



EGRD Refrigerated Air Dryers

ELGi
Always Better.



CIN: L29120TZ1960PLC000351

www.elgi.com

10 - 2900 cfm | 0.28 - 75 m³/min

The ELGi logo consists of the letters 'ELGi' in a bold, black, sans-serif font. The letter 'i' is lowercase and has a small red square above its dot. The background of the entire page is a photograph of a factory interior with large industrial machinery, overlaid with a semi-transparent red filter.

Always Better.

ELGi, established in 1960, designs and manufactures a wide range of air compressors. The company has gained its reputation for design and manufacture of screw compressors through strategic partnerships and continuous research and development. Over the years, it has emerged as a multi-product, multi-market enterprise providing total compressed air solutions in all segments. ELGi's design capabilities translated into a wide range of products ranging from oil-lubricated and oil-free rotary screw compressors, reciprocating compressors and centrifugal compressors. ELGi has its own manufacturing operations in India, Italy and USA with subsidiaries in Australia, Brazil, UAE and Indonesia. The company is fast expanding its global footprint attracting distributors and customers with its latest generation products.

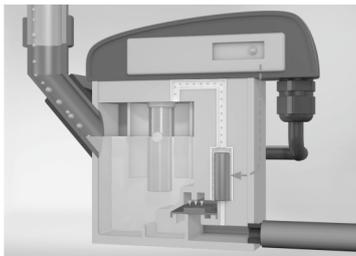
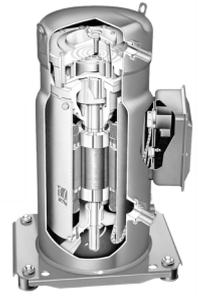
Screw Compressor elements are manufactured in-house using state-of-the-art machining centres for rotor grinding and machining castings of various sizes. ELGi's own η -V profile rotors ensure energy-efficient compressed air supply for all demanding applications. ELGi is one of the few companies capable of manufacturing wide range of airends and compressor packages in the world. ELGi's patent portfolio is a testament to the company's continuous research and innovation capability

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Refrigeration Compressor

- Hermetically sealed and highly energy efficient compressor
- Low noise and vibration



Condensate Drain

- Level sensing zero loss drain removes condensate from the system with no air loss

Condenser

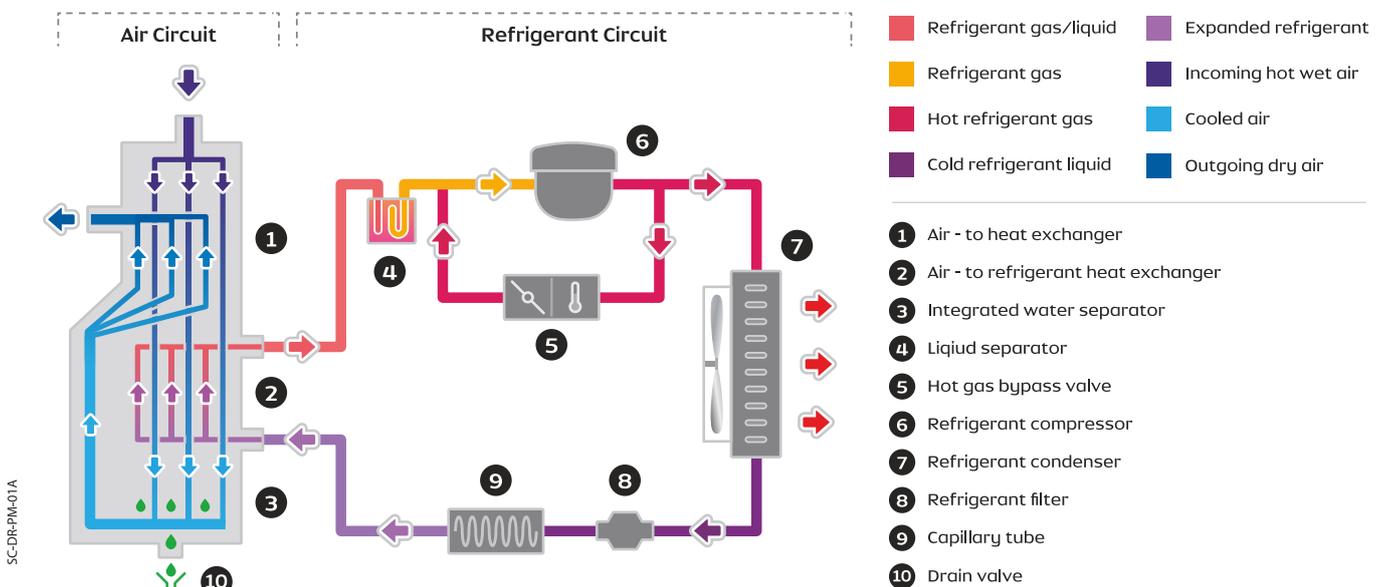
- High efficient copper tubed Aluminium finned condenser. The hot high pressure refrigerant enters into the condenser in gaseous state and gets cooled through the forced circulation of cold air using a fan and flows to the capillary tube in liquid state.
- Condenser fan switches off/reduces speed based on the condensing pressure & dryer temperature



