



# Oil-free Series Screw Air Compressors

Oil-free air for all sustainable air needs

**ELGI**  
Always Better.

**UPTIME™** + **OilFREE™**  
ASSURANCE CLASS-0 ISO 8573-1



CIN: L29120TZ1960PLC000351

[www.elgi.com](http://www.elgi.com)

Two-Stage OF Series: 125 - 500 Hp  
Two - Stage OF-A Series: 60 - 250 HP

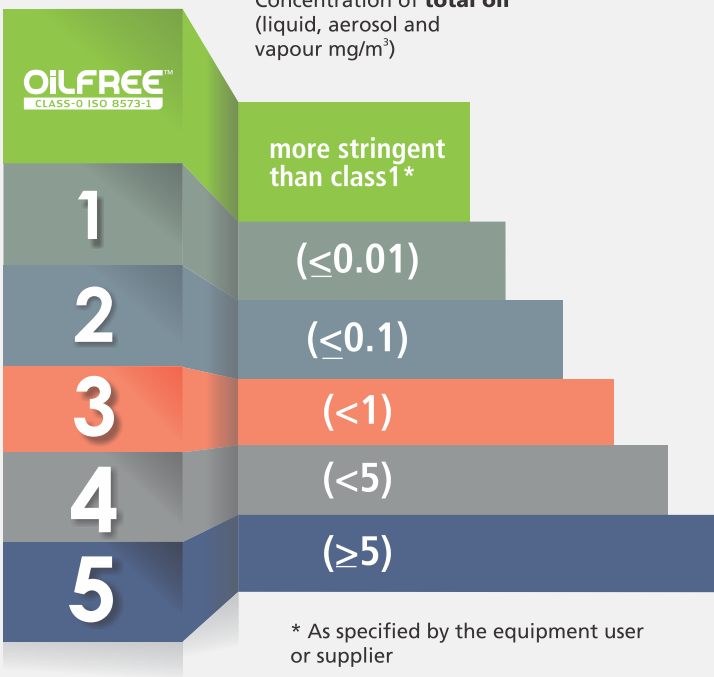
"My critical application requires Class Zero, oil free air with no breakdowns. The UPTIME assurance from ELGI ensures we are always running."

**OILFREE™**  
CLASS-0 ISO 8573-1

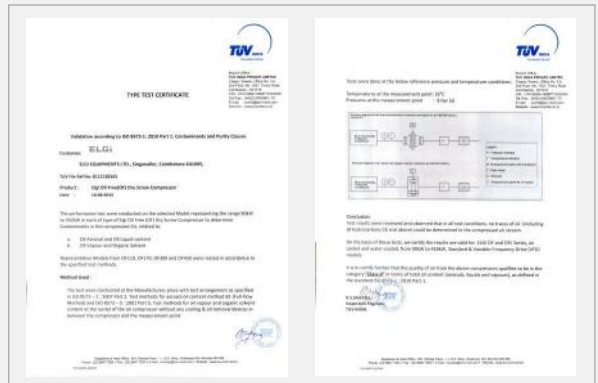


**UPTIME™**  
ASSURANCE

**The Dual Advantage**



## ISO 8573-1, Class '0' Oil-free air

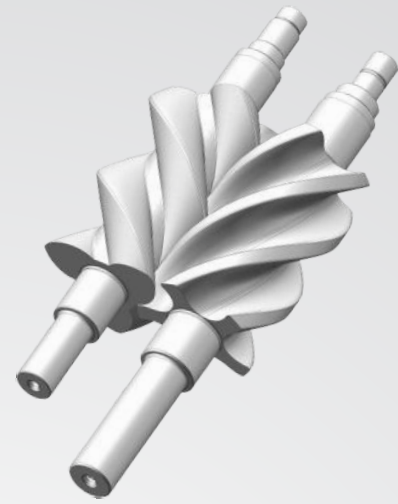




# ELGi Oil-Free Technology

ELGi is one of the very few compressor companies to design and manufacture oil-free air ends. With in-house oil-free technology, the compressors are engineered to deliver maximum uptime and reliability. ELGi's unique eta-V rotor design reduces pressure losses and increases stage efficiencies, leading to an optimized compressed air system.

