

PureAir

EnviroAire T75 to T315

TVS110 to TVS315

Oil-Free Rotary Screw Compressors

Fixed & Regulated Speed (VS)



Don't compromise on compressed air quality

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Product Range



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Product Range

- **Working Pressure: 4.0 to 8.0 / 10.0 bar g**
+ additional 0,5 bar via controller
- **Multiple voltage configurations**
400V/50Hz, 460V/60Hz, 380V/60Hz,
575V/60Hz
- **Fixed speed and regulated speed variants**
- **Air-cooled and water-cooled**



	Fixed Speed	Variable Speed
Frame 1	T75	
	T90	
	T110	TVS110
	T132	TVS132
	T160	TVS160
Frame 2	T165	
	T200	TVS200
	T250	TVS250
	T315	TVS315

8,9 m³/min

FLOW

51.1 m³/min

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Available Options



T75 – T160 (Fixed and regulated speed)

Alternative Voltages	400V/50 Hz [±10%] 460V/60 Hz [±10%] 380V/60 Hz [+10%/-5%] 575V/60Hz [±10%]
ELECTRONIC CONTROL DELCOS XL	Remote ON / OFF couple relay for wiring distance > 20m XL Master - Base Load Sequencing (RS 485:3 module) (Can either act as a Base Load Sequencing Master device (Delcos XL Master – up to 3 Slaves can be connected via a serial link (RS485:1) – or can be used for ModBus-RTU remote monitoring parallel to RS485:1) Remote monitoring
STAINLESS STEEL COOLERS*	Intercooler & Aftercooler & Fluid Cooler
HOC CONNECTION	Partial Flow Full Flow
IE4 Super Premium Efficiency Motor	Available for all models
Canopy stand still heater	up to -10°C, factory mounted / retrofit kit
Performance Certificate	Factory test bench performance run
Witness performance test Standard 400V/50Hz, 460V/60Hz	Factory test bench, additional tests on request
ENERGY RECOVERY*	Preparation for External HR (heat exchanger not included) Factory mounted Preparation for External HR (heat exchanger not included) Retrofit

T165 – T315 (Fixed and regulated speed)

Alternative Voltages	400V/50 Hz [±10%] 460V/60 Hz [±10%] 380V/60 Hz [+10%/-5%] 575V/60Hz [±10%]
ELECTRONIC CONTROL DELCOS XL	Remote ON / OFF couple relay for wiring distance > 20m XL Master - Base Load Sequencing (RS 485:3 module) (Can either act as a Base Load Sequencing Master device (Delcos XL Master – up to 3 Slaves can be connected via a serial link (RS485:1) – or can be used for ModBus-RTU remote monitoring parallel to RS485:1) Remote monitoring
STAINLESS STEEL COOLERS*	Intercooler & Aftercooler & Fluid Cooler
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Performance Certificate	Factory test bench performance run
Witness performance test Standard 400V/50Hz, 460V/60Hz	Factory test bench, additional tests on request
ENERGY RECOVERY**	Preparation for External HR (heat exchanger not included) Factory mounted Preparation for External HR (heat exchanger not included) Retrofit

*Option only available for water-cooled models

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Technical Specification and Layout



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Fixed Speed Models

Gardner Denver model	Cooling Method	Motor Rating	Nominal Pressure		Free Air Delivered (m³/min)*		Dimensions L x W x H		Noise level dB(A)**		Weight
		(kW)	(bar g)		8 bar g	10 bar g	(mm)		8 bar g	10 bar g	(kg)
EnviroAire T75	Air	75	8	10	12.91	10.63	2597 x 1744 x 2001		75	74	3023
	Water								72	70	3223
EnviroAire T90	Air	90	8	10	15.65	13.79	2597 x 1744 x 2001		76	75	3223
	Water								73	72	3423
EnviroAire T110	Air	110	8	10	19.51	17.39	2597 x 1744 x 2001		77	77	3265
	Water								75	74	3465
EnviroAire T132	Air	132	8	10	22.39	20.5	2597 x 1744 x 2001		78	78	3432
	Water								77	76	3632
EnviroAire T160	Air	160	10		-	22.33	2597 x 1744 x 2001		-	78	3644
	Water								-	77	3844
EnviroAire T165	Air	160	8	10	29.0	24.9	3300 x 1994 x 2190		78	78	5170
	Water				29.1				77	78	4715
EnviroAire T200	Air	200	8	10	35.8	32	3300 x 1994 x 2190		81	81	5515
	Water				36.1				80	81	5060
EnviroAire T250	Air	250	8	10	44.1	37.2	3300 x 1994 x 2190		84	83	5670
	Water				44.5				81	82	5215
EnviroAire T315	Water	315	8	10	49.2	44.5	3300 x 1994 x 2190		81	82	5520

Regulated Speed Models

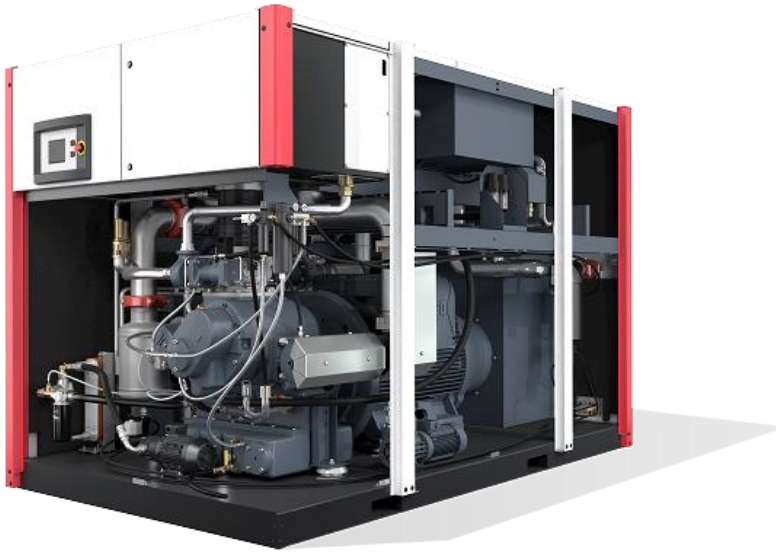
Gardner Denver model	Cooling Method	Motor Rating	Working Pressure (bar g)		Free Air Delivered (m³/min)*		Dimensions L x W x H	Noise level dB(A)** (70% load)	Weight
		(kW)	min.	max.	min.	max.	(mm)		(kg)
EnviroAire TVS 110-8	Air	110	4	8	8.89	19.51	2597 x 1744 x 2001	76	3278
	Water							72	3478
EnviroAire TVS 110-10	Air	110	4	10	10.51	17.68	2597 x 1744 x 2001	76	3278
	Water							71	3478
EnviroAire TVS 132-8	Air	132	4	8	8.95	22.95	2597 x 1744 x 2001	77	3476
	Water							73	3676
EnviroAire TVS 132-10	Air	132	4	10	10.51	21.1	2597 x 1744 x 2001	77	3476
	Water							72	3676
EnviroAire TVS 160-10	Air	160	4	10	10.4	23.52	2597 x 1744 x 2001	77	3688
	Water							73	3888
EnviroAire TVS 200-8.5	Air	200	4	8.5	17.3	37.4	3300 x 1994 x 2190	77	5565
	Water							77	5110
EnviroAire TVS 200-10	Air	200	4	10	18	33.2	3300 x 1994 x 2190	77	5565
	Water							79	5110
EnviroAire TVS 250-8.5	Air	250	4	8.5	17.4	46.9	3300 x 1994 x 2190	79	5720
	Water							78	5265
EnviroAire TVS 250-10	Air	250	4	10	18.4	41.7	3300 x 1994 x 2190	79	5720
	Water							79	5265
EnviroAire TVS 315-8.5	Air	315	4	8.5	16.6	51.1	3300 x 1994 x 2190	82	6025
	Water							78	5570
EnviroAire TVS 315-10	Water	315	4	10	18.3	48.5	3300 x 1994 x 2190	79	5570

¹⁾ Data measured and stated in accordance with ISO 1217 Edition 4, Annex C & E at the following conditions:
Air Intake Pressure 1 bar a / 14.5 psi; Air Intake Temperature 20° C / 68° F ; Humidity 0 % (dry)

²⁾ Measured in free field conditions in accordance with ISO 2151, tolerance ± 3 dB (A)

Design Concept: Package

Water-cooled



Air-cooled

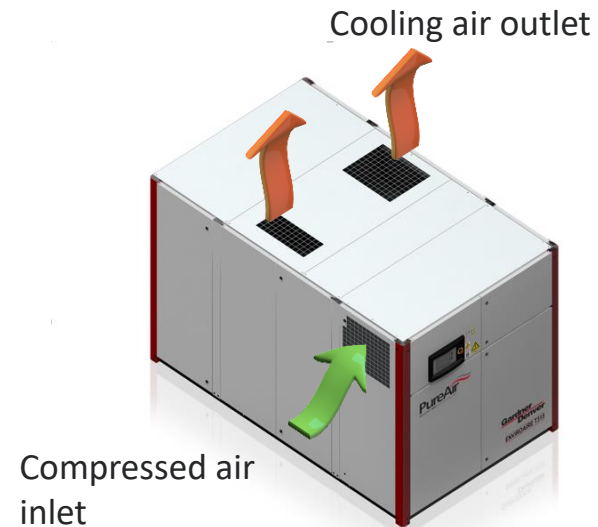
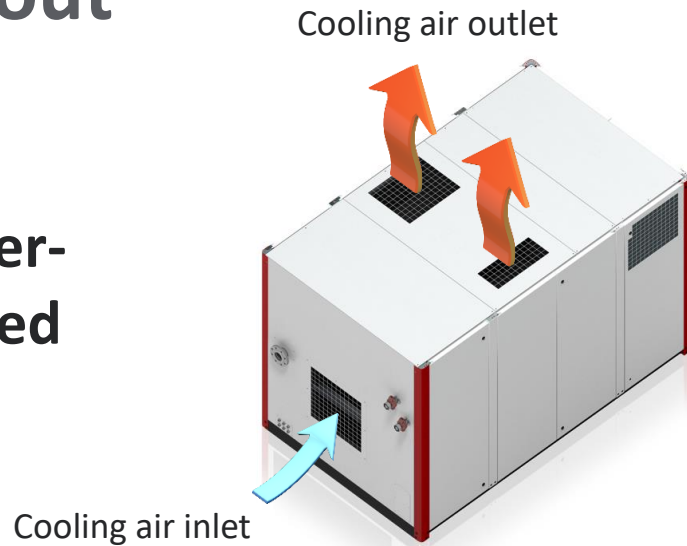


Features

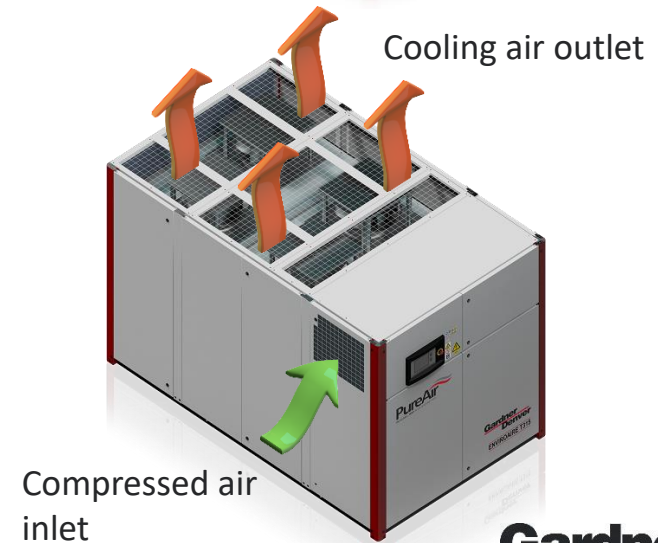
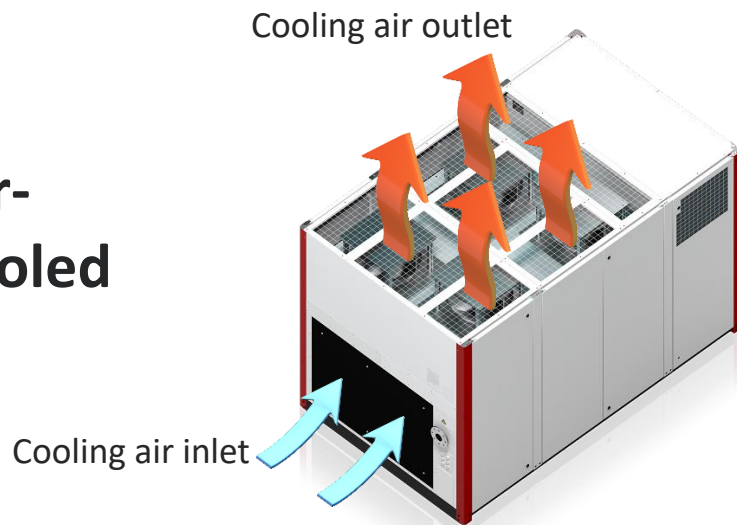
- Modular Design Concept, use of Common Parts
- Same dimensions air-and water cooled
- **Best-in-Class Footprint** [click here for details](#)

