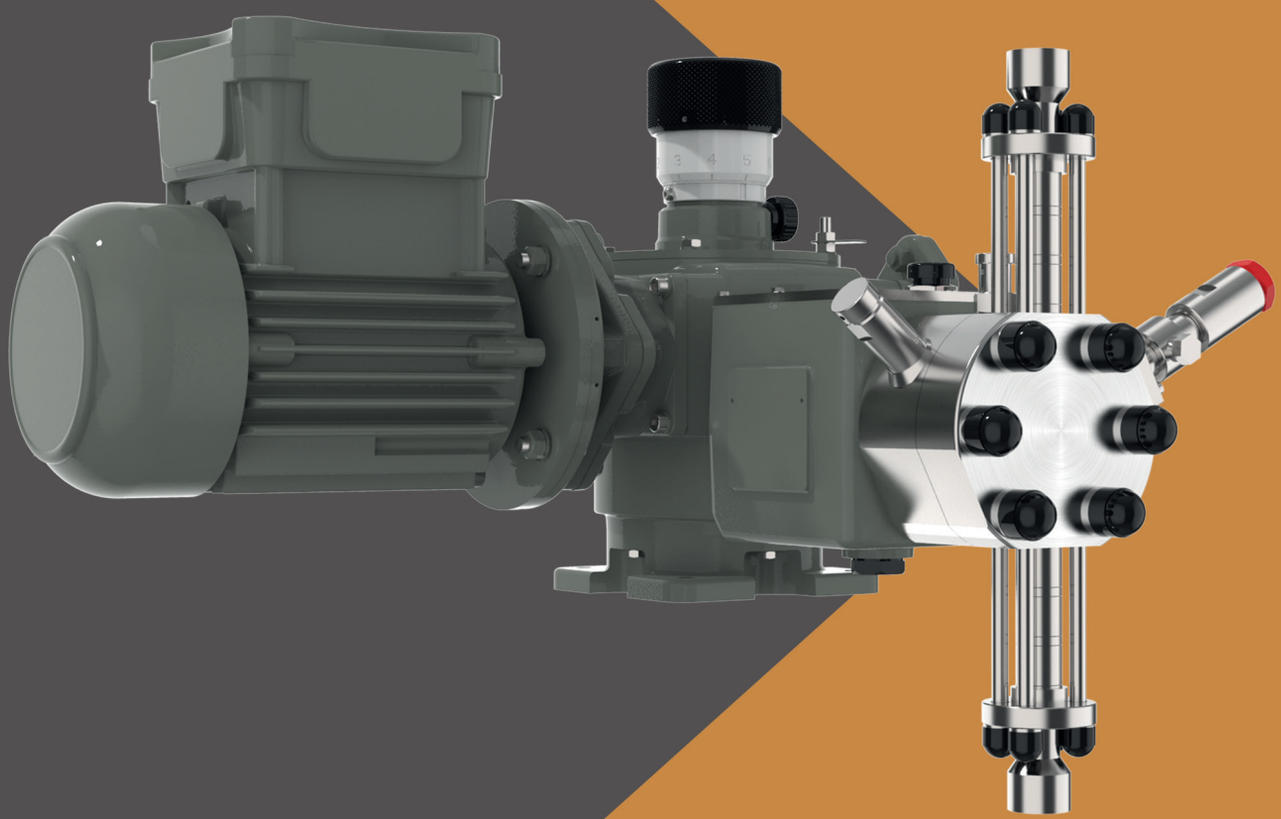
exakta

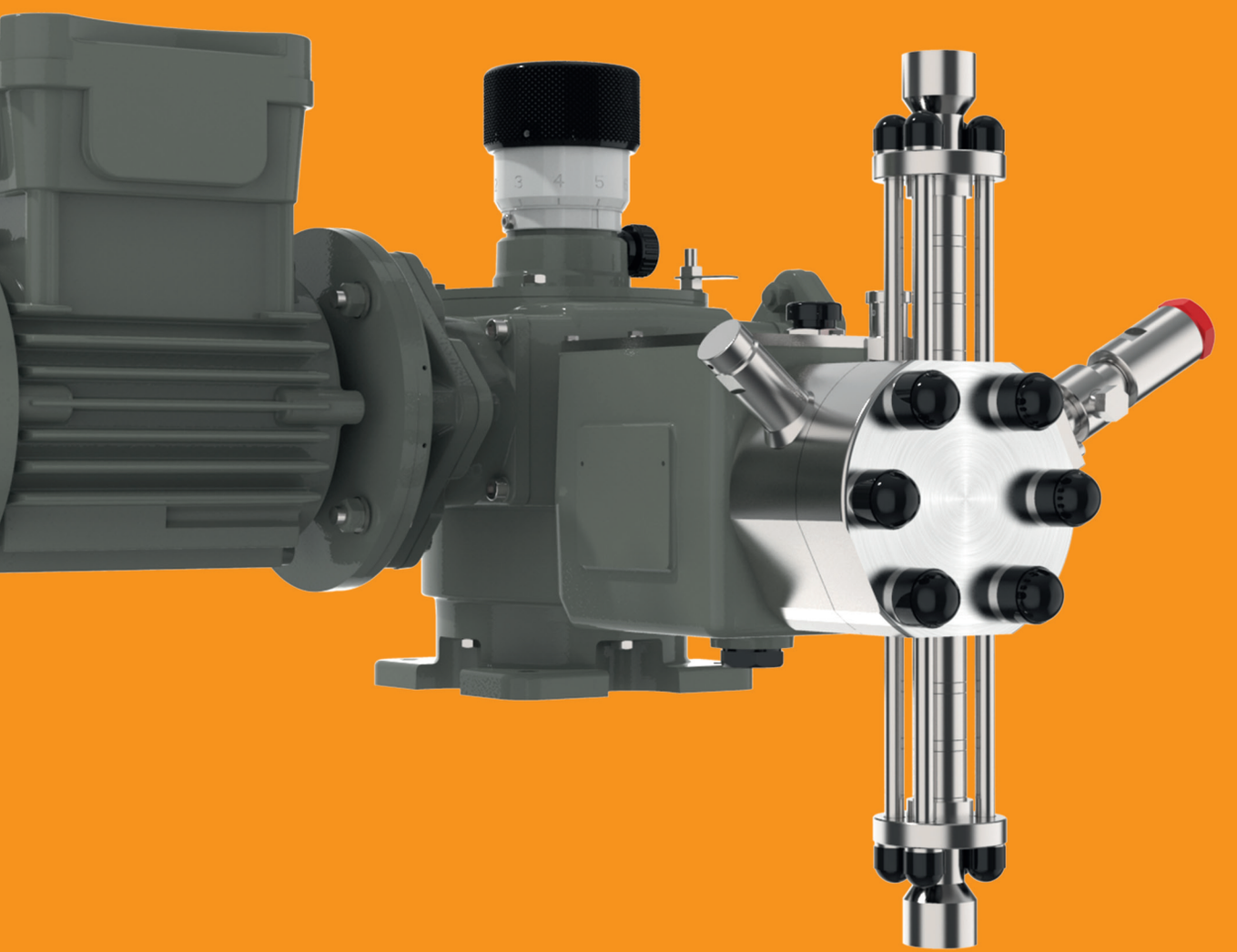


Nexa Series

Hydraulic double-diaphragm and packed plunger pumps with full-motion mechanisms

Nexa Series

Hydraulic double-diaphragm and packed plunger pumps with full-motion mechanisms



