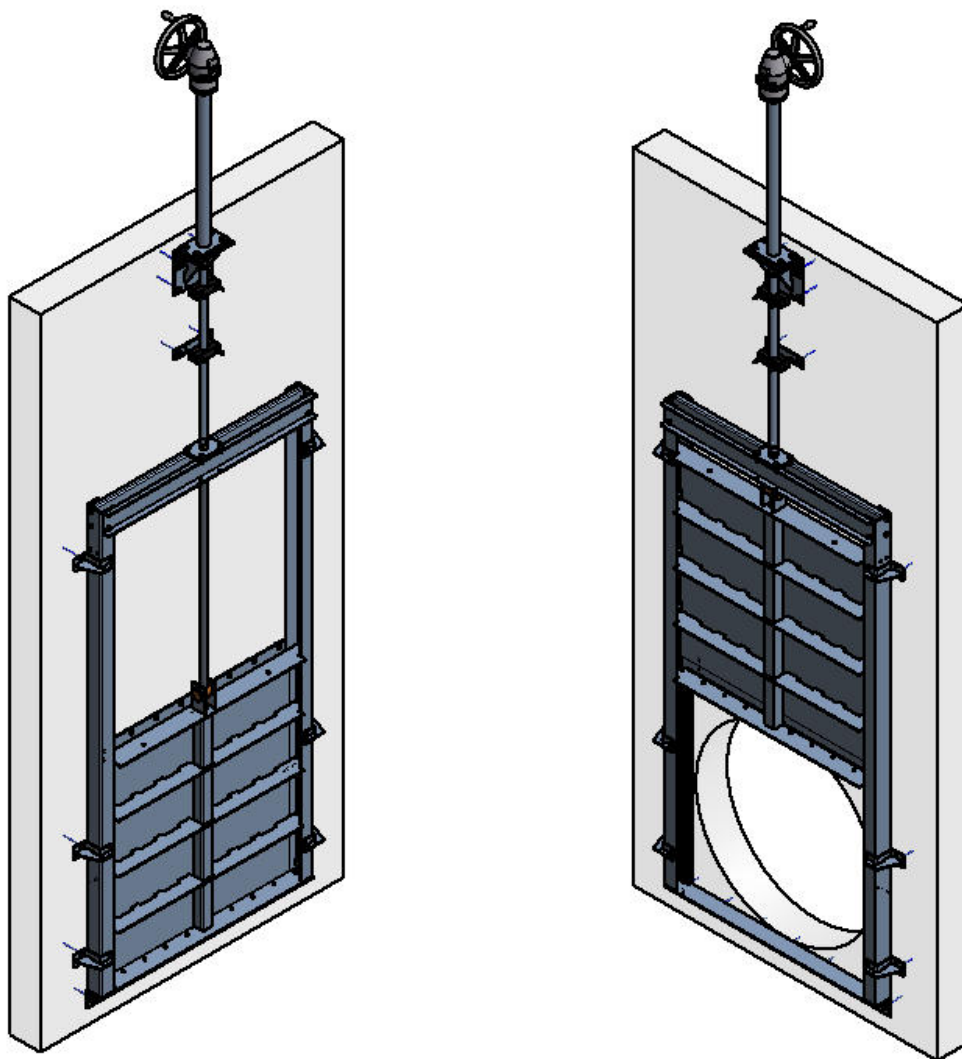


Product Catalogue

Stainless Steel Penstocks

Series SC-FLEX



Contents

| | | |
|----------|--|-----------|
| 1 | General..... | 4 |
| 1.1 | Design..... | 4 |
| 1.2 | Leakage | 4 |
| 1.3 | Definition of Terms | 5 |
| 1.4 | Sizes | 6 |
| 1.5 | On- / Off-Seating water head..... | 7 |
| 1.6 | Seal and Guide Design | 8 |
| 1.7 | Frame Bracket Selection | 8 |
| 2 | Materials | 11 |
| 3 | Frame Mounting Types | 12 |
| 3.1 | General | 12 |
| 3.2 | Invert Frame..... | 12 |
| 3.3 | Side Frame | 12 |
| 3.4 | Soffit Frame | 13 |
| 3.5 | Yoke..... | 14 |
| 3.5.1 | Design for DN 150 to DN 500..... | 14 |
| 3.5.2 | Design for DN 600 to DN 1200..... | 14 |
| 4 | Operation Types..... | 15 |
| 4.1 | Manual Operation..... | 15 |
| 4.1.1 | Cap Top | 15 |
| 4.1.2 | Handwheel | 15 |
| 4.1.3 | Handwheel d = 315mm with Bevel Gearbox GK 10.2 or GK 14.2..... | 15 |
| 4.2 | Electric Multi-turn Actuator | 15 |
| 4.3 | Cylinder Pistons | 16 |
| 4.3.1 | Pneumatic Actuated | 16 |
| 4.3.2 | Hydraulic Actuated | 16 |
| 4.4 | Standard Operation Specifications | 16 |
| 4.4.1 | Manual Operation with Handwheel..... | 17 |
| 4.4.2 | Electric Actuators | 18 |
| 5 | Accessories..... | 19 |
| 5.1 | Pedestal..... | 19 |
| 5.1.1 | Floor Mounted – F10..... | 19 |

| | | |
|----------|--|-----------|
| 5.1.2 | Wall Mounted – T20-F10..... | 19 |
| 5.2 | Brackets..... | 19 |
| 5.2.1 | Floor Bracket..... | 19 |
| 5.2.2 | Wall Bracket..... | 19 |
| 5.2.3 | Spindle Guide Bracket D32..... | 19 |
| 5.2.4 | Frame Bracket..... | 19 |
| 5.2.5 | Channel Side Wall Bracket GW..... | 20 |
| 5.3 | Spindle / Spindle Extension and Spindle Nut..... | 20 |
| 5.3.1 | Spindle Nut Rg 7 - 40..... | 20 |
| 5.3.2 | Spindle Nut Rg 7 - 60..... | 20 |
| 5.4 | Mounting Conditions / Materials..... | 20 |
| 5.4.1 | General Information..... | 20 |
| 5.4.2 | Mounting Surface..... | 20 |
| 5.4.3 | Evenness / Tolerances..... | 21 |
| 5.4.4 | Anchorage..... | 21 |
| 5.4.5 | Sealing to Concrete Surface..... | 22 |
| 6 | Model Types..... | 22 |
| 6.1 | General..... | 22 |
| 6.2 | Sizes for RPS – FX M1-WM-Wb-OF/ON: Flex Penstock 4-sided sealed, self contained with non-rising Spindle, wall mounted..... | 23 |
| 6.3 | Sizes for RSG – FX M2-CS-F: Flex Channel Penstock 3-sided sealed, self contained with rising Spindle, channel side wall mounted..... | 24 |
| 6.4 | Sizes for RSG – FX M2-CR-R: Flex Channel Penstock 3-sided sealed, self contained with rising Spindle, in rebate..... | 25 |
| 6.5 | Sizes for RPS – FX M3-WM-Wb-OF/ON: Flex Penstock 4-sided sealed, open with non-rising Spindle, wall mounted..... | 26 |
| 6.6 | Sizes for RPS – FX M4-WM-Wb-OF/ON: Flex Penstock 4-sided sealed, open with rising Spindle, wall mounted..... | 27 |
| 6.7 | Sizes for RWG – FX M1-WM-Wb-OF/ON: Flex Weir Penstock 3-sided sealed, self contained with non-rising Spindle, wall mounted..... | 28 |

1 General

1.1 Design

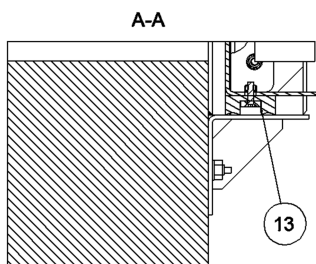
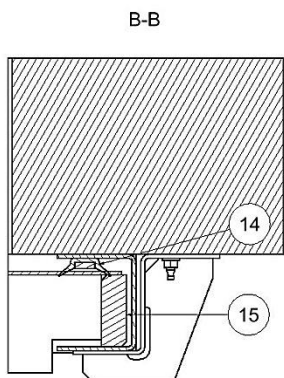
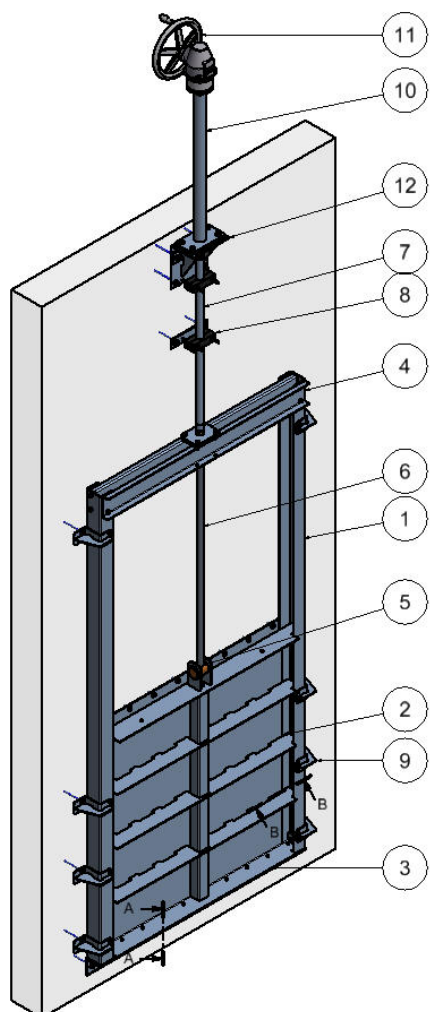
The IBS FLEX series for the four-sided sealed penstock (RPS), the three-sided sealed channel penstock (RSG) and the three-sided sealed weir penstock (RWG) are designed as modular constructions. This modular design permits the adaptation of the FLEX series to numerous installation situations occurring in everyday construction work. At the same time, the use of standardised interchangeable components ensures the shortest possible production times, maximum process reliability and consistently high quality.

Due to innovative production methods and modern machine technology, precise components are manufactured according to the drawings. The interaction of guides, axis alignments, sealing surfaces and load-bearing components is ensured through automated, routine procedural processes. Most of the quality criteria such as geometry, fit accuracy, ease of movement, stability etc. are therefore consistently fulfilled within narrow tolerance limits.

