## GRUNDFOS DATA BOOKLET

## GT tanks

For cold-water and heating applications


## Contents

General data
Applications ..... 3
Type key ..... 3
Tank range ..... 3
Overview of tank types ..... 3
Approvals and markings ..... 3
Tank colours ..... 3
Operating conditions ..... 3
Material specifications ..... 4
Cold water
Cold-water tanks ..... 5
Tank range ..... 5
Sizing ..... 7
GT-U, 10 bar ..... 8
GT-U, 16 bar ..... 9
GT-U, 25 bar ..... 10
GT-H, 10 bar ..... 11
GT-H, 16 bar ..... 12
GT-H, 10 bar ..... 13
GT-D, 10 bar, GT-DF, 8.6 bar ..... 14
GT-C, GT-CA, GT-CF, 8.6 bar ..... 15
Heating
Applications ..... 16
Tank range ..... 16
Sizing ..... 16
GT-HR, 6 bar ..... 17
Further product documentation
WebCAPS ..... 18
WinCAPS ..... 19

## Applications

The Grundfos GT pressure tanks are long-life tanks ideally suited for controlling the pressure in domestic as well as industrial applications in

- cold-water (drinking-water) systems.

See Cold-water tanks, page 5.

- heating systems. See Heating, page 16.

Grundfos GT tanks ensure long, maintenance-free, reliable and controlled operation.

GT tanks can be integrated in many different systems with a wide variety of pumps. The large number of tank sizes and types available makes it possible to select the pressure tank that best suits the application and system in question.

## Type key



## Tank range

| Application | Positioning | Volume range [I] |
| :--- | :--- | :--- |
| Cold water | Vertical | 8 to 5000 |
|  | Horizontal | 24 to 80 |
| Heating | Vertical | 8 to 1000 |

## Overview of tank types

The table below shows the available tank types in relation to application.

| Symbol | Description |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | Recommended |  |  |  |  |  |  |  |
| - | Not recommended |  |  |  |  |  |  |  |
| Application | Tank type |  |  |  |  |  |  |  |
|  | GT-U | GT-H | GT-D | GT-DF | GT-C | GT-CA | GT-CF | GT-HR |
| Heating | - | - | - | - | - | - | - | - |
| Chilled water | - | - | - | - | - | - | - | - |
| Degassing | - | - | - | - | - | - | - | - |
| Sea water | - | - | - | - | - | - | - | - |
| Grey water* | $\bigcirc$ | - | - | - | $\bullet$ | - | - | - |
| Drinking water | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bullet$ | $\bigcirc$ | - | $\bullet$ | - |
| * Grey water, also known as sullage, is non-industrial wastewater generated from domestic processes, such as dish washing, laundry and bathing. |  |  |  |  |  |  |  |  |

## Approvals and markings

| Tank type | Approvals |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | WRAS | NSF | ACS | CE | GOST |
| GT-U | $\bullet$ | - | $\bullet$ | $\bullet$ | - |
| GT-H | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| GT-D | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| GT-DF | - | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| GT-C | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| GT-CA | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| GT-CF | - | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| GT-HR | - | - | - | $\bullet$ | - |

## Tank colours

| Application | Colour | Colour code |
| :--- | :--- | :--- |
| Cold water | Grey | NCS S7005-R80B, gloss 20-35 |
| Heating | Red | RAL3011 |

## Operating conditions



Material specifications

| Pos. | Component | Material | Tank type |
| :---: | :---: | :---: | :---: |
| 1 | Tank body | Low-carbon sheet steel | GT-U, GT-H, GT-D, GT-DF, GT-HR |
|  |  | Fibreglass, epoxy resin, composite | GT-C, GT-CA, GT-CF |
| 2 | Bladder, diaphragm | Butyl | GT-U, GT-H, GT-D, GT-DF, GT-C, GT-CF |
|  |  | EPDM rubber | GT-HR |
| 3 | Flange/pipe connection | Stainless steel EN 1.4301/AISI 304 | GT-U, GT-H, GT-D, GT-DF |
|  |  | Polyvinyl chloride (PVC) | GT-C, GT-CA, GT-CF |
|  |  | Low-carbon sheet steel | GT-HR |
| 4 | Air valve | Steel/brass | GT-U, GT-H, GT-D, GT-DF, GT-C, GT-CA, GT-CF, GT-HR |
| 5 | Clamping ring/feet | Low-carbon sheet steel | GT-U, GT-H, GT-D, GT-DF, GT-HR |
|  |  | Polypropylene (PP) | GT-C, GT-CA, GT-CF |
| 6 | Lifting eye/skirt | Low-carbon sheet steel | GT-U, GT-H, GT-D, GT-DF, GT-HR |
|  |  | Polypropylene (PP) | GT-C, GT-CA, GT-CF |
| 7 | Tapped hole | Low-carbon sheet steel | GT-U |



Fig. 1 Sectional drawings, examples of tanks. The actual GT tank may look different from the examples shown.