Optimized component layout of the OF series machine provides easy serviceability with reduced service time. Incorporating superior safety norms, the compressors have not only low energy losses and low air outlet temperatures but are also highly reliable and compact. All these advanced features integrated into one simple design that drives maximum Reliability and Uptime.



## UPTIME<sup>TM</sup> ASSURANCE

# It's not just about delivering air It's about delivering UPTIME<sup>TM</sup>

### Applications

Oil free air is required where there is absolute intolerance of oil vapour presence in the entire manufacturing process



DIRECT IMPACT



BEVERAGE



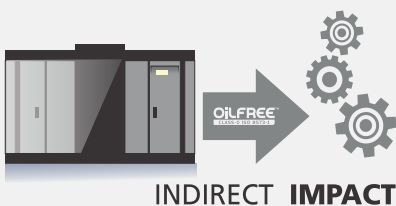
FOOD



TEXTILE



PHARMA



INDIRECT IMPACT



METALS



POWER



OIL&GAS

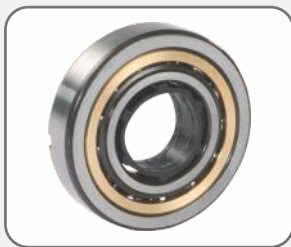
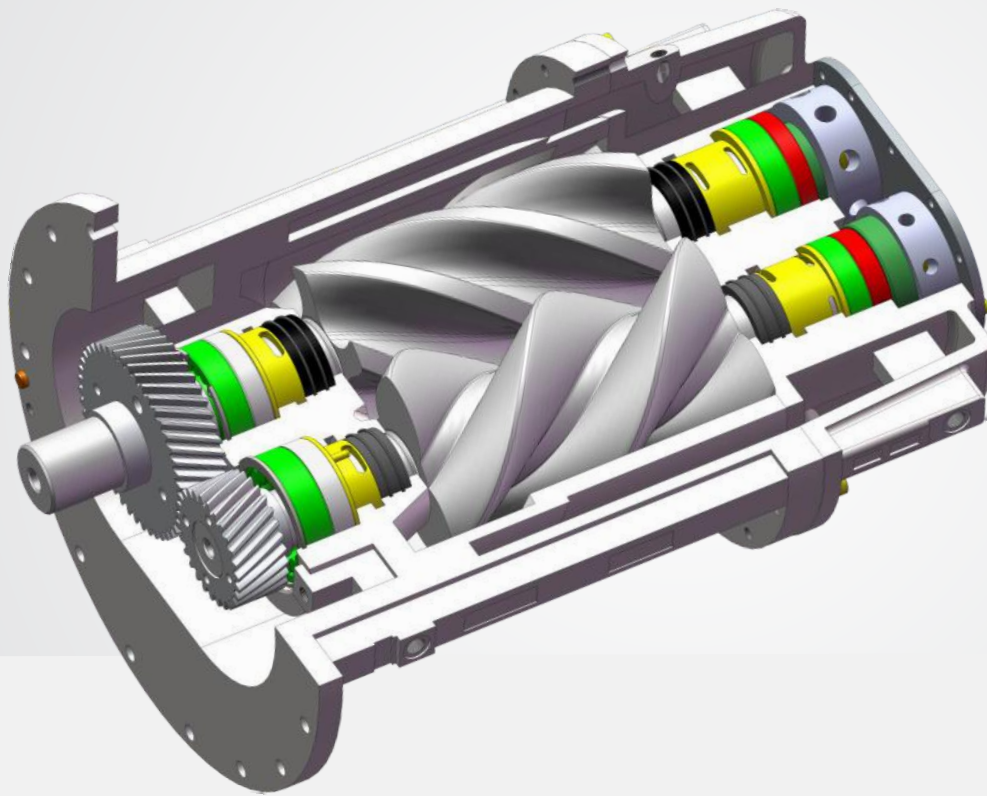


AUTOMOTIVE

# OILFREE™

CLASS-0 ISO 8573-1

Every component in ELGi OF series starting from design, Manufacturing till quality testing embody the philosophy of UPTIME ASSURANCE. The materials used ensure long life, reliability and ruggedness under wide ambient conditions to provide you with oil-free air for uninterrupted and seamless productivity.



