Instruction Manual for AC Compressors
English

XAS 400-200 PACE
XAS 400-150 PACE
X-Air 375-150

Engine JD4045HI440

CALIFORNIA Proposition 65

⚠ **WARNING**

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.

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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.

Preface

Please read the following instructions carefully before starting to use your compressor.

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

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.

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Atlas Copco

Safety precautions

☞ **To be read attentively and acted accordingly before towing, lifting, operating, performing maintenance or repairing the compressor.**

INTRODUCTION

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

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

Before handling any product, take time to read the relevant instruction manual. Besides giving detailed operating instructions, it also gives specific information about safety, preventive maintenance, etc.

Keep the manual always at the unit location, easy accessible to the operating personnel.

See also the safety precautions of the engine and possible other equipment, which are separately sent along or are mentioned on the equipment or parts of the unit.

These safety precautions are general and some statements will therefore not always apply to a particular unit.

Only people that have the right skills should be allowed to operate, adjust, perform maintenance or repair on 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 with the push-buttons, and is trained to know the safety aspects.

Skill level 2: Mechanical technician

A mechanical technician is trained to operate the unit the same as the operator. In addition, the mechanical technician is also trained to perform maintenance and repair, as described in the instruction manual, and is 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 could 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.

When handling, operating, overhauling and/or performing maintenance or repair on Atlas copco equipment, the mechanics are expected to use safe engineering practices and to observe all relevant local safety requirements and ordinances. The following list is a reminder of 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 may endanger people as well as 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.

All responsibility 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, is disclaimed by Atlas copco.

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, shall at all times make sure that all instructions regarding machinery and equipment operation and maintenance are strictly followed and that 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 Whenever there is an indication or any suspicion that an internal part of a machine is overheated, the machine shall be stopped but no inspection covers shall be opened before sufficient cooling time has elapsed; this to avoid the risk of spontaneous ignition of oil vapour when air is admitted.

4 Normal ratings (pressures, temperatures, speeds, etc.) shall be durably marked.

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

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

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

8 All regulating and safety devices shall be maintained with due care to ensure that they function properly. They may not be put out of action.

9 Care shall be taken to avoid damage to safety valves and other pressure-relief devices, especially to avoid plugging by paint, oil coke or dirt accumulation, which could interfere with the functioning of the device.

10 Pressure and temperature gauges shall be checked regularly with regard to their accuracy. They shall be replaced whenever outside acceptable tolerances.

11 Safety devices shall be tested as described in the maintenance schedule of the instruction manual to determine that they are in good operating condition. See the .

12 Mind the markings and information labels on the unit.

13 In the event the safety labels are damaged or destroyed, they must be replaced to ensure operator safety.

14 Keep the work area neet. Lack of order will increase the risk of accidents.

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

16 Take precautions against fire. Handle fuel, 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.

SAFETY DURING TRANSPORT AND INSTALLATION

When towing, lifting or transporting the compressor in any way, the battery cable must be disconnected

To lift a unit, all loose or pivoting parts, e.g. doors and towbar, 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 Before towing the unit:
- ascertain that the pressure vessel(s) is (are) depressurized,
- check the towbar, the brake system and the towing eye. Also check the coupling of the towing vehicle,
- check the towing and brake capability of the towing vehicle,
- check that the towbar, jockey wheel or stand leg is safely locked in the raised position,
- ascertain that the towing eye can swivel freely on the hook,
- check that the wheels are secure and that the tyres are in good condition and inflated correctly,
- connect the signalisation cable and check all lights
- attach the safety break-away cable or safety chain to the towing vehicle,
- remove wheel chocks, if applied, and disengage the parking brake.

2 To tow a unit use a towing vehicle of ample capacity. Refer to the documentation of the towing vehicle.

3 Never exceed the maximum towing speed of the unit (mind the local regulations).

4 Place the unit on level ground and apply the parking brake before disconnecting the unit from the towing vehicle. Unclip the safety break-away cable or safety chain. If the unit has no parking brake or jockey wheel, immobilize the unit by placing chocks in front of and/or behind the wheels. When the towbar can be positioned vertically, the locking device must be applied and kept in good order.

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

6 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.

7 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.

8 Never leave a load hanging on a hoist.

9 A hoist has to be installed in such a way that the object will be lifted perpendicular. 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.

10 Locate the unit away from walls. Take all precautions to ensure that hot air exhausted from the engine and driven machine cooling systems cannot be recirculated. If such hot air is taken in by the engine or driven machine cooling fan, this may cause overheating of the unit; if taken in for combustion, the engine power will be reduced.

11 Before moving the compressor, switch it off.

12 If the warning light on the ABS module or in the vehicle lights up, please contact Atlas copco.

SAFETY DURING USE AND OPERATION

1 When the unit has to operate in a fire-hazardous environment, each engine exhaust has to be provided with a spark arrestor to trap incendiary sparks.

2 The exhaust contains carbon monoxide which is a lethal gas. When the unit is used in a confined space, conduct the engine exhaust to the outside atmosphere by a pipe of sufficient diameter; do this in such a way that no extra back pressure is created for the engine. If necessary, install an extractor. Observe any existing local regulations. Make sure that the unit has sufficient air intake for operation. If necessary, install extra air intake ducts.

3 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.

4 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, ensure that the open end is held securely, so that it cannot whip and cause injury.

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

6 No external force may 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.

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

8 Do not use compressed air from any type of compressor, without taking extra measures, for breathing purposes as this may 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.

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

10 If the compressor is to be used for sand-blasting or will be connected to a common compressed-air system, fit an appropriate non-return valve (check valve) between compressor outlet and the connected sand-blasting or compressed-air system. Observe the right mounting position/direction.

11 Before removing the oil filler plug, ensure that the pressure is released by opening an air outlet valve.

12 Never remove a filler cap of the cooling water system of a hot engine. Wait until the engine has sufficiently cooled down.

13 Never refill fuel while the unit is running, unless otherwise stated in the Atlas copco Instruction Book (AIB). Keep fuel away from hot parts such as air outlet pipes or the engine exhaust. Do not smoke when fuelling. When fuelling from an automatic pump, an earthing cable should be connected to the unit to discharge static electricity. Never spill nor leave oil, fuel, coolant or cleansing agent in or around the unit.

14 All doors shall 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 should be kept open for a short period only e.g. for inspection or adjustment.

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

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

17 Noise, even at reasonable levels, can cause irritation and disturbance which, over a long period of time, may 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 should 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 shall 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.

18 The unit has parts, which may be accidentally touched by personnel, of which the temperature can be in exess 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.

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

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

21 When using compressed air or inert gas to clean down equipment, do so 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 at people. Never use it to clean dirt from your clothes.

22 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.

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

24 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.

25 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.

26 Never operate the unit at pressures or speeds below or in excess of its limits as indicated in the technical specifications.

27 Do not use aerosol types of starting aids such as ether. Such use could result in an explosion and personal injury.

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 shall only be replaced by genuine Atlas copco replacement parts.

3 All maintenance work, other than routine attention, shall only be undertaken when the unit is stopped. Steps shall be taken to prevent inadvertent starting. In addition, a warning sign bearing a legend such as ”work in progress; do not start” shall be attached to the starting equipment. On engine-driven units the battery shall be disconnected and removed or the terminals covered by insulating caps. On electrically driven units the main switch shall be locked in open position and the fuses shall 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.

4 Before dismantling any pressurized component, the compressor or equipment shall be effectively isolated from all sources of pressure and the entire system shall 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.

5 Prior to stripping an engine or other machine or undertaking major overhaul on it, prevent all movable parts from rolling over or moving.

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

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

8 Take safety precautions against toxic vapours of cleaning liquids.

9 Never use machine parts as a climbing aid.

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

11 Never weld on or perform any operation involving heat near the fuel or oil systems. Fuel and 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. Disconnect the alternator cables during arc welding on the unit.

12 Support the towbar and the axle(s) securely if working underneath the unit or when removing a wheel. Do not rely on jacks.

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

14 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.

15 Protect the engine, alternator, air intake filter, electrical and regulating components, etc., to prevent moisture ingress, e.g. when steam-cleaning.

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

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

18 Disconnect –battery-clamp before starting electrical servicing or welding (or turn battery-switch in “off” position).

19 When repair has been completed, the machine shall be barred over at least one revolution for reciprocating machines, several revolutions for rotary ones to ensure that there is no mechanical interference within the machine or driver. 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.

20 Maintenance and repair work should be recorded in an operator’s logbook for all machinery. Frequency and nature of repairs can reveal unsafe conditions.

21 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.

22 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.

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

24 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.

TOOL APPLICATIONS SAFETY

Apply 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.

SPECIFIC SAFETY PRECAUTIONS

Batteries

When servicing batteries, always wear protecting clothing and glasses.

1 The electrolyte in batteries is a sulphuric acid solution which is fatal if it hits your eyes, and which can cause burns if it contacts your skin. Therefore, be careful when handling batteries, e.g. when checking the charge condition.

2 Install a sign prohibiting fire, open flame and smoking at the post where batteries are being charged.

3 When batteries are being charged, an explosive gas mixture forms in the cells and might escape through the vent holes in the plugs. Thus an explosive atmosphere may form around the battery if ventilation is poor, and can remain in and around the battery for several hours after it has been charged. Therefore:

- never smoke near batteries being, or having recently been, charged,
- never break live circuits at battery terminals, because a spark usually occurs.

4 When connecting an auxiliary battery (AB) in parallel to the unit battery (CB) with booster cables: connect the + pole of AB to the + pole of CB, then connect the - pole of CB to the mass of the unit. Disconnect in the reverse order.

Pressure vessels

Maintenance/installation requirements:

1 The vessel can be used as pressure vessel or as 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 with.

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 vessel is in use.

7. Installation, design and connections should not be changed.

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

Safety valves

Operating & Maintenance

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

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

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.

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.

Safety valves must be frequently tested and regularly maintained.

The set pressure should be periodically checked for accuracy.

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

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

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

Do not paint or coat the installed safety valve (see also).

Selective Catalytic Reduction

The SCR catalytic converter contains vanadium pentoxide, a chemical known to the State of California to cause cancer.

The SCR catalytic converter is fitted in the silencer and does not constitute a health hazard during normal use and handling.

When carrying out work on the SCR catalytic converter which may result in exposure to dust, safety precautions must be taken. Such work includes, for example, opening the silencer machining and scrapping the SCR catalytic converter.

Safety precautions when working on the SCR system

- Inhalation: If dust is inhaled, the person should be provided with fresh air immediately. Seek medical attention.
- Eye contact: Rinse eyes with water immediately.
- If irritation persists, seek medical attention.
- Skin contact: Wash with water and soap. Remove contaminated clothes.
- Ingestion: If large amounts have been ingested, drink plenty of water and induce vomiting. Seek medical attention.

Warning for XATS/XAVS machines

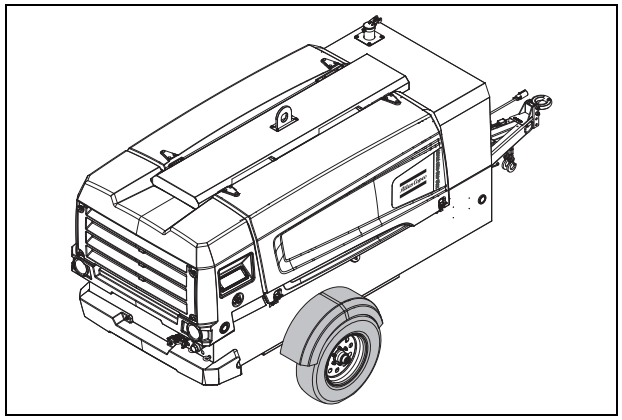
This air compressor can operate above 150 psi (10.3 Bar) which is the normal maximum rating for hoses that are typically used with pneumatic tools. Use extreme caution when using machine above 150 psi (10.3 Bar). The operator is responsible for providing hoses, fittings, and other downstream devices that can withstand air pressure above 150 psi (10.3 Bar) when using this air compressor at a working pressure above 150 psi (10.3 Bar). Failure to comply could result in injury to people or cause equipment damage should a hose burst or a part fail due to the higher pressure.

Environmental hazards

- Vanadium pentoxide is toxic to water organisms and can cause detrimental long term effects to water environment.

Leading particulars

GENERAL DESCRIPTION



The XAS 400-200 PACE/ XAS 400-150 PACE / X-Air 375-150 is a silenced, single-stage, oil-injected screw compressor, built for a nominal effective working pressure of 1 bar (14.7 psi).

All machines meet Tier 4 emission standards.

Engine

The compressors XAS 400-200 PACE/ XAS 400-150 PACE / X-Air 375-150 is driven by 4 cylinder in-line liquid-cooled diesel engines.

The engine's power is transmitted to the compressor element through a heavy-duty coupling.

Compressor

The compressor casing houses two screw-type rotors, mounted on ball and roller bearings. The male rotor, driven by the engine, drives the female rotor. The compressor delivers pulsation-free air.

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 oil is removed from the air, in the air/oil vessel at first by centrifugal force, secondly through 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-off valve which is integrated in the unloader assembly. The valve is closed during operation by air receiver pressure and opens by air receiver pressure via the compressor element 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 regulating valve which, by means of control air to the unloader and an electronic engine speed regulator, matches the air output to the air consumption. The air receiver pressure is maintained between the pre-selected working pressure and the corresponding unloading pressure.

Cooling system

The engine is provided with a liquid-cooler and inter cooler and the compressor is provided with an oil cooler. For available options see chapter Available options.

The cooling air is generated by a fan, driven by the engine.

Safety devices

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

The engine is equipped with low oil pressure and high coolant temperature shut-down sensors.

The electric system is equipped with a 12V main switch.

Frame and axles

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

The standard compressor has fixed towbar with brakes.

Bodywork

The bodywork has openings at the shaped front and rear end for the intake and outlet of cooling air and hinged doors for maintenance and service operations. The bodywork is internally lined with sound-absorbing material.

Lifting eye

A lifting eye is accessible at all times at the top of the unit.

Control panel

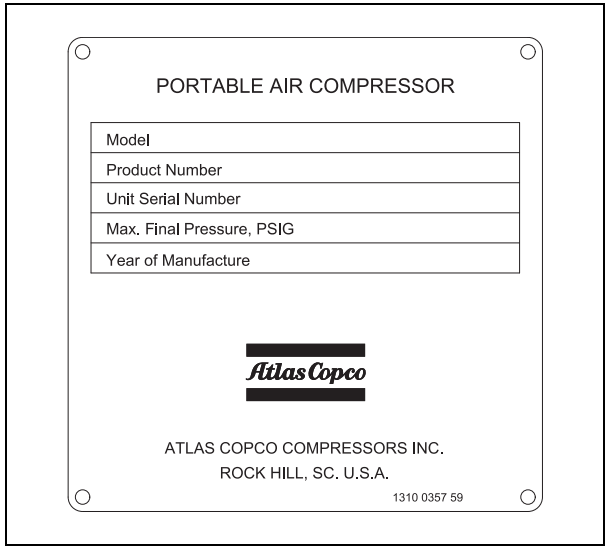
The control panel grouping the air pressure gauge, control switch etc., is placed at the right hand/ rear end corner.

Exhaust system

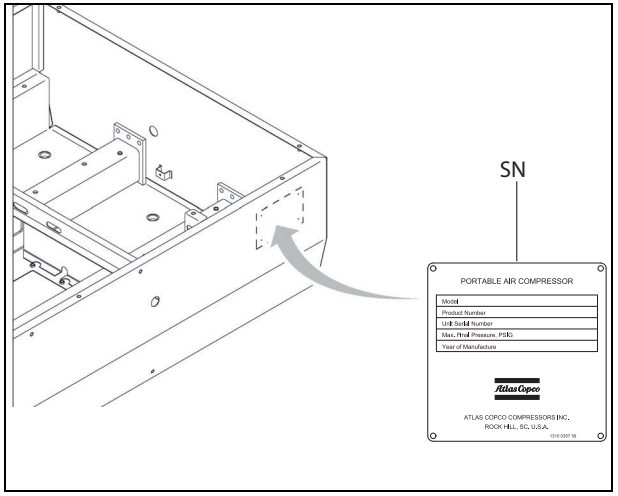
The exhaust system includes an after treatment with a selective catalytic reduction system.

Data plate

The compressor is furnished with a data plate showing the model, product number and maximum final proposal.

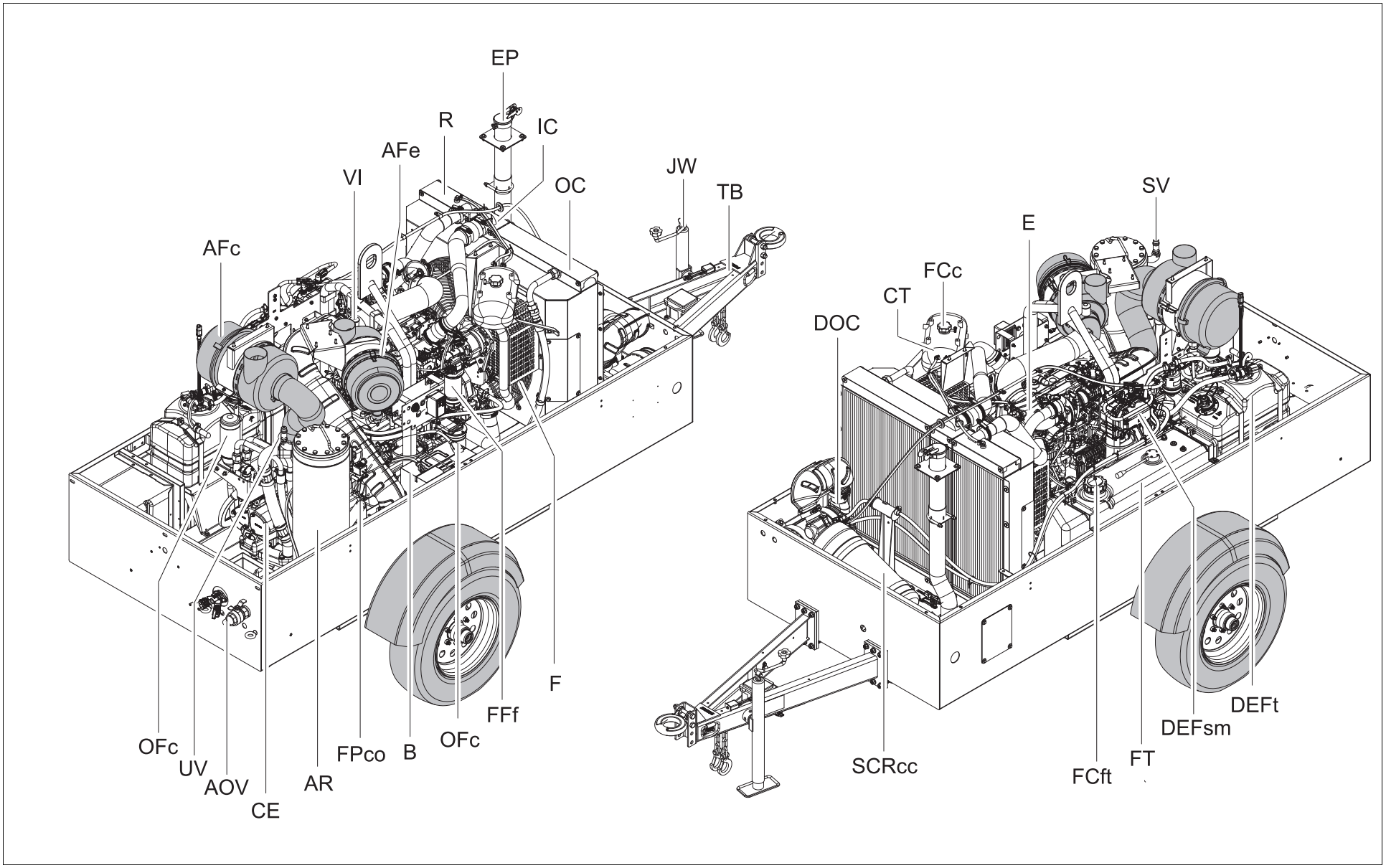


Serial number



The serial number (SN) is mentioned on the data plate. Last 6 digits from V.I.N.(Vehicle Identification Number) is serial number.

