

# EDS CHEMICAL DRY SCREW VACUUM PUMPS





# CLEAN AND ENERGY-EFFICIENT VACUUM SOLUTIONS FOR CHEMICAL PROCESS INDUSTRIES

Edwards installed its first dry pump for a pharmaceutical application in 1988. It is yet to be replaced. This is a testament to the highest quality, safety and service standards. Our combination of applications expertise, diverse product portfolio, engineering strength and global presence puts us in a unique position to be able to design and maintain the best solution for chemical process industries. The EDS Dry Screw chemical vacuum pump offers the latest screw technology to provide a clean, effluent-free vacuum specifically for the chemical, pharmaceutical and petrochemical industries.

With rapid advances in technology, chemical processing industries place increasingly challenging demands on vacuum systems. Vacuum pumps need to handle increasingly complex chemicals, solvents and compounds in a reliable and safe way while ensuring control and reduction of environmental pollution at a low cost of ownership.

It is crucial for systems to be “plug and play” with minimum setup or have configurable options available when required to suit specific chemical processes. The EDS Dry Screw chemical vacuum pump with its strong focus on the fine chemical and pharmaceutical markets serves a wide range of chemical applications.

## PUMP TECHNOLOGY



### SIMPLE

Advanced screw vacuum technology simply packaged

- **Peace of mind:** Ease of installation, systemisation, support and service
- **Pumping:** Designed to be reliable



### PROCESS CAPABLE

Mechanism proven in the most demanding applications

- **Extended MTBS:** Purge protection options to prolong life in harsh processes
- **Increased process uptime:** Survives process mishaps and contaminant ingestion



### FASTER

Extra performance to meet modern day technologies

- **Quick pump down times:** Higher roughing speeds get the job done quicker
- **High pumping speeds:** Give more throughput where it matters



### ROBUST

Built for challenging chemical installations

- **Installation options:** Highly tolerant water-cooled standard products
- **Protection:** High IP ratings



### FLEXIBLE

Designed for a changing global market

- **Safe and compliant:** Easily configured for hazardous area installations
- **Engineer-to-Order:** Basic modular building blocks for special pumping systems



### ATEX COMPLIANT

Safe for hazardous area installations

- **Designed to be capable of handling gases:** From a potentially explosive atmosphere
- **Certified:** Under the ATEX directive 2014/34/EU
- **Global compliance:** Flexible to adapt to all global explosion-proof standards