## Bearings

- Special bearings running at relatively low speeds and high temperatures
- Optimized for oil free compressor speeds and temperatures considering the load and unload conditions.



## Oil-Seal

- Non-contact type Visco seals made of Bronze
- Helical grooves cut with helix direction opposite to rotor rotation to prevent oil entry into compression chamber



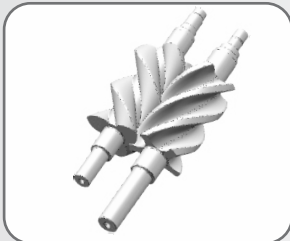
## Casing

- Completely coated with PP® coating (food grade)
- Water jackets are also coated with the same coating



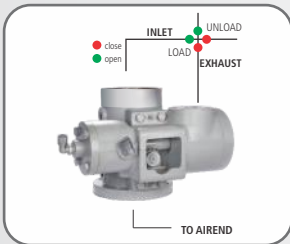
## Coolers

- Cupronickel coolers with water-in-tube system and is designed for temperature difference of max. 14°F
- Better Corrosion resistance and 28 times better thermal conductivity than stainless steel



## Rotor

- Patented eta-V profile with 3/5 lobe for high swept volume and lower pressure ratio
- Rotor operate at lower speed due to the patented profile and less inter-lobe Leakages
- Rotor and housing are coated with PTFE based food-grade PP<sup>®</sup> coating to resist
- Corrosion and endure at high temperatures up to 482°F. This results in optimum long term performance with no loss at efficiency.



## Capacity Control Valve

- Hydraulic rack and pinion type actuation
- Valve membrane made of stainless steel metal instead of elastomer
- More than one million cycles life between rebuilds
- Simultaneous closing of inlet valve and opening of blow off valve by rack and pinion to ensure safety and air-end life
- Less maintenance compared to electrically actuated valves



## Air Seal

- Carbon impregnated SS floating type seals
- Axially locked by Belleville spring and radially locked by compressed air



## Oil Pump

- Separate motor powered oil pump ensures lubrication before and during start of machine (ensuring no dry running of gears and bearings)
- All oil tubing is made of Stainless Steel to increase reliability



## Timing Gears

- Helical gears, precision ground to DIN 4 quality and case hardened to minimize transmission losses and noise during operation
- Dynamically balanced to reduce vibrations by optimizing the loads on bearings and increase bearing life.

## Intelligent Control for Consistent Air Quality and Increased UPTIME

- Reliability of the entire system is ensured by using a dedicated programmable Logic Controller (PLC)
- The PLC uses more than 15 safety interlocks gathering input from Analog and Digital modules

### PLC- Optional with Customized Solutions

#### Add on features:

- DCS connectivity with Modbus
- Customized in-line with client requirement
- Shock pulse monitoring system



