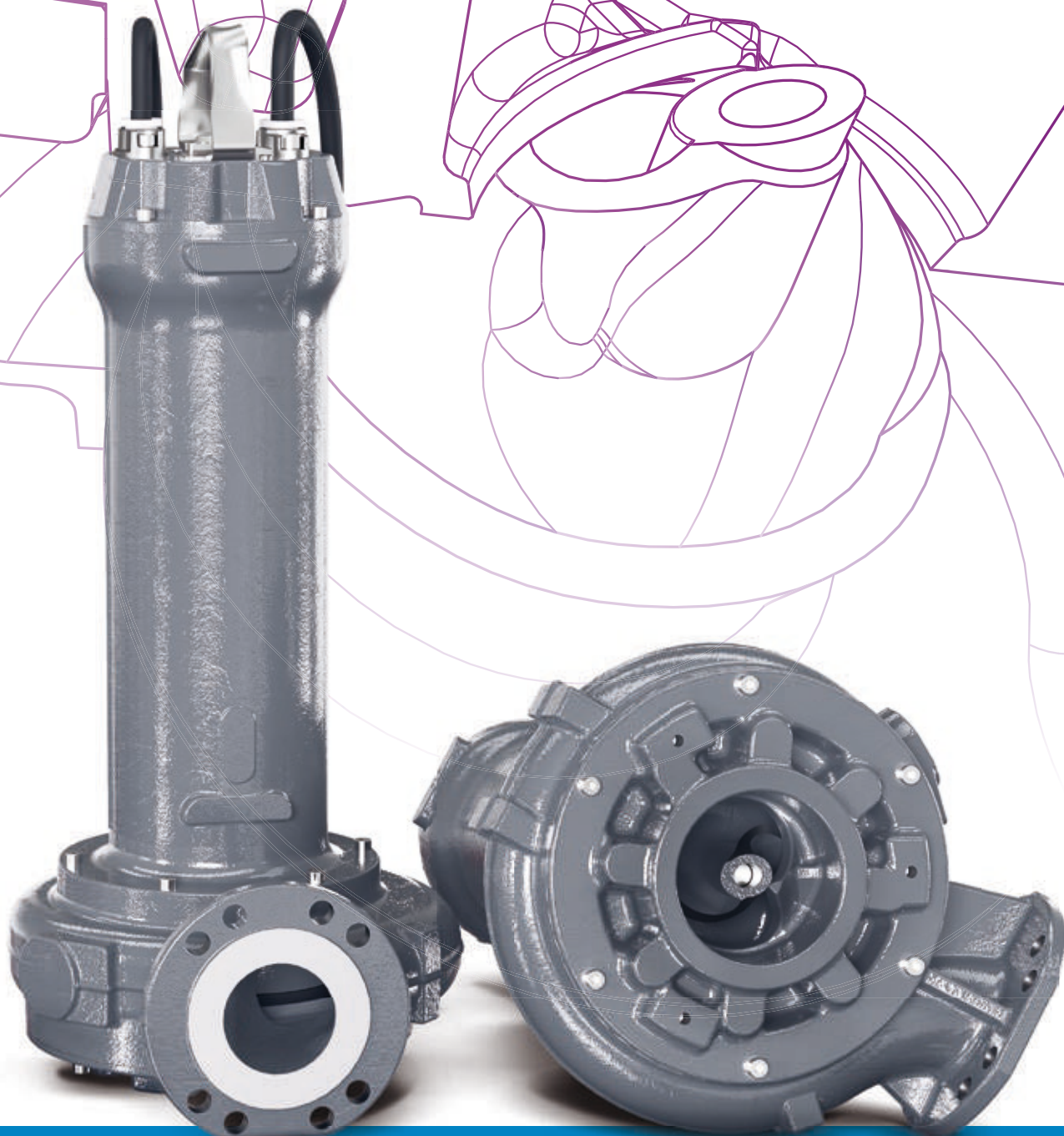




A Tsurumi Pump Company

MUNICIPAL/INDUSTRIAL



# Grey CTG

SUBMERSIBLE PUMPS WITH INNOVATIVE CUTTING SYSTEM



# Grey CTG

Cuts and smashes solid waste, including long and fibrous waste, effectively.

Zenit **Grey CTG** submersible pumps are intended for heavy use with highly soiled sewage and wastewater, containing **solid and fibrous waste**.

The Grey CTG submersible pump is equipped with **a hydraulic unit with an innovative cutting system**, designed to cut solid waste and smash filamentary waste contained in wastewater.

