

MODEL

CC

GENERAL DESCRIPTION

The ORBINOX model CC Channel Gate is designed for open channel installation with a highly versatile flow control in waste water treatment plants, irrigation, hydraulic works and hydro-electric power plants. The sealing system is incorporated on both laterals and bottom area of the slide, resulting in a perfect seal without the need of wedges on the gate. From sizes 150 mm x 150 mm to 4500 mm x 4500 mm, the CC model has a self-adjusting seal design for applications requiring accurate flow regulation and optimum performance. The maximum leakage rate is lower than the maximum allowable recommended by DIN 19569-4 (class 5) and AWWA C561 under normal conditions.

The frame of the CC model is typically embedded in a concrete channel for both uni-directional or bi-directional sealing. 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 CC model channel gate in larger dimensions and for higher service conditions.

For more information, please contact an ORBINOX representative.



CONSTRUCTION DESIGN

The CC Channel Gate is designed in general accordance to DIN 19569-4. It can be also be designed in general accordance to other standards, such as AWWA C-561 and BS 7775.

The standard CC 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
- Mounting options: Embedded In Concrete, Wall Mount and Face Mount In Existing Channel
- Option of Uni-Directional (≤ 1000) or Bi-Directional sealing
- Option of Rising or Non-Rising Stem configurations
- Suitable for actuation with manual, electric, pneumatic or hydraulic actuators
- Self-cleaning HMWPE guides reduce the friction coefficient during operation, minimizing therefore the actuation thrust and extending the seal life
- Self adjusting seal design (wedges not required)
- ORBINOX Channel Gates are factory-assembled and tested, eliminating the need for on site adjustment
- Stainless steel fasteners on ORBINOX slide gates

Leakage Allowance:

The leakage rate on the model CC is lower than the maximum allowable defined by different standards under normal conditions:

- DIN 19569-4 (class 5): 1,20 l/min per meter
- AWWA C-561: 1.24 l/min per meter

Seating and Unseating Design Head:

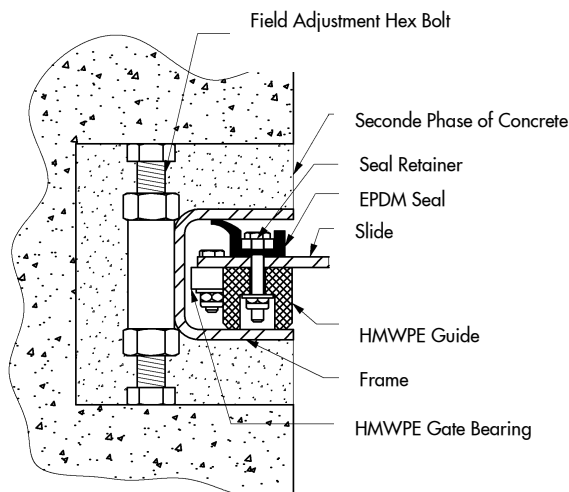
The CC model is designed to withstand a water pressure equal to the height of the slide. The uni-directional CC Channel Gate is very appropriate for on-seating head pressure conditions, offering a very economical solution. The bi-directional CC Channel Gate is designed for both off and on-seating normal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

Seal design:

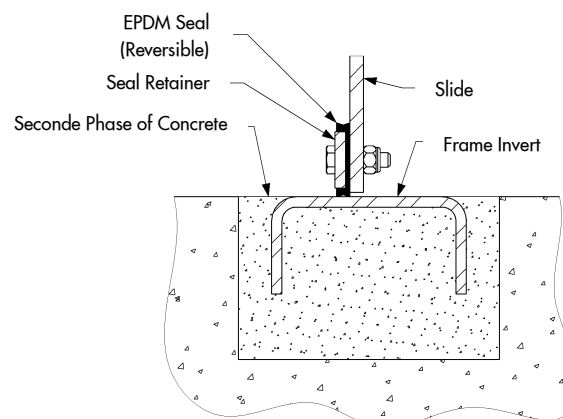
The CC model has a unique seal design. The self-adjusting "lip-design" side seals ensure a substantially watertight performance. The design allows the EPDM seals to be installed on the slide leaving the opening unobstructed when the gate is in the open position. It also allows easy access to reverse 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: CC Uni-Directional and Embedded In Concrete

