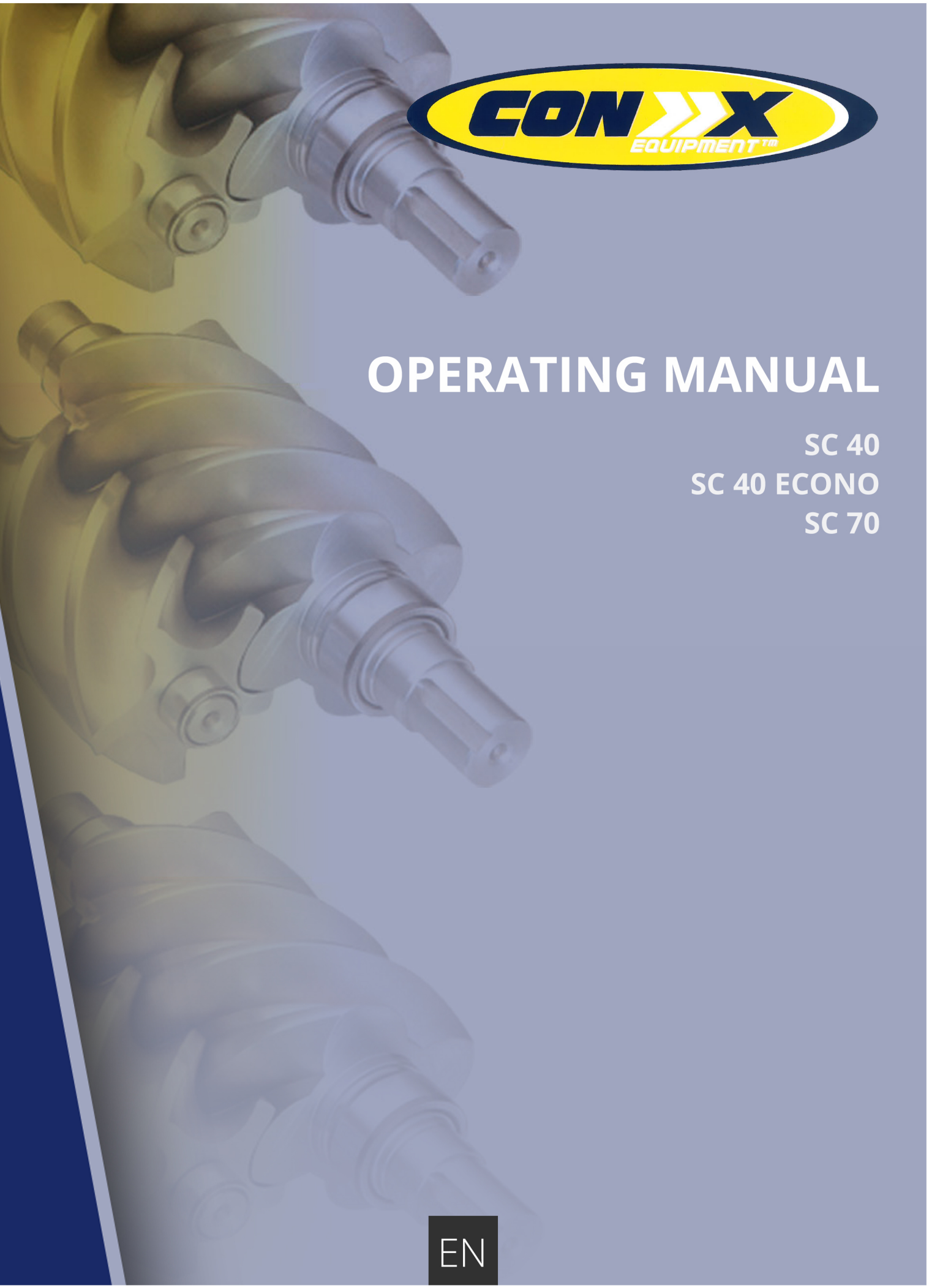

OPERATING MANUAL

SC 40
SC 40 ECONO
SC 70

EN

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2 - FOREWORD

2-1 Notes on the compressor

CONX EQUIPMENT screw compressors are the result of many years of research and development. These prerequisites combined with high quality standards guarantee the manufacture of screw compressors providing a long service life, high reliability and cost-effective operation. It stands to reason that all requirements concerning environmental protection are met.

2-2 Intended use

The machine / unit has been constructed in accordance with state-of-the-art technology and the recognized safety regulations.

Nevertheless, the operator or third parties may be exposed to risk to life and limb in the course of the use of the compressor (e.g. through flying pieces of building material, swirling dirt or dust particles, electric current or thermal impairment, vibration, noise or mechanical hazard), and the machine or other tangible assets may be impaired, for reasons that could not have been avoided through preventive constructional safety measures.

Hazards occur particularly, when:
- the compressor is not used for its intended purpose
- the compressor is not operated by trained personnel
- unauthorized changes or modifications are carried out on the compressor
- you are not wearing the required protective clothing
- you do not comply with the safety instructions
- you do not observe the information in the operating instructions.

For this reason every person involved in the operation, maintenance and repair of the compressor must read and observe the operation manual and the safety regulations. This is to be confirmed by signature as required.

Furthermore, the following naturally apply:
- the relevant accident prevention regulations
- generally recognized safety and traffic regulations
- particular national regulations

The compressor is designed for providing compressed air:
- for operating compressed-air appliances
- for conveying bulk material
- for sandblasting and paint-spraying operations
- for cleaning machines and shuttering material
- for blow-cleaning drilled holes

Any other use, or any additional use, for example as respiratory air, is regarded as not being for the originally intended purpose.

The manufacturer / supplier accepts no liability for any resulting damage. The risk is assumed by the user alone.

The compressor may only be used in a technically perfect condition, for its intended purpose, with appropriate awareness of safety regulations and hazards, subject to compliance with the operating manual.

In particular, faults representing safety hazards are to be corrected at once.

2-3 Technical data

Model	Mass Flow	Operating Pressure	Engine HONDA	Engine Output	Speed Range	Electric start	Oil fil Engine	Fuel tank Capacity	Oil tank capacity	Weight	Size L x l x H	Sound level dBA
	cfm	psi	ref.	hp	rpm		liters	liters	liters	lbs		
SC 40 ECONO HDM	40	100	GX 390	13	2400 to 3600	-	1.1	6.1	4	216	820 x 560 x 610	99
SC 40 ECONO HDE	40	100	GX 390	13	2400 to 3600	Yes	1.1	6.1	4	244	820 x 560 x 610	99
SC 40 HDM	40	100	GX 390	13	2400 to 3600	-	1.1	6.1	4	229	820 x 560 x 610	99
SC 40 HDE	40	100	GX 390	13	2400 to 3600	Yes	1.1	6.1	4	257	820 x 560 x 610	99
SC 70 HDE	70	100	GX 630	20.8	2200 to 3700	Yes	1.9	20	4	332	890 x 635 x 670	99

2-4 Maintenance and care

Care and maintenance are all-important if the screw compressor is to meet the demands placed upon it. Compliance with the prescribed maintenance intervals and careful execution of care and maintenance work are therefore essential, especially under difficult working conditions.

Service

In case of faults, or should you require spare parts for the chassis-mounted compressor, please contact your local CONX EQUIPMENT agent.

In case of damage, the trained technical staff will guarantee a fast, expert repair using CONX EQUIPMENT spare parts.

Original CONX EQUIPMENT spare parts are manufactured according to the state of the art and guarantee continued reliable operation.

In case of questions or orders for spare parts, please give us the compressor type, compressor number as given on the identification plate and the year of production as given on the oil cooler.

If you give us this data you can be sure that you will be given the correct information or sent the spare parts you require.

2-5 General Information

This operating manual is to help you to get to know the compressor and to use it for its intended applications.

It contains important information about how to operate the compressor safely, costeffectively and with due care. Compliance with the instructions in this manual will help to avoid danger, reduce repair costs and downtime, and increase the reliability and service life of the compressor.

This operating manual is to be supplemented by instructions concerning current national regulations for accident prevention and environmental protection. It must always be available at the site of the compressor.

The operating manual is to be read and used by all persons in charge ot work with the compressor, for example, operation, including setting up, correcting faults during operation, disposal of waste products from production, care, disposal of process materials, upkeep (maintenance, inspection, repair) and transport.

Besides the operating instructions and the current regulations applicable in the user's country and at the sites of operation concerning accident prevention, the recognized technical rules for safe and proper working are also to be complied with.

2-6 Guarantee

Only operate this compressor with exact knowledge of and in compliance with these instructions.

CONX EQUIPMENT cannot be held responsible for the safe operation of the machine / unit if it is used in a manner, which does not correspond to the intended use, or for other applications, which are not mentioned in these instructions.

Warranty claims will not be accepted in the case of:

- operating errors
- incorrect maintenance
- wrong auxiliary materials
- use of spare parts other than CONX EQUIPMENT original spare parts
- changes to the unit

The warranty and liability conditions of the general terms and conditions of CONX EQUIPMENT will not be extended by the notes above.

Any unauthorized change to the compressor unit / station, or the installation of components not accepted by the manufacturer (e.g. fine separator) will result in the withdrawal of the CE mark. As a consequence, the manufacturer will not accept any liability or warranty claim.

Safety regulations

The safety regulations in chapter 3 of the operating Instructions have to be strictly observed

Technical changes

In the course of technical development, we reserve the right to modify the units without further notice.

3 - SAFETY REGULATIONS

3-1 Identification of safety guidelines

CONX EQUIPMENT is not liable for any damage or injury resulting from the non-observance of these safety instruc- tions or negligence of the usual care and attention required during handling, operation, maintenance or repair, even if this is not explicitly mentioned in these operating instructions.

If any of the regulations contained in these instructions - especially with regard to safety - does not correspond to the local legal provisions, the stricter of both shall prevail.

These safety regulations are general and valid for various types of machines and equipment. It is therefore possible that some information may not apply to the unit(s) described in these instructions.

Passages marked with this sign indicate a possible danger to persons.

Important

Passages marked with this sign indicate a possible danger to machines or part of machines.

Notes

Passages marked with this sign provide technical information on an optimal cost effective use of the machine.

3-2 General safety instructions

Organizational measures

The operating instructions must always be at hand at the place of operation of the machine.

In addition to the operating instructions, all other generally applicable legal and other mandatory regulations relevant to accident prevention and environmental protection must be adhered to and passed on to others.

These compulsory regulations may also deal with the handling of hazardous materials or the issuing / wearing of personal protective equipment, or traffic regulations.

Instructions, including supervisory responsibility and duty of notification for taking into account of special in-plant factors, for example regarding work organization, sequences of operations, personnel as signed to certain tasks, are to be added to the operating instructions.

The personnel entrusted with working on the machine must have read the operating instructions and in particular the chapter on safety regulations before starting work. Reading the instructions after work has be gun is too late. This applies especially to persons working only occasionally on the machine, e.g. for setting up or maintenance.

Safety and danger-conscious working by the personnel in compliance with the operating manual should be checked at least occasionally.

For safety reasons, long hair must be tied back or otherwise secured, garments must be close-fitting and no jewellery - such as rings - may be worn.

Injury may result from being caught up in the machinery or from rings catching on moving parts. As necessary or as required by regulations, personal protective equipment should be used.

Observe all safety and warning notices attached to the machine / unit.

See to it that safety instructions and warnings attached to the machine are always complete and perfectly legible.

In the case of safety-relevant changes to the machine / unit or its operating behaviour, stop the machine / unit immediately and report the fault to the responsible department / person.

Spare parts have to comply with the technical requirements specified by the manufacturer. This can always be ensured by using original spare parts.

Hydraulic hoses have to be changed within stipulated and periodic intervals, even if no safety-relevant faults have been detected.

Adhere to prescribed intervals or those specified in the operating instructions for routine checks and inspections.

For the execution of maintenance work, tools and workshop equipment adapted to the task on hand are absolutely indispensable.

