

**MODEL**

**AG**



## GENERAL DESCRIPTION

The ORBINOX model AG Stop Gate is designed for open channel installation in waste water treatment plants, irrigation, hydraulic works and hydro-electric power plants. They are used to isolate other equipment for maintenance, repairs or inspection. The slide is hand operated or hoist operated for larger sizes. The sealing system is incorporated on both laterals and bottom area of the slide, resulting in a substantially watertight seal without the need of wedges on the gate. From sizes 150mm x 150mm to 3500mm x 3500mm, the AG model has a self-adjusting seal design with low leakage performance. The maximum leakage rate is lower than the maximum allowable recommended by DIN 195694. The frame of the AG model is typically embedded in a concrete channel for both uni-directional (seating head only) or bi-directional sealing (seating and unseating water head).

ORBINOX can also offer different mounting options such as wall mount and existing channel mount where required. Our engineering team can also design and manufacture the AG Stop Gate in larger dimensions and for higher service conditions while maintaining a low leakage rate. For more information, please contact an ORBINOX representative.

## CONSTRUCTION DESIGN

The AG Stop Gate is designed in general accordance to DIN 19569-4. It can be also be designed in general accordance to other standards, such as BS 7775.

The standard AG model is manufactured in stainless steel which has a higher corrosion and erosion resistance in many applications which results into 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.



## DESIGN FEATURES

- Stainless steel fabricated modular design (corrosion resistance)
- Mounting options: Embedded In Concrete, Wall Mount and Face Mount In Existing Channel
- Option of Uni-Directional and Bi-Directional sealing
- The slide is designed to seal at the bottom due to its own weight
- ORBINOX Stop Gates are completely factory assembled and tested eliminating the need for on site adjustment
- HMWPE guides reduce the friction coefficient during operation, minimizing therefore the required pull-out thrust and extending the seal life
- Self adjusting seal design (wedges not required)
- Stainless steel fasteners on ORBINOX slide gates

### Leakage Allowance:

The leakage rate on the model AG is lower than the maximum allowable defined by DIN 19569-4 (class 2).

### Seating and Unseating Design Head:

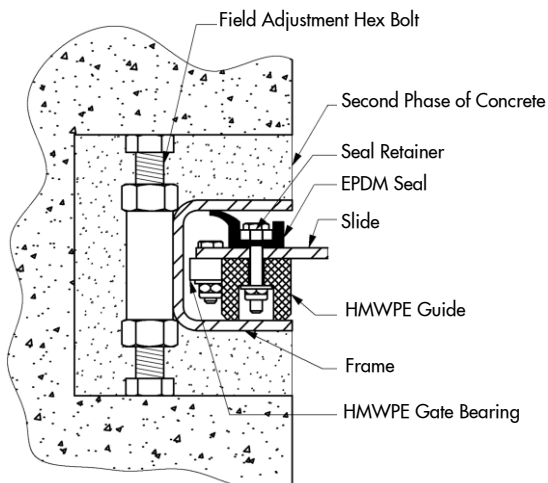
The AG model is designed to withstand a water pressure equal to the height of the slide. The uni-directional configuration is very appropriate for on-seating head pressure conditions, offering a very economical solution. The bidirectional one is designed for both off and on-seating normal head pressure conditions.

### Seal design:

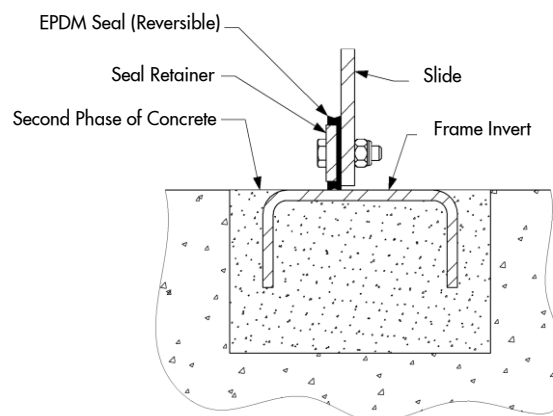
The AG model has a unique seal design. The self-adjusting "lip-design" side seals ensure a substantially watertight performance. The design allows the EPDM seals to be installed on the slide leaving the opening unobstructed when the gate is in the open position. It also allows easy access to reverse or replace the bottom seal or change the side seals if damaged, resulting in cost savings in maintenance time. The HMWPE guides and bearings ensure no metal to-metal contact between the frame and slide which reduces the friction during operation and extends seal life.

