GATE PUMP PUMPING STATION

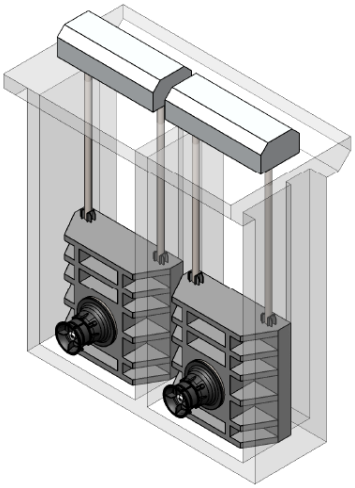
Pumps and systems for today's storm water and Flood control challenges

be
think
innovate

GRUNDFOS

POWERFUL PUMPING EFFICIENT OPERATION

Gate pump is a reliable solution if a pumping station and reservoir are not an option due to lack of space. If the outside water level is low, the gate pumps and screen will open and discharge inside water by gravity flow. Once the outside water level gets higher, blocking the back flow, the gate pumps close and block the rising water level. If the inside water reaches a certain level, the pump and screen will start operating to forcibly discharge the water inside.

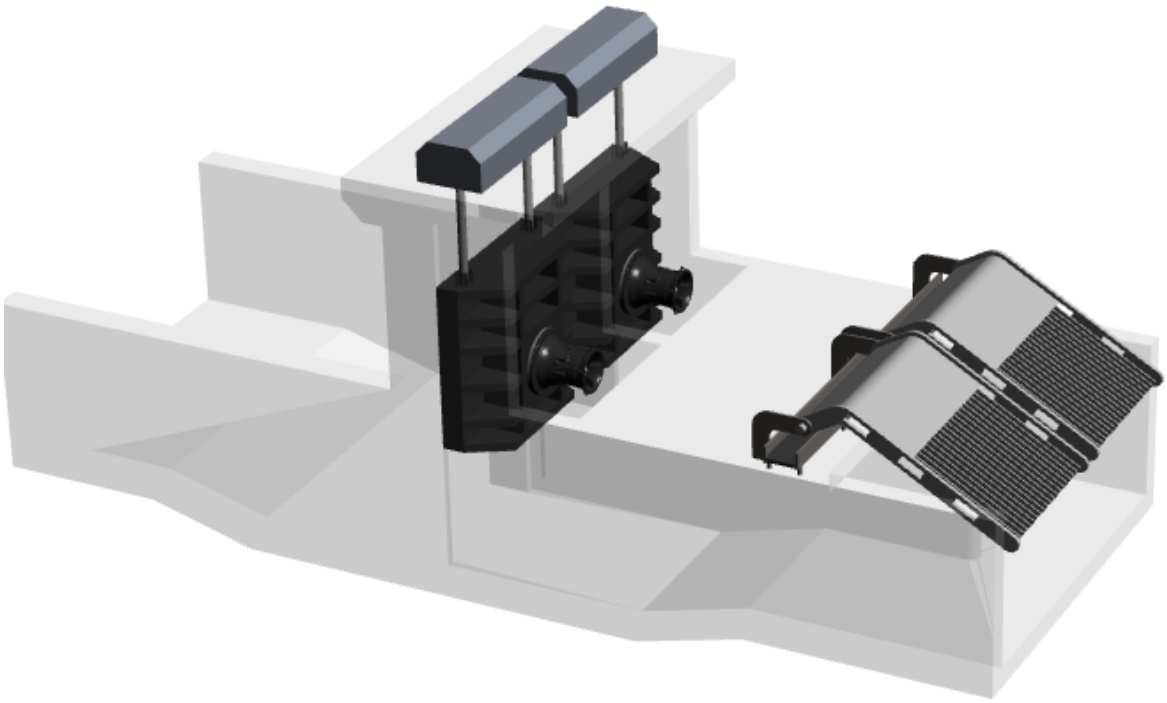


The market-leading high efficiency and compact design make it possible to reduce the size of the pumping station and cost for civil construction work. Built from cast iron or stainless steel, a wide range of variants using different materials, sensors, surface coatings and shaft seal materials are available, ensuring excellent reliability in demanding applications.

