



**Vestteknikk**

**VE800E**



**MOBILE 4-MAN  
BREATHING-AIR COMPRESSOR**

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## 1.0 INTRODUCTION

The Vestteknikk VE800E is built by FACTAIR developed from a range of breathing-air systems which are state of the art, mobile and specially designed to deliver breathing quality compressed air to operatives wearing air-fed respiratory equipment when working in hazardous atmospheres such as occur in the nuclear, petrochemical, pharmaceutical and other industries. The systems provide breathable air conforming to BS EN 12021.

The VE800E is mounted in a galvanised frame complete with fork lift pockets and a lift tested frame. The frame has four castors two fixed and two steerable and braked. The VE800E has an electric driven rotary vane compressor and three stage filtration plus a membrane dryer.

The unit is enclosed with stainless steel panels and doors that allows the correct airflow and access to all necessary components for both running and service. The unit is quiet in operation and the noise level is within the European regulations of <97LWA.

The VE800E comprises a sliding vane compressor that is controlled in modulation mode in which it runs continuously once turned on and is either on load or off load automatically for a smooth and stable air pressure output. The VE800E can be run on either a 400 or 690V 50Hz supply and the controls correct for the voltage and the direction of rotation automatically.

The unit should be operated on reasonably level ground and sited with the warm air outlet down-wind to ensure that waste heat is not re-entrained. It should also be kept well away from any polluted or toxic atmospheres and should be securely restrained while being transported or in areas that are unstable or in high winds.

Simple precautions and attention to the operation and maintenance instructions ensure that the unit provides high-quality air and trouble-free operation over a long period.

### **IMPORTANT**

**A qualified attendant should be in charge of the equipment during operation and ensure that it is operated only, and strictly, in accordance with these instructions.**

**The attendant should check that all cables and hoses are laid out without kinks or tangles, are safe from interference or damage, and orifices of all couplings are clear of dirt.**