1.2 Leakage

Our penstocks meet internationally recognized standards including BS 7775, AWWA and DIN 19569.

1.3 Definition of Terms



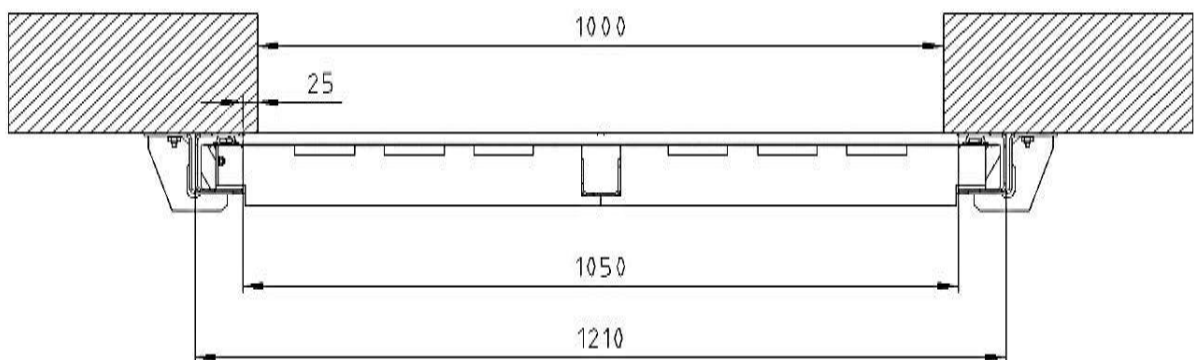
- 1. Side Frame
- 2. Door
- 3. Invert Frame
- 4. Yoke
- 5. Stem Nut
- 6. Spindle
- 7. Spindle Extension
- 8. Spindle Guide Bracket
- 9. Frame Bracket
- 10. Pedestal
- 11. Actuator (Electric, Handwheel, Cap Top)
- 12. Wall Bracket
- 13. Invert Seal
- 14. Double Lip Seal
- 15. Door Guide

1.4 Sizes

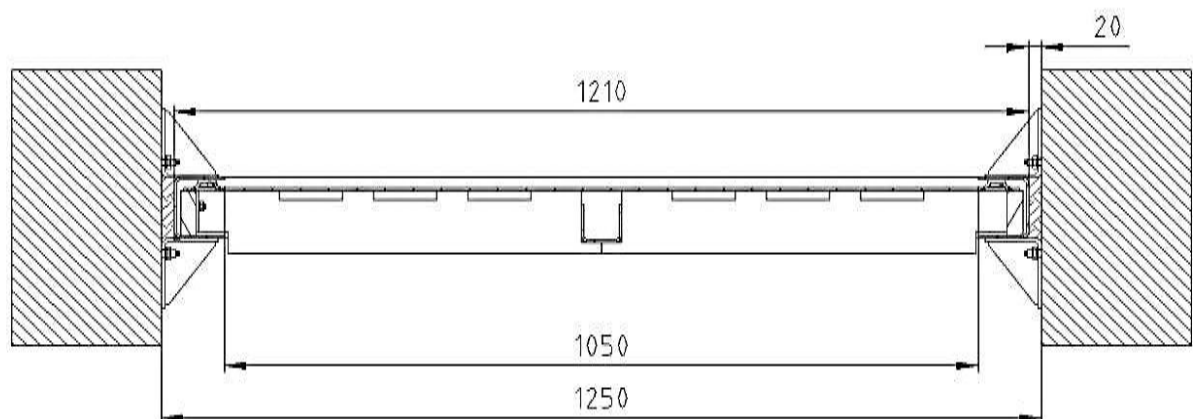
The designs presented in this catalogue span channel widths from 200mm to 1,200 mm with varying heights. Both square and circular cross-sections are uniformly designated as DN. The aperture encompassed by a DN side frame always has a square geometry. Rectangular cross-sections are designated as RQ. The standard sizes are graded from DN 150 to DN 400 in 50mm increments. From DN 400 to DN 1200, the increment pattern is 100mm.

For example, a DN 1000 design has a clear frame aperture of 1050mm. With a planned opening width of 1000mm, 25mm tolerance per side would be available for a wall-mounted installation situation. The outer frame width of a DN 1000 design has a total dimension (without frame fixing bracket), of 1210mm. This door design could therefore be installed into an existing channel with a width of, for example, 1,250mm side wall-mounted (=without rebate). For channel installation into a rebate, this would fit into a channel width of 1050mm.

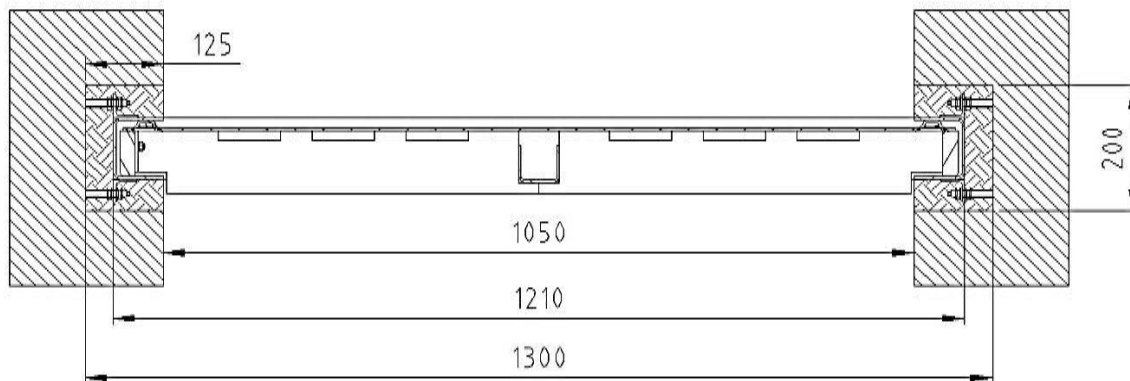
DN 1000 Wall Mounted - Opening Width 1000mm



DN 1000 Channel Side Wall Mounted - Channel Width 1.250mm



DN 1000 in Rebate - Channel Width 1050mm

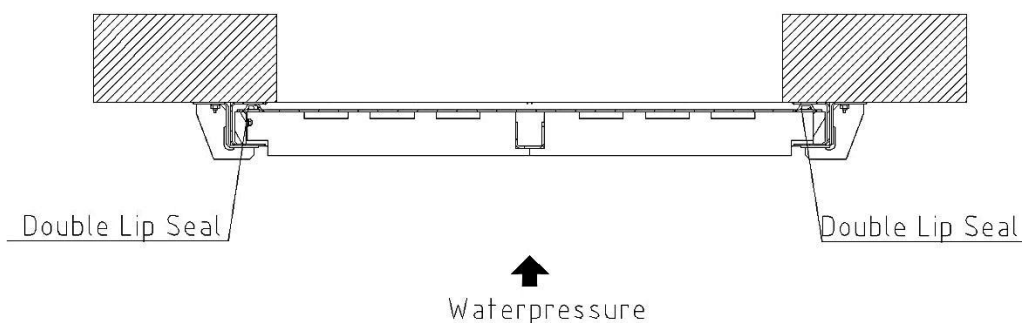


1.5 On- / Off-Seating water head

The term 'on-seating' means that the direction of water acts to press the door onto the double lip seal, which is mechanically fixed within the side frame. In contrast, under an 'off-seating' head, the direction of water acts to try to press the door towards the side frame flanges located on the opposite side and thus away from the double lip seal.

ON-Seating

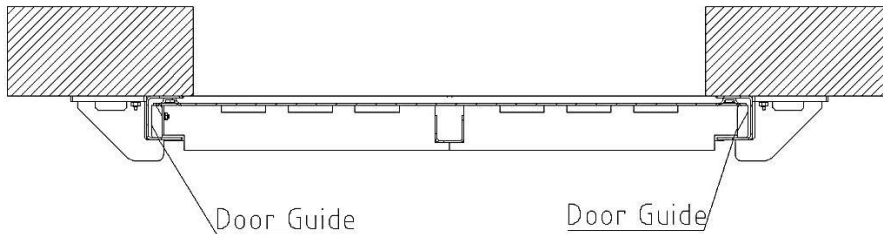
Direction of Waterpressure: On-Seating



OFF-Seating

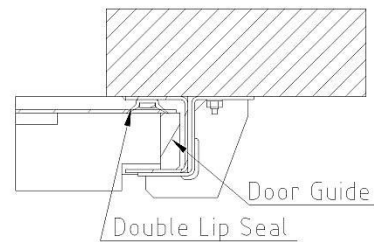
Direction of Waterpressure: Off-Seating

Waterpressure



1.6 Seal and Guide Design

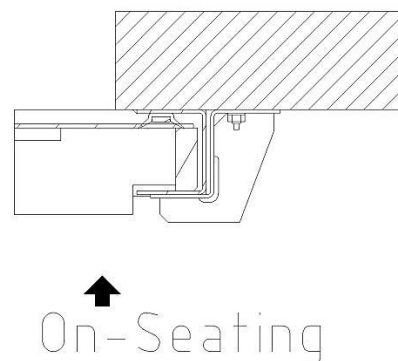
The double lip seals (fixed within the side frame) provide sealing under water pressure from either direction. The door guide attached to the door ensures continuous pressure in any door position along the complete length of the seals. This part of the penstock design remains constant regardless of whether they are subjected to on or off-seating heads, i.e. the sealing and sliding technology always remains the same.



Both the sealing and guide technology for the penstock door always meet the higher requirements demanded for bi-directional sealing, i.e. there is no reduced design which is effective only for sealing in one direction or which only seals for locking purposes at the end of door travel (e.g. wedge seal). This reduces the number of design variants and enables the use of an economically viable modular principle.

1.7 Frame Bracket Selection

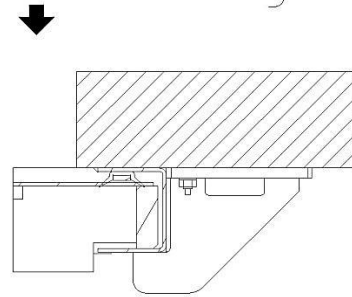
The differentiation of the water head direction as on or off-seating is important in the wall-mounted installation situation for the selection of frame brackets including the anchor technology. With wall-mounted penstock designs subject to on-seating loads, the overall design (door and frame) are pressed against the wall contact surface. Frame brackets used for such a situation are merely meant to hold the penstock frame in position. No anchoring forces are generated that would push the penstock away from the wall.



