



DS-PM VSD

Rotary Screw Air Compressors Double Stage Airend OPTIMA Series

Installed motor power 37- 400 KW

Free air delivery from 0.38 to 86.26 m³/min, Pressure 7.0 - 16 bar

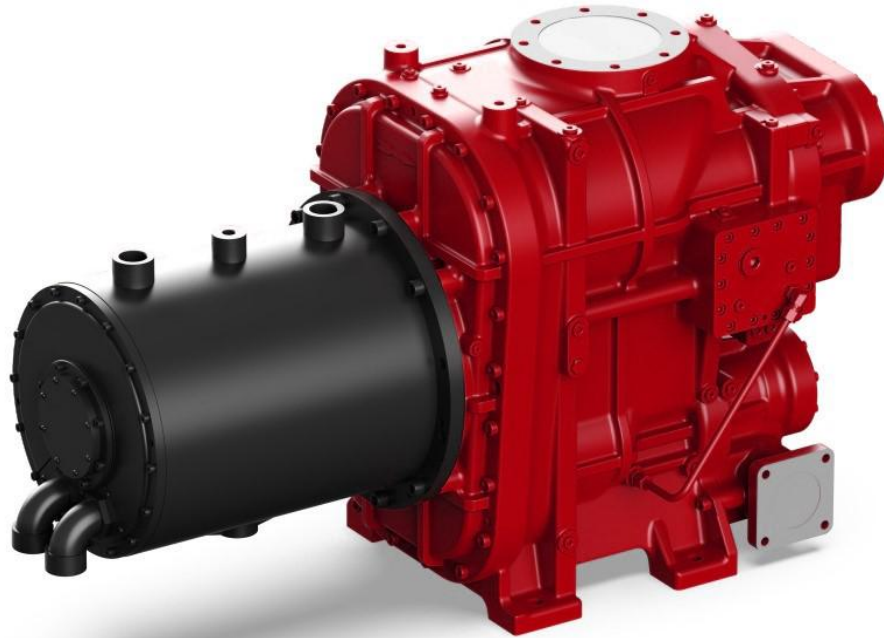


Farafanhava Co



DS-VSD Two-stage Screw Air Compressor (30-400 KW) Permanent Magnet & Asynchronous Electro Motor

Features and advantages

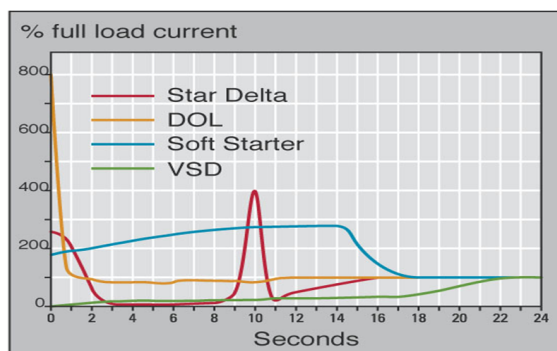


GHH Technology

01 Features Of Permanent Magnet Variable Frequency Air Compressor

- Ultra-low temperature rise design, which allows the compressor running at ultra-low frequency for a long time.
- Closed-loop vector control system for faster control and more precise speed control.
- The compressor unit can still operate efficiently when the frequency is reduced by more than 50%.
- The pressure is stable and the pressure fluctuation is accurately controlled within 0.1 bar.

- The figure shows a comparison of several starting methods. It can be seen that the frequency converter is slowly accelerated to start, the starting is more stable, and the current peak is completely avoided.

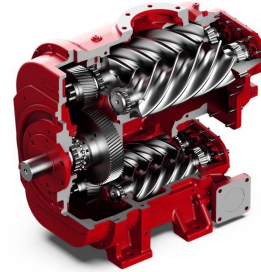


02 Air End

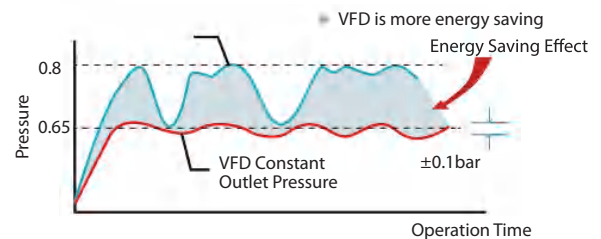
Reducing Rpm to 1500 and increasing life time of bearing ensure Performance and Reducing maintenance cost

The rotor adopts the world's leading high-efficiency profile and is made of 1141 special steel, which has good hardness and high wear resistance.