The range of Gate pumps offers:

- Best-in-class hydraulic efficiency
- Market-leading compact and lightweight design
- Backswept self-cleaning hydraulic design that provides great non-clogging performance

■ CONSTRUCTION



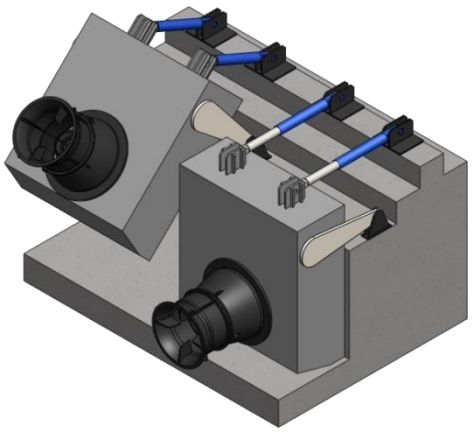
■ APPLICATION AND BENEFITS

These axial flow pumps are designed for high flow up to 300m^3/min and head up to 5.5m. Higher flow and head is available on request. Built to handle large amount of water, the pumps are ideal for a wide range of applications such as:

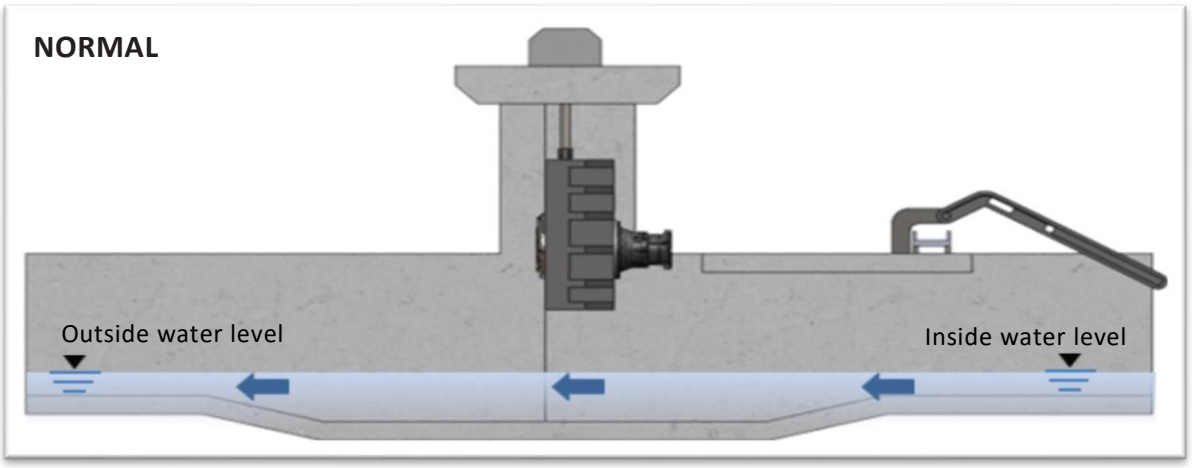
- Flood and storm water control
- Large volume drainage and irrigation
- Water level control in coastal and low-lying areas
- Filling and emptying water from dry docks and harbor

Benefits

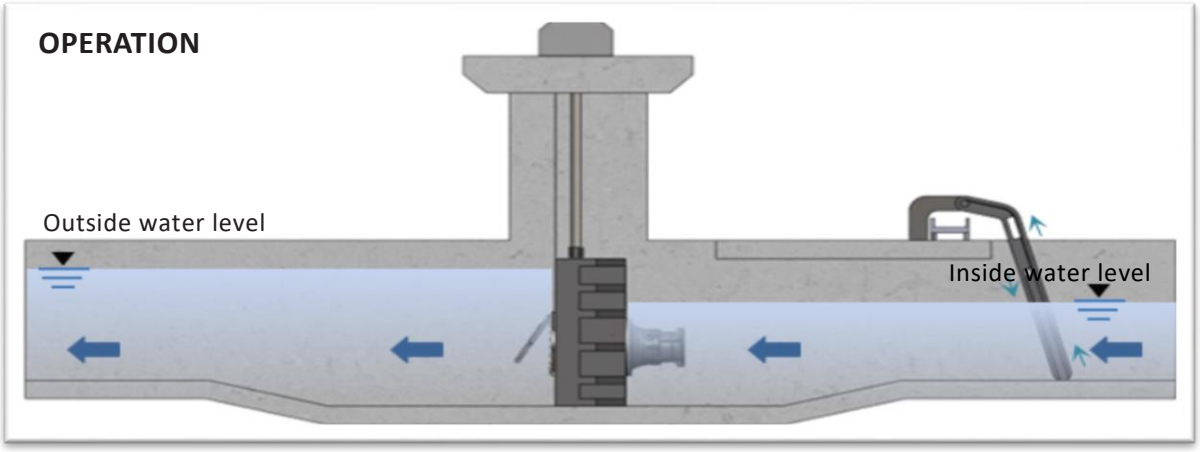
- Serves as a flood gate and pump simultaneously
- Equipped with submersible pumps, the gates can be installed on an existing waterway
- Required small space, ideal for both urban and rural areas



