Atlas Copco Instruction Manual

Instruction Manual
for Portable Compressors
English

H185 VSD APP
H250 VSD APP

Atlas Copco

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for Portable Compressors
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Original instructions

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Atlas Copco

ATLAS COPCO - PORTABLE ENERGY DIVISION
www.atlascopco.com

Warranty and Liability Limitation

Use only authorized parts.
Any damage or malfunction caused by the use of unauthorized parts is not covered by Warranty or Product Liability.
The manufacturer does not accept any liability for any damage arising from modifications, additions or conversions made without the manufacturer's approval in writing.
Neglecting maintenance or making changes to the setup of the machine can result in major hazards, including fire risk.
While every effort has been made to ensure that the information in this manual is correct, Atlas Copco does not assume responsibility for possible errors.

Atlas Copco Airpower,

Boomsesteenweg 957,

2610 Wilrijk,

Belgium.

Preface

Follow the instructions in this booklet and we guarantee you years of trouble free operation. It is a solid, safe and reliable machine, built according to the latest technology.

Always keep the manual available near the machine.

In all correspondence always mention the compressor type and serial number, shown on the data plate.

The company reserves the right to make changes without prior notice.

Table of contents

Atlas Copco

Safety precautions

PERSONAL PROTECTIVE EQUIPMENT

Read the instructions carefully prior to working with the machine and perform towing, lifting, operation, maintenance or repair of the unit according to the instructions manual.

INTRODUCTION

The policy of Atlas Copco is to provide the users of their equipment with safe, reliable and efficient products. Factors taken into account include:

- the intended use of the products, and the environments in which they are expected to operate.
- applicable rules, codes and regulations.
- the expected useful product life, thinking proper service and maintenance.
- provide up-to-date information in the manual.

Read the related instructions before working with the product. Also read the specific information about safety, preventive maintenance, etc.

Always keep the instructions manual near the machine so that operating personnel can easily refer back to it.

Make sure that you read the safety precautions of other equipment supplied with or mentioned on the unit or equipment being used with it.

These safety precautions are general and some statements are not always applicable to a particular unit.

Only skilled and trained people are allowed to operate, adjust, perform maintenance on or repair Atlas Copco equipment. It is the responsibility of management to appoint operators with the appropriate training and skill for each category of job.

Skill level 1: Operator

An operator is trained in all aspects of operating the unit and is trained in the relevant safety aspects.

Skill level 2: Mechanical technician

A mechanical technician is trained to operate the unit the same level as the operator. In addition, the mechanical technician is also trained to perform maintenance and repair, as described in the instruction manual. They are allowed to change settings of the control and safety system. A mechanical technician does not work on live electrical components.

Skill level 3: Electrical technician

An electrical technician is trained and has the same qualifications as both the operator and the mechanical technician. In addition, the electrical technician may carry out electrical repairs within the various enclosures of the unit.

This includes work on live electrical components.

Skill level 4: Specialist from the manufacturer

This is a skilled specialist sent by the manufacturer or its agent to perform complex repairs or modifications to the equipment.

In general it is recommended that not more than two people operate the unit. More operators can lead to unsafe operating conditions.

Take necessary steps to keep unauthorized persons away from the unit and eliminate all possible sources of danger at the unit.

It is mandatory for the mechanics to use safe engineering practices and to observe all relevant local safety requirements and ordinances when handling, operating, overhauling and/or performing maintenance or repair on Atlas Copco equipment. The following list is for special safety directives and precautions mainly applicable to Atlas Copco equipment.

These safety precautions apply to machinery processing or consuming air. Processing of any other gas requires additional safety precautions typical to the application and are not included herein.

Neglecting the safety precautions can endanger people as well as the environment and machinery:

- endanger people due to electrical, mechanical or chemical influences.
- endanger the environment due to leakage of oil, solvents or other substances.
- endanger the machinery due to function failures.

Atlas Copco is not responsible for any damage or injury resulting from neglecting these precautions or by non-observance of ordinary caution and due care required in handling, operating, maintenance or repair, also if not expressly mentioned in this instruction manual. The manufacturer does not accept any liability for any damage arising from the use of non-original parts and for modifications, additions or conversions made without the manufacturer's approval in writing.

If any statement in this manual does not comply with local legislation, the stricter of the two shall be applied.

Statements in these safety precautions should not be interpreted as suggestions, recommendations or inducements that it should be used in violation of any applicable laws or regulations.

GENERAL SAFETY PRECAUTIONS

1 The owner is responsible for maintaining the unit in a safe operating condition. Unit parts and accessories must be replaced if missing or unsuitable for safe operation.

2 The supervisor, or the responsible person, make sure that all instructions regarding machinery, equipment operation and maintenance are strictly followed. The machines with all accessories and safety devices, as well as the consuming devices, are in good repair, free of abnormal wear or abuse, and are not tampered with.

3 Make sure that the motors, air filters, and electrical and regulating components are protected to prevent moisture from entering them.

4 Pipes or other parts with a temperature in excess of 80 °C (176 °F) and which can be accidentally touched by personnel in normal operation must be guarded or insulated. Other high temperature piping must be clearly marked.

5 Whenever there is an indication or any suspicion that an internal part of the machine is overheated, the machine must be stopped. Inspection covers must not be opened before sufficient cooling time has elapsed. This is to prevent the risk of oil vapour ignition.

6 Normal ratings (pressures, temperatures, speeds, etc.) must be durably marked.

7 Operate the unit only for the intended purpose and within its rated limits (pressure, temperature, speeds, etc.).

8 The machinery and equipment shall be kept clean, i.e. as free as possible from oil, dust or other deposits.

9 To prevent an increase in working temperature, inspect and clean heat transfer surfaces (cooler fins, intercoolers, water jackets, etc.) regularly.

10 All regulating and safety devices must be maintained with due care to make sure that they function properly. They may not be put out of action.

11 After machine shutdown, make sure to release the pressure that can remain in the air outlet part of system.

12 The unit contains a frequency converter. Wait for at least 15 minutes after electrically isolating the machine before starting any electrical repair, to allow stored energy to dissipate. Always use a multimeter to check that electrical components are safe before commencing work.

13 Care must be taken to prevent damage to safety valves and other pressure-relief devices, especially to prevent plugging by paint, oil coke or dirt accumulation, which can interfere with the functioning of the device.

14 Pressure and temperature gauges must be checked regularly for accuracy. They must be replaced whenever outside acceptable tolerances.

15 Safety devices must be tested as given in the maintenance schedule of the instruction manual to identify that they are in good operating condition.

16 Mind the **Markings and information labels** on the unit.

17 In the event the safety labels are damaged or destroyed, they must be replaced to make sure the operator safety.

18 Keep the work area neat. Lack of order will increase the risk of accidents.

19 When working on the unit, wear appropriate safety clothing. Depending on the kind of activities performed, these can include: safety glasses, ear protection, safety helmet (including visor), safety gloves, protective clothing, safety shoes. Do not wear hair long and loose (protect long hair with a hairnet) or wear loose clothing or jewellery.

20 Take precautions against fire. Handle oil and anti-freeze with care because they are inflammable substances. Do not smoke or approach with naked flame when handling such substances. Keep a fire-extinguisher in the vicinity.

21 Make sure that there are no sharp edges or corners, no burrs and no rough surfaces to prevent injury.

22 Make sure that you do not stand on the machine.

23 In a domestic environment, this product may cause radio interference in which case supplementary mitigation measures are required.

SAFETY DURING TRANSPORT AND INSTALLATION

Transport of the unit must be done by authorized/ experienced people.

To lift a unit, all loose or pivoting parts, e.g. doors and tow bar, shall first be securely fastened.

Do not attach cables, chains or ropes directly to the lifting eye. Apply a crane hook or lifting shackle meeting local safety regulations. Never allow sharp bends in lifting cables, chains or ropes.

Helicopter lifting is not allowed.

It is strictly forbidden to dwell or stay in the risk zone under a lifted load. Never lift the unit over people or residential areas. Lifting acceleration and retardation shall be kept within safe limits.

1 To lift heavy parts, a hoist of ample capacity, tested and approved according to local safety regulations, shall be used.

2 Lifting hooks, eyes, shackles, etc., shall never be bent and shall only have stress in line with their design load axis. The capacity of a lifting device diminishes when the lifting force is applied at an angle to its load axis.

3 For maximum safety and efficiency of the lifting apparatus all lifting members shall be applied as near to perpendicular as possible. If required, a lifting beam shall be applied between hoist and load.

4 Never leave a load hanging on a hoist.

5 A hoist is to be installed in such a way that the machine will be lifted vertically. If that is not possible, the necessary precautions must be taken to prevent load-swinging, e.g. by using two hoists, each at approximately the same angle not exceeding 30° from the vertical.

6 Locate the unit away from walls. Take all precautions to make sure that hot air exhausted from the cooling systems cannot be recirculated. If such hot air is taken in from cooling fan, this can cause overheating of the unit.

7 Before moving the compressor, switch it to off and fully disconnect it from external power cables.

SAFETY DURING USE AND OPERATION

1 Periodically check that:
- All hoses and/or pipes inside the machine are in good condition, secure and not rubbing;
- No leaks occur;
- All fasteners are tight;
- All electrical leads are secure and in good order;
- Safety valves and other devices are not obstructed with dirt or paint;
- Air outlet valve is in good condition.

2 Make sure that the plastic straps that are used to hold the cables are properly cut to prevent any personnel injury.

3 Be careful of sharp edges that can cause deep cuts, for example: the electrical fan cover.

4 After switching-off the power, the VSD converter remains energized for several minutes. Please wait for 15 minutes before touching any electrical components. Always use a multimeter to check that electrical components are safe before commencing work.

5 When operating in a dust-laden atmosphere, place the unit so that dust is not carried towards it by the wind. Operation in clean surroundings considerably extends the intervals for cleaning the air intake filters and the cores of the coolers.

6 Close the compressor air outlet valve before connecting or disconnecting a hose. Ascertain that a hose is fully depressurized before disconnecting it. Before blowing compressed air through a hose or air line, make sure that the open end is held securely, so that it cannot whip and cause injury.

7 The air line end connected to the outlet valve must be safeguarded with a safety cable, attached next to the valve.

8 No external force must be exerted on the air outlet valves, e.g. by pulling on hoses or by installing auxiliary equipment directly to a valve, e.g. a water separator, a lubricator, etc. Do not step on the air outlet valves.

9 Never move a unit when external lines or hoses are connected to the outlet valves, to avoid damage to valves, manifold and hoses.

10 Do not use the compressed air from any type of compressor for breathing purposes without taking extra measures, as this can result in injury or death. For breathing air quality, the compressed air must be adequately purified according to local legislation and standards. Breathing air must always be supplied at stable, suitable pressure.

11 Distribution pipework and air hoses must be of the correct diameter and suitable for the working pressure. Never use frayed, damaged or deteriorated hoses. Replace hoses and flexibles before their lifetime expires. Use only the correct type and size of hose end fittings and connections.

12 Before removing the oil filler plug, make sure that the pressure is released by opening an air outlet valve.

13 All doors must be shut during operation so as not to disturb the cooling air flow inside the bodywork and/or render the silencing less effective. A door must only be kept open for a short period, e.g. for inspection or adjustment.

14 Periodically carry out maintenance works according to the maintenance schedule.

15 Stationary housing guards are provided on all rotating or reciprocating parts not otherwise protected and which can be hazardous to personnel. Machinery shall never be put into operation, when such guards have been removed, before the guards are securely reinstalled.

16 Noise, even at reasonable levels, can cause irritation and disturbance which, over a long period of time, can cause severe injuries to the nervous system of human beings. When the sound pressure level, at any point where personnel normally has to attend, is:
- below 70 dB(A): no action needs to be taken,
- above 70 dB(A): noise-protective devices must be provided for people continuously being present in the room,
- below 85 dB(A): no action needs to be taken for occasional visitors staying a limited time only,
- above 85 dB(A): room to be classified as a noise-hazardous area and an obvious warning must be placed permanently at each entrance to alert people entering the room, for even relatively short times, about the need to wear ear protectors,
- above 95 dB(A): the warning(s) at the entrance(s) shall be completed with the recommendation that also occasional visitors shall wear ear protectors,
- above 105 dB(A): special ear protectors that are adequate for this noise level and the spectral composition of the noise shall be provided and a special warning to that effect shall be placed at each entrance.

17 The unit has parts, which can be accidentally touched by personal, of which the temperature can be in excess of 80°C (176°F). The insulation or safety guard, protecting these parts shall not be removed before the parts have cooled down to room temperature. As it is technically not possible to insulate all hot parts or to install safety guards around hot parts (e.g. vessel, cooler), the operator / service engineer must always be aware

not to touch hot parts when opening a machine door.

18 Never operate the unit in surroundings where there is a possibility of taking in flammable or toxic fumes.

19 If the working process produces fumes, dust or vibration hazards, etc., take the necessary steps to eliminate the risk of personal injury.

20 When using compressed air or inert gas to clean the equipment, do that with caution and use the appropriate protection, at least safety glasses, for the operator as well as for any bystander. Do not apply compressed air or inert gas to your skin or direct an air or gas stream to people. Never use it to clean dirt from your clothes.

21 When washing parts in or with a cleaning solvent, provide the required ventilation and use appropriate protection such as a breathing filter, safety glasses, rubber apron and gloves, etc.

22 Safety shoes must be compulsory in any workshop and if there is a risk, however small, of falling objects, wearing of a safety helmet must be included.

23 If there is a risk of inhaling hazardous gases, fumes or dust, the respiratory organs must be protected and depending on the nature of the hazard, so must the eyes and skin.

24 Remember that where there is visible dust, the finer, invisible particles will almost certainly be present too; but the fact that no dust can be seen is not a reliable indication that dangerous, invisible dust is not present in the air.

25 Never operate the unit at pressures or speeds below or in excess of its limits as indicated in the **Technical specifications**.

SAFETY DURING MAINTENANCE AND REPAIR

Maintenance, overhaul and repair work shall only be carried out by adequately trained personnel. If required, under supervision of someone qualified for the job.

1 Use only the correct tools for maintenance and repair work, and only tools which are in good condition.

2 Parts must only be replaced by genuine Atlas Copco replacement parts.

3 After power switch-off, the VSD converter remains energized for several minutes. Please wait for 15 minutes before touching any electrical components. Always use a multimeter to check that electrical components are safe before commencing work.

4 All maintenance work, other than routine attention, must only be undertaken when the unit is stopped. Steps must be taken to prevent inadvertent starting. In addition, a warning sign bearing a legend such as “work in progress, do not start” must be attached to the starting equipment. On electrically driven units the main switch / breaker must be locked in open position and the fuses must be taken out. A warning sign bearing a legend such as “work in progress, do not supply voltage” shall be attached to the fuse box or main switch.

5 Before any maintenance, repair work, adjustment or any other non-routine checks, stop the compressor, press the emergency stop button, switch off the voltage and depressurize the compressor.

6 Before servicing, make sure to turn the emergency stop to OFF position and disconnect all the power supplies.

7 Before servicing, make sure that the breaker is in the locked position.

8 Be careful when you release the pipes that connect to the outlet valve or after cooler. Pipes remain pressurized after machine shutdown.

9 If the machine is installed with an automatic restart after voltage failure function and if this function is active, be aware that the machine will restart automatically.

10 Before dismantling any pressurized component, the compressor or equipment shall be effectively isolated from all sources of pressure and the entire system must be relieved of pressure. Do not rely on non-return valves (check valves) to isolate pressure systems. In addition, a warning sign bearing a legend such as “work in progress, do not open” shall be attached to each of the outlet valves.

11 Prior to stripping a machine or undertaking a major overhaul on it, prevent all movable parts from rolling over or moving.

12 Make sure that no tools, loose parts or rags are left in or on the machine. Never leave rags or loose clothing near the compressor air intake

13 Never use flammable solvents for cleaning (fire-risk).

14 Take safety precautions against toxic vapours of cleaning liquids.

15 Never use machine parts as a climbing aid.

16 Observe scrupulous cleanliness during maintenance and repair. Keep away dirt, cover the parts and exposed openings with a clean cloth, paper or tape.

17 Never weld or perform any operation involving heat near the oil systems. Oil tanks must be completely purged, e.g. by steam-cleaning, before carrying out such operations. Never weld on, or in any way modify, pressure vessels.

18 Do not remove any of, or tamper with, the sound-damping material. Keep the material free of dirt and liquids such as oil and cleansing agents. If any sound-damping material is damaged, replace it to prevent the sound pressure level from increasing.

19 Use only lubricating oils and greases recommended or approved by Atlas Copco or the machine manufacturer. Ascertain that the selected lubricants comply with all applicable safety regulations, especially with regard to explosion or fire-risk and the possibility of decomposition or generation of hazardous gases. Never mix synthetic with mineral oil.

20 Protect the frequency convertor, motor, air inlet filter, electrical and regulating components, etc., to prevent moisture ingress.

21 When performing any operation involving heat, flames or sparks on a machine, the surrounding components shall first be screened with non-flammable material.

22 Never use a light source with open flame for inspecting the interior of a machine.

23 When the repair is completed, Check the direction of rotation of electric motors when starting up the machine initially and after any alteration to the electrical connection(s) or switch gear, to check that the oil pump and the fan function properly.

24 Maintenance and repair work must be recorded in an operator's logbook for all machinery. Frequency and nature of repairs can reveal unsafe conditions.

25 When hot parts have to be handled, e.g. shrink fitting, special heat-resistant gloves shall be used and, if required, other body protection shall be applied.

26 When using cartridge type breathing filter equipment, ascertain that the correct type of cartridge is used and that its useful service life is not surpassed.

27 Make sure that oil, solvents and other substances likely to pollute the environment are properly disposed of.

28 Before clearing the unit for use after maintenance or overhaul, check that operating pressures, temperatures and speeds are correct and that the control and shutdown devices function correctly.

29 During dismantling, there is a potential tension pressure in the spring of minimum pressure valve and thermostatic valve during. Be careful when you loosen the spring.

TOOL APPLICATIONS SAFETY

Check the maximum pressure of the tool and hoses against maximum vessel pressure.

Use the proper tool for each job. With the knowledge of correct tool use and knowing the limitations of tools, along with some common sense, many accidents can be prevented.

Special service tools are available for specific jobs and should be used when recommended. The use of these tools will save time and prevent damage to parts.

ELECTRICAL SAFETY PRECAUTIONS

1 Periodically check that all electrical leads are secure and in good condition.

2 Make sure that the electric machine is properly grounded through the connected power cable.

3 Do not open electric boxes, boards or other equipment when the power is ON. Make sure to disconnect the power from main supply. All the measurements, tests or adjustments must only be performed by a qualified electrician, having the suitable tools and wearing the necessary protections (PPE).

4 After power switch-off, the VSD converter remains energized for several minutes. Please wait for 15 minutes before touching any electrical components. Always use a multimeter to check that electrical components are safe before commencing work.

5 Do not touch the electrical terminals when the machine is running.

6 If a failure situation occurs, for example unwanted noise, continuous vibration, or a strong smell then immediately isolate the machine. The failure must be corrected before starting the machine again.

7 Periodically check the cables. Damaged cables and poor tightening of connections can cause electric shocks. Whenever the existence of dangerous circumstances is observed, isolate the machine. Replace the damaged wires. Identify the risk situation before starting the machine. Make sure that all electric wirings are safe.

8 Make sure that the area is safe and clear to supply electrical power.

9 Make sure to check the direction of rotation of the fan and drive-motor in the initial start-up.

10 After servicing, make sure you assemble the motor cables in their correct location to prevent short circuit and fluctuations in rpm.

SPECIFIC SAFETY PRECAUTIONS

Pressure vessels

Maintenance/installation requirements:

1 The vessel can be used as a pressure vessel or as a separator and is designed to hold compressed air for the following application:
   - pressure vessel for compressor,
   - medium AIR/OIL,

   and operates as detailed on the data plate of the vessel:
   - the maximum working pressure ps in bar (psi),
   - the maximum working temperature Tmax in °C (°F),
   - the minimum working temperature Tmin in °C (°F),
   - the capacity of the vessel V in L (US gal).

2 The pressure vessel is only to be used for the applications as specified above and in accordance with the technical specifications. Safety reasons prohibit any other applications.

3 National legislation requirements with respect to re-inspection must be complied.

4 No welding or heat treatment of any kind is permitted to those vessel walls which are exposed to pressure.

5 The vessel is provided and may only be used with the required safety equipment such as manometer, overpressure control devices, safety valve, etc.

6 Draining of condensate shall be performed daily when the vessel is in use.

7 Installation, design and connections must not be changed.

8 Bolts of cover and flanges can not be used for extra fixation.

9 (Pressure) vessel maintenance is to be performed by Atlas Copco.

Safety valves

1 All adjustments or repairs are to be done by an authorized representative of the valve supplier.

2 Only trained and technically competent personnel should consider overhaul, re-set or performance testing of safety valves.

3 The safety valve is supplied with either a lead security seal or crimped cover to deter unauthorised access to the pressure regulation device.

4 Under no circumstances should the set pressure of the safety valve be altered to a different pressure than that stamped on the valve without the permission of the installation designer.

5 If the set pressure must be altered then use only correct parts supplied by Atlas Copco and in accordance with the instructions available for the valve type.

6 Safety valves must be frequently tested and regularly maintained.

7 The set pressure should be periodically checked for accuracy.

8 When fitted, the compressors must be operated at pressures not less than 75% of the set pressure to make sure free and easy movement of internal parts.

9 The frequency of tests is influenced by factors such as the severity of the operating environment and aggressiveness of the pressurised medium.

10 Soft seals and springs should be replaced as part of the maintenance procedure.

11 Do not paint or coat the installed safety valve.

Variable frequency drive

1. All adjustments or repairs are to be done by an authorized representative of the Atlas Copco.

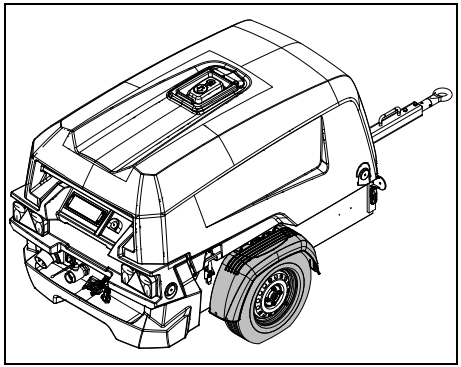
Leading particulars

SAFETY PICTOGRAMS USED

This symbol draws your attention to dangerous situations. The operation concerned may endanger persons and cause injuries.

This symbol is followed by supplementary information.

GENERAL DESCRIPTION



The compressors H185 VSD and H250 VSD are silenced, single-stage, oil-injected screw compressor, built for a nominal effective working pressure of 7 bar(g) (101.5 psi) to 12.0 bar(g) (174.0 psi) (see chapter **Technical specifications**).

The compressor is installed with a PE canopy.

PE is very robust, can't corrode. It keeps its shape and color during the full lifetime of the machine. It is fully recyclable to keep the environmental impact as low as possible. The compressor low weight (below 750 kg) makes it possible to tow it with a standard European driver's license.

The canopy has openings at the shaped front and rear end for the intake and outlet of cooling air. The canopy is internally lined with sound-absorbing material.

Permanent Magnet Motor

Compressor is driven by motor with class H insulation. It runs in maximum rpm of 9000.

Frequency Drive

The compressor is powered from the electrical grid/ generator through a liquid-cooled frequency drive.

The input power is transmitted to a DC voltage bus by an active front end. This DC-bus then powers an inverter that creates the desired electrical power for the permanent magnet motor.

Power from the grid/generator is 3 phase without neutral, voltage range of frequency drive is 380V to 480 V AC. Current range is limited between 16A to 50A on H185 VSD and 16A to 63A on H250 VSD.

Current range is limited to 60A for H250 VSD USA.

Compressor

The compressor casing contains two screw-type rotors, mounted on ball and roller bearings. The male rotor driven by integrated permanent magnet motor, drives the female rotor.

The compressor uses Variable Speed Drive (VSD) technology which automatically adjust the motor speed depending on the compressed air required.

Injected oil is used for sealing, cooling and lubricating purposes.

Compressor oil system

The oil is boosted by air pressure. The system has no oil pump. The entire oil system is installed with screwed oil hoses to get higher quality and less failures.

The oil is removed from the air, in the air/oil vessel first by centrifugal force, secondly by the oil separator element.

The vessel is provided with an oil level indicator.

Regulation

The compressor is provided with a continuous regulating system and a blow-down valve which is integrated in the unloader assembly. The blow down valve is closed during operation by air receiver pressure and opens by air receiver pressure when the compressor is stopped.

When the air consumption increases, the air receiver pressure will decrease and vice versa.

This receiver pressure variation is sensed by the working pressure sensor and send to the controller. The controller will match the air output to the air consumption by controlling the motor speed and throttling the compressor inlet valve. The controller sends an electronic speed request to the frequency drive and steers an electro-pneumatic regulating valve which, by means of control air will position the unloader. The air receiver pressure is maintained at the pre-selected working pressure.

Cooling system

The frequency drive is provided with a liquid cooler. The compressor is provided with an oil cooler.

The cooling air is generated by the two electrical fans.

Safety devices

A thermal shut-down switch protects the compressor against overheating. The air receiver is provided with a safety valve.

