

Original instruction manual



High pressure cleaner Batch 9015 - 9020S  
Batch 9015ST - 9020S-ST  
Batch 2008 - 3016

150 – 240 bar

Warning: Read this manual before operating the product

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## EU-OVERENSSTEMMELSESERKLÆRING

Fabrikant: **KENT HØJTRYK A/S**  
**Skovbrynet 10**  
**DK - 6752 Glejbjerg**  
Tlf: **+45 75 19 80 33**



Erklærer hermed, at Maskine:



### Højtryksrensere

**Model:** 9015:  9018:  9018S:  9019:  9019S:  9020:  9020S:



**Model:** 9015ST:  9018ST:  9018S-ST:  9019ST:  9019S-ST:  9020ST:  1520S-ST:



**Model:** 2008:  3010BB:  3010:  3010S:  3011:  3012:  3014:  3016:

Fabr. nr.:

Årgang:

Er fremstillet i overensstemmelse med:

- Bestemmelserne i Rådets direktiv af 17. maj 2006 om indbyrdes tilnærmelse af medlemstaternes lovgivning om maskiner (2006/42/EF) under særlig henvisning til direktivets **bilag II, A og bilag I**, om væsentlige sikkerheds- og sundhedskrav i forbindelse med konstruktion og fremstilling af maskiner.*
- Bestemmelserne i Rådets direktiv af 12. december 2006 om indbyrdes tilnærmelse af medlemstaternes lovgivning om elektrisk materiel bestemt til anvendelse inden for visse spændingsgrænser (2006/95/EF).*
- Bestemmelserne i Rådets direktiv af 15. december 2004 om indbyrdes tilnærmelse af medlemstaternes lovgivning om elektromagnetisk kompatibilitet (2004/108/E).*

Er fremstillet i overensstemmelse med følgende **nationale/internationale standarder og tekniske specifikationer:**

DS/EN 60335-2-79  
DS/EN ISO 12100:2010  
DS/EN 60204-1:2006

Sikkerhed - *Særlige krav til højtryksrensere og damprensere. 2009-11-17*  
Maskinsikkerhed - *Generelle principper for konstruktion - Risikovurdering og risikonedsettelse.*  
Maskinsikkerhed - *Elektrisk udstyr på maskiner - Del 1: Generelle krav*

Ove Jørgensen

Dato: 18/4-2017

(Underskrift)

**EC-DECLARATION OF CONFORMITY FOR MACHINERY**

Manufacturer: **KENT HØJTRYK A/S**  
**Skovbrynet 10**  
**DK - 6752 Glejbjerg**  
Tel: **+45 75 26 73 00**



Hereby declare that:

**High pressure cleaners**

**Model:** 9015:  9018:  9018S:  9019:  9019S:  9020:  9020S:



**Model:** 9015ST:  9018ST:  9018S-ST:  9019ST:  9019S-ST:  9020ST:  1520S-ST:



**Model:** 2008:  3010BB:  3010:  3010S:  3011:  3012:  3014:  3016:

Manufacturing no.:

Year:

Is manufactured in conformity with:



*Provision in the Council Directive of 17. May 2006 on mutual approximation of the laws of the Member States on the safety of machines (2006/42/EC) with special reference to Annex II, A and Annex I, of the Directive on essential safety and health requirements in relation to construction and manufacture of machines.*



*Provision in the Council Directive of 12. December 2006 on mutual approximation of the laws of the Member States on electrical equipment intended for apply to some tension limits (2006/95/EC).*



*Provision in the Council Directive of 15. December 2004 on mutual approximation of the laws of the Member States on electromagnetic compatibility (2004/108/EC).*

Is manufactured in conformity with following national / international standards and technical specifications:

DS/EN 60335-2-79 Safety - Particular requirements for high pressure cleaners and stem cleaners. 2009-11-17  
EN ISO 12100:2010 Safety of machinery - General principles for design - Risk assessment and risk reduction  
DS/EN 60204-1:2006 Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Ove Jørgensen

(Sign)

Date: 18/4-2017

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## 1. Machine description

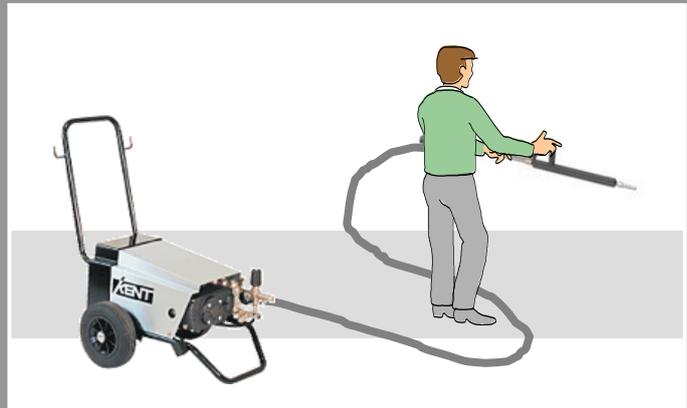
### 1.1 Application:

Congratulations with your choice of a Kent high-pressure cleaner. You have purchased a unit with high technological value. It is a professional and reliable machine which you can use for many years. Thus, we ask you to read and follow the instruction manual carefully.

This instruction manual is an integral part of the machine and must be read carefully before the unit is installed, turned on and used. The manual contains important information and instructions for the safe usage and maintenance of the machine.

