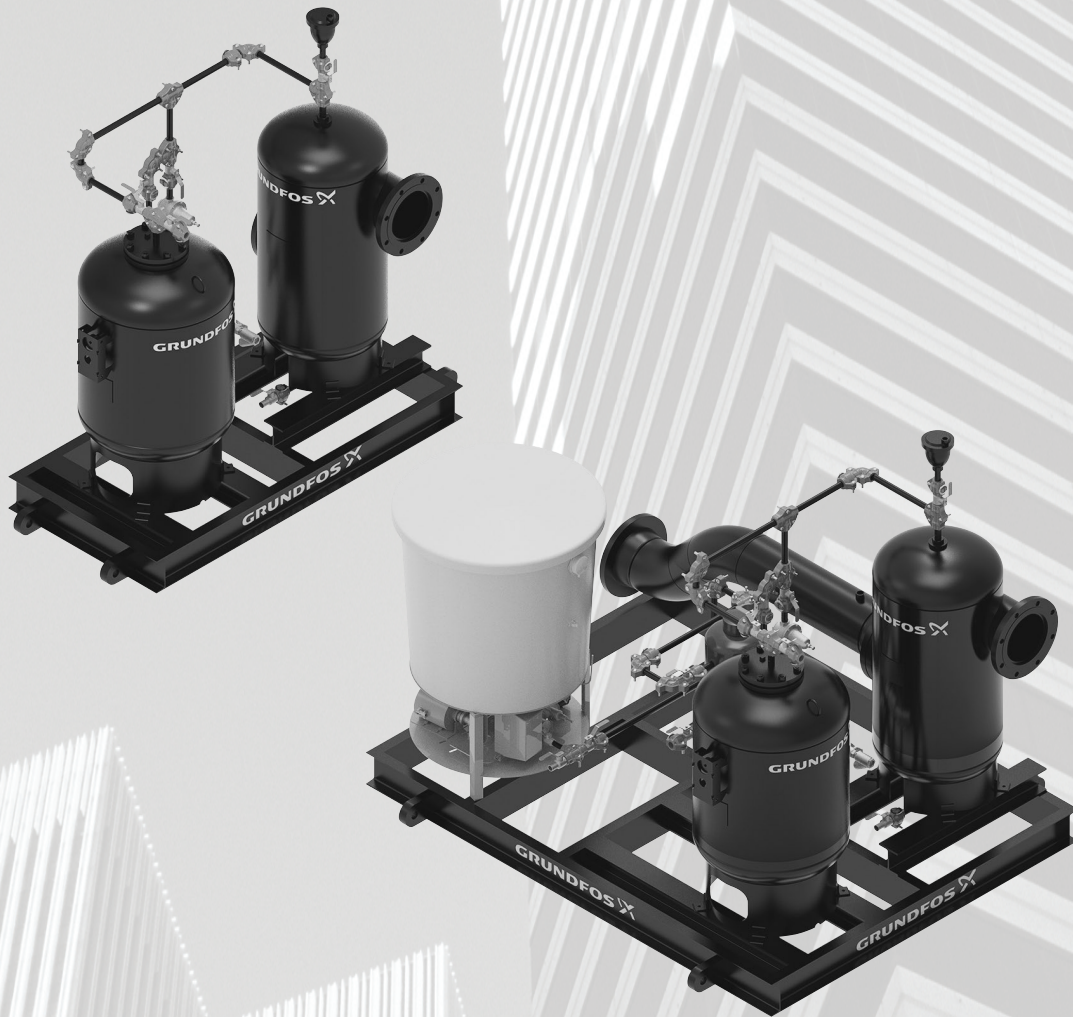


# ACCPACK

North America



**ACCPACK**  
Data booklet  
(all available languages)  
<http://net.grundfos.com/qr/i/92705098>



# ACCPACK

---

English (US)

..... 4

<b>1. Product Introduction</b> .....	<b>5</b>
Features and benefits .....	5
Product range .....	5
Nameplate .....	5
Type key .....	6
<b>2. Construction</b> .....	<b>8</b>
Product structure .....	8
Air separator .....	8
Expansion tank .....	8
Make-up water line .....	9
Bypass feeder .....	9
Glycol make-up packages .....	9
Base frame .....	9
<b>3. Mechanical installation</b> .....	<b>10</b>
Location .....	10
Pipes .....	10
Foundation .....	10
Vibration dampers .....	11
Expansion joints .....	11
<b>4. Selection of product</b> .....	<b>12</b>
Sizing via this data booklet .....	12
<b>5. Technical data</b> .....	<b>13</b>
Tangential ACCPACK with make-up water line . . . .	13
Tangential ACCPACK with bypass feeder and make-up water line .....	15
Tangential ACCPACK with bypass feeder, glycol make-up package and make-up water line . . . . .	17
Coalescing ACCPACK with make-up water line. . . .	19
Coalescing ACCPACK with bypass feeder and make-up water line .....	21
Coalescing ACCPACK with bypass feeder, glycol make-up package and make-up water line . . . . .	23
<b>6. Grundfos Product Center</b> .....	<b>25</b>
<b>7. Document quality feedback</b> .....	<b>26</b>

# 1. Product Introduction

ACCPACK provides the main accessories required in a closed-loop system. ACCPACK is composed of an air separator or air and dirt separator, and an expansion tank. It can also include a bypass feeder, a glycol make-up system and a make-up water line. These components are all conveniently piped together so that they can be connected directly to a GRUNDFOS DELTA HCU pump skid.

## Features and benefits

### Pre-packaged and pre-engineered

ACCPACK offers a standardized design, saving time and resources that would otherwise be spent on field-designed systems. Pre-packaging simplifies the procurement process by providing a single package with all the necessary components rather than having to procure individual components, which can lead to faster project completion.

ACCPACK is designed to work seamlessly with GRUNDFOS DELTA HCU. It ensures that all components are compatible, and reduces the risk of compatibility issues that can arise in field-designed systems. This also makes installation quicker and easier for contractors.

To meet standards of performance and reliability, ACCPACK undergoes quality control and testing before shipping to the customer. As a result, ACCPACK is more likely to deliver consistent and reliable performance over time.

### Variety of accessories

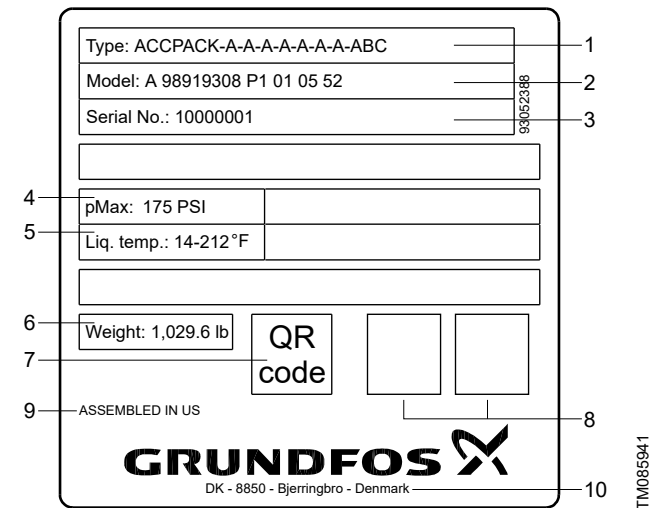
ACCPACK allows a variety of typical HVAC accessories to be installed on the same base frame. This allows the customer to pick the specific accessories required for the application.

## Product range

System design	Technical data	Parameter
	Flow rate [gpm]	0-8000
	Liquid temperature [°F]	33-160 <sup>1)</sup>
	Ambient temperature [°F]	33-104
Hydraulic data	Maximum operating pressure [psi]	125 <sup>2)</sup>
	Relative humidity	Max. 95 %
	Altitude [ft]	Up to 3280 <sup>3)</sup>
Pipe connection	ANSI flange [inch]	4-18

- 1) The liquid temperature range depends on the options selected for ACCPACK. Contact Grundfos if your application is outside of this range.
- 2) Higher pressure ratings are available on request. Contact Grundfos if needed.
- 3) Customization should be considered if the altitude is higher than 3280 ft.

