# GRUNDFOS DATA BOOKLET

# **GT** tanks

For cold-water and heating applications





**BE THINK INNOVATE** 

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

# 1. General data

#### Applications

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

- · cold-water (drinking-water) systems. See Cold-water tanks, page 5.
- heating systems. See 3. 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

Example	GT	- U	- 25	PN 10	G 1/2	v
Type range						
Tank type: U = bladder H = diaphragm D = double diaphragm DF = double diaphragm with Flow C = composite tank CF = composite tank with FlowThi HR = non-replaceable diaphragm heating applications	ru					
Tank volume [litres]						
Pressure rating				=		
Pipe connection						
Position: V = vertical H = horizontal						-

#### Tank range

Positioning	Volume range [I]			
Vertical	8 to 5000			
Horizontal	24 to 80			
Vertical	8 to 1000			
	Vertical Horizontal			

#### **Overview of tank types**

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

Symbol	Des	criptio	n							
•	Reco	Recommended								
-	Not	Not recommended								
Application		Tank type								
Application	GT-U	GT-H	GT-D	GT-DF	GT-C	GT-CF	GT-HR			
Heating	-	-	-	-	-	-	•			
Chilled water	-	-	-	-	-	-	•			
Sea water	-	-	-	-	٠	-	-			
Grey water*	О	٠	٠	-	٠	-	-			
Drinking water	0	0	0	0	0	•	-			

\* Grey water, also known as sullage, is non-industrial wastewater generated from domestic processes, such as dish washing, laundry and bathing.

# Approvals and markings

Tonk type		Approvals	Markings		
Tank type	WRAS	NSF	ACS	CE	GOST
GT-U	-	-	٠	•	-
GT-H	-	-	•	•	٠
GT-D	-	-	٠	•	٠
GT-DF	-	-	٠	•	٠
GT-C	-	-	•	•	٠
GT-CF	-	-	٠	•	٠
GT-HR	-	-	-	•	-

#### Tank colours

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

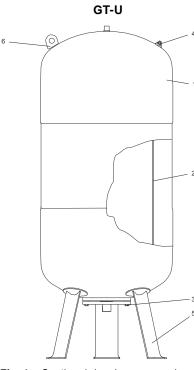
# **Operating conditions**

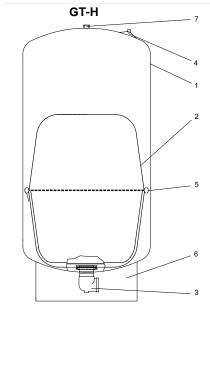
	25 bar	GT-U blad	der tank								
	16 bar	GT-U blad	der tank								
ure		GT-H diap	hragm tank								
pressure		GT-U blad	der tank								
	10 bar	GT-D doub	le-diaphragn	n tank							
operating		GT-H diap	hragm tank								
_		GT-DF doub	le-diaphragn	n tank with F	lowThru						
Maximum	8.6 bar	GT-CF com	oosite tank w	ith FlowThru	ı						
Мах		GT-C com	oosite tank								
	6 bar	GT-HR heati	ng tank (5 to	1000 litres)							
		10 °C	20 °C	30 °C	40 °C	50 °C	60 °C	70 °C	80 °C	90 °C	100 °C