## EDWARDS THE PARTNER OF CHOICE

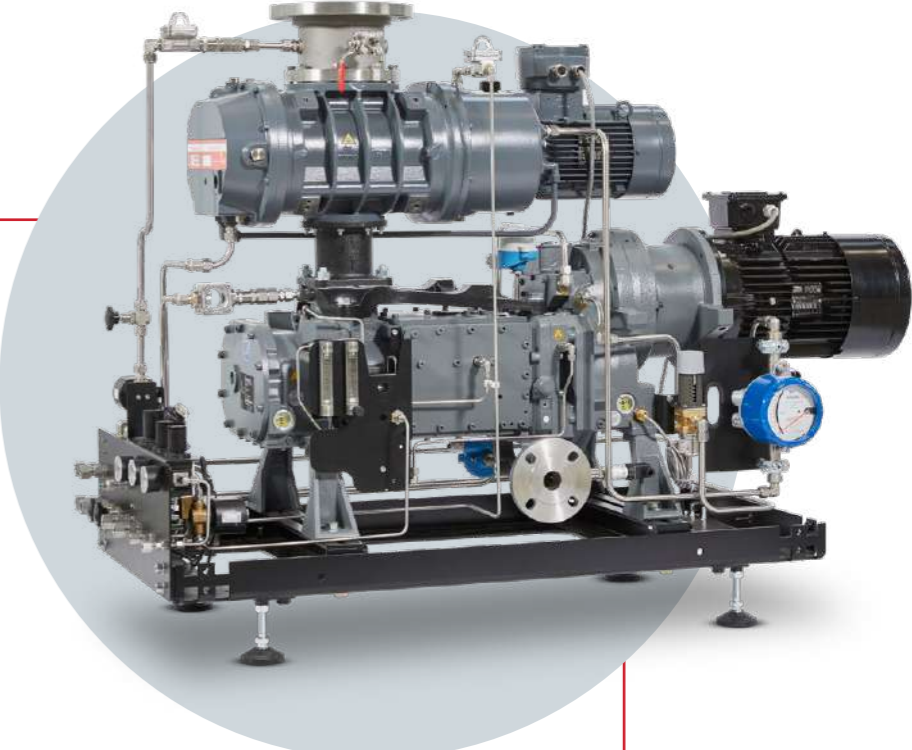
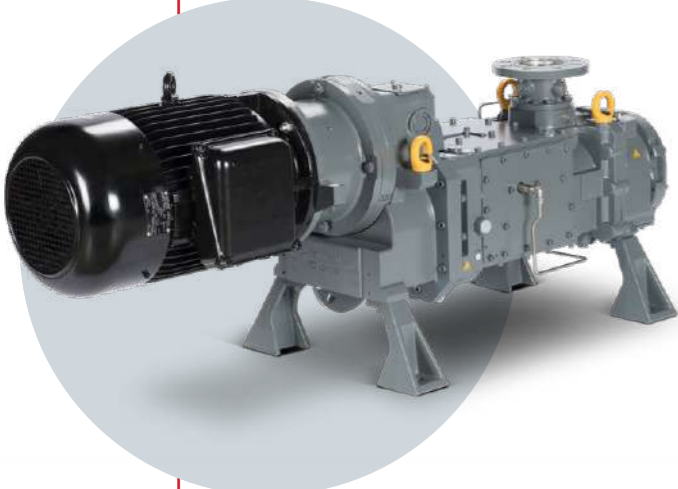
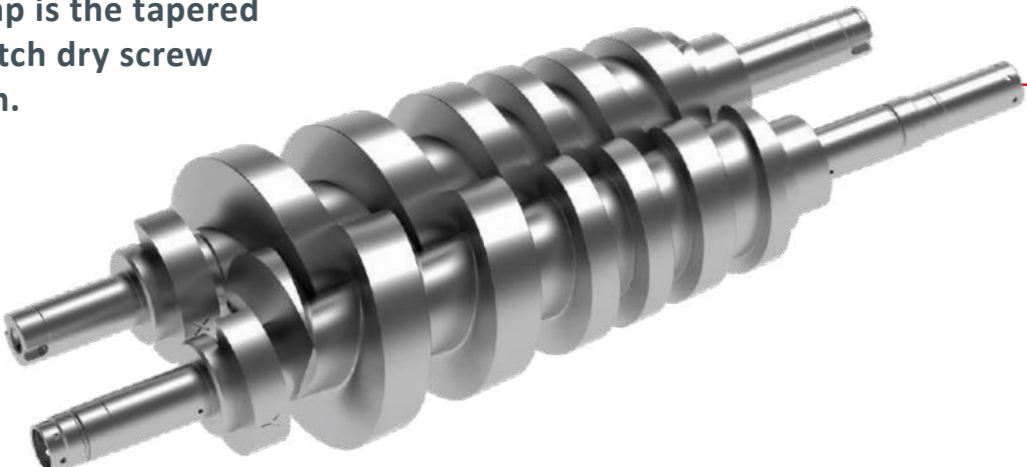
Edwards is a world leader in the design, technology and manufacture of vacuum pumps for industrial applications with over 100 years' history.

We believe in delivering results that bring value to our customers by using our breadth of industry experience to identify and apply solutions. Using the most innovative and up-to-date modelling techniques, we can optimise the pumping configuration for customers to provide a system design giving the maximum performance in the most reliable and cost-effective way.









# EDS CHEMICAL SYSTEM AT A GLANCE

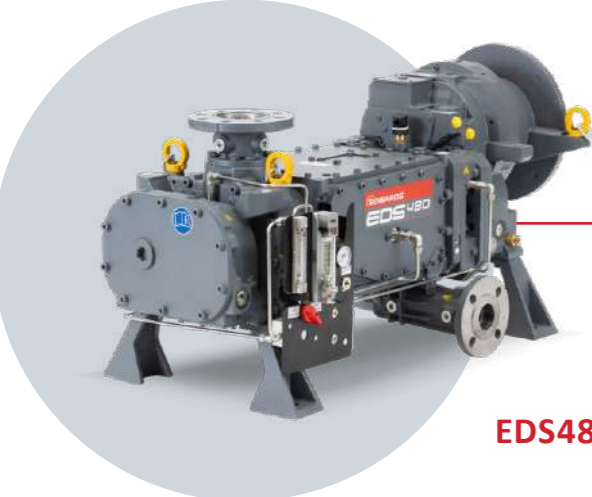
At the heart of the EDS Dry Screw pump is the tapered variable pitch dry screw mechanism.



