

ADV V pumps

automated
dry vertical
vacuum pumps



Design Features

Lobe and claw design
Up to 300 cubic m/hr capacity
Skid mounted 'plug and play' system
Fully automated operation to cGAMP

Operational Benefits

Highly efficient and dependable design
Creates an operator safe environment
Effective solvent vapour recovery
Typically pays for itself within months

Our ADVV Technology

Stanpumps Engineering Industries provide full turnkey solutions for automated dry vertical vacuum pumps.

Our innovative ADVV technology employs a highly efficient vacuum dry lobe and claw pump to draw off all remaining solvent vapours found in process equipment after a specific operation. This ensures plant operators are not exposed to such harmful substances when opening the equipment. Such solvents vapours can then be processed in a solvent recovery system, which can also be supplied by Stanpumps if required (see supply options overleaf).

Our technology also drastically improves the application drying and distillation process efficiency, creating significant cost savings for client operations.

Stanpumps ADVV solutions provide a wide range of operational benefits making them an ideal solution for all drying, distillation and solvent recovery applications in both continuous and batch production as found in small laboratories or research and development plants to large production plants.



Industry sectors which use Stanpumps ADVV's include;

- Pharmaceuticals and API / Bulk Drugs
- Dyes/dye intermediates
- Inorganic chemicals, Plastics and Polymers
- Distilleries and Brewery
- Agrochemicals and Organic chemicals
- Edible oils, Oil refining and Petrochemicals

Client Value-Adding Benefits

Design Feature

1. Vertical equipment orientation
2. Robust lobe and claw pump technology.
3. Multi-stage pump is maintenance friendly and has no mechanical seal and timer gear.
4. Innovative water jacketed pump design
5. cGMP & cGAMP equipment design and construction
6. Highly efficient, ultimate vacuum
7. PLC control based automation
8. Modular design with a multitude of customisable options
9. Skid mounted turnkey 'plug and play' system

Customer Benefit

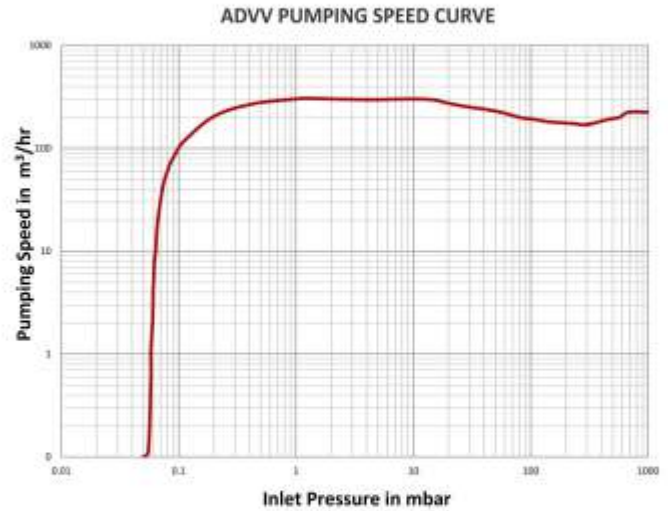
- The self-draining vertical orientation ensures no stagnation of the product media and less chance of condensation which results in high corrosion attack potential of ductile iron material.
- Excellent ability for handling sticky products
- Significant maintenance cost savings as there is no mechanical seal replacement / repair. Also the ADVV has four pump stages and any stage can be repaired independently.
- Improves pump cooling and extends equipment operating life
- Facilitates thorough equipment cleaning such as clean/wash in place (CIP/WIP), solvent flushing and nitrogen purging.
- Accelerates the equipment drying process providing significant client cost savings, increased production throughput and equipment utilisation
- Ensures all harmful vapours from the reaction/drying process are reliably and consistently removed for total operator safety and client peace of mind.
- Full operational versatility: ideal for multi-product, batch and continuous production plants
- Modularity facilitates exceptional service and fast product lead times.
- Turnkey solution from single source supplier facilitates the smooth operation of all technologies in synergy which results in improved productivity & efficiency.

