CPVS Rotary Screw
20 – 250 hp
Product Presentation

High-performance tools and compressors.
Designed for <u>you</u> !

Chicago Pneumatic

C

High Perfo For You!

CPVS

The **CPVS** is the result of more than 30 years of continuous product development.

Our design and manufacturing policy is to produce a **quality product** combining **reliability**, **low maintenance** and **energy efficiency** at a **market-leading price**.

Our goal is to produce a compressor that **sets the standard for the compressed air industry**.

WHAT IS A VSD?

Also Known As:

- **VSD** - Variable Speed Drives
- **VFD** - Variable Frequency Drives
  - Convert AC to DC and back to AC
  - Normally 3-5% loss due to motor and drive
- **AFD** - Adjustable Frequency Drives
- Inverters

VSDs have a “turndown” which is the minimum capacity the compressor can produce as a percentage of full load

Chillers, blowers and pumps have been utilizing VSD technology since the 1980’s

THE VSD ENVIRONMENT

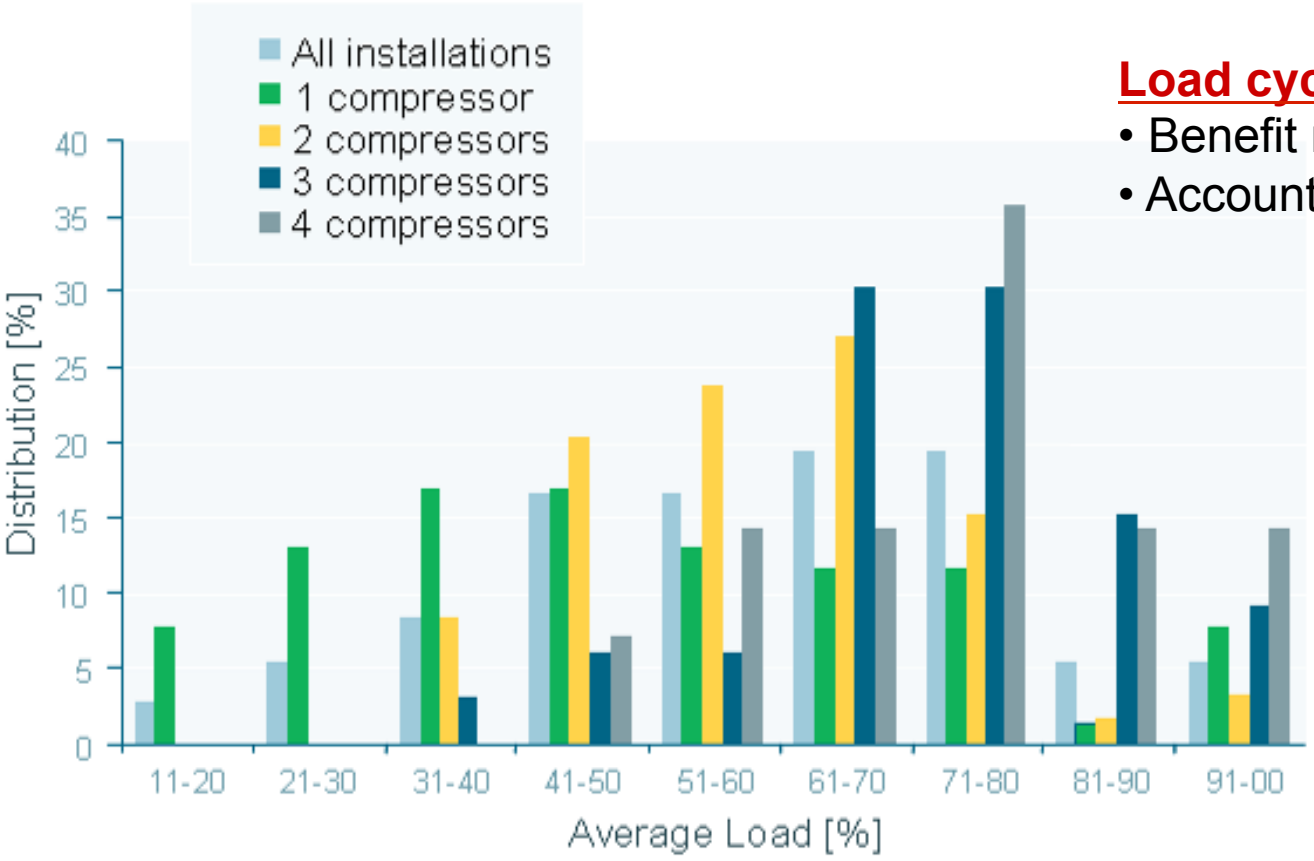
Recommended Temperature Range is 36º - 104ºF

Environment should be clean & dry. Beware of manufacturers that claim their VSD can run in harsh environment applications

Standard CPVS is NEMA 1

- Designed for indoor installations
- Keep unit out of the weather

WHY USE A VSD



Load cycles 40-80%

- Benefit most from VSD
- Account for 85% of installations

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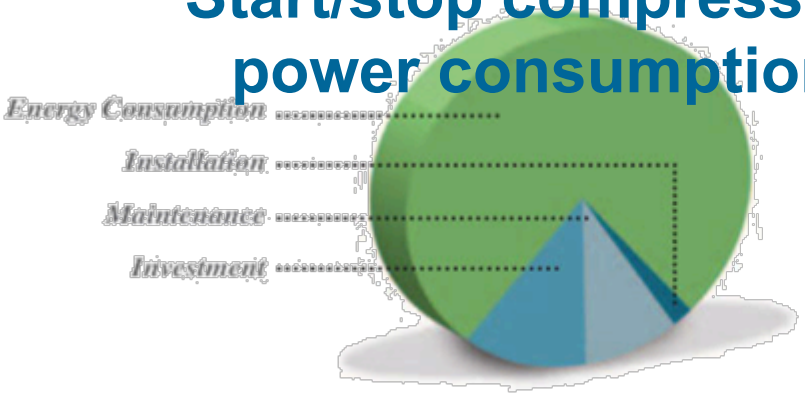
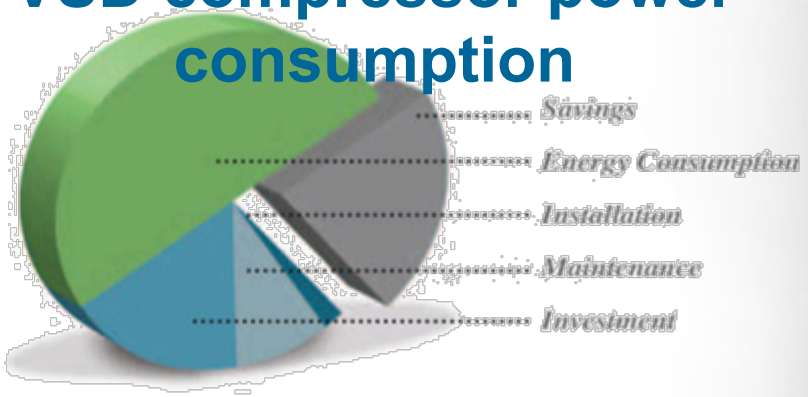
THE SAVINGS

Start/stop compressor power consumption



VSD compressor power consumption



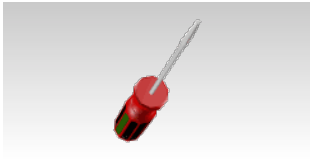
The CPVS Can Save 25% on Energy Costs

MENU

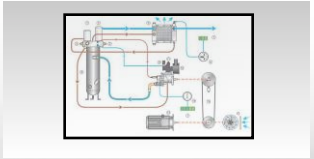
Features

Performance

Controls and Monitoring



Maintenance and Installation



Summary

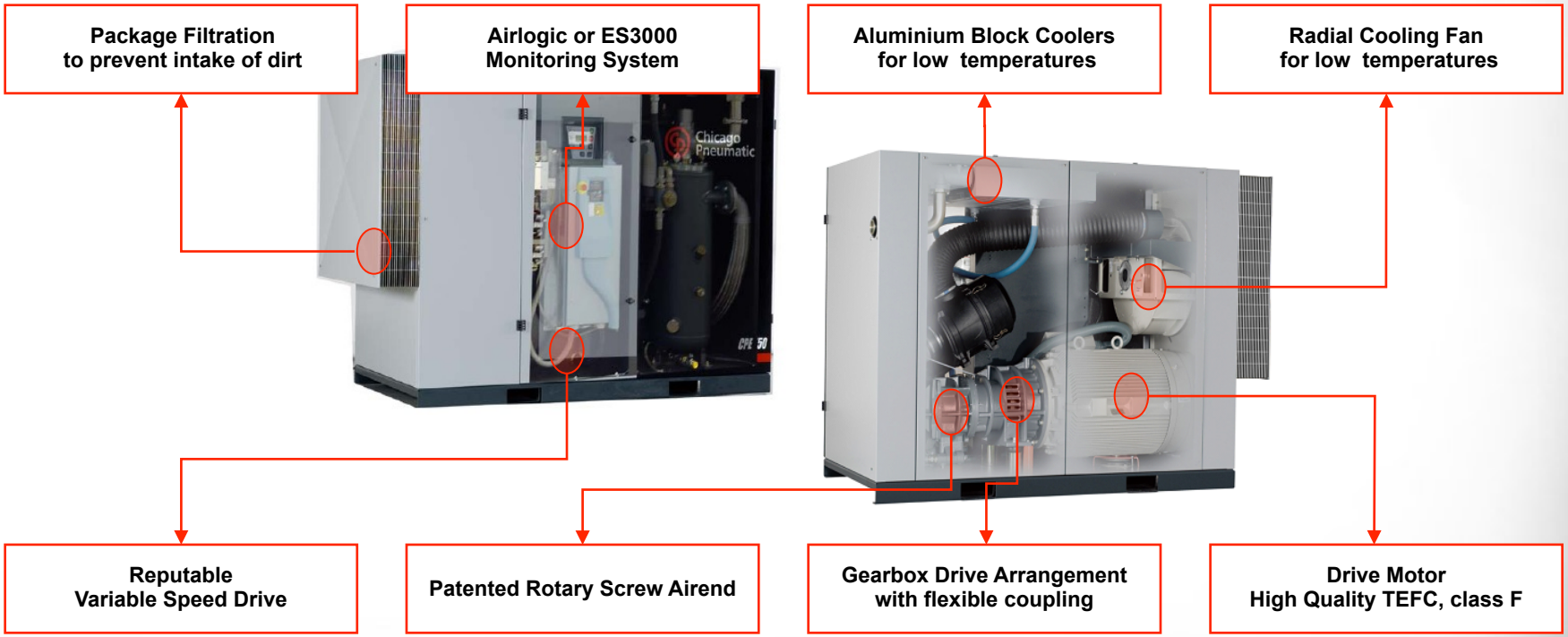
FEATURES

Standard Features

- Low Sound Enclosure
- 60 - 145 psig
- Belt Drive 20 – 30 hp
- Gear Drive 40-250 hp
- Soft Start
- AIRLOGIC Microprocessor (40-250 hp)
- ES3000 Microprocessor (20-30 hp)
- Continuous Operating Capability
- TEFC Motor
- Turndown up to 80% of Full Load
- Space Saving Design
- Load/No Load With Intelligent Shutdown
- NEMA 1 Electrical Protection
- Vibration Isolated Assembly
- 5 Year CP SECURE Warranty