## Cold-water tanks

The Grundfos GT pressure tanks for cold-water applications are long-life tanks ideally suited for controlling the pressure in domestic as well as industrial applications.

## Typical applications:

- domestic water supply systems
- booster systems
- irrigation systems
- industrial systems.

GT tanks can be integrated in many different systems with a wide variety of pumps. The large number of tank sizes and types available makes it possible to select the pressure tank that best suits the application and system in question.

## Tank range

## GT-U (bladder)

The pressure tank body is made of steel and is factory-pre-charged with nitrogen. All parts in contact with water are either made of stainless steel or coated for protection against corrosion.
The replaceable bladder for tanks with a volume exceeding 60 litres is made of high-quality rubber material suitable for potable-water applications, such as booster systems, pressurisation and water hammer arresting.

## GT-H (diaphragm)

The polypropylene liner combined with an FDAapproved high-grade butyl diaphragm makes up the water chamber. This is held against the tank wall with a steel clench ring.
The brass air valve, sealed by a threaded O-ring valve cap, prevents air leaks.

## GT-D (double diaphragm)

The diaphragm is a chlorine-resistant $100 \%$ butyl diaphragm with a precision-moulded copolymer polypropylene liner for superior air and water separation.
The diaphragm assembly is clenched together with a positive lock internal clench ring which contains drawdown water in a pre-charged air atmosphere, thus providing separation between the diaphragm and tank wall. This "air buffer" means less problems with condensation.
The air chamber is sealed with a fixed O-ring and closed cell foam.

## GT-DF (double diaphragm with FlowThru)

The FlowThru connection diverts system water into, and more importantly out of the tank, while the pump is running. This constant flushing ensures that the water in the tank remains fresh and eliminates the risk of stagnant water during normal system operation. See figs 2 and 3.

## GT-C (composite tank)

The GT-C pressure tank is a lightweight pressure tank. The diaphragm is a chlorine-resistant $100 \%$ butyl diaphragm with a precision-moulded copolymer polypropylene liner for superior air and water separation. This design allows each tank size to have a properly sized water chamber matched to the drawdown performance of that tank.

## GT-CA (composite tank with air volume)

The water is forced through the air injector which saturates the water with air. The air-saturated water is then held in the composite tank for a period of time to allow the air to be liberated from the water. The period of time (days/weeks) depends on the level of contamination. This process also removes unwanted gases such as sulphur-containing gases from the water. When a certain level is reached, a vent opens and allows the unwanted gases to escape.

## Cold water

## GT-CF (composite tank with FlowThru)

The FlowThru connection diverts system water into, and more importantly out of the tank, while the pump is running. This constant flushing ensures that the water in the tank remains fresh and eliminates the risk of stagnant water during normal system operation. See figs 2 and 3.


TM04 54223309
Fig. 2 Illustration of the FlowThru function


Fig. 3 Illustration of the FlowThru principle

## Sizing

Tank sizes not exceeding 450 litres
For tank sizes not exceeding 450 litres, use the diagram below in order to choose the optimum tank size.
All you need to know is the cut-in pressure and the flow.
The diagram below is based on the following values:

- Differential pressure: 1 bar.
- Number of starts/stops per hour: 20.
- Constant for tank pre-charge pressure: 0.9.

Tank sizes exceeding 450 litres
Tank sizes exceeding 450 litres should be calculated from the formula below.