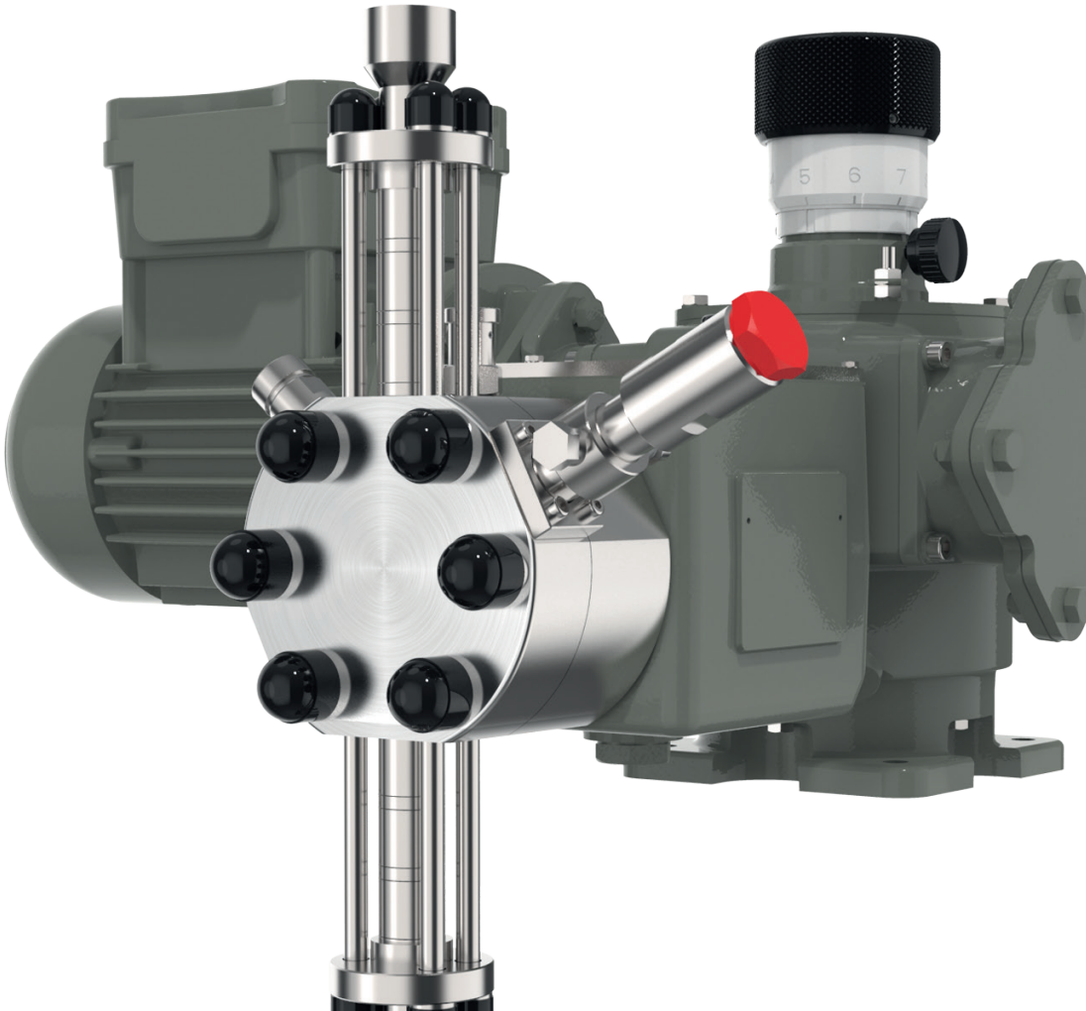
Capable of superior performance in even the most severe operating conditions, the Nexa Series packed-plunger and hydraulic double-diaphragm metering pumps represent one of heavy industry's most versatile, robust and reliable fluid metering and dosing solutions.

