Dual Plate Check Valve

Technical Product Information

The world's preferred partner, delivering expert, corrosion-resistant, valve solutions.

CONTROLS SUPPLY CHAIN©
VALVES ACTUATORS INSTRUMENTATIONS

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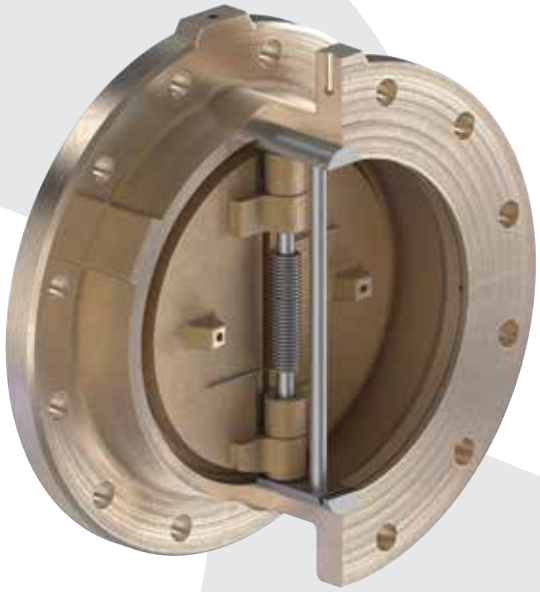
Contents

Headlines

Your Comprehensive Dual Plate Check Valve Technical Manual

Shipham Valves has developed a high-quality Dual Plate Check Valve range that reflects our technical expertise in valve design, product engineering and market knowledge. This range benefits from multiple design features which reflect the wide range of applications these valves support.

Technical Information At Your Fingertips



This technical manual provides a comprehensive overview of our range, illustrated by detailed 3D models and cutaway imagery combined with in-depth product descriptions and technical information such as:

- User benefits
- Unique design features
- Technical specifications
- Valve components and construction
- Reference standards and certifications
- The varied applications supported by this range

User Requirements

The Dual Plate Check Valve prevents reverse fluid flow, reduces water hammering occurring, delivers effective sealing under pressurised conditions and has proven performance in corrosive and severe service applications.

Our unrivalled technical capabilities and expertise in product design, engineering and material selection help to provide a highly effective valve solution, manufactured to the highest standards. As a result, it will meet your application and exceed your expectations.

By choosing to work with Shipham Valves, we remove any concerns and provide total confidence that you have selected the right partner. This will help you navigate your way through the complex world of valve selection and project execution.

1 Introduction

Dual Plate Check Valves are a durable, cost-effective solution for preventing fluid from flowing backwards. Dual Plate Check Valves are effective on all services, high and low pressures and a wide range of temperature applications.

The closure is accomplished by spring assistance on the plates. It remains closed by back pressure, allowing only line media through due to higher pressure differentiation upstream.

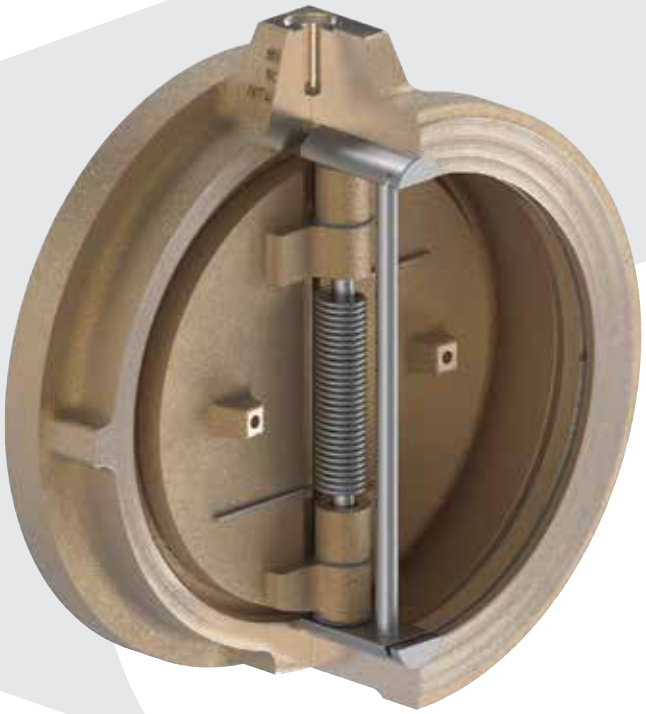


Image 1 - Dual plate check valve, wafer-type body

1.1 Valve Design Series

- WC01 – Wafer-Type Raised Face or Flat Face
- WC02 – Lug-Type Raised Face or Flat Face
- WC03 – Double-Flanged Raised Face or Flat Face

WC01 - Wafer-Type

WC02 - Lug-Type

WC03 - Double-Flanged

1.2 Reference Standards

Valve Design
API 594 – Check Valves, Flanged, Lug, Wafer and Buttweld

Face to Face
API 594 – Check Valves, Flanged, Lug, Wafer and Buttweld

Pressure Testing
API 598 – Valve Inspection and Testing

Shut Off Class
API 598 (Metal-Seated Leakage) - Valve Inspection and Testing
ISO 5208 Rate E – Pressure Testing of Metallic Valves

Fire Testing
Inherently firesafe when metal seated

Fugitive Emissions
N/A

Accreditations
PED 2014 / 68 / EU
PE(S)R

2 Applications

The primary dual plate application is to allow the fluid to flow in one direction and prevent flow in the opposite direction.

Operation is automatic as fluid flow initiates the operation of the Dual Plate Check Valve. Flow opens the plates and reverse spring-assisted flow closes them.