## Nameplate



Pos.	Description
1	Product name
2	Factory code and production code (year and week)
3	Serial number
4	Maximum operating pressure [psi]
5	Temperature range of liquid
6	Net weight
7	QR code
8	Marks of approval
9	Production site
10	Address of manufacturer

## Type key

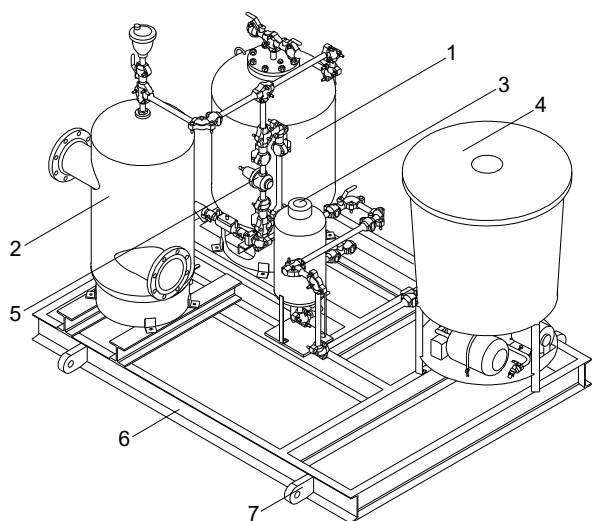
Example: ACCPACK-A-A-A-A-A-A-ABC

Code	Description	Designation
ACCPACK		Product name
A-	A: Open B: Closed	Base frame type
A-	A: Indoor B: Outdoor	Location
A-	A: 2" system connection size B: 2.5" system connection size C: 3" system connection size D: 4" system connection size E: 6" system connection size F: 8" system connection size G: 10" system connection size H: 12" system connection size I: 14" system connection size J: 16" system connection size K: 18" system connection size L: 20" system connection size M: 24" system connection size	Connection size
A-	A: Tangential without strainer B: Tangential with strainer C: Coalescing, air&dirt, standard velocity, removable head, with options D: Coalescing, air&dirt, standard velocity, removable head, without options E: Coalescing, air&dirt, standard velocity, fixed head, with options F: Coalescing, air&dirt, standard velocity, fixed head, without options G: Coalescing, air&dirt, high velocity, removable head, with options H: Coalescing, air&dirt, high velocity, removable head, without options I: Coalescing, air&dirt, high velocity, fixed head, with options J: Coalescing, air&dirt, high velocity, fixed head, without options K: Coalescing, air only, standard velocity, fixed head, with options L: Coalescing, air only, standard velocity, fixed head, without options M: Coalescing, air only, high velocity, fixed head, with options N: Coalescing, air only, high velocity, fixed head, without options	Air separator
A-	A: 10 gallons B: 13 gallons C: 23 gallons D: 35 gallons E: 53 gallons F: 79 gallons G: 106 gallons H: 132 gallons I: 158 gallons J: 211 gallons K: 264 gallons L: 317 gallons M: 370 gallons N: 422 gallons O: 528 gallons P: 660 gallons Q: 792 gallons (tall tank) R: 792 gallons (short tank) S: 1056 gallons T: 1320 gallons U: 1980 gallons V: 2640 gallons W: 3963 gallons	Expansion tank capacity

Code	Description	Designation
A-	A: 2 gallons, non-ASME B: 5 gallons, non-ASME C: 12 gallons, non-ASME D: 18 gallons, non-ASME E: 2 gallons, ASME F: 5 gallons, ASME G: 10 gallons, ASME H: 12 gallons, ASME I: 18 gallons, ASME Z: No bypass feeder	Bypass feeder
A-	A: Single, 1/3 HP, 50 gallons, indoor rated B: Single, 1/3 HP, 100 gallons, indoor rated C: Single, 1/2 HP, 50 gallons, indoor rated D: Single, 1/2 HP, 100 gallons, indoor rated E: Duplex, 1/3 HP, 50 gallons, indoor rated F: Duplex, 1/3 HP, 100 gallons, indoor rated G: Duplex, 1/2 HP, 50 gallons, indoor rated H: Duplex, 1/2 HP, 100 gallons, indoor rated I: Twin, 1/3 HP, 50 gallons, indoor rated J: Twin, 1/3 HP, 100 gallons, indoor rated K: Twin, 1/2 HP, 50 gallons, indoor rated L: Twin, 1/2 HP, 100 gallons, indoor rated Z: No glycol make-up package	Glycol make-up package
ABC-	A: Make-up water line B: Spool piece C: Buffer tank (120 gallons) D: Buffer tank (200 gallons) E: Buffer tank (300 gallons) F: Buffer tank (500 gallons) G: Buffer tank (850 gallons) H: Buffer tank (1040 gallons) Z: Other	Options

## 2. Construction

### Product structure



TM085942

Pos.	Description
1	Expansion tank
2	Air separator
3	Bypass feeder
4	Glycol make-up packages
5	Make-up water line
6	Base frame
7	Lifting eye

### Air separator



TM086100

ACCPACK is available with two types of air separators: tangential and coalescing.

Tangential air separators utilize the low velocity swirling effect created in the center of the unit due to the tangential nozzle connections. Natural centrifugal forces allow the heavier, air-free water to move towards the outer edges,

while entrained air is released through an automatic air vent on the top of the unit. Tangential air separators can be equipped with or without a built-in strainer.

Coalescing air separators utilize the principle of coalescence, which involves merging tiny air bubbles into larger ones, making it easier to separate them from the liquid. These larger bubbles are raised inside the chamber and released through an automatic air vent on the top of the unit. ACCPACK offers coalescing air separators in standard or high-velocity versions or an air and dirt separator in standard and high-velocity versions. Both air separators and air and dirt separators can be chosen with or without a removable head.

### Expansion tank



TM086102

ACCPACK offers a removable bladder-type expansion tank. Expansion tanks are used to absorb the expansion forces and control the pressure in heating or cooling systems because of the changes in temperature. As the system fluid expands, it is forced into the precharged tank to the maximum system pressure. The precharged air cushion then forces the fluid back into the system as it contracts. The extra-heavy butyl bladder keeps the fluid permanently isolated from the precharged air cushion. This arrangement eliminates water logging and absorption of air into the system. It also helps prevent air-bound terminal units, excessive corrosion, inefficient balancing and pump cavitation over the life of the system.



## Make-up water line



TM086103

ACCPACK offers a make-up water line to maintain proper water and pressure levels within the HVAC loop. HVAC systems require a consistent water level to run efficiently. Over time, water can be lost due to evaporation, leaks or other factors. Make-up water lines are used to replenish the lost water to maintain the correct water level. Make-up water lines are designed to have a pressure-reducing valve which regulates the pressure of the water entering the HVAC system. This helps maintain the desired pressure levels within the system to ensure proper operation and prevent damage to the equipment. A backflow preventer is installed to help prevent contamination of the potable water supply.

## Bypass feeder



TM086028

ACCPACK offers a bypass feeder as a means of introducing treatment chemicals into heating or cooling systems. Chemicals introduced via bypass feeders can help prevent corrosion, scale formation and microbial growth, ensuring an efficient and safe operation of the HVAC system.

## Glycol make-up packages



TM086030

ACCPACK is available with three types of glycol make-up packages: a simplex system, a duplex system, and a twin system.

Glycol make-up packages are used in HVAC systems primarily to manage the concentration of glycol-based heat transfer fluids in hydronic heating and cooling systems. These glycol solutions are used to prevent freezing in chilled water or hot water systems, especially in cold climates or in systems exposed to low temperatures.

Simplex and twin systems supply the glycol and water mixture to one closed loop. However, the twin system is equipped with an additional pump. Duplex systems supply the glycol and water mixture to two separate closed loops.

## Base frame



TM086101

All components in ACCPACK are installed on a common base frame. The base frame is made of carbon steel.

## 3. Mechanical installation

### Location



ACCPACK is designed for indoor installation only. Do not expose ACCPACK to direct sunlight.

- Install ACCPACK with a one-meter (3 ft) clearance on all sides for inspection and removal in the future.

### Pipes

#### WARNING

##### Hot surface

Death or serious personal injury



- To avoid stress on pipes or joints inside ACCPACK, do not apply any extra tension on the connection to the main pipeline.
- Make sure that the thermal expansion does not cause any damage to the joints.

#### WARNING

##### Hot surface

Death or serious personal injury



- Install the external pipe connections according to the guidelines of the pipe manufacturers to avoid excessive stress on the pipes.



The screws for connecting the pipe must be at least Grade 8, in case that the deformation causes pipe leakage.

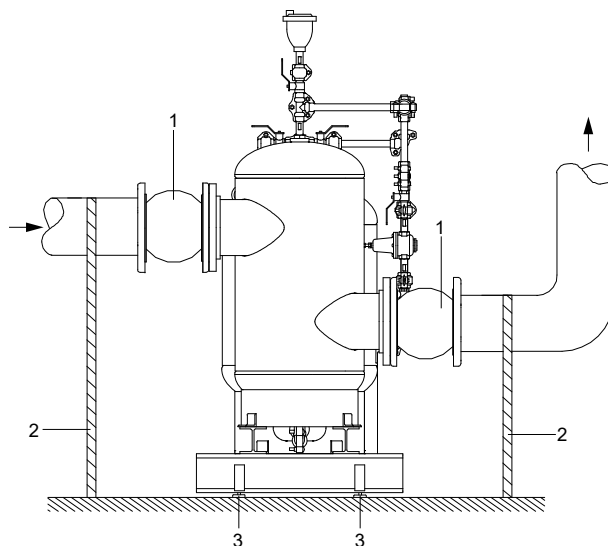
The pipes connected to ACCPACK must be of adequate size.

Connect the pipes to the inlet flange of the air separator.

To optimize the operation and minimize the noise and vibration, it may be necessary to consider the vibration damping of the system.

Noise and vibration are generated by the flow in the pipes and fittings. The effect on the environment is subjective and depends on the correct installation and the state of the other parts of ACCPACK.

If an ACCPACK is installed in an apartment building, or if the first consumer on the line is close to ACCPACK, we recommend that you install expansion joints on the inlet pipe and outlet pipe to prevent the transmission of vibration through the pipes.