Layout

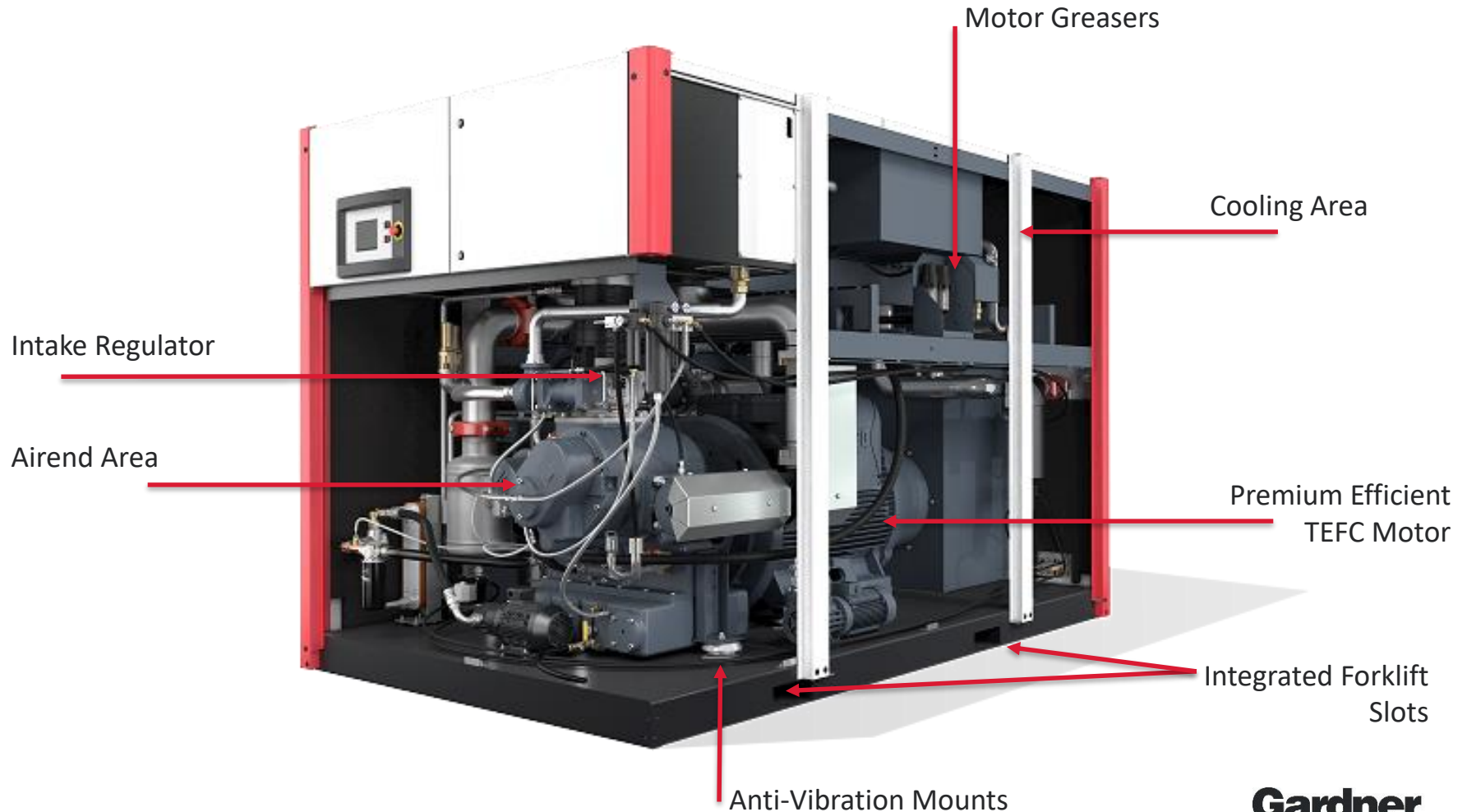
Water-cooled



Air-cooled

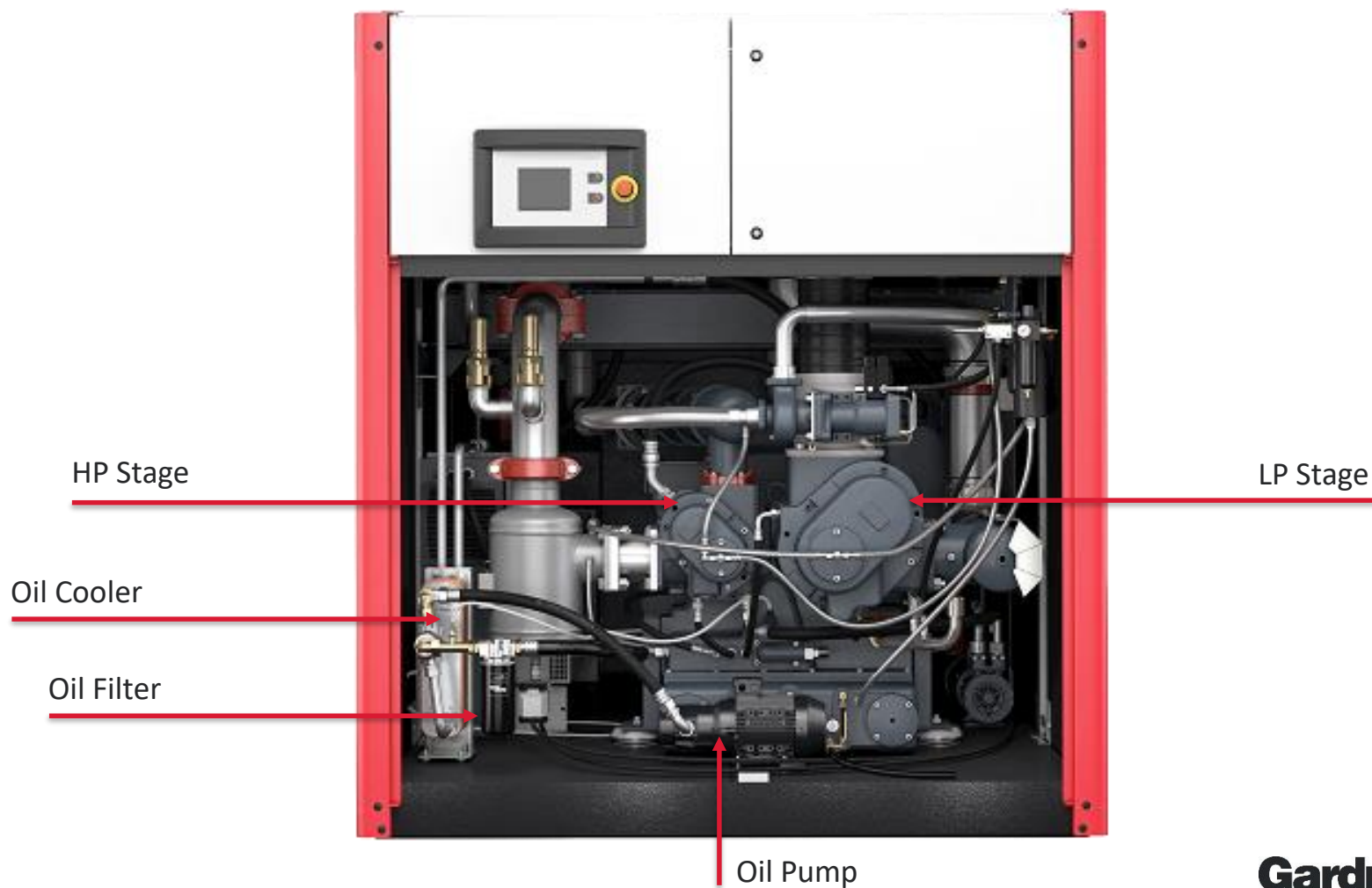


Layout *T165-315W unit shown.*

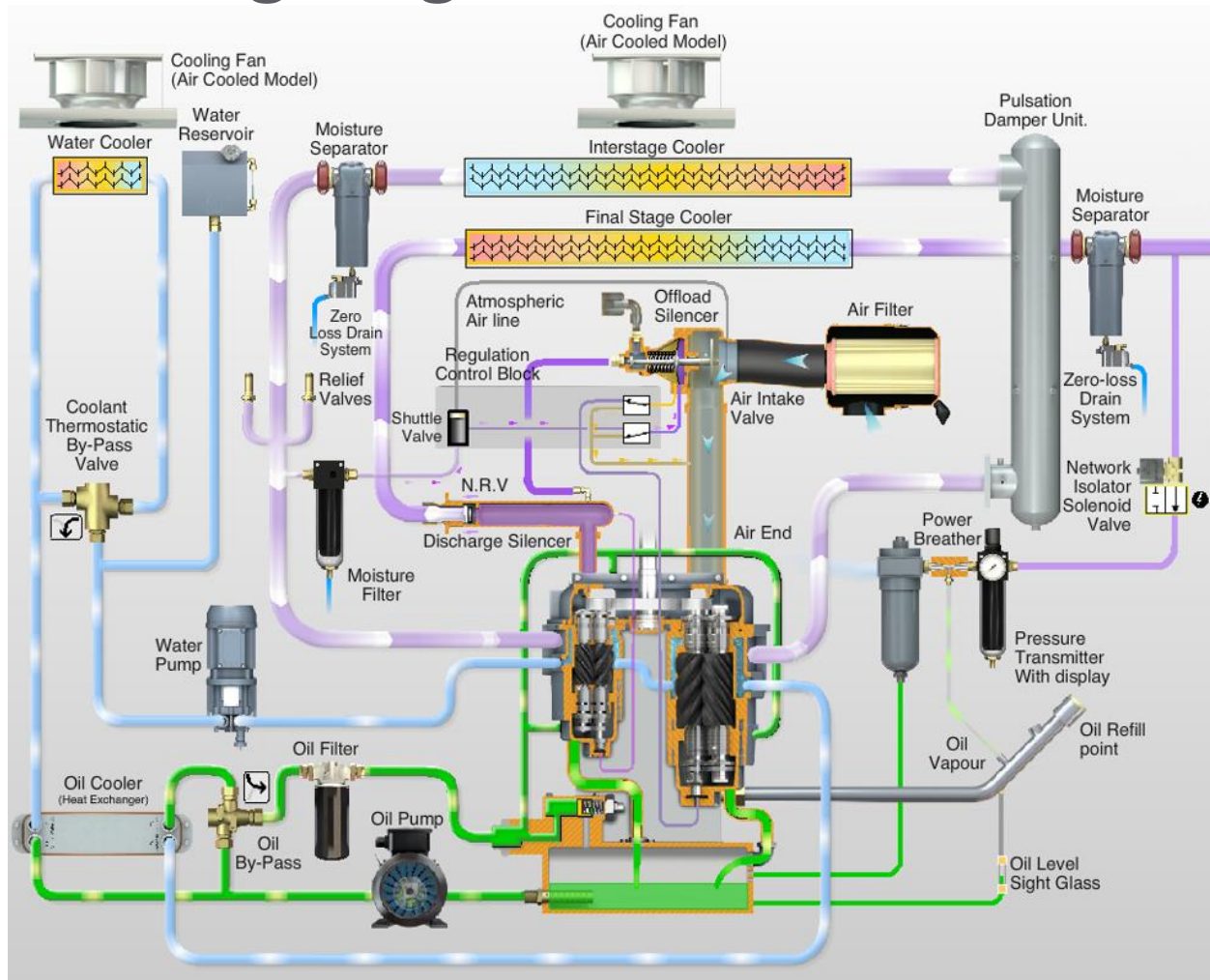


Layout

T165-315W unit shown.