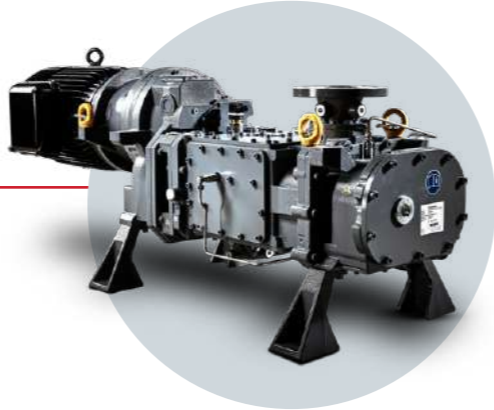
**EDS vacuum pump + EH booster combination**

-  Direct and Indirect shell and tube heat exchanger cooling options
-  ATEX Cat 1 and Cat 2 standard variants to meet T3 and T4 temperature classes
-  Bare-shaft variants available for flexibility to meet any global Ex Proof standards
-  Wide range of standard accessories available
-  Purge flow rotameters as standard
-  Compressed air gas ballast

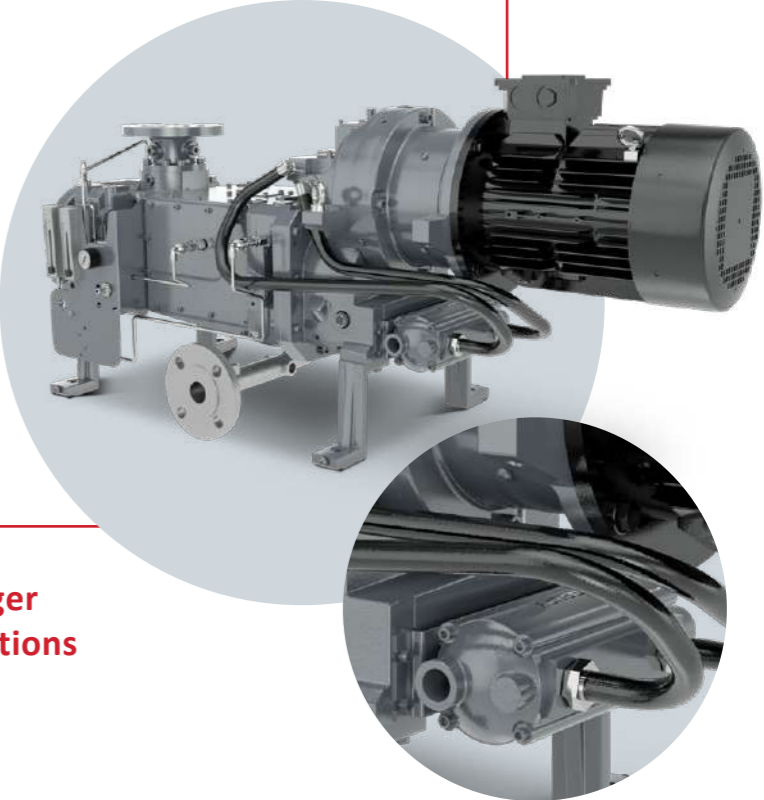
## EDS Chemical (ATEX)



**EDS480**



**Compact heat exchanger for indirect cooling options**

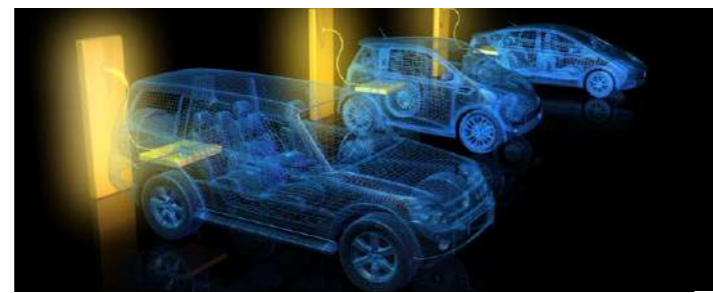
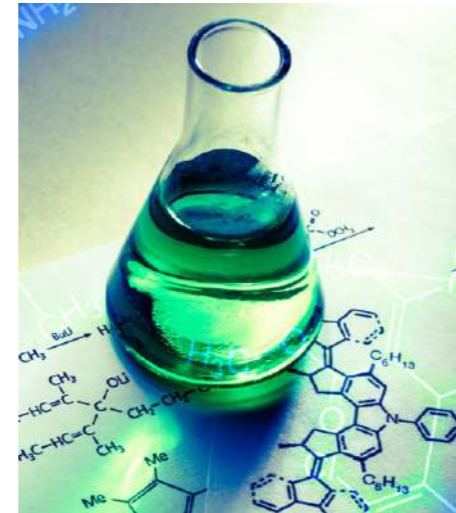




# APPLICATIONS

The EDS range is suitable for a wide range of chemical applications including:

