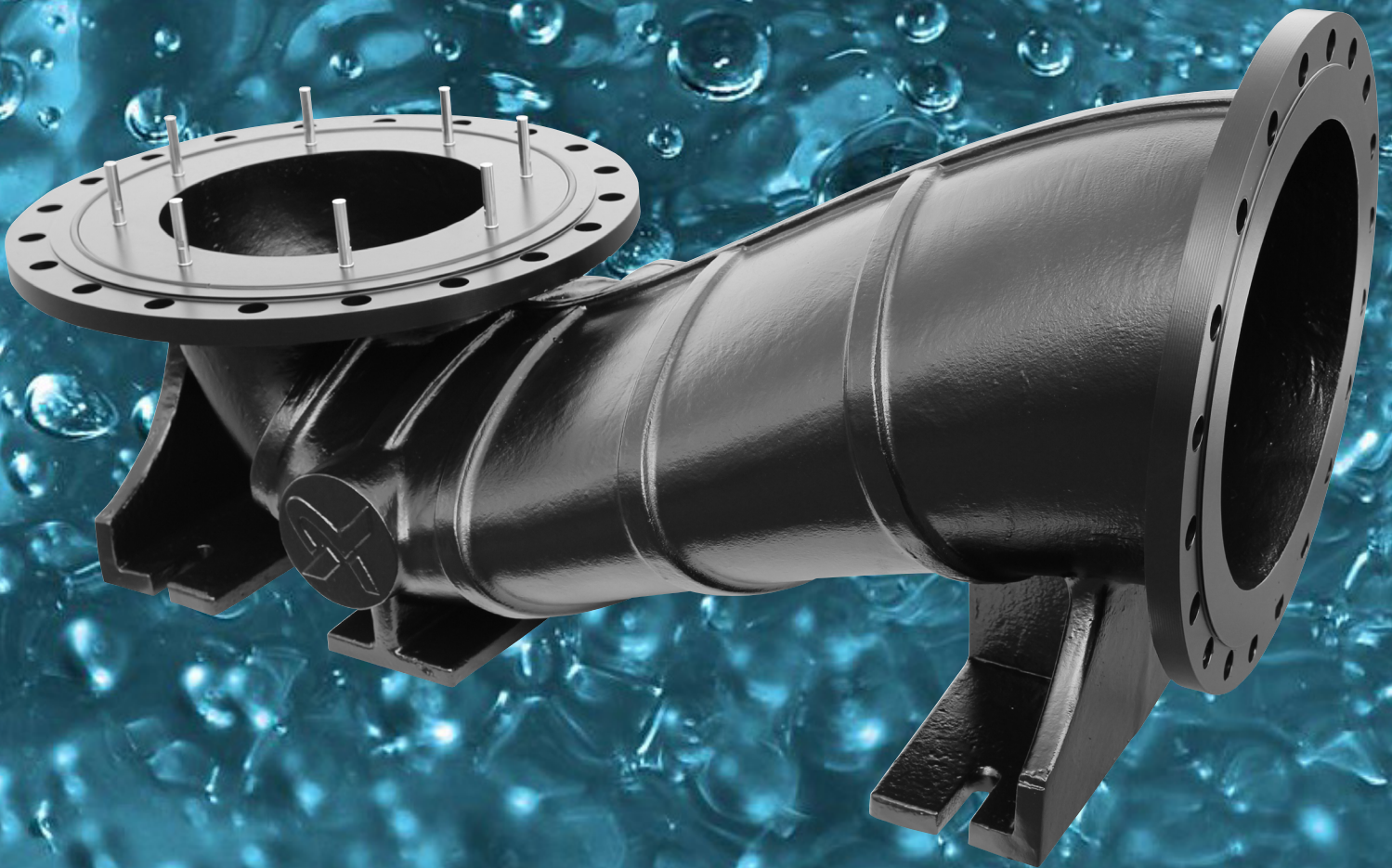


PERFECT SOLUTION FOR WATER INTAKE

Compact Suction Intake



WASTE-WATER TRANSPORT WITH NEW APPLICATION TECHNOLOGY

Compact Suction Intake(C.S.I) is an optimized device to ensure ideal inflow with reduced civil footprint and cost.

It provides homogeneous flow of liquid to the pump inlet and thereby minimizes dynamic losses.

The CSI is widely used in pump stations, pre-fabricated tanks, reservoirs, and rivers with customized ownership options.