Main Parts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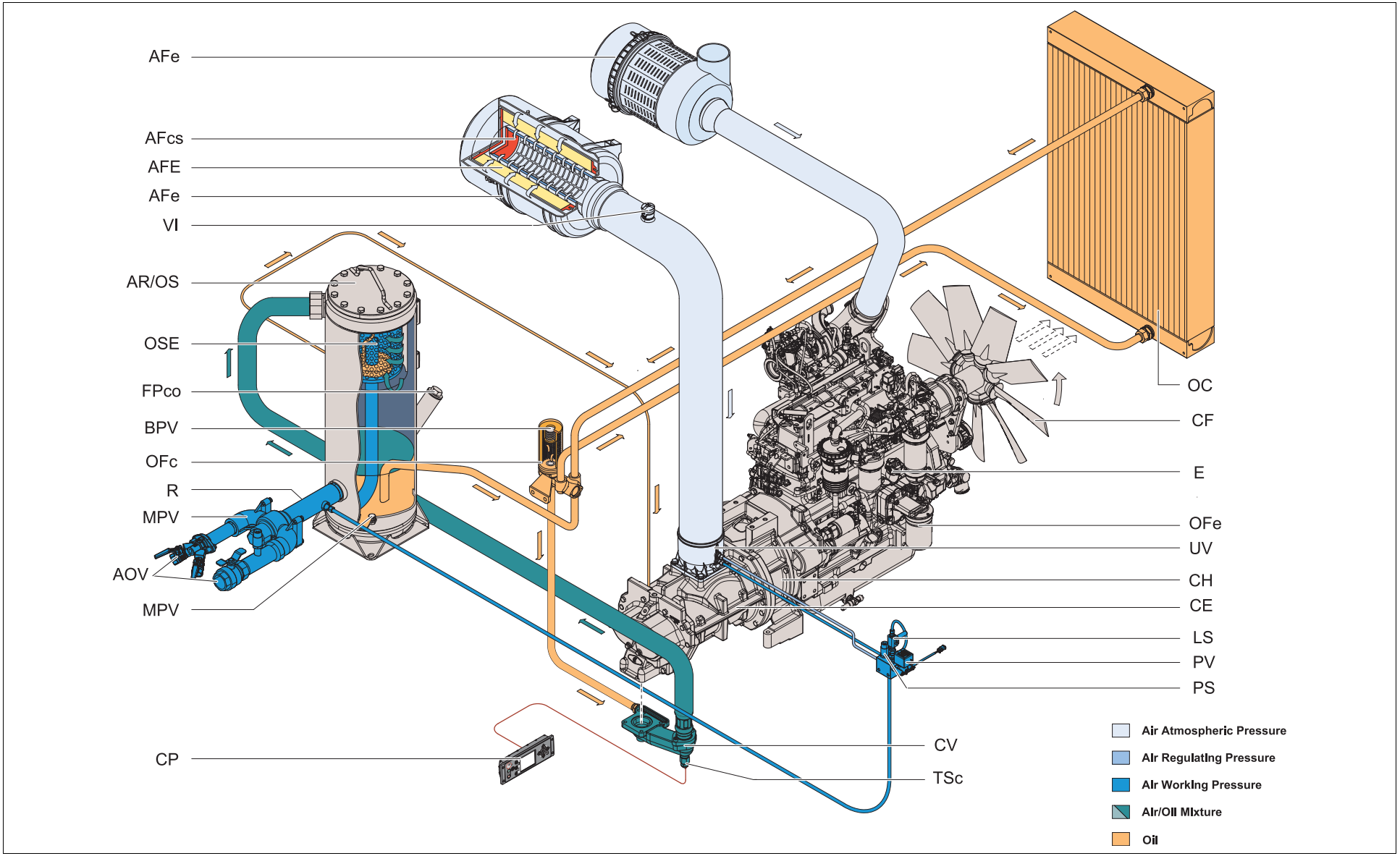
Reference	Name
A	Alternator
AFce	Air Filter (compressor element)
AFe	Air Filter (engine)
AOV	Air Outlet Valves
AR	Air Receiver
B	Battery
CE	Compressor Element
C	Cubicle
CP	Control Panel
CT	Coolant Tank
Dp	Data plate
DOC	Diesel Oxidation Catalyst
E	Engine
EP	Exhaust Pipe
ES	Emergency Stop
F	Fan
FCft	Filler Cap (fuel tank)
FCc	Filler Cap (coolant)
FFf	Fuel Filter final
FFp	Fuel Filter primary
FPco	Filler Plug (oil compressor element)
FT	Fuel Tank
IC	Intercooler
MPV	Minimum Pressure Valve
OC	Oil Cooler
OFce	Oil Filter (compressor element)
OFe	Oil Filter (engine)
OLG	Oil Level Gauge
R	Radiator
S	Starter

Reference	Name
SV	Safety Valve
SCR	Selective Catalytic Reduction
SCRcc	SCR Catalytic Converter
TB	Towbar
UV	Unloading Valve
VIe	Vaccum Indicator Engine

Overview

REGULATING SYSTEM



AIR FLOW

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

The check valve (CV) prevents blow-back of compressed air when the compressor is stopped. In the air receiver/oil separator (AR/OS), most of the oil is removed from the air/oil mixture.

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, even when the air outlet valves are open (specified in section Limitation). This ensures adequate oil injection and prevents oil consumption. The minimum pressure valve (MPV) also functions as a check valve.

The system comprises temperature sensors (TS), regulating pressure sensors (RPS) and a working pressure sensor (WPS).

OIL SYSTEM

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

Air pressure forces the oil from the air receiver/oil separator (AR/OS) through the oil cooler (OC), the oil filters (OFc) and the oil stop valve (OSV) to the compressor element (CE).

When the compressor is stopped and / or there is no pressure in the system, the oil stop valve (OSV) prevents the oil from flowing back into the compressor element.

The thermostatic by-pass valve (TBV) starts opening when the oil temperature is 70 °C (158 °F).

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 in the bottom of the oil separator element is returned to the system through a scavenging line (SL), which is provided with a flow restrictor.

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

CONTINUOUS REGULATING SYSTEM

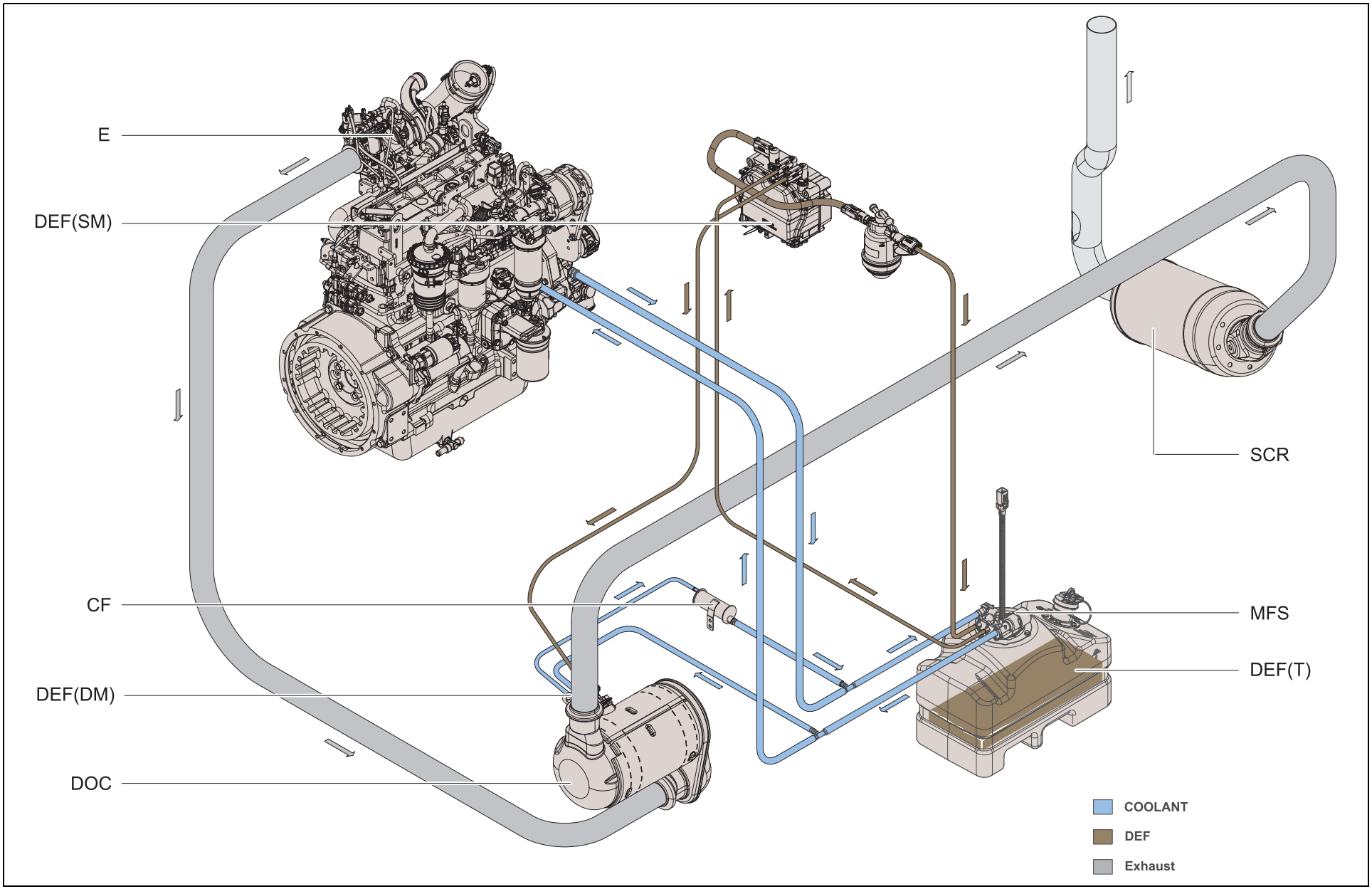
The compressor is provided with a continuous electro pneumatic regulating system. This system makes sure that the air delivery is so that the pressure in the air receiver matches the pressure set point in the controller. The air output is controlled from maximum air delivery to no air delivery by:

1. Speed control of the engine 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 engine speed in trying to get the receiver pressure equal to the pressure set point. If engine 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 cause the receiver pressure will decrease.

If the pressure in the air receiver is below the pressure set point the engine rpm will be at maximum level and regulating pressure will be minimum level. The maximum engine speed will depend on pressure set point (when flow boost = off) on receiver pressure (when flow boost = on). The working pressure is controlled by the controller and can be set at two different presets. Both these presets can be given any value between 5 and 10.7 bar (72.5 and 155 psi) (XAS 440) and between 5 and 14 bar (72.5 and 203 psi) for (XATS 400) in 0.1 bar steps.

EXHAUST AFTER TREATMENT SYSTEM



Reference	Name
CF	Coolant Filter
DEF(DM)	DEF Dosing Module
DEF(SM)	DEF Supply Module
DEF(T)	DEF Tank
DOC	Diesel Oxidation Catalyst
DRT	Decomposition Reactor tube
E	Engine
MFS	Multi Function Sensor / Heater
SCR	Selective Catalytic Reduction

EXHAUST GAS AFTERTREATMENT

To meet the demands of EPA Tier4b/EU Stage IV Emission Legislation, the engine is equipped with a diesel oxidation catalyst (DOC) and a selective catalytic reduction system (SCR).

Step 1 Exhaust Gas Recirculation

With Exhaust Gas Recirculation (EGR), part of the exhaust gases are cooled and then injected back into the engine cylinders to reduce NOx.

Exhaust gas is cooled to allow the introduction of a greater mass of recirculated gas.

The outcome is a lower peak combustion temperature.

Step 2 Diesel Oxidation Catalyst

The diesel oxidation catalyst is designed to oxidize carbon monoxide, gas phase hydrocarbons and organic fraction of diesel particulates to carbon dioxide and water.

Step 3 SCR Technology

SCR stands for an after treatment technology called Selective Catalytic Reduction.

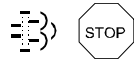
This technology requires the use of diesel exhaust fluid (AdBlue) to reduce the NOx. This technology is used to meet the new emission legislation on NOx emissions and it is the most cost effective solution to meet NOx emission standards.

Diesel exhaust fluid (AdBlue) is injected into the exhaust pipe, in front of the SCR catalyst, downstream of the engine. Heated in the exhaust it decomposes into ammonia and CO2. When the NOx reacts inside the catalyst with the ammonia, the harmful NOx

MARKINGS AND INFORMATION LABELS

	Dangerous outlet gases.
	Danger, hot surface.
	Electrocution hazard.
	Atlas copco synthetic compressor oil.
	Atlas copco PAROIL E mission green oil.
	Manual.
	Read the instruction manual before working on the battery.
	Reset fuse.
	On / off button.
	Prohibition to open air valves without connected hoses.
	Rotation direction.
	Inlet.
	Outlet.

	Compressor oil drain.
	Read the instruction manual before starting.
	Service every 24 hours.
	Warning! Part under pressure.
	Do not stand on outlet valves.
	Start-Stop indication of switch.
	Do not run the compressor with open doors.
	Lifting permitted.
	Use diesel fuel only.
4 bar (58 psi)	Tire pressure.
6 bar (87 psi)	Tire pressure.
	Fork lifting permitted.
	Don’t lift here.

	Read the instruction manual before lifting.
	Filler cap coolant.
	Read the instruction manual before topping up with coolant.
	Service point.
	Circuit breaker.
	Do not run the compressor when the baffles are not in the right position.
	Exhaust Filter Cleaning Indicator
	Exhaust Filter Indicator
	Exhaust Filter and Warning Indicator
	Exhaust Filter and Stop Indicator
	Auto Cleaning and Disabled Indicator

Operating instructions

PARKING, TOWING AND LIFTING INSTRUCTIONS

Safety precautions

The operator is expected to apply all relevant Safety precautions.

Attention

Before putting the compressor in to use, check the brake system as described in section Brake shoe adjustment.

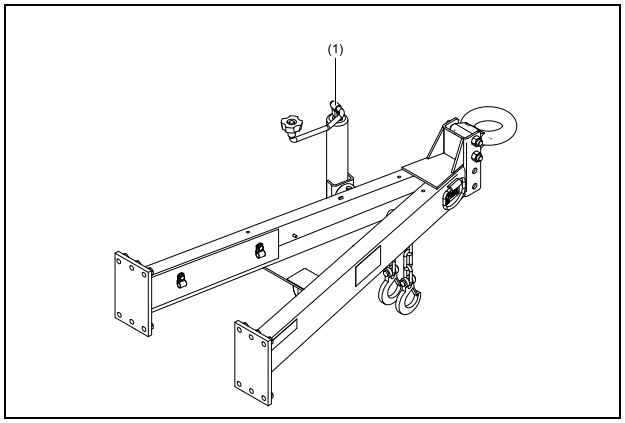
After the first 50 miles travel:

Check and retighten the wheel nuts and towbar bolts to the specified torque. See section Compressor / engine specifications.

Check the brake adjustment. See section Brake shoe adjustment.

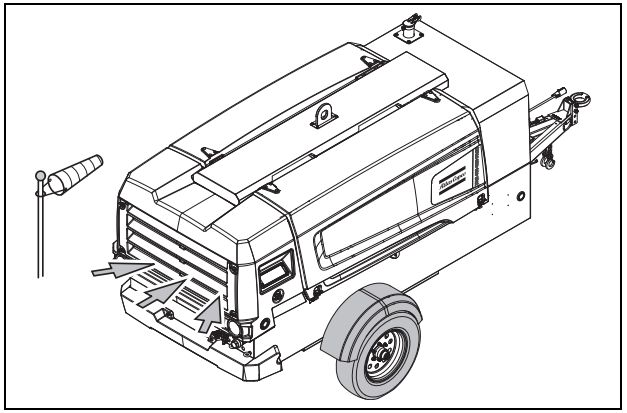
When towing, lifting or transporting the compressor in any way, the battery cable must be disconnected.

PARKING INSTRUCTIONS



Fixed towbar with jockey wheel and brakes

When parking a compressor, secure the jockey wheel (1) to support the compressor in a level position. Place the compressor as level as possible; however, 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 (available as option) in front of or behind the wheels.



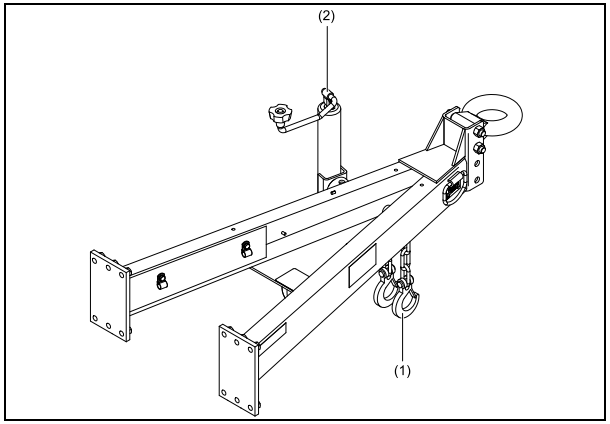
Rear-end of compressor upwind

Locate the rear-end of the compressor upwind, away from contaminated wind-streams and walls. Avoid recirculation of exhaust air from the engine. This can cause overheating and engine power decrease.

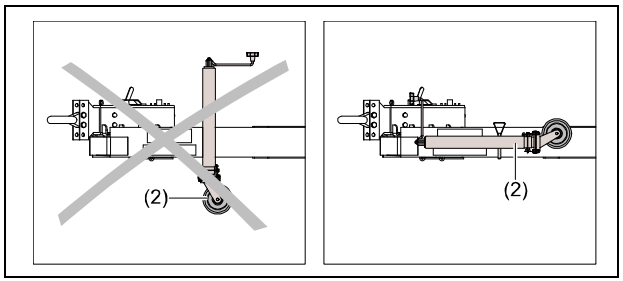
TOWING INSTRUCTIONS

Before towing the compressor, ensure that the towing equipment of the vehicle matches the towing eye or ball connector.

The towbar should be as level as possible and the compressor and towing eye end in a level position.



connect breakaway cable (1) to the vehicle.Secure jockey wheel (2) in the highest possible position. The jockey wheel is prevented from turning.

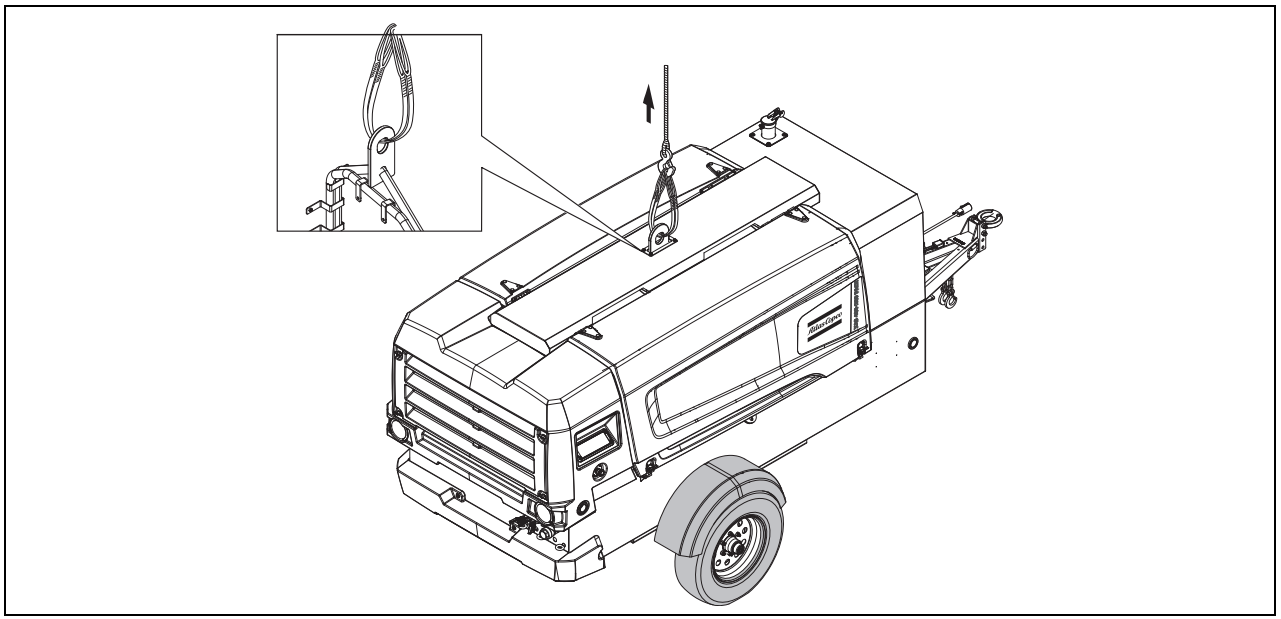


Towing position of jockey wheel

Before moving the compressor, switch it off.

Never move the compressor with air hoses connected to the air outlet valves.

LIFTING INSTRUCTIONS



1. To lift the compressor, use a lift truck or crane with sufficient capacity (weight: see indication on Design data).
2. To lift a unit, all loose or pivoting parts, e.g. doors shall first be securely fastened.
3. 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.
4. 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.
5. To lift heavy parts, a hoist of ample capacity, tested and approved according to local safety regulations, shall be used.
6. 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.
7. 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.
8. Never leave a load hanging on a hoist.
9. A hoist has to be installed in such a way that the object will be lifted perpendicular. 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.

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.

Drain any standing water from frame before lifting.

STARTING / STOPPING

Safety precautions

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

Do not switch off the circuit breaker when the control box is switched on. This will cause memory loss.

Battery switch

If the compressor is equipped with a battery switch:

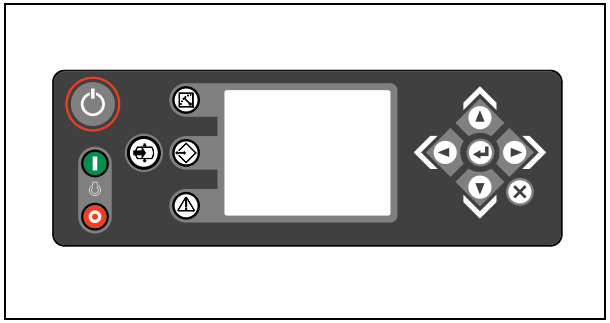
When the compressor is not in use this switch must always be in the “OFF” position.

It is not allowed to use this switch as an emergency switch or for stopping the compressor. It will cause damage in the control unit when using this switch for stopping.

Always first shut off the control unit and wait until the display is dark before switching the battery switch to position “OFF”.