The frequency drive is equipped with low coolant pressure and high coolant temperature shut-down switches.

Lifting eye

A lifting eye is accessible when the small door at the top of the unit is unlocked.

Frame and axles

The machine is equipped with a spillage-free frame.

The base frame which is made out of a single metal sheet, can contain up to 120% of all the liquids in the compressor. A drain plug is installed to drain the frame and safely capture all the spilled liquids.

The bumper is designed in such a way that it protects the rear bottom of the frame if the machine tilts on its rear.

The compressor unit is supported by rubber buffers in the frame.

The unit is delivered with the wheels, and a fixed/ adjustable tow bar without brakes. The tow bar is equipped with a ball coupling or various towing eyes.

Electronic Pressure Regulation System (EPRS)

The machine is equipped with EPRS or PACE system which controls pressure when it varies. The required pressure can be set.

Control panel

The control panel, XC2003 consists of a display and keys. It is placed in the rear end/bumper of the unit.

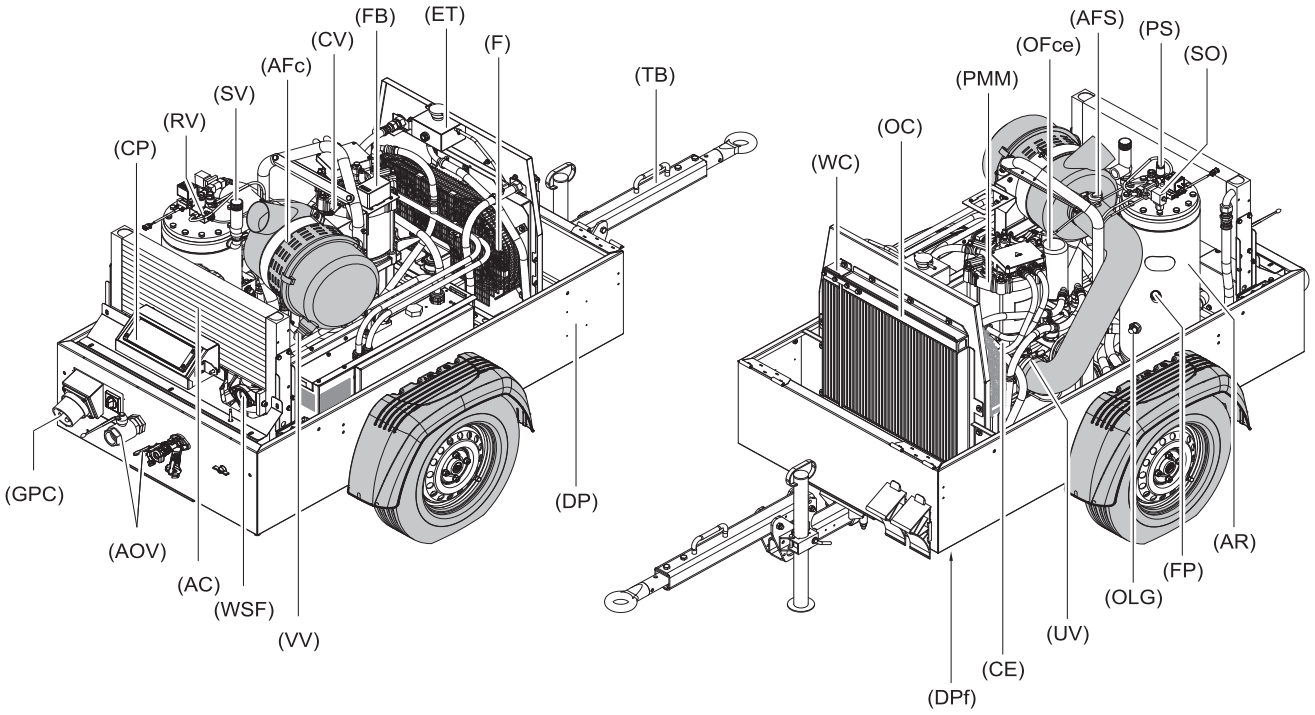
Data plate

The compressor is supplied with a data plate that shows the product code, the unit number and the working pressure (see chapter **Data plate**).

VIN number

The Vehicle Identification Number (VIN) is located on the right-hand front side of the frame.

Main parts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(AR)
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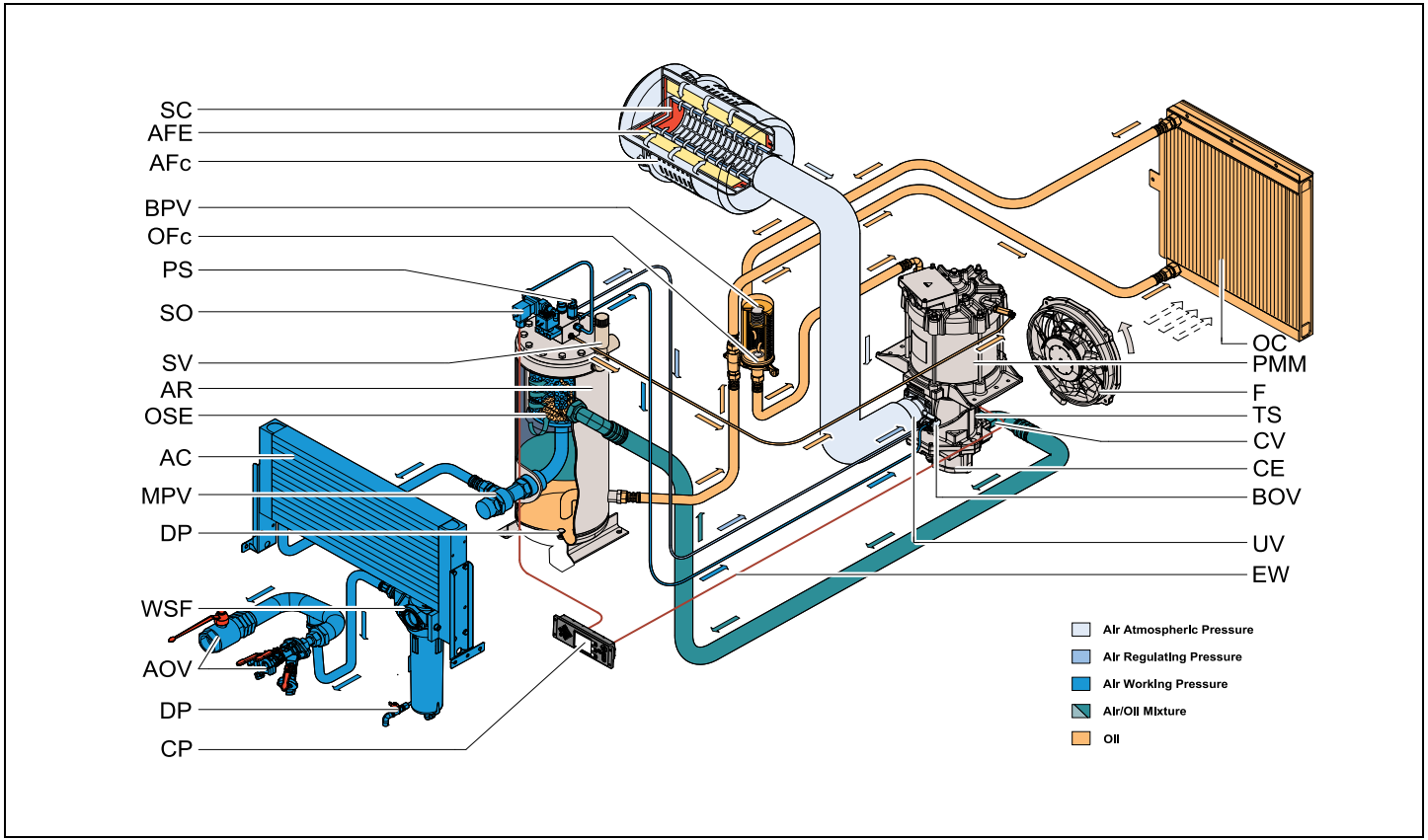
(CE)
(DPf)

Reference	Name
AC	Aftercooler (optional for H185)
AFc	Air Filter (compressor)
AFS	Air Filter Switch
AOV	Air Outlet Valves
AR	Air Receiver
CE	Compressor Element
CP	Control Panel
CV	Check Valve
DP	Data Plate
DPf	Drain Plug (frame)
ET	Expansion Tank
F	Fan
FB	Fuse Box
FP	Filler Plug
GPC	Grid Power Connection

Reference	Name
MPV	Minimum Pressure Valve
OC	Oil Cooler
OFce	Oil Filter (compressor element)
OLG	Oil Level Gauge
PMM	Permanent Magnet Motor
PS	Pressure Sensor
RV	Regulating Valve
SO	Solenoid Valve
SV	Safety Valve
TB	Towbar
UV	Unloader Valve
VSD	Variable Speed Drive
VV	Vacuator Valve
WC	Water Cooler
WSF	Water Separator Filter

Overview


SC
AFE
AFc
BPV
OFc
PS
SO
SV
AR
OSE
AC
MPV
DP
WSF
AOV
DP
CP
OC
PMM
F
TS
CV
CE
BOV
UV
EW
Air Atmospheric Pressure
Air Regulating Pressure
Air Working Pressure
Air/Oil Mixture
Oil

Reference	Name
AC	Aftercooler (optional for H185)
AFc	Air Filter (compressor)
AFE	Air Filter Element
AOV	Air Outlet Valves
AR	Air Receiver
BOV	Blow-Off Valve
BPV	By-Pass Valve (oil filter)
CE	Compressor Element
CP	Control Panel
CV	Check Valve
DP	Drain Plug
EW	Electrical Wiring
F	Fan

Reference	Name
MPV	Minimum Pressure Valve
OC	Oil Cooler
OFc	Oil Filter (compressor)
OSE	Oil Separator Element
PMM	Permanent Magnet Motor
PS	Pressure Sensor
SC	Safety Cartridge
SO	Solenoid Valve
SV	Safety Valve
TS	Temperature Switch
UV	Unloader Valve
WSF	Water Separator Filter

Air flow

Air drawn through the air filter (AF) into the compressor element (CE) is compressed. At the element outlet, compressed air and oil pass into the air receiver/oil separator (AR/OSE).

A check valve in the unloader assembly prevents blow-back of compressed air when the compressor is stopped. In the air receiver (AR), most of the oil is removed from the air/oil mixture; the remaining oil is removed by the separator element (OSE).
The oil collects in the receiver and on the bottom of the separator element.

The air leaves the receiver via a minimum pressure valve (MPV) which prevents the receiver pressure from dropping below the minimum working pressure (specified in section Limitations), even when the air outlet valves are open. This is to make sure that there is an adequate oil injection and that prevents oil consumption.
The MPV also acts as a non-return valve, which prevents any pressure built up in the system behind the compressor will escape through the compressor.

The system comprises of a temperature switch (TS).

A blow-down valve is fitted in the unloader assembly to automatically depressurize the air receiver (AR) when the compressor is stopped.

Oil system

The lower part of the air receiver (AR) serves as an oil tank.

Air pressure forces the oil from the air receiver/oil separator (AR/OSE) through the oil cooler (OC), oil filter (OFc), and cooling jackets of the permanent magnet motor (PMM) into the compressor element (CE).

The compressor element has an oil gallery in the bottom of its casing. The oil for rotor lubrication, cooling, and sealing is injected through holes in the gallery.

Lubrication of the bearings is ensured by oil injected into the bearing housings.

The injected oil, mixed with the compressed air, leaves the compressor element and re-enters the air receiver, where it is separated from the air as described in section **Air flow**.

The oil that collects on the bottom of the oil separator element is returned to the system through a scavenging line, which is provided with a flow restrictor.
The oil that collects on the bottom of the oil separator element (OSE) is returned to the system through a scavenging line, which is provided with a flow restrictor.

The oil filter by-pass valve (BPV) opens when the pressure drop over the filter is above normal because of a clogged filter. The oil then bypasses the filter without being filtered. For this reason, the oil filter must be replaced at regular intervals (see section **Maintenance schedule**).

Continuous electro pneumatic regulating system

The compressor is provided with a continuous electro pneumatic regulating system. This system makes sure that the air delivery is such that the pressure in the air receiver matches the pressure set point in the controller. The air output is controlled from maximum air delivery to no air delivery by:

1. Speed control of the motor between maximum and minimum speed.
2. Air inlet throttling.

The receiver pressure is sensed by the controller through the working pressure sensor. If the pressure in the receiver is above the pressure set point, the controller will first decrease motor speed in trying to get the receiver pressure equal to the pressure set point. If motor speed is at minimum speed and receiver pressure is still above the pressure set point, the regulating valve shall start to create regulating pressure. By increasing regulating pressure the unloader assembly will throttle more and admit less air in the compressor element this will make the receiver pressure decrease.

If the pressure in the air receiver is below the pressure set point, the motor rpm will be maximum and regulating pressure will be minimum. The maximum motor speed will depend on pressure set point (when flow boost = off) or on actual receiver pressure (when flow boost = on). The working pressure is controlled by the controller and can be set at any value between 5 bar (72.5 psi) and 13 bar (188.5 psi) in 0.1 bar steps.

MARKINGS AND INFORMATION LABELS

For location of the labels refer to the spare parts manual.

	Danger, outlet gases
	Danger, hot surface
	Electrocution hazard
	Atlas Copco synthetic compressor oil
	Manual
	Read the instruction manual before working on the battery
	On / off button
	Hours, time
	Prohibition to open air valves without connected hoses
	Check Air filter
	Compressor temperature too high

	Rotation direction
	Read the instruction manual before starting
	Service every 24 hours
	Warning! Part under pressure
	Do not stand on outlet valves
	Do not run the compressor with open doors
	Lifting device
	Coolant drain
	Compressor oil drain
2.7 bar (39 psi)	Tyre pressure
	Service

	Sound power level in accordance with Directive 2000/14/EC (expressed in dB (A))
	Horizontal towbar position required in case of coupling
	Flammable substances
	Do not tow with the support in rest position
	Check the maximum pressure of the tool and hoses against maximum vessel pressure

Operating instructions

PARKING, TOWING AND LIFTING INSTRUCTIONS

Safety precautions

The operator is expected to apply all relevant Safety precautions.

Attention

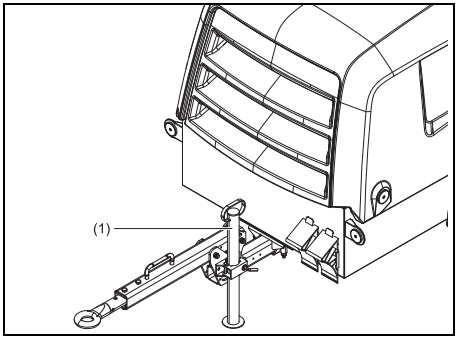
After the first 100 km travel:

Check and re-tighten the wheel nuts and towbar bolts to the specified torque. See section Technical specifications.

When you use a towing vehicle to manoeuver the unit, take care that the support leg is lifted fully.

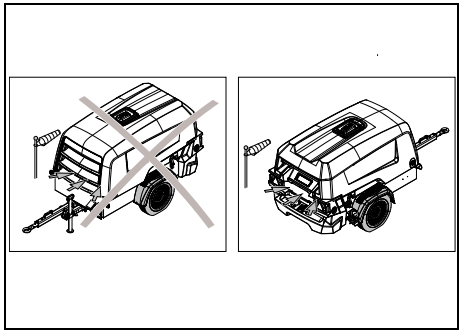
The machine is tested and can be operated in all weather condition.

PARKING INSTRUCTION



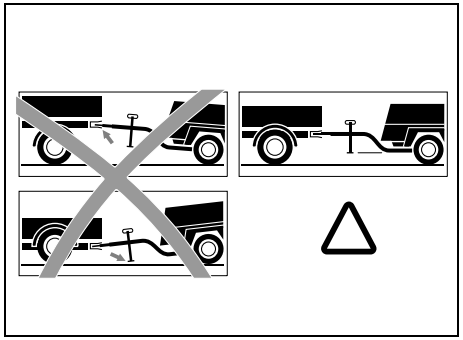
When parking a compressor, secure the support leg (1) to support the compressor in a level position.

Place the compressor as level as possible. It can be operated temporarily in an out of level position not exceeding 15°. If the compressor is parked on sloping ground, immobilize the compressor by placing wheel chocks in front of or behind the wheels.

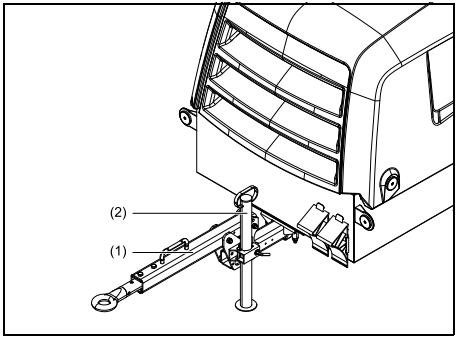


Put the rear-end of the compressor upwind, away from contaminated wind-streams and walls to prevent the recirculation of exhaust gas and warmed-up cooling air into the compressor. If the gas/air enters, it causes overheating. Do not obstruct air evacuation from the cooling system. The compressor oil lifetime will be decreased when the compressor inlet air is contaminated..

TOWING INSTRUCTIONS



Label on tow bar, towing instructions



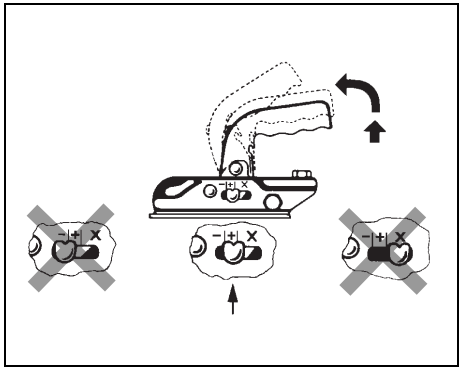
Fixed tow bar

Before towing the compressor, make sure that the towing equipment of the vehicle matches the towing eye or ball connector. Make sure that the hood is closed and locked properly.

The towbar (1) must be as level as possible for both the non-adjustable and adjustable towbar. The compressor and towing eye end are in a level position.

Secure the support leg (2) in the highest possible position.

Ball coupling (option)



The handle of the ball coupling and the handbrake lever must not be used as a manoeuvring aid to prevent damage to the internal components.

The coupling (ball coupling) on the tow bar is type approved. The maximum load at the coupling must not be exceeded.

When coupling, lower the support leg to the ground. Reverse the car up to the compressor or, in the case of a small compressor, manoeuvre the compressor up to the car's trailer coupling.

Coupling:

Open coupling jaw by pulling the lever fully upwards in the direction of the arrow. Lower the opened coupling onto the ball of the vehicle coupling and the lever will automatically be lowered. Closing and locking are carried out automatically. Check the "+" (see figure) position.

Connect the breakaway cable and electrical plug (option) to the towing vehicle. Raise the support leg up fully and secure by firmly clamping it. Release parking brake before setting off.

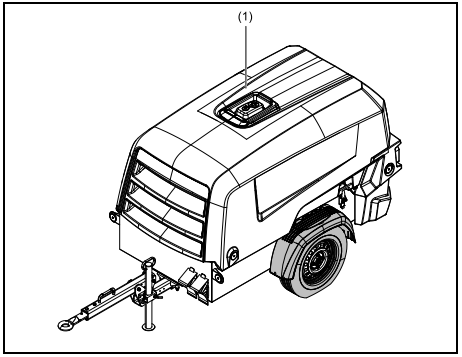
Visual check: the ball must no longer be visible in coupled condition.

Uncoupling

Lower the support leg. Disconnect breakaway cable and electrical plug. Pull the lever fully upwards in the direction of the arrow and hold. Lift the compressor off the ball of the towing vehicle.

Secure the compressor by means of a wheel chock.

LIFTING INSTRUCTIONS



When lifting the compressor, the hoist must be placed in such a way that you can lift the compressor vertically. Keep lifting acceleration and retardation within safe limits.

It is recommended to use the lifting eye. The lifting eye is accessible while lifting the rubber flap (1).

Lifting acceleration and retardation must be kept within safe limits (max. 2xg).

Helicopter lifting is not allowed.

Lifting is not allowed when the unit is running.

It is recommended to use a lifting rope to prevent damage to the lifting beam structure and canopy.

Use a rope of ample capacity, that is tested and approved according to local safety regulations.

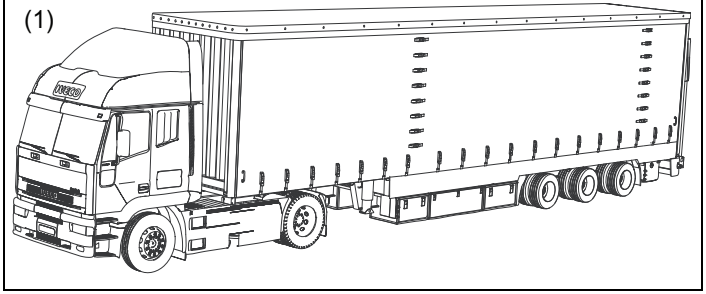
SHIPPING THE COMPRESSOR

Specified shipping vehicle

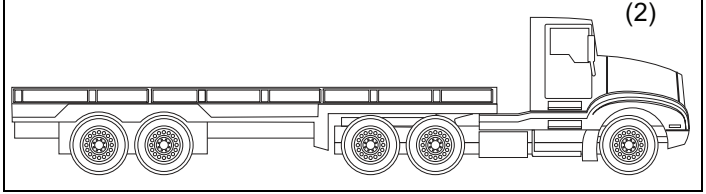
Use only these shipping vehicles to transport the unit to the required location:

1. Curtain Trailers
2. Open Trailers
3. Winch Trucks

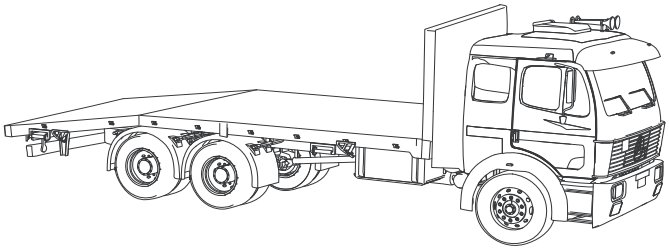
(1)



(2)

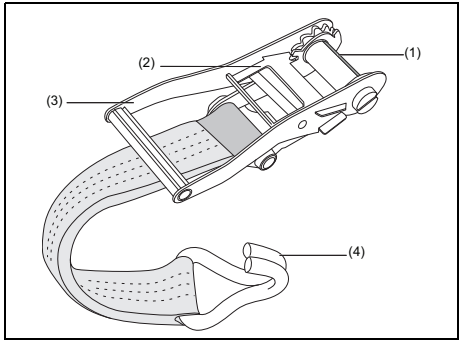


(3)

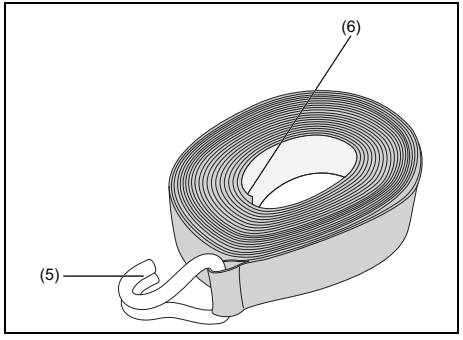


FIXATION TOOLS

Use only CE-approved lashing belts (ratchet straps). The lashing belts (ratchet straps) must be of type LC 2000 daN and Stf 350 daN.



Fixed belt



Adjusting belt

The lashing belt set has two separate belts, the fixed belt and the adjusting belt.

Reference	Description
1	Slot for adjusting belt
2	Ratchet locking tool (Pawl)
3	Ratchet handle
4	Hook of fixed belt
5	Hook of adjusting belt
6	Open end of adjusting belt

Fixing The Lashing Belts

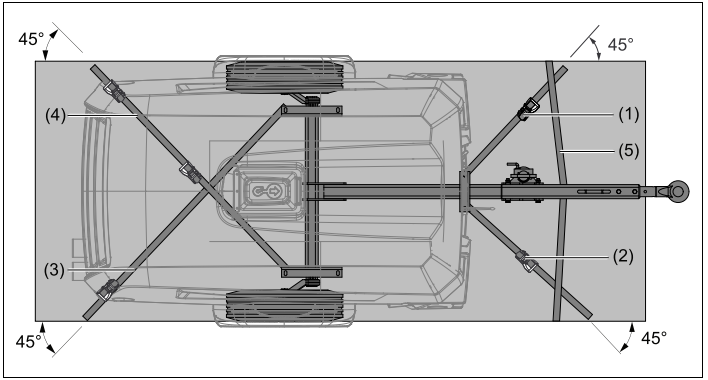
1. Fix the hook of the fixed belt (4) to an eye on the shipping vehicle. Open the ratchet handle (3) on the fixed belt. Raise and lower the ratchet handle (3) till the slot (1) is visible and accessible (as shown in the figure).
2. Fix the hook of the adjusting belt (5) to an eye on the unit. Pass the open end of the adjusting belt (6) through the slot (1) from the bottom to the top.
3. Pull out the open end (6) such that a loop is formed. The open end (6) must be pulled till there is no slack in the adjusting belt.
4. Raise and lower the ratchet handle (3) till the force required to add tension to the belt becomes too great.
5. Push the ratchet handle (3) down to lock the belts in place.

