# SIHI® Dry Series

Dry-running vacuum pumps

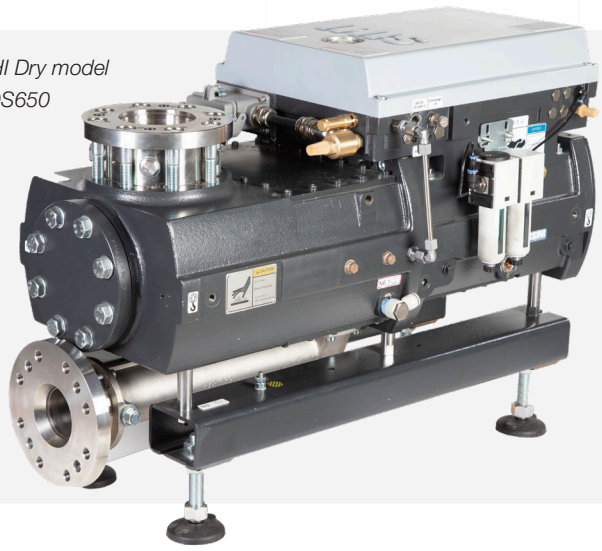
## Simple, efficient and reliable

SIHI Dry vacuum pumps from Flowserve feature a self-draining design with no mechanical contact that leverages the natural force of gravity. They are typically installed in a vertical orientation. With no gearbox, couplings, shaft seals or other tertiary friction energy losses, SIHI Dry units are the most efficient vacuum pumps on the market — requiring significantly less power while delivering faster pump-down cycle times and optimal finished product throughput. Shaft-mounted, direct drive, permanent magnet (PM) motors perform ongoing rotor diagnostics, allowing for variable-speed operation, pinpoint mass flows and consistent pressure management. Moreover, accurate electronic rotor synchronization permits quiet operation without any process-contaminating lubrication.

This award-winning solution can accommodate applications ranging from simple air to corrosive gases and vapors. It also has superior resistance to heat-accelerated deposition. SIHI Dry pumps are ideal for applications where there is a high possibility of liquids or solids carryover.

An extensive range of supplemental modules can be incorporated into systems for all general through process industries which are purpose designed. In this way, SIHI Dry pumps can match everything from simple process requirements to dynamic distributed control system (DCS) integration, allowing for safe operation with remote monitoring. Flowserve experts can help you select the options that best fit your unique applications.

*SIHI Dry model M160*



*SIHI Dry model GDS650*

### Discerning benefits:

- Self-draining
- Superior reliability
- Deep vacuum performance
- No waste oils or effluent generated
- Easy implementation, operation and monitoring
- Simple on-site inspection, cleaning and maintenance

# Operational benefits

## Built for harsh processes

### Tolerates particle and liquid carryover without a suction side filter

- Top-down flow avoids liquid and particle accumulation
- Two to three times larger interface clearances

### Condensable and corrosive media handling

- No pressure control valve required
- Condensation reduced by temperature-controlled operation
- Pump chamber condensation prevented by optional partial pressure gas dilution module

### Safe handling of toxic process media

- Tight hermetical functionality
- Internal secondary cooling loop decoupled from customer cooling water

## Easy system integration and installation

### Customized vacuum system solutions

- Engineered or pre-configured systems available
- Classified area utilization available
- Compact designs minimize footprint

### Fast installation and startup

- Fully assembled, wired and self-controlled system
- All units pre-tested before leaving factory

### Easy communication

- All major bus standards and input/output (I/O) interfaces available
- Human-machine interface (HMI) available

## Lower power consumption

### No wearing components

- Non-contact labyrinth seals
- High-tech screw profiles optimized for highest efficiency
- Motor frequency control improves energy efficiency

## Superior pumping performance

### Quality finished products

- Precise speed control
- Higher maximum rotational speeds
- Higher flow rate of process gases
- Deep final pressure
- Forgiving to process upsets

## Zero process contamination

### No service liquids or external fluid lubrication used

- Truly dry, contactless operation
- Sealed-for-life bearings
- Gear oil eliminated by electronically synchronized shafts

## Lower maintenance costs and downtime

### Designed for in situ cleaning and on-site service

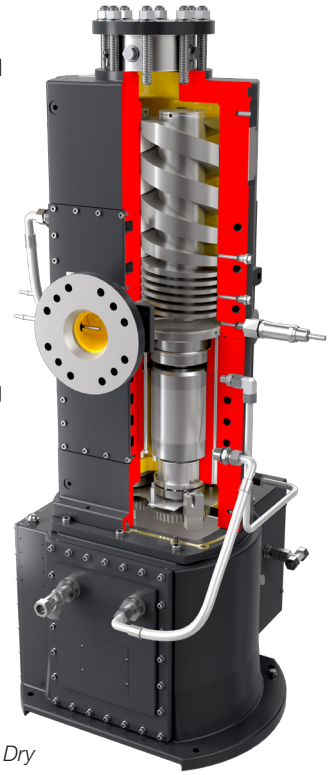
- Minimizes downtime
- Easy dismantling of pump chamber cover without requiring bearing removal
- No sophisticated workshop required
- Service on-site with your own staff or third-party service

### No oil checks, exchanges or disposals required

- Free of oil as a service liquid
- No gear oils needed

### Continuous condition monitoring

- Data logging
- Online status
- RedRaven Ready — predictive maintenance service from Flowserve that leverages the internet of things (IoT)



*SIHI Dry model Mi450*

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