Nexa's exceptional build quality enables stable dosing even under extreme operating pressures and temperatures, from wellhead chemical injection in oil and gas applications to pyrophoric liquids handling in chemical compounds manufacturing.

Designed to meet API 675 3rd edition standard, compliant to ATEX2014/34/EU, TR CU 004-010-020-012/2011 and alignable with Shell DEP (various), Norsok M-501 & M-630, NACE 0175 specifications, Nexa can be safely operated in hazardous processes, reassuring operators of the pump's suitability regardless of the application.

Technical Features

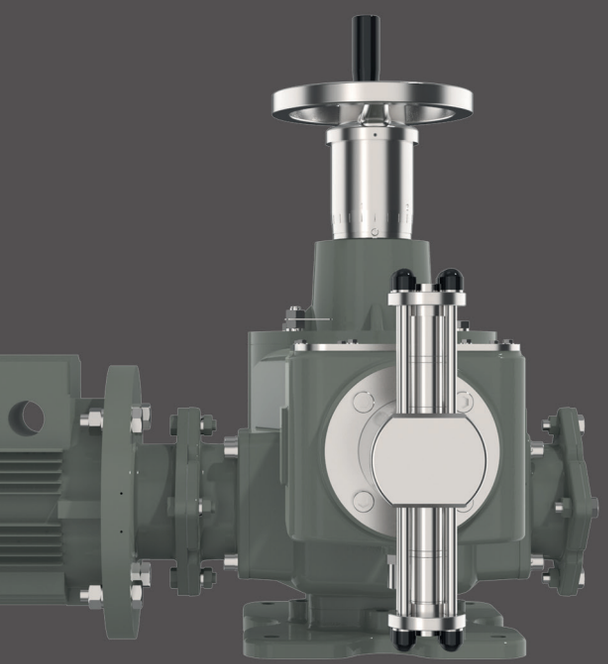
Pressure:	up to 600 barg for hydraulic diaphragm and 650 for packed plunger
Flow rate:	up to 10,000 l/h with a single head
Fluid temperature:	from -20°C to 80°C (from -40°C to 150°C on request)
Wetted parts:	SS 316L, PP, PVDF and PTFE (exotic alloys available on request)



Hydraulic double-diaphragm heads version

A trustworthy solution for applications requiring the highest levels of operational accuracy and reliability. Features include:

- Hydraulic oil-operated diaphragms
- **Double oil** for hydraulics and mechanism lubrication ensuring 100% chemical tightness and operational safety for higher reliability, dosing accuracy and application flexibility
- **Sealed design** for metering hazardous fluids such as toxic or corrosive solutions
- Protection against external contamination
- **Preformed PTFE** diaphragms as standard, for excellent chemical compatibility and increased compactness allow an outstanding level of efficiency
- **Diaphragm rupture detector** available in multiple options:
  - Exakta standard local visual
  - Local visual via pressure gauge
  - Pressure switch (any make, model or case material and signal type: analogue 4 – 20 mA, digital, HART protocol)
  - Pressure transmitter (any make, case material and signal type: analogue 4 – 20 mA, digital, HART protocol)
- Mechanical replenishment system maintains a constant level of the hydraulic fluid, thereby guaranteeing maximum precision and repeatability and enabling diaphragm deformation control for extended life
- Standard wetted parts include 316L stainless steel, PP and PVDF, with other materials available upon request



Packed-plunger heads version

The simplest and most suitable solution for featuring increased resistance and long working life, PN and KN plunger heads boast special features that offer superior performance.

- **Plunger** available with Stellite or ceramic coating and precise surface finish for increased resistance and longer working life
- **Perfect alignment** of the plunger in the seal
- **Adjustable seal** for leakage recovery

Mechanism

Full-motion type in six different sizes, featuring:

- Oil-bath lubrication
- Low-noise internal worm gearbox
- High-precision stroke adjustment for ultrafine volume control
- Increased turndown ratio achievable via frequency converter
- Housing available in cast iron as standard and nodular cast iron to cope with harsh ambient conditions
- Exakta-designed electrical and pneumatic actuators available

Valves

Exakta is committed to developing flexible and customized valve configurations with flow channels specifically designed to improve hydraulic efficiency while coping with different conditions and applications.

SEAM Cone Valve

Thanks to additive manufacturing technology, this valve delivers high performance with SS 3D printing while allowing endless shape possibilities to meet unique in-valve fluid dynamics for every application.

Features

- Lower NPSH required (up to 10%)
- Increased volumetric efficiency (3%)
- 30% lighter than conventional machined valves
- Enhanced durability for longer mean time between repairs

VEEP Cone Valve

Engineered to cater to diverse fluid demands, VEEP Cone Valve offers outstanding performance while ensuring self-cleaning functionality. Its unique operating direction prevents fluid obstruction to the valve's seals and guide, enhancing its reliability.

VEEP Cone Valve's design incorporates a component of engineered polymer compound that provides excellent protection against abrasive fluid particles, ensuring compatibility with particulate and abrasive fluids.