SIDE SEAL



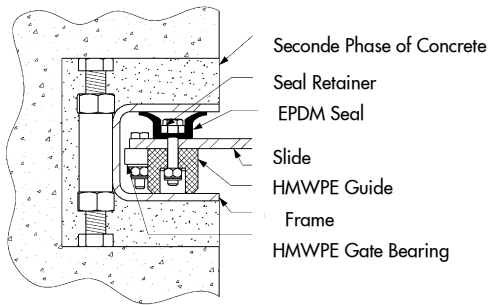
BOTTOM SEAL



DESIGN FEATURES

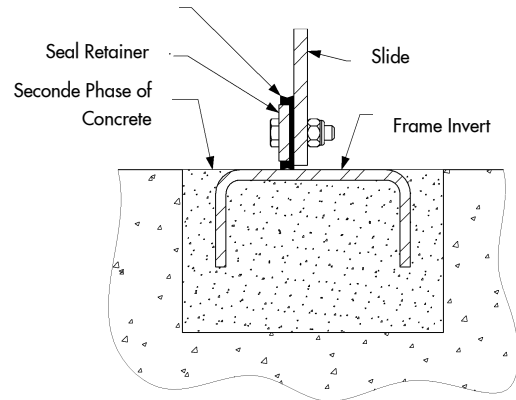
Seal Design: CC Bi-Directional and Embedded In Concrete

SIDE SEAL



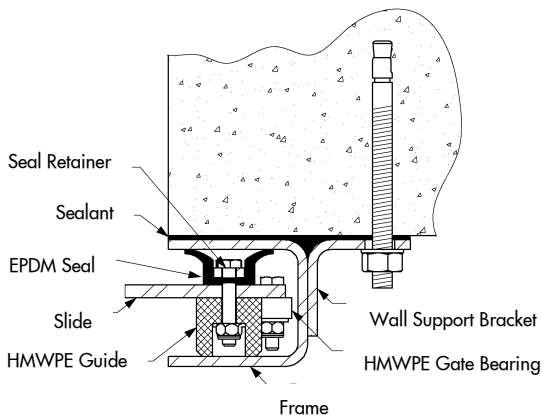
BOTTOM SEAL

EPDM Seal (Reversible)



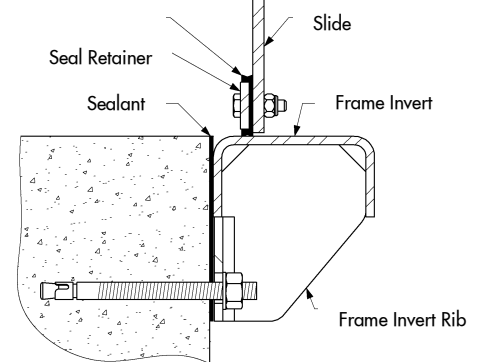
Seal Design: CC Bi-Directional and Wall Mounted (Uni-Directional optional)

SIDE SEAL



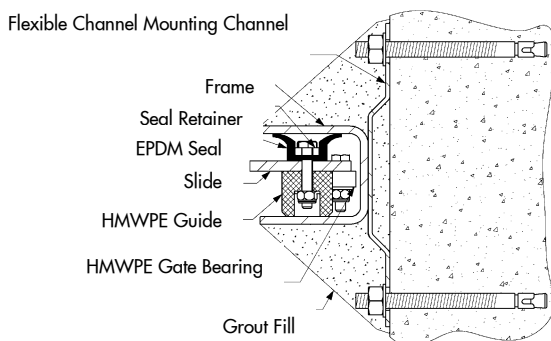
BOTTOM SEAL

EPDM Seal (Reversible)



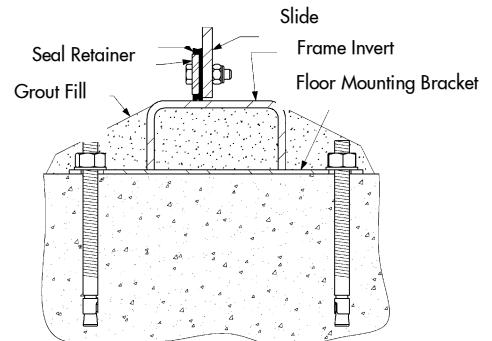
Seal Design: CC Bi-Directional and Face Mounted (Uni-Directional optional)