- Two-stage independent compression, low-speed design, lower overall noise.
- The low compression ratio at each stage ensures smaller leakage and higher volumetric efficiency.
- Oil mist spray cooling is used between stages, and the compression process is close to isothermal compression to improve efficiency.
- The rotor and bearings are under little stress, and the long life of screw element is guaranteed to continue running.
- Under the set frequency conversion pressure, the unit will automatically adjust to keep the output pressure within ± 0.1 bar, reducing unnecessary waste (the power consumption increases by 7% for every 1 bar of pressure increase)

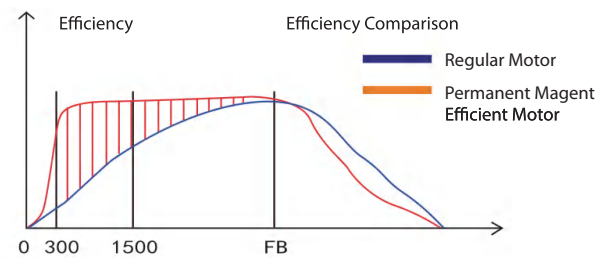


15% More efficiency



03 Advantages of Permanent Magnet Motors Compared to General Asynchronous Motors

- High efficiency: Eliminates excitation system losses and improves efficiency.
- It is still efficient under low load conditions: the energy efficiency of a permanent magnet motor is more than 9% higher than that of a conventional asynchronous motor at full load operation, and its energy efficiency remains unchanged as the speed decreases.
- Large overdrive torque: The ratio of the maximum starting torque of the permanent magnet synchronous motor to the rated torque can be more than 3 times, while the general asynchronous motor is only 1.6 times.
- The control is more stable: the corresponding time of the permanent magnet motor is < 50 ms, and the gas production can be adjusted in a large range in an instant, so that the gas pressure is truly stable.



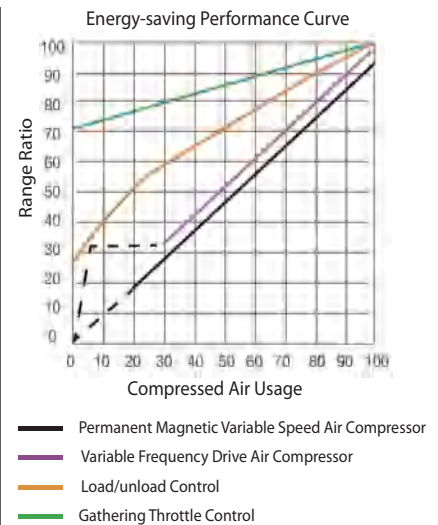
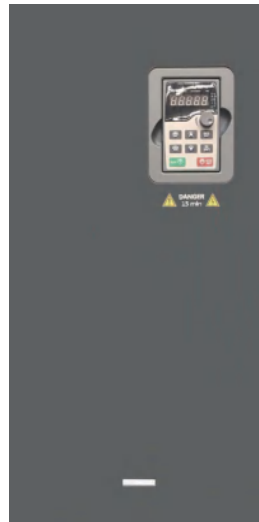
04 High Efficiency Permanent Magnetic Motor

- High Efficiency Motor IE4 & IE5
- Cooling method: oil cooling/air cooling
- No bearing design, 100% transmission efficiency
- UH series magnets, can withstand temperature up to 180°C
- Up to 5 years durability test, 40,000 hours of durable operation without failure
- IP65, F class insulation, B grade temperature rise
- PM motor cooling structure design
- Perfectly linear output torque, low speed still retains high torque output



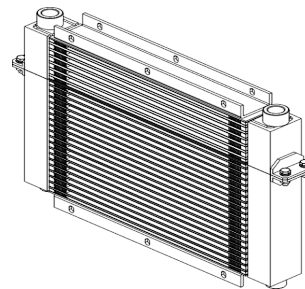
05 More Advanced Technology. More Powerful Inverter

- The standard equipment is equipped with a high-frequency reactor to reduce the high frequency generated by the inverter.
- The soft start of the inverter reduces the peak current at startup, resulting in a smooth start and greatly reduced power costs.
- Forced cooling of the inverter to prevent high temperature shutdown in Summer.
- Standard equipment dust screen, circuit board surface coating treatment, high efficiency and durability against dirt, dust, moisture.
- The special design of the heat dissipation area of the inverter ensures stable operation of the inverter under high temperature environment.
- No idling occurs under any load conditions to achieve the desired power saving effect.
- Quickly track changes in pressure, control pressure fluctuations within ± 0.1 bar, and optimize the use of the power to accurately provide the right amount of air as needed.