Diverse Industry-Specific Applications

They are widely used due to their low slamming effect and are ideal for industry-specific applications including:

- Chemical and processing industries
- Hydrocarbons
- LNG storage and transportation
- LPG
- Oil and gas
- Onshore and offshore
- Petrochemical
- Petroleum and refining
- Pharmaceuticals
- Waste recycling
- Water industry and wastewater treatment

Supporting applications such as:

- Air and gas applications
- Chemical applications
- Chlorine
- Cooling water systems and control
- Fire safety systems
- HVAC (Heating, ventilation and air-conditioning)
- Industrial and pipeline applications
- Potable water
- Slurry and pulp water pumping
- Steam and condensate systems
- Water supply
- Wastewater treatment

The Dual Plate Check Valve product is a compact, space-saving and highly economical range which drives cost efficiencies through reduced ongoing maintenance, transport and storage costs.

For these reasons, it's an ideal valve solution for several industries.

3 Design Features

3.1 Spring-Assisted Check Plates

The Dual Plate Check Valve prevents any potential backflow from the line media. As the pressure decreases, the spring-assisted plates close the valve. There are minimal obstructions to flow when the Dual Plate Check Valve discs are open, resulting in very low-pressure drop and turbulence.

3.2 Leakage Rates and Long Service Life

Dual Plate Check Valves provide low leakage rates over a long service life. Their robust design allows them to be used in most, if not all, applications as a one-way valve in temperatures ranging between -46°C and +425°C.

With multiple alternative hard face trims available, achievable leakage rates can be maintained over the valve's life within service.

Image 2 - Dual plate check valve, partially open

Shipham Valves' Dual Plate Check Valve with Wafer-Type (WC01) - Exploded View

Image 3 - Dual plate check valve with wafer-type body - exploded view

4 Product Range

4.1 WC01

Dual Plate Check Valve, Wafer-Type Body
With Raised Face or Flat Face

4.2 WC02

Dual Plate Check Valve, Lug-Type Body
With Raised Face or Flat Face

4.3 WC03

Dual Plate Check Valve, Double-Flanged Body
With Raised Face or Flat Face

4.4 Body Configurations – Flanges

The Dual Plate Check Valve design is available in the three main body configurations shown previously in section (1.1 Valve Design Series). Each valve can be offered with either flat-face or raised-face flanges.

**Raised face flange – Gasket surface is raised above the bolting face.*
**Flat faced flange – Gasket face is flat and in the same plane as the bolting face.*

Image 4 - Wafer-type body with flat face (left) and raised face (right)

4.5 Series Availability

This range is available in sizes 2” up to 24” with further size options.

These tables below show the product range for Shipham Valves’ Dual Plate Check Valve.

Further options are available upon customer request.

Size	2”		3”		4”		6”		8”		10”	
Class	Cl 150	Cl 300	Cl 150	Cl 300	Cl 150	Cl 300	Cl 150	Cl 300	Cl 150	Cl 300	Cl 150	Cl 300
Wafer-Type (WC01)	●	●	●	●	●	●	●	●	●	●	●	●
Lug-Type (WC02)	●	●	●	●	●	●	●	●	●	●	●	●
Double-Flanged (WC03)	●	●	●	●	●	●	●	●	●	●	●	●

Table 1 - Dual plate check valve series size availability (2” - 10”)

Size	12"		14"		16"		18"		20"		24"	
Class	Cl 150	Cl 300	Cl 150	Cl 300	Cl 150	Cl 300	Cl 150	Cl 300	Cl 150	Cl 300	Cl 150	Cl 300
Wafer-Type (WC01)	●	●	●	●	●	●	●	●	●	●	●	●
Lug-Type (WC02)	●	●	●	●	●	●	●	●	●	●	●	●
Double-Flanged (WC03)	●	●	●	●	●	●	●	●	●	●	●	●

Table 2 - Dual plate check valve series size availability (12” - 24”)