TOTAL RELIABILITY

Chicago Pneumatic designs for Reliability



IDEAL DESIGN

Microprocessor Control Intelligently Controls Operation

Vacon Variable Speed Drive

Low Sound Enclosure Reduces Employee Fatigue

Rugged Baseplate Gives Easy Access from All Sides

High Efficiency Coolers

Heavy Duty Air Filter

Single Panel Access to All Components

Separator Tank with Oil Sight Glass

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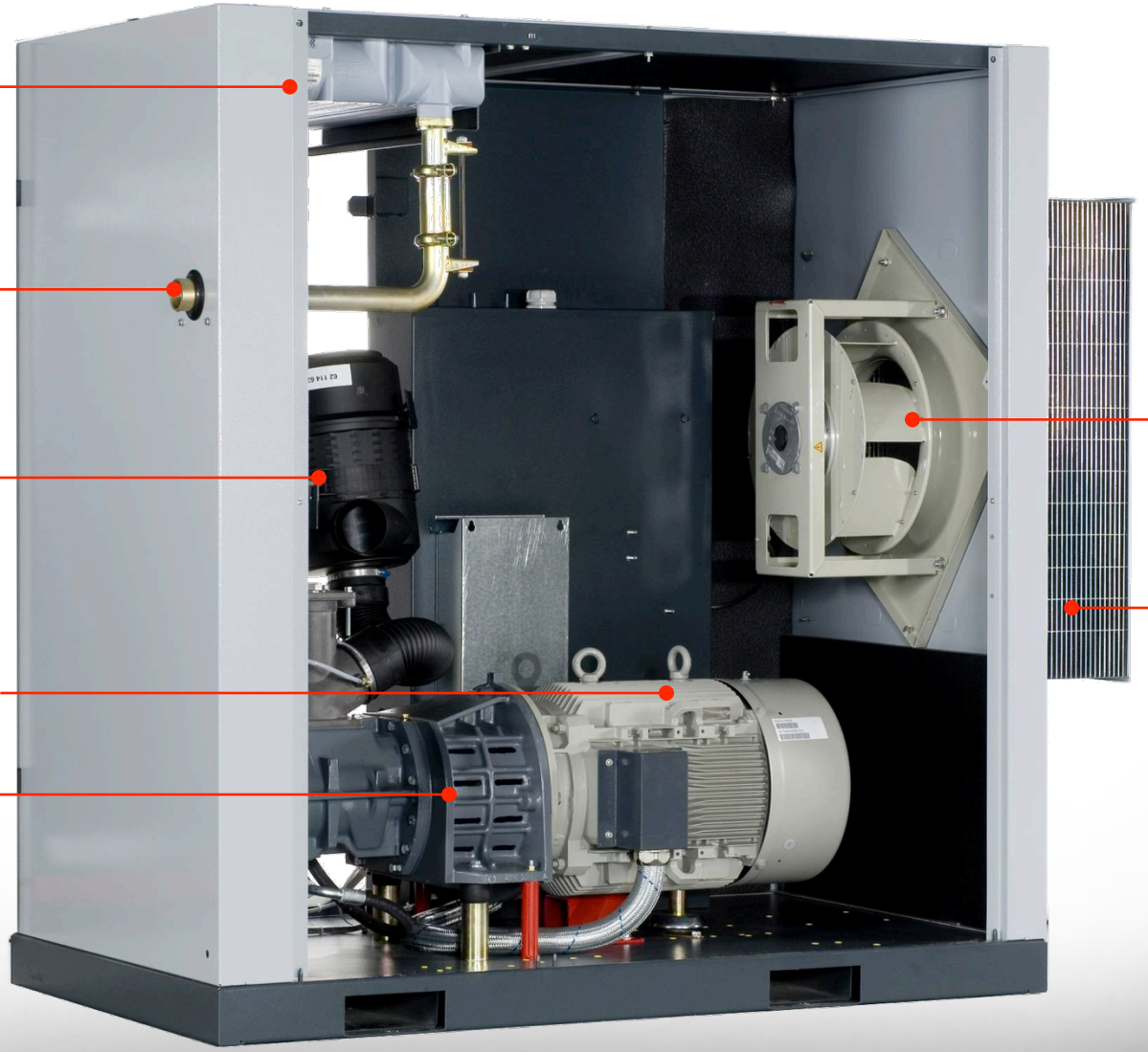
IDEAL DESIGN



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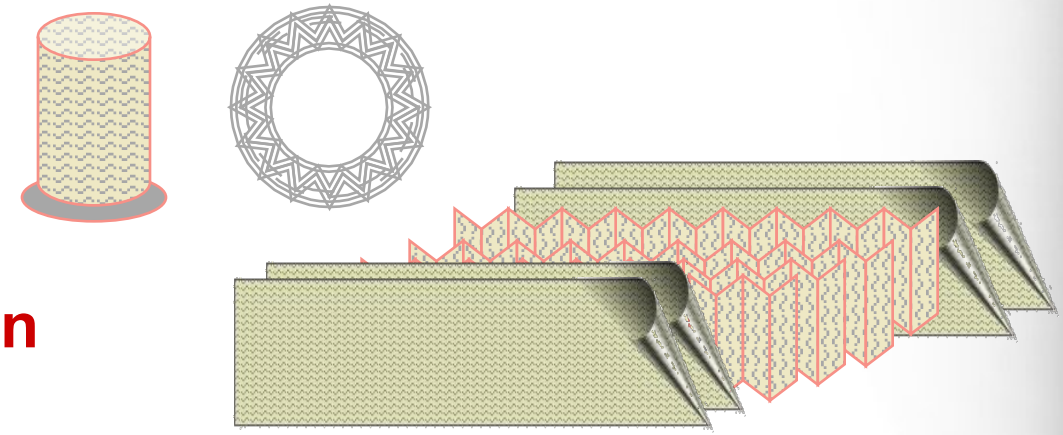
HIGH EFFICIENCY AIR FILTER

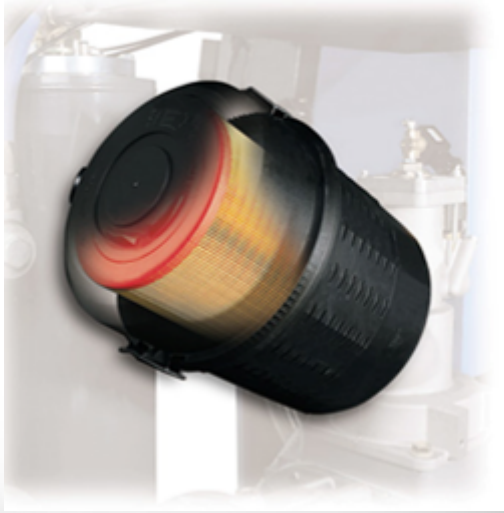


Pleated cartridge

Filtration level : 2 Micron

Encapsulated filter with two stages of filtration

- **Pre-cyclonic separation**
- **Impact filtration**



High Efficiency Filtration

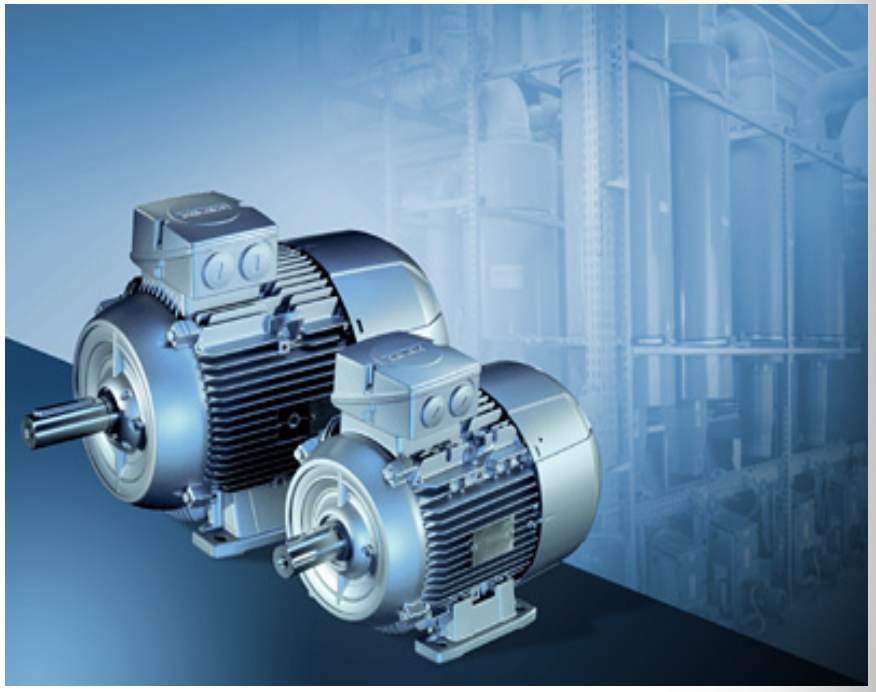
= Ensures oil quality

= Reduced operating costs

= Improves compressor life

= Reduced pressure drop

DRIVE MOTOR



No compromise for the power source

High Qualifications

The drive motors are designed for application and toughest conditions. The drive motor is wye-delta, TEFC, class F insulation

Reputable brand

Chicago Pneumatic doesn't compromise on quality. Therefore, the CPVS are equipped with drive motors from **Siemens**

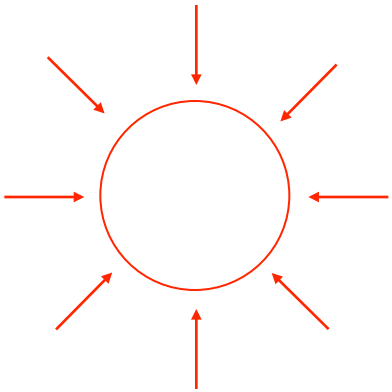
Benefits of Standardization

Using industry standard drive motors, Chicago Pneumatic ensures fast and efficient service support on a global scale

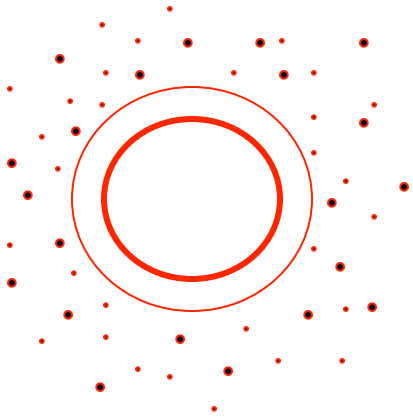
Intelligent packaging

The motor is placed at the cooling air inlet ensuring optimum cooling for perfect running conditions

TEFC MOTOR



Protected against water splashes from any direction.