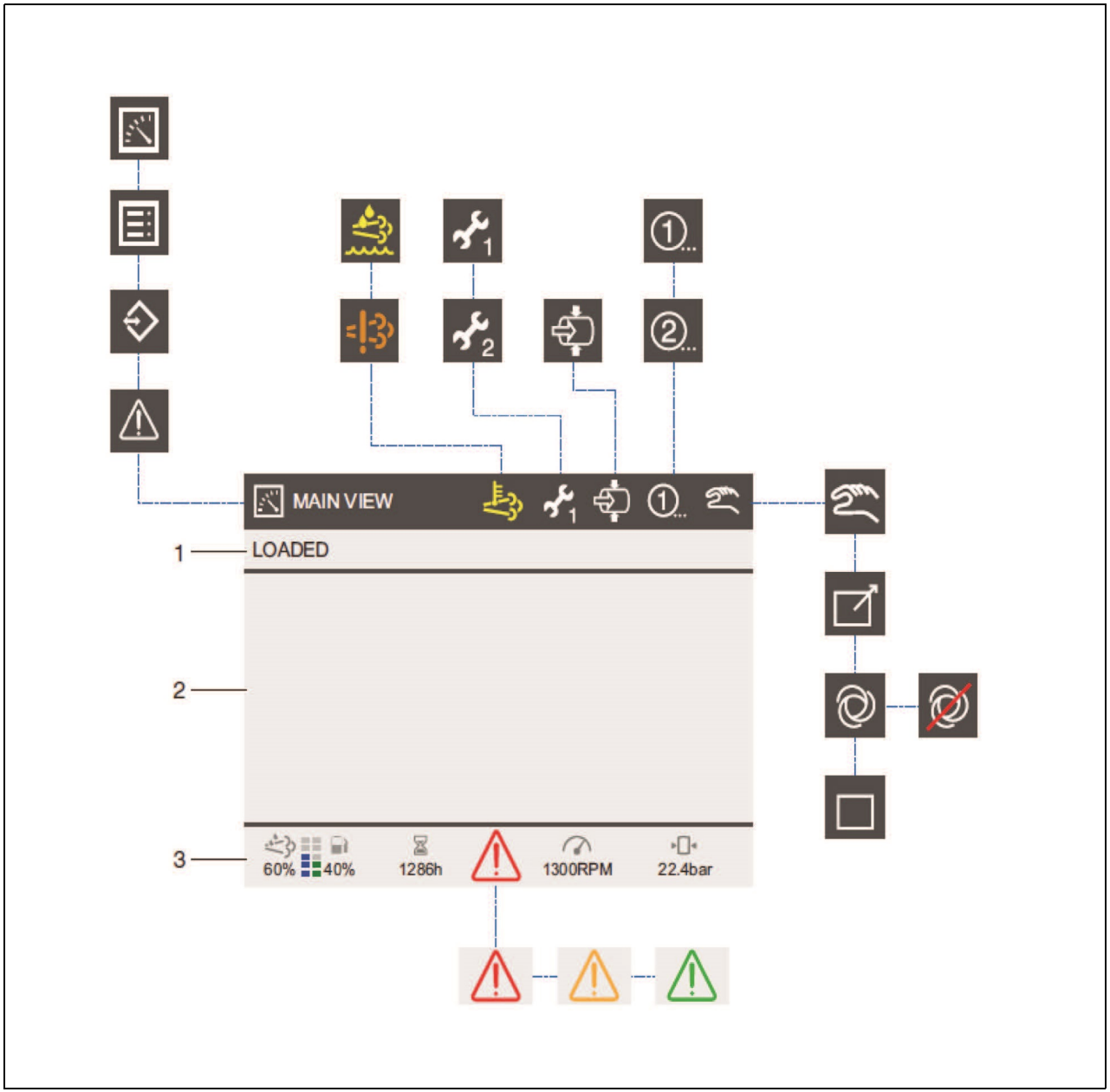
Please be aware that the (optional) preheater unit is still “live” with the battery switch in “OFF” position.

CONTROL PANEL



Reference	Name
	**START BUTTON** This button will initiate the starting sequences if the controller is in Ready To Start Sequence, or will re-enter the normal running sequence when in Cooldown Sequence.
	**STOP BUTTON** This button will initiate the cooldown/ stopping sequences if the controller is in normal running sequence.
	**LOAD BUTTON** This button will initiate the Auto Load function when the controller is in normal running sequence, but not ready to be loaded. - Initiate the loading sequences when the controller is ready to be loaded. - Initiate the not loaded sequence when the controller is running in Loaded Sequence.
	**MEASUREMENTS VIEW BUTTON** This button will enter the Measurements View when not already in the Measurements View, or when already in the Measurements View it will enter the Main View.
	**SETTINGS VIEW BUTTON** This button will enter the Settings View when not already in the Settings View, or when already in the Settings View it will enter the Main View.
	**ALARMS VIEW BUTTON** This button will enter the Alarms View when not already in the Alarms View, or when already in the Alarms View it will enter the Main View.
	**NAVIGATION BUTTONS** These buttons are used to navigate through the display menu's.
	**ENTER BUTTON** Confirms/stores the selection/change.
	**BACK BUTTON** Moves back one level or ignores the change.

OVERVIEW ICONS



Reference	Name
1	Compressor status
2	Vessel pressure indication or info text
3	Compressor info
	Main View Indication
	Measuring View Indication
	Settings View Indication
	Alarm View Indication
	(AdBlue) Low level.
	SCR PURGE NEEDED Means that the SCR needs to be regenerated. Please force SCR Regeneration.
	SCR PURGE High Exhaust System Temperature. Means that the system is being regenerated.

Reference	Name
	REGENERATION INHIBITED Diesel Particle Filter Regeneration Inhibited means that the regeneration is inhibited, even if all criteria to activate a regeneration are met.
	OVERHAUL Initial overhaul required.
	OVERHAUL Minor overhaul required.
	OVERHAUL Major overhaul required.
	AUTO LOAD This icon will be shown 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.
	PRESET Depending of which pressure (and/or flow) setting is active, the controller will show its dedicated icon.
	PRESET Depending of which pressure (and/or flow) setting is active, the controller will show its dedicated icon.

Reference	Name
	OPERATION MODE Local
	OPERATION MODE Remote
	OPERATION MODE PC control
	OPERATION MODE Automatic
	OPERATION MODE Automatic Mode is active, but the Auto Start and Auto Stop function are both inactive.
	OPERATION MODE Block Mode
	ALARM Active & not-acknowledged Shutdown Alarm.
	ALARM Active & not-acknowledged non-Shutdown alarm.
	ALARM Active & acknowledged alarm.

Reference	Name
	FUELTANK Running at internal fueltank.
	Diesel exhaust fluid (AdBlue) tank level.

AUTOMATIC FUNCTIONS

Auto Start

The compressor can be automatically started when the monitored pressure drops under the specified level with the Auto Start function.

Auto No-Load

The Auto No-Load function can be used to save fuel when there's no air demand from the application. The compressor reverts to No-Load operation when no air demand is present for a pre-configured period of time.

Auto Load

The compressor starts to deliver air as soon as it can, with the Auto Load function.

Auto Re-Load

The compressor will start loading itself as soon as there is air demand by the application with the Auto Re-Load function.

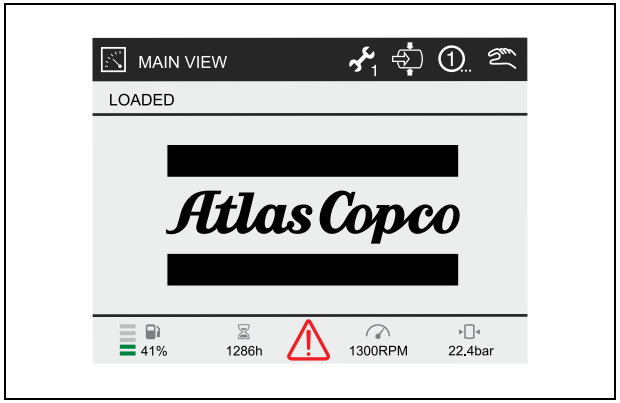
Auto Stop

This function stops the engine when no air demand is present for a pre-configured period of time. Fuel savings can be achieved by using this function.

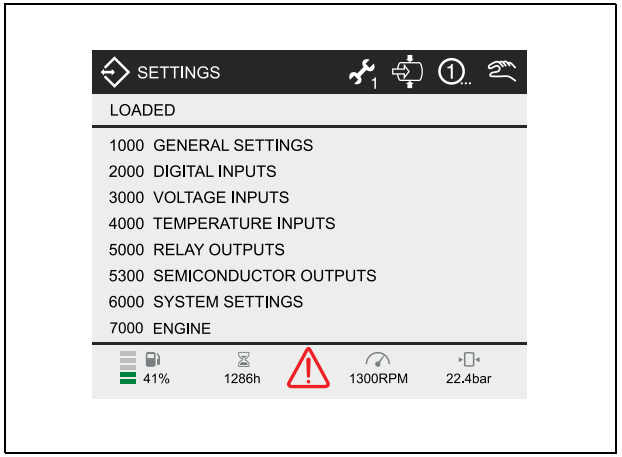
- These functions can be configured according to the needs of the application.
- These functions may require an Atlas Copco Service Key to be accessible.
- Contact Atlas Copco Technical Support for assistance in setting up a machine with Automatic Functions.

POSSIBLE VIEWS

Main View



Setup View

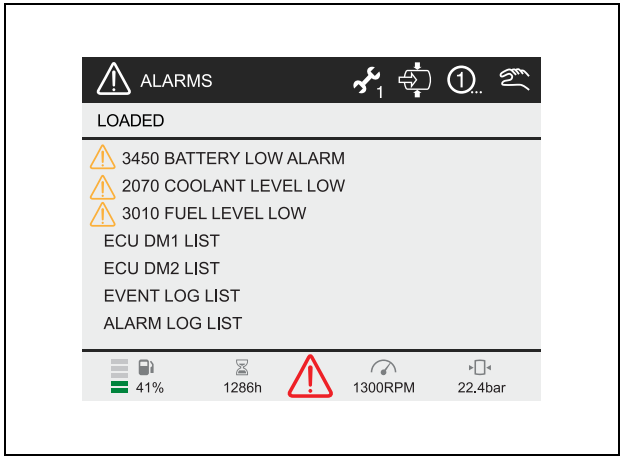


Use the Up and Down navigation buttons to scroll through the full list of settings.

Use the Enter button to enter the selected sub menu.

Use the Back button to leave the entered (sub) menu.

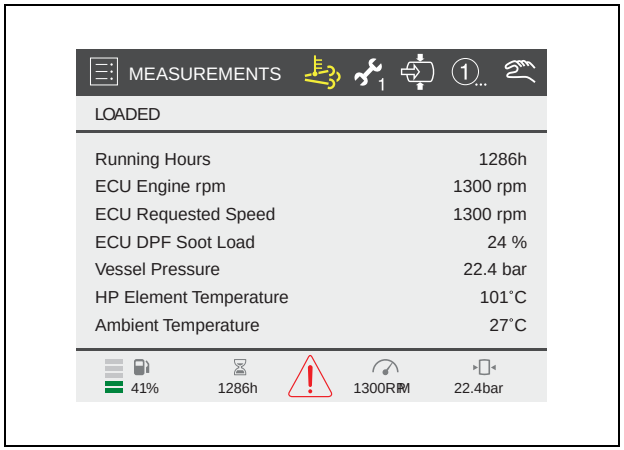
Alarm View



Use the Up and Down navigation buttons to scroll through the full list of alarms.

The DM Lists and the Log Lists can be selected and entered to access the sub list.

Measuring View



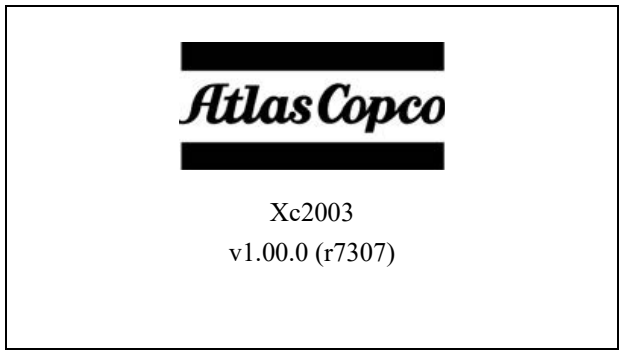
Use the Up and Down navigation buttons to scroll through the full list of measurements.

STARTING

Switch on the battery switch if so equipped.

Switch the controller on by pressing the power button.

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



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

This view will be shown for about 2 seconds, after which the display will show the Main View.

The actual vessel pressure is shown. If the measured vessel pressure is higher than 1.5 bar, the unit will not start. The vessel pressure has to be lowered by opening the blow down valve. After power up, the vessel pressure normally is low enough to proceed with the starting procedure.

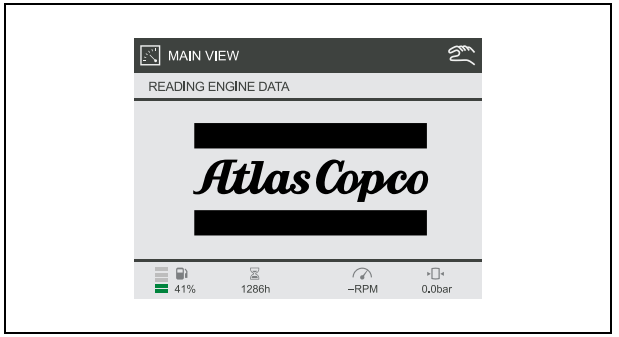
Active Buttons	
	Measurement View Button
	Settings View Button
	Alarms View Button

The display now shows

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

Active Buttons	
	Start Button (to initiate Start command)
	Measurement View Button
	Settings View Button
	Alarms View Button

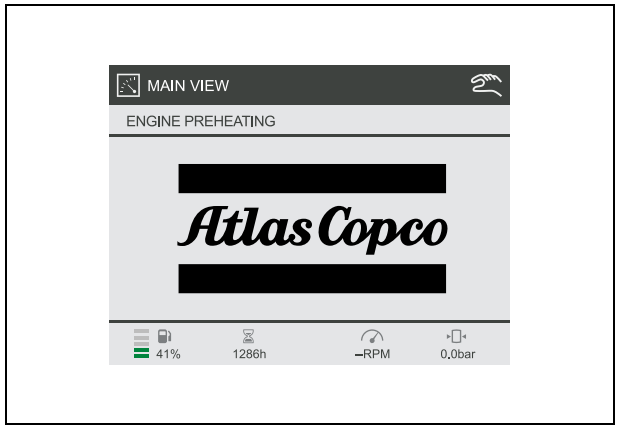
The display now shows



Press the START button to power-up the engine electronics (ECU).

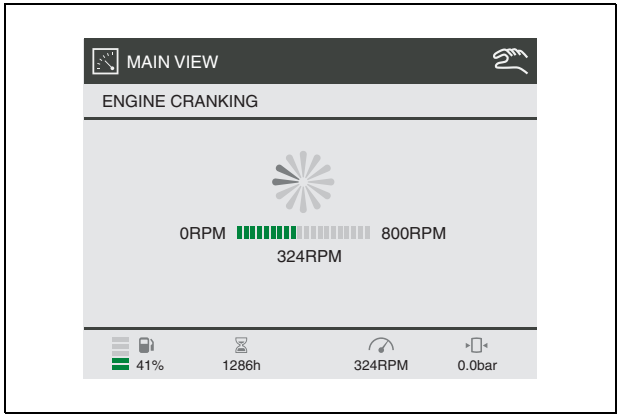
As soon as communication between compressor controller and engine controller is established, the machine will preheat according to the parameters of the engine controller.

The display now shows



Active Buttons	
	Stop Button (to cancel Start command)
	Measurement View Button
	Settings View Button
	Alarms View Button

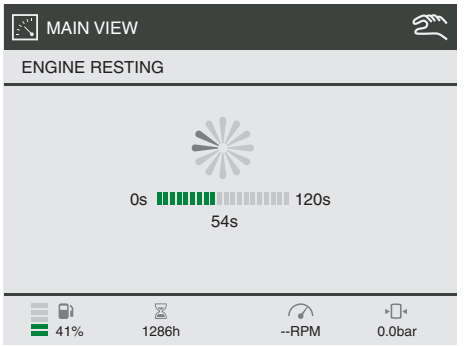
The engine starts cranking, the display shows



The engine cranks until 800 rpm is reached.

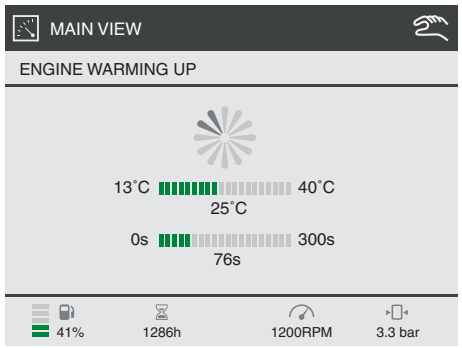
If 800 rpm is not reached within 30 seconds, the starting procedure is cancelled and the engine will rest for some time. (Resting time depends on cranking time).

The display now shows



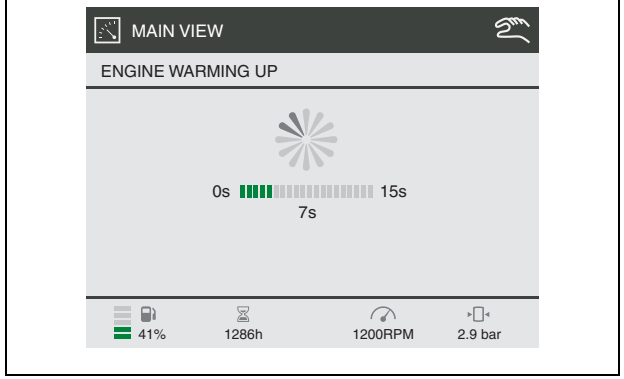
Active Buttons	
	Stop Button (to cancel Start command)
	Measurement View Button
	Settings View Button
	Alarms View Button

The engine starts running at idle speed. The display shows



The engine will run at minimum rpm, until the engine's coolant temperature reaches 40 deg C (104 deg F), with a minimum time of 15 seconds and a maximum time of 300 seconds.

The display now shows

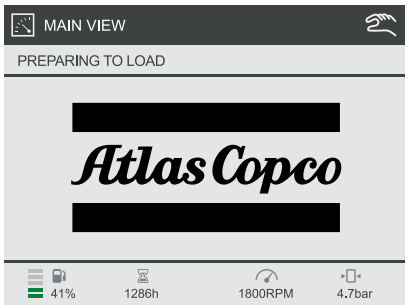


Active Buttons	
	Stop Button (to cancel Start command)
	Measurement View Button
	Settings View Button
	Alarms View Button

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

Active Buttons	
	Stop Button (to cancel Start command)
	Load Button (to initiate Automatic Load)
	Measurement View Button
	Settings View Button
	Alarms View Button

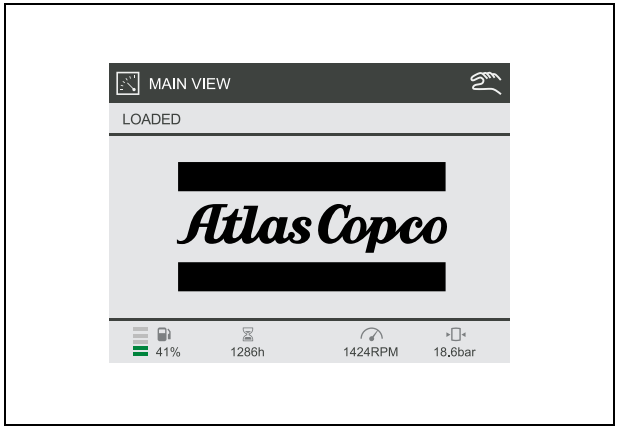
The engine will now run at maximum rpm, the display will show



The loading valve will be energized and pressure starts building up.

Active Buttons	
	Stop Button (to cancel Start command)
	Load Button (to cancel Load command)
	Measurement View Button
	Settings View Button
	Alarms View Button

During loading the following display is shown (default display)



The controller controls the speed of the engine in order to meet the requested working pressure, at the most economical fuel usage.

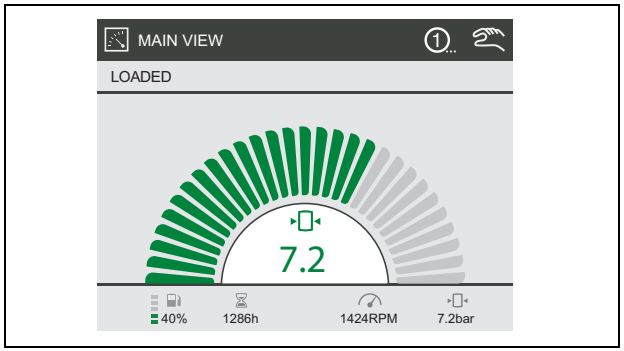
Active Buttons	
	Stop Button (to cancel Start command)
	Load Button (to cancel Load command)
	Measurement View Button
	Settings View Button
	Alarms View Button

PRESSURE SETTING

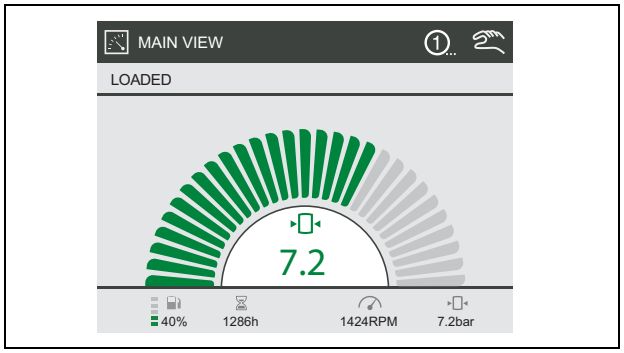
To change the pressure setting there are two possibilities.

1. Choosing between presets

The operator can choose between two preset pressures.



