

## GEA Niro Soavi Technical Datasheet

### Homogenizer & High Pressure Pump

# Ariete NS3075

From the world leader in high pressure homogenization: absolute quality and reliability with advanced technical solutions for any process need.



The Ariete series is the state-of-the-art technology for powerful reliable high pressure machines and customized solutions. The Ariete machines, compliant to EU safety rules (CE standards) and built according to EN ISO 9001:2008 Quality System, are the best fit for pharmaceutical, dairy, food & beverage, biotechnology, chemical and cosmetics industries.

#### Liquid end

- High quality stainless steel and special high wear resistant materials for best mechanical and corrosion resistance performance
- 3-A and electropolished versions available
- Ball (PVB) and poppet valves (PVP) interchangeable into the same block design for maximum product handling flexibility
- Aseptic version compression block available as option, with sterile condensate packing flushing
- Various materials for pumping plungers
- Monoblock construction, up to 600 bar, or multiblock, up to 1500 bar forged high grade Duplex or Super Duplex SS alloy

#### Homogenizing valve

- One stage (standard on homogenizers) with pneumatic adjustment from the machine's control panel
- High efficiency homogenizing valve NanoVALVE™, based on advanced fluid dynamics concepts, available as option
- Engineered for easy maintenance and cleaning
- Second homogenizing stage as option
- Wear parts made of tungsten carbide, ceramics as option

#### Power end

- Heavy duty and reliable power frame housing the transmission elements
- AC motor drive
- Forced lubrication with gear pump, low oil pressure switch and oil cooling
- "V" belts drive train and gearbox speed reduction unit

#### Casing

- Made of polished stainless steel with sound proof lining
- Easy access and maintenance with removable panels
- Noise reduction execution ( $\leq 75\text{dB (A)}$ ) available as option

#### Tools and spare parts

- Ordinary maintenance tools and one set of emergency spare parts supplied with the machine
- O&M manual and spare part list on CD-ROM

#### Pump Valves

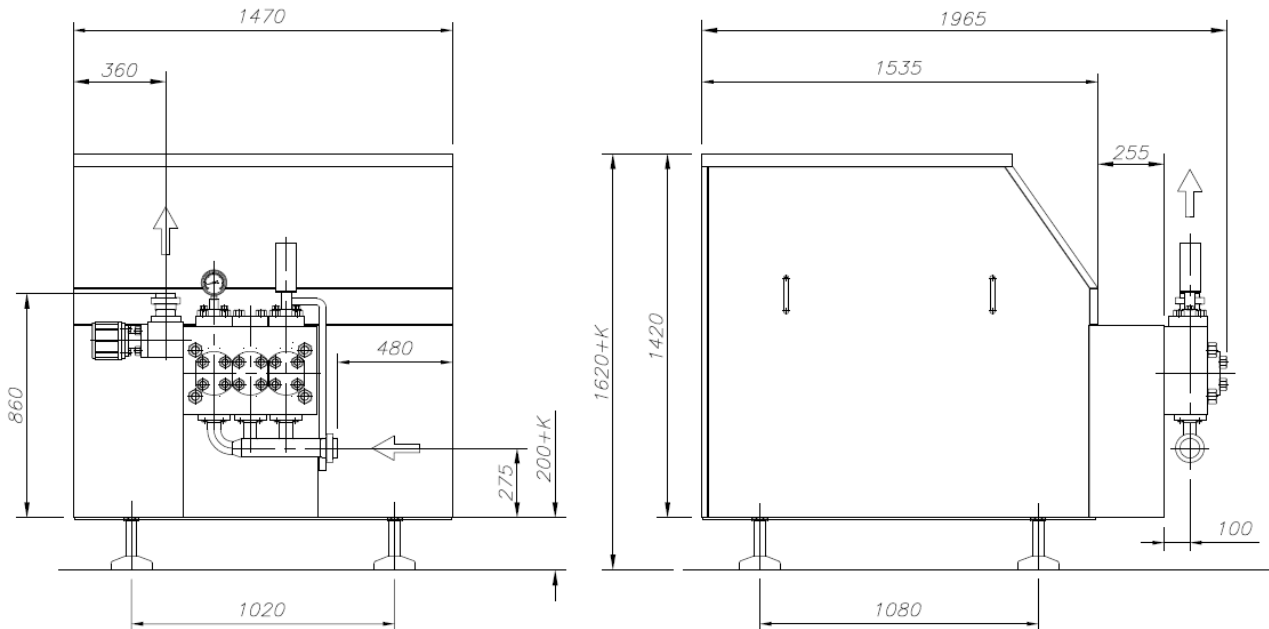
- High wear resistant Stellite™ alloy removable seats
- Ball type (PVB) or poppet type (PVP) in solid Stellite™
- Ceramic or tungsten carbide materials available as option

