ELGI

Think Long Run

Total Compressed Air Management Solutions

Air Accessories

a tradition of RELIABILITY

Elgi's experience in the design and manufacture of air compressors spans 50 years. Established in India in 1960 as a reciprocating air compressor manufacturing company, Elgi gained its reputation for design and manufacture of screw compressors through strategic partnerships and continuous research and development. Over the years, it emerged as a multi-product multi-market enterprise providing total compressed air solutions in all segments. Elgi's design capabilities translated into wide range of products ranging from oil-lubricated and oil-free rotary screw compressors, oil-free reciprocating compressors and centrifugal compressors.

innovative **TECHNOLOGY**

Screw compression elements are manufactured in-house using state-of-the-art machining centres for rotor grinding and machining intrinsic castings of various sizes. Elgi's own ηV (eta V) profile rotors ensure energy-efficient compressed air supply for all demanding applications. Elgi is one of the few companies capable of manufacturing wide range of airends and compressor packages in the world.

robust **INFRASTRUCTURE**

Elgi has modern manufacturing facilities in India & abroad equipped with advanced high precision grinding machines, turning centres and CNC horizontal and vertical machining centres . Every manufactured component / product passes through stringent quality audits and are tested to ensure performance and reliability. Our Manufacturing test rooms are atmospheric controlled. All parts and finished products undergo stringent quality checks to ensure that Elgi delivers only high quality products to its customers.

Prevent Real Life Problems with Elgi Airmate Refrigeration Air Dryers and Filters

Real life problem 1
Unwanted Abrasive Sludge

Real life problem 2
Corrosion of Piping

Real life problem 3
Damaged Pneumatic Tools

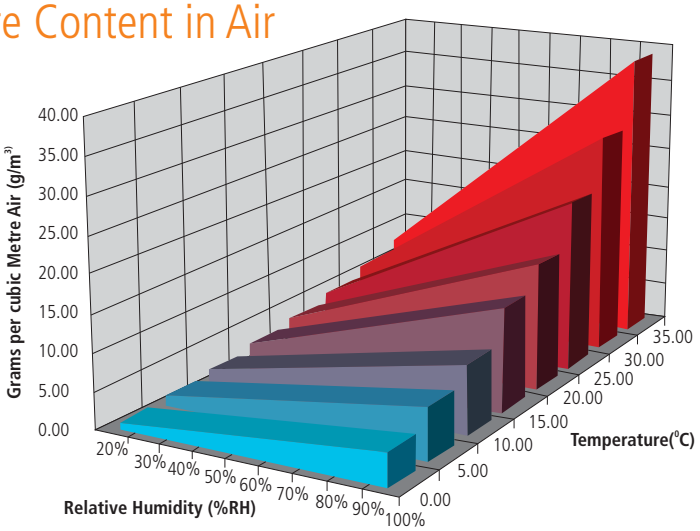
Why do we need to dry the air?
When atmospheric air cools down, as happens following a compressor compression process, water vapour precipitates as condensate. This is the form of water that is naturally present in the air we breathe. Under average conditions, a compressor with a capacity of 3 m3/min at 7.5 bar will generate approximately 40 litres of water per day. This condensate needs to be removed from the compressed air system to prevent corrosion and damage to transmission piping and end use machines. Compressed air drying is hence essential and is an important part of air treatment process.

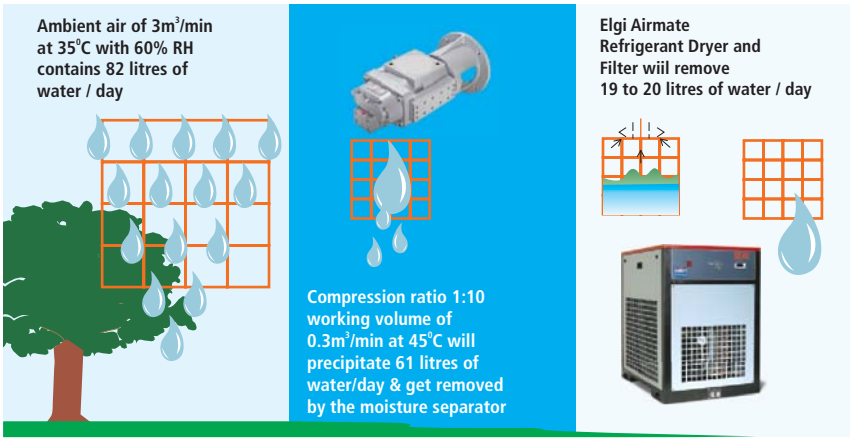
Compressed air will also contain water, dirt, wear particles, bacteria and even degraded lubricating oil. All these impurities mix together to form an abrasive sludge. This sludge is often acidic and accelerates wear and tear of tools, pneumatic machinery, block valves and orifices. This results in costly air leaks and high maintenance. It also corrodes pipes and can bring production process to a standstill.