The personnel must be made familiar with the location and operation of fire extinguishers.

Observe all fire-warning and fire-fighting procedures.

Limit values (pressures, time settings, etc.) have to be permanently identified.

Selection and qualification of personnel; basic responsibilities

Work on / with the machine / unit may be carried out by reliable personnel only. Statutory minimum age limits must be observed.

Employ only trained or instructed personnel and clearly set out the individual responsibilities of the personnel for operation, set-up, maintenance and repair.

Ensure that only authorized personnel work on or with the machine.

Define the machine operator's responsibilities giving the operator the authority to refuse instructions by third persons that are contrary to safety regulations.

Do not allow persons to be trained or in structed or persons taking part in a general training course to work on or with the machine / unit without being permanently supervised by an experienced person.

Work on the electrical equipment of the machine / unit must be carried out only by a skilled electrician in accordance with electrical engineering rules and regulations.

Work on system elements, e.g. pressurized components, may only be carried out by personnel with special knowledge and experience of hydraulics.

3-3 Changes and modifications to the machine

Do not make any changes, modifications or attachments to the machine / unit, which could affect safety, without the supplier's prior permission. This also applies to the installation and the setting of safety equipment and safety valves as well as for welding on structural and pressurized parts. Unauthorized changes to the machine are not permitted for safety reasons.

Original parts were especially designed for this machine. We would like to point out that we have not approved and will not approve parts and special accessories which have not been supplied by us. The installation and / or use of such products can therefore affect the active and / or passive safety.

The manufacturer is not liable for dam age resulting from the use of nonoriginal part's or special accessories. This applies also to the installation and setting of safety equipment and valves as well as to welding on structural or pressurized parts.

Note

The general type approval becomes invalid in the case of modifications or changes, which change or infringe upon the external geometry and the admissible axle data.

3-4 Loading / Relocation / Travelling

Loading / Relocation

All loose parts that could fall down when the machine is lifted must first be removed or secured; moveable or pivoted parts like doors, etc. must be immobilized.

For lifting heavy parts, lifting gear and heavy-lift facilities with the appropriate capacities, which have been checked and approved in accordance with local safety regulations, must be used.

For lifting machines or machine parts with one or more lifting eye(s), only hooks or shackles complying with local safety regulations may be used. Never fasten cables, chains or ropes directly to or through lifting eyes.

Lifting hooks, lifting eyes, shackles, etc. must never be bent and must always be stressed in alignment with the loadcarrying axis. The load bearing capacity of the lifting gear is reduced if the lifting force is applied at an angle to the axis.

All bearing parts must be stressed vertically, as far as possible, for maximum safety and optimum performance of the lifting gear. If required, a support is to be installed between the lifting gear and the load.

Secure the load properly.

If heavy loads are to be transported by means of lifting gear, it is strictly forbidden to stay under or near this load.

Never leave the load suspended on the lifting gear.

Acceleration and deceleration of the load must take place within the admissible limits.

The lifting gear must be set up in such a way that the load is lifted vertically. If this is not possible, take relevant precautions in order to prevent the load from swinging.

For example, two lifting gears can be used, both with an inclination angle of not more than 30° to the vertical.

Appoint an experienced supervisor for the lifting procedure.

Lift the machine only in accordance with the operating instructions (fastening points for the load lifting tackle, etc.) using suitable lifting gear.

Always use a suitable transport vehicle with sufficient load carrying capacity.

Before and immediately after completion of loading secure the machine / unit against accidental shifting.

Attach corresponding warning signs.

Before putting the machine / unit back into operation, the securing devices have to be duly removed.

Parts, which have to be removed for transport purposes, must be carefully refitted and fixed again before putting the machine / unit back into operation.

When putting the machine / unit back into operation again, only proceed in accordance with the operating instructions.

Travelling

Make sure that the air vessels are depressurized.

Lift and secure supporting gear.

Check to make sure that the wheels are properly tightened, that the tyres are in a roadworthy condition, that the tyre pressure is correct.

Before transporting the machine, always check to make sure that the accessories are firmly attached so that they can cause no accidents.

Always keep a safe distance to foundation ditches and embankments.

Never travel across slopes transversely; always keep working equipment near ground level (for example, do not place it on the bodywork).

Avoid all operations that adversely affect the stability of the machine.

3-5 Installation / Starting and Normal operation

Installation

In addition to the general technical operation in accordance with the stipulations of the local authorities, we would like to refer in particular to the following regulations.

Before switching on the machine / unit, or starting it up, make sure that nobody can be injured by the machine as it starts up.

The system has to be set up in such a way that it is adequately accessible and the required cooling is guaranteed. Never block the air intake.

The air intake is to be located so that no hazardous constituent (solvent vapour, etc., but also dusts and other hazardous material) can be sucked in. This applies also to flying sparks.

The air intake is to be positioned so that no loose clothing of persons can be sucked in.

The pressure line connected to the air outlet of the system must be fitted stress free.

Compressed air lines have to be clearly marked in line with the local regulations.

If several compressors are arranged in a system, manually operated valves have to be installed so that each machine may be shut off individually. When operating pressure systems, do not rely on the effectiveness of check valves alone to isolate these systems.

Safety equipment, protective covers or insulation must not be removed or modified. Any pressure vessel, which is located outside the system, the permissible operating pressure of which is higher than the atmospheric pressure and which is fitted with two or more pressure supply lines, has to be equipped with additional safety equipment, which will automatically prevent the admissible operating pressure from rising by more than 10%.

Pipes and / or other parts with a surface temperature higher than 80°C have to be suitably identified and shielded against touching.

Electrical connections must comply with local regulations.

Install the machine so that it is as horizontal as possible; a slight inclination is permissible (see chapter 5).

Set up the machine in such a way that no inlets, outlets or gates are blocked, even when the doors are open.

If a machine with a combustion engine has to work in a fire-risk environment, the unit must be fitted with a spark catcher.

In dusty environments, set up the machine in such a way that the wind does not blow dust in its direction.

During operation in clean environments / the intervals for cleaning the air intake filter and the cooler elements are much longer.

Do not install the machine directly in front of walls. Make sure that the warm air coming from the engine and cooling systems is not drawn into the air intake under any circumstances. Drawing this warm air in through the engine or cooler fan could lead to overheating; it is drawn into the combustion chamber, this will result in a loss of power.

Never relocate the machine if external lines or hoses are connected to the discharge valves, in order to avoid damage to the valve and / or collecting pipe and hoses.

No force may be exerted on the discharge valves, for example by pulling the hoses.

Make sure that:

- all bolted connections have been tightened,
- all electrical wiring has been connected correctly and is in good condition,
- the engine exhaust system is operationally safe and that no inflammable material is in its vicinity,
- The wheel nuts are properly tightened; never exceed the specified torques.

Normal operation

Before starting work, make yourself familiar with the working environment at the place of operation. The working environment includes, for example, obstacles in the working and transport areas, the carrying capacity of the ground, and any necessary cordoning off of the site from public traffic areas.

Take the necessary precautions to make sure that the machine / unit is only operated in a safe, functional condition.

Only operate the machine when all protective devices, shutdown devices, soundinsulating equipment and extraction equipment is in place and working.

Be careful: loose articles of clothing, hair or limbs can still be drawn in by revolving parts.

Check regularly that:

- all means of protection are correctly fitted and fixed,
- all hoses and / or pipes within the system are in good condition, firmly fixed and do not chafe,
- there are no leakages (fuel, oil or coolant),
- all fittings are firmly tightened,
- all wires are connected correctly and are in good condition,
- all safety valves and other pressure relief mechanisms are in good order and not blocked by e.g. dirt or paint,
- the safety mechanisms are fully functional.

All connected components must be of the correct size and be suitable for the specified operating pressure and temperature.

Only use hose couplings and fittings of the right type and the correct size.

Before blowing through a hose or an air pipe ensure that the open end is positively held. A free end whips and can cause injuries or damage.

Refrain from any working method which is doubtful in terms of safety.

Never play around with compressed air.

Never aim compressed air at your skin or at other persons.

Never use compressed air to clean your clothing. When using compressed air to clean equipment take the utmost care and always wear protective goggles.

The compressed air generated by these compressors must never be used for breathing unless it has been conditioned for those applications in line with the «safety requirements for respiratory air».

When breathing apparatus with car tridges is used, make sure that the correct cartridge has been inserted and that its service life has not expired.

Never use the machine in environments where the possibility cannot be ruled out that inflammable or toxic vapours may be taken in.

Never operate the system at pressures and temperatures below or above the values indicated in the technical data sheet.

Persons working in environments or rooms in which the acoustic pressure is 85 dB(A) or higher must wear ear protectors.

Caution: This may impair communication between persons. Warnings may not be heard. Inform supervisor.

Never fill up with fuel while the engine is running. Make sure that the fuel does not come into contact with hot machine parts.

Do not smoke while filling up with fuel.

Filling up at a pump can cause staticelectricity and possibly sparks. In order to avoid this, a ground cable must be connected to the system while it is being filled up.

The machine must not be used in closed or poorly ventilated areas (tunnel, cellar, ...). The exhaust emissions of combustion engines contain carbon monoxide - a lethal gas.

If a machine with such an engine has to work in an enclosed room, the exhaust gases must therefore be conducted outside or to the open air by means of a hose or pipe with an internal diameter of at least 100 mm. The use of extraction systems is highly recommended in test rooms for mobile machines.

Before connecting or disconnecting hoses, always close the compressor outlet valves.

Before disconnecting a hose, always make sure that it is not under pressure.

A hose connected to an air valve must be fitted with a safety wire for operating pressures above 7 bar; it is in fact recommended that this safety device should be used for pressures above 4 bar. The steel wire has a diameter of 8 mm and is firmly clamped to the hose at least every 500 mm. Both ends are fitted with cable lugs.

Check the machine / unit for external damage and faults at least once per shift.

Any changes noticed (included changes in the operating performance) must be reported immediately to the authority or person in charge. If necessary, shut down and secure the machine immediately.

In case of malfunction, shut down and secure the machine / unit immediately. Have malfunctions corrected immediately.

Observe operating instructions for startup and shutdown procedures as well as control displays.

3-6 Special work / Maintenance

Carefulness

Observe the adjusting, maintenance and inspection activities and intervals set out in the operating instructions, including information on the replacement of parts and equipment. These activities may be carried out by skilled personnel only.

Maintenance work, tests and repairs should be carried out in a well ventilated room, away from heat, open flames or sparks. Appropriate prohibition signs (fire, open flames, no smoking) must be put up.

Loss of oil leads to a very slippery floor.

Statistics have shown that many accidents can be attributed to the installation or maintenance of machines on oily floors or machine components. For this reason, always start maintenance work by cleaning the floor and the machine exterior.

Brief the operating personnel prior to starting special operations or maintenance work. Appoint a person to supervise the activities.

After completing repair work, always check to see whether any tools, loose parts or clothes have been left in or on the machine, driving engine or driving equipment.

Maintenance and repair work is only to be carried out under the supervision of or by a person qualified for this work.

For all work concerning the operation, production adjustment, conversion or settings of the machine / unit and its safety-relevant equipment, as well as servicing, maintenance and repair, observe the operating instructions for start-up and shut down procedures and the instructions for maintenance work.

All maintenance and repair work may only be carried out when the system is shut down, or, with electrical systems, when the mains power supply is switched off. Make sure that the equipment cannot be switched on by accident.

If the machine / unit has been completely switched off for maintenance and repair work, it must be safeguarded against being switched on again unexpectedly, or, with electrical systems, the mains power supply must be disconnected:

- remove the ignition key and / or put up a warning sign on the main switch «Attention! Maintenance work.» Close off the complete maintenance area, if required.
- disconnect the starter battery.

Individual parts and larger subassemblies must be carefully attached to the lifting gear and secured in the case of replacement.

Only use suitable, technically perfect lift - ing gear and load suspension devices with adequate lifting capacity. Never work or stand under suspended loads.