Maximum liquid temperature

# **Material specifications**

Pos.	Component	Material	Tank type
4	Tauly banks	Low-carbon sheet steel	GT-U, GT-H, GT-D, GT-DF, GT-HR
1	Tank body	Fibreglass, epoxy resin, composite	GT-C, GT-CA, GT-CF
2	Dladdar dianbraam	Butyl	GT-U, GT-H, GT-D, GT-DF, GT-C, GT-CF
2	Bladder, diaphragm	EPDM rubber	GT-HR
	Flange/pipe connection	Stainless steel EN 1.4301/AISI 304	GT-H, GT-D, GT-DF
3		Stainless steel EN 1.4401/AISI 316 Ti	GT-U
3		Polyvinyl chloride (PVC)	GT-C, GT-CF
		Low-carbon sheet steel	GT-HR
4	Air valve	Steel/brass	GT-U, GT-H, GT-D, GT-DF, GT-C, GT-CF, GT-HR
5	Clemping ring/feet	Low-carbon sheet steel	GT-U, GT-H, GT-D, GT-DF, GT-HR
э	Clamping ring/feet	Polypropylene (PP)	GT-C, GT-CF
6	Lifting over akist	Low-carbon sheet steel	GT-U, GT-H, GT-D, GT-DF, GT-HR
U	Lifting eye/skirt	Polypropylene (PP)	GT-C, GT-CF
7	Tapped hole	Low-carbon sheet steel	GT-U





GT-HR

Fig. 1 Sectional drawings, examples of tanks

The actual GT tank may look different from the examples shown above.

# 2. Cold water

# **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 tank)

The pressure tank body is made of steel and is factorypre-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 tank)

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 tank)

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 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.

#### 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 tanks

#### 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.

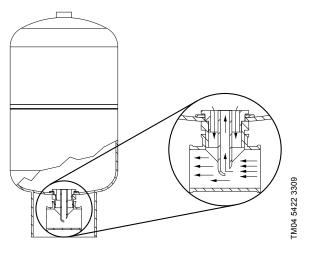
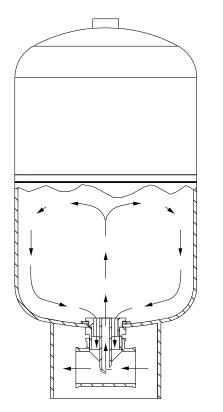


Fig. 2 Illustration of the FlowThru function



TM04 5424 3309

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 to select 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.

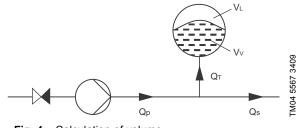


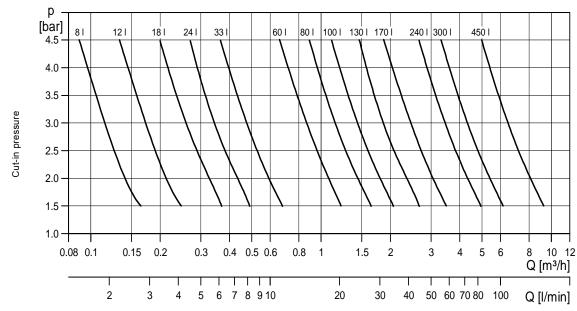
Fig. 4 Calculation of volume

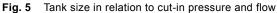
$$= \frac{1000 \times Q_s \times (p_1 + 1) \times (p_2 + 1)}{4 \times N \times (p_0 + 1) \times (p_2 - p_1)}$$

#### Legend

V<sub>0</sub>

- V<sub>0</sub> = tank volume [litres]
- V<sub>L</sub> = air volume in tank [litres]
- V<sub>v</sub> = water volume in tank [litres]
- $Q_s$  = mean flow rate [m<sup>3</sup>/h]
- p<sub>1</sub> = cut-in pressure [bar]
- p<sub>2</sub> = cut-out pressure [bar]
- p<sub>0</sub> = pre-charge pressure, tank [bar]
- $Q_P$  = flow, pump [m<sup>3</sup>/h]
- $Q_T$  = flow, pressure tank [m<sup>3</sup>/h]
- N = maximum number of starts/stops per hour





