

Industrial Cooling Systems (ICS) TAE EVO 101 Packaged Process Chiller



Stock Code: CT489

Manufacturer: Industrial Cooling Systems (ICS)

Model: TAE EVO 101

Year of Manufacture: 2003

Serial: 2200083583

New or Used: Used (Second Hand)

Ave. cooling capacity: 42kW at 15°C cwt

Ave. Water Flow Rate: 7.2/9.6 m³/h

Other Info: Advanced Evolution model

Weight: 375kgs

External Dimensions (WxDxH): 770 x 1920 x 1450mm

A popular pre-owned self contained air cooled package chiller having a cooling capacity 42kW at 15°C chilled water leaving temperature in an ambient of 25°C.

The TA Evo range of air cooled chillers, are specifically designed for use in industrial applications, are compact units equipped, as standard, with an internal storage tank and pump, offering a tried and tested solution to process cooling.



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Industrial Cooling Systems (ICS) TAE EVO 101 Packaged Process Chiller

The innovative evaporator-in tank configuration ensures reduced ambient heat gain and a steady temperature of the process fluids.

The use of components sourced from premium manufacturers and extensive factory testing of all units make for the highest reliability levels, minimising the risks of unplanned stoppages and increasing productivity levels.

The Evo Chiller has been designed to provide optimum performance to process and comfort applications within the following industries:

- Chemical and pharmaceutical
- Food and Beverage
- Engineering and Manufacturing
- Lasers
- Plastics and Rubber

Comprehensive control panel incorporating a microprocessor based digital temperature controller with inbuilt fault diagnostics.

Specifications

-Approx overall size 770 x 1920 x 1450 mm high.

-Installed nominal power of 14.46 kw

-Internal 255 ltr storage tank

-.9kw circulation pump offering between 7.2/9.6 m³/h flow at a head of 2.1 - 1.5 bar respectively.

- Water connections 1 1/2" bsp inlet / outlet

-Quite running and efficient scroll compressors

-Triple 0.79 kw condenser cooling fan units

-415Volt 3ph

-Running on the modern non ozone depleting R407c refrigerant gas.

-weight 375kg

View Industrial Cooling Systems (ICS) TAE EVO 101 Packaged Process Chiller on our web site at <http://www.rileysurfaceworld.co.uk/machines/25484.htm>



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PHOTOGRAPHS TAKEN PRIOR TO REFURBISHMENT.

VE *Technical Description*

OIL-INJECTED ROTARY SCREW COMPRESSORS BELTS DRIVEN

Capacity from 1800 to 7500 l/m
Pressure from 8 to 15 bar
Power from 15 to 45 kW



By working in partnership with Adicomp to secure your future

VE

Functional compressed air, even in limit conditions.

VE compression stations are real complete, compact and quiet compressed air production and treatment units; they are suitable for use in heavy-duty environments and in the most varied industrial sectors with working temperatures between -15°C and $+50^{\circ}\text{C}$.

Thanks to the reliability of the components used and the possibility of perfectly combining the units with both energy-saving refrigeration dryer and reservoir with an integrated filtering system, the VE stations are able to produce water-free compressed air, thus improving the plant performance and extending the lifetime of the equipment.

Special attention has been focused on the transmission of power: the perfect alignment of the pulleys obtained by flanging the pumping element and motor on the same plate and the excellent quality of the belts and pulleys used, guarantee optimum transmission of power with lower maintenance costs.

The design and compact dimensions of these stations facilitate transportation and installation in the assigned compartments. In this sense the units have been designed to be moved easily and guarantee the maximum safety.

The innovative air/oil separation system with a horizontal reservoir flanged to the pumping element with a separator cartridge of the "spin-on" type permits fast replacement of the filter without using special tools.

The ample size of the system and the ingenious mechanical separation method guarantee the minimum contamination of the oil in the compressed air and long service life.



VE, the flexible industry solution.

The experience gained over the years and in the various engineering and development processes, allowed us to obtain a versatile machine for any type of 24h use and for any kind of industrial application where high air flows with constant quality levels are required.