The CTG Series combines the best of Zenit top hydraulics: **the high flow rates values of the Open Channel** together with **the solids' management capacity allowed by the Vortex**, with the addition of the **innovative Zenit cutting system**.

Moreover, thanks to **the effective anti-clogging system**, the CTGs set a benchmark for the Grey series to handle loaded wastewater in any environment, without compromising performance and operational reliability.



## Handling of **sewage**

In water treatment and purification systems, livestock facilities, sewage lifting and all contexts where fluids containing **solids, fibres or other materials** are lifted and handled, the use of normal cutting pumps is limited by the different nature of the solids and the small free passages.

The Grey CTGs are the perfect complement to Zenit's range of cutting pumps. Their **high flow rate** and **hydraulic design** guarantee **exceptional performance in terms of efficiency**.



## What are the **benefits** of Grey CTG

### Reduced maintenance costs

Fewer interventions for cleaning and replacing components.

### High application versatility

Effective pumping in a wide range of applications with a high risk of clogging.

### Increased operational efficiency

Continuous operation guaranteed even with heavily loaded liquids.

Grey CTG pumps offer an effective solution that greatly improves wastewater handling capacity. The **innovative Zenit integrated cutting system** can smash and expel the solids and fibres present in the liquid, preventing clogging and ensuring efficient lifting of waste and sewage, while ensuring high reliability.



### Wastewater and sewage treatment

Suitable for use within wastewater lifting systems in sewage treatment plants. Optimal waste water management and no blockages caused by solid waste, rags or fibrous materials.



### Food, agriculture and livestock industry

Pumping of sewage with organic residues, processing waste or manure. Sewage management in stables or biogas plants.



### Paper and textile industry

Transport of industrial waters with fibrous residues or filaments.



### Municipal and emergency applications

Disposal of mixed wastewater in urban or flood contexts.

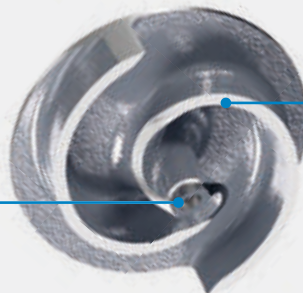
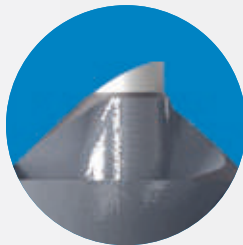
# A **breakthrough** in wastewater solids handling

The **Grey CTG** achieves high performance thanks to an innovative hydraulic system equipped with **a brand new cutting system**.



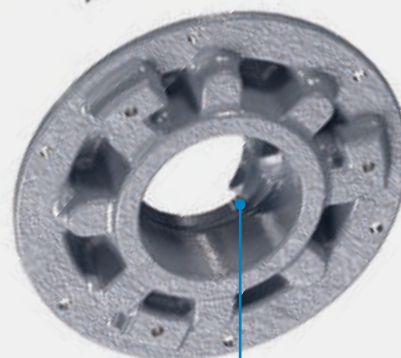
## SHARP EDGES

Channel impeller equipped with sharp edges that convey solid materials towards the knife on the flange, effectively cutting and smashing incoming solids.



## PREMIUM ANTI-CLOGGING SYSTEM

The extended impeller hub prevents solids from accumulating in the suction area. The unique design is engineered to convey waste into the hydraulics toward the blades and away from the low-pressure area in the center of the impeller, **preventing solids from becoming trapped** in the suction flange and greatly improving reliability against clogging.



## FIXED SUCTION BLADE

The suction flange is equipped with an extremely sharp blade that cuts and smashes any solids it comes into contact with. The inside of the flange is engineered to facilitate the passage of solids, preventing blockages.