In the case of wall-mounted penstocks subject to off-seating loads, the water head wants to push the penstock away from the wall. These forces must be reliably dissipated into the wall by the side frame brackets and associated anchors.

For a wall-mounted installation, the following frame bracket types have been defined (based on a minimum concrete quality of C25/30):

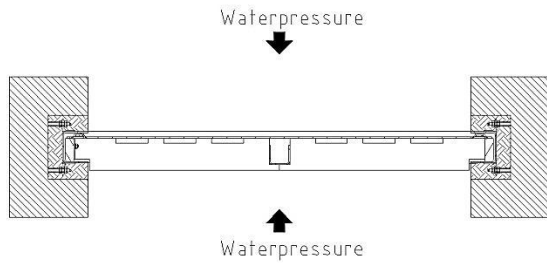
Off-Seating



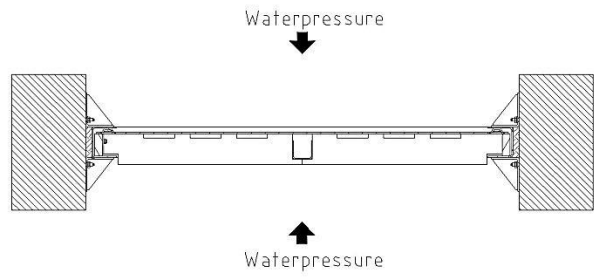
| DN | ON-Seating | OFF-Seating 6 m Water Head |
|-------------|-----------------|-------------------------------|
| 150 x 150 | 2 x 1 pc. RK T2 | 2 x 1 pc. RK T2 |
| 200 x 200 | 2 x 1 pc. RK T2 | 2 x 1 pc. RK T2 |
| 250 x 250 | 2 x 1 pc. RK T2 | 2 x 1 pc. RK T2 |
| 300 x 300 | 2 x 1 pc. RK T2 | 2 x 1 pc. RK T9 |
| 350 x 350 | 2 x 1 pc. RK T2 | 2 x 1 pc. RK T9 |
| 400 x 400 | 2 x 1 pc. RK T2 | 2 x 1 pc. RK T9 |
| 500 x 500 | 2 x 1 pc. RK T2 | 2 x 1 pc. RK T9 |
| 600 x 600 | 2 x 1 pc. RK T2 | 2 x 2 pc. RK T9 |
| 700 x 700 | 2 x 1 pc. RK T2 | 2 x 2 pc. RK T9 |
| 800 x 800 | 2 x 2 pc. RK T2 | 2 x 2 pc. RK T12 |
| 900 x 900 | 2 x 2 pc. RK T2 | 2 x 2 pc. RK T12 |
| 1000 x 1000 | 2 x 2 pc. RK T2 | 2 x 3 pc. RK T12 |
| 1100 x 1100 | 2 x 2 pc. RK T2 | 2 x 3 pc. RK T12 |
| 1200 x 1200 | 2 x 2 pc. RK T2 | 2 x 3 pc. RK T12 |

For installations in rebates or on to a channel side wall, there are no differences in the results for the selection of an anchorage with regard to on or off-seating loads.

Mounting Situation **in Rebate**



Mounting Situation **Channel Side Wall**



2 Materials

The following stainless steel materials can be selected as standard materials for component production:

- Material number 1.4301(304)
- Material number 1.4404 (316)

In the following table, all the materials used in the components are listed:

| Component | Materials |
|--|------------------------------------|
| Frame / Door / Yoke | 1.4301 / 1.4404 |
| Spindle | 1.4305 / 1.4404 |
| Spindle Protection Tube DN 400 to DN 600 | PE |
| Spindle Protection Tube DN 600 to DN 1200 | 1.4301 / 1.4404 |
| Spindle Nut | RG 7 |
| Spindle Extension | 1.4301 / 1.4404 |
| Spindle Guide Bracket | POM + 1.4404 |
| Frame-, Floor Bracket | 1.4301 / 1.4404 |
| Channel Side Wall Bracket | 1.4301 / 1.4404 |
| Pedestal, Wall Bracket | 1.4301 |
| Clamping Strip | 1.4301 / 1.4404 |
| Bolts / Nuts / Washers | A2 / A4 |
| Double Lip Seal | EPDM / Elastosil |
| Invert Seal | EPDM / Elastosil |
| Anchorage | A4 |
| Compression Cord | PU-Cord 20/4 grey self adhesive |
| Sealant | PU - Bond + Seal |

3 Frame Mounting Types

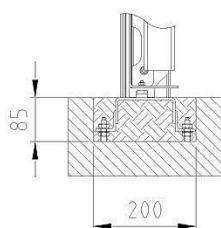
3.1 General

The frame design for the penstock, the channel penstock and the weir penstock always comprise of the same cross-section dimensions for all sizes. The overall frame design consists of the side frames and, depending on the design, an invert frame, soffit frame and yoke. In the side frames and on the soffit frame, the double lip seals are mechanically fixed using a clamping strip. The material thickness of the frame components is a uniform 4mm.

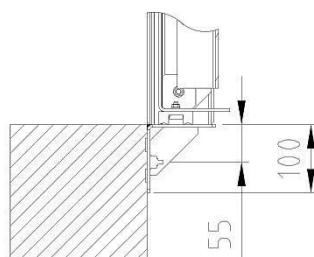
3.2 Invert Frame

For the invert frame, the following three installation **variants** are available as standard:

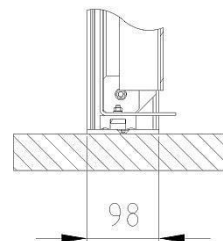
Type Ra – in Rebate



Type Wb – Wall Mounted



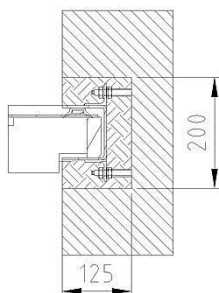
Type Fa – Floor Mounted



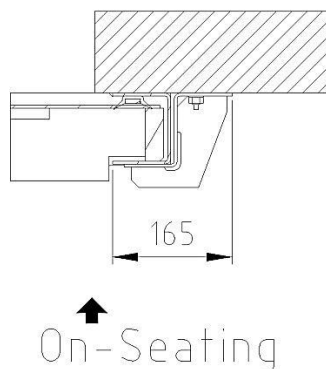
3.3 Side Frame

For the side frame, the following installation situations are available as standard variants:

Type CR – in Rebate



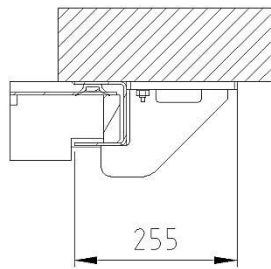
Type WM-ON – Wall Mounted On-Seating
Frame Bracket Type 2



