

## Safety instructions

To reduce the risk of serious injury or death to yourself or others, read and understand the Safety and operating instruction before installing, operating, repairing, maintaining, or changing accessories on the machine.

Post this Safety and operating instruction at work locations, provide copies to employees, and make sure that everyone reads the Safety and operating instruction before operating or servicing the machine. For professional use only.

In addition, the operator or the operator's employer must assess the specific risks that may be present as a result of each use of the machine.

## Safety signal words

The safety signal words Danger, Warning and Caution have the following meanings:

<b>DANGER</b>	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
<b>WARNING</b>	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
<b>CAUTION</b>	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

## Personal precautions and qualifications

Only qualified and trained persons may operate or maintain the machine. They must be physically able to handle the bulk, weight, and power of the tool. Always use your common sense and good judgement.

### Personal protective equipment

Always use approved protective equipment. Operators and all other persons in the working area must wear protective equipment, including at a minimum:

- Protective helmet
- Hearing protection
- Impact resistant eye protection with side protection
- Respiratory protection when appropriate
- Protective gloves
- Proper protective boots
- Appropriate work overall or similar clothing (not loose-fitting) that covers your arms and legs.

### Drugs, alcohol or medication

#### ▲ **WARNING** Drugs, alcohol or medication

Drugs, alcohol or medication may impair your judgment and powers of concentration. Poor reactions and incorrect assessments can lead to severe accidents or death.

- ▶ Never use the machine when you are tired or under the influence of drugs, alcohol or medication.
- ▶ No person who is under the influence of drugs, alcohol or medication may operate the machine.

## Installation, precautions

#### ▲ **WARNING** Hydraulic oil at high pressure

Thin jets of hydraulic oil under high pressure can penetrate the skin and cause permanent injury.

- ▶ Immediately consult a doctor if hydraulic oil has penetrated the skin.
- ▶ Never use your fingers to check for hydraulic fluid leaks.
- ▶ Keep your face away from any possible leaks.

#### ▲ **WARNING** Hydraulic oil

Spilled hydraulic oil can cause burns, accidents due to slippery conditions and will also harm the environment.

- ▶ Take care of all spilled oil and handle it according to your safety and environmental regulations.
- ▶ Never dismount the hydraulic machine when the hydraulic oil is hot.

#### ▲ **CAUTION** Skin eczema

Hydraulic oil can cause eczema if it comes in contact with the skin.

- ▶ Avoid getting hydraulic oil on your hands.
- ▶ Always use protective gloves when working with hydraulic oil.
- ▶ Wash hands after contact with hydraulic oil.

#### ▲ **CAUTION** Moving parts

Risk for crushed hands and fingers.

- ▶ Never check bores or passages with hands or fingers.
- ▶ Never operate the machine when adjusting the choke control or fuel valve.

## Operation, precautions

### ▲ DANGER Explosion hazard

When working on certain materials and when using certain materials in machine parts, sparks and ignition can occur. Explosions will lead to severe injuries or death.

- ▶ Never operate the machine in any explosive environment.
- ▶ Never use the machine near flammable materials, fumes or dust.
- ▶ Make sure that there are no undetected sources of gas or explosives.

### ▲ DANGER Fuel hazard

The fuel (petrol and oil) is extremely flammable and petrol fumes can explode when ignited, causing serious injury or death.

- ▶ Protect your skin from contact with the fuel. If fuel has penetrated the skin, consult a qualified health professional.
- ▶ Never remove the filler cap, and never fill the fuel tank when the machine is hot.
- ▶ Release the filler cap slowly to let pressure escape.
- ▶ Never overfill the fuel tank.
- ▶ Make sure the filler cap is screwed on when the machine is used.
- ▶ Avoid spilling fuel on the machine, wipe off any spilled fuel.
- ▶ Check regularly for fuel leaks. Never use the machine if it is leaking fuel.
- ▶ Never use the machine in the proximity of material that can generate sparks. Remove all hot or spark-generating devices before starting the machine.
- ▶ Never smoke when filling the fuel tank or when working with the machine or servicing it.
- ▶ Only store fuel in a container that is specially constructed and approved for the purpose.
- ▶ Consumed petrol and oil containers must be taken care of and returned to the retailer.
- ▶ Never use your fingers to check for fluid leaks.