# Innovative cutting system

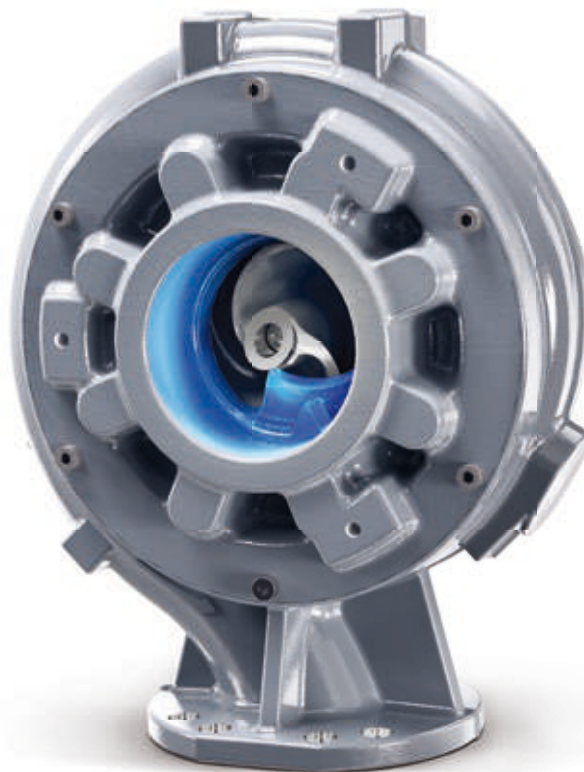
Grey CTG stands out from other cutter pumps thanks to its **innovative hydraulic unit** that houses a **new cutting system**, comprising an impeller, equipped with sharp edge blades, and the fixed blade placed on the suction mouth.

In addition to **smashing** solid bodies, this system can **cut** long, fibrous bodies, often difficult to treat, which can get tangled up around the impeller, blocking the hydraulic unit.

In the **CTG hydraulic unit**, a sharp blade, integrated into the suction flange, is positioned flush with the blades from the sharp edges of the high-efficiency channel impeller.

The **blade** on the suction flange is obtained from a **single casting**. A robust rib makes it **resistant and durable**, increasing the overall reliability of the entire cutting system.

The blades of the channel impeller are screwed along the longer central hub, creating a guide that **conveys the solid bodies** towards the blade more effectively, by avoiding the retention of residues in the centre of the impeller.



## State-of-the-art **cutting and smashing** mechanism

The innovative system cuts solid bodies, ensuring regular pumping.

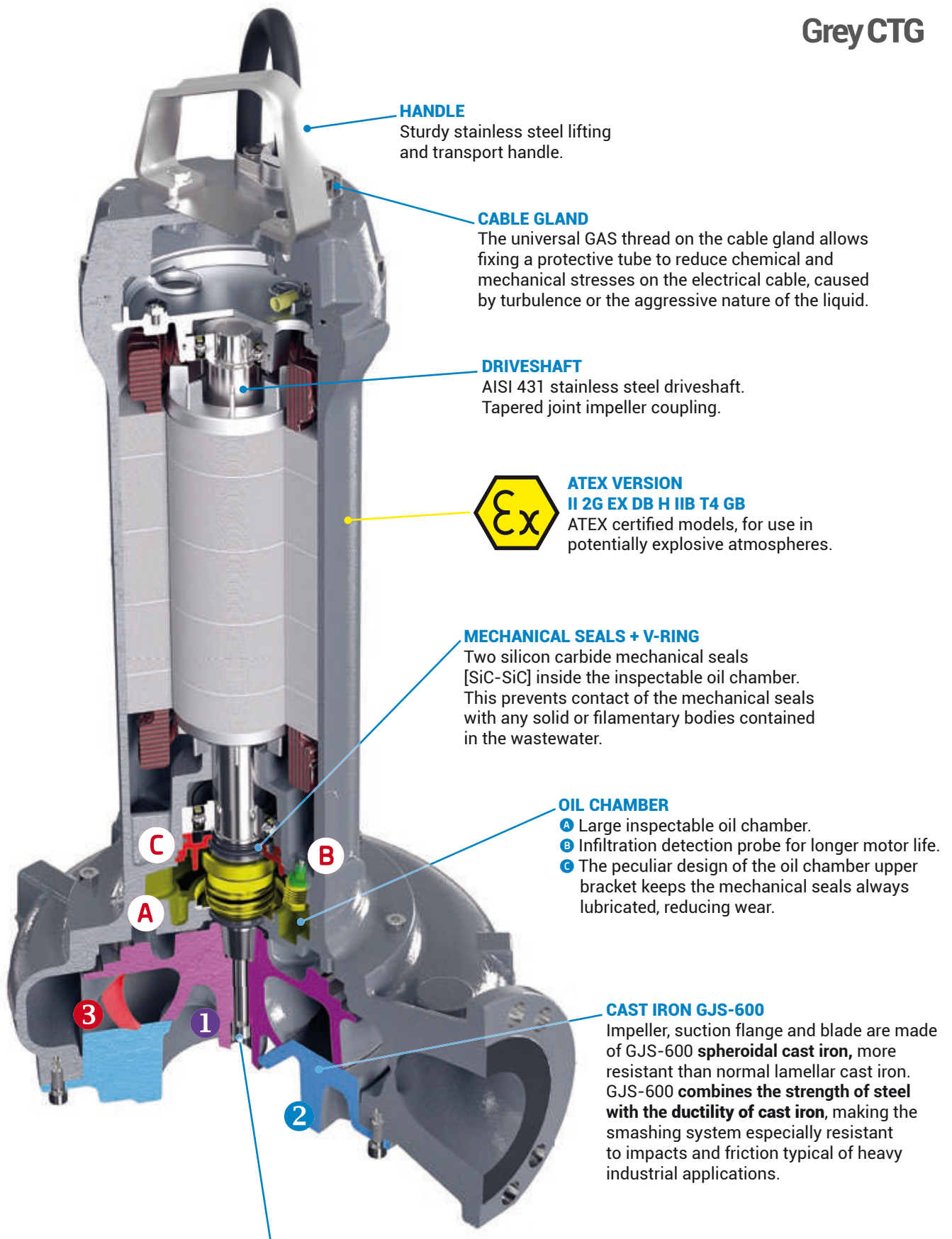
Through an **optimal angle**, the impeller blades convey the solids towards the blade, favouring the smashing, avoiding turbulence and, with their shape, preventing the pump from being clogged and a reduction of the efficiency performance.