TM086041

Example showing the position of expansion joints, pipe supports and machine shoes

Pos.	Description
1	Expansion joint
2	Pipe support (and good location for system isolation valve)
3	Vibration damper (machine shoe)



Expansion joints, pipe supports and machine shoes shown in the figure above are not included in a standard ACCPACK.

### Foundation

We recommend that you install ACCPACK on an even and solid surface, such as a concrete floor or foundation. If ACCPACK is not equipped with vibration dampers, bolt it to the floor or a foundation.

The weight of a concrete foundation must be at least 1.5 times the weight of ACCPACK.

## Vibration dampers

To prevent the vibration from transmitting to buildings, we recommend that you use vibration dampers to isolate the ACCPACK foundation from the adjacent parts of the building.

Different installation situations require different types of damper, and using the wrong damper may increase the vibration level. Vibration dampers must, therefore, be sized by the supplier. If ACCPACK is installed on a base frame with vibration dampers, always install expansion joints on the pipe connections. This is important because it prevents ACCPACK from "hanging" on the pipes.

## Expansion joints

Install expansion joints for the following reasons:

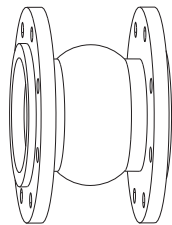
- to absorb expansions or contractions in the pipes caused by changes in liquid temperature
- to reduce mechanical strain caused by pressure surges in the pipes
- to isolate mechanical structure-borne noise in the pipes (only expansion joints like rubber bellows).



Do not install expansion joints to compensate for inaccuracies in the pipes, such as flange center displacement.

Proceed with the following steps when you install an expansion joint:

- Install expansion joints at a minimum distance of 1 to 1.5 times the nominal flange diameter from the pipe connections on the inlet side and the outlet side. This prevents the development of turbulence in the expansion joints, resulting in better inlet conditions and minimal pressure loss on the pressure side.



TM084020

### Example of an expansion joint

- Expansion joints with limiting rods can be used to minimize the forces caused by the expansion joints. We always recommend that you use expansion joints with limiting rods for flanges larger than four inches.
- Anchor the pipes so that they do not stress the expansion joints and the accessories. Follow the supplier's instructions and pass them on to advisers or pipe installers.

## 4. Selection of product

When sizing an ACCPACK, consider the following aspects:

- The performance of ACCPACK must meet the highest possible demand in terms of both flow rate and pressure.
- ACCPACK must not be oversized. This is important in relation to installation and operating costs.

You can size ACCPACK via this data booklet.

### Sizing via this data booklet

#### Air separator

Air separators are typically selected based on their flow rates. Refer to the manufacturer's recommended maximum flow rate to select the appropriate size.

#### Expansion tank

Expansion tanks can typically be sized on the manufacturer's website or by using the guide below. To size an expansion tank, the following information is required:

- total system water content (gallon)
- temperature of the water when the system is filled (°F)
- average maximum operating temperature (°F)
- minimum operating pressure (psig)
- maximum operating pressure (10 % below relief valve) (psig).

The size of the expansion tank is calculated by the steps below:

1. Enter the total system water content (the first item on the bullet list above).
2. Use the expansion factor table. Find and enter the expansion factor.
3. Multiply the value of step 1 by that of step 2. This gives you the expanded water volume in gallon.
4. Use the acceptance factor table. Find and enter the acceptance factor.
5. Divide the value of step 3 by that of step 4. This gives you the total tank volume in gallon required.

The volume of the diaphragm expansion tank must satisfy both the expanded water volume in step 3 and the total tank volume in step 5. Bladder tanks must satisfy the total tank volume in step 5.

#### Glycol make-up package

A general guideline for sizing the glycol make-up package reservoir is to ensure a 1 % leak load. This means that the container size should be equal to 1 % of the system volume.

#### Bypass feeder

Bypass feeder sizing typically involves determining the appropriate volume or capacity of the bypass feeder vessel. This ensures that it can adequately hold the necessary water treatment chemicals and dispense them into the HVAC system.

- Determine the dosage of water treatment chemicals required for your specific HVAC system.
- Calculate the needed chemical volume which may involve multiplying the concentration of the chemical by the system volume.
- Choose a feeder size which should be greater than or equal to the required chemical volume.

#### Buffer tank (on request)

Chilled water buffer tanks are typically sized according to the following:

$$BT \text{ capacity} = TCC \times MRSV - ASV$$

BT capacity:	Buffer tank capacity
TCC:	Total chiller capacity
MRSV:	System volume suggested by the manufacturer. Chiller manufacturers recommend 3 to 6 gallons per ton for HVAC application and 6 to 10 gallons per ton for nominal cooling when temperature accuracy is critical.
ASV:	Actual System Volume

Hot water buffer tanks are typically sized according to the following:

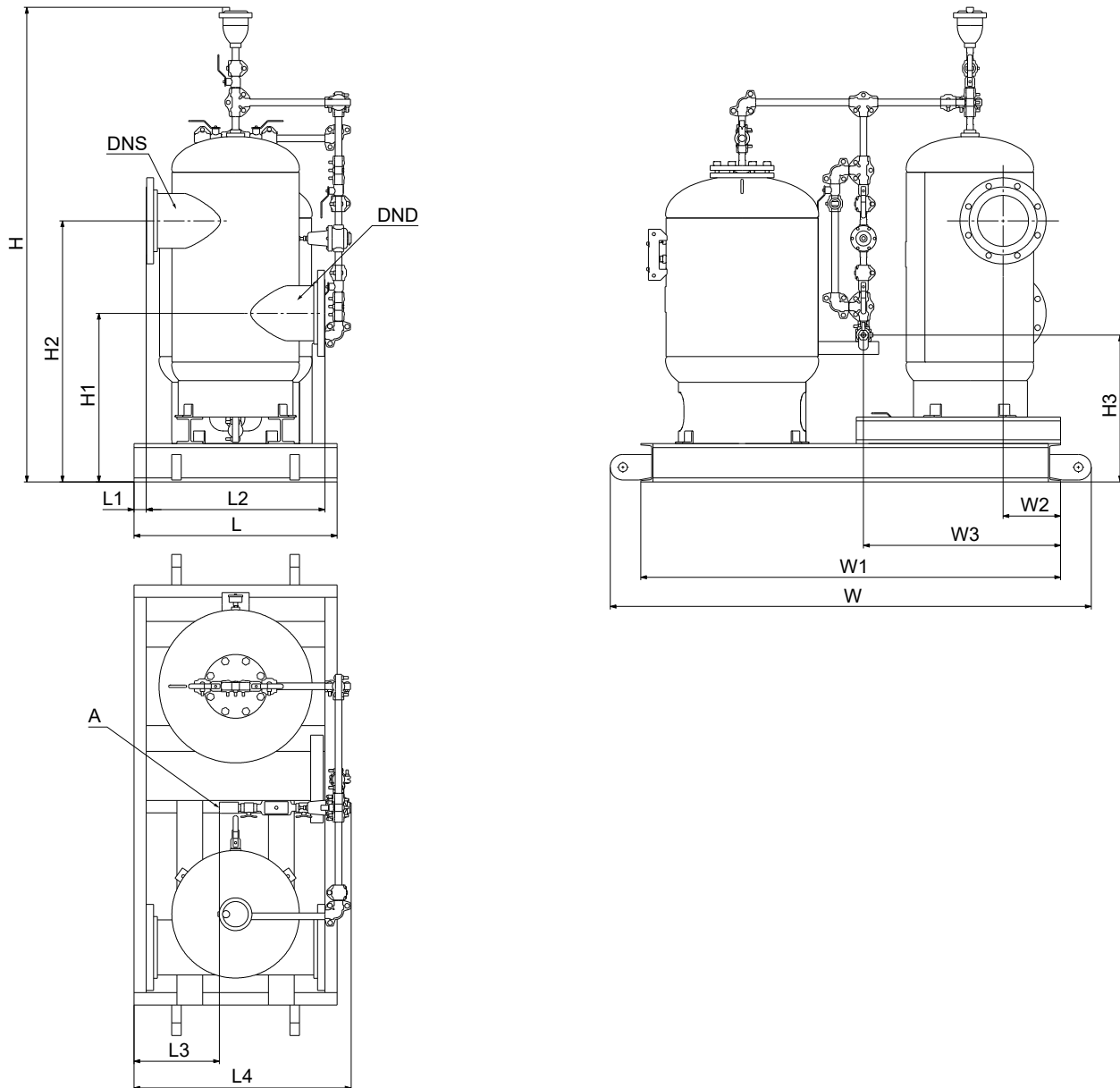
$$BT \text{ capacity} = \frac{MMBCT \times (MBO - MSL)}{\Delta T \times 500}$$

BT capacity:	Buffer tank capacity
MMBCT:	Minimum boiler cycle time suggested by the manufacturer. Typically, from 1 to 5 minutes.
MBO:	Minimum boiler output
MSL:	Minimum system load. It is assumed to be 0 if there is no system load or the rate is unknown.
ΔT:	Temperature differential within the tank. The temperature differential can vary between 5 and 25 °F, typically 10 °F.

## 5. Technical data

### Tangential ACCPACK with make-up water line

Accessory sizing is dependent on total system volume and varies based on your application. The list below is for illustration only. All the dimensions below are measured in inches.



