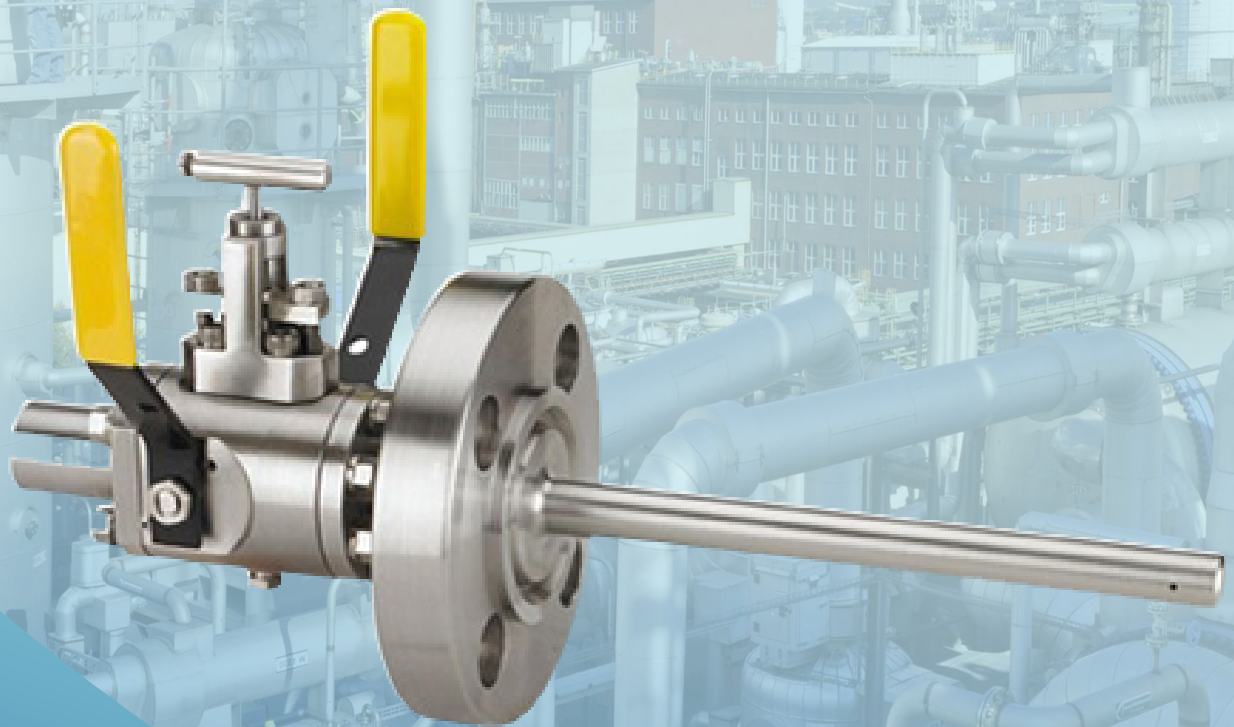


# **INTEGRAL BLOCK & BLEED VALVES**



**EVOL**

**INSTRUMENT**

# INTEGRAL BLOCK & BLEED VALVES

## SB Series and DB Series

EVOL TECHNOLOGIES has developed two series of integral block and bleed valves:

- ❖ SB Series Single Block and Bleed Valve
- ❖ DB Series Double Block and Bleed Valve

The SB series and DB series block and bleed valves are designed to achieve positive sealing in a compact design. Both series have options of customizable features and specifications to suit different application. A full range of materials in stainless steel, carbon, alloy and polymers is available to accommodate all general to severe applications.

- ✓ Increased speed of delivery
- ✓ Proven manufacturing performance
- ✓ Flexible choice of end connectors
- ✓ Designed to ASME B16.34 standard
- ✓ Surface mounting option available

## Features

Connection Size	1/4" to 3"
Bore Size	10 mm to 50 mm
Pressure Rating	ANSI CLASS 150 to 2500 (up to 10 000 psi)
Temperature Rating	-29 °C to 120 °C
Design and Manufacture Standard	ASME B16.34 Standard
Face to Face Dimension	Manufacturer's Standard
Fire Safety Design	API 607 Standard
Inspection and Testing	API 598 Standard

## Application

The integral block and bleed valves are ideal in various applications such as isolation of equipment and instrument for maintenance, instrument drain, gauge isolation, chemical injection and sampling, pressure connections, meter calibration, piping or instrument interface, direct mounting of instruments, remote mounting of instruments and many others. Their wide applications can be commonly seen in the area of oil and gas industry, LNG carrier, chemical and petro-chemical processing, refining plants, process or power industry, heavy manufacturing and etc.