Therefore it must be kept with care.

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### **Utilization:**

This machine is designed exclusively for washing by means of pressurized water jet, objects, things or surfaces eligible to be treated by the mechanical action of pressurized water jet and by the possible chemical action of liquid detergent additives. The liquid detergent additives must be chosen in accordance with the chemical compatibility of the surfaces to be washed.

High-pressure cleaners can clean with either cold or hot water, but for technical reasons the pumps in the high-pressure cleaners must not run with water temperatures above 60 °C. Higher temperatures require equipment which heats up the water on the outlet side of the high-pressure cleaner. In most cases the water temperature will improve the cleaning process, in particular on greasy surfaces.

The high-pressure cleaner requires either 3 x 230 volt or 3 x 400 volt. Please see the nameplate.

The high-pressure cleaner must only be used with process water or collected rain water with a purity equal to tap water. The inlet side requires a 3/4 inch. pipe diameter with a flow of at least 10 L / min.

The high-pressure cleaner is relatively noiseless with a noise level below 70 dB. Make sure the operator wears hearing protection if the work is considered damaging to hearing. This means that noise exposure even below 85 dB(A) may require the use of hearing protection (4).

### **Examples of possible use:**

*Farming:* Intensive keeping- and breeding firms, farms, slaughterhouses.

*Workshops:* Maintenance of tractors and agricultural machinery.

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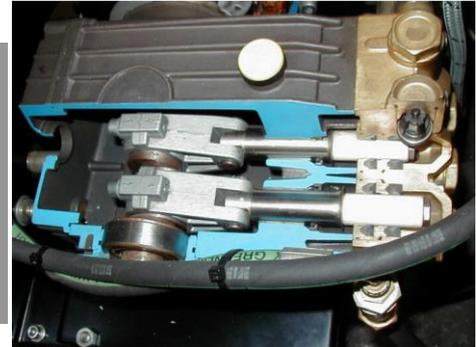
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## **1.2 Functionality:**

Section of 3 cyl. pump piston cycle.

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### **Pump:**

3-cylinder, vibrationless and noiseless, oil bath lubricated high-pressure plunger pump made of rust- and acidproof materials. The plungers are made of non-wearing ceramic material. Suitable for temperatures up to 60° C.

### **Safety valve:**

Built-in adjustable by-pass – continuous variable regulation of water volume.

### **Pressure regulation:**

Working pressure adjustable from 30 bar to max. pressure at the lance. The low-pressure injector with dosage regulation for detergents is also controlled from the lance.

### **Mics:**

Epoxy-treated steel frame and cover. 10" wheel, 8 m high-pressure hose, spraygun, double-lance incl. nozzles, 10 m electric cable.

### **Optional:**

- Auto start/stop.
- Detergent container.

### **Product range:**

4 models are manufactured with each suitable for a pressure between 150 and 200 bar. A further 3 variations of model "S" which can build up an additional pressure. Can also be delivered as stationary model. In addition, and a smaller model 3016 high pressure cleaner. All models have identical designs, and only pump and electric motor may vary depending on the model. See Technical specifications.

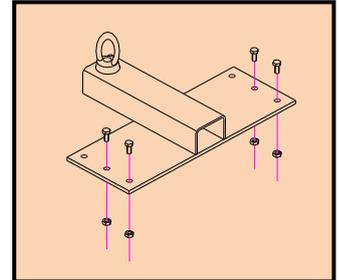
## 2. User guide

### 2.1 Preparation

The high-pressure cleaner must be moved by use of either a forklift truck, by rigging it directly onto a pallet with the high-pressure cleaner securely fixed, or lifting by crane with the shown lifting bracket No. 19664, as mentioned in section 4.1.

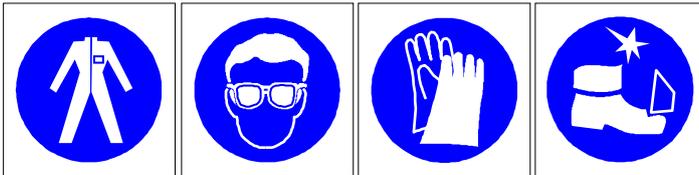
The high-pressure cleaner must be switched off and, if possible, cooled down during handling.

Weight 70-82 kg depending on model. Please see previous list.



Never lift higher than 0,5 m and never lift above persons. Connect power and water only when the unit is placed on a stable and level surface.

This unit has been tested and test-run in the factory, but after transportation it may require a fine adjustment and visual check of all operations. Always check for loose wires, screws and defect joints. Pay particularly attention to thread connections and the equipment fittings at the outlet and inlet connections on the high-pressure cleaner.



Make sure that personal protective equipment is within reach. We recommend that operators wear protective clothing, protective goggles, gloves and safety footwear during operation of the high-pressure cleaner.

The work must always be planned in compliance with good ergonomic principles, and breaks must be organized during large and continuous tasks. Avoid straining of back and arms and plan the work day after consulting management and avoid stress. Vary your work or take appropriate breaks in order to avoid monotonous strain.

Check oil level through pump indicator glass. Change oil after 25 hours of operation. Then after each 200 hours of operation. Use a good motor oil, SAE 20/30.