APPLICATIONS

Flood-control pumping station



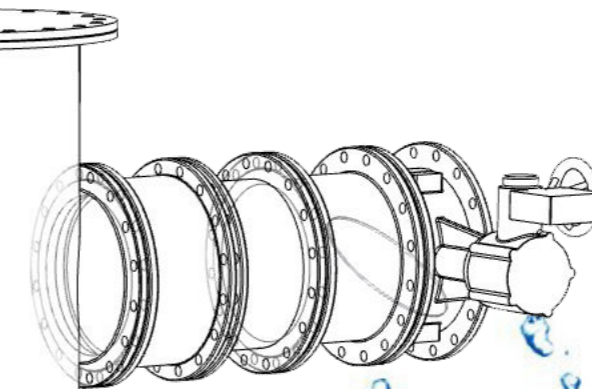
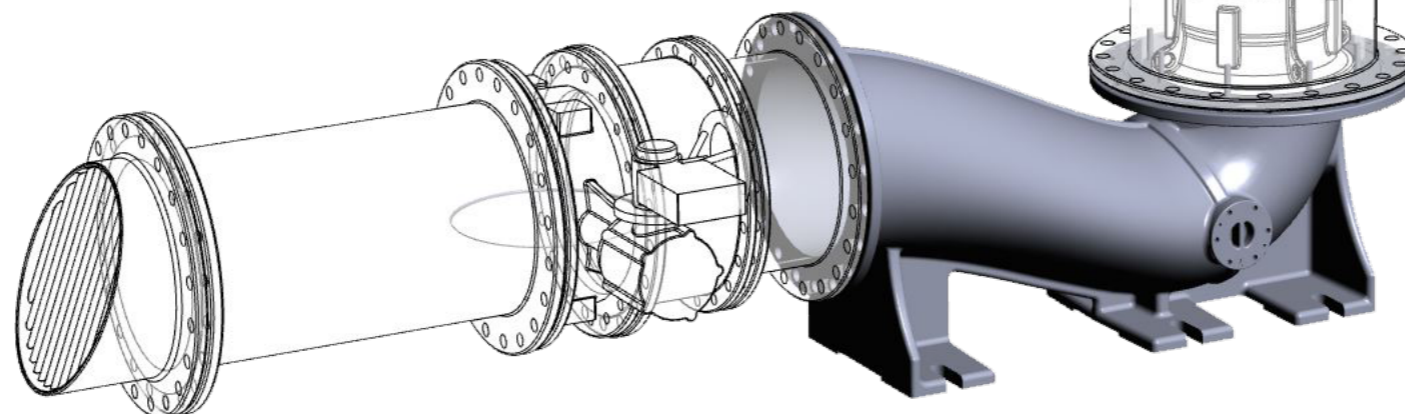
River bank and Reservoir



Rural irrigation and Drainage



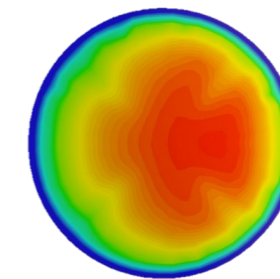
Storm water tank



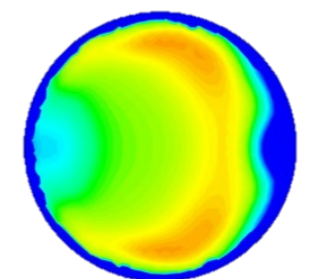
BENEFITS

- A compact pump station
- Multiple types of installation
- Reduced minimum water level
- Minimized pressure loss at pump entry
- Cost reduction in entire system packages
- Simple piping system and easy inspection
- Easy installation with additional accessories
- Compatible combination with other materials
 - Stainless steel, HDPE, Cast iron, and so on