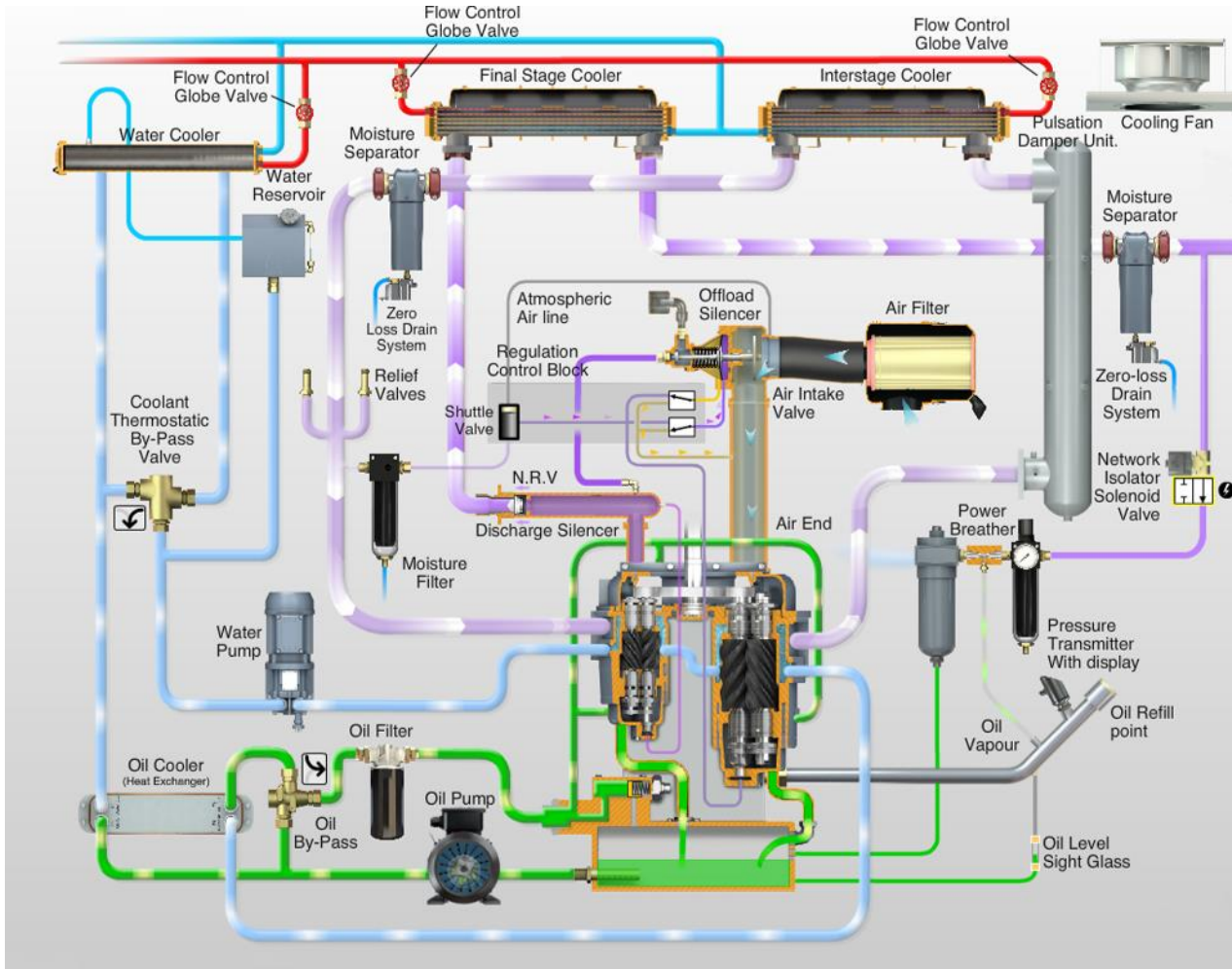


Working Diagramm Air-cooled



- Air flow
- Water circuit
- Oil circuit

Working Diagramm Water-cooled



- Air flow
- Water circuit
- Oil circuit

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Features and Benefits

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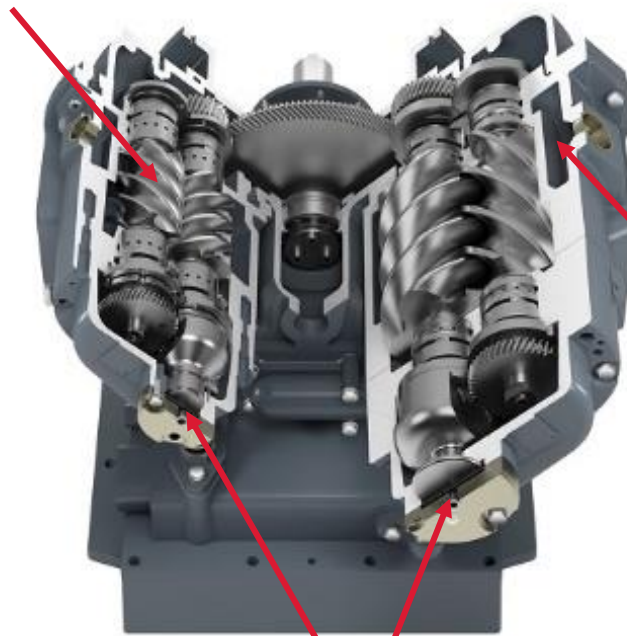


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Compression Elements



Superior hard coated rotors



Water based cooling jacket

Balancing pistons

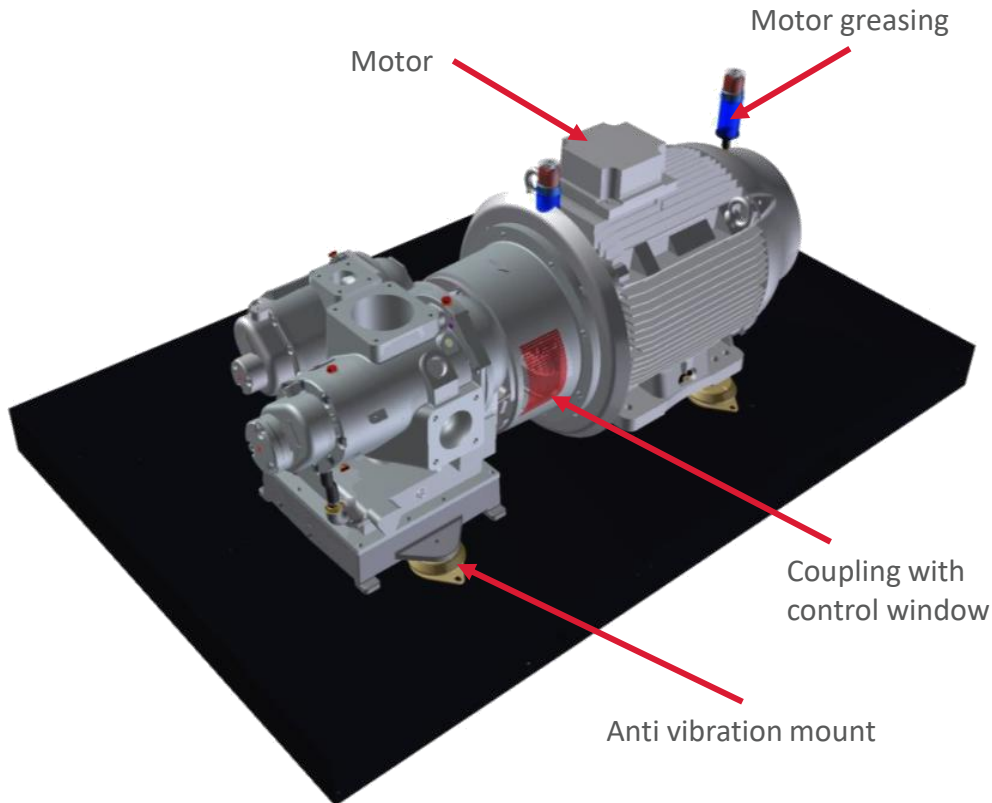
Features

- **Superior double coating** based on Nickel and PTFE avoids rapid wear and performance decrease
[click here for case study](#)
[click here for competitive comparison](#)
- **Water based airend cooling** reduces component stress and assures a long airend life. No risk of oil contamination
- **Balancing pistons on both airend stages** offset the axial bearing loads to minimize wear and risk of failure
[click here for details](#)

Benefits

- High reliability and stable performance over many years
- Minimized operating and maintenance cost

Drive System



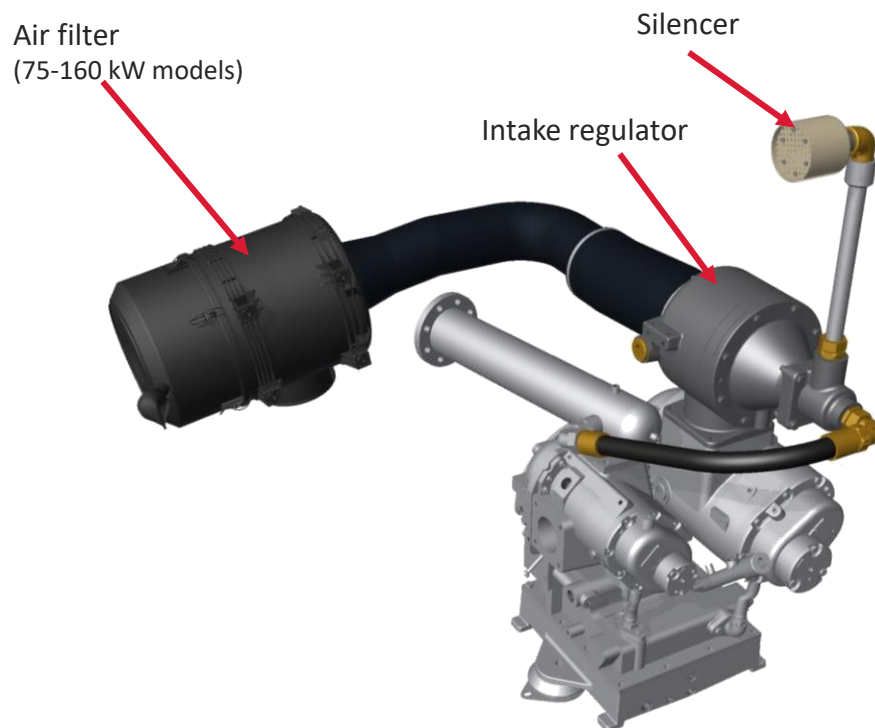
Features

- High efficient IE3 motor (IE4 as option)
- Direct driven
- Automatic motor greasing system
- Assembled on anti vibration mounts
- Control window for coupling

Benefits

- Highest motor efficiency and reliability
- Easy maintenance
- No danger of over-/undergreasing

Compressed Air Circuit



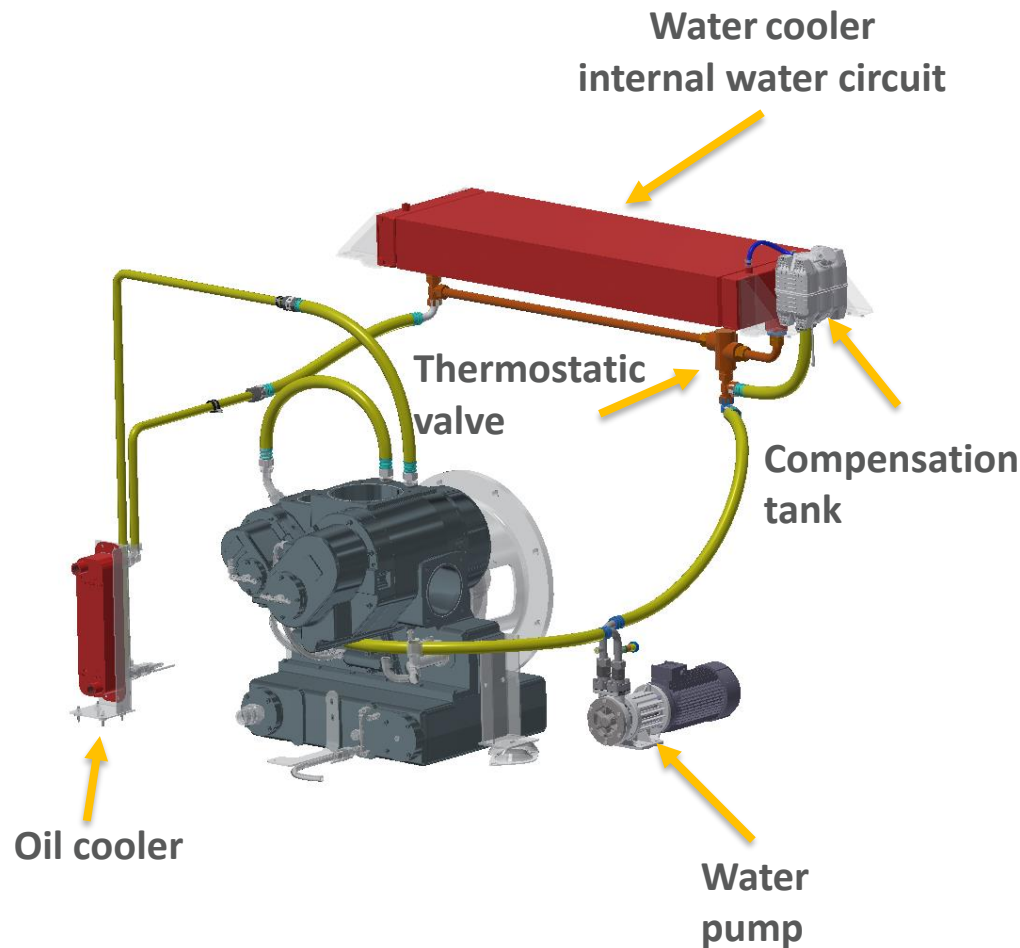
Features

- **Unique high performance air filter design** for minimum pressure drop optimal filter efficiency, quiet operation and long service intervals (165-315 kW models) [click here for more details](#)
- **Compact intake regulator** for easy maintainability and minimum suction pressure loss [click here for more details](#)