Before removing any pressurized part, separate the power unit effectively from all sources of pressure and release the pressure from the complete system.

Never use inflammable solvents or carbon tetrachloride to clean parts.

Take precautions against poisonous vapours from cleaning agents.

Absolute cleanliness is essential during maintenance and when carrying out repairs.

Only carry out maintenance and repair work when the machine is located on an even, stable base and is secured against running away and against buckling.

Checks, maintenance and repair work may only be carried out with the screw compressor being at rest and depressurized.

Protective devices, i.e. protective grids, may not be removed during operation.

Be careful when the screw compressor is in operation. Protective equipment to be removed for this work, has to be refitted after completion of these activities.

Operation of the machine without protective equipment is not permitted.

When working on a running screw com pressor system, working clothes have to be close-fitting.

Maintenance

During maintenance and repair work, the employer has to inform the insured persons about the dangers that can occur during their work and about measures to avert such dangers.

The personnel have to support all measures to improve safety at work.

Safety equipment for the prevention or elimination of danger has to be maintained regularly and functionally checked at least once a year. Faults observed have to be immediately rectified and / or reported to the responsible person.

Only use the correct tools for maintenance and repair work. Only use original spare parts.

All maintenance and repair work may only be carried out when the system is shut down, or, with electrical systems, when the mains power supply is switched off. Make sure that the equipment cannot be switched on by accident.

If the machine / unit has been completely switched off for maintenance and repair work, it must be safeguarded against being switched on again unexpectedly, or, with electrical systems, the mains power supply must be disconnected:

- remove the ignition key and / or put up a warning sign on the main switch « Attention! Maintenance work. ». Close off the complete maintenance area, if required.
- disconnect the starter battery.

Before removing any part under pressure, separate the power unit effectively from all sources of pressure and release the pressure from the complete system.

Observe the safety precautions for work on batteries.

Pay attention to cleanliness. Prevent dirt from entering by sealing the parts and exposed openings with a clean cloth, paper, or tape.

Before the power unit is approved for operation after maintenance or an overhaul, make sure that operating temperatures and time settings are correct and that the control and shutdown devices are working properly.

The electric motor, generator, air filter, electrical components and control equipment are to be protected against the pen etration of dampness - for example when cleaning with a steam jet - by covering and sealing them.

Under no circumstances should the sound-insulating material be removed or modified.

Never use solvents with dangerous properties for cleaning parts.

Maintenance work, tests and repairs should be carried out in a well ventilated room, away from heat, open flames or sparks. Appropriate prohibition signs (fire, open flames, no smoking) must be put up.

Wear suitable eye protection when inspecting the system. Make sure that the openings of spray containers, valves.

pipes or atomizers are never directed at yourself or at any other person during the inspection.

The fuel used in these systems is highly inflammable, toxic and poisonous. Avoid contact with eyes and skin, and never in hale vapours. Should you accidentally swallow fuel, do not induce vomiting, but seek medical attention.

Should fuel come into contact with the eyes, or in case of eye irritation by vapours, flush eyes with plenty of clean water and seek medical attention.

Every time a message is displayed or there is a suspicion that an internal part of the machine has overheated, the machine must be shut down. Never open the inspection cover / however, before the machine has cooled down sufficiently to rule out the possibility of the oil vapours igniting spontaneously when mixed with air.

In order to avoid an increase in the operating temperature, check and clean the heat transfer surfaces (cooling fins, inter mediate cooler, water cooling jackets, etc.) at regular intervals. Prepare a plan of the most favourable cleaning intervals for each machine.

Avoid damaging the safety valves and other pressure reducing devices. In particular, make sure that they are not blocked through paint, oil carbon, or dust accumulation, which could impair the effect of these devices.

Insulation or protective shielding, the temperature of which may exceed 80°C and which could be erroneously touched by the personnel, must not be removed before these parts have cooled down to room temperature.

Check the accuracy of pressure and temperature indicators at regular intervals. If the admissible tolerance limits have been exceeded, these devices have to be replaced.

Never carry out welding work or any other work that produces heat in the vicinity of fuel or oil systems. Systems that might contain fuel or oil must be completely drained and cleaned - for example with a steam jet - before such work is carried out.

Never carry out any welding work on pressure vessels or pressurized parts or modify them in any way.

If work which produces heat, flames or sparks has to be carried out on a machine, the adjacent components have to be protected by means of non inflammable material.

Before removing or overhauling a compressor, a motor or another machine, ensure that all moveable parts of a mass of more than 15 kg cannot move or roll away.

Machines performing a back and forward main movement have to be cycled at least once, rotating machines have to be cycled several times in order to ensure that there are no mechanical faults in the machine or the drive member.

The fastening of loads and the instructing of crane operators should be entrusted to experienced persons only. The person giving the instructions must be within sight or voice contact with the operator.

For carrying out overhead assembly work always use specially designed or other wise safety-orientated ladders and working platforms. Never use machine parts as a climbing aid. Wear a safety harness when carrying out maintenance work at greater heights.

Keep all steps, handles, handrails, platforms, landings and ladders free from dirt, snow and ice.

Clean the machine, especially connections and threaded unions, of any traces of oil, fuel or preservatives before carrying out maintenance or repair work. Never use aggressive detergents. Use lint-free cleaning rags.

After cleaning, remove the covers / masking completely.

After cleaning, check all fuel, engine oil and hydraulic fluid lines for leaks, loose connections, chafing and damage. Correct any faults immediately.

Always re-tighten screwed connections which have been loosened for maintenance and repair work.

If the set-up, maintenance or repair require the demounting of safety equipment, this equipment has to be remounted and checked immediately after these activities.

Ensure that consumables and replacement parts are disposed of in a safe and environmentally friendly manner. Components containing oil, for example fine separators, and oils must be disposed of. Oil must not

enter the soil.

Safety precautions for work with batteries

The fluid contained in batteries is diluted sulphuric acid which can cause blindness if brought into contact with the eyes, or serious burns if brought into contact with the skin.

For this reason it is essential to work with the greatest of care when servicing batteries, e.g. when checking battery charge, and to take all necessary safety precautions.

Always wear long-sleeved overalls, acidresistant gloves and safety goggles.

On charging a battery, an explosive gas mixture is formed in the cells, which can escape through the vent holes in the sealing caps. If ventilation is poor, a highly explosive atmosphere can form around the battery, and can persist for several hours after charging.

Thus:
- never smoke in the vicinity of batteries that are being charged or have just been charged.
- put up prohibition signs for fire, open flames and smoking in workshops where batteries are charged.
- never interrupt a current-carrying circuit at battery terminals because of the danger of spark formation
- proceed particularly cautiously when connecting or disconnecting reinforcing cables or quick-charge cable clamps

When starting up using jumper cables or auxiliary batteries, first connect the positive terminals then the negative terminals. After starting the engine, first disconnect the negative terminal (ground cable) and only then the positive terminal. Disconnect the auxiliary battery after the starting procedure in order to avoid the risk of the release of gas (explosion hazard).

3-7 Warning of speclal dangers

Electric energy

Use only original fuses with the specified current rating.

Switch off the machine / unit immediately if trouble occurs in the electric system.

Work on the electrical system or equipment may only be carried out by a skilled electrician or by specially instructed personnel under the control and supervision of such an electrician and in line with the relevant electrical engineering rules.

If regulations require, the power supply to parts of machines and plants, on which inspection, maintenance and repair work is to be carried out, must be cut off.

Before starting any work, check the de-energized parts for the presence of power and ground or short-circuit them in addition to insulating adjacent live parts and elements.

The electrical equipment of the machines / units is to be inspected and checked at regular intervals.

Defects such as loose connections or scorched cables must be rectified immediately.

Necessary work on live parts and elements must be carried out in the presence of a second person who can cut off the power supply in case of danger by operating the emergency shutdown or main power switch. Secure the working area with a red-and-white safety chain and a warning sign.

Use insulated tools only.

Keep an adequate distance between the machine / unit and overhead power lines. When working near overhead power lines, equipment must not come near the power lines. Danger! Find out about the safe distance to be observed.

After touching high-voltage lines:
- do not leave the machine.
- move the machine away from the danger area.
- warn outsiders not to come closer or touch the machine.
- make sure that the voltage is switched off.

- do not leave the machine until the line which has been touched or damaged, has been switched off load.

Before starting work on high-voltage as semblies and after having cut out the power supply, the feeder cable must be grounded, and components, such as capacitors, short-circuited with a grounding rod.

Gas, dust, steam and smoke

Carry out welding, flame-cutting and grinding work on the machine / unit only if this has been expressly authorized, as there may be a risk of explosion and fire.

Before carrying out welding, flamecutting and grinding operations, clean the machine / unit and its surroundings from dust and other inflammable substances and make sure that the premises are adequately ventilated (risk of explosion).

Only operate combustion engines in properly ventilated rooms.

Adhere to the regulations valid for the place of operation.

Hydraulics, pneumatics

Work on hydraulic equipment may only be carried out by persons with special knowledge and experience of hydraulics.

Check all lines, hoses and screwed connections regularly for leaks and obvious damage.

Repair damage immediately. High pressure jets of oil may cause injury and fire.

Depressurize all system sections and pressure pipes (hydraulic system, compressed- air system) which are to be removed in accordance with the specific instructions for the assemblies concerned before carrying out any repair work.

Hydraulic and compressed-air lines must be laid and fitted properly. Ensure that no connections are exchanged.

The fittings, lengths and quality of the hoses must comply with the technical requirements.

Noise

Sound-proofing elements on the machine / unit have to be active during operation (i.e. sound-proofing panels closed, etc.)

Wear personal ear protection as required. Caution: This may impair communication between persons. Warnings may not be heard. Inform supervisor.

Noise generation and the wearing of ear protection may have adverse effects on the perceptive faculty of persons. Warnings may not be heard. Circumspect behaviour by all concerned is necessary.

Noise, even at a low level, can cause nervousness and annoyance; over a longer period of time, our nervous system can suffer serious damage. We therefore recommend a separate machine room in order to keep the noise of the machine away from the workshop.

Depending on the number of machines in a machine room, the noise can be quite loud. In accordance with the sound pressure level at manned posts, the following precautions have to be taken:

Below 70 dB(A)	No special measures
Above 70 dB(A)	Persons who stay permanently in this room have to wear ear protectors.
Below 85 dB(A)	In the case of occasional visitors who stay in this room only for a short while, no special precautions are to be taken
Above 85 dB(A)	Hazardous noise zone. A warning sign has to be attached to each entrance indicating that everybody who enters the room - even for a short time only- has to wear ear protectors.
Above 95 dB(A)	The warning signs have to contain there commendation that occasional visitors also have to wear ear protectors.

Above 105 dB(A)	Special ear protectors, which are suitable for the noise level spectral composition of he noise must be available A corresponding warning sign must be fixed to each entrance door.

Take care that the noise transmission through walls and frames does not result in too high a noise level in the surrounding areas.

Oils, greases and other chemical substances

When handling oils, greases and other chemical substances, observe the safety regulations for this product.

Be careful when handling hot fuels and consumables (danger of burning or scalding).

Note

CONX EQUIPMENT accepts no responsibility for any damage or injury caused by noncompliance with these safety measures or non-compliance with nommal care and caution during the handling, operation, maintenance or repair of this compressor, even if not expressly stated in this operating manual.

4 - CONSTRUCTION AND FONCTIONAL DESCRIPTION

Fig. 1A - SC 40 / SC 40 ECONO

Fig. 2A - SC 40 / SC 40 ECONO

Fig. 1B - SC 70

Fig. 2B - SC 70

1 - carrying handle
2 - air filter (compressor)
3 - air filter (engine)
4 - hood
5 - engine switch
6 - tap
7 - hourmeter
8 - pressure gauge
9 - remote thermometer (oil temperature compressor)
10 - tank
11 - wheels
12 - eye bolt
13 - identification plate
14 - battery
15 - launcher

4-1 Construction

Compressor and engine

Our machines are a sound-insulated compressor system. The heart of the system is a single-stage, oil-injected screw compressor. The air is delivered pulsation-free.