Fig. 4 Calculation of volume

$$
V_{0}=\frac{1000 \times Q_{5} \times\left(p_{1}+1\right) \times\left(p_{2}+1\right)}{4 \times N \times\left(p_{0}+1\right) \times\left(p_{2}-p_{1}\right)}
$$

## Legend

$\mathrm{V}_{0}=$ Tank volume [litres]
$\mathrm{V}_{\mathrm{L}}=$ Air volume in tank [litres]
$V_{v}=$ Water volume in tank [litres]
$Q_{5}=$ Mean flow rate $\left[m^{3} / h\right]$
$\mathrm{p}_{1}=$ Cut-in pressure [bar]
$\mathrm{p}_{2}=$ Cut-out pressure [bar]
$p_{0}=$ Pre-charge pressure, tank [bar]
$\mathrm{Q}_{\mathrm{P}}=$ Flow, pump [m $\left.\mathrm{m}^{3} / \mathrm{h}\right]$
$Q_{T}=$ Flow, pressure tank [ $\left.\mathrm{m}^{3} / \mathrm{h}\right]$
$\mathrm{N}=$ Maximum number of starts/stops per hour


Fig. 5 Tank size in relation to cut-in pressure and flow

## GT-U, 10 bar

Vertical installation, maximum pressure 10 bar, pre-charge pressure 4 bar

## Dimensions, weights and product numbers



Fig. 6 Dimensional sketches

| Tank type | Size <br> [l] | Dimensions [mm] |  |  |  | Gross weight [kg] |  | Product number |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | D | H | H1 | C | Stainlesssteel flange | Coated flange | Stainless-steel flange | Coated flange |
| GT-U-12 PN 10 G 3/4 V | 12 | 280 | 310 | - | G 3/4 | 2.5 | - | 96989120 | - |
| GT-U-25 PN 10 G 3/4 V | 25 | 280 | 500 | - | G 3/4 | 5.5 | - | 96573253 | - |
| GT-U-33 PN 10 G 3/4 V | 33 | 354 | 450 | - | G 3/4 | 6.7 | - | 96573254 | - |
| GT-U-60 PN 10 G 3/4 V | 60 | 409 | 740 | - | G 3/4 | 14.3 | - | 96989123 | - |
| GT-U-80 PN 10 G 1 V | 80 | 480 | 730 | 150 | G 1 | 26 | 17 | 96573255 | 96573266 |
| GT-U-100 PN 10 G 1 V | 100 | 480 | 840 | 150 | G 1 | 30 | 22 | 96573257 | 96573267 |
| GT-U-200 PN 10 G $11 / 4 \mathrm{~V}$ | 200 | 634 | 980 | 145 | G 1 1/4 | 50 | 50 | 96573258 | 96573268 |
| GT-U-300 PN 10 G $11 / 4 \mathrm{~V}$ | 300 | 634 | 1267 | 145 | G 1 1/4 | 50 | 55 | 96573259 | 96573269 |
| GT-U-400 PN 10 G $11 / 4 \mathrm{~V}$ | 400 | 740 | 1245 | 135 | G 1 1/4 | 76 | 76 | 96603444 | 96603450 |
| GT-U-500 PN 10 G $11 / 4 \mathrm{~V}$ | 500 | 740 | 1485 | 135 | G 1 1/4 | 85 | 78 | 96573260 | 96573280 |
| GT-U-600 PN 10 G 1 1/2 V | 600 | 740 | 1859 | 265 | G 1 1/2 | 161 | 161 | 96603445 | 96603451 |
| GT-U-800 PN 10 G $11 / 2 \mathrm{~V}$ | 800 | 740 | 2324 | 265 | G 1 1/2 | 187 | 200 | 96603446 | 96603452 |
| GT-U-1000 PN 10 G 1 1/2 V | 1000 | 740 | 2734 | 265 | G 1 1/2 | 258 | 258 | 96603447 | 96603453 |
| GT-U-1500 PN 10 DN 65 V | 1500 | 1200 | 2538 | 290 | DN 65 | - | 535 | - | 96573283 |
| GT-U-2000 PN 10 DN 65 V | 2000 | 1200 | 2440 | 290 | DN 65 | - | 710 | - | 96573284 |
| GT-U-3000 PN 10 DN 65 V | 3000 | 1500 | 3340 | 320 | DN 65 | - | 1050 | - | 96573285 |
| GT-U-4000 PN 10 DN 150 V | 4000 | 1500 | 3095 | 320 | DN 150 | - | 1140 | - | 96603454 |
| GT-U-5000 PN 10 DN 150 V | 5000 | 1500 | 3650 | 320 | DN 150 | - | 1350 | - | 96603456 |

