MODEL CC

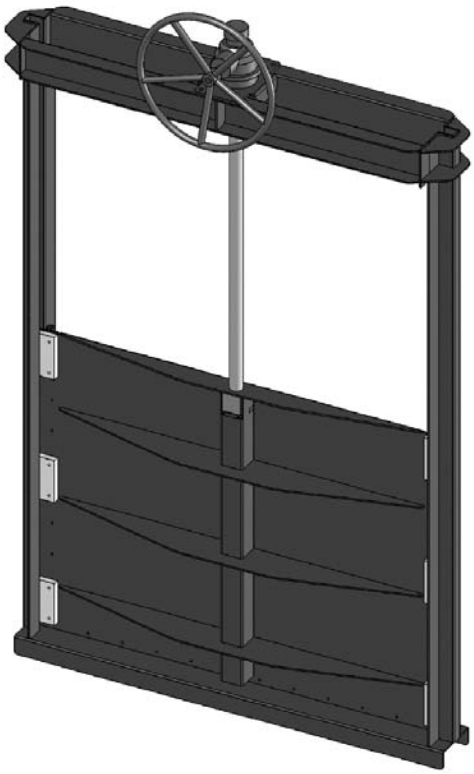
ORBINOX
VALVE SOLUTIONS IN MORE THAN 70 COUNTRIES

CHANNEL GATE

The CC model is a rectangular penstock designed for open channel installation. A resilient sealing feature is incorporated on 3 sides, (both laterals and bottom), resulting in a perfect seal without the need of pressing wedges. This feature allows the design to be utilised for applications requiring accurate regulation of the flow, where the positive sealing achieved reduces the potential for leakage, even from partially closed channel section, ensuring optimum performance.

The CC series is used mainly in water treatment, irrigation, hydraulic works and hydroelectric power plants.
This product is manufactured in accordance with the following standards: AWWA 513-05, DIN 19569 and BS 7775.

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



CONSTRUCTION MATERIALS

Standard materials of construction:

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

Alternative alloy materials , like AISI 904L or DUPLEX stainless steel are available if required.

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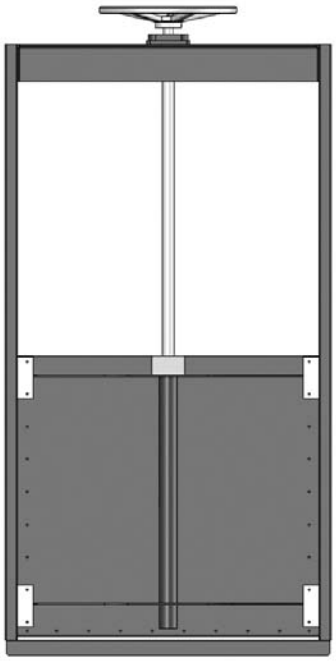
DESIGN FEATURES

- The standard design is unidirectional. On request, we have the capability to provide a custom design service for bidirectional aplications in any size.
- Modular design allows for both open frame or self-contained configurations.
- Options of rising and non-rising stem actuation.
- Suitable for linear actuation with either pneumatic or hydraulic cylinders.
- CC series penstocks are fixed into preformed rebates in the sides and inverts of channels by means of a sand/cement non shrink grout.
- A special design for wall mounting is available.
- UHMWPE sliding pressure pads reduce the friction coeficient during operation, minimizing actuation thrust and extending the seal life.
- Stems in AISI 303 stainless steel, threaded in accordance DIN 103 standard.



ACTUATORS

The CC series are easily adaptable to non-rising stem, rising stem, and lineal actuators: pneumatic and hydraulic cylinders.

Manual operators:

- Handwheel with rising stem
- Handwheel with non-rising stem
- Gear box with rising stem
- Gear box with non rising stem
- Others (cap top...)

Actuators:

- Electric actuator
- Pneumatic cylinder
- Hydraulic cylinder

Slide gates with a self-contained frame design accommodate a direct interface with various actuators. However, when using extensions, the actuator must be mounted securely onto a dedicated floor pillar or appropriate wall bracket supports.