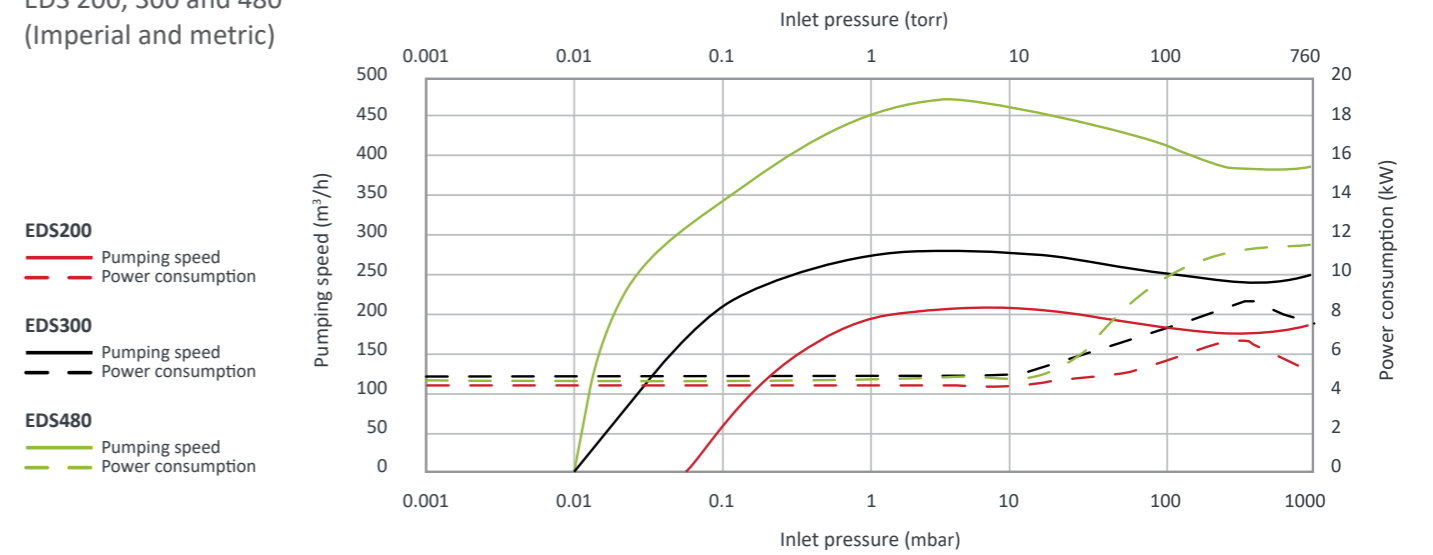
- Lithium-ion batteries
- Distillation applications
- Solar crystal pulling
- Fine chemicals
- Oil treatment plants
- Pharmaceuticals
- Petrochemicals
- Flammable and corrosive gases
- Degassing
- Dewatering and filtration
- Polymers and plastics production



For a complete list of chemical applications and processes, please contact your local Edwards representative.

# PERFORMANCE CURVES

EDS 200, 300 and 480  
(Imperial and metric)