TM086035

System flow rate <sup>4)</sup> [gpm]	Air separator	Expansion tank	Make-up water line	L	L1	L2	L3	L4	W	W1	W2	W3	H	H1	H2	H3 <sup>5)</sup>	DNS	DND	A <sup>6)</sup>
125	SPA-4	NLA-35	Yes	21.9	0.1	21.8	2.4	23.0	57.4	47.8	7.0	24.9	62.3	22.3	33.0	/	4	4	0.75
250	SPA-6	NLA-50	Yes	27.9	-0.1	28.0	6.4	27.0	65.4	55.8	8.0	30.9	74.4	26.4	40.9	/	6	6	0.75
500	SPA-6	NLA-130	Yes	27.9	-0.1	28.0	9.4	30.0	71.4	61.8	8.0	30.9	74.4	26.4	40.9	/	6	6	0.75
750	SPA-6	NLA-200	Yes	31.9	1.9	28.0	13.4	34.0	75.4	65.8	8.0	30.9	74.4	26.4	40.9	/	6	6	0.75
1000	SPA-8	NLA-200	Yes	31.9	1.9	28.0	13.4	34.0	75.4	65.8	9.0	30.9	74.4	26.4	40.9	/	8	8	0.75
1250	SPA-8	NLA-300	Yes	31.9	1.9	28.0	13.4	34.0	75.4	65.8	9.0	30.9	74.4	26.4	40.9	/	8	8	0.75
1500	SPA-10	NLA-300	Yes	37.9	-1.6	41.0	16.4	37.0	85.4	75.8	10.2	40.9	91.0	31.7	51.7	/	10	10	0.75
2000	SPA-10	NLA-400	Yes	37.9	-1.6	41.0	19.4	40.0	91.4	81.8	10.2	40.9	91.0	31.7	51.7	/	10	10	0.75
2500	SPA-12	NLA-500	Yes	37.9	-1.6	41.0	19.4	40.0	91.4	82.5	11.2	41.2	92.9	33.7	53.7	/	12	12	0.75
3000	SPA-12	NLA-600	Yes	37.9	-1.6	41.0	19.4	40.0	91.4	82.5	11.2	41.2	97.2	33.7	53.7	/	12	12	0.75
3500	SPA-14	NLA-800L	Yes	43.9	-1.8	46.4	23.4	44.0	99.4	90.5	12.2	47.2	110.4	36.7	68.2	/	14	14	0.75
4000	SPA-16	NLA-800L	Yes	43.9	-2.1	60.0	29.4	44.0	111.4	102.5	14.2	59.2	140.4	50.2	90.2	/	16	16	0.75
5000	SPA-16	NLA-1000	Yes	55.9	-2.1	60.0	31.4	52.0	115.4	106.5	14.2	59.2	140.4	50.2	90.2	/	16	16	0.75
6000	SPA-18	NLA-1200	Yes	61.9	-2.1	66.0	34.4	55.0	121.4	112.5	17.2	65.2	156.4	52.6	102.6	/	18	18	0.75
7000	SPA-18	NLA-1400	Yes	61.9	-2.1	66.0	34.4	55.0	121.4	112.5	17.2	65.2	156.4	52.6	102.6	/	18	18	0.75
8000	SPA-18	NLA-1600	Yes	61.9	-2.1	66.0	40.4	61.0	133.4	124.5	17.2	65.2	156.4	52.6	102.6	/	18	18	0.75

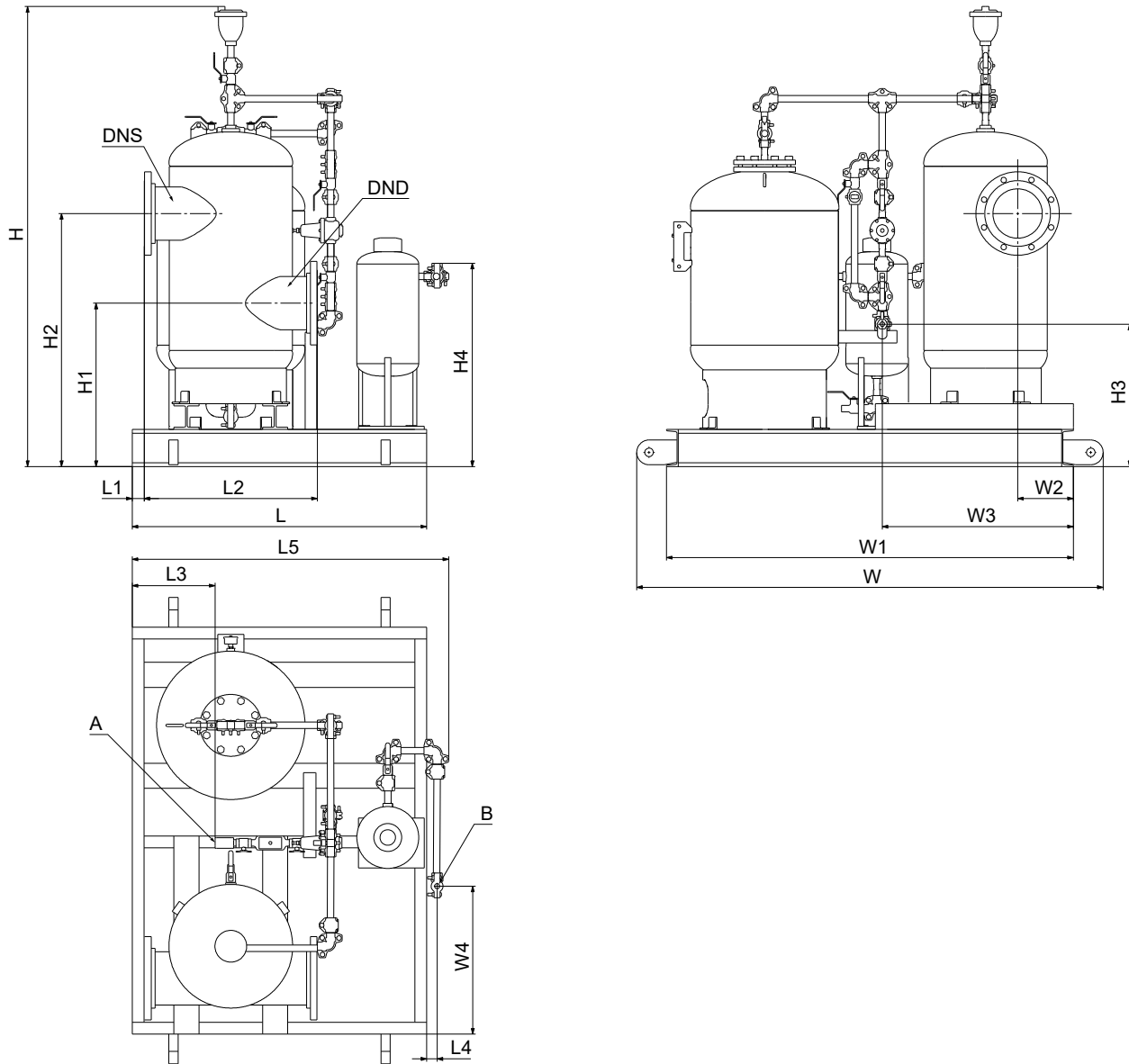
4) This is the flow of the DELTA HCU pump skid.

5) H3 is subject to changes depending on actual customer's needs.

6) A is the diameter for the connection to the make-up water line.

### Tangential ACCPACK with bypass feeder and make-up water line

Accessory sizing is dependent on total system volume and varies based on your application. The list below is for illustration only. All the dimensions below are measured in inches.