Operating pressure varies according to the machine model.

The driving equipment is a mediumcooled petrol engine which drives the screw rotors of the compressor directly by belts.

It primarily consists of :

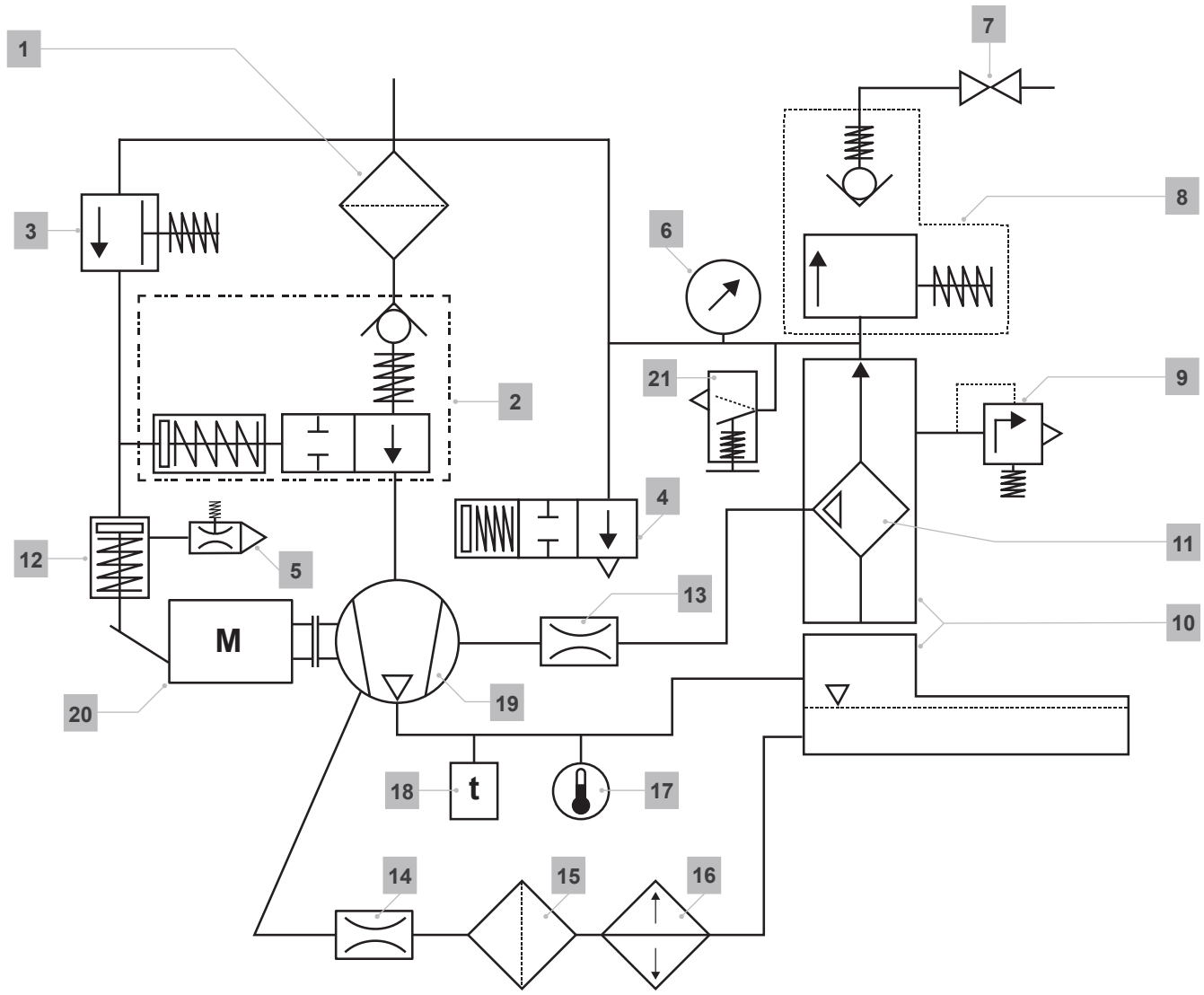
- petrol engine
- an oil cooled compressor screw

The unit is mounted in a chassis frame, providing both protection and easy handling.

The machine unit is mounted on rubber elements to dampen vibrations and to avoid structure-borne noise.

For convenient assembly, all individual parts of the body are bolted together using machine bolts. For effective corrosion prevention, the individual parts are phosphated coated, electrostatically powder coated, and stove-enamelled at 220 °C. All current noise regulations (15. BIm SchV, ISO, EC directives) are complied with.

4-2 Installation scheme



Picture 3

1 - air filter
2 - Intake control valve
3 - regulator
4 - relief valve
5 - nozzle - controller
6 - pressure gauge
7 - relief cock
8 - pressure retaining - and check valve
9 - safety valve
10 - pressure reservoir
11 - fine separator (cartbridge)
12 - positioner for cylinder motor
13 - diaphragm - sucion line
14 - diaphragm - injection line
15 - oil filter
16 - oil cooler
17 - remote thermometer
18 - temperature switch
19 - screw compressor
20 - gazoline engine
21 - blowdown switch (1).

(1) : except SC 40 / SC 40 ECONO

4-3 Functional description

Oil circuit

The oil required for sealing and cooling the rotors as well as for lubricating the roller bearings is injected into the compressor (19) from the pressure tank (10), which is under system pressure. The difference in pressure between the pressure tank and the oil injection position is approx. 1 bar. Here, the oil passes through the oil filter (15), the oil cooler (16) and the diaphragm (14). The optimum volume flow for each type of system is achieved by choking in diaphragm (14). The intake control valve (2) is fitted with a non-return function, so that when the system is switched off, flooding of the air filter (1) is prevented.

Air circuit

The air taken in reaches the compressor (19) via the air filter (1) and the intake control valve (2). During compression, oil is injected in order to lubricate, cool and seal the screw rotors.

The compressed air-oil mixture flows into the pressure tank (10). Centrifugal preseparation of the oil is ensured through tangential entry into the tank.

Any remaining oil is separated from the air in the fine separator (11).

The practically oil-free compressed air then reaches the air discharge (7) via a pressure-retaining non-return valve (8). This valve (8) effectively prevents the system pressure from falling below the minimun operating pressure required for the system to work properly.

A temperature monitoring unit (17,18) as well as an operating pressure gauge are integrated in the air circuit.

Regulation

A combined choke / speed regulation unit allows continuously variable quantities of air between 0% and 100% to be removed.

On starting the engine is placed under full load.

The intake control valve (2) opens through the resulting suction vacuum and the compressor begins to transport air.

After operating pressure has been reached the controller causes the pneumatic engine control cylinder (12) and the intake control valve (2) to be pressurized with control air (3).

This causes the system to be limited to idling speed.

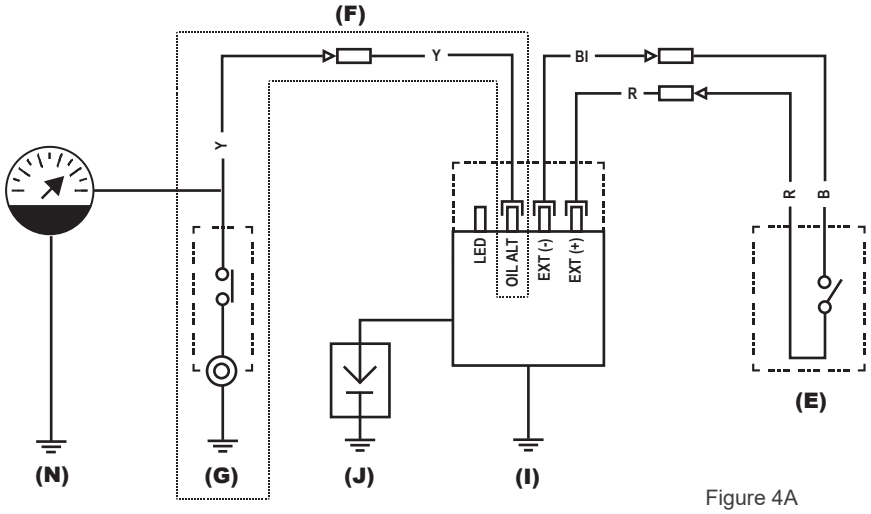
After the system has been switched off the compressor is automatically vented to atmospheric pressure.

Discharge system for cold statring (except SC 40 / SC 40 ECONO)

The pneumatic push button (21) discharge the air circuit during the cold starting process.

