



D55 - D155

Oil-Free Rotary Screw Compressors



Intelligent Air Technology



# Oil-Free Rotary Screw Compressors

The CompAir range of oil-free compressors can be relied on to deliver a consistent flow of high quality, clean and economical compressed air.

Where contaminated compressed air can result in expensive product spoilage, you can rest assured that a CompAir oil-free compressor will eliminate oil-carryover in the compressed air supply. In addition, the removal of oil from the compression process enables compressed air users to operate with maximum environmental efficiency.

## CompAir's oil-free pedigree

CompAir have been designing, manufacturing and supplying oil-free compressors for more than 80 years. With a product design that has evolved from single cylinder, oil-free reciprocating compressors to multi-stage, oil-free rotary compressors, CompAir has unrivalled experience in providing oil-free compressed air installations to industry.

CompAir oil-free compressors provide clean, high quality, oil-free compressed air to a diverse range of industries.

Industries, both large and small, rely on CompAir for a supply of consistently high quality compressed air, including automotive, aviation, petro-chemical, power generation, shipping and the utilities.

In situations where compressed air comes into direct contact with the products being manufactured: for example food and drink, pharmaceuticals, electronics and textiles, CompAir compressors have been helping clients meet their quality and production objectives for many years.



Ongoing investment in the latest design and manufacturing tools, and rigorous implementation of ISO 9001 approved quality systems, ensure you take delivery of a reliable, high quality product.

Factory performance and functional testing guarantee that your compressor will operate and perform perfectly.

Eliminates Product Spoilage

Reduces Energy Consumption

Minimises Installation Costs

Easy to Install

Increases Reliability  
and Productivity

Instant Monitoring  
and Control

Low noise levels allow installation adjacent to the production environment with no impact on nearby personnel, resulting in reduced installation costs.



Simplifies Maintenance



## CompAir Compression Element 100% Oil-Free Compressed Air - Guaranteed

Non-contact, non-wearing labyrinth seals prevent bearing lubricant entering the compression chamber.

The design also features heavy duty, low friction ball and roller bearings and helical drive and timing gears. Thrust balance pistons equalise the loads across the bearings, allowing each bearing to achieve its optimum life expectancy.

### Market Leading Efficiency

The CompAir compression element design sets the industry standard for energy efficiency. Advanced asymmetric rotor profiles and optimised radial and axial porting ensure maximum air output for minimum energy consumption.

The rotor casings feature generously-sized liquid cooling passages for even heat dissipation, enabling closer tolerances to be used for high compression efficiency.

### Extended Service Life

For the longest working life the correct lubrication and cooling of gears and bearings, under all conditions, is essential. For this reason, the CompAir D-Series features an electric motor-driven oil pump that delivers full lubricant pressure prior to starting and during the stopping phases, thereby extending the operating life of the compression element.

Two-stage inlet filtration protects against the ingress of airborne particles into the compression elements. Filter element life is extended by the enclosure mesh panel filters. This also ensures that the motors and coolers operate with the maximum cooling capability.

### Compact Design

The fully silenced, free-standing D-Series compressor package includes drive motor, coolers, inlet filtration and silencing system, integrated compressor controls and all service connections. As a result installation requirements and associated costs are reduced.



*Motor-driven oil pump extends component life through optimum bearing and gear lubrication*



*Thrust balance pistons on low and high pressure compression elements equalise bearing loads and extend element life*



*Protection relay ensures security of operation and safeguards your investment*



*IP55 totally enclosed, fan cooled, energy efficient drive motor*



*Coated rotors and casings for maximum protection and long operating life*

## Simplified Maintenance

Servicing costs and downtime are kept to a minimum with:

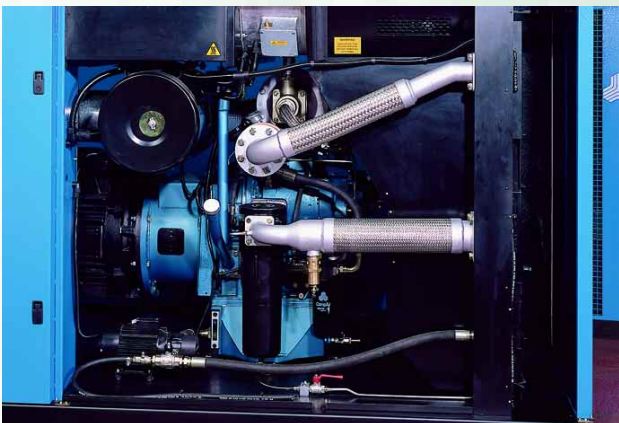
- A grouped service area
- Simplified access for cooler cleaning
- Hinged service access doors all round
- 8000 hours standard service interval.

