

## Introduction

The CRT and CRTE pumps are non-self-priming, vertical multistage centrifugal pumps. The pumps are available with Grundfos standard motors (CRT pumps) or frequency-controlled motors (CRTE pumps). Reliable and cost efficient, CRT and CRTE pumps handle a variety of liquids from sea water to sodium hypochlorite. In CRT and CRTE pumps, all components in contact with the pumped liquid are constructed of titanium.

### Excellent corrosion resistance

Titanium is widely used for many industrial applications due to its high resistance to corrosion.

Totally unaffected by corrosive attacks by salt water or marine atmospheres, titanium also has an exceptional resistance to a wide range of acids, alkalies, natural water and industrial chemicals.

The fine corrosion resistance of titanium is due to a stable, protective and strongly adherent oxide film, formed instantly on the metal when a fresh surface is exposed to air or moisture.



GR7369

Fig. 1 CRT pumps

## Applications

Reliable and cost-efficient, CRT pumps handle a variety of liquids from sea water to sodium hypochlorite.

CRT and CRTE pumps are suitable for these types of applications:

### Marine environment

- Ballast pumps
- washing/cleaning.

### Pulp and paper industries

- Bleaching solutions

### Offshore industries and refineries

- Fire fighting
- cooling
- metal-finishing industries (electroplating)
- copper chloride etching
- ammonium chloride etching.

### Power generation plants

- FGD (Flue Gas Desulphurization)

### Food processing, brewing and pharmaceutical industries

- CIP (Cleaning In Place)
- disinfection.

### Desalination industries

- Reverse osmosis
- distillation.

### Chemical processing industries

- Chlorine and chlorates
- organic acids
- oxidizing acids (nitric acid, chromic acid)
- chloride-containing salts (ferric chloride)
- inhibited reducing acids.

### Other

- Fish farming
- aquariums
- water parks.

## Pump

The pump consists of a base and a pump head. The chamber stack and the outer sleeve are secured between the pump head and the base by means of staybolts. The base has suction and discharge ports on the same level (in-line).

All pumps are equipped with a maintenance-free mechanical shaft seal.

## Motors

### Grundfos standard motors - ML and Baldor® motors

CRT pumps are fitted with Grundfos specified motors. The motors are all heavy-duty 2-pole, energy efficient NEMA frame, C-face motors.

### Frequency-controlled motors - MLE motors

CRTE pumps are fitted with totally enclosed, fan-cooled, 2-pole frequency-controlled motors.

From 0.5 Hp to 1.5 Hp Grundfos offers CRTE pumps fitted with single-phase MLE motors (1 x 208-230 V).

From 1.5 Hp to 7.5 Hp Grundfos offers CRTE pumps fitted with three-phase MLE motors (3 x 208 x 230).

From 1.0 Hp to 10 Hp Grundfos offers CRTE pumps fitted with three-phase MLE motors (3 x 460-480 V).

## Electrical data

<b>Mounting designation</b>	NEMA
<b>Insulation class</b>	F/B/H
<b>Efficiency class*</b>	Energy efficient Premium efficiency - on request for 15 Hp and above
<b>Enclosure class</b>	TEFC - Totally Enclosed Fan Cooled
<b>60 Hz Standard voltages</b>	1 x 115/208-230 V 3 x 208-230/460 V 3 x 575 V

Approvals 





\* 1 - 10 Hp ML motors are premium efficient as standard.

## Optional motors

The Grundfos standard range of motors covers a wide variety of application demands. However, for special applications or operating conditions, custom-built motor solutions can be provided.

For special applications or operating conditions, Grundfos offers custom-built motors such as:

- explosion proof motors
- motors with anti-condensation heating units
- low-noise motors
- premium efficiency motors
- motors with thermal protection.

## Motor protection

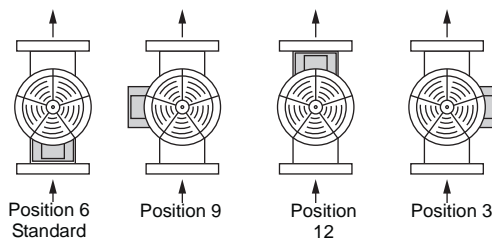
Single-phase Grundfos specified motors have built-in thermal overload switches (up to 7.5 Hp).

Three-phase motors must be connected to motor starters in accordance with local regulations.

Single- and three-phase MLE motors have built-in thermal protection.