4-4 Wiring Diagram

Machines SC 40 / SC 40 ECONO with manual start

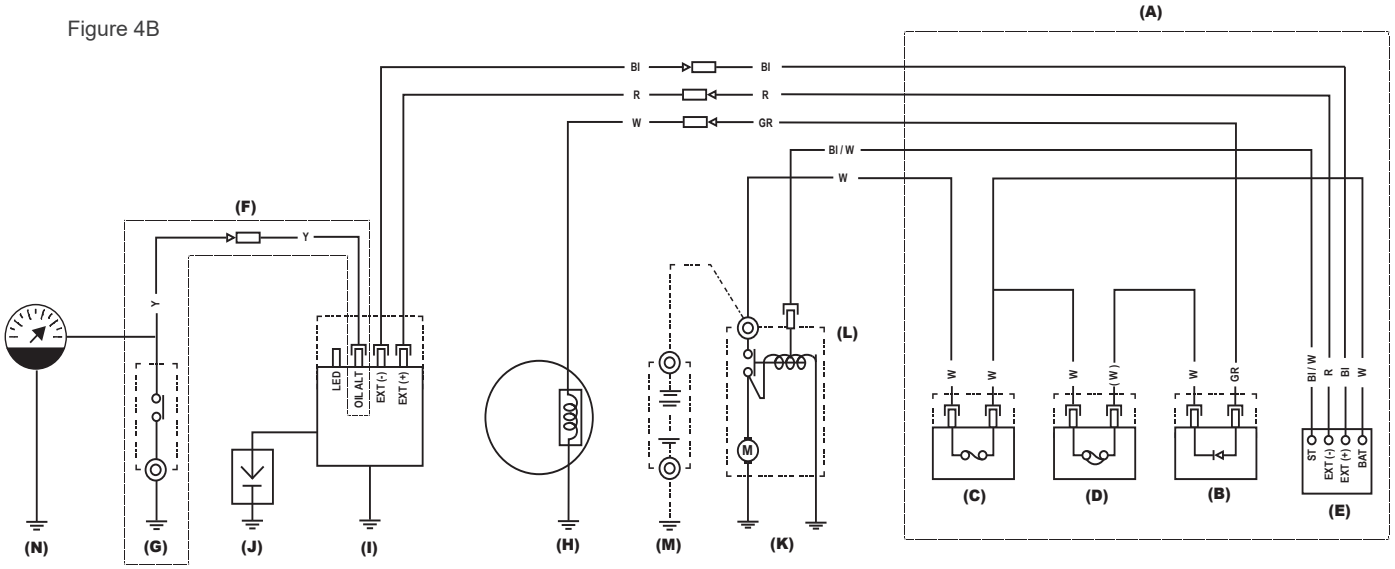


	EXT (+)	EXT (-)
STOP		
START	○	○

Figure 4A

Machines SC 40 / SC 40 ECONO with electretic start

Figure 4B

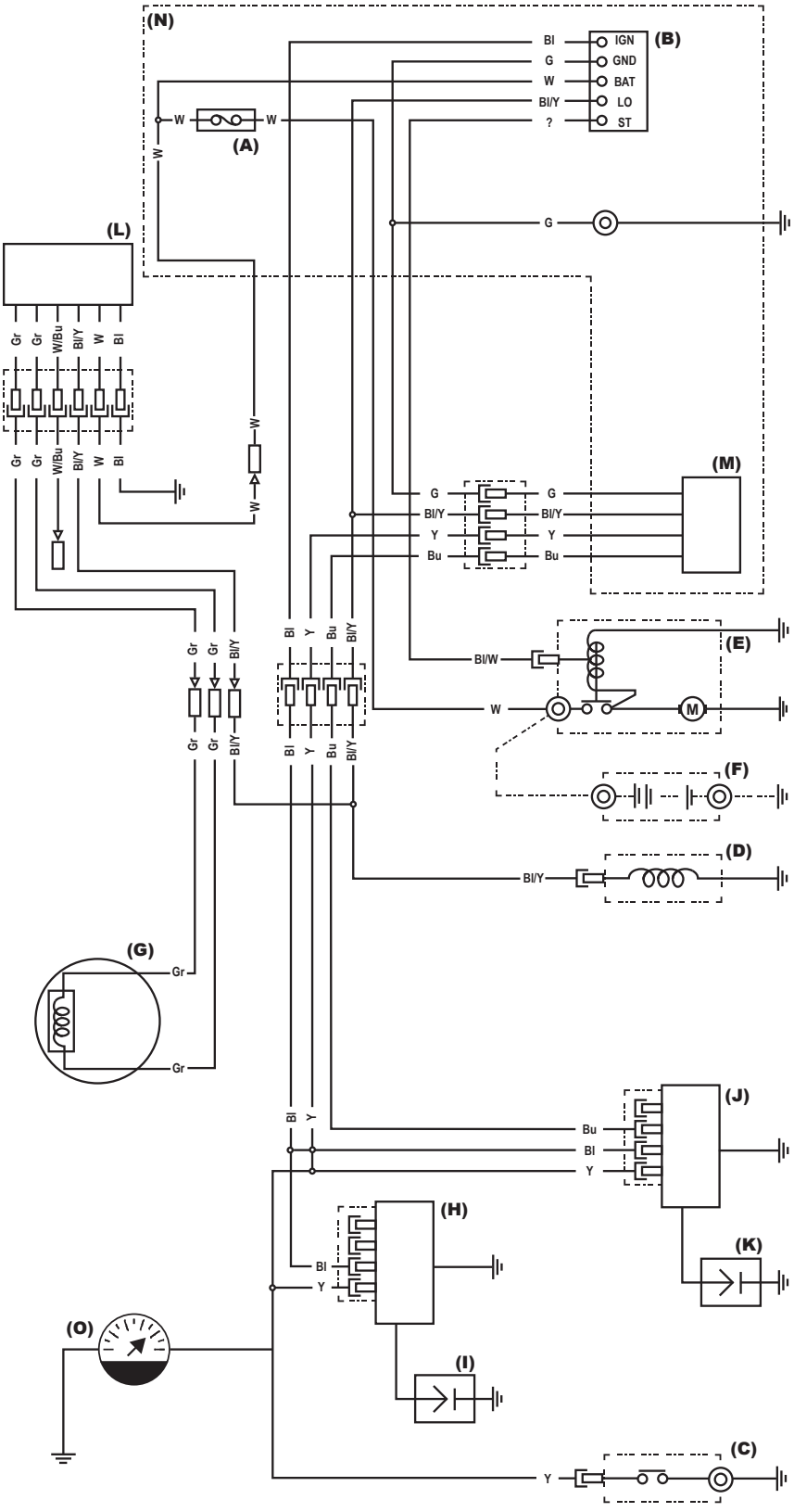


A - control box
B - rectifier
C - fuse
D - circuit protector
E - engine switch
F - type with oil Alert Unit
G - oil level switch
H - charge coil
I - ignition coil
J - spark plug
K - starter moto
L - starter solenoid
M - battery
N - telethermometer

Bl - Black
Y - Yellow
Bu - Blue
G - Green
R - Red
W - White
Br - Brown
O - Orange
Lb - Light blue
Lg - Light Green
P - Pink
Gr - Gray

	EXT (+)	EXT (-)	ST	BAT
OFF				
ON	○	○		
START	○	○	○	○

Machines SC 70 with electric start



	ALL	MASSE	BAT	LO	ST
OFF					
ON					
START					

A - main fuse
B - engine switch
C - oil level switch
D - fuel cut solenoid
E - starter motor
F - battery
G - charge coil
H - left ignition coil
I - left spark plug
J - right ignition coil
K - right spark plug
L - regulator rectifier
M - hour meter
N - control box
O - telethermometer

Bl - black
Br - brown
Bu - blue
G - green
Gr - gray
Lb - light Blue
Lg - light Green
O - orange
P - pink
R - red
W - white
Y - yellow

Picture 4

5 - TRANSPORT AND INSTALLATION

5-1 Transport

5.1.1 Loading into the vehicule

Make sure the ramps are sufficiently strong and correctly wedged for easy loading inside the vehicle.

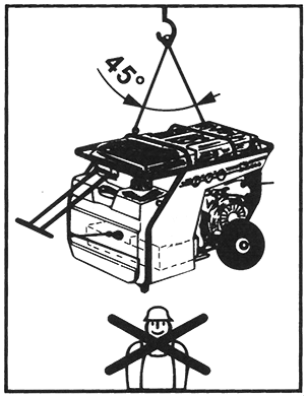
They should be positioned in such a way that if a handling mistake occurs with the compressor no injury would result.

Immobilize the compressor using wedges or straps to avoid any sudden or dangerous movement which could result from a sudden manoeuvre of the vehicle.

5.1.2 Loading onto the platform

Only use hoisting gear (e.g. crane) with appropriate lifting capacity for the loads occurring!

Only use the correct suspension gear!



Keep clear of the swiveling range of the hoisting gear!

Keep clear of suspended loads!

All loose parts that could fall down during hoisting must first be removed or secured; pivoting parts like doors towbars etc. must be secured in such a way that they cannot move.

Never leave the load suspended on the hoisting gear. Acceleration or braking of the means of transport must remain within the approved limits.

Please also observe the safety instructions in Chapter 3 on the subject of loading.

Important

Never lift up or lash down the unit using the shieldings!

Never relocate the machine if external lines or hoses are connected to the dlscharge valves, in order to avoid damage to the valves and / or collecting pipe and hoses.

When loading, the following points must be observed:

- insert the crane hook or hoisting device into the crane ring of the screw compressor.
- when hoisting the compressor, set up the hoisting gear in such a way that the compressor, which must be set up horizontally, is litted vertically.
- only relocate the compressor by itself.
- raise and lower the compressor carefully
- after relocation, unhook the crane hook or suspension device from the crane ring.
- tie down the compressor on the cargo area of the means of transport.

5-2 Installation on site

The air intake must be positioned in such a way that loose personal clothing cannot be drawn in.

The air intake is to be designed in such a way that no dangerous admixtures (inflammable solvent vapors etc., but also other dangerous or toxic substances) can be taken in. This also applies to flying sparks.

Please also note the safety instructions in Chapter 3 on the subject of installation on site.

Location

The complete system is to be set up in such a way that it is easily accessible and that the required cooling is guaranteed. Never block the air intake. Make sure that the entry of humidity with the intake air is kept to a minimum.

The compressor is to be set up away from walls and gusts of wind that could swirl up dirt.

Important

The screw compressor is to be set up in such a way that no air reflection can take place, i.e. neither waste air nor exhaust emissions may be drawn in; the same applies to dangerous admixtures to the air.

The compressor must be set up in as horizontal a position as possible; an inclination ot less than 15° is permissible for a short time.

Maximum permissible inclination during operation:

- in direction of pull: 15 degrees
- backwards: 15 degrees
- to the right and to the left: 15 degrees

Important

Greater inclinations endanger the operating reliability of the screw compressor.

When setting up the unit on ground that is not horizontal, or with a variable angle (see operating instructions) please consult CONX EQUIPMENT.

Secure wheels with chocks

Notes

In dusty environments, set up the machine in such a way that the wind does not blow the dust in the direction of the machine. During operation in clean environments, the intervals for cleaning the air intake filter and the cooler elements are much longer.

Important

No force may be exerted on the discharge valves, for example by pulling the hoses or fitting additional equipment (e.g. a water separator, etc.) directly at the discharge valve.

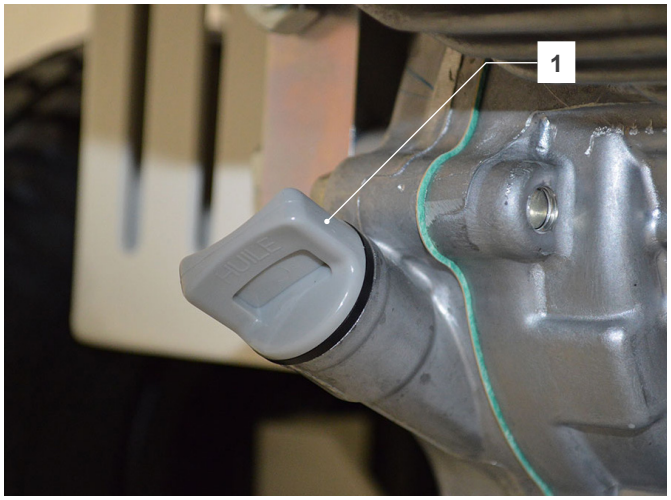
Temperatures

The compressor is to be set up in such a way that it is exposed to as little frost as possible; the intake air temperature may vary from -10° to a maximum of +35 °C.

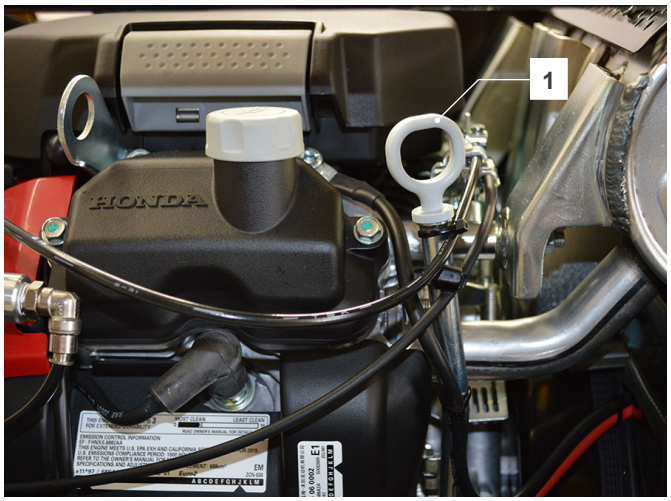
For operation at an altitude above 1,000 m, the compressor and engine must be adapted (modified design).

6 - PREPARATING THE COMPRESSOR FOR OPERATION

6-1 Checking oil levels



Pic. 5A - SC 40 / SC 40 ECONO



Pic. 5B - SC 70

Only check the oil level when the chassis-mounted compressor engine is at a standstill. Spill no oil! The oil may be hot. Risk of scalding! Check for leaks.

Proceed as follows:

- ensure that the chassis-mounted compressor is standing horizontally
- ensure that the chassis-mounted compressor has been out of operation for some time
- pull out dipstick
- the oil level should be as near as possible to the upper dipstick mark
- correct as required
- screw in dipstick
- close oil filler for oil specifications, see « Engine Operating Manual ».

Important

After a short test run, the oil level must not be above or below the upper or lower dipstick marks. For oil specifications, see engine instruction manual.

6-2 Battery

When working with battery acid (electrolyte), wear acidresistant goggles, gloves and apron.

The gases released by the battery are explosive. Avoid sparks and open fires in the vicinity of the battery.

Do not allow acids to come into contact with skin or clothing. Wear safety goggles.

Place no tools on the battery.

The battery is filled and charged in accordance with DIN 43539.

Keep the electrolyte level about 1 cm above the plates with distilled water.

6-3 Filling up the fuel tank

Compressors SC 40

Only fill up with fuel when the screw compressor is at a standstill. Cleanliness is essential! Spill no fuel!

Filling up at a pump can cause static electricity and possibly sparks.