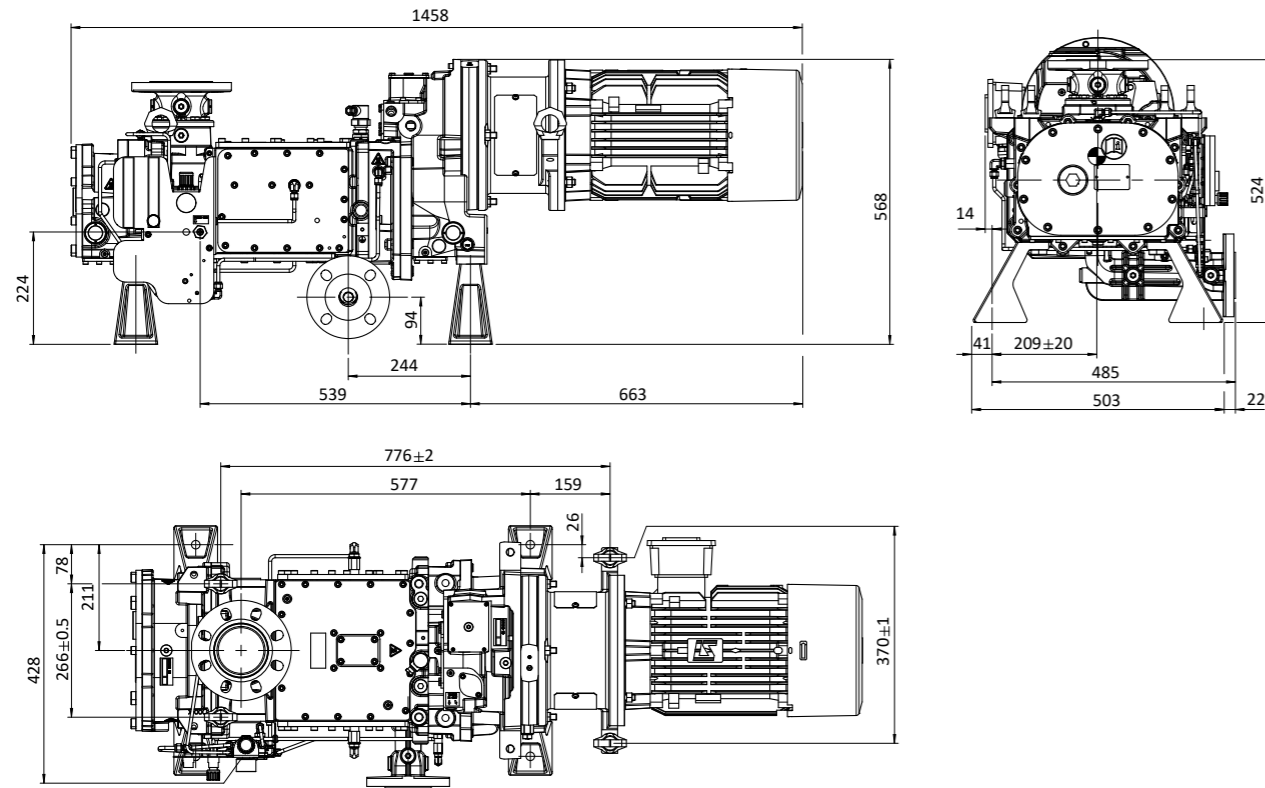


# TECHNICAL SPECIFICATIONS

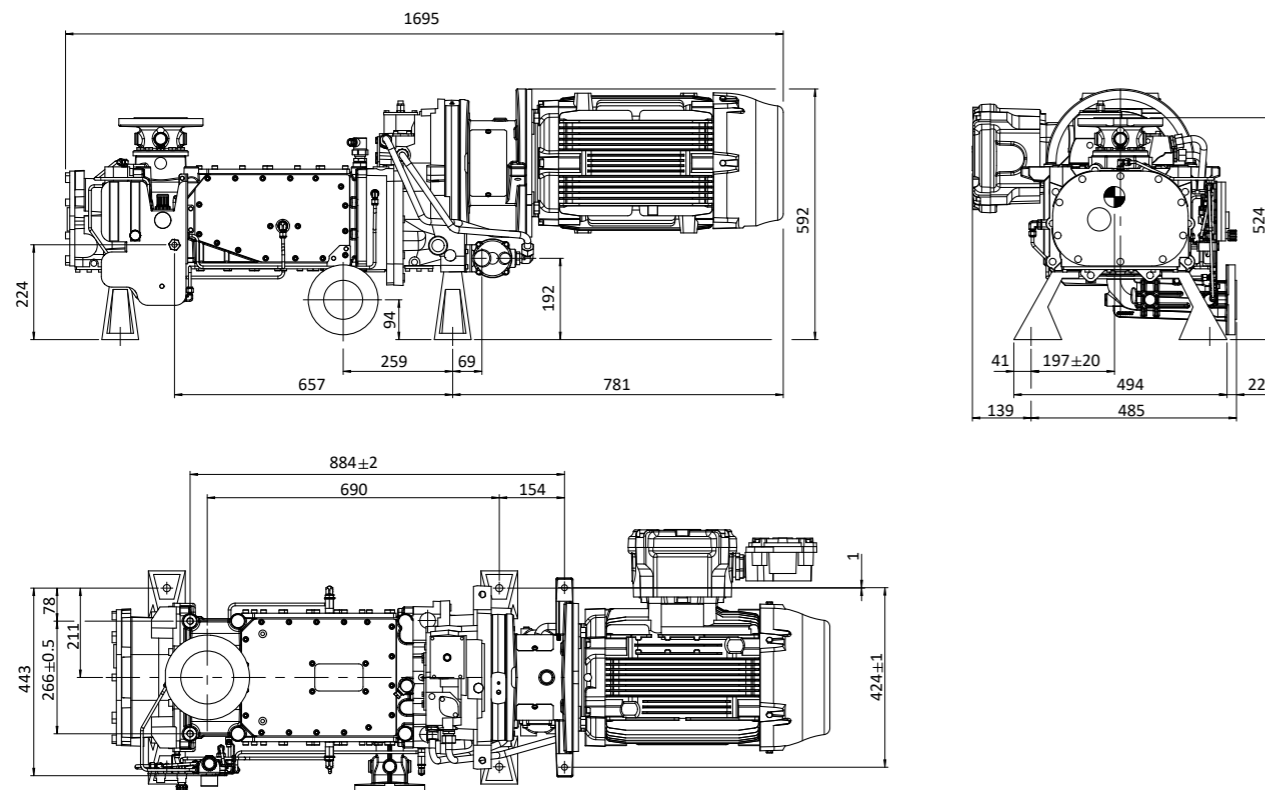
|                    |                                | Metric                         |                      |           | Imperial |                       |            |           |       |
|--------------------|--------------------------------|--------------------------------|----------------------|-----------|----------|-----------------------|------------|-----------|-------|
|                    |                                | Chemical                       |                      |           | Chemical |                       |            |           |       |
|                    |                                | EDS200                         | EDS300               | EDS480    | EDS200   | EDS300                | EDS480     |           |       |
| Performance        | Peak pumping speed             | m <sup>3</sup> h <sup>-1</sup> | 210                  | >280      | >460     | CFM                   | 124        | >165      | 270   |
|                    | Ultimate pressure              | mbar                           | <0.05                | <0.01     | <0.01    | Torr                  | <0.04      | <0.008    | 0.007 |
| Full load power    | @ ultimate pressure            | kW                             | 4.1                  | 4.5       | 4.5      | hp                    | 5.5        | 6         | 6     |
|                    | @ peak pumping load            | kW                             | 6.4                  | 8.2       | 11       | hp                    | 8.6        | 11        | 15    |
| Vacuum connections | Inlet connection               |                                | DIN80/3"ANSI         |           |          | DIN80/3"ANSI          |            |           |       |
|                    | Exhaust connection             |                                | DIN50/2"ANSI         |           |          | DIN50/2"ANSI          |            |           |       |
| Cooling water      | Connection                     |                                | G1/2" female         |           |          | G1/2" female          |            |           |       |
|                    | Flow                           | L/min <sup>-1</sup>            | <8                   | <4        |          | Gal/min <sup>-1</sup> | <2.1       | >1.05     |       |
