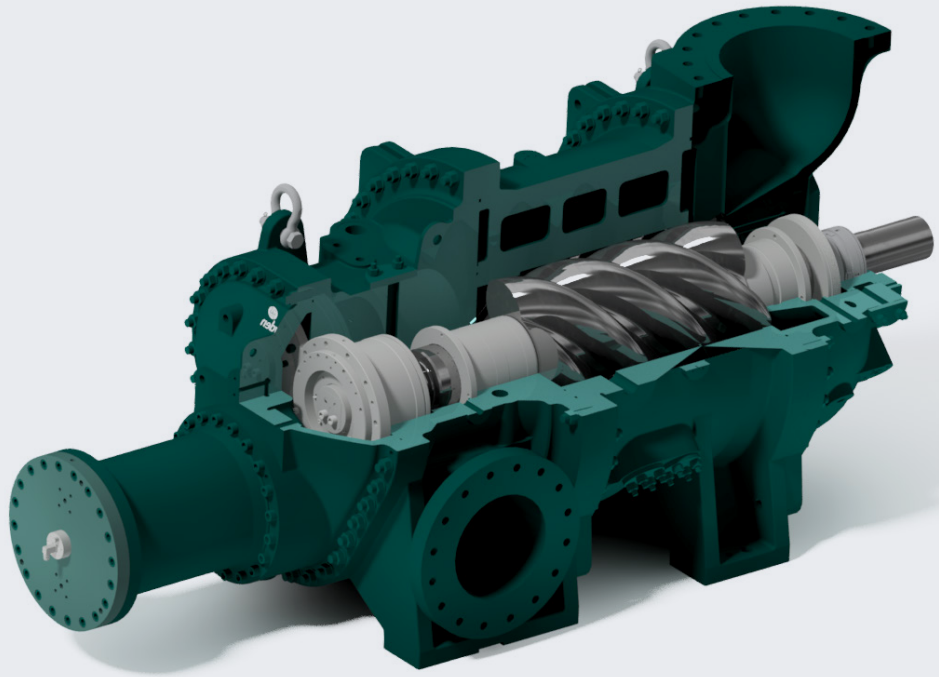
Product Specifications

W420 range
Oil injected screw compressors

Howden
A Chart Industries Company



Features and benefits

- W420 range incorporates the automatic variable Vi feature which enables Vi changes to the compressor during operation
- Various shaft seal types and configurations such as API Plan 11, 53B and 72/75 are available as options
- Hydrodynamic journal bearings and tilting pad thrust bearings with the option of angular contact rolling element thrust bearings for less demanding applications
- Provides universally certified LPI (linear position indicators) to measure the Vi and capacity figures
- Provides two LRI ports at different pressures to facilitate the gas cooling with liquid refrigerant
- Provides an economiser port to entrain gas at an intermediate ressure
- Various seal elastomer grades are available

As world pioneers of rotary twin screw compressors, Howden, a Chart Industries Company, provide the industry's largest and most versatile range of oil injected and oil free screw compressors.

The new W-range joins part of a well proven suite of compressors that offer high reliability and versatility. It is designed for a wide range of applications, including industrial refrigeration, hydrogen and process gas. The new W420 range offers our customers with a compressor size between the existing WRV510 and WRV365.

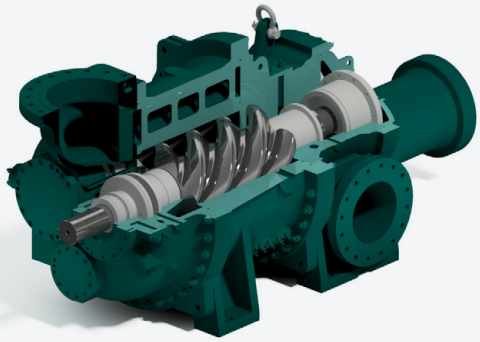
The compressor has different length options, with the maximum displacement close to 17000 m^3/h. Our W420 compressor design is robust and highly reliable, and incorporates a number of material options to suit specific customer applications. The W420 direct drive operation is also well suited for both 50 and 60Hz countries.

WRV 420 range key performance parameters

Max pressure	37 bar g	537 psi g
Min displacement	2350 m^3/hr	1380 CFM
Max displacement	17000 m^3/hr	10000 CFM
Min speed	1000 rpm	
Max speed	3600 rpm	
Max power	7500 kW	10000 hp

Installation and maintenance

- Reduced overall package complexity and cost
- Improved reliability and improved efficiency
- Packaging flexibility where the system design can be simpler and at a lower cost
- Can be used for applications where cooling water is not available
- Lower emissions and ease of maintenance planning
- Able to facilitate multiple evaporate temperatures with a single stage compressor



WRV 420 illustrative performance

WRV 420 Variants	Speed (rpm)	Swept volume (m^3/hr)	Dimensions in mm basic unit (L x W x H)
W420/110	1000–3600	2347–8449	2469 x 1104 x 1180
W420/165	1000–3600	3520–12673	2701 x 1104 x 1180
W420/193	1000–3600	4118–14824	2819 x 1104 x 1180
W420/220	1000–3600	4694–16897	2932 x 1104 x 1180

Key features

Component	Key feature	Key benefit
Design overview	Evolutionary design, incorporating many new design features, new rotor profiles and improved functionality	Flexible packaging layout options, ensuring optimum performance and process “matching” without cost impact.
	Direct drive capability	Flexibility to run up to with or without a gearbox, which match application requirements that reduce cost and complexity.
	Automatic Variable Vi function from 2.2 to 5.0 (A fixed VI 5.8 is also available)	Hydraulically actuated Auto Vi can be remotely adjusted during operation without the need to reduce capacity or stop the compressor.
	Automatic Variable Capacity function	Capacity can be remotely adjusted during operation to match start up, shutdown and process demand.
Seal	Wide range of shaft seal offerings	Shaft seal can be easily selected to suit process needs, API and non-API applications.
Component	Hydrodynamic radial and tilting pad thrust bearings	Optimal bearing selection to ensure best axial load “capacity” ensure best in class running hours.
Compressor monitoring	Proximity probes for rotor radial movement sensing	Measurement of rotor axial and radial position and vibration to predict the condition of the bearings via Howden Uptime or SCADA system.
	Proximity probes for rotor axial movement sensing	
	Bearing RTDs	Ability to measure bearing temperature to enable continuous compressor condition assessment.
	Accelerometers on compressor casing	Ability to measure compressor vibration to enable continuous compressor condition assessment.
	Radial proximity probes	Ability to measure rotor vibration closer to the bearing location.
Package flexibility	ANSI flange connections	No weld or screw connections, less hot work required or requirement to deviate from API specifications.
	Two oil injection ports	Package piping layout flexibility, improved oil control.
	Provision for 2 LRI ports	Liquid refrigerant can be directly injected to cool down the gas to control the discharge temperature, packaging flexibility.
	Economiser port	Compatible gas can be entrained into the compressor at an intermediate pressure.
Classification standards	API619 compliance	Meeting stringent special purpose application demands required for dry and oil-flooded, helical-lobe rotary compressors used for vacuum or pressure or both in petroleum, petrochemical, and gas industry services.

Start your screw compressor selection today:

Howden Select will match our most efficient and economical screw compressors to your application requirements.

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For further information contact:

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