Picture 6A - SC 40

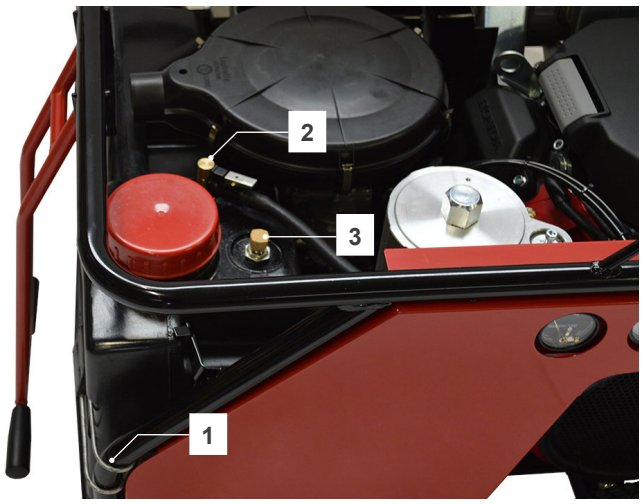
Use unleaded (95 / 98 oct.) or lowleaded gasoline. More information on fuel quality see engine manual.

You can reduce the occurrence of condensation in the fuel tank considerably by filling it up in good time. This also prevents downtimes and starting problems that can occur when the fuel tank is run dry.

Compressors SC 70

Only fill up with fuel when the screw compressor is at a standstill. Cleanliness is essential! Wait until the machine is cold! Spill no fuel!

Filling up at a pump can cause static electricity and possibly sparks.



Picture 6B - SC 70

As the petrol tank is easily removable, it can be detached and taken to a petrol station for refilling.

To do this:

- remove the strap (1)
- remove the rapid action coupling (2) to disconnect the supply hose
- fully screw in the breather tube (3).
- lift up the bar and pull out the tank while lifting it up.

Use unleaded (95 / 98 oct.) or lowleaded gasoline. More information on fuel quality see engine manual.

You can reduce the occurrence of condensation in the fuel tank considerably by filling it up in good time. This also prevents downtimes and starting problems that can occur when the fuel tank is run dry.

7 - PUTTING THE COMPRESSOR INTO OPERATION

7-1 Initial operation

Transport inspection

Every CONX EQUIPMENT screw com- pressor has already run in the factory and has already undergone a through test before shipment. This test ensures that the compressor complies with the given data and works perfectly. Independent of the care taken in the factory, it is still possible for the compressor to be damaged during transport. For this reason it is recommended that the unit should be examined for possible damage during transport.

During the first hours of operation, the compressor should be observed in order to be able to ascertain any possible malfunctions.

7-2 Start-up

Before startlng up make sure that no one is in the danger area of the engine / screw compressor. Compressors may not be operated in hazardous environments unless they have been specially designed for this purpose (e.g. exhaust protected against emission of flying sparks etc.).

After service work has been completed: Make sure that all protective devices have been refitted and that all tools have been removed.

The exhaust emissions of combustion engines contain carbon monoxide - a lethal gas.

If a machine with such an engine has to work in an enclosed room the exhaust gases must therefore be conducted out of doors by means of a pipe or hose with an internal diameter of at least 100 mm. The use of extraction systems is highly recommended in test rooms for mobile machines.

Only operate the chassis-mounted compressor with the hood closed. The hood may only be opened briefly for minor adjustments while the chassis-mounted compressor is running.

Use ear muffs during repair work while the chassis-mounted compressor is running and the hood is open. Caution: this may impair communication between persons. Warnings may not be heard. Inform supervisor.

Starting-up compressor (SC 40) :

Picture 7A

- open the air outlet valve (1)
- open the engine bonnet and pull the starter (2) (cold starting)
- turn the ignition key (3) to START and keep it engaged until the motor starts.

When the compressor is running, please push the starter.

ATTENTION: If the motor does not start, wait until the compressed air circuit has been completely vented before starting the engine again.

In case of battery fault, It is possible to start the engine with the launcher.

Let the motor run for a few minutes before closing the air outlet valve.

The engine adjusts itself to idling speed.

Check the maximum operating pressure and progressively open the valve to check that the regulation is functioning correctly.

Starting-up compressor (SC 70) :

Picture 7B

ATTENTION: If the petrol tank has been removed for re-filling, put it back in place by reversing the disassembly procedure mentioned above:

- unscrew the breather tube (see pict. 6B).
- prime the circuit by pressing the manual pump (1) until a resistance is felt indicating that the supply circuit is full.
- open the air outlet valve (2).
- open the engine bonnet and pull the starter (3) (cold starting)
- turn the ignition key (4) to START and keep it engaged until the motor starts.

When the compressor is running, please push the starter.

ATTENTION: For cold starting process, please push on the pneumatic push button (5) during 3 or 5 second. (Especially at minus temperature in winter).

ATTENTION: If the motor does not start, wait until the compressed air circuit has been completely vented before starting the engine again.

Let the motor run for a few minutes before closing the air outlet valve.

The engine adjusts itself to idling speed.

Check the maximum operating pressure and progressively open the valve to check that the regulation is functioning correctly.

Start-up using jumper cables / auxiliary batteries

Longer operation with an auxiliary battery or jumper cables connected can lead to sudden emissions of gas. An inflammable air / gas mixture is formed. Explosion hazard!

Important

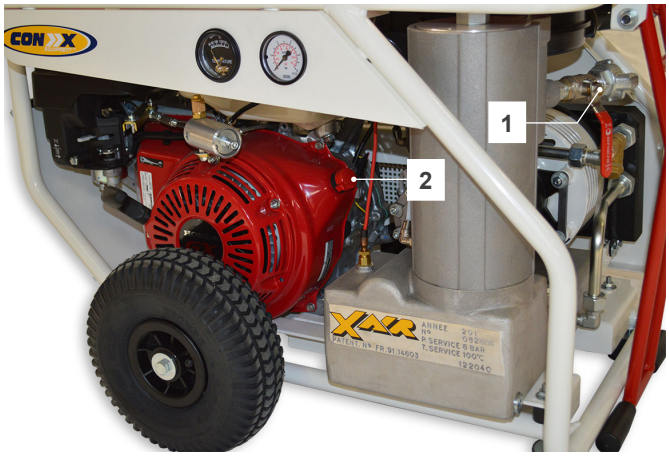
Serious damage can be caused to the electrical system if wrongly connected.

- **set ignition key to O position.**
- **first connect positive terminal then negative terminal (ground).**
- **start as described in section «Starting up the chassis-mounted compressor »**

Note

After the engine has started, first disconnect the negative cable (ground) and then the positive cable.

7.3 Shut-Down



Pic.8A - SC 40 / SC 40 ECONO

Picture 8B - SC 70

Emergency shut-down:

- close the valve (1)
- move the key (2) to the «OFF» position

Shut-Down:

- close the valve (1)
- move the key (2) to the «OFF» position

If a hose with a tool is connected to the valve:

- close the valve (1)
- operate the tool until the hose pressure is vented
- disconnect the hose
- move the key (2) to the «OFF» position

Never disconnect a hose without having first vented the pressure.

When using any pneumatic equipment it is essential to follow the Manufacturer's instructions.

Never connect any equipment without previously «purging» condensates and impurities from the hose.

7-4 Setting the operating pressure

The setting of the operating pressure may only be carried out by a specialist

The screw has been factory set to an operating pressure. The pressure may be adjusted between the values minimum and maximum, higher pressures are not permissible.

Spreadsheet below shows differents pressures wich be respected in accordance to your machine model.

Model	Pressure Mini	Pressure Maxi	Speed Mini	Speed Maxi
	psi	psi	rpm	rpm
SC 40 ECONO	56	100	2400	3600
SC 40	56	100	2400	3600
SC 70	56	100	2200	3700

7-5 Regulating procedure

7-5-1 Regulating procedure for SC 40 / SC 40 ECONO

Maximum pressure setting

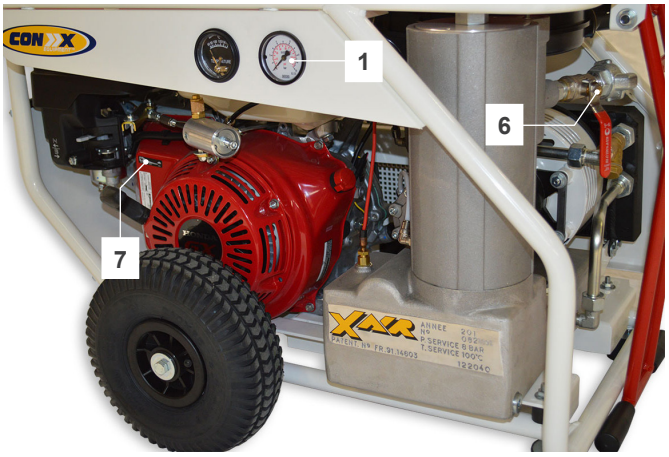
- start-up engine and leave it to warm up for about 10 mins
- with pressure gauge (1), check maximum pressure
- to set pressure, slacken lock nut (2) and tighten or slacken srew (3) to reach the right maximum pressure (see section 7.4).
- re-tighten lock nuts (2)
- open the air valve (6) very slowly and check the pressure gauge (1) that the needle does not oscillate. If the needle oscillates, or unscrew the nut (4) and unscrew by 1/4 turn screw (5) until the oscillation disappears. Tighten the nut (4).
- check the maximum gauge pressure again (1) and if necessary adjust with screw (3)

Setting maximum speed and minimum pressure

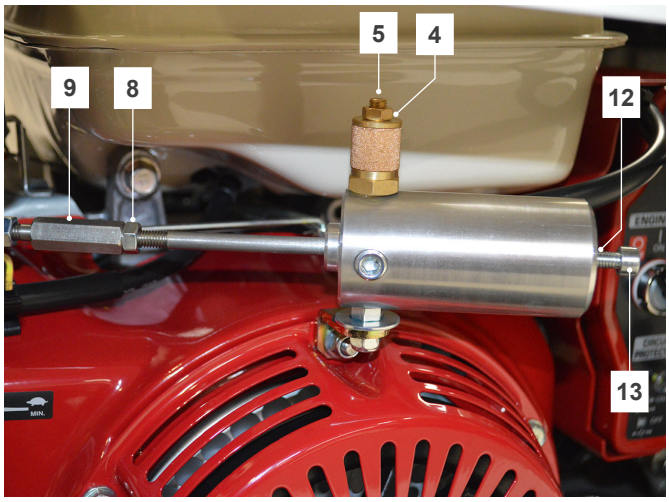
- fully open the valve (6)
- control the speed tachometer (7)
- slacken lock nut (8) and tighten or slacken srew (9) to reach the right speed (see section 7.4)
- re-tighten lock nuts (8)
- maintain the valve (6) open at the bottom and to control the minimum pressure gauge (1)
- loosen the nut against (10) and screw or unscrew the screw (11) to get the right pressure Mini (see section 7.4)
- close the valve

Mini speed setting

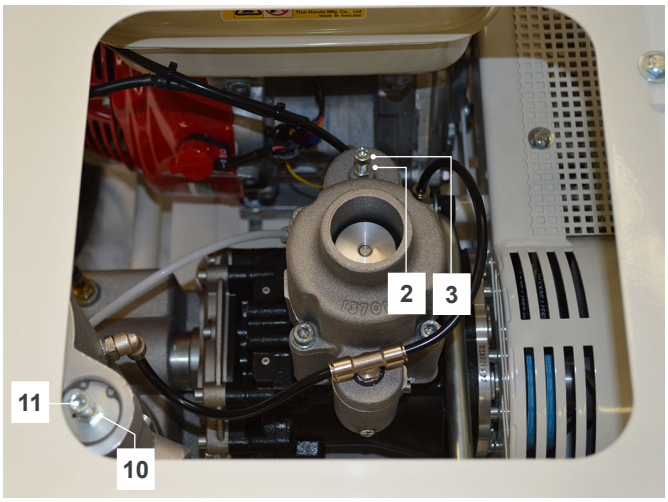
- check the minimum speed to the tachometer (7) (see section 7.4)
- loosen the nut against (12) and screw or unscrew the screw (13) to get the right speed.
- tighten the nut against (12).