|                    | Supply pressure (Max.)         | bar                            | 7                    |           |          | psig                  | 100        |           |       |
|                    | DP across pump (Min.)          | bar                            | 0.5                  |           |          | psig                  | 7.25       |           |       |
|                    | Temperature                    | °C                             | 5-40                 | 5-35      |          | °F                    | 41-104     | 41-95     |       |
| Purge gas          | Connection                     |                                | G1/4" female threads |           |          | G1/4" female threads  |            |           |       |
|                    | Pressure                       | bar                            | 2.5-6.9              | >2.2      |          | psig                  | 36-100     | 32        |       |
|                    | SSP flow                       | lmin <sup>-1</sup>             | <12                  |           |          | lmin <sup>-1</sup>    | <12        |           |       |
|                    | Gas ballast flow*              | lmin <sup>-1</sup>             | 0-50                 | 0-130 slm |          | lmin <sup>-1</sup>    | 0-50       | 0-130 slm |       |
| Operating data     | Noise                          | dB(A)                          | <71                  | 71        |          | dB(A)                 | <71        | 71        |       |
|                    | Operating temperature          | °C                             | -20 to +40           |           |          | °F                    | -4 to +104 |           |       |
|                    | Exhaust back pressure (Max.)** | mbar                           | 1200                 | 1100      |          | psia                  | 17.4       | 15.9      |       |
|                    | System IP rating               |                                | IP54                 |           |          | IP54                  |            |           |       |
|                    | Lubrication (as supplied)      |                                | Extend 110           |           |          | Extend 110            |            |           |       |