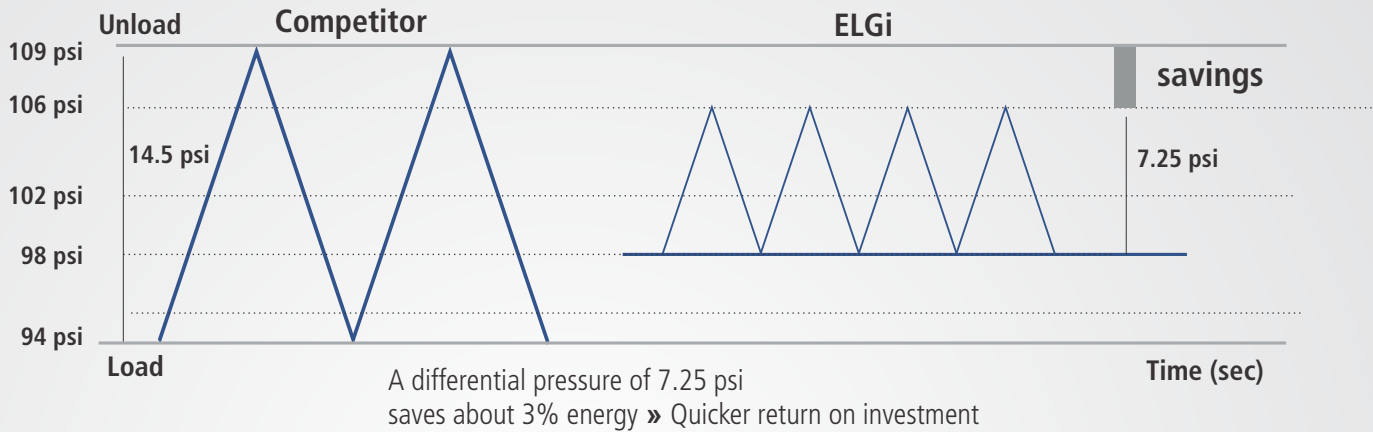


With Rack & Pinion capacity control system, there is no maintenance for over one million cycles » Lower cost of ownership

Without two-step control

With rack and pinion control

Gives an edge to operate numerous cycles in a minute with reduction in pressure band. This saves energy and maintains pressure discharge.



## Reliability / Working Conditions

- Lower speed of airend » Gives better reliability due to lower gear ratio
- Usage of rigid Stainless Steel tubes » Improves product reliability and reduce maintenance
- Reduced pressure differential. Load unload pressure differential is 2.9 psi » Reduces stress on the motor
- Tropical design » Ensures reliable operation at severe working temperatures (23°F to 113°F)

## Efficiency / Cost of Ownership

**Low life cycle cost- High energy efficiency design delivering maximum UPTIME and lower cost of ownership**

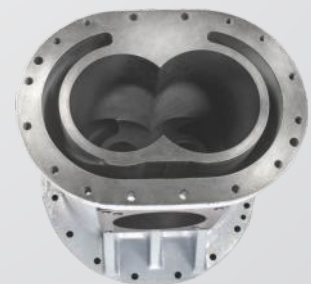
- Operates on low pressure cooling-water head » Reduced power consumption of feed water pumps
- Lower temperature differential of cooling water » Power saving by reduced cooling water pump sizing
- Optimized airend design » Deliver best efficiency of its class at different pressures and Quicker return on investment
- The OF series compressor package ensures that cooling water in-out temperature differential is only 14°F compared to other conventional systems of 57.2°F » Ensures lower thermal stress to the system, better fouling factor and lower cost of ownership



## Consistent Air Quality

**Consistent oil-free air meeting ISO8573-1 class 0 oil standards.**

- Food grade coating is done where air contacts metal surface inside the compressor » Ensures consistent oil-free air without metal debris
- Pipes have special e-coating » Ensures consistently clean and oil-free air
- Optimized rotor clearances » Ensures consistent air delivery as rotor coatings remain uniform



## Uptime Assurance Plan

**48<sup>+</sup>-hour parts availability»** Parts availability shouldn't be a limiting factor for your business. So all ELGi distributors stock high volumes of replacement filters and parts. However, if they don't have a specific part available, we'll ship it to you within 48<sup>+</sup> hours.

**Competitive parts pricing»** Genuine ELGi replacement parts and consumables (filters, oil etc.) are key to protecting your OF series compressor and providing maximum uptime. That's why we offer them at competitive prices.

**Loaner machines<sup>\*</sup>**» If your compressor goes down, we'll have it repaired within 48<sup>+</sup>-hours or we can offer you use of a loaner machine while yours is being repaired.

**Customer Hotline»** When you have service questions, you want to speak to a person, not a machine. You also want that person to be local and knowledgeable. That's why our customer hotline is staffed by industry professionals who know our products, and your business.

\* Subject to conditions.