## Seal Design: AG Uni-Directional and Embedded In Concrete

### SIDE SEAL



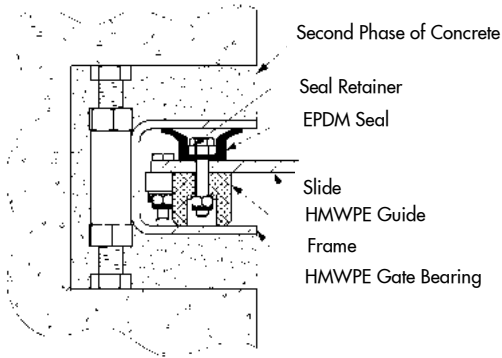
### BOTTOM SEAL



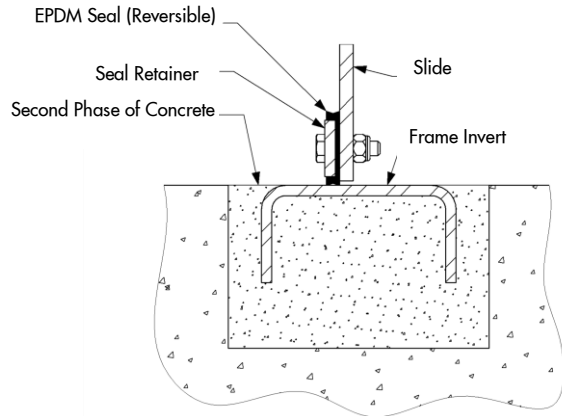
DESIGN FEATURES

Seal Design: AG Bi-Directional and Embedded In Concrete

SIDE SEAL

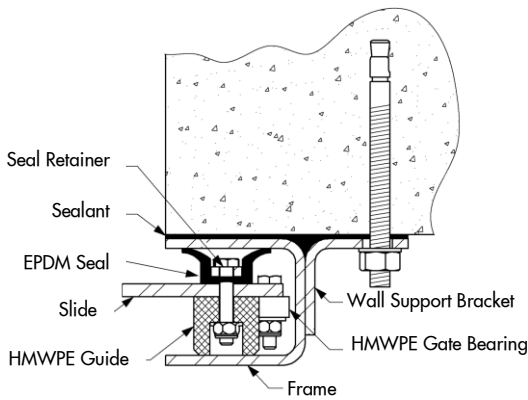


BOTTOM SEAL

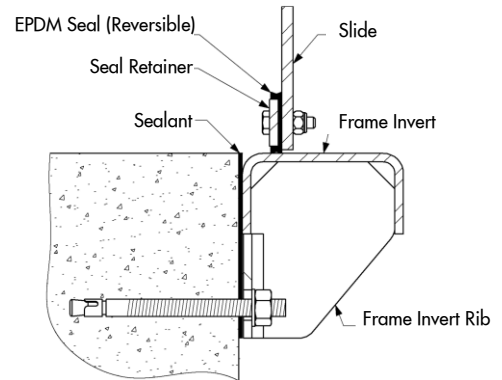


Seal Design: AG Bi-Directional and Wall Mounted (Uni-Directional optional)