06 Cooling Fan

- Low noise
- Big capacity
- Maintenance free



07 Oil Gas Tank

- Air line and oil line are separated.
- Excellent separation effect, less than 3ppm of oil content.
- 3 step separation guaranty excellent separation
- Reduction of pressure drops and energy costs. ▪
- Low oil consumption ensures minimal maintenance costs and long compressor lifetime.
- Quality air with low oil content: ▪
- three step air-oil separation(centrifuge, gravity, oil content: less than 3 ppm by weight
- hinged cover for easy separator element change



08 Oil Filter

- Seal material: PTFE
- Working pressure up to 20 bar
- Element material: German resin wood fiber
- Working temperature can withstand 120 °C
- Separation efficiency: 50% impurity separation at 10 μm and 99% impurity separation at 30 μm



09 Oil Gas Separator

- Maximum working pressure can reach 20 bar
- Service life: 4,000Hr
- Maximum withstand pressure drop: 1.2 bar
- Efficient separation, oil content less than 3ppm
- External oil separator design, maintenance time is only take 2min



10 Stainless Steel Pipe

- Maintenance free
- 100 years service life
- Excellent corrosion resistance
- Excellent mechanical properties, superior wear resistance
- Wide range of use, long service life and low overall cost
- Can work safely for a long time at a temperature of -270°C-400°C. The material properties are quite stable.
- 304 stainless steel has a tensile strength of more than 530 N/mm, which is twice stronger of galvanized pipe, 3-4 times stronger of copper pipe, 8-10 times stronger of PPR pipe, and it has good ductility and toughness



11 Air Filter Assemblage

- The imported brand is used to reliably remove dirt from the air. The dust particles in the air are controlled below 0.3 microns and the filtration accuracy is as high as 99.99%.



Technical Parameters

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Model	Working Pressure		Capacity FAD*		Power		IP Grade	Noise Level**	Dimensions (mm)			Weight (kg)	Air Outlet Pipe Diameter	Driving Mode& Cooling Method	EEI
	(barg)	(psig)	(m³ / min)	(cfm)	(kW)	(hp)			(L)	(W)	(H)				
DS-30	7.0	102	2.55-5.37	90-225	30	40	IP55	75	1650	1050	1300	945	R2	Direct Driven Air Cooling W-Water Cooling	EEI1
	8.0	116	2.54-5.34	90-224											
DS-37	7.0	102	3.26-6.14	115-288	37	50	IP55	75	1650	1050	1300	1029	R2		
	8.0	116	3.20-6.00	113-283											
DS-45	7.0	102	4.00-7.01	141-354	45	60	IP55	75	1650	1050	1300	1100	R2		
	8.0	116	4.00-7.00	141-353											
DS-55	7.0	102	5.16-10.90	182-456	55	75	IP55	80	2350	1500	1600	1995	DN50		
	8.0	116	5.13-10.83	181-453											
	10.0	145	3.88-9.00	137-353											
	12.5	181	3.46-9.64	122-305											
DS-75	7.0	102	6.83-13.07	241-603	75	100	IP55	80	2350	1500	1600	2100	DN50		
	8.0	116	6.80-13.00	240-601											
	10.0	145	6.00-12.50	212-530											
	12.5	181	4.89-11.22	173-432											
DS-90	7.0	102	8.36-16.90	295-739	90	120	IP55	80	2705	1775	1915	2625	DN80		
	8.0	116	8.02-16.05	283-709											
	10.0	145	6.58-15.44	233-581											
	12.5	181	5.91-14.77	209-522											
DS-110	7.0	102	9.92-18.80	351-876	110	150	IP55	80	2705	1775	1915	2730	DN80		
	8.0	116	9.62-18.04	340-850											
	10.0	145	7.65-17.13	270-676											
	12.5	181	6.48-16.19	229-572											
DS-132	7.0	102	11.45-25.63	405-1007	132	175	IP55	80	2705	1775	1915	3150	DN80		
	8.0	116	11.40-25.49	403-1006											
	10.0	145	9.20-23.01	325-813											
	12.5	181	8.64-21.59	305-763											
DS-160	7.0	102	14.06-31.14	497-1242	160	215	IP55	80	3110	1890	2150	4515	DN100		
	8.0	116	14.00-30.64	495-1224											
	10.0	145	12.72-27.79	450-1123											
	12.5	181	10.53-26.33	372-931											
DS-185	7.0	102	16.07-31.17	568-1420	185	250	IP55	80	3110	1890	2150	4725	DN100		
	8.0	116	16.00-31.00	565-1414											
	10.0	145	13.78-30.45	487-1217											
	12.5	181	11.56-29.63	409-1046											
DS-200	7.0	102	17.78-34.45	628-1571	200	270	IP55	82	3310	2090	2400	5775	DN100		
	8.0	116	17.61-34.02	622-1556											
	10.0	145	15.53-33.83	549-1372											
	12.5	181	13.32-33.31	471-1177											

*)FAD in accordance with ISO 1217:2009, Annex C: Absolute intake pressure 1 bar (a), cooling and air intake temperature 20

**) Noise level as per ISO 2151 and the basic standard ISO 9614-2, operation at maximum operating pressure and maximum speed; tolerance: ±3 dB(A)

Specifications are subject to change without notice.