ADV V Operational Data

The Stanpumps ADVV employs a four stage lobe and claw type dry vacuum pump which is ideally suited for chemical, pharmaceutical and API / Bulk Drugs applications.

This vertical multi-stage lobe and claw mechanism is highly efficient and technically superior to similar rotary lobe designs. The first stage of the pump comprises of lobes on parallel shafts which rotate in opposite directions. The second, third and fourth stages comprise of claws on parallel shafts which also rotate in opposite directions. The lobes and claws trap the gas and compresses it, thereby moving it along with the shaft from inlet to the outlet.

The ADVV pump has a water cooling jacket option which is designed to run in continuous mode. The ADVV pumping speed curve to the right, illustrates the pumps excellent and consistent pumping performance across the range of inlet operating pressures. This supports the best practice use of this innovative ultimate vacuum pump technology.



ADV V-300 Technical Data

- **Orientation:** Vertical which complies to cGAMP
- **Motor:** 11 kW, 2 Pole (3000 RPM), 50Hz - Flameproof
- **Main Dimensions:** 0.85m wide x 0.85m long x 1.5m high. Customised designs are made to suit specific client applications
- **Flange Drilling:** ISO 63
- **Capacity:** 300 cubic m/hr (with standard motor). This can be reduced with our variable speed motor option.
- **Operating Pressure:** 0.05 mbar (0.0375 Torr)
- **Operating Temperature:** up to 200° C (390°F)
- **Chemical pH Range:** above 3 (less than 3pH please contact the Stanpumps technical department)
- **Standard Configuration:** PLC control and skid mounted - Fully automated system with periodic solvent flushing and nitrogen purging to optimise pump life.
- **Material of Construction:** SG Iron wetted parts. Please contact Stanpumps technical department for other material requirements such as 316L S/S and titanium.

High chemical resistant coatings can be applied on the wetted components of the system. Please contact our technical department for further information.



ADV V Supply Options

Stanpumps ADVV pump range is designed around a modular concept therefore can be easily customised to suit specific client application requirements. Some of the more standardised supply options are listed below;

Period Flushing Cycle

- The ADVV comes as standard with a programmed periodic pump chamber flushing cycle for use with an appropriate flush media. This cycle can be changed as required.

Instrumentation & Electrics

- Full instrumentation pack for control room operation
- Variable speed drive electric motor for reduced equipment energy consumption

Solvent Recovery System

- Solvent recovery system is installed on the discharge side of the pump comprising of a Condenser and Receiver. Receivers can be supplied in stainless steel and/or with glass-lined (enamel) wetted parts.

Supporting Systems

- Standalone Thermal Control Unit (TCU) to manage and supply the thermal cooling fluid (water or oil based) for the pump cooling jacket (where plant services are not available).

Safety & Regulatory Compliance

- ATEX rated (explosion proof) electrics to any standard
- Bespoke guarding systems & laser beam guarding
- CE and PED compliance (for European shipments)

For customised ADVV pump supply configuration, please contact our technical sales support team.



Left: Glass Lined Receiver for harmful solvent / vapour recovery

Below: Single Fluid Cooling System to accurately manage the temperature of the ADVV jacket.



Why Stanpumps?

With a team of time served skilled engineers and technical professionals, Stanpumps understand process applications such as vacuum distillation, powder transfer systems (PTS) and filter-drying very well. As such we endeavour to provide innovative turnkey solutions delivered with exceptional customer service and high levels of attention to detail and safety. Some of the main reasons why clients choose Stanpumps as their preferred supplier include;

- Strong application expertise, specifically in reactor, filter-dryer, gas dispersion and hydrogenation systems.
- High quality ISO9001 manufacturing with excellent process capabilities and controls for sustainable supply.
- A total turnkey product supplier. Our true 'one-stop-shop' approach eliminates client difficulties when trying to couple together technology from different suppliers.
- Local service centres spread across India and the UK.

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