SIDE SEAL

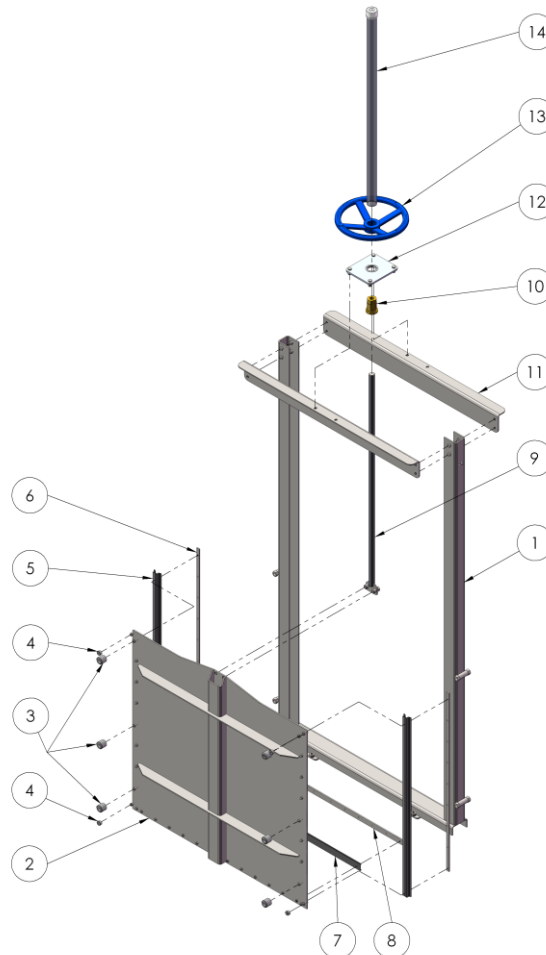


BOTTOM SEAL

EPDM Seal (Reversible)



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)
9	Stem	Stainless Steel
10	Stem Nut	Bronze
11	Yoke	Stainless Steel Type 304L or 316L (1.4306 or 1.4404)
12	Stem Nut Bracket	Stainless Steel Type 304L or 316L (1.4306 or 1.4404)
13	Handwheel	Cast Iron (RS*) / Aluminum (NRS*)
14	Stem Protector	Carbon Steel / Clear Polycarbonate (RS* only)

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

* RS: Rising Stem; NRS: Non Rising Stem.

MODEL

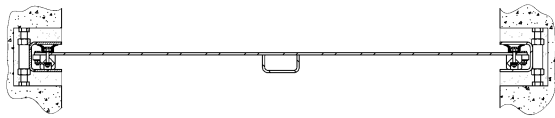
CC

MOUNTING OPTIONS

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

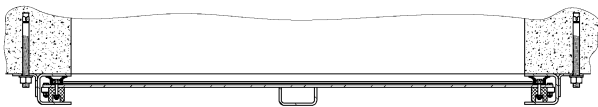
EMBEDDED IN CONCRETE (EC)

Model: CC-EC



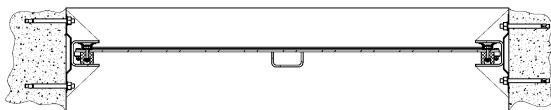
WALL MOUNTED (WM)

Model: CC-WM



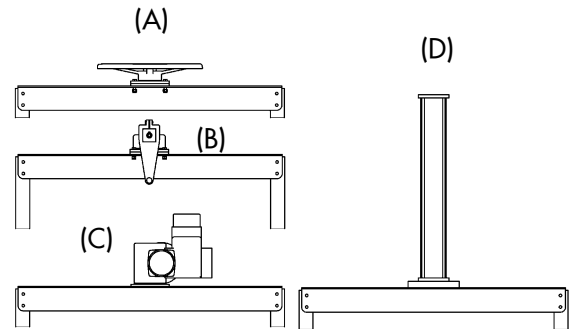
FACE MOUNTED IN EXISTING CHANNEL (FM)

Model: CC-FM



ACTUATORS

All ORBINOX actuators can be yoke or pedestal mounted. Below are some examples of the most common actuator types used on Channel Gates:



Various types of actuators as shown above:

- (A) Handwheel
- (B) Yoke mounted gear and crank
(crank installed square nut - ISO 5211-)
- (C) Electric motor
- (D) Hydraulic or pneumatic cylinder

Accessories:

- Mechanical Stops (for manual actuator and for the completely closed position)
- Actuator manual overrides
- Locking devices
- Solenoid Valves
- Positioners
- Limit / Proximity switches

INSTALLATION, OPERATION AND MAINTENANCE

This section briefly describes the installation, operation and maintenance of CC Channel 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 CC Channel Gate is installed by means of mechanical anchor bolts and construction sealant (Sikaflex 11FC or equivalent).

C) Face Mounted in Existing Channel (FM): The CC Channel 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 (table 3, group 6). 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:

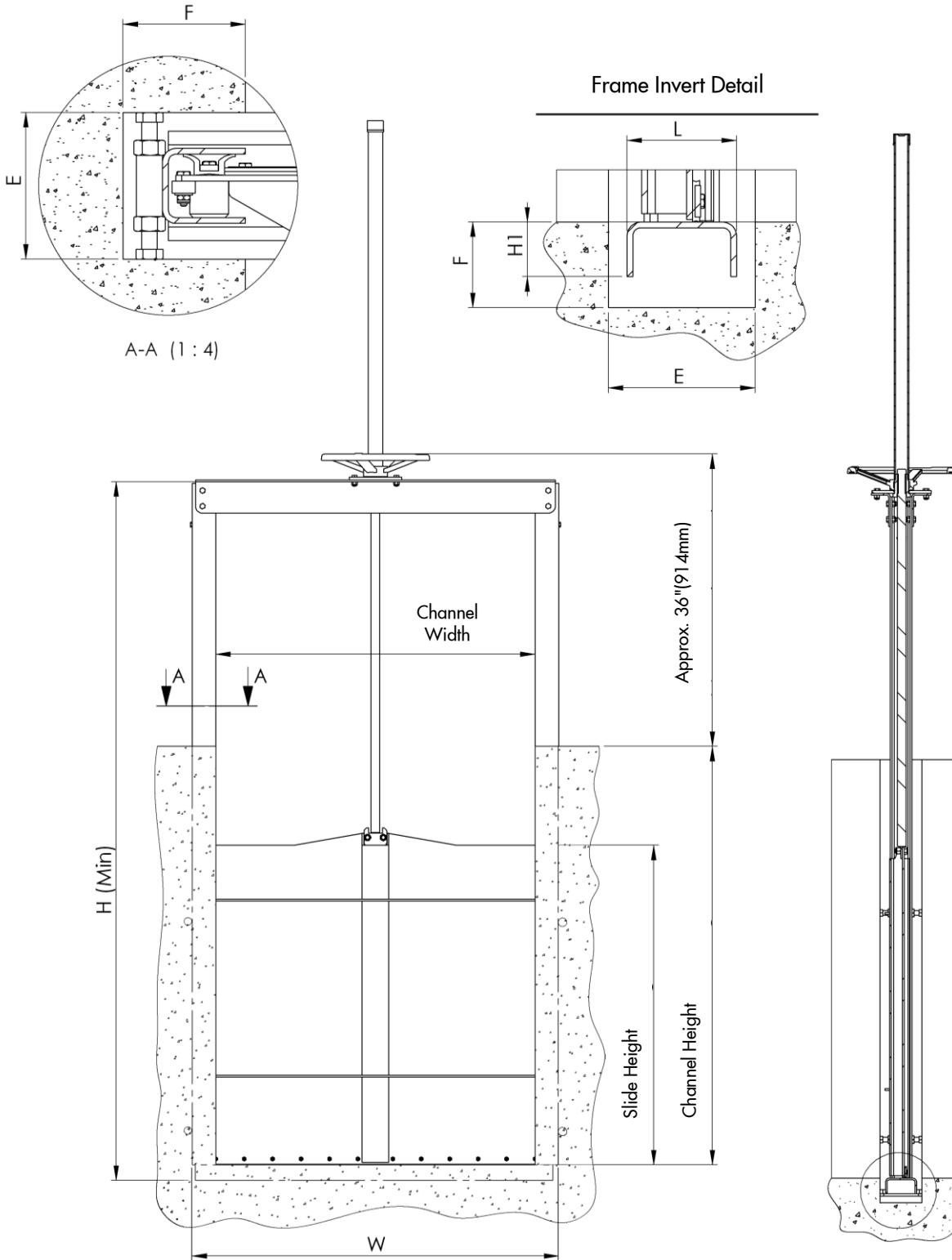
The ORBINOX CC Channel Gates need practically no maintenance. The stem shall be kept lubricated and seals shall be replaced in case of damage. The gate is closed by applying a clockwise rotation. Applying excessive force on the operator when closing the gate may cause damage to the stem.

MODEL

CC

CC-EC · BI-DIRECTIONAL · RISING STEM · DIMENSION

SIZES: 150 mm x 150 mm to 4500 mm x 4500 mm



MODEL**CC**
CC-EC · BI-DIRECTIONAL · RISING STEM · DIMENSION

SIZE (mm) Channel Width	SIZE (mm) Slide Height	W	H Min	L	H1	E x F
150	150	284	425	80	30	120 x 100
200	200	334	525	80	30	120 x 100
300	300	434	725	80	30	120 x 100
400	400	534	925	80	30	120 x 100
500	500	634	1125	80	30	120 x 100
600	600	736	1380	90	45	120 x 100
700	700	836	1580	90	45	120 x 100
800	800	936	1780	90	45	120 x 100
900	900	1036	1980	90	45	120 x 100
1000	1000	1136	2180	90	45	120 x 100
1100	1100	1236	2415	110	60	250 x 125
1200	1200	1336	2615	110	60	250 x 125
1300	1300	1436	2815	110	60	250 x 125
1500	1500	1636	3215	110	60	250 x 125
1600	1600	1774	3500	215	90	250 x 125
1800	1800	1974	3900	215	90	250 x 125
2000	2000	2174	4300	215	90	250 x 125
2500	2500	2696	5300	215	120	250 x 125
3000	3000	3196	6300	215	120	300 x 150
3500	3500	3696	7300	215	120	300 x 150

Note: For dimensions other than above, please contact an ORBINOX representative.