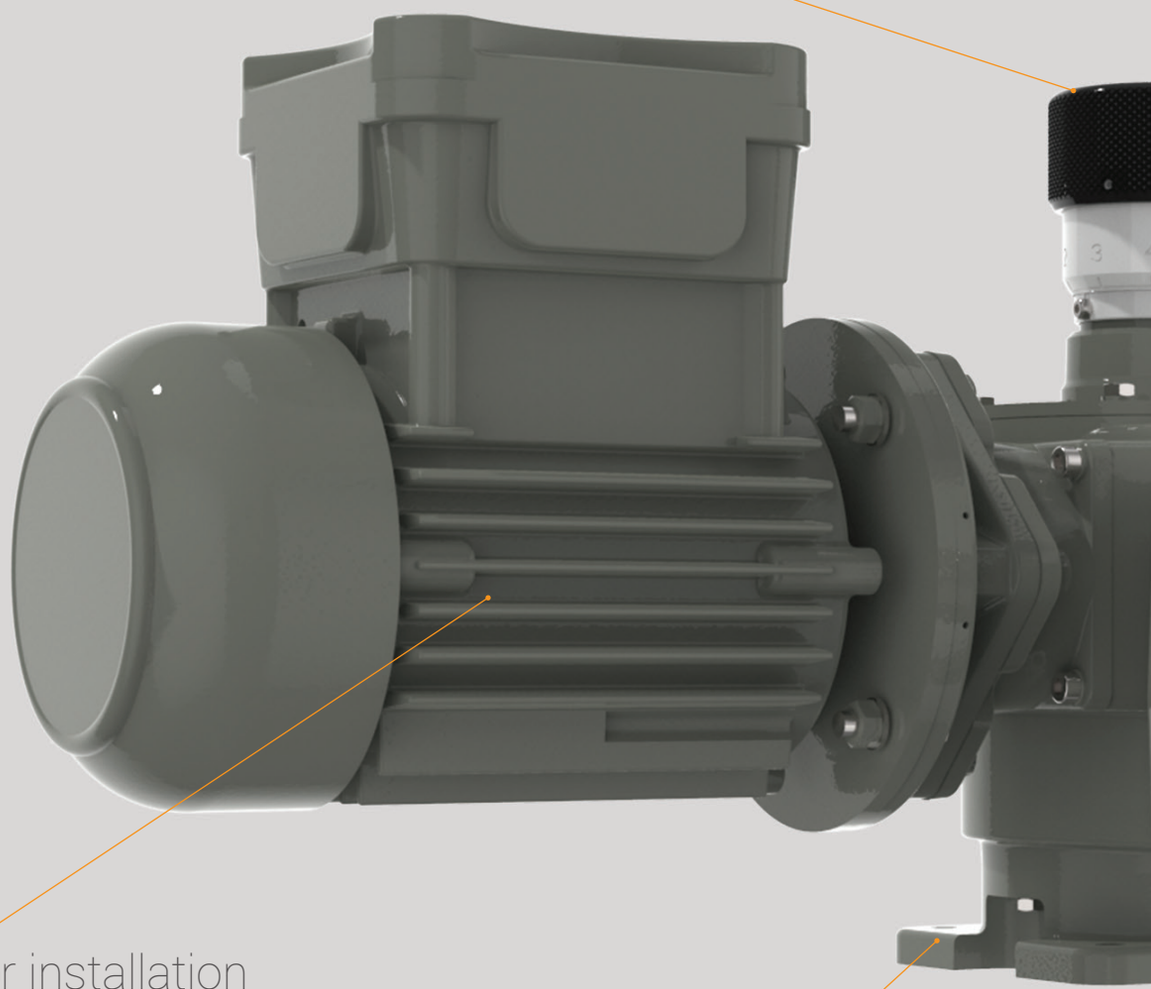
Features

- Lower NPSH required (up to 10%)
- Compatibility with particulate fluids
- Compatibility with abrasive fluids

Nexa Series Features

Stroke adjustment

Flow rate variation is by adjustment from 0 to 100% of the plunger stroke length. Stroke adjustment can be achieved both manually and automatically.



Versatile motor installation

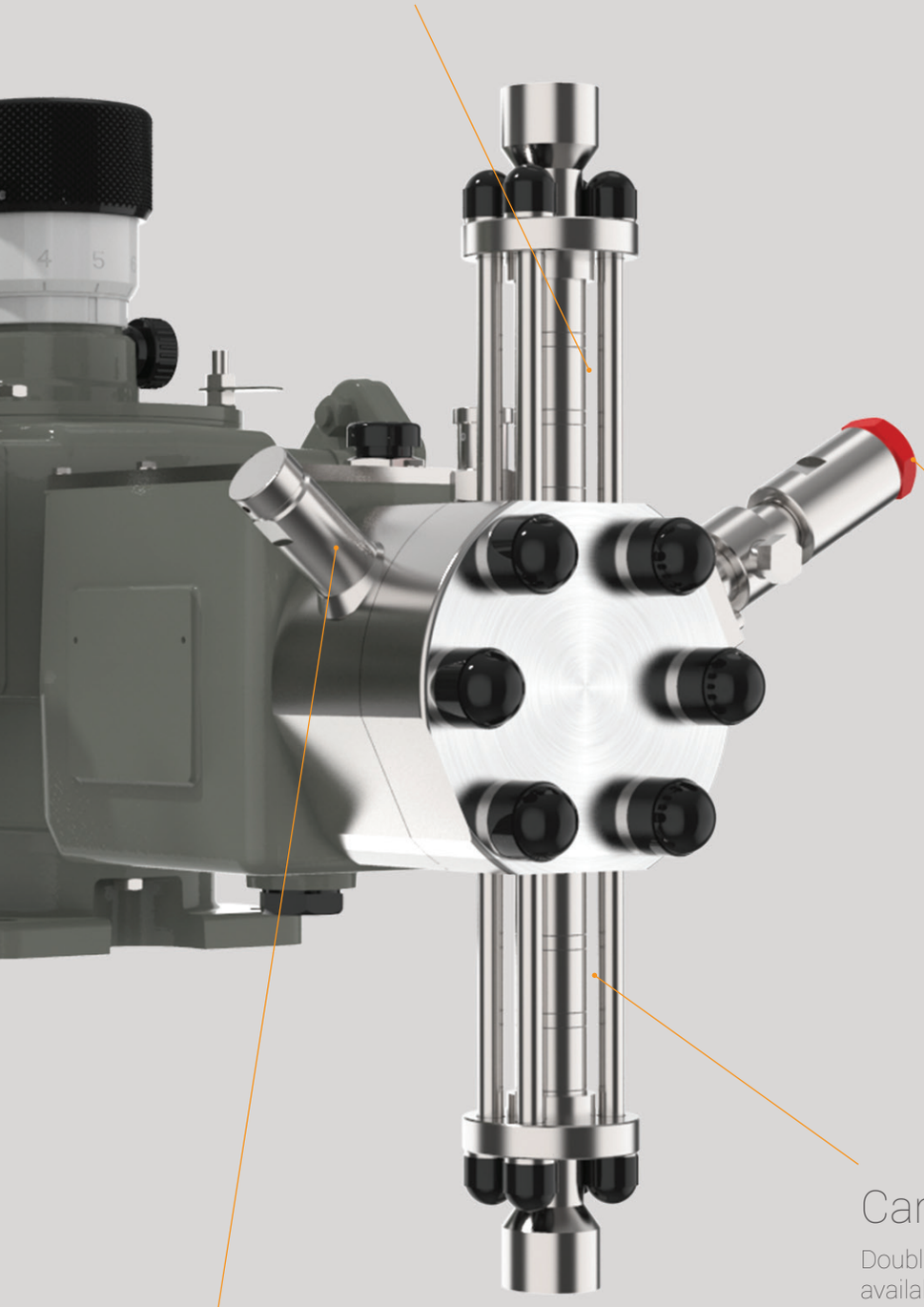
The driving motor can be fitted horizontally (either side) or vertically and can also be supplied suitable for variable speed drive and on demand with relevant inverters and filters.