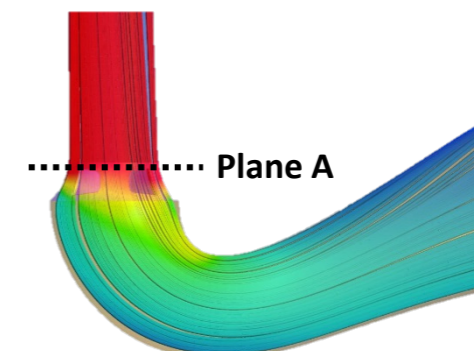
DESIGN VALIDATION



Velocity distribution at Plane A



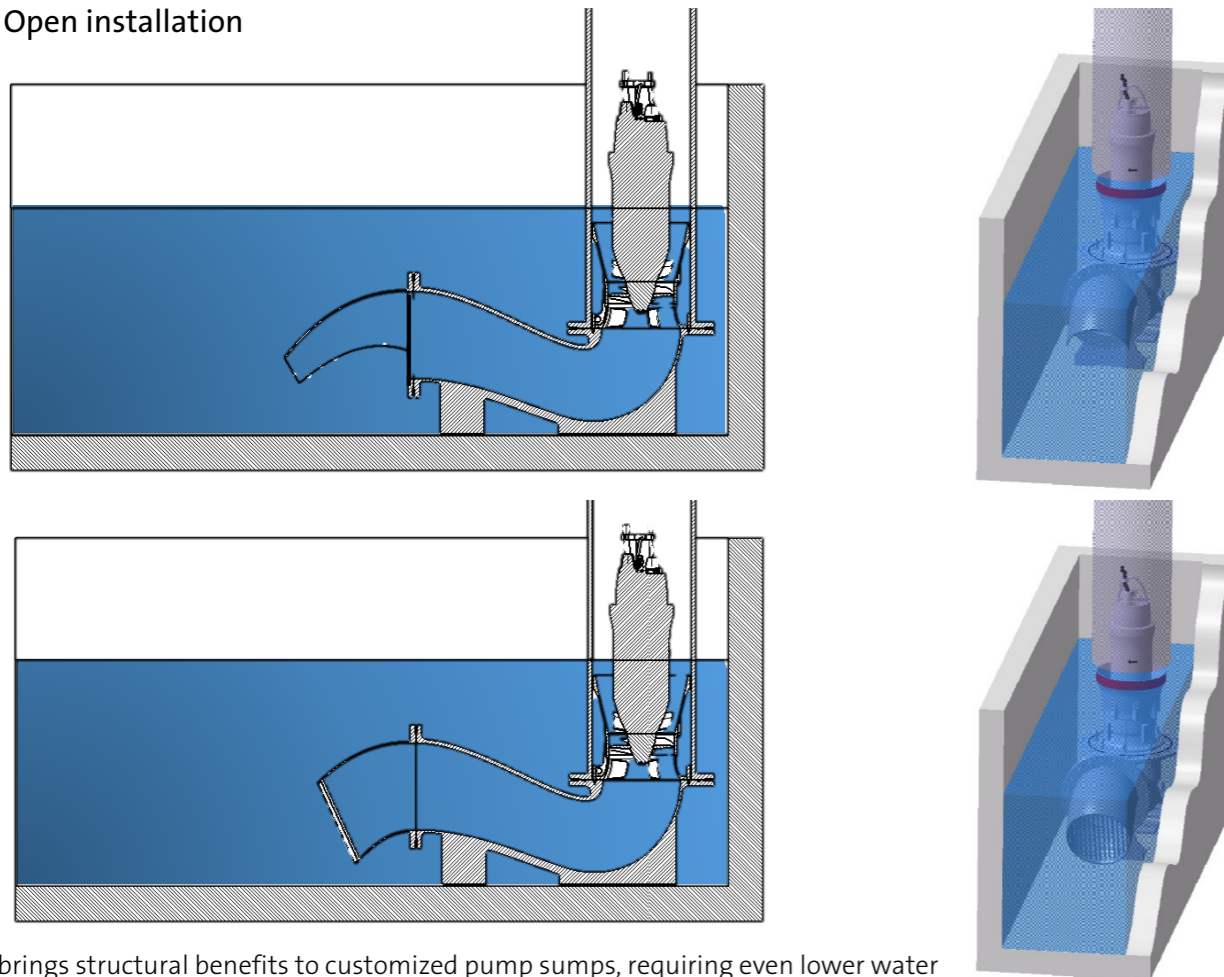
Velocity distribution of typical formed suction intake



- **CFD analysis**
In order to ensure hydraulic performance, Grundfos has conducted computer aided simulations. A mixed flow pump was used for the simulation. The result indicates velocity distribution measured at plane A. We achieved even better flow behavior than a typical formed suction intake's and a very low swirl angle.