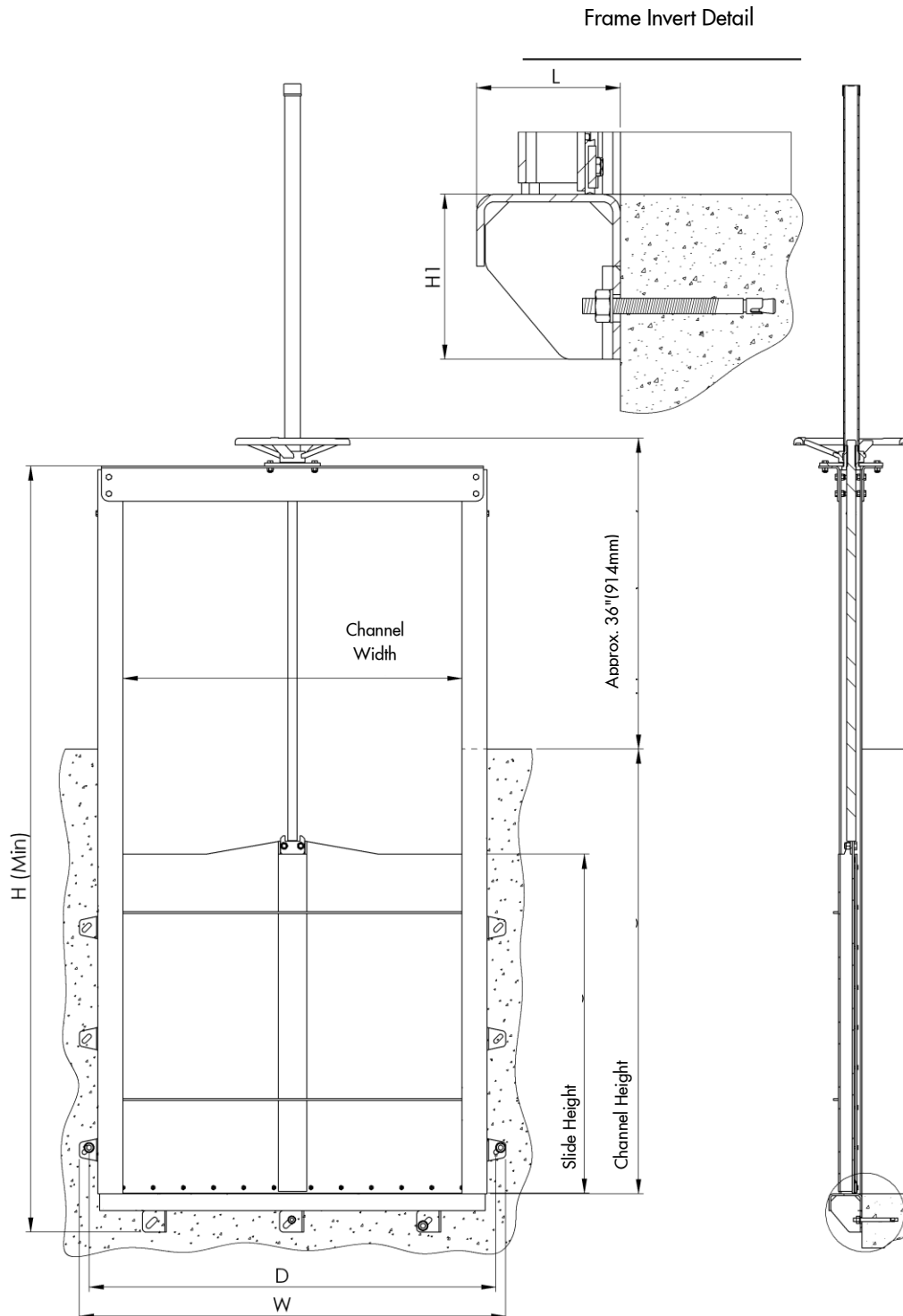
These dimensions are for information only. Do not use for installation or submittal purposes.

MODEL

CC

CC-WM · BI-DIRECTIONAL · RISING STEM · DIMENSION

SIZES: 150 mm x 150 mm to 4500 mm x 4500 mm



MODEL**CC****CC-WM · BI-DIRECTIONAL · RISING STEM · DIMENSION**

SIZE (mm) Channel Width	SIZE (mm) Slide Height	W	D	H Min	L	H1
150	150	384	344	425	80	80
200	200	434	394	525	80	80
300	300	534	494	725	80	80
400	400	634	594	925	80	80
500	500	734	694	1125	80	80
600	600	836	796	1380	90	95
700	700	936	896	1580	90	95
800	800	1036	996	1780	90	95
900	900	1136	1096	1980	90	95
1000	1000	1236	1196	2180	90	115
1100	1100	1356	1306	2415	110	115
1200	1200	1456	1406	2615	110	115
1300	1300	1556	1506	2815	110	115
1500	1500	1756	1706	3215	110	115
1600	1600	1804	1754	3500	215	125
1800	1800	2004	1954	3900	215	125
2000	2000	2204	2154	4300	215	125
2500	2500	2800	2750	5300	215	150
3000	3000	3300	3250	6300	215	150
3500	3500	3800	3750	7300	215	150