Series VE compressors with belt transmission meet the demands for flexible utilization and all the requests for compressed air at the various working pressures, while maintaining the air quality level unaltered over time.

Our VE compressors have been designed with attention to the arrangement of the various mechanical parts in order to facilitate programmed maintenance, and with an eye to the costs for maintaining the compressor itself which have been considerably reduced.

The VE series is available in various customized solutions, from the standard version to the water-free one with refrigeration dryer and reservoir with centralized condensate discharge and to the ATEX version.

CO₂, lower emission.

By ducting the cooling air it is possible to heat the rooms and workshops adjacent to the compressor rooms and, in whole or in part, make use of the hot air dissipated by the compressor.

With the aid of the cooling fluid and special oil/water exchangers, it is possible to heat the water and/or any liquids for combined cycle heating.

Water free, protect your plants.

Adicomp offers integrated solutions with both vessels and dryers in an all-in-one package to produce "water free" compressed air. This improves the reliability of your distribution system and prevents costly production down times or late deliveries. The compressed air that comes into contact with your end-product must absolutely not affect its quality.

The combination of a suitably sized refrigeration dryer within the compressor, along with a multiple filtering system, depending on the real compressed air needs, removes the moisture, vapors, aerosols and dust, thus protecting your machinery and investment.

Electronic control, management of compressed air.

VE compressors are equipped with innovative electronic controllers ready for insertion in a compressed air management system with the main aim of keeping the production and treatment of compressed air under control, as well as containing costs in a simple and cheap way.

We use the most modern communications and monitoring technologies in order to allow our stations to interface with internationally used communication protocols such as Profibus DP, Modbus RTU, DeviceNet, etc. These technologies permit the complete integration of our compression stations with the latest monitoring and control technologies for plants operating in modern industrial production sites, where control is a fundamental requirement for optimizing costs associated with industrial production.

Key Points

P1 ELECTRONIC SYSTEM ENHANCED CONTROL

Developed for maximizing performance of the compression units and specially designed to facilitate the end-user. It permits ideal management of the machine in real time and a minimum waste of energy during operation off-load.

This board is characterized by a simple intuitive interface with an LCD panel which does not envisage the use of a specific language and is universally comprehensible.

Every compressor can be integrated with the other units that already exist with even easier use of the entire station, if all the units have been manufactured by Adicomp.

This allows the user to manage and optimize operation of the entire plant and not just of the single compressor.

MODULAR ELECTRIC FAN

A distinct compressed air/fluid radiator equipped with a separate high head fan for ensuring compressed air at a low temperature. It operates in both continuous and intermittent mode.

OIL INJECTION ROTARY SCREW COMPRESSOR BELT DRIVEN

The lubricated single-stage rotary compressor screw element is driven directly by an electric motor by means of belts fitted rigorously on balanced steel pulleys fixed by taper-locks.

In this power range belt transmission constitutes an important characteristic of Adicomp machines as it makes it possible to drive the compressor element with the maximum performance and reliability.