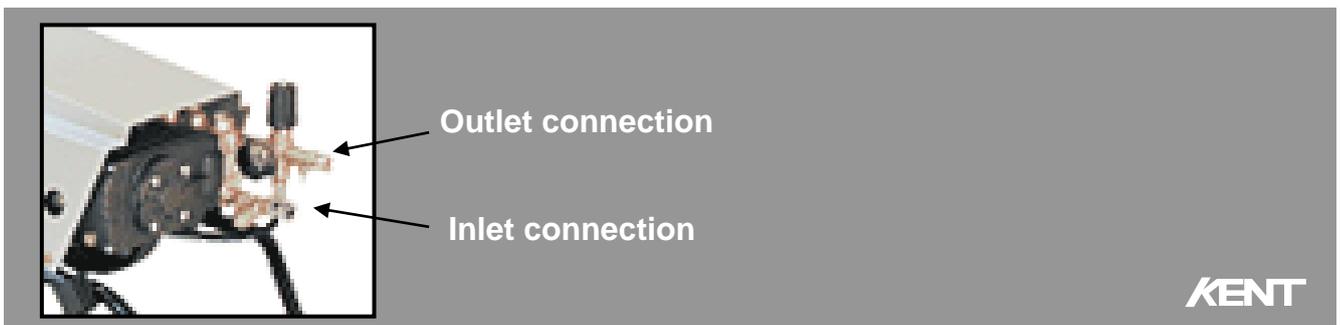
Check that the machine is plugged into correct mains voltage.

Check water filter, MUST be free of dirt.

Check that the motor protection is switched off.

Connect electric cable (Approved socket or fixed installation).

See Electrical data (annex 4.4)



Connect the water supply to the cold-water cleaner by a 3/4 inch. fabric-reinforced hose. Use tap water or “reject water” (treated waste water), if available.

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## **2.2 User guide**

This machine must only be operated by persons over 18 years.



*(Danish At-instruction (At = Danish Working Environment Authority) D. 2.20 November 2006):*

*Young persons covered by compulsory education must not operate pressure equipment.*

*Young persons over 15 years not covered by compulsory education must, as a main rule, not operate pressure equipment with a pressure over 7 MPa (70 bar).*

*However, young persons over 16 years not covered by compulsory education and working within agriculture and horticulture are allowed to work with pressure equipment over 7 MPa (70 bar). The pressure equipment must only be used for cleaning, painting, rust inhibiting or the like.*

*Young persons under 18 years must only be engaged with work 4 hours daily if wearing self-contained respiratory protective equipment.*

*For prolonged use of high pressure equipment use vibration dampening gloves like type TEGERA 9185*

### **Before start:**

Remove items or goods that may be damaged during high-pressure cleaning.

Use wheel chocks if the high-pressure cleaner is placed on a sloping surface.

The high-pressure cleaner must only be used on a ladder if it is a platform ladder with barriers. The height to the platform must not be more than 3 m. The platform ladder must be designed in compliance with the principles of EN 131 or with a similar safety level.

### **Connection of the high pressure hose and lance:**

1. Connect one end of the high-pressure hose to the gun, the other end has to be connected to the outlet of the pump. After that mount the lance to the gun.
2. Before use of the machine, inspect high pressure hose to make sure it is not damaged. In case of replacement make sure that the new hose has at least the same specifications as the original one. Technical specifications (max. working pressure, date of manufacturing, name of manufacturer) must be marked on the outer sleeve of the hose.

### **Connection to the water supply**

1. The maximum temperature of the inlet water must not exceed 60° C (140° F).
2. Connect the water supply to the INLET port by means of a reinforced hose (min. 15 bar/200 psi) with the internal diameter of not less than 19 mm (3/4")
3. Considering that the water flow decreases in accordance with the length of the hose, make sure that the quantity of the water reaching the machine is at least 10 l/min.

### **Important:**

Make sure that the machine is fed with clean water during use. Running the machine without water, or with dirty, sandy water, or containing corrosive chemicals, causes serious damage to the machine itself.

### **Connection to the electrical supply:**

1. Make sure that the mains voltage is the same as shown on the identification Label on the machine.
2. Make sure that the plug complies with your local regulations, and that it is proved with ground connection.
3. The power outlet must be protected by a differential magnetic interrupter having a sensitivity of less than 30, mA.
4. Do not connect any other appliances to the same outlet.
5. Insert the plug after making sure that the switch on the machine is in the OFF position.

### Start-up of machine:

1. Now you can turn on the water.
2. Hold the gun in open position for venting.
3. Switch the machine on.
4. The pressure can be adjusted on the double nozzle pipe.



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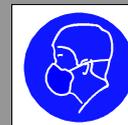
### Chemicals dosage:

Fill plastic can with desired chemical. Mount injector suction hose in can. Open double nozzle pipe valve, and approx. 10 % chemical will be added to water.

Indoor high-pressure cleaning is only permitted in halls and together with good ventilation. If you feel unwell during cleaning, stop working immediately and go outside. The reason may be the cleaning detergent which you may have used during cleaning. Thus, check carefully if these materials are being used in a safe and environmentally correct way. Information can often be found on the containers of the detergent. Never experiment with additives which can influence the health of the persons present and domestic animals, if any. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Show the label of the cleaning detergent where possible, e.g. bring the container in order to obtain the best medical treatment.

