

**MODEL**

# RC/RR FLAP GATES



## GENERAL DESCRIPTION

The ORBINOX model RC and RR Flap Gates are designed for discharge lines such as levees, sewer lines and drainage conduits. The flap stays closed preventing water back-flow, and it opens automatically when the unseating water head is higher than the seating water head. From sizes 6" x 6" (150mm x 150mm) to 56" x 56" (1400mm x 1400mm) the RC square Flap Gate and the RR round Flap Gate have a unique seal design, resulting in a substantially watertight performance. ORBINOX can also design and manufacture the RC and RR models in larger sizes. For more information, please contact an ORBINOX representative.

## CONSTRUCTION DESIGN

The standard RR and RC models are manufactured in stainless steel which has a higher corrosion resistance in many applications which results in a longer life cycle with little or no maintenance. Other materials of construction are available upon request, such as AISI 904L, Duplex stainless, etc.



RC Square Flap Gate



RR Round Flap Gate



ORBINOX reserves the right to change specifications without notice

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Rev.1

RC/RR\_1

MODEL

# RC/RR FLAP GATES



## DESIGN FEATURES

- Stainless steel fabricated design (corrosion resistance)
- Double jointed pivot arm design ensures a perfect seating for optimum sealing performance
- Self adjusting "lip" type seal design ensures a substantially watertight performance even with low seating water heads
- The flap opens with low unseating heads (2" to 12" depending on the size). If the water head on both sides of the flap gate is equal, the flap closes automatically
- Option of Wall Mount, Wall Thimble Mount or Standard Flange mounting
- ORBINOX Flap Gates are completely factory assembled and tested eliminating the need for on site adjustment

### Seat Design Head:

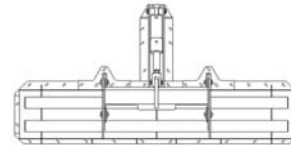
The RC and RR models are designed to withstand 17 feet of seating water head (5 m.w.c.). For higher water head service conditions please contact an ORBINOX representative.

### Seal design:

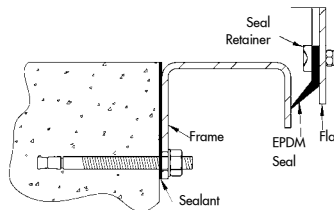
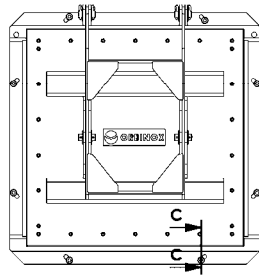
The RC and RR models have a unique seal design. The self-adjusting "lip-design" seals ensure a substantially watertight performance, even in low seating water head conditions.

### Special Designs:

In certain applications, such as storm tanks, fast opening Flap Gates are required. The Flap Gate can be designed to open rapidly with the help of a hydraulic actuator in order to effectively flush the bottom of the storm tanks. Typically 2 to 3 seconds are required to fully open the flap, and it generates a wave having a powerful flushing action. For more detailed information, please contact an ORBINOX representative.

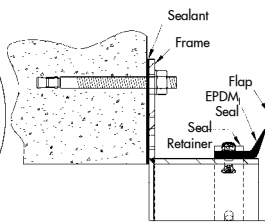
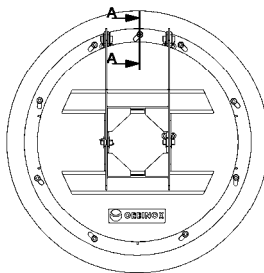