SIDE SEAL

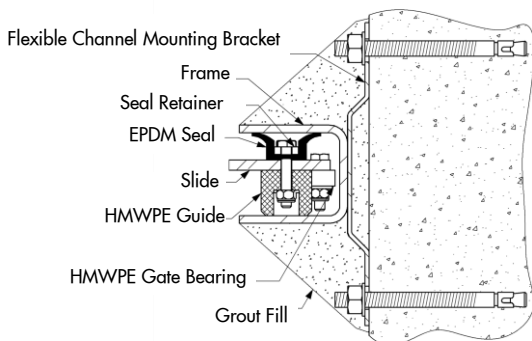


BOTTOM SEAL

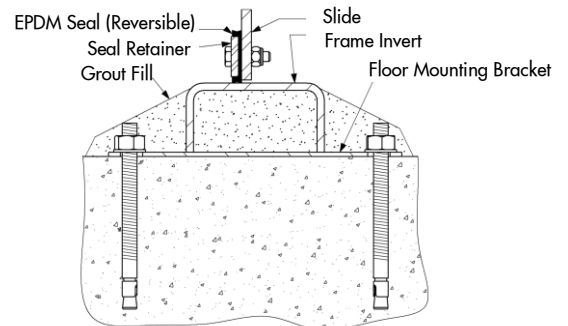


Seal Design: AG Bi-Directional and Existing Channel (Uni-Directional optional)

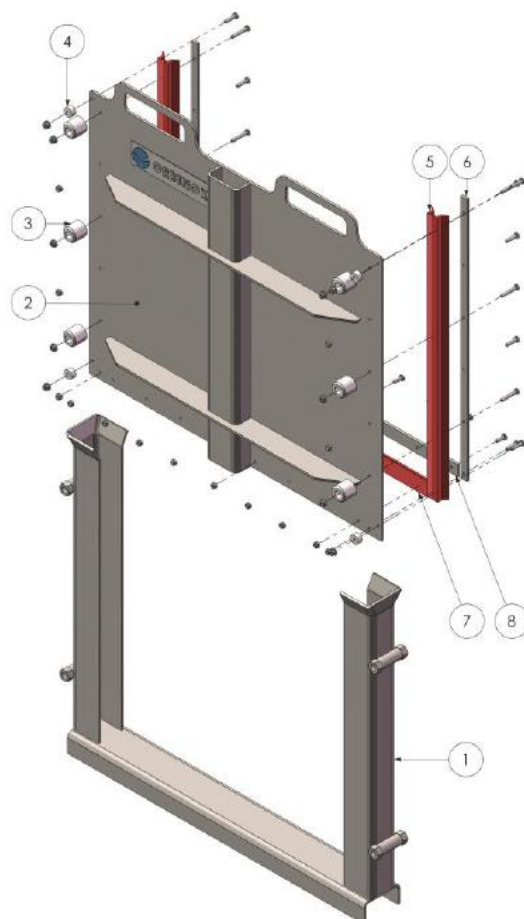
SIDE SEAL



BOTTOM SEAL



## STANDARD MATERIALS OF CONSTRUCTION



ITEM	DESCRIPTION	MATERIAL (standard)
1	Frame	Stainless Steel Type 304L or 316L (1.4306 or 1.4404)
2	Slide	Stainless Steel Type 304L or 316L (1.4306 or 1.4404)
3	Guides	High Molecular Weight Polyethylene (HMWPE)
4	Gate Bearings	High Molecular Weight Polyethylene (HMWPE)
5	Seal	EPDM
6	Seal Retainer	Stainless Steel Type 304L or 316L (1.4306 or 1.4404)
7	Bottom Seal	EPDM
8	Bottom Seal Retainer	Stainless Steel Type 304L or 316L (1.4306 or 1.4404)

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

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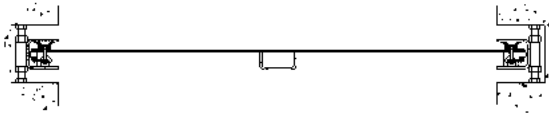
**AG**

## MOUNTING OPTIONS

The following drawings show the most common mounting options. For other mounting options please contact an ORBINOX representative.

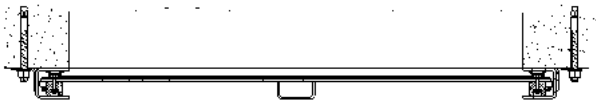
### EMBEDDED IN CONCRETE (EC)

**Model: AG-EC**



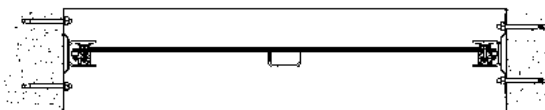
### WALL MOUNTED (WM)

**Model: AG-WM**



### FACE MOUNTED IN EXISTING CHANNEL (FM)

**Model: AG-FM**



## LIFTING MECHANISM

In order to lift the slide, ORBINOX can design different lifting mechanisms. For the smaller sizes, the slide is lifted manually with the help of a hook or by means of lift poles in deeper channels. For larger gates, it can be designed to be lifted using an overhead hoist.