## GT-U, 16 bar

Vertical installation, maximum pressure 16 bar, pre-charge pressure 4 bar

## Dimensions, weights and product numbers



Fig. 7 Dimensional sketches

| Tank type | Size [l] | $\begin{aligned} & \text { Dimensions } \\ & {[\mathrm{mm}]} \end{aligned}$ |  |  |  | Gross weight [kg] |  | Product number |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | D | H | H1 | C | Stainless-steel flange | Coated flange | Stainless-steel flange | Coated flange |
| GT-U-12 PN 16 G 3/4 V | 12 | 280 | 310 | - | G 3/4 | 3.6 | - | 96573348 | - |
| GT-U-25 PN $16 \mathrm{G} 3 / 4 \mathrm{~V}$ | 25 | 280 | 500 | - | G 3/4 | 9.0 | - | 96573349 | - |
| GT-U-80 PN 16 G 1 V | 80 | 480 | 729 | 150 | G 1 | 22 | 22 | 96603410 | 96603420 |
| GT-U-100 PN 16 G 1 V | 100 | 480 | 834 | 150 | G 1 | 29 | 36 | 96603411 | 96603421 |
| GT-U-200 PN $16 \mathrm{G} 11 / 4 \mathrm{~V}$ | 180 | 634 | 967 | 145 | G $11 / 4$ | 58 | 49 | 96603413 | 96603422 |
| GT-U-300 PN $16 \mathrm{G} 11 / 4 \mathrm{~V}$ | 300 | 634 | 1267 | 145 | G $11 / 4$ | 66 | 77 | 96603414 | 96603423 |
| GT-U-400 PN $16 \mathrm{G} 11 / 2 \mathrm{~V}$ | 400 | 740 | 1245 | 135 | G $11 / 2$ | 117 | 215 | 96603415 | 96603424 |
| GT-U-500 PN $16 \mathrm{G} 11 / 2 \mathrm{~V}$ | 500 | 740 | 1475 | 135 | G 1 1/2 | 129 | 124 | 96603416 | 96603425 |
| GT-U-600 PN $16 \mathrm{G} 11 / 2 \mathrm{~V}$ | 600 | 740 | 1859 | 265 | G 1 1/2 | 173 | 161 | 96603417 | 96603426 |
| GT-U-800 PN $16 \mathrm{G} 11 / 2 \mathrm{~V}$ | 800 | 740 | 2324 | 265 | G $11 / 2$ | 223 | 223 | 96603418 | 96603427 |
| GT-U-1000 PN 16 G 1 1/2 V | 1000 | 740 | 2734 | 265 | G $11 / 2$ | 275 | 264 | 96603419 | 96603428 |
| GT-U-1500 PN 16 DN 65 V | 1500 | 1200 | 2030 | 290 | DN 65 | - | 694 | - | 96603429 |
| GT-U-2000 PN 16 DN 65 V | 2000 | 1200 | 2500 | 290 | DN 65 | - | 904 | - | 96603430 |
| GT-U-3000 PN 16 DN 65 V | 3000 | 1500 | 2570 | 320 | DN 65 | - | 1249 | - | 96603431 |
| GT-U-4000 PN 16 DN 150 V | 4000 | 1500 | 3145 | 320 | DN 150 | - | 1364 | - | 96603432 |
| GT-U-5000 PN 16 DN 150 V | 5000 | 1500 | 3688 | 320 | DN 150 | - | 1616 | - | 96603433 |

## GT-U, 25 bar

Vertical installation, maximum pressure 25 bar, pre-charge pressure 4 bar

## Dimensions, weights and product numbers

8 litres
80 to 800 litres


1000 to 3000 litres


Fig. 8 Dimensional sketches

| Tank type | Size <br> [l] | Dimensions [mm] |  |  |  | Gross weight [kg] | Product number |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | D | H | H1 | C |  | Stainless-steel flange | Coated flange |
| GT-U-8 PN 25 G 3/4V | 8 | 206 | 325 | - | G 3/4 | 8 | 96573347 | - |
| GT-U-80 PN 25 DN 50 V | 80 | 450 | 947 | 185 | DN 50 | 107 | - | 96603459 |
| GT-U-120 PN 25 DN 50 V | 120 | 450 | 1253 | 185 | DN 50 | 142 | - | 96603460 |
| GT-U-180 PN 25 DN 50 V | 180 | 450 | 1228 | 185 | DN 50 | 179 | - | 96603462 |
| GT-U-300 PN 25 DN 50 V | 300 | 750 | 1318 | 200 | DN 50 | 201 | - | 96603463 |
| GT-U-400 PN 25 DN 50 V | 400 | 750 | 1423 | 200 | DN 50 | 302 | - | 96603465 |
| GT-U-600 PN 25 DN 50 V | 600 | 750 | 1868 | 185 | DN 50 | 404 | - | 96603466 |
| GT-U-800 PN 25 DN 50 V | 800 | 750 | 2268 | 185 | DN 50 | 150 | - | 96603468 |
| GT-U-1000 PN 25 DN 50 V | 1000 | 750 | 2768 | 185 | DN 50 | 559 | - | 96603469 |
| GT-U-1500 PN 25 DN 65 V | 1500 | 1200 | 2050 | 285 | DN 65 | 911 | - | 96967953 |
| GT-U-2000 PN 25 DN 65 V | 2000 | 1200 | 2500 | 285 | DN 65 | 1184 | - | 96967955 |
| GT-U-3000 PN 25 DN 65 V | 3000 | 1500 | 2520 | 315 | DN 65 | 1632 | - | 96967957 |