Protected against dust and debris

Protection for the Motor

= Lower Power Consumption

= Lower Operating Costs

= Longer Motor Lifespan

VARIABLE SPEED DRIVE

Standardization for Reliability and Efficiency

Proven Concept

The CPVS Concept has proven its reliability over nearly 10 years in thousands of installations throughout the world. Today's CPVS incorporates the experience and competence of two earlier generations.

Reputable brand

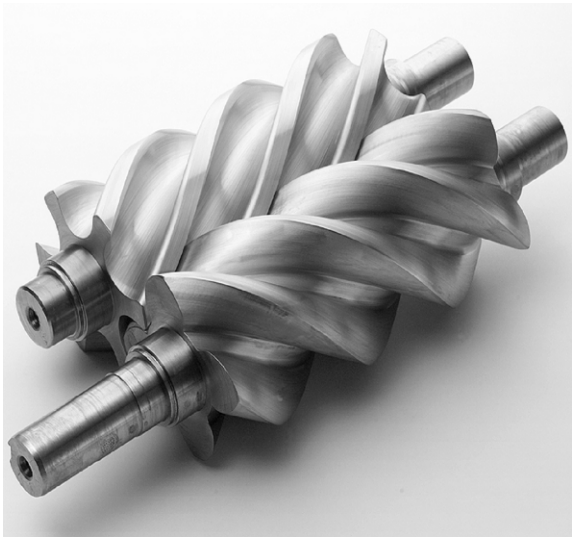
CPVS is provided with an electronic Variable Speed AC Drive of **Vacon**, a market leading and global company in the sector, known for its advanced technology and quality.

Benefits of Standardization

Using industry standard AC drives Chicago Pneumatic ensures fast and efficient service support on a global scale.

AIREND

For the heart, “Nothing but the best”

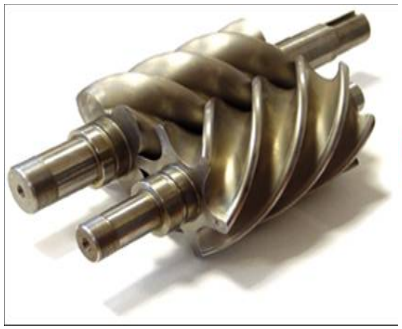


Chicago Pneumatic airends incorporate a vast experience and competence as they are being designed, manufactured and tested in a state of the art production facility that is reputed for its quality and consistency.

Chicago Pneumatic airends have proven their reliability in over more than 100,000 compressors for more than 40 years.

RELIABILITY

The oil flooded rotary screw airend used in Chicago Pneumatic compressors has proven its reliability in thousands of installations throughout the world.



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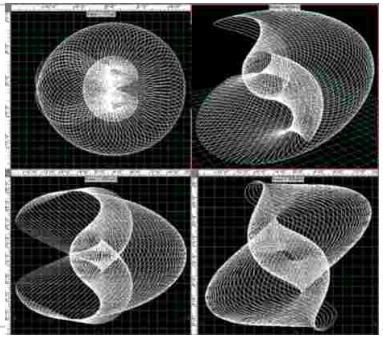
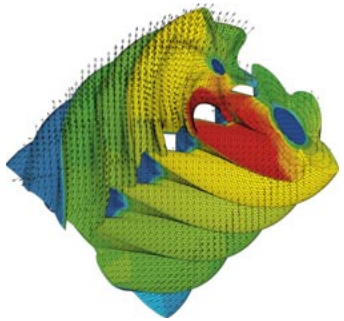
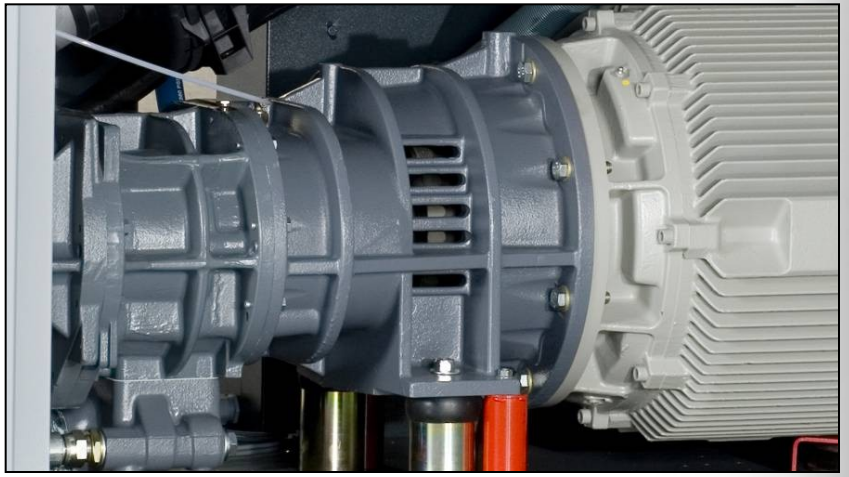




The simple design allows smooth pulse free air to be produced with minimum moving parts

RELIABLE TRANSMISSION

Guaranteed Alignment



- Mounted on isolation blocks

- Reliable transmission of power from motor through flexible coupling to the airend (40-250 hp)

- Avoids energy losses and prevents stress on the shafts

Reliable Transmission

= Improved Overall Performance

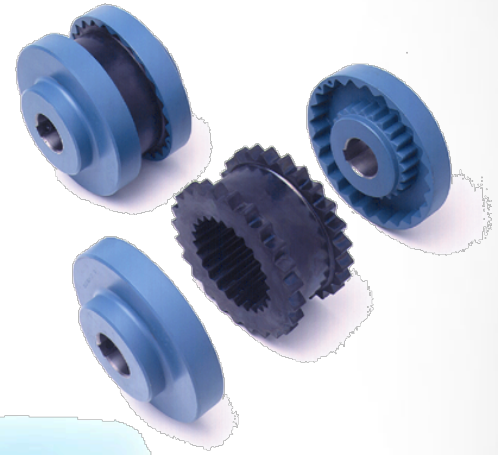
= Reduces Maintenance Time

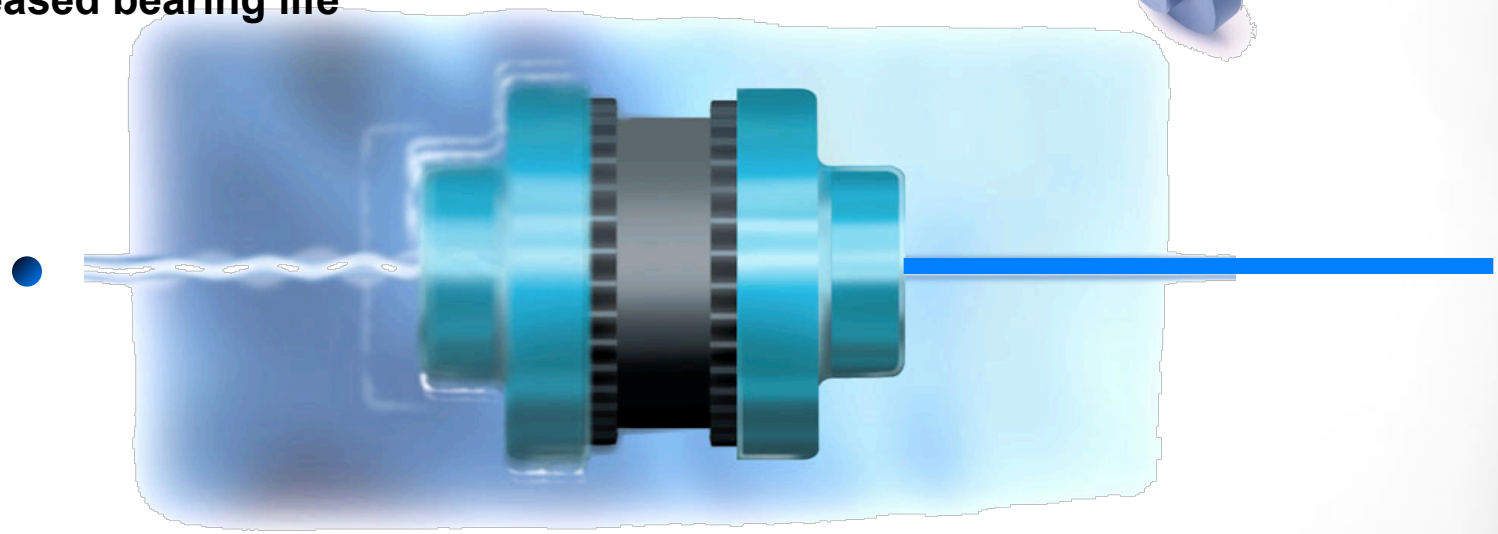
= Increases Compressor Life

= Quiet Operation

SUREFLEX COUPLING

= Used on 40-250 hp
= Improves efficiency
= Reduced torque, especially on start up
= Protects airend from motor failure & vice versa
= Reduces vibration
= Increased bearing life





Reduces Energy Costs
Increases Reliability
Extends Component Life
Runs Quiet

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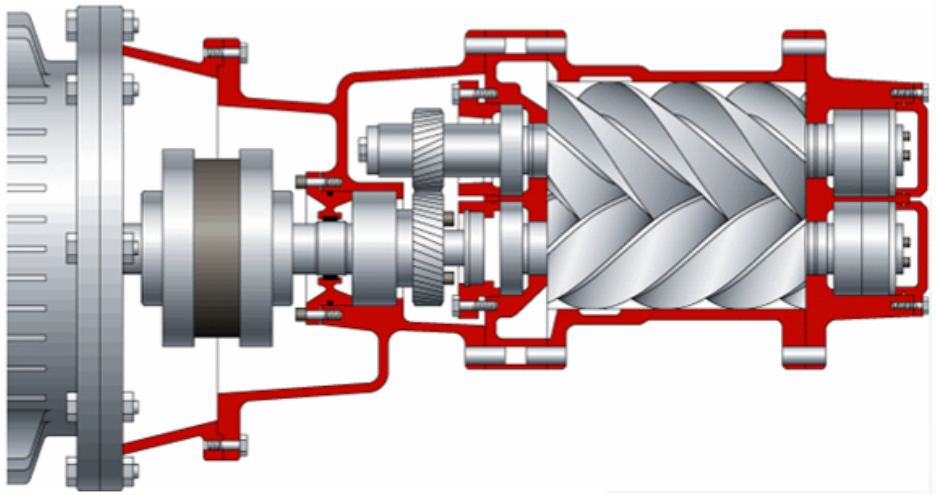
EFFICIENTLY DRIVEN