WEATHER & EXPLOSION PROOF

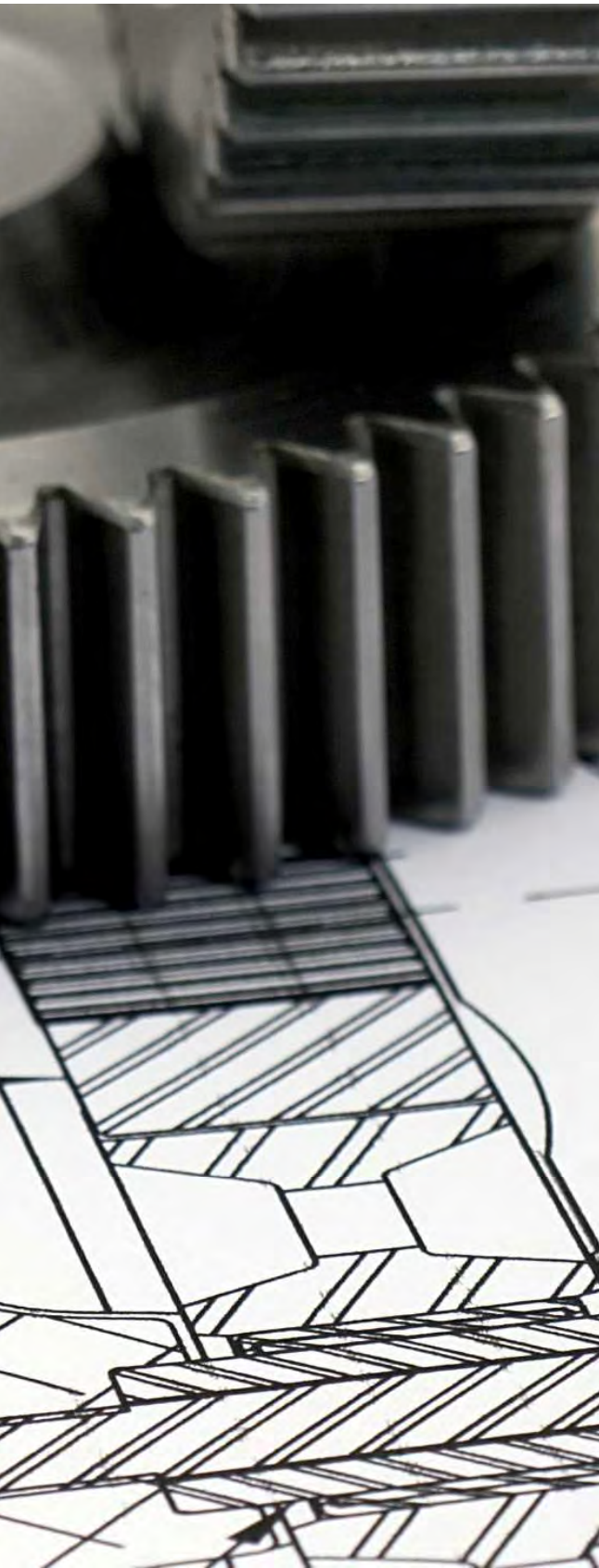
The use of special materials that are suitable for the most extreme and explosive environments means that this station can be used for any application.

Power,
flexibility,
air quality,
all-in-one solutions
for any need.



VE22-10B

Innovative
solutions,
for you.



Key Points

INNOVATIVE AIR/OIL SEPARATION SYSTEM

Adicomp has developed an innovative air/oil separation system with a horizontal reservoir flanged to the pumping element.

The air/oil separation cartridge is the SPIN ON type, which means that it is easy to change.

INTEGRATED FILTERING SYSTEM

Combination with a filtering system that guarantees the production of compressed air in quality class 1, the equivalent of a concentration of contaminants below 0.01 mg/m³.

COMBINABILITY WITH A RECEIVER AND REFRIGERATION DRYER

Completely automatic, this space-saving unit combines compressor, high-efficiency dryer, automatic condensate discharger, filtering set and accumulation reservoir without the use of any particular connection of piping between components.

EASY INSPECTION AND PERFECT ACCESSIBILITY TO ALL THE COMPONENTS

The compressor can also work with the doors open so that any internal inspection that may be necessary is even easier.

Thanks to special panels, the air/oil coolers can be cleaned without having to be dismantled.

NOISELESSNESS

The sound-absorbing coating with a washable surface has been designed for reducing the noise level during use, making it slightly higher than a normal conversation and lower than that of an air-conditioner.

HIGH-EFFICIENCY MOTORS

Adicomp is very attentive to efficiency, so that all our motors are at the highest levels recognized by international standards.

principal characteristics

COMPRESSOR ELEMENT AND TRANSMISSION

The lubricated single-stage rotary screw compressor is composed of two rotors: a 5-lobe male and a 6-slot female one with asymmetrical profiles. Rotation of the rotors produces compression of the air with continuity and without pulsations.