Benefits

- High reliability and stable performance over many years
- Minimized maintenance cost

Closed Internal Cooling Water Circuit



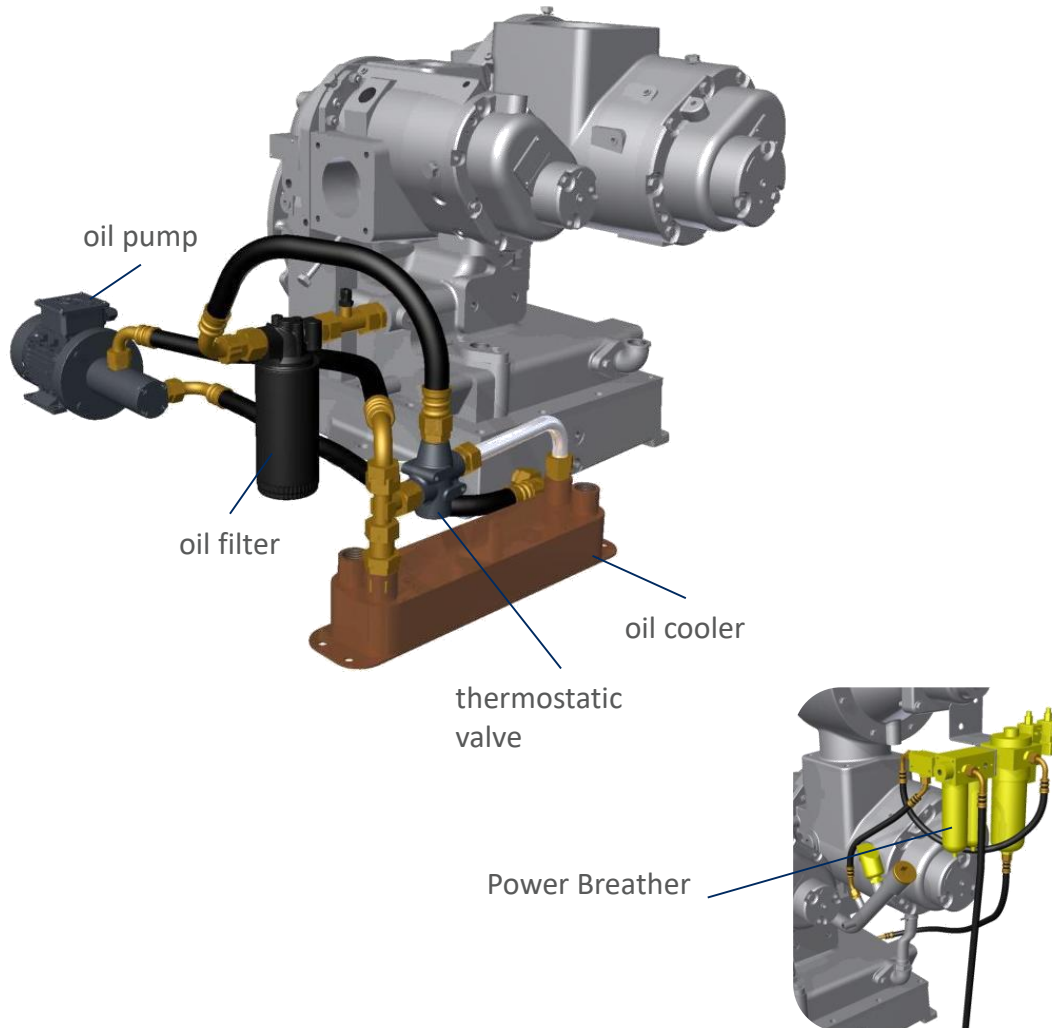
Features

- High efficient cooling of aircnd jackets due to higher heat capacity of water vs. oil as cooling medium

Benefits

- Higher **reliability** and **lifetime** of the whole compressor package due to reduced discharge temperature (8...10°C)
- **Higher Efficiency** (approx. 2 %) due to better cooling
- **GD utility model (patent)**
- No danger of **oil leaks**
- **Less oil** in the system

Oil circuit



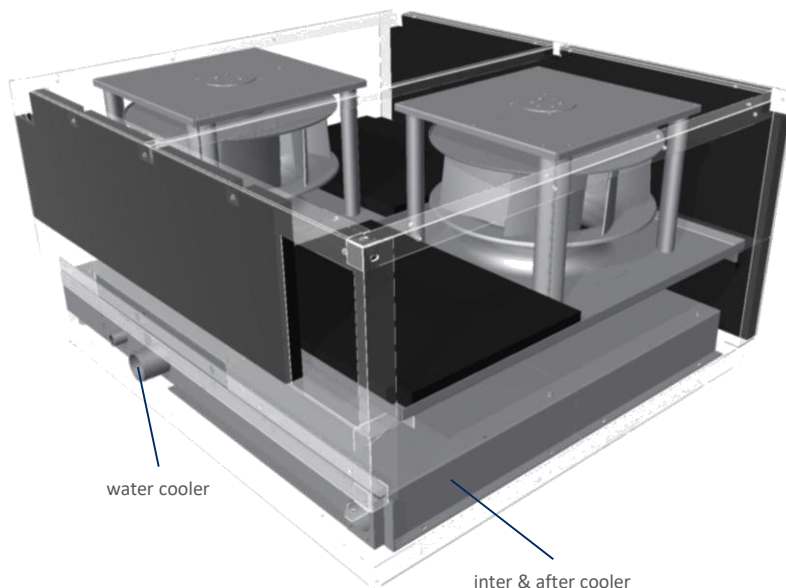
Features

- **Independent oil pump** for oil lubrication prior starting / after stopping prolongs gear box life and maximizes efficiency [Click here for details](#)
- **Best-in-Class Power Breather** removes oil vapor while keeping the environment around compressor components clean [Click here for details](#)
- **Water-cooled oil cooler and thermostatic bypass valve** for optimal oil temperature at any time

Benefits

- High reliability and lifetime
- Low service cost (8000 hours for filter servicing)

Cooling Unit – Air-cooled Version



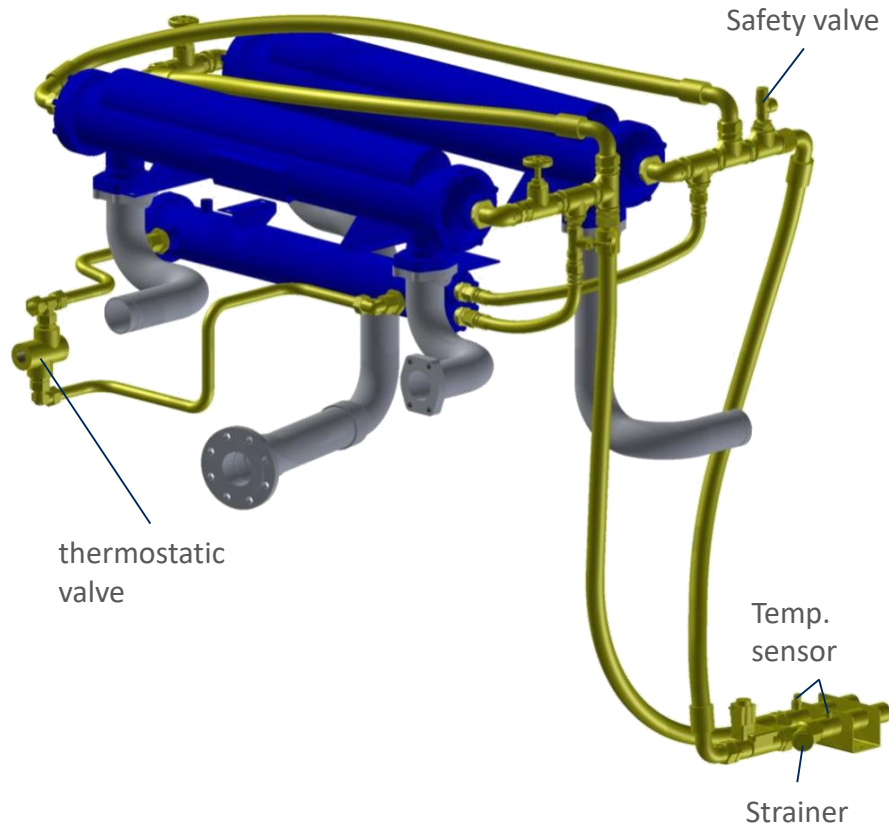
Features

- **Speed regulated fans** for minimum power consumption and noise, less thermal stress for coolers (165-315 kW models) [click here for details](#)
- **Fully enclosed design** incl. noise-absorbent mats
- Easy fan accessibility [click here for details](#)
- Optimum cooling up to **45°C** [click here for details](#)

Benefits

- Lower O&M cost
- Less stress / longer life of coolers
- Quick and easy maintenance
- Less downtime

Cooling Unit – Water-cooled Version



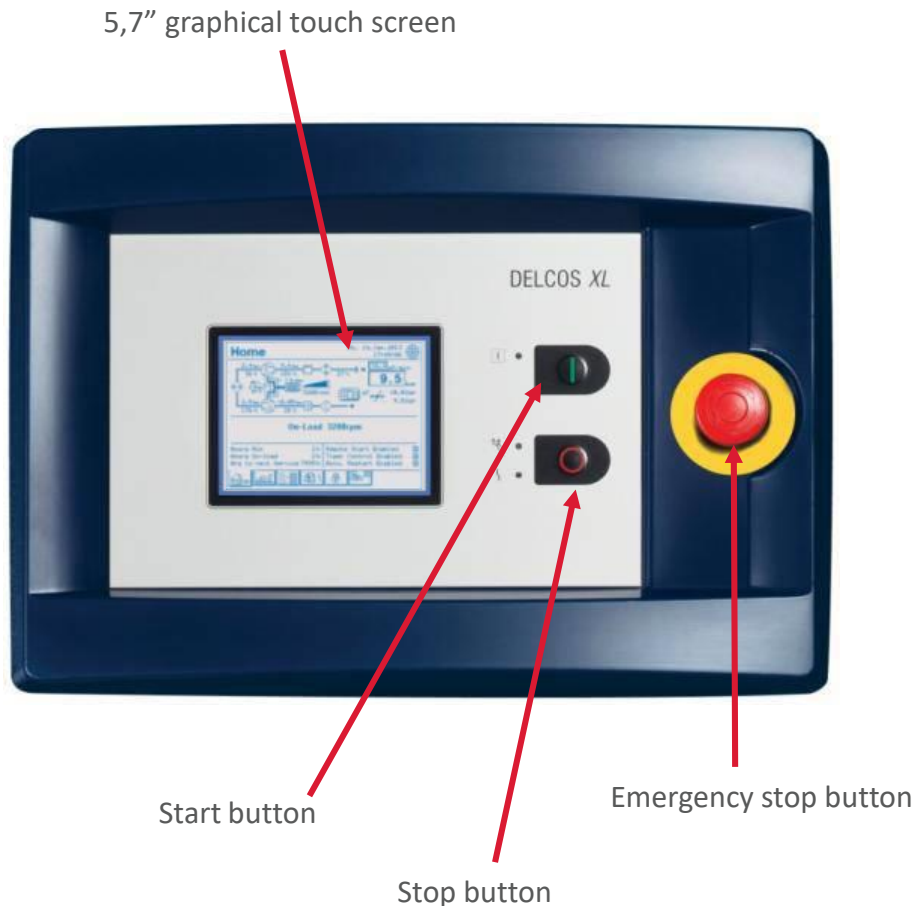
Features

- **Shell & tube heat exchangers** for intercooler, aftercooler and water circuit cooler
- **Removable tube bundles**
- Optional **stainless steel** coolers (IC & AC)

Benefits

- Improved and stable compressor efficiency
- Quick and easy cleaning and maintenance of coolers
- Low service cost
- Low noise level