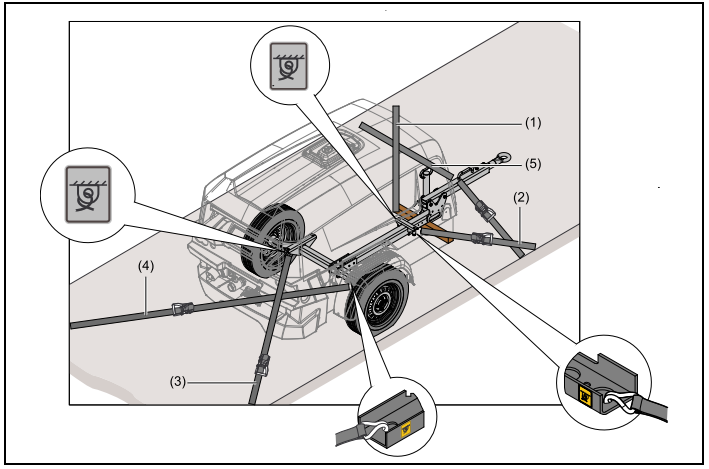
Removing the Lashing belts

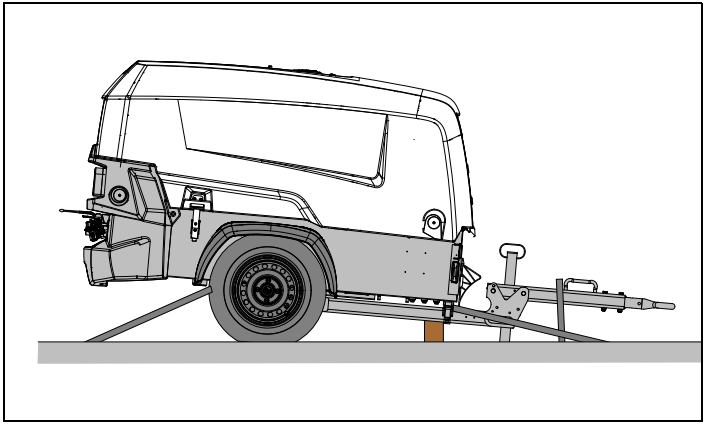
1. Open the ratchet handle (3).
2. Pull the ratchet locking tool (2) towards the grip of the ratchet handle (3) to free the tension on the adjusting belt.
3. Pull out the open end of the adjusting belt (6) from the slot (1).
4. Unhook the fixed and adjusting belts from the eyes where they had been fitted.
5. Keep the lashing belts in a safe area.

SECURING THE UNIT TO THE SHIPPING VEHICLE

1. Place the unit in centre position into the shipping vehicle so that the canopy is parallel to the edges of the shipping vehicle.
2. For tie points 1 to 4, hook the four adjusting belts to the eyes of the unit and four fixed belts to the eyes on the shipping vehicle.
3. Place a wooden block below the tow bar to make sure that the floor is not damaged. It is recommended to keep minimum height of 15 cm.
4. Fasten the adjusting belts to the fixed belts, refer to **Fixing The Lashing Belts** Make sure that an angle of 45° is maintained between the above fitted lashing belts and the horizontal sides of the shipping unit.
5. For tie point 5, fit the hooks of the adjusting belt and the fixed belt to eyes opposite to one another on the shipping vehicle.
6. Fasten the adjusting belt to the fixed belt so that the towing bar is tied down. For the fastening procedure, refer to **Fixing The Lashing Belts**.







Before starting

1. Before initial start-up, prepare the electrical connection to the grid if not already done. See section **Grid connection**.
2. With the compressor standing level, check the level of the coolant circuit of the variable frequency drive.

Before removing the oil filler plug (FP), make sure that the pressure is released by opening an air outlet valve.

3. Check the level of the compressor oil through oil indicator. The pointer of the oil indicator must be in the green range. If necessary, add the oil. See section **Compressor oil level check**.
4. Empty the dust trap of each air filter (AF). See section **Cleaning the dust trap**.

No external force can be applied to the air outlet valve(s), e.g. by pulling hoses or by connecting equipment directly to the valve(s).

5. Attach the air line(s) to the closed air outlet valve(s). Connect the safety chain. Use hoses and equipment that are designed to withstand the maximum pressure of the unit (see **Technical specifications**).

Do not disconnect power supply to control box in any way when the control box is switched on. This will cause memory loss.

Bypass the aftercooler

H250 VSD is standard equipped with an aftercooler to cool down the pressurized air and removing water vapour through the water separator.

If you want the pressurized air to bypass this aftercooler, operate the corresponding valve that is positioned between the aftercooler and the outlet valve(s).

Grid connection

You find the grid connection box with 400V-63A 5 pole socket and a main switch at the rear of the compressor, next to the outlet valves.

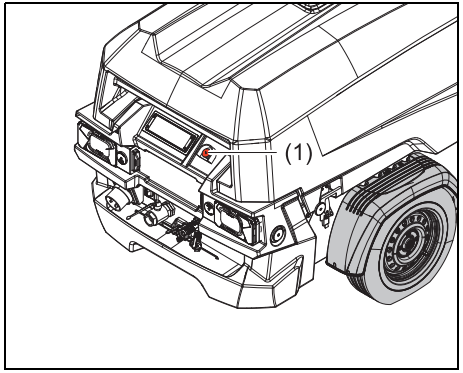
1. Make sure that the main switch is in OFF position.

Two adapter cables can be ordered as option. They are 16A to 32A, 32A to 63A adaptor cables.

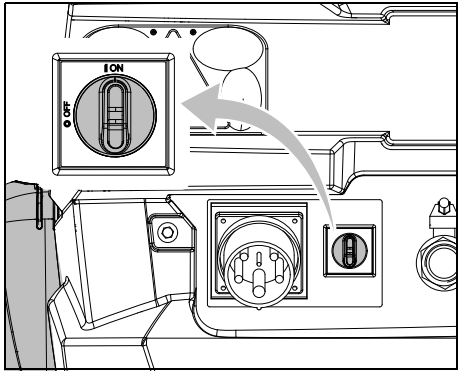
2. Connect the compressor to the grid with the appropriate adapter and extension cable (not delivered with machine) depending on the grid socket available (400V-63A, 400V-32A, and 400V-16A).

When using an Earth Leakage Relay / Differential Relay / Residual Current Device (RCD) / Residual Circuit Breaker with Overcurrent protection (RCBO) of Amperage setting below 300 mA, it must be of Type B. It is common for the VSD converter to have differential spikes above 30 mA.

3. Use an extension cable with IP67 grade sockets for outdoor use.
4. Once the socket connections on grid side and compressor side are securely fastened, the main switch can be switched to the ON position.



The emergency stop button (1) must be used in emergency situations and not for stopping the machine.



The main switch must be in ON position while operation.

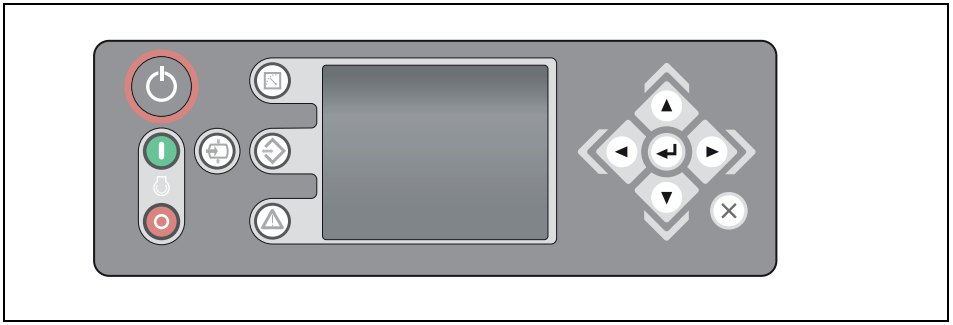
When the main switch is turned to OFF position, power to all outputs is terminated.

Before opening the hood, the main switch must be set to OFF position. (e.g. for maintenance or troubleshooting)

BASIC OPERATION OF THE MACHINE

The compressor is controlled by local operation mode in the operating panel.

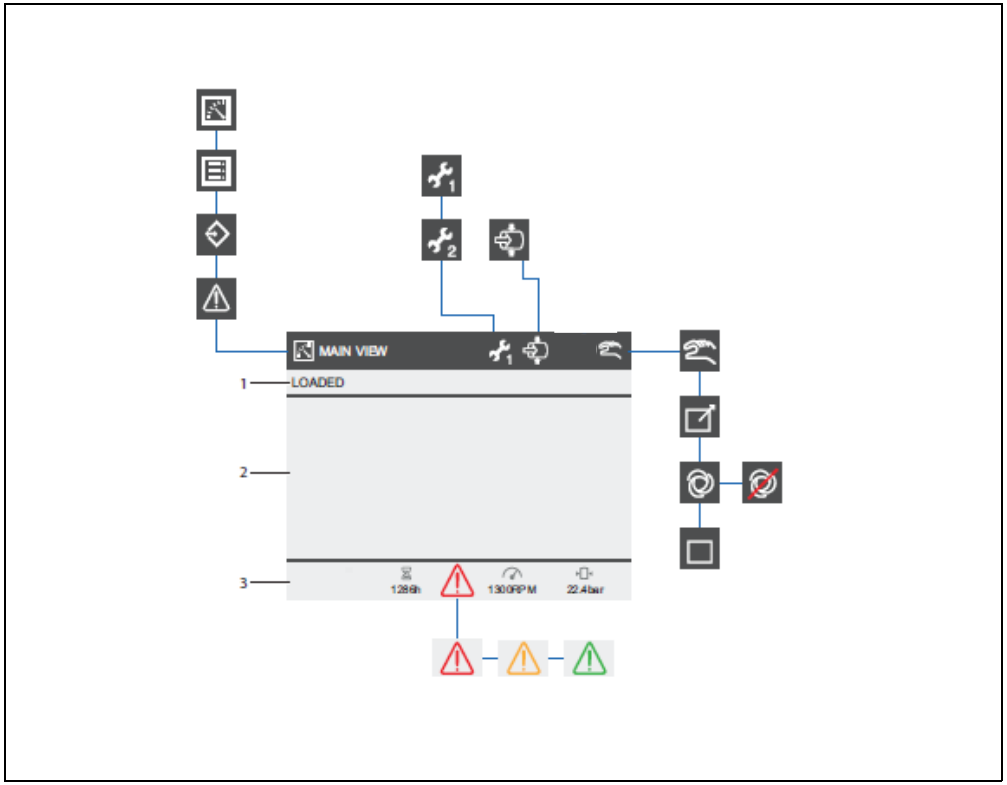
CONTROL PANEL



Reference	Name
	Power off / on switch This switch has no function on the E-Air units.
	Start button To start the compressor.
	Stop button To stop the compressor in a controlled way.

Reference	Name
	Load button • When in LOAD, switch the compressor to NO LOAD • When in NO LOAD, initiate AUTO LOAD function or switch to LOAD (depending on actual status)
	Measurements View button To toggle between Measurements View and Main View.
	Settings View button To toggle between Settings View and Main View.
	Alarms View button To toggle between Alarms View and Main View.
	Navigation buttons To navigate through the display menu's.
	Enter button To confirm/store the selection/change.
	Back button To move back one level or ignores the change.

OVERVIEW ICONS

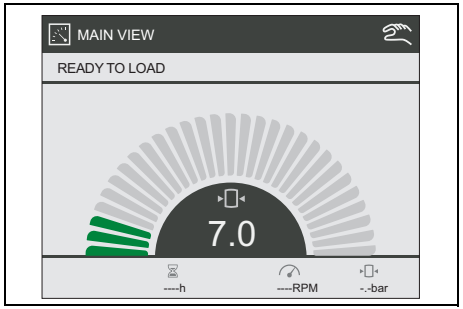


Reference	Name
1	Active compressor status
2	Vessel pressure indication or information text
3	Alarm indication and compressor information
	Main View Indication
	Measuring View Indication
	Settings View Indication
	Alarm View Indication
	Operation Mode Local
	Operation Mode Remote
	Operation Mode Automatic
	Operation Mode Automatic Mode is active, but the Auto Start and Auto Stop function are both inactive.
	Operation Mode Block Mode

Reference	Name
	Overhaul Minor Overhaul required.
	Overhaul Major Overhaul required.
	Auto Load This icon shows if the Auto Load functionality is enabled, or by means of a parameter setting, or by means of pressing the load button before the machine is ready to be loaded.
	Alarm Active & not-acknowledged Shutdown Alarm.
	Alarm Active & not-acknowledged Non-Shutdown Alarm.
	Alarm Active & acknowledged Alarm.

POSSIBLE VIEWS

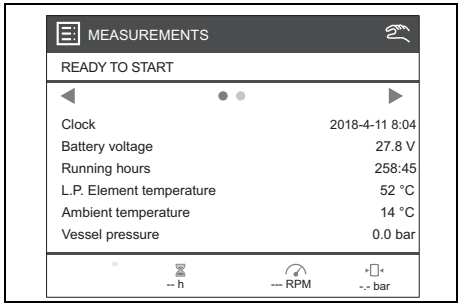
Main View



Main view is the default view. In the main view the operator can view the most important information on the actual compressor operation, like:

- Active compressor status
- Vessel pressure
- Motor speed
- Running hours
- Alarm indication
- Operation mode indication
- Pre-set indication
- Auto load indication
- Overhaul indication

Measurements View



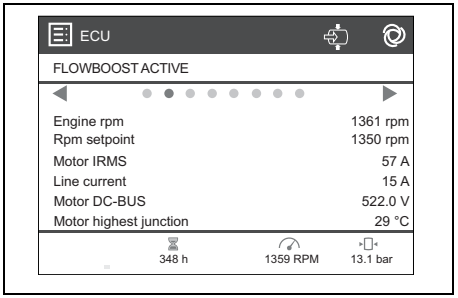
In the measurements view, the operator can view up to 100 measured values (depending on the authorisation level)

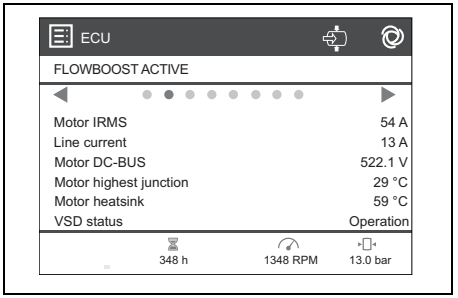
Use the up and down navigation buttons to scroll through the full list of measurements.

Use the left and right navigation buttons to scroll through the different pages.

The first page contains general data

- Clock
- Running hours
- Vessel pressure
- Regulating pressure
- Emergency stop count
- Loaded hours
- Unloaded hours
- LP element temperature
- Air discharge pressure



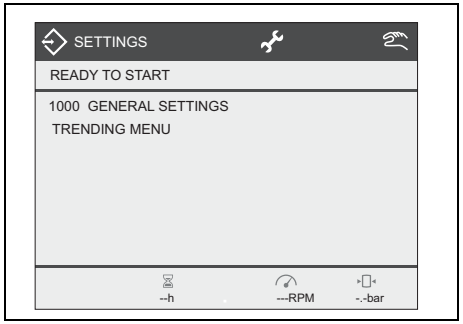


The second page contains motor related data:

- Engine rpm
- Rpm set point
- Motor IRMS
- Line current
- Motor DC-BUS
- Motor torque
- Motor highest junction

- Motor IRMS
- Line current
- Motor DC-BUS
- Motor highest junction
- Motor heat sink
- VSD status

Settings View



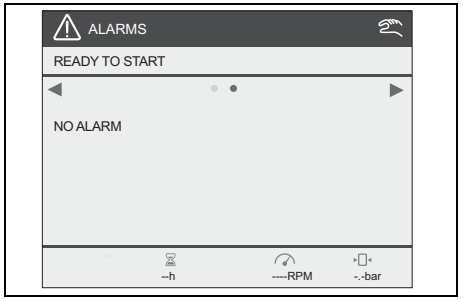
In the settings view the operator can view and change (depending on the authorisation level) various parameters.

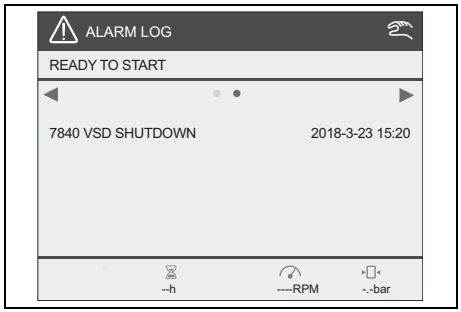
Use the up and down navigation buttons to scroll through the full list of settings.

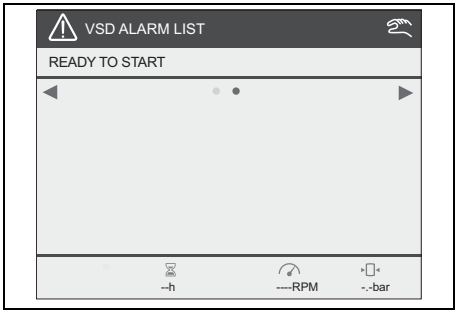
Use the enter button to enter the selected sub-menu.

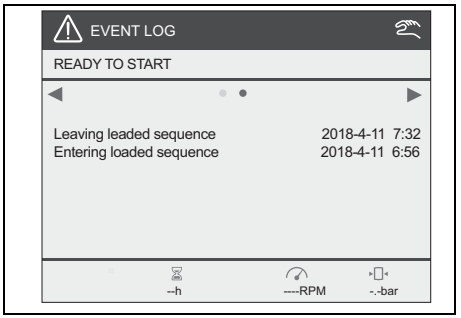
Use the back button to leave the entered sub-menu.

Alarm View









In the alarms view, the operator can swap between 4 pages (shows 4 bullets on the screen) by using the left and right navigation buttons.

- alarms
- alarm log
- event log
- ECU alarm list

STARTING

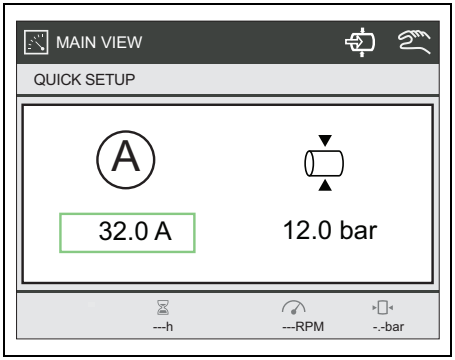
The controller switches ON when the compressor is connected to mains power and the main switch is turned ON.

The instrument panel will now perform a self test. The following display is shown and the controller is initialized:

During initializing all buttons/inputs/outputs/alarms are inactive.

After initialization, the controller will show a pop-up screen, showing current and pressure setting.

This shows the values of the last settings of the machine.



The maximum current for H185 is 50A and H250 is 63A.

Current range is limited to 60A for H250 VSD USA.

Use the left and right navigation buttons to select current setting or pressure setting.

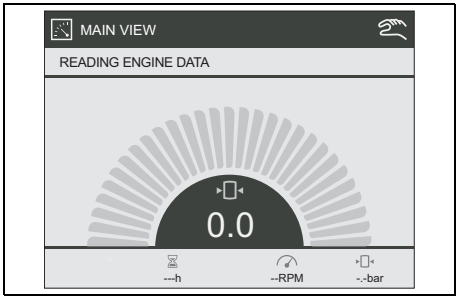
Use up and down navigation button to set the desired current and/or pressure.

Press the enter button to save the settings.

The machine is now ready to start and is waiting for a start command.

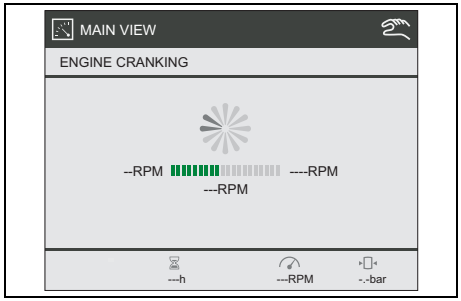
Active Buttons				
				

After a start command, the display will change to as shown below:



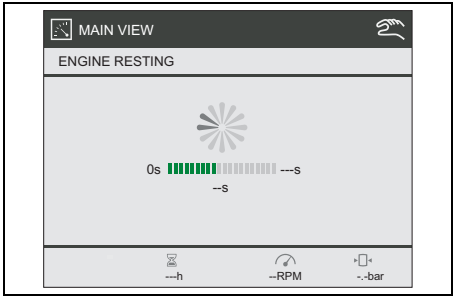
As soon as communication between compressor controller and VSD controller is established, the machine will start-up.

The motor starts running, the display will change to as shown below:



The motor will first accelerate slowly to 150 rpm in three seconds to wash out excessive oil in the compressor element. Once 150 rpm is reached, the motor accelerates fast to idle speed.
If the motor doesn't reach 800 rpm within 30 seconds, the starting procedure is cancelled and the motor will rest for some time.

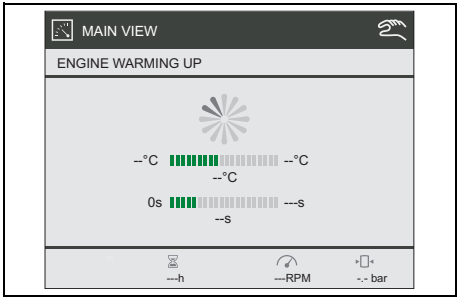
The display will change to as shown below:



On completion of the motor resting time, a new start attempt can be made.

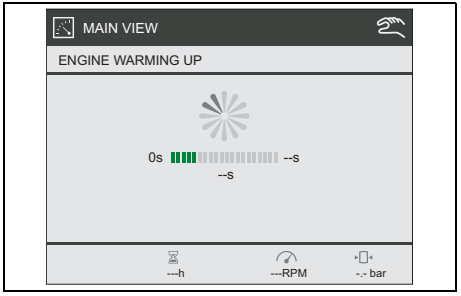
Max. starting attempt is limited to 10.

If the motor is running at idle speed. The display will change to as shown below:

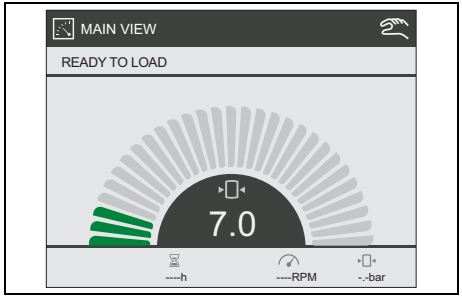


The motor will run at minimum rpm, until the compressor temperature reaches 40°C, with a minimum time of 5 seconds and a maximum time of 30 seconds.

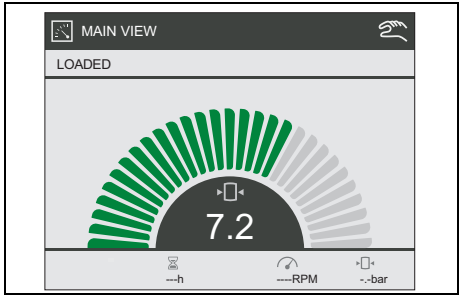
When warming up temperature is reached within 30 seconds, the display will change to as shown below:



After warming up, the machine is ready to load and is waiting for a load command; the display shows:



Press the load button, the display will show

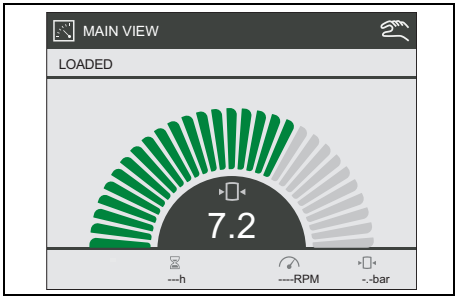


The controller controls the speed to meet the requested working pressure selected in the pop-up window during start-up.

Active Buttons

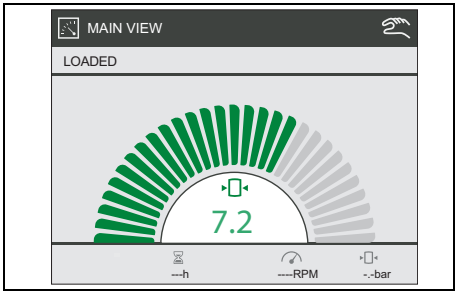

PRESSURE SETTING

The operator can adjust the active preset as follows:



In the Main view, when the operator presses the enter button for 2 sec. The pressure setting will light up in green when it is in edit mode.

The operator can still adjust the initial pressure setting when the machine is in use.



By pressing the up and down buttons the pressure setting can be increased or decreased in 0.1 bar steps.

Pressing the enter button again confirms the pressure setting and will leave the edit mode.

Be aware that lowering the pressure during operation can take up to 10 minutes before the lower pressure is reached.

It is preferred to first stop the unit, and restart with the lowered pressure setting, depending on your application.

DURING OPERATION

Be aware not to touch hot parts when the door is open.

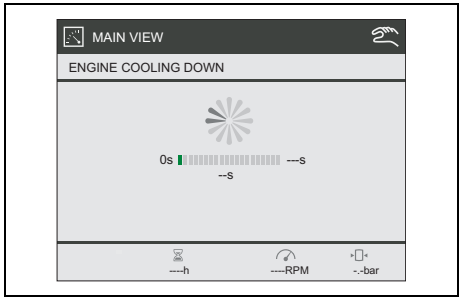
When the machine is running, the air outlet valves (ball valves) must always be in a fully opened or fully closed position.