Only compressed air that is totally clean and dry will ensure reliable working of compressed air systems and maximum savings. The favoured method of drying the compressed air is through refrigeration dryers.

Elgi offers a reliable solution through Elgi Airmate Refrigerant Air Dryers. The dryers ensure longer life of compressed air systems through efficient removal of the condensate and contaminants .

Moisture Content in Air





Total Air Cure Solutions for clean and dry air

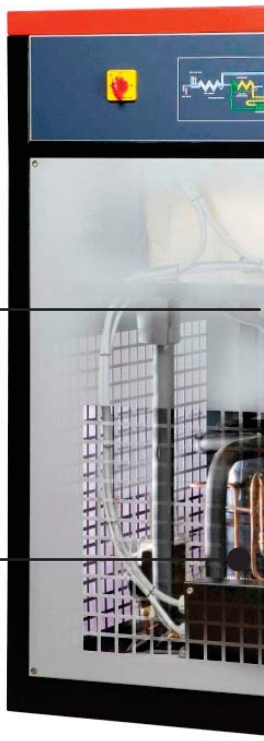
Adding value to the Elgi Compressor range
Elgi Air Accessories

Controller

The use of microprocessor based controller ensures higher performance reliability of the drier. The controller indicates the pressure dew point for online monitoring. Setting options for controlling the cycle controller and automatic drain valves are provided.

Cycle controller

The pressure operated 100% modulating cycle controller provides a quicker and reliable response to the inlet air temperature. It ensures optimum dew point control under all operating conditions. It is primarily used to prevent freezing phenomenon in the evaporator. Mechanical type cycle controller is used in the higher flow models and solenoid operated cycle controller is used in lower flow models.



Refrigeration compressor

Hermetically sealed and highly energy efficient reciprocating piston compressor ensures effective compression of the refrigerant for drying the compressed air.

Condenser

Highly efficient copper tubed Aluminum finned condenser. The hot and high pressure refrigerant enters into the condenser in gaseous state and gets cooled through the forced circulation of cold air using a fan and flows to the expansion valve in liquid state

Capillary/Expansion Device

Use of capillary refrigerant expander or mechanical expansion device prior to the heat exchanger ensures that the refrigerant flow into the evaporator is only in the liquid state. High quality copper ensures minimum due point fluctuation and maximum heat transfer efficiency between compressed air and refrigerant.

ISO 7183

Heat exchanger

High efficiency 'tube in tube' heat exchanger. The high quality copper tube ensures maximum heat transfer efficiency, corrosion resistance and minimum pressure drop. The heat exchanger is filled with PUF for better insulation and efficiency. It performs the function of both pre-cooler and evaporator.

Condensate drain

High reliability automatic condensate drain ensures maximum condensate removal form the system. The drain is solenoid controlled and the timings of moisture draining can be set by the user using the microprocessor based controller. This controllable feature ensures reliable moisture cured air even at high humid and tropical conditions.