# Cold water

# GT-U, 10 bar

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

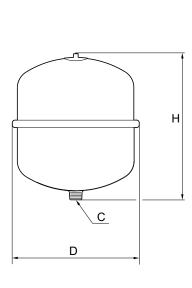
т

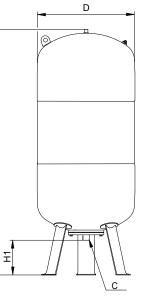
Dimensions, weights and product numbers

#### 12 to 33 litres

# 60 to 800 litres

1000 to 5000 litres





Т

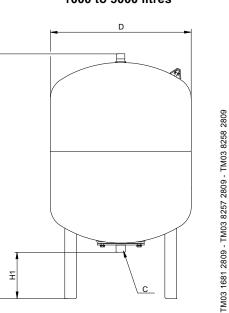


Fig. 6 Dimensional sketches

	0:		Dimensions [mm]			Gross [k	•	Deviserable	Product number		
Tank type	Size [I]	D	н	H1	с	Stainless- steel flange	Coated flange	<ul> <li>Replaceable bladder</li> </ul>	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	٠	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 1 1/4 V	200	634	980	145	G 1 1/4	50	50	•	96573258	96573268	
GT-U-300 PN 10 G 1 1/4 V	300	634	1267	145	G 1 1/4	50	55	•	96573259	96573269	
GT-U-400 PN 10 G 1 1/4 V	400	740	1245	135	G 1 1/4	76	76	•	96603444	96603450	
GT-U-500 PN 10 G 1 1/4 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 1 1/2 V	800	740	2324	265	G 1 1/2	187	200	٠	96603446	96603452	
GT-U-1000 PN 10 G 1 1/2 V	1000	740	2604	265	G 1 1/2	258	258	•	96603447	96603453	
GT-U-1500 PN 10 DN 65 V	1500	1200	2010	290	DN 65	-	535	•	-	96573283	
GT-U-2000 PN 10 DN 65 V	2000	1200	2470	290	DN 65	-	710	•	-	96573284	
GT-U-3000 PN 10 DN 65 V	3000	1500	2520	320	DN 65	-	1050	•	-	96573285	
GT-U-4000 PN 10 DN 150 V	4000	1500	3095	320	DN 65	-	1140	٠	-	96603454	
GT-U-5000 PN 10 DN 150 V	5000	1500	3630	320	DN 65	-	1350	٠	-	96603456	

Note: For some GT-U tanks, the bladder is available as a spare part. The part number can be found on Grundfos.com (WebCAPS).

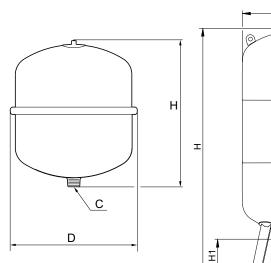
# GT-U, 16 bar

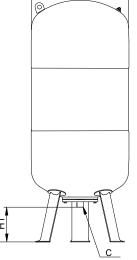
Vertical installation, maximum pressure 16 bar, pre-charge pressure 4 bar

Dimensions, weights and product numbers

#### 12 to 25 litres

# 80 to 800 litres





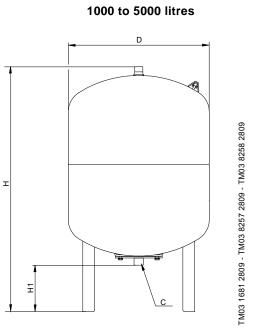


Fig. 7 Dimensional sketches

	0:		Dimen [m			Gross v [kg	•	— Replaceable	Product	number
Tank type	Size [I]	D	н	H1	с	Stainless- steel flange	Coated flange	bladder	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 G 3/4 V	25	280	500	-	G 3/4	9.0	-	-	96573349	-
GT-U-80 PN 16 G 1 V	80	480	730	150	G 1	22	22	•	96603410	96603420
GT-U-100 PN 16 G 1 V	100	480	835	150	G 1	29	36	•	96603411	96603421
GT-U-200 PN 16 G 1 1/4 V	180	634	970	145	G 1 1/4	58	49	•	96603413	96603422
GT-U-300 PN 16 G 1 1/4 V	300	634	1270	145	G 1 1/4	66	77	•	96603414	96603423
GT-U-400 PN 16 G 1 1/2 V	400	740	1395	135	G 1 1/2	117	215	•	96603415	96603424
GT-U-500 PN 16 G 1 1/2 V	500	740	1615	135	G 1 1/2	129	124	•	96603416	96603425
GT-U-600 PN 16 G 1 1/2 V	600	740	1860	265	G 1 1/2	173	161	•	96603417	96603426
GT-U-800 PN 16 G 1 1/2 V	800	740	2325	265	G 1 1/2	223	223	•	96603418	96603427
GT-U-1000 PN 16 G 1 1/2 V	1000	740	2604	265	G 1 1/2	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	٠	-	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 65	-	1364	٠	-	96603432
GT-U-5000 PN 16 DN 150 V	5000	1500	3680	320	DN 65	-	1616	•	-	96603433