### ▲ DANGER Exhaust gas hazard

The exhaust gas from the machine's combustion engine contains carbon monoxide which is poisonous, and chemicals known to the State of California and other authorities to cause cancer, birth defects, or other reproductive harm. Inhalation of exhaust fumes can cause serious injury, illness, or death.

- ▶ Never inhale exhaust fumes.
- ▶ Never operate the machine indoors or in a poorly ventilated area.
- ▶ Never stand in a deep hole, ditch, or similar surrounding during operating.

**▲ WARNING Dust and fume hazard**

Dusts and/or fumes generated or dispersed when using the machine may cause serious and permanent respiratory disease, illness, or other bodily injury (for example, silicosis or other irreversible lung disease that can be fatal, cancer, birth defects, and/or skin inflammation).

Some dusts and fumes created by drilling, breaking, hammering, sawing, grinding and other construction activities contain substances known to the State of California and other authorities to cause respiratory disease, cancer, birth defects, or other reproductive harm. Some examples of such substances are:

- Crystalline silica, cement, and other masonry products.
- Arsenic and chromium from chemically-treated rubber.
- Lead from lead-based paints.

Dust and fumes in the air can be invisible to the naked eye, so do not rely on eye sight to determine if there is dust or fumes in the air.

To reduce the risk of exposure to dust and fumes, do all of the following:

- ▶ Perform site-specific risk assessment. The risk assessment should include dust and fumes created by the use of the machine and the potential for disturbing existing dust.
- ▶ Use proper engineering controls to minimize the amount of dust and fumes in the air and to minimize build-up on equipment, surfaces, clothing, and body parts. Examples of controls include: exhaust ventilation and dust collection systems, water sprays, and wet drilling. Control dusts and fumes at the source where possible. Make sure that controls are properly installed, maintained and correctly used.
- ▶ Wear, maintain and correctly use respiratory protection as instructed by your employer and as required by occupational health and safety regulations. The respiratory protection must be effective for the type of substance at issue (and if applicable, approved by relevant governmental authority).
- ▶ Work in a well ventilated area.
- ▶ If the machine has an exhaust, direct the exhaust so as to reduce disturbance of dust in a dust filled environment.
- ▶ Operate and maintain the machine as recommended in the operating and safety instructions

- ▶ Select, maintain and replace consumables/ working tools/ other accessories as recommended in the operating and safety instructions. Incorrect selection or lack of maintenance of consumables/ inserted tools/ other accessories may cause an unnecessary increase in dust or fumes.
- ▶ Wear washable or disposable protective clothes at the worksite, and shower and change into clean clothes before leaving the worksite to reduce exposure of dust and fumes to yourself, other persons, cars, homes, and other areas.
- ▶ Avoid eating, drinking, and using tobacco products in areas where there is dust or fumes.
- ▶ Wash your hands and face thoroughly as soon as possible upon leaving the exposure area, and always before eating, drinking, using tobacco products, or making contact with other persons.
- ▶ Comply with all applicable laws and regulations, including occupational health and safety regulations.
- ▶ Participate in air monitoring, medical examination programs, and health and safety training programs provided by your employer or trade organizations and in accordance with occupational health and safety regulations and recommendations. Consult with physicians experienced with relevant occupational medicine.
- ▶ Work with your employer and trade organization to reduce dust and fume exposure at the worksite and to reduce the risks. Effective health and safety programs, policies and procedures for protecting workers and others against harmful exposure to dust and fumes should be established and implemented based on advice from health and safety experts. Consult with experts.
- ▶ Residues of hazardous substances on the machine can be a risk. Before undertaking any maintenance on the machine, clean it thoroughly.

**▲ WARNING Overheated power pack**

The power pack can become overheated and cause burns.

- ▶ Never close the cooler in order to warm up the power pack quicker.
- ▶ Never run the power pack without a fan.

**▲ WARNING Slipping, tripping and falling hazards**

There is a risk of slipping or tripping or falling, for example tripping on the hoses or on other objects. Slipping or tripping or falling can cause injury. To reduce this risk:

- ▶ Always make sure that no hose or other object is in your way or in any other person's way.
- ▶ Always make sure you are in a stable position with your feet as far apart as your shoulders width and keeping a balanced body weight.