20 – 30 hp: Belt drive with perfect alignment
40 – 250 hp: Gear drive combined with SUREFLEX coupling



= Reduces vibration and shock on start-up

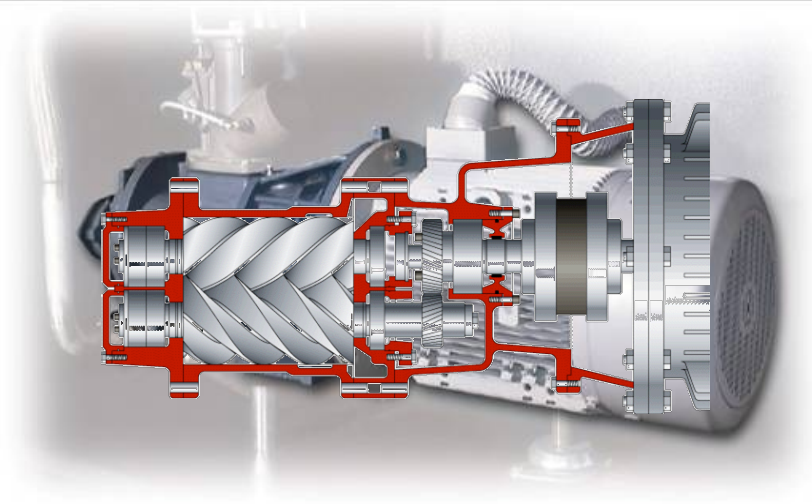
= No maintenance or changing

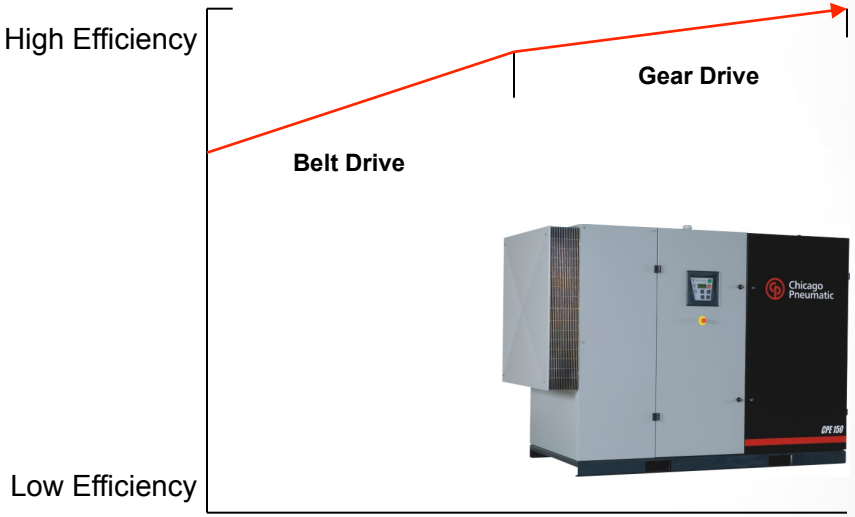
= No pulsation into downstream application

RELIABLE AND EFFICIENT

DRIVE ARRANGEMENT

High efficient gearbox drive minimizes losses





The drive arrangement is for maximum

Reliability and Efficiency

OIL SEPARATION SYSTEM

- 3 Stage air / oil separation
- Provides low carryover
- Protects application

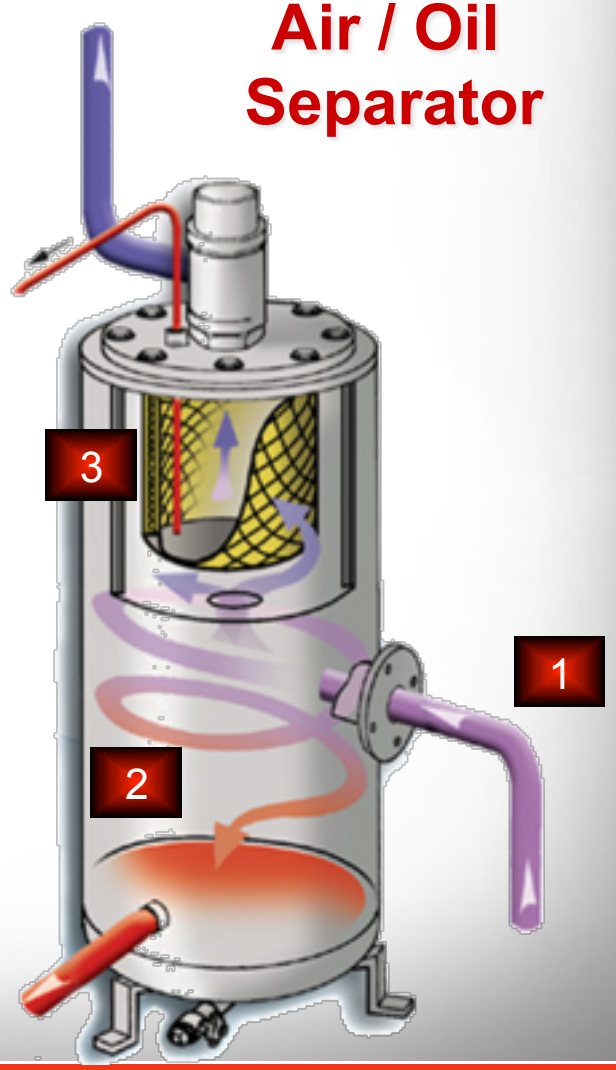
1. Cyclonic action when air/oil enters
2. Weight separation in liquid phase
3. Surface area filtration

Increased Surface Area

= Lower Pressure Drop

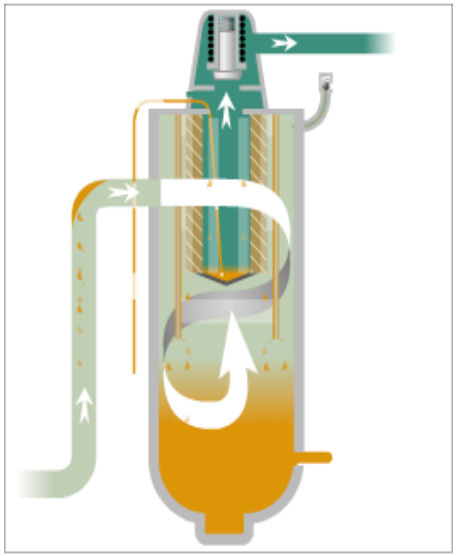
= Increased Energy Efficiency

= Reduced Oil Carryover



OIL SEPARATION SYSTEM

Advanced separator design minimizes losses

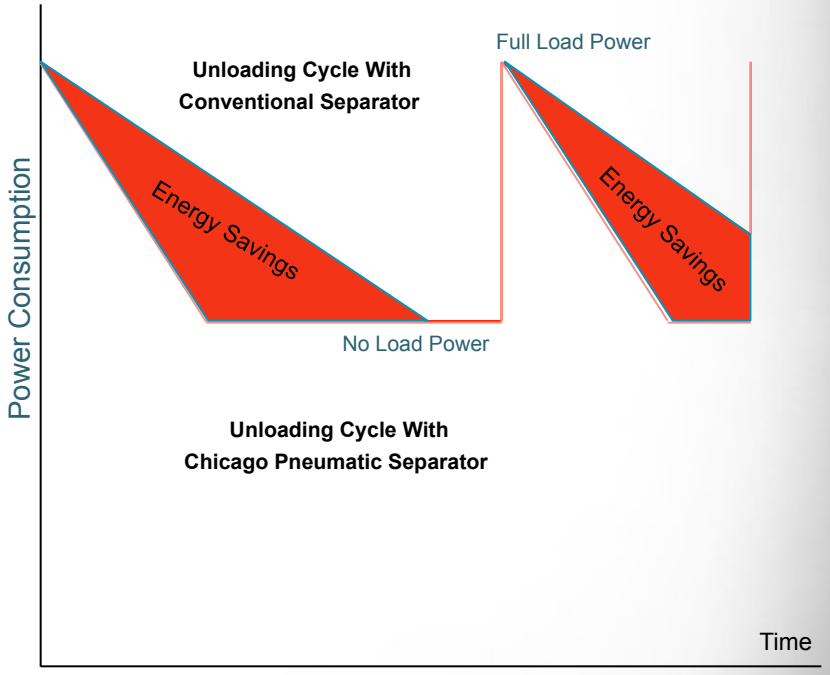


Reducing load power consumption

By intelligent design the separator has not only a very low initial pressure drop but also during 90% of its service life time.

Reducing unload power consumption

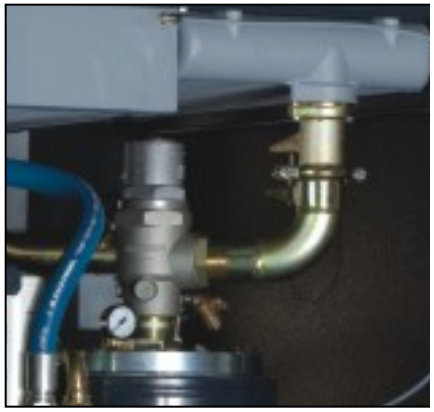
Compact pressure vessel reduces internal air volume, which reduces the blow down time during off load cycles, substantially.



Advanced seperator for very low oil carry over

OIL SEPARATION SYSTEM

The Air / Oil separation system is designed to provide low residual oil content (3 ppm) for the air entering the compressed air network



By using rigid pipes, replacing flexible hoses and leakage risks are avoided

Quality = Reliability

INLET BAFFLE

Chicago Pneumatic knows that a cool compressor will run longer, be more efficient and cost less!