TM086034

System flow rate <sup>7)</sup> [gpm]	Air separator	Expansion tank	Bypass feeder	Make-up water line	L	L1	L2	L3	L4	L5	W	W1	W2	W3	W4	H	H1	H2	H3 <sup>8)</sup>	H4	DNS	DND	A&B <sup>9)</sup>
125	SPA-4	NLA-35	DB-5HD	Yes	37.6	0.1	21.8	2.4	1.7	41.2	57.4	47.8	7.0	24.9	17.9	62.3	22.3	33.0	/	30.8	4	4	0.75
250	SPA-6	NLA-50	DB-5HD	Yes	43.6	-0.1	28.0	6.4	1.7	47.2	65.4	55.8	8.0	30.9	23.9	74.4	26.4	40.9	/	30.8	6	6	0.75
500	SPA-6	NLA-130	DB-5HD	Yes	43.6	-0.1	28.0	9.4	1.7	47.2	71.4	61.8	8.0	30.9	23.9	74.4	26.4	40.9	/	30.8	6	6	0.75
750	SPA-6	NLA-200	DB-5HD	Yes	47.6	1.9	28.0	13.4	1.7	51.2	75.4	65.8	8.0	30.9	23.9	74.4	26.4	40.9	/	30.8	6	6	0.75
1000	SPA-8	NLA-200	DB-5HD	Yes	47.6	1.9	28.0	13.4	1.7	51.2	75.4	65.8	9.0	30.9	23.9	74.4	26.4	40.9	/	30.8	8	8	0.75
1250	SPA-8	NLA-300	DB-5HD	Yes	47.6	1.9	28.0	13.4	1.7	51.2	75.4	65.8	9.0	30.9	23.9	74.4	26.4	40.9	/	30.8	8	8	0.75
1500	SPA-10	NLA-300	DB-5HD	Yes	53.6	-1.6	41.0	16.4	1.7	57.2	85.4	75.8	10.2	40.9	33.9	91.0	31.7	51.7	/	30.8	10	10	0.75
2000	SPA-10	NLA-400	DB-5HD	Yes	53.6	-1.6	41.0	19.4	1.7	57.2	91.4	81.8	10.2	40.9	33.9	91.0	31.7	51.7	/	30.8	10	10	0.75
2500	SPA-12	NLA-500	DB-5HD	Yes	53.6	-1.6	41.0	19.4	1.7	57.2	91.4	82.5	11.2	41.2	34.3	92.9	33.7	53.7	/	32.7	12	12	0.75
3000	SPA-12	NLA-600	DB-5HD	Yes	53.6	-1.6	41.0	19.4	1.7	57.2	91.4	82.5	11.2	41.2	34.3	97.2	33.7	53.7	/	32.7	12	12	0.75
3500	SPA-14	NLA-800L	DB-5HD	Yes	59.6	-1.8	46.4	23.4	1.7	63.2	99.4	90.5	12.2	47.2	40.3	110.4	36.7	68.2	/	32.7	14	14	0.75
4000	SPA-16	NLA-800L	DB-5HD	Yes	71.6	-2.1	60.0	29.4	1.7	75.2	111.4	102.5	14.2	59.2	52.3	140.4	50.2	90.2	/	32.7	16	16	0.75
5000	SPA-16	NLA-1000	DB-5HD	Yes	71.6	-2.1	60.0	31.4	1.7	75.2	115.4	106.5	14.2	59.2	52.3	140.4	50.2	90.2	/	32.7	16	16	0.75
6000	SPA-18	NLA-1200	DB-5HD	Yes	77.6	-2.1	66.0	34.4	1.7	81.2	121.4	112.5	17.2	65.2	58.3	156.4	52.6	102.6	/	32.7	18	18	0.75
7000	SPA-18	NLA-1400	DB-5HD	Yes	77.6	-2.1	66.0	34.4	1.7	81.2	121.4	112.5	17.2	65.2	58.3	156.4	52.6	102.6	/	32.7	18	18	0.75
8000	SPA-18	NLA-1600	DB-5HD	Yes	77.6	-2.1	66.0	40.4	1.7	81.2	133.4	124.5	17.2	65.2	58.3	156.4	52.6	102.6	/	32.7	18	18	0.75

7) This is the flow of the DELTA HCU pump skid.

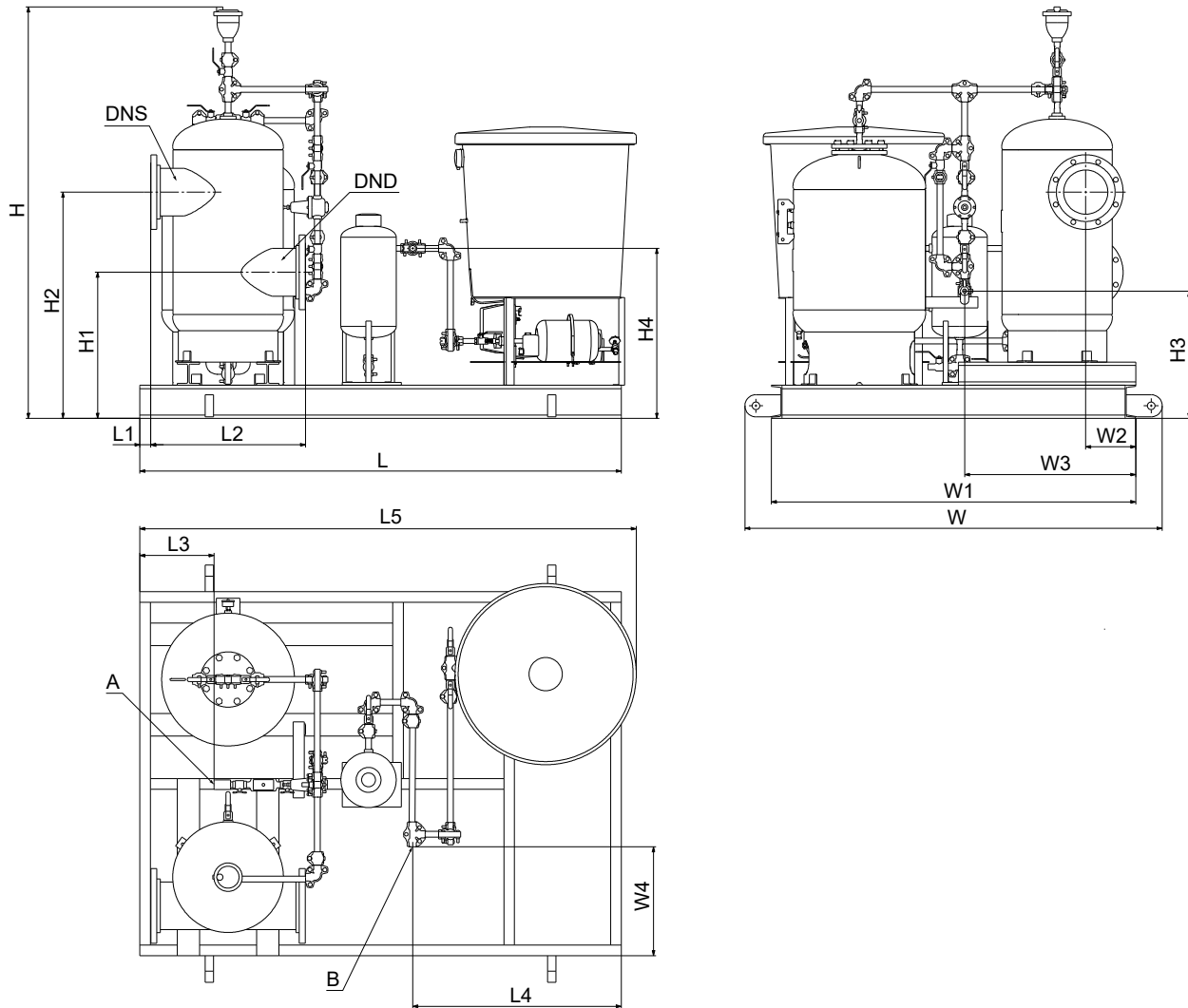
8) H3 is subject to changes depending on actual customer's needs.

9) A is the diameter for the connection to the make-up water line. B is the diameter for the connection to the bypass feeder and glycol joint.



### Tangential ACCPACK with bypass feeder, glycol make-up package and make-up water line

Accessory sizing is dependent on total system volume and varies based on your application. The list below is for illustration only. All the dimensions below are measured in inches.



TM086036

System flow rate <sup>10)</sup> [gpm]	Air separator	Expansion tank	Bypass feeder	Glycol package	Make-up water line																	A&B <sub>12)</sub>		
						L	L1	L2	L3	L4	L5	W	W1	W2	W3	W4	H	H1	H2	H3 <sup>11)</sup>	H4	DNS	DND	
125	SPA-4	NLA-35	DB-5HD	GMP-13050	Yes	77.0	0.1	21.8	2.4	37.7	79.7	57.4	47.8	7.0	24.9	13.7	62.3	22.3	33.0	/	30.8	4	4	0.75
250	SPA-6	NLA-50	DB-5HD	GMP-13050	Yes	83.0	-0.1	28.0	6.4	37.7	85.7	65.4	55.8	8.0	30.9	19.7	74.4	26.4	40.9	/	30.8	6	6	0.75
500	SPA-6	NLA-130	DB-5HD	GMP-13050	Yes	83.0	-0.1	28.0	9.4	37.7	85.7	71.4	61.8	8.0	30.9	19.7	74.4	26.4	40.9	/	30.8	6	6	0.75
750	SPA-6	NLA-200	DB-5HD	GMP-13050	Yes	87.0	1.9	28.0	13.4	37.7	89.7	75.4	65.8	8.0	30.9	19.7	74.4	26.4	40.9	/	30.8	6	6	0.75
1000	SPA-8	NLA-200	DB-5HD	GMP-13050	Yes	87.0	1.9	28.0	13.4	37.7	89.7	75.4	65.8	9.0	30.9	19.7	74.4	26.4	40.9	/	30.8	8	8	0.75
1250	SPA-8	NLA-300	DB-5HD	GMP-13050	Yes	87.0	1.9	28.0	13.4	37.7	89.7	75.4	65.8	9.0	30.9	19.7	74.4	26.4	40.9	/	30.8	8	8	0.75
1500	SPA-10	NLA-300	DB-5HD	GMP-13050	Yes	93.0	-1.6	41.0	16.4	37.7	95.7	85.4	75.8	10.2	40.9	29.7	91.0	31.7	51.7	/	30.8	10	10	0.75
2000	SPA-10	NLA-400	DB-5HD	GMP-13050	Yes	93.0	-1.6	41.0	19.4	37.7	95.7	91.4	81.8	10.2	40.9	29.7	91.0	31.7	51.7	/	30.8	10	10	0.75
2500	SPA-12	NLA-500	DB-5HD	GMP-13050	Yes	93.0	-1.6	41.0	19.4	37.7	95.6	91.4	82.5	11.2	41.2	30.0	92.9	33.7	53.7	/	32.7	12	12	0.75
3000	SPA-12	NLA-600	DB-5HD	GMP-13050	Yes	93.0	-1.6	41.0	19.4	37.7	95.6	91.4	82.5	11.2	41.2	30.0	97.2	33.7	53.7	/	32.7	12	12	0.75
3500	SPA-14	NLA-800L	DB-5HD	GMP-13050	Yes	99.0	-1.8	46.4	23.4	37.7	101.6	99.4	90.5	12.2	47.2	36.0	110.4	36.7	68.2	/	32.7	14	14	0.75
4000	SPA-16	NLA-800L	DB-5HD	GMP-13050	Yes	111.0	-2.1	60.0	29.4	37.7	113.6	111.4	102.5	14.2	59.2	48.0	140.4	50.2	90.2	/	32.7	16	16	0.75
5000	SPA-16	NLA-1000	DB-5HD	GMP-13050	Yes	111.0	-2.1	60.0	31.4	37.7	113.6	115.4	106.5	14.2	59.2	48.0	140.4	50.2	90.2	/	32.7	16	16	0.75
6000	SPA-18	NLA-1200	DB-5HD	GMP-13100	Yes	117.0	-2.1	66.0	34.4	37.7	121.1	121.4	112.5	17.2	65.2	54.0	156.4	52.6	102.6	/	32.7	18	18	0.75
7000	SPA-18	NLA-1400	DB-5HD	GMP-13100	Yes	117.0	-2.1	66.0	34.4	37.7	121.1	121.4	112.5	17.2	65.2	54.0	156.4	52.6	102.6	/	32.7	18	18	0.75
8000	SPA-18	NLA-1600	DB-5HD	GMP-13100	Yes	117.0	-2.1	66.0	40.4	37.7	121.1	133.4	124.5	17.2	65.2	54.0	156.4	52.6	102.6	/	32.7	18	18	0.75