Airmate Refrigeration Air Dryer

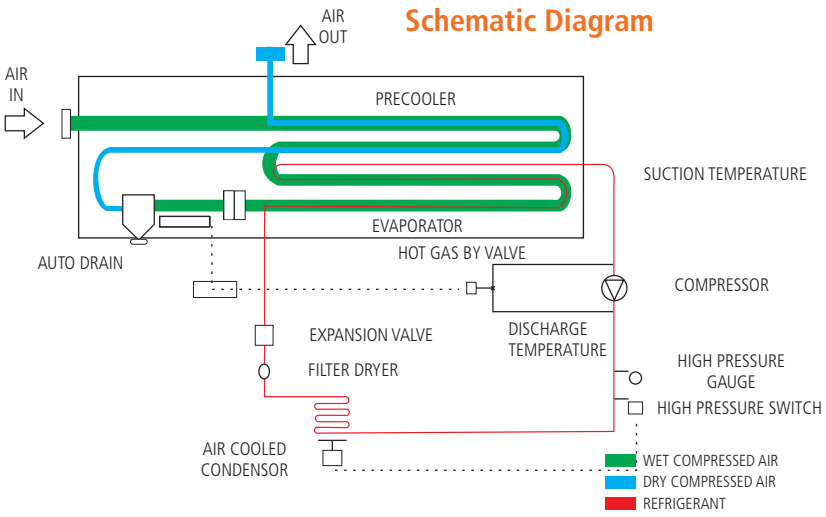
Ozone-friendly refrigerant

Elgi thinks long run to make the earth and the environment a safer and a better place to live. As per international protocol, Elgi uses ozone-friendly R 134A gas as the refrigerant which has zero ozone-depletion potential.

Unique Features:

- Low pressure drop
- Non-cyclic
- Compact
- Suitable for 180-260/415 Volts
- Environment-friendly - R 134A
- Tropicalised

Schematic Diagram



Model	Flow		Max Pressure	Electrical			Dimensions in mm			weight	Cooling media
	cfm	m³/min	bar g	Volts	Hz	phase	length	breadth	height	Kg	
ELRD 010	10	0.28	16	230	50	Single	360	475	570	45	Air
ELRD 020	20	0.57	16	230	50	Single	360	475	570	45	Air
ELRD 030	30	0.85	16	230	50	Single	360	475	570	47	Air
ELRD 040	40	1.13	16	230	50	Single	360	475	570	47	Air
ELRD 050	50	1.42	16	230	50	Single	500	600	730	84	Air
ELRD 080	80	2.27	16	230	50	Single	500	700	830	95	Air
ELRD 100	100	2.83	16	230	50	Single	600	800	850	121	Air
ELRD 150	150	4.25	16	230	50	Three	600	800	850	135	Air
ELRD 200	200	5.66	16	230	50	Three	600	800	850	135	Air
ELRD 300	300	8.50	16	230	50	Three	800	900	1150	200	Air
ELRD 400	400	11.33	16	230	50	Three	800	1000	1350	250	Air
ELRD 500	500	14.16	16	415	50	Three	800	1000	1350	250	Air/ Water
ELRD 600	600	16.99	16	415	50	Three	900	1200	1350	275	Air/ Water
ELRD 750	750	21.24	16	415	50	Three	900	1200	1475	375	Air/ Water
ELRD 900	900	25.48	16	415	50	Three	900	1200	1725	425	Air/ Water
ELRD 1100	1100	31.15	16	415	50	Three	900	1200	1725	425	Air/ Water
ELRD 1254	1254	35.51	16	415	50	Three	1600	1100	1400	1000	Water
ELRD 1552	1552	43.95	12.5	415	50	Three	1600	1100	1400	1200	Water
ELRD 1750	1750	49.55	12.5	415	50	Three	1800	1100	1400	1500	Water

*Water-cooled version available as option

Performance data is measured at 7 bar, inlet temperature 45°C, ambient temperature 35°C, pressure dew point +3°C

Customized models are available on request

Dryers of higher capacities are also available

Due to continuous engineering improvements, technical specifications are subject to change without prior notice