Type WM-OF – Wall Mounted Off-Seating

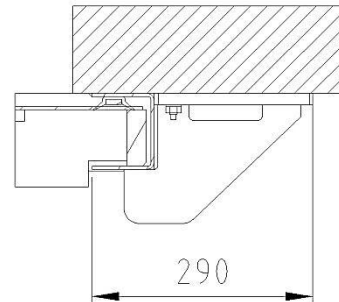
Frame Bracket Type 9

Off-Seating
↓

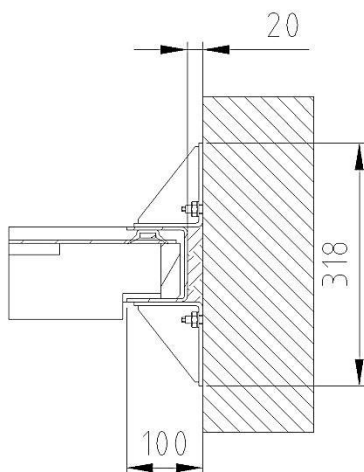


Frame Bracket Type 12

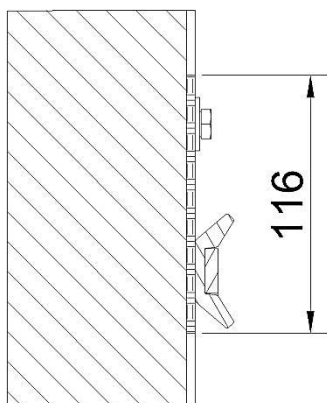
Off-Seating
↓



Type CS – Channel Side Wall Mounted

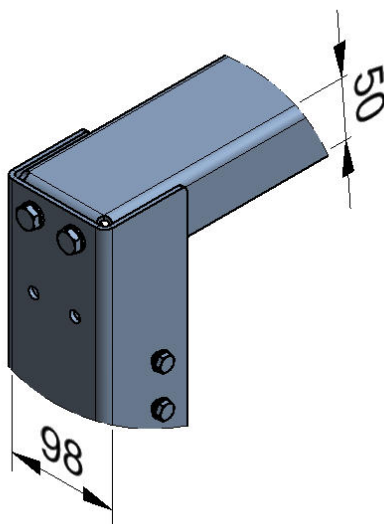


3.4 Soffit Frame

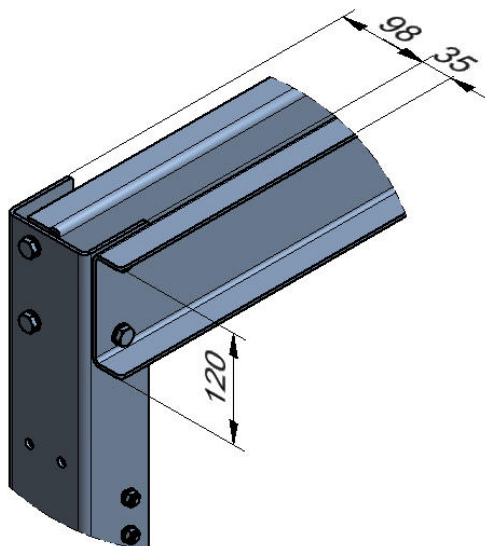


3.5 Yoke

3.5.1 Design for DN 150 to DN 500



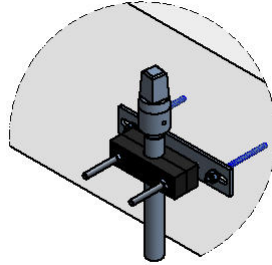
3.5.2 Design for DN 600 to DN 1200



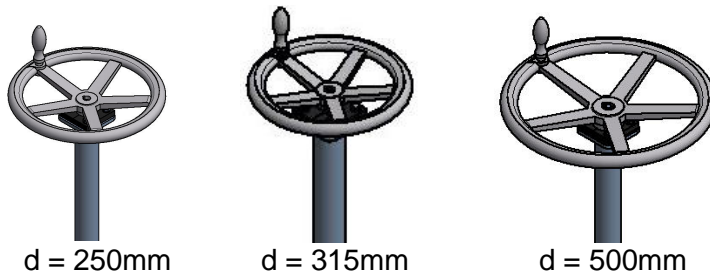
4 Operation Types

4.1 Manual Operation

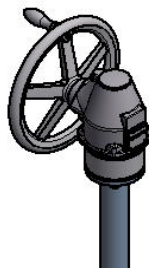
4.1.1 Cap Top



4.1.2 Handwheel



4.1.3 Handwheel d = 315mm with Bevel Gearbox GK 10.2 or GK 14.2 (2:1) (2,8:1)



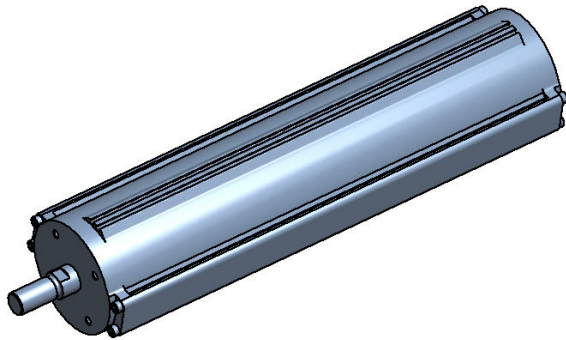
4.2 Electric Multi-turn Actuator

Multi-turn-Actuator

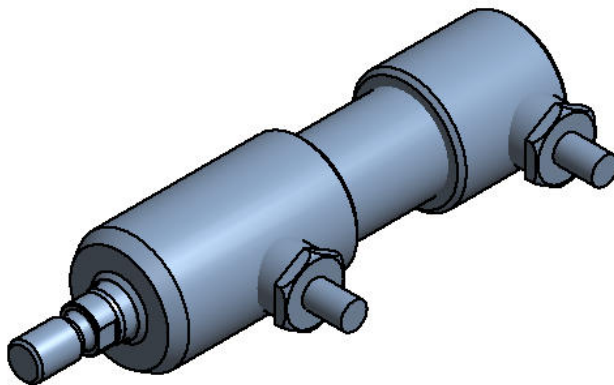


4.3 Cylinder Pistons

4.3.1 Pneumatic Actuated



4.3.2 Hydraulic Actuated



4.4 Standard Operation Specifications

With a water pressure of up to 6.0m, an operation type can be selected with the aid of the following information:

4.4.1 Manual Operation with Handwheel

| DN Spindle Size | Non-rising Spindle | | | Rising Spindle | | |
|--------------------|-------------------------------|------------------------|---------------------------|--------------------|------------------------|---------------------------|
| | Diameter Handwheel | Required Opening Force | Max. allow. Closing Force | Diameter Handwheel | Required Opening Force | Max. allow. Closing Force |
| 150 TR20x4 | 250 mm | 1,2 kg | 11 kg | 250 mm | 0,6 kg | 5,5 kg |
| 200 TR20x4 | | 2,0 kg | | | 1,0 kg | |
| 250 TR20x4 | | 3,0 kg | | | 1,5 kg | |
| 300 TR20x4 | | 4,1 kg | | | 2,1 kg | |
| 350 TR20x4 | | 5,6 kg | | | 2,8 kg | |
| 400 TR20x4 | | 7,2 kg | | | 3,6 kg | |
| 500 TR20x4 | | 11 kg | | | 5,5 kg | |
| 600 TR32x6 | 500 mm | 12 kg | 25 kg | 250 mm | 6,2 kg | 25 kg |
| 700 TR32x6 | | 16 kg | | | 8,3 kg | |
| 800 TR32x6 | | 21 kg | | | 11 kg | |
| 900 TR32x6 | | 20 kg | | | 13 kg | |
| 1000 TR32x6 | 315 mm + GK14.2 (2,8:1) | 20 kg | 14 kg | 500 mm | 16 kg | 14 kg |
| 1100 TR32x6 | | 23 kg | | | 19 kg | |
| 1200 TR32x6 | | 27 kg | | | 23 kg | |

Economic handwheel variants for DN sizes 1000 to 1200 with non-rising spindle design

| DN Spindle Size | Non-rising Spindle | | | |
|--------------------|-----------------------------|------------------------|---------------------------|-----------|
| | Diameter Handwheel | Required Opening Force | Max. allow. Closing Force | |
| 1000 TR32x6 | 500 mm | 31 kg | 25 kg | |
| 1100 TR32x6 | | 37 kg | | |
| 1200 TR32x6 | | 43 kg | | |
| 1000 TR32x6 | 315 mm + GK10.2 (2:1) | 27 kg | 20 kg | |
| 1100 TR32x6 | | 33 kg | | |
| 1200 TR32x6 | | 38 kg | | |
| 1000 TR32x6 | 315 mm + GK10.2 (2:1) | 25 kg* | 20 kg | * 5,5 mWC |
| 1100 TR32x6 | | 25 kg* | | * 4,7 mWC |
| 1200 TR32x6 | | 25 kg* | | * 4,0 mWC |

4.4.2 Electric Actuators

| DN Spindle Size | Non-rising Spindle | | rising Spindle | |
|--------------------|-----------------------------|----------------------------------|----------------------------|----------------------------------|
| | Multi-turn AUMA NORM | Max. Torque Opening / Closing | Multi-turn AUMA NORM | Max. Torque Opening / Closing |
| 150 TR20x4 | SA 07.2 | 15 Nm / 15 Nm | SA 07.2 | 10 Nm / 10 Nm |
| 200 TR20x4 | | | | |
| 250 TR20x4 | | | | |
| 300 TR20x4 | | | | |
| 350 TR20x4 | | | | |
| 400 TR20x4 | | | | |
| 500 TR20x4 | | | | |
| 600 TR32x6 | SA 07.6 | 60 Nm / 60 Nm | SA 07.2 | 30 Nm / 30 Nm |
| 700 TR32x6 | | | | |
| 800 TR32x6 | | | | |
| 900 TR32x6 | | | | |
| 1000 TR32x6 | SA 07.6 GK 10.2 (2:1) | 50 Nm / 30 Nm | SA 07.6 | 47 Nm / 30 Nm |
| 1100 TR32x6 | | | | |
| 1200 TR32x6 | | | | |

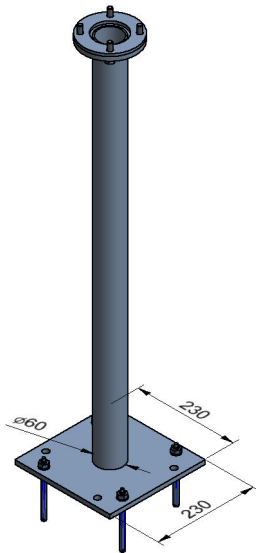
Economic **electric** drive variants for DN sizes 1000 to 1200 with non-rising spindle design:

| DN Spindle Size | Non-rising Spindle | |
|--------------------|-------------------------|----------------------------------|
| | Multi-turn AUMA NORM | Max. Torque Opening / Closing |
| 1000 TR32x6 | SA 10.2 | 90 Nm / 55 Nm |
| 1100 TR32x6 | | |
| 1200 TR32x6 | | |

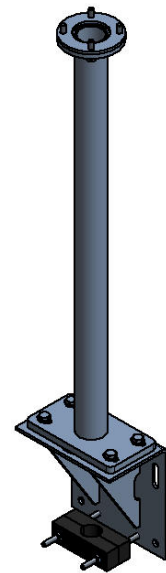
5 Accessories

5.1 Pedestal

5.1.1 Floor Mounted – F10

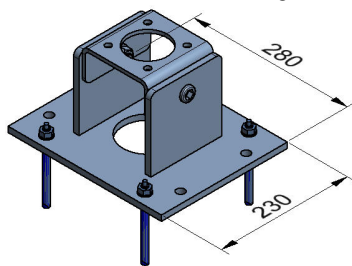


5.1.2 Wall Mounted – T20-F10

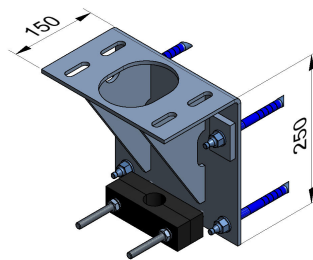


5.2 Brackets

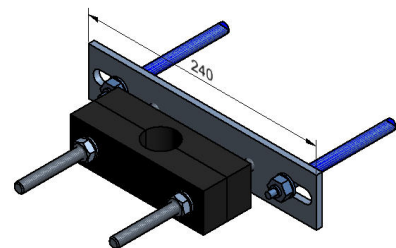
5.2.1 Floor Bracket F10



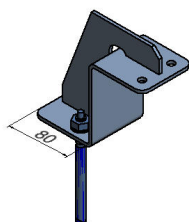
5.2.2 Wall Bracket T20



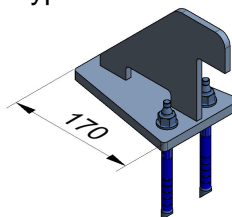
5.2.3 Spindle Guide Bracket D32



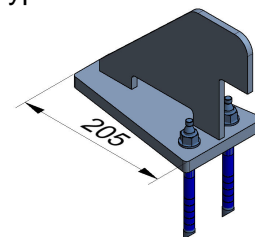
5.2.4 Frame Bracket Type 2



Type 9

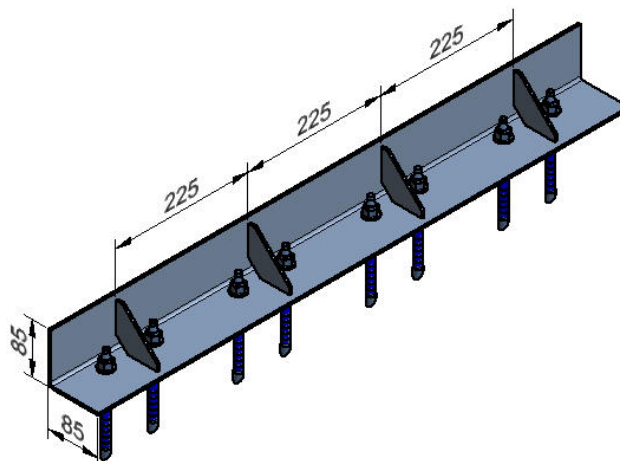


Type 12



5.2.5 Channel Side Wall Bracket GW

CS T1



5.3 Spindle / Spindle Extension and Spindle Nut

5.3.1 Spindle Nut
Rg 7 - 40

Spindle
Tr 20 x 4

Spindle
Extension
SV 30



5.3.2 Spindle Nut
Rg 7 - 60

Spindle
Tr 32 x 6

Spindle
Extension
SV 30



5.4 Mounting Conditions / Materials

5.4.1 General Information

The installation of penstock accessories must not take place under strain. Twisting of the frame is not permitted under any circumstances. In addition, please observe the appropriate operating, maintenance and installation instructions.