## GT-H, 10 bar

Vertical installation

## Dimensions, weights and product numbers

8 to 35 litres


60 to 100 litres


Fig. 9 Dimensional sketches

| Tank type | Size$[1]$ | Dimensions [mm] |  |  | Gross weight [kg] | Product number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | D | H | C |  |  |
| GT-H-8 PN 10 G 3/4 V | 8 | 203 | 311 | G 3/4 | 2.6 | 96528335 |
| GT-H-8 PN 10 G 1 V | 8 | 203 | 311 | G 1 | 2.6 | 96526321 |
| GT-H-12 PN 10 G 3/4 V | 12 | 229 | 364 | G 3/4 | 3.1 | 96528336 |
| GT-H-12 PN 10 G 1 V | 12 | 229 | 364 | G 1 | 3.1 | 97506558 |
| GT-H-18 PN $10 \mathrm{G} \mathrm{3/4} \mathrm{~V}$ | 18 | 279 | 366 | G 3/4 | 5.0 | 96526322 |
| GT-H-18 PN 10 G 1 V | 18 | 279 | 366 | G 1 | 5.0 | 96528337 |
| GT-H-24 PN 10 G 3/4 V | 24 | 290 | 445 | G 3/4 | 5.1 | 96528338 |
| GT-H-24 PN 10 G 1 V | 24 | 290 | 445 | G 1 | 5.1 | 96528339 |
| GT-H-35 PN $10 \mathrm{G} \mathrm{3/4} \mathrm{~V}$ | 35 | 318 | 481 | G 3/4 | 7.5 | 96526002 |
| GT-H-35 PN 10 G 1 V | 35 | 318 | 481 | G 1 | 7.5 | 96528340 |
| GT-H-60 PN 10 G 1 V | 60 | 388 | 528 | G 1 | 10 | 96528341 |
| GT-H-80 PN 10 G 1 V | 80 | 388 | 626 | G 1 | 16.7 | 96894291 |
| GT-H-100 PN 10 G 1 V | 100 | 430 | 804 | G 1 | 18.9 | 97527968 |

## GT-H, 16 bar

Vertical installation

## Dimensions, weights and product numbers

8 to 35 litres


60 to 80 litres


Fig. 10 Dimensional sketches

| Tank type | Size <br> $[1]$ | Dimensions [mm] |  |  |  |  | Gross weight <br> $[\mathrm{kg}]$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

## GT-H, 10 bar

Horizontal installation
Dimensions, weights and product numbers


## Supporting bracket



Fig. 11 Dimensional sketches

| Tank type | Size <br> [l] | Dimensions [mm] |  |  |  |  |  |  |  |  | Gross weight [kg] | Product number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | D | H | B | L1 | L2 | L3 | 14 | Z | C |  |  |
| GT-H-24 PN 10 G 1 H | 24 | 289 | 444 | 235 | 447 | 250 | 84 | 156 | 4 | G 1 | 6.5 | 96528388 |
| GT-H-60 PN 10 G 1 H | 60 | 414 | 528 | 342 | 532 | 299 | 102 | 199 | 4 | G 1 | 12.8 | 96528389 |
| GT-H-80 PN 10 G 1 H | 80 | 414 | 724 | 342 | 730 | 229 | 201 | 306 | 4 | G 1 | 18.0 | 96528390 |

## Supporting bracket

| Tank type | Size$[1]$ | Dimensions [mm] |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | B1 | B2 | B3 | B4 | Z |
| GT-H-24 PN $10 \mathrm{G} \mathrm{1/4} \mathrm{H}$ | 24 | 220 | 165 | 139 | 107 | 10 |
| GT-H-60 PN $10 \mathrm{G} \mathrm{1/4} \mathrm{H}$ | 60 | 220 | 165 | 139 | 107 | 9 |
| GT-H-80 PN 10 G 1 H | 80 | 220 | 165 | 139 | 107 | 9 |