5 Valve Dimensions

5.1 Envelope Dimensions

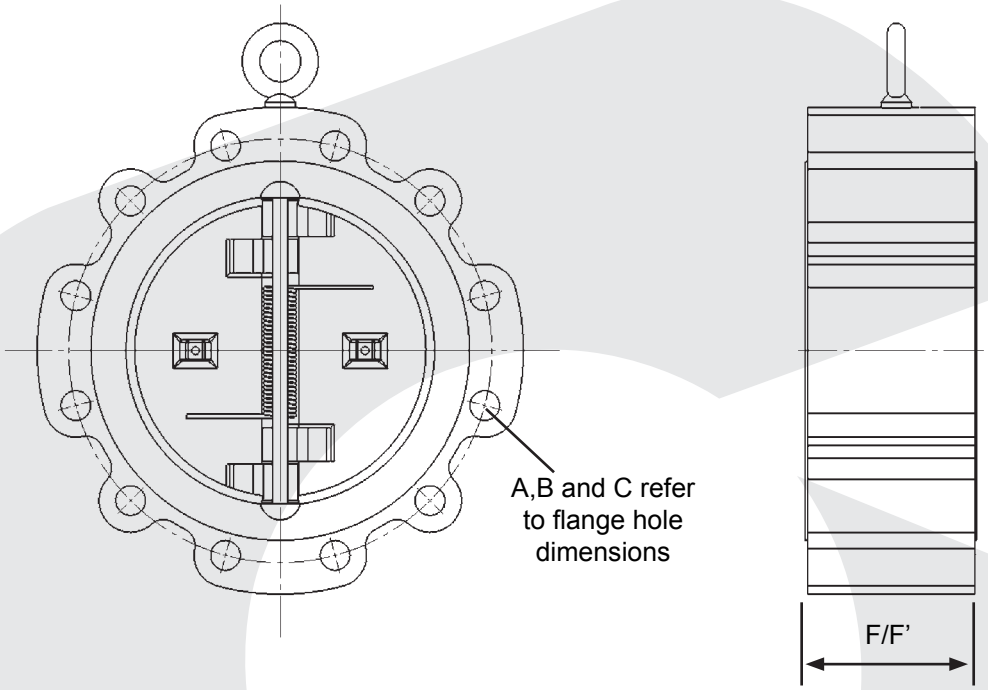


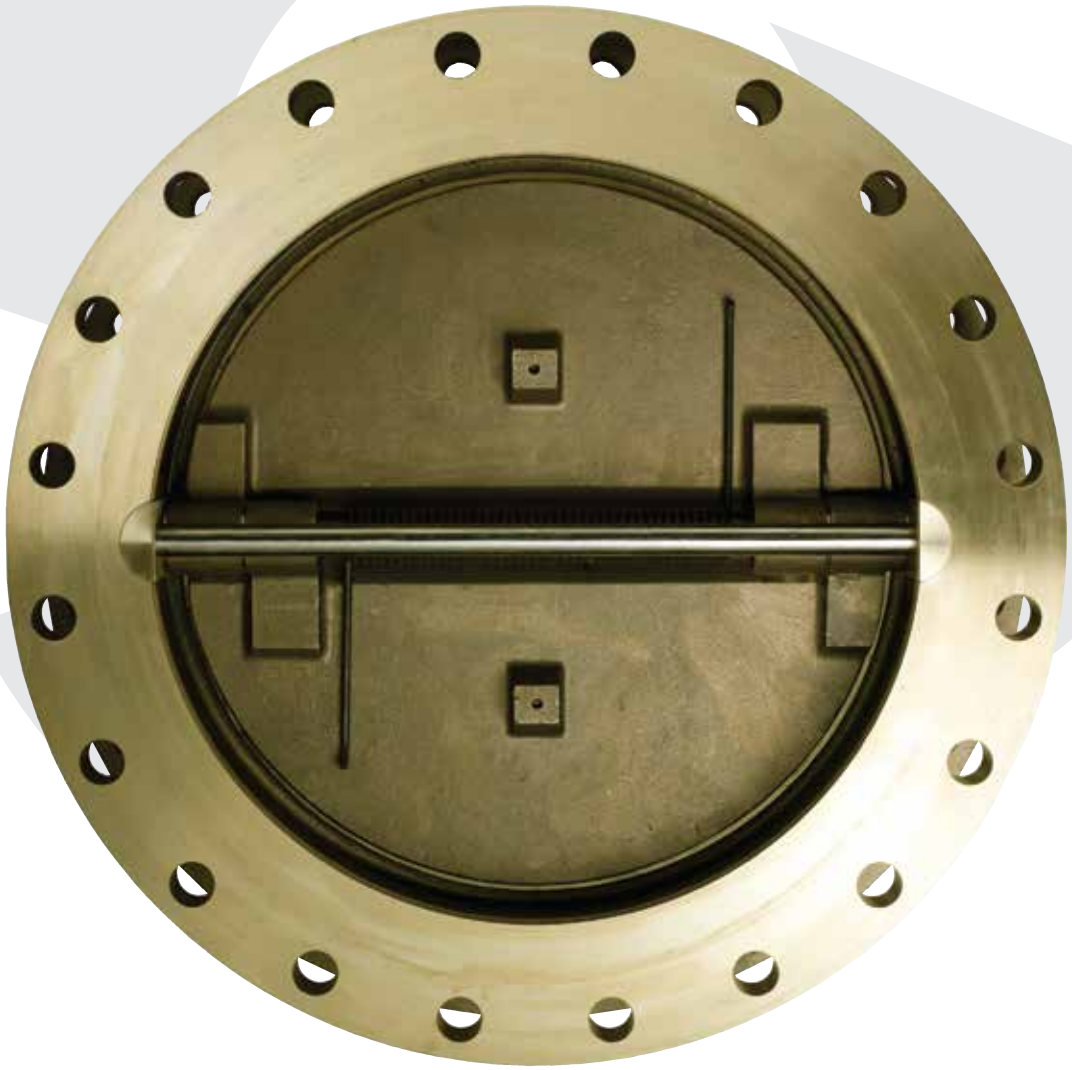
Image 5 - Envelope dimensions of dual plate check valves

Class 150									
Valve size (inch)		A No of holes	B Hole diameters	C PCD holes	F/F	F/F (DF)	Wafer (Kg)	Lugged (Kg)	Double Flanged (Kg)
DN	NPS								
50	2	4	3/4"	120.6	60	114	2.2	6.9	7.1
65	2.5	4	3/4"	139.7	67	114	3.4	8.2	7.9
80	3	4	3/4"	152.4	73	121	4.5	13.2	12.8
100	4	8	3/4"	190.5	73	121	7	17.5	16.5
150	6	8	7/8"	241.3	98	130	14.2	32.5	28.2
200	8	8	7/8"	298.4	127	127	28.2	52.7	41.8
250	10	12	1"	362	146	146	44.3	80.8	65.9
300	12	12	1"	431.8	181	181	77.5	139	98.6
350	14	12	1.1/8"	476.2	184	184	97.4	173.2	125.7
400	16	16	1.1/8"	539.8	191	191	124.8	219.8	168.8
450	18	16	1.1/4"	577.8	203	203	152.4	248.6	191.3
500	20	20	1.1/4"	635	219	219	198.3	335.5	249.4
600	24	20	1.3/8"	749.3	222	222	282.1	458.4	361.7