5.4.2 Mounting Surface

The minimum prerequisite for the validity of the stated installation technology, in particular for the stated anchorage, is a concrete quality of C25/30 or higher.

5.4.3 Evenness / Tolerances

Construction tolerances: Surface unevenness of up to ± 2mm are accommodated using the sealing materials recommended for installation.

5.4.4 Anchorage

The following list of anchor technology is purely for information purposes. In individual cases, numerous factors such as edge clearances, concrete strengths, concrete conditions, etc. play a major role in selecting the correctly dimensioned anchor technology. The correct selection of anchor technology is the responsibility of the person providing it for the purposes of installation.

| Components | Examples for Anchorage Materials |
|------------------------------|--|
| Pedestal Floor Mounted | 4 x Anchor Rod HAS-R M10x90/21+ 4 x Adhesive capsule HVU M10x90 |
| Floor Bracket | 4 x Anchor Rod HAS-R M10x90/21+ 4 x Adhesive capsule HVU M10x90 |
| Wall Bracket T20 | 2 x Washer 40x60x10 4 x Anchor Rod HAS-RTZ M12x95/25+ 4 x Adhesive capsule HVU-TZ M12x95 |
| Spindle Guide Bracket | 2 x Anchor Rod HAS-R M10x90/21+ 2 x Adhesive capsule HVU M10x90 |
| Frame Bracket T2 | 1 x Anchor Rod HAS-R M10x90/21+ 1 x Adhesive capsule HVU M10x90 |
| Frame Bracket T9 | 2 x Anchor Rod HAS-RTZ M12x95/25+ 2 x Adhesive capsule HVU-TZ M12x95 |
| Frame Bracket T12 | 2 x Anchor Rod HAS-RTZ M12x95/25+ 2 x Adhesive capsule HVU-TZ M12x95 |
| Channel Side Wall Bracket T1 | Anchor Rod HAS-RTZ M12x95/25+ Adhesive capsule HVU-TZ M12x95 |
| Frame Fixing (in Rebate) | Anchor Rod HAS-R M10x90/21+ Adhesive capsule HVU M10x90 |
| Soffit Frame | Flush Anchor HKD-SR M8x30+ Hexagon Bolt DIN 933 M8x20+ Washer DIN 9021 8 |
| Invert Frame Ra | Anchor Rod HAS-R M10x90/21+ Adhesive capsule HVU M10x90 |
| Invert Frame Wb | Anchor Rod HAS-R M10x90/21+ Adhesive capsule HVU M10x90 |
| Invert Frame Fa | Flush Anchor HKD-SR M8x30+ Countersunk Bolt DIN7991 M 8x16 |

5.4.5 Sealing to Concrete Surface

Two sealing lines are provided for adequate sealing between the frame components and the installation surface. One of these is a double-row, self-adhesive sealing tape (Kompriband 20/4 grey) running along the entire channel aperture, which is to be adhered onto the contact surface of the frame components. When the penstock frame is then attached to the wall, the sealing tape is compressed between frame and wall. When the frame is fixed, the sealing tape equalizes any unevenness in the contact surface up to a tolerance of $\pm 2\text{mm}$. The second sealing line is in the form of an adhesive seam made of PU-Klebt+Dichtet along the frame flange around the clear frame aperture.

If the frame is grouted, for example when installed into a rebate or to a channel side wall-mounted, no further sealing measures are required. The sealing process between the frame and the surrounding construction is ensured through a non-shrinking grouting mortar, which is to be applied carefully and without faults or gaps.

6 Model Types

6.1 General

The position of the spindle and the load transfer from the movement process is shown through the model types 1, 2, 3 or 4.

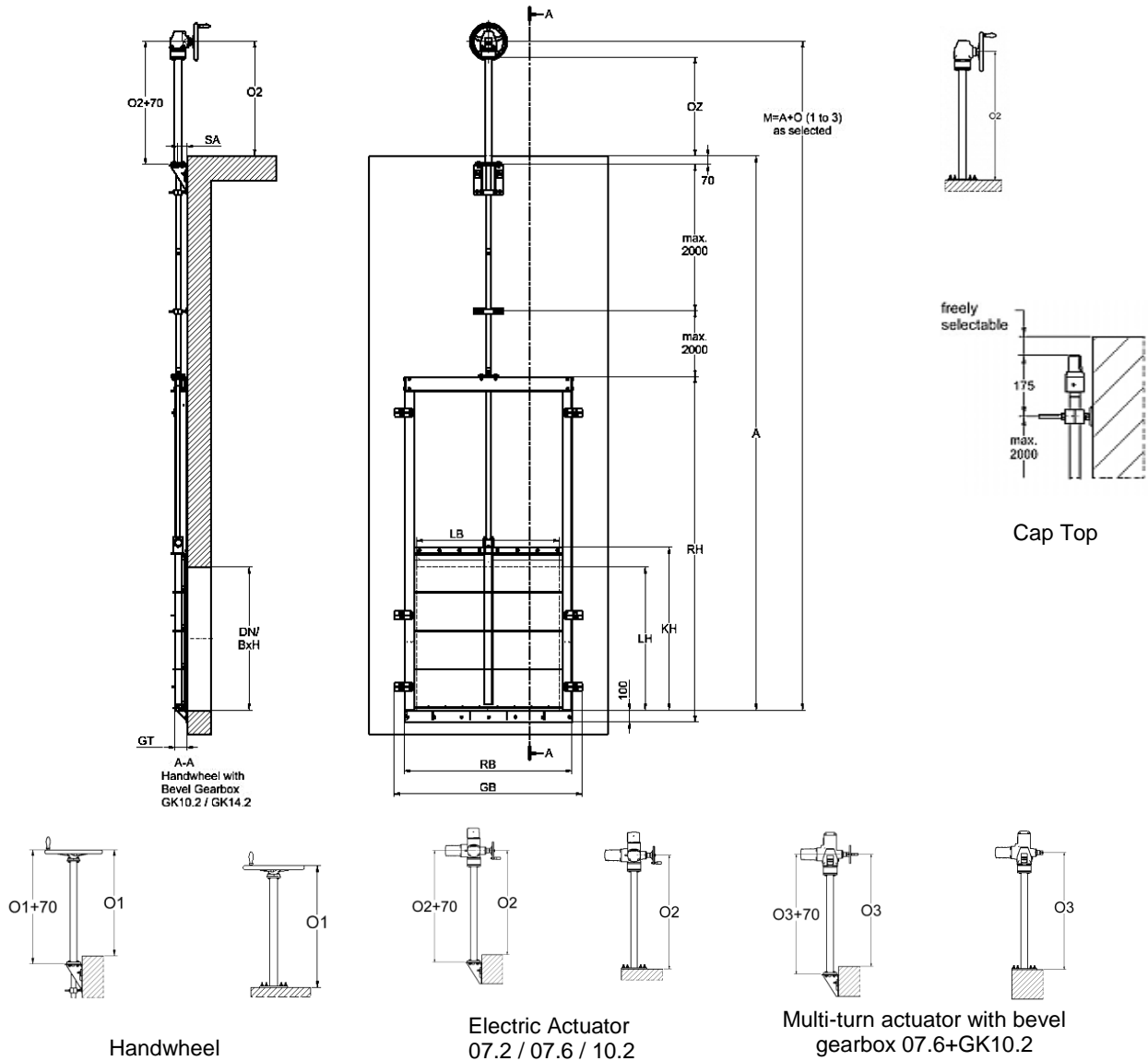
Model 1 defines a non-rising spindle and model 2 a rising spindle, which each transmit the opening/closing forces onto the penstock yoke, which is attached to the side frames. Due to the enclosed flow of force in the frame and yoke design resulting from the penstock door movement process, we designate the construction type of models 1 and 2 as self-contained.

Model 3 defines a non-rising spindle and model 4 a rising spindle, which each transmit the opening/closing forces onto a sub-assembly independent of the frame (e.g. operating console, pedestal, bridge etc.) Due to the forces transmitted via the sub-assembly, usually directly into the adjacent wall via the anchorage, we designate the construction type of models 3 and 4 as open, i.e. an open frame penstock design without yoke is used.

| Model Definition | Non-rising Spindle | rising Spindle |
|----------------------|------------------------|----------------|
| Frame self-contained | M1 | M2 |
| Frame open | M3 (telescopic) | M4 |

6.2 Sizes for RPS – FX M1-WM-Wb-OF/ON: Flex Penstock 4-sided sealed, self contained with non-rising Spindle, wall mounted