# Product Description

## Introduction

The SB series and DB series integral block and bleed valves are assemblies of one or more isolation/block valves and a vent/bleed valve integrated as a one-piece body. The primary function of an integral block and bleed valve is to achieve positive isolation of fluid flow to perform certain tasks in process operations, such as maintenance and repair works, flow diversion, chemical injection, sampling, integrity check for leakages and etc.

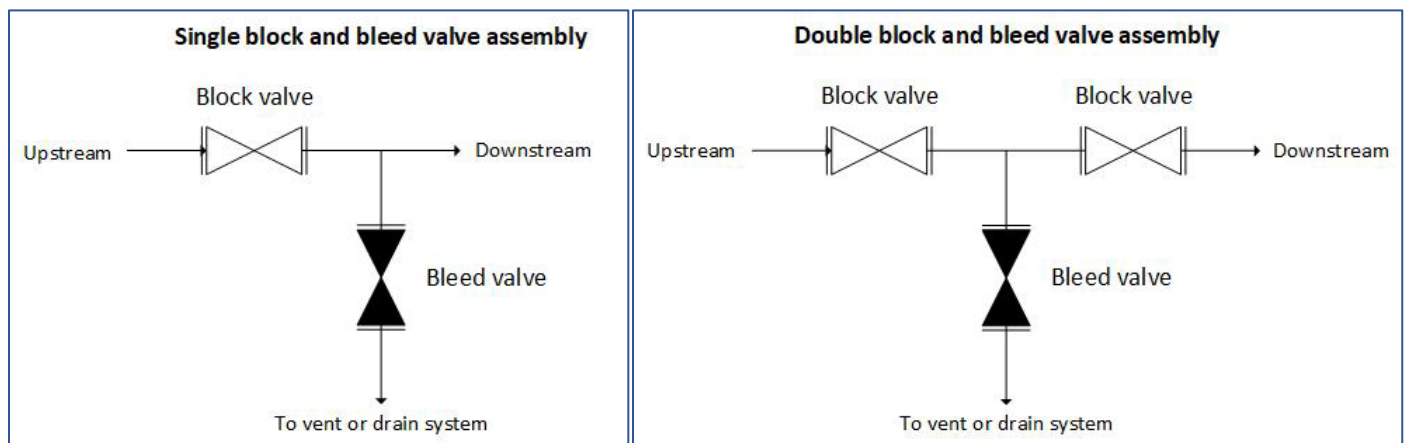
Generally, a single block valve and a bleed valve can be readily installed for isolation purpose in non-critical process services. The block valve prevents fluid from upstream to reach the components at downstream of the system, while the bleed valve enables the remaining fluid to be removed out from the system on the downstream side by venting to atmosphere or draining to a safe disposal system.

Under certain critical conditions, double block and bleed valve assemblies are required to achieve isolation from both the upstream and downstream process flow. The double block and bleed valve is used to perform the functions of three individual valves, i.e. two isolation valves and a vent/drain valve, thus being comparably more light-weighted, cost saving, space saving, and also saving on the time for installation and maintenance works.

Comparing to the conventional installations of multiple individual valves, the integral block and bleed valves have less potential leakage paths which greatly enhanced the safety of the system.

## Working principle

During normal operation, the integral block and bleed valves are set in the configurations as illustrated below, with the block valves opened and the bleed valves closed to allow normal fluid flow.

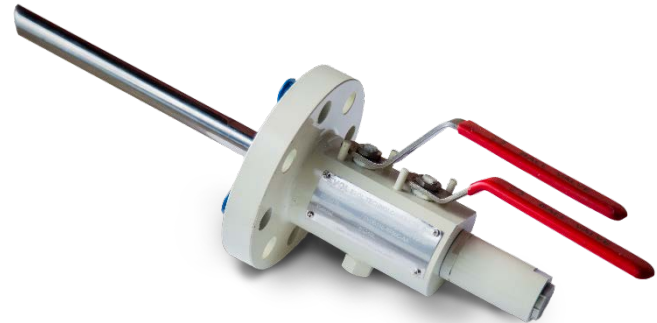


To perform positive isolation in a single block and bleed valve assembly, the block valve is first closed and then the bleed valve is opened to allow the shutdown side to be drained or vented. Similarly, in a double block and bleed valve assembly, the two block valves are first closed to achieve isolation from both the upstream and downstream process flow. This creates a cavity between the block valves, which is then removed by opening the bleed valve.