The CTG system is **easy to maintain**: the clearance between blade and impeller can be adjusted by means of cellulose fibre gaskets inserted between the flange and the pump body.



- Sharp blade edge
- Flange with blade
- Cellulose fibre gasket

Design registration in EU: DM/209219 - Patent registration number: EP4067663



**HANDLE**  
Sturdy stainless steel lifting and transport handle.

**CABLE GLAND**  
The universal GAS thread on the cable gland allows fixing a protective tube to reduce chemical and mechanical stresses on the electrical cable, caused by turbulence or the aggressive nature of the liquid.

**DRIVESHAFT**  
AISI 431 stainless steel driveshaft.  
Tapered joint impeller coupling.

**ATEX VERSION**  
**II 2G EX DB H IIB T4 GB**  
ATEX certified models, for use in potentially explosive atmospheres.

**MECHANICAL SEALS + V-RING**  
Two silicon carbide mechanical seals [SiC-SiC] inside the inspectable oil chamber. This prevents contact of the mechanical seals with any solid or filamentary bodies contained in the wastewater.

**OIL CHAMBER**  
**A** Large inspectable oil chamber.  
**B** Infiltration detection probe for longer motor life.  
**C** The peculiar design of the oil chamber upper bracket keeps the mechanical seals always lubricated, reducing wear.

**CAST IRON GJS-600**  
Impeller, suction flange and blade are made of GJS-600 **spheroidal cast iron**, more resistant than normal lamellar cast iron. GJS-600 **combines the strength of steel with the ductility of cast iron**, making the smashing system especially resistant to impacts and friction typical of heavy industrial applications.

## INNOVATIVE HYDRAULIC UNIT WITH NEW CUTTING AND SMASHING SYSTEM

- 1 Channel impeller with **sharp edge blades** screwed deeply along the hub, creating **two rotating blades**.
- 2 Suction flange with blade that creates a **cutting effect** with the impeller blades.
- 3 The inner part of the flange houses a **helical groove** that facilitates the ejection of solid bodies and prevents the impeller from being blocked.