### Lifting Device

When required, a stainless steel lifting device can be supplied. The lifting device, which is connected to a crane, fits into both lateral frame guides and hooks and releases the gate remotely and semi-automatically.



## INSTALLATION, OPERATION AND MAINTENANCE

This section briefly describes the installation, operation and maintenance of AG Stop Gates. For more detailed information please refer to the IOM Manual.

### **Installation:**

A) Embedded in Concrete (EC): The gate frame is centered in the recess prior to embedding it in concrete. Optionally, the gate frame includes leveling fittings and brackets to simplify the installation process.

B) Wall Mount (WM): The AG Stop Gate is installed by means of mechanical anchor bolts and construction sealant (Sikaflex or equivalent).

C) Face Mounted in Existing Channel (FM): The AG Stop Gate is installed by means of mechanical anchor bolts. All the gaps shall be grout filled afterwards and shaped in order to assure a smooth transition.

The minimum concrete strength shall be 20.7 MPa. The tolerance of the concrete construction (flatness, levelness and plumbness) shall be in accordance to DIN 18202.

For detailed information about the type, size and quantity of the required anchor bolts or other installation materials, please refer to the notes on the "General Arrangement Drawing".

### **Maintenance and Operation:**

The ORBINOX AG Stop Gates need practically no maintenance. Seals should be replaced if damaged.

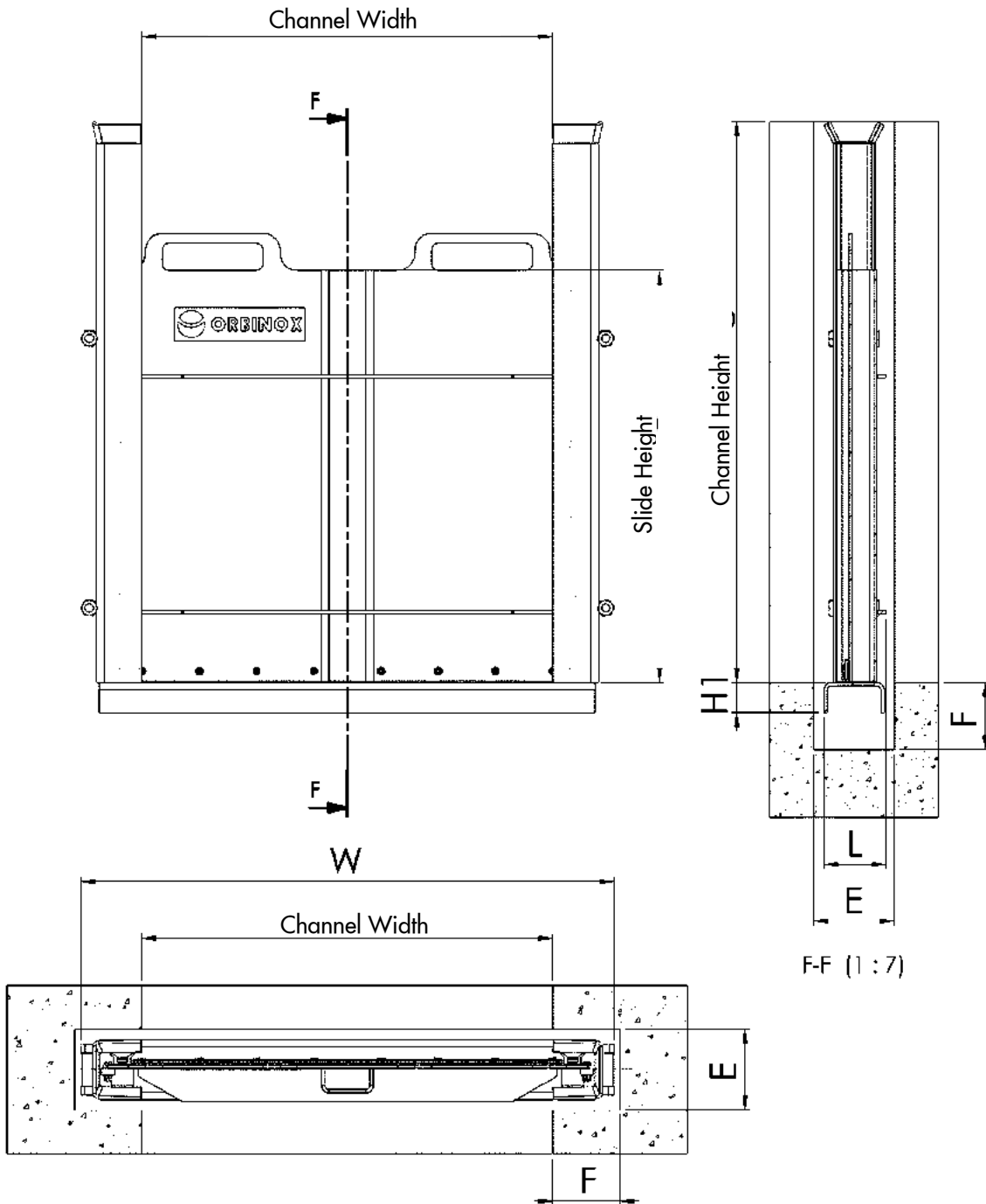
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AG-EC · BI-DIRECTIONAL · DIMENSIONS