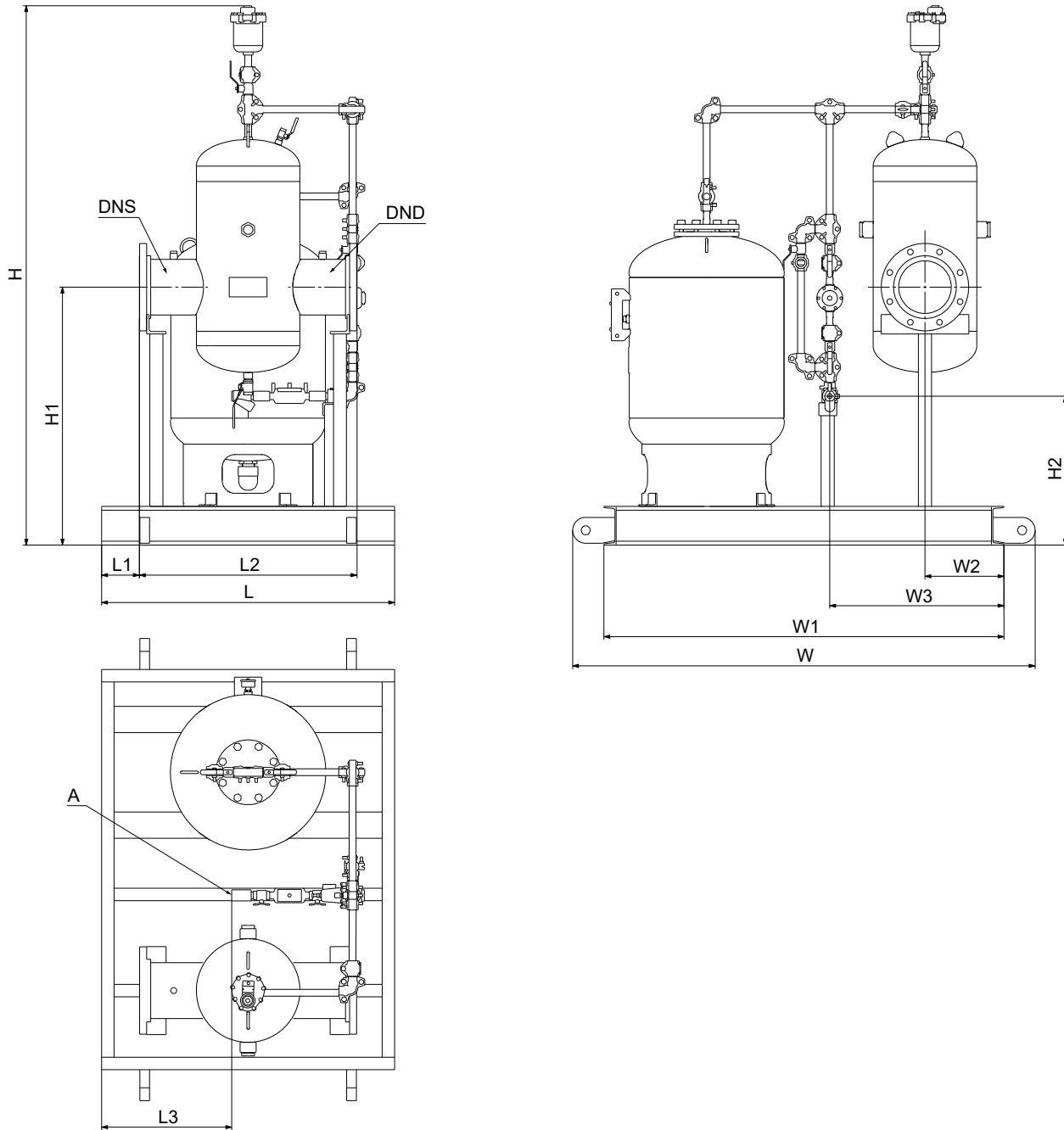
<sup>10)</sup> This is the flow of the DELTA HCU pump skid.

<sup>11)</sup> H3 is subject to changes depending on actual customer's needs.

<sup>12)</sup> A is the diameter for the connection to the make-up water line. B is the diameter for the connection to the bypass feeder and glycol joint.

### Coalescing ACCPACK with make-up water line

Accessory sizing is dependent on total system volume and varies based on your application. The list below is for illustration only. All the dimensions below are measured in inches.



TM086032

System flow rate <sup>13)</sup> [gpm]	Air separator	Expansion tank	Make-up water line	L	L1	L2	L3	W	W1	W2	W3	H	H1	H2 <sup>14)</sup>	DNS	DND	A <sup>15)</sup>
125	ASF-040	NLA-35	Yes	33.3	6.3	20.6	8.1	52.1	42.5	8.5	19.5	68.6	34.7	/	4	4	0.75
250	ASF-060	NLA-50	Yes	35.3	3.8	27.8	10.1	58.2	48.6	10.6	23.7	76.0	37.7	/	6	6	0.75
500	ASF-060	NLA-130	Yes	41.3	6.8	27.8	16.1	64.2	54.6	10.6	23.7	76.0	37.7	/	6	6	0.75
750	AHF-060	NLA-200	Yes	45.3	8.8	27.8	20.1	68.2	58.6	10.6	23.7	87.0	37.7	/	6	6	0.75
1000	ASF-080	NLA-200	Yes	45.3	5.8	33.6	20.1	71.4	61.8	12.2	26.9	83.4	39.9	/	8	8	0.75
1250	AHF-080	NLA-300	Yes	45.3	5.8	33.6	20.1	71.4	61.8	12.2	26.9	96.4	39.9	/	8	8	0.75
1500	ASF-100	NLA-300	Yes	45.3	3.9	37.5	20.1	75.4	65.8	14.2	30.9	92.8	41.6	/	10	10	0.75
2000	AHF-100	NLA-400	Yes	51.3	6.9	37.5	26.1	81.4	71.8	14.2	30.9	108.8	41.6	/	10	10	0.75
2500	AHF-120	NLA-500	Yes	51.3	4.4	42.5	26.1	85.4	76.5	16.2	35.2	125.9	45.6	/	12	12	0.75
3000	AHF-120	NLA-600	Yes	51.3	4.4	42.5	26.1	85.4	76.5	16.2	35.2	125.9	45.6	/	12	12	0.75
3500	AHF-140	NLA-800L	Yes	53.3	4.1	45.0	28.1	93.4	84.5	19.2	41.2	132.4	51.1	/	14	14	0.75
4000	ASF-160	NLA-800L	Yes	53.3	1.6	50.0	28.1	93.4	84.5	19.2	41.2	132.4	53.1	/	16	16	0.75
5000	AHF-160	NLA-1000	Yes	57.3	3.6	50.0	32.1	97.4	88.5	19.2	41.2	153.4	53.1	/	16	16	0.75
6000	AHF-180	NLA-1200	Yes	57.3	0.7	56.0	32.1	103.5	94.5	22.2	47.3	155.8	58.6	/	18	18	0.75
7000	AHF-180	NLA-1400	Yes	57.3	0.7	56.0	32.1	103.5	94.5	22.2	47.3	155.8	58.6	/	18	18	0.75