# Optional Features

## Injection quills and sampling probes for DBB valves

One very common application of integral block and bleed valves is to incorporate the functions for chemical injection or sample collection in a process stream at full operating conditions. To meet this requirement, the DB series ranges of double block and bleed valves can be fitted with an injection quill or a sampling probe, which is an additional straight tubing designed to suit specific application requirements.

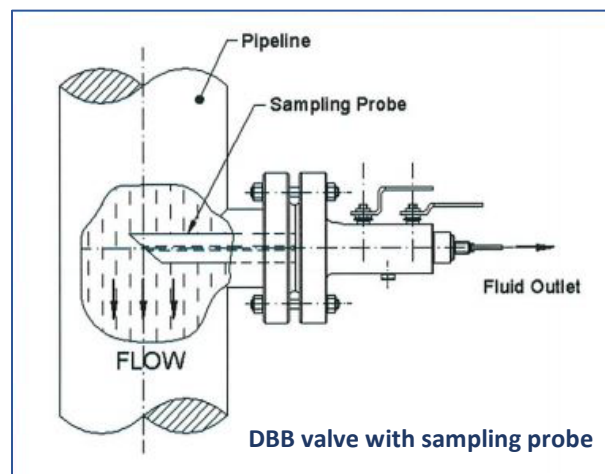
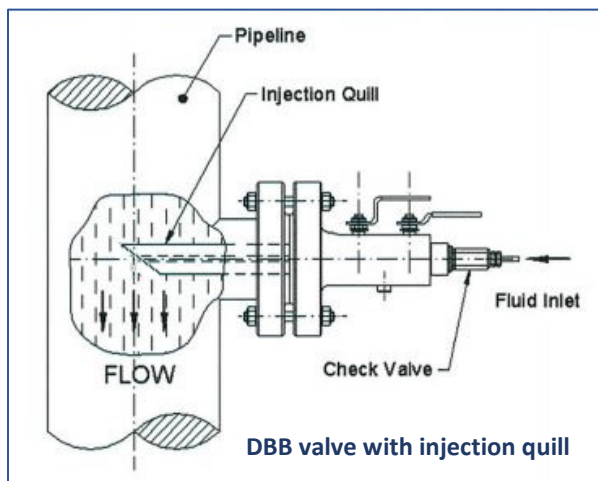


**EV-DB Series DBB valve with injection quill**



Injection of chemicals or other substances into the process stream can be facilitated using the DBB valve with injection quill assembly. The injection quill extends into the center of the process stream and allows the chemical to be introduced into the process stream through the valve. This valve design incorporates a check valve which only allows one-way entry of chemical from an injection control system, and is normally closed to prevent fluid outflow from the process stream.

The DBB valve with sampling probe assembly is used to collect samples of the process fluid for further analysis. This valve design allows the sampling to be performed while the process is in operation at normal or pressurized conditions. To achieve this, the isolation valves are first closed, and the trapped sample of fluid between the two isolation valves can then be collected using the vent/drain valve by safely removing it off at reduced pressure.



# Double Block & Bleed Valve

## 1. Valve Series

SB	Single block & bleed valve
DB	Double block & bleed valve
SM	Single block & bleed monoflange
DM	Double block & bleed monoflange

## 2. Inlet × Outlet Configuration

1	Thread × Flange
2	Flange × Flange
3	Flare weld × Flange
4	Thread × Thread

## 3. Valve Type

Type		1 <sup>st</sup> Isolate	2 <sup>nd</sup> Isolate	Vent
Single Block Type	1	Ball	-	Needle
	2			Ball
Double Block Type	1	Ball	Ball	Needle
	2	Ball	Ball	Ball
	3	Trunnion	Trunnion	Needle

## 4. Bore Size

0	10 mm (Standard)
1	14 mm
2	20 mm
3	25 mm
4	32 mm
5	38 mm
6	50 mm

## 5. Connection Type

Flange Type		Size (DN)		Pressure Rating*	
RF	Raised Face	8	1/4"	A	150#
RJ	Ring Type Joint	10	3/8"	B	300#
FF	Flat Face Flange	15	1/2"	C	600#
Thread Type		20	3/4"	D	900#
	National Pipe Thread (Standard)	25	1"	E	1500#
		40	1-1/2"	F	2500#
BSP	British Standard Pipe	50	2"	G	2000psi
		80	3"	H	3000psi
				I	5000psi
				J	10000psi