Controller GD Pilot



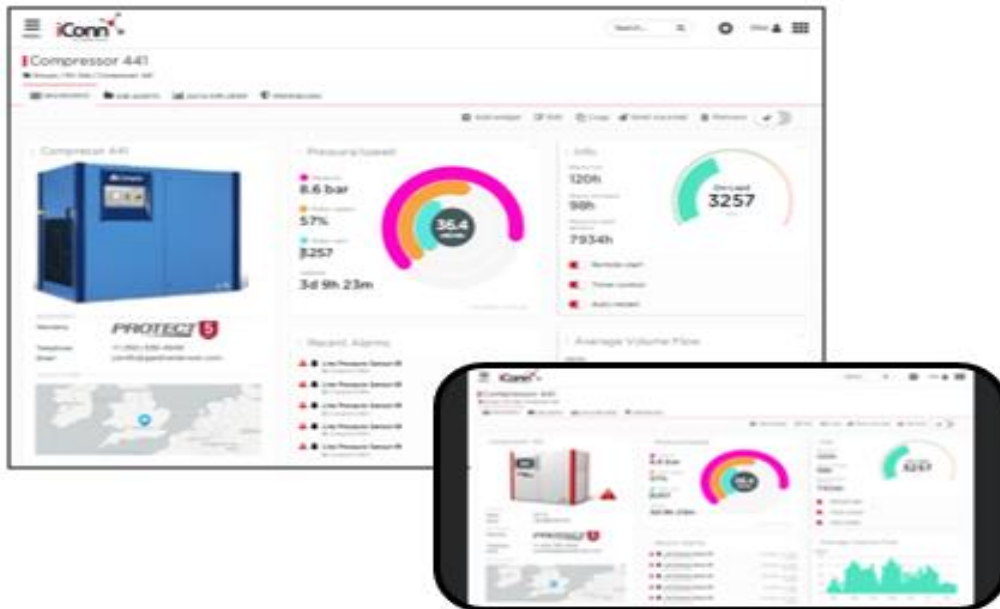
Features

- 5,7" graphical touch screen with 320 x 240 pixels
- 5 standard screens [click here for details](#)
- 5 trend graphs available [click here for details](#)
- Constant control of all relevant parameters [click here for details](#)
- Onboard SD card for remote analysis [click here for details](#)
- Optional Base Load Sequencing [click here for details](#)
- Interfaces: Modbus (standard), profibus (optional), RS485 interface for SmartAir Master [click here for details](#)

Benefits

- User friendly and intuitive control
- Instant overview of compressor status

iConn



Features

- Digital Cloud Platform to support compressed air analytics
- Predictive maintenance
- Full air manufacturing control optimisation
- External data pattern integration
- Condition based monitoring
- iConn enabled as standard

Benefits

- Highest service attention assurance
- Avoidance of unplanned outages
- Free of cost

Air Quality

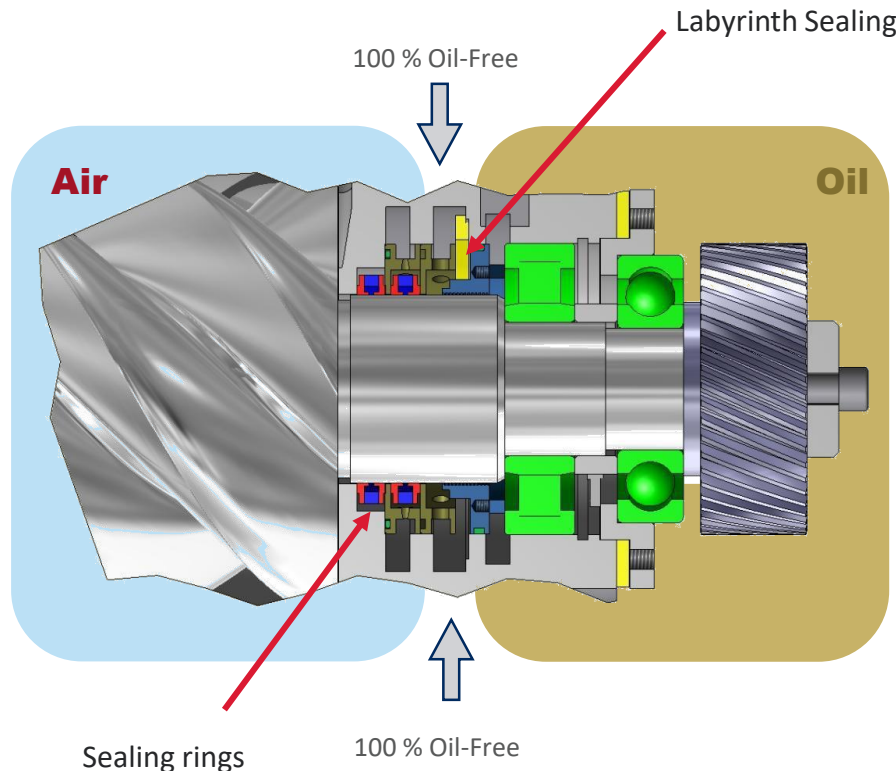


Features

- **Class Zero certification** confirms no chance for oil and siloxanes to contaminate air
- Tested by TÜV, measured in accordance of ISO 8573-1 / ISO 8573-2 / ISO 8573-5

Benefits

- Absolute peace of mind for the user
- No danger of products contamination with oil ($<0,01 \text{ mg/m}^3$) or siloxanes ($<0,005 \text{ mg/m}^3$)



PureCare Warranty



Features

- Up to **44.000 hours/6 years*** peace of mind **free of charge** [click here for details](#)
- One of the most generous warranties available in the industry
- **Guaranteed quality of service** by CompAir authorised service providers
- Use of **genuine CompAir parts** and lubricants

Benefits

- Total peace of mind
- Maximised compressor life and efficiency
- No extra cost

Servicing



Features

- Optimal accessibility of all service parts
- Service parts are required only every 8000 hours
- Only a visual inspection is required every 4000 hours
- Detailed service recommendation in the user manual
- Proactive customer service with our continuous monitoring via ICON digital database

Benefits

- Short outage times
- Minimum life cycle cost

Summary – Why Gardner Denver T-series

1. **GD's High Performance Long Life Air Ends** – Designed and manufactured in Germany. Double coated with PTFE (Sacrificial Coating) and Nickel (Hard Coating; inhibit corrosion) as a double safe measure replacing Teflon based coating which result in rapid wear, premature air end degradation and significant loss in efficiency
2. **Best-in-Class Footprint** (air-cooled models)– Easier installation, less space consumption at site
3. **Superior design for heat management** – cooling water air ends jackets surrounding our airends resulting in best heat transfer from air ends to the water medium thus increase air end life and ensure optimum operating conditions.
4. **Independent Internal cooling water circuit** from the external water (minimizing cooling bundle leaks and prolonging compressor components lifetime)
5. **Independent oil pump for oil lubrication prior starting** prolonging gear box life and maximizing efficiency (other competitor use pinion gear shaft for oil circulation)
6. **Automatic Motor Greasing** – Eliminate the risk of under/over greasing.
7. **Power Breather** Oil Vapor removal set – Clean Oil Free Air Environment around the compressor components.
8. **Oversized Air Filters Surface Area** – Decreased pressure drop thus increasing lifetime (8000 hrs) also to ensure air end protection during operation in harsh environment what includes high humidity and/or high airborne contamination
9. **Intercooler/Aftercooler maintenance** - One hidden cost of traditional twin screw OF compressor is costs associated with replacing intercooler and aftercoolers. For our water cooled units it is facilitated for ease of maintenance just by remove cooler bundles and discale/clean and ease fix them back.
10. **Generous 6 Years PureCare Warranty** on insurance spare parts (Air Ends, motors, controllers..etc) free of charge!!
6. **iConn Proactive Supplier Maintenance** – Allowing our our specialized service engineers to conduct preventative maintenance upon customer's approval

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Case Studies

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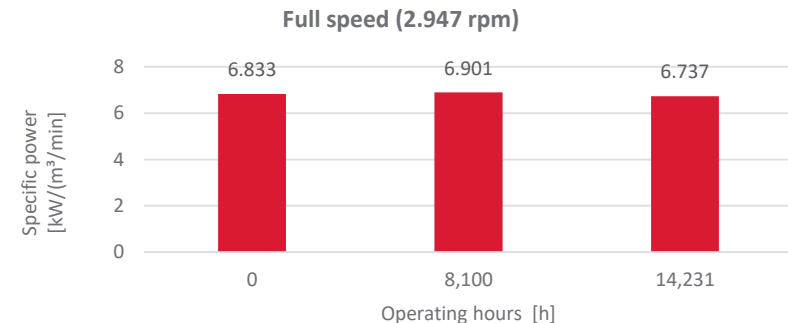


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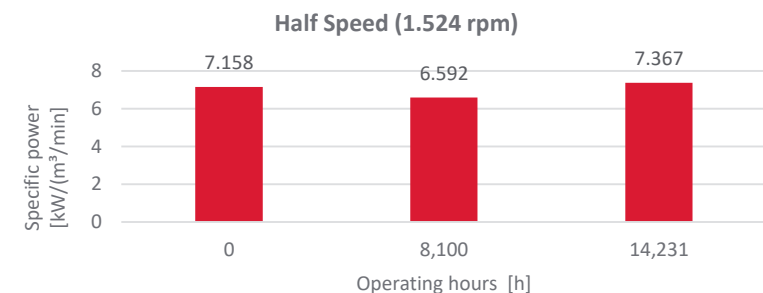
Case Study: CompAir Airend Performance over time

Performance comparison of 3 LP airends used in D75-07W compressors after different operating hours

Full speed performance (2.947 rpm)		Operating hours [h]		
		0	8.100	14.231
P shaft	kW	143,7	140,8	141,1
FAD	m ³ /min	21,468	20,956	21436
Wsp	kW/(m ³ /min)	6,833	6,901	6,737
	% deviation from initial conditions	0,0%	1,0%	-1,4%
ΔT	K	135	143	142



Half speed performance (1.524 rpm)		Operating hours [h]		
		0	8.100	14.231
P shaft	kW	71,9	71,3	71,5
FAD	m ³ /min	10,230	11,06	9,902
Wsp	kW/(m ³ /min)	7,158	6,592	7,367
	% deviation from initial conditions	0,0%	-7,9%	2,9%
ΔT	K	140	144	143

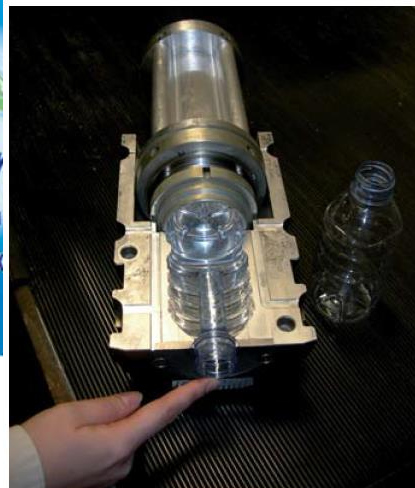


Key Findings

- No significant performance decrease over a period of 14.231 hours measurable!!
- In some points the measured specific power was even better compared to a brand new airend!!

Case Study: Société des Eaux Minérales de Luchon

Customer	Société des Eaux Minérales de Luchon
Location	Luchon, France
Application	Production and bottling of water and flavoured drinks
Product	CompAir D110 RS oil-free compressor



Benefits at a Glance

- Variable-speed compressor balances energy input to air demand optimum energy efficiency
- Guaranteed oil-free compressed air
- does not compromise production quality, saving the expense of rework or product recalls
- Trouble-free operation from 0oC to 40oC – ideal for fluctuating seasonal air temperatures
- Constant air supply up to 900 m3/h to maintain productivity at all stations simultaneously
- Maintains 8.5 bar pressure - uninterrupted supply at the correct pressure ensures reliability
- One unit replaces two compressors – reducing service and maintenance costs
- Air cooling system - cheaper and simpler to install than cooling water systems
- Simplified maintenance and 6-year warranty – reduces lifetime ownership costs

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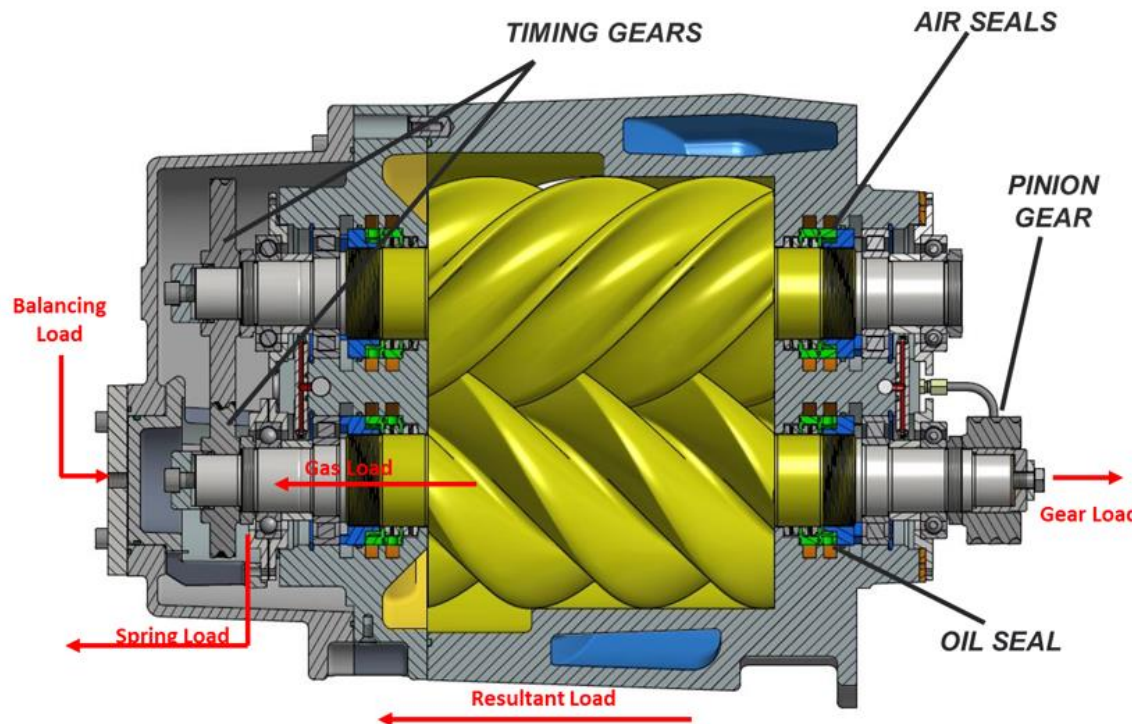
Additional detailed
information

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Airend – Load balancing



Features

Thrust balance piston balances thrust caused by compression and relieves load on male rotor non drive end ball bearing to extend bearing and hence compression element life.