Bespoke base plate design

Pumps are provided with an API 675 standard or customized base plate, designed according to customer and application requirements.

Venting system

While guaranteeing automatic venting of the hydraulic chamber during operation, this system also facilitates pump start-up with a manual action to purge the air/gas.



Rupture detector

Should one of the two diaphragms fail, the integrated protection system immediately signals the anomaly, allowing the pump to continue functioning on the undamaged diaphragm until maintenance can be scheduled.

Cartridge valves

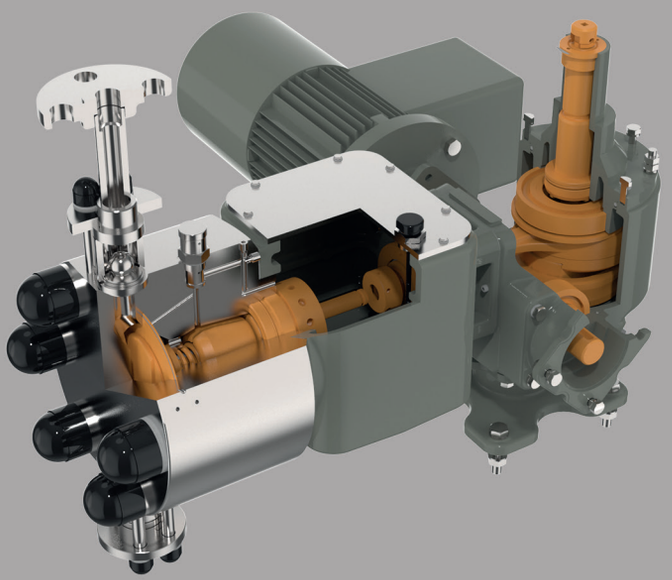
Double and triple-ball configurations are available with high-precision seats and can be replaced with minimum downtime. The metal gaskets for SS 316L heads, and the FPM gaskets for those in plastic, guarantee maximum fluid compatibility

Built-in relief valve

Protects the double-diaphragm pump against unexpected overpressure

Nexa XP
Hydraulic configuration

Exakta's broad experience in supporting customers throughout the most challenging projects has led to the development of Nexa XP, a special version of Nexa able to cope with extreme suction conditions and a wide range of chemicals.



XP Hydraulics - Max. pressure 200 barg

Head Size	Max. Flow Rate [l/h]	Fluid Temperature [°C]	NPIPr [barg]	Suction Pressure [barg]
A	11,3	-20 / 150	-0,6	200
B	28,3	-20 / 150	-0,8	200
C	142	-20 / 150	-0,8	200
D1	220	-20 / 150	-0,7	200
D2	375	-20 / 150	-0,8	200
E	709	-20 / 150	-0,8	95
E1	1800	-20 / 150	-0,75	200
F	4800	-20 / 150	-0,75	20
F1	2400	-20 / 150	-0,75	90

These are limit values, please state actual conditions with enquiry.

Nexa XP is the ideal metering solution for fluids with high vapour pressure requiring greater operational safety.

Nexa XP complies with the most stringent requirements in terms of strength and reliability, ensuring:

- Minimized internal stresses thanks to the FEM-designed hydraulic diaphragm
- Compatibility with dangerous, toxic, flammable and pyrophoric chemicals
- Best-in-class NPIP required (down to 0.1 bar)
- Highest admissible suction pressure (200 barg)