INSTALLATION TYPE

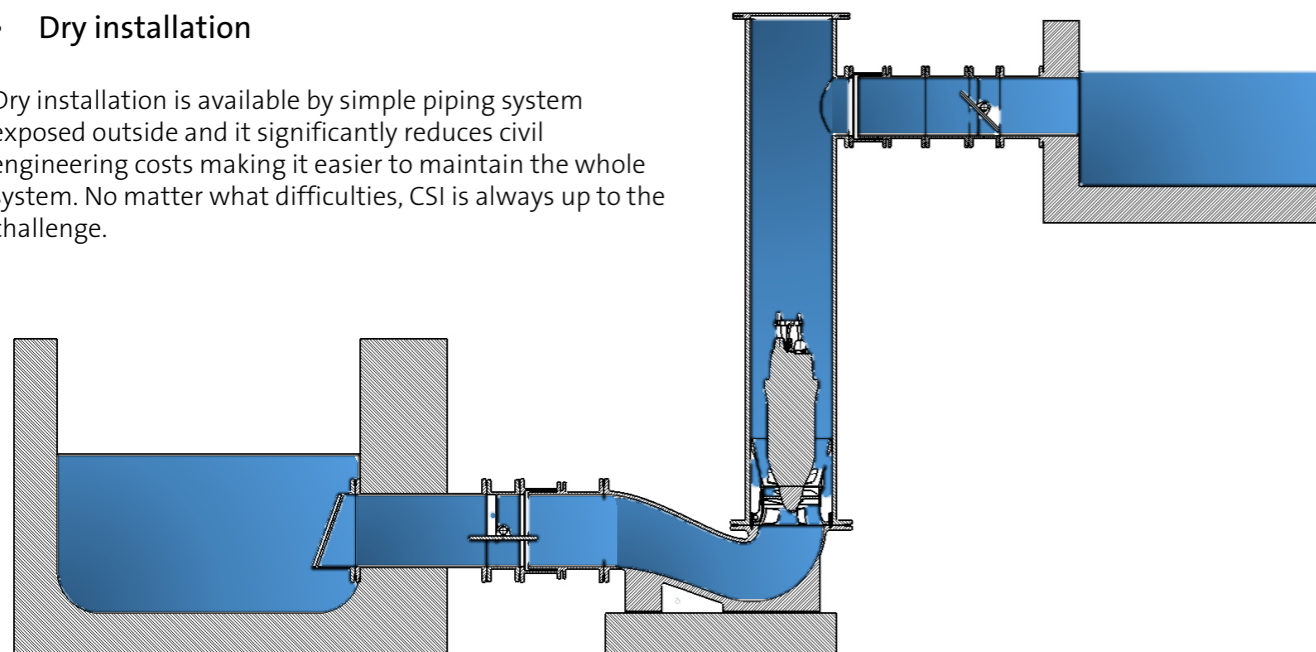
- Open installation



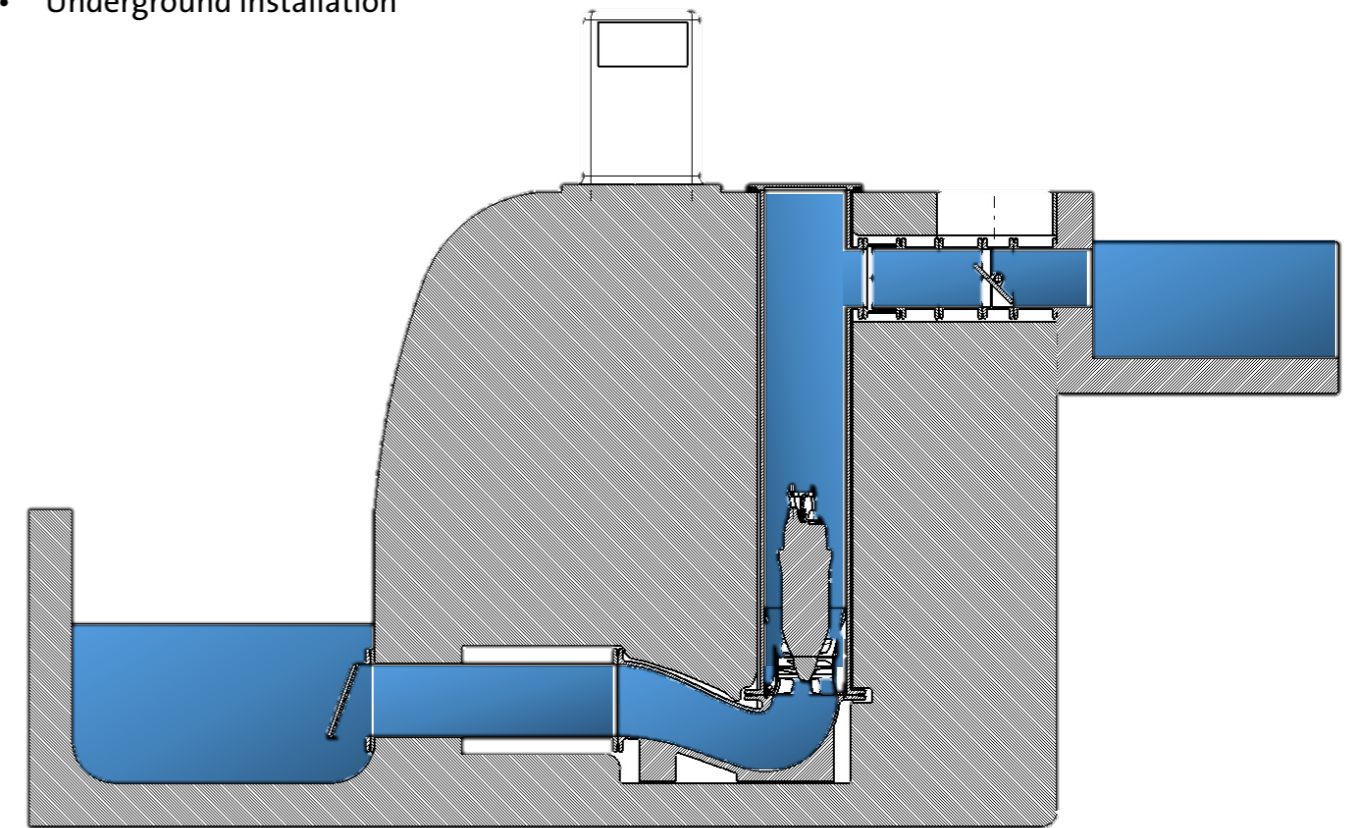
CSI brings structural benefits to customized pump sumps, requiring even lower water level and reduced pump bay size.

- Dry installation

Dry installation is available by simple piping system exposed outside and it significantly reduces civil engineering costs making it easier to maintain the whole system. No matter what difficulties, CSI is always up to the challenge.