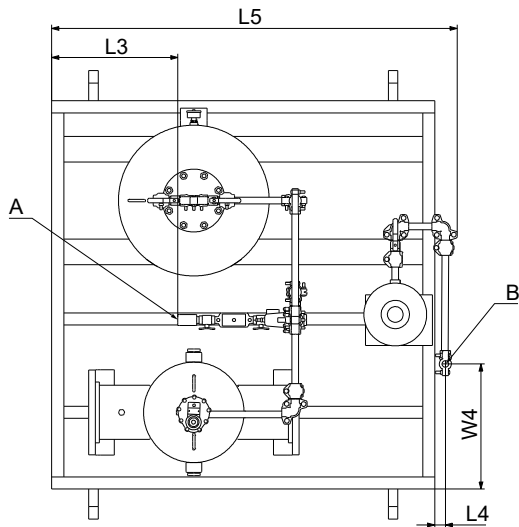
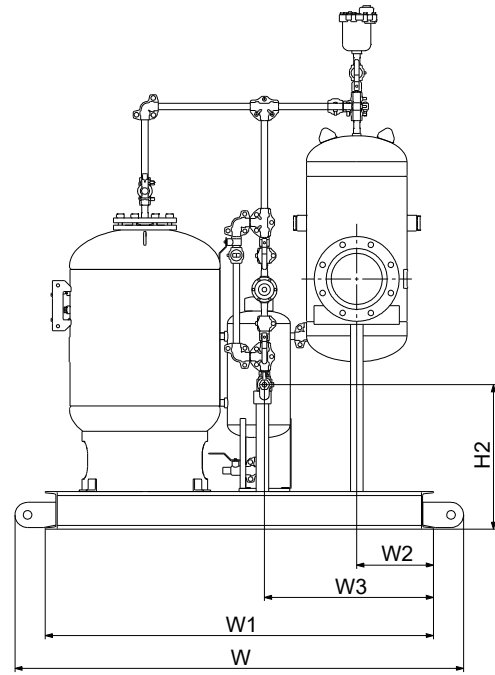
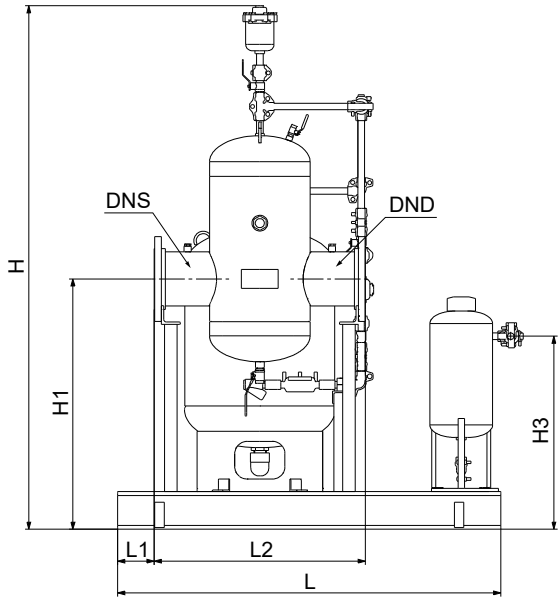
<sup>13)</sup> This is the flow of the DELTA HCU pump skid.

<sup>14)</sup> H2 is subject to changes depending on actual customer's needs.

<sup>15)</sup> A is the diameter for the connection to the make-up water line.

### Coalescing ACCPACK with bypass feeder and make-up water line

Accessory sizing is dependent on total system volume and varies based on your application. The list below is for illustration only. All the dimensions below are measured in inches.



TM086031

System flow rate <sup>16)</sup> [gpm]	Air separator	Expansion tank	Bypass feeder	Make-up water line	L	L1	L2	L3	L4	L5	W	W1	W2	W3	W4	H	H1	H2 <sup>17)</sup>	H3	DNS	DND	A&B <sup>18)</sup>
125	ASF-040	NLA-35	DB-5HD	Yes	49.0	6.3	20.6	8.1	1.7	52.6	52.1	42.5	8.5	19.5	12.6	68.6	34.7	/	30.8	4	4	0.75
250	ASF-060	NLA-50	DB-5HD	Yes	51.0	3.8	27.8	10.1	1.7	54.6	58.2	48.6	10.6	23.7	16.7	76.0	37.7	/	30.8	6	6	0.75
500	ASF-060	NLA-130	DB-5HD	Yes	57.0	6.8	27.8	16.1	1.7	60.6	64.2	54.6	10.6	23.7	16.7	76.0	37.7	/	30.8	6	6	0.75
750	AHF-060	NLA-200	DB-5HD	Yes	61.0	8.8	27.8	20.1	1.7	64.6	68.2	58.6	10.6	23.7	16.7	87.0	37.7	/	30.8	6	6	0.75
1000	ASF-080	NLA-200	DB-5HD	Yes	61.0	5.8	33.6	20.1	1.7	64.6	71.4	61.8	12.2	26.9	19.9	83.4	39.9	/	30.8	8	8	0.75
1250	AHF-080	NLA-300	DB-5HD	Yes	61.0	5.8	33.6	20.1	1.7	64.6	71.4	61.8	12.2	26.9	19.9	96.4	39.9	/	30.8	8	8	0.75
1500	ASF-100	NLA-300	DB-5HD	Yes	61.0	3.9	37.5	20.1	1.7	64.6	75.4	65.8	14.2	30.9	23.9	92.8	41.6	/	30.8	10	10	0.75
2000	AHF-100	NLA-400	DB-5HD	Yes	67.0	6.9	37.5	26.1	1.7	70.6	81.4	71.8	14.2	30.9	23.9	108.8	41.6	/	30.8	10	10	0.75
2500	AHF-120	NLA-500	DB-5HD	Yes	67.0	4.4	42.5	26.1	1.7	70.6	85.4	76.5	16.2	35.2	28.3	125.9	45.6	/	32.7	12	12	0.75
3000	AHF-120	NLA-600	DB-5HD	Yes	67.0	4.4	42.5	26.1	1.7	70.6	85.4	76.5	16.2	35.2	28.3	125.9	45.6	/	32.7	12	12	0.75
3500	AHF-140	NLA-800L	DB-5HD	Yes	69.0	4.1	45.0	28.1	1.7	72.6	93.4	84.5	19.2	41.2	34.3	132.4	51.1	/	32.7	14	14	0.75
4000	ASF-160	NLA-800L	DB-5HD	Yes	69.0	1.6	50.0	28.1	1.7	72.6	93.4	84.5	19.2	41.2	34.3	132.4	53.1	/	32.7	16	16	0.75
5000	AHF-160	NLA-1000	DB-5HD	Yes	73.0	3.6	50.0	32.1	1.7	76.6	97.4	88.5	19.2	41.2	34.3	153.4	53.1	/	32.7	16	16	0.75
6000	AHF-180	NLA-1200	DB-5HD	Yes	73.1	0.7	56.0	32.1	1.7	76.6	103.5	94.5	22.2	47.3	40.3	155.8	58.6	/	32.7	18	18	0.75
7000	AHF-180	NLA-1400	DB-5HD	Yes	73.1	0.7	56.0	32.1	1.7	76.6	103.5	94.5	22.2	47.3	40.3	155.8	58.6	/	32.7	18	18	0.75

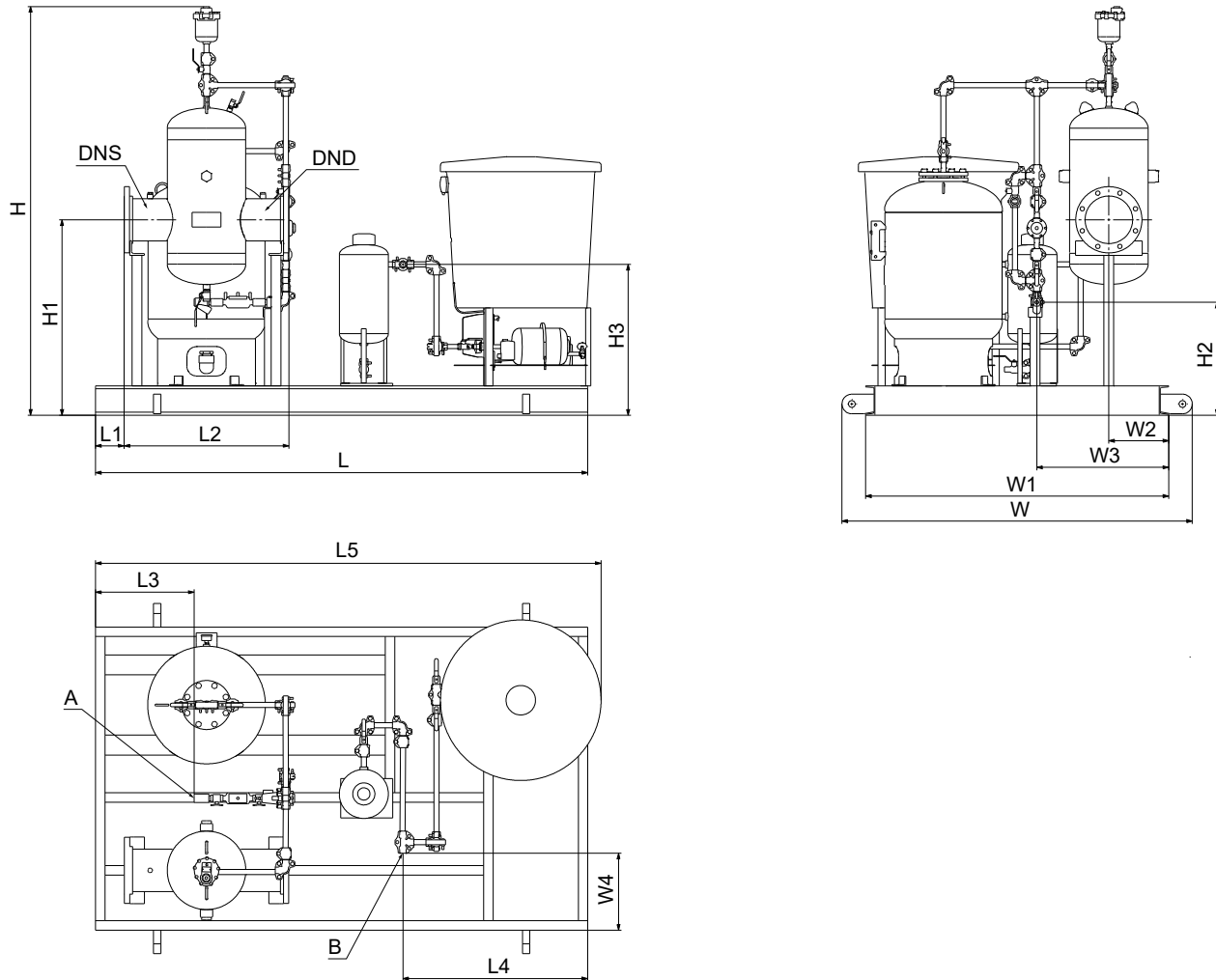
<sup>16)</sup> This is the flow of the DELTA HCU pump skid.

