

INDUSTRIAL VALVES

**VAAS**

# **D46/47, S46/47** SERIES

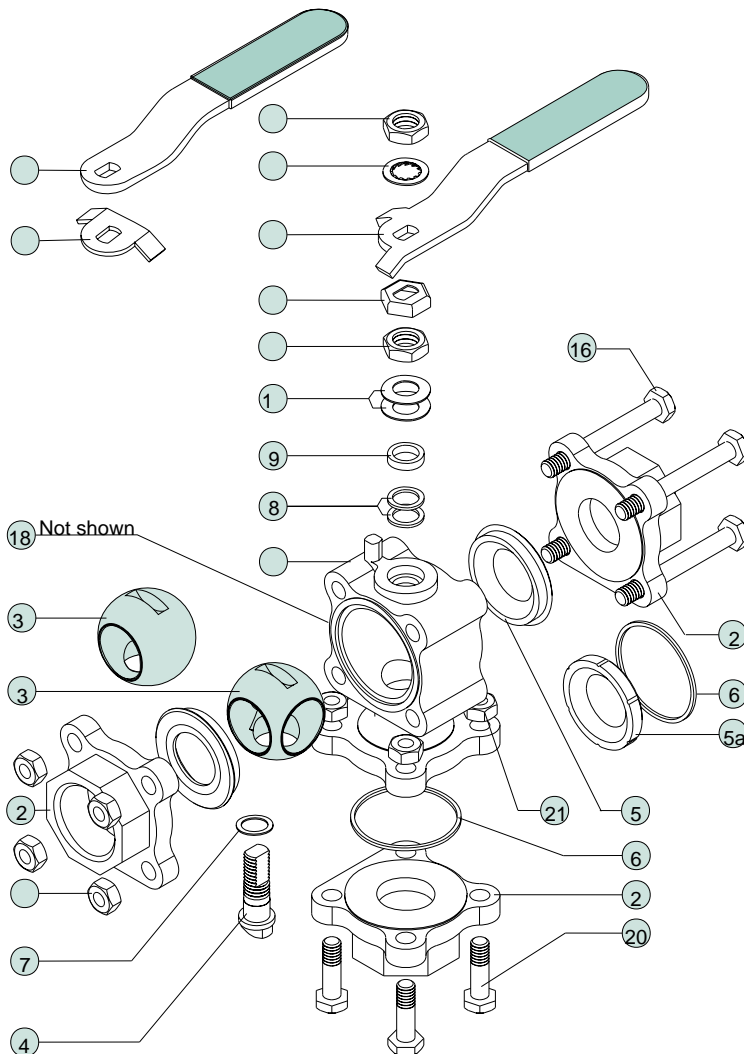
**Diverter, Bottom and  
Side Entry Ball Valves**

Size Range: **1/2" - 2" (15 - 50 mm)**  
Service Operation: **Diversion, Mixing, Blending**  
Materials: **Stainless Steel, Carbon Steel**  
End Connections: **Screwed, Buttweld, Socket weld, Sanitary and**  
Service Application: **others**  
Temperatures: **Water, Oil, Steam, Gas, Thermal Fluid, Chemicals and**  
Operation: **others**