A pumped lubricant drain facility ensures that lubricant changes are both quick and clean.

The CompAir control system identifies servicing needs and allows for services to be conveniently planned.

## Options

- Outdoor weatherproof and rental packages
- Soft (ramped) starting
- Door interlocked mains switch
- Low ambient temperature heaters
- Level controlled condensate drain valves.



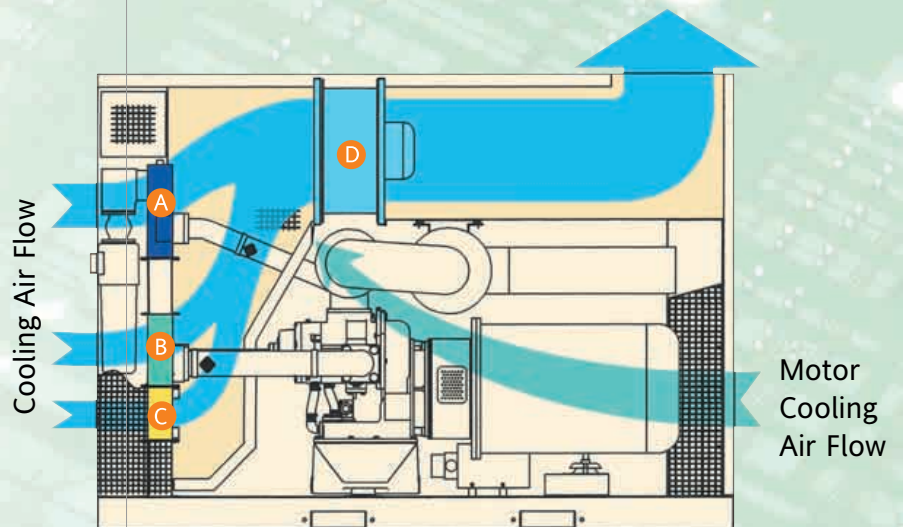
Grouped Service Area for Simplified Maintenance

## Air Cooling System

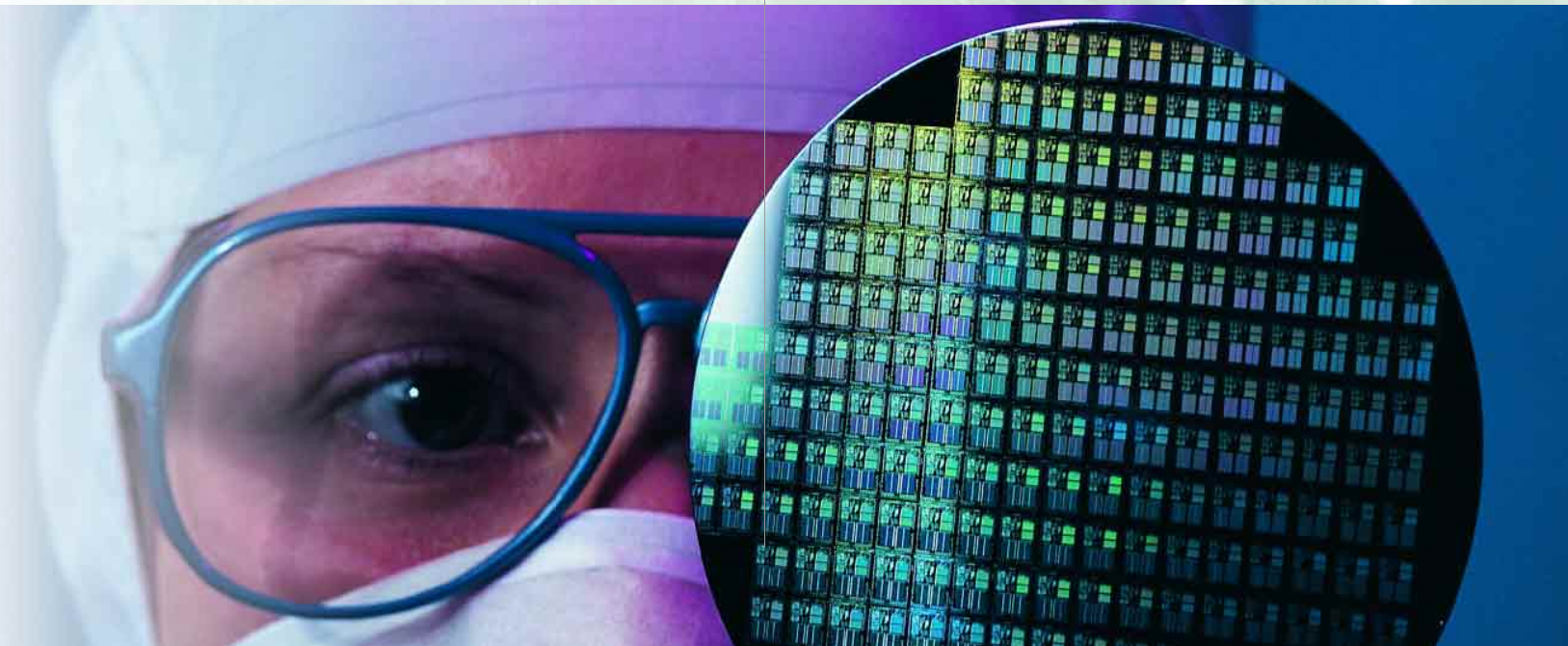
The optimised air cooling arrangement ensures that only unheated ambient air passes across the coolers, maximising the cooling effect and enabling the plant to operate in high ambient temperatures with total reliability.