Note: For some GT-U tanks, the bladder is available as a spare part. The part number can be found on Grundfos.com (WebCAPS).

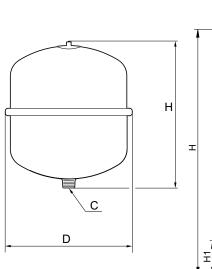
# GT-U, 25 bar

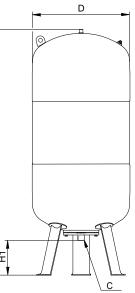
Vertical installation, maximum pressure 25 bar, pre-charge pressure 4 bar

Dimensions, weights and product numbers

#### 8 litres

# 80 to 800 litres





I

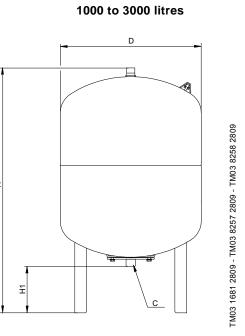


Fig. 8 Dimensional sketches

Tank time	Size		Dimer [m	nsions m]		Gross weight	Replaceable bladder	Product number		
Tank type	[1]	D	н	H1	с	[kg]		Stainless-steel flange	Coated flange	
GT-U-8 PN 25 G 3/4 V	8	206	320	-	G 3/4	8	-	96573347	-	
GT-U-80 PN 25 DN 50 V	80	450	925	185	DN 50	107	•	-	96603459	
GT-U-120 PN 25 DN 50 V	120	450	1235	185	DN 50	142	٠	-	96603460	
GT-U-180 PN 25 DN 50 V	180	450	1515	185	DN 50	179	•	-	96603462	
GT-U-300 PN 25 DN 50 V	300	750	1275	200	DN 50	201	٠	-	96603463	
GT-U-400 PN 25 DN 50 V	400	750	1395	200	DN 50	302	•	-	96603465	
GT-U-600 PN 25 DN 50 V	600	750	1860	185	DN 50	404	٠	-	96603466	
GT-U-800 PN 25 DN 50 V	800	750	2260	185	DN 50	150	٠	-	96603468	
GT-U-1000 PN 25 DN 50 V	1000	750	2760	185	DN 50	559	٠	-	96603469	
GT-U-1500 PN 25 DN 65 V	1500	1200	2050	285	DN 65	911	٠	-	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	

Note: For some GT-U tanks, the bladder is available as a spare part. The part number can be found on Grundfos.com (WebCAPS).

**Cold water** 

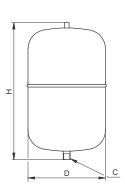
TM02 9086 2809 - TM02 9087 2809

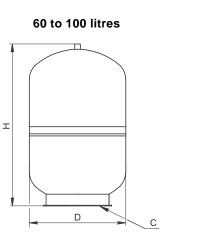
# GT-H, 10 bar

Vertical installation

Dimensions, weights and product numbers

#### 8 to 35 litres





#### Fig. 9 Dimensional sketches

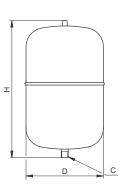
Tank type	Size		Dimensions [mm]		Gross weight	Product number	
	[1]	D	н	С	— [kg]		
GT-H-8 PN 10 G 3/4 V	8	203	311	G 3/4	2.6	96528335	
GT-H-8 PN 10 G 1 V	8	203	311	G 1	2.6	96526321	
GT-H-12 PN 10 G 3/4 V	12	229	364	G 3/4	3.1	96528336	
GT-H-12 PN 10 G 1 V	12	229	364	G 1	3.1	97506558	
GT-H-18 PN 10 G 3/4 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	97506559	
GT-H-24 PN 10 G 1 V	24	290	445	G 1	5.1	96528339	
GT-H-35 PN 10 G 3/4 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