Nexa XP's pyrophoric configuration

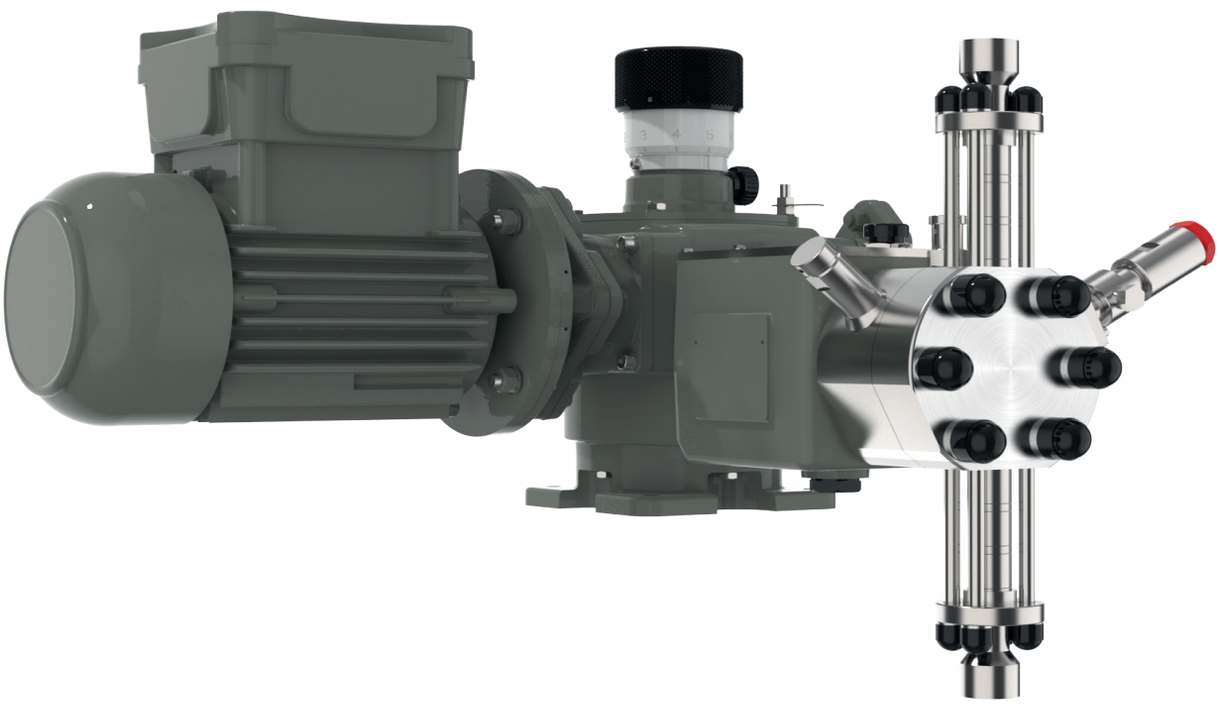
Nexa XP is designed with the delivery of pyrophoric fluids in mind. In its pyrophoric configuration, Nexa XP guarantees that the critical needs of isolating the chemical from an oxygen source are fully met, even in the toughest conditions.

The hydraulic oil reservoir is hermetically sealed and filled with a constant nitrogen flow, that ensures the internal parts of the pump are completely isolated from oxygen. This built-in nitrogen flushing system protects the liquids from any contact with air in case of diaphragm rupture, maintenance or fluid leakage.

As an extra precaution, pyrophoric configuration can also be provided with an additional specific valve, preventing the risk of fluid leakage where valve retaining bolts may have loosened.

The Nexa XP pyrophoric configuration ensures safe and reliable operation, matching innovation and efficiency.

Hydraulic double-diaphragm heads
Technical information



B Type - Max. pressure 450 barg (600 barg upon request)

Head Size	Max. Flow Rate [l/h]	Fluid Temperature [°C]	Viscosity [cPs]	Material
AH	0,7	-20 /120	500	316L SS
B2	14	-20 /120	500	316L SS
C2	103	-20 /120	500	316L SS
D2	400	-20 /120	500	316L SS
E2	1000	-20 /120	500	316L SS
F2	1200	-20 /120	500	316L SS

H Type - Max. pressure 200 barg

Head Size	Max. Flow Rate [l/h]	Fluid Temperature [°C]	Viscosity [cPs]	Material
A	2,45	-20 /120	1000	316L SS
B	17	-20 /120	1000	316L SS
C	110	-20 /120	1000	316L SS
C (LT)	110	-40 /70	1000	316L SS
D1	162	-20 /120	1000	316L SS
D2	320	-20 /120	1000	316L SS
E2	1500	-20 /120	500	316L SS
F2	2000	-20 /120	500	316L SS

T Type - Max. pressure 120 barg

Head Size	Max. Flow Rate [l/h]	Fluid Temperature [°C]	Viscosity [cPs]	Material
A	8,6	-20 /120	1000	316L SS
B	22,8	-20 /120	1000	316L SS
C	136	-20 /120	1000	316L SS
C(LT)	135	-40/70	1000	316L SS
D1	197	-20 /120	1000	316L SS
D2	350	-20 /120	1000	316L SS
E2	1650	-20 /120	1000	316L SS
F2	2350	-20 /120	500	316L SS
G2	5700	-20 /120	500	316L SS
H2	6800	-20 /120	500	316L SS