## D46/47, S46/47 Series

# The VAAS D46/47, S46/47 Versatile Diverter valve

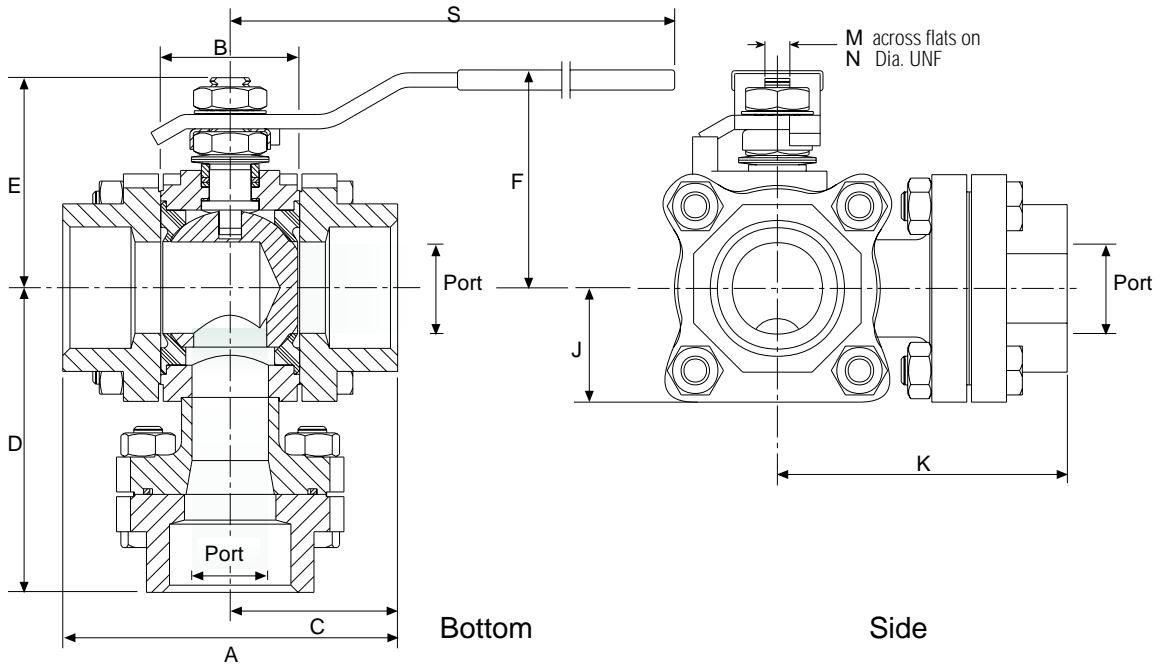
<b>Flow Rate</b>	Higher Cv values with minimum dead space.
<b>Shut-off</b>	Provides tight shut-off both upstream and downstream in all flow directions.
<b>Flow Pattern</b>	Provides a solution where two or three valves are needed. Flow combinations are available in the same minimum dimensional envelope.
<b>Port Selection</b>	Bottom Entry or Side Entry according to application and piping.
<b>Materials</b>	Stainless Steel and Carbon Steel.
<b>Construction</b>	Rugged 3-piece construction with standard Habonim ends and trim.
<b>Seat and Seal</b>	Choice of seat and seal design depending on pressure differential on the valve.
2 - piece seat / seal	When flow port pressure is higher than closed port pressure.
1 - piece seat / seal	When flow port pressure is lower than closed port pressure.
	For additional application consult with Habonim.
<b>Stem Assembly</b>	Quarter Turn, blowout proof, live loaded, designed for high cycle.
<b>Interchangeability</b>	All internal parts are interchangeable with standard Habonim components.
<b>Maintenance</b>	In-line maintenance and changing of internal parts.



Item	Description	Material
1	Body	S.St ASTM A351-CF8M
2	Body connector	S.St ASTM A351-CF3M
3	Ball T-Port	S.St 316
3a	Ball L-Port	S.St 316
4	Stem	S.St 316
5*	Seat / Seal	PTFE, PTFE Filled, NRG
5a*	Seat	PTFE, PTFE Filled, NRG
6*	Connector Seal	PTFE
7*	Stem thrust seal	PTFE 25% Carbon Filled
8*	Stem seal	PTFE 25% Carbon Filled
9	Gland	S.St 316
10	Disc spring	S.St 17-7PH
11	Gland nut	S.St C.St
12	Lock clip	S.St 303
13	Wrench 90°	S.St C.St
13a	Wrench 180°	S.St C.St
14	Serrated washer	S.St 316
15	Wrench nut	S.St C.St
16	Body connector bolt	S.St C.St
17	Body connector nut	S.St C.St
18	Identification plate	S.St 316
19	Stop 180°	S.St C.St
20	End connector bolt	S.St C.St
21	End connector nut	S.St C.St

\* Standard repair Kit Parts. Other materials on Items 3 and 13 for 90° operation. Items 3a, 13a and 19 for 180° operation.