Technical Parameters

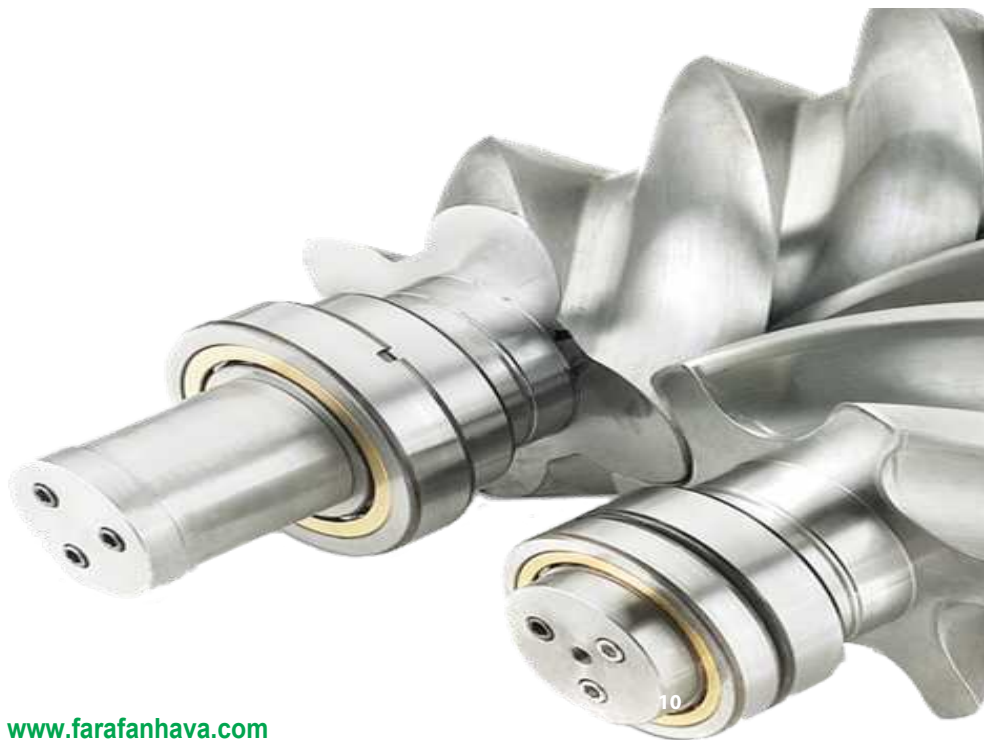
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Model	Working Pressure		Capacity FAD*		Power		IP Grade	Noise Level**	Dimensions (mm)			Weight (kg)	Air Outlet Pipe Diameter	Driving Mode& Cooling Method	EEI
	(barg)	(psig)	(m³ /min)	(cfm)	(kW)	(hp)			(L)	(W)	(H)				
DS-220	7.0	102	19.56-40.90	691-1728	220	300	IP55	82	3310	2090	2400	5880	DN100	Direct Driven Air Cooling W-Water Cooling	EEI1
	8.0	116	19.51-40.77	689-1724											
	10.0	145	17.35-40.37	613-1533											
	12.5	181	15.23-38.08	538-1346											
DS-250	7.0	102	21.98-42.94	777-1942	250	350	IP55	82	3310	2090	2400	5985	DN100		
	8.0	116	21.93-42.83	775-1938											
	10.0	145	19.38-41.45	685-1712											
	12.5	181	17.18-40.95	607-1518											
DS-280	7.0	102	24.10-50.24	852-2129	280	375	IP55	82	3730	2380	2550	7350	DN125		
	8.0	116	24.05-50.13	850-2125											
	10.0	145	21.33-47.32	754-1884											
	12.5	181	19.06-45.65	674-1684											
DS-315	7.0	102	26.43-55.08	934-2335	315	425	IP55	85	3730	2380	2550	7455	DN125		
	8.0	116	26.39-55.97	933-2331											
	10.0	145	23.32-51.29	824-2060											
	12.5	181	20.94-49.34	740-1850											
DS-355	7.0	102	29.90-59.00	1056-2719	355	475	IP55	85	3730	2380	2550	7875	DN125		
	8.0	116	29.25-59.32	1033-2660											
	10.0	145	24.97-58.29	882-2270											
	12.5	181	22.33-57.50	788-2030											
DS-400	7.0	102	35.50-80.85	1255-3137	400	550	IP55	85	4500	2500	2750	9240	DN125		
	8.0	116	35.00-80.05	1237-3074											
	10.0	145	30.00-70.80	1060-2641											
	12.5	181	24.00-66.94	848-2364											

*)FAD in accordance with ISO 1217:2009, Annex C: Absolute intake pressure 1 bar (a), cooling and air intake temperature 20

**) Noise level as per ISO 2151 and the basic standard ISO 9614-2, operation at maximum operating pressure and maximum speed; tolerance: ± 3 dB(A)

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