MODEL **CC**

ORBINOX

CHANNEL GATE

The CC model is a slide gate designed for open channel installation. Sealing is on 3 sides, (both laterals and bottom). A perfect sealing is obtained without the need of pressing wedges, due to seal design. Therefore, this model can be used for modulating purposes, without any water coming out of the partially closed channel section. It is used mainly in water treatment, irrigation, hydraulic works and hydroelectric power plants.

Product according to AWWA 513-05, DIN 19569 and BS 7775 standards.

SIZES: From 200x200 to 2000x2000 (as standard). Larger sizes available on request.

CONSTRUCTION MATERIALS

Standard construction materials are:

1.- Frame:	Stainless Steel AISI 304, AISI 316 or Carbon Steel
2.- Gate:	Stainless Steel AISI 304, AISI 316 or Carbon Steel
3.- Seals:	EPDM
4.- Stem:	Stainless steel AISI 303 as standard. AISI 304/AISI 316 on request
5.- Sliders:	UHMWPE

In case the application requires special materials, other options as AISI 904L or DUPLEX, are available.

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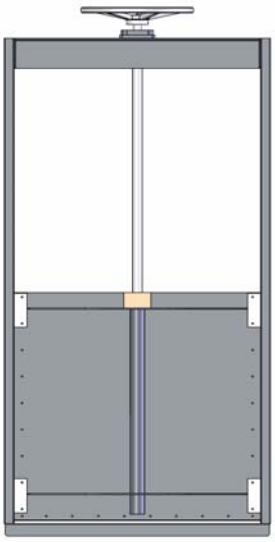
DESIGN FEATURES

- It is unidirectional as standard. Availability of custom-made designs for bidirectional aplications in any size.
- Modular design: It allows open frame and self-contained configurations.
- Option of rising and non-rising stem actuation.
- It is adaptable to lineal actuators as pneumatic and hydraulic cylinders.
- Standard mounting is embedded inside the concrete channel walls. A special design for wall mounting is available.
- Sliding pressure pads reduce the friction coeficient, minimize actuation thrust and extend seal life.
- Stems are in AISI 303 stainless steel. Threading is according to DIN 103 standard.



ACTUATORS

Channel gates are easily adaptable to non-rising stem, rising stem, and lineal actuators: pneumatic and hydraulic cylinders.

Manual actuators:
- Handwheel with rising stem
- Handwheel with non-rising stem
- Gear box with rising stem
- Gear box with non rising stem
- Others (square nut,…)

Automatic actuators:
- Electric actuator
- Pneumatic cylinder
- Hydraulic cylinder

Automatic actuators can be mounted directly on a self-contained frame in case an extension is not needed. When using extensions, actuators have to be mounted on headstocks or wall supports.

Extensions:
Tube extensions are used to allow operating the slide gate from a distance. Connections to the slide by means of square nuts or fixed couplings. If the lenght of the extension requires it, fixing to the wall is made by means of wall braquets with polyethylene guides.

Accesories:
There are various accesories available for the actuators: mechanical stops, actuator manual overrides, locking devices, solenoid valves, postioners, limit switches, proximity switches, etc.

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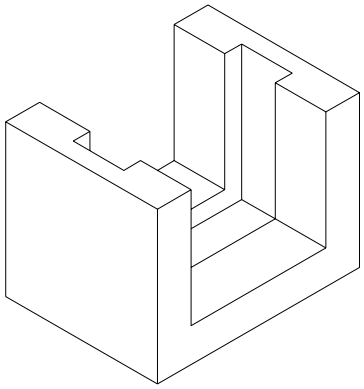
INSTALLATION INSTRUCTIONS

CC channel gates are designed to be fixed inside the concrete channel walls. There are no parts on the frame that come out from the inside of the walls. Therefore, dirt accumulation and head loss is minimized.

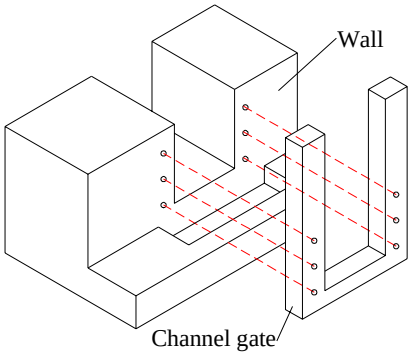
1. Installation on the channel

- Have the grooves ready on the channel floor and side walls. Groove size is shown on the drawings.
- Place the channel gate on these grooves with the seals on the upstream side.
- Centre the frame in the channel, levelling it on both horizontal and vertical senses. Level the bottom beam of the frame with the channel floor.
- Fix the slide gate on this position to avoid movement of frame while filling the groove with mortar. Small channel gates are usually fixed by means of simple wooden wedges. If the size or weight of the equipment does not allow to be fixed in such way, the frame will have special pieces to be fixed to the wall with anchor bolts or similar.
- Fill the grooves with expansive mortar as SIKAGROUT or similar.