SIZES: 150mm x 150mm to 3500mm x 3500mm



**MODEL****AG****AG-EC · BI-DIRECTIONAL · DIMENSIONS****SIZES: 150mm x 150mm to 3500mm x 3500mm**

SIZE (mm) Channel Width	SIZE (mm) Slide Height	W	L	H1	E x F
150	150	321	80	30	120 x 100
200	200	371	80	30	120 x 100
300	300	471	80	30	120 x 100
400	400	571	80	30	120 x 100
500	500	671	80	30	120 x 100
600	600	776	90	45	120 x 100
700	700	876	90	45	120 x 100
800	800	976	90	45	120 x 100
900	900	1076	90	45	120 x 100
1000	1000	1176	90	45	120 x 100
1100	1100	1276	110	60	250 x 125
1200	1200	1376	110	60	250 x 125
1300	1300	1476	110	60	250 x 125
1400	1400	1576	110	60	250 x 125
1500	1500	1576	110	60	250 x 125
1600	1600	1814	215	90	250 x 125
1700	1700	1914	215	90	250 x 125
1800	1800	2014	215	90	250 x 125
1900	1900	2114	215	90	250 x 125
2000	2000	2214	215	90	250 x 125
2500	2500	2696	215	120	250 x 125
3000	3000	3196	215	120	300 x 150
3500	3500	3696	215	120	300 x 150