CompAir is the only supplier that uses thrust balancing pistons on both, first and second stage airends!

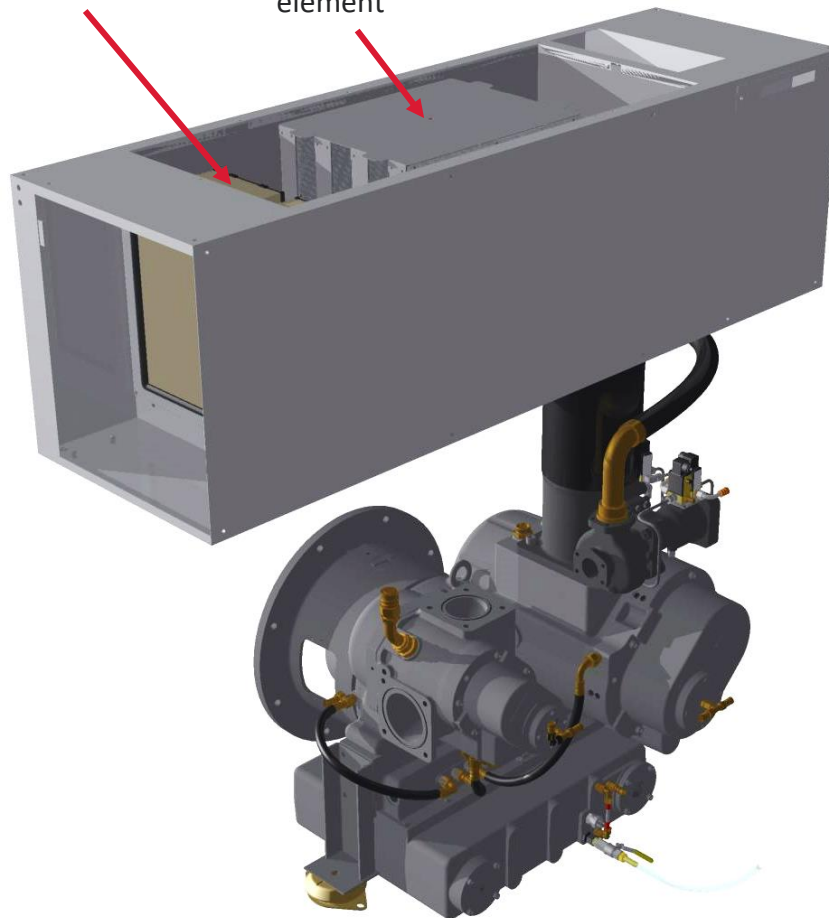
Benefits

- Highest reliability of airened bearings
- Optimized airend life

Air Filter

Two high performance
filter elements

Sound absorbing
element



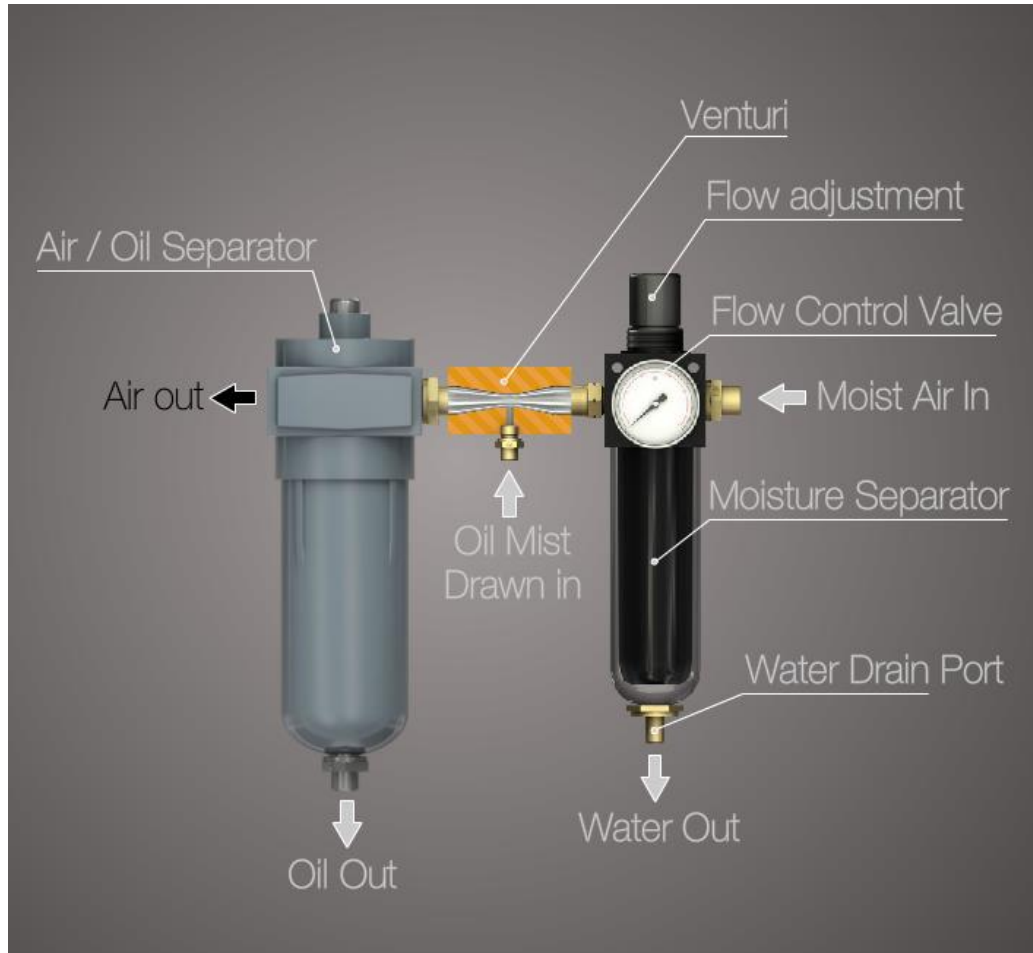
Features

The unique high performance air filter design applied for the 165-315 kW models is characterized by an extra large cross sectional filter area, which assures minimum pressure drop and optimal filter efficiency. The subsequent sound absorbing element effects in a quiet operation and long service intervals (165-315 kW models)

Benefits

- Low maintenance cost due to long service intervals of 8000 hours
- Optimal airend protection even in harsh environment incl. high humidity and/or high airborne contamination

Power Breather



Features

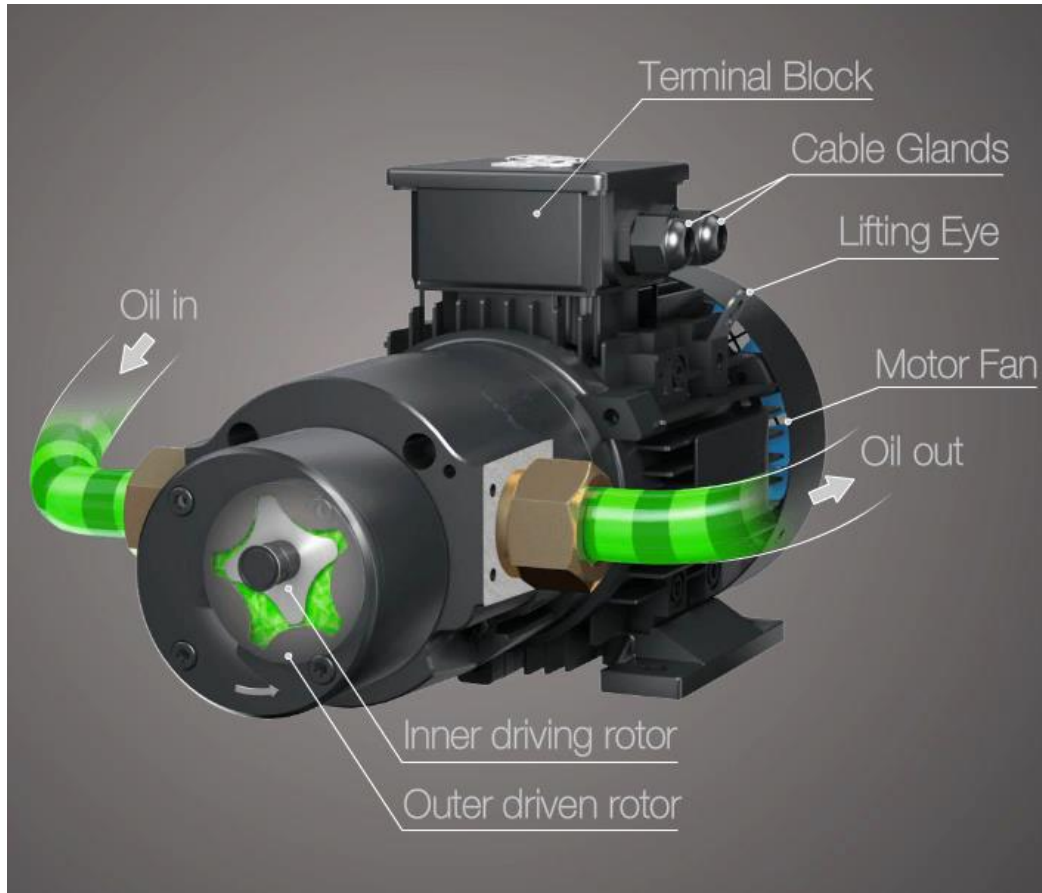
The **Power Breather** removes oil vapour from within the oil return by creating a vacuum, which is generated by a Venturi. Oil is then separated from the vapour by a Coalescing filter and is returned to the reservoir by the Vacuum.

The control Air Required to power the Venturi is Taken from the interstage pressure at the First Stage Discharge

Benefits

- High efficient oil vapour removal
- Re-use of separated oil vapour
- Clean environment of compressor components

Oil Pump



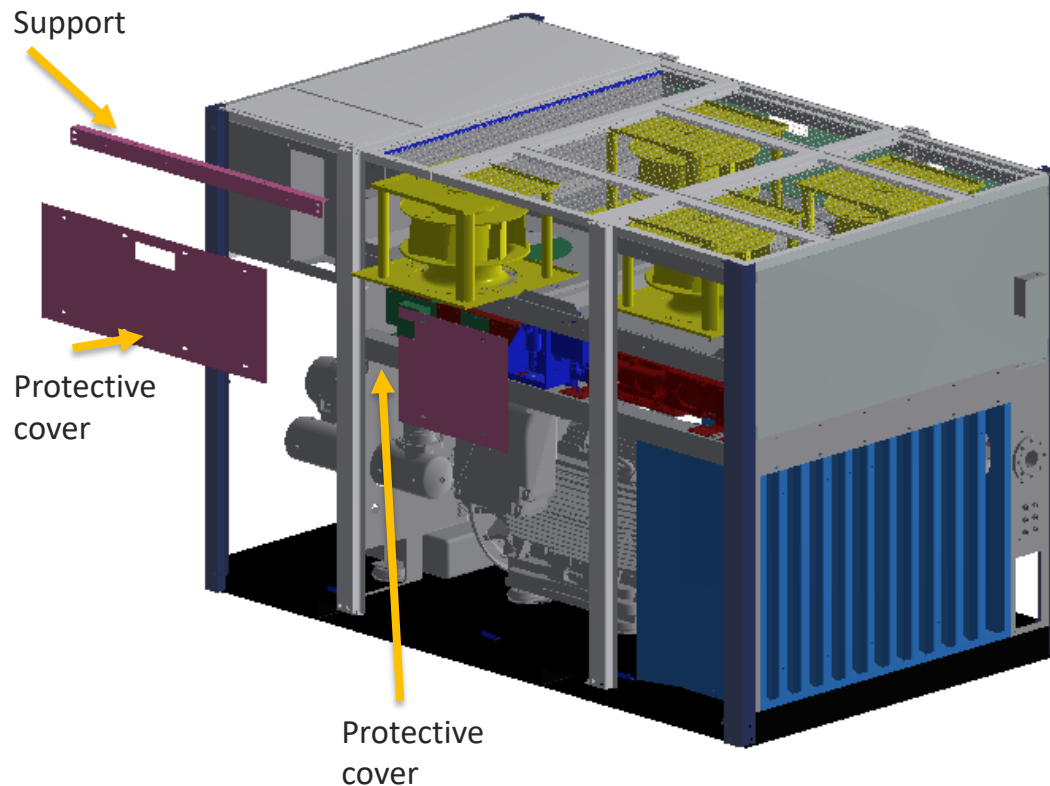
Features

The oil pump is an IP54 rated unit that circulates gearbox coolant / lubricant to and from the heat exchanger for cooling. The pump comprises a direct driven four toothed rotor surrounded by a five lobed internal gear. This gear is offset from the centre axis. As the central rotor turns it drives the surrounding outer gear