The quality of cleaning detergents may vary and you must make sure they are suitable for high operating temperatures under high pressure. Consider the environment in particular where there is run-off to unprotected drainage. Obtain data sheets, if necessary, with definition of class of danger of the substance and personal protection on a scale of 1 to 6 where 6 is the most hazardous! Never use aggressive substances such as acids, solvents or explosive substances together with this unit. Use a less corrosive cleaning detergent, if possible.

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*Respiratory protection equipment / hearing protection (Danish At-instruction (At = Danish Working Environment Authority) D. 2.20 November 2006): Employees must wear suitable respiratory protection equipment during work under 2.5 MPa (25 bar) if aggravating factors such as chemicals harmful to health by inhalation, micro-organisms or organic origin residue are present.*

*Always wear suitable respiratory protection equipment during work over 2.5 MPa (25 bar).*

*The respiratory protection equipment must contain at least a P2 filter protecting against both solid particles and liquid aerosols. The safest method is to use self-contained respiratory protection equipment. There can often be doubt about the nature and concentration of the air pollution as it is difficult to determine what will detach from the sprayed surfaces. If work is carried out for more than three hours on a daily basis the respiratory protection equipment must be self-contained or filtering by turbo-unit (blower).*

*Inhalation of aerosols with surfactants (e.g. soap) and fat and protein residue constitutes a risk of developing respiratory disease and is also mucous membrane irritant (3).*

The employer must make sure that the employees wear hearing protection as soon as they start work which is considered to be damaging to hearing. This means that noise exposure even below 85 dB(A) may require the use of hearing protection.

Respiratory protection equipment and hearing protection must fit together and should preferably be tested together.

*At-instruction (At = Danish Working Environment Authority) D.5.4 January 2008:*



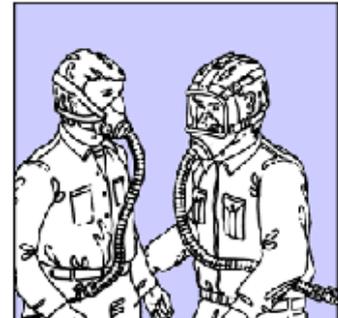
Filter face mask.



Filter respiratory protection equipment.

Particulate filters are divided into three classes:

- P1 low-efficiency filter
- P2 medium-efficiency filter
- P3 high-efficiency filter



Self-contained respiratory protection equipment

#### Class P2

has a better elimination degree and therefore better protection. It can be used against harmful and toxic dust, but not against radioactive dust, bacteria and virus. These filters can protect solely against solids and against both solids and liquid aerosols. If the filter is tested according to EN149:2001 the filter protects against both solids and liquid aerosols. For further information, please see At-instruction (At = Danish Working Environment Authority) D.5.4 January 2008.

#### **Important:**

Use only biodegradable detergents with pH value between 7 and 12. These detergents must comply with the laws and regulations applicable in the country in which they are used. The utilization of this machine must be strictly respected. Any other use must be considered as incorrect. The manufacturer cannot be held responsible for damage caused by incorrect use of the machine. The machine must not be tampered with for any reason. In case of tampering the manufacturer declines any responsibility on the functioning and safety of the machine.

During work planning it must be taken into account that aerosols, especially small aerosols, stay in the air for a long time, even after the pressure work has stopped. Thus, it will often be necessary to wear personal protection equipment, even after the actual pressure work has stopped. Very small aerosols may stay in the air for up to 1.5 hours.

#### **Inspection of water filter**

It is important to inspect the water filter prior to machine start-up. Please keep in mind that a clean water filter means longer service life and operation of the machine.

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### Precautions for storage/frost:

We recommend to fill the pump with anti-freeze equal to anti-freeze for cars if the machine will be stored in a place with a risk of being exposed to frost, or will not be used for more than 3 months. In case of low temperatures some parts may freeze or settle if the machine has been stored for a long time. Thus, we recommend that you turn the shaft by the key supplied with the machine prior to start-up. This procedure allows you to check if the machine is frozen or blocked by other reasons. By taking these precautions prior to start-up you can avoid destroying the machine. Please remember to remove the key from the shaft prior to start-up.

### General precautions for use:

1. Keep the machine out of the reach of children.
2. High-pressure water jets must not be directed against persons or animals, electrical equipment of the machine itself. Do not use the machine when persons and/or animals are within the reach of the jet.
3. The user must operate the machine in safe conditions and situations avoiding any situations of potential danger to himself or other persons, in particular, the user will have to:
  - Avoid operating in unstable balance conditions.
  - Remember that the high pressure generates a recoil when the gun is operated. The force of this recoil is less than 20 N (approx. 2 kg).
  - Use adequate protection clothing.
  - Wear protection goggles and anti-slip rubber shoes.
  - Avoid contaminating the environment with pollution, toxic or harmful substances.
4. This machine is built in compliance with the requirements of the current safety regulations. In any case the use of electrical appliances involves the respect of some basic rules, namely:
  - Do not touch electrical parts or components.
  - All inspection, maintenance or repair operations must be made by qualified personal only. In any case always disconnect the plug from mains before proceeding on any of the above mentioned operations.
  - In case you need to use an extension cord, check that the connection is water tight. Keep all connections off the ground to avoid possible contacts with water.
5. Do not pull power cord to unplug.
6. While the machine is running, do not cover it and do not place it in a closed space with insufficient ventilation.
7. Do not leave the machine running for more than 5 minutes with the gun closed. Should it run for a longer period, the temperature of the recirculating water will increase rapidly and could risk damaging the pump seals.
8. When the machine is not in use, lock gun trigger in safe position to prevent it from being opened by accident.
9. For sake of safety use only original spare parts and accessories
  - Should you need to remove or change the nozzle, turn off the machine and bleed pressure from the hose.