**▲ DANGER Electrical hazard**

The machine is not electrically insulated. If the machine comes into contact with electricity, serious injuries or death may result.

- ▶ Never operate the machine near any electric wire or other source of electricity.
- ▶ Make sure that there are no concealed wires or other sources of electricity in the working area.

**▲ WARNING Involuntary start**

Involuntary start of the machine may cause injury.

- ▶ Keep your hands away from the start and stop device until you are ready to start the machine.
- ▶ Learn how the machine is switched off in the event of an emergency.
- ▶ Stop the machine immediately in all cases of power supply interruption.

**▲ WARNING Noise hazard**

High noise levels can cause permanent and disabling hearing loss and other problems such as tinnitus (ringing, buzzing, whistling, or humming in the ears). To reduce risks and prevent an unnecessary increase in noise levels:

- ▶ Risk assessment of these hazards and implementation of appropriate controls is essential.
- ▶ Operate and maintain the machine as recommended in these instructions.
- ▶ Select, maintain and replace the working tool as recommended in these instructions.
- ▶ If the machine has a silencer, check that it is in place and in good working condition.
- ▶ Always use hearing protection.
- ▶ Use damping material to prevent work pieces from 'ringing'!

**▲ WARNING Nominal pressure**

If the maximum nominal pressure for the hydraulic machine is exceeded, it can result in material damage and personal injury.

- ▶ Always run the hydraulic machine with a tool that does not require a continuously higher pressure than the stated nominal pressure. See section "Technical data".

**▲ DANGER Electrical hazard**

There is a risk of electrical shocks from electrically powered machines which can lead to serious injuries or death.

- ▶ Avoid body contact with grounded surfaces.
- ▶ Make sure that there are no concealed wires or other sources of electricity in the working area.
- ▶ Always connect the machine to an earthed outlet socket.
- ▶ Always check that the mains voltage corresponds with that stated on the data plate on the machine.

**▲ DANGER Fire hazard**

If a fire starts in the machine, it can cause injury.

- ▶ If possible use an ABE-class powder extinguisher, otherwise use a BE-type carbon dioxide fire extinguisher.

**▲ DANGER Electrical cable hazard**

There is a risk of electrical shocks if the electrical cable is not treated correctly, this can lead to serious injuries or death.

- ▶ Never move the machine by dragging the electrical cable.
- ▶ Disconnect the cable only by pulling the socket, never pull the electrical cable.
- ▶ Always make sure that the electrical cable is kept away from water, oil and sharp edges.
- ▶ Make sure the electrical cable is not pinched in doors, fences or similar.
- ▶ Check that the electrical cable and cable plug are intact and in good condition.
- ▶ Never connect a damaged electrical cable to the machine.
- ▶ Never touch the electrical cable if it becoming damaged while working. Disconnect the electrical cable plug from the socket.

## Maintenance, precautions

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### **▲ WARNING Machine modification**

Any machine modification may result in bodily injuries to yourself or others.

- ▶ Never modify the machine. Modified machines are not covered by warranty or product liability.
- ▶ Always use original parts, insertion tools and accessories approved by Atlas Copco.
- ▶ Change damaged parts immediately.
- ▶ Replace worn components in good time.

### **▲ WARNING Hot components**

Under normal working conditions the engine components, particularly the exhaust system, will get hot. The hydraulic oil, pump, valve, and tank can also reach high temperatures that can cause burns.

- ▶ Never touch a hot exhaust system, hydraulic oil, pump, valve or tank.

### **▲ WARNING Accessory hazards**

Accidental engagement of accessories during maintenance or installation can cause serious injuries, when the power source is connected.

- ▶ Never inspect, clean, install, or remove accessories while the power source is connected.

## Storage, precautions

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- ◆ Keep the machine and tools in a safe place, out of the reach of children and locked up.

## Overview

To reduce the risk of serious injury or death to yourself or others, read the Safety instructions section found on the previous pages of this manual before operating the machine.