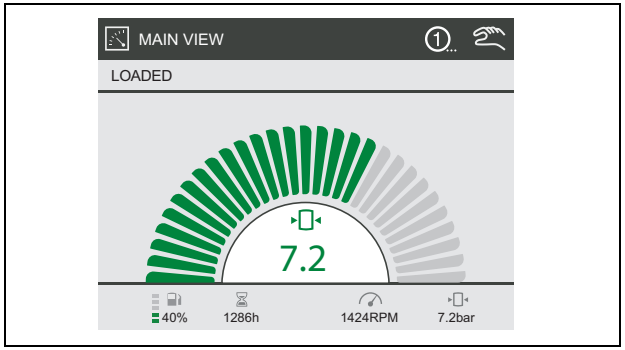
The current active preset is indicated in the top right corner of the display: 1 or 2. To switch to the other preset, go to the Main view and press the enter button for 2 seconds (the pressure set point will light up in green).



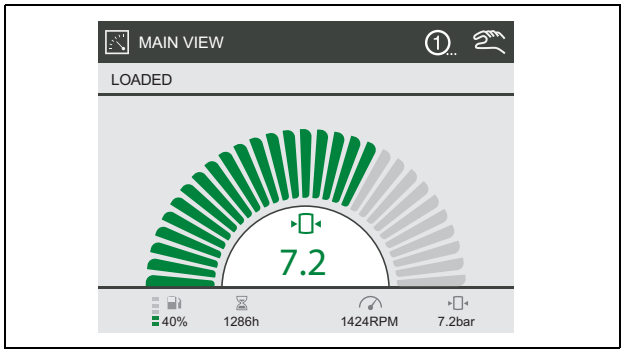
By pressing the left or the right arrow button the operator will be notified to:
"Press enter to go to other pressure setting X Y"
When enter is pressed the setting will become active.
Press the Enter again to go out of edit mode on the controller.
The active preset pressure (1 or 2) will be visible in the top right corner of the display.

2. Changing the pressure of a preset

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.



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

During operation

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

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

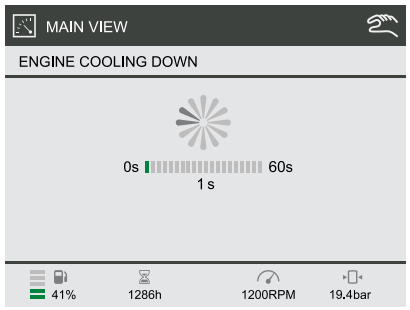
When the engine is running, the air outlet valves (ball valves) must always be put in a fully opened or fully closed position.

Regularly carry out following checks:

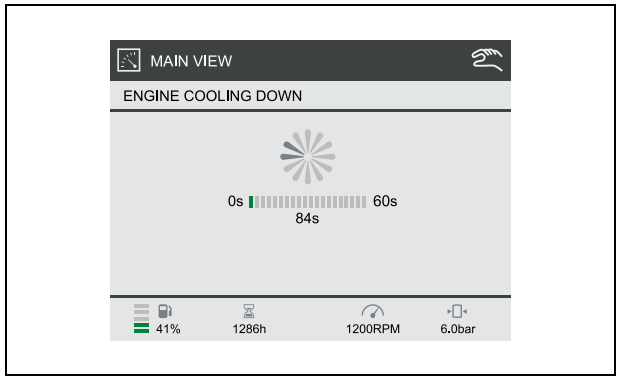
3. Ensure that the regulating valve (RV) is correctly adjusted, i.e. starts decreasing the engine speed when reaching the preset working pressure in the receiver.
4. Check the air outlet temperature of the compressor element.
5. Check the engine oil pressure, the coolant temperature and display of control box.
6. Avoid the engine running out of fuel. Nevertheless, if this happens, fill the fuel tank and prime the fuel system to speed up starting.

STOPPING

After pressing the STOP button the display will show:

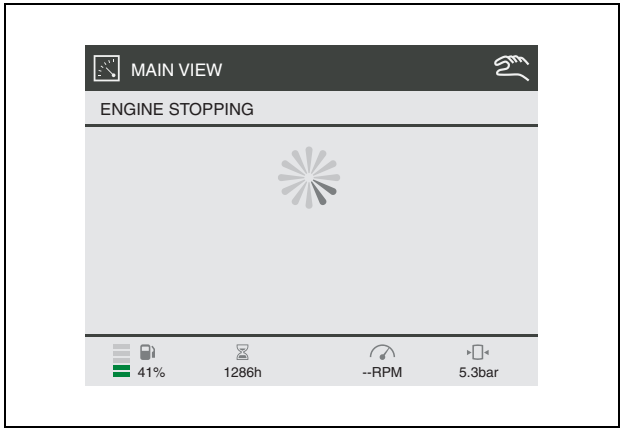


After a Stop command, or in case of a controlled stop alarm, the machine will cool down and run at minimum rpm for 1 minute before it will stop.



Active Buttons	
	Start Button (to initiate Start command)
	Measurement View Button
	Settings View Button
	Alarms View Button

After cooling down the engine will stop and the display will show

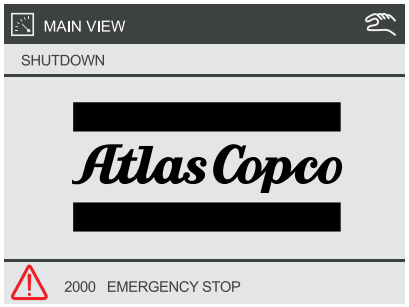


The engine is stopped, and the controller will do a double check to see if the engine is really stopped.

Active Buttons	
	Start Button (to initiate Start command)
	Measurement View Button
	Settings View Button
	Alarms View Button

SHUTDOWN

When the machine is shutdown due to a critical alarm or an emergency stop the display will show



Active Buttons	
	Measurement View Button
	Settings View Button
	Alarms View Button
	Enter Button (to acknowledge the shown alarm)

POWER OFF

Press the Power button to switch OFF the controller.

If the compressor is equipped with a battery switch:

When the compressor is not in use, this switch must always be in the “OFF” position.

It is not allowed to use this switch as an emergency switch or for stopping the compressor.

It can damage the controller or the engine’s Electronic Control Unit when using the battery switch for stopping.

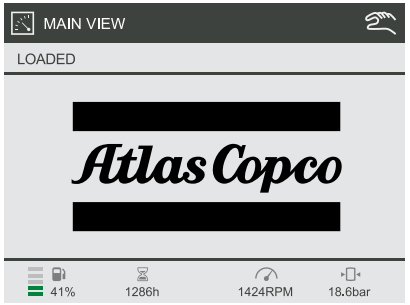
Always first shut off the controller and wait until the display is dark before switching the battery switch to position “OFF”.

DIESEL OXIDATION CATALYST

When the Diesel Particle Filter regeneration process is kept at its default ‘AUTOMATIC’ setting, then the regeneration will be performed automatically when the Soot Load exceeds 60%.

The controller display will indicate an ongoing Regeneration by showing the HEST icon (High Exhaust System Temperature):

	HEST Icon



The regeneration process will continue, until the Soot Load has become as low as possible, or until the engine is stopped.

When the regeneration process is stopped, the HEST icon will disappear from the display.

AUTOMATIC REGENERATION (DEFAULT)

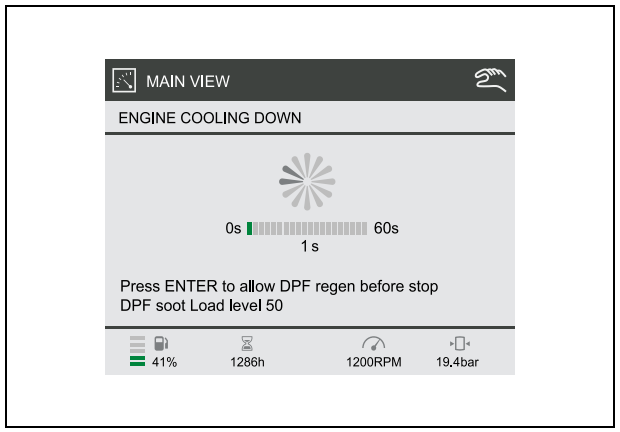
IIn specific cases, when the engine speed is constant at minimum RPM, an Regeneration can start..

This can happen in following situations:

- Warming Up
- Not Loaded
- Loaded (when running in Unload condition - minimum RPM)
- Cooldown

When an LSR is ongoing while the soot load is less than 60%, and the engine speed changes (engine is stopped, machine gets loaded, etc.), then the Regeneration process will be stopped.

If the Soot Load is high when cooling down and an SCR should start the controller will ask:



If Enter is pressed within 10 seconds then the controller will allow the regeneration to be completed before the engine is stopped.

A full SCR Purge can take up to an hour.

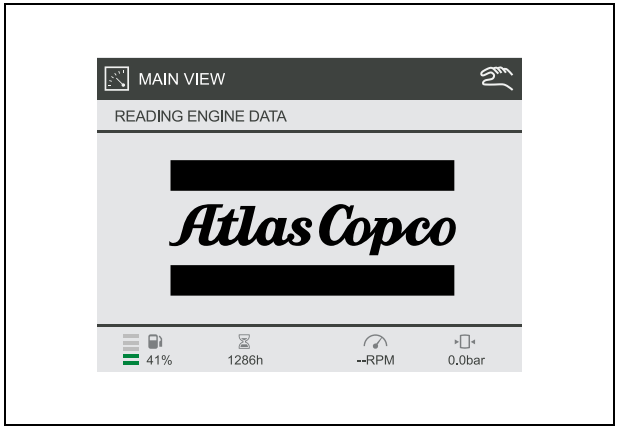
If Enter is not pressed (within 10 seconds), then the engine will be stopped after cooling down.

INHIBIT REGENERATION

When running in an environment where an elevated exhaust temperature is not allowed, it might be necessary to inhibit SCR Purge. This has to be done at Customer Service Level. Go to General settings 1000. Parameter 1142 ECU Enable - Set to "OFF". The controller has now put the SCR Purge in a FORCED OFF mode, which is Inhibit SCR Purge.

The compressor controller will communicate with the engine controller and the (RED) Inhibit SCR Purge icon will appear:

	SCR Purge Inhibited..



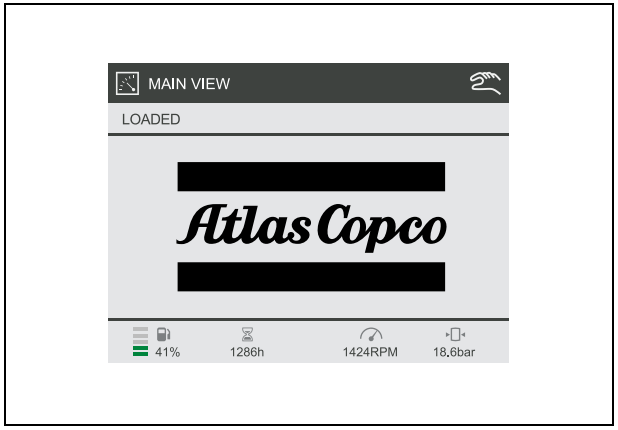
When the controller gets powered down, it will (at next power up) fall back to its default settings, meaning AUTOMATIC SCR Purge.

INCREASING SOOT LOAD

When the SCR Purge is Inhibited, or when the engine does not get sufficient possibility to automatically perform a full SCR Purge, the Soot Load will exceed the normal levels.

The controller will show the SCR Purge Needed Icon. In case of Inhibited SCR Purge, the SCR Purge Needed Icon will overwrite the DOC Inhibited Icon.

	SCR Purge needed



Required Action:

- Force SCR Purge, see paragraph FORCE SCR Purge

When the SCR Purge is started, the SCR Purge Needed icon will disappear and the HEST icon will pop-up

TURNING REGENERATION BACK TO AUTO

Machine is not running:

Power the controller down. At next power up, the SCR Purge settings will be back to default, and an Automatic SCR Purge will take place at the soonest appropriate moment.

Machine is running:

- Make sure parameter '1140 ECU
- ENABLE' is set to "ON"
- Scroll down and Enter the 'MODE' parameter
- Scroll down and Enter the 'AUTOMATIC' setting
- Press the Back button 3 times to get back to the Main view

FORCE REGENERATION

Machine is running:

- Press the Settings View Button
- Enter the '1000 GENERAL SETTINGS' menu
- Go to parameter '1130 STATIONARY REGENERATION'
- Scroll to Enable and change to "ON"
- Go to parameter '1140 ECU
- Scroll to Enable and change to "ON"

Unit will not regenerate if soot level is not high enough.

SERVICE REGENERATION

Machine is running:

- Press the Settings View Button
- Enter the '7000 ENGINE' menu
- Go to parameter '7140 SERVICE REGENERAION'
- Scroll to Enable and change to "ON"

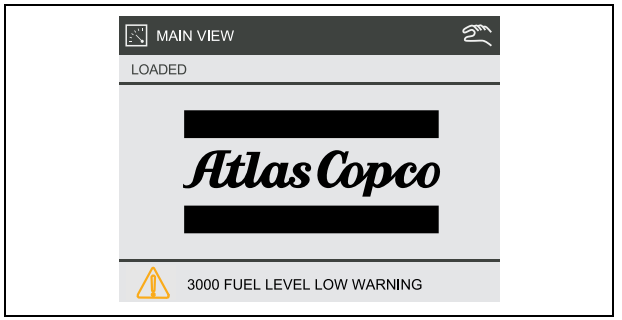
Unit will not regenerate if soot level is not high enough.

SETTINGS

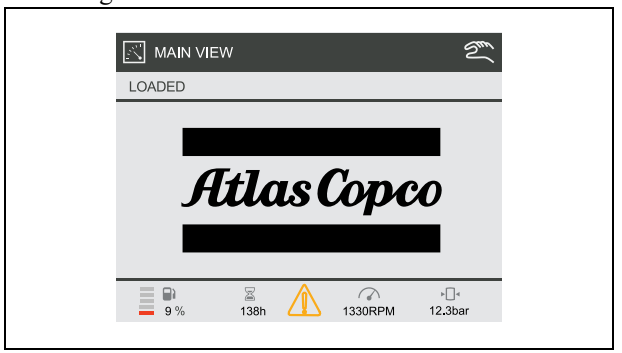
For buttons to be used see “Control Panel”

Acknowledge an Alarm

If an alarm becomes active, for example a Low Fuel Level Warning:



then this alarm can be acknowledged by pressing the ENTER button. If the fuel level is still low, the view will change to:



As soon as the fuel level is higher than the warning level, the alarm icon will automatically disappear.

As long as there is an alarm icon in the middle of the bottom part of the view, all active acknowledged / unacknowledged alarms can be seen by pressing the ALARM VIEW button

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

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 ‘Month’, scroll to the preferred month and press ENTER.

To change any other setting, the highlighted figure is editable.

Scroll up/down and press ENTER to change. Use left/right to shift between editable figures.

Now press BACK until you’re 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’
  ‘1360 FUEL FLOW 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 highlighted 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).

Go To Diagnostics

Press the SETTINGS VIEW button

- Scroll to ‘1000 GENERAL SETTINGS’
- Press ENTER
- Scroll to ‘1150 DIAGNOSTICS’
- ENTER the Diagnostics menu,
- ENTER the ‘ENABLE’ parameter
- Scroll to ‘ON’ and press ENTER.

Now the ECU will get power and one can perform ECU diagnostics (read DM1 List, DM2 List, ECU values, perform engine diagnostics, …).

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

To leave Diagnostics, press the STOP button.

- ECU warning 7009 will be active while in diagnostics.

Set the Auto Load Function

Parameters 1160 – 1180 can be configured in any order and will remain inactive until Operation Mode Command (parameter1100) is configured to 'Automatic'. Parameter 1100 must be configured last or the machine may start prematurely if this parameter is set earlier.

Press the 'Settings View button'

- Scroll to 1000 GENERAL SETTINGS
- Press 'Enter button'
- Scroll to 1160 Auto Load
- Enter the FUNCTION menu
- Scroll to Auto Load setting
- Press 'Enter button'.

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

If 'Function' is set to 'Off', both Auto Load and Auto No-Load functions are disabled.

If 'Function' is set to 'Auto Load', then only the Auto Load function is enabled. In this mode, the machine will remain loaded regardless of Operation Mode Command setting.

If 'Function' is set to 'Auto No-Load', then only the Auto No-Load function is enabled. In this mode, the loaded machine will operate loaded for the time configured in 'Timer' before reverting back to the No Load state.

If 'Function' is set to 'Auto No-Load + Reload', then both automatic loading and unloading functionalities are enabled, and the machine will start and stop as dictated by the sensor's pressure set point and timer setting.

Auto Start/Auto Stop

Parameter 1170 – Auto Start, 1180 – Auto Stop

If 'Enable' is set to 'On', the machine will attempt to start if the measured value of the selected sensor goes below the configured 'Pressure' for an elapsed time configured by 'Delay'.

When 'Enable' is set to 'On', 'Function' (parameter 1160) is automatically set to 'Auto Load'.

If you are using an external sensor to control automatic functionality, the sensor's pressure values at 0.5V and 4.5V must be specified in 13180 parameter.

If 'Function' is set to 'On', the machine engine will stop after being in Loaded Sequence for the elapsed time configured in 'Timer'.

Once desired Auto Load, Auto Start, Auto Stop and external sensor range (if applicable) is defined, finally go to parameter 1100 and set the operation mode to AUTOMATIC, as the machine may start prematurely if this parameter is set earlier.

Once set to AUTOMATIC, the Automatic operation icon appears.

If the automatic Operation Mode is active, but both Auto Start and Auto Stop are disabled, a red slash appears of the Automatic operation icon to indicate the machine will not perform automatically.

Suggested Atlas Copco transducers

Atlas Copco Model No.	Pressure (in bar)
1089957963	0 to 25
1089957964	0 to 50
1089957971	-1 to 5
1089957972	-1 to 17
1089957974	0 to 17
1089957975	0 to 35
1089957976	0 to 50

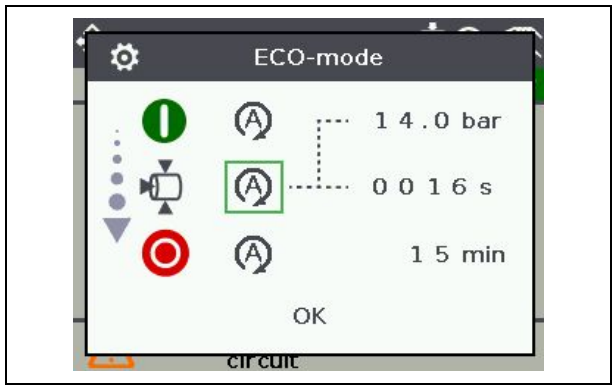
ECO MODE

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.

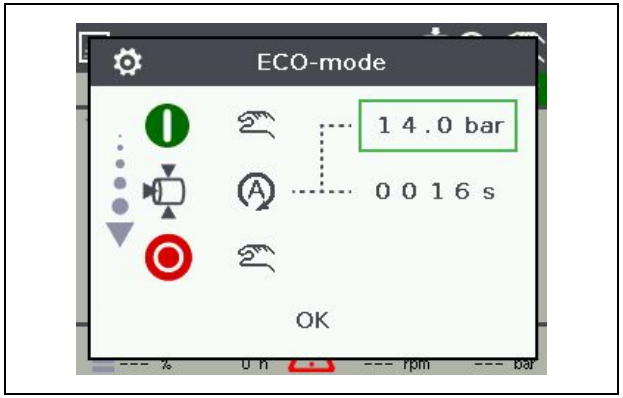
AUTO NO-LOAD / AUTO RE-LOAD

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.

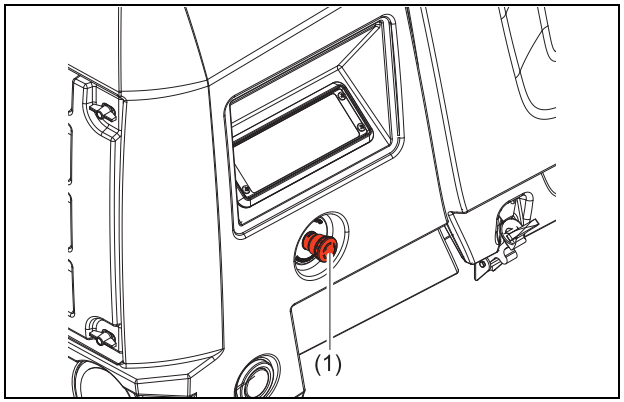
The Auto Stop must be combined (not only can be combined) with Auto Start, if you need the machine to start up again after the first stop (otherwise it remains stopped until a manual intervention).

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.

EMERGENCY STOP

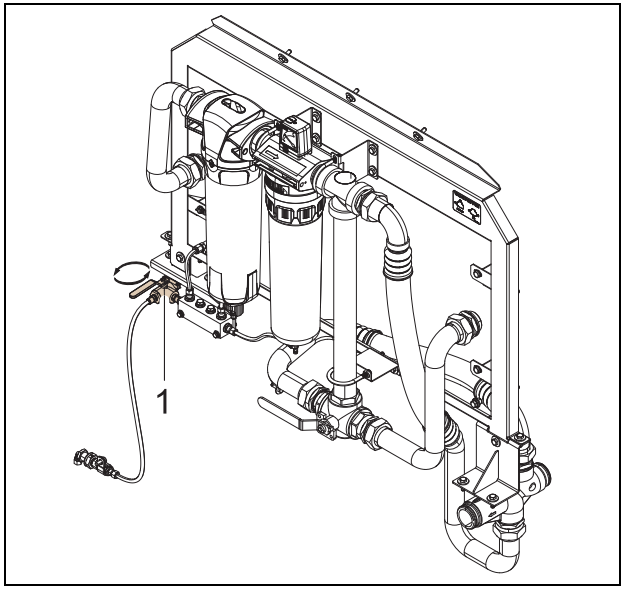


The emergency stop button is only to be used in emergency situations; not for stopping procedures.

When an emergency stop button (1) is pressed, power to all outputs is terminated, by the emergency stop itself (hardware) as well as by the software.

When the emergency stop button (1) is pressed the operator can unlock the emergency stop by turning it counter-clockwise.