Correction factors

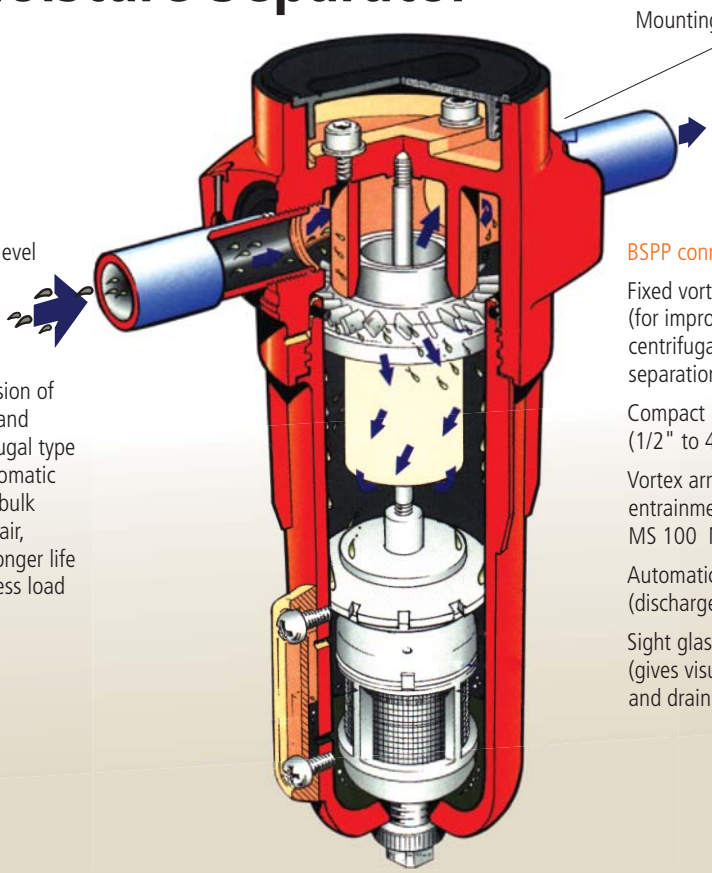
Inlet temp.	25 Deg C	30 Deg C	35 Deg C	40 Deg C	45 Deg C	50 Deg C	55 Deg C	60 Deg C
factor	1.22	1.20	1.15	1.05	1	0.85	0.8	0.7

Ambient temp.	20 Deg C	25 Deg C	30 Deg C	35 Deg C	40 Deg C	45 Deg C	50 Deg C
factor	1.20	1.14	1.10	1	0.91	0.87	0.78

Working Pressure	4 Bar	5 Bar	6 Bar	7 Bar	8 Bar	9 Bar	10 Bar	11 Bar
factor	0.75	0.85	0.93	1	1.06	1.11	1.15	1.18

Airmate Moisture Separator

Depending on the humidity level of the inlet air, certain amount of bulk water is present in the compressed air at varying levels. This bulk water causes the corrosion of pipes, end tools, machinery and valves. Elgi's unique centrifugal type moisture separator with automatic drain removes over 99% of bulk water from the compressed air, resulting in corrosion-free, longer life of end use equipment and less load on the dryer.



BSPP connections

Fixed vortex generator
(for improved water removal by centrifugal and impingement separation)

Compact lightweight housing
(1/2" to 4" sizes available)

Vortex arrestor (Prevents re-entrainment of separated water
MS 100 MS 365)

Automatic drain
(discharges separated water)

Sight glass
(gives visual check of water collection and drain function)

Airmate Air Receiver

The Elgi Air Receiver is engineered to handle the stress of fluctuating air demands, reduce wear and tear and increase the life of the end use equipment.

Model	Capacity		Max Working Pressure	Dimensions (m)	
	ltr.	m^3	bar g	Height	Dia.
VA 00 010	250	0.25	12.5	1745	500
VA 00 020	500	0.5	7	2060	600
VA 00 020	500	0.5	10	2060	600
VA 00 020	500	0.5	12.5	2010	622
VA 00 030	750	0.75	12.5	2095	752
VA 00 040	1000	1	7	2700	750
VA 00 040	1000	1	10	2700	750
VA 00 040	1000	1	12.5	2700	750
VA 00 060	1500	1.5	7	2510	996
VA 00 060	1500	1.5	10	2510	996
VA 00 060	1500	1.5	12.5	2520	1020
VA 00 080	2000	2	7	3185	1000
VA 00 080	2000	2	10	3185	1000
VA 00 080	2000	2	12.5	3185	1000
VA 00 120	3000	3	7	2995	1310
VA 00 120	3000	3	10	2995	1310
VA 00 120	3000	3	12.5	2815	1314
VA 00 160	4000	4	12.5	3590	1314
VA 00 200	5000	5	12.5	3545	1500

Dimensions are approximate
Air receivers of higher capacities are available on request
All air receivers are made as per ASME section VIII Div 1 / IS 2825
Level sensing auto drains are also available
Due to continuous engineering improvements, technical specifications are subject to change without prior notice

Airmate Filters

ISO 8573-1

Alocrom aluminium treatment
The Alocrom aluminium treatment is a special feature of all Elgi Airmate die-cast filter housings. This treatment ensures there is no corrosion and no carry over of corroded particles into the airline, which can otherwise cause blockades in sophisticated parts.