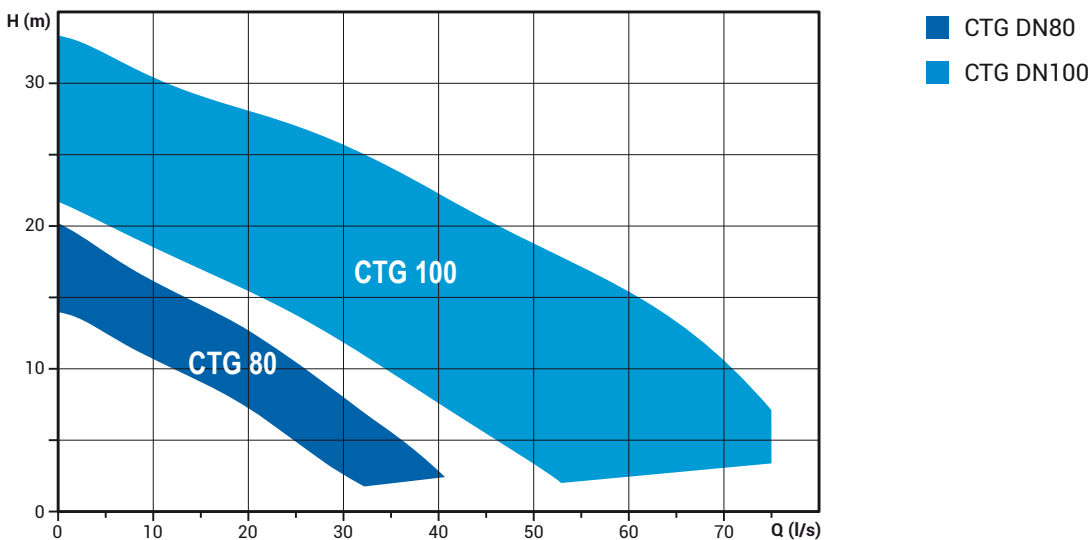
## Specifications

- Cast iron body EN-GJL250
- Impeller, Suction flange and Blade in EN-GJS600
- Three-phase electric motor from 2.2÷15 kW at 50Hz
- Class H insulation [180°C]
- IP68 protection
- Thermal protections integrated into the stator
- Mechanical seals oil chamber infiltration detection probe
- AISI 431 crankshaft
- Two-component epoxy painting 200 µm
- Two silicon carbide mechanical seals [SiC] inside the oil chamber
- Outlet from DN80 to DN100
- Wide free passage



ATEX approved range:   Ex db h IIB T4 Gb  
2460 II 2G

## Overview of work applications



## Construction materials

Motor enclosure	Cast iron GJL-250
Impeller	
Suction flange with smashing system	Cast iron GJS-600
Mechanical seals	Two in silicon carbide [2SiC]
Hardware	Stainless steel - Class A2-70
Standard gaskets	NBR
Crankshaft	Stainless steel AISI 431
Painting	Corrosion-resistant two-component epoxy paint 200 µm

## Use specification

Max ambient temperature	40°C
liquid pH	6 - 14
Max submergence	20 m
Max liquid density	1.1 kg/dm <sup>3</sup>
Max sound pressure	<70 dB
Continuous operation	Service S1
Max start-up/hour	20 [P2<10kW] 15 [P2>10kW]

\*The availability is subject to review and approval by Zenit Technical Department.

## Electrical and hydraulic data

GREY CTG 300	
Power [kW]	2.2
Outlet	DN80
Poles	4
Free flow [mm]	32
Max flow rate [l/s]	32.2
Max head [m]	13.0

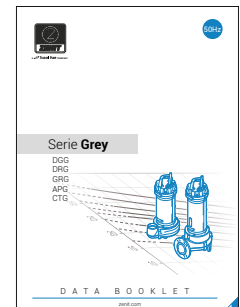
GREY CTG 1000	
Power [kW]	7.5
Outlet	DN100
Poles	4
Free flow [mm]	34
Max flow rate [l/s]	51.1
Max head [m]	23.6

GREY CTG 550	
Power [kW]	4.0
Outlet	DN80
Poles	4
Free flow [mm]	30
Max flow rate [l/s]	38.3
Max head [m]	18.6

GREY CTG 1500	
Power [kW]	11
Outlet	DN100
Poles	4
Free flow [mm]	44
Max flow rate [l/s]	72.1
Max head [m]	27.0

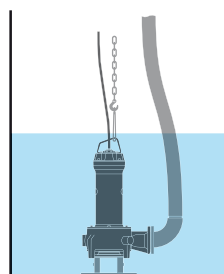
GREY CTG 750	
Power [kW]	5.5
Outlet	DN100
Poles	4
Free flow [mm]	36
Max flow rate [l/s]	49.7
Max head [m]	20.1

GREY CTG 2000	
Power [kW]	15
Outlet	DN100
Poles	4
Free flow [mm]	42
Max flow rate [l/s]	75.0
Max head [m]	31.1

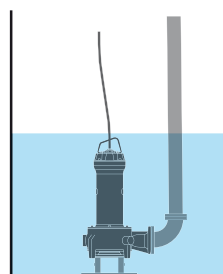


Full Technical Data booklet with hydraulic curves available at [zenit.com](http://zenit.com)