= Maximize compressed air quality

= Protect compressor components from debris

= Reduce inlet air velocity

= Reduce maintenance costs

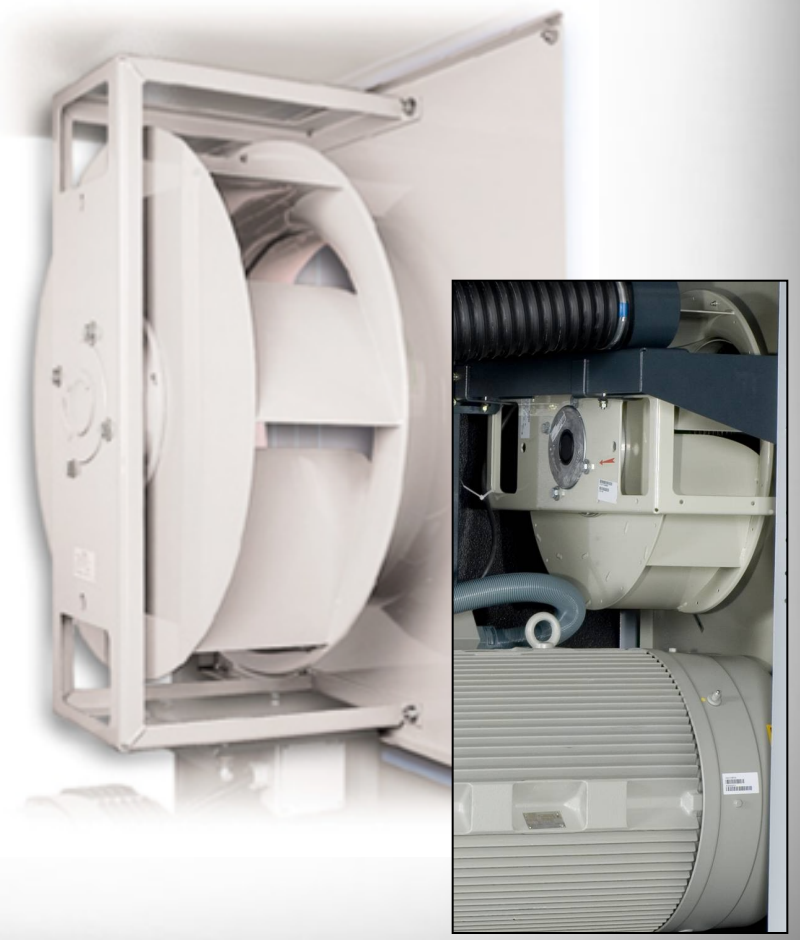
= Maximize cooler efficiency

= Maximize compressor life

Chicago Pneumatic

LARGE CENTRIFUGAL FAN

- Mounted immediately behind the large inlet baffle
- Blows fresh air into the package
- Metal housing serves two functions
    - Conveys air directly to motor
    - Distributes motor heat evenly
- Increases cooler efficiency



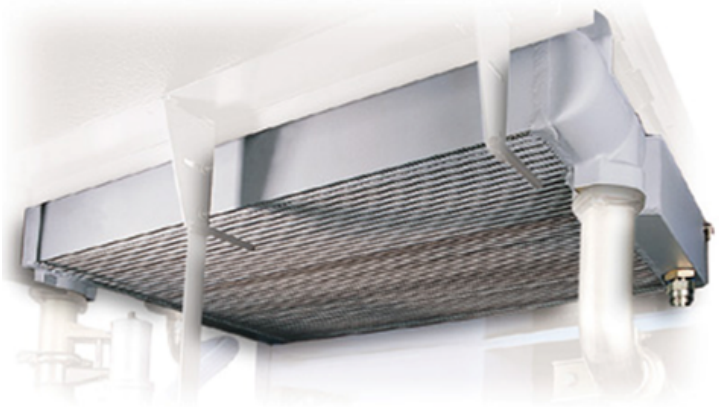
= Reduce operating temperature

= Low noise levels

= Reduce maintenance time & costs

= Reliable compressed air flow

HIGH EFFICIENCY COOLERS



Air and oil coolers are independent to avoid thermal shocks during regulation periods. Easy access for regular dust blowing, they are mounted on rails for simple disassembly even when ducted.

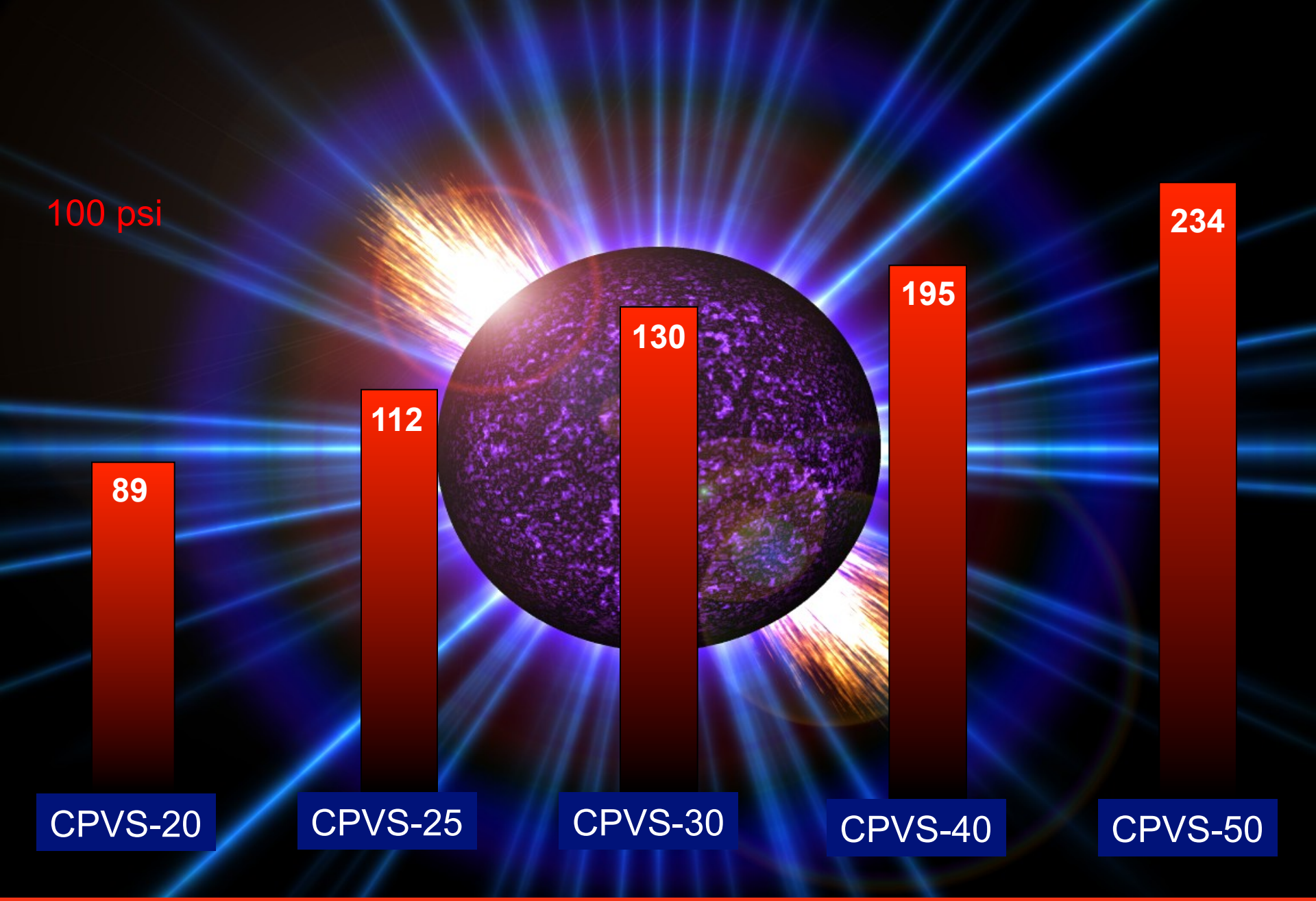
Especially sized to the maximum temperatures of both air and oil fluids for higher performance and to increase compressor longevity