Extensions:
Tube extensions are used to allow operation of the gate remotely. Connections to the gate is by means of a square nut or fixed coupling. Should the lenght of the extension requires it, dedicated polyethylene guides will be provided and must be utilised with the appropriate wall brackets and fixings.

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

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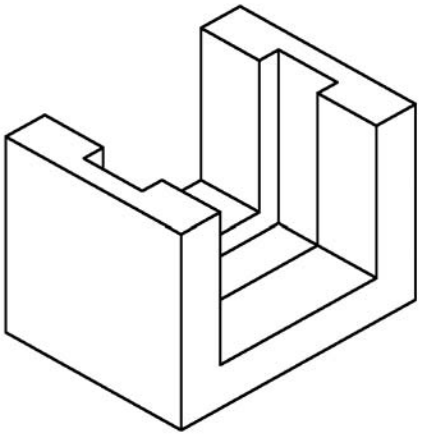
INSTALLATION INSTRUCTIONS

CC series penstocks are designed to be mounted in a channel. There are no protrusions from the wall, reducing the accumulation of debris, thus minimising any potential resulting head loss.

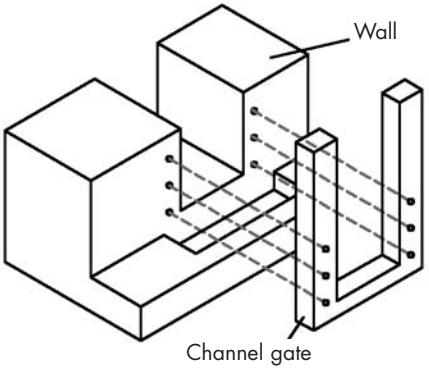
1. Installation in a channel

- The penstock is fixed into the preformed rebates in the sides and inverts of channels, dimensions as illustratated on the drawings provided.
- Place the penstock into the rebate with the seals on the upstream side.
- Centre the frame in the channel, levelling it on both horizontal and vertical planes. Level the bottom beam of the frame with the channel floor.
- Fix the frame to avoid movement while filling the rebate with mortar. Small channel gates are usually fixed by means of simple wooden wedges. If the size or weight of the equipment does not facilitate this method, the frame will be provided with additional mountings to allow fixing to the wall with anchor bolts or similar.
- Fill the rebates with expansive mortar, SIKAGROUT or suitable alternative.



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 frame as a guide.
- 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, soft adhesive rubber tape can be used (20 mm wide by 10 mm deep), placed on the back of the frame around the orifice.
- Place the frame back on the wall and tighten the fasteners of the anchor bolts. Be very careful not bending the frame.



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MAINTENANCE INSTRUCTIONS

1. Stem lubrication

Keep the stem well greased to avoid premature wear of the bronze nut.

2. Seal replacement

The seals are retained with stainless steel plates and fasteners. After replacing the seals, the fixing components can be reused.

OPERATING INSTRUCTIONS

1. Opening and closing

A clockwise rotation closes the gate. Once the closed position is reached, apply additional 1/4 turn. This will ensure that the bottom seal is properly pressed.

⚠ **WARNING!!**
Forcing the spindle unnecessarily does not improve the sealing performance and may cause irreparable damage on stems, nuts, gates and frames.

A counter clockwise rotation opens the gate. The gate will stop against the upper beam once the slide gate is fully open.

The slide gate operating system is self-locking by design, thus the gate will remain in the last operated position: open, closed or intermediate.

2. Electric actuators

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

Opening:
Position indicator and motor cut-off by limit switch.
Adjust the torque switch setting at the values specified by ORBINOX.

Closing:
Position indicator and motor cut-off by limit switch or torque switch.
Adjust the torque switch setting at the values specified by ORBINOX.

⚠ **WARNING!!**
- Electric motors without limit and torque switches are not applicable to ORBINOX slide gates.
- Electric motors have internal anti-condensation electric heaters. Avoid mounting the actuators outside if they are not connected to the electric supply. Internal humidity could damage the electric/electronic components.
- For motor maintenance, refer to the dedicated manufacturers IOM manual.