The doors must be closed during operation and may be opened for short periods only.

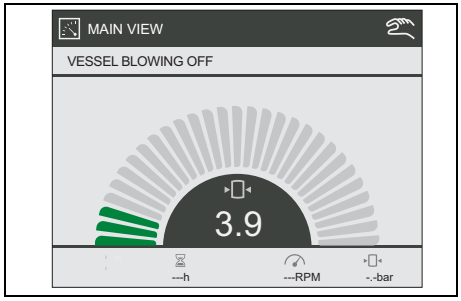
STOPPING

Press the stop button. Open the air outlet valves to de-pressurize the part of the system.

After pressing the Stop button, the below display will be shown:



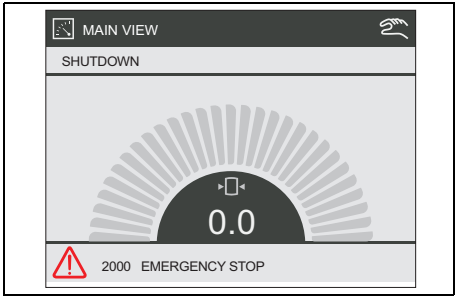
After cooling down, the motor will stop and the below display will be shown:



Active Buttons			
			

SHUTDOWN

When the machine is shutdown due to a critical alarm or an emergency stop, the below display will be shown:



The ENTER button is to be pressed to acknowledge the shown alarm and to be able to proceed.

Acknowledge an Alarm

If an alarm becomes active, then this alarm can be acknowledged by pressing the Enter button.

As long as there is an alarm icon in the middle of the bottom part of the view, all active acknowledged / un-acknowledged alarms can be seen by pressing the Alarm View button.

Pressing the Alarm View button again, will bring you back to the Main View.

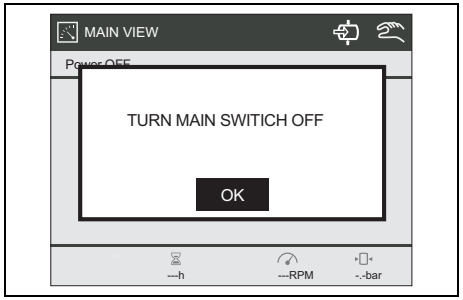
POWER OFF

Press the Power button to switch off the compressor.

The controller will switch off when the main switch of the E-Air unit is switched off.

When the compressor is not in use, the main power must always be OFF.

The Power Off/On button has no function on E-Air unit. If it is pressed, a pop-up window will appear on the display to tell the operator “TURN MAIN SWITCH OFF”.



SETTINGS

For buttons to be used, see section **Control panel**.

Set Clock

Press the Settings View button

- scroll to 1000 GENERAL SETTINGS
- press Enter
- scroll to 1290 DATE/TIME
- Enter the DATE/TIME menu
- scroll to the parameter you want to change
- Enter this parameter.

To change the ‘RTC Month’, scroll to the preferred month and press Enter.

To change any other RTC setting, the red figure is editable.
Scroll up/down and press Enter to change. Use left/ right to shift between editable figures.

Now press BACK until you are back in the Main View (or in the menu you require).

Set Language

Press the Settings View button

- scroll to 1000 GENERAL SETTINGS
- press Enter
- scroll to 1300 LANGUAGES
- Enter the LANGUAGES menu
- Enter the SETTINGS parameter
- scroll to the preferred language
- press Enter.

Now press BACK until you are back in the Main View (or in the menu you require).

Set Units

Press the Settings View button

- scroll to 1000 GENERAL SETTINGS
- press Enter
- scroll to the unit you would like to change:

  1340 TEMPERATURE UNITS
  1350 PRESSURE UNITS

- Enter the preferred menu
- Enter the SETTINGS parameter
- scroll to the preferred setting
- press Enter.

Now press BACK until you are back in the Main View (or in the menu you require).

Change Display Settings

Press the Settings View button

- scroll to 1000 GENERAL SETTINGS
- press ENTER
- scroll to 1310 DISPLAY BACKLIGHT
- Enter the DISPLAY BACKLIGHT menu
- scroll to the setting you would like to change
- press Enter.

To change a setting, the red figure is editable. Scroll up/down and press Enter to change. Use left/ right to shift between editable figure.

Now press BACK until you are back in the Main View (or in the menu you require).

Set the AutoLoad Function

Press the Settings View button

- scroll to 1000 GENERAL SETTINGS
- press Enter
- scroll to 1160 AUTO LOAD
- Enter the FUNCTION menu
- scroll to AUTO LOAD setting
- press Enter.

Now the Auto Load function is active, and as soon as the unit is Ready To Start, the display will show the Auto Load icon.

Now press BACK until you are back in the Main View (or in the menu you require).

Set the Current Rating

Press the Settings View button

- scroll to 1000 GENERAL SETTINGS
- press Enter
- scroll to 6000 SYSTEM SETTINGS
- press Enter
- scroll to 6071 DERATE SETTING
- scroll to current rating
- press Enter.
- use the Navigation buttons and Enter button to adjust the current rating
- press Enter

Now press BACK until you are back in the Main View (or in the menu you require).

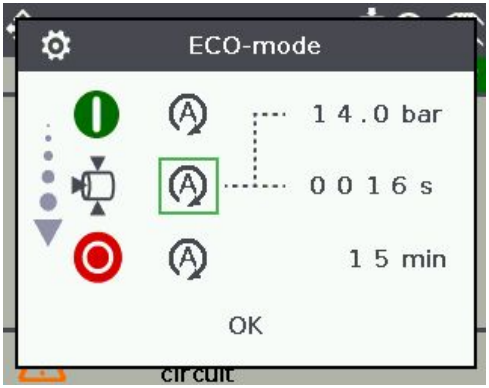
ECO MODE

ECO mode feature is a simplification for the 'Automatic functions'.

The common settings of the automatic functions are grouped in the ECO mode pop-up menu, to make it easier for the end user to modify the settings.

A single pop-up menu avoids to go into four different menu's of the Settings Menu. Not all settings can be done in the pop-up menu. Therefore, the menu structure is still available in the background. By using the ECO mode, the customer can quickly activate the automatic no-load/re-load and automatic stop functions that will help him/her to reduce the fuel consumption. The end user can also change the timers and pressure levels at which the ECO mode functions needs to react on, to optimize the settings for his/her application.

Overview

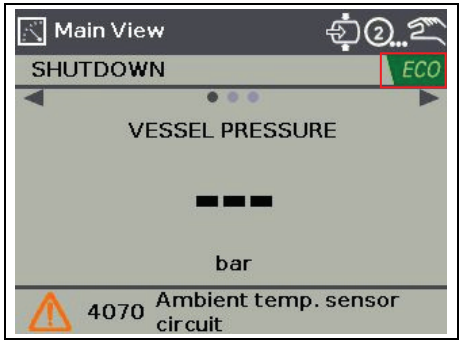


All the features are set to manual operation in the ECO mode pop-up menu by default (in order to avoid unexpected starting and loading of the unit).

The compressor unit needs to have the air discharge pressure sensor installed for the ECO mode feature to function.

Press 'Load' button to view the ECO mode pop-up menu on the controller screen (only when the machine is not running). If the parameters need to be accessed when the machine is running, then go into Settings menu.

When the ECO mode is active, an icon is displayed in the right upper corner of the controller display as shown below:



Auto start

The Auto Start function is used to have the compressor automatically start, when the pressure measured by the air discharge sensor mounted between the MPV and the discharge valve pressure drops under a specified setpoint.

To set auto start function

Press the 'Load' button on controller and the ECO-mode pop-up menu appears on the controller display:

- Go to 'Start' icon on the ECO mode pop-up menu and set the parameter to 'Automatic'
- Set the pressure for Auto Start
  - Once the pressure is set for Auto start; that means if the pressure drops under a specified set pressure, the machine automatically starts.
- Click 'OK' to acknowledge.

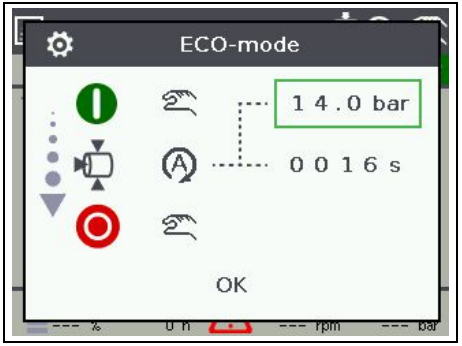
Auto no-load / auto re-load

The Auto No-load function is used for saving fuel when there is no air demand from the application. The compressor switches to No-load operation mode when there is no demand for extended time.

With the Auto Re-load function, the compressor is loaded again, when there is an air demand.

To set auto noload & auto re-load

- Select the 'Load' icon on the ECO mode pop-up menu and set the parameter to 'Automatic'
- Set the timer for Auto No-load
- Set the pressure for Auto Re-load
  - Once the pressure is set for Auto Re-load; that means if the pressure drops under a specified set pressure - the machine is re-loaded automatically.
- Click 'OK' to acknowledge.



Auto stop

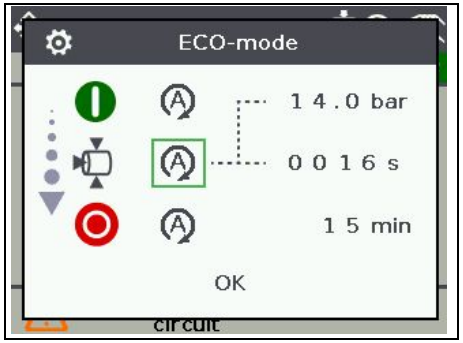
The Auto Stop function is used to stop the compressor, when there is no air demand over an extended time. This function can be combined with the Auto Start and Auto Load functions. This function can be used for fuel saving.

The Auto Stop must be combined (not only can be combined) with Auto Start, if you need the machine to start up again after the first stop (otherwise it remains stopped until a manual intervention).

To set auto stop function

- Select the 'Stop' icon on ECO mode pop-up menu and change the parameter to 'Automatic'

- Set the timer for Auto stop and then click 'OK' to acknowledge.



After setting-up the necessary parameters for each mode, click on 'OK' to acknowledge.

FAULT CODES

The below table contains list of faults that can arise during operation. Keep watch on the codes.

There are several parameters that are continuously watched.

When one of these parameters exceeds its specified limit, the compressor will react depending the present status of the control box.

Alarm code	Alarm text	Fail class
1550	MAJOR OVERHAUL ALARM	WARNING
2000	--- CURRENT ---	SHUTDOWN
2312	SW Main inverter overcurrent	SHUTDOWN
2313	SW Max common mode current	SHUTDOWN
2314	HW Main inverter overcurrent	SHUTDOWN
2322	HW Main inverter IGBT desat	SHUTDOWN
3000	--- VOLTAGE ---	SHUTDOWN
3050	VESSEL PRESSURE HIGH WARNING	WARNING
3060	VESSEL PRESSURE HIGH SHUTDOWN	SHUTDOWN
3125	HW Main inverter IGBT undervoltage	SHUTDOWN
3210	SW DC-Link overvoltage	SHUTDOWN
3211	HW DC-Link overvoltage	SHUTDOWN
3221	SW DC-Link undervoltage	SHUTDOWN
3222	HW DC-Link undervoltage	SHUTDOWN
4000	--- TEMPERATURE ---	INDICATION
4010	LOW PRESSURE ELEMENT TEMP ALARM	CONTROLLED STOP
4040	LOW PRESSURE ELEMENT TEMP CIRCUIT	INDICATION
4212	SW CB MCU overtemperature	SHUTDOWN
4213	SW PB MCU overtemperature	SHUTDOWN
4020	LOW PRESSURE ELEMENT TEMP ALARM	SHUTDOWN
4311	SW IGBT Main overtemperature	SHUTDOWN
4320	SW PB PCB overtemperature	SHUTDOWN
4321	SW CB PCB overtemperature	SHUTDOWN
4325	SW PSU Board overtemperature	SHUTDOWN
4334	SW SCR overtemperature	SHUTDOWN

Alarm code	Alarm text	Fail class
4335	SW Main inverter i2t	SHUTDOWN
4336	SW Current overload not allowed	SHUTDOWN
4337	HW Main inverter IGBT overtemperature	SHUTDOWN
5000	--- HARDWARE DEVICE ---	SHUTDOWN
5020	HW STO read by Power Board	SHUTDOWN
5021	HW STO read by Control Board (cn-STOn)	SHUTDOWN
5114	HW PSU fail (cn-PSU_FAILn)	SHUTDOWN
5401	HW Main inverter power fault	SHUTDOWN
5462	HW Internal fan locked	SHUTDOWN
5463	HW 24V external enable failure, non recoverable	SHUTDOWN
5464	HW PSU 24V (controller) supply current limitation active	SHUTDOWN
5465	HW PSU 28V (external fan) supply current limitation active	SHUTDOWN
6000	--- SOFTWARE DEVICE ---	SHUTDOWN
6100	SW Internal software error, non recoverable	SHUTDOWN
6102	SW CB<->PB communication failed, non recoverable	SHUTDOWN
6108	SW CB<->PB communication timeout	SHUTDOWN
610E	SW Undefined Power Board size, non recoverable	SHUTDOWN
6110	SW IGBT Boards not compatible, non recoverable	SHUTDOWN
6113	SW CAN stack comm overflow (circular buffer overwrite)	SHUTDOWN
6115	SW Foreground part2 overload	SHUTDOWN
6119	SW PB App FW version invalid, non recoverable	SHUTDOWN
611A	SW Serializer 24V config. fail, non recoverable	SHUTDOWN
611C	SW PB HW not compatible, non recoverable	SHUTDOWN
611E	SW CB HW not compatible, non recoverable	SHUTDOWN
6120	SW PB App not compatible, non recoverable	SHUTDOWN
6121	SW CB Boot not compatible, non recoverable	SHUTDOWN
6122	SW CAN stack init fault	SHUTDOWN
6123	SW VoverHz profile invalid	SHUTDOWN
6124	SW Power Board EEPROM write fail, non recoverable	SHUTDOWN
6125	SW Control Board EEPROM not valid, non recoverable	SHUTDOWN

Alarm code	Alarm text	Fail class
6126	SW SQV inductances identification post data elab. fail	SHUTDOWN
6129	SW Foreground part1 detect timeout for the first ADC seq.	SHUTDOWN
612A	SW Foreground part2 detect a foreground part1 interrupt	SHUTDOWN
612B	SW Voltage saturation	SHUTDOWN
612C	SW Vbus decimation fail	SHUTDOWN
612D	SW PB EEPROM diagnostic handling fail, non recoverable	SHUTDOWN
612E	SW IPM Init position sequence failed	SHUTDOWN
612F	SW Foreground part1 overload	SHUTDOWN
6130	SW Magnetizing phase, too much time	SHUTDOWN
6131	SW Control mode not compatible with the motor type	SHUTDOWN
6132	SW Serializer 24V internal fail, non recoverable	SHUTDOWN
7000	--- ADDITIONAL MODULES ---	SHUTDOWN
7130	SW Main motor overtemperature	SHUTDOWN
8000	--- MONITORING ---	SHUTDOWN
8101	SW CAN stack internal error	SHUTDOWN
8103	SW CAN stack timeout	SHUTDOWN
8111	SW CAN stack tx overflow	SHUTDOWN
8112	SW CAN stack rxb overflow	SHUTDOWN
8121	SW CAN stack tx bus passive	SHUTDOWN
8122	SW CAN stack rx bus passive	SHUTDOWN
8131	SW CAN stack NG timeout	SHUTDOWN
8141	SW CAN stack tx bus off	SHUTDOWN
8401	SW Overspeed	SHUTDOWN
8403	SW Negative speed	SHUTDOWN

-

Maintenance

Some of the parts remain hot and can cause injury during maintenance. Let the parts get sufficiently cool before maintenance.

Always keep the machine clean to prevent fire hazard.

Unauthorised modifications can result in injuries or machine damage.

Before starting any maintenance on electrical parts, wait for at least 10 minutes as dangerous high voltage remains on the capacitors of the start and speed regulation unit during few minutes after switching off the voltage.

Poor maintenance can void any warranty claims.

The operator is only allowed to execute the daily maintenance. All other maintenance/repair is to be done by authorized personnel.

PREVENTIVE MAINTENANCE

Preventive maintenance must be carried out by authorized technicians according the maintenance schedule.

SERVICE PAKS

A Service Pak is a collection of parts to be used for a specific maintenance task, e.g. after 2000 running hours.
It guarantees that all necessary parts are replaced at the same time keeping down time to a minimum. The order number of the Service Paks are listed in the Atlas Copco Spare Part List (ASL).

QR CODE

Scan the QR code to access into the Atlas Copco Spare Part List (ASL).

H185

H250

LIABILITY

The manufacturer does not accept any liability for any damage arising from the use of non-original parts and for modifications, additions or conversions made without the manufacturer's written approval.

FLEETLINK

The compressor is equipped with the fleetlink option, an intelligent smartbox system for fleet monitoring. Atlas Copco developed both the hardware and software to provide you with insights of the compressor performance.

Do the following steps:

1. Go to the website http://fleetlink.atlascopco.com/.
2. Type the user name and password you received by email.
3. If you are a new user or forget your password, contact Customer Center FleetLink administrator or product management team to set it up.

DAILY MAINTENANCE OF COMPRESSOR BEFORE STARTING

Checks	Action
Drain condensate and water from spillage-free frame	See **Spillage-free frame**
Empty air filter vacuator valves	See **Air filter**
Check compressor oil level (if necessary top up)	See **Compressor oil level check**
Check coolant level	See **Coolant level check**
Check air intake vacuum indicators	
Check on abnormal noise	
Check control panel	See **Control panel**

DAILY MAINTENANCE OF UNDERCARRIAGE BEFORE GOING ONTHE ROADS

Checks	Action
Check towbar, and all movable parts for ease of movement	
Check coupling head for damage	
Check tyre pressure	See **Technical specifications**
Check safety cable for damage	
Check tyres for uneven wear	

Refer to the spare parts manual for order number and fluids to be used.

MAINTENANCE SCHEDULE

Maintenance schedule (running hrs)	Notes	Daily	50 hrs after initial start-up	Every 500 hrs	Every 1000 hrs	Every 2000 hrs or 2 years	Yearly
For the most important sub-assemblies, Atlas Copco has developed service kits that combine all wear parts. These service kits offer you the benefits of genuine parts, save administration costs and are offered at a reduced price, compared to individual components. Refer to the parts list for more information on the contents of the service kits.							
Drain condensate and water from spillage-free frame or catch basin		x					
Check compressor oil level (if necessary top up)		x					
Check coolant level		x					
Check air intake vacuum indicators		x					
Check for leaks in compressor, air, and oil system			x	x			
Check control panel		x					
Check on abnormal noise		x					
Check electrical system cables for wear				x			
Check torque on critical bolt connections				x			
Replace oil						x	
Replace oil separator						x	
Replace oil filter(s)	(3)					x	
Replace air filter					x		
Hoses and clamps - Inspect/Replace		x					
Test safety valve	(5)						x
Check rubber flexibles	(6)						x
Check emergency stop							x
Clean after cooler	(1)						x
Clean oil cooler(s)	(1)			x			x
Clean radiator	(1)			x			x
Analyse coolant	(2)(4)						x
Clean cooler fins		x					
Inspection by Atlas Copco service technician						x	

MAINTENANCE SCHEDULE UNDERCARRIAGE

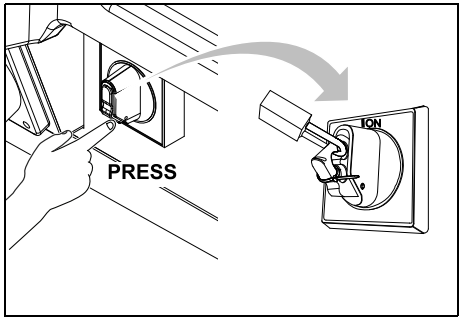
Maintenance schedule (km)	Notes	Daily	50 hrs after initial start-up	Every 500 hrs	Every 2000 hrs or 2 years	Yearly
Check tyre pressure		x				
Check tyres for uneven wear		x				
Check torque of wheel nuts			x			x
Check safety cable for damage		x				

Notes :

1. More frequently when operating in a dusty environment.
2. Yearly is only valid when using PARCOOL. Change coolant every 5 years.
3. Use Atlas Copco oil filters, with by-pass valve as specified in the parts list.
4. The following part numbers can be ordered from Atlas Copco to check on inhibitors and freezing points:
   - 2913 0028 00 refractometer
   - 2913 0029 00 pH meter
5. See section **Safety valves**.
6. Replace all rubber flexibles each 6 years.

LOCKING THE MAIN SWITCH

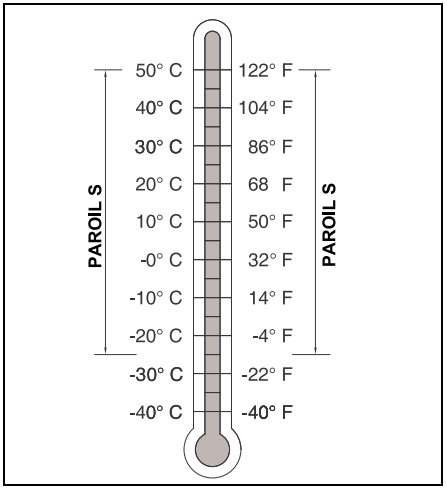
It is mandatory to lock the main switch or emergency switch before you do the maintenance.



1. Turn the main switch counterclockwise to OFF position.
2. Press the button on the main switch to release the latch.
3. Put the lock into the access hole of the latch. Refer to the above figure.
4. Put the plastic strap into another access hole of the latch. Refer to above figure.

Release the lock after the maintenance work is completed.

COMPRESSOR / MOTOR OIL SPECIFICATION

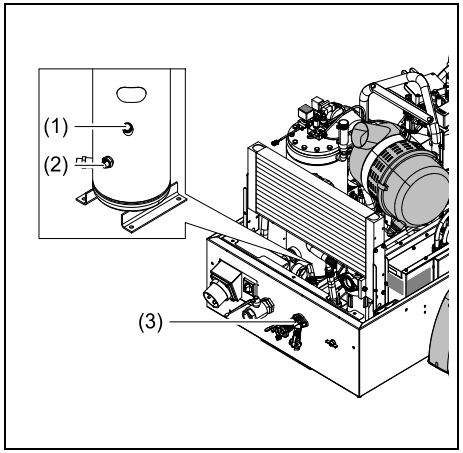


Choose your compressor/motor oil based on the ambient temperatures in the actual operating area.

For order numbers refer to the spare parts list.

It is strongly recommended to use Atlas Copco branded lubrication oils for compressor and motor. If you want to use another brand of oil, consult Atlas Copco.

COMPRESSOR OIL LEVEL CHECK



DAILY CHECKS

Check the compressor oil level daily, after running the compressor.

The compressor oil level needs to be checked with the compressor in an horizontal position after running the compressor to warm up so that the thermostatic valve is open.

1. Stop the compressor with closed air outlet valve (3) and let it rest for a short period, to allow the system to relief pressure inside the vessel and settle down the oil.
2. Check the level of the compressor oil through oil level indicator (2). The pointer of the oil level indicator must be in the green range. If the pointer of oil level indicator is in red range that means oil level is low. Add the oil via the oil filler plug (1).

Before removing the oil filler plug, make sure that the pressure is released by opening the air outlet valve and check the vessel pressure on the controller or the pressure gauge.

3. Top up with oil until the pointer of the oil level indicator (2) is in the upper part of the green area.
4. Reinstall and tighten the filler plug (1).

CHECK AFTER A LONGER PERIOD WITHOUT RUNNING THE COMPRESSOR

1. Check the oil level through the oil level indicator (2). The pointer must be in the green area.
2. If the oil level is too low, remove the oil filler plug (1) and check if there is still oil in the vessel.
   - No oil in the vessel: Top up the compressor with oil until the pointer of the oil level indicator is in the upper part of the green area and follow the steps as described above in **Daily check**.
   - Oil in the vessel: Start up the unit to warm up and give time for the thermostatic valve to open. Stop the compressor with closed outlet valve and follow the steps described above in **Daily check**.

At temperatures below 0°C, you have to load the compressor to make sure that the compressor thermostat is open.

COMPRESSOR OIL AND OIL FILTER CHANGE

The quality and the temperature of the oil determine the oil change interval.

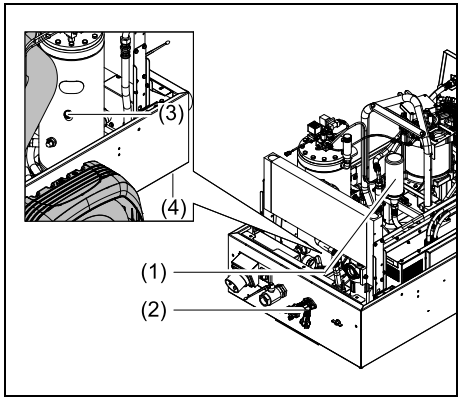
The prescribed interval is based on normal operating conditions and an oil temperature of up to 100°C (212°F) (see section maintenance schedule).