## GT-D, 10 bar, GT-DF, 8.6 bar

Vertical installation

## Dimensions, weights and product numbers



Fig. 12 Dimensional sketches

| Tank type | Size$[1]$ | Dimensions [mm] |  |  | Gross weight [kg] | Product number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | D | H | C |  |  |
| GT-D |  |  |  |  |  |  |
| GT-D-60 PN 10 G 1 V | 60 | 406 | 571 | G 1 | 13.5 | 96748301 |
| GT-D-80 PN 10 G 1 V | 80 | 388 | 787 | G 1 | 18.0 | 96528342 |
| GT-D-100 PN 10 G 1 V | 100 | 406 | 880 | G 1 | 16.0 | 96528343 |
| GT-D-130 PN 10 G 1 V | 130 | 406 | 1081 | G 1 | 23.0 | 96528344 |
| GT-D-170 PN $10 \mathrm{G} 11 / 4 \mathrm{~V}$ | 170 | 533 | 921 | G $11 / 4$ | 31.0 | 96528345 |
| GT-D-240 PN $10 \mathrm{G} 11 / 4 \mathrm{~V}$ | 240 | 533 | 1219 | G $11 / 4$ | 38.0 | 96528346 |
| GT-D-300 PN $10 \mathrm{G} 11 / 4 \mathrm{~V}$ | 300 | 533 | 1575 | G $11 / 4$ | 45.0 | 96528347 |
| GT-D-450 PN $10 \mathrm{G} 11 / 4 \mathrm{~V}$ | 450 | 660 | 1505 | G $11 / 4$ | 70.0 | 96528348 |
| GT-DF |  |  |  |  |  |  |
| GT-DF-80 PN 8.6 G $11 / 4 \mathrm{~V}$ | 80 | 406 | 744 | G $11 / 4$ | 16.4 | 96980804 |
| GT-DF-170 PN 8.6 G $11 / 4 \mathrm{~V}$ | 170 | 533 | 921 | G $11 / 4$ | 30.9 | 96980807 |
| GT-DF-325 PN 8.6 G 1 1/4 V | 325 | 660 | 1130 | G $11 / 4$ | 55.5 | 96980808 |

## GT-C, GT-CA, GT-CF, 8.6 bar

Vertical installation

## Dimensions, weights and product numbers



Fig. 13 Dimensional sketches

| Tank type | Size <br> [l] | Dimensions [mm] |  |  |  |  | Gross weight [kg] | Product number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | D | H | H1 | L | C |  |  |
| GT-C |  |  |  |  |  |  |  |  |
| GT-C-60 PN 8.6 G 1 V | 60 | 418 | 650 | 45 | 2388 | G 1 | 5.0 | 96733303 |
| GT-C-80 PN 8.6 G 1 V | 80 | 418 | 852 | 45 | 2388 | G 1 | 6.6 | 96733304 |
| GT-C-100 PN 8.6 G 1 V | 100 | 418 | 967 | 45 | 2388 | G 1 | 8.0 | 96733305 |
| GT-C-130 PN 8.6 G 1 V | 130 | 418 | 1227 | 45 | 2388 | G 1 | 9.9 | 96733306 |
| GT-C-200 PN 8.6 G 1 1/4 V | 200 | 542 | 1098 | 57 | 3023 | G $11 / 4$ | 16.5 | 96733307 |
| GT-C-250 PN 8.6 G $11 / 4 \mathrm{~V}$ | 250 | 542 | 1303 | 57 | 3023 | G $11 / 4$ | 21.7 | 96733308 |
| GT-C-300 PN 8.6 G 1 1/4 V | 300 | 542 | 1644 | 57 | 3023 | G $11 / 4$ | 28.4 | 96733309 |
| GT-C-350 PN 8.6 G $11 / 4 \mathrm{~V}$ | 350 | 614 | 1448 | 57 | 3401 | G $11 / 4$ | 31.2 | 96733310 |
| GT-C-450 PN 8.6 G 1 1/4 V | 450 | 614 | 1831 | 57 | 3401 | G $11 / 4$ | 42.1 | 96733311 |
| GT-CA |  |  |  |  |  |  |  |  |
| GT-CA-115 PN 8.6 G $11 / 4 \mathrm{~V}$ | 115 | 418 | 1068 | 45 | - | G $11 / 4$ | 7.4 | 96942874 |
| GT-CA-150 PN 8.6 G 1 1/4 V | 150 | 418 | 1356 | 45 | - | G 1 1/4 | 10.0 | 96942878 |
| GT-CA-300 PN $8.6 \mathrm{G} 11 / 4 \mathrm{~V}$ | 300 | 542 | 1628 | 57 | - | G $11 / 4$ | 25.8 | 96942880 |
| GT-CA-450 PN $8.6 \mathrm{G} 11 / 4 \mathrm{~V}$ | 450 | 614 | 1831 | 57 | - | G $11 / 4$ | 32.8 | 96942902 |
| GT-CF |  |  |  |  |  |  |  |  |
| GT-CF-60 PN 8.6 G $11 / 4 \mathrm{~V}$ | 60 | 419 | 640 | 45 | - | G 1 1/4 | 8.6 | 96980809 |
| GT-CF-80 PN 8.6 G $11 / 4 \mathrm{~V}$ | 80 | 419 | 841 | 45 | - | G 1 1/4 | 10.9 | 96980810 |
| GT-CF-150 PN $8.6 \mathrm{G} 11 / 4 \mathrm{~V}$ | 150 | 614 | 747 | 57 | - | G $11 / 4$ | 15.9 | 96980811 |
| GT-CF-200 PN 8.6 G 1 1/4 V | 200 | 544 | 1090 | 57 | - | G 1 1/4 | 18.6 | 96980822 |