## SEAL DESIGN: RC Square Flap Gate



Detail view of Section C-C

## SEAL DESIGN: RR Round Flap Gate



Detail view of Section A-A

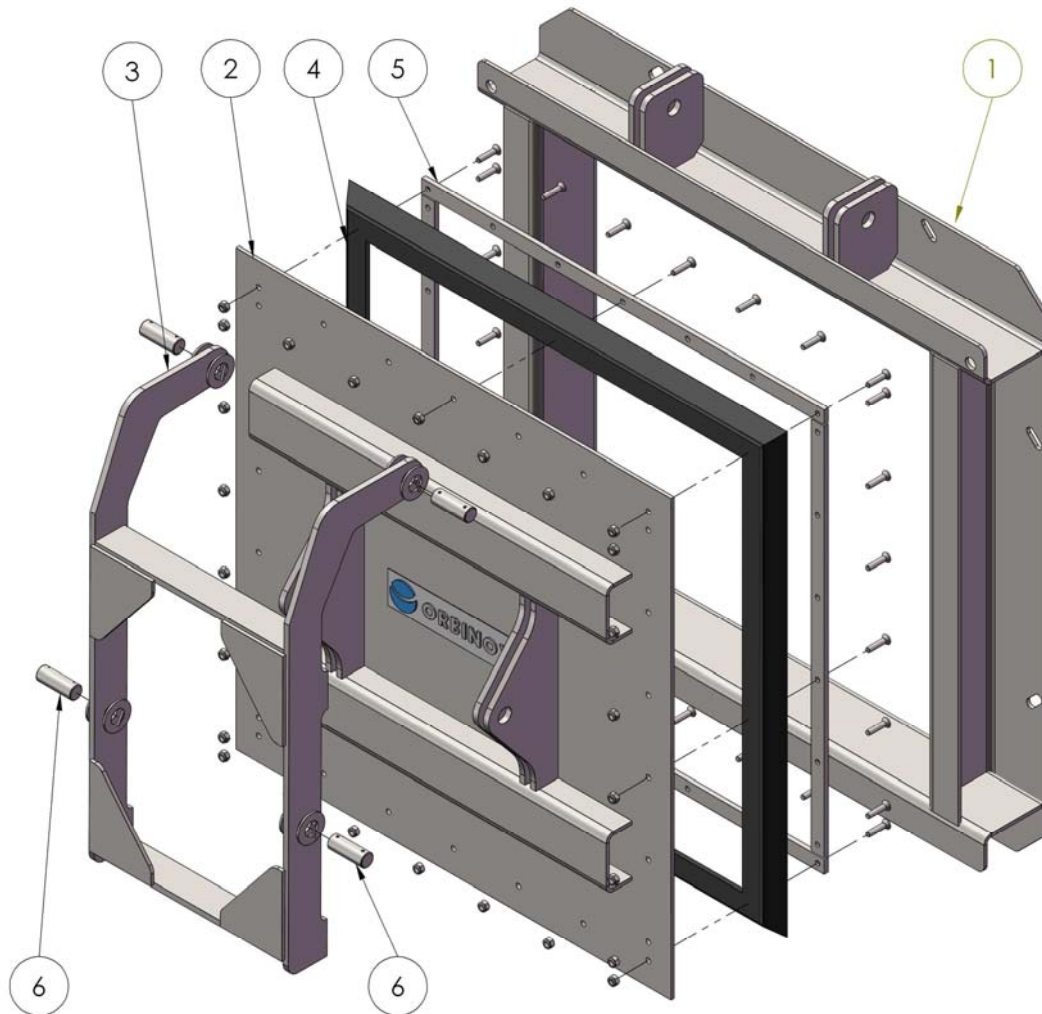
**MODEL**

# RC/RR FLAP GATES



## STANDARD MATERIALS OF CONSTRUCTION

### RC Square Flap Gate



ITEM	DESCRIPTION	MATERIAL
1	Frame	Stainless Steel ASTM A-240 / Type 304L or 316L
2	Flap	Stainless Steel ASTM A-240 / Type 304L or 316L
3	Pivot Arm	Stainless Steel ASTM A-240 / Type 304L or 316L
4	Seal	EPDM
5	Seal Retainer	Stainless Steel ASTM A-240 / Type 304L or 316L
6	Hinge Pin	Stainless Steel ASTM A-240 / Type 304L or 316L

Note: for materials other than the above, please consult an ORBINOX representative