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



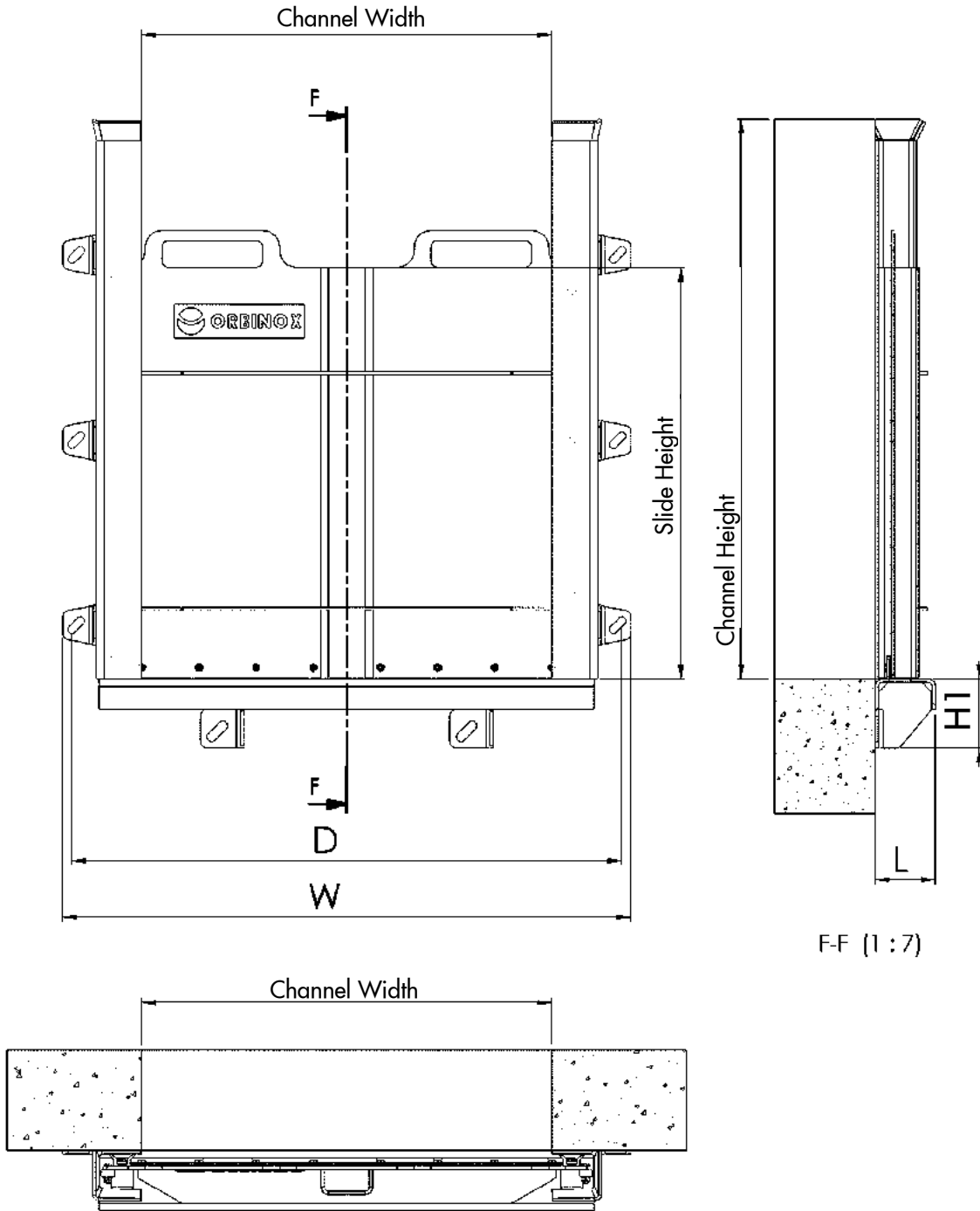
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## AG-WM· BI-DIRECTIONAL · DIMENSIONS

SIZES: 150mm x 150mm to 3500mm x 3500mm



**MODEL****AG**

## AG-WM· BI-DIRECTIONAL · DIMENSIONS

**SIZES: 150mm x 150mm to 3500mm x 3500mm**

SIZE (mm) Channel Width	SIZE (mm) Slide Height	W	D	L	H1
150	150	384	344	80	80
200	200	434	394	80	80
300	300	534	494	80	80
400	400	634	594	80	80
500	500	734	694	80	80
600	600	836	796	90	95
700	700	936	896	90	95
800	800	1036	996	90	95
900	900	1136	1096	90	95
1000	1000	1236	1196	90	115
1100	1100	1356	1306	112	115
1200	1200	1456	1406	112	115
1300	1300	1556	1506	112	115
1400	1400	1656	1600	112	115
1500	1500	1756	1706	112	115
1600	1600	1804	1754	112	115
1700	1700	1904	1854	112	115
1800	1800	2004	1954	112	115
1900	1900	2104	2054	112	115
2000	2000	2204	2154	112	115
2500	2500	2800	2750	215	150
3000	3000	3300	3250	215	150
3500	3500	3800	3750	215	150