CONDENSATE FLASHING



For after cooler equipped machines, the operator has the option to either drain condensate through the bottom of the frame or flash the condensate in the exhaust stream. To adjust the method of condensate disposal, rotate the condensate flash valve located at the rear of the unit attached to the condensate drain manifold block. Rotating the handle clockwise will send condensate to the drain while rotating it counter clockwise will send condensate to the exhaust for flashing.

FAULT 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	Trigger
1231	FUEL FILL CHECK	Warning	Xc
1503	INITIAL OVERHAUL REQUIRED	Warning	Xc
1522	MINOR OVERHAUL WITHIN ** H	Warning	Xc
1523	MINOR OVERHAUL WITHIN ** D	Warning	Xc
1524	MINOR OVERHAUL REQUIRED	Warning	Xc
1552	MAJOR OVERHAUL WITHIN ** H	Warning	Xc
1553	MAJOR OVERHAUL WITHIN ** D	Warning	Xc
1554	LOAD PREVENTION - FIRE RISK	Inhibit Load	Xc
1558	COMP. OIL CHANGE WITHIN ** H	Warning	Xc
1559	COMP. OIL CHANGE WITHIN ** D	Warning	Xc
2000	EMERGENCY STOP INPUT	Shutdown	Xc
2040	REMOTE EMERGENCY STOP	Shutdown	Xc
2070	COOLANT LEVEL LOW WARNING	Warning	Xc
2080	COOLANT LEVEL LOW SHUTDOWN	Shutdown	Xc
2090	∆P AIRFILTERS HIGH	Warning	Xc
2100	NO PROJECTFILE DOWNLOADED	Warning	Xc
2752	NAM OILTRONIX BYPASS CIRCUIT	Shutdown After Stop	Xc
2762	NAM OILTRONIX CLOSED CIRCUIT	Shutdown After Stop	Xc
2772	NAM AIRXPERT OPENED CIRCUIT	Shutdown	Xc
2782	NAM AIRXPERT CLOSED CIRCUIT	Shutdown	Xc
3000	FUEL LEVEL LOW WARNING	Warning	Xc
3010	FUEL LEVEL LOW SHUTDOWN	Controlled Stop	Xc
3020	FUEL LEVEL SENSOR CIRCUIT	Warning	Xc
3050	VESSEL PRESSURE HIGH WARNING	Controlled Stop	Xc
3060	VESSEL PRESSURE HIGH SHUTDOWN	Shutdown	Xc
3070	VESSEL PRESSURE SENSOR CIRCUIT	Shutdown	Xc
3120	REGULATING PRESSURE SENSOR CIRCUIT	Shutdown	Xc
3170	AIR DISCHARGE PRESSURE SENSOR CIRCUIT	Warning	Xc
3320	INLET PRESSURE SENSOR CIRCUIT	Shutdown	Xc
3450	BATTERY LOW ALARM	Indication	Xc
3460	BATTERY HIGH ALARM	Warning	Xc
3660	FIRE RISK - CHECK OILSTOPVALVE	Shutdown	Xc
3680	OSV PRESSURE SENSOR CIRCUIT	Controlled Stop	Xc

Alarm code	Alarm text	Fail class	Trigger
3720	INTERSTAGE PRESSURE SENSOR CIRCUIT	Warning	Xc
4000	L.P. ELEMENT TEMPERATURE HIGH	Warning	Xc
4010	L.P. ELEMENT TEMP. ALARM 2	Controlled Stop	Xc
4020	L.P. ELEMENT TEMP. ALARM 3	Shutdown	Xc
4040	L.P. ELEMENT TEMP. SENSOR CIRCUIT	Shutdown	Xc
4070	AMBIENT TEMPERATURE SENSOR CIRCUIT	Warning	Xc
4100	AIR DISCHARGE TEMPERATURE ALARM 1	Warning	Xc
4110	AIR DISCHARGE TEMPERATURE ALARM 2	Controlled Stop	Xc
4120	A.D. TEMPERATURE SENSOR CIRCUIT	Warning	Xc
4150	H.P. ELEMENT TEMPERATURE ALARM 1	Warning	Xc
4160	H.P. ELEMENT TEMPERATURE ALARM 2	Controlled Stop	Xc
4170	H.P. ELEMENT TEMPERATURE ALARM 3	Shutdown	Xc
4190	H.P. ELEMENT TEMP. SENSOR CIRCUIT	Shutdown	Xc
4220	AFTERCOOLER AIR TEMP SENSOR CIRCUIT	Warning	Xc
4230	AFTERCOOLER FREEZING DANGER	Indication	Xc
5200	AIR SHUT OFF	Shutdown	Xc
6190	CHARGE MONITORING FAIL	Indication	Xc
6327	START FAILURE	Shutdown	Xc
6329	STARTER SPEED TOO LOW	Shutdown	Xc
6388	VESSEL PRESSURE TOO LOW TO LOAD	Indication	Xc
6426	UNINTENTIONAL RUN	Shutdown	Xc
6427	RUN FAILURE	Shutdown	Xc
6428	STOP FAILURE	Shutdown	Xc
6708	DRAINING 1	Warning	Xc
6709	DRAINING 2	Warning	Xc
6749	OILTRONIX FUNCTIONALITY DISABLED	Warning	Xc
6760	OILTRONIX COUPLING FAILURE	Shutdown After Stop	Xc
6769	OILTRONIX COMPONENT FAILURE	Shutdown	Xc
6981	INLET VALVE POS. FAILURE	Shutdown	Xc
7002	ECU COMMUNICATION	Shutdown	Xc
7007	ECU RED LAMP	Shutdown	ECU
7008	ECU AMBER LAMP	Warning	ECU
7009	ECU PROTECT LAMP	Warning	ECU
7010	ECU ENGINE SPEED TOO LOW	Shutdown	Xc
7020	ECU ENGINE SPEED ALARM 2	Shutdown	Xc
7030	ECU ENGINE COOLANT TEMP. ALARM	Controlled Stop	Xc
7050	ECU ENGINE AIR INLET TEMP. ALARM 1	Controlled Stop	Xc

Alarm code	Alarm text	Fail class	Trigger
7100	ECU SOOT LOAD HIGH	Warning	Xc
7110	PLEASE FORCE REGENERATION !	Inhibit Load	Xc
7120	LOAD PREVENTION - HIGH SOOT LOAD	Controlled Stop	Xc
7130	SOOT LOAD TOO HIGH - CALL ATLAS COPCO	Warning	Xc
7222	COMBO COMMUNICATION FAILURE	Warning	Xc
7223	COMBO PA SENSOR WARNING	Warning	Xc
7224	COMBO RHA SENSOR WARNING	Warning	Xc
7225	COMBO TA SENSOR WARNING	Warning	Xc

Details of ECU triggered alarms can be monitored via the ECU DM1 LIST menu

In case of ECU AMBER LAMP or ECU PROTECT LAMP:
Only possible when engine is running or if Diagnostics Mode is active.
Access the ECU DM1 LIST menu via Alarm View.

In case of ECU RED LAMP:
Do NOT acknowledge the ECU RED LAMP alarm.
DM1 alarms are automatically copied into the Alarm View, and can be read there.

For all ECU triggered alarms, the respective SPN code is shown in the ECU DM1 LIST
A full list of supported SPN codes is provided by the engine manufacturer.

For following alarms, the Xc controller also shows full text next to the SPN code:
ECU - FUEL FILTER PRESSURE
ECU - INTERCOOLER TEMPERATURE
ECU - FUEL PRESSURE
ECU - FUEL FILTER PRESSURE
ECU - WATER IN FUEL
ECU - OIL LEVEL
ECU - OIL FILTER PRESSURE
ECU - OIL PRESSURE
ECU - TURBO BOOST PRESSURE
ECU - TURBO OIL PRESSURE
ECU - INTAKE MANIFOLD TEMPERATURE
ECU - AIR INLET PRESSURE
ECU - COOLANT TEMPERATURE
ECU - COOLANT LEVEL
ECU - SUPPLY VOLTAGE
ECU - AMBIENT AIR TEMPERATURE
ECU - AIR INLET TEMPERATURE
ECU - FUEL TEMPERATURE
ECU - OIL TEMPERATURE
ECU - ENGINE SPEED
ECU - INJECTOR 1
ECU - INJECTOR 2
ECU - INJECTOR 3
ECU - INJECTOR 4
ECU - INJECTOR 5
ECU - INJECTOR 6
ECU - INJECTOR 7
ECU - INJECTOR 8
ECU - SOOT LOAD

Maintenance

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 approval in writing.

SERVICE PAKS

A Service Pak is a collection of parts to be used for a specific maintenance task, e.g. after 50, after 500 and after 1000 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 Parts List (ASL).

Use of service paks

Service Paks include all genuine parts needed for normal maintenance of both compressor and engine.

Service Paks minimize downtime and keep your maintenance budget low.

Order Service Paks at your local Atlas copco dealer.

SERVICE KITS

A service kit is a collection of parts to fit a specific repair or rebuilding task.

It guarantees that all necessary parts are replaced at the same time which improves the uptime of the unit.

The order numbers of the Service Kits are listed in the Atlas copco Parts List (ASL).

☞ **Contact Atlas copco.**

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 going to be stored without running from time to time, protective measures must be taken.**

⚠ **Unauthorised modifications can result in injuries or machine damage.**

⚠ **Always keep the machine tidy to prevent fire hazard.**

☞ **Poor maintenance can void any warranty claims.**

QR CODE

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

X-Air 375-150 / XAS 400-150 PACE / XAS 400-200 PACE

PREVENTIVE MAINTENANCE SCHEDULE

The schedule contains a summary of the maintenance instructions. Read the respective section before taking maintenance measures.

When servicing, replace all disengaged packings, e.g. gaskets, O-rings, washers.

For engine maintenance & Exhaust filters refer to Engine Operation Manual.The maintenance schedule has to be seen as a guideline for compressors operating in a dusty environment typical to compressor applications. Maintenance schedule can be adapted depending on application, environment and quality of maintenance.

MAINTENANCE SCHEDULE

To determine the maintenance intervals, use service hours, or calendar time, whichever occurs first.					
Service hours		**500 hrs**	**1000 hrs**	**2000 hrs**	**3000 hrs**
Calendarial	**Daily**	**Every 6 months**	**Yearly**	**Every 2years**	**Every 3 years**
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 on administration costs and are offered at reduced price, compared to the loose components. Refer to the parts list for more information on the contents of the service kits.					
Check engine oil level	x				
Check compressor oil level	x				
Check coolant level	x				
Drain water from fuel filter	x				
Empty Air filter vaccuator valve	x				
Check electrolyte level and terminals of battery		x	x		
Check tyre pressure	x				
Check for leaks in air-, oil- or fuel system (2)		x	x		
Clean oil cooler (1)		x	x		
Clean radiator (1)		x	x		
Clean intercooler (1)		x	x		
Check torque of wheel nuts		x	x		
Check and adjust brake system (if installed)		x	x		
Test safety valve (8)			x		
Grease door hinges		x	x		
Grease towing eye shaft or ball coupling and its shaft		x	x		
Check rubber flexibles (2)			x		
Check shut down switches			x		
Replace separator element (11)			x		
Check / adjust fan V-belts (3) (10)		x	x		

(to be continued on page 51)

Maintenance schedule (continuation of page 50)		**500 hrs**	**1000 hrs**	**2000 hrs**	**3000 hrs**
	Daily	**Every 6 months**	**Yearly**	**Every 2years**	**Every 3 years**
Clean fuel tank			x		
Replace compressor oil (1) (12)			x		
Replace compressor oil filter (6)			x		
Analyse coolant (5) (9)		x			
Replace air filter element (1)		x	x		
Replace engine oil (3) (4)		x	x		
Replace engine oil filter (3)		x	x		
Replace primary fuel filter (7)		x	x		
Replace fuel prefilter (3) (7)		x	x		
Clean oil stop valve			x		
Check and adjust engine inlet and outlet valves (3)				x	
Clean flow restrictor in oil scavenge line			x		
Inspection by Atlas copco Service Technician			x		
Replace DEF filter (3)					x

Notes:

1. More frequently when operating in a dusty environment.
2. Replace all rubber flexible each 6 years, according to DIN 20066.
3. Refer to the engine operation manual.
4. 500 hours only valid when using PAROIL E mission Green.
5. Check coolant every year. Change coolant every 5 years.
6. Use Atlas copco oil filters, with by-pass valve, as specified in the parts list.
7. Replace the fuel filters regularly. Gummed or clogged filters mean fuel starvation and reduced engine performance. The quality of the fuel determines the frequency of renewal.
8. See section **Safety valve**.
9. The following part numbers can be ordered from Atlas copco to check on inhibitors and freezing point:

- 2913 0028 00 refractometer
- 2913 0029 00 pH meter.

10. Replace V-belt after 3000 operating hours.
11. Replace the element when the pressure drop exceeds 0.8 bar (11.6 psi).
12. see section oil specification.

Keep the bolts of the housing, the lifting beam, towbar and axles securely tightened. For torque values see section Technical specifications.

See Engine operators manual for information regarding the Selective catalytic reductions maintenance & service.

OIL SPECIFICATIONS

It is strongly recommended to use Atlas Copco branded lubrication oils for both compressor and engine.

Only use synthetic compressor oil.

High-quality, mineral, hydraulic or synthesized hydrocarbon oil with rust and oxidation inhibitors anti-foam and anti-wear properties is recommended.
The viscosity grade should correspond to the ambient temperature and ISO 3448.

Never mix synthetic with mineral oil.

Remark:

When changing from mineral to synthetic oil (or the other way around), you will need to do an extra rinse:

After a complete change over to synthetic oil, run the unit for a few minutes to allow proper and complete circulation of the synthetic oil.

Then drain the synthetic oil again and fill again with new synthetic oil. To set correct oil levels, follow the normal instructions.

PAROIL from Atlas Copco is the ONLY oil tested and approved for use in all engines built into Atlas Copco compressors and generators.

Extensive laboratory and field endurance tests on Atlas Copco equipment have proven PAROIL to match all lubrication demands in varied conditions. It meets stringent quality control specifications to ensure your equipment will run smoothly and reliably.

The quality lubricant additives in PAROIL allow for extended oil change intervals without any loss in performance or longevity.

PAROIL provides wear protection under extreme conditions. Powerful oxidation resistance, high chemical stability and rust- inhibiting additives help reduce corrosion, even within engines left idle for extended periods.

PAROIL contains high quality anti-oxidants to control deposits, sludge and contaminants that tend to build up under very high temperatures. PAROIL's detergent additives keep sludge forming particles in a fine suspension, instead of allowing them to clog your filter and accumulate in the valve/rocker cover area.

PAROIL releases excess heat efficiently, whilst maintaining excellent bore-polish protection to limit oil consumption.

PAROIL has an excellent Total Base Number (TBN) retention and more alkalinity to control acid formation.

PAROIL prevents Soot build-up.

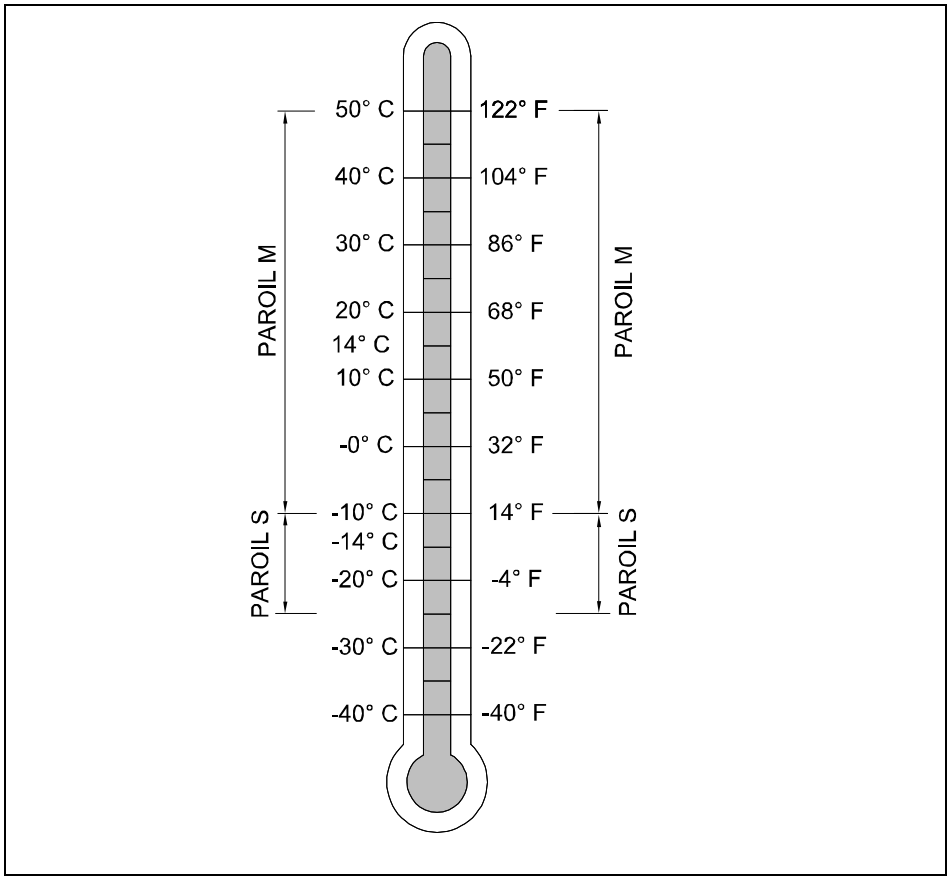
PAROIL is optimized for the latest low emission EURO -3 & -2, EPA TIER II & III engines running on low sulphur diesel for lower oil and fuel consumption.

PAROIL E xtra is a Synthetic ultra high performance diesel engine oil with a high viscosity- index. Atlas Copco PAROIL E xtra is designed to provide excellent lubrication from start-up at temperatures as low as -25°C (-13°F).

PAROIL E Mission Green is a mineral based high performance diesel engine oil with a high viscosity- index. Atlas Copco PAROIL E Mission Green is designed to provide a high level of performance and protection under 'standard' ambient conditions from -10°C (14°F) onward.

PAROIL E xtra and PAROIL E Mission Green are low SAPS oil. These oils are to be used in Tier 4I / Stage IIIB engines in order to provide the full performance and life of the engine and after-treatment systems.

COMPRESSOR OIL



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

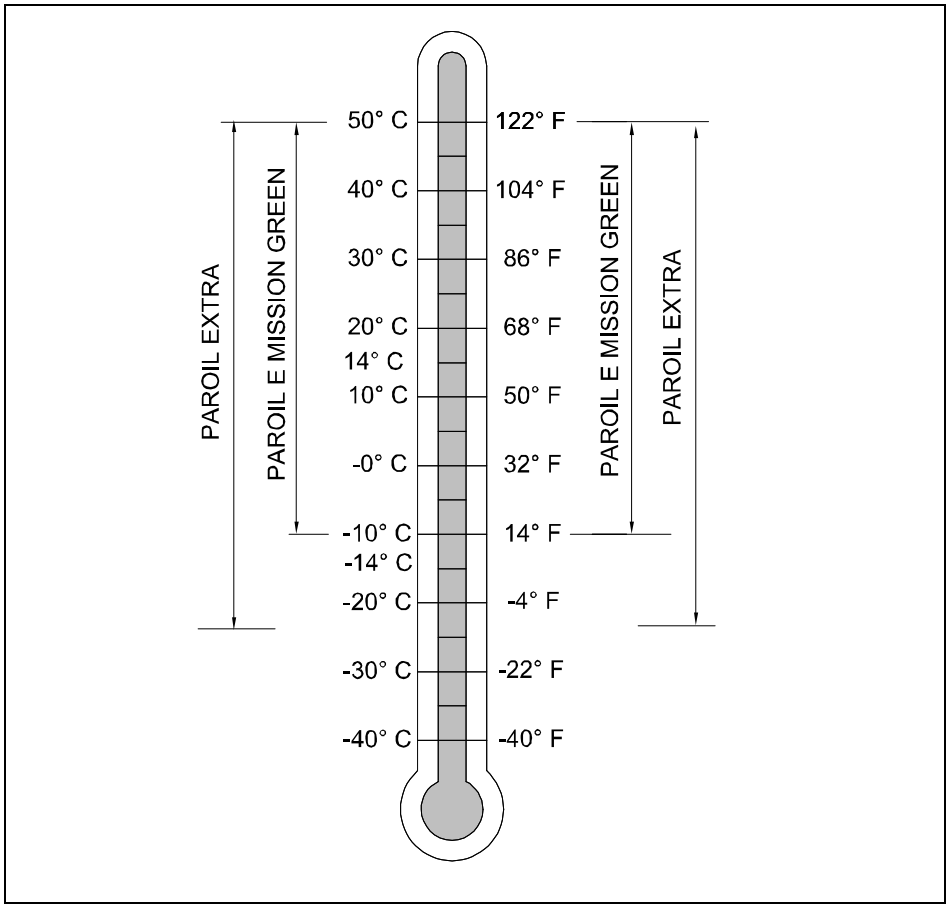
Synthetic compressor oil PAROIL S - XATS 400

	Liter	US gal	Order number
can	5	1.3	1630 0160 00
can	20	5	1630 0161 00
barrel	210	55	1630 0162 00
barrel	1000	264	1630 0163 00

Mineral compressor oil PAROIL M XTREME- XAS 440

	Liter	US gal	Order number
can	5	1.3	1615 5958 00
can	20	5	1615 5959 00
barrel	210	55	1615 5960 00

ENGINE OIL



Choose your engine oil based on the ambient temperatures in the actual operating area.