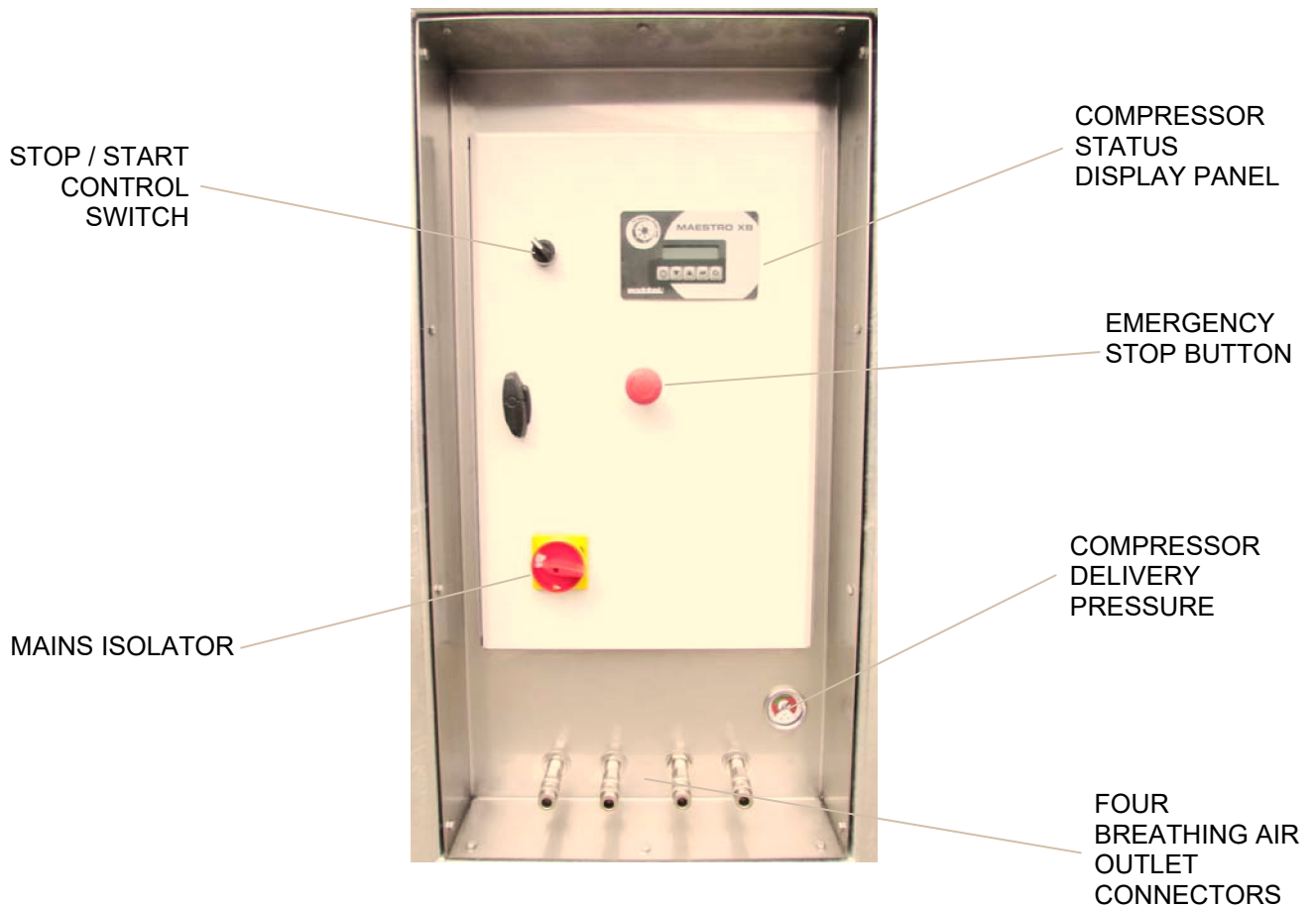
## 2.0 GENERAL ARRANGEMENT

### 2.1 VE800E ON SITE



## 2.2 INSTRUMENT PANELS

### Control Panel



### 3 TECHNICAL DATA

COMPRESSOR	-	Mattei rotary vane ERC507H
SUPPLY VOLTAGE 3 phase / 50Hz	-	400Vac (+10% / -0%) or 690Vac (+0% / -10%)
RUNNING CURRENT	-	@ 400Vac – 20A      @ 690Vac – 12A
NOMINAL WORKING PRESSURE	-	9 BAR
MAXIMUM WORKING PRESSURE	-	10 BAR
FILTRATION	-	Purifies air to breathing quality conforming to EN 12021
DRYER	-	A membrane dryer gives a PDP to at least -11°C
FRAME	-	Galvanised frame with fork lift pockets lifting eyes & castors
OUTPUT CAPACITY	-	29 cfm (840 l/min) @ 116 psi (8 bar)
NOISE LEVEL	-	<99 LWA. (Better than 78dBA @ 4 metres)
DISPLAY FEATURES	-	Active, unit status, icons for notifications & mode, line pressure and oil temperature. Scroll through menus for hours run and hours on load
ALARMS	-	Indicated on the display - emergency stop, high oil temperature, motor overload
GAUGES SHOW	-	Regulated system supply pressure and compressor pressure
OUTLETS	-	4 off female Scott/ Dräger breathing air couplings
QUALITY	-	The VE800E is manufactured in accordance with our Quality Assurance Procedures approved to ISO9001/EN29001

POWER	REV/MIN	FREE AIR DELIVERED at 8 BAR/116 psi	MAXIMUM WORKING PRESSURE Bar      psi	DIMENSIONS (approx)			
				LENGTH mm	WIDTH mm	HEIGHT mm	WEIGHT kgs
7.5 KW, 400V or 690V 3ph+E, 50Hz 20 or 12A	1450	840 l/min (29CFM)	10      147	2400	1000	1500	600

## 4 SAFETY PRECAUTIONS - GENERAL

### **WARNING**

Run unit in a well-ventilated area. The machine should be as level as possible in both planes whilst in operation.

Operate unit at least 1 metre away from buildings and flammable objects.

Do not run the unit except when it is positioned down-wind from the work site.

Do not attempt any work on the compressor until the unit has been stopped and the system completely depressurised. Wait until the all pressure gauges read zero.

Do not insert any object through the fan guard rings. Serious damage to the compressor and personal injury could result.

If changing the oil when the compressor is still warm, take necessary precautions to avoid contact of hot oil with the skin. Dispose of used oil with due regard to the environment.

Be aware of the location of the nearest fire extinguishers and their method of operation.

For safe operation prior to moving the compressor – see section 5.3.

## 5 OPERATING INSTRUCTIONS

This machine is only to be operated by fully trained personnel

### 5.1 SITING

Never run unit in an enclosed or confined area. The unit should be operated on reasonably level ground and sited to prevent entrainment of toxic atmospheres. The compressor should be positioned so that the warm air outlet flow points down wind, taking account of the wind direction and the likelihood of pollution from the worksite and other local emissions. The following points should also be taken into consideration; communications between the standby man and the BA wearer, the route of the supply hoses.

### 5.2 PRE-OPERATION DAILY CHECKS

Check:-

- for leaks
- compressor oil level

The unit should be level in both planes during checks and in use

### 5.3 MOVING THE COMPRESSOR

The compressor can be moved easily on a flat surface using the handles on either end. Take care when moving the compressor by hand. When on a slope at least two people should be available to help move the unit which weighs 600kg.

The parking brake may not be sufficient to secure the unit from unintended movement on sloping or moving surfaces and in high winds.

The maximum speed, walking pace 4 mile per hour should never be exceeded. Instability and overturning may result.