2. Wall mounting

- Open the gate.
- Place the frame against the wall making sure the orifices on both the wall and the frame are perfectly aligned.
- Drill the concrete using the holes on the body as guiding.
- Introduce the anchor bolts with a hammer.
- In order to avoid leakage between frame and wall, separate the frame from the wall and fill the void between them with SIKAFLEX 11 FC or similar. As an alternative, sticking soft rubber bands can be used with an approximate size of 30 mm wide by 15 mm deep, placed on the frame around the orifice.
- Place the frame back on the wall and tighten the nuts of the anchor bolts being very careful not to bend it.



WARNING!!

If the wall is not flat, tightening the nuts fully will bend the frame. Use a flat rule while bolting to control the flatness of the frame. As soon as it starts to bend, stop tightening. Fill the void between wall and metal with expansive mortar, allow necessary time to dry and retighten all nuts. Malfunctioning of a wrongly mounted slide gate is not responsibility of ORBINOX.

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MAINTENANCE INSTRUCTIONS

1. Stem lubrication

Keep the stems well greased to avoid premature wear in bronze nuts.

2. Seal replacement

The seals are fixed with stainless steel plates, screws and nuts. After replacing the seals, all the other components can be reused.

OPERATING INSTRUCTIONS

1. Opening and closing

Turn the stem clockwise to close the gate. Once closed position is reached, keep turning the stem only a little more, just to make sure the bottom seal is well pressed.

WARNING!!
Forcing the stem unnecessarily does not improve the sealing and can cause irreparable damage on stems, nuts and gates.

Turn the stem counter clockwise to open the gate. The gate will stop against the upper beam once the penstock is fully open.

The penstock operation system is self-locking, so that the gate keeps the open, close, or intermediate positions.

2. Electric actuators (regulation)

Electric actuators for ORBINOX slide gates should have the following adjustments:

Opening:
Signals and motor stop by limit switches.
Adjust the torque regulation in medium-high values.

Closing:
Signal and motor stop by limit switches or torque switches.
Adjust the torque regulation in medium-low values. (The lowest possible, in order to achieve a good sealing without forcing the stem unnecessarily).

WARNING!!
- Electric motors without limit and torque switches are not applicable to ORBINOX slide gates
- Electric motors have internal anti-condensation electric resistances. Avoid mounting of motors outside if they are not wired to the electric line. Internal humidity would damage electric components.
- For motor maintenance, see manufacturer manual.

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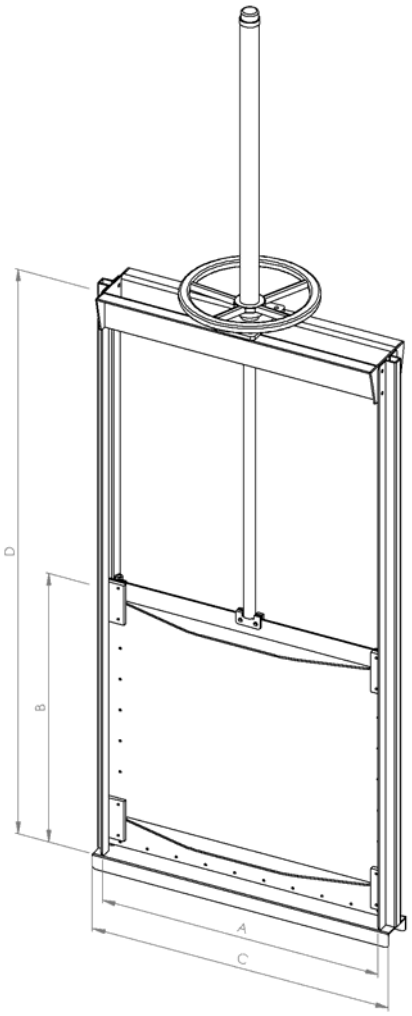
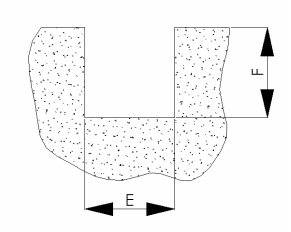
RISING STEM HANDWHEEL ACTUATOR





ITEM	A	B	C	D	E X F
	200	200	274	445	170x70
	300	300	374	645	170x70
	400	400	474	845	170x70
	500	500	574	1045	170x70
	600	600	674	1245	170x70
	700	700	774	1525	180x90
	800	800	874	1725	180x90
	900	900	974	1925	180x90
	1000	1000	1074	2125	180x90
	1100	1100	1174	2325	180x90
	1200	1200	1274	2525	180x90