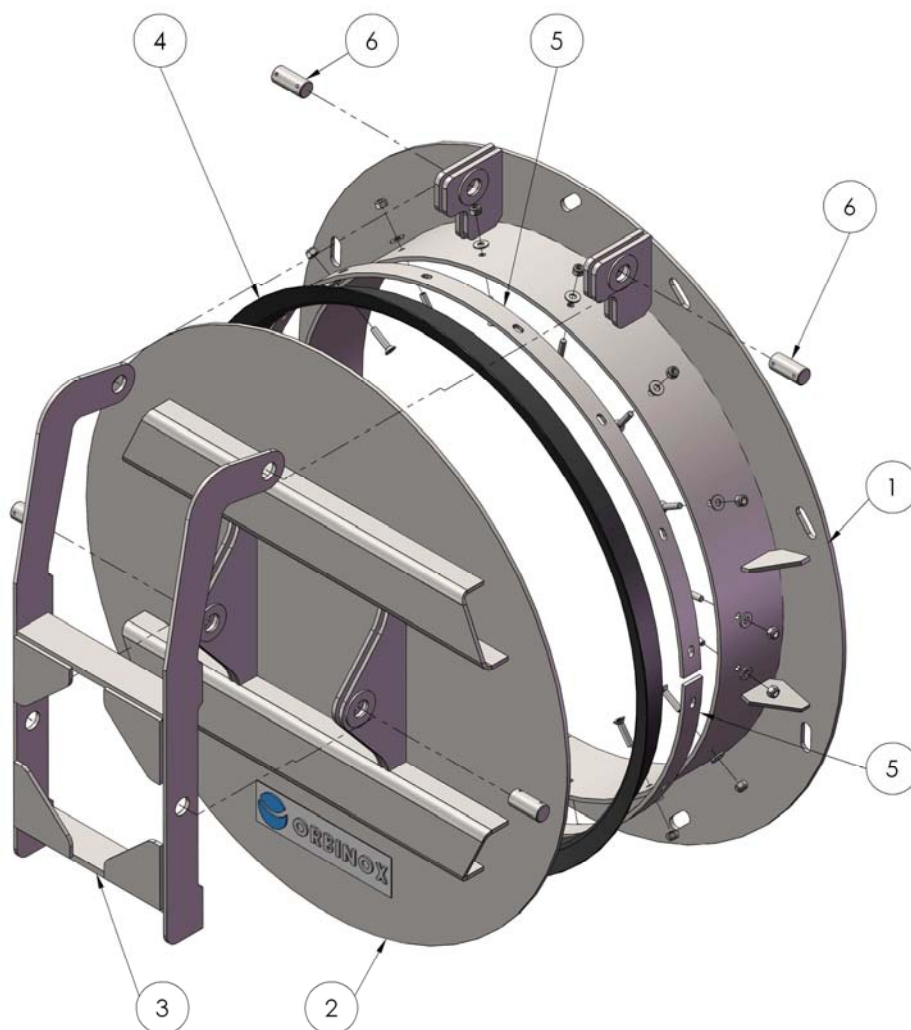
**MODEL**

# RC/RR FLAP GATES



## STANDARD MATERIALS OF CONSTRUCTION

### RR Round Flap Gate



ITEM	DESCRIPTION	MATERIAL
1	Frame	Stainless Steel ASTM A-240 / Type 304L or 316L
2	Flap	Stainless Steel ASTM A-240 / Type 304L or 316L
3	Pivot Arm	Stainless Steel ASTM A-240 / Type 304L or 316L
4	Seal	EPDM
5	Seal Retainer	Stainless Steel ASTM A-240 / Type 304L or 316L
6	Hinge Pin	Stainless Steel ASTM A-240 / Type 304L or 316L

Note: for materials other than the above, please consult an ORBINOX representative

**MODEL**

# **RC/RR** FLAP GATES

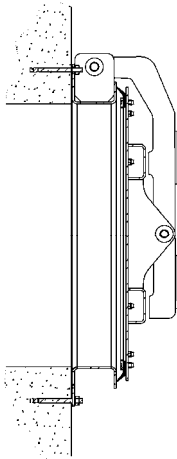


## **MOUNTING OPTIONS**

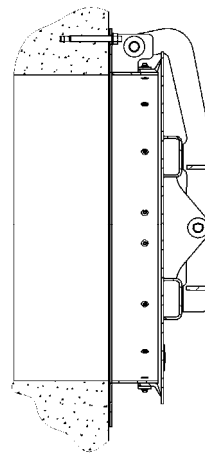
The following drawings show the most common mounting options for RC and RR Flap Gates. For other mounting options please contact an ORBINOX representative.