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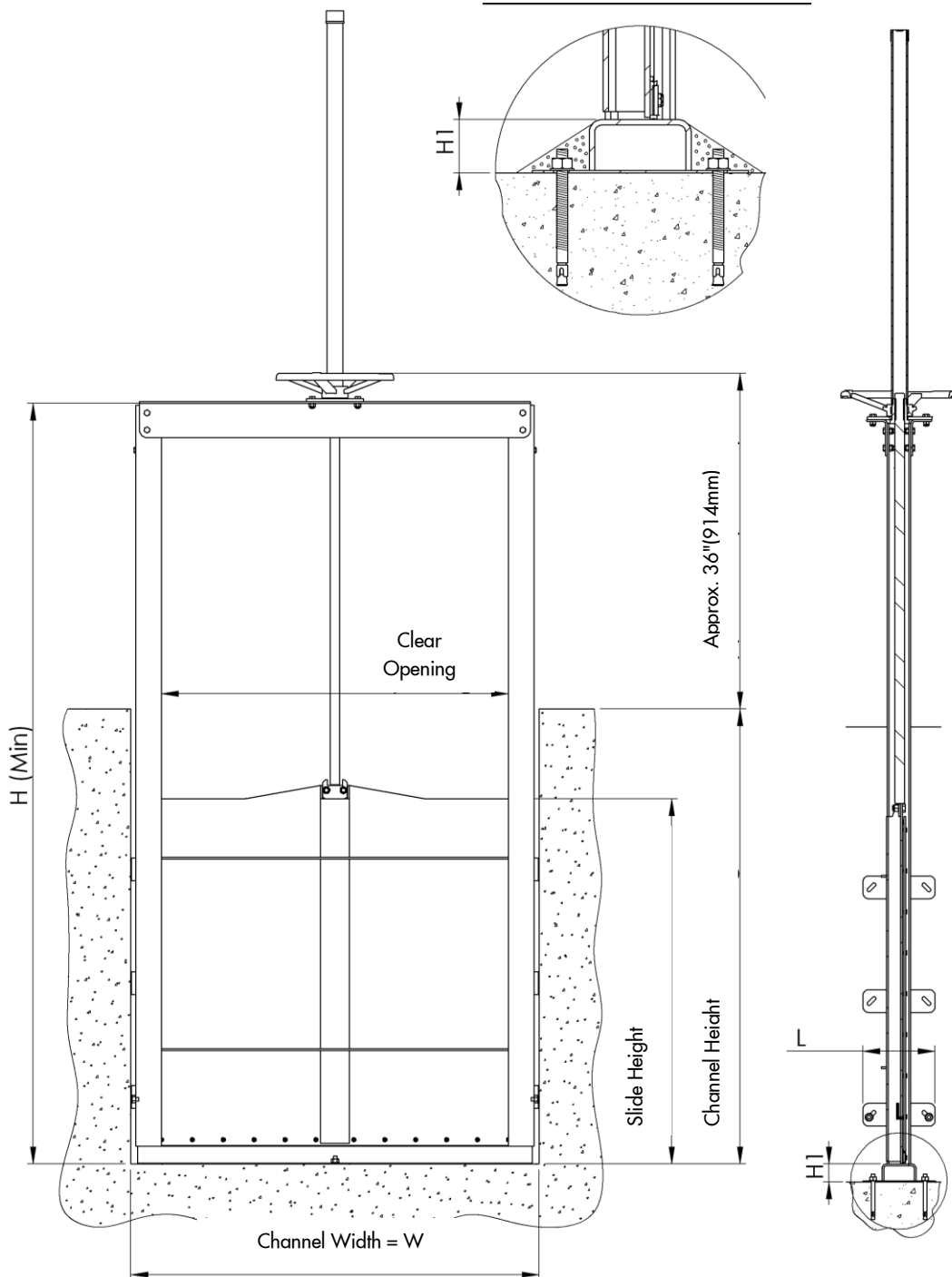
MODEL