Table 3 - Class 150 flange hole dimensions and approximate series weights

Class 300									
Valve size (inch)		A No of holes	B Hole diameters	C PCD holes	F/F	F/F (DF)	Wafer (Kg)	Lugged (Kg)	Double Flanged (Kg)
DN	NPS								
50	2	8	3/4"	127	60	114	TBC	TBC	TBC
65	2.5	8	7/8"	149.4	67	114	TBC	TBC	TBC
80	3	8	7/8"	168.1	73	121	TBC	TBC	TBC
100	4	8	7/8"	200.2	73	121	TBC	TBC	TBC
150	6	12	7/8"	269.7	98	130	TBC	TBC	TBC
200	8	12	1"	330.2	127	152	TBC	TBC	TBC
250	10	16	1.1/8"	387.4	146	178	TBC	TBC	TBC
300	12	16	1.1/4"	450.8	181	181	TBC	TBC	TBC
350	14	20	1.1/4"	514.4	222	222	TBC	TBC	TBC
400	16	20	1.3/8"	571.5	232	232	TBC	TBC	TBC
450	18	24	1.3/8"	628.6	264	264	TBC	TBC	TBC
500	20	24	1.3/8"	743	292	292	TBC	TBC	TBC
600	24	24	1.5/8"	812.8	318	318	TBC	TBC	TBC

Table 4 - Class 300 flange hole dimensions and approximate series weights



6 Part Identification

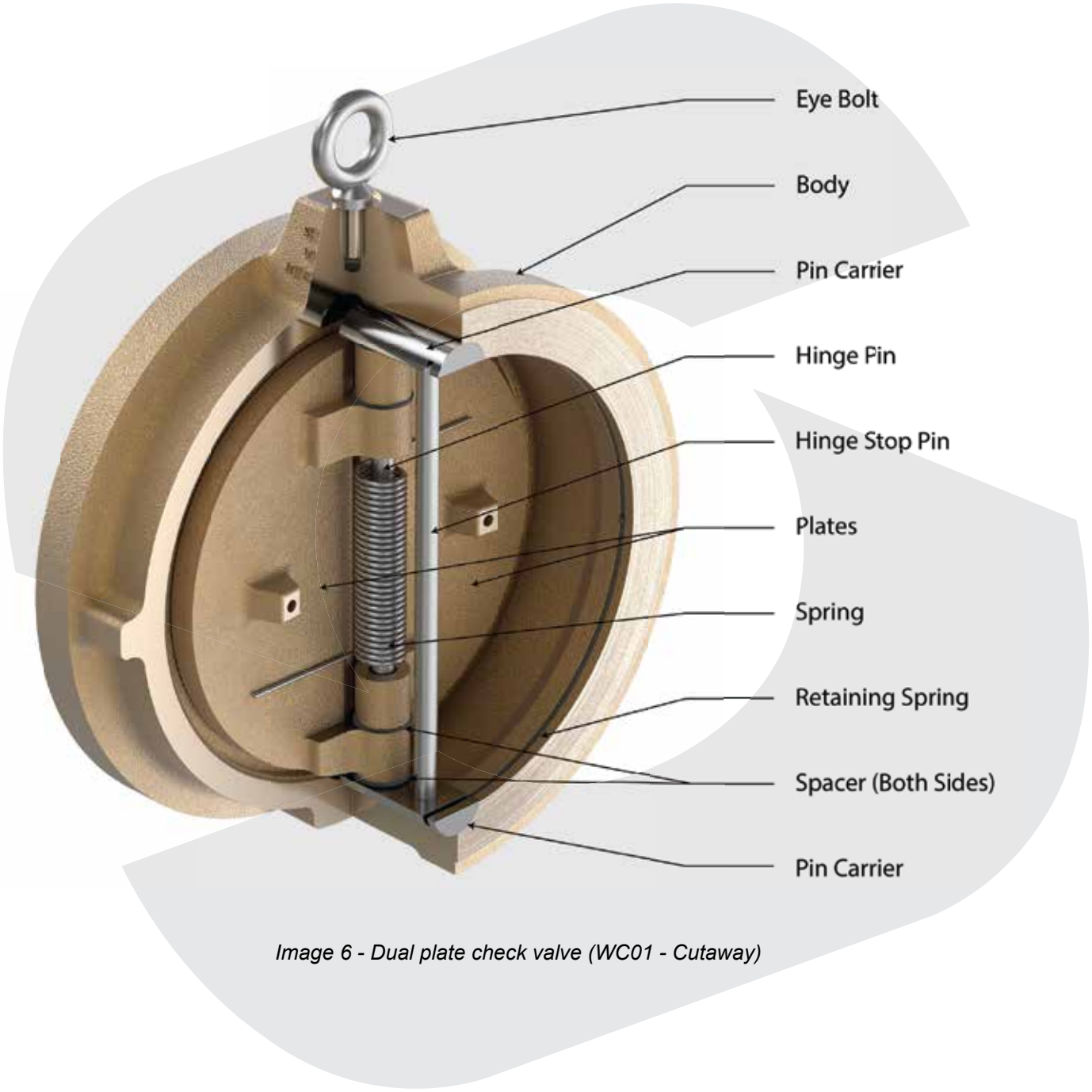


Image 6 - Dual plate check valve (WC01 - Cutaway)

7 Benefits

The standard design of our Dual Plate Check Valve range reduces the possibility of water hammering occurring. It helps to prevent pressure and flow to upstream equipment (i.e. pumps or compressors) and damage to your critical infrastructure and mechanical equipment.