## Design and function

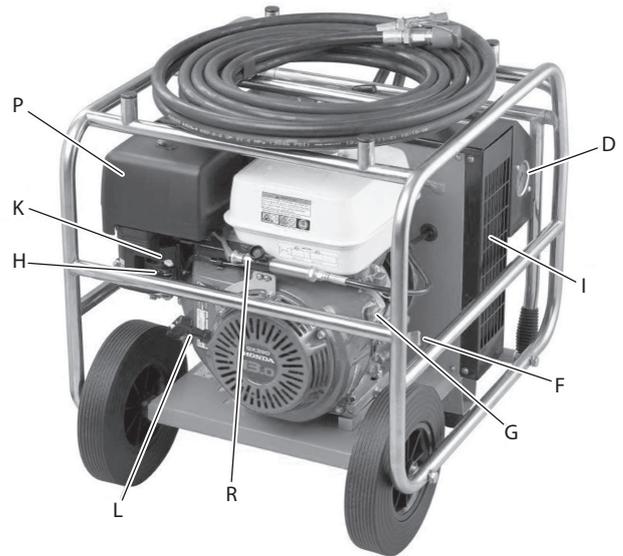
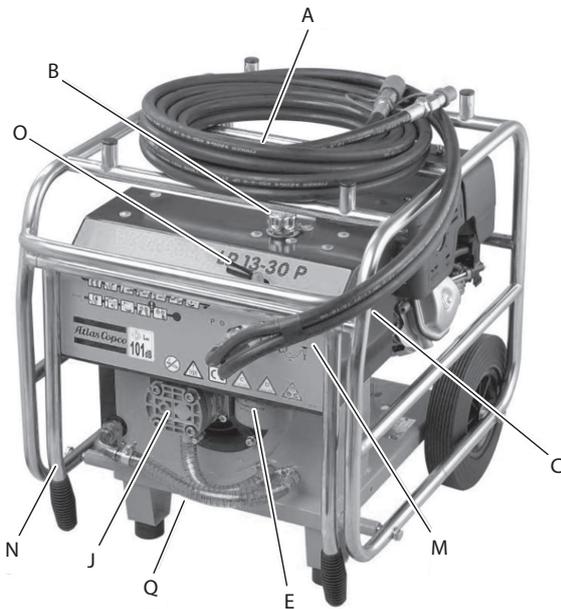
The Atlas Copco LP 13-30 P is a hydraulic power pack designed for operating hydraulic breakers and other hydraulic machines. No other use is permitted. LP 13-30 P is fitted with an air cooled 13 HP Honda petrol engine with hydraulic POD system (power on demand).

LP 13-30 P provides a oil flow of 20-30 l.p.m. (5-8 US gal/min).

The torque of the engine is reduced when reducing the r.p.m. The power pack can therefore not in all cases deliver the maximum pressure at low r.p.m.

## Main parts

### LP 13-30 P

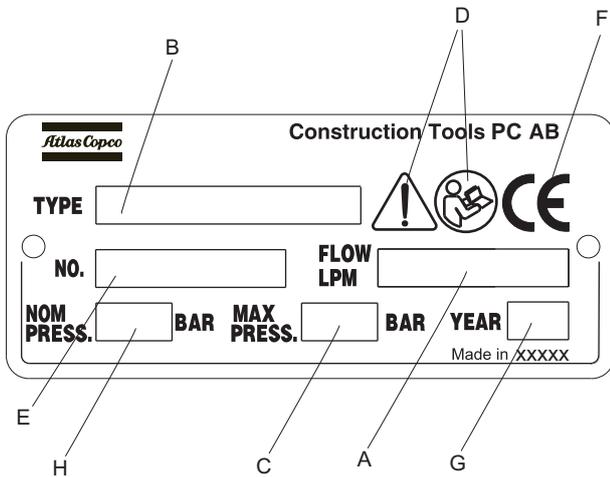


- A. Filler cap, fuel
- B. Filler cap, hydraulic oil
- C. Sight glass, hydraulic oil level
- D. Filter condition gauge
- E. Hydraulic oil filter
- F. Engine oil, dipstick
- G. Ignition switch OFF and ON
- H. Fuel tap
- I. Oil cooler
- J. Hydraulic pump
- K. Choke control
- L. Recoil start
- M. Pressure relief valve
- N. Foldable handles
- O. By-pass valve
- P. Air filter
- Q. Drain plug
- R. POD system