General Sketch

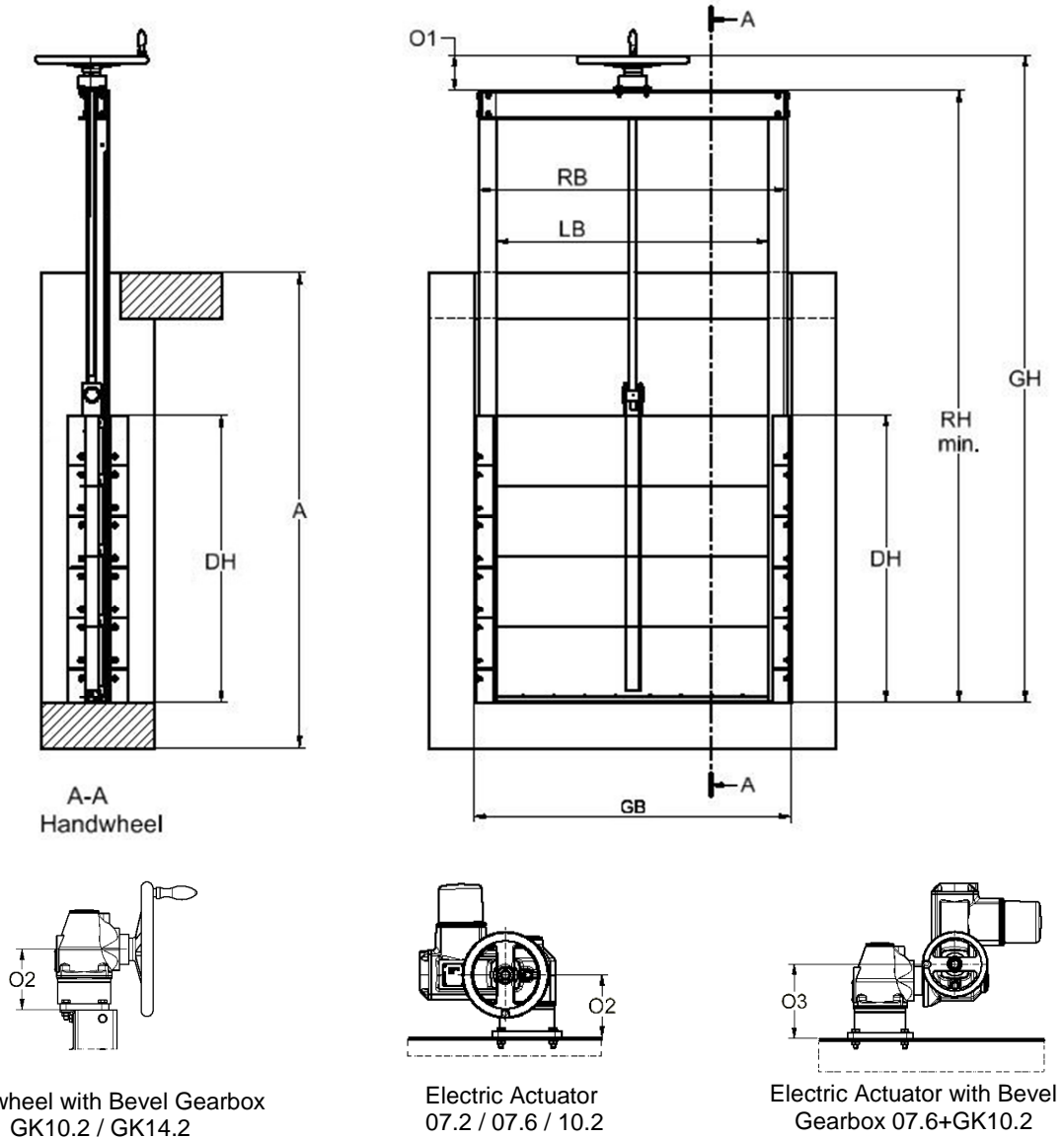


Sizes:

| DN/WxH | RB | GB D/Z | | RH | GT | SA | KH | LB | LH | OZ | O1 | O2 | O3 |
|--------|------|-----------|------|------|-----|----|------|------|------|-----|-----|-----|------|
| 150 | 360 | 530 | 530 | 650 | 100 | 49 | 316 | 150 | 150 | 830 | 910 | 965 | 1005 |
| 200 | 410 | 580 | 580 | 750 | 100 | 49 | 366 | 200 | 200 | 830 | 910 | 965 | 1005 |
| 250 | 460 | 630 | 630 | 850 | 100 | 49 | 416 | 250 | 250 | 830 | 910 | 965 | 1005 |
| 300 | 510 | 680 | 860 | 950 | 100 | 49 | 466 | 300 | 300 | 830 | 910 | 965 | 1005 |
| 350 | 560 | 730 | 910 | 1050 | 100 | 49 | 516 | 350 | 350 | 830 | 910 | 965 | 1005 |
| 400 | 610 | 780 | 960 | 1150 | 100 | 49 | 566 | 400 | 400 | 830 | 910 | 965 | 1005 |
| 500 | 710 | 880 | 1060 | 1350 | 100 | 49 | 666 | 500 | 500 | 830 | 910 | 965 | 1005 |
| 600 | 810 | 980 | 1160 | 1700 | 100 | 76 | 766 | 600 | 600 | 830 | 910 | 965 | 1005 |
| 700 | 910 | 1080 | 1260 | 1900 | 100 | 76 | 866 | 700 | 700 | 830 | 910 | 965 | 1005 |
| 800 | 1010 | 1180 | 1430 | 2100 | 100 | 76 | 966 | 800 | 800 | 830 | 910 | 965 | 1005 |
| 900 | 1110 | 1280 | 1530 | 2300 | 100 | 76 | 1066 | 900 | 900 | 830 | 910 | 965 | 1005 |
| 1000 | 1240 | 1380 | 1630 | 2500 | 100 | 76 | 1166 | 1000 | 1000 | 830 | 910 | 965 | 1005 |
| 1100 | 1310 | 1480 | 1730 | 2700 | 100 | 76 | 1266 | 1100 | 1100 | 830 | 910 | 965 | 1005 |
| 1200 | 1410 | 1580 | 1830 | 2900 | 100 | 76 | 1366 | 1200 | 1200 | 830 | 910 | 965 | 1005 |

6.3 Sizes for RSG – FX M2-CS-F: Flex Channel Penstock 3-sided sealed, self contained with rising Spindle, channel side wall mounted

General Sketch

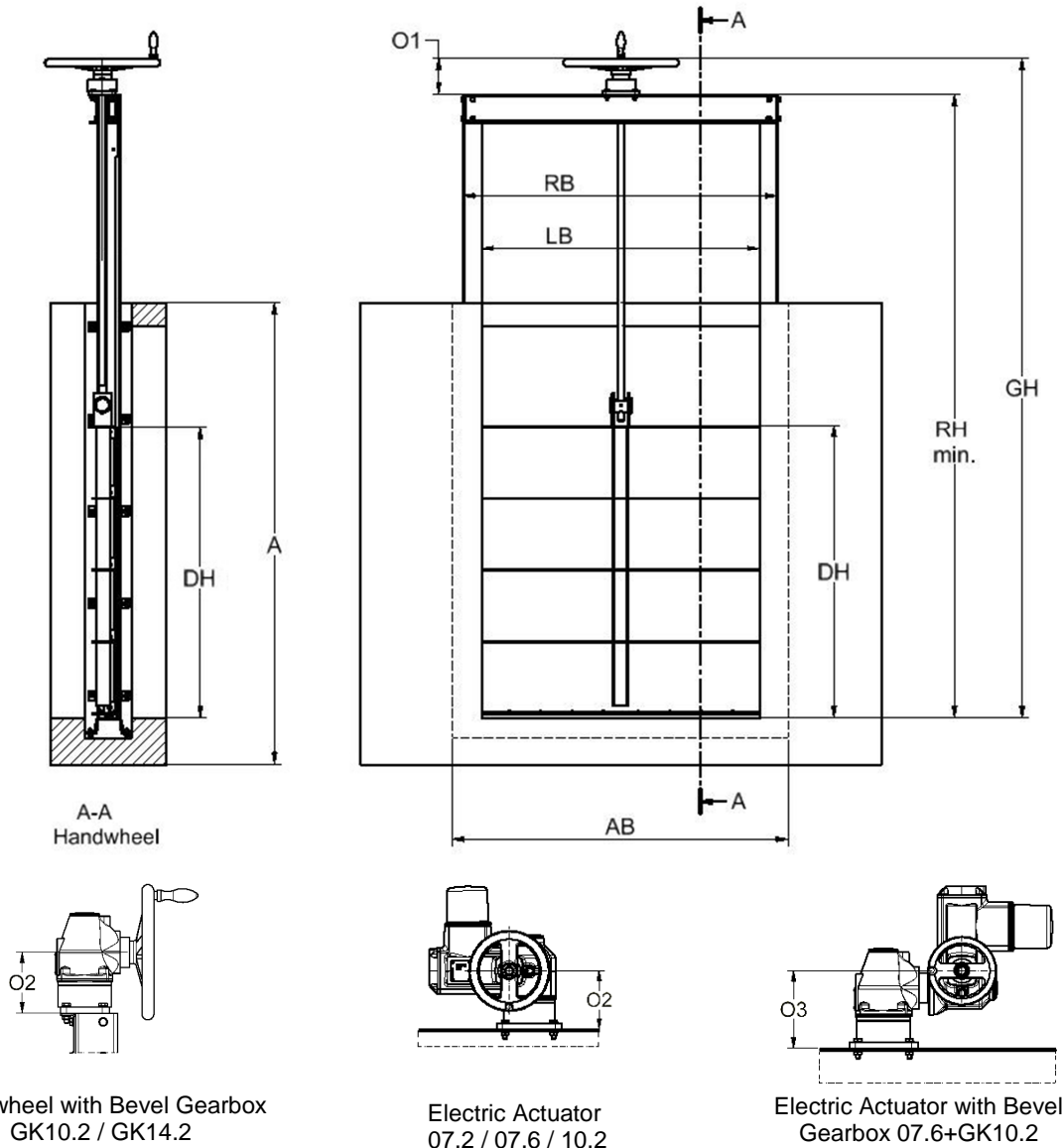


Sizes:

| GB | LB | DN/B | RB | DH | RH min. | GH | O1 | O2 | O3 |
|------|------|------|------|------|---------|------|-----|-----|-----|
| 800 | 600 | 550 | 760 | 673 | 1550 | 1710 | 160 | 145 | 185 |
| 900 | 700 | 650 | 860 | 773 | 1750 | 1910 | 160 | 145 | 185 |
| 1000 | 800 | 750 | 960 | 873 | 1950 | 2110 | 160 | 145 | 185 |
| 1100 | 900 | 850 | 1060 | 973 | 2150 | 2310 | 160 | 145 | 185 |
| 1200 | 1000 | 950 | 1160 | 1073 | 2300 | 2460 | 160 | 145 | 185 |
| 1300 | 1100 | 1050 | 1260 | 1173 | 2500 | 2660 | 160 | 145 | 185 |
| 1400 | 1200 | 1150 | 1360 | 1273 | 2700 | 2860 | 160 | 145 | 185 |