= Helps removal of condensate

= Less thermal stress on components

= Improved efficiency

= Lowers operating costs



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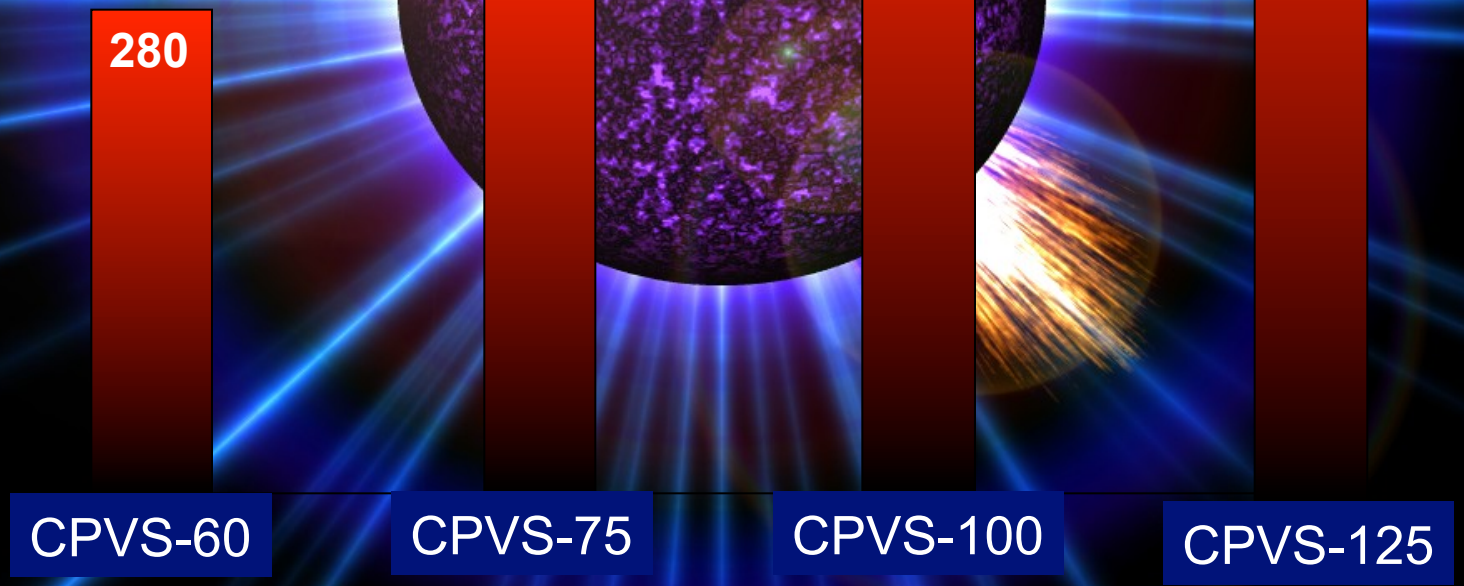
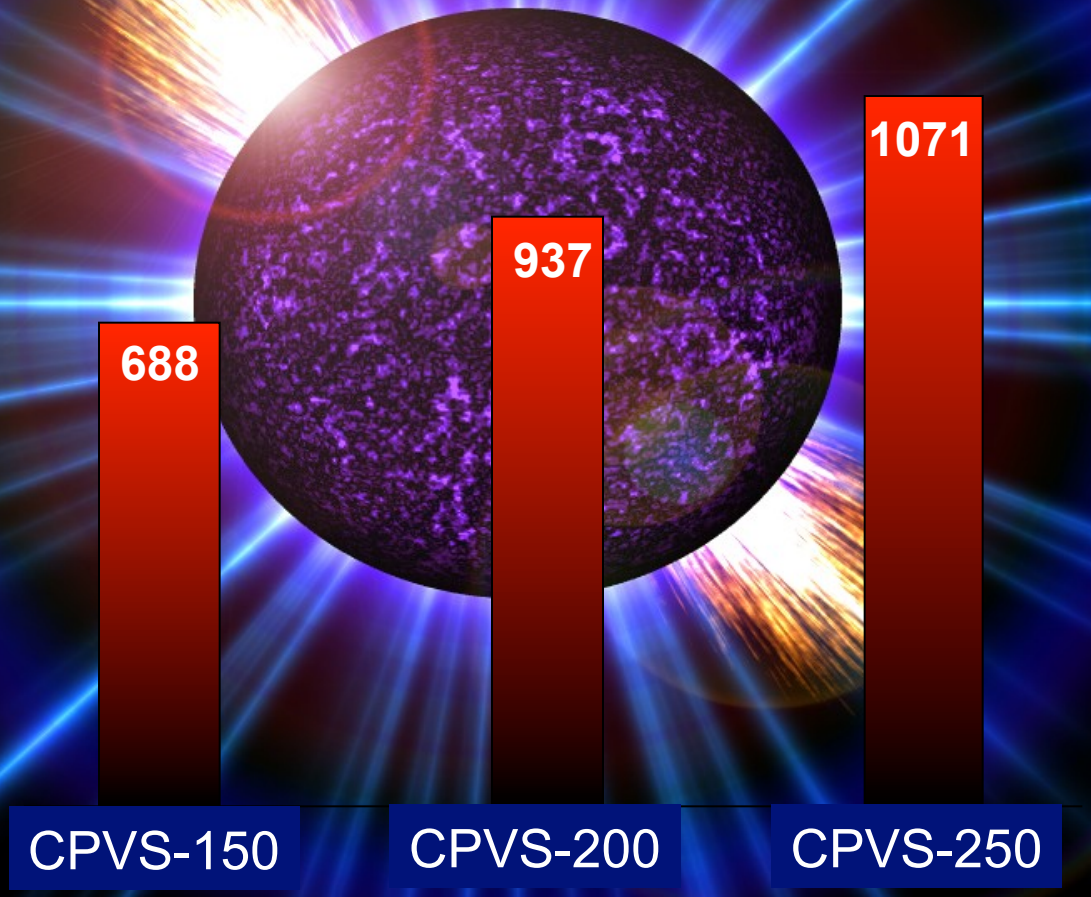
100 psi



Chicago Pneumatic

100 psi



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SUPERIOR SILENCE

66 DBA AT 100 HP

INDUSTRY LEADER

Chicago Pneumatic

WHISPER QUIET

ENJOY THE SILENCE

HP	dBA
20 – 30	63-68
40 – 60	69-71
75 – 150	65-72
200 – 250	71

= Reduce worker fatigue
= Increase installation possibilities
- Install at point of use
- Reduce pressure drop
- Save on installation costs

0	Hearing Threshold
10	Rustling Leaf
20	Quiet Recording Studio
30	Quiet Bedroom
40	Quiet Library
50	Ambient Home Noise
60	Conversational Speech, 1m
70	Vacuum Cleaner, 1m
80	Heavy Traffic, 5m
90	Diesel Truck, 10m
100	Lawn Mower, 1m
110	Chainsaw, 1m
120	Discomfort Threshold
130	Pain Threshold
140	Jet Aircraft, 50m

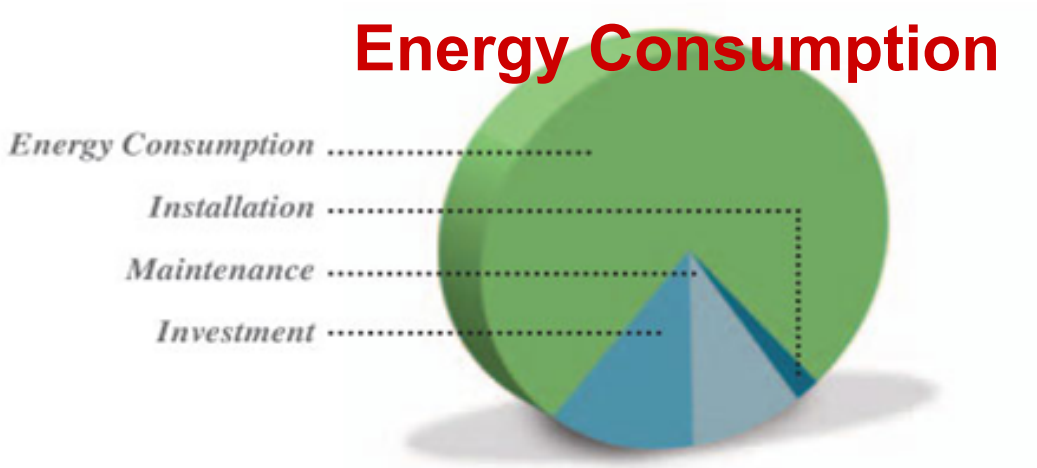
5 YEAR WARRANTY

THE COMMITMENT…

- High E
- Time-p
- Comp bal Leaders
- Precis
- Intellig

The CP SECURE Warranty covers the airend and major components for 5 years. Our warranty is a promise to the customer and demonstrates our commitment to outstanding quality and reliability

WHY CONTROLS?



Accounts for 75% of the Annual Total Cost of Ownership

A properly controlled compressor can result in more energy savings than the cost of the compressor

AIRLOGIC

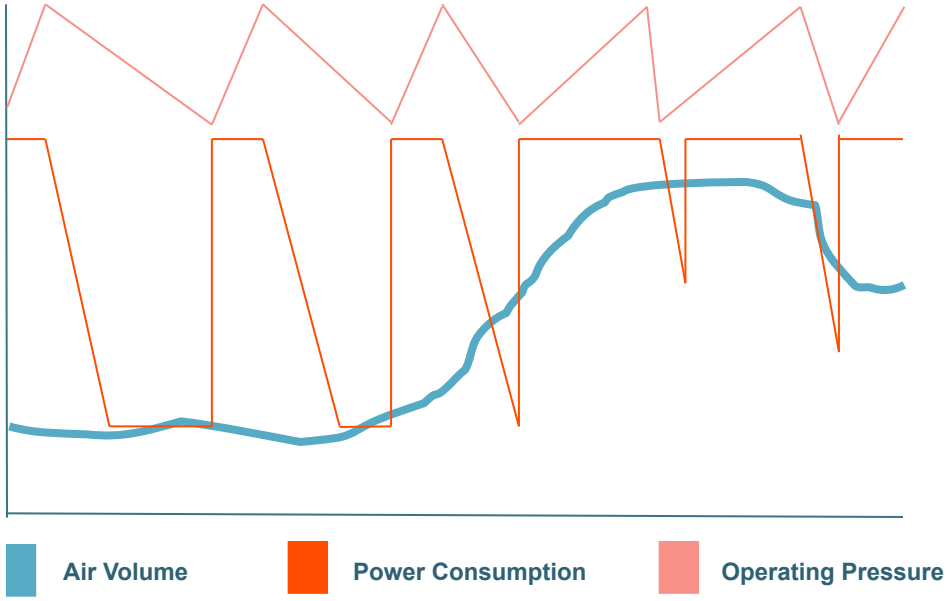
Efficiency by Advanced Energy Saving Features

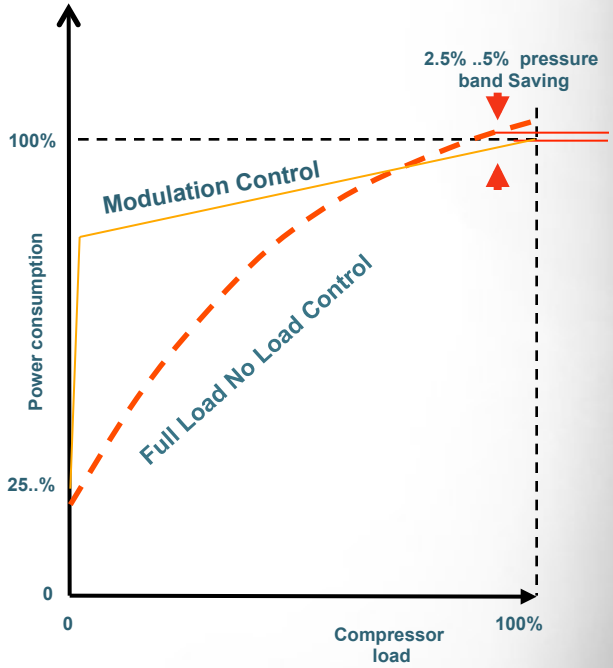
- Load-Unload Control
- Accurate Pressure Control
- Programmable Start-Stop
- Delayed Second Stop
- Dual Pressure Setting