## Labels

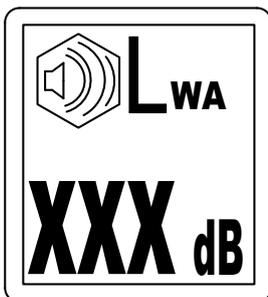
The machine is fitted with labels containing important information about personal safety and machine maintenance. The labels must be in such condition that they are easy to read. New labels can be ordered from the spare parts list.

### Data plate



- A. Maximum permitted hydraulic oil flow
- B. Machine type
- C. Maximum relief valve setting
- D. The warning symbol together with the book symbol means that the user must read the safety and operating instructions before the machine is used for the first time.
- E. Serial number (is also stamped in the valve housing).
- F. The CE symbol means that the machine is EC-approved. See the EC declaration which is delivered with the machine for more information.
- G. Year of manufacture.
- H. Maximum nominal operating pressure

### Noise level label



The label indicates the guaranteed noise level corresponding to EC-directive 2000/14/EC. See "Technical data" for accurate noise level.

### EHTMA

The European Hydraulic Tool Manufacturers Association (EHTMA) has categorised hydraulic power packs and tools in terms of flow rate and working pressure.

	LP 13-30 P
Flow rate	20-30 l.p.m. (5-8 US gal/min)
Nominal pressure	125 bar (1,812 psi)
Max pressure	150 bar (2,175 psi)
EHTMA category	C and D

### EHTMA category

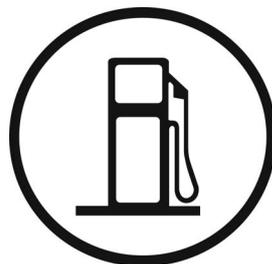
The machine is clearly marked with EHTMA categories. It is important that any power source used is in a compatible category. If any doubt, consult an authorised supervisor.

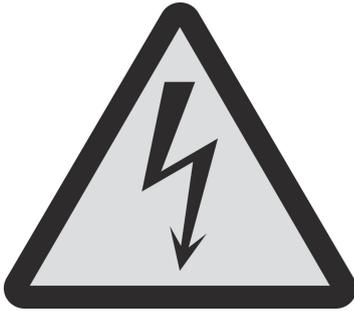
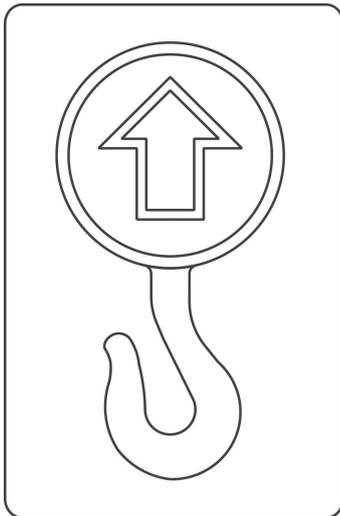


### Safety label



### Fuel label



**Electricity label****Lifting point label****Installation****▲ WARNING Whipping hydraulic hose**

Hydraulic hoses under pressure can whip uncontrollably if screws loosen or are loosened. A whipping hydraulic hose can cause severe injuries.

- ▶ Depressurise the hydraulic system before loosening the connection of a hydraulic hose.
- ▶ Tighten the nuts on the connections of the hydraulic hoses to the required torque.
- ▶ Check that the hydraulic hose and the connections are not damaged.

**Quick-release couplings**

The original hydraulic hoses are fitted with Flat-Face quick-release couplings that are strong and easy to clean. The quick-release couplings are fitted so that the male connection supplies oil and the female connection receives oil.

**NOTICE** Wipe all couplings clean before connecting. Ensure that couplings are clean and correctly engaged before operation. Failure to do so may result in damage to the quick couplings and

cause overheating and cause foreign matter to enter the hydraulic system.

**Hydraulic oil**

In order to protect the environment, use of biologically degradable hydraulic oil is recommended. No other fluids must be used.