Synthetic Engine oil PAROIL E xtra

	Liter	US gal	Order number
can	5	1.3	1630 0135 01
can	20	5.3	1630 0136 01

Mineral Engine oil PAROIL E Mission Green

	Liter	US gal	Order number
can	5	1.3	1630 0471 00
can	20	5.3	1630 0472 00
barrel	210	55.2	1630 0473 00

OIL LEVEL CHECK

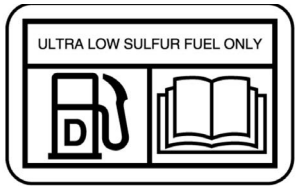
CHECK ENGINE OIL LEVEL

Also consult the Engine Operation Manual for the oil specifications, viscosity recommendations and oil change intervals.

For intervals, see .

Check engine oil level in accordance with the instructions in the Engine Operation Manual and if necessary, top up with oil.

DIESEL FUEL RECOMMENDATIONS



Ultra Low Sulphur Diesel (ULSD) fuel 0.0015 percent (≤15 ppm (mg/kg)) sulphur is required by regulation for use in engines certified by regulation for use in engines certified to non road Tier 4 standards (U.S. EPA Tier 4 certified) and that are equipped with exhaust after-treatment systems.

European ULSD 0.0010 percent (≤10ppm (mg/kg)) sulphur fuel is required by regulation for use in engines certified to European non road Stage IIIB and newer standards and are equipped with exhaust after-treatment systems.

Misfueling with fuels of higher sulphur level can have the following negative effects:

- Shorten the time interval between after treatment device service intervals (cause the need for more frequent service intervals).
- Adversely impact the performance and life of after treatment devices (cause loss of performance).
- Reduce regeneration intervals of after treatment devices.
- Reduce engine efficiency and durability.
- Increase the wear.
- Increase the corrosion.
- Increase the deposits.
- Lower fuel economy.
- Shorten the time period between oil drain intervals (more frequent oil drain intervals).
- Increase overall operating costs.
- Failures that result from the use of improper fuels will not be covered by warranty.

DIESEL EXHAUST FLUID (ADBLUE)

General information

For diesel engines that are equipped with SCR equipment, meeting the mandated exhaust emissions levels requires the use of diesel exhaust fluid (AdBlue).

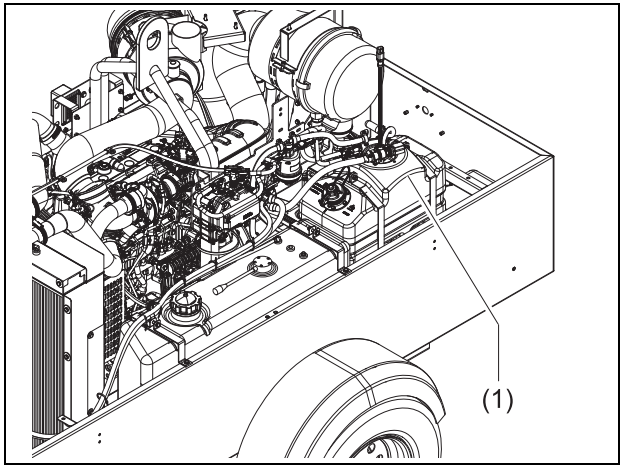
Diesel exhaust fluid (AdBlue) is available commercially, and its manufacture is regulated by the American Petroleum Institute (API).

For engines and machines with diesel exhaust fluid (AdBlue)/SCR equipment used in the U.S., the use of API certified diesel exhaust fluid is required.

Use of fluids that are not recommended by Atlas Copco can result in numerous problems including damage to the equipment.

As diesel exhaust fluid (AdBlue) is very corrosive, you need to thoroughly clean up any spilled diesel exhaust fluid (AdBlue).

FILLING UP DIESEL EXHAUST FLUID (ADBLUE)



1. Open the door on the right-hand side and fill the tank (1) with diesel exhaust fluid (AdBlue).
2. When you refill with diesel exhaust fluid (AdBlue), there is no need to wear protective clothing. However, we recommend that you wear gloves to prevent irritation to sensitive skin.

Do not use old diesel or oil containers to transfer diesel exhaust fluid (AdBlue) into the tank. Any non-dedicated equipment can lead to contamination.

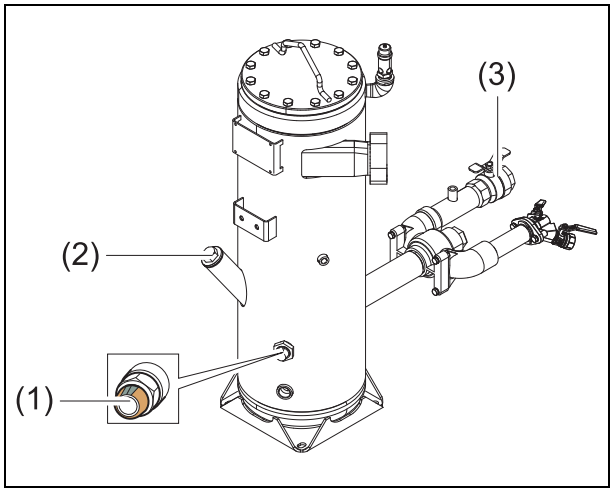
Even very small quantities of fuel/oil/ lubricant can damage your SCR system.

Do not replace diesel exhaust fluid (AdBlue) by a water/urea solution. Water or urea solution cause easily identifiable damage, including a buildup of calcium deposits from the minerals found in water and urea solution. Gradual degrading and clogging of the SCR system will result in costly replacement parts, reducing efficiency and lost time. These repairs will not be covered by warranty if it can be detected that the damage was caused by water, or urea solution.

If diesel exhaust fluid (AdBlue) is accidentally filled into the diesel tank or diesel into the diesel exhaust fluid (AdBlue) tank, do not start the engine! It s essential that you drain the tank with the unit still in its original position. If the engine is started, even just briefly:

- **The fluid will enter the wrong system, and this can have expensive consequences in the long and short term.**
- **Diesel exhaust fluid (AdBlue) is not compatible with some metals and materials, so it will slowly degrade the fuel system's pipework and components.**
- **Diesel will poison the catalyst which is expensive to replace (unwarrantable damage), resulting in downtime and maintenance bills.**

CHECK COMPRESSOR OIL LEVEL



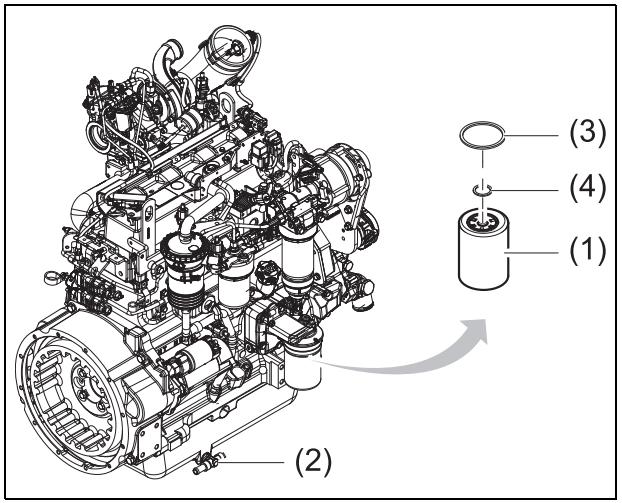
With the compressor standing horizontal, check the level of the compressor oil.

The pointer of the oil level gauge (1) must register in the upper extremity of the green range. Add oil if necessary.

Before removing the oil filler plug (2), ensure that the pressure is released by opening an air outlet valve (3).

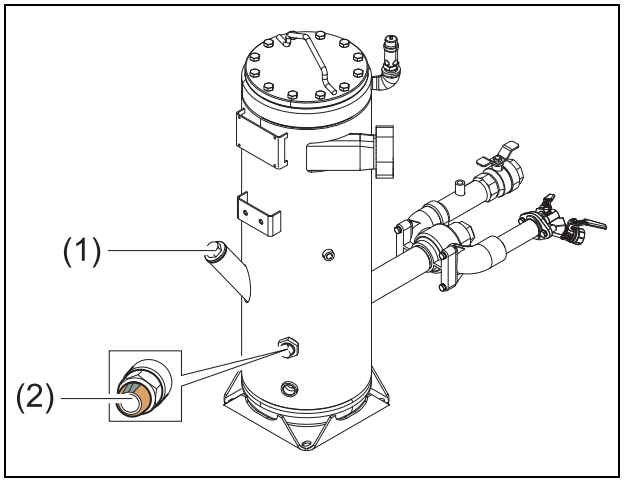
OIL AND OIL FILTER CHANGE

ENGINE OIL AND OIL FILTER CHANGE



1. Run engine approximately 5 minutes to warm up oil. Shut engine off.
2. Remove oil pan drain plug (2).
3. Drain crankcase oil from engine while warm.
4. Turn filter element (1) using a suitable filter wrench to remove. Discard oil filter element.
5. Apply clean engine oil to the new filter at the inner (4) and outer (3) seals and to filter threads.
6. Wipe both sealing surfaces of the header with a clean rag. Ensure notches in dust seal are properly installed in the slots in the housing. Replace dust seal if damaged.
7. Install and tighten oil filter by hand until firmly against dust seal DO NOT apply an extra 3/4 to 11/ 4 turn after gasket contact as done with standard filters.
8. Tighten drain plug to specifications.

TOPPING UP THE COMPRESSOR OIL



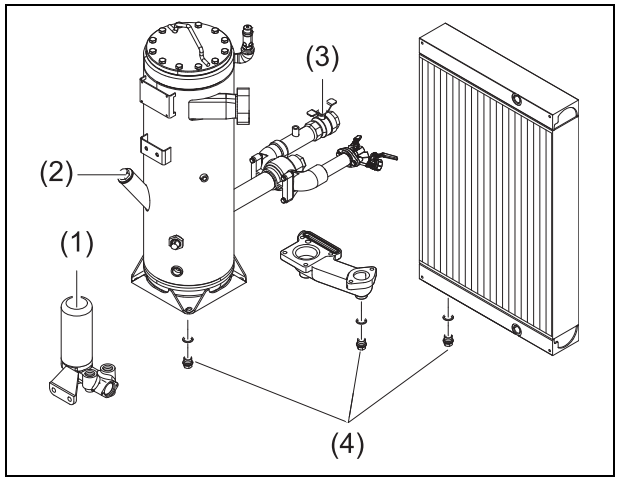
1. Stop the compressor. Wait a few minutes until the pressure is released through the automatic blow-down valve. Make sure that all pressure is released by loosening the filler plug (1) one turn.
2. Wait a few minutes until the oil level is constant.
3. Remove the filler plug (1) and top up with oil until the pointer of the oil level gauge (2) is in the upper part of the green area.
4. Reinstall and tighten the filler plug (1).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 Preventive maintenance schedule).

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.



1. Run the compressor until warm. Close the outlet valve(s) (3) and stop the compressor. Wait until the pressure is released through the automatic blow-down valve. Unscrew the oil filler plug (2) 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 all relevant drain plugs (4). Catch the oil in a drain pan. Unscrew the filler plug (2) to speed up draining. After draining, reposition and tighten the drain plugs (4).
3. Remove the oil filters (1), e.g. by means of a special tool. Catch the oil in a drain pan.
4. Clean the filter seat on the manifold, taking care that no dirt drops into the system. Oil the gasket of the new filter element. Screw it into place until the gasket contacts its seat, then tighten one half turn only.
5. Fill the air receiver until the pointer of the oil level gauge is in the upper part of the green area. Be sure that no dirt gets into the system. Reinstall and tighten the filler plug.
6. Start the compressor and let it run unloaded for a few minutes.
7. Stop the compressor, wait a few minutes and top up with oil until the pointer of the oil level gauge is in the upper part of the green area.

Never add more oil. Overfilling results in oil consumption.

COMPRESSOR OIL FLUSHING PROCEDURE

Not respecting compressor oil changing intervals in accordance with the maintenance schedule, can lead to serious problems, including fire hazard! The manufacturer does not accept any liability for damage arising from not following the maintenance schedule or not using genuine parts.

To avoid problems when changing over to a new type of oil (see table) a special Compressor Oil Flushing Procedure has to be followed. The table is only valid when the replaced oil has not exceeded its lifetime. For more information consult Atlas Copco Service dept.

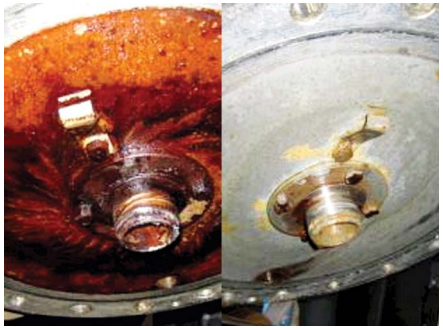
Aged oil can be recognized best by using an oil sampling analysis program. Indicators for aged oil are strong smell, or contamination such as sludge and varnish inside the oil vessel and oil stop valve or a brownish colour of the oil.

Whenever aged oil is discovered, eg. when changing the oil separator, contact Atlas Copco Service dept. to have your compressor cleaned and flushed.

1. First thoroughly drain the system when the oil is warm, leaving as little oil in the system as possible, especially in dead areas, if possible blow out remaining oil by pressurising the oil system. Check the instruction manual for detailed description.
2. Remove the compressor oil filter(s).
3. Open the oil vessel and remove the oil separator element.

Instructions on replacing the oil separator element are available from Atlas Copco Service dept.

4. Check the interior of the oil vessel (see pictures). If varnish deposits are discovered, contact Atlas Copco Service dept. and do not continue.
5. Put in a new oil separator, screw on new compressor oil filter(s) and close the oil vessel according to the instructions.
6. Fill the oil vessel with the minimum amount of replacement oil, run the compressor under light load conditions for 30 minutes.
7. Thoroughly drain the system when the oil is warm, leaving as little oil in the system as possible, especially in dead areas, if possible blow out remaining oil by pressurising the oil.
8. Fill the system with the final oil charge.
9. Run the compressor under light load conditions for 15 minutes and check for leakage.
10. Check the oil level and top up if necessary.
11. Collect all waste lubricant used during the flushing process and dispose of it in accordance with the applicable procedures for managing waste lubricant.



Vessel cover contaminated — clean

Vessel contaminated — clean

	PAROIL S	PAROIL S xtreme
PAROIL S	draining *	draining
PAROIL S xtreme	draining	draining *

- When changing over to the same oil within the oil changing interval, draining is sufficient

COOLANT SPECIFICATIONS

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

The system may be under pressure. Remove the cap slowly and only when coolant is at ambient temperature. A sudden release of pressure from a heated cooling system can result in personal injury from the splash of hot coolant.

It is strongly recommended to use Atlas Copco branded coolant.

The use of the correct coolant is important for proper heat transfer and protection of liquid-cooled engines. Coolants used in these engines must be mixtures of good quality water (distilled or de-ionised), special coolant additives and anti-freeze, if required. Coolant that is not to manufacturer's specification will result in mechanical damage of the engine.

The freezing point of the coolant must be lower than the freezing point that can occur in the area. The difference must be at least 5 °C (9 °F). If the coolant freezes, it may crack the cylinder block, radiator or coolant pump.

Consult the engine's operation manual and follow the manufacturer's directions.

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

PARCOOL GREEN

PARCOOL Green is the only coolant that has been tested and approved by all manufacturers of engines currently used in Atlas Copco compressors and generators.

Atlas Copco's PARCOOL Green extended life coolant is the new range of organic coolants purpose-designed to meet the needs of modern engines. PARCOOL Green can help prevent leaks caused by corrosion. PARCOOL Green is also fully compatible with all sealants and gasket types developed to join different materials used within an engine.

PARCOOL Green is a ready to use Ethylene Glycol based coolant, premixed in an optimum 50/50 dilution ratio, for antifreeze protection guaranteed to -37°C (-34.6°F).

Because PARCOOL Green inhibits corrosion, deposit formation is minimized. This effectively eliminates flow restriction problems through the engine coolant ducts and the radiator, minimizing the risk of engine overheating and possible failure.

It reduces water pump seal wear and has excellent stability when subjected to sustained high operating temperatures.

Because PARCOOL Green inhibits corrosion, deposit formation is minimized. This effectively eliminates flow restriction problems through the engine coolant ducts and the radiator, minimizing the risk of engine overheating and possible failure.

It reduces water pump seal wear and has excellent stability when subjected to sustained high operating temperatures.

PARCOOL Green is free of nitride and amines to protect your health and the environment. Longer service life reduces the amount of coolant produced and disposal requirements, which limits environmental impact.

PARCOOL GREEN

	Liter	US gal	Order number
can	5	1.3	1630 0134 01
can	20	5.3	1630 0134 06
barrel	210	55.2	1630 0134 07

To ensure protection against corrosion, cavitation and formation of deposits, the concentration of the additives in the coolant must be kept to certain limits, as stated by the manufacturer's guidelines. Topping up the coolant with water only, changes the concentration and is therefore not allowed.

Liquid-cooled engines are factory-filled with this type of coolant mixture.

HANDLING PARCOOL GREEN

PARCOOL Green should be stored at ambient temperatures, while periods of exposure to temperatures above 35 °C (95 °F) should be minimized. PARCOOL Green can be stored for a minimum of 5 years in unopened containers without any effect on the product quality of performance.

PARCOOL Green is compatible with most other coolants based on ethylene glycol, but you only get the benefits of 5 years protection when its used on its own. Exclusive use of PARCOOL EG is recommended for optimum corrosion protection and sludge control.

For simple density-measuring of Ethylene Glycol and Propylene Glycol in general the standard available 'density' measuring devices are used to measure the concentration of EG. In case a device is used to measure EG, no PG can be measured afterwards as a result of the difference in the density. More specific measurements can be done by the use of a refractometer. This device can measure both EG and PG. A mix of both products will be show unreliable results!

Mixed EG coolants with identical glycol type can be measured by use of a refractometer as well as the 'density' system. The mixed coolants will be considered as one product.

The use of distilled water is recommended. If you have exceptionally soft water it would be acceptable, as well. Basically, the engine metals are going to corrode to some extent no matter what water you use, and hard water will encourage the resulting metal salts to precipitate.

PARCOOL Green comes as a pre-mixed coolant to safeguard the quality of the complete product.

It is recommended that topping up of the cooling system is always done with PARCOOL Green.

COOLANT CHECK

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

The system may be under pressure. Remove the cap slowly and only when coolant is at ambient temperature. A sudden release of pressure from a heated cooling system can result in personal injury from the splash of hot coolant.

In order to guarantee the lifetime and quality of the product, thus optimising engine protection, regular coolant-condition-analysis is recommended.

The quality of the product can be determined by three parameters:

Visual check

- Verify the appearance of the coolant with regard to its colour and make sure that no loose particles are floating around.

pH measurement

- Check the pH value of the coolant using a pH-measuring device.
- The pH-meter can be ordered from Atlas Copco with part number 2913 0029 00.
- Typical value for EG = 8.6.
- If the pH-level is below 7 or above 9.5, the coolant should be replaced.

Glycol concentration measurement

- To optimise the unique engine protection features of the PARCOOL Green, the concentration of the Glycol in the water should always be above 33 vol.%.
- Mixtures exceeding a 68 vol.% mix ratio in water are not recommended, as this will lead to high engine operating temperatures.
- A refractometer can be ordered from Atlas Copco with part number 2913 0028 00.

In case of a mix of different coolant products this type of measuring might provide incorrect values.

TOPPING UP/REPLACING COOLANT

- Verify whether the engine cooling system is in a good condition (no leaks, clean,...).
- Check the condition of the coolant.
- If the condition of the coolant is no longer up to standard, the complete coolant should be replaced (see section **Replacing the coolant**).
- Always top-up with PARCOOL Green Concentrate / PARCOOL Green.
- Topping up the coolant with water only, changes the concentration of additives and is therefore not allowed.

REPLACING THE COOLANT

Drain

- Completely drain the entire cooling system.
- Used coolant must be disposed or recycled in accordance with laws and local regulations.

Flush

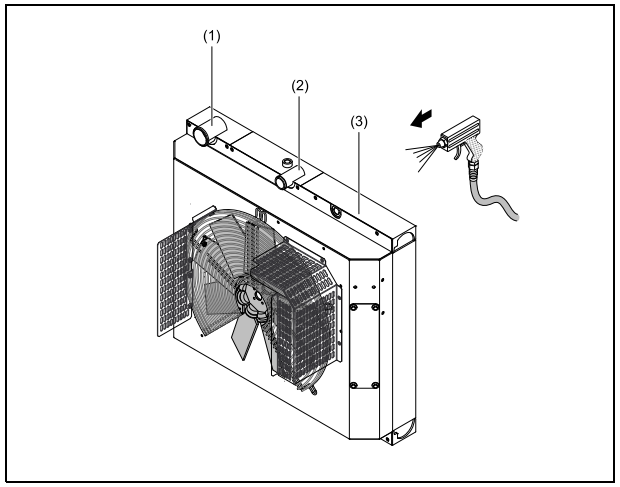
- Flush twice with clean water. Used coolant must be disposed or recycled in accordance with laws and local regulations.
- It is recommended to let the unit drain overnight.
- It should be clearly understood that the risk for contamination is reduced in case of proper cleaning.
- In case a certain content of 'other' coolant remains in the system, the coolant with the lowest properties influences the quality of the 'mixed' coolant.

Fill

- To assure proper operation and the release of trapped air, run the engine until normal engine operation temperature is reached. Turn off the engine and allow to cool.
- From the Atlas copco Instruction book, determine the amount of PARCOOL Green required.
- Mix concentrate and water before filling.
- Fill with a maximum rate of 10 l/min (0.35 cu.ft/min).
- Recheck coolant level and add coolant mixture if necessary.

Caution: do not top off when the engine is hot.