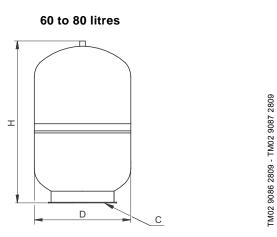
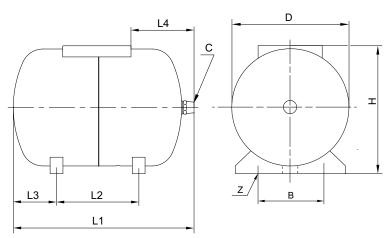


Fig. 10 Dimensional sketches

Tank type	Size		Dimensions [mm]	Gross weight	Product number	
	[1]	D	н	С	— [kg]	
GT-H-8 PN 16 G 3/4 V	8	203	311	G 3/4	2.6	96528356
GT-H-12 PN 16 G 3/4 V	12	229	364	G 3/4	3.1	96528357
GT-H-18 PN 16 G 1 V	18	279	366	G 1	5.0	96528358
GT-H-24 PN 16 G 1 V	24	290	445	G 1	5.1	96528360
GT-H-35 PN 16 G 1 V	35	318	481	G 1	7.5	96528361
GT-H-60 PN 16 G 1 V	60	388	528	G 1	10	96528362
GT-H-80 PN 16 G 1 V	80	388	626	G 1	16.7	96528363

Horizontal installation

Dimensions, weights and product numbers



Supporting bracket

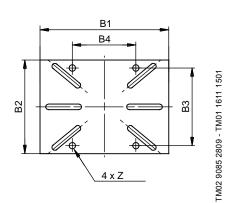


Fig. 11 Dimensional sketches

Tank type	Size		Dimensions [mm]						Gross weight	Product number		
	[1]	D	н	в	L1	L2	L3	L4	z	С	- [kg]	number
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

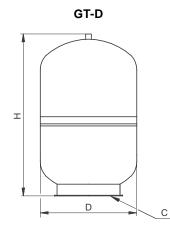
Tank type	Size	Dimensions [mm]							
	[1]	B1	B2	B3	B4	Z			
GT-H-24 PN 10 G 1/4 H	24	220	165	139	107	10			
GT-H-60 PN 10 G 1/4 H	60	220	165	139	107	9			
GT-H-80 PN 10 G 1 H	80	220	165	139	107	9			

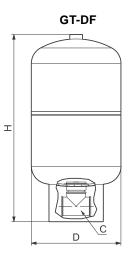
2

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

Vertical installation

#### Dimensions, weights and product numbers





TM02 9087 2809 - TM04 5936 4409

#### Fig. 12 Dimensional sketches

Tank type	Size		Dimensions [mm]	i	Gross weight	Product number
	[1]	D	н	С	[kg]	
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 G 1 1/4 V	170	533	921	G 1 1/4	31.0	96528345
GT-D-240 PN 10 G 1 1/4 V	240	533	1219	G 1 1/4	38.0	96528346
GT-D-300 PN 10 G 1 1/4 V	300	533	1575	G 1 1/4	45.0	96528347
GT-D-450 PN 10 G 1 1/4 V	450	660	1505	G 1 1/4	70.0	96528348
GT-DF						
GT-DF-80 PN 8.6 G 1 1/4 V	80	406	744	G 1 1/4	16.4	96980804
GT-DF-170 PN 8.6 G 1 1/4 V	170	533	921	G 1 1/4	30.9	96980807
GT-DF-325 PN 8.6 G 1 1/4 V	325	660	1130	G 1 1/4	55.5	96980808