The compressor element is driven directly by an electric motor by means of belts fitted rigorously on balanced steel pulleys fixed by taper-locks. In this power range belt transmission represents an important characteristic of Adicomp machines as it makes it possible to drive the compressor element with the best results and maximum reliability.

The compression is developed in a single stage and the heat of compression is removed by the oil injected between the two rotors.

Furthermore, the oil lubricates the rotating mechanical parts and ensures the seal between the two rotors.

The forged steel rotors are cut by specially tooled CNC machines. The roller and ball bearings support the radial loads and the axial thrusts respectively.

OIL CIRCUIT

The oil circuit is composed as follows:

- Air/oil reservoir containing a centrifugal oil separator;
- High-efficiency spin-on type de-oiler cartridges;
- Thermostatic valve;
- Oil cooler with large exchange surface;
- Oil filtering cartridge;
- Minimum oil pressure valve.

The oil whose functions are to cool, to ensure perfect tightness of the parts under pressure and to lubricate, is kept in circulation exclusively by the pressure difference of the air between the air/oil reservoir and the compressor element.

This technical solution makes it possible to eliminate the traditional gear pump, which has a negative influence both on the power taken in by the station and on maintenance costs.

COOLING CIRCUIT

The cooling circuit is composed of the air-type oil chiller and by the final compressed air cooler combined within a single radiator cooled by a separate 4-pole axial electric fan.

ELECTRIC MOTOR

The electric motor used is IE2 or IE3 efficiency class and F insulated with shielded bearings, sized to withstand to class B temperatures and with a degree of protection IP55.

The choice of technologically advanced electric motors manufactured by major international manufacturers in this industry, they value a lot our machines comparing them to other correspondents.

Into VE version the electric motor is connected to the compressor block by pulleys and belts specially sized to carry all the power generated out.

STARTING AND CONTROL EQUIPMENT

The starter equipment – leading brand star/delta remote switches with protective thermal relays and line cut-off switch – in compliance with EC/UL standards, is fitted in the compressor command and control board.

CONTROL AND REGULATION SYSTEM

IP55-rated electrical control panel with automatic YD start-delta starter, protection of the main motor and fan motor, protection against high temperature of the air/oil mix and against incorrect rotation direction.

Regulation by electronic board with temperature sensor and pressure transducer, off-load/loaded operation with timed automatic stopping for greater operating economy.

The regulation system used in this machine processes the signals of the pressure and air flows requested by the user by means of sensors located inside the unit.

Correct programming of operations guarantees the constant air flow requested without any pressure jumps.

The electronic system makes it possible to:

- Control the operating conditions of the main components of the compression station.
- Change the programmed working conditions.
- Determine any maintenance work in an automatic manner, as regards the environmental and operating conditions of the station, thereby rendering service more secure and less onerous.

A luminous monitor with three displays on the control board makes it possible to display the working conditions of the machine and the triggering of any of the alarm and blocking devices provided.

More specifically:

- Display indicating the working pressure;
- Display indicating the working temperature;
- Symbol LEDs;
- Failure messages; Status messages; Maintenance messages;
- Start button
- Programmed stop button;
- Emergency stop button

OTHER COMPONENTS OF THE STATION

- Two-stage intake filter with high filtering power (equivalent to 99.80% of particles larger than 3 micron) with large accumulation capacity.
- Safety valve
- Check valve in the air circuit.
- Lubricant oil filler.
- Line voltage cut-off.
- Dryer (optional)
- 500 lt. reservoir (optional)
- Integrated filtering system (optional)