■ CONCEPT OF GATE PUMPING STATION



When outside water level is lower than inside water level, gate pump will open completely.



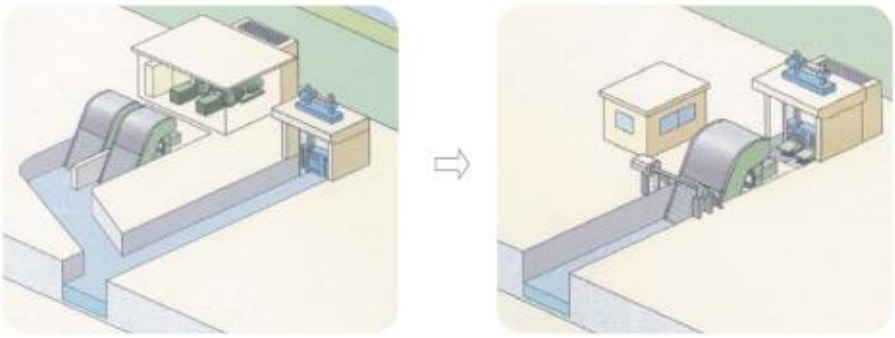
When outside water level is higher than inside water level, gate pump and screen will close simultaneously.

If inside water level reaches up to pump start level, pump and screen will operate automatically in order to forcibly discharge inside water toward outside.

Once outside water level is lower than inside water level, the gate pumps and screen will open and discharge the inside water by gravity flow.

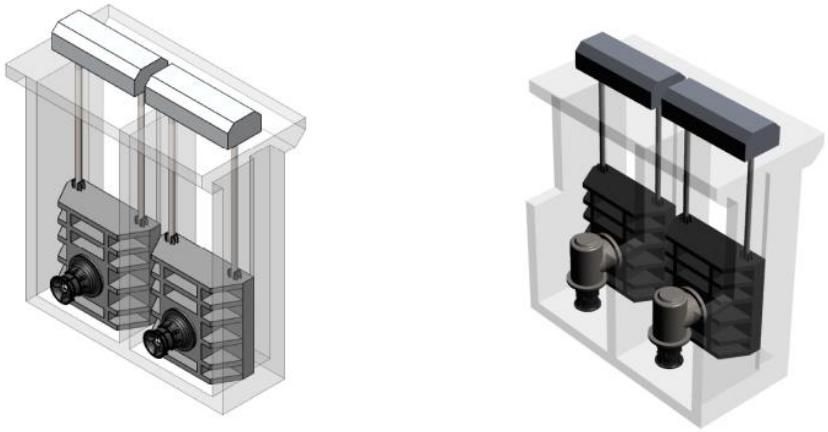
■ CONVENTIONAL PUMP *vs* GATE PUMP STATION