Benefits

The Dual Plate Check Valve range is available in three main body configurations. It features a unique dual design that delivers proven performance and reasonable flow rates (see section 8 for valve flow rates overleaf).

User benefits include:

Performance

- Ease of use
- High performance across diverse applications such as liquids, gases and steam
- Delivers proven performance in harsh conditions
- Low slamming effect
- Economical – lower energy costs than other check valve family members
- Fast reaction and rapid closure – before fluid reverse occurs
- Lower ongoing maintenance costs

Design

- Designed fully in accordance with API 594
- Dual plate design reduces water hammering occurring
- Compact design – cost reduction and space-saving
- Its balanced design requires low momentum force to open
- Flexibility - horizontal and vertical installation
- Lighter and compact check valve solution
- Its disc weight is distributed between two parts

Sizes and specialist materials of construction

Our range can be manufactured in a variety of specialist materials including Nickel Aluminium Bronze, Bronze, Duplex Stainless Steel, Super Duplex Stainless Steel, Hastelloy®, Monel®, Titanium, Inconel® and Zirconium in sizes ranging from 2” - 24”, with additional sizes available upon customer request.

8 Valve Flow Coefficient

The theoretical flow capabilities of the Dual Plate Check Valve range are illustrated below.

These details are based on the assumption that the valve is fully open and the pressure drop will be negligible.

Valve Size	Class 150		Class 300	
NPS (In)	*Cv	*Kv	*Cv	*Kv
2	106	91	106	91
3	269	232	269	232
4	522	451	522	451
6	1218	1053	1218	1053
8	2193	1895	2193	1895
10	4157	3592	4157	3592
12	6056	5233	5769	4984
14	7406	6399	6664	5758
16	12210	10549	11484	9922
18	15571	13453	15332	13247
20	19367	16733	TBC	TBC
24	29192	25222	TBC	TBC

*Cv – Valve flow coefficient (imperial unit) - The number of US Gallons per minute (gpm) of water at 60°F that can flow through a valve with a pressure drop across it of 1psi

*Kv - Valve flow coefficient (metric unit) - The number of cubic metres per hour (m3/h) of water at 16°C that can flow through a valve with a pressure drop across it of 1bar

Table 5 – Theoretical Cv and Kv values for Class 150 – 300 Dual Plate Check Valve

Image 7 - Dual plate check valve double-flanged body (WC03)

9 Materials of Construction

		Components						
		Body	Pin Carriers	Discs	Hinge Pins	Torsion Spring	Retainer Spring	Spacer(s)
Standard Materials of Construction	Nickel Aluminium Bronze	Nickel Aluminium Bronze ASTM B148 C95800	Nickel Aluminium Bronze ASTM B150 C63200	Nickel Aluminium Bronze ASTM B148 C95800	Nickel Aluminium Bronze ASTM B150 C63200	Inconel® X-750	Inconel® X-750	Nickel Aluminium Bronze ASTM B150 C63200
	Monel®	Monel® ASTM A494 M 35-1	Monel® ASTM B164 N04400	Monel® ASTM A494 M 35-1	Monel® K500 ASTM B865 N05500	Inconel® X-750	Inconel® X-750	Monel® K500 ASTM B865 N05500
	Duplex	Duplex ASTM A995 CD3MN	Super Duplex ASTM A479 S32760	Duplex ASM A995 CD3MN	Super Duplex ASTM A479 S32760	Inconel® X-750	Inconel® X-750	Super Duplex ASTM A479 S32760
	Super Duplex	Super Duplex ASTM A995 CD3MWCuN	Super Duplex ASTM A479 S32760	Super Duplex ASM A995 CD3MWCuN	Super Duplex ASTM A479 S32760	Inconel® X-750	Inconel® X-750	Super Duplex ASTM A479 S32760
	Titanium	Titanium ASTM B367 Gr. C-2	Titanium ASTM B348 Gr. 2	Titanium ASTM B367 Gr. C-2	Titanium ASTM B381 F-5	Inconel® X-750	Inconel® X-750	Titanium ASTM B348 Gr. 5
	Inconel® 625	Inconel® 625 ASTM A494 CW6MC	Inconel® 625 ASTM B446 N06625	Inconel® 625 ASTM A494 CW6MC	Inconel® 718 ASTM B637 Gr. 718	Inconel® X-750	Inconel® X-750	Inconel® 625 ASTM B446 N06625
	6Mo	6Mo ASTM A351 CK3MCuN	6Mo ASTM A276 S31254	6Mo ASTM A351 CK3MCuN	6Mo ASTM A276 S31254	Inconel® X-750	Inconel® X-750	6Mo ASTM A276 S31254
	Stainless Steel	Stainless Steel ASTM A351 CF8M	Stainless Steel ASTM A479 S31600	Stainless Steel ASTM A351 CF8M	Stainless Steel ASTM A479 S31600	Inconel® X-750	Inconel® X-750	Stainless Steel ASTM A479 S31600
	Hastelloy®	Hastelloy® ASTM A494 CW12MW	Hastelloy® ASTM B564 N10276	Hastelloy® ASTM A494 CW12MW	Hastelloy® ASTM B564 N10276	Inconel® X-750	Inconel® X-750	Hastelloy® ASTM B564 N10276

Table 6 - Available materials of construction

Shipham Valves' Lug-Type Dual Plate Check Valve (WC02)