Vertical installation

Dimensions, weights and product numbers

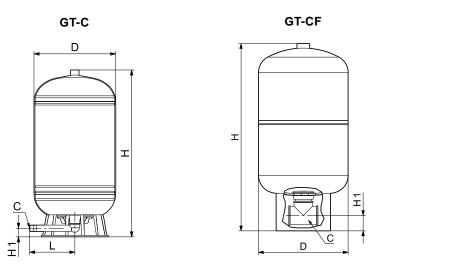


Fig. 13 Dimensional sketches

Tank type	Size		Gross weight	Product number				
	[1]	D	н	H1	L	С	[kg]	
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 1 1/4	16.5	96733307
GT-C-250 PN 8.6 G 1 1/4 V	250	542	1303	57	3023	G 1 1/4	21.7	96733308
GT-C-300 PN 8.6 G 1 1/4 V	300	542	1644	57	3023	G 1 1/4	28.4	96733309
GT-C-350 PN 8.6 G 1 1/4 V	350	614	1448	57	3401	G 1 1/4	31.2	96733310
GT-C-450 PN 8.6 G 1 1/4 V	450	614	1831	57	3401	G 1 1/4	42.1	96733311
GT-CF								
GT-CF-60 PN 8.6 G 1 1/4 V	60	419	640	45	-	G 1 1/4	8.6	96980809
GT-CF-80 PN 8.6 G 1 1/4 V	80	419	841	45	-	G 1 1/4	10.9	96980810
GT-CF-150 PN 8.6 G 1 1/4 V	150	614	747	57	-	G 1 1/4	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

TM04 5588 3509 - TM04 5423 3309

# 3. Heating

#### 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 chilled-water applications. These tanks can be incorporated in an expansion system in a tiny household or a large multi-storey 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 pre-charged 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:

$$V_{e} = \frac{(0.07 \text{ x t} - 2.5) \text{ x } (p_{s} + 1)}{100 \text{ x } (p_{s} - p_{e})} \text{ x V [litres]}$$

Ve	Tank volume [litres]
t	Maximum temperature in system [°C]
ps	Maximum system pressure [bar] (safety valve pressure)
p <sub>e</sub>	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 l/kW, flow-pipe temperature of 70  $^{\circ}$ C and return-pipe temperature of 50  $^{\circ}$ 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
leat 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.

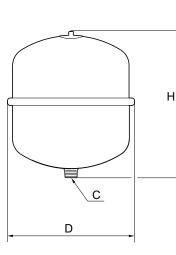
# GT-HR, 6 bar

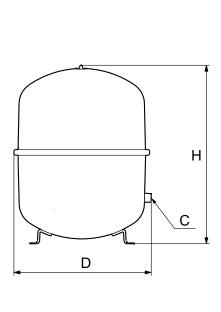
Vertical installation

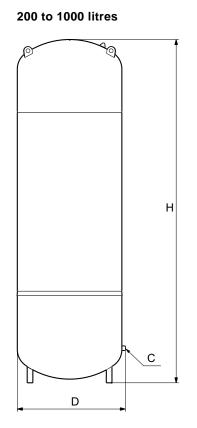
Dimensions, weights and product numbers

#### 8 to 25 litres

# 35 to 140 litres







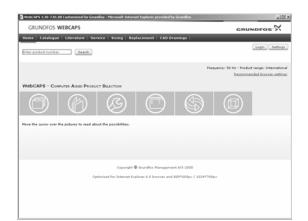
# TM03 1681 2809 - TM03 1682 2809 - TM03 1694 2809

#### Fig. 14 Dimensional sketches

Tank type	Size		Dimensions [mm]	Gross weight	Product number		
	[1]	D	Н	С	— [kg]		
GT-HR-8 PN 6 G 3/4 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 G 3/4 V	24	308	480	G 3/4	4.6	96573390	
GT-HR-35 PN 6 G 3/4 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	