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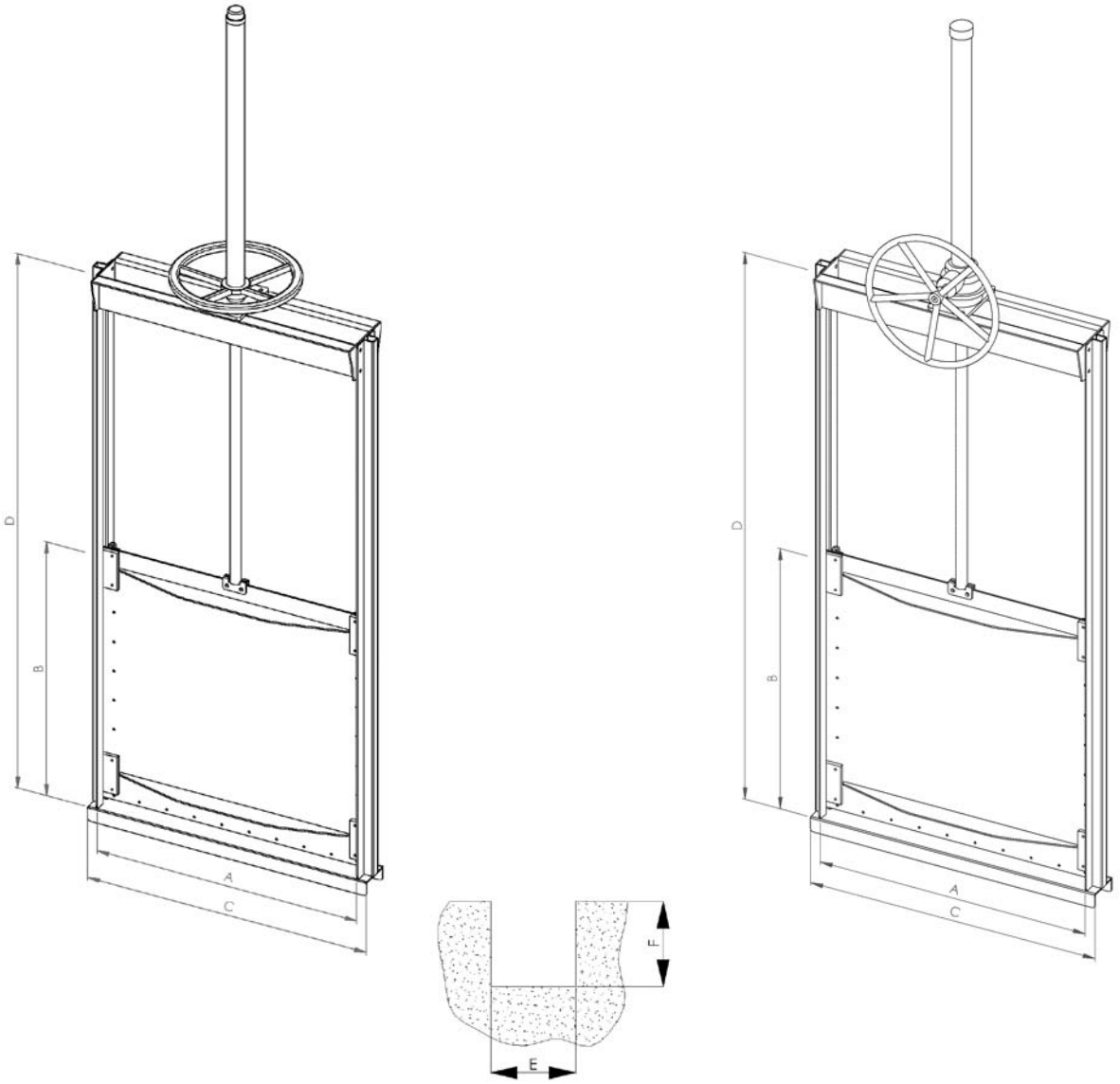
RISING STEM HANDWHEEL ACTUATOR