Capillary Tube

- High quality copper tube ensures that the refrigerant flows into the heat exchanger in the liquid state and reduced temperature

EGRD Refrigerated Air dryer Schematic diagram



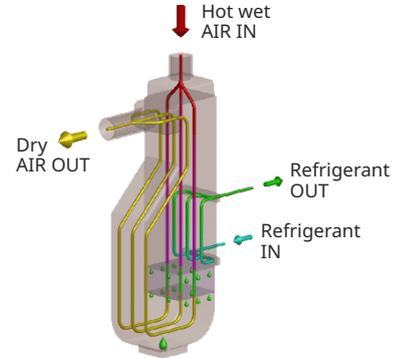


Refrigerant Filter

- Refrigerant filter ensures the humidity that enters the refrigerant system during refrigerant replacement does not clog the system.

Heat Exchanger

- High efficiency aluminium plate type air to air and air to refrigerant heat exchanger
- Design ensures cross flow between coolant and hot air thus minimizing pressure drop and maximizing thermal efficiency.
- Heat exchanger insulated with Eco-friendly material for high degree of insulation and efficiency with minimum impact on the environment.



Controller

- 3 digit display of pressure dew point temperature (°C or °F) & condensing pressure (bar or psi)
- Displays dryer total operation hours and hours until next service
- On/Off status of compressor, drain, fan I & II
- LED indication for service warning, alarm for any failure
- Test option for drain

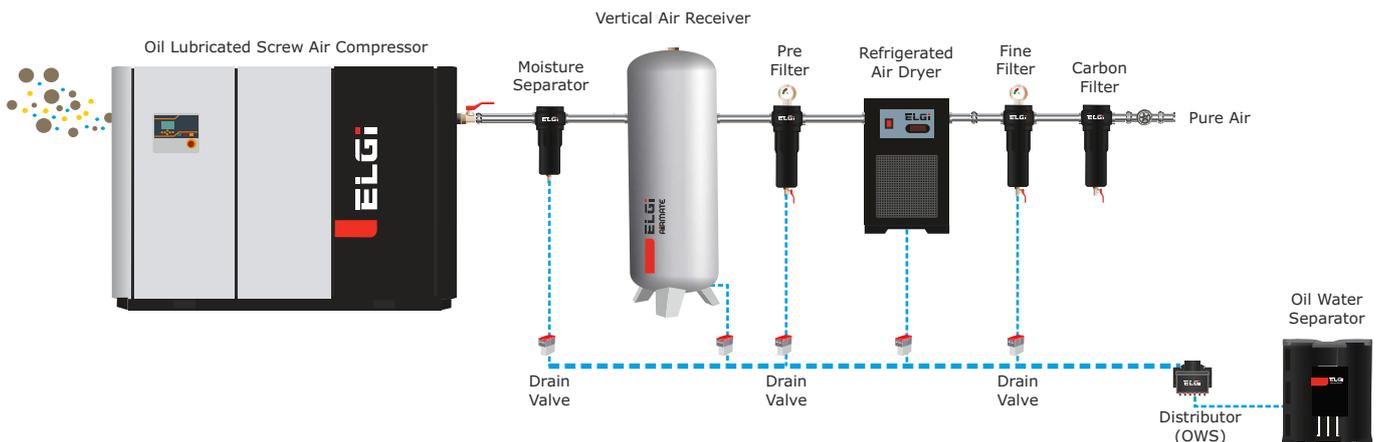
Hot Gas Bypass Valve

- The pressure operated 100% modulating mechanical type hot gas bypass valve ensures quicker and reliable response to changes in load conditions, maintaining optimum dew point at any load conditions.
- Prevents freezing phenomenon in the heat exchanger and ensures smoother and reliable operation due to complete mechanical system.