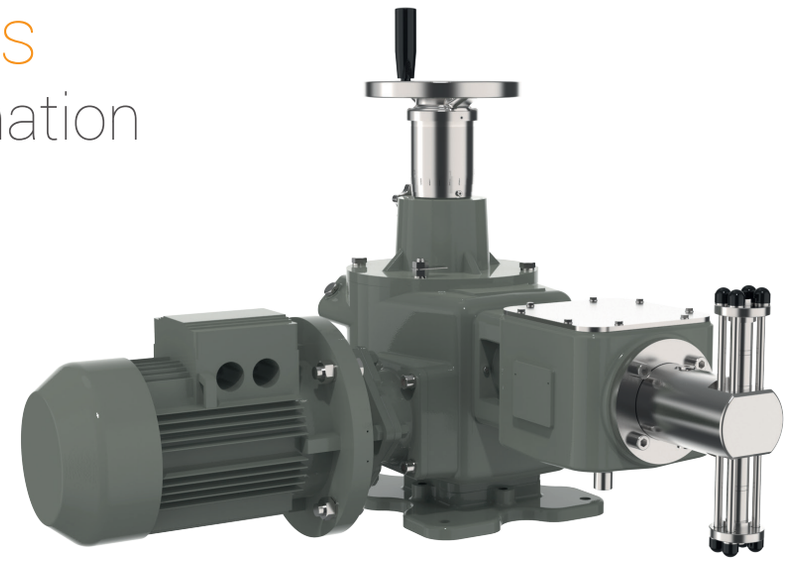
Y Type - Max. pressure 40 barg

Head Size	Max. Flow Rate [l/h]	Fluid Temperature [°C]	Viscosity [cPs]	Material
A	11,3	-20 /120	1000	316L SS
B	28,3	-20 /120	1000	316L SS
C	142	-20 /120	1000	316L SS
D1	220	-20 /120	1000	316L SS
D2	375	-20 /120	1000	316L SS
E1	709	-20 /120	1000	316L SS
E2	1800	-20 /120	1000	316L SS
F	3100	-20 /120	1000	316L SS
G	3891	-20 /120	500	316L SS
H	6883	-20 /120	500	316L SS
I	9370	-20 /120	500	316L SS

Y Type - Max. pressure up to 20 barg for plastic head

Head Size	Max. Flow Rate [l/h]	Fluid Temperature [°C]	Viscosity [cPs]	Material
A	11,3	-10/65	1000	PP-PVDF
B	28,3	-10/65	1000	PP-PVDF
C	142	-10/65	1000	PP-PVDF
D1	220	-10/65	1000	PP-PVDF
D2	375	-10/65	1000	PP-PVDF
E1	709	-10/65	1000	PP-PVDF
E2	1800	-10/65	1000	PP-PVDF
F	3100	-10/65	500	PP-PVDF
G	3891	-10/65	500	PP-PVDF
H	6883	-10/65	500	PP-PVDF

Plunger heads
Technical information



P Type - Max. pressure 40 barg

Plunger [mm]	Max. Flow Rate [l/h]	Fluid Temperature [°C]	Viscosity [cPs]	Material
25	153	-20 / 150	1000	316L SS
40	673	-20 / 150	1000	316L SS
50	1078	-20 / 150	1000	316L SS
60	1588	-20 / 150	1000	316L SS
75	2690	-20 / 150	1000	316L SS
95	4110	-20 / 150	1000	316L SS
110	5788	-20 / 150	1000	316L SS
130	7760	-20 / 150	1000	316L SS

K Type - Max. pressure 200 barg

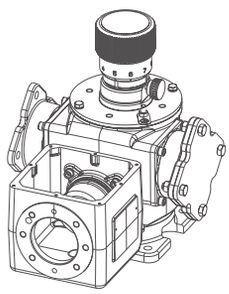
Plunger [mm]	Max. Flow Rate [l/h]	Fluid Temperature [°C]	Viscosity [cPs]	Material
10	4,76	-20 / 150	1000	316L SS / CERAMIC COATING
15	38	-20 / 150	1000	316L SS / CERAMIC COATING
20	140	-20 / 150	1000	316L SS / CERAMIC COATING
25	260	-20 / 150	1000	316L SS / CERAMIC COATING
40	673	-20 / 150	1000	316L SS / CERAMIC COATING

U Type - Max. pressure 650 barg

Plunger [mm]	Max. Flow Rate [l/h]	Fluid Temperature [°C]	Viscosity [cPs]	Material
7	0,7	-20 / 150	1000	316L SS / TUNGSTEN CARBIDE
10	7	-20 / 150	1000	316L SS / TUNGSTEN CARBIDE
12	25	-20 / 150	1000	316L SS / TUNGSTEN CARBIDE
15	72	-20 / 150	1000	316L SS / TUNGSTEN CARBIDE
20	136	-20 / 150	1000	316L SS / TUNGSTEN CARBIDE
25	228	-20 / 150	1000	316L SS / TUNGSTEN CARBIDE

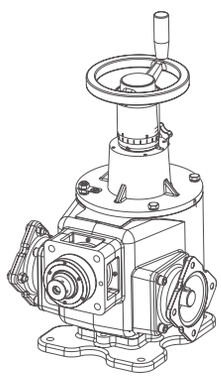
Nexa Mechanism
Technical information

Mechanism available in seven different sizes to ensure maximum reliability and best performance.



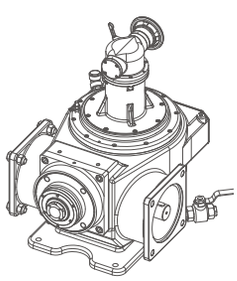
N0, N1 Mechanisms

Size	Stroke Length [mm]	Plunger Diameter Range [mm]	Thrust [kN]	Hydraulic Power [kW]
N0	10	4 - 50	2	0.1
N1	25	6 - 90	5	0.4



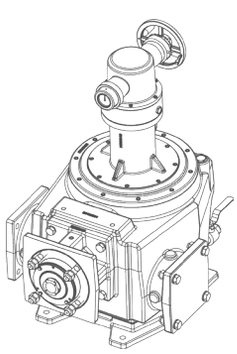
N2, N3 Mechanisms

Size	Stroke Length [mm]	Plunger Diameter Range [mm]	Thrust [kN]	Hydraulic Power [kW]
N2	35	10 - 120	8	1
N3	50	15 - 130	18	3



N4, N5 Mechanisms

Size	Stroke Length [mm]	Plunger Diameter Range [mm]	Thrust [kN]	Hydraulic Power [kW]
N4	70	30 - 130	30	5
N5	70	35 - 140	45	6.5