# D46/47, S46/47 Series



VALVE DIMENSIONS														Appro Weigh kg.	US GPM	
Valve	Port 1	Port 2	A	B	C	D	E	F	J	K	M	N	S			
mm	20	14.	11.9	71.	24.	35.	71.	40.	47.	26.	68.	5.5	3/8	114.	1.1	5.0
in	3/4	0.5	0.4	2.8	0.9	1.4	2.7	1.5	1.8	1.0	2.6	0.21		4.4		
mm	25	20.	15.	93.	31.	44.4	88.	55.	61.	31.	86.	7.5	7/16	146.	2.0	10.
in	1	0.8	0.6	3.6	1.2	1.7	3.4	2.1	2.4	1.2	3.4	0.29		5.7		
mm	40	31.	26.	116.	48.	57.1	105.	73.	80.	40.	10	8.7	9/16 UNF	178.	4.0	24.
in	1 1/2	1.2	1.0	4.5	1.9	2.2	4.1	2.8	3.1	1.5	3.9	0.34		7.0		
mm	50	38.	35.	128.	56.	66.6	113.	78.	84.	45.	107.	8.7	9/16 UNF	178.	5.5	36.
in	2	1.5	1.4	5.0	2.2	2.6	4.4	3.0	3.3	1.7	4.2	0.34		7.0		

1/2" valve is full

## Valve design

Two types of valve design enable you to achieve desired flow patterns.

### Bottom Entry D46/47

Two seated ports with one common non-seated port co-axial to the stem hole. This combination allows diverting or mixing of flow. Choice of 90° or 180° rotation available.

### Side-Entry S46/47

Two seated ports with one common non-seated port perpendicular to the stem hole. This combination allows diverting or mixing of flow. 90° rotation only.

## Ball design

Habonim Diverter valve comes with choice of three types of balls.

Each ball is used for a different application.

### T-port (D46/47)

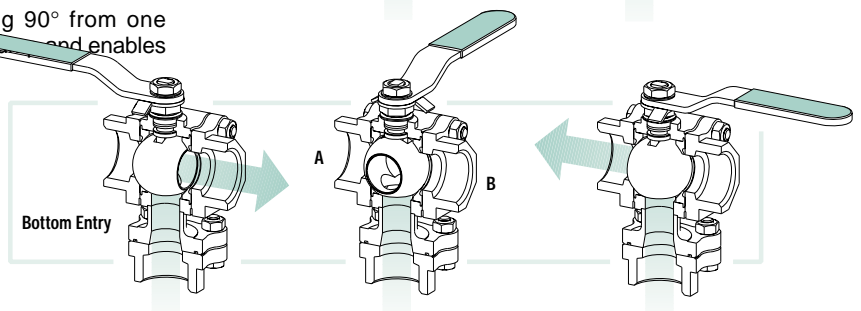
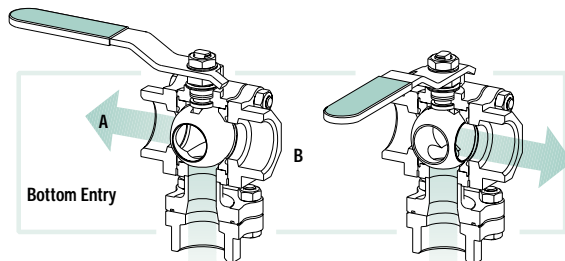
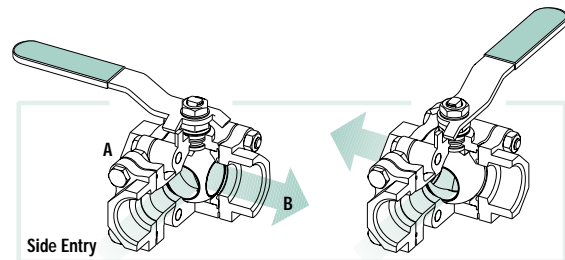
Port A opens before port B closes, rotating 90° from one position to the next. This reduces heading of flow and enables trans-flow between ports.