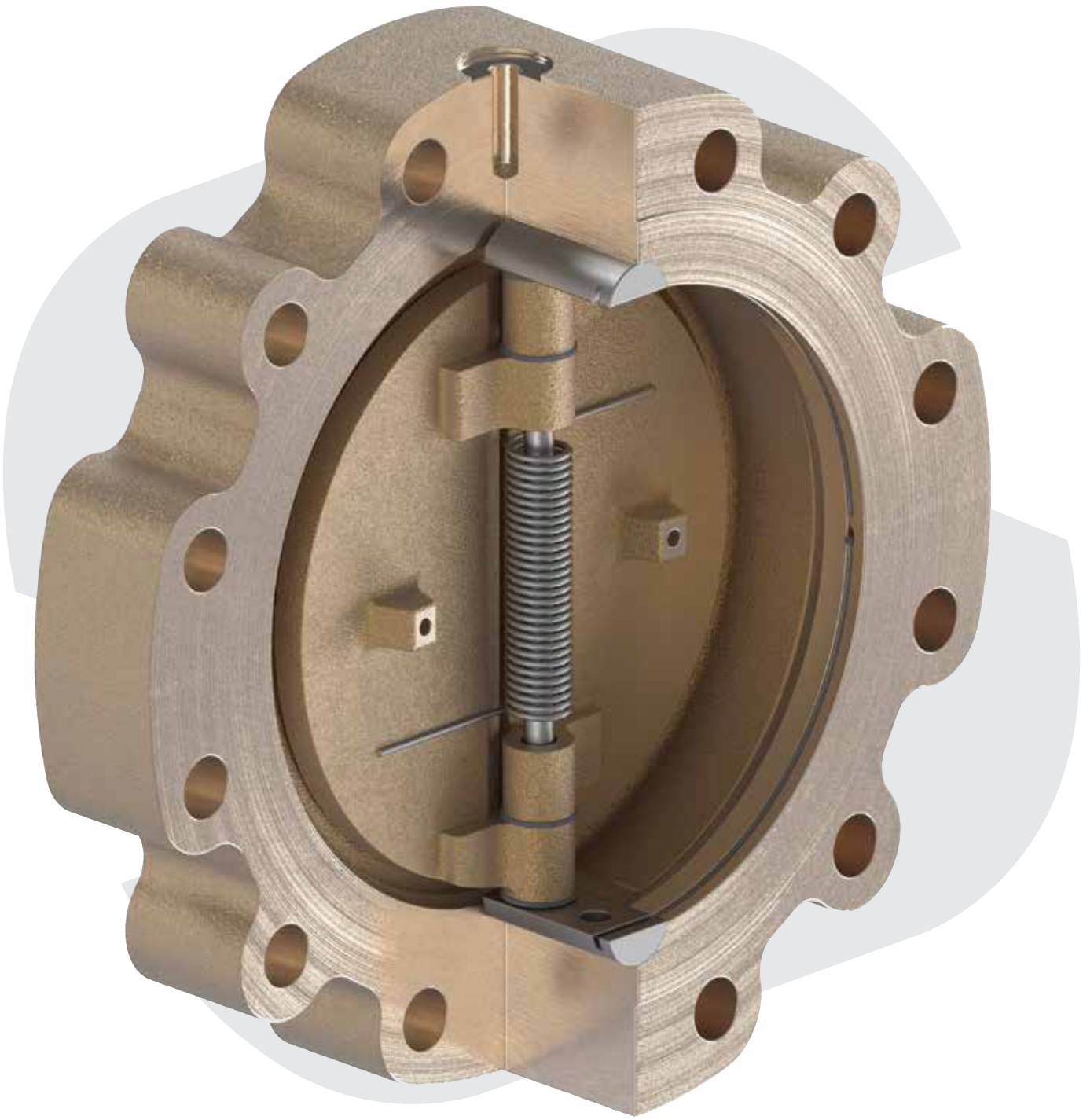


Image 8 - Dual plate check valve lug-type (WC02)

10 Pressure Temperature Ratings

The Pressure Temperature Ratings of the body materials are in accordance with the SPT Curves available as per the list below:

Body Material	Pressure Temperature Rating (SPT)
Nickel Aluminium Bronze ASTM B148 C95800	SPT01
Monel® 400 ASTM A494 M 35-1	SPT08
Duplex ASTM A995 Gr. CD3MN	SPT10
Super Duplex ASTM A995 CD3MNWCuN	SPT10
Titanium ASTM B367 Gr. C-2	SPT02
Inconel® 625 ASTM A494 CW6MC	TBC
6Mo (Super Austenitic) ASTM A351 CK3MCuN	TBC
Stainless Steel ASTM A351 CF8M	TBC
Hastelloy® ASTM A494 CW-12MW	SPT09

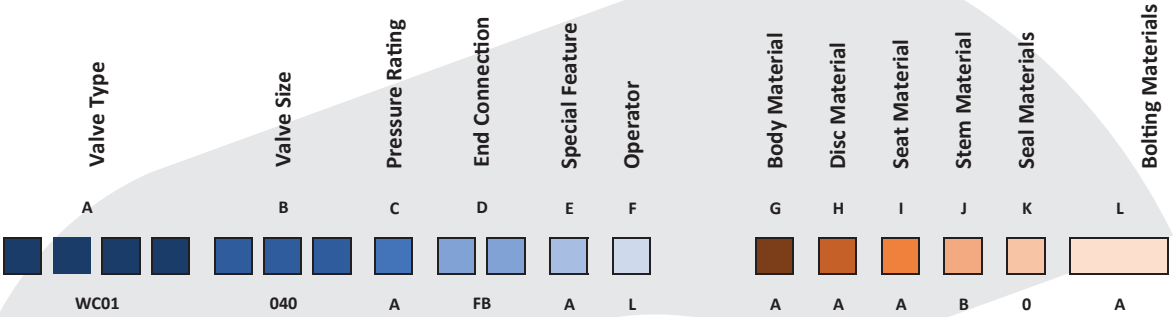
Table 7 - Body material pressure temperature rating (s)

As the world's preferred partner, delivering expert corrosion-resistant valve solutions, we manufacture valves in a wide range of materials. These materials may or may not have pressure temperature ratings available for them. Materials such as ASTM B148 C95800 do not have pressure temperature ratings listed in ASME B16.34. These materials have had their bespoke pressure temperature ratings developed and refined over the years and are in line with standard developments.