**The manufacturer declines any responsibility for damages caused by non-compliance with the destination of use, with the instructions and warnings contained in this instruction manual.**



### Important:

When application of chemicals/soap has been terminated the suction hose and injector non-return valve **MUST** be cleaned with pure water. Place injector suction hose in a bucket or similar container with pure water and allow injector to suck water for a few minutes.

**Never aim flush jet at electrical installations or live targets.  
Never pull machine by high-pressure hose as this may cause damage to machine components and entail forfeit of the warranty.**



**Beware of the water jet which has a cutting effect on sensitive surfaces under high pressure.**

Never point the water jet towards yourself or other persons or animals. It is prohibited to “bath” animals even with a low water temperature as the water jet can cause serious injury to the affected area. Sensitive areas such as eyes and ears can be seriously and painfully injured.

Do not use high-pressure cleaning on electrical installations and live cables and avoid also sensitive parts such as signs and delicate items.

### Stop machine:

Turn off water, open gun, and let machine run for 15 – 30 sec.  
Switch off at motor protection.  
Release hose pressure.  
Unplug the power plug.

### Frost proofing:

The cleaner must be stored frost free; if this is impossible, the pump and pump components must be frost proofed as follows: Mount short  $\frac{3}{4}$ ” hose on water inlet, place other end in a 5-litre can of anti-freeze. Start cleaner, open the gun, close again when anti-freeze comes out at nozzles. Switch off power at motor protection, and the cleaner is frost proofed.

**If the machine has been exposed to frost, never start it again until it has thawed out completely. Let your supplier check it for any damage that might have occurred.**



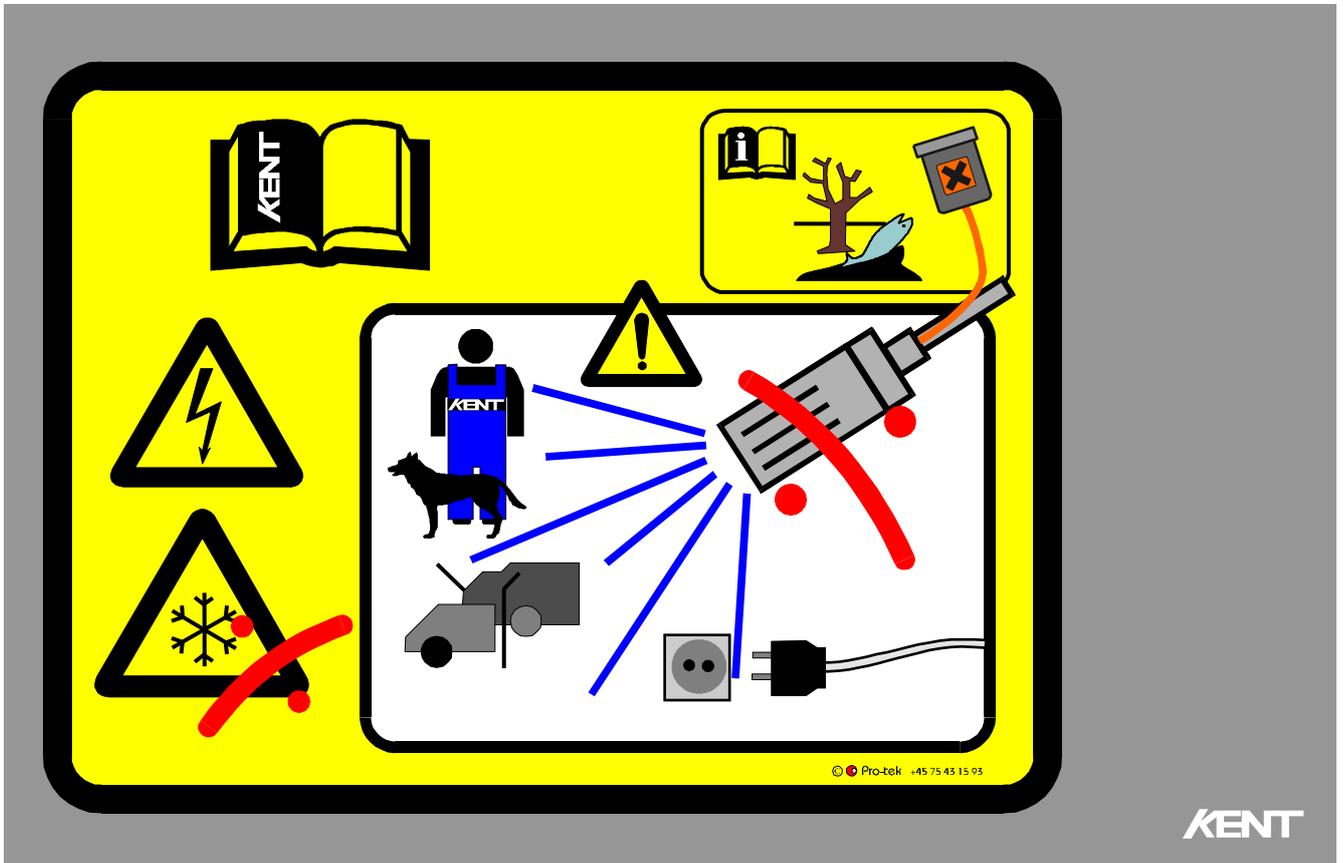
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Although the high-pressure cleaner has only been operating on “clean” tap water you should never drink the water due to a possible high bacteria content from a previous heating.