TYPE PF

High efficiency General Purpose Protection: For the removal of particles down to 1 micron including coalesced liquid water and oil, providing a maximum remaining oil aerosol content of 0.5 mg/m^3 @ 21^{0}C.

TYPE FF

High Efficiency Oil Removal Filtration: For the removal of particles down to 0.01 micron including water and oil aerosols, providing a maximum remaining oil aerosol content of 0.01 mg/m^3 @ 21^{0}C. (Precede type FF with type PF)

TYPE CF

Activated Carbon Filtration: For the removal of oil vapour and hydrocarbon odour giving a maximum remaining oil content of <0.003 mg/m^3 (<0.003 ppm) (excluding methane) @ 21^{0}C. (Precede type CF with type FF & PF)

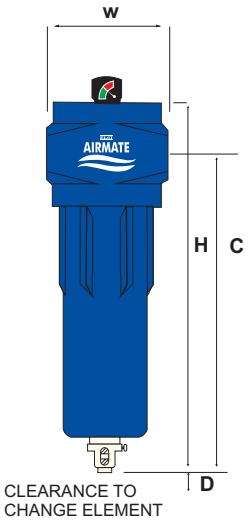
Designation - Economy Series Filters

PF	E	0100
Filter type	Economy	Filter size

PF- PreFilter
FF - Fine Filter
CF - Carbon Filter

Economy Series Filters

Filter Type	Pipe size	Engineering Data: Flow rates @7 bar g (100 psi g) cfm	Flow rates @7 bar g (100 psi g) m^3/h	Dimensions (mm) H	W	C	D	Weight (kg)
(Filter Type)E 0018	G 3/8	18	31	275	70	180	75	1.2
(Filter Type)E 0035	G 3/8	35	59	315	80	215	90	1.3
(Filter Type)E 0053	G 1/2	53	90	315	80	215	120	1.5
(Filter Type)E 0070	G 1/2	71	121	350	95	235	120	1.6
(Filter Type)E 0100	G 3/4	106	180	350	95	235	150	1.8
(Filter Type)E 0125	G 1	125	212	120	58	351	272	2.9
(Filter Type)E 0150	G 1	159	270	420	110	295	150	2.5
(Filter Type)E 0200	G 1 1/4	212	360	420	110	295	200	2.7
(Filter Type)E 0280	G 1 1/2	282	479	575	150	405	200	5
(Filter Type)E 0400	G 2	424	720	575	150	405	280	6
(Filter Type)E 0620	G 2	635	1079	1015	280	830	450	28
(Filter Type)E 0840	G 2 1/2	847	1439	1015	280	830	580	33
(Filter Type)E 1120	G 3	1129	1918	1315	320	1120	850	40
(Filter Type)E 1600	G 4	1694	2878	1100	410	710	580	80
(Filter Type)E 2540	G 4	2541	4317	1100	410	810	580	80
(Filter Type)E 3300	G 4	3388	5756	1370	410	1140	850	90



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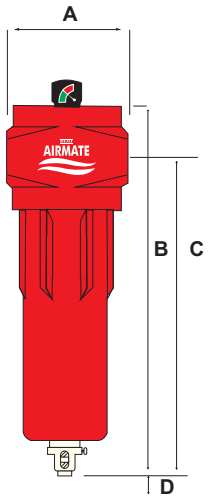
Designation - Premium Series Filters

PF	P	0020
Filter type	Premium	Filter size

Premium Series Filters

Filter Type	Pipe size	Engineering Data						Weight (kg)
		Flow rates @7 bar g (100 psi g)		Dimensions (mm)				
		cfm	m^3/h	A	B	C	D	
(Filter Type)P 0020	G 1/4	21	36	76	181.5	153.2	40	0.6
(Filter Type)P 0040	G 3/8	42	71	97.5	235	201	50	1.1
(Filter Type)P 0060	G ½	64	109	97.5	235	201	50	1.1
(Filter Type)P 0125	G 3/4	127	216	129	274.8	232.5	70	2.2
(Filter Type)P 0230	G1	170	289	129	364.3	322	70	2.7
(Filter Type)P 0300	G1 1/4	399	678	170	432.5	382.5	100	5.1
(Filter Type)P 0400	G1 1/4	399	678	170	432.5	382.5	100	5.1
(Filter Type)P 0420	G1 ½	466	792	170	524.5	474.5	100	5.7
(Filter Type)P 0460	G1 ½	466	792	170	524.5	474.5	100	5.7
(Filter Type)P 0670	G2	678	1152	170	524.5	474.5	100	5.7
(Filter Type)P 0848	G2 ½	911	1548	204.8	641.6	581.6	120	11.1
(Filter Type)P 0900	G3	911	1548	204.8	641.6	581.6	120	11.1
(Filter Type)P 1300	G3	1314	2232	204.8	832.1	581.6	120	13.9
(Filter Type)P 2100	G4	2119	3600	420	82	1095	570	44.5