Shipham Valves have developed a range of Shipham Pressure Temperature (SPT) ratings. These pressure temperature ratings have been developed in line with industry best practices incorporating the requirements and limitations of the chemical and mechanical restrictions imposed by standards such as NACE and NORSOK, which standard pressure temperature ratings from ASME B16.34 do not account for.

11 Product Coding

Dual Plate Check Valve Product Information



A - Valve Type	
WC01	- API 594, Wafer Pattern (2" & above)
WC02	- API 594, Lugged-Pattern (2" & above)
WC03	- API 594, Flanged Pattern (6" & above)

B - Valve Size			
020	- 2"	120	- 12"
025	- 2.1/2"	140	- 14"
030	- 3"	160	- 16"
040	- 4"	180	- 18"
060	- 6"	200	- 20"
080	- 8"	240	- 24"
100	- 10"	Larger sizes on request	

C - Pressure Class	
A	- ASME Cl 150
B	- ASME Cl 300
Q	- PN16
S	- PN32
T	- PN40

D - End Connection	
FA	- ASME B16.5 Cl 150 RF
FB	- ASME B16.5 Cl 150 FF
FD	- ASME B16.5 Cl 300 RF
FE	- ASME B16.5 Cl 300 FF

E - Special Feature	
A	- None
B	- Bonded Seat

F - Operator	
S	- Spring Loaded[1]

In the case of a component being manufactured from bar in place of the casting e.g. a ball, the bar equivalent material specification is supplied.

Notes
[1] - Valves supplied with Inconel X-750 springs only

G - Body Material	
A	- ASTM B148 C95800 (NI AL BRZ)
B	- ASTM A494 M 35-1 (MONEL® 400)
C	- ASTM B61 C92200 (BRONZE)
D	- ASTM B62 C83600 (BRONZE)
E	- ASTM A995 CD3MN (DUPLEX)
F	- ASTM A995 CD3MWCuN (SUPER DUPLEX)
H	- ASTM B367 Gr. C-2 (TITANIUM)
K	- ASTM A494 CW6MC (INCONEL® 625)
L	- ASTM A351 CK3MCuN (6Mo)
M	- ASTM A494 N12MV (HASTELLOY®B)
N	- ASTM A494 CW12MW (HASTELLOY®C)

H -Disc Material	
A	- ASTM B148 C95800 (NI AL BRZ)
B	- ASTM A494 M 35-1 (MONEL® 400)
C	- ASTM B61 C92200 (BRONZE)
D	- ASTM B62 C83600 (BRONZE)
E	- ASTM A995 CD3MN (DUPLEX)
G	- ASTM A995 CD3MWCuN (SUPER DUPLEX)
K	- ASTM B367 Gr. C-2 (TITANIUM)
N	- ASTM A494 CW6MC (INCONEL® 625)
O	- ASTM A351 CK3MCuN (6Mo)
Q	- ASTM A494 N12MV (HASTELLOY®B)
R	- ASTM A494 CW12MW (HASTELLOY®C)

I - Seat Material	
A	- ASTM B148 C95800 (NI AL BRZ)
B	- ASTM A494 M 35-1 (MONEL® 400)
D	- ASTM B61 C92200 (BRONZE)
E	- ASTM B62 C83600 (BRONZE)
F	- ASTM A995 CD3MN (DUPLEX)
H	- ASTM A995 CD3MWCuN (SUPER DUPLEX)
L	- ASTM B367 Gr. C-2 (TITANIUM)
O	- ASTM A494 CW6MC (INCONEL® 625)
P	- ASTM A351 CK3MCuN (6Mo)
R	- ASTM A494 N12MV (HASTELLOY®B)
S	- ASTM A494 CW12MW (HASTELLOY®C)

J - Hinge Pin Material	
A	- ASTM B150 C63200 TQ 50 (NI AL BRZ)
B	- ASTM B865 N05500 (MONEL® K-500)
C	- API 6A CRA N07718 (INCONEL® 718)
D	- ASTM B381 Gr. F-5 (TITANIUM)
F	- ASTM B564 N06625 (INCONEL® 625)
J	- ASTM B564 N10276 (HASTELLOY®)
L	- ASTM A276 S32760 (SUPER DUPLEX)

K- Seal Material	
0	- No Gasket / No Elastomer
1	- No Gasket / Nitrile Elastomer
2	- No Gasket / Type 3 FKM Elastomer
3	- No Gasket / Type 2 FKM Elastomer
4	- No Gasket / 25/90 FKM Elastomer

L- Bolting Material	
0	- Not Applicable

Finish Identifier	Extent	Code	Colour	Quality Identifier	Level Number	Percentage Modifier	Level Modifier
M	N	O	P	Q	R	S	T
F				Q			
F	N	N	N	Q	0	S	S