Hot water that has been through the high-pressure cleaner must not be used in connection with production or preparation of food as there exists extraordinary requirements for machines being used in connection with food processing.

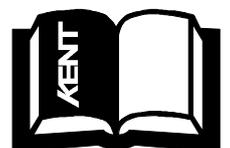
## 2.3 Safety rules



1. Always wear protective equipment as described in the work instructions. This applies in particular for the use of suitable working clothes, safety goggles, gloves, safety footwear, respiratory protection equipment and hearing protection. Remember your assistants. Never splash on boots and protective clothing for the purpose of cleaning.



2. Accidents are significantly reduced if proper work lighting is established around the work area.
3. Only instructed personnel is allowed to stay near the hot-water cleaner when it is running.
4. This instruction manual must be available for all persons using the device.
5. The high-pressure cleaner must not be used if the safety devices are defective. All electrical connections must be waterproof.
6. High-pressure hoses and lance must be approved types without defects.



7. Never point the water jet towards yourself, other persons or animals. Cleaning of clothes on persons.

8. Avoid splashes on electrical wires and installations.

9. Be careful with sensitive and expensive installations.

10. Avoid cleaning of parts in contact with food.

11. Use only approved detergents suitable for hot-water or cold-water cleaning.

12. Choose according to eco-friendly considerations and dispose of empty containers by delivering them to approved local receiving stations.

13. Wear respiratory protective device, if necessary, if there is a risk of inhaling vapours. Please read about the hazard class on the label on the detergent.

14. Frost may cause burst pipes and will immediately destroy the high-pressure cleaner. Always keep the machine on a frost-free location. If this is not possible, you must frost-proof the machine as described in the following section.

15. High-pressure cleaning in freezing weather requires immediate start-up after which the hot water must be used immediately. Please note that cleaning may cause ice accumulation.

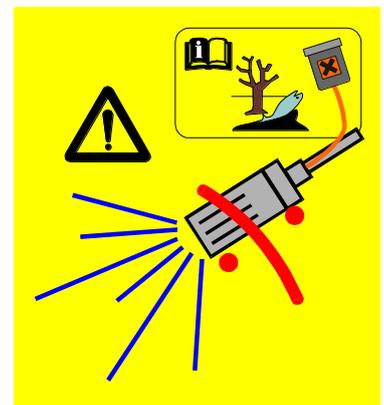
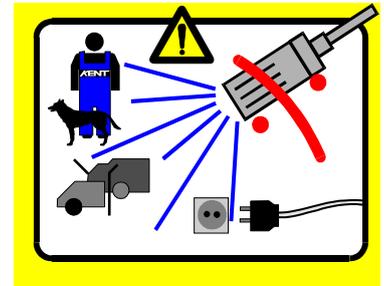
16. Never leave the high-pressure cleaner running.

17. You can brake the high-pressure cleaner by placing wheel chocks, if necessary.

18. No persons must stay under the high-pressure cleaner when it is being lifted.

19. Any repair or adjustment must take place only when the main power has been secured against accidental start-up of the machine. E.g. by disconnecting the power plug.

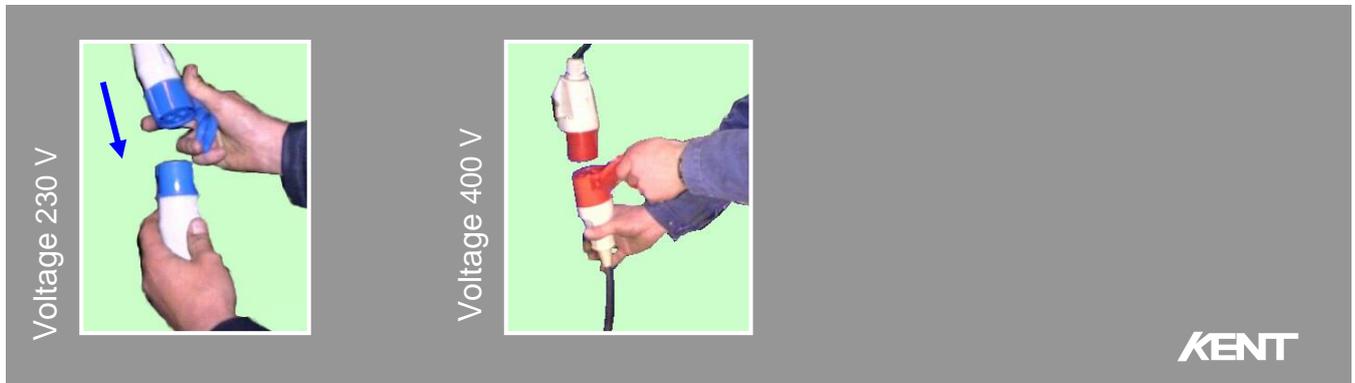
20. Assembly and handling by non-skilled persons can cause serious accidents.