The prescribed interval for compressor oil change is not to be exceeded in any case. When the oil exchange interval is exceeded, this can cause damage to the compressor.

In case the compressor oil lifetime has been exceeded, please consult the Atlas Copco Customer Center.

When operating in high ambient temperatures, in very dusty or high humidity conditions, it is recommended to change the oil more frequently.

In this case, contact Atlas Copco.



Do not add more oil as it causes more oil consumption.

1. Run the compressor until warm. Close the outlet valve(s) (2) and stop the compressor. Wait until the pressure is released through the automatic blow-down valve. Unscrew the oil filler plug (3) by a single turn. This uncovers a vent hole, which permits any pressure in the system to escape.
2. Drain the compressor oil by removing the drain plug (4). Drain plugs are fitted on the air receiver and compressor element. Collect the oil in a drain pan. Unscrew the filler plug to speed up draining. After draining, reposition and tighten the drain plugs.
3. Remove the oil filter (1), e.g. by means of a special tool. Collect the oil in a drain pan.
4. Clean the filter seat on the manifold. Make sure that no dirt drops into the machine. Lubricate the gasket of the new filter element with oil. Screw it into place until the gasket fits into its seat. Tighten one half turn only.
5. Fill the air receiver until the oil level reaches the thread. Make sure that no dirt drops into the machine. Reinstall and tighten the oil filler plug (3).
6. Run the unit unloaded for a few minutes to circulate the oil and evacuate the air trapped in the oil system.
7. Stop the compressor. Let the oil settle for a few minutes. Check that the pressure is released by opening an air outlet valve (2). Unscrew filler plug (3) and add the oil until the oil level reaches the thread. Reinstall and tighten the filler plug (3).

COOLANT

It is strongly recommended to use Atlas Copco branded coolant.

Never mix different coolants and mix the coolant components outside the cooling system.

PARCOOL EG

PARCOOL EG is a ready to use Ethylene Glycol based coolant, premixed in an optimum 50/50 dilution ratio, for antifreeze protection guaranteed to -40°C (-40°F).

For order numbers. refer to the spare parts list.

COOLANT LEVEL CHECK

- Check the coolant level at the expansion tank. If necessary top up with coolant. See section **Topping up of coolant**.
- Low coolant level can lead to frequency convertor overheating, which can cause permanent damage.

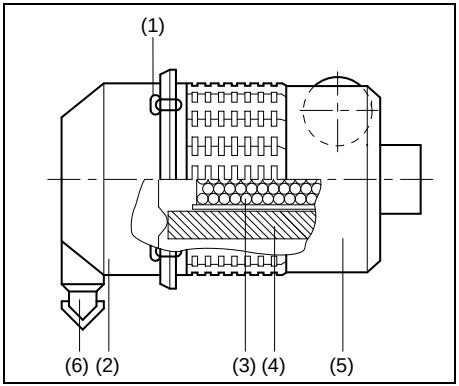
TOPPING UP OF COOLANT

Never remove the cooling system filler cap while coolant is hot.

The system can be under pressure. When the coolant is at ambient temperature, remove the cap slowly. A sudden release of pressure from a heated cooling system can cause personal injury from getting of hot coolant.

- Always top-up with PARCOOL EG.
- Topping up the coolant with water only. Change in the concentration of additives is not permitted.

AIR FILTER



1. Snap clips
2. Dust trap cover
3. Safety cartridge (option)
4. Filter element
5. Filter housing
6. Vacuator valve

CLEANING THE DUST TRAP

To remove dust from the dust trap, squeeze the vacuator valve (5) several times.

COOLERS

Keep the coolers clean to maintain the cooling efficiency. Open the hood and clean the coolers with a fibre brush and compressed air.

Remove any dirt from the coolers with a fibre brush. Never use a wire brush or metal objects.

Steam cleaning in combination with a cleansing agent can be applied.

To avoid damaging the coolers, angle between jet and coolers should be approx. 90°.

Never leave spilled liquids such as oil, water and cleansing agents in or around the compressor.

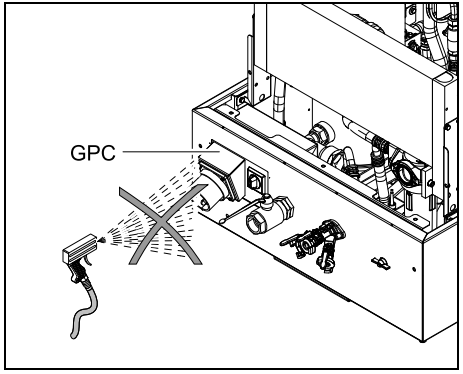
CLEANING HARDHAT

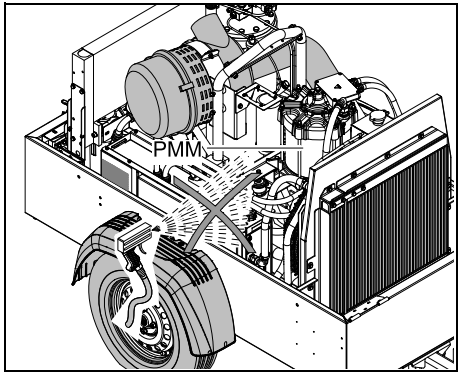
Optimal cleaning of the HardHat can be achieved by high pressure cleaning in combination with liquid soap.

Do not use water with a temperature >50°C (122°F).

ELECTRICAL PARTS (VSD, MOTOR, AND GRID POWER CONNECTION)

Do not spray the cleaning solvent directly on the electrical parts.



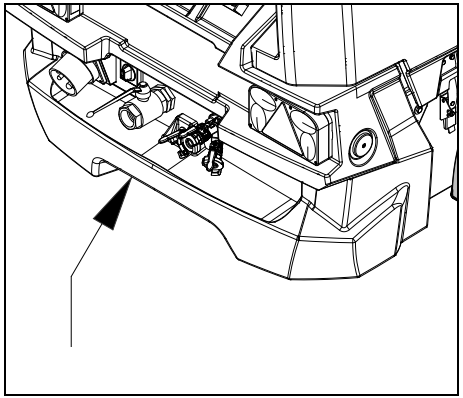


Protect the electrical and controlling equipment, air filters, etc. against penetration of moisture.

Never attempt to clean the electrical parts while they are energized. After power switch-off, the VSD converter remains energized for several minutes. Please wait for 10 minutes before touching any electrical components.

Clean the Variable Speed Drive, Permanent Magnet Motor (PMM), and Grid Power Connection (GPC) carefully to prevent risk of residues causing damage. Do not attempt to disconnect wires or open up these components.

SPILLAGE-FREE FRAME



The compressor is fitted with a leak-proof undercarriage in order to protect the environment.

Any leaking fluid is collected in case of malfunctions. This fluid can be removed through a drain, normally secured by caps.

Tighten the cap firmly and check for leakages.

Please observe the locally applicable environmental regulations when removing the leaked liquid.

STORAGE

Run the compressor regularly, e.g. twice a week, until warm.

Load and unload the compressor a few times to operate the unloading and regulating components. Close the air outlet valves after stopping.

If the compressor is to be stored without running regularly, protective measures must be taken.

Contact Atlas Copco for corrective measures.

AVAILABLE OPTION

Safety cartridge

In case of highly polluted/dusty environments, a safety cartridge is recommended. This gives extra protection in case of a rupture in the filter element.

Cold weather equipment

When starting the machine at extreme cold temperatures, pressure starts from 7 bar(g) (101.5 psi) and goes upto 12 bar(g) (174 psi) when heated-up.

DISPOSAL OF USED MATERIAL

Used filters or any other used material (e.g. desiccant, lubricants, cleaning rags, machine parts, etc.) must be disposed of in an environmentally friendly and safe manner, and in line with the local recommendations and environmental legislation.

Be careful when removing the permanent magnet motor. The rotor contains magnetic parts.

Problem solving

It is assumed that the frequency converter and drive train are in good condition and that there is an adequate connection to the power grid.

Make sure that the wires are not damaged and that they are clamped tight to their terminals.

If it's not possible to solve the problem with reference to the information mentioned below, consult Atlas Copco.

An electrical fault must be traced by an electrician.

Problem: Compressor capacity or pressure below normal.

Possible faults	Corrective actions
Air consumption exceeds the capacity of the compressor	Check the connection of the equipment.
Choked air filter elements (AF)	Remove and inspect the elements. Clean or replace, if necessary.
Regulating valve defective	Contact Atlas Copco.
Blow down valve stuck in open position	Check and correct as necessary.
Loading valve leaking	With compressor running at max. load speed, disconnect the hose leading to unloader. If air leaks from the hose, remove and inspect the loading valve. Replace the damaged or worn O-rings.
Oil separator element clogged	Element is to be removed and inspected by an Atlas Copco Service representative.
Unloader valve remains partially closed	Check the unloader valve and identify the reason for open valve. If possible, solve the problem. If you do not solve, contact Atlas Copco.
Safety valve (SV) leaking	Remove and inspect the safety valve. Replace if not airtight after re-installation.

Problem: Pressure in air receiver rises above maximum and causes safety valve to blow.

Possible faults	Corrective actions
Regulating valve defective	Contact Atlas Copco Service.
Air leaks in regulating system	Check the hoses and their fittings. Replace the leaking hoses, if necessary.
Unloading valve does not close for some reason	Check the unloader valve and identify the reason for open valve. If possible, solve the problem. If you do not solve, contact Atlas Copco.
Minimum pressure valve malfunctioning	Remove and inspect the valve.

Problem: After some hours of work, the unit stops through a shutdown switch.

Possible faults	Corrective actions
VSD shutdown	Disconnect the power supply. Contact Atlas Copco Service.
Compressor or frequency converter overheating	See corrective actions “Compressor overheating”.
Low coolant level	Top up the cooling system.

Problem: Compressor overheating.

Possible faults	Corrective actions
Insufficient compressor cooling	Locate the compressor away from walls when banked with other compressors, leave the space between them.
Oil cooler clogged externally	Clean the oil cooler. Refer to section **Coolers**.
Oil cooler clogged internally	Consult Atlas Copco.
Oil filters clogged	Replace the oil filters.
Oil level too low	Check the oil level. Top up with recommended oil if necessary.
Thermostatic bypass valve remains stuck in opened position	Remove and check the valve for proper opening and closing. Replace if out of order.
Fan blade(s) broken	Check and correct if necessary.
Oil separator element (OS) clogged	Element is to be removed and inspected by an Atlas Copco Service representative.

Problem: Voltage faults.

Possible faults	Corrective actions
Overcurrent	Consult Atlas Copco.
Ground fault	Consult Atlas Copco.
Too much high voltage	Check the supply voltage. Consult Atlas Copco.
Too much low voltage	Check the supply voltage. Consult Atlas Copco.
Drive overload	Consult Atlas Copco.
Motor overload	Consult Atlas Copco.
Input phase loss	Check the supply voltage and loose wiring connection. Consult Atlas Copco.
Output phase loss	Consult Atlas Copco.

Technical specifications

TORQUE VALUES

General torque values

The following tables list the recommended torques applied for general applications during assembly of the compressor.

For hexagon screws and nuts with strength grade 8.8

Thread size	Torque value (Nm / lbf.ft)
M6	8 (6) +/-25 %
M8	20 (15) +/-25 %
M10	41 (30) +/-25 %
M12	73 (54) +/-25 %
M14	115 (85) +/-25 %
M16	185 (137) +/-25 %

For hexagon screws and nuts with strength grade 12.9

Thread size	Torque value (Nm / lbf.ft)
M6	14 (10) +/-21 %
M8	34 (25) +/-23 %
M10	34 (25) +/-23 %
M12	120 (89) +/-25 %
M14	195 (144) +/-23 %
M16	315 (233) +/-23 %

Critical torque values

Assemblies	Torque value (Nm / lbf.ft)
Wheel bolts	See section **Wheels**
Bolts, axle/beams	205 (151.29) +/- 20 %
Bolts, towbar/axle	80 (59) +/- 10 %
Bolts, towbar/bottom	205 (151.29) +/- 20 %
Bolts, towing eye/towbar	80 (59) +/- 10 %
Bolts, lifting eye/flywheel housing	80 (59) +/- 10 %
Bolts, compressor element/drive housing	80 (59) +/- 5 %
Safety switches	35 (26) +/- 5 %
Joints adjustable towbar (M24)	275 (203) +/- 25
Joints adjustable towbar (M32)	375 (277) +/- 25

COMPRESSOR SPECIFICATIONS

REFERENCE CONDITIONS

Designation	Unit	H185 VSD / H185 VSD USA	H250 VSD / H250 VSD USA
		50A	63A / 60A
Absolute inlet pressure	bar(a)	1.0	1.0
	psi	14.5	14.5
Relative humidity	%	0	0
Air inlet temperature	°C	20	20
	°F	68	68

The inlet conditions are specified at the air inlet grating outside the canopy.

Unit performance may be reduced due to weak grids.

LIMITATIONS

Designation	Unit	H185 VSD / H185 VSD USA	H250 VSD / H250 VSD USA
		50A	63A / 60A
Minimum effective receiver pressure	bar(g)	5.0	5.0
	psi	72.5	72.5
Maximum effective receiver pressure, compressor unloaded	bar(g)	12	12
	psi	174	174
Maximum ambient temperature at sea level with aftercooler	°C	45	45
	°F	113	113
Minimum starting temperature with cold start equipment	°C	-25	-25
	°F	-13	-13

Designation	H185 VSD / H185 VSD USA				H250 VSD / H250 VSD USA			
Power (kW)	Work pressure	Motor speed (rpm)	Unit	Power	Work pressure	Motor speed (rpm)	Unit	Power
	5.0	1200	kW	2.0	5.0	1288	kW	3.8
	5.0	1500	kW	3.5	5.0	1515	kW	7.2
	5.0	2002	kW	8.2	5.0	1999	kW	9.0
	5.0	3200	kW	13.0	5.0	3010	kW	13.2
	5.0	3812	kW	15.8	5.0	4025	kW	17.8
	5.0	4700	kW	20.0	5.0	5025	kW	22.6
	5.0	5467	kW	23.6	5.0	6000	kW	27.4
	5.0	6080	kW	26.6	5.0	7000	kW	32.7
	5.0	7094	kW	32.2	5.0	8005	kW	38.7
	-	-	-	-	5.0	8761	kW	42.9
	7.0	1500	kW	5.2	7.0	1200	kW	4.8
	7.0	1837	kW	9.1	7.0	1488	kW	8.6
	7.0	2633	kW	12.6	7.0	1980	kW	10.7
	7.0	3392	kW	16.4	7.0	2980	kW	15.3
	7.0	4123	kW	19.9	7.0	4010	kW	20.5
	7.0	4973	kW	24.4	7.0	5000	kW	25.7
	7.0	5403	kW	26.8	7.0	6060	kW	31.6
	7.0	6610	kW	33.7	7.0	7058	kW	37.5
	-	-	-	-	7.0	7987	kW	43.0
	8.6	1500	kW	5.6	8.6	1200	kW	5.5

Designation	H185 VSD / H185 VSD USA				H250 VSD / H250 VSD USA			
Power (kW)	Work pressure	Motor speed (rpm)	Unit	Power	Work pressure	Motor speed (rpm)	Unit	Power
	8.6	1718	kW	9.9	8.6	1495	kW	9.8
	8.6	2358	kW	12.7	8.6	1990	kW	12.1
	8.6	2962	kW	16.0	8.6	3009	kW	17.3
	8.6	3689	kW	19.5	8.6	4017	kW	22.7
	8.6	4608	kW	25.1	8.6	5019	kW	28.4
	8.6	4928	kW	26.8	8.6	6025	kW	34.4
	8.6	6070	kW	33.7	8.6	7031	kW	40.6
	-	-	-	-	8.6	7533	kW	43.8
	10.3	1500	kW	6.5	10.3	1200	kW	6.1
	10.3	1700	kW	11.1	10.3	1393	kW	9.3
	10.3	2002	kW	12.6	10.3	2005	kW	13.4
	10.3	3017	kW	18.1	10.3	2998	kW	19.0
	10.3	3282	kW	19.8	10.3	4011	kW	24.9
	10.3	4205	kW	25.2	10.3	5017	kW	31.0
	10.3	4480	kW	26.9	10.3	6041	kW	37.7
	10.3	5550	kW	33.6	10.3	6825	kW	43.0
	12.0	1500	kW	7.6	12.0	1200	kW	7.1
	12.0	1800	kW	12.8	12.0	1480	kW	11.8
	12.0	2688	kW	18.0	12.0	2008	kW	14.8

Designation	H185 VSD / H185 VSD USA				H250 VSD / H250 VSD USA			
Power (kW)	**Work pressure**	**Motor speed (rpm)**	**Unit**	**Power**	**Work pressure**	**Motor speed (rpm)**	**Unit**	**Power**
	12.0	3026	kW	20.1	12.0	3033	kW	20.9
	12.0	3922	kW	25.7	12.0	4034	kW	27.3
	12.0	4050	kW	26.6	12.0	5008	kW	33.7
	12.0	5065	kW	33.1	12.0	6017	kW	40.8
	-	-	-	-	12.0	6303	kW	42.8

Designation	H185 VSD / H185 VSD USA				H250 VSD / H250 VSD USA			
Free Air Delivery (FAD) (l/s)	Work pressure (controller)	Motor speed (rpm)	Unit	FAD	Work pressure (controller)	Motor speed (rpm)	Unit	FAD
	5.0	1200	l/s	0.0	5.0	1288	l/s	0.0
	5.0	1500	l/s	12.7	5.0	1515	l/s	16.2
	5.0	2002	l/s	22.9	5.0	1999	l/s	22.3
	5.0	3200	l/s	38.9	5.0	3010	l/s	36.0
	5.0	3812	l/s	47.3	5.0	4025	l/s	49.4
	5.0	4700	l/s	59.3	5.0	5025	l/s	62.4
	5.0	5467	l/s	69.0	5.0	6000	l/s	74.6
	5.0	6080	l/s	78.0	5.0	7000	l/s	86.4
	5.0	7094	l/s	91.0	5.0	8005	l/s	98.1
	-	-	-	-	5.0	8761	l/s	106.8
	7.0	1500	l/s	0.0	7.0	1200	l/s	0.0
	7.0	1837	l/s	20.7	7.0	1488	l/s	15.8
	7.0	2633	l/s	31.0	7.0	1980	l/s	21.7
	7.0	3392	l/s	42.1	7.0	2980	l/s	35.1
	7.0	4123	l/s	51.4	7.0	4010	l/s	48.7
	7.0	4973	l/s	62.7	7.0	5000	l/s	61.5
	7.0	5403	l/s	68.6	7.0	6060	l/s	74.5
	7.0	6610	l/s	84.2	7.0	7058	l/s	86.1
	-	-	-	-	7.0	7987	l/s	96.8
	8.6	1500	l/s	0.0	8.6	1200	l/s	0.0

Designation	H185 VSD / H185 VSD USA				H250 VSD / H250 VSD USA			
Free Air Delivery (FAD) (l/s)	Work pressure (controller)	Motor speed (rpm)	Unit	FAD	Work pressure (controller)	Motor speed (rpm)	Unit	FAD
	8.6	1718	l/s	19.2	8.6	1495	l/s	15.7
	8.6	2358	l/s	27.2	8.6	1990	l/s	21.8
	8.6	2962	l/s	36.2	8.6	3009	l/s	35.0
	8.6	3629	l/s	45.8	8.6	4017	l/s	48.2
	8.6	4608	l/s	59.1	8.6	5019	l/s	61.2
	8.6	4928	l/s	62.8	8.6	6025	l/s	73.8
	8.6	6070	l/s	78.6	8.6	7031	l/s	85.5
	-	-	-	-	8.6	7533	l/s	91.4
	10.3	1500	l/s	0.0	10.3	1200	l/s	0.0
	10.3	1700	l/s	18.5	10.3	1393	l/s	10.4
	10.3	2002	l/s	22.6	10.3	2005	l/s	21.9
	10.3	3017	l/s	36.7	10.3	2998	l/s	34.7
	10.3	3282	l/s	40.9	10.3	4011	l/s	48.4
	10.3	4205	l/s	53.3	10.3	5017	l/s	61.1
	10.3	4480	l/s	57.2	10.3	6041	l/s	74.0
	10.3	5550	l/s	71.4	10.3	6825	l/s	82.8
	12.0	1500	l/s	0.0	12.0	1200	l/s	0.0
	12.0	1800	l/s	18.9	12.0	1480	l/s	15.2
	12.0	2688	l/s	31.7	12.0	2008	l/s	21.5
	12.0	3026	l/s	35.7	12.0	3033	l/s	35.0
	12.0	3922	l/s	48.8	12.0	4034	l/s	48.0

Designation	H185 VSD / H185 VSD USA				H250 VSD / H250 VSD USA			
Free Air Delivery (FAD) (l/s)	**Work pressure (controller)**	**Motor speed (rpm)**	**Unit**	**FAD**	**Work pressure (controller)**	**Motor speed (rpm)**	**Unit**	**FAD**
	12.0	4050	l/s	50.4	12.0	5008	l/s	60.4
	12.0	5065	l/s	63.6	12.0	6017	l/s	72.3
	-	-	-	-	12.0	6303	l/s	75.5

DESIGN DATA	Unit	H185 VSD / H185 VSD USA	H250 VSD / H250 VSD USA
Number of compression stages		1	1
Capacity of cooling system VSD	l	2.7	2.7
	US gal	0.7	0.7
Capacity of compressor oil system	l	17.0	17.0
	US gal	4.4	4.4

Performance data	Unit	H185 VSD / H185 VSD USA	H250 VSD / H250 VSD USA
Compressor unloaded speed	rpm	1200	1200
Maximum typical oil content of compressed air	mg/m³	8.0	8.0
	oz/1000 cu.ft	0.008	0.008
Compressed air temperature at outlet valve with aftercooler	°C	28.0	28.0
	°F	82.4	82.4
Compressed air outlet temperature without aftercooler	°C	54.0	54.0
	°F	129.2	129.2
Noise Sound Pressure Level dB(A)			
- Sound pressure level (Lp) measured according to ISO 2151	dB(A)	65.4	65.4
- Sound power level (Lw) measured according to 2000/14/EC	dB(A)	93.9	93.9

ELECTRIC CABLE SIZE AND FUSES

It is mandatory to use a proper cable gland when connecting the supply cable to the compressor to preserve the IP protection degree of the electric cubicle and to protect its components from dust from the environment.

The voltage on the compressor terminals must not deviate more than 10% of the nominal voltage.

It is recommended to keep the voltage drop over the supply cables at nominal current below 5% of the nominal voltage (IEC 60204-1).

Local regulations remain applicable if they are stricter than the values proposed below.

Cable length must not exceed the maximum length according to IEC60204.

Make sure that the fuse size versus the calculated cable size. If required, reduce fuse size or enlarge cable size.

If cables are grouped together with other power cables, it can be necessary to use cables of a larger size than those calculated for the standard operating conditions.

Currents and fuses

IEC approval

Compressor Type		I_{max}	Max fuse	I_{max}	Max fuse
			gL/gG		gL/gG
	V	A	A	A	A
H185 VSD	380	73.7	100	78.3	100
H185VSD	400	73.7	100	78.3	100
H185 VSD	400 + N	73.7	100	78.3	100
H250 VSD	380	87.7	100	93.4	100
H250 VSD	400	87.7	100	93.4	100
H250 VSD	400 + N	87.7	100	93.4	100

Fuse calculations for IEC are done according to 60364-4-43. Fuse sizes are calculated to protect the cable against short circuit.

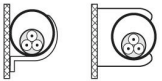
Earthing

The earthing cable connected to the compressor must be minimum 10 mm^2 (refer to EN 60204-1 section 828).

Cable sizing according IEC

The tables indicate the current carrying capacities of cables for three commonly used installation methods, calculated according to standard 60364-5-52.

The allowed currents are valid for PVC insulated cables with three loaded copper conductors (maximum conductor temperature 70 °C).



Installation method B2.

Multi-core cable in conduit on a wooden wall.

Maximum allowed current in function of the ambient temperature for installation method B2.

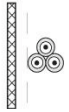
	Ambient temperature				
Cable section	**30 °C**	**40 °C**	**45 °C**	**50 °C**	**55 °C**
4 mm²	< 27 A	< 23 A	< 21 A	< 19 A	< 16 A
6 mm²	< 34 A	< 30 A	< 27 A	< 24 A	< 21 A
10 mm²	< 46 A	< 40 A	< 36 A	< 33 A	< 28 A
16 mm²	< 62 A	< 54 A	< 49 A	< 44 A	< 38 A
25 mm²	< 80 A	< 70 A	< 63 A	< 57 A	< 49 A
35 mm²	< 99 A	< 86 A	< 78 A	< 70 A	< 60 A
50 mm²	< 118 A	< 103 A	< 93 A	< 84 A	< 72 A
70 mm²	< 149 A	< 130 A	< 118 A	< 106 A	< 91 A
95 mm²	< 179 A	< 156 A	< 141 A	< 127 A	< 109 A
120 mm²	< 206 A	< 179 A	< 163 A	< 146 A	< 126 A


Installation method B2.

Multi-core cable in conduit on a wooden wall.

Maximum allowed current in function of the ambient temperature for installation method C.