DRAINAGE STRUCTURE



Conventional pump station　　Gate pump station

GATE PUMP INSTALLATION



Horizontal　　Vertical

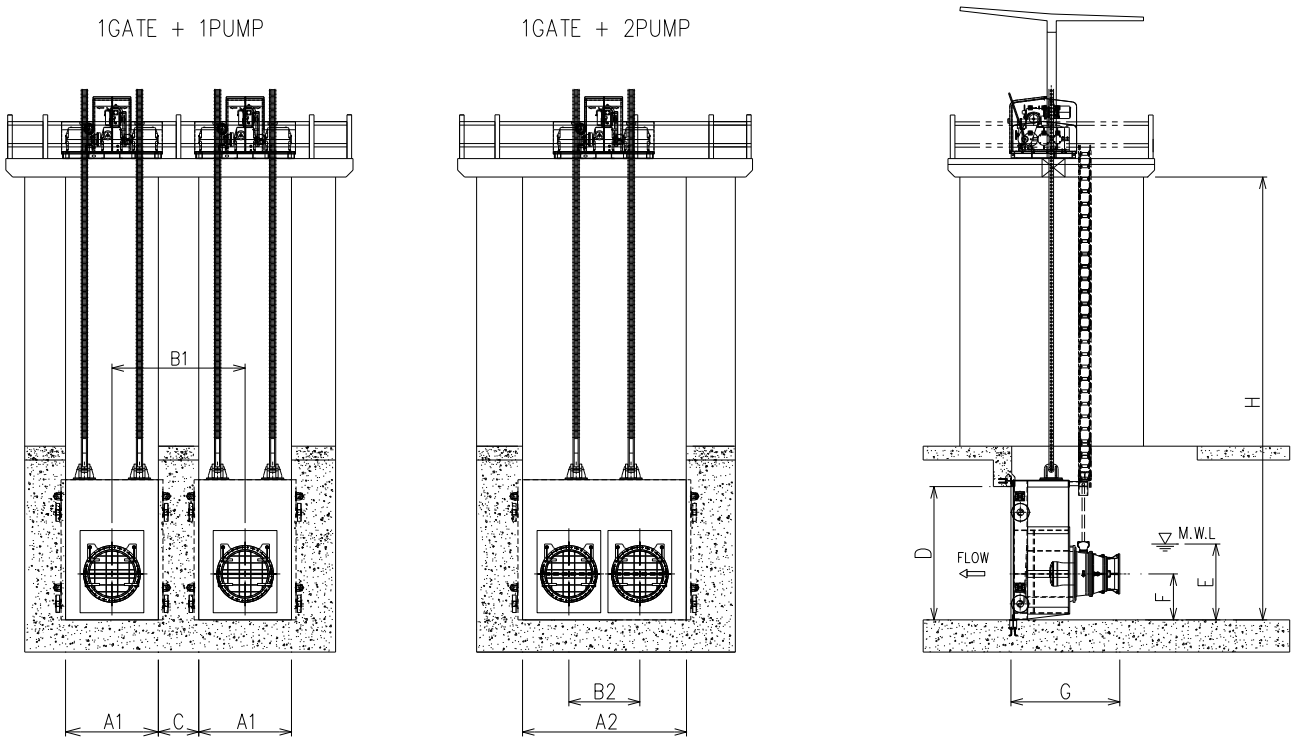
(Unit: %)

Description	Conventional pump station	Gate pump (Submersible Axial flow pump)	
Pump type	Vertical	Vertical	Horizontal
Pump station footprint	100	65	60
Pump room	Required	Not required	
Reservoir	Required	Channel used for reservoir	
Flood Gate	Required	Gate pump used for flood gate	
ME, EL Cost	100	65	60
Civil Cost	100	60	55
Maintenance Cost	100	80	80
Management	100	95	95

■ GATE PUMP SPECIFICATION

- Motor rated power: 22~230 kW
- Flow rate (Q): Max. 18,000 m^3/h
- Head (H): Max. 5.5 m
- Liquid temperature: 0 to +40° C
- Discharge diameter: Up to 1,400 mm
- Insulation class: F
- Max. Installation depth: 20 m
- Max. Pump efficiency: 80%
- Installation method: Vertical and Horizontal
- Lifting Facilities:
  - Power Jack Actuator, Spindle Actuator, Wire drum hoist, Hydraulic cylinder type

■ INSTALLATION



■ DIMENSIONS

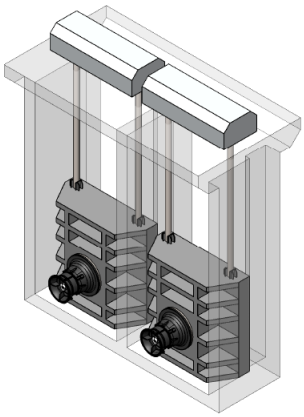
(unit: mm)