Picture 9A



Picture 10A



Picture 11A

7-5-2 Regulating procedure for SC 70

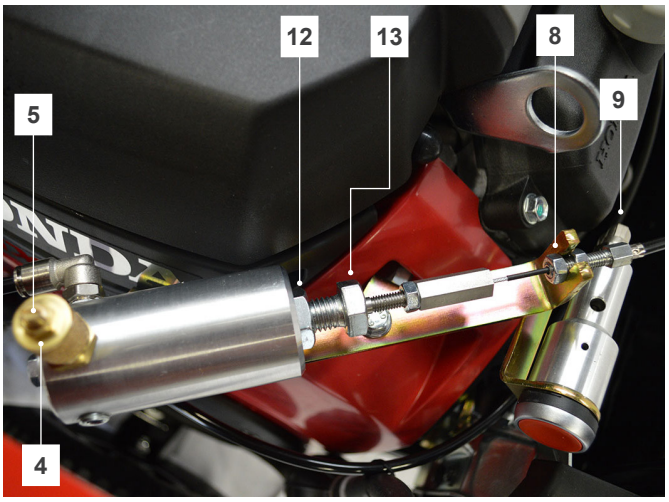
Maximum pressure setting

- start-up engine and leave it to warm up for about 10 mins
- with pressure gauge (1), check maximum pressure
- to set pressure, slacken lock nut (2) and tighten or slacken srew (3) to reach the right maximum pressure (see section 7.4).
- re-tighten lock nuts (2)
- open the air valve (6) very slowly and check the pressure gauge (1) that the needle does not oscillate. If the needle oscillates, or unscrew the nut (4) and unscrew by 1/4 turn screw (5) until the oscillation disappears. Tighten the nut (4).
- check the maximum gauge pressure again (1) and if necessary adjust with screw (3)

Picture 7B

Setting maximum speed and minimum pressure

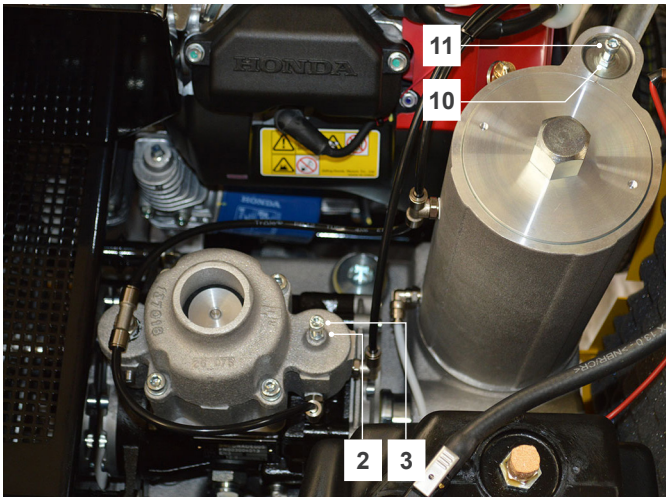
- fully open the valve (6)
- control the speed tachometer (7)
- slacken lock nut (8) and tighten or slacken srew (9) to reach the right speed (see section 7.4)
- re-tighten lock nuts (8)
- maintain the valve (6) open at the bottom and to control the minimum pressure gauge (1)
- loosen the nut against (10) and screw or unscrew the screw (11) to get the right pressure Mini (see section 7.4)
- close the valve



Picture 10B

Mini speed setting

- check the minimum speed to the tachometer (7) (see section 7.4)
- loosen the nut against (12) and screw or unscrew the screw (13) to get the right speed.
- tighten the nut against (12).



Picture 11B

8 - FUELS

8-1 Recommended lubricant for compressor

Note

In these screw compressors, circulating oil has not only a lubricating function, but in particular it also has cooling and sealing functions.

It is therefore exposed to more difficult conditions. In particular the temperature conditions at the installation site and the consistency of the air (dust, dirt, and humidity content, as well as chemical influences) must be taken into account when selecting a suitable lubricant.

Important

Do not mix oils of different specifications.

The maintenance intervals and the maximum and minimum operating temperatures given in this operating manual only apply when high-quality multi-grade oils are used.

Use of the wrong oll leads to impairment of function.

Out of consideration for the high loads imposed on the lubricant in screw compressors with oil injection cooling, we recommend the use of suitable, non ageing, nonfoaming, corrosion-protective oils. They must meet the following requirements for hydraulic fluids: H-LP 46 in accordance with DIN 51524, Part 2,June 1985. The viscosity of the lubricants should comply with viscosity class ISO VG 46 DIN 51519, July 1976, with 41-50 mm2/s (cSt) /40° C

Important

Conventional engine oils with HD designation should not be used.

If other lubricants are to be used, please contact:

CONX EQUIPMENT CANADA INC.
2479 GUENETTE ST.LAURENT, QC
CANADA
Tel. 888-900-2669
Fax 877-592-2669
www.conxequipment.com

8-2 Recommended engine oil

Lubricant specifications for the driving engine can be found in the enclosed engine operating manual.

8-3 Tool lubricants

Important

The wrong tool lubricants lead to deposits that cause malfunctions in the appliances connected!

For the perfect lubrication of concrete breakers and pneumatic spades, we recommend the use of oilers.

8-4 Fuel

Use automotive gasoline (Unleaded or lowleaded is preferred to minimize combustion chamber deposits).

Octane rating : 95-98

Never use an oil / gasoline mixture or dirty gasoline. Avoid getting dirt, dust or water in the fuel tank.

Important

Gasoline substitutes are not recommended; they may be harmful to the fuel system components.

Gasoline is extremely flammable and explosive under certain conditions.

Refuel in a well ventilated area with the engine stopped.

Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.

Do not overfill the tank, and make sure the filler cap is securely closed after refueling.

Be careful not to spill fuel when refueling spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

9 - MAINTENANCE

9-1 Compressor maintenance / Maintenance schedule

In your own interest, tick the maintenance work carried out by you in the maintenance schedule:

W1 **Air filter:**
Every 50 hours (or 3 months): cleaning

W2 **Compressor oil filter:**
First 20 hours: cleaning.
Next, cleaning every 100 hours (or 6 months)

W3 **Oil cooler:**
see ch.9.2.3

W4 **Draining oil circuit:**
First 20 hours: draining.
Next, draining every 100 hours (or 6 months)

W5 **Separator cartridge replacement:**
every 300 hours (or 1 year)

W6 **Belt:**
see ch.9.2.6

W7 **Safety valve:**
Check safety valve each time before starting Up.

W8 Control unit and solenoid valves

W9 Check retaining bolts and nuts for the first time after 20 hours, tighten if necessary

The warning sign «Attention! Maintenance work» must be put up before starting to work. Close off the complete maintenance area, if required.

Important

- **maintenance general: at regular intervals**
- **maintenance engine: in accordance with engine operating manual**

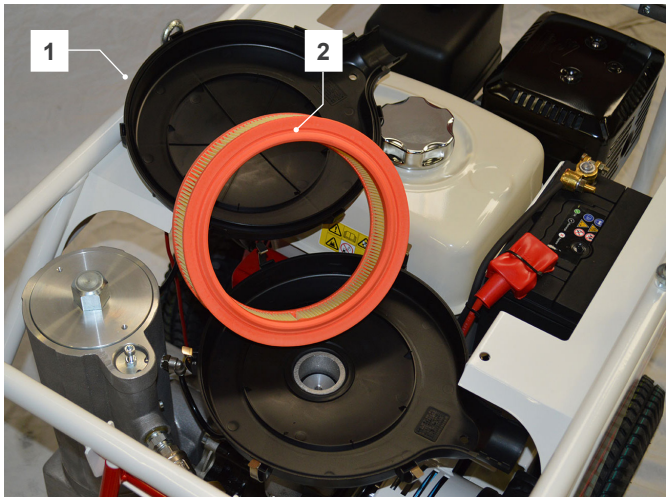
	Hours (1)															
Operation	50	100	150	200	250	300	350	400	450	500	550	600		1000	2000	3000
W1																
W2																
W3 (2)																
W4																
W5																
W6 (2)																
W7 (2)																
W8 (2)																
W9 (2)																

(1) These maintenance intervals must be observed
(2) Please see text above

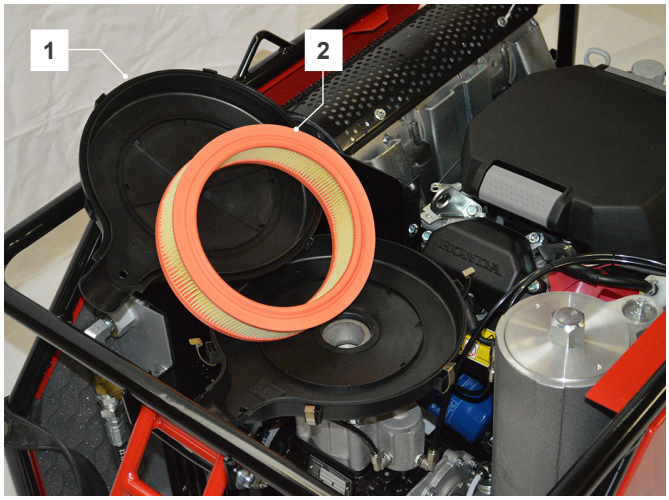
9-2 Maintenance Operations

NOTE: To simplify maintenance work it is recommended to remove the petrol tank.

9-2-1 Compressor Air Filter



Pic. 12A - SC 40 / SC 40 ECONO

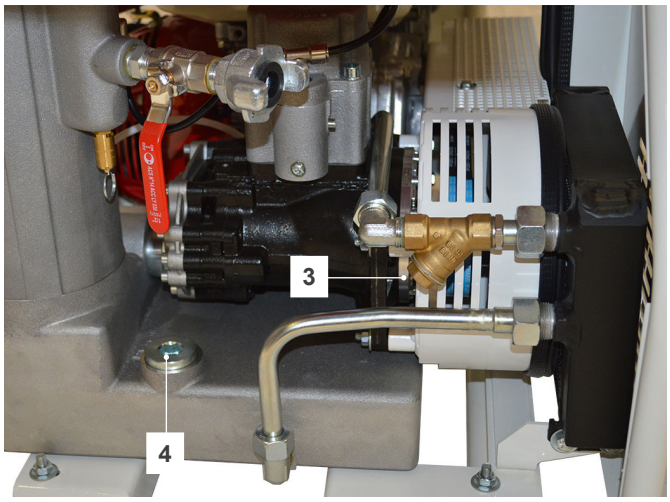


Pic. 12B - SC 70

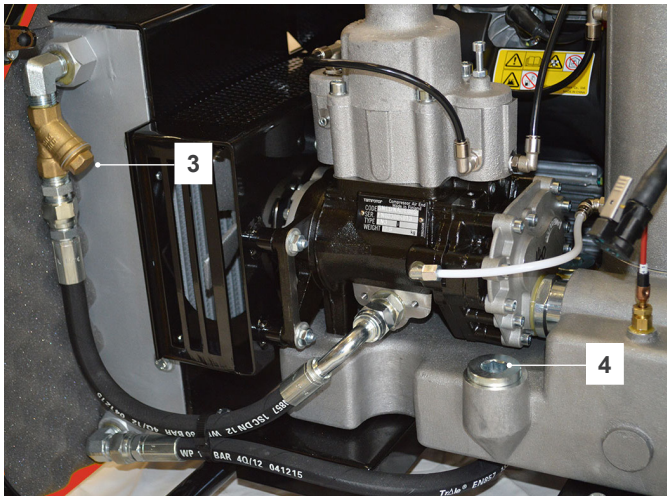
- dismantle the fixing clips of the cover (1)
- remove the filter element (2)
- blow it with compressed air from inside to outside.

If it too blocked, replace it.