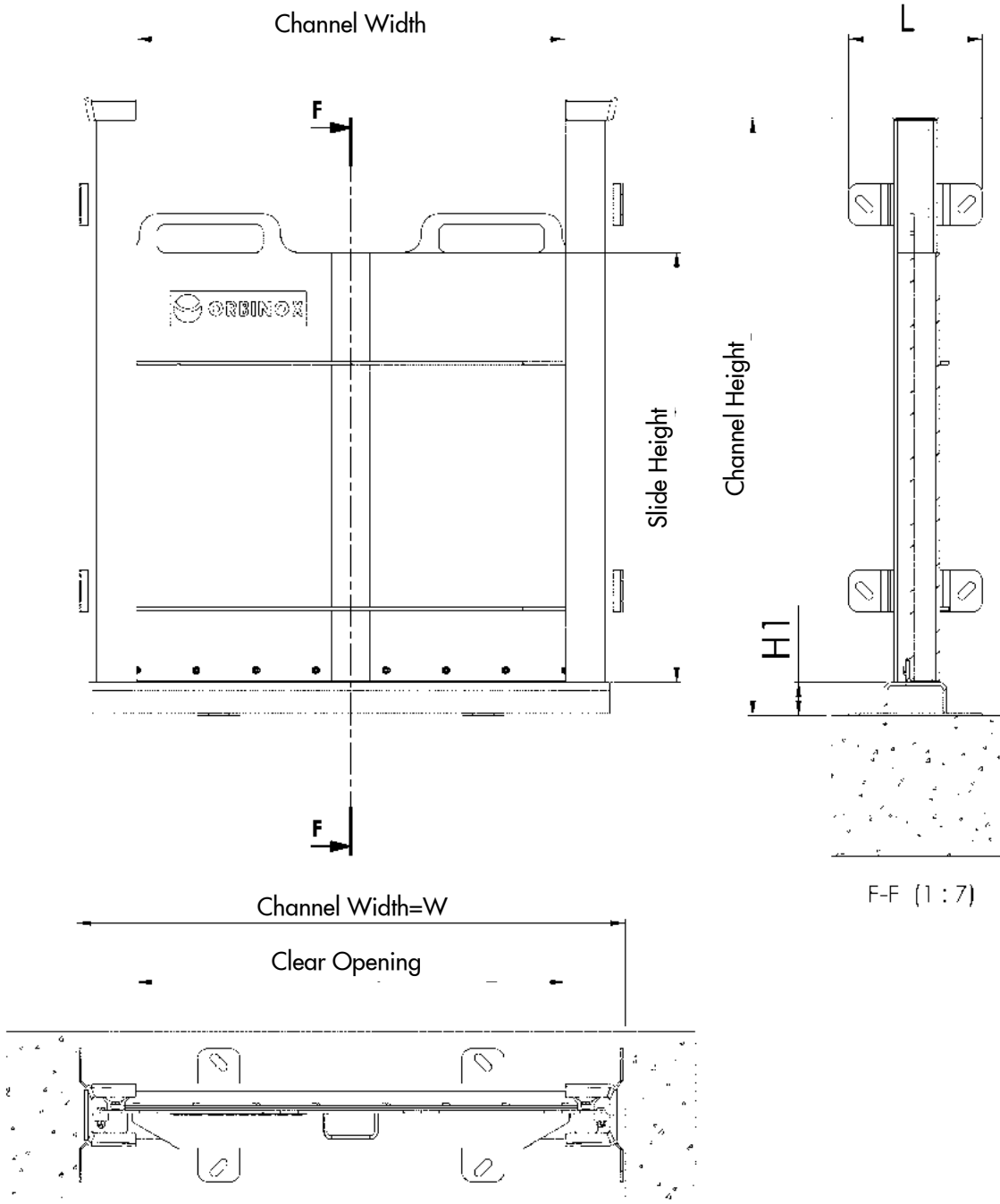
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**AG-FM · BI-DIRECTIONAL · DIMENSIONS**

