



# Grundfos CR

## The ultimate multistage centrifugal pumps

# INSIDE



## Grundfos Motor

Grundfos makes its own motors to ensure maximum performance. The MG motors are remarkably silent and highly efficient. They are also available in the self-regulating MGE configuration, featuring an integrated frequency converter.

## Cartridge seal

The specially designed cartridge seal increases reliability, ensures safe handling and enables easy service and access.

## Shaft seal solutions

The cartridge shaft seal configuration comes in a wide choice of materials. It is available in flushed seal, double seal and magnetic drive configurations. Handles temperatures from  $-40^{\circ}\text{C}$  to  $180^{\circ}\text{C}$ .

## Connection options

The Grundfos CR can be connected to any system.

## Dry running sensor

The patented Grundfos LiqTec system eliminates the risk of breakdowns due to dry running. If there is no liquid in the pump, the LiqTec will immediately stop it.

## High performance hydraulics

Pump efficiency is maximized by state-of-the-art hydraulic design and carefully crafted production technology.

## Durable bearings

The CR bearings are remarkable long-lived thanks to hard-wearing materials and a wide range of options for difficult liquids.

## Material options

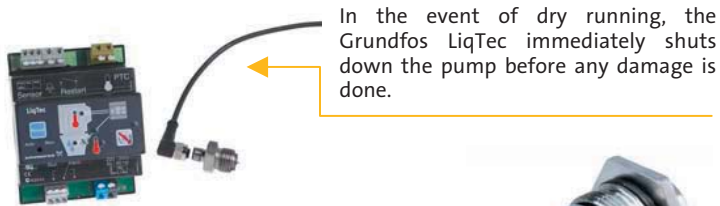
The CR is available in four different materials: titanium, stainless steel AISI316, stainless steel AISI 304 and AISI 304/cast iron.

## Wide range of sizes

The CR comes in 13 flow sizes and hundreds of pressure sizes, ensuring that you can always find exactly the right pump for the job.

## Reliability in real life

The CR is renowned for its reliability. And rightly so. The CR design has all the durability that customers expect from a high-quality multistage pump – and then some. We have added unique features to ensure unsurpassed reliability: dry-running protection, a unique cartridge seal and a full titanium variant.



In the event of dry running, the Grundfos LiqTec immediately shuts down the pump before any damage is done.

With unfailing attention to reliability, the Grundfos engineers have designed an innovative cartridge seal that can be replaced within minutes. Add that is just one of the remarkable benefits it offers.



Minimising downtime is also part of reliable operation. That is why Grundfos has eliminated a major nuisance for owners of large pumps. Now, it is no longer necessary to remove heavy motors to replace the seal: The innovative spacer coupling, unique to the CR range, means that all motors weighing more than 35 kg can be left in place during seal replacement.

## RELIABILITY



The boiler feeding process reads like a shortlist of extreme pump conditions: high temperatures, long operating hours, frequent starts/stops, pressure pulsing, and poor inlet conditions. This makes it even more remarkable that the Grundfos CR is the first choice for such operation worldwide.

# EFFICIENCY



## Reduce the real cost

Electricity is the most expensive part of any pump. This simple fact is often overlooked when pumps and prices are compared, so it is worth repeating here.

It may still surprise some to learn that the purchase price and maintenance costs account for less than 15% of the total lifetime cost of a pump. Obviously, this means that electricity accounts for a staggering 85% or more of the total costs. So if you want to save money, that's why you should look at.

### Efficiency Class 1 motors – the best efficiency you can get

The Grundfos CR makes a real difference. All 3-phase 50Hz motors used in the CR range bear the EFF1 mark; clear proof that they are as efficient as pump motors can get. See the table below to find out just how much electricity you can save

### Other benefit of EFF1 pumps.

While energy savings are the main benefit of EFF 1 motors, it's worth noting that they are also quieter than standard motors – they require less cooling, so their fans are smaller and less noisy. The lower motor temperature also means that EFF1 motors tolerate higher ambient temperatures up to 60°C.

Application type	Typical duty point	Operating hours per day	Average kWh reduction per year with CR	Average kWh reduction per year with MG motors	Total reduction per year
Water supply	80 m <sup>3</sup> /h at 6 bar	24 hours	18500 kWh	5200 kWh	23700 kWh
Water treatment	2 m <sup>3</sup> /h at 15 bar	15 hours	3200 kWh	600kWh	3800 kWh
General industry	6 m <sup>3</sup> /h at 10 bar	10 hours	2200kWh	400kWh	2600 kWh

## SOLUTIONS

### All your needs covered



**CR**  
Stainless steel  
AISI 304 with a  
cast iron top  
and base



**CRN**  
High-grade AISI  
316 stainless steel  
throughout.



**CRI**  
Stainless  
steel AISI 304  
throughout.



**CRT**  
Titanium  
throughout.

### The CR range meets all challenges

Aggressive or corrosive liquids	Seawater, hypochlorites, hydrochloric acid, ferric chloride, nitric acid, chromic acid
Abrasive liquids	Metasilicate, abrasive, cleaners/degreasers, phosphates
Toxic or explosive liquids	Trichloroethylene, toluene, petrol, ethyl alcohol, methyl alcohol
High-viscosity liquids	Glycols, lubricating oils, vegetable oils
Hardening liquids	Paints
Crystallizing liquids	Glycol additives, naphthalene, sugar products (e.g. dextran), salts
High pressures	Water treatment, cleaning/washing
Extreme temperatures	Oils, boilers feed, secondary coolants

# FAMILY CURVES