N - Extent		
A	-	ACTUATOR
N	-	NOT APPLICABLE
O	-	OPERATOR ONLY
V	-	VALVE ASSEMBLY

O -Code		
B	-	BS 4800
C	-	CUSTOM
F	-	FED STD
N	-	NOT APPLICABLE
R	-	RAL

P- Colour		
BS4800		
A	-	14-E-53 - Green (SC011)
B	-	04-D-45 - Russet
C	-	04-E-53 - Poppy Red SC010)
D	-	06-C-39 - Saddle Brown
E	-	06-E-51 - Mandarin Orange
F	-	08-C-35 - Butterscotch
G	-	22-D-45 - Deep Purple
H	-	20-E-51 - Cornflower Blue
I	-	00-E-53 - Black
J	-	08-E-55 - Orange & 04-D-45 Russet
K	-	10-E-53 - Canary Yellow
L	-	18-E-53 - Cobalt Blue
CUSTOM		
A	-	TBC
FED STD		
A	-	TBC
RAL		
A	-	RAL 3000 - Flame Red (SC002)
B	-	RAL 3001 - Signal Red (SC005)
C	-	RAL 3002 - Carmine Red
D	-	RAL 9003 - Signal White (SC006)
E	-	RAL 1028 - Melon Yellow
F	-	RAL 7042 - Traffic Grey
G	-	RAL 6002 - Leaf Green
H	-	RAL 9017 - Traffic Black (SC004)
I	-	RAL 7022 - Umbra Grey
J	-	RAL 7035 - Light Grey
K	-	RAL 2011 - Deep Orange
L	-	RAL 5011 - Steel Blue
M	-	RAL 5013 - Cobalt Blue (SC001)
O	-	RAL 7038 - Exxon Mobil Grey
P	-	RAL 9002 - Grey White
N- NOT APPLICABLE		

R - Level Number		
0	-	QSL 0
1	-	QSL 1
2	-	QSL 2
3	-	QSL 3
See 4-07-15 for details of QSL's		

S -Percentage Modifier		
S	-	STD 10% MIN OF 2
A	-	25% PER LINE ITEM
B	-	50% PER LINE ITEM
C	-	100% PER LINE ITEM

T - Level Modifier		
B	-	3.2 CERT (BV BODY)
C	-	IMPACT TESTED (-196°C)
D	-	3.2 CERT (DNV BODY)
L	-	3.2 CERT (LLOYDS BODY)
S	-	STANDARD NO REQ
Z	-	SPECIAL

12 Technical Optional Extras

Our added-valve services include a wide range of technical options and cover everything your organisation needs, from optional design features that meet various bespoke applications to comprehensive testing services and coating options.

We provide effective technical solutions for valves installed in challenging environments, hard-to-reach locations or areas with limited access.

Technical Optional Extras

Design features:
- Soft seating option

Testing:
- Extended test durations
- Fugitive emissions testing
- Disc strength test
- Functional testing

External coating
- Painting

For further details on the complete range of Shipham Valves' technical optional extra solutions, please contact the team today at valvesales@shiphamvalves.com or +44 (0)1482 323163.

13 Commercial Optional Extras

Tailored Valve Solutions That Meet Your Requirements

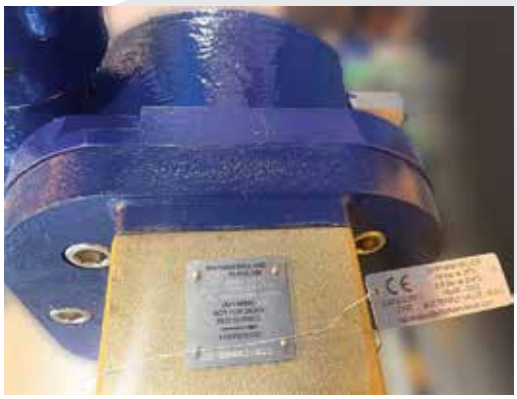
We also offer a selection of added-value services to complement the high-quality valves we manufacture.

These optional commercial extras cover everything your organisation needs from comprehensive testing to witness inspection services, documentation and tagging. This ensures we deliver a tailored valve solution that meets your requirements.

Commercial Optional Extras

Items	Cost
Certificate of Origin and Invoice Attested by Local Chamber of Commerce	TBC
EX1 Export Documentation	TBC
Project Documentation Pack (English language only) This contains GA Drawings, maintenance and operating instructions along with relevant procedures in PDF file format only (ITP and relevant procedures) One copy supplied six weeks after order placement Any other documentation required will be subject to additional costs	Costs will be provided as part of the overall costed proposal
Witness Inspection (Charged at a day rate to P.O quantity)	Costs will be provided as part of the overall costed proposal
Tagging (Optional) If tagging is required, please provide full details in-order for us to process the order	TBC

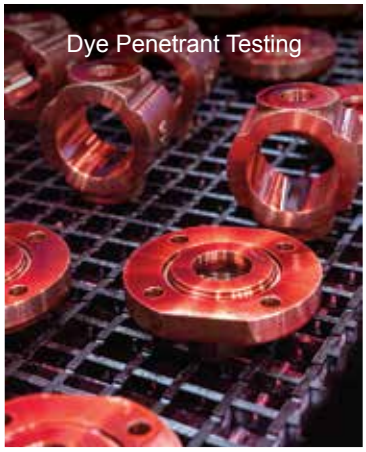
For further details on the complete range of Shipham Valves' commercial optional extra solutions, please contact the team today at valvesales@shiphamvalves.com or +44 (0)1482 323163.



Testing and Quality Verification

Verifies product quality by performing dimensional inspections

Verification of metal and alloy chemical composition



Testing exterior/interior surfaces for defects, cracks and conformity to ASME VIII