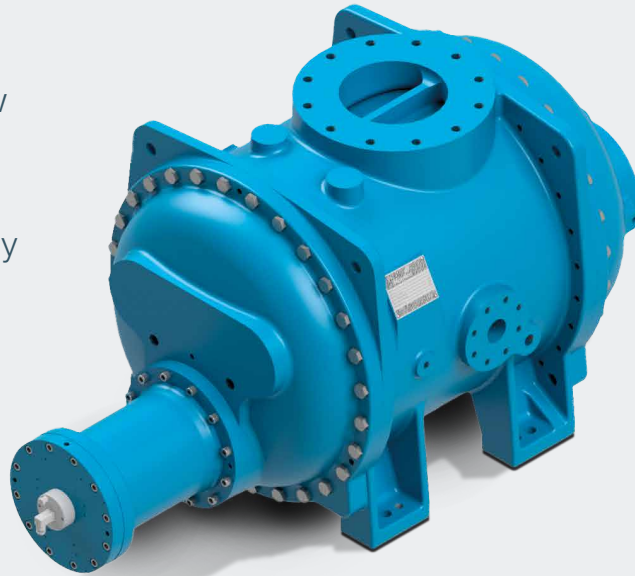


Auto Vi capability on Howden WRVi Screw compressors

Auto Vi is available for all WRVi screw compressors utilising variable speed drive, including as a retrofit option on models which currently have manually adjustable volume ratio control.



Compressor



Control panel



Edge device



Communications



Howden Uptime

Automatically variable volume index (Auto Vi) allows the compressor volume ratio to be adapted whilst in operation, to follow the actual operating conditions, minimising power consumption, noise and vibration.

Combining the Auto Vi with our data driven solutions increases the reliability and availability of your compressor.

Howden Uptime

Howden Uptime collects and analyses the real-time performance data from your system, providing Howden experts with the right data to deliver a highly optimised control philosophy for the Auto Vi, specific to your application. The data driven solution collects data directly from the sensors on your compressor and sends them, via an edge device, to the Howden Uptime platform which resides in the cloud.

With the Auto Vi solution, compressor capacity is regulated through a variable speed drive. Integrating the Auto Vi with Howden Uptime gives you the ability to review the operating conditions in real-time, and provides you with the opportunity to maximise the efficiency of your compressor.

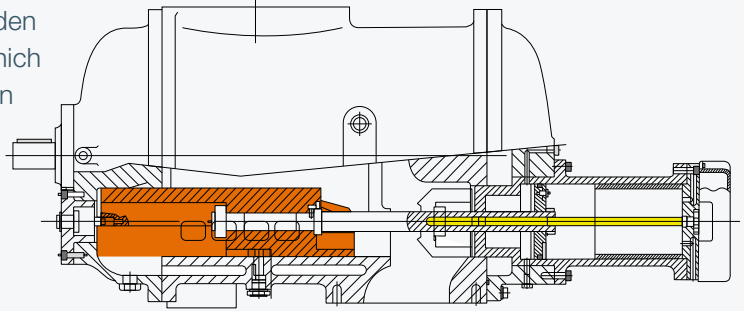
The best efficiency point is calculated using the unique Howden digital twin; comparing the operating performance with the existing design data to enable performance optimisation of the equipment to match the operational requirements.

Howden Uptime provides you with an invaluable insight into the compressor performance which allows you to plan targeted maintenance and avoid unplanned downtime.

Empowering your screw compressor selection

Benefitting from 165 years of engineering expertise, Howden Select is the screw compressor configuration software which allows you to create your own product selections. Howden Select will match our most efficient and economical screw compressors to your application requirements.

Click here to register or sign-in:
howden.cloud/selectsheet



Benefits of Auto Vi

Provides up to 7% savings in power

Correctly following the varying operating pressure ratio means the system prevents over or under compression of the working fluid, minimising the power absorbed. Adjusting the correct valve block position provides the most efficient machine operation, the below graphs illustrate the potential energy savings.