Installation of Air Accessories

Compressed Air Supply System



Technical Specification

Model	Flow		Air pressure drop	Max Inlet pressure	Inlet/Outlet	Compressor	Refrigerant	Electrical standard	Nominal Power consumption	Dimension (mm)			Gross Weight
	cfm	m ³ /min	bar (g)	bar (g)	Size (BSP-F)	Type	Type	Ph/V/Freq	(kW)	Length	Breadth	Height	Kg
EGRD 10	10	0.28	0.15	16	G 3/8"	Reciprocating	R134a	1/230/50	0.15	310	370	435	21
EGRD 20	20	0.57	0.04	16	G 1/2"	Reciprocating	R-134a	1/230/50	0.16	395	515	500	25
EGRD 30	30	0.85	0.09	16	G 1/2"	Reciprocating	R-134a	1/230/50	0.19	395	515	500	26
EGRD 40	40	1.13	0.14	16	G 1/2"	Reciprocating	R-134a	1/230/50	0.21	395	515	500	28
EGRD 50	60	1.70	0.32	16	G 1/2"	Reciprocating	R-134a	1/230/50	0.29	395	515	500	32
EGRD 80	85	2.41	0.24	14	G 1"	Reciprocating	R-134a	1/230/50	0.39	380	420	775	34
EGRD 100	110	3.11	0.16	14	G 1.1/4"	Reciprocating	R-134a	1/230/50	0.48	380	445	775	39
EGRD 150	150	4.25	0.24	14	G 1.1/4"	Rotary	R-407C	1/230/50	0.71	380	445	775	40
EGRD 175	180	5.10	0.34	14	G 1.1/4"	Rotary	R-407C	1/230/50	0.72	520	455	865	41
EGRD 200	210	5.95	0.19	14	G 1.1/2"	Rotary	R-407C	1/230/50	0.82	605	580	940	54
EGRD 250	260	7.36	0.25	14	G 1.1/2"	Rotary	R-407C	1/230/50	0.71	605	580	940	56
EGRD 300	370	10.48	0.14	14	G 2"	Rotary	R-407C	1/230/50	0.92	610	625	1030	94
EGRD 400	455	12.88	0.20	14	G 2"	Rotary	R-407C	1/230/50	1.4	610	625	1030	96
EGRD 500	590	16.71	0.15	14	G 2.1/2"	Rotary	R-407C	1/230/50	1.5	715	725	1155	144
EGRD 600	630	17.84	0.07	14	DN80 PN16	Scroll	R-407C	3/400/50	2.1	900	1000	1600	240
EGRD 750	750	21.24	0.11	14	DN80 PN16	Scroll	R-407C	3/400/50	2.55	900	1000	1600	242
EGRD 900	900	25.49	0.09	14	DN80 PN16	Scroll	R-407C	3/400/50	2.85	900	1000	1600	275
EGRD 1100	1100	31.15	0.13	14	DN80 PN16	Scroll	R-407C	3/400/50	3.1	900	1000	1600	276
EGRD 1254	1254	35.51	0.12	14	DN80 PN16	Scroll	R-407C	3/400/50	3.5	900	1000	1600	311
EGRD 1552	1552	43.95	0.11	14	DN100 PN16	Scroll	R-407C	3/400/50	4.3	1135	1265	1750	463
EGRD 1750	1750	49.55	0.08	14	DN100 PN16	Scroll	R-407C	3/400/50	4.8	1135	1265	1750	538
EGRD 2000	2100	59.47	0.11	14	DN100 PN16	Scroll	R-407C	3/400/50	5.6	1135	1265	1750	540
EGRD 2900	2650	75.04	0.16	14	DN100 PN16	Scroll	R-407C	3/400/50	6.4	1135	1265	1750	612

Note:

- Reference Condition for Inlet flow capacity: Ambient Temperature: 25°C, Inlet compressed air temperature: 35°C, Inlet Pressure: 7 barg
- All data mentioned above is measured for air cooled versions according to ISO 7183, with standard voltages, at 3-5° C pressure dew point
- Standard scope of supply includes only timer drain valves up to EGRD500 & Level sensing drains from EGRD600
- Air cooled variant available from EGRD 10 to 2900 & Water cooled variant from EGRD 600 to 2900
- Variants also available for these Ph/V/Freq: 1/115/60, 1/230/60, 3/460/60 & 3/380/60
- Dryers of higher capacities are also available

Correction Factors

Inlet air pressure - F1	barg	4	5	6	7	8	10	12	14
EGRD 10 to EGRD 2900		0.77	0.86	0.93	1	1.05	1.14	1.21	1.27

Ambient temperature - F2	°C	<=25	30	35	40	45	50		
EGRD 10 to EGRD 500		1.00	0.98	0.95	0.88	0.80			
EGRD 600 to EGRD 2900		1.00	0.98	0.95	0.88	0.80	0.64		

Inlet air temperature - F3	°C	<=30	35	40	45	50	55	60	70
EGRD 10 to EGRD 500		1.15	1.00	0.84	0.71	0.59	0.5		
EGRD 600 to EGRD 2900		1.15	1.00	0.84	0.71	0.59	0.5	0.44	0.37

Pressure dew point - F4	°C	3	5	7	10				
EGRD 10 to EGRD 500		0.91	1.00	1.10	1.26				
EGRD 600 to EGRD 2900		1.00	1.09	1.19	1.37				

How to calculate dryer minimum nominal Capacity to meet rated conditions : $\frac{\text{Actual rated capacity}}{F1 \times F2 \times F3 \times F4}$

Dryer nominal capacity need to be higher than "Actual required capacity".

Example

Inlet air flow to dryer: 14.16 m ³ /min Inlet air temperature: 40°C Ambient temperature: 30°C Inlet air pressure: 7 bar Pressure dew point: 3°C	Dryer capacity required = 14.16 <hr style="width: 50%; margin: 0;"/> (1 x 0.98 x 0.84 x 1) = 17.2 m³/min
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Next model available to the above calculated m³/min to be selected, i.e. EGRD 600



ELGi is the first, globally established industrial air compressor manufacturer to have won the Deming Prize*
 *In over six decades



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