6.4 Sizes for RSG – FX M2-CR-R: Flex Channel Penstock 3-sided sealed, self contained with rising Spindle, in rebate

General Sketch

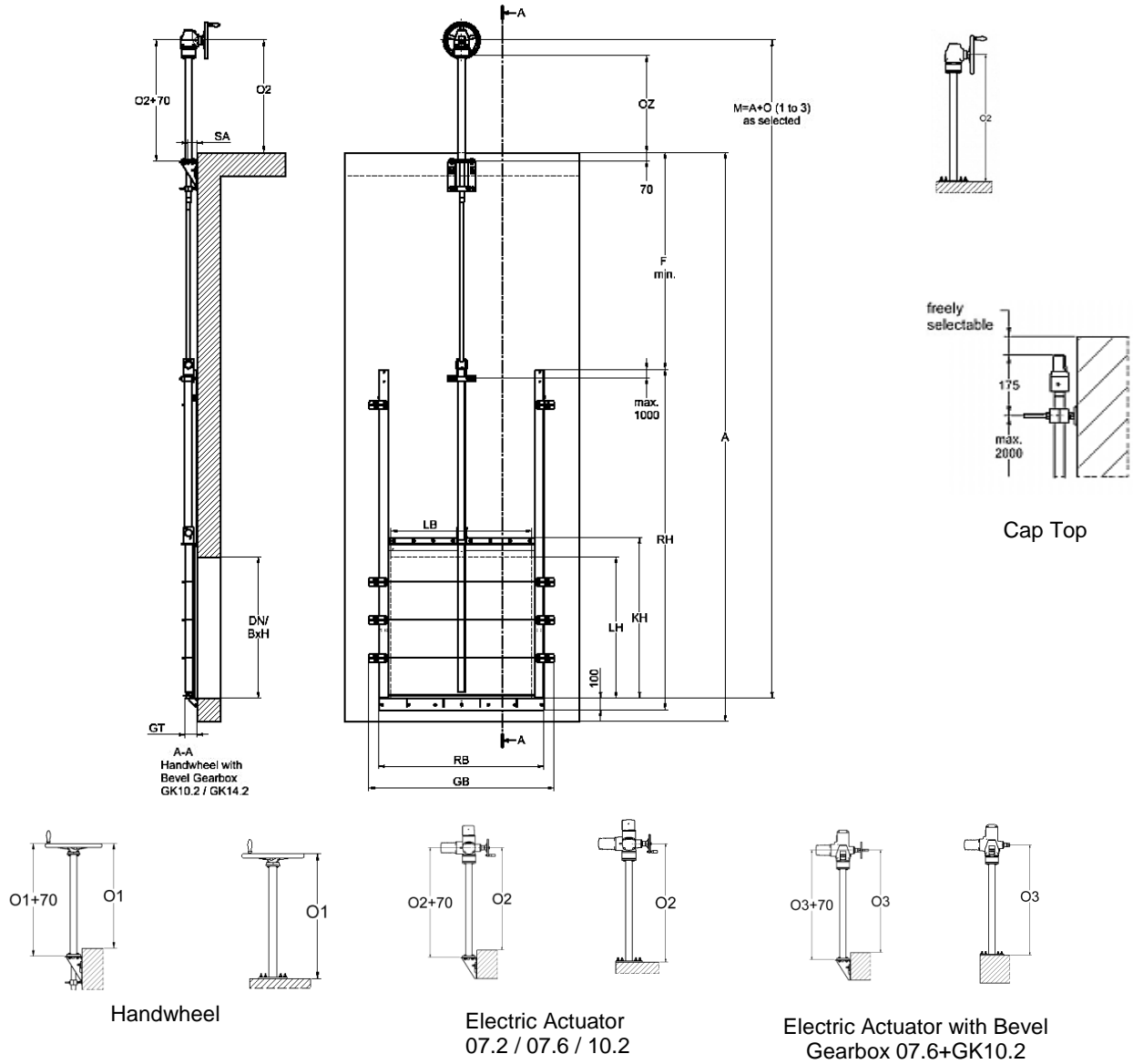


Sizes:

| LB | DN/B | AB | RB | DH | RH min. | GH | O1 | O2 | O3 |
|------|------|------|------|------|---------|------|-----|-----|-----|
| 600 | 550 | 850 | 760 | 669 | 1550 | 1710 | 160 | 145 | 185 |
| 700 | 650 | 950 | 860 | 769 | 1750 | 1910 | 160 | 145 | 185 |
| 800 | 750 | 1050 | 960 | 869 | 1950 | 2110 | 160 | 145 | 185 |
| 900 | 850 | 1150 | 1060 | 969 | 2150 | 2310 | 160 | 145 | 185 |
| 1000 | 950 | 1250 | 1160 | 1069 | 2300 | 2460 | 160 | 145 | 185 |
| 1100 | 1050 | 1350 | 1260 | 1169 | 2500 | 2660 | 160 | 145 | 185 |
| 1200 | 1150 | 1450 | 1360 | 1269 | 2700 | 2860 | 160 | 145 | 185 |

6.5 Sizes for RPS – FX M3-WM-Wb-OF/ON: Flex Penstock 4-sided sealed, open with non-rising Spindle, wall mounted

General Sketch

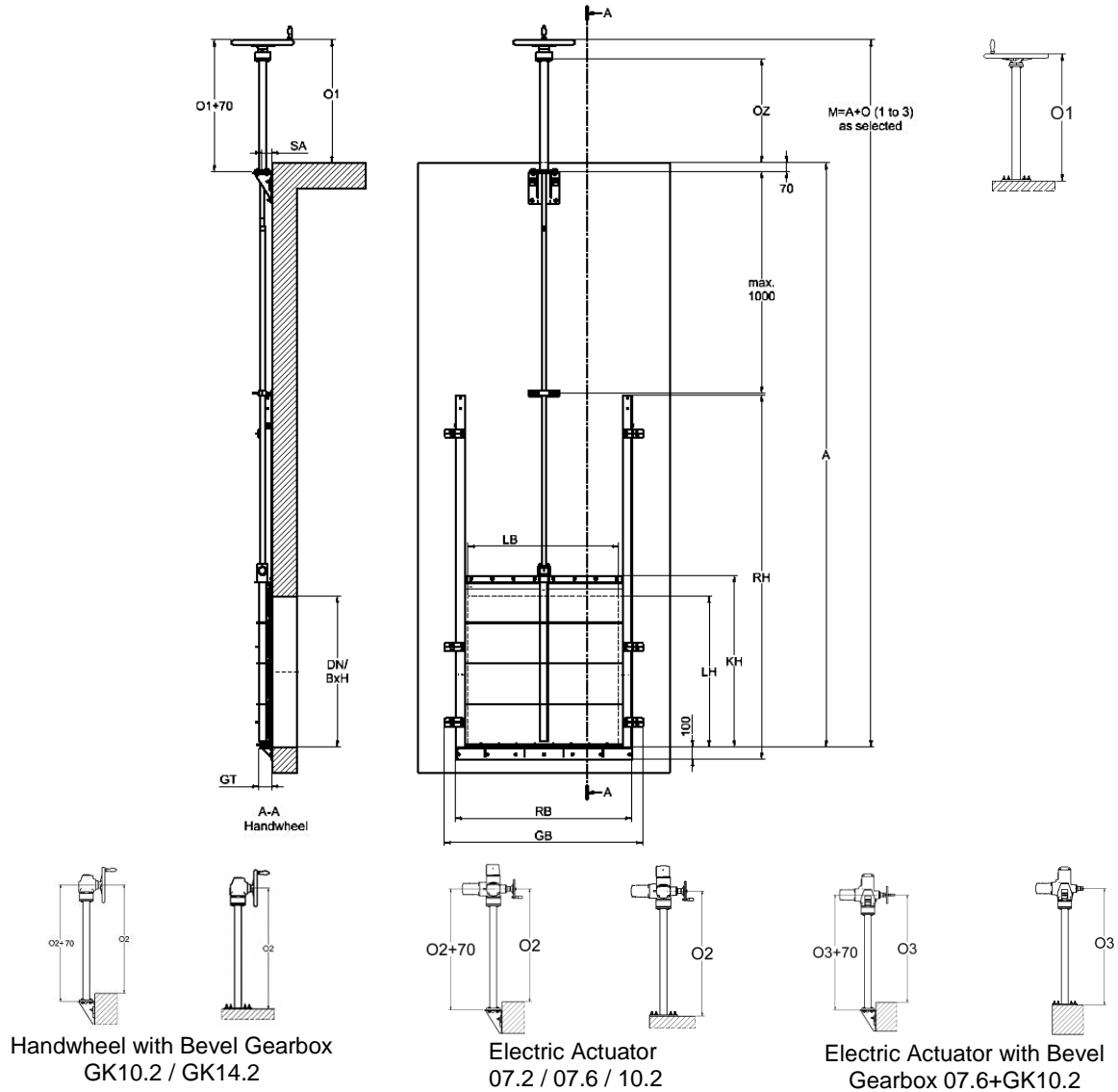


Sizes:

| DN/BxH | RB | GB D/Z | RH | GT | SA | KH | LB | LH | F min. | OZ | O1 | O2 | O3 |
|--------|------|-----------|------|------|-----|----|------|------|-----------|------|-----|-----|------|
| 150 | 360 | 530 | 530 | 650 | 100 | 49 | 316 | 150 | 150 | 850 | 830 | 910 | 1005 |
| 200 | 410 | 580 | 580 | 750 | 100 | 49 | 366 | 200 | 200 | 900 | 830 | 910 | 1005 |
| 250 | 460 | 630 | 630 | 850 | 100 | 49 | 416 | 250 | 250 | 950 | 830 | 910 | 1005 |
| 300 | 510 | 680 | 860 | 950 | 100 | 49 | 466 | 300 | 300 | 1000 | 830 | 910 | 1005 |
| 350 | 560 | 730 | 910 | 1050 | 100 | 49 | 516 | 350 | 350 | 1050 | 830 | 910 | 1005 |
| 400 | 610 | 780 | 960 | 1150 | 100 | 49 | 566 | 400 | 400 | 1100 | 830 | 910 | 1005 |
| 500 | 710 | 880 | 1060 | 1350 | 100 | 49 | 666 | 500 | 500 | 1200 | 830 | 910 | 1005 |
| 600 | 810 | 980 | 1160 | 1700 | 100 | 76 | 766 | 600 | 600 | 1300 | 830 | 910 | 1005 |
| 700 | 910 | 1080 | 1260 | 1900 | 100 | 76 | 866 | 700 | 700 | 1400 | 830 | 910 | 1005 |
| 800 | 1010 | 1180 | 1430 | 2100 | 100 | 76 | 966 | 800 | 800 | 1500 | 830 | 910 | 1005 |
| 900 | 1110 | 1280 | 1530 | 2300 | 100 | 76 | 1066 | 900 | 900 | 1600 | 830 | 910 | 1005 |
| 1000 | 1240 | 1380 | 1630 | 2500 | 100 | 76 | 1166 | 1000 | 1000 | 1700 | 830 | 910 | 1005 |
| 1100 | 1310 | 1480 | 1730 | 2700 | 100 | 76 | 1266 | 1100 | 1100 | 1800 | 830 | 910 | 1005 |
| 1200 | 1410 | 1580 | 1830 | 2900 | 100 | 76 | 1366 | 1200 | 1200 | 1900 | 830 | 910 | 1005 |