- ◆ Viscosity (preferred) 20-40 cSt.
- ◆ Viscosity (permitted) 15-100 cSt.
- ◆ Viscosity index minimum 100.

Standard mineral or synthetic oil can be used. Make sure to only use clean oil and filling equipment.

When the machine is used continuously, the oil temperature will stabilise at a level which is called the working temperature. This will, depending on the type of work and the cooling capacity of the hydraulic system, be between 20-40°C (68-104°F) above the ambient temperature. At working temperature, the oil viscosity must be within the preferred limits. The viscosity index indicates the connection between viscosity and temperature. A high viscosity is therefore preferred, because the oil can then be used within a wider temperature range. The machine must not be used, if oil viscosity fails to remain within the permitted area, or if the working temperature of the oil does not fall between 20°C (68°F) and 70°C (158°F).

**NOTICE** The setting of the pressure relief valve on the machine can in some cases be higher than the prescribed maximum setting according to the EHTMA category, see "EHTMA category". A too high pressure relief valve setting can harm the machine to be used. Readjust the pressure relief valve, if the technical specifications of the machine prescribe a lower pressure relief valve setting than the standard setting of the machine.

## Hydraulic control and connectors



The by-pass valve (C) must be in the OFF position when starting and in the ON position when using the machine.

Connectors (G) and (H) are used to connect the power pack to the machine as follows:

- ◆ Connector (G) = Return (female quick-release coupling).
- ◆ Connector (H) = Feed (male quick-release coupling).

## Hoses and connections

Ensure that the machine you plan to use is compatible with the model of power pack being used. Otherwise, both the power pack and the machine might be harmed. Check the "Technical data" in this instruction book and compare the flow rate with the technical specifications in the instruction book for the machine.

### Connecting hoses

1. Turn the by-pass valve to the OFF position and stop the engine.
2. Make sure the couplings are clean and serviceable.
3. Attach the return line hose and the feed line hose.
4. Start the engine and run the power pack to fill up the hydraulic circuit. Check the hydraulic oil level.

### Disconnecting hoses

1. Turn the by-pass valve to the OFF position and stop the engine.
2. Remove the feed line hose and the return line hose.

The couplings are unlocked by moving the collar back on the coupling.

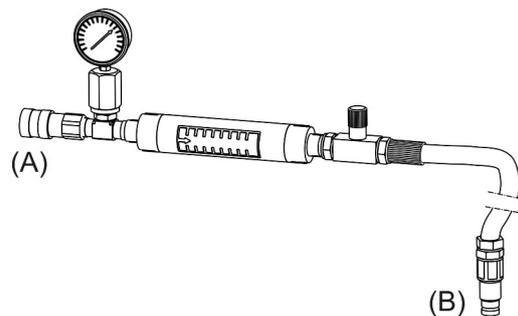
### Hose length

For power packs giving a flow of 20 l.p.m. (5 US gal/min), a maximum hose length of 21 m (69 ft) is recommended. For power packs giving a higher flow, a maximum hose length of 14 m (46 ft) is recommended.

Normally, 7 m (23 ft) of Twin hose is used for the power pack.

Twin hoses and other accessories are shown in the spare parts list.

## Check the hydraulic system



To set or check the hydraulic oil flow and the pressure relief valve, we recommend using the Atlas Copco test equipment or similar test equipment.

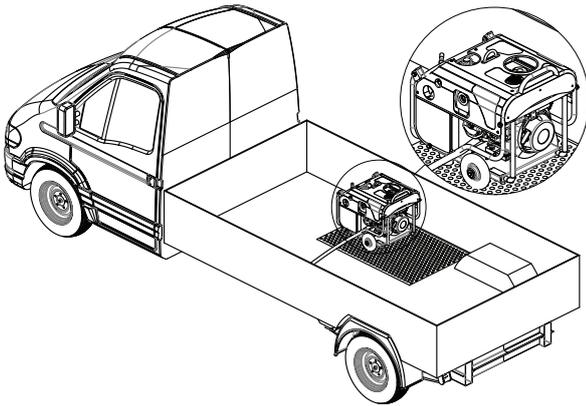
- ◆ 0-250 bar (0-3600 psi)

- ◆ 5-46 l.p.m. (1-12 US gal/min)

1. Stop the engine.
2. Connect the test equipment to the power pack. Male (B) to the return connector and female (A) to the feed connector on the power pack.
3. Make sure that the loading valve of the test equipment is fully open.
4. Start the engine.
5. Move the by-pass valve on the power pack to the ON position.
6. Turn the loading valve, until the gauge shows approximately 70 bar (1,000 psi) and allow the power pack to warm up for 3-4 minutes.