9-2-2 Compressor Oil Filter



Pic. 13A - SC 40 / SC 40 ECONO



Pic. 13B - SC 70

Cleaning:

- make sure the circuit has been purged
- unscrew the plug with filter (3)
- clean with a detergent
- dry and reassemble

9-2-3 Oil Cooler

Cleaning:

- blow them with compressed air in the direction contrary to the fresh air intake.

If there is accumulated dirt:

- clean with a detergent

9-2-4 Draining Oil Circuit

After first 20 hours: drain the oil tank

If the oil is hot, take the appropriate precautions.

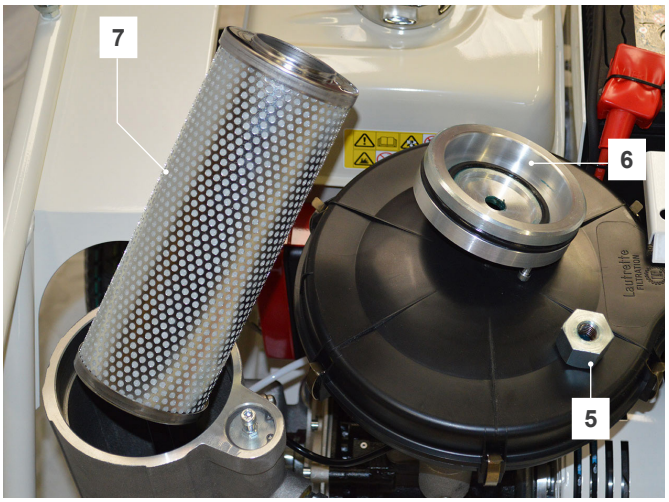
- make sure that the circuit is no longer pressurized.
- unscrew the filling plug (4)
- unscrew the drain plug
- let all oil drain out, making sure to collect it to avoid any pollution.
- re-tighten the drain plug.
- fill up the tank to the maxi-level.

Recommended oil: see section 8.

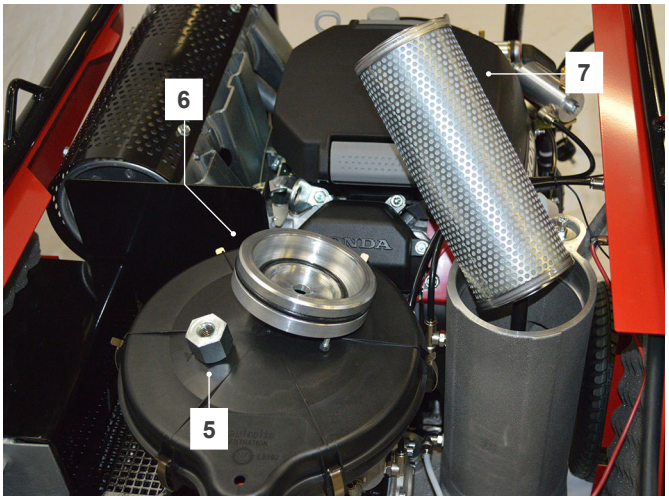
Due to the low oil consumption, there is no need to check the level before 100 hours (except if a leak has been detected).

Reminder: When engine stops the remote temperature detector gives warning of any oil shortage. Then, change the oil every 100 hours (or 6 months).

9-2-5 Separator cartridge replacement



Pic. 14A - SC 40 / SC 40 ECONO



Pic. 14B - SC 70

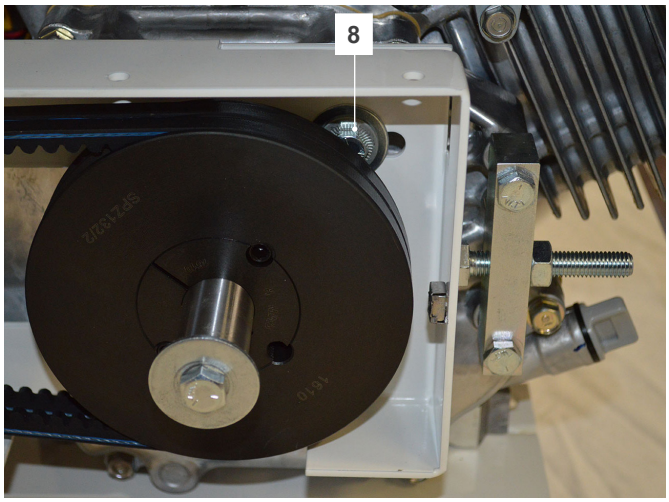
Every 300 hours (or 1 year):

- unscrew plug (5)
- remove cover (6) using its 2 extraction screws
- take out the cartridge (7) and replace it systematically.

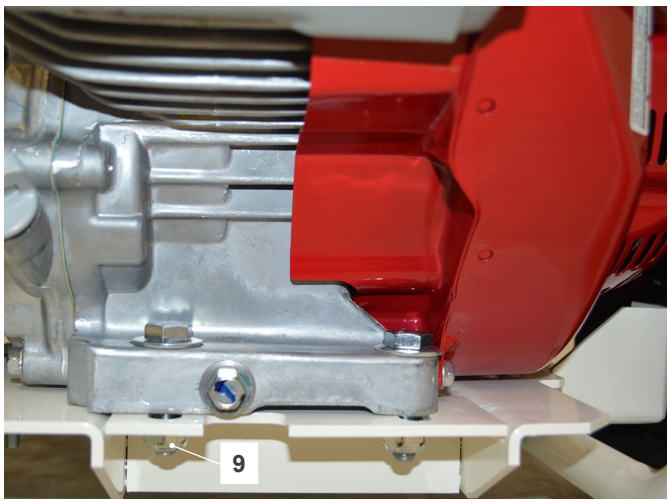
IMPORTANT: This cartridge cannot be cleaned.

- Reassemble after checking the condition of gaskets

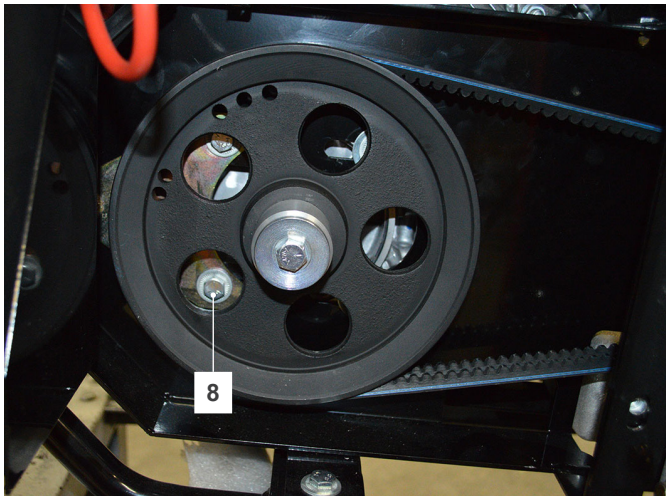
9-2-6 Belts



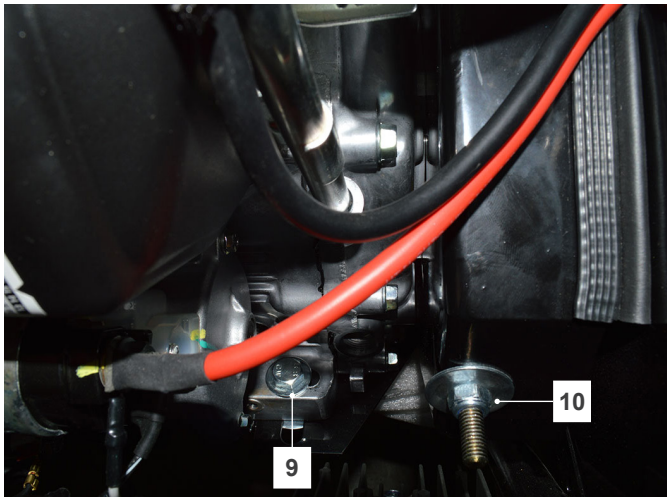
Pic. 15A - SC 40 / SC 40 ECONO



Pic. 16A - SC 40 / SC 40 ECONO



Pic. 15B - SC 70



Pic. 16B - SC 70

After first 20 hours: check the tension (arrow), if necessary retention the 2 belts:

- unmount the wheel
- remove the protective housing
- unblock the 4 engine fixing screws (8)
- unblock the 4 frame fixing screws (9)
- adjust the tension using the adjusting screw (10)

After completion:

- re-block screws (8) and (9)
- remount the protective housing and the wheel.

Replace the belts every 2 years or sooner if wear or deterioration has occurred.

9-2-7 Long term shutdown - garaging

Engine:

- see manufacturers manual for specific operations..

Compressor:

- remove air filter, push back the control valve and inject about 0.5 litre of compressor oil inside.

Complete machine:

- carefully clean the complete unit and grease the rods and various control linkages.

10 - TROUBLESHOOTING

Problem	Possible cause(s)	Correction
Engine stalls when the compressor air valve is closed	Engine too cold	Let the engine warm up for a few minutes
	Maxi-pressure out of adjustment	See section 7.4
	Idling speed too low.	See section 7.4
Untimely engine speed variations	Mixture balance jet out of adjustment	Adjust
	Defective controller membrane	Change the membrane
	Circuit leak	Find the leak and seal it
Compressor output rate too low	Maxi engine speed out of adjustment	See section 7.4
	Compressor air filter is clogged	Clean or change the cartridge
	Regulation out of adjustment	See section 7.4
	Compressed air leak	Find the leak and seal it
	Compressor speed too low	Retention the belts which are slipping
No flow rate	Drive belts broken	Replace belts
Oil traces at air outlet	Oil return jet blocked	Dismount and clean jet
	Incorrect oil viscosity	Drain oil and replace with correct viscosity
	Separator cartridge saturated	Replace the cartridge
Insufficient or no air supply	Clogged air filter	Clean air filter
	Chassis-mounted compressor engine speed misadjusted	Set speed
	Clogged oil fine separator filter cartridge	Replace compressor oil, oil fine separator filter cartridge and clean oilfilter
	Wrong setting at controller	Adjust
	Butterfly in intake control valve not fully opened	Clean, replace parts if necessary, readjust
	Pressure retaining / non-return valve jammed	Clean, replace if necessary
Insufficient pressure	Pressure control valve defective	Repair or replace
	Control line detective	Repair or replace
	Piston ring or spring in engine control cylinder or controller detective	Replace
	Pressure retaining / non-return valve jammed	Clean, replace if necessary
Compressor becomes excessively hot (automatic shutdown)	Wrong oil?	Replace
	Compressor oil level too low	Fill up with oil
	Fan broken	Replace
	Oil cooler dirty (outside)	Clean
	Oil filler clogged	Clean
	Leak in oil line	Repair or replace
	Air short circuit	Repair

Problem	Possible cause(s)	Correction
Chassis-mounted compressor will not start	No fuel or contaminated fuel	Fill up with fuel
	Fuel filter clogged	Repair / Clean
	Fuel line loose, broken, or jammed	Repair line
	Operating voltage low	Charge battery or replace
	Electrical connection loose, corroded, or broken	Repair
	Air in system	Move the manual pump
	Starter defective	Replace
	Other engine problems	See egine operating manual
	Fuse defective	Replace
	Ignition and starting switch defective	Replace
Oil in air line	Orifice in oil return line clogged	Repair / clean
	Oil fine separator defective	Replace
	Too much oil in pressure tank	Correct
Safety valve blows off	Controller set too high	Set
	Pressure control valve defective	Replace
	Intake control valve, control cylinder, engige, or connected control lines defective	Replace or repair
	Safety valve defective	Replace or repair
Oil comes out of the air filter ot the compressor after the lassis-mounted com pressor has been shut down	Intake regulation valve defective	Check and repair
Engine starts but switches off again immediately, or the system switches off while runnlng	V-belt detective	Replace
	Oil pressure switch / engine defective	Replace
	Oil temperatur switch defective	Replace
	Compressor defective	Check
	Ignition and starting switch fuse or diode defective	Replace
	Generator defective	Repair or replace
	Other engine problems	See engine operating manual

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