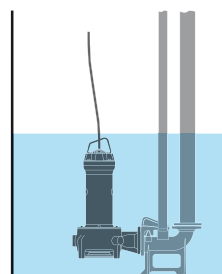
## Installation



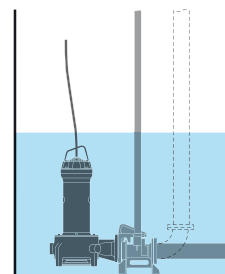
FREE installation



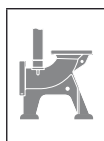
FIXED installation



Installation with BOTTOM COUPLING DEVICE



## A full range of **accessories** to simply any installation.



### Bottom coupling devices

- Cast iron body - steel screws
- Vertical and horizontal outlet
- GAS 1 1/2" - GAS 2" / DN65 ÷ DN250



### Ball check valve

- Cast iron body - steel screws
- Rubber ball
- GAS 1 1/2" - GAS 2" / DN65 ÷ DN250



### Gate valves

- Cast iron body with bronze seats
- Integral free passage



### Outlet curves

- Cast iron or galvanised steel
- Integral free passage
- DN65 - DN250



### Bases

- Cast iron or galvanised steel
- Ideal for free installation



### Chains

- Stainless steel and galvanised steel
- Ø 5mm, 8mm, 12mm

## A series with a **simple and rational** design for simple maintenance.

The **Grey series** has been designed and built to make replacing parts subject to normal wear and tear easier, in order to extend its life cycle and reduce operating costs.

Zenit Group Authorised **Installers** and **Service Centres** are carefully selected and trained to offer the best maintenance services and guarantee high standards of service quality.



## The **best solution** for every application

Zenit Group supports its **customers** at all stages of the process. From design to logistics, we can offer the best solutions to even the most complex applications.



### PRE-SALE

Product selection  
Customisation  
Cost and consumption estimates



### CONSULTING

Solution evaluation  
Plant design  
On-site presence



### AFTER-SALES

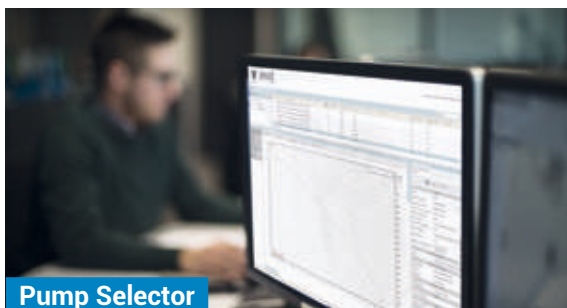
Installation support  
Commissioning support  
Authorised workshops

## ZENO Navigator Suite, the right solution at your fingertips.

Zenit Group's platform for **selecting and configuring the desired product**, choosing **original spare parts** and **accessing documents**, designed to meet the needs of industry operators, engineering firms, plant managers and installers.

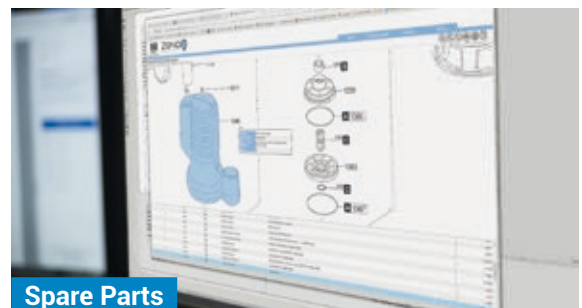
### The most effective tool for managing your business.

**ZENO Pump Selector** provides a valid support for pump selection and configuration, and allows you to determine the solution that best matches to the required parameters. The selection can be made in a timely manner, for a specific work point, or by directly choosing the type of hydraulic unit.



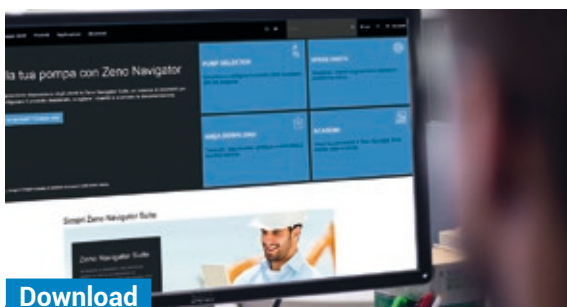
Pump Selector

This application provides a valid support for selecting and configuring Zenit pumps, up to the generation of the final offer.



Spare Parts

A simple and fast tool to help you select the original Zenit spare parts you need.



Download

A library of in-depth technical and commercial documents at your disposal.



Academy

In the Academy section, you will find useful information to familiarize and get trained on Zenit products and services.



Zeno is available for **Desktop** and **Mobile** applications, on smartphones and tablets, for Apple and Android.

[www.zenit.com](http://www.zenit.com)



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For more information, visit [www.zenit.com](http://www.zenit.com)