Benefits

- Oil lubrication prior starting / after stopping prolongs gear box life and maximizes efficiency

Fan accessibility – D165 – 315A



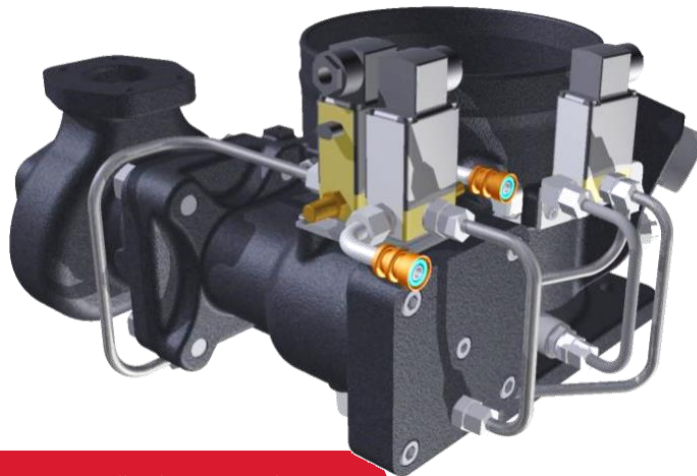
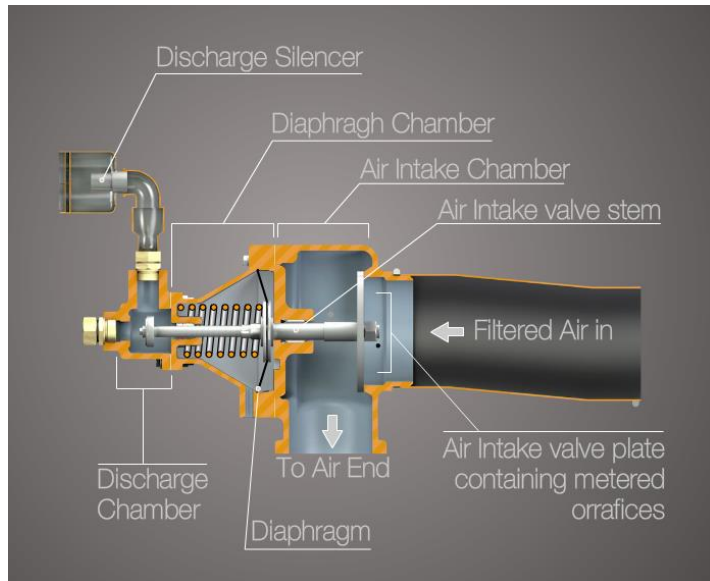
Features

The fans can quickly and easily be disassembled from side without removing the exhaust gas duct

Benefits

- Lower downtimes
- Less maintenance cost

Air Intake Valve



Features

The **Air Intake Valve** regulates the differing air requirements into the compressor during its on-load and off-load states.

The valve's position is determined by differing air pressures either side of a diaphragm chamber. This is all managed by the regulation control system

Benefits

- Minimum pressure loss
- Easy and quick maintenance (no dismantling)
- Reliable operation

PureCare Extended Warranty

2.2 PureCARE Extended Warranty Terms & Conditions

PureCare provides up to 44000 hours or 6 years coverage from commissioning or 78 months from shipment factory, whichever is the soonest.

The compressor, dryer or nitrogen generator must be installed and commissioned by a CompAir certified service provider.

In order to validate the PureCare warranty the machinery owner must instruct the CompAir certified service provider to register the warrantable machinery within 90 days of commissioning. If there is no distributor involvement the equipment must be registered via the CompAir selling entity.

The PureCare extended warranty is only available if the equipment is supported by a PureCare Service Plan for the duration of the extended warranty.

For Oil-Free compressors build after 1 September 2017 and have iConn installed, the iConn device must be activated and monitored by the authorised service provider for the duration of the extended warranty.

The warrantable machinery owner must allow the CompAir certified service provider to deliver the PureCare service plan.

Only CompAir certified service providers can provide service within the PureCare extended warranty period.

Genuine CompAir service kits and lubricants must be used at all times and at the recommended service interval as per the corresponding PureCARE equipment operating manuals. Only if no kits are available, individual genuine spare parts are allowed.

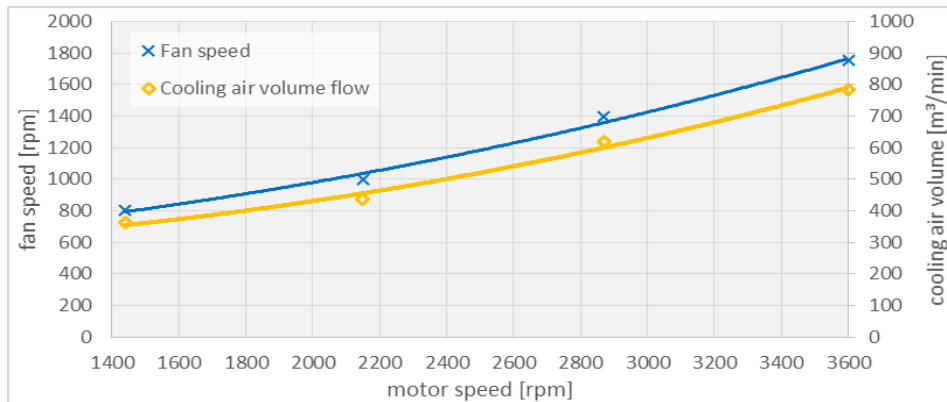
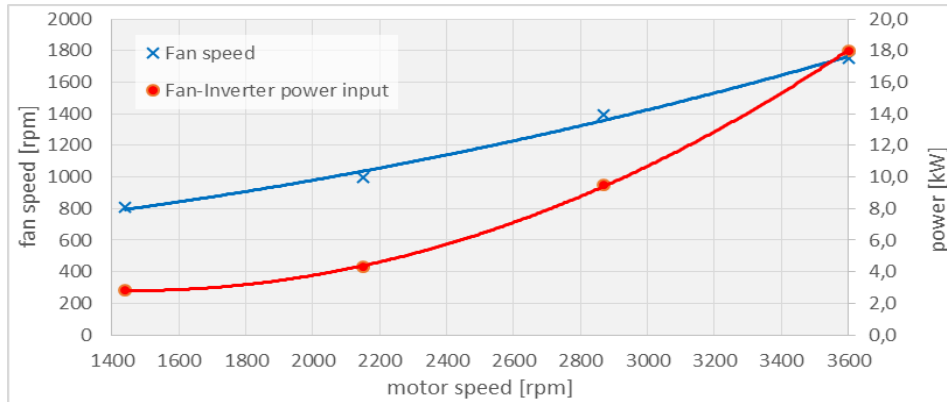
It is the responsibility of the CompAir Certified Service Provider to ensure that all services and service kits used are registered using the QR Code service registration process. Failure to do so will invalidate the extended warranty. Dryers and Generators are currently exempt from the QR code service registration.

The equipment owner is responsible for all daily and weekly checks as detailed in the user handbook.

Failure to allow the service schedule to be delivered by a CompAir certified service provider will invalidate the warranty, which will then revert to the unexpired portion (if any) of the standard warranty associated with this warrantable equipment.

After the expiry of the standard warranty period, certified service providers will be liable for the first two hours of labour expenses applied to a warranty repair.

Speed regulated fans



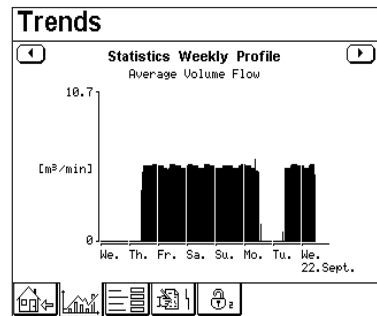
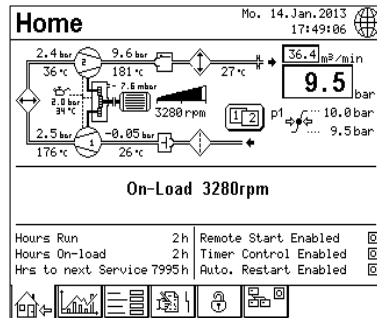
Features

The fans of the 165-315 kW models are speed regulated. This allows a flexible operation depending on load and ambient conditions. The savings in fan power consumption under part load can reach more than 80%

Benefits

- Less operating cost at standard ambient- and part load conditions
- Reduced noise level at standard ambient conditions (lower fan speed @ 20°C)
- Reduced stress of big aluminum coolers (reduced temp. peaks) -> longer life, less service costs

GD Pilot – Standard Screens



Settings

Select Menu

Hour Meters... Configuration...
Control... Factory Settings...
Timer Control... SD-Card...
Programmable Inputs and Outputs... Water Cycle Control...
Communication...

Fault History

14.Oct. Warning R602:	i	△
11:18:29 Compressor Disch. Temp.	i	
14.Oct. Warning R602:	i	
11:17:20 Compressor Disch. Temp.	i	
14.Oct. Fault E483:	i	
11:17:20 Compressor Disch. Temp.	i	
14.Oct. Fault E488:	i	
09:36:11 Disch. Temp. Sensor R2	i	
14.Oct. Fault E407:	i	
09:36:11 Disch. Press. Sensor B2	i	
14.Oct. Fault E406:	i	
09:36:11 Line Pressure Sensor B1	i	
14.Oct. Warning R602:	i	
09:36:10 Compressor Disch. Temp.	i	
14.Oct. Fault E483:	i	
09:36:10 Compressor Disch. Temp.	i	

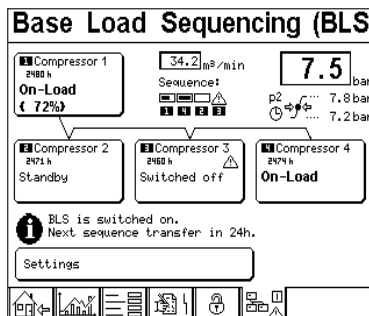
RESET

Access Code

Input Access Code

State:
User Settings Unlocked

1 2 3
4 5 6
7 8 9
0 ← →



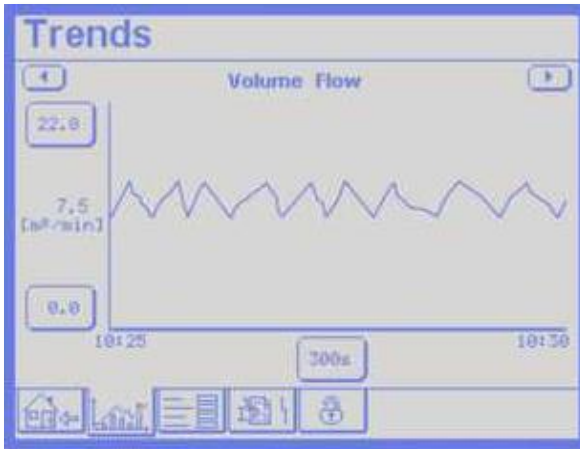
Features

- **Home Screen:** The most important information at a glance
- **Trends:** to review trend graphs for 5 parameters
- **Settings:** to edit main parameter settings
- **Fault History:** Overview of all faults and warnings
- **Access Codes**
- **Base Load Sequencing:** for efficient operation of up to 4 compressors

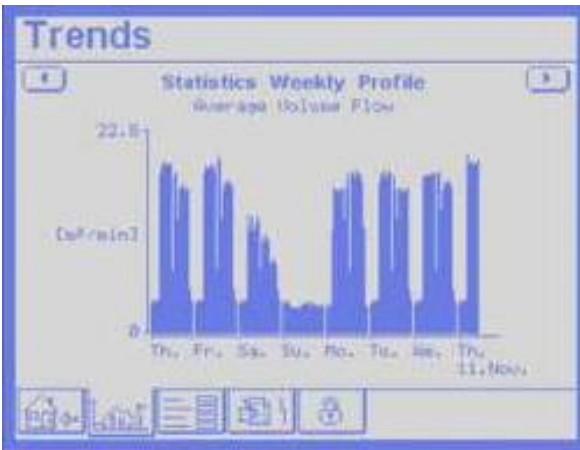
Benefits

- All functions are intuitively visual
- Easy to get complete overview about compressors status – without reading user manual parallel

GD Pilot – Trend Graphs



Example: Volume flow



Example: Weekly profile

Features

5 trend graphs available:

- Volume flow
- Network pressure
- Motor speed (RS units)
- On-Load / run hours
- Weekly profile

Benefits

- Easy optimisation of compressed air system for optimal efficiency
- Minimized operating cost

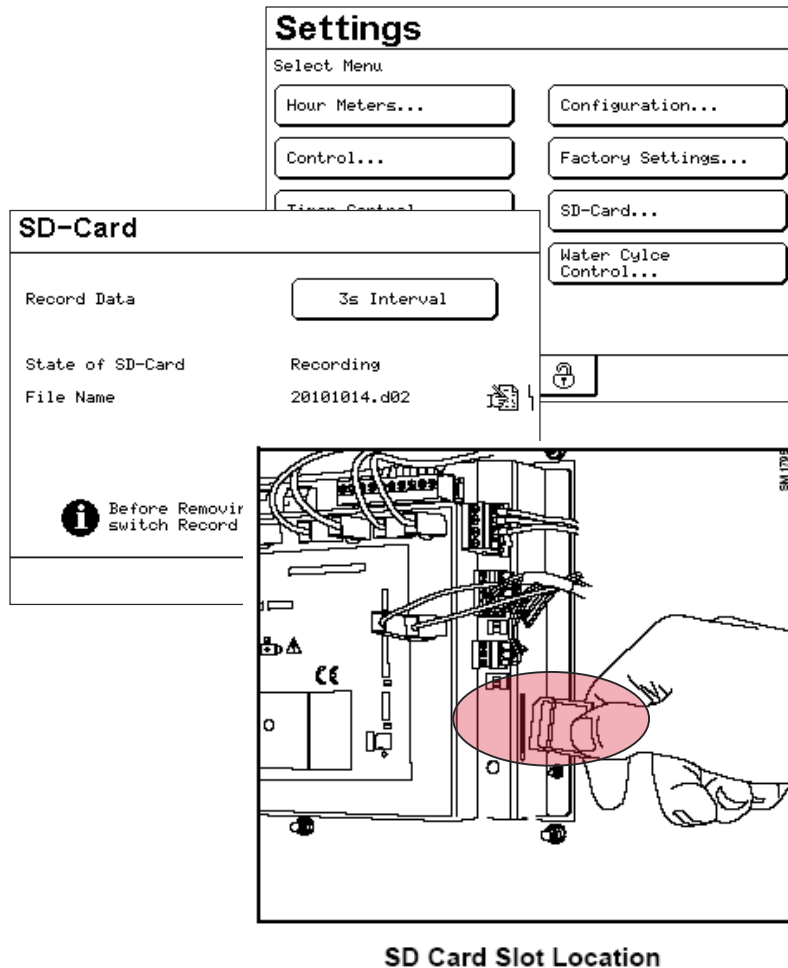
GD Pilot – Controlled Parameters



Constant control of...

- Ambient pressure & temperature
- Inlet & outlet pressure & temperature 1. and 2. stage
- Network pressure & temperature
- Oil pressure & temperature
- Water pressure & temperature
- Vacuum gearbox
- Oil level
- Water level
- Condensate drain
- Motor greasing system
- Start/Stop and/or secondary pressure function via integrated real time clock and timer
- Controlling and monitoring thanks to programmable inputs/outputs
- and many more...

GD Pilot – Onboard SD Card



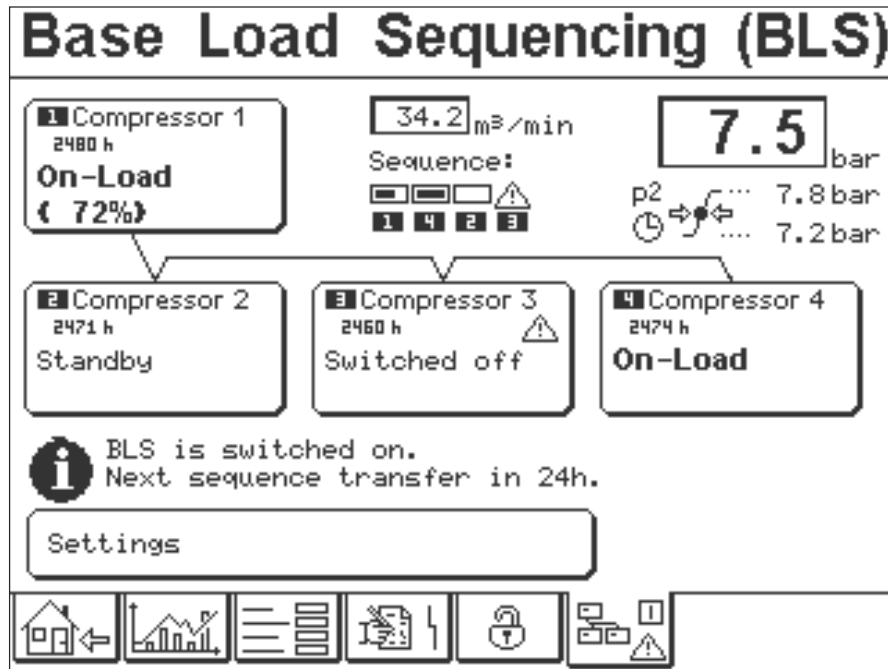
Features

- Fitted as standard with SD card for data recording (data logger)
- Permanent logging of flow, temperature, hours, etc.
- Offers options for detailed and remote analysis
- Also applicable to conduct software updates

Benefits

- Easy optimisation of compressed air system for optimal efficiency
- Great tool to assist maintenance personal

GD Pilot – Base Load Sequencing



Features

- Optimise your operations of up to 4 compressors (1x master / 3x slaves)
- Easy-to-understand screens ensure a complete overview about compressor sequencing group
- Easy installation thanks to serial link to the master
- Supported slave controllers are Delcos XL, Delcos Pro and Delcos 3100. Fixed speed compressors from other manufacturers can be connected as well
- Different constellations are supported

Smart Air Master



Features

- Multi compressor solution up to 12 compressors
- Delcos controlled compressors can easily be connected by serial port, only two wires are needed
- Easy to integrate compressors from other manufacturers by VSD or STD box
- Installing a correctly sized RS compressor will almost eliminate the fix speed units running off-load

Benefits

- Reduced service costs for all compressors
- Cost-effective and trouble free

Design Comparison - Airends

	Atlas Copco	D-Series	Evaluation
Coating	Soft coating (Spray and bake coating based on Teflon and a Teflon graphite layer)	Hard Coating (PTFE and Nickel-PTFE 2 layer chemically bonded)	AC's soft coating leads to significant wear across the element = Rapid FAD reduction after few operating hours. compare has a proven stable performance even after many years of operation see case study
Cooling Jacket	Oil cooled (ZT-series)	Water cooled	Water cooled means better heat transfer and cooling efficiency, (due to higher spec. heat capacity); less stress, risk of degradation and oil deterioration, resulting in less service cost; generally less oil in the system
Load balancing	Balancing pistons only for second stage	Balancing pistons on both stages	No balancing pistons on first airend stage increases bearing load and reduces airend life



Atlas Copco



Gardner Denver / CompAir

Footprint Comparison Air Cooled

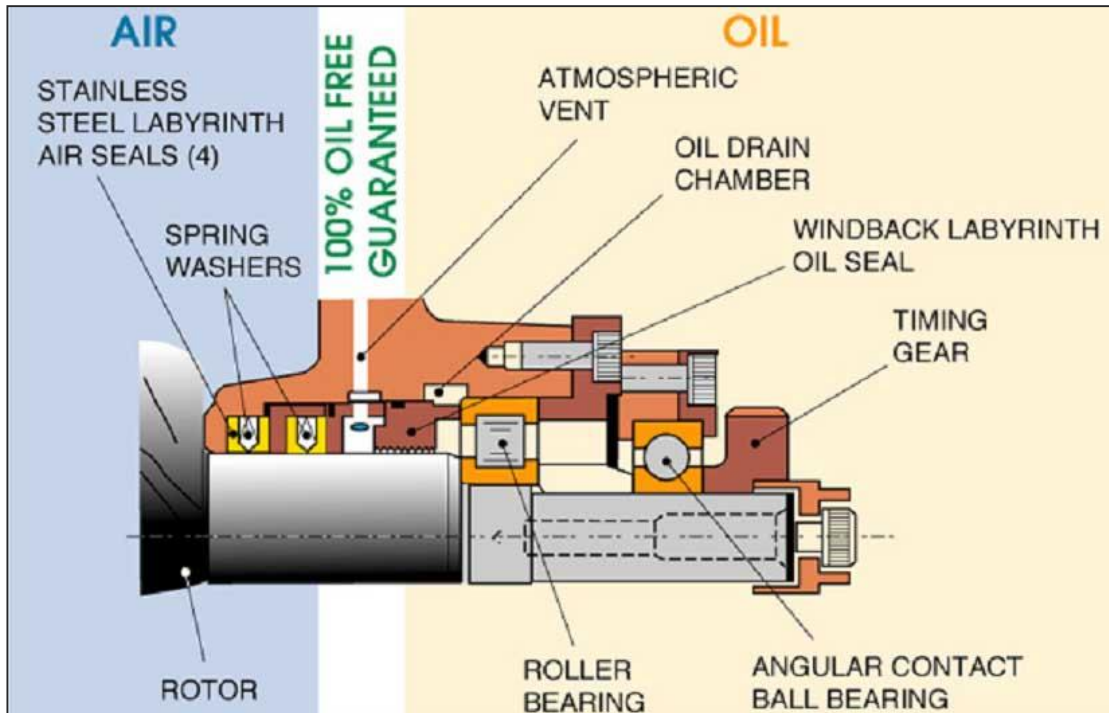


	<i>Fixed Speed</i>	<i>Variable Speed</i>
	[m ²]	[m ²]
GD / CompAir	6,5	6,5
Atlas Copco	8,3 (+27%)	8,3 (200...315kW) (+27%) 6,7 (160kW) (+3%)
Kaeser	7,3 (+12%)	8,6 (+32%)

Key Findings

- GD/CompAir D-series with **best-in-class footprint**

Air and Oil Seal Arrangement



Oil Sealing

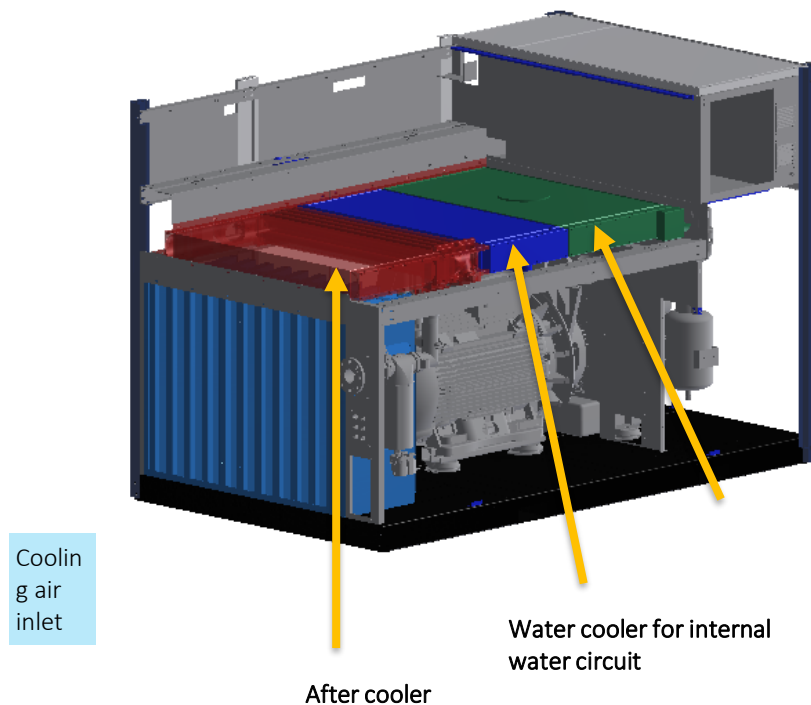
A sealing arrangement ensures that oil cannot enter compression chamber as well as sealing pressure in the compression element. The windback labyrinth oil seal has a spiral groove cut into the bore, as the shaft rotates the spiral groove forces the oil back along the shaft towards the oil drain chamber which returns the oil to the sump. The seal is non contact and is a clearance fit on the rotor shaft. 100% oil-free compression is guaranteed throughout the life of the element.

Air Sealing

Air pressure is sealed in the compression element by stainless steel labyrinth sealing rings. The rings are held in place by wavy washers and are a clearance fit on the rotor shaft. As air pressure passes each seal the pressure is gradually reduced, due to the small clearances around the seals, until after the last ring the air is almost at atmospheric pressure and hence leakage is minimal.

The chamber between the oil and air seals is connected to atmosphere via a vent. This acts as a indicator as to the condition of the air seals as any leakage of air pressure can be felt at this vent.

Cooler – air-cooled models



Features

Only **single-stage** inter cooler is required thanks to the use of speed regulated fans