<sup>17)</sup> H2 is subject to changes depending on actual customer's needs.

<sup>18)</sup> A is the diameter for the connection to the make-up water line. B is the diameter for the connection to the bypass feeder and glycol joint.

### Coalescing ACCPACK with bypass feeder, glycol make-up package and make-up water line

Accessory sizing is dependent on total system volume and varies based on your application. The list below is for illustration only. All the dimensions below are measured in inches.



TM086033

System flow rate <sup>19)</sup> [gpm]	Air separator	Expansion tank	Bypass feeder	Glycol package	Make-up water line	L	L1	L2	L3	L4	L5	W	W1	W2	W3	W4	H	H1	H2 <sup>20)</sup>	H3	DNS	DND	A&B <sup>21)</sup>
125	ASF-040	NLA-35	DB-5HD	GMP-13050	Yes	88.4	6.3	20.6	8.1	37.7	91.1	52.1	42.5	8.5	19.5	8.3	68.6	34.7	/	30.8	4	4	0.75
250	ASF-060	NLA-50	DB-5HD	GMP-13050	Yes	90.4	3.8	27.8	10.1	37.7	93.1	58.2	48.6	10.6	23.7	12.5	76.0	37.7	/	30.8	6	6	0.75
500	ASF-060	NLA-130	DB-5HD	GMP-13050	Yes	96.4	6.8	27.8	16.1	37.7	99.1	64.2	54.6	10.6	23.7	12.5	76.0	37.7	/	30.8	6	6	0.75
750	AHF-060	NLA-200	DB-5HD	GMP-13050	Yes	100.4	8.8	27.8	20.1	37.7	103.1	68.2	58.6	10.6	23.7	12.5	87.0	37.7	/	30.8	6	6	0.75
1000	ASF-080	NLA-200	DB-5HD	GMP-13050	Yes	100.4	5.8	33.6	20.1	37.7	103.1	71.4	61.8	12.2	26.9	15.7	83.4	39.9	/	30.8	8	8	0.75
1250	AHF-080	NLA-300	DB-5HD	GMP-13050	Yes	100.4	5.8	33.6	20.1	37.7	103.1	71.4	61.8	12.2	26.9	15.7	96.4	39.9	/	30.8	8	8	0.75
1500	ASF-100	NLA-300	DB-5HD	GMP-13050	Yes	100.4	3.9	37.5	20.1	37.7	103.1	75.4	65.8	14.2	30.9	19.7	92.8	41.6	/	30.8	10	10	0.75
2000	AHF-100	NLA-400	DB-5HD	GMP-13050	Yes	106.4	6.9	37.5	26.1	37.7	109.1	81.4	71.8	14.2	30.9	19.7	108.8	41.6	/	30.8	10	10	0.75
2500	AHF-120	NLA-500	DB-5HD	GMP-13050	Yes	106.4	4.4	42.5	26.1	37.7	109.0	85.4	76.5	16.2	35.2	24.0	125.9	45.6	/	32.7	12	12	0.75
3000	AHF-120	NLA-600	DB-5HD	GMP-13050	Yes	106.4	4.4	42.5	26.1	37.7	109.0	85.4	76.5	16.2	35.2	24.0	125.9	45.6	/	32.7	12	12	0.75
3500	AHF-140	NLA-800L	DB-5HD	GMP-13050	Yes	108.4	4.1	45.0	28.1	37.7	111.0	93.4	84.5	19.2	41.2	30.0	132.4	51.1	/	32.7	14	14	0.75
4000	ASF-160	NLA-800L	DB-5HD	GMP-13050	Yes	108.4	1.6	50.0	28.1	37.7	111.0	93.4	84.5	19.2	41.2	30.0	132.4	53.1	/	32.7	16	16	0.75
5000	AHF-160	NLA-1000	DB-5HD	GMP-13050	Yes	112.4	3.6	50.0	32.1	37.7	115.0	97.4	88.5	19.2	41.2	30.0	153.4	53.1	/	32.7	16	16	0.75
6000	AHF-180	NLA-1200	DB-5HD	GMP-13100	Yes	112.4	0.7	56.0	32.1	37.7	115.0	103.5	94.5	22.2	47.3	36.1	155.8	58.6	/	32.7	18	18	0.75
7000	AHF-180	NLA-1400	DB-5HD	GMP-13100	Yes	112.4	0.7	56.0	32.1	37.7	115.0	103.5	94.5	22.2	47.3	36.1	155.8	58.6	/	32.7	18	18	0.75

<sup>19)</sup> This is the flow of the DELTA HCU pump skid.

<sup>20)</sup> H2 is subject to changes depending on actual customer's needs.

<sup>21)</sup> A is the diameter for the connection to the make-up water line. B is the diameter for the connection to the bypass feeder and glycol joint.



## 6. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

From the international view, you can select your specific country to view the product range available to you.

International view: <https://product-selection.grundfos.com>

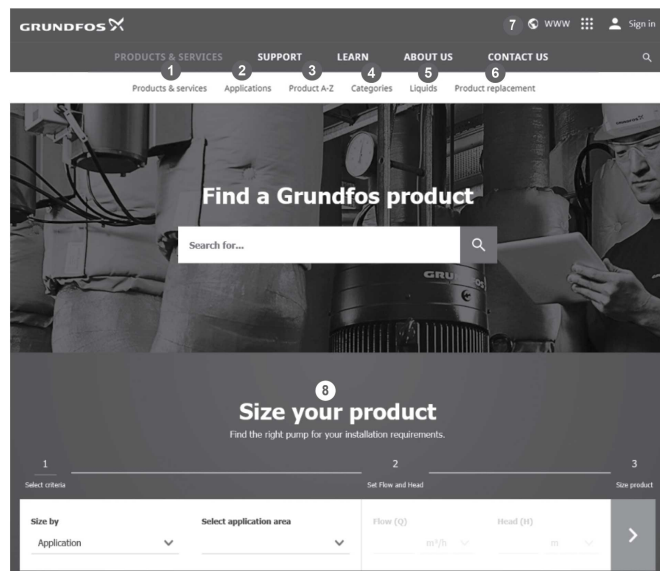
### All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.



### Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc., in PDF format.



TM072383-1\_GRAY

When you select your country, you will see the menus below. Note that some menus may not be available depending on the country.

Example: <https://product-selection.grundfos.com/us>

Pos.	Description
1	<b>Products &amp; services</b> enables you to find products and documents by typing a product number or name into the search field.
2	<b>Applications</b> enables you to choose an application to see how Grundfos can help you design and optimize your system.
3	<b>Products A-Z</b> enables you to look through a list of all the Grundfos products.
4	<b>Categories</b> enables you to look for a product category.
5	<b>Liquids</b> enables you to find pumps designed for aggressive, flammable or other special liquids.
6	<b>Product replacement</b> enables you to find a suitable replacement.
7	<b>WWW</b> enables you to select the country, which changes the language, the available product range and the structure of the website.
8	<b>Sizing</b> enables you to size a product based on your application and operating conditions.

## 7. Document quality feedback

To provide feedback about this document, scan the QR-code using your phone's camera or a QR code app.



FEEDBACK92705098

[Click here to submit your feedback](#)

<b>92705098</b> 11.2023
ECM: 1378904

**GRUNDFOS Holding A/S**  
Poul Due Jensens Vej 7  
DK-8850 Bjerringbro  
Tel: +45 87 50 14 00  
[www.grundfos.com](http://www.grundfos.com)

**GRUNDFOS** 