## Terminal box positions

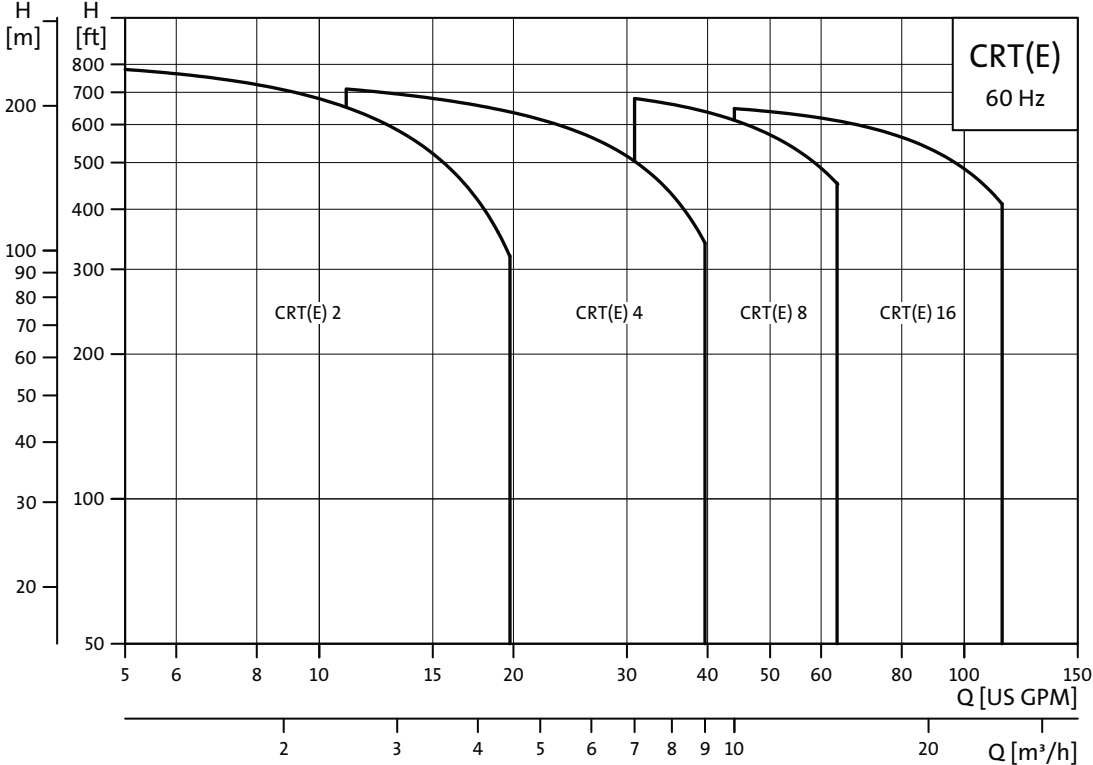
As standard the terminal box is mounted on the suction side of the pump.



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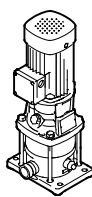
Fig. 2 CRT, CRTE terminal box positions

## Performance range

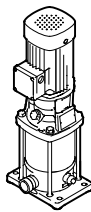


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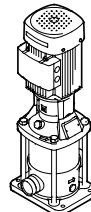
## Product range



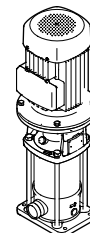
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TM02 7331 3203



TM02 7185 2703



TM02 7195 2803

Description	CRT(E) 2	CRT(E) 4	CRT(E) 8	CRT(E) 16
<b>Range</b>				
Nominal flow rate [US gpm (m <sup>3</sup> h)]	13 (2.9)	30 (6.8)	50 (11.3)	80 (18.1)
Max. operating pressure [psi (bar)]	362 (25)	362 (25)	362 (25)	362 (25)
Temperature range [°F (C °)]	-4 to +248 (-20 to +120)	-4 to +248 (-20 to +120)	-4 to +248 (-20 to +120)	-4 to +248 (-20 to +120)
Maximum efficiency [%]	48	59	64	70
Flow range [US gpm (m <sup>3</sup> h)]	1.3 to 20 (.3 to 4.5)	3 to 40 (.7 to 9.0)	5 to 64 (1.1 to 14.5)	8 to 114 (1.8 to 25.9)
Motor power range [Hp]	0.5 to 5	0.5 to 7.5	0.75 to 15	5 to 25
<b>Pipework connection</b>				
PJE (victaulic type) coupling	1.25"	1.25"	2"	2"
ANSI flange adapter - on request	-	-	2"	2"