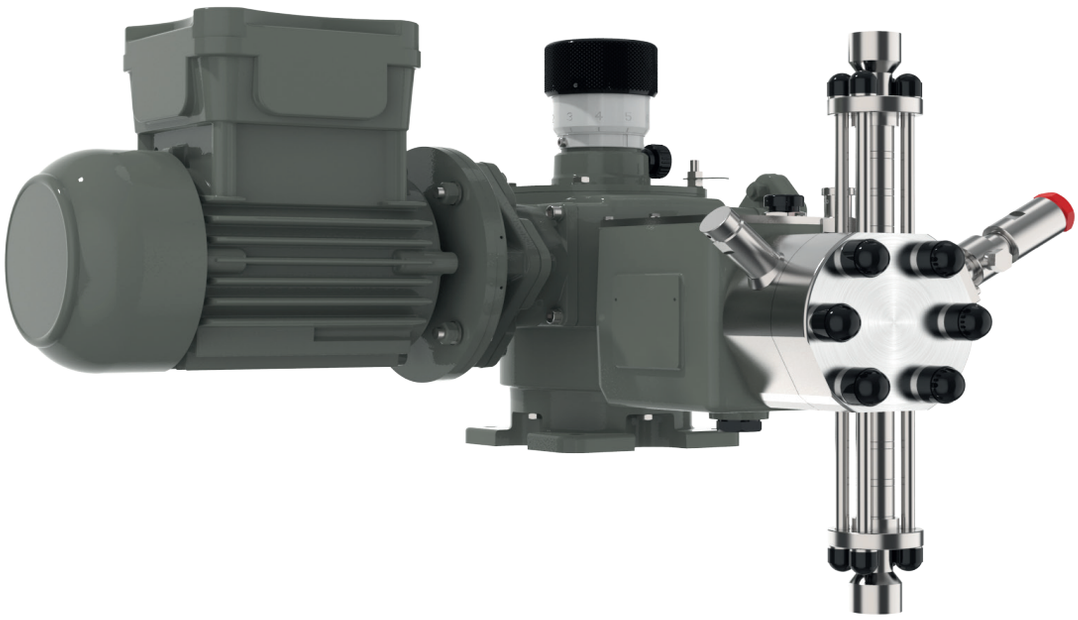


N6 Mechanism

Size	Stroke Length [mm]	Plunger Diameter Range [mm]	Thrust [kN]	Hydraulic Power [kW]
N6	120	35 - 145	60	15,7

These are limit values, please state actual conditions with enquiry.

A range of benefits



Flexibility

The superior versatility of Nexa's pump drive unit allows motors to be mounted left-sided, right-sided or even vertically depending on the installation requirements.

Nexa also allows different-sized mechanisms to be coupled, with casings designed to maintain the same foot level in order to allow installation on a flat support base.

An internal gearbox allows pumps with different stroke adjustment to be combined to form multi-head units for greater flexibility.

Customization

With Exakta's tailor-made manufacturing approach, customers can personalize their Nexa series pump with multiple drive unit combinations, hydraulic configurations, piping connections, suction and discharge solutions and accessories to withstand temperature extremes, aggressive chemicals and difficult suction conditions encountered in challenging applications.

Modularity

All Nexa mechanisms, regardless of size, can be easily combined to form larger metering units with significant construction advantages, simplifying assembly and installation.

Mechanisms are coupled together using joints with no exposed parts, resulting in a compact unit with a strong and perfectly aligned connection which removes the need for a special base.

As demands change according to fluctuating process conditions, users can quickly and easily add a pump to an existing system by performing a few simple coupling operations, even on site.

Industry applications

Oil & Gas

- Wax inhibitors, pour point depressants, asphaltene inhibitors, scale inhibitors injection to prevent equipment blockage
- Corrosion inhibitors, oxygen scavenger, biocides, demulsifiers, foam inhibitors metering to extend the lifetime of pipelines and process equipment
- Dosing of antifoams, de-oilers, demulsifiers, nitrate inhibitors, sodium hypochlorite to eliminate the water-bearing formations of crude oil and natural gas
- Methanol, MEG/TEG injection to remove control the hydrates formation to prevent clogging and choking in flow lines
- Drag-reducing agents and polymers metering to reduce the downhole pressure loss during the fluid pumping

Chemical & Petrochemical

- Caustic soda, organic sulphur injection to reduce refinery column-overhead hydrochloric acid corrosion
- Sour water for stripper column
- Organic chloride, dimethyl disulfide, ammonia, antifoam, odorizing agents, for crude oil separation and conversion for further use
- Wash water and condensate disposal and transfer
- Pyrophoric liquids for chemicals production

Oleochemicals

- Fatty acid production and processing for cosmetics, lotions and softeners production
- Conversion of fatty acid to biodiesel
- Glycerine processing for concentrated flavour extracts, texture improver and emulsifiers

Fertilizers

- Metering of nitric acid and ammonia for the production of nitrogenous fertilizers
- Injection of sulphuric acid for the production of phosphorous fertilizer
- Urea production
- Multi-compound fertilizers production

Plastics

- Antioxidants for plastic processing where weathering resistance is needed
- Colourants for coloured plastic parts
- Foaming agents for expanded polystyrene and polyurethane
- Lubricants injection to avoid plastic sticking to the mould
- Antimicrobials injection to provide a biocide treatment to control germs or fungi.

Power Generation

- Phosphate dosing to prevent scale formation in boiler tubes
- Oxygen scavenger to prevent corrosion
- Amine dosing to neutralize the carbonic acid present in the condensate
- pH control through ammonia injection
- Biocide for bacteria prevention in boilers tubes

Food & Beverage

- Liquid flavourings and fragrances
- Icing and syrups
- Thickening agent and foam stabilizer
- Cleaning and disinfection of fruit and vegetables
- Protection additives against the botulism bacterium

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