CC

CC-FM · BI-DIRECTIONAL · RISING STEM · DIMENSION

SIZES: 150 mm x 150 mm to 4500 mm x 4500 mm

Frame Invert Detail



MODEL**CC**
CC-FM · BI-DIRECTIONAL · RISING STEM · DIMENSION

SIZE (mm) Channel Width	SIZE (mm) Slide Height	W	H Min	Clear Opening	L	H1
400	400	400	925	238	80	30
500	500	500	1125	338	80	30
600	600	600	1380	438	80	30
700	700	700	1580	538	80	30
800	800	800	1780	638	80	30
900	900	900	1980	738	90	45
1000	1000	1000	2180	938	90	45
1100	1100	1100	2415	1038	90	45
1200	1200	1200	2615	1138	90	45
1300	1300	1300	2815	1238	90	45
1500	1500	1500	3215	1438	110	60
1600	1600	1600	3500	1400	110	60
1800	1800	1800	3900	1600	110	60
2000	2000	2000	4300	1800	110	60
2500	2500	2500	5300	2250	215	90
3000	3000	3000	6300	2750	215	90
3500	3500	3500	7300	3250	215	90

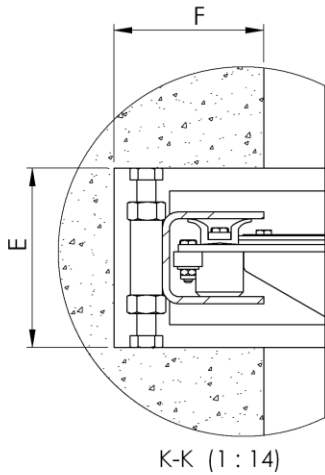
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MODEL

CC

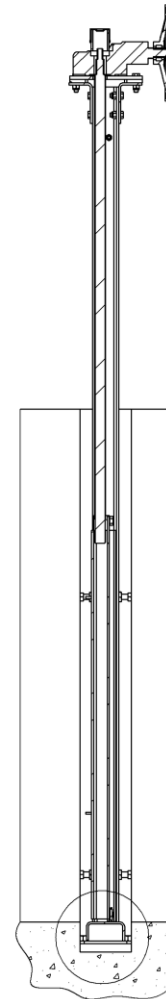
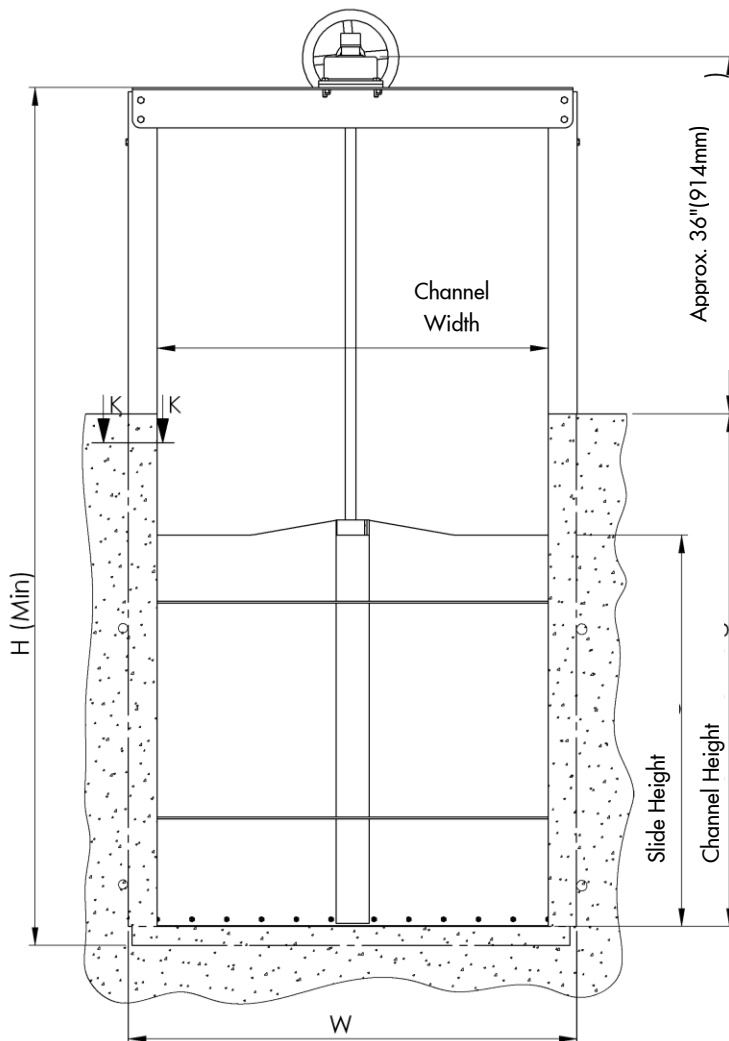
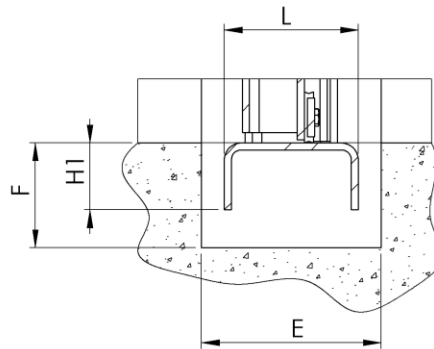
CC-EC · BI-DIRECTIONAL · NON RISING STEM · DIMENSION