# DIMENSIONS

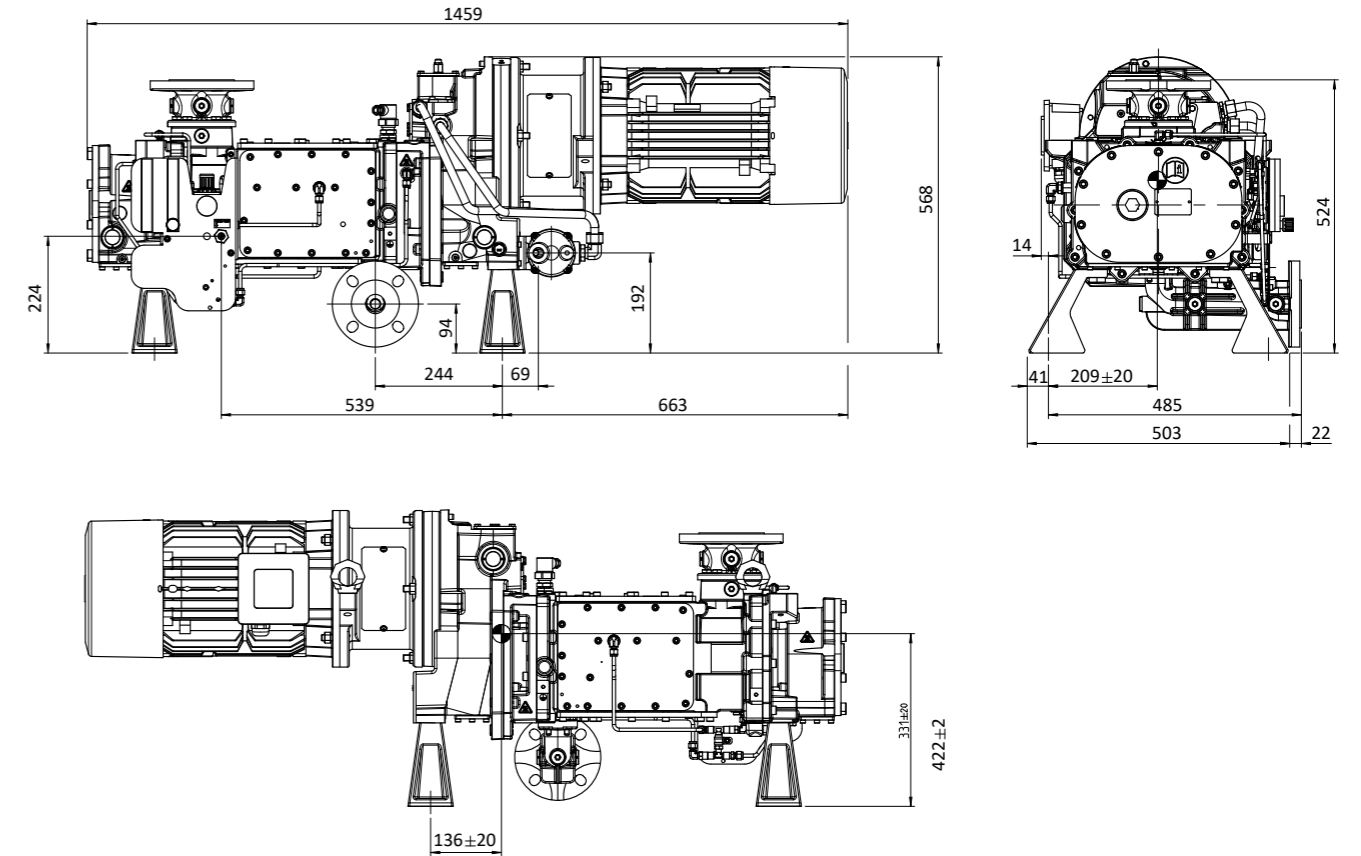
## EDS200-300 (Chemical Direct)



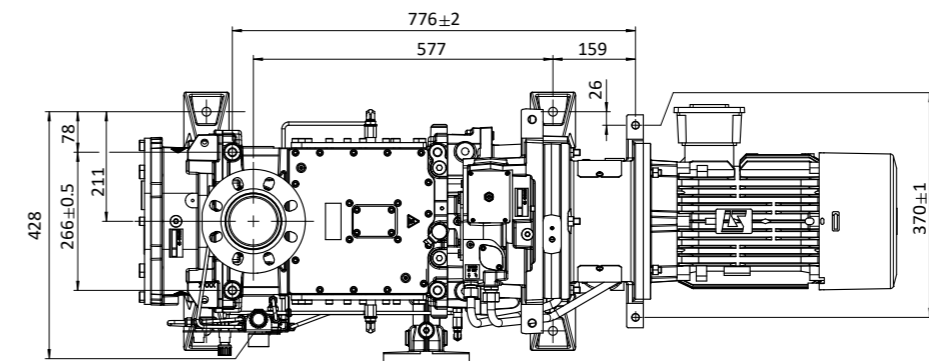
## EDS480 (Chemical Direct)



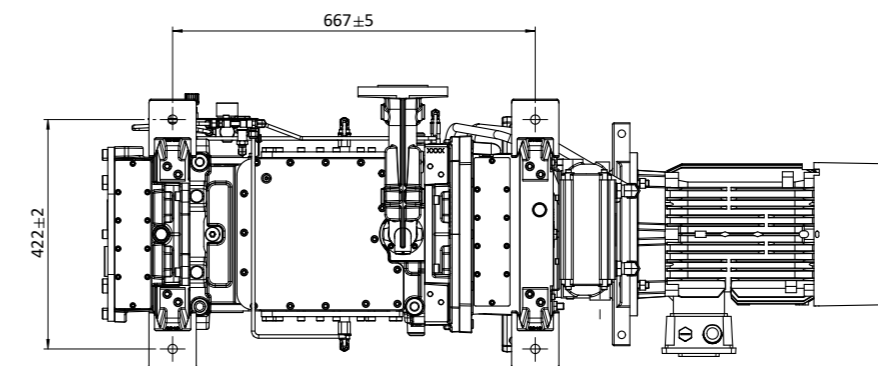
## EDS200-300 (Chemical Indirect)