**SIZES: 150mm x 150mm to 3500mm x 3500mm**



**MODEL****AG****AG-FM · BI-DIRECTIONAL · DIMENSIONS****SIZES: 150mm x 150mm to 3500mm x 3500mm**

SIZE (mm) Channel Width	SIZE (mm) Slide Height	W	Clear Opening	L	H1
150	150	150	-	190	30
200	200	200	38	190	30
300	300	300	138	190	30
400	400	400	238	190	30
500	500	500	338	190	45
600	600	600	438	190	45
700	700	700	538	190	45
800	800	800	638	190	45
900	900	900	738	190	45
1000	1000	1000	938	190	45
1100	1100	1100	1038	190	60
1200	1200	1200	1138	190	60
1300	1300	1300	1238	190	60
1400	1400	1400	1338	190	60
1500	1500	1500	1438	190	60
1600	1600	1600	1400	240	80
1700	1700	1700	1500	240	80
1800	1800	1800	1600	240	80
1900	1900	1900	1700	240	80
2000	2000	2000	1800	240	80
2500	2500	2500	2250	215	90
3000	3000	3000	2750	215	90
3500	3500	3500	3250	215	90

Note: For dimensions other than above, please contact an ORBINOX representative  
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AG STOP GATE SELECTION FORM

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

**DESIGN (Size= Channel Width x Slide Height)**

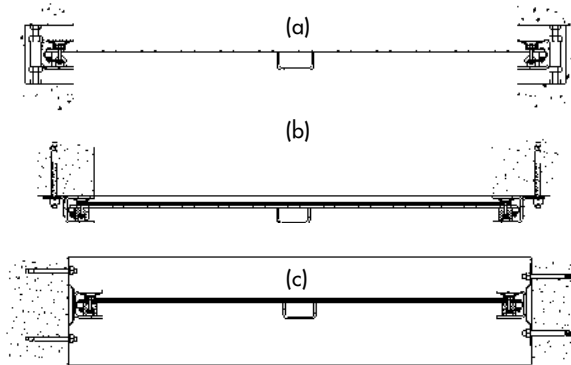
Units: mm  inch   
 Channel Width \_\_\_\_\_ Channel Height \_\_\_\_\_  
 Slide Height \_\_\_\_\_

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

- Uni-Directional  
 Bi-Directional

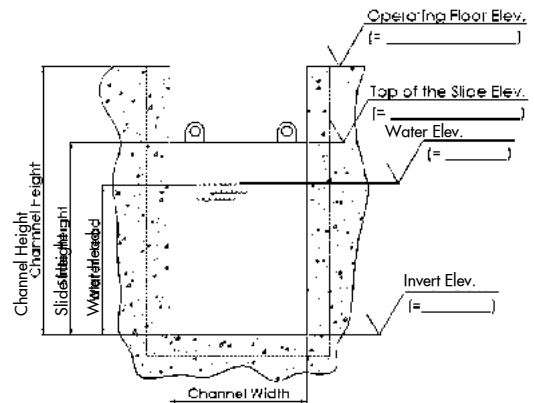
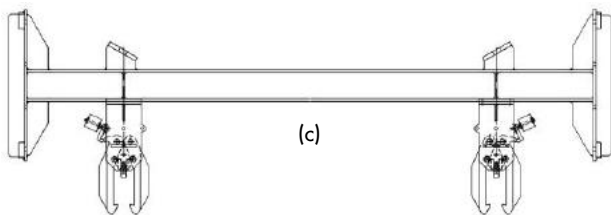
**STOP GATE MOUNTING**

- Embedded in Concrete (a)  
 Wall Mounted (b)  
 Face Mounted in Existing Channel (c)



**LIFTING MECHANISM**

- Hand pull  
 Prepared for external crane  
 Lifting device (c)



- Slide Height = Top of the Slide - Invert Level  
 (As standard: Slide Height = Water Head + 6" (150mm))
  - Channel Height = Operating Floor Level - Invert Level
  - Water Head = Water Level - Invert Level
- Channel Height=Operating Floor Level-Invert Level  
 Water Head= Water Level - Invert Level

**Frame Invert Mounting:**

- Embedded in Concrete  
 Face Mounted in Existing Channel  
 Wall Mounted

**MATERIALS**

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

**REMARKS:**

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