7. Slowly close the loading valve, until the pressure gauge shows a pressure of 100 bar (1,400 psi).
8. Check that the flow is according to the flow rate in the technical specifications.
9. The accuracy of the reading on the flow meter is  $\pm 2$  l.p.m. ( $\pm 0.5$  US gal/min). If the performance is not in accordance with the technical specifications for the power pack, see section "Troubleshooting".

## Transport



During transport make sure the power pack is secured. Ensure that the power pack is upright during transportation and lifted with approved lifting equipment.

## Operation

### **▲ WARNING Involuntary start**

Involuntary start of the machine may cause injury.

- ▶ Keep your hands away from the start and stop device until you are ready to start the machine.
- ▶ Learn how the machine is switched off in the event of an emergency.
- ▶ Stop the machine immediately in all cases of power supply interruption.

## Operating

### **Preparation before starting**

The following checks must be made each time you start to use the power pack. All these checks concern the serviceability of the power pack. Some concern your safety:

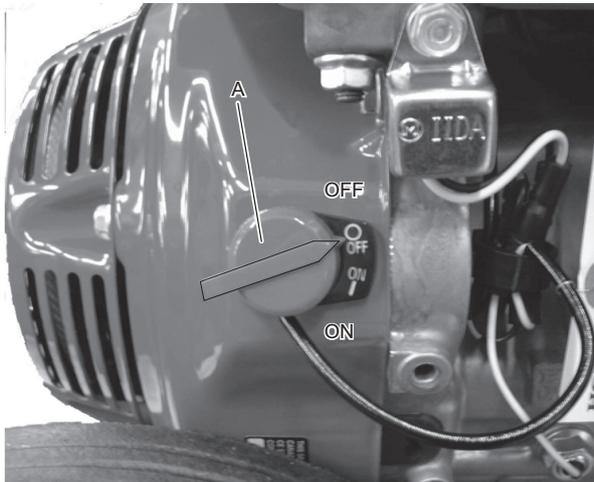
- ◆ Clean all safety labels. Replace any that are missing or cannot be read.
- ◆ Inspect the power pack and hoses generally for signs of damage.
- ◆ Remove dirt and debris especially from the linkages and hydraulic oil cooler.
- ◆ Check for oil and fuel leakages beneath the power pack.
- ◆ Ensure that the hydraulic couplings are clean and fully serviceable.
- ◆ Check all fastenings.
- ◆ Check the hydraulic oil level and add as necessary.
- ◆ Check the engine oil level and add oil as necessary.
- ◆ Make sure the fuel filler cap is tightly closed.
- ◆ Place the power pack in a safe position, to prevent tilting during operation.
- ◆ Ensure that any machines you plan to use are compatible with the power pack model used.
- ◆ Ensure that you have adequate fuel for the job. Top up as necessary, taking care not to overfill.
- ◆ If the power pack has a recoil starter for starting the engine, the cord must not be wound around the operator's hand when starting the engine.

The first time the power pack is started with new hoses, these will take approx 1.5 litres (0.4 US gal) of oil to fill up. Add this amount of oil after the first start-up.