## 5.4 START UP PROCEDURE

Position the unit so that the warm air outlet points down wind.

Open the door to the left hand side of the control panel and carry out pre-start checks:-

1. Check compressor oil level is above the sight glass, top up as required
2. Connect the earth bond to the point provided if that is required

Close and latch all access doors

Connect to suitable 32A 3P+E power supply using the supply 35metre trailing cable. Two voltages may be connected 400V or 690V both at 50Hz. The control panel will automatically detect the voltage and phase rotation and compensate for it so that the compressor runs correctly.

Switch on main isolator on the control panel.

Ensure emergency stop button is released.

On first powering up, allow 10 seconds for the start up sequence of the Mattei compressor controller.

Turn the stop/start control switch to the "I" position, which shall start the compressor after a short delay of 5 seconds.

Check that the outlet pressure is in the correct range for the respiratory protective equipment selected and adjust the pressure if necessary using the regulator with a T bar handle. Do not attempt to adjust the minimum pressure valve mounted below the regulator.



BREATHING AIR  
OUTLET  
PRESSURE  
REGULATOR

Connect the individual outlet hoses from the outlet couplings to the selected respiratory protective equipment.

The breathing air unit is now ready for use.

## 5.5 SHUTDOWN PROCEDURE

Ensure the machine is not supporting life.

Turn the stop/start control switch to the “0” position. The compressor will begin a unloading sequence lasting 30 seconds before stopping the compressor.

(DO NOT USE THE E-STOP BUTTON UNLESS IN AN EMERGENCY)

## 5.6 EMERGENCY SHUTDOWN

In the event of an emergency, stop the compressor using the emergency stop button. This will instantly stop the compressor and oil vapour may be seen to come from the air inlet filter. This is undesirable but not damaging, as it may soak the air filter element and restrict the flow rate.

If a unit fault develops, say a power failure or overheating that stops the compressor it will behave as though the emergency stop button has been pressed.

## 6.0 MAINTENANCE

### 6.1 QUICK REFERENCE

#### VE800E – Service Schedule (excluding pre-start checks)

Operation	Weekly	Monthly	6 Months	Annually
	Every 50 hrs	Every 200 hrs	Every 1000 hrs	Every 2000 hrs
Check oil level	✓			
Check & clean condensate drain solenoid valve filter	✓			
Clean air intake filter		✓		
Clean air/oil cooler externally		✓		
Clean compressor oil return valves			✓	
Replace air intake filter			✓	
Clean or replace the separator condensate filter			✓	
Check/tighten cable fixings in starter & motor terminal box			✓	
Grease motor bearings				✓
Replace oil return valves				✓
Change oil (Shell Corena AS 68)				✓
Change oil filter				✓
<b>Breathing-air Filtration</b>				
Change general purpose element				✓
Change coalescing filter element				✓
Change carbon element			✓	
Check, test and clean autodrains		✓		

Operation	Recommended Periodicity. May be superseded by the terms of the client's written scheme of examination.	
	Every 12 months	Every 24 months
<b>Factair VE800E pressure systems checks</b>		
Pressure relief valves	Check lift & reseal action if available	Re-certify
Pressure indicators	Check zero	Compare with calibrated gauge

## 6.2 Compressor

Refer to Compressor COM0274 User Handbook

Condensate drain DRA0032 User Handbook

## 6.3 Membrane Dryer

DRY0067 BEKO Technologies DM20G63TA Manual

## 6.4 Approved Compressor Oil

Shell Corena AS 68 oil for 2000-hour oil change (ambient temperature range 0°C to +40°C).

*Note:* Not to be mixed with any other type of lubricant.

## 6.5 BA FILTRATION

Part N°	Item
AG01CXX034	Water separator
FIL0637 Housing <i>FIL0654 Element</i>	High efficiency general purpose filter element - change every 2,000 hours or 12 months
FIL0638 Housing <i>FIL0656 Element</i>	Coalescing element (lower combination) - change every 2,000 hours or 12 months
FIL0639 Housing <i>FIL0657 Element</i>	Carbon element (top combination) - change every 1,000 hours or 6 months
DRY0067	Membrane dryer Drypoint M

## 7.0 RECOMMENDED SERVICE SPARES

### Compressor – Mattei ERC507H

<b><u>PART N°</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QTY</u></b>
CR21E20153	Compressor air intake filter	1
KIT0351	Compressor service kit A	1
KIT0352	Compressor service kit B	1
KIT0353	Compressor service kit C	1
KIT0354	Compressor service kit D	1
OIL0043	Shell Corena AS 68 oil (4 litres)	1

### BA FILTRATION

<b><u>PART N°</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QTY</u></b>
FIL0654	General purpose filter element	1
FIL0656	Coalescing element	1
FIL0657	Activated carbon element	1
DRA0030	Autodrain valve	2