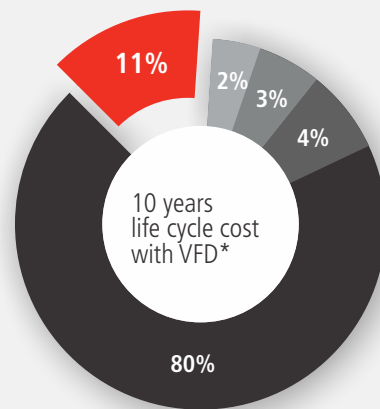


## Improved Cost Of Ownership

In addition to ensuring UPTIME, ELGi OF series is designed to deliver quick returns on capital invested by reducing the operating cost.



- TOTAL POWER COST OF RUNNING MACHINE
- TOTAL SAVINGS DUE TO VFD
- TOTAL POWER COST FOR UTILITIES BY CUSTOMER
- INSTALLATION AND MAINTENANCE COST
- CAPITAL AND COMMISSIONING COST



\* Cost based on OF 275-7 model with VFD. Values subject to change for different models

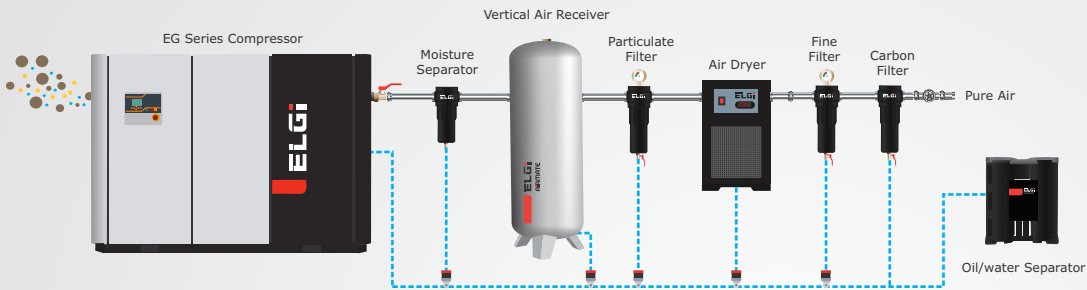


**OILFREE™**  
CLASS-0 ISO 8573-1

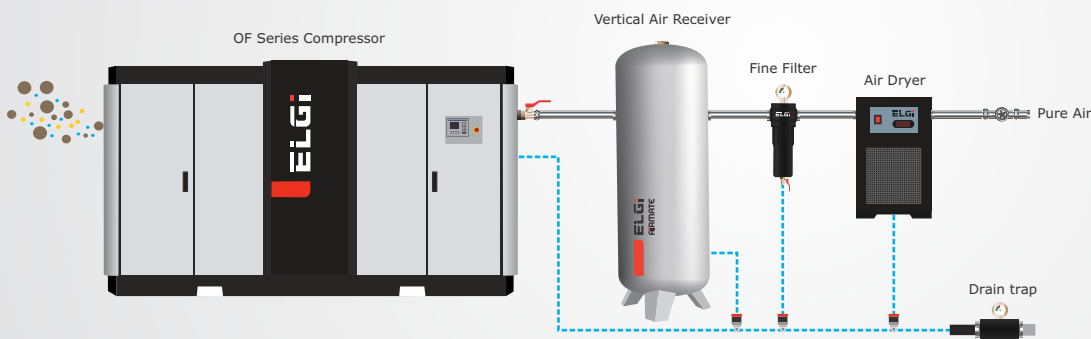
**AIRMATE™**  
AIR ACCESSORIES

Reduced Installation Cost

**Oil-Lubricated Compressed Air Supply System**



**Oil-Free Compressed Air Supply System**



WITH THE CONSERVE ENERGY SAVING ACCESSORIES AND AIRMATE DOWNSTREAM ACCESSORIES, ELGI IS STRIVING FOR A CLEAN, GREENER AND SUSTAINABLE FUTURE

**CONSERVE™**  
ENERGY EFFICIENCY

## Variable Frequency Drives (VFD)

The ELGi CONSERVE VFD matches the compressor output to air demand by varying motor speed and hence the power consumption of the compressor reduces in line with the reduction in demand. The VFD eliminates frequent load-unload cycle and minimizes power wastage there by saving energy cost.