	Ambient temperature				
Cable section	**30 °C**	**40 °C**	**45 °C**	**50 °C**	**55 °C**
4 mm²	< 32 A	< 28 A	< 25 A	< 23 A	< 20 A
6 mm²	< 41 A	< 36 A	< 32 A	< 29 A	< 25 A
10 mm²	< 57 A	< 50 A	< 45 A	< 40 A	< 35 A
16 mm²	< 76 A	< 66 A	< 60 A	< 54 A	< 46 A
25 mm²	< 96 A	< 84 A	< 76 A	< 68 A	< 59 A
35 mm²	< 119 A	< 104 A	< 94 A	< 84 A	< 73 A
50 mm²	< 144 A	< 125 A	< 114 A	< 102 A	< 88 A
70 mm²	< 184 A	< 160 A	< 145 A	< 131 A	< 112 A
95 mm²	< 223 A	< 194 A	< 176 A	< 158 A	< 136 A
120 mm²	< 259 A	< 225 A	< 205 A	< 184 A	< 158 A



Installation method F.

Single-core cables, touching in free air.

Clearance to wall not less than one cable diameter.

Maximum allowed current in function of the ambient temperature for installation method F.

	Ambient temperature				
Cable section	**30 °C**	**40 °C**	**45 °C**	**50 °C**	**55 °C**
25 mm²	< 110 A	< 96 A	< 87 A	< 78 A	< 67 A
35 mm²	< 137 A	< 119 A	< 108 A	< 97 A	< 84 A
50 mm²	< 167 A	< 145 A	< 132 A	< 119 A	< 102 A
70 mm²	< 216 A	< 188 A	< 171 A	< 153 A	< 132 A
95 mm²	< 264 A	< 230 A	< 209 A	< 187 A	< 161 A
120 mm²	< 308 A	< 268 A	< 243 A	< 219 A	< 188 A

Calculation method for IEC:

- Single supply cables (3 phases + PE - configuration (1)):
  - Add 10 % to the total compressor current (I_{tot}Pack or I_{tot}FF from the tables)
  - Install the prescribed fuse on each cable.
- Parallel supply cable (2 x 3 phases + PE - configuration (2)):
  - Add 10 % to the total compressor current (I_{tot}Pack or I_{tot}FF from the tables) and divide by 2
  - Multiply the ampacity of the cables with 0.8 (see table A.52.17 (52-E1))
  - Install fuses of half the size of the recommended maximum fuse size on each cable.
- When using 2 x 3 phases + PE as in (3):
  - Add 10 % to the total compressor current (I_{tot}Pack or I_{tot}FF from the tables) and divide by 3
  - Multiply the ampacity of the cables with 0.8 (see table A.52.17 (52-E1))
  - Fuse size: the recommended maximum fuse size divided by 3 on each cable.
- Size of the PE cable:
  - For supply cables up to 35 mm^2: same size as supply cables
  - For supply cables larger than 35 mm^2: half the size of the supply wires

Always check the voltage drop over the cable (less than 5 % of the nominal voltage is recommended).

Example: I_{tot} = 89 A, maximum ambient temperature is 45 °C, recommended fuse = 100 A

- Single supply cables (3 phases + PE - configuration (1)):
  - I = 89 A + 10 % = 89 x 1.1 = 97.9 A
  - The table for B2 and ambient temperature = 45 °C allows a maximum current of 93 A for a 50 mm^2 cable. For a cable of 70 mm^2, the maximum allowed current is 118 A, which is sufficient. Therefore, use a 3 x 70 mm^2 + 35 mm^2 cable.

If method C is used, 50 mm^2 is sufficient. (35 mm2 for method F) => cable 3 x 50 mm^2 + 25 mm^2.

- Parallel supply cable (2 x 3 phases + PE - configuration (2)):
  - I = (89 A + 10 %)/2 = (89 x 1.1)/2 = 49 A
  - For a cable of 25 mm^2, B2 at 45 °C, the maximum current is 63 A x 0.8 = 50.4 A. So 2 parallel cables of 3 x 25 mm^2 + 25 mm^2 are sufficient.
  - Install 50 A fuses on each cable instead of 100 A.

Cable sizing according UL/cUL

Calculation method according UL 508A : allowable ampacities of insulated copper conductors (75 °C (167 °F)).

Maximum allowed current in function of the wire size

AWG or kcmil	Maximum current
10	< 30 A
8	< 50 A
6	< 65 A
4	< 85 A
3	< 100 A
2	< 115 A
1	< 130 A
1/0	< 150 A
2/0	< 175 A
3/0	< 200 A

Calculation method for UL:

- Single supply cables (3 phases + 1 PE - configuration (1)):
  - Add 25 % to the total current from the tables (see UL 508A 28.3.2: “Ampacity shall have 125 % of the full load current”).
  - Install the prescribed maximum fuse on each cable.
- Parallel supply cable (2 x 3 phases + 2 PE - configuration (2)):
  - Add 25 % to the total current from the tables and divide by 2.
  - Multiply the ampacity of the cables with 0.8 (see UL 508A table 28.1 continued).
  - Install fuses of half the size of the recommended maximum fuse size on each cable.
- When using 2 x 3 phase + 2 PE as in (3):
  - Add 25 % to the total current from the tables and divide by 3.
  - Multiply the ampacity of the cables with 0.8 (see UL 508A table 28.1 continued).
  - Fuse size: the recommended maximum fuse size divided by 3 on each cable.
- Size PE cable:
  - For supply cables up to AWG8: same size as the supply cables.
  - For supply cables larger than AWG8: use maximum allowed ampacity of the selected supply cables and compare with value in table below:

< 100 A: use AWG8
< 200 A: use AWG6
< 300 A: use AWG4

Always check the voltage drop over the cable (less than 5 % of the nominal voltage is recommended).

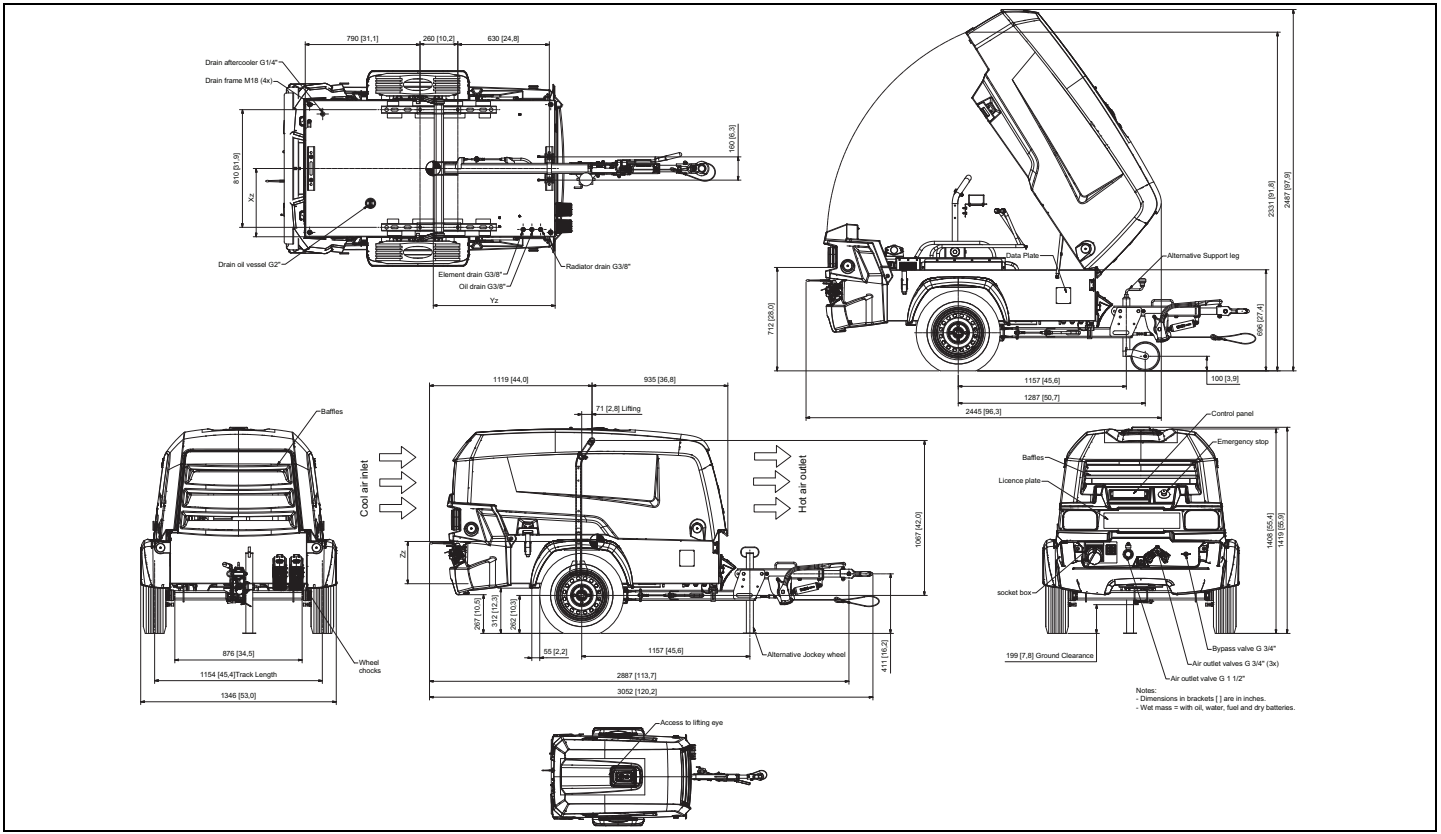
Example of supply cable calculation: Itot = 128 A, maximum ambient temperature is 45 °C, recommended.

fuse = 150 A.

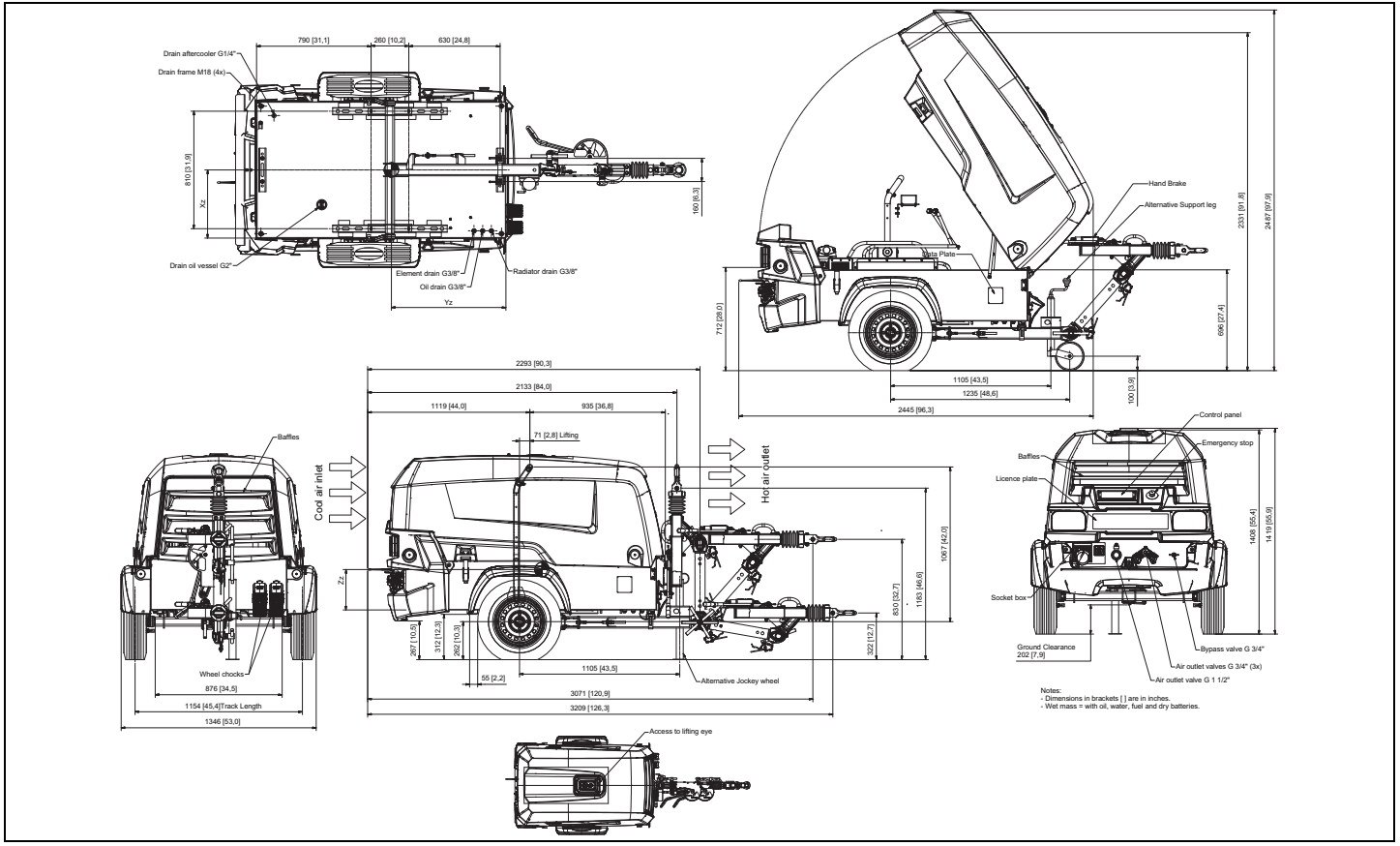
- Single supply cables (3 phases + 1 PE - configuration (1)):
  - I = 128 A + 25 % = 128 x 1.25 = 160 A.
  - For AWG2/0, the maximum current is 175 A, which is sufficient => use AWG2/0.
  - Install the prescribed maximum fuse (150 A) on each cable.
- Parallel supply cable (2 x 3 phases + 2 PE - configuration (2)):
  - I = (128 A + 25%)/2 = (128 x 1.25)/2 = 80 A.
  - For a AWG4, the maximum current is 85 A x 0.8 = 68 A, which is insufficient. For an AWG3, the maximum current is 100 x 0.8 = 80A. So 2 parallel cables of 3 x AWG3 + 2 x AWG8 are sufficient.
  - Install 80 A fuses on each cable.

Dimension drawings

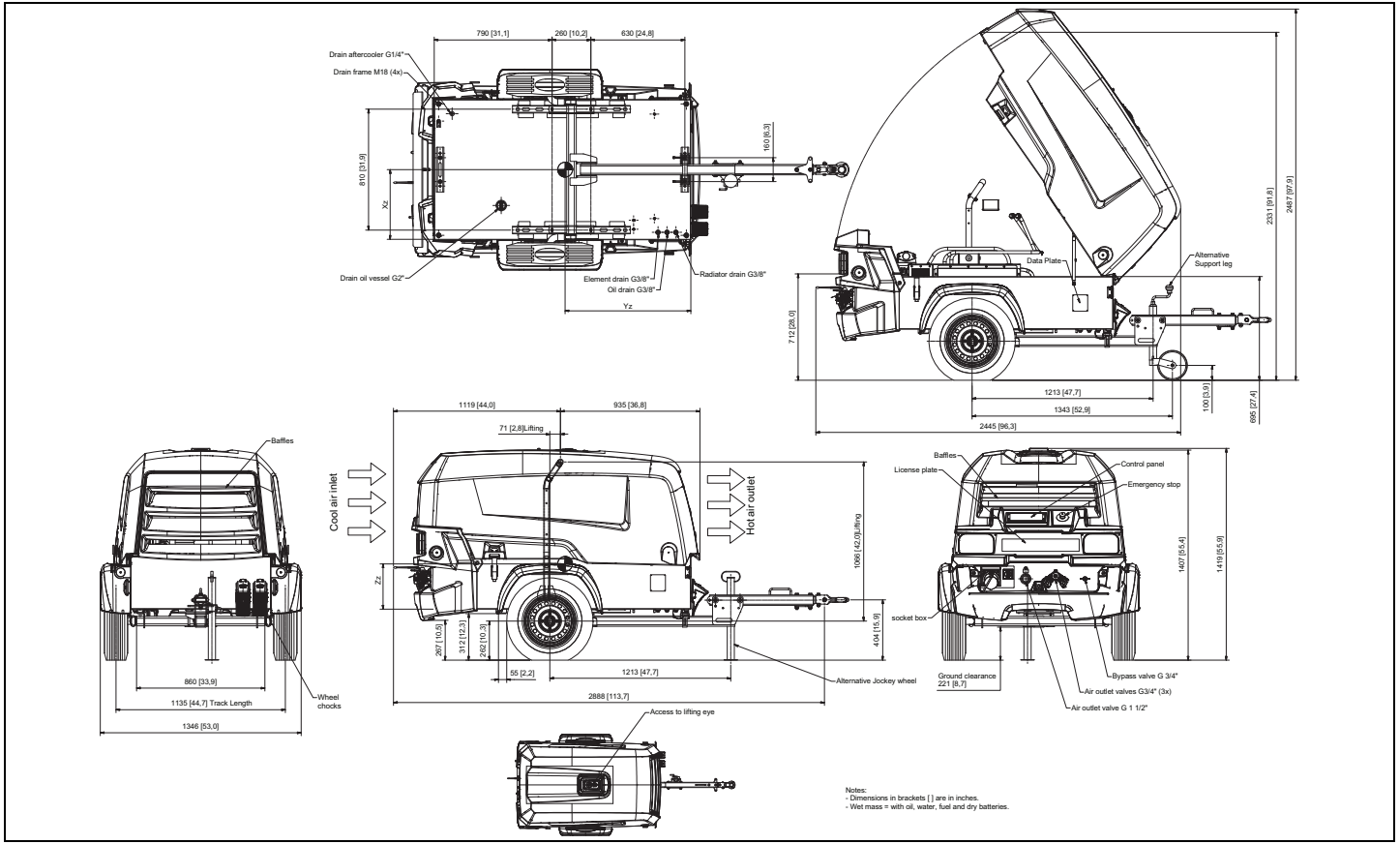
Dimensions drawing - 9822 1265 14



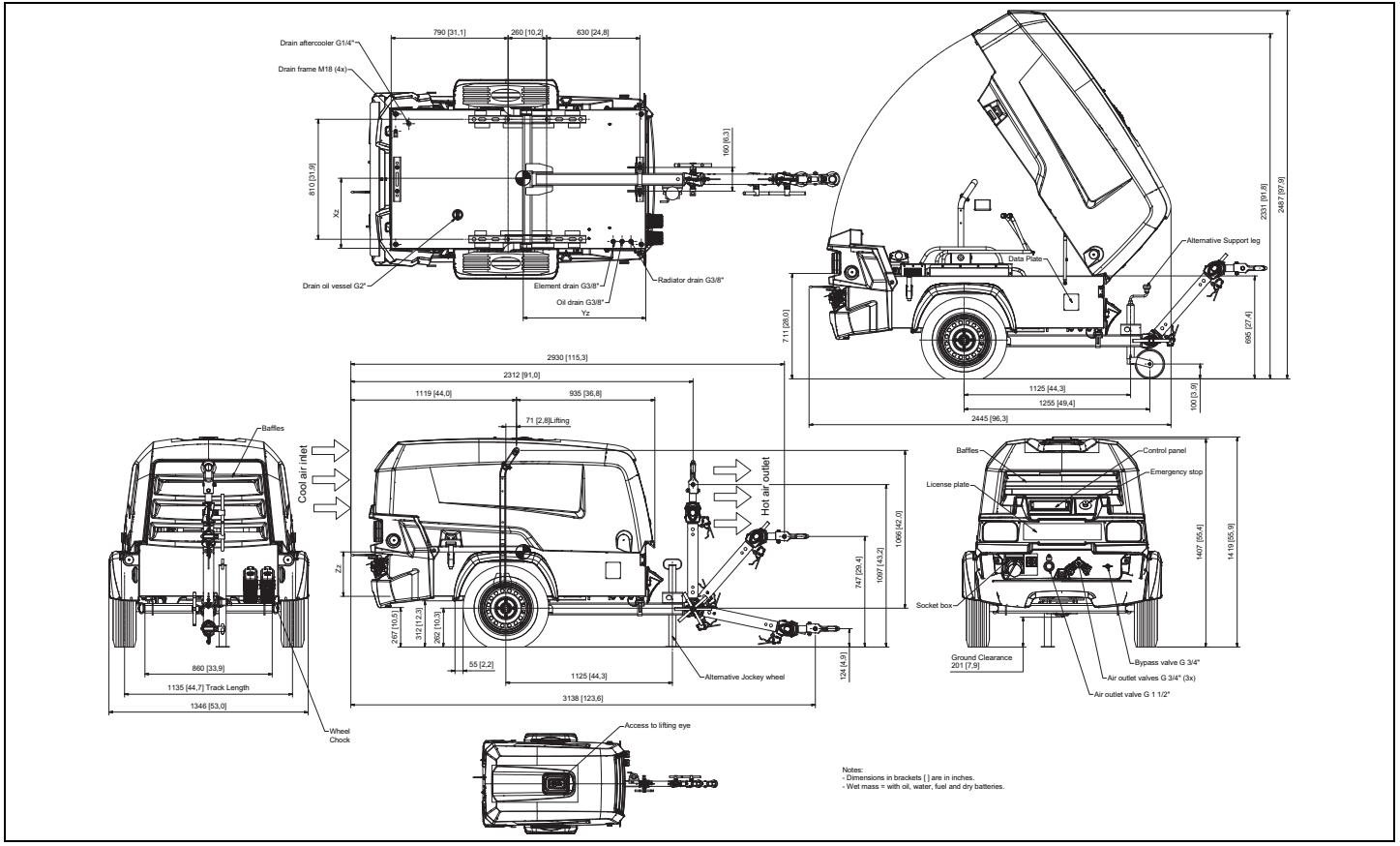
Dimensions drawing - 9822 1265 15



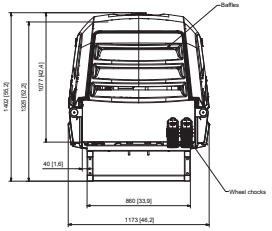
Dimensions drawing - 9822 1265 16

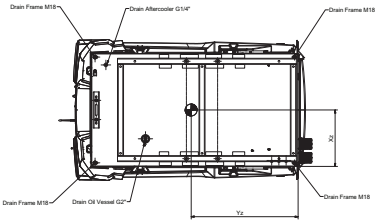


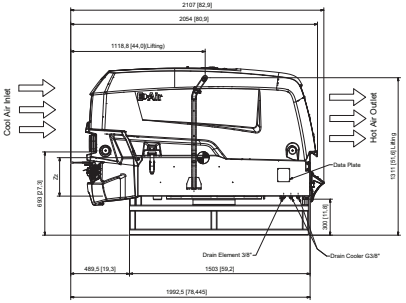
Dimensions drawing - 9822 1265 17

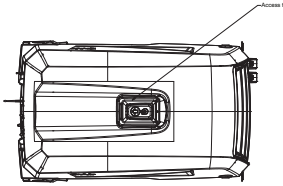


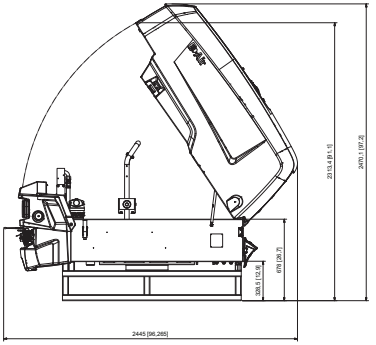
Dimensions drawing - 9822 1266 41

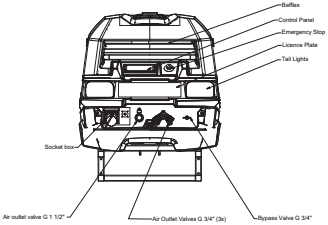






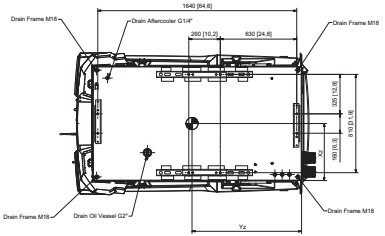


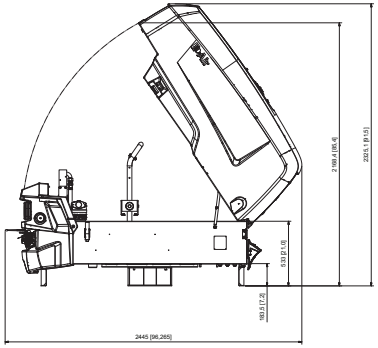


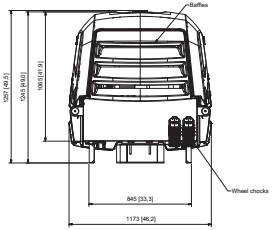


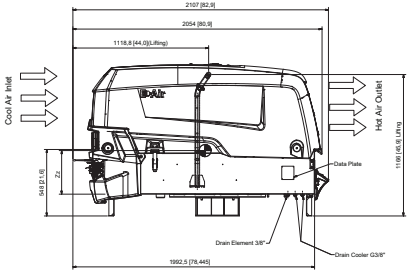
NOTE:
- Dimensions in bracket [ ] are in inches.
- Wet Mass = with oil, water , fuel and dry batteries.