REFRIGERATION DRYER

- **Economical:** DRM dryers have been designed for combination with the standard flows of the air compressors. It is not necessary to recommend larger sizes: the dryer-compressor combination is tested and guaranteed by ADICOMP within the operating limits indicated in the technical characteristics.
- **Functional:** correct operation of the DRM dryer is monitored by means of the DMC15 electronic control instrument with a digital display that shows the dew-point temperature, with a cyclical timer that controls the condensate discharge solenoid valve, and with a sensor that measures the condensation temperature and activates a condenser cooling fan. A hot by-pass valve makes it possible to adapt the potential of the refrigerating compressor to the evaporator load, thereby preventing the formation of ice in any working condition. The aluminium ALU-DRY dryer module has an exclusive feature that completely directs the flow of moist air along a descending vertical path and therefore with naturally facilitated condensate discharge.
- **Environment-friendly:** the component materials of the DRM dryers are highly recyclable. For some years ADICOMP has been implementing an environmental policy aimed at the continuous search for eco-compatible materials, the use of eco-friendly refrigerators and compliance of the components with Community Directives 2002/95/EC "RoHS" (Restriction of Hazardous Substances) and 2002/96/EC "RAEE" (Waste from electrical and electronic equipment).

INSTALLATION

Installing a compression station is extremely simple.

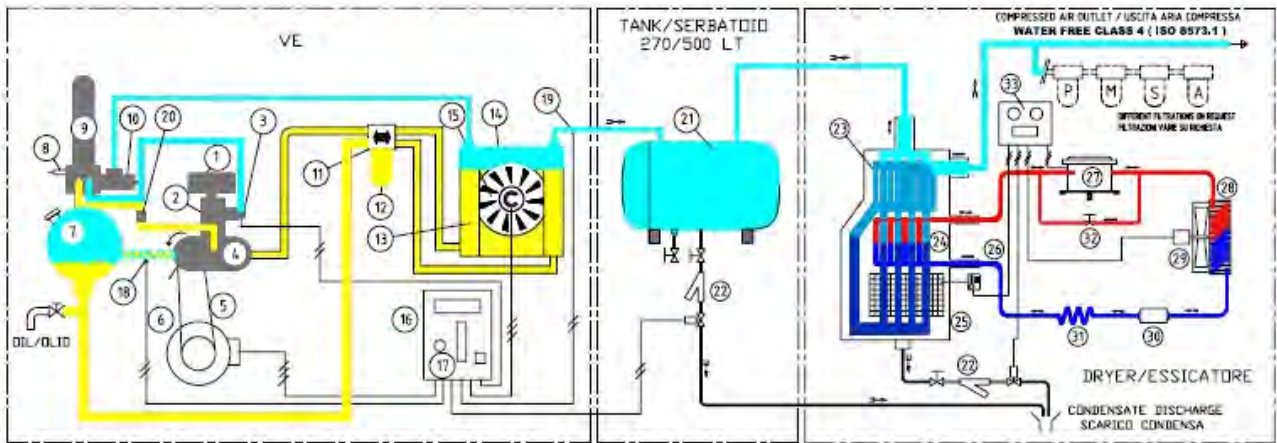
No foundations are required. It is therefore sufficient to position it in the designated place, make the electrical connections from the line to the power board on the machine and the pneumatic connection from the air delivery valve of the station to the reservoir or distribution network.

The compression unit complies with EC and EMV standards.

The tolerances of each unit are tested in our works and a certificate is issued stating that the parameters measured comply with the DIN1945 standard, while the measured values may change as follows:

- Flow rate: $\pm 5\%$
- Power intake: $\pm 6\%$
- Noise level (CAGI-Pneurop): $\pm 3\%$

VE DIAGRAM "OIL & WATER FREE" VERSION



- 1 - air filter
- 2 - intake valve
- 3 - solenoid valve
- 4 - screw pumping element
- 5 - belt transmission
- 6 - electric motor
- 7 - air-oil reservoir
- 8 - safety valve
- 9 - air-oil separator
- 10 - minimum pressure valve
- 11 - thermostatic oil valve
- 12 - oil filter
- 13 - oil radiator
- 14 - final cooler
- 15 - electric fan
- 16 - power board
- 17 - electrical panel display
- 18 - temperature transducer
- 19 - pressure transducer
- 20 - oil recovery visor
- 21 - air reservoir
- 22 - automatic discharge unit

- 23 - air-air heat exchanger
- 24 - air-freon exchanger
- 25 - condensate separator
- 26 - dew-point temperature sensor
- 27 - refrigerant gas compressor
- 28 - gas condenser
- 29 - condenser electric fan
- 30 - filter
- 31 - capillary tube
- 32 - dryer control panel