Airlogic offers flexibility to meet your individual conditions

LOAD-UNLOAD CONTROL

Airlogic Load-Unload Control reduces electrical cost



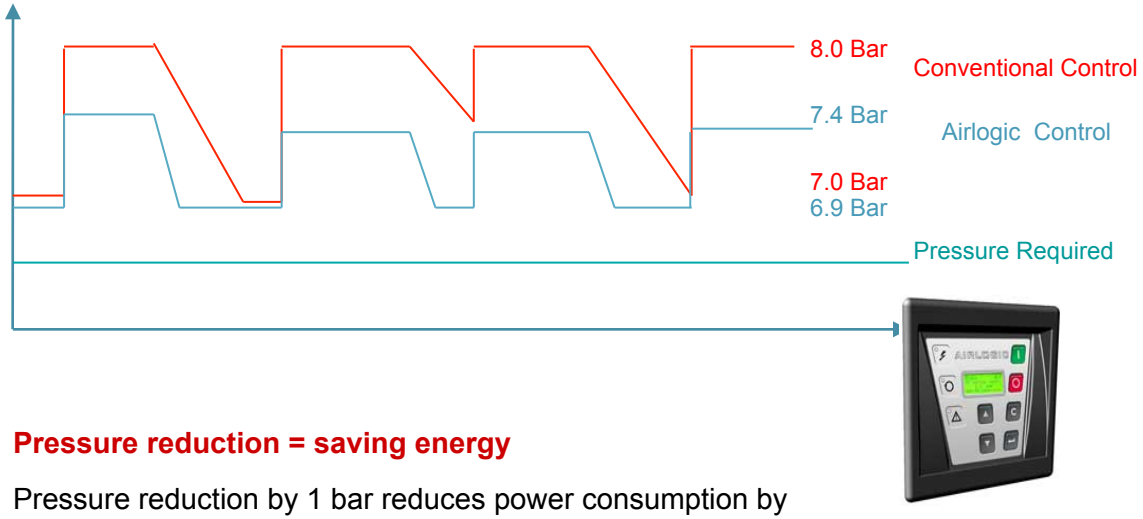


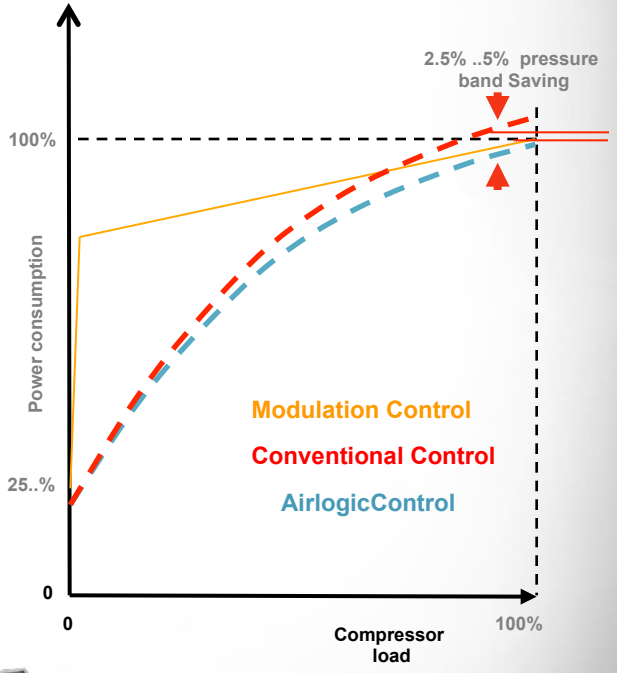
Load-Unload Control is more efficient than Modulating Control

Chicago Pneumatic

ACCURATE PRESSURE CONTROL

Airlogic's Accurate Pressure Control reduces energy cost





Pressure reduction = saving energy

Pressure reduction by 1 bar reduces power consumption by 7%

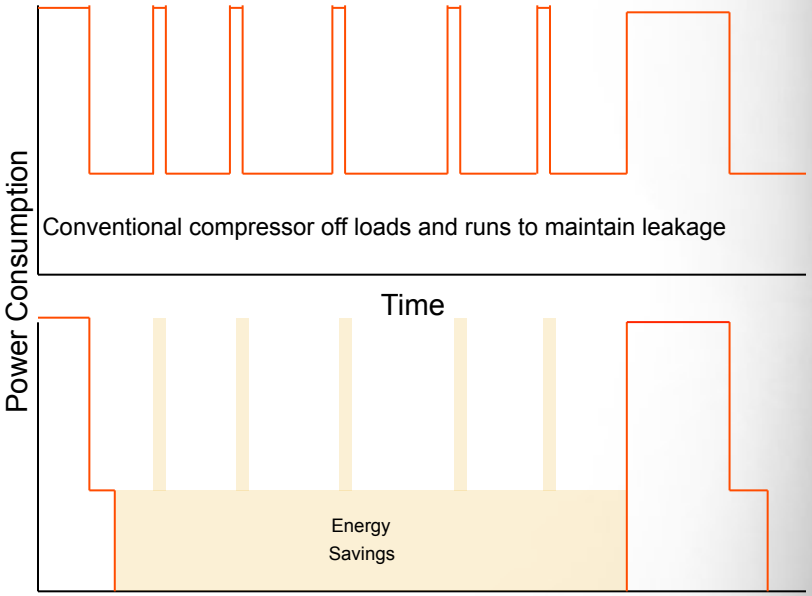
Reducing system pressure also reduces air leakage, further reducing power consumption.

Saving you money.

Chicago Pneumatic

PROGRAMMABLE START-STOP

With Airlogic you only generate air when required



Efficiency is in the details

The Airlogic can be programmed to switch on and off at the start and finish of different production shifts or during breaks, eliminating the need for an operator to monitor the compressor and saving energy by stopping the compressor when not required. Compressors not equipped with auto timers keep running when not required and operate to maintain air leaks, wasting energy.

Saving you money.

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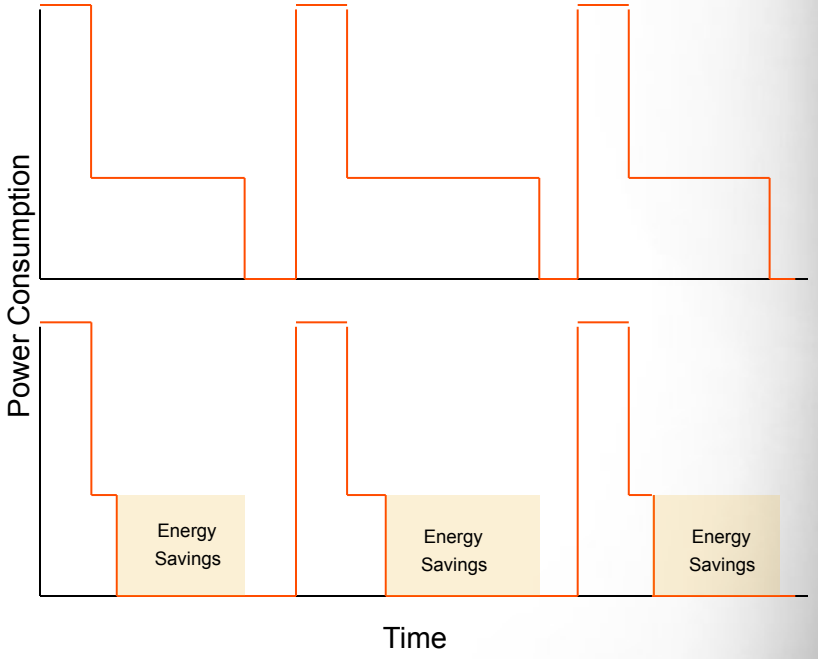
DELAYED STOP

With Airlogic you only generate air when required

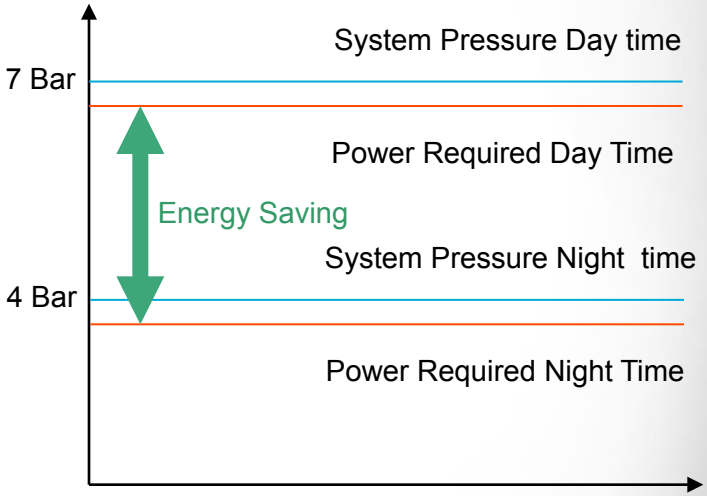


Conventional compressors have long off load running cycles during periods of low air demand, this is to prevent the motor damage by frequent stopping and starting. The Airlogic analyzes the load pattern and switches off the motor during periods of light air demands and avoid the long off load cycles when not required.

Saving you money.

DUAL PRESSURE SETTING

Airlogic's advanced Dual Pressure Control



Saving you money.

Chicago Pneumatic

MULTILOGIC

Airlogic's Integrated Multiple Compressor Control

loaded: 0000
0000

total: 39 kb

No separate multiple controller required

= Reduced investment costs

= Reduced installation costs

Lower operating pressure

= Reduced power consumption

= Reduced electrical costs

= Reduced air leaks

Flexibility and Compatibility

Multilogic controls up to 4 compressors, also compressors of other brands whether provided with an electronic or solid state control system

One bar pressure reduction = 7% power reduction

Saving you money.

ENERGY SAVINGS CALCULATOR

Airlogic's built-in Energy Savings Calculator

Prove energy saving and payback

With Airlogic you can monitor your compressed air costs and see your savings compared to a conventional control system.

Display

The Airlogic's displays energy saved in kWh or in money at customer's electricity rate and currency rate.

Prove energy savings and payback.

Dramatically demonstrate savings using customer's own data and input

Chicago Pneumatic

COMPRESSOR INTELLIGENCE

Digital, multilingual display with 4 lines, 16 characters (choice of 3 languages)

Power on

Auto run

Error / Caution

Start

Stop

Navigation and parameter modification buttons

With a modern design, the AIRLOGIC is the pinnacle in user friendliness.
ISO symbol buttons provide simple navigation and comfort to the user.

COMPRESSOR INTELLIGENCE

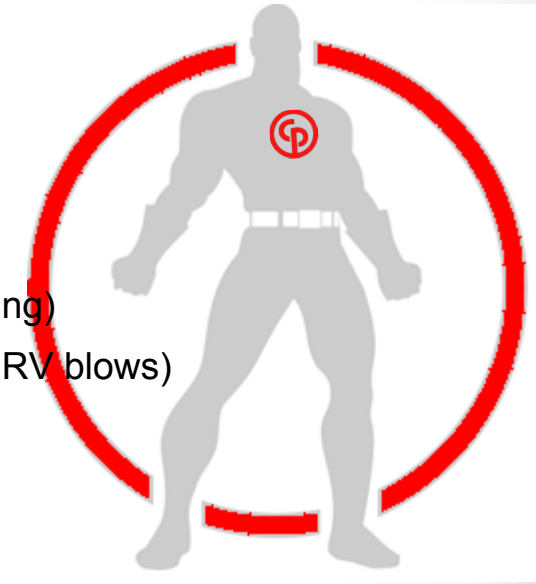
AIRLOGIC CONTROL

- Selection of two operation bands
- Provides energy savings based on production needs
- Every 2 psi = 1% power savings
- Standard CANBUS protocol
- Choice of 3 languages among 25

- Every running parameter can be manually modified and protected by a password
- Auto restart (cascade control with multi-control option)
- Remote control and default report through a standard terminal
- Calculation of the running time percentage at different load level
- Allows customer to optimize compressed air operation
- Permits energy savings during peak demand

COMPRESSOR INTELLIGENCE

INTELLIGENT PROTECTION



Rotation control

Pressure drop detection through oil separator

Limit on the number of motor starts

Protection against start up under pressure (minimum pressure setting)

Protection against over pressure in the oil receiver (safety before PRV blows)

High oil temperature limit

Protection against start-up at low temperatures

Test of input / output

History of five (5) faults

- Records running parameters
- Helps technical diagnosis

Prevent an auto restart after a long stop period

AIRLOGIC

Reliability by Intelligent Monitoring and Controlling

Warning Indication

Ensures early detection and rectification of potential problems. Prevents unnecessary loss of production.