Air cooling simplifies installation and eliminates the costs associated with installing and maintaining cooling water systems.

A low final air discharge temperature ( $\approx 5$  to  $8^{\circ}\text{C}$ ) reduces the sizing and loading on downstream air treatment equipment.



- A Aftercooler
- B Intercooler
- C Oil Cooler
- D Cooling Fans





## CompAir Control System

CompAir's microprocessor-based compressor management system simplifies operation and allows instant review of status. Comprehensive control, condition monitoring, protection and remote control facilities are incorporated into the system.

With flexibility built in, the D-Series range can meet specific control requirements such as:

- Remote start and stop
- Remote load and unload
- Automatic power failure restart
- Available output
- Running output
- Onload output.
- Service due output
- Group alarm and trip outputs
- RS485 communications interface for remote monitoring and control.



Control Panel

As demand for compressed air can vary, D-Series compressors are fitted with a regulation system that efficiently matches output to demand. Discharge pressure is monitored via a pressure transducer and the compressor automatically loads and unloads, minimising energy consumption.

Recognising that many electrical supplies are subject to irregularities, a protection relay is fitted to provide security against reverse rotation, phase imbalance, phase failure and phase reversal.

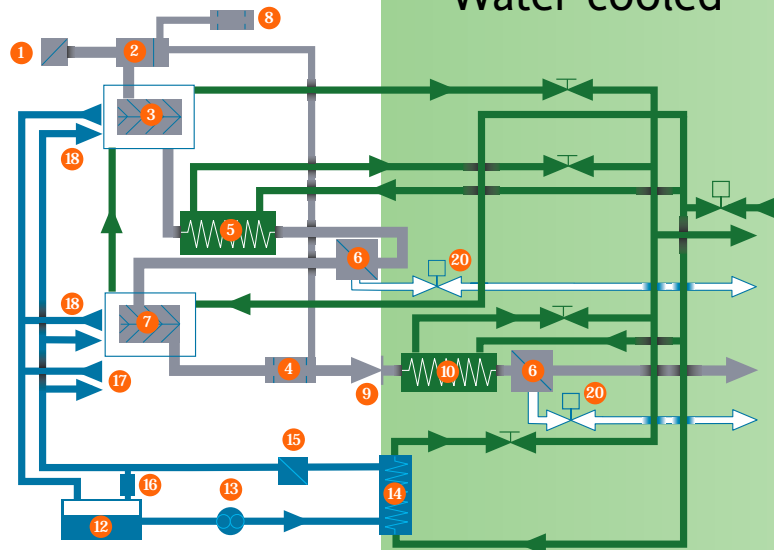
## Air cooled

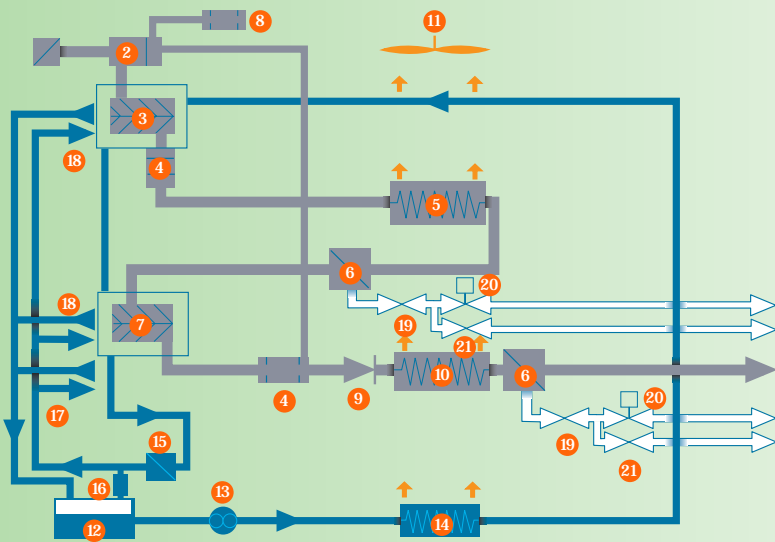
### Energy Recovery

Utilising the hot cooling air discharge, CompAir D-Series air-cooled compressors can provide space heating to supplement existing systems and reduce heating costs.

D-Series water-cooled compressors can be factory configured to provide cooling water outlet temperatures of up to 85°C, enabling the water to be used for process or heating requirements.

## Water cooled





## Key to diagrams

- 1 Suction Filter/Silencer
- 2 Suction Regulator
- 3 1st Stage Compression Element
- 4 Pulsation Dampner/Silencer
- 5 Intercooler
- 6 Moisture Separator
- 7 2nd Stage Compression Element
- 8 Blowdown Silencer
- 9 Check Valve
- 10 Aftercooler
- 11 Cooling Fans
- 12 Oil Reservoir
- 13 Motor Driven Oil Pump
- 14 Oil Cooler
- 15 Oil Filter
- 16 Pressure Relief Valve
- 17 To Gearbox
- 18 To Compression Element, Bearings and Gears
- 19 Isolating Valves
- 20 Automatic Condensate Drain Valves
- 21 Manual Condensate Drain Valves
- 22 Water Stop Valve



- CONDENSATE
- OIL
- AIR
- WATER

# Aftermarket Parts & Lubricants

## *Protect the Investment in CompAir*

Regular maintenance and service of CompAir product is critical to the performance and longevity of the equipment. Only CompAir can provide the assurance that the investment will provide a lifetime of productivity.

## *Reliability*

Only CompAir can provide aftermarket parts and services that are engineered for use in CompAir products. The parts and lubricant have been tested under rigorous conditions at the factory to the highest quality standards.

## *Performance*

Only CompAir can provide aftermarket parts designed specifically for the CompAir product. Use of OEM parts ensures that the investment in CompAir will continue to perform year in and year out with the same reliability and efficiency.

## *Ease of Doing Business*

Only CompAir can provide the peace of mind of turning to one supplier and one source for all aftermarket needs. CompAir has the support network in place to handle all customer service, service and technical support needs.

## *Value*

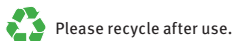
Only CompAir can provide the high quality aftermarket parts and services for the life of the investment in CompAir. Proper care of the CompAir product is vital to the equipment's performance and efficiency. Lean on a trusted source — CompAir.



[www.CompAir.com](http://www.CompAir.com)   [sales@CompAir.com](mailto:sales@CompAir.com)

CompAir USA  
1301 North Euclid Avenue  
Princeton, IL 61356  
United States of America  
Tel (866) 994-8807  
Fax (800) 443-7790

CompAir Canada  
871 Cranberry Court  
Oakville, Ontario L6L 6J7  
Canada  
Tel (905) 847-0688  
Fax (905) 847-8124



©2010 Gardner Denver, Inc.   Printed in U.S.A.  
98700-359

Member