### **WALL MOUNTED**

**Model: RC**

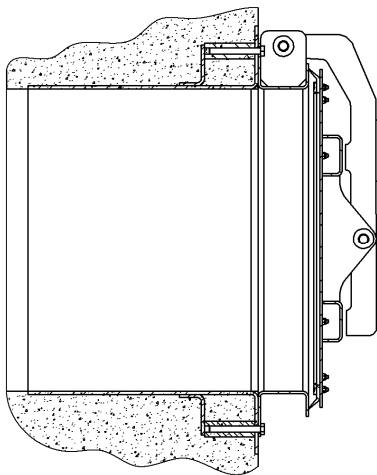


**Model: RR**



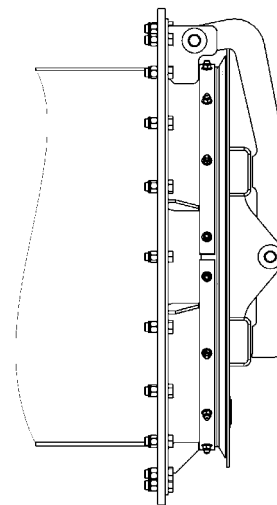
### **ON A WALL THIMBLE**

**Model: RC**



### **ON A STANDARD FLANGE**

**Model: RR**



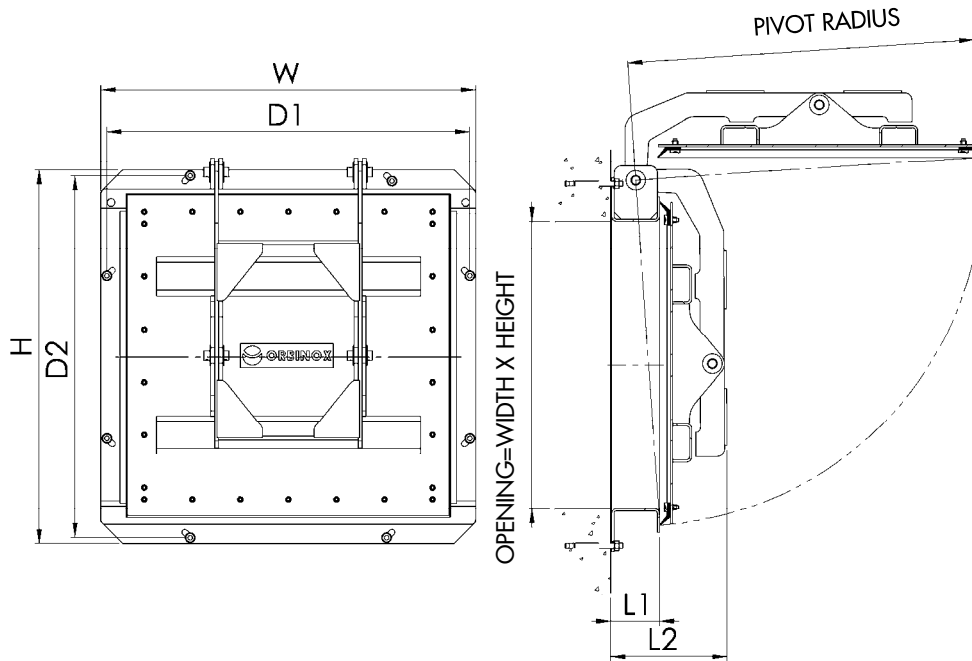
**MODEL**

# RC/RR FLAP GATES



## RC - DIMENSIONS

The following drawings show the most common mounting options, as well as the respective dimensional charts.