Top View



Bottom View





## ORDERING INFORMATION

| Part number | Size | Cooling        | Motor voltage | Motor desc.    | Freq. |
|-------------|------|----------------|---------------|----------------|-------|
| A41822945   | 200  | Direct water   | 230/400V 50Hz | ATEX IIC T3    | 50Hz  |
| A41824945   | 200  | Indirect water | 230/400V 50Hz | ATEX IIC T3    | 50Hz  |
| A41823945   | 200  | Direct water   | 230/400V 50Hz | ATEX IIC T4    | 50Hz  |
| A41825945   | 200  | Indirect water | 230/400V 50Hz | ATEX IIC T4    | 50Hz  |
| A41826945   | 200  | Direct water   | 230/400V 50Hz | ATEX IC T3, T4 | 50Hz  |
| A41827945   | 200  | Indirect water | 230/400V 50Hz | ATEX IC T3, T4 | 50Hz  |
| A41824985   | 200  | Indirect water | B/S           | IEC ready      | 50Hz  |
| A41824986   | 200  | Indirect water | B/S           | NEMA ready     | 60Hz  |
| A41832945   | 300  | Direct water   | 230/400V 50Hz | ATEX IIC T3    | 50Hz  |
| A41834945   | 300  | Indirect water | 230/400V 50Hz | ATEX IIC T3    | 50Hz  |
| A41833945   | 300  | Direct water   | 230/400V 50Hz | ATEX IIC T4    | 50Hz  |
| A41835945   | 300  | Indirect water | 230/400V 50Hz | ATEX IIC T4    | 50Hz  |
| A41836945   | 300  | Direct water   | 230/400V 50Hz | ATEX IC T3, T4 | 50Hz  |
| A41837945   | 300  | Indirect water | 230/400V 50Hz | ATEX IC T3, T4 | 50Hz  |
| A41834985   | 300  | Indirect water | B/S           | IEC ready      | 50Hz  |
| A41832985   | 300  | Direct water   | B/S           | IEC ready      | 50Hz  |
| A41834986   | 300  | Indirect water | B/S           | NEMA ready     | 60Hz  |
| A41842945   | 480  | Direct water   | 230/400V 50Hz | ATEX IIC T3    | 50Hz  |
| A41842985   | 480  | Direct water   | Non-motorised | IEC ready      | 50Hz  |
| A41842986   | 480  | Direct water   | Non-motorised | NEMA ready     | 60Hz  |

## ACCESSORIES

| Part number | Accessories                             | Pump compatibility            |
|-------------|---|-------------------------------|
| A41890000   | TCV kit (Direct cooled)                 | All direct cooled EDS pumps   |
| A41890001   | TCV kit (Indirect cooled)               | All indirect cooled EDS pumps |
| A41891001   | Solenoid valve accessory                | All EDS pumps                 |
| A41893000   | EDS to EH 1200/2600/4200 connection kit | 200/300 pumps only            |
| A41893001   | EDS to EH500 connection kit             | 200/300 pumps only            |
| A41894000   | Exhaust pressure transmitter            | All EDS pumps                 |
| A41895000   | Pt100 stator temperature transmitter    | All EDS pumps                 |
| A41895001   | Pt100 exhaust temperature transmitter   | All EDS pumps                 |
| A41897000   | BoV plug kit                            | All EDS pumps                 |

## SERVICE AND SUPPORT

To ensure your EDS Dry Screw vacuum pump maintains optimal performance and reliability, we offer a wide range of service solutions, tailored to meet your needs. From Field Service intervention, Managed Maintenance agreements and Overhaul service in our Service Technology Centres (STC), we will take care of your pump to ensure that it continues to deliver clean, consistent, efficient performance, with lower running costs and optimum total cost of ownership for its operating life.

Selecting original spare parts, maintenance kits and oil means that every critical part performs as it was intended. Our services engineers only fit 100% genuine parts to ensure you receive the best result from each service.

Our Preventative Maintenance service packages include:

- **Health check and routine service check** - Various flexible services to keep your pump running in an optimal condition for your application, including visual inspections, pump vitals checks and replacement/cleaning of components.
- **Overhaul** - The overhaul service includes multiple service options to ensure high performance and minimal downtime.
  - » **Complete remanufacturing** including full decontamination of the pump, replacement of consumables and components tested to factory specifications.
  - » **Clean and overhaul** including cleaning of pump interior, repair/replacement of pipework, replacement of consumables and reassembly.
  - » **Module exchange** including removal and assembly of motor, gearbox, gas and water systems onto replacement pump module.
  - » **Pump exchange** includes exchange of whole pump (including motor, gear box, gas and water systems) replaced with remanufactured pump.





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Edwards Ltd., registered in England and Wales  
No. 6124750, registered office: Innovation Drive,  
Burgess Hill, West Sussex, RH15 9TW, UK.