

ENGINEERING  
TOMORROW

*Danfoss*

High Pressure Pumps | Industrial Cleaning

# High-pressure pumps and valves - the preferred solution to ultra-pure cleaning applications

**Zero**

contamination risk

Low maintenance

Ultra compact

[hpp.danfoss.com](http://hpp.danfoss.com)

# High-pressure - High efficiency

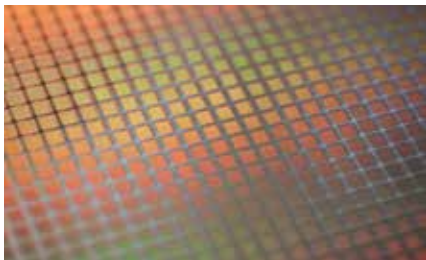
## Ultra-pure cleaning for demanding applications

Manufacturers of high-tech products are increasingly looking for efficient and reliable cleaning technologies that render production processes ultra-clean without any contamination of sensitive parts.

High-pressure cleaning solutions outperform traditional cleaning technologies in a number of ways. For instance, they eliminate problems with undesirable mechanical impact and excessive water consumption during the cleaning process.



### Increase your bottom-line with Danfoss



**Whatever your cleaning application, Danfoss high-pressure pumps are part of the solution:**

- **Flat Panel Displays** - to avoid dust particles and ensure ultra-HD quality
- **Wafer technology** - to eliminate all traces of grinding dust
- **Pharmaceutical** - for efficient cleaning of test tubes and other sterile equipment
- **Parts cleaning** - from automotive to watches, for extremely high efficiency and reliable operation

### Opting for a high-pressure solution

From leading automotive brands to Swiss watches and pharmaceutical equipment, Danfoss high-pressure pumps become the preferred solution to ultra-pure cleaning applications across the world.

The axial piston pumps at the heart of the high-pressure cleaning system deliver outstanding reliability due to fewer parts. The pumps are oil free and run

at least 8,000 hours before first service, significantly reducing costs for inspection and maintenance. The low pulsation rate of the pumps eliminates the need for pulsation dampeners, reducing the number of components in the system.

The PAHT pump offers the best power-to-footprint ratio in the market, allowing flexible configuration when space is limited.

For more than 20 years, Danfoss has pioneered the development of axial piston pumps for demanding applications such as hypermodern cleaning processes. Today, Danfoss is a strong and worldwide partner in high-pressure, oil-free pump technologies bringing all the benefits of positive displacement pumps to a wide range of cleaning processes.

## What's in it for you?

- The PAHT pumps are oil-free to avoid any contamination in the cleaning process
- The pumps are easy to regulate to fit the current production capacity to save water and energy
- The low pulsation of the pump secures a consistent and efficient cleaning process
- The long service intervals save inspection and maintenance costs
- The compact design enables easy installation in almost any production line or system, new or retrofit
- The high grade materials reduce maintenance costs and secure long service life

# The Danfoss solution

## PAHT high-pressure pumps, VDH / VDHT solenoid and VRH pressure relief valves

The PAHT pump range adheres to stringent hygiene requirements and is certified according to ISO 9001,

ISO TS 16949 and ISO 14001. ATEX certification certification is available on request.

Pump type	Flow l/min [gpm]	Pressure barg [psig]
PAHT 2-6.3	0.7-18 [0.2-4.8]	30-100 [435-1,450]
PAHT 10-12.5	7.6-27.7 [2-7.2]	30-140 [435-2,031]
PAHT 20-32	16.9-73.5 [4.5-19.4]	30-160 [435-2,321]
PAHT 50-90	43.7-149.6 [11.5-39.5]	30-160 [435-2,321]
PAHT 256-308	89.6-354.2 [23.7-93.6]	30-120 [435-1,740]



### High-pressure valves for use in ultra-pure cleaning applications

The comprehensive range of stainless steel valves are the perfect accessory for your high-pressure system. The valves are dirt-tolerant, corrosion-

proof and easy to clean. Highly reliable, they withstand high temperatures as well as high coil density. Enclosure IP 67 [NEMA 4X].

Valve type	Flow l/min [gpm]	Pressure barg [psig]
<b>2/2-way solenoid valves</b>		
VDH 2E 1/4"	0-5 [0-0.7]	0-100 [0-1,450]
VDHT 1/4" E	0-15 [0-4]	0.3-100 [4.3-1,450]
VDHT 3/8 - 1/2"	1-60 [0.3-16]	3.5-210 [51- 3,046]
VDHT 3/4 - 1"	1-150 [0.3-40]	3.5-210 [51-3,046]
<b>Pressure-relief valves</b>		
VRH 5	5 [1.3]	25-100 [362-1,450]
VRH 30	30 [7.9]	10-210 [145-3,045]
VRH 60	60 [15.8]	25-140 [362-2,030]
VRH 120	120 [31.7]	25-140 [362-2,030]



"Many of our inline parts cleaners are installed in production facilities that run three shifts a day, year-round, so dependability and long intervals between service are key parameters for us. Danfoss leads the way in pump reliability with at least 8,000 hours of operation before service as quite normal."

**Wolfgang Wiederer, SLE Technology**



"For many years, Danfoss has been a trusted partner supplying high-quality pumps that our customers rely on for multiple applications. The long service intervals are one of the benefits valued by our customers, who want to minimize total cost of ownership."

**Chai Hee Dong, Dynesyscon Co., Ltd.**





## Here today. Here tomorrow

Danfoss is a leading global player within the development and production of mechanical and electronic products and controls.

Since 1933, our extensive know-how has made modern life easier and we continue to break new ground in our core business areas.

Every day, more than 250,000 items are produced at 63 factories in 19 countries. Impressive as these figures are, we are most proud of the way our dedicated employees apply the high-quality components in customer solutions, adding value to the end product.

Building strong partnerships is of great importance to us, because it is purely by understanding our customers' needs that we can meet the expectations of tomorrow.

Danfoss High Pressure Pumps brings decades of hydraulic experience to the design and manufacture of energy-saving pumps.

The Division designs and markets a broad range of high-performance pumps, including the groundbreaking PAHT pumps for ultra-pure water, as well as dedicated solutions for reverse osmosis and oil and gas applications.

### **Danfoss A/S, High Pressure Pumps**

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