Shutdown Protection

Stops the compressor before serious damage could occur. Prevents unnecessary loss of production.

Maintenance Countdown Function

Allows planning for maintenance without interfering with production.

Service Plan Function

Allows planning of service only when required. Ensures correct service is performed at the time when it is needed.

SUPERIOR REGULATION

CPVS offers the ultimate advantages by its superior regulation

Reduction Energy Cost by 35%

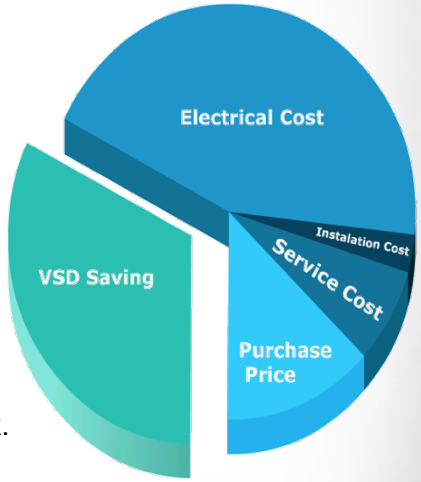
The CPVS regulation follows the air consumption fast and exactly, thus saving the maximum of energy.

Stable System Pressure

The CPVS controls the sytem pressure within 2 psi, reducing the system pressure.

High Power Factor

The CPVS increases the power factor of your electrical network.



Total Cost of Compressed Air

No Starting Peaks

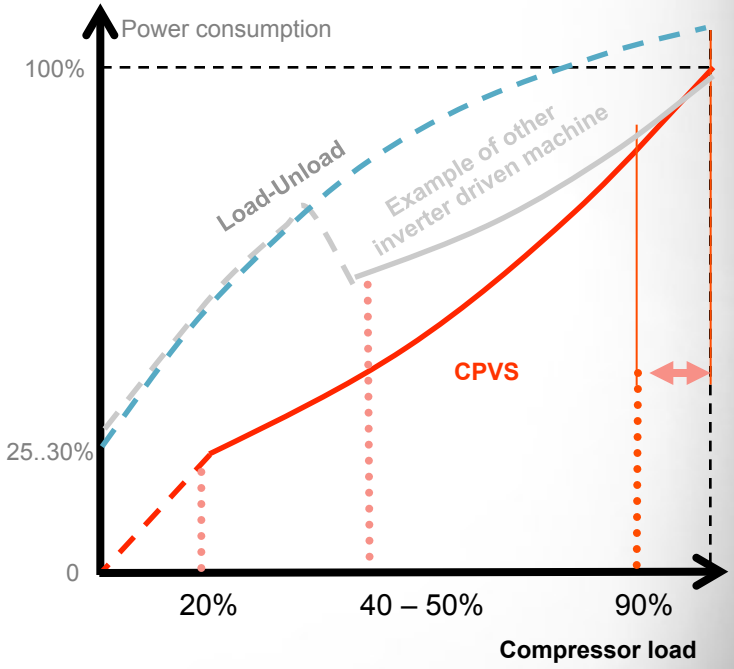
The CPVS does not generate any starting peaks thus reducing the load and sensitivity of your electrical network.

Reduction Air Receiver Capacity

Installing a CPVS allows you to reduce the air receiver volume.

SUPERIOR REGULATION

CPVS offers the ultimate advantages by its superior regulation



Saving you money.

RAPID MAINTENANCE

Rapid Maintenance = Reduced Downtime

Chicago Pneumatic

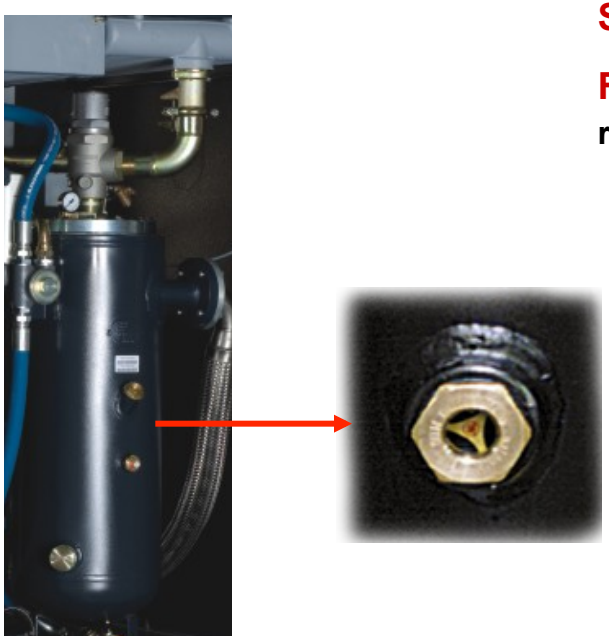
RAPID MAINTENANCE

No Leaks

FLEXMASTER pipes are specially designed to combine all the benefits of both rigid and flexible pipes.

SOLID METAL PIPES increase durability for reduced maintenance costs.

FLEXMASTER EXPANSION JOINTS allow expansion and contraction resulting in fewer air and oil leaks for increased reliability.



One connection to the separator vessel

Few connections = Reduced possibility of leaks

Designed for Minimum Service Time

INSTALLATION

48”
59”
63”
79”

31”
37”
42”
64”

47”
75”
88”
117”

DIMENSIONS

20-30 hp = 12 sq. ft
40-60 hp = 20 sq. ft
75-150 = 26 sq. ft
200-250 = 52 sq. ft

Save vital production space

Increases installation possibilities

Easier to identify maintenance issues with stand-alone unit

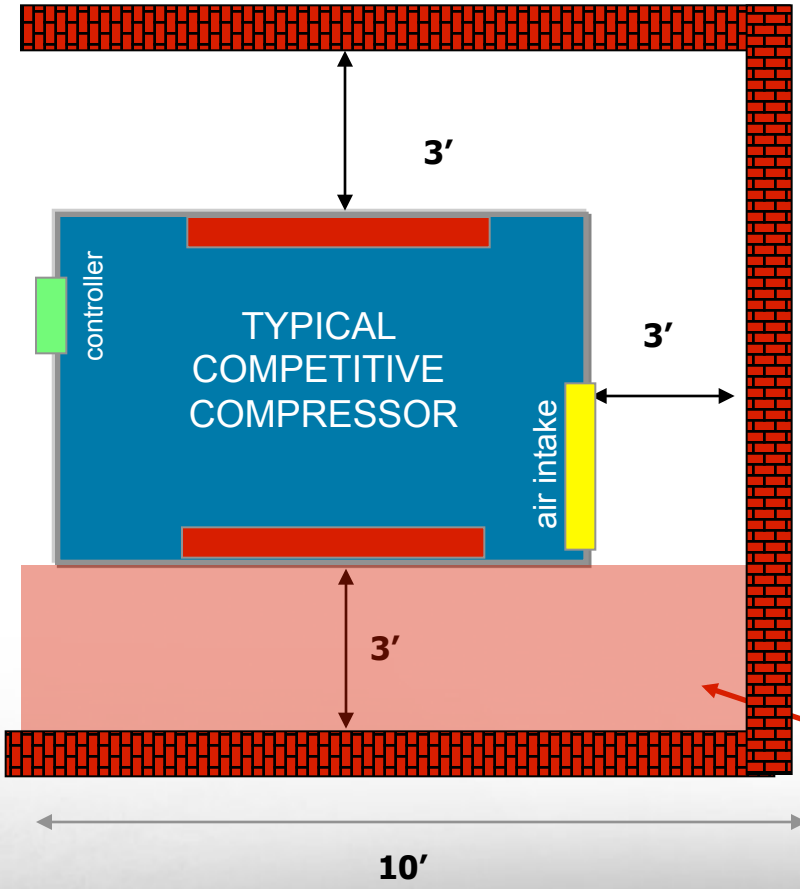
INSTALLATION

Designed for Minimum Installation Time

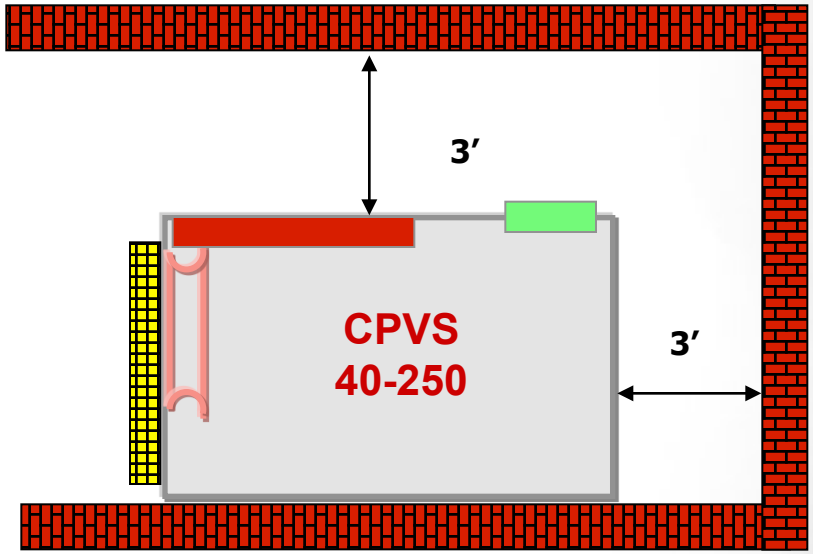
- Accessible from three sides for easy handling
- Distribution of the lifting points in line with the centre of gravity
- Increased installation possibilities

INSTALLATION

Maintenance access required on 2 sides, fresh air intake on one side and controller on the fourth side



The CPE & CPF can be installed against a wall with all routine maintenance being carried out from one side.



Excellent maintenance access and space saving design.

Customer saves 30 sq. ft. and installation costs!

SUMMARY

- High Efficiency Cooling
- Whisper Quiet Operation
- Easy Installation
- AIRLOGIC Control
- Superior Price-Performance
- Superior Air / Oil Separation
- Superior Inlet Filtration
- Low Maintenance Costs
- Low Power Consumption

Simple and Reliable

Chicago Pneumatic