6.6 Sizes for RPS – FX M4-WM-Wb-OF/ON: Flex Penstock 4-sided sealed, open with rising Spindle, wall mounted

General Sketch

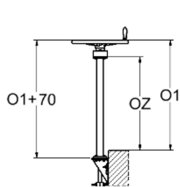
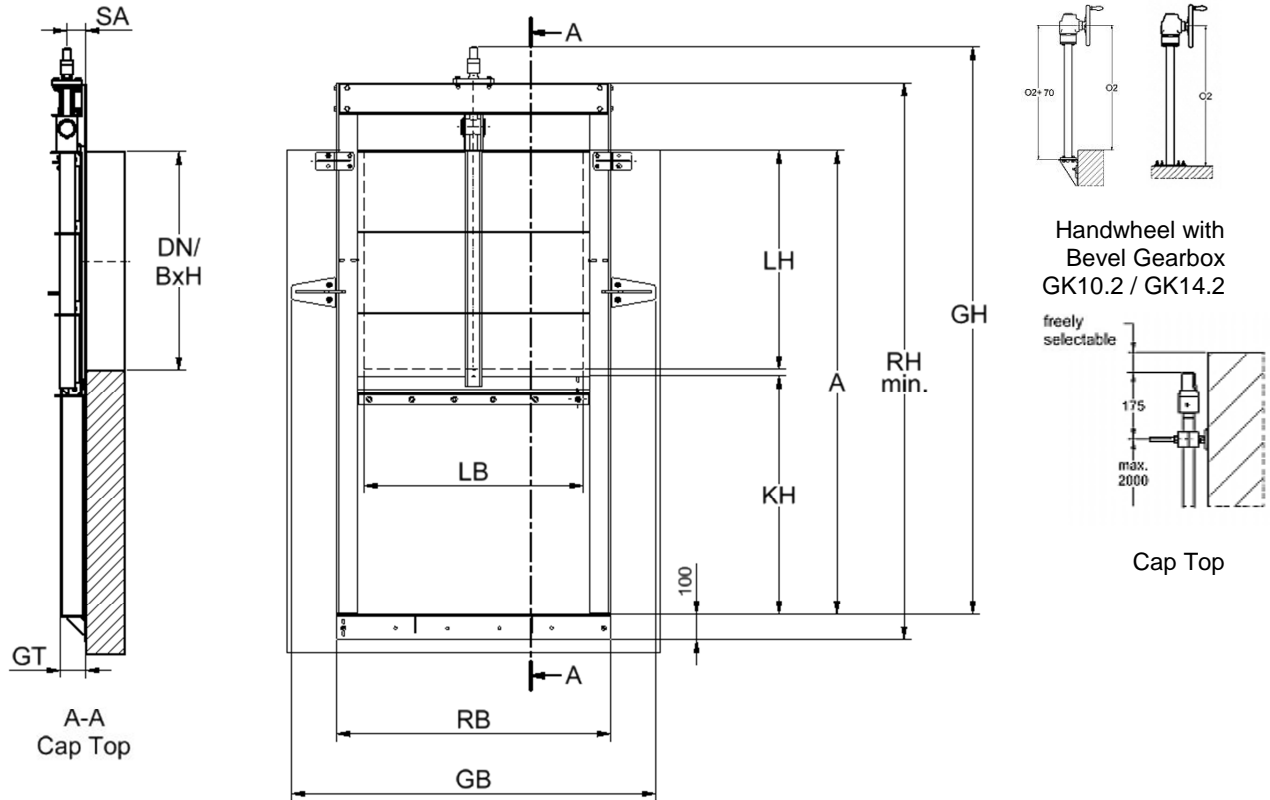


Sizes:

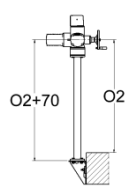
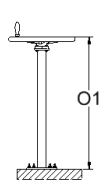
| DN/BxH | RB | GB D/Z | | RH | GT | SA | KH | LB | LH | OZ | O1 | O2 | O3 |
|--------|------|-----------|------|------|-----|----|------|------|------|-----|-----|-----|------|
| 150 | 360 | 530 | 530 | 650 | 100 | 49 | 316 | 150 | 150 | 830 | 910 | 965 | 1005 |
| 200 | 410 | 580 | 580 | 750 | 100 | 49 | 366 | 200 | 200 | 830 | 910 | 965 | 1005 |
| 250 | 460 | 630 | 630 | 850 | 100 | 49 | 416 | 250 | 250 | 830 | 910 | 965 | 1005 |
| 300 | 510 | 680 | 860 | 950 | 100 | 49 | 466 | 300 | 300 | 830 | 910 | 965 | 1005 |
| 350 | 560 | 730 | 910 | 1050 | 100 | 49 | 516 | 350 | 350 | 830 | 910 | 965 | 1005 |
| 400 | 610 | 780 | 960 | 1150 | 100 | 49 | 566 | 400 | 400 | 830 | 910 | 965 | 1005 |
| 500 | 710 | 880 | 1060 | 1350 | 100 | 49 | 666 | 500 | 500 | 830 | 910 | 965 | 1005 |
| 600 | 810 | 980 | 1160 | 1700 | 100 | 76 | 766 | 600 | 600 | 830 | 910 | 965 | 1005 |
| 700 | 910 | 1080 | 1260 | 1900 | 100 | 76 | 866 | 700 | 700 | 830 | 910 | 965 | 1005 |
| 800 | 1010 | 1180 | 1430 | 2100 | 100 | 76 | 966 | 800 | 800 | 830 | 910 | 965 | 1005 |
| 900 | 1110 | 1280 | 1530 | 2300 | 100 | 76 | 1066 | 900 | 900 | 830 | 910 | 965 | 1005 |
| 1000 | 1240 | 1380 | 1630 | 2500 | 100 | 76 | 1166 | 1000 | 1000 | 830 | 910 | 965 | 1005 |
| 1100 | 1310 | 1480 | 1730 | 2700 | 100 | 76 | 1266 | 1100 | 1100 | 830 | 910 | 965 | 1005 |
| 1200 | 1410 | 1580 | 1830 | 2900 | 100 | 76 | 1366 | 1200 | 1200 | 830 | 910 | 965 | 1005 |

6.7 Sizes for RWG – FX M1-WM-Wb-OF/ON: Flex Weir Penstock 3-sided sealed, self contained with non-rising Spindle, wall mounted

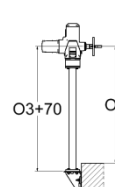
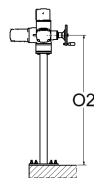
General Sketch



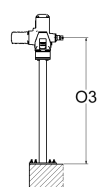
Handwheel



Electric Actuator
07.2 / 07.6 / 10.2



Electric Actuator with Bevel
Gearbox 07.6+GK10.2



Sizes:

| DN/BxH | RB | GB D/Z | | RH min. | GH | GT | SA | KH | LB | LH | OZ | O1 | O2 | O3 |
|--------|------|-----------|------|------------|------|-----|----|------|------|------|-----|-----|-----|------|
| 150 | 360 | 530 | 530 | 650 | 803 | 100 | 49 | 225 | 150 | 150 | 830 | 910 | 965 | 1005 |
| 200 | 410 | 580 | 580 | 750 | 903 | 100 | 49 | 275 | 200 | 200 | 830 | 910 | 965 | 1005 |
| 250 | 460 | 630 | 630 | 850 | 1003 | 100 | 49 | 325 | 250 | 250 | 830 | 910 | 965 | 1005 |
| 300 | 510 | 680 | 860 | 950 | 1103 | 100 | 49 | 375 | 300 | 300 | 830 | 910 | 965 | 1005 |
| 350 | 560 | 730 | 910 | 1050 | 1203 | 100 | 49 | 425 | 350 | 350 | 830 | 910 | 965 | 1005 |
| 400 | 610 | 780 | 960 | 1150 | 1303 | 100 | 49 | 475 | 400 | 400 | 830 | 910 | 965 | 1005 |
| 500 | 710 | 880 | 1060 | 1350 | 1503 | 100 | 49 | 575 | 500 | 500 | 830 | 910 | 965 | 1005 |
| 600 | 810 | 980 | 1160 | 1700 | 1703 | 100 | 76 | 675 | 600 | 600 | 830 | 910 | 965 | 1005 |
| 700 | 910 | 1080 | 1260 | 1900 | 1903 | 100 | 76 | 775 | 700 | 700 | 830 | 910 | 965 | 1005 |
| 800 | 1010 | 1180 | 1430 | 2100 | 2103 | 100 | 76 | 875 | 800 | 800 | 830 | 910 | 965 | 1005 |
| 900 | 1110 | 1280 | 1530 | 2300 | 2303 | 100 | 76 | 975 | 900 | 900 | 830 | 910 | 965 | 1005 |
| 1000 | 1240 | 1380 | 1630 | 2500 | 2503 | 100 | 76 | 1075 | 1000 | 1000 | 830 | 910 | 965 | 1005 |
| 1100 | 1310 | 1480 | 1730 | 2700 | 2703 | 100 | 76 | 1175 | 1100 | 1100 | 830 | 910 | 965 | 1005 |
| 1200 | 1410 | 1580 | 1830 | 2900 | 2903 | 100 | 76 | 1275 | 1200 | 1200 | 830 | 910 | 965 | 1005 |

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