\*Pressure rating is only applicable for flange type. Leave blank for thread type

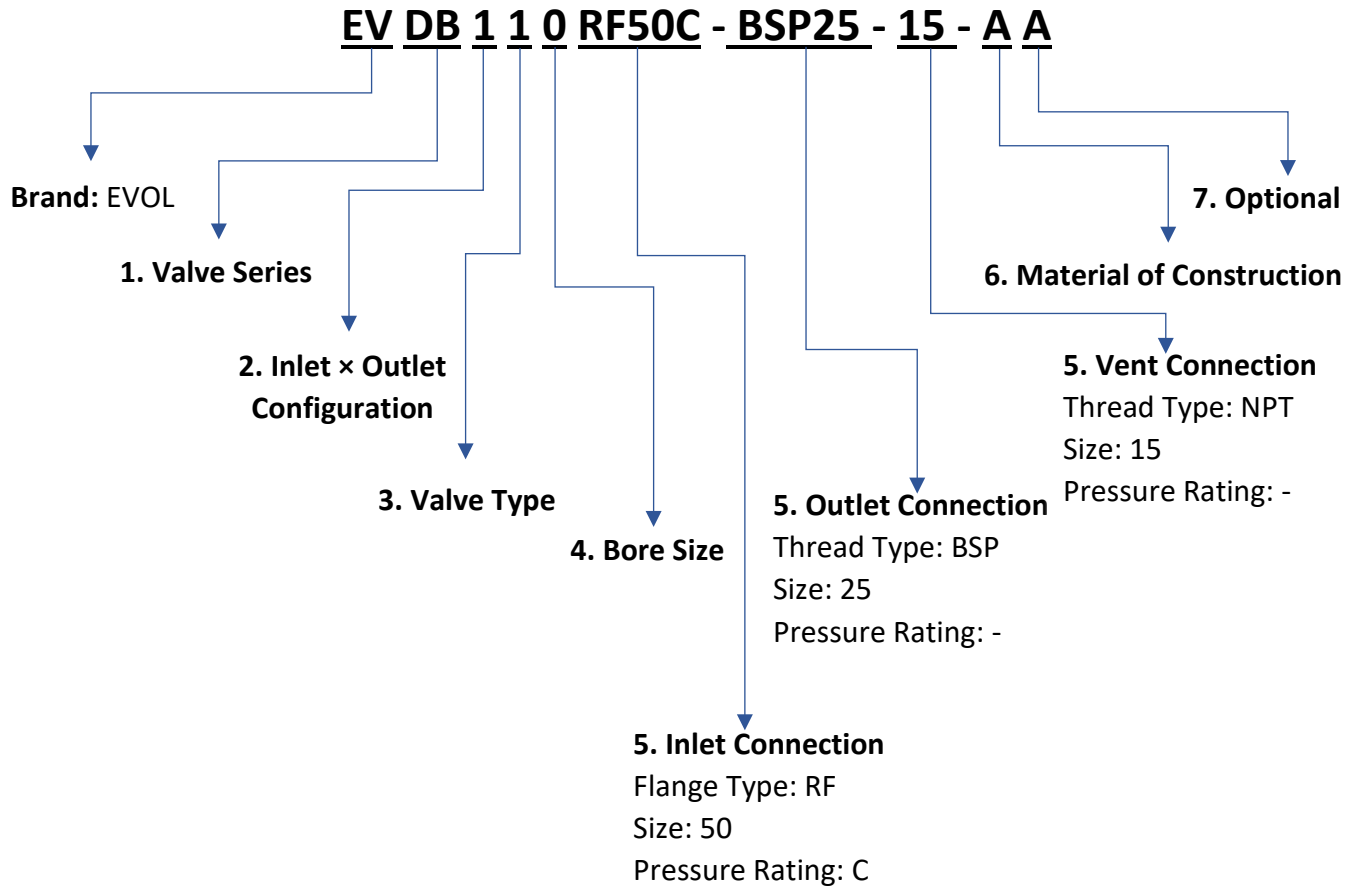
## 6. Material of Construction

Parts	Body	Trim	Seat	O-Ring
A	SS316L	SS316L	PTFE	PTFE
F	Other special materials and dimensions are available upon request.			

## 7. Optional

	Without probe
A	With probe

**Part Number**



❖ Please refer to Product Specifications in the previous page for selection.



# **EVOL**Technologies

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