Discharge Dia.	1 Gate + 1 Pump			1 Gate + 2 Pump		D	E	F	G*	H
	A1	B1	*C	A2	B2					
DN 500	1200	2100	900	2000	900	1500	900	500	1600	4000
DN 600	1500	2400	900	2400	1100	1700	1050	600	1700	4400
DN 700	1700	2600	900	2800	1300	1900	1250	700	1800	4800
DN 800	2000	2900	900	3200	1400	2100	1400	800	2000	5200
DN 900	2200	3100	900	3600	1600	2300	1600	900	2200	5600
DN 1000	2400	3300	900	4000	1800	2500	1750	1000	2400	6000
DN 1200	2900	3800	900	4800	2100	2900	2000	1100	2800	6800
DN 1400	3400	4300	900	5400	2400	3300	2250	1200	3000	7600

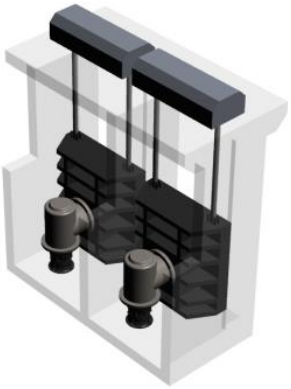
Note: The above dimensions are all minimum dimensions.
(*) dimension can be changed by site condition or pump vendor.

■ PRODUCTS

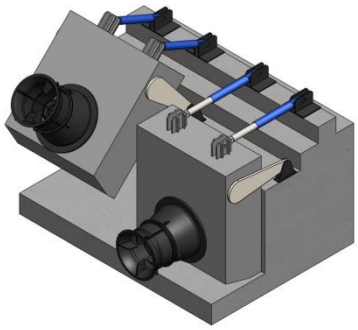
Grundfos provides turnkey gate pumping station and electrical system solutions. We provide project development, products, manufacturing, and installation on turnkey basis. Our proven technical expertise and experience in flood control solution is recognized as a leading company in total solution of gate pumping station.



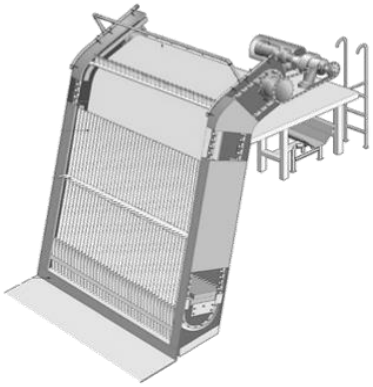
Horizontal type



Vertical type



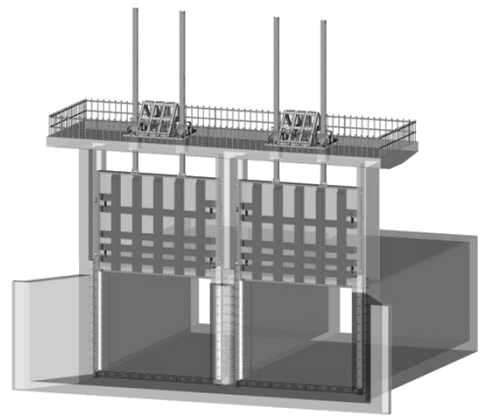
Hydraulic cylinder type



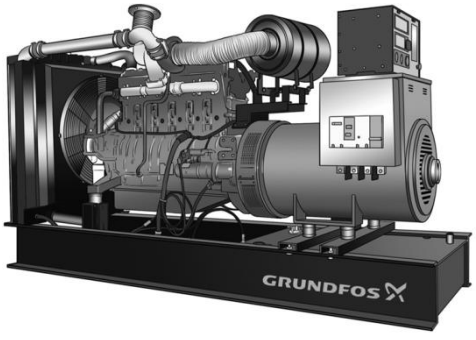
Screen & Trash remover

Flap valve

Monitoring & Controls



Flood Gate & Stop log



Diesel Generator Sets

Grundfos Water Utility – optimized water solutions

Grundfos Water Utility is a full-range supplier of intelligent pumps and systems for all water supply and wastewater applications.
We optimize pumping solutions to provide maximum reliability and resource efficiency for our customers. Our solutions are made with tried and tested technology and our expertise is part of any delivery.

We offer solutions and expertise within the following applications:

- Raw Water Intake
- Drinking Water Treatment
- Water Distribution
- Wastewater Transport
- Flood Control
- Wastewater Treatment

Download engineering guides, case stories, films and learn more at www.grundfos.com/flood-control.

Explore the KPL Pump, download the KPL Pump App

Grundfos is a global leader in advanced pump solutions and a trendsetter in water technology. We contribute to global sustainability by pioneering technologies that improve quality of life for people and care for the planet.

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