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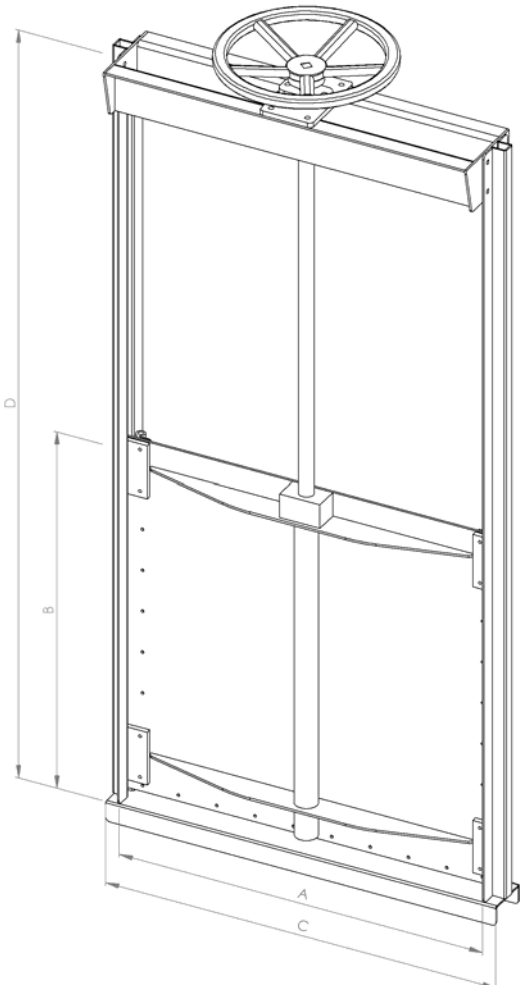
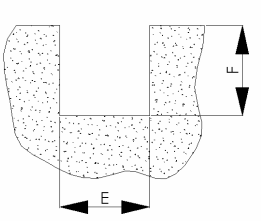
NON RISING STEM HANDWHEEL ACTUATOR





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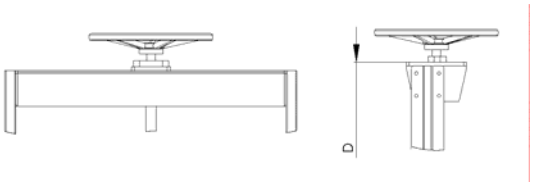
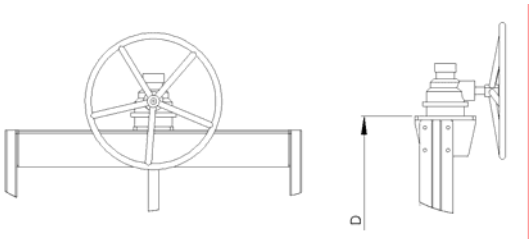
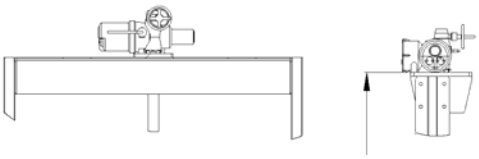
HANDWHEEL ON FRAME



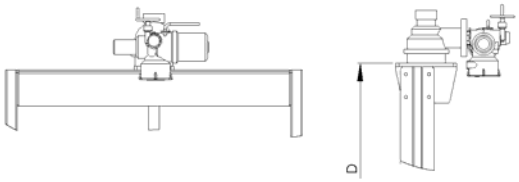
BEVEL GEAR ON FRAME



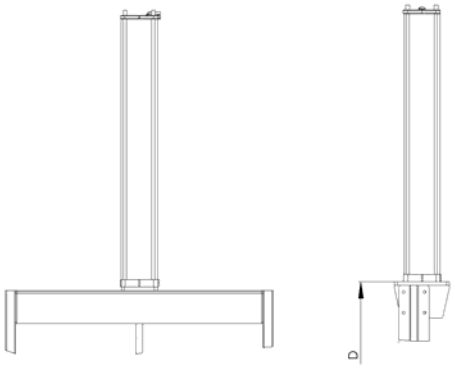
MOTOR ON FRAME



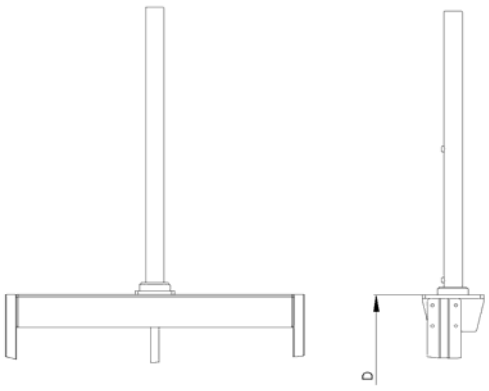
BEVEL GEAR AND MOTOR ON FRAME



PNEUMATIC CYLINDER ON FRAME



HYDRAULIC CYLINDER ON FRAME



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Channel slide gates. Sealing on 3 sides

Fabricated slide gates can be adapted for any application. Please provide the information requested on this sheet.

1. Nº pieces: .....

2. Size of channel:
   Width (mm): .....
   Height (mm): .....

3. Head oh water:
   On-seat: .....
   Of-seat: .....

4. Gate height: .....

5. Operating level: .....

6. Fabrication material:
   - ☐ AISI 304
   - ☐ AISI 316
   - ☐ Carbon Steel
   - ☐ Others: .....

7. Actuator:
   - ☐ Hand wheel
   - ☐ Bevel gear
   - ☐ Electric
   - ☐ Hydraulic
   - ☐ Pneumatic
   - ☐ Others: .....

7. Type of elevation:
   - ☐ Rising stem
   - ☐ Non rising stem

8. Wall fixing:
   - ☐ Embedded in concrete
   - ☐ Wall fixing with anchor bolts