INTEGRATED FILTERING SYSTEM



ORIGINAL SPARES AND COMPONENTS



VE products overview

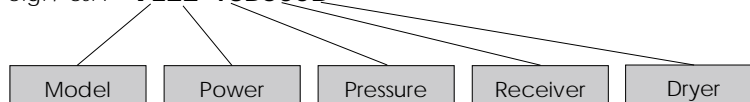
Model	Power	Working pressure	Maximum pressure		Free Air Delivery (FAD)		Dryer	Noise Level	Receiver	Weight	Dimensions	
	kW - HP	bar	bar	PSI	l/min	m ³ /h		dB(A)	l	Kg	cm	
VE15-08B	15 - 20	7,5	8	115	2400	148	-	70	-	210	130x100x150	
VE15-10B		9,5	10	145	2100	126						
VE15-13B		12,5	13	189	1800	108						
VE18-08B	18 - 25	7,5	8	115	2900	174	-	70	-	305		
VE18-10B		9,5	10	145	2500	150						
VE18-13B		12,5	13	189	2050	123						
VE22-08B	22 - 30	7,5	8	115	3250	195	-	70	-	337		
VE22-10B		9,5	10	145	2950	177						
VE22-13B		12,5	13	189	2550	153						
VE22-08C	22 - 30	7,5	8	115	3900	234	-	72	-	362		
VE22-10C		9,5	10	145	3400	204						
VE22-13C		12,5	13	189	3000	180						
VE30-08B	30 - 40	7,5	8	115	5200	312	-	72	-	397		
VE30-10B		9,5	10	145	4550	273						
VE30-13B		12,5	13	189	3850	231						
VE37-08C	37 - 50	7,5	8	115	6200	372	-	72	-	515		
VE37-10C		9,5	10	145	5450	327						
VE37-13C		12,5	13	189	4800	288						
VE37-08H	37 - 50	7,5	8	115	6350	381	-	74	-	550		
VE37-10H		9,5	10	145	5600	336						
VE37-13H		12,5	13	189	4800	288						
VE45-08H	45 - 60	7,5	8	115	7500	450	-	74	-	605		
VE45-10H		9,5	10	145	6800	408						
VE45-13H		12,5	13	189	5800	348						
VE receiver version												
VE15-08B500	15 - 20	7,5	8	115	2450	148	-	70	500	350	195x75x203	
VE15-10B500		9,5	10	145	2100	126						
VE15-13B500		12,5	13	189	1800	108						
VE18-08B500	18 - 25	7,5	8	115	2900	174	-	70	500	397		
VE18-10B500		9,5	10	145	2500	150						
VE18-13B500		12,5	13	189	2050	123						
VE22-08B500	22 - 30	7,5	8	115	3250	195	-	70	500	477		
VE22-10B500		9,5	10	145	2950	177						
VE22-13B500		12,5	13	189	2550	153						
VE receiver and dryer version												
VE15-08B500D	15 - 20	7,5	8	115	2450	148	DRM25	70	500	362		195x75x203
VE15-10B500D		9,5	10	145	2100	126						
VE15-13B500D		12,5	13	189	1800	108						
VE18-08B500D	18 - 25	7,5	8	115	2900	174	DRM32	70	500	445		
VE18-10B500D		9,5	10	145	2500	150						
VE18-13B500D		12,5	13	189	2050	123						
VE22-08B500D	22 - 30	7,5	8	115	3250	195	DRM32	70	500	485		
VE22-10B500D		9,5	10	145	2950	177						
VE22-13B500D		12,5	13	189	2550	153						

Reference's conditions

- Ambient temperature: 20°C
- Intake pressure 1bar(a)
- Relative humidity 60%

Product codes' interpretation

e.g. / es.: **VE22-13B500D**

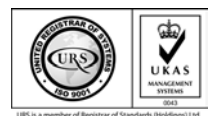




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