SIZE		W	H	D1	D2	L1	L2	PIVOT RADIUS
Opening Width	Opening Height							
6"	6"	13 1/16	11 7/8	11 11/16	10 1/8	3 15/16	6	10 5/8
8"	8"	15 1/16	13 7/8	13 11/16	12 1/8	3 15/16	6	12 9/16
12"	12"	19 1/16	17 7/8	17 11/16	16 1/8	3 15/16	6	16 1/2
16"	16"	23 1/16	21 7/8	21 11/16	20 1/8	3 15/16	7 3/16	20 1/2
20"	20"	27 1/16	25 7/8	25 11/16	24 1/8	3 15/16	7 3/16	24 1/2
24"	24"	31 1/16	31 7/8	29 11/16	30 7/16	3 15/16	7 3/16	28 1/2
28"	28"	35 1/16	35 7/8	33 11/16	34 7/16	3 15/16	8 7/8	32 1/2
32"	32"	39 1/16	39 7/8	37 11/16	38 7/16	3 15/16	8 7/8	36 7/16
36"	36"	43 1/2	43 7/8	42 1/16	42 7/16	3 15/16	8 7/8	40 7/16
40"	40"	47 7/8	47 7/8	46 1/16	46 7/16	3 15/16	8 7/8	44 7/16
44"	44"	51 7/8	51 7/8	50 7/16	50 7/16	3 15/16	9 1/8	48 7/16
48"	48"	55 7/8	55 7/8	54 7/16	54 7/16	3 15/16	9 1/8	52 7/16
52"	52"	59 7/8	59 7/8	58 7/16	58 7/16	3 15/16	9 1/8	56 7/16
56"	56"	63 7/8	63 7/8	62 7/16	62 7/16	3 15/16	9 1/8	60 7/16

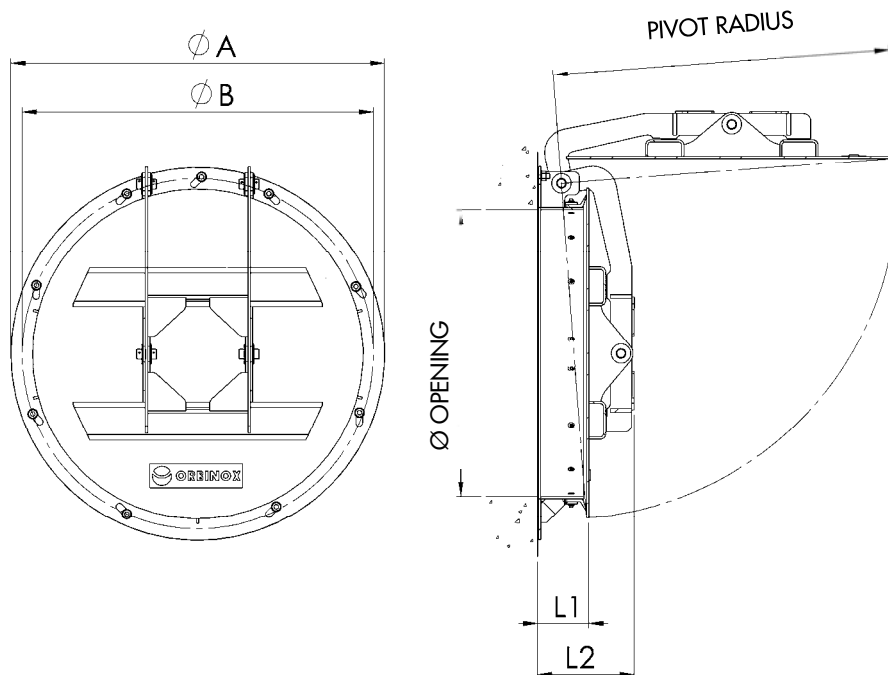
Note: for dimensions other than the above, please contact an ORBINOX representative  
 These dimensions are for information only. Do not use for installation or submittal purposes