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Technical Data

Maximum operating pressure (0019 to 2119) with Autodrain	16 bar g (232 psi g)	Max. recommended operating temperature 30 °C (86 ° F) (Type CF)	Initial 'dry' differential pressure Type PF - 70m bar (1.0 psi) Type FF - 100m bar (1.5 psi) Type CF - 70m bar (1.0 psi)	Initial 'wet' differential pressure Type PF - 140m bar (2.0 psi) Type FF - 200m bar (3.0 psi) Type CF- N/A
Maximum operating pressure (0018 to 2119) with manual drain	20 bar g (290 psi g)	Min. recommended 1.5 °C (35° F)		
Maximum recommended operating temperature (Type PF/FF)	66 d C (150 ° F)		Maximum recommended pressure differential for element change: (PF, FF filters only) 340m bar.	

For Flow Rates at other pressures, apply the factor shown

Line	bar g	1	2	3	5	7	9	11	13	15	17	20
Pressure	psi g	15	29	44	73	100	131	160	189	218	247	290
Correction Factor		0.38	0.53	0.65	0.85	1.0	1.13	1.25	1.36	1.46	1.56	1.7

The CF Filter will not remove CO/CO_2 or other toxic gases or fumes.

Ordering example: To order a premium 0.01 micro fine filter with a flow capacity of 125 cfm at 7 bar , specify FFP0125

Airmate Drain Valves

"Zero loss advantage"

Compressed air condenses moisture in dryers, after-coolers and air receivers. This condensate needs to be removed frequently. This process is done by the drain valves. In ordinary drains, there is always loss of compressed air. Most of the condensate drains have a 4 mm orifice. This 4 mm orifice bleeds about 34 cfm, which is the equivalent of 6.5 kw of power. Elgi airmate drains work on the principle of zero air loss and do not bleed your compressed air, consequently saving energy.

Technical Specifications

Capacity	: up to 2000 cfm
Working pressure	: 16kgf / cm ^{2} g max
Media	: Condensate

Compact Timer Drain Valve

The controller is built with ultra reliable microcontroller with dual adjustment of both both cylce and drains for added flexibility of use.The valve has large orifice and special solenoid operator section to discharge dust.

- Easy to mount at all location
- Maintain and clean drain valve without removing from service
- Adjustable on and off timing
- Large orifice for effective drain of dust and condensate
- Condensate discharging is no problem

Level Sensing Drain Valve

The condensate sensing type automatic drain valve is the latest advancement in drain valve technology. Instead of operating through cycle timer, these valves sense the condensate level for activation, ensuring absolutely no loss of compressed air and hence enormous energy saving. These drain valves are highly efficient and reliable. They can be fitted directly on the equipment simply by replacing the manual drains.

- The electronic level control ensures proper draining of condensate and avoids unnecessary loss of air.
- All the functions of the valve are accurately indicated by the LED display.
- Test switch (or) manual drain allows function test at anytime.
- Intelligent Controller detects valve, probe failure and acts accordingly.
- Noise free, as air is not discharged.

Energy Saving Solutions

Energy saving - The CONSERVE way

Conserv **Variable Frequency Drives(VFD)**

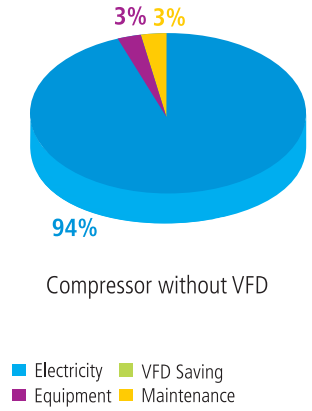
ELGI CONSERVE drives match output with demand by varying motor speed. the power consumption reduces in line with the reduction in demand. Helps in eliminating the frequent load-unload cycle and the also the wasted power from the energy bill.