CLEANING COOLERS



Keep the Air Cooler (1), radiator (2) & Oil Cooler (3) clean to maintain the cooling efficiency.

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

Clean by air jet in the direction of the arrow.

Steam cleaning in combination with a cleansing agent may be applied (do not use jet at max. power).

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

Close the service door(s).

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

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

BATTERY CARE

Before handling batteries, read the relevant safety precautions and act accordingly.

If the battery is still dry, it must be activated as described in section Activating a dry-charged battery.

The battery must be in operation within 2 months from being activated; if not, it needs to be recharged first.

ELECTROLYTE

Read the safety instructions carefully.

Electrolyte in batteries is a sulphuric acid solution in distilled water.

The solution must be made up before being introduced into the battery.

Always pour the sulphuric acid carefully into the distilled water; never pour the water into the acid.

ACTIVATING A DRY-CHARGED BATTERY

- Take out the battery.
- Battery and electrolyte must be at equal temperature above 10 °C (50 °F).
- Remove cover and/or plug from each cell.
- Fill each cell with electrolyte until the level reaches the mark on the battery. If there is no mark on the battery, the level must be above the plates for at least 10 mm (0.4 in) to 15 mm (0.6 in).
- Rock the battery a few times so that possible air bubbles can escape; wait 10 minutes and check the level in each cell once more; if required, add electrolyte.
- Refit plugs and/or cover.
- Place the battery in the compressor.

RECHARGING A BATTERY

Before and after charging a battery, always check the electrolyte level in each cell; if required, top up with distilled water only. When charging batteries, each cell must be open, i.e. plugs and/or cover removed.

Use a commercial automatic battery charger according to its manufacturer's instructions.

Apply with preference the slow charging method and adjust the charge current according to the following rule of thumb:

Battery capacity in Ah divided by 20 gives safe charging current in Amp.

MAKE-UP DISTILLED WATER

The amount of water evaporating from batteries is largely dependant on the operating conditions, i.e. temperatures, number of starts, running time between start and stop, etc...

If a battery starts to need excessive make-up water, this points to overcharging. Most common causes are high temperatures or a too high voltage regulator setting.

If a battery does not need any make-up water at all over a considerable time of operation, an undercharged battery condition may be caused by poor cable connections or a too low voltage regulator setting.

PERIODIC BATTERY SERVICE

• Keep the battery clean and dry.

• Keep the electrolyte level at 10 to 15 mm above the plates or at the indicated level; top up with distilled water only. Never overfill, as this will cause poor performance and excessive corrosion.

• Record the quantity of distilled water added.

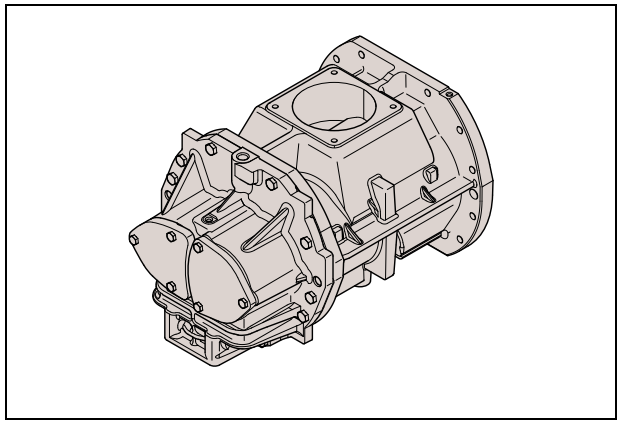
• Keep the terminals and clamps tight, clean, and lightly covered in petroleum jelly.

• Carry out periodic condition tests. Test intervals of 1 to 3 months, depending on climate and operating conditions, are recommended.

• If doubtful conditions are noticed or malfunctions arise, keep in mind that the cause may be in the electrical system, e.g.loose terminals, voltage regulator maladjusted, poor performance of compressor, etc.

COMPRESSOR ELEMENT OVERHAUL

When a compressor element is due for overhaul, it needs to be done by Atlas copco. This guarantees the use of genuine parts and correct tools with care and precision.



Adjustments and serving procedures

AIR FILTER ENGINE/COMPRESSOR

The Atlas copco air filters are specially designed for the application. The use of non-genuine air filters may lead to severe damage of engine and/or compressor element.

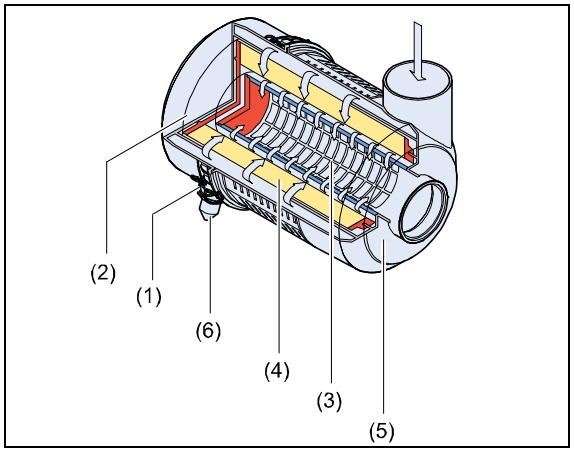
Never run the compressor without air filter element.

SERVICING

Always select the service point according to the vacuum indicator or display message. A regular inspection or cleaning as it is sometimes practiced in the field is more likely to be damaging than useful as there is a risk that the element will be damaged and dust will gain access to the engine.

Atlas copco always recommends exchanging rather than cleaning the filter element in order to avoid damage and ensure maximum engine protection.

MAIN PARTS



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

CLEANING THE DUST TRAP

Remove dust daily.

To remove dust from the dust trap pinch the vacuator valve (6) several times.

CLEANING INSTRUCTIONS FILTER ELEMENT

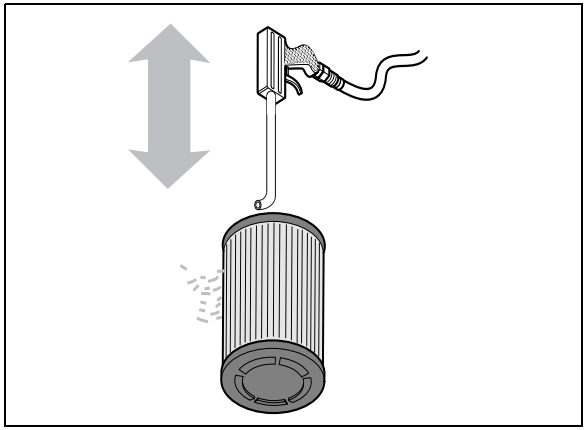
If element cleaning can not be avoided, care should be taken that the filter element (4) is not washed out. Please note that engine damage can cause considerable costs, which makes the cost of a new filter element seem insignificant.

Safety cartridges (3) can not be cleaned but must be exchanged.

Please note that a cleaned element will never match the service life and performance of a new element.

Take the element from the air filter housing (5) (see section **Replacing the air filter element**).

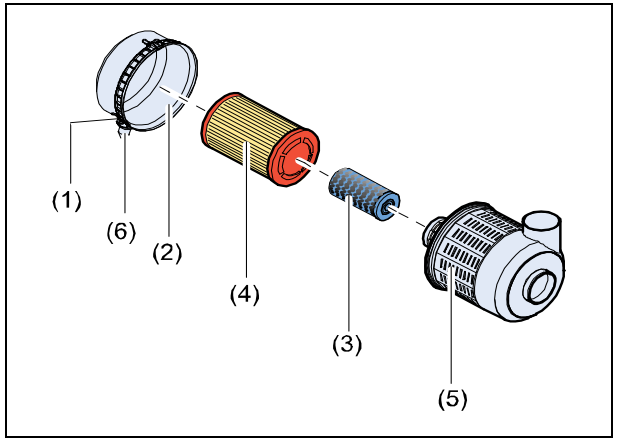
In order to clean, position a pipe with an end bent by approx. 90° on the end of a compressed-air pistol. The pipe must be long enough to reach the bottom of the filter element. Carefully blow out the filter element with dry compressed air (max. 5 bar (72.5 psi)) from the inside to the outside until there is no more development of dust. The end of the pipe must not touch the element.



Next carefully examine the element for possible damage. Never beat or knock the element as this will damage it and there will be a danger of damage to the engine.

Carefully clean the inside of the housing and put the element in the housing (see section **Replacing the air filter element**).

REPLACING THE AIR FILTER ELEMENT



New elements must also be inspected for tears or punctures before installation.

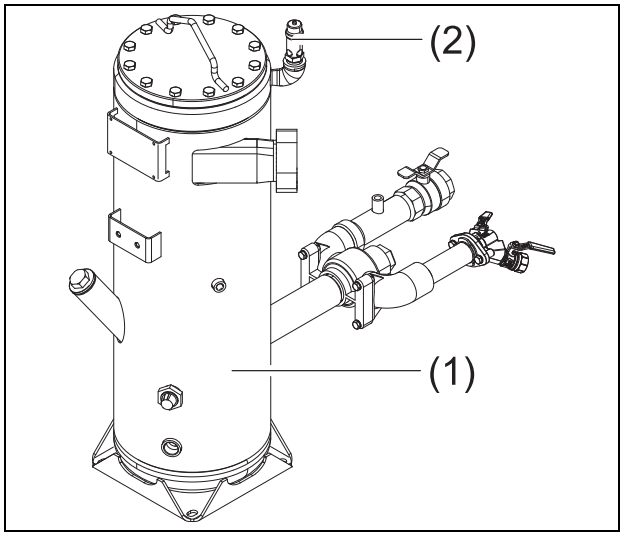
Discard the element (4) when damaged.

A dirty safety cartridge (3) is an indication of a malfunctioning air filter element. Replace the element and the safety cartridge in this case.

The safety cartridge cannot be cleaned.

1. Release the snap clips (1) and remove the dust trap (2). Clean the trap.
2. Remove the element (4) and the safety cartridge.
3. Reassemble in reverse order of dismantling. Make sure the vacuator valve (6) points down.
4. Inspect and tighten all air intake connections.

AIR RECEIVER



The air receiver (1) is tested according to official standards. Regularly have inspections carried out in conformity with local regulations.

Daily drain condensate.

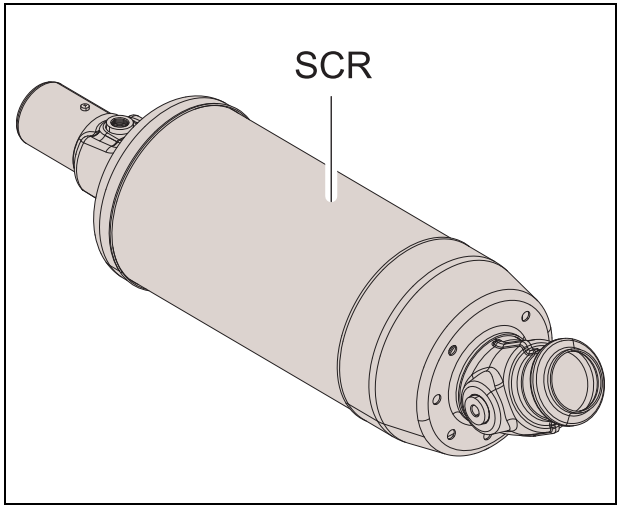
SAFETY VALVE

All adjustments or repairs are to be done by an authorized representative of the valve supplier, see section Specific safety precautions.

Following checks must be carried out on the safety valve (2):

- A check of the opening of the lifting gear, twice a year.
  This can be done by screwing the cap of the valve anti-clockwise.
- A check of the set pressure once a year according to the local regulations. This check cannot be done on the compressor and must be carried out on a proper test bench.

EXHAUST FILTER



1. Selective Catalytic Reduction (SCR)
2. Diesel Oxidation Catalyst (DOC)

EXHAUST FILTER SYSTEM

An exhaust filter consisting of a diesel oxidation catalyst (DOC) and a Selective catalytic reduction (SCR) specifically to meet the demands of off-highway applications. The DOC reduces carbon monoxide, hydrocarbons, and some particulate matter. The downstream SCR traps and holds particulates remaining in the exhaust stream. Trapped particles are eventually oxidized within the SCR through a process known as regeneration or exhaust filter cleaning.

Under normal machine operation and with the system in AUTO mode, the exhaust filter system requires minimal operator interaction.

To avoid unnecessary buildup of diesel particulates or soot in the exhaust filter system;

1. Utilize the Automatic (AUTO) Exhaust Filter Cleaning mode.
2. Avoid unnecessary idling.
3. Use Atlas copco “PAROIL E mission Green Low SAPS” engine oil.
4. Use only ultra low sulphur fuel.

In addition to soot, ash deposits will also slowly build up in the SCR and cannot be removed through the engine exhaust filter cleaning process.

When the exhaust filter has run several thousand hours, these ash deposits can restrict engine performance due to increased back pressure.

To correct this situation, replace the exhaust filter or have the exhaust filter cleaned in specialized equipment.

Do not power wash the filter assembly when external skin temperature of assembly exceeds 50° C (120° F).

SELECTIVE CATALYTIC REDUCTION MAINTENANCE AND SERVICE

The Exhaust Filter includes the Diesel Oxidation Catalyst (DOC) and Selective catalytic reduction (SCR). The SCR is designed to retain residual ash, which is a non-combustible result of additives used in crankcase lubrication oils and the fuel. The SCR provides many hours of maintenance free operation. At some point the SCR will require professional service to remove the accumulated ash. The exact number of hours of operation before service is required will vary depending upon the engine’s power category, duty cycle and operating conditions, engine oil ash content, and fuel quality.

The exhaust filter’s dash lamp indicator or the diagnostic codes will indicate when the SCR needs ash removal service.

The removal of SCR ash must be done by removing the SCR from the machine and placing it into specialized equipment. Do not remove ash by using water or other chemicals. Removing ash by these methods may damage the material securing the SCR in its canister, resulting in the loosening of the SCR element in the canister and subjecting it to damage from vibration.

EXHAUST FILTER / SELECTIVE CATALYTIC REDUCTION ASH HANDLING AND DISPOSAL

Under federal, state, and/or local laws or regulations, Selective catalytic reduction ash may be classified as a hazardous waste. Hazardous wastes must be disposed of in accordance with all applicable federal, state and local laws or regulations governing hazardous waste disposal. Only a qualified service provider should remove ash from the SCR. Personal protective equipment and clothing, maintained in a sanitary and reliable condition, should be used when handling and cleaning a SCR. See your John Deere dealer or qualified service provider for assistance.

EXHAUST FILTER DISPOSAL

Proper management of an Exhaust Filter that has reached the end of its useful life is required, since the ash or catalyst material in the device may be classified as hazardous waste under federal, state, and/orlocal laws or regulations. Used Exhaust Filters,which include the Selective catalytic reduction,may be exchanged at any Engine manufacturer’s dealeror qualified service provider.

See Engine operator’s manual for further information regarding the Exhaust Filter.

FUEL SYSTEM

PRIMING INSTRUCTIONS

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire. To help prevent possible injury, turn the "ON/OFF" switch in position "OFF" when changing fuel filters or water separator elements. Clean up fuel spills immediately.

Prime the fuel system in order to fill the fuel filter. Prime the fuel system in order to purge trapped air. The fuel system should be primed under the following conditions:

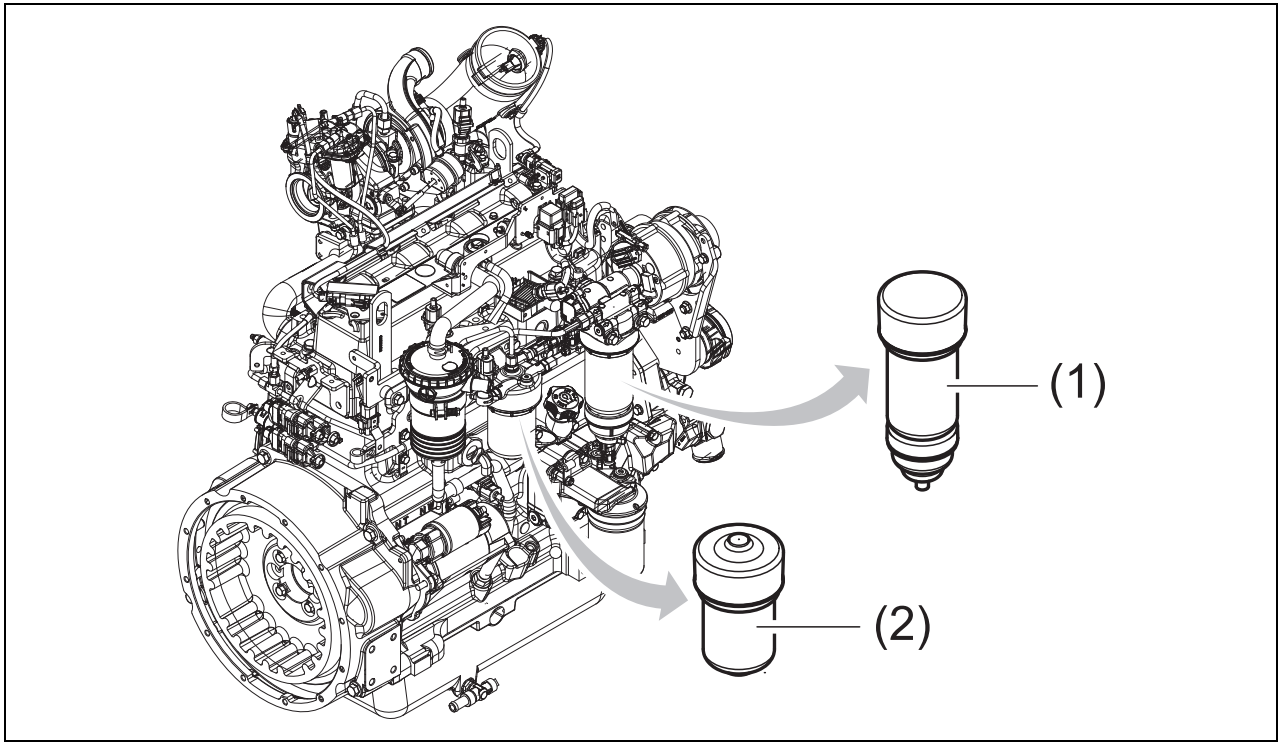
- Compressor is put in operation for the first time
- Running out of fuel
- Storage
- Replacement of the fuel filter

Do not loosen the fuel lines at the fuel manifold. The fittings may be damaged and/or a loss of priming pressure may occur when the fuel lines are loosened.

Diesel fuel quality & fuel suffer content must comply with all existing emissions regulation for the area in which the unit operates.

Do not use diesel fuel with suffer content greater than 1% (10,000 ppm).

DRAINING INSTRUCTIONS



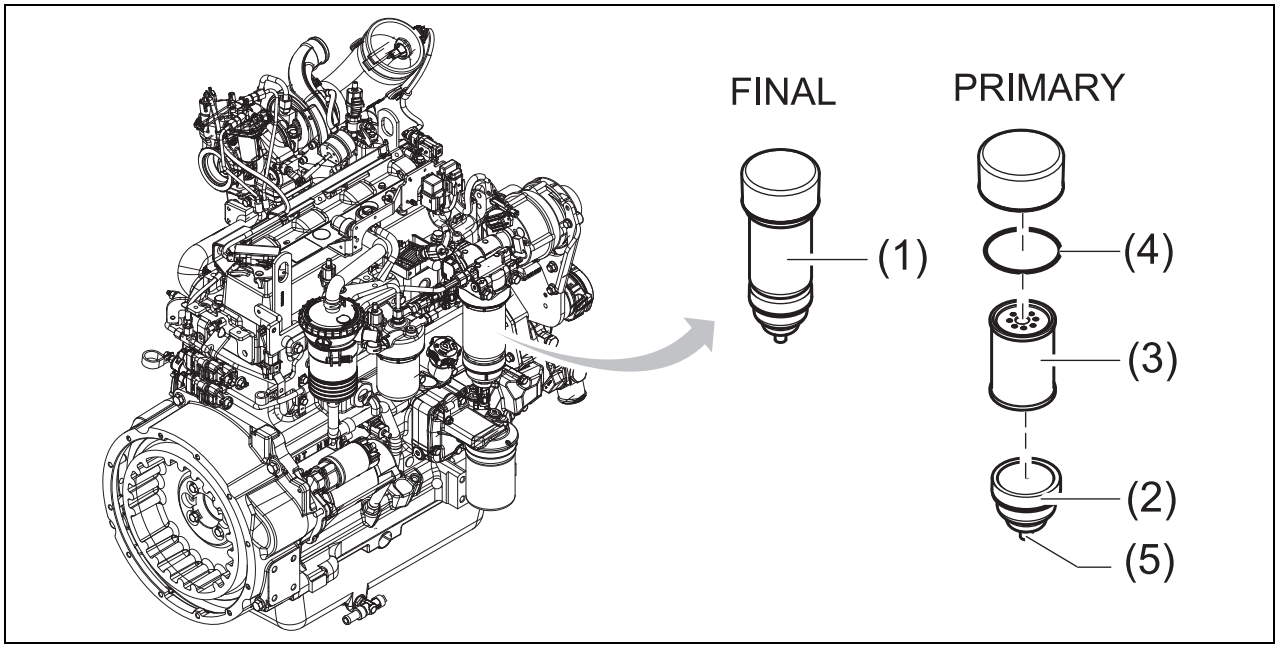
check the fuel filters (1) and (2) for water or debris. If filter is fitted with a see-through bowl, drain as needed based on a daily visual inspection.

1. Loosen drain plugs (3) at bottom of fuel filters or bowls, if equipped, half turn to one turn.
2. When fuel starts to drain out, tighten drain plugs securely.

After draining water from the fuel filters, the filters must be primed by bleeding all air from the fuel system.

Drain water into a suitable container and dispose of properly.