Design changes of the machine's devices is at one's own risk. Impairment of the safety and health functions may put the owner in a judicial unfavourable position especially where the changes or the changes carried out by the owner himself have caused accidents. Significant changes usually require a new CE marking of the hot-water cleaner.

### 3. Maintenance instructions

#### 3.1 General maintenance



Any repair or adjustment must take place only when the main power has been locked and the high-pressure cleaner has been secured against accidental start-up. A removable power plug makes the technician even safer.

Make sure that **all** pressure has been compensated prior to disassembly of high-pressure pipes and hoses.

#### **Every start-up:**

Testing of start and stop functions by activating pistol.  
 Visual check of hoses for cracks and deterioration.  
 Visual check for oil leakage.  
 Visual check for water leakage during start-up.  
 Check if pump is noisy.

#### **Every year:**

Inspection of frame and lifting brackets, visual inspection for cracks and loose bolts.  
 Test of flow meter.  
 Thread connection at input stud.  
 Seals at all electrical installations.  
 Overall check of frame for rust and impact damages.  
 A light oil lubrication of wheel hub, if necessary.

#### **Frost proofing:**

The cleaner must be stored frost free; if this is impossible, the pump and pump components must be frost proofed as follows: Mount short  $\frac{3}{4}$ " hose on water inlet, place other end in a 5-litre can of alcohol. Start cleaner, open the gun, close again when alcohol comes out at nozzles. Switch off power at motor protection, and the cleaner is frost proofed.

**If the machine has been exposed to frost, never start it again until it has thawed out completely. Let your supplier check it for any damage that might have occurred.**



**Decalcification:**

Carried out when needed and is **important** to prevent clogging of the tube coil in the boiler. Fill with water and acetic acid in the mixture proportion 1 portion of acetic acid and 10 portions of water, leave the mixture for a couple of hours followed by flushing of loose pieces of chalk and dirt. An extra treatment may be required if the water contains much chalk in order to avoid a later clogging of the nozzle on the pistol.

**General:**

Repeated fuse drop-outs may be due to faults in the control or the electrical devices, and fault current can cause electric shock. (230 volt or 400 volt)

Maintenance must only be carried out by an authorized technician who can detect the fault and carry out a correct repair prior to using the high-pressure cleaner again.

The machine itself can be washed with e.g. standard auto shampoo, but the electrical parts must only be cleaned by high-pressure air and wiped off with a clean cloth. Only when cold.

Damages on the varnish on the frame must be polished, thereafter primer plus finishing paint (single component finishing paint).

**Disposal of machine:**

- If you decide not to use the machine any longer, we recommend that you make the machine unusable by removing the electrical wire.
- It must always be kept out of reach of children.
- The machine cannot be disposed of as is, therefore the most uniform parts must be dismantled and collected for disposal at a public collection station.
- Dismantled parts must not be used as spare parts.

### 3.2 Fault finding

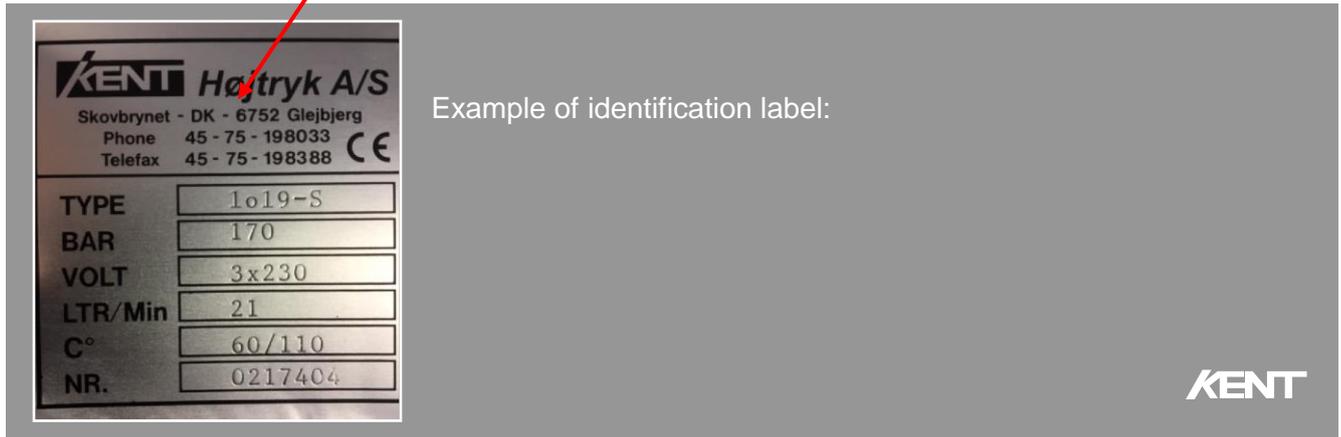
#### Fault finding on the high pressure cleaners