A fixed speed compressor operates on a load-unload band of atleast 10 psi around the working pressure whereas with ELGI VFD, compressor can be operated within a band of 2 psi. Since compressors are not operated under higher than working pressure requirements, there is substantial energy saving. For every 2 psi reduction in operating pressure, there is 1% power saving.

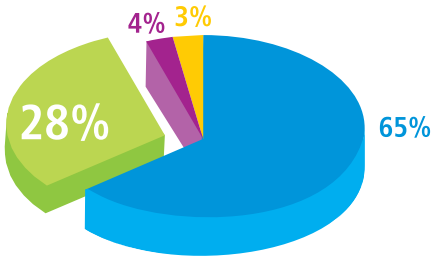
In a fixed speed compressor with Star-Delta starter, starting current is as high as three times the full load current(FLC). With Elgi VFD starting, starting current is as high as three times the full load current (FLC). This helps to avoid using heavy rated components like fuses, MCCB, cable size, generator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

For compressed air systems with fluctuating demand pattern, return on investment due to power saving will be less than 12 months

10 Year Life Cycle Cost



Compressor without VFD



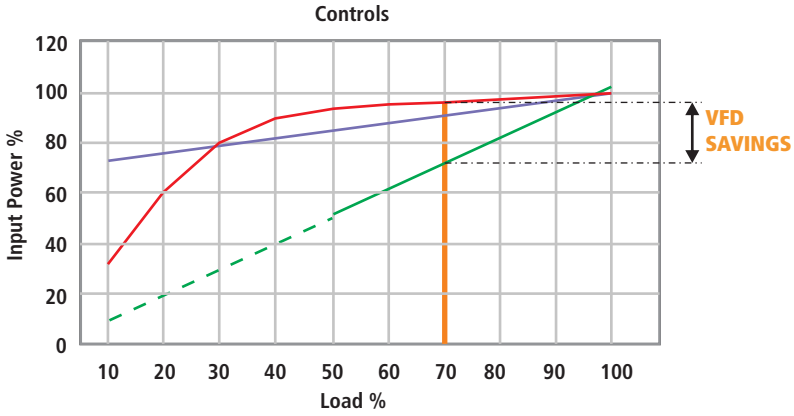
Compressor with Conserv

Advantages

Mechanical
Minimum maintenance
Smooth start
Smooth control

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

Model	Compatible Compressor Model
ELVD 75	E75 & EE75
ELVD 90	E90 & EE90
ELVD 110	E110 & EE110
ELVD132	E132 & EE132
ELVD 160	E160 & EE160
ELVD 200	E200
ELVD 250	E250



Example: For a demand of 70 % of full load, the savings from Elgi Conserve compared to a fixed speed compressor will be about 28% of full load power

Automated Supply Side Controller (ASSC)

In multiple compress installation, it is difficult to choose the correct combination of compressors manually. This results in wastage of 20 - 60% of power. To cut such operating costs, Elgi has introduced the Automated Supply Side Controller

Elgi's ASSC , Master controller can manage up to 12 positive displacement compressors – including compressors of different capacities, different types (fixed speed, variable speed and variable capacity), and in any combination or configuration. Through advanced control functionality and universal connectivity the ASSC will work with your existing compressors, from Elgi or any manufacturer, to improve operating efficiency and reduce energy costs. Here's how the ASSC controller delivers a unique combination of efficiency and reliability:

- Operate compressors only as needed, bringing standby compressors on-line incrementally during periods of increased demand
- Dynamically match the most energy efficient compressor or combination of compressors with compressed air demand
- Manage the compressed air system at your minimum required pressure without compromising the reliability of your compressed air supply

Customer care system

Elgi's customer care centre works 12 hours a day and 6 days with two shifts of staffing through a toll-free telephone number, 1800-425-3544 in India.

global **REACH**

Elgi serves the world marketplace. Over two million compressors are powering business in 63 countries worldwide. The company offers a strong sales and service network of 14 domestic and 6 overseas offices, besides a well-knit distribution network of 114 dealers in India and 165 distributors worldwide. In addition to manufacturing facilities in India, Elgi has manufacturing facilities in China and France. Elgi has also set up warehouse facilities in Brazil and Middle East.

ELGI

Think Long Run

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