## Applications

The GT-HR tanks are conventional diaphragm-type expansion tanks ranging from 8 to 1000 litres for 6 bar working pressure for closed heating systems and chilledwater applications. These tanks can be incorporated in an expansion system in a tiny household or a large multistorey building.

Typical applications:

- domestic-heating and chilled-water systems
- commercial-building heating and chilled-water systems
- industrial-heating and chilled-water systems.

GT-HR tanks can be used with any Grundfos pump.

## Tank range

The GT-HR tanks are available in sizes ranging from 8 to 1000 litres and are suitable for vertical installation.

The tanks have a non-replaceable diaphragm that is precharged with nitrogen (1.5 bar).
The tanks have a non-toxic butyl rubber diaphragm, dividing the tank chamber into two compartments. The upper compartment contains compressed nitrogen. The lower compartment has a liner of polypropylene (PP) and is filled with water from the pump.

## Sizing

The required tank volume can be calculated from the formula below:

$$
\mathrm{V}_{\mathrm{e}}=\frac{(0.07 \times \mathrm{t}-2.5) \times\left(\mathrm{p}_{\mathrm{s}}+1\right)}{100 \times\left(\mathrm{p}_{\mathrm{s}}-\mathrm{p}_{\mathrm{e}}\right)} \quad \times \vee[\text { litre }]
$$

| $\mathrm{V}_{\mathrm{e}}$ | Tank volume [litres] |
| :--- | :--- |
| t | Maximum temperature in system [ ${ }^{\circ} \mathrm{C}$ ] |
| $\mathrm{p}_{\mathrm{s}}$ | Maximum system pressure [bar] <br> (safety valve pressure) |
| $\mathrm{p}_{\mathrm{e}}$ | Pre-charge pressure [bar] |
| V | Total volume of water in system [litres] |

If the necessary information required to calculate the tank according to the formula is not available, the sizing of the tank can be based on heat input to the installation and maximum system pressure.

## Pre-conditions

Heating systems: flat radiators, specific water volume of $11.3 \mathrm{l} / \mathrm{kW}$, flow-pipe temperature of $70^{\circ} \mathrm{C}$ and returnpipe temperature of $50^{\circ} \mathrm{C}$.

| Maximum system pressure [bar] | 6 |  |
| :---: | :---: | :---: |
| Pre-charge pressure [bar] | 3 | Tank size [l] |
|  | 4 | 8 |
|  | 8 | 12 |
|  | 16 | 18 |
|  | 27 | 25 |
|  | 44 | 35 |
|  | 60 | 50 |
|  | 100 | 80 |
|  | 120 | 100 |
| Heat input [kW] | 170 | 140 |
|  | 250 | 200 |
|  | 310 | 250 |
|  | 370 | 300 |
|  | 490 | 400 |
|  | 620 | 500 |
|  | 740 | 600 |
|  | 990 | 800 |
|  | 1230 | 1000 |

## Grundfos recommendation:

- Set the tank pre-charge pressure to at least 0.2 bar above the static pressure of the heating system.
- The tank pre-charge pressure should not be lower than 1 bar.