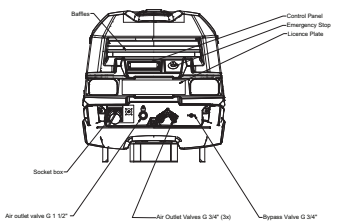
Dimensions drawing - 9822 1266 79

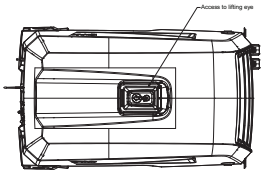






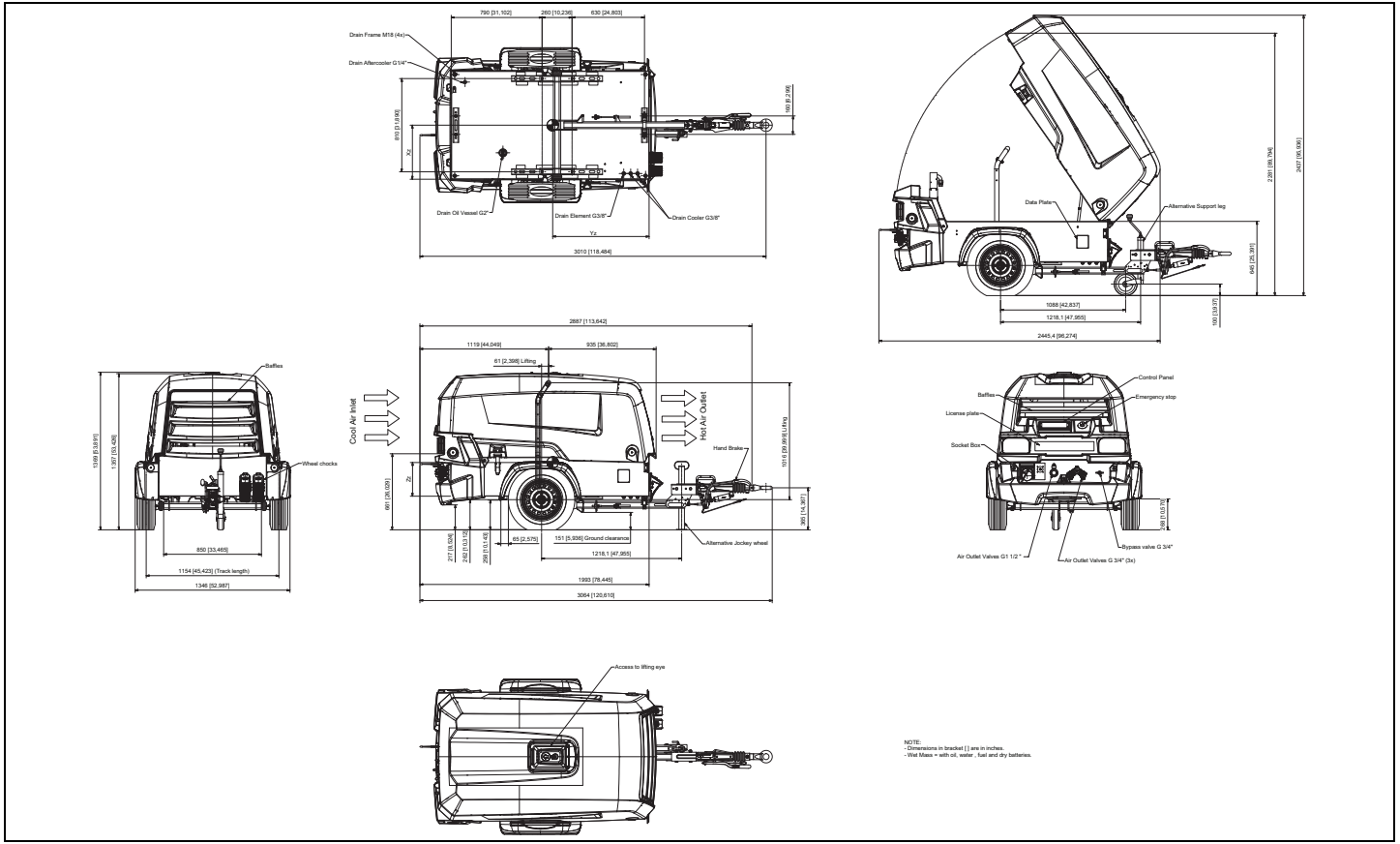






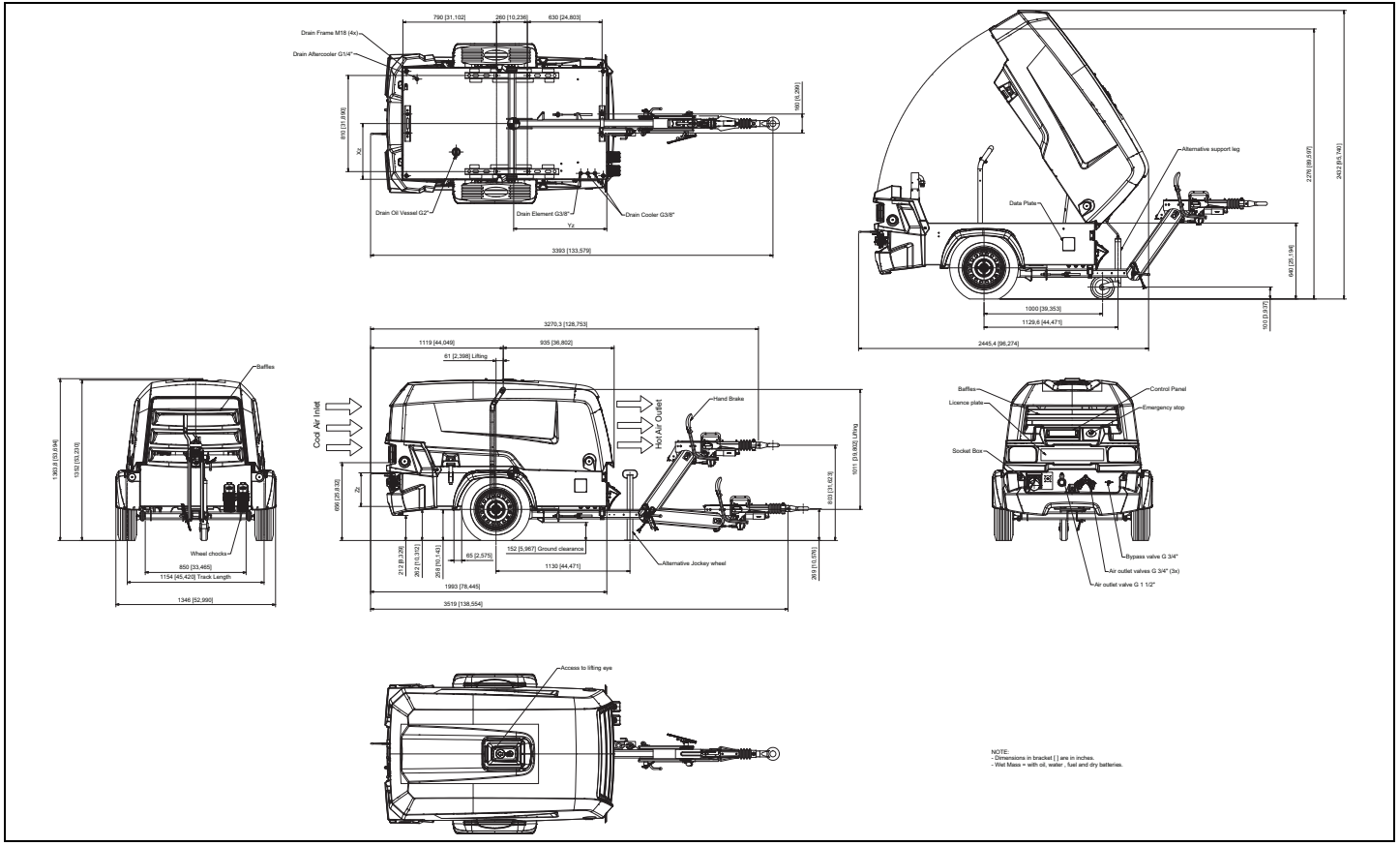
NOTE:
- Dimensions in bracket [ ] are in inches.

Dimensions drawing - 9822 0224 00

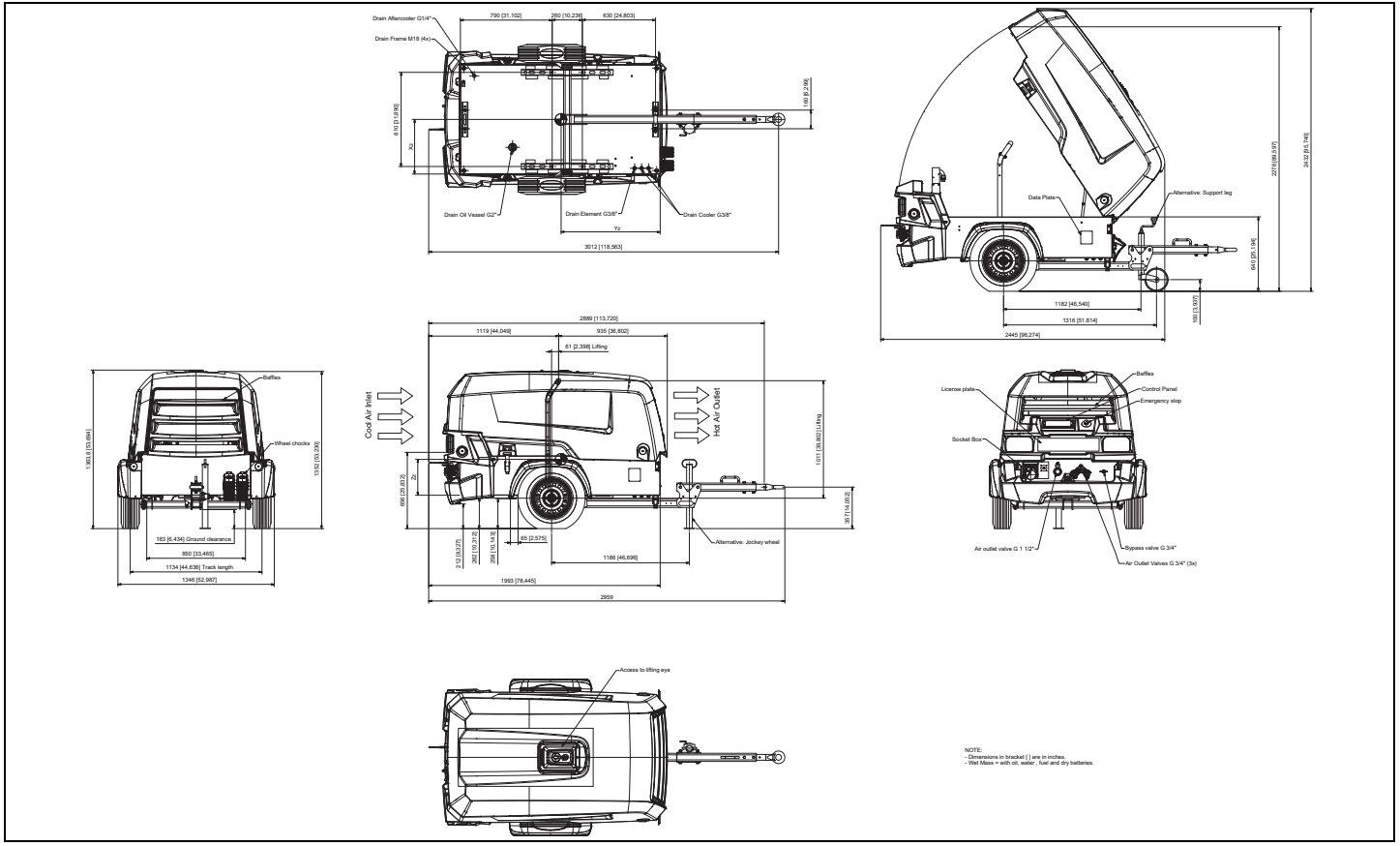


NOTE:
- Dimensions in bracket [ ] are in inches.
- Wet Mass = with oil, water , fuel and dry batteries.

Dimensions drawing - 9822 0225 00

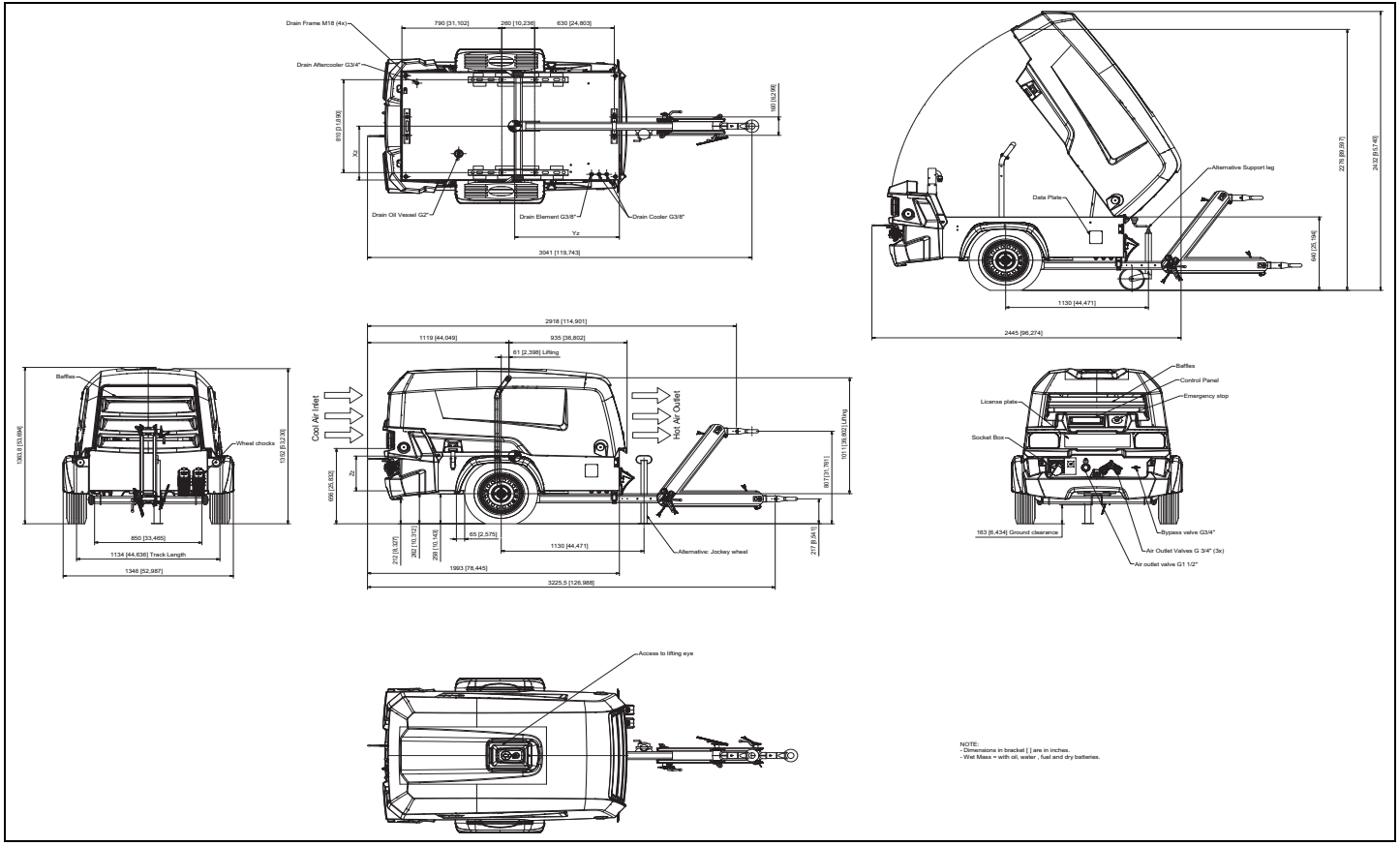


Dimensions drawing - 9822 0226 00

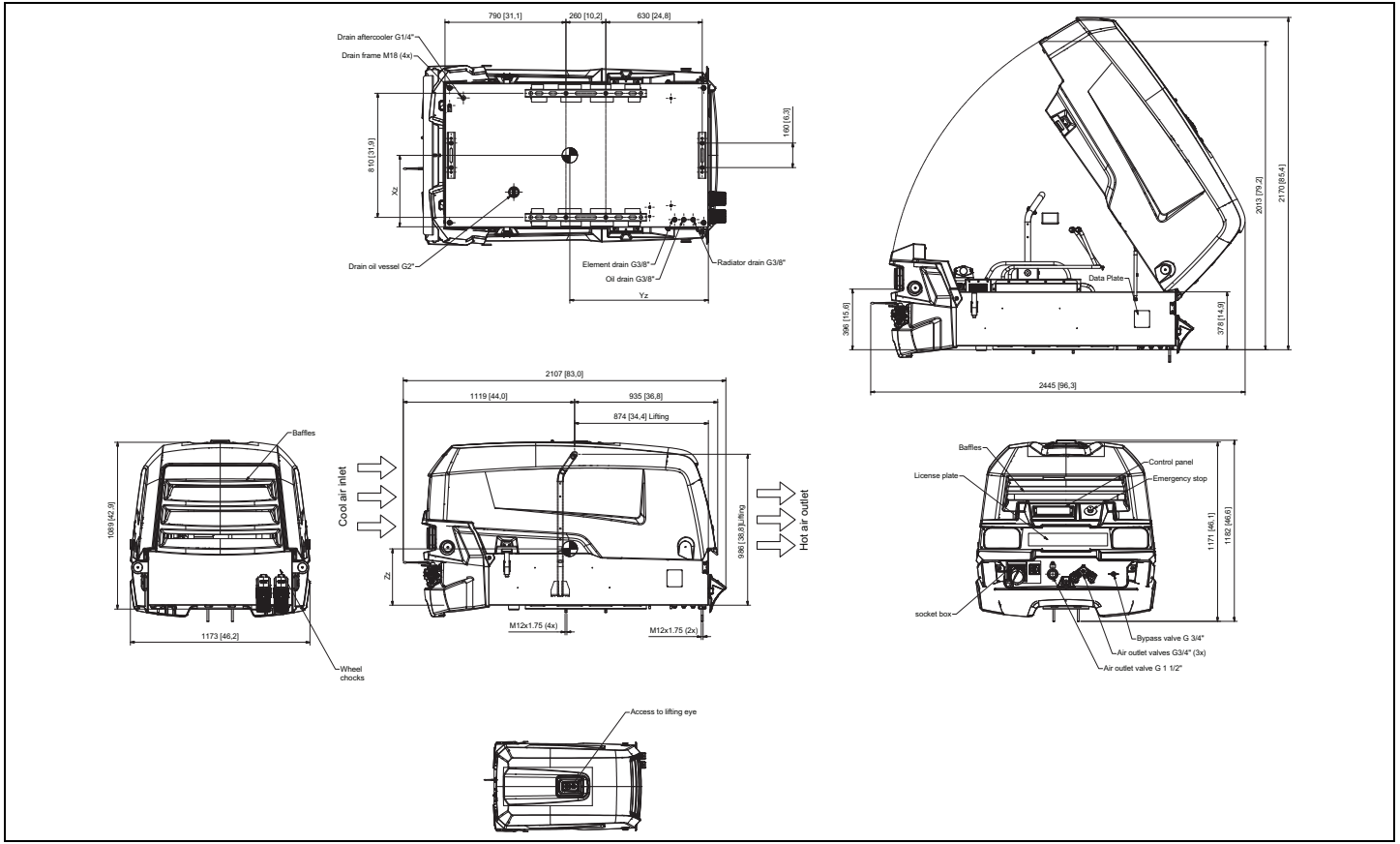


NOTE:
- Dimensions in bracket [ ] are in inches.
- Wet Mass = with oil, water , fuel and dry batteries.

Dimensions drawing - 9822 0227 00



Dimensions drawing - 9822 1266 81



Electrical drawings

Circuit diagram - 9822111232-02_01

LEGEND					
TAG	Desc. 1	FUNCTION	Location	Pg	Col.
E1	HEATER	EPRS	MACHINE	2	8
F1	FUSE	XC2003	FUSE PANEL	2	7
F2	FUSE	EPRS HEATER	FUSE PANEL	2	8
F3	FUSE	COOLANT PUMP	FUSE PANEL	2	8
F4	FUSE	FAN 1	FUSE PANEL	2	6
F5	FUSE	FAN 2	FUSE PANEL	2	7
F11	FUSE	INLINE MAIN FUSE	WIRING	2	5
K1	RELAY	EPRS HEATER	FUSE PANEL	3	7
K2	RELAY	RUN RELAY	FUSE PANEL	3	9
K3	RELAY	SHUTDOWN RELAY	FUSE PANEL	3	8
K4	RELAY	COOLANT PUMP	FUSE PANEL	3	6
M1	MOTOR	COMPRESSOR	MACHINE	2	2
M2	MOTOR	COOLANT PUMP	MACHINE	2	8
M3	MOTOR	FANMOTOR 1	MACHINE	2	6
M4	MOTOR	FANMOTOR 2	MACHINE	2	7
N1	CONTROLLER	XC2003	MACHINE	4	2
N6	MODULE	FLEETLINK	MACHINE	5	
PT1	PRESSURE SENSOR	VESSEL PRESSURE	MACHINE	3	2
PT2	PRESSURE SENSOR	REGULATING PRESSURE	MACHINE	3	3
PT3	PRESSURE SENSOR	AIR DISCHARGE PRESSURE	MACHINE	3	4
R9	RESISTOR	120 OHM	CONNECTOR	3	9
S0	SWITCH	POWER	MACHINE	2	2
S2	SWITCH	AIRFILTER	MACHINE	3	7
S3	SWITCH	EMERGENCY STOP	MACHINE	3	4
TT1	TRANSDUCER	ELEMENT TEMPERATURE	MACHINE	3	5
TT2	TRANSDUCER	AMBIENT TEMPERATURE	MACHINE	3	6
TT3	TRANSDUCER	AIR DISSCHARGE TEMPERATURE	MACHINE	3	6
U1	DRIVE	VSD+FILTER	MACHINE	2	1
X0	SOCKET	POWER	MACHINE	2	2
X1	CONNECTOR	CONTROLLER XC2003	MACHINE	3	2
X2	CONNECTOR	CONTROLLER XC2003	MACHINE	3	2
X3	CONNECTOR	COOLING FAN1	MACHINE	2	6
X4	CONNECTOR	COOLING FAN2	MACHINE	2	7

TAG	Desc. 1	FUNCTION	Location	Pg	Col.
X5	CONNECTOR	VSD DC-OUT	MACHINE	2	3
X6	CONNECTOR	VSD POWER MASTER	MACHINE	2	3
X7	CONNECTOR	USB	MACHINE	3	7
X8	CONNECTOR	CAN END RESISTOR J-1939	WIRING	3	8
X9	CONNECTOR	CAN END RESISTOR J-1939	MACHINE	3	8
X32	CONNECTOR	FLEETLINK	MACHINE	5	
Y1	SOLENOID VALVE	EPRS	MACHINE	3	5
Y2	SOLENOID VALVE	LOADING	MACHINE	3	6

SHEET	DESCRIPTION
01	INDEX & LEGEND
02	POWER & MAIN CIRCUIT
03	CONTROL CIRCUIT
04	CONTROLLER
05	OPTIONAL

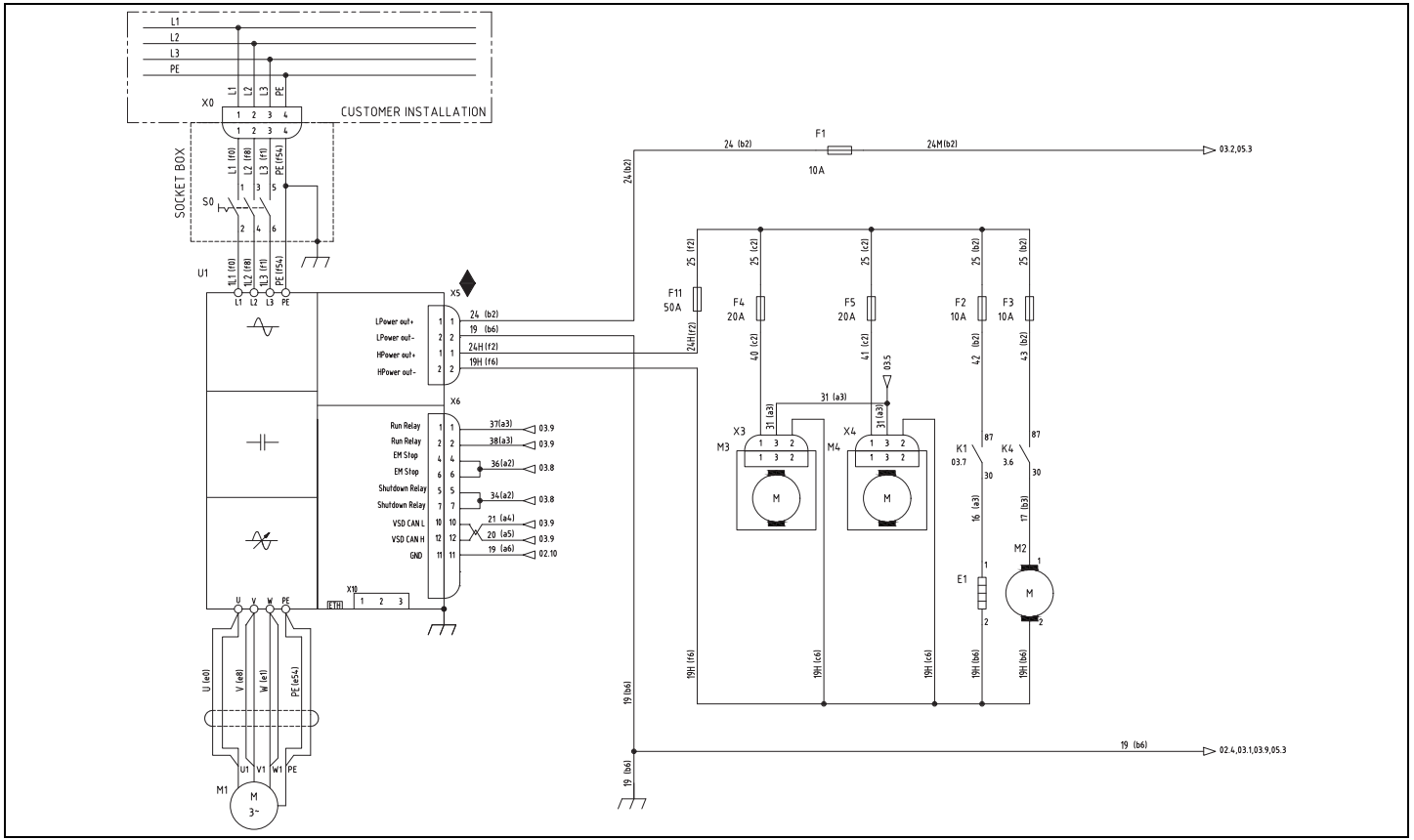
Color codes

0 = black	5 = green
1 = brown	6 = blue
2 = red	7 = purple
3 = orange	8 = grey
4 = yellow	9 = white