Most fixed speed compressor operates on a load unload band of at least 7.25 psi around the working pressure whereas with ELGi VFD, compressor can be operated within a band of 1.45 psi. Since the compressor is not operated under higher than working pressure requirements, there is substantial energy saving. Approximately, For every 2 psi reduction in operating pressure, there is 1% power saving.

In a fixed speed compressor with Star-Delta starter, starting current is as high as three times the full load current (FLC). With ELGi VFD, starting current is less than the FLC. This helps to avoid using higher ratings of allied components like fuses, MCCB, cable size, generator rating, isolators etc.

For compressed air systems with fluctuating demand pattern, return on additional capital investment due to energy saved can be within few months.

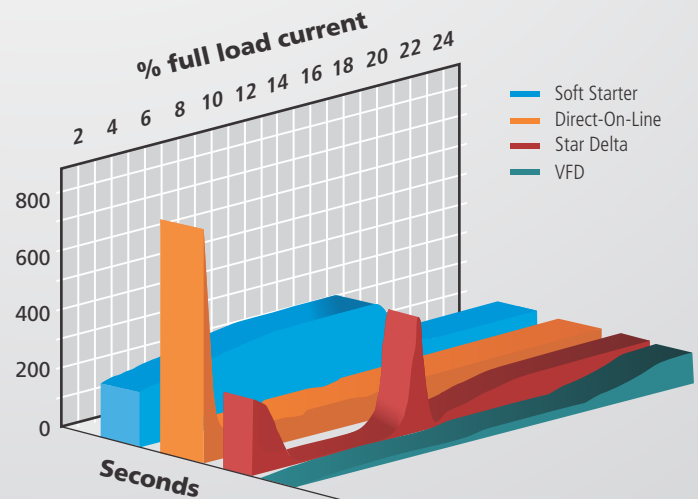
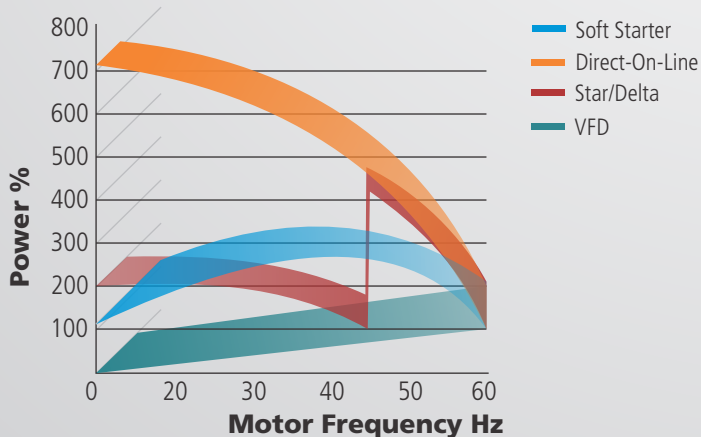
### Advantages:

#### Electrical:

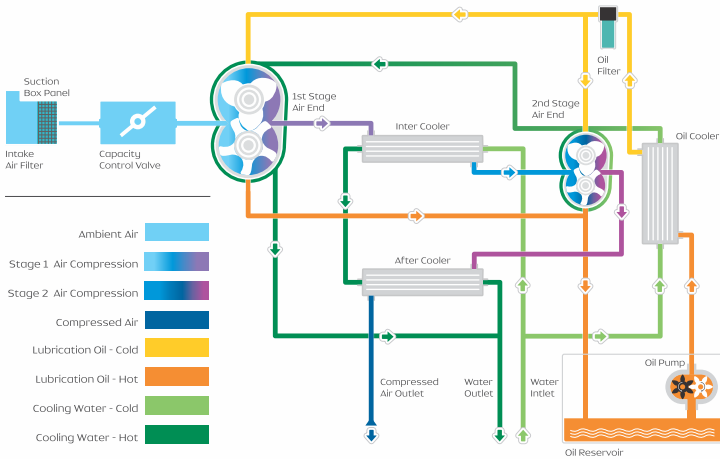
- Low starting current
- High efficiency
- Improved power factor
- Reduced maximum demand