FUEL FILTER REPLACEMENT



Engines are equipped with dual fuel filters: a primary filter with water bowl, and a final filter. Both filters are replaced at the same 500 hour interval or every 12 months.

☞ **Both the primary and the final fuel filter elements must be replaced at the same time.**

Remove primary fuel filter element

1. Thoroughly clean filter header and surrounding area to prevent dirt and debris from entering fuel system.
2. Connect a hose to filter drain valve (5) on bottom of filter and drain all fuel from filter canister.
3. Disconnect water in fuel sensor connector (1).
4. Remove fuel filter canister (2).
5. Pull filter element (3) down.

Install primary fuel filter element

1. Place new O-ring (4) on filter canister.
2. Apply a thin film of fuel on O-ring.
3. Place Filter Element in canister with tangs on bottom going into canister.
4. Screw canister into filter header then tighten to specification.

Remove final fuel filter element

1. Thoroughly clean filter header and surrounding area to prevent dirt and debris from entering fuel system.
2. Connect a hose to filter drain valve (8) on bottom of filter and drain all fuel from filter element.
3. Loosen and remove fuel filter element (6).

Install final fuel filter element

1. Place new filter packing (7) on filter element.
2. Apply a thin film of fuel on packing.
3. Screw filter element into fuel filter header (9) then tighten to 10 N·m (7.5 lb.ft.).

☞ **To prime the fuel system, before starting engine, turn ignition key to ON for 60 sec.**

☞ **Fill the fuel tank at the end of each working day to reduce condensation & moisture build-up in the fuel system.**

☞ **Replace fuel filter elements anytime audible alarm sounds and trouble codes indicate plugged fuel filters (low fuel pressure). If no alarm sounds during the 12 month service interval, replace elements at that time, or after 500 hours operation, whichever comes first.**

⚠ **Do not open higher pressure fuel system .**

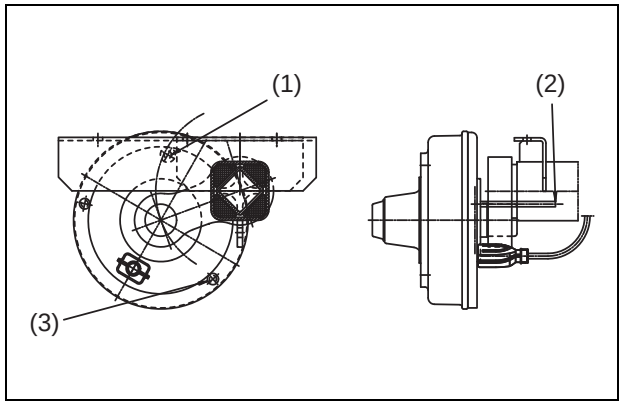
Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting fuel or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

If any fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.

BRAKE ADJUSTMENT

Before jacking up the compressor, connect it to a towing vehicle or attach a weight of minimum 50 kg (110 lb) to the towbar.

BRAKE SHOE ADJUSTMENT



Check the thickness of the brake lining.

- Remove both black plastic plugs (3) one on each wheel.
- Check the thickness of the brake lining.
- After inspection and/or replacement re-insert both plugs (3).

Brake shoe adjustment re-establishes the brake lining-to-drum clearance and compensates for lining wear.

When the brake lining has been worn to a minimum thickness, the brake shoes have to be replaced (Min. thickness brake lining: 1 mm (0.039 in)).

Problem solving

It is assumed that the engine is in good condition and that there is adequate fuel flow to the filter and injection equipment.

An electrical fault must be traced by an electrician.

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

For denomination of switches, relays, etc.,

See also section **Control panel**.

Problem: Compressor capacity or pressure below normal.

Possible faults	Corrective actions
Air consumption exceeds capacity of compressor.	Check equipment connected.
Choked air filter elements (AF).	Remove and inspect elements. Clean or replace, if necessary.
Blow down valve stuck in open position.	Check and correct as necessary.
Loading valve (LV) leaking past O-ring.	With compressor running at max. load speed, disconnect hose leading to unloader. If air leaks from the hose, remove and inspect loading valve. Replace damaged or worn O-rings.
Oil separator element clogged.	Have element removed and inspected by an Atlas copco Service representative.
Air intake throttle valve remains partially closed.	Check unloader and identify reason for open valve; if possible: solve; else: contact Atlas copco.
Safety valve (SV) leaking.	Remove and inspect. Replace if not airtight after reinstallation.
Blow-off valve leaking.	Remove and inspect. Replace if necessary.

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

Possible faults	Corrective actions
Air leaks in regulating system.	Check hoses and their fittings. Stop leaks; replace leaking hoses.
Air intake throttle valve does not close for some reason.	Check unloader and identify reason for open valve; if possible: solve; else: contact Atlas copco.
Minimum pressure valve malfunctioning.	Remove and inspect valve.
Blow-off valve malfunctioning.	Remove and inspect valve.

Problem: After working some time, the unit stops through a shutdown switch.

Possible faults	Corrective actions
Engine oil pressure too low.	Refer to the engine instruction manual.
Compressor or engine overheating.	See corrective actions “Compressor overheating”.
Fuel tank contains insufficient fuel.	Fill fuel tank.
Low coolant level.	Top up cooling system.

Problem: Air and oil mist expelles from air filters immediately after stopping.

Possible faults	Corrective actions
Check valve at element outlet.	Remove and inspect. Replace if necessary. Replace air filter elements and safety cartridges. Check the oil level and add oil if necessary. Run the compressor for a few minutes, stop and recheck oil level.
Plunger of oil stop valve jammed.	Remove and inspect. Replace if necessary. Replace air filter elements and safety cartridges. Check the oil level and add oil if necessary. Run the compressor for a few minutes, stop and recheck oil level.

Problem: Compressor overheating.

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

Alternator precautions

1. Never reverse the polarity of the battery or the alternator.
2. Never break any alternator or battery connections while the engine is running.
3. When recharging the battery, disconnect it from the alternator. Before using booster cables to start the engine, be sure of the polarity and connect the batteries correctly.
4. Never operate the engine without the main or voltage sensing cables connected in the circuit.

Available options

Support

A rigid support mounted version for rough construction conditions with the possibility to be mounted on a truck. The installation allows the unit to be put on and taken off the truck daily. It is possible to handle the unit with a forklift.

Inlet shutdown

The inlet shutdown provides protection to the diesel engine against over speeding caused by failure of the engine regulator, burning oil from the engine sump due to overfilling or aspiration of combustible fumes in hazardous environments. The inlet shutdown system is fully electronic.

Customer colour canopy (1 colour)

Special colour will apply on all external canopy parts or all internal parts visible from the outside, and wheel rims. The undercarriage, towbar and frame will be painted in black.

Customer colour canopy (2 colours)

Same to Customer colour (1) option, but with two (2) colours for which the customer will provide details.

Customer colour frame (1 colour)

Customer colour for undercarriage, towbar and frame.

Technical specifications

TORQUE VALUES

GENERAL TORQUE VALUES

The following tables list the recommended torques applied for general applications at 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	40(30)±25%
M12	69(51)±25%
M14	109(80)±25%
M16	171(126)±25%

For hexagon screws and nuts with strength grade 12.9

Thread size	Torque value, Nm (lbf.ft)
M6	14(10)±25%
M8	34(25)±25%
M10	68(50)±25%
M12	116(86)±25%
M14	185(136)±25%
M16	288(212)±25%

CRITICAL TORQUE VALUES

Assemblies	Torque value		Variance
Axles to frame:	**Nm**	**ft.lbf**	
Wheel lug nuts to be torqued in 3 steps in a star pattern:			
1st Step	27-34	19.91-25.07	
2nd Step	68-81	50.15-59.74	
3rd Step	136-163	100.30-120.22	
Bolts, axle/frame	195	144	±10%
Compressor to frame:			
Bolts, elements/gear casing	46	33.92	±10%
Bolts, elements/support	83	61.21	±10%
Bolts, support/buffer	46	33.29	±10%
Bolts, buffer/frame	23	16.96	±10%
Engine to frame:			
Bolts, engine/support	80	59	±10%
Bolts, support/buffer	46	33.92	±10%
Bolts, buffer/frame	23	16.96	±10%
Lifting beams to frame:			
Bolts, A-Frames/frame	195	143.82	±10%
Hose clamps:			
Worm Type	4	3.0	±10%
Constant Torque Type	4	3.0	±10%
Heavy Duty Constant Torque Type	10	7.4	±10%

☞ **Secure the drain cock and tank cap of the fuel tank handtight.**

COMPRESSOR / ENGINE SPECIFICATIONS

REFERENCE CONDITIONS

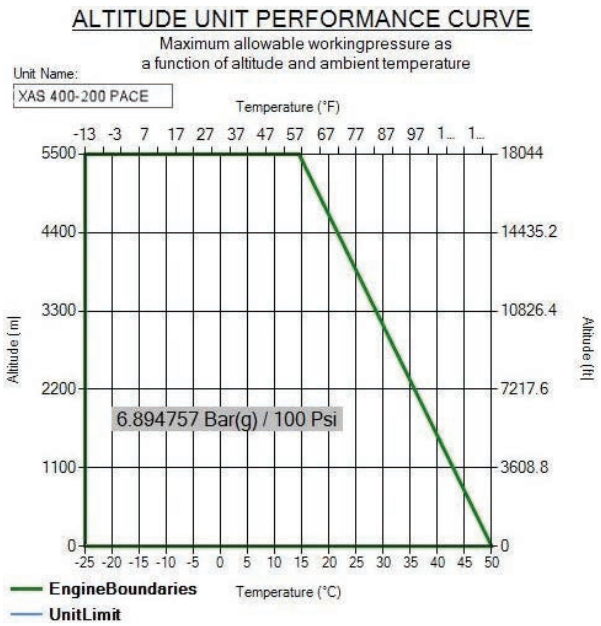
Designation		X-Air 375-150 / XAS 400-150 / XAS 400-200 PACE
Absolute inlet pressure	bar(e)	1
	psi	14.7
Relative air humidity	%	0
Air inlet temperature	°C	25
	°F	77
Nominal effective working pressure	bar(e)	6.8
	psi	100

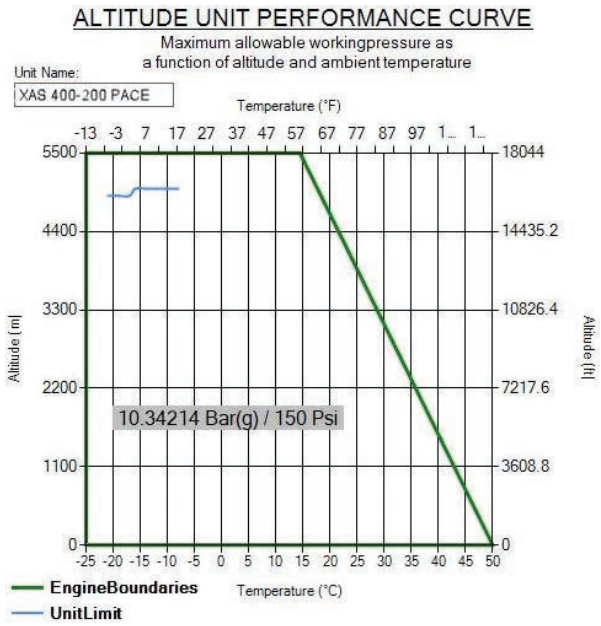
The inlet conditions are specified at the air inlet grating outside the canopy.

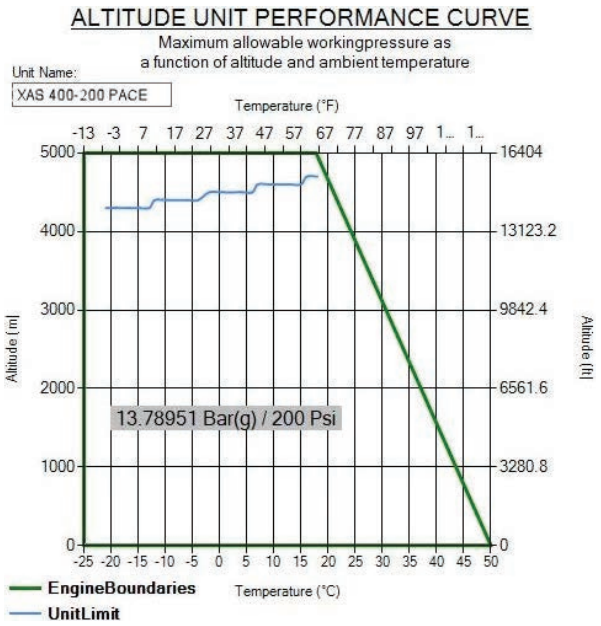
LIMITATION

Designation		X-Air 375-150 / XAS 400-150 / XAS 400-200 PACE
Minimum effective receiver pressure	bar(e)	4
	psi	58
Maximum effective receiver pressure, compressor unloaded	bar(e)	13.78
	psi	200
Maximum ambient temperature at sea level	°C	51.55
	°F	124.8
Minimum starting temperature	°C	-25
	°F	-13
Altitude capability	ft	see graph section

ALTITUDE UNIT PERFORMANCE CURVE







Maximum allowable working pressure as a function altitude and ambient temperature.

Limitations for start-up in terms of altitude are provided by the engine manufacturer.

Limitations might differ in reality.

PERFORMANCE DATA

At reference conditions, if applicable, and at normal shaft speed, unless otherwise stated.

Designation	Units	X-Air 375-150* / XAS 400-150 PACE* / XAS 400-200 PACE		
		100 psi	150 psi	200 psi
Engine shaft speed, normal	rpm	2200	2200	2000
Engine shaft speed, normal and maximum	r/min	2200		
Engine shaft speed, compressor unloaded	r/min	1500		
Free air delivery [2)]	cfm	403	397	356
	cfm	396	389	356
Fuel consumption				
at 100% full load	gal/hr	6.32	7	6.77
-at 75%	gal/hr	3.84	4.74	5.08
-at 50%	gal/hr	3.16	3.84	4.4
-at 25%	gal/hr	2.82	3.5	4.29
-at 0% no load	gal/hr	2.03	2.03	2.03
Specific fuel consumption at 100%	lb/hp-hr	0.393	0.392	0.363
Fuel Autonomy at 100% FAD, full load	hrs	8.22	7.43	7.68
Maximum typical oil content of compressed air (mg/m³)	mg/m³	5		
Noise Sound Pressure Level (Lp) (dB(A)) @ 100% FAD (full load), 7m		76.4		
(Lp) measured according to		ISO 2151		
Fuel Tank Capacity	gal	52		

*X-Air 375-150 allows maximum flow of 375 cfm.

*XAS 400-150 PACE allows maximum pressure of 150 psi.

DESIGN DATA

Compressor

Designation	All units
Number of compression stages	1

Engine

Designation		All units
Make		John Deere
Type		4045HI440
Coolant		Ethylene glycol
Number of cylinders		4
Bore	mm	106.68
	in	4.2
Stroke	mm	127
	in	5
Swept volume	l	4.5
	cu.in	275
Output at normal shaft speed [4)]	kW	110.36
	hp	148
Load factor	%	82
		91
		95
Capacity of oil sump	L	20.81
	US gal	5.5
Capacity of cooling system	L	83.28
	US gal	22

Unit

Designation		All units
Capacity of compressor oil system	l	27
	US gal	7.25
Net capacity of air receiver	l	41.64
	US gal	11
Capacity of fuel tank	l	196.84
	US gal	52
Capacity of Diesel Exhaust Fluid (DEF) system (qts)	qts	20

1) At reference conditions, if applicable, and at normal shaft speed unless otherwise stated.

2) Free Air Delivery (volume flow rate) is measured according to ISO 1217 ed.3 1996 annex D

Tolerance:

+/- 5% 25 l/s < FAD < 250 l/s

+/- 4% 250 l/s < FAD

The international standard ISO 1217 corresponds to following national standards:

British BSI 1571 part 1

German DIN 1945 Part 1

Swedish SS-ISO 1217

American ANSI PTC9

3) Air required for engine and compressor cooling, combustion and for compression

4) Gross power guaranteed within +/- 5% at SAE J1995 and ISO 3046 conditions:

77°F air inlet temperature

29.31 in. Hg barometer

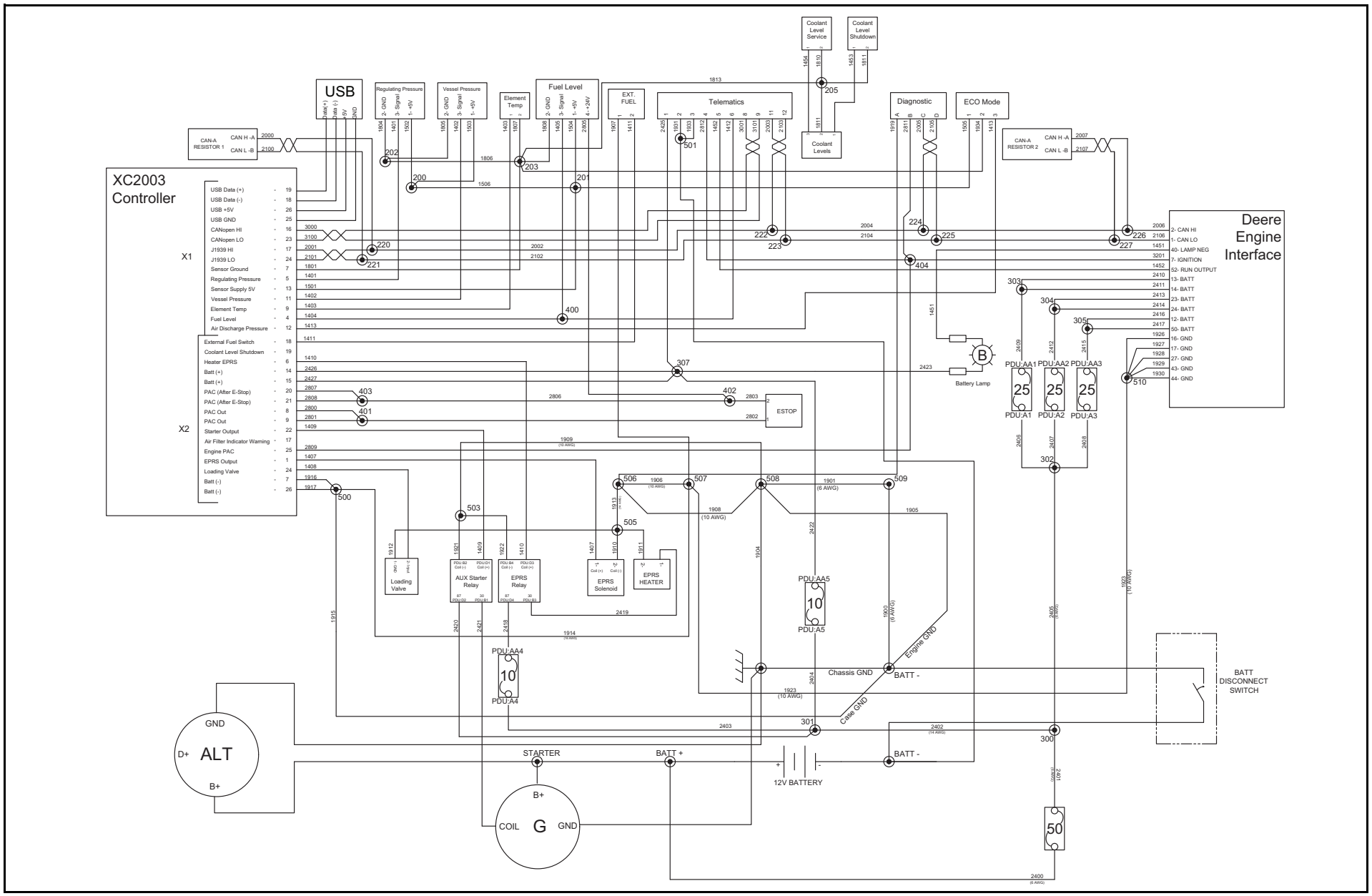
104°F fuel inlet temperature

0.853 fuel specific gravity @ 60°F

5) Measured in accordance with ISO 2151 under free field conditions at 7m distance

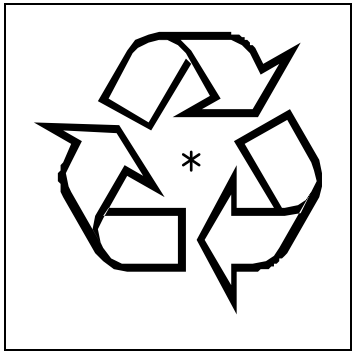
Electrical system

Circuit diagram 1310 3203 00



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, and used, as well as at their disposal.

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

Selecting materials the substantial recyclability, the disassembly possibilities and the separability of materials and assemblies are considered as well as the environmental perils and dangers to health during the recycling and disposal of the unavoidable rates of not recyclable materials.

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

☞ **This concept can only succeed with your help. Support us by disposing professionally. By assuring a correct disposal of the product you help to prevent possible negative consequences for environment and health, that can occur with an inappropriate waste handling.**

Recycling and re-usage of material helps to preserve natural resources.

DISPOSAL OF MATERIALS

Dispose contaminated substances and material separately, according to local applicable environmental legislations.

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

Remove the batteries. Do not throw batteries into the fire (explosion risk) or into the residual waste. Separate the machine into metal, electronics, wiring, hoses, insulation and plastic parts.

Dispose all components according to the applicable disposal regulations.

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

Maintenance Log

Compressor Customer

Serial number

Service hours	Maintenance action	Date	By initials

Maintenance Log

Compressor Customer

Serial number

Service hours	Maintenance action	Date	By initials

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

X-Air 375-150
XAS 400-150 PACE
XAS 400-200 PACE

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