MODEL

# RC/RR FLAP GATES



## RR • DIMENSIONS



SIZE Opening Diameter	A	B	L1	L2	PIVOT RADIUS
6"	11 <sup>5</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	10
8"	13 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>4</sub>	12
12"	17 <sup>11</sup> / <sub>16</sub>	15 <sup>9</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>4</sub>	15 <sup>15</sup> / <sub>16</sub>
16"	22 <sup>1</sup> / <sub>2</sub>	20 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>4</sub>	19 <sup>15</sup> / <sub>16</sub>
20"	26 <sup>11</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>2</sub>	4 <sup>5</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>4</sub>	23 <sup>15</sup> / <sub>16</sub>
24"	31 <sup>1</sup> / <sub>16</sub>	28 <sup>15</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>4</sub>	27 <sup>7</sup> / <sub>8</sub>
28"	35 <sup>11</sup> / <sub>16</sub>	33 <sup>1</sup> / <sub>2</sub>	4 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	31 <sup>7</sup> / <sub>8</sub>
32"	40 <sup>7</sup> / <sub>16</sub>	38 <sup>5</sup> / <sub>16</sub>	4 <sup>7</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>4</sub>	35 <sup>7</sup> / <sub>8</sub>
36"	44 <sup>7</sup> / <sub>16</sub>	42 <sup>5</sup> / <sub>16</sub>	4 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>	39 <sup>7</sup> / <sub>8</sub>
40"	49 <sup>1</sup> / <sub>16</sub>	46 <sup>7</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	8 <sup>3</sup> / <sub>8</sub>	43 <sup>7</sup> / <sub>8</sub>
44"	53 <sup>7</sup> / <sub>16</sub>	51 <sup>5</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	8 <sup>3</sup> / <sub>8</sub>	47 <sup>7</sup> / <sub>8</sub>
48"	58 <sup>1</sup> / <sub>16</sub>	55 <sup>7</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>4</sub>	51 <sup>7</sup> / <sub>8</sub>
52"	62 <sup>4</sup> / <sub>16</sub>	60 <sup>1</sup> / <sub>16</sub>	4 <sup>13</sup> / <sub>16</sub>	8 <sup>3</sup> / <sub>4</sub>	55 <sup>7</sup> / <sub>8</sub>
56"	66 <sup>13</sup> / <sub>16</sub>	64 <sup>11</sup> / <sub>16</sub>	4 <sup>13</sup> / <sub>16</sub>	11 <sup>3</sup> / <sub>8</sub>	59 <sup>7</sup> / <sub>8</sub>

Note: for dimensions other than the above, please consult an ORBINOX representative  
 These dimensions are for information only. Do not use for installation or submittal purposes

**MODEL**

**RC/RR FLAP GATES**



## STANDARD SPECIFICATIONS

**Model RC and RR 6" x 6" - 56" x 56" (150mm x 150mm - 1400mm x 1400 mm)**

### GENERAL CONDITIONS

The equipment provided under this section shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with the drawings, specifications, engineering data, instructions and recommendations of the equipment manufacturer unless exceptions are noted by the engineer. Gates and operators shall be supplied with all the necessary parts and accessories indicated on the drawings, specified or otherwise required for a complete, properly operating installation, and shall be the latest standard product of a manufacturer regularly engaged in the production of fabricated gates. Gates supplied under this section shall be Model RC or RR Stainless Steel Flap Gates as manufactured by ORBINOX.

**QUALITY ASSURANCE.** The manufacturer shall have experience in the production of substantially similar equipment, and shall show evidence of satisfactory operation in at least 50 installations. The manufacturer's shop welds, welding procedures and welders shall be qualified and certified in accordance with the requirement of the latest edition of ASME, Section IX.

**SUBMITTALS.** The manufacturer shall submit for approval by the purchaser, drawings showing the principal dimensions, general construction and materials used in the gate.

### PERFORMANCE

**OPERATION.** The Flap Gate shall close when the seating water head is higher than the unseating water head. Under these conditions the Flap Gate shall be substantially watertight. The Flap Gate shall open when the unseating water head is higher than the seating water head.

**DESIGN HEAD.** The flap gate shall be designed to withstand the design head shown in the schedule.

### PRODUCT (FLAP GATE)

**GENERAL DESIGN.** Flap Gates shall be made of stainless steel. All hardware shall be stainless steel.

**FRAME.** The gate frame shall be constructed of structural members or formed plate welded to form a rigid one-piece frame. The frame shall be suitable for mounting on a concrete wall, wall thimble or standard flange.

**FLAP.** The flap shall consist of a flat plate reinforced with formed plates or structural members in order to withstand the maximum specified seating head.