### L-port (D46/47)

Port A closes before Port B opens, rotating 180° from one position to the next. This allows a middle position with both ports, A and B closed.

### Side entry (S46/47)

Port A opens before port B closes, rotating 90° from one position to the next.



## D46/47,S46/47 Series

1. Limiting stem input torque figures are based on random practical laboratory tests. For critical applications consult Habonim.
2. Welded valves are assembled and tested with Buna body seals. The correct body seals are attached to the valve for replacement after welding.

### Fugitive Emission

The Diverter 47 series valve can be fitted with the standard Habonim Fugitive Emission kit which conforms to the US Clean Air Act and strict environmental regulations of other countries.

### Actuation

D46/47 and S46/47 series valves can be actuated both pneumatically or electrically.

The Compact Pneumatic actuator can be used for 90° operation.

For 180° operation consult Habonim.

For sizing the actuator please refer to the Compact actuator catalogue or consult with Habonim.

### How to order

When placing an order for valves please refer to the flow pattern, differential pressure on ports, temperature, construction material and end connectors. The following table will help to identify the valve.

Size	Style	Body	End	Ball	Stem	Seat*	Seal	Connection	Option
1/2" - 2"	D46/47	6-S.St 316	6-S.St 316	6-S.St 316	6-S.St 316	T - PTFE	T - PTFE	NPT	90°
	S46/47	4-Carbon St.	4-Carbon St.		M-17-4PH	R - RPTFE P - NRG K - PEEK U - UHMWPE	G - Grafite B - Buna U - UHMWPE	BSPT BW SW	180°

\* For a 1 piece seat / seal use one letter for seat and seal under the seat column.

Examples:

1) Style - Bottom Entry, Size - 1", Body, End Ball - S.St 316, Seat / Seal - PTFE, Option - 180°

10 - D46 - 6666T/NPT - 180°

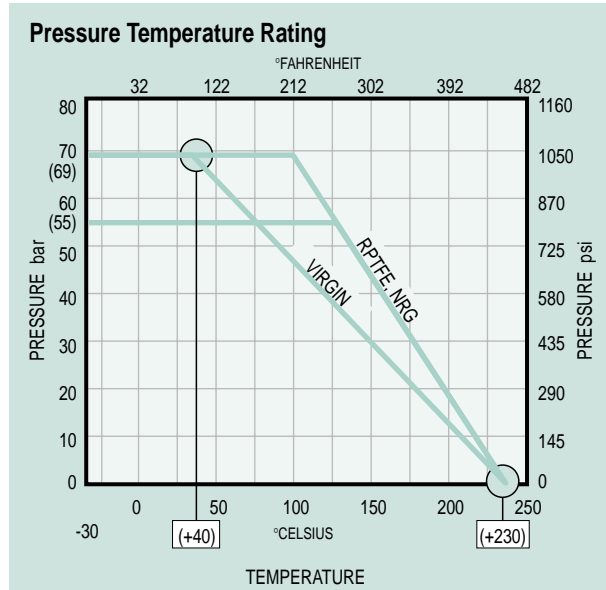
2) Style - Side Entry, Size - 2", Body & End - Carbon St. , Ball - S.St 316, Seat - NRG, Seal - Grafite

20 - S46 - 4466PG/BW - 90°

In accordance with our policy to strive for continuous improvement of the product, we reserve the right to alter the dimensions, technical data and information included in this catalogue when required.

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### Flow Coefficients and Breakaway Torque

Valve Size		Flow Coefficient		Expected Breakaway Torque	
mm	in	Cv	Kv	N·M	lbf·ins
15 - 20	1/2" - 3/4"	5	4	6	
25	1"	10	9	14	124
40	1 1/2"	24	21	22	195
50	2"	36	31	26	230

Cv - Flow - US GPM Pressure - psi  
Kv - Flow - m<sup>3</sup>/hr Pressure - bar

### Limiting Stem Input Torque

Valve Size		N·M	lbf·ins
15-20	1/2" - 3/4"	13.2	117
25	1"	24.4	216
40-50	1 1/2" - 2"	48.6	430