## Sizing example:

A heating system has a heat input of 160 kW , the maximum system pressure is 6 bar , and the heating system will be pre-charged by 3 bar.
Use the column for 6 bar maximum system pressure. The nearest value above 160 kW is 170 kW . This corresponds to a tank size of 140 litres.

## GT-HR, 6 bar

Vertical installation

## Dimensions, weights and product numbers



200 to 1000 litres


Fig. 14 Dimensional sketches

| Tank type | Size [l] | Dimensions [mm] |  |  | Gross weight [kg] | Product numbers |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | D | H | C |  |  |
| GT-HR-8 PN $6 \mathrm{G} 3 / 4 \mathrm{~V}$ | 8 | 272 | 233 | G 3/4 | 1.9 | 96573376 |
| GT-HR-12 PN 6 G 3/4 V | 12 | 272 | 315 | G 3/4 | 2.6 | 96573377 |
| GT-HR-18 PN 6 G 3/4 V | 18 | 308 | 360 | G 3/4 | 3.5 | 96573378 |
| GT-HR-24 PN $6 \mathrm{G} 3 / 4 \mathrm{~V}$ | 24 | 308 | 480 | G 3/4 | 4.6 | 96573390 |
| GT-HR-35 PN $6 \mathrm{G} 3 / 4 \mathrm{~V}$ | 35 | 376 | 465 | G 3/4 | 5.4 | 96573393 |
| GT-HR-50 PN 6 R 3/4 V | 50 | 441 | 495 | R 3/4 | 12.5 | 96573395 |
| GT-HR-80 PN 6 R 1 V | 80 | 512 | 570 | R 1 | 17.0 | 96573396 |
| GT-HR-100 PN 6 R 1 V | 100 | 512 | 680 | R 1 | 20.5 | 96573397 |
| GT-HR-140 PN 6 R 1 V | 140 | 512 | 890 | R 1 | 28.6 | 96573398 |
| GT-HR-200 PN 6 R 1 V | 200 | 634 | 785 | R 1 | 36.7 | 96573399 |
| GT-HR-250 PN 6 R 1 V | 250 | 634 | 915 | R 1 | 45.0 | 96573400 |
| GT-HR-300 PN 6 R 1 V | 300 | 634 | 1085 | R 1 | 52.0 | 96573401 |
| GT-HR-400 PN 6 R 1 V | 400 | 740 | 1075 | R 1 | 65.0 | 96573403 |
| GT-HR-500 PN 6 R 1 V | 500 | 740 | 1295 | R 1 | 79.0 | 96573404 |
| GT-HR-600 PN 6 R 1 V | 600 | 740 | 1530 | R 1 | 85.0 | 96573405 |
| GT-HR-800 PN 6 R 1 V | 800 | 740 | 1990 | R 1 | 103 | 96573407 |
| GT-HR-1000 PN 6 R 1 V | 1000 | 740 | 2430 | R 1 | 120 | 96573408 |

## Further product documentation

## WebCAPS





## Further product documentation



## Sizing ${ }^{\text {PIIV }}$

This section is based on different fields of application and installation examples, and gives easy step-by-step instructions in how to

- select the most suitable and efficient pump for your installation
- carry out advanced calculations based on energy consumption,
payback periods, load profiles, life cycle costs, etc.
- analyse your selected pump via the built-in life cycle cost tool
- determine the flow velocity in wastewater applications, etc.



## Replacement

In this section you find a guide to selecting and comparing replacement data of an installed pump in order to replace the pump with a more efficient Grundfos pump.
The section contains replacement data of a wide range of pumps produced by other manufacturers than Grundfos.

Based on an easy step-by-step guide, you can compare Grundfos pumps with the one you have installed on your site. When you have specified the installed pump, the guide will suggest a number of Grundfos pumps which can improve both comfort and efficiency.


CAD drawings (7)
In this section it is possible to download 2-dimensional (2D) and 3-dimensional (3D) CAD drawings of most Grundfos pumps.

These formats are available in WebCAPS:
2-dimensional drawings:
-.dxf, wireframe drawings

- .dwg, wireframe drawings.

3-dimensional drawings:

- .dwg, wireframe drawings (without surfaces)
- .stp, solid drawings (with surfaces)
- .eprt, E-drawings.


## WinCAPS



Fig. 15 WinCAPS CD-ROM

WinCAPS is a Windows-based Computer Aided Product Selection program containing detailed information on more than 185,000 Grundfos products in more than 20 languages.

The program contains the same features and functions as WebCAPS, but is an ideal solution if no Internet connection is available.
WinCAPS is available on CD-ROM and updated once a year.