#### Plungers

- Chrome coated stainless steel
- Tungsten carbide coated stainless steel
- Solid ceramic
- HCR Chromium Carbide coated stainless steel

# Ariete NS3075

## Dimensional drawing



Available up to 1500 bar, suitable for CIP and SIP, the Ariete machines can be supplied with all necessary customizations for easy integration in any process line, sanitary or aseptic. The wide range of available materials, the low running speed and linear plunger velocity allow Ariete machines to perform at their best also on abrasive and viscous product.

### Pressure measurement & control

- Sanitary design analog high pressure gauge
- Pressure transmitters and transducers available as option
- Overpressure relief valve installed on compression block

### Product line connections

- DIN 11851, Tri-Clamp™, GEA Tuchenhagen Varivent™
- Others as option upon request

### Power end

- Cast iron power frame
- Forced lubrication with low oil pressure switch and oil cooling
- Polished SS machine casing on painted steel frame

### Main options on request

- High pressure pump version
- 2nd stage homogenizing valve
- Electric power board for fixed or variable capacity
- Machine automation and remote controls
- Aseptic execution
- 3-A execution, FDA approved gasket and cGMP documentation

### PERFORMANCE

Pressure (bar)	Max Flow Rate (l/h)
100	14000
150	14000
200	11000
250	8200
400	4900
600	3100
1000	1400
1200	1400
1500	1000

Each line refers to a different machine, which is designed for the specific maximum pressure and the specific maximum capacity.

### TECHNICAL DATA

Number of plungers	3
Stroke	80 mm
Absorbed motor power up to	75 kW
Net weight	2400 kg
Gross weight	2800 kg
Lubricating and cooling water	90 l/h
Lubricating oil ISO VG 150	30 l
Gearbox oil EP 220	17 l

## GEA Mechanical Equipment

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# Ariete Series Homogenizers

Innovation designed to last

# Applications & benefits

## Dairy

GEA homogenizers set the industry standard for sanitary and aseptic processing, automation and cleanability.

The homogenization process is used on dairy products to improve their stability and shelf life as well as increase digestibility and taste.

- Fresh and pasteurized milk
- UHT milk
- Milk for yoghurt
- Yoghurt drinks
- Desserts
- Cream cheese
- Fermented milk products
- Spray dried products



## Pharmaceutical & Biotech

Homogenizers stabilize active ingredients and dispersion in liquid pharmaceutical products for enhanced clinical effectiveness, improved drug tolerance and reduced dosage. Homogenization is also used for cell rupture on yeast and bacteria to extract intra-cellular substances.

- Vaccines
- Intravenous emulsions
- Liposomes
- Yeast
- Enzymes
- Bacteria



## Food & Beverage

Homogenization in the food industry is widely used to obtain a stable product, with a longer shelf life. It reduces the amount of additives used while improving the dispersion of ingredients and the absorption of flavors.

- Food emulsions
- Baby foods
- Fruits juices
- Cloudifiers/aromas
- Dressing
- Egg and mayonnaise
- Tomato products (paste/concentrate)
- Starches



## Home & Personal Care

High pressure homogenization can effectively reduce the particle size, resulting in uniform dimensional distribution, for stable and longer shelf life of cosmetic products, along with a better active ingredient dispersion.

- Ointments
- Lotions
- Nail varnish
- Hair colorants
- Detergents



## Chemical

High pressure homogenization creates stable emulsions, dispersions and mixes for chemical products. It can also improve chemical reaction and extraction processes, polymer properties and pigment color.