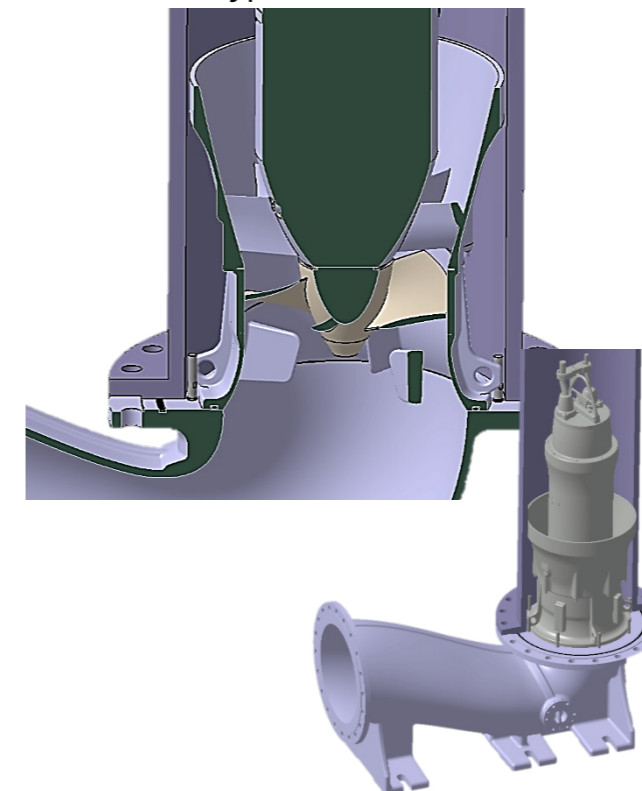


- Underground installation

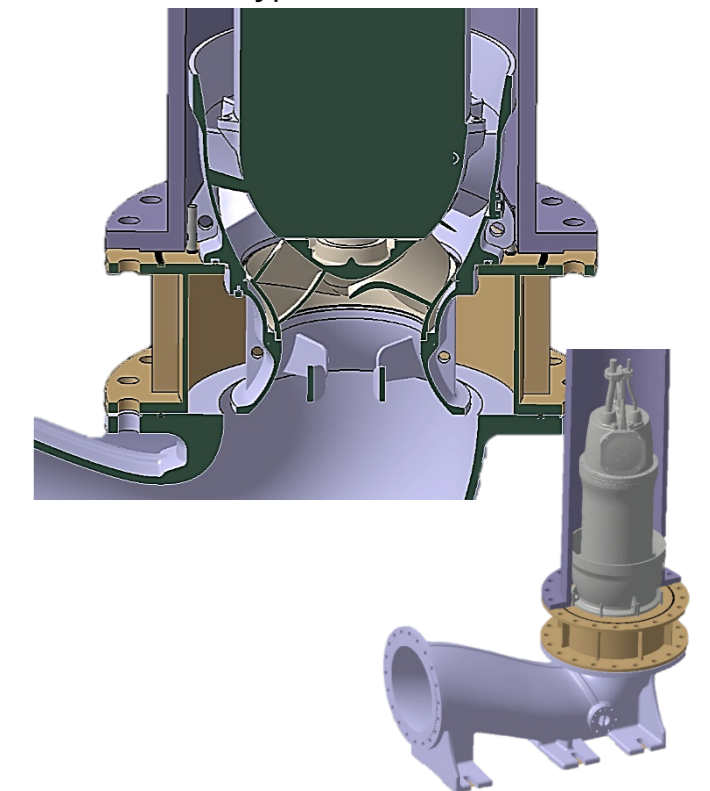


2-WAY USABILITY

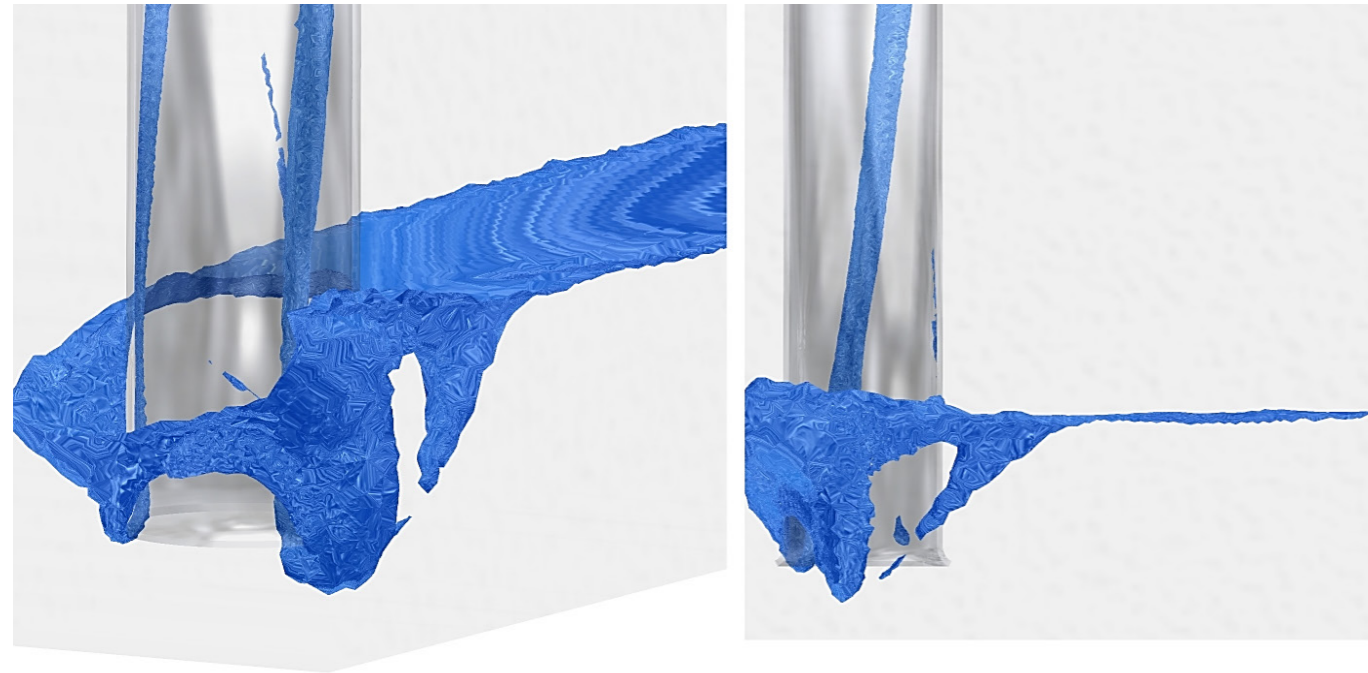
- Axial flow type



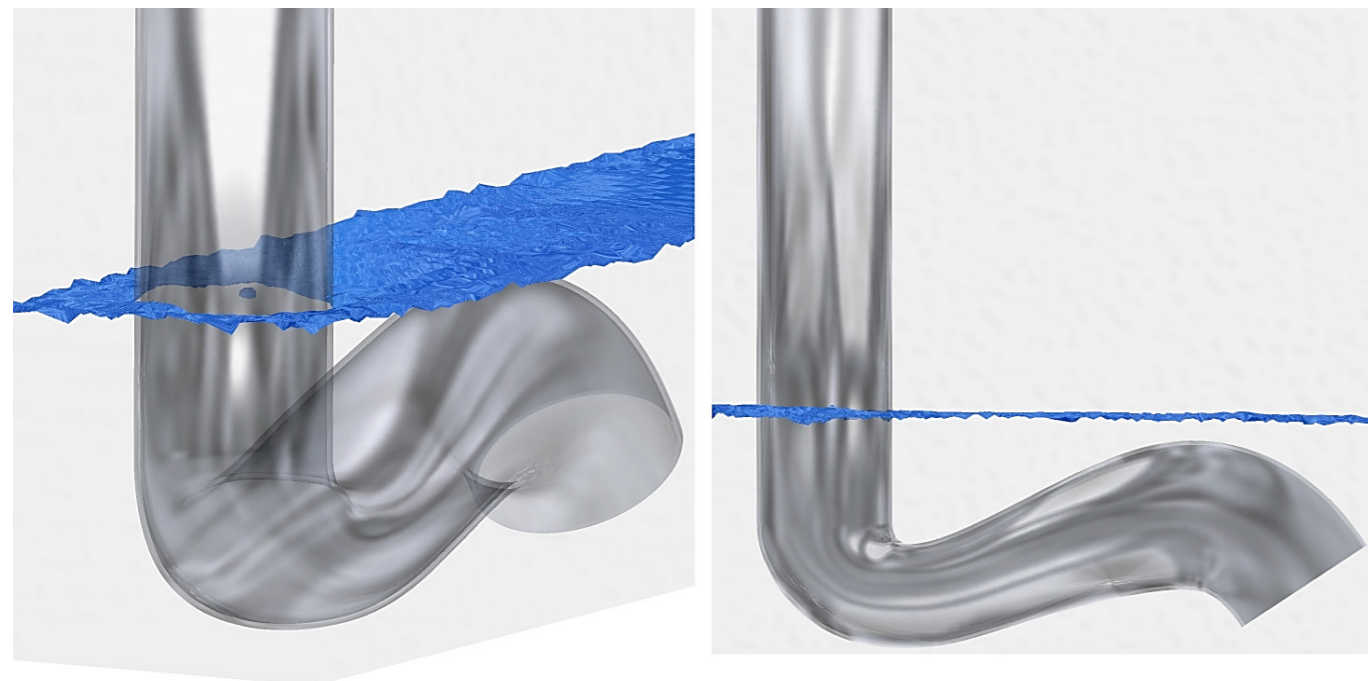
- Mixed flow type



CFD ANALYSIS



A CFD analysis conducted in an artificial sump where ideal inflow to pump entry cannot be achieved shows regional surface vortices formed around the pipe, which may affect pump's performance adversely.



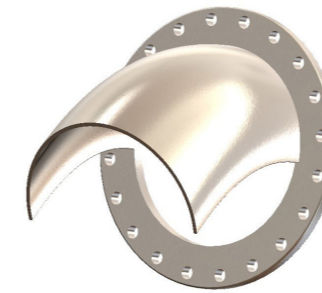
An additional CFD analysis conducted with CSI in the same artificial sump shows completely vortex-free surface of water.