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

A	B	C	D	E X F
1100	1100	1174	2325	180x90
1200	1200	1274	2525	180x90
1300	1300	1408	2650	250x125
1400	1400	1508	2850	250x125
1500	1500	1608	3050	250x125
1600	1600	1708	3250	250x125
1700	1700	1808	3450	250x125
1800	1800	1908	3650	250x125
1900	1900	2008	3850	250x125
2000	2000	2108	4050	250x125

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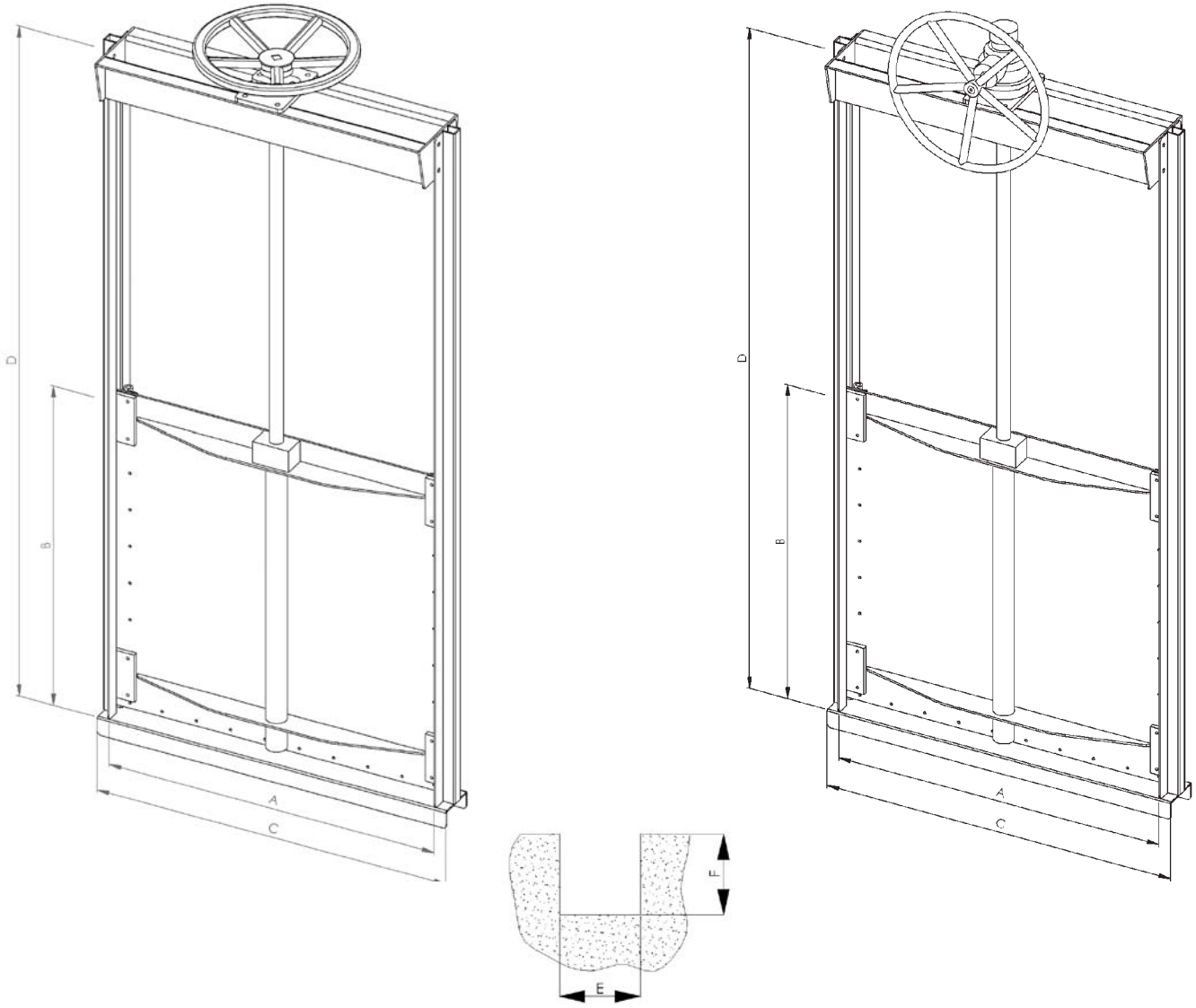
NON RISING STEM HANDWHEEL ACTUATOR