SIZES: 150 mm x 150 mm to 4500 mm x 4500 mm



K-K (1 : 14)

Frame Invert Detail



MODEL**CC**
CC-EC · BI-DIRECTIONAL · NON RISING STEM · DIMENSION

SIZE (mm) Channel Width	SIZE (mm) Slide Height	W	H Min	L	H1	E x F
150	150	284	425	80	30	120 x 100
200	200	334	525	80	30	120 x 100
300	300	434	725	80	30	120 x 100
400	400	534	925	80	30	120 x 100
500	500	634	1125	80	30	120 x 100
600	600	736	1380	90	45	120 x 100
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800	800	936	1780	90	45	120 x 100
900	900	1036	1980	90	45	120 x 100
1000	1000	1136	2180	90	45	120 x 100
1100	1100	1236	2415	110	60	250 x 125
1200	1200	1336	2615	110	60	250 x 125
1300	1300	1436	2815	110	60	250 x 125
1500	1500	1636	3215	110	60	250 x 125
1600	1600	1774	3500	215	90	250 x 125
1800	1800	1974	3900	215	90	250 x 125
2000	2000	2174	4300	215	90	250 x 125
2500	2500	2696	5300	215	120	250 x 125
3000	3000	3196	6300	215	120	300 x 150
3500	3500	3696	7300	215	120	300 x 150

Note: For dimensions other than above, please contact an ORBINOX representative.
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CC CHANNEL GATE SELECTION FORM

Customer: _____ Tag No.: _____ Date: _____
 Order Number: _____ Qty.: _____

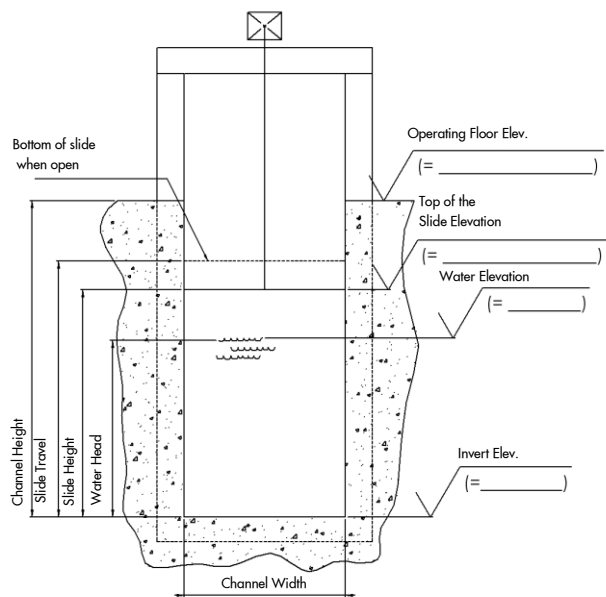
CHANNEL GATE DESIGN
(Size= Channel Width x Slide Height)

Units: mm inch

Channel Width: _____ Channel Height: _____
 Slide Height: _____ Slide Travel: _____

Seating Water Head: _____
 Unseating Water Head: _____

Non Rising Stem (NRS) Uni-Directional
 Rising Stem (RS) Bi-Directional



CHANNEL GATE MOUNTING

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

Frame Invert Mounting:

Embedded in Concrete
 Wall Mounted
 Face Mounted In Existing Channel

ACTUATORS

Handwheel
 Crank (w/ B.Gear and Sqr. Nut)
 Square Nut - (NRS Only)
 Bevel Gear
 Electric Motor
 Pneumatic Cylinder
 Hydraulic Cylinder

Position Indicator:
 (For RS Only)

Position Label
 Limit Switch
 Proximity Switch

MATERIALS

<input type="checkbox"/> Frame & Slide	<input type="checkbox"/> 304L SS	<input type="checkbox"/> 316L SS	Other: _____
<input type="checkbox"/> Stem	<input type="checkbox"/> 303 SS	<input type="checkbox"/> 316 SS	Other: _____
<input type="checkbox"/> Extension	<input type="checkbox"/> 304L SS	<input type="checkbox"/> 316L SS	Other: _____
<input type="checkbox"/> Seal	<input type="checkbox"/> EPDM		Other: _____
<input type="checkbox"/> Stem Cover	<input type="checkbox"/> Carbon Steel	<input type="checkbox"/> PVC	Other: _____

REMARKS

Name: _____ Signature: _____