- Chemical slurries
- Paints
- Latex
- Polymers
- Pesticides/fertilizers
- Cellulose fibers



# Technology advantages

Ariete machines: state-of-the-art technology, powerful and reliable for customized solutions.

## Customization beyond the options

The GEA Ariete Series includes 15 models, completely customizable with more than 300 options to guarantee the best performance and reliability.

These tailor made solutions help customers meet products needs and resolve technical challenges for new application development.

## Main features and options:

- Monoblock construction (up to 600 bar) or multiblock (up to 1500 bar) forged high grade Duplex or Super Duplex SS alloy
- Special block design for cleanability (NiSoCLEAN) and difficult products (OpenXFLO)
- 4 types of plunger materials to easily meet any production needs
- Aseptic and sanitary design available
- High efficiency NanoVALVE™ reduces operating pressures up to 30%
- Vibration monitoring system
- Wide range of gaskets and seals for best optimization
- Remote control system

## Advantages:

- Best results at lowest consumption of energy and resources
- Fully customizable with more than 300 options
- Eco-friendly options available to maximize efficiency reducing TCO
- Hygienic design
- Fully compliant with all pharmaceutical requirements and regulations
- Working condition monitoring system to avoid downtime
- Easy access and maintenance with removable panels



# Efficiency at its best

## Green options and special solutions

As part of the program to prioritize sustainability, GEA homogenizers offer specific options for optimizing the use of resources.

### NisoPURE

The most efficient system to sterilize water used for aseptic production, saving 90% of water and steam.

### Oil Purification System

It guarantees a continuous oil regeneration enhancing oil lifetime, quality and safety.

### Gearbox oil cooling unit

This oil-to-air cooling unit saves water and oil using air to cool down oil temperature.

## Traceability and certifications

Ariete Series homogenizers are fully compliant with the Regulation (EC) N. 1935/2004 and all food and pharmaceutical requirements - including the most stringent certifications (USDA, FDA, CE, 3-A Sanitary Standard, Atex, cGMP).



Ariete Homogenizer 5400



# Performances

From the smallest machine size to the largest one, GEA assures the same quality on the final product.

## PERFORMANCES

### Max Flow Rate l/h

Pressure bar	Ariete NS2006	Ariete NS3006	Ariete NS3011	Ariete NS3015	Ariete NS3030	Ariete NS3037	Ariete NS3045
100	650	1.000	3.000	4.500	7.500	12.000	12.000
180	450	750	1.800	2.500	5.000	6.700	8.000
200	450	750	1.600	2.200	4.200	6.000	7.300
250	400	600	1.300	1.800	3.300	5.000	5.800
400	200	350	800	1.100	1.700	3.000	3.600
600	100	220	550	750	1.100	2.000	/
1.000	80	120	/	400	650	1.200	/
1.200	80	120	/	370	500	1.000	/
1.500	35	50	/	250	330	800	/

### Max Flow Rate l/h

Pressure bar	Ariete NS3055	Ariete NS3075	Ariete NS3090	Ariete NS3110	Ariete NS5132	Ariete Homogenizer 5200	Ariete Homogenizer 5315	Ariete Homogenizer 5400
100	14.000	14.000	17.500	22.000	28.000	37.000	65.000	80.000
180	10.000	12.000	16.000	20.000	23.900	34.000	47.000	65.000
200	9.000	11.000	14.500	18.000	21.500	30.000	41.000	57.000
250	7.200	8.200	11.700	15.000	17.200	26.000	34.000	45.000
400	4.500	4.900	7.300	8.700	10.700	15.000	21.000	28.000
600	2.800	3.100	4.900	5.500	7.000	10.000	14.000	18.000
1.000	/	1.400	/	3.400	/	5.500	/	10.000
1.200	/	1.400	/	2.600	/	4.200	/	7.000
1.500	/	1.000	/	1.800	/	3.000	/	5.000

Technical specifications are preliminary and subject to modification without notice



## We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA is a global technology company with multi-billion euro sales operations in more than 50 countries. Founded in 1881 the company is one of the largest providers of innovative equipment and process technology. GEA is listed in the STOXX® Europe 600 Index. In addition, the company is included in selected MSCI Global Sustainability Indexes.

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