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

A	B	C	D	E X F
1100	1100	1174	2325	180x90
1200	1200	1274	2525	180x90
1300	1300	1408	2650	250x125
1400	1400	1508	2850	250x125
1500	1500	1608	3050	250x125
1600	1600	1708	3250	250x125
1700	1700	1808	3450	250x125
1800	1800	1908	3650	250x125
1900	1900	2008	3850	250x125
2000	2000	2108	4050	250x125

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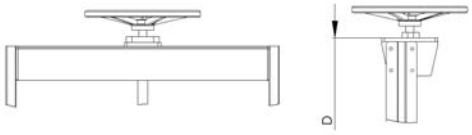
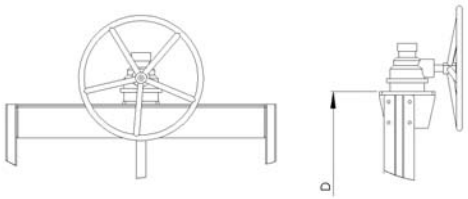
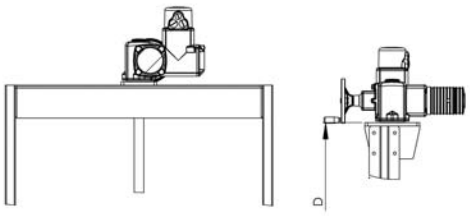
HANDWHEEL ON FRAME



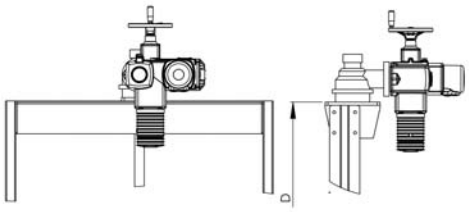
BEVEL GEAR ON FRAME



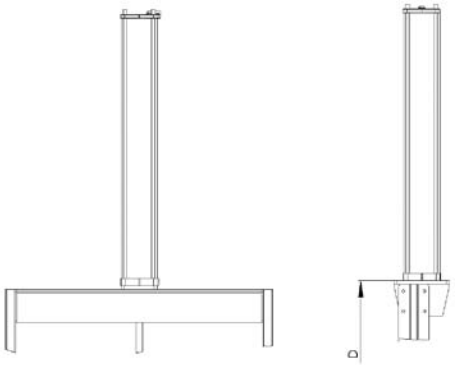
MOTOR ON FRAME



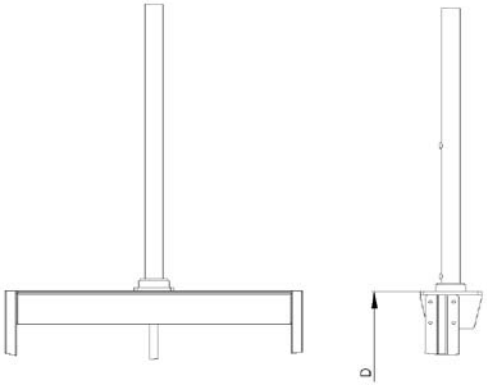
BEVEL GEAR AND MOTOR ON FRAME



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. Number of pieces: _____

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

3. Head oh water:
   On-seat: _____
   Off-seat: _____

4. Gate height: _____

5. Operating level: _____

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

6. Actuator:
   ☐ Hand wheel
   ☐ Bevel geal
   ☐ Electric
   ☐ Hydraulic
   ☐ Pneumatic
   ☐ Others: _____

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

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