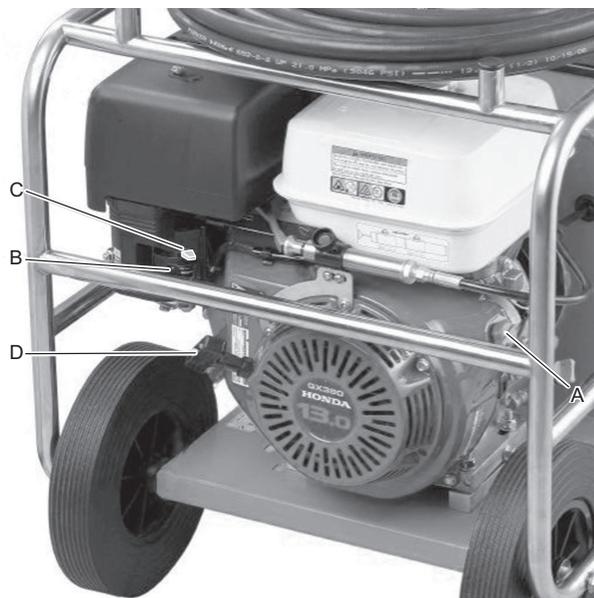
## Start and stop

### Starting the engine

1. Turn the engine switch (A) to position ON.



2. Turn on the fuel by setting the fuel control (B) to the ON position.
3. Move the choke control (C) to the CLOSE position. If the engine is warm, or the air temperature is high, move the choke control to the OPEN position.



4. Set the hydraulic by-pass valve (E) to the OFF position.



5. Pull out the starter rope (D) until it resists. Release the handle so the starter rope goes back again, and then pull the starter rope until the engine starts.
6. As the engine warms up, gradually move the choke control (C) to the OPEN position.

Before usage, the power pack must be allowed to warm up for several minutes to its working temperature.

### Stopping the engine

1. Turn the engine switch (E) to position OFF.
2. Turn off the fuel by setting the fuel control (B) to the OFF position.

## When taking a break

- ◆ During all breaks you must place the machine in such a way that there is no risk for it to be unintentionally started. Make sure to place the machine on the ground, so that it can not fall.
- ◆ Switch off the power supply in the event of a longer break or when leaving the workplace.

## Maintenance

Regular maintenance is a basic requirement for the continued safe and efficient use of the machine.

Follow the maintenance instructions carefully.

- ◆ Before starting maintenance on the machine, clean it in order to avoid exposure to hazardous substances. See "Dust and fume hazard".
- ◆ Use only authorised parts. Any damage or malfunction caused by the use of unauthorised parts is not covered by warranty or product liability.
- ◆ When cleaning mechanical parts with solvent, comply with appropriate health and safety regulations and ensure there is satisfactory ventilation.
- ◆ For major service of the machine, contact the nearest authorised workshop.
- ◆ After each service, check that the machine's vibration level is normal. If not, contact the nearest authorised workshop.

## Every day

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Never perform maintenance when the power pack is running.

- ◆ Clean and inspect the machine and its functions each day before start working.
- ◆ Conduct a general inspection for leaks and damage and wear.
- ◆ Change damaged parts immediately.
- ◆ Replace worn components in good time.
- ◆ Never use the equipment if you suspect that it is damaged.
- ◆ Never strike or abuse the equipment.
- ◆ Make sure that all the attached and related equipment, such as hoses and POD (power on demand) are in good condition.
- ◆ Check hydraulic oil level.
- ◆ Check hydraulic couplings.
- ◆ Check hydraulic filter.
- ◆ Check engine oil level.
- ◆ All fasteners and other threaded components to be tightened to the specified torque only.

- ◆ Check tightness of nuts, bolts, screws and hose fittings after the first days of operation and there after in accordance with the maintenance schedule.
- ◆ The engine oil should be replaced after the first 8 hours of operation and thereafter in accordance with the maintenance schedule in the engine manufacturer's operating and maintenance instructions.

### Check hydraulic oil filter

When the filter gauge needle remains in the red sector (while the engine is idling and the oil is at service temperature), the filter must be replaced.

1. Stop the engine, switch off by-pass valve.
2. The old filter is removed by turning it clockwise (use a filter strap wrench if necessary).
3. Tilting the power pack rearwards will minimise oil spillage.
4. Before mounting the new filter, it is recommended to grease the surface of the seal with oil in order to ease tightening of the filter.

## Every three months

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- ◆ Check tightness of nuts, bolts, screws and hose fittings.
- ◆ Clean the air cleaner element, see engine manufacturer's handbook.

## Every 300 hours or every year

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- ◆ Change the hydraulic oil.
- ◆ Change the hydraulic oil filter.
- ◆ For engine maintenance, see engine manufacturer's handbook.