TECHNICAL DATA

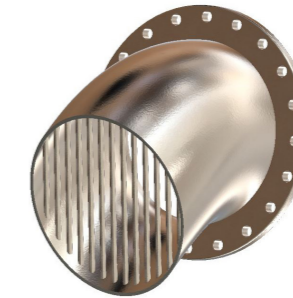
- Flow rate: up to 550m³/min
- Materials: ductile cast iron
- Installation method: horizontal
- Column diameter: up to DN 1800



ACCESSORIES



Type A

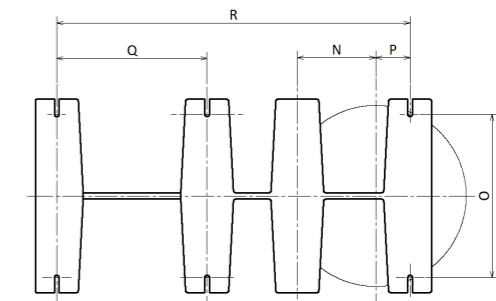
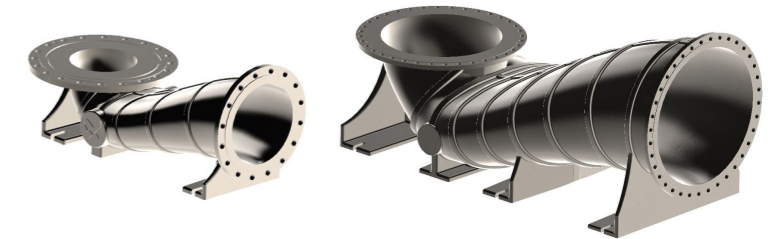
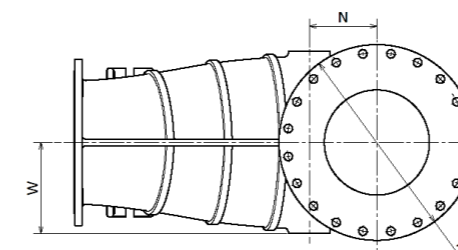
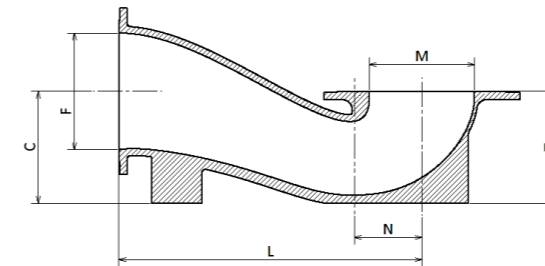


Type B



Type C

DIMENSION TABLE



(Unit: mm)

| Nominal column diameter [DN] | Compact suction intake(CSI) | | | | | | | | | | | | Weight |
|------------------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-----|-------|-------|-------|--------|
| | ØD | C | F | L | M | N | T | W | O | P | Q | R | Y |
| 500 | 360 | 400 | 1,100 | 325 | 210 | 370 | 270 | 370 | 75 | - | 1,135 | 715 | 362 |
| 600 | 480 | 500 | 1,300 | 451 | 290 | 480 | 390 | 510 | 100 | - | 1,360 | 840 | 675 |
| 650 | 480 | 500 | 1,300 | 451 | 290 | 480 | 390 | 510 | 100 | - | 1,360 | 845 | 698 |
| 700 | 560 | 600 | 1,600 | 550 | 360 | 540 | 450 | 670 | 135 | - | 1,710 | 910 | 978 |
| 800 | 630 | 700 | 1,900 | 650 | 420 | 620 | 530 | 800 | 140 | - | 2,020 | 1,025 | 1,312 |
| 900 | 630 | 700 | 1,900 | 650 | 420 | 620 | 530 | 800 | 140 | - | 2,020 | 1,025 | 1,377 |
| 1000 | 790 | 900 | 2,300 | 832 | 530 | 760 | 660 | 1,010 | 220 | - | 2,090 | 1,255 | 2,322 |
| 1200 | 970 | 1,200 | 2,800 | 1,000 | 620 | 940 | 800 | 1,370 | 230 | - | 2,530 | 1,485 | 4,125 |
| 1400 | 1,120 | 1,400 | 3,500 | 1,200 | 720 | 1,050 | 1,000 | 1,570 | 320 | 1,400 | 3,290 | 1,685 | 6,988 |
| 1500 | 1,190 | 1,400 | 3,600 | 1,280 | 800 | 1,120 | 1,000 | 1,570 | 350 | 1,420 | 3,420 | 1,795 | 7,200 |
| 1600 | 1,360 | 1,600 | 3,800 | 1,400 | 850 | 1,280 | 1,060 | 1,670 | 350 | 1,510 | 3,650 | 1,930 | 9,982 |
| 1800 | 1,540 | 1,800 | 4,400 | 1,600 | 1,000 | 1,490 | 1,180 | 1,770 | 450 | 1,790 | 4,290 | 2,130 | 12,835 |

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