# 4. Further product documentation

# **WebCAPS**



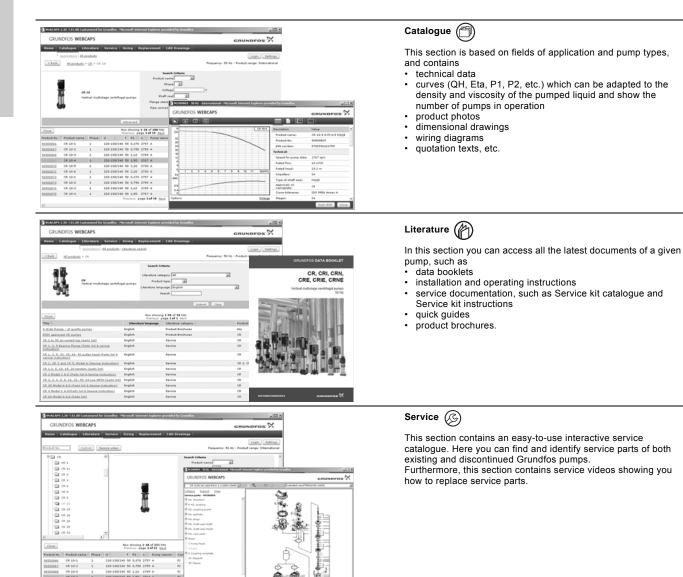
WebCAPS is a Web-based Computer Aided Product Selection program available on www.grundfos.com. WebCAPS contains detailed information on more than 185,000 Grundfos products in more than 20 languages.

In WebCAPS, all information is divided into six sections:

- Catalogue
- Literature •
- Service
- Sizing •

•

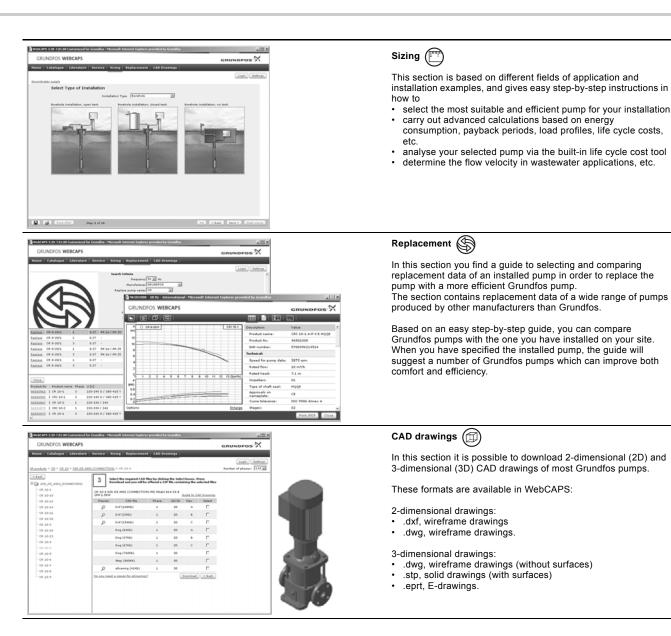
- Replacement
- CAD drawings.



**A A** 

CR 10-1

0 50 2.20 2730 A



# WinCAPS



Fig. 15 WinCAPS CD-ROM

#### WinCAPS is a **Win**dows-based **C**omputer **A**ided **P**roduct **S**election 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.

Subject to alterations.

96552805 0611

Repl. 96552805 0211



ECM: 1077482

The name Grundfos, the Grundfos logo, and the payoff Be–Think–Innovate are registrated trademarks owned by Grundfos Management A/S or Grundfos A/S, Denmark. All rights reserved worldwide.



**GRUNDFOS A/S** . DK-8850 Bjerringbro . Denmark Telephone: +45 87 50 14 00 www.grundfos.com