<b>Fault finding:</b>	<b>Cause</b>	<b>Remedy</b>
Cleaner does not start	Fuse defective.	Replace fuse.
	Electric plug dirty.	Clean plug.
	Motor protection has been released.	Turn the red stop knob until it jumps out.
Does no supply pressure	Insufficient water supply.	Wrong hose diameter.
	Hose pinched.	See section: Before start.
	Water filter choked.	Dismount and clean.
	Leaks at couplings	Retighten / replace gaskets.
	V-belt slips	Tighten / replace.
	Nozzles worn	Replace
	Pump valves dirty or worn. (pulsate)	Clean / replace, see spare parts drawing.
	Flow valve dirty or worn.	Take apart and clean valve, replace defective parts. X) see spare parts drawing.
Check flow through hose, gun and nozzle pipes.		
Injector cannot suck chemicals	Non-return valve gone slack sucks dead air.	Retighten, replaces nylon gasket.
	Ball hangs (old soap residue)	Dismount chemicals hose, loosen ball from top with match or similar object.
	Low pressure nozzle on double nozzle pipe choked	Clean / replace.
	Injector nozzle worn.	Replace.
Flow valve shuts off during operation (pressure increase)	Valve or double nozzle pipe pinched or dirty.	Clean / replace.
	Wrong nozzle mounted.	Change to right size.
	Spring in flow valve gone slack.	Replace *)
	Dirt in flow valve.	Take apart / clean *)
	Dirt in injector.	Take apart / clean
Motor protection switches off	Check plug / fuse / cable Defect motor / pump. – Dismount V-belt or pump (inlet and outlet hoses must be disconnected). Pump movement must be even and free of metallic sounds. If abnormally heavy when turning: Call your dealer's service department. Electric motor must run smoothly, without noise.	

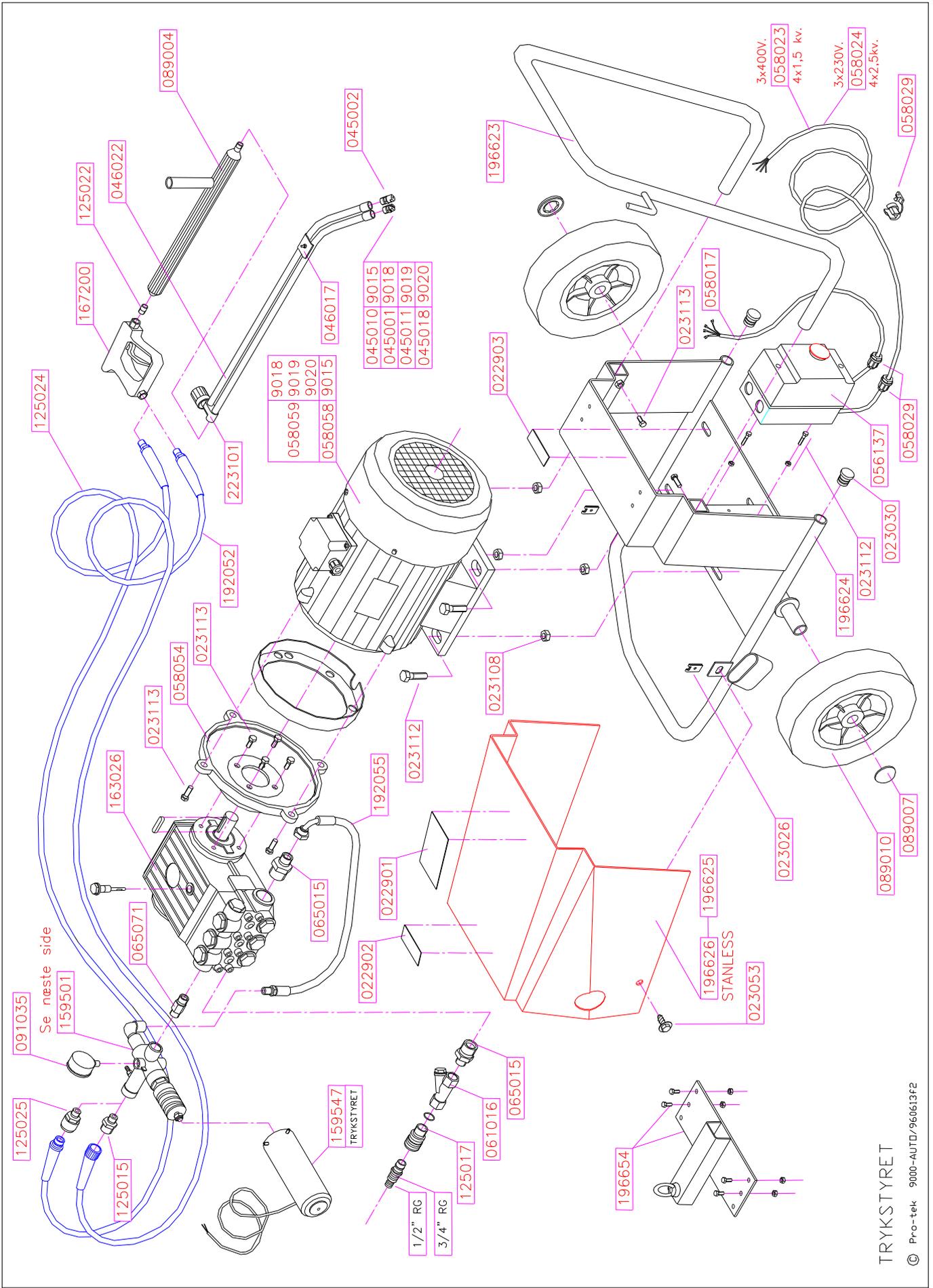
\*) Let your dealer makes repairs and adjustments.