#### Mechanical:

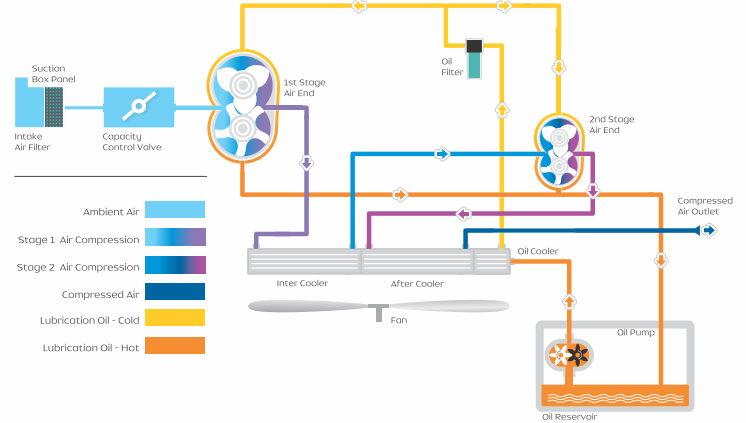
- Minimum maintenance
- Reduced mechanical wear
- Smooth start
- Smooth control



## Oil Free Two Stage Water Cooled



## Oil Free Two Stage Air Cooled



## Technical Specification Air Cooled

Model	Nominal Power	Free Air Delivery (FAD)		Dimension L x W x H (Inches)	Weight lbs
	HP	scfm	m <sup>3</sup> /min		
<b>460V / 440V / 380V- 60 Hz – 100 psi(g) Working Pressure</b>					
OF-45 A	60	235	6.7	86.6 x 49.2 x 78.7	5732
OF-55 A	75	295	8.4	86.6 x 49.2 x 78.7	5732
OF-75 A	100	425	12.0	86.6 x 49.2 x 78.7	5732
OF-90 A	150	549	15.5	116.14 x 72.83 x 89.37	10580
OF-110 A	150	671	19.0	116.14 x 72.83 x 89.37	10580
OF-145 A	200	889	25.2	116.14 x 72.83 x 89.37	12677
OF-170 A	250	1085	30.7	116.14 x 72.83 x 89.37	12677
<b>460V / 440V / 380V- 60 Hz – 115 psi(g) Working Pressure</b>					
OF-90 A	150	505	14.3	116.14 x 72.83 x 89.37	10580
OF-110 A	150	592	16.8	116.14 x 72.83 x 89.37	10580
OF-145 A	200	824	23.3	116.14 x 72.83 x 89.37	12677
OF-170 A	250	999	28.3	116.14 x 72.83 x 89.37	12677
<b>460V / 440V / 380V- 60 Hz – 125 psi(g) Working Pressure</b>					
OF-45 A	60	190	5.4	86.6 x 49.2 x 78.7	5732
OF-55 A	75	253	7.2	86.6 x 49.2 x 78.7	5732
OF-75 A	100	360	10.2	86.6 x 49.2 x 78.7	5732
OF-90 A	150	480	13.6	116.14 x 72.83 x 89.37	10580
OF-110 A	150	567	16.1	116.14 x 72.83 x 89.37	10580
OF-145 A	200	785	22.2	116.14 x 72.83 x 89.37	12677
OF-170 A	250	957	27.1	116.14 x 72.83 x 89.37	12677
<b>460V / 440V / 380V- 60 Hz – 145 psi(g) Working Pressure</b>					
OF-55 A	75	193	5.47	86.6 x 49.2 x 78.7	5732
OF-75 A	100	295	8.35	86.6 x 49.2 x 78.7	5732
OF-90 A	150	395	11.19	116.14 x 72.84 x 89.37	10582
OF-110 A	150	478	13.54	116.14 x 72.84 x 89.37	10582
OF-145 A	200	708	20.05	116.14 x 72.84 x 89.37	12677
OF-170 A	250	815	23.08	116.14 x 72.84 x 89.37	12677