Prevents excessive working fluid pulsation

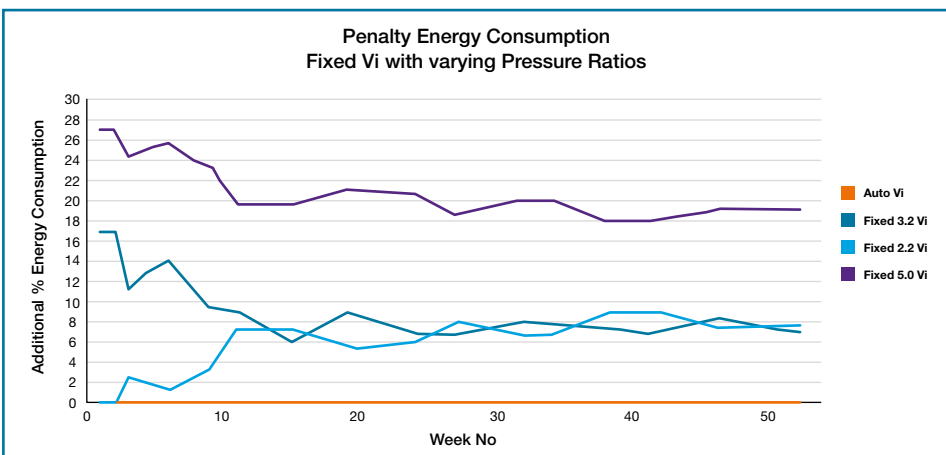
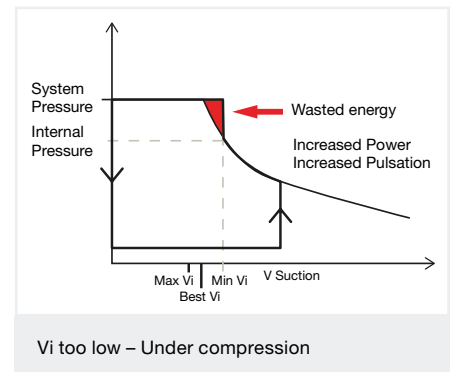
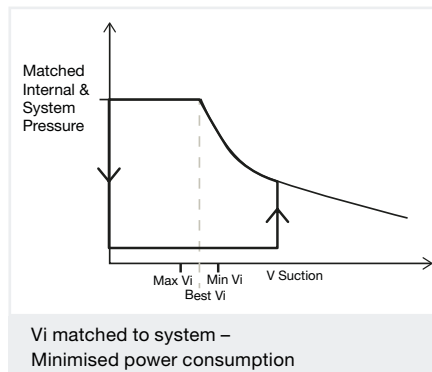
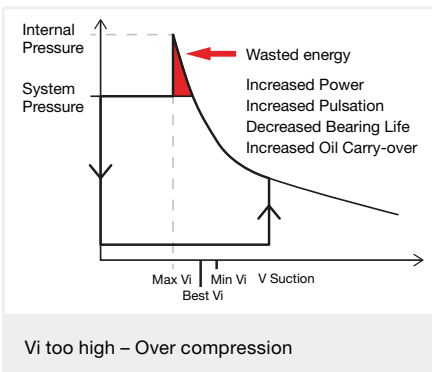
Eliminating the pressure difference across the discharge port reduces the noise, vibration and pulsation levels significantly. This reduces potential issues downstream of the compressor package, by reducing overall system excitation.

Lowens the risk of over-compression

Over-compression causes high radial and axial loads on the compressor bearings, as well as excessive heat generation in the working chamber. This can lead to premature bearing failures, contact damage to rotors and distortion of compressor casings.

Reduces the overall package cost

Optimising the volume index for each operating duty removes the need to design the over or under compression cases into the compressor package specifications. This results in decreased motor and oil cooling ratings, and smaller support systems, which reduces the package costs.



This graph is based on the Howden WRVi 255 with various pressure ratio fluctuations throughout a year typically around a 200kW absorbed power application. In this illustration it can be seen that the optimum Vi fluctuates between 2.2 & 3.2, by continually optimising for these precise conditions, up to 7% power consumption savings can be realised over the course of a year.

For more information contact our team today:

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