**PIVOT ARM.** The pivot arm shall be made of stainless steel. The pivot arm shall be connected to the frame with two hinge pins. The flap shall be connected to the pivot arm with two hinge pins.

**SEALS.** The seals shall be made of EPDM and be secured to the frame or flap by means of the seal-retainer. The seal retainer shall be made of stainless steel.

**HINGE PINS.** Hinge pins shall be made of stainless steel.



**MODEL****RC/RR** FLAP GATES

## STANDARD SPECIFICATIONS

### MATERIALS

<b>Part</b>	<b>Material</b>
Frame	Stainless Steel ASTM A-240 / Type 304L or 316L
Flap	Stainless Steel ASTM A-240 / Type 304L or 316L
Pivot Arm	Stainless Steel ASTM A-240 / Type 304L or 316L
Seal	EPDM
Seal Retainer	Stainless Steel ASTM A-240 / Type 304L or 316L
Hinge Pin	Stainless Steel ASTM A-240 / Type 304L or 316L

### SCHEDULE

**Flap Gate Identification****Size (Opening)****Water Head (Seating)****Mounting**

### EXECUTION

**INSTALLATION:**

Gates and appurtenances shall be handled and installed in accordance with the manufacturer's recommendations.

MODEL

# RC/RR FLAP GATES



## RR AND RC FLAP GATE SELECTION FORM

Customer: \_\_\_\_\_ Tag No.: \_\_\_\_\_ Date: \_\_\_\_\_  
 Order Number: \_\_\_\_\_ Qty.: \_\_\_\_\_

### FLAP GATE DESIGN

Units: mm  inch

RR: Round Flap Gate

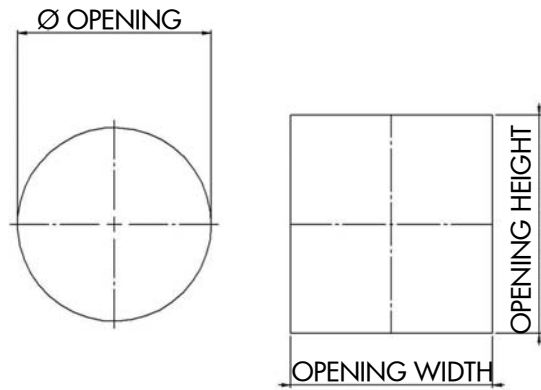
Opening diameter: \_\_\_\_\_

RC: Square Flap Gate

Opening Width: \_\_\_\_\_

Opening Height: \_\_\_\_\_

Seating Water Head: \_\_\_\_\_

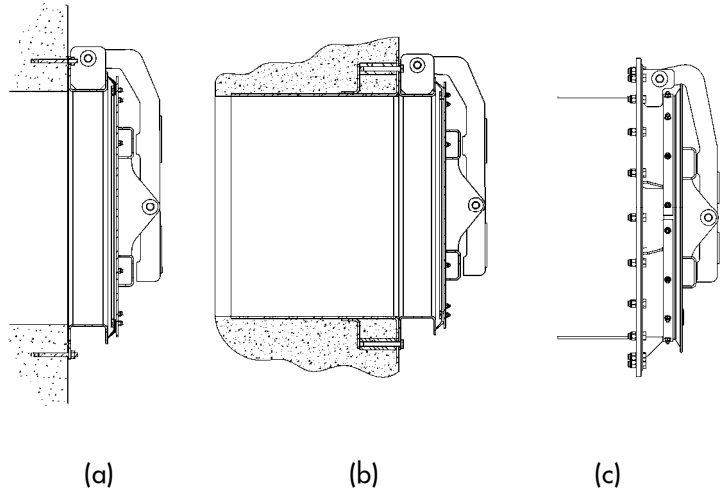


### MOUNTING OPTIONS

- Wall Mounted (a)
- Wall Thimble Mounted (b)
- Std. Flange Mounted (c)

Flange Type: \_\_\_\_\_

Other:



### MATERIALS

Frame & Flap  304L SS  316L SS Other: \_\_\_\_\_  
 Seal  EPDM Other: \_\_\_\_\_

### REMARKS

Name: \_\_\_\_\_ Signature: \_\_\_\_\_