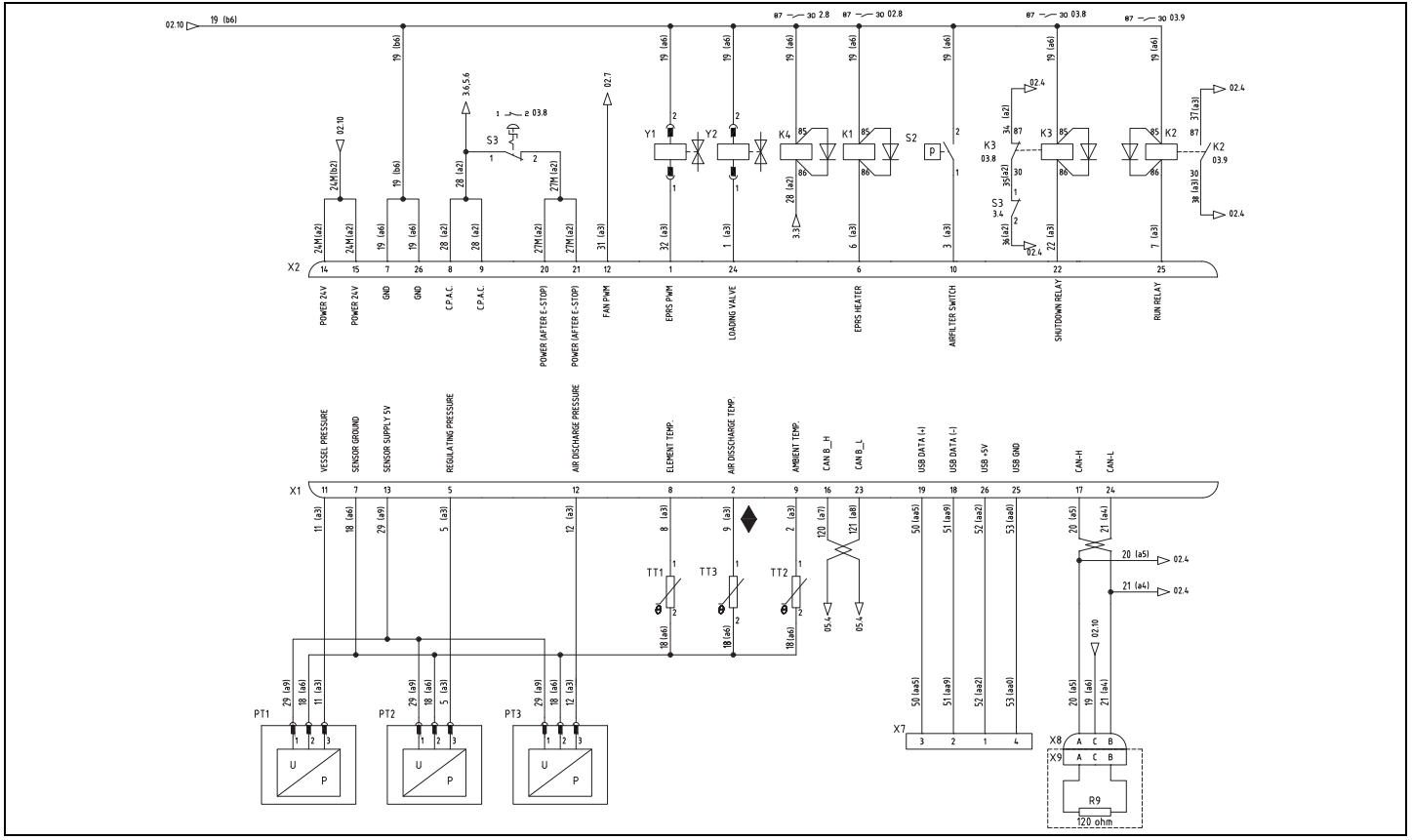
Wire sections

aaa=0.35 mm^2
aa = 0,5 mm^2
ab = 0,75 mm^2
a = 1 mm^2
b = 1,5 mm^2
c = 2,5 mm^2
d = 4 mm^2
e = 6 mm^2
f = 10 mm^2
g = 16 mm^2
h = 25mm^2
i = 35 mm^2
j = 50 mm^2
k = 70mm^2
l = 95 mm^2

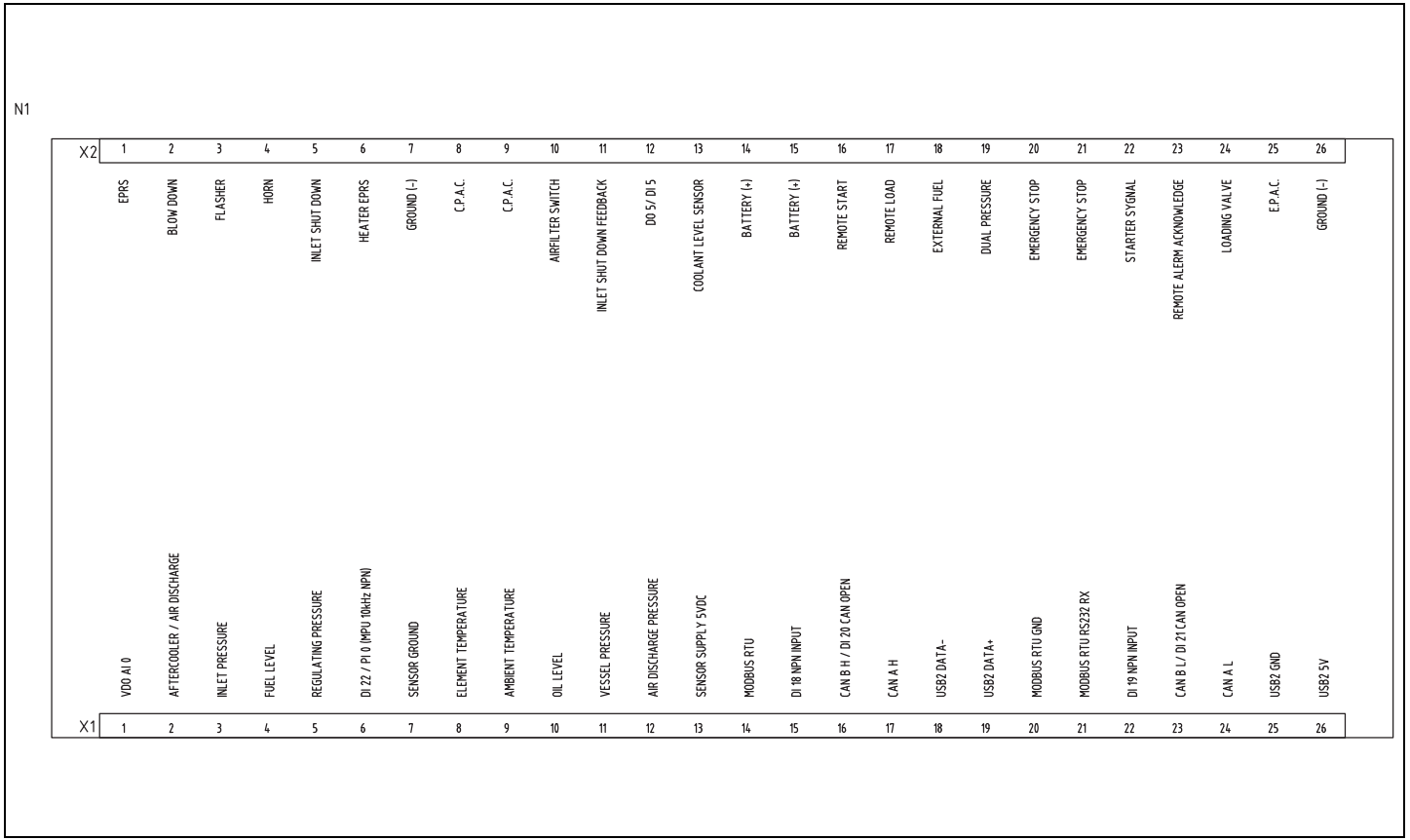
Circuit diagram - 9822111232-02_02 POWER & MAIN CIRCUIT

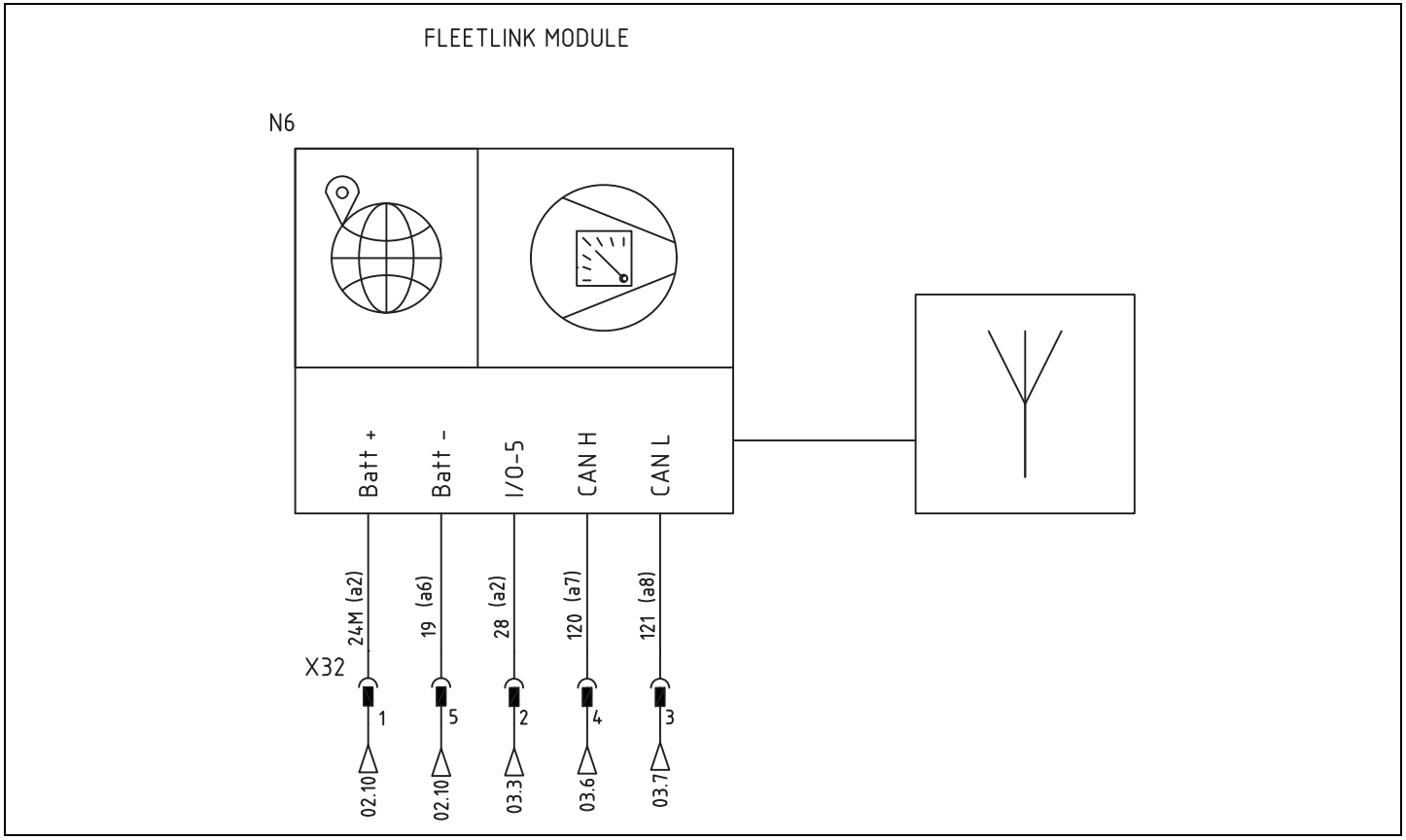


Circuit diagram - 9822111232-02_03 CONTROL CIRCUIT

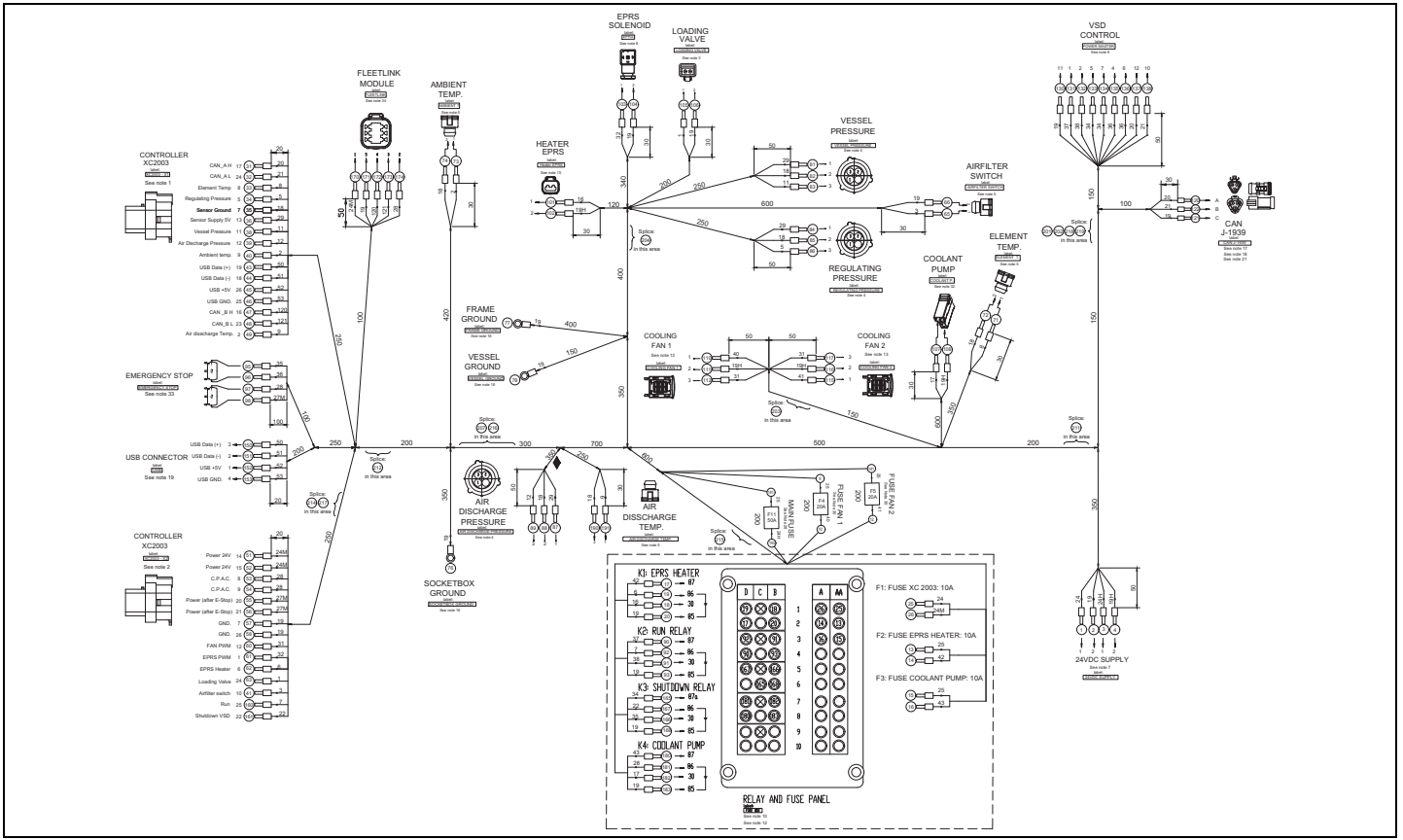


Circuit diagram - 9822111232-02_04 CONTROLLER




FLEETLINK MODULE
N6
Batt +
Batt -
I/O-5
CAN H
CAN L
24M (a2)
19 (a6)
28 (a2)
120 (a7)
121 (a8)
X32
1
5
2
4
3
02.10
02.10
03.3
03.6
03.7

Wiring diagram - 1638 3562 06



Weight

Weight ready to operate	see data plate

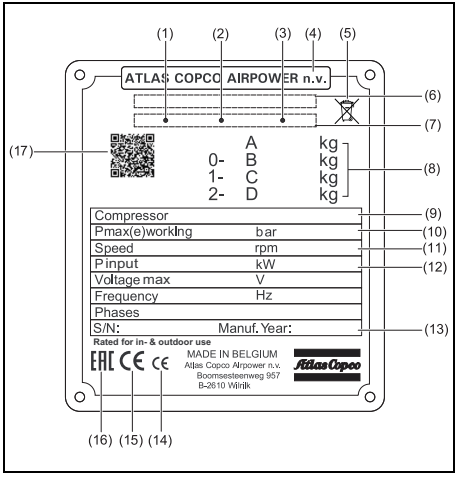
Air outlet

Air outlet valves	3 x 3/4, 1 x $1^1/_2$”

Wheels

Tyre pressure	bar	2.7
	psi	39
Wheel bolt torque	Nm	85
	lbf.ft	63

Data plate



1 Company code
2 Product code
3 Unit serial number
4 Name of the manufacturer
5 WEEE Directive 2012/19/EU
6 EEC or national type approval number
7 Vehicle identification number
8 Undercarriage
  A Maximum permitted total weight of the vehicle
  B Maximum permitted load on the towing eye
  C Maximum permitted load on axle (or front axle on dual axle units)
  D Maximum permitted load on rear axle (on dual axle units)
9 Model
10 Working pressure
11 Speed
12 Engine power
13 Manufacturing year
14 CE with DOC notified body number 0038 or without
15 CE mark in accordance with Machine Directive
16 EAC certification symbol, if applicable
17 QR code

Disposal

GENERAL

When developing products and services, Atlas Copco tries to understand, address, and minimize the negative environmental effects that the products and services may have, when being manufactured, distributed, used and disposed.

Recycling and disposal policy are part of the development of all Atlas Copco products. Atlas Copco company standards determine strict requirements.

Material selection, substantial recyclability, disassembly possibilities and separability of materials and assemblies are considered, as well as environmental perils and dangers to health during the recycling and disposal of the unavoidable rates of non-recyclable materials.

Your Atlas Copco compressor consists for the most part of metallic materials, that can be remelted in steelworks and smelting works and are therefore almost infinitely recyclable. The plastic used is labelled; sorting and fractioning of the materials for recycling in the future is foreseen.

This concept can only succeed with your help. Support us by disposing professionally. By assuring correct disposal of the product you help prevent possible negative consequences for environment and health as a result of inappropriate waste handling.

Recycling and re-usage of material help preserve natural resources.

DISPOSAL OF MATERIALS

Dispose of contaminated substances and material separately, in accordance with locally applicable environmental legislation.

Before dismantling a machine at the end of its operating lifetime drain and dispose of all fluids of according the applicable local disposal regulations.

Dispose of all components in accordance with applicable disposal regulations.

Remove spilled fluid mechanically; pick up the rest using an absorbing agent (for example sand, sawdust) and dispose of it in accordance with applicable local disposal regulations. Do not drain into the sewage system or surface water.

DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

This equipment falls under the provisions of the European Directive 2012/19/EU on waste electrical and electronic appliances (WEEE) and may not be disposed as unsorted waste.

The equipment is labelled in accordance with the European Directive 2012/19/EU with the crossed-out wheel bin symbol.

At the end of life-time of the electric and electronic equipment (EEE) it must be taken to separate collection.

For more information check with your local waste authority, customer center or distributor.

Maintenance log

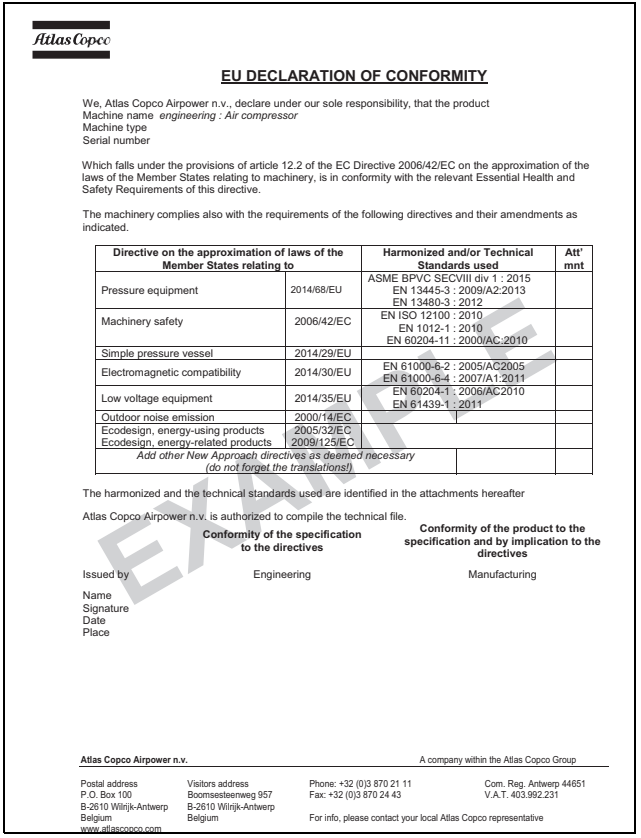
Compressor ..... **Customer** .....

Serial number..... .....

Service hours	Maintenance action	Date	By: initials

Following documents are provided with this unit:

- Test Certificate
- EC Declaration of Conformity



Atlas Copco

EU DECLARATION OF CONFORMITY

We, Atlas Copco Airpower n.v., declare under our sole responsibility, that the product
Machine name *engineering : Air compressor*
Machine type
Serial number

Which falls under the provisions of article 12.2 of the EC Directive 2006/42/EC on the approximation of the laws of the Member States relating to machinery, is in conformity with the relevant Essential Health and Safety Requirements of this directive.

The machinery complies also with the requirements of the following directives and their amendments as indicated.

Directive on the approximation of laws of the Member States relating to		Harmonized and/or Technical Standards used	Att' mnt
Pressure equipment	2014/68/EU	ASME BPVC SECVIII div 1 : 2015 EN 13445-3 : 2009/A2:2013 EN 13480-3 : 2012	
Machinery safety	2006/42/EC	EN ISO 12100 : 2010 EN 1012-1 : 2010 EN 60204-11 : 2000/AC:2010	
Simple pressure vessel	2014/29/EU		
Electromagnetic compatibility	2014/30/EU	EN 61000-6-2 : 2005/AC2005 EN 61000-6-4 : 2007/A1:2011	
Low voltage equipment	2014/35/EU	EN 60204-1 : 2006/AC2010 EN 61439-1 : 2011	
Outdoor noise emission	2000/14/EC		
Ecodesign, energy-using products Ecodesign, energy-related products	2005/32/EC 2009/125/EC		
Add other New Approach directives as deemed necessary (do not forget the translations!)			

The harmonized and the technical standards used are identified in the attachments hereafter

Atlas Copco Airpower n.v. is authorized to compile the technical file.

	Conformity of the specification to the directives	Conformity of the product to the specification and by implication to the directives
Issued by	Engineering	Manufacturing
Name		
Signature		
Date		
Place		

EXAMPLE

Atlas Copco Airpower n.v. A company within the Atlas Copco Group

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Phone: +32 (0)3 870 21 11
Fax: +32 (0)3 870 24 43

For info, please contact your local Atlas Copco representative

Com. Reg. Antwerp 44651
V.A.T. 403.992.231

Scan the QR code to access into the Atlas Copco Spare Part List (ASL).

H185

H250