# Technical Specification Water Cooled

Model	Nominal Power	FAD		Dimension	Weight
	HP	scfm	m <sup>3</sup> /min	L x W x H (Inches)	lbs
<b>460V - 60 Hz - 100 psi Working Pressure</b>					
OF-90	125	549	15.5	116 x 65 x 73	9920
OF-110	150	669	18.9	116 x 65 x 73	9920
OF-145	200	880	24.9	116 x 65 x 73	10800
OF-170	250	1077	30.5	116 x 65 x 73	10800
OF-250	300	1509	42.7	138 x 73 x 81	14000
OF-275	350	1688	47.8	138 x 73 x 81	14000
OF-300	400	1809	51.2	138 x 73 x 81	14000
OF-355	450	1935	54.8	165 x 83 x 100	20944
OF-400	500	2443	69.2	165 x 83 x 100	20944
<b>460V - 60 Hz - 115 psi Working Pressure</b>					
OF-90	125	505	14.3	116 x 65 x 73	9920
OF-110	150	619	17.5	116 x 65 x 73	9920
OF-145	200	815	23.1	116 x 65 x 73	10800
OF-170	250	990	28.0	116 x 65 x 73	10800
OF-250	300	1416	40.1	138 x 73 x 81	14000
OF-275	350	1602	45.4	138 x 73 x 81	14000
OF-300	400	1680	47.6	138 x 73 x 81	14000
OF-355	450	1929	54.6	165 x 83 x 100	20944
OF-400	500	2333	66.1	165 x 83 x 100	20944
<b>460V - 60 Hz - 125 psi Working Pressure</b>					
OF-90	125	480	13.6	116 x 65 x 73	9920
OF-110	150	581	16.5	116 x 65 x 73	9920
OF-145	200	775	21.9	116 x 65 x 73	10800
OF-170	250	950	26.9	116 x 65 x 73	10800
OF-250	300	1366	38.7	138 x 73 x 81	14000
OF-275	350	1506	42.6	138 x 73 x 81	14000
OF-300	400	1646	46.6	138 x 73 x 81	14000
OF-355	450	1929	54.6	165 x 83 x 100	20944
OF-400	500	2275	64.4	165 x 83 x 100	20944
<b>460V - 60 Hz - 145 psi Working Pressure</b>					
OF-90	125	399	11.3	116 X 65 X 73	9920
OF-110	150	466	13.2	116 X 65 X 73	9920
OF-145	200	671	19	116 X 65 X 76	10800
OF-170	250	786	22.3	116 X 65 X 76	10800
OF-250	300	1235	35	138 x 73 x 81	14000
OF-275	350	1321	37.5	138 x 73 x 81	14000
OF-300	400	1405	39.9	138 x 73 x 81	14000
OF-355	450	1774	50.2	165 X 83 X 100	20944
OF-400	500	2016	57.1	165 X 83 X 100	20944

1 : OF - 90 NEMA spec motor nominal power is 125 HP

- Single stage low pressure compressors (21.8 - 43.5 psi) are also available on request
- Free Air Delivery (FAD) are tested as per ISO 1217 : 2009 - Annex C
- FAD indicated is for the full package measured at the outlet
- Weight indicated is approximate and actual can vary significantly
- Displayed here is the standard range. For customized packages with different voltages , medium and high voltage motor, pressure variants (50 - 145 psi for two stage machines), please contact our nearest sales office
- Due to continuous improvements, specifications are subject to change without prior notice
- All standard packages can be offered with built in VFD. Please contact our nearest sales office for specifications and shutdown details
- The ambient temperature operating conditions 23°F to 113°F
- All motors can be supplied for various country standards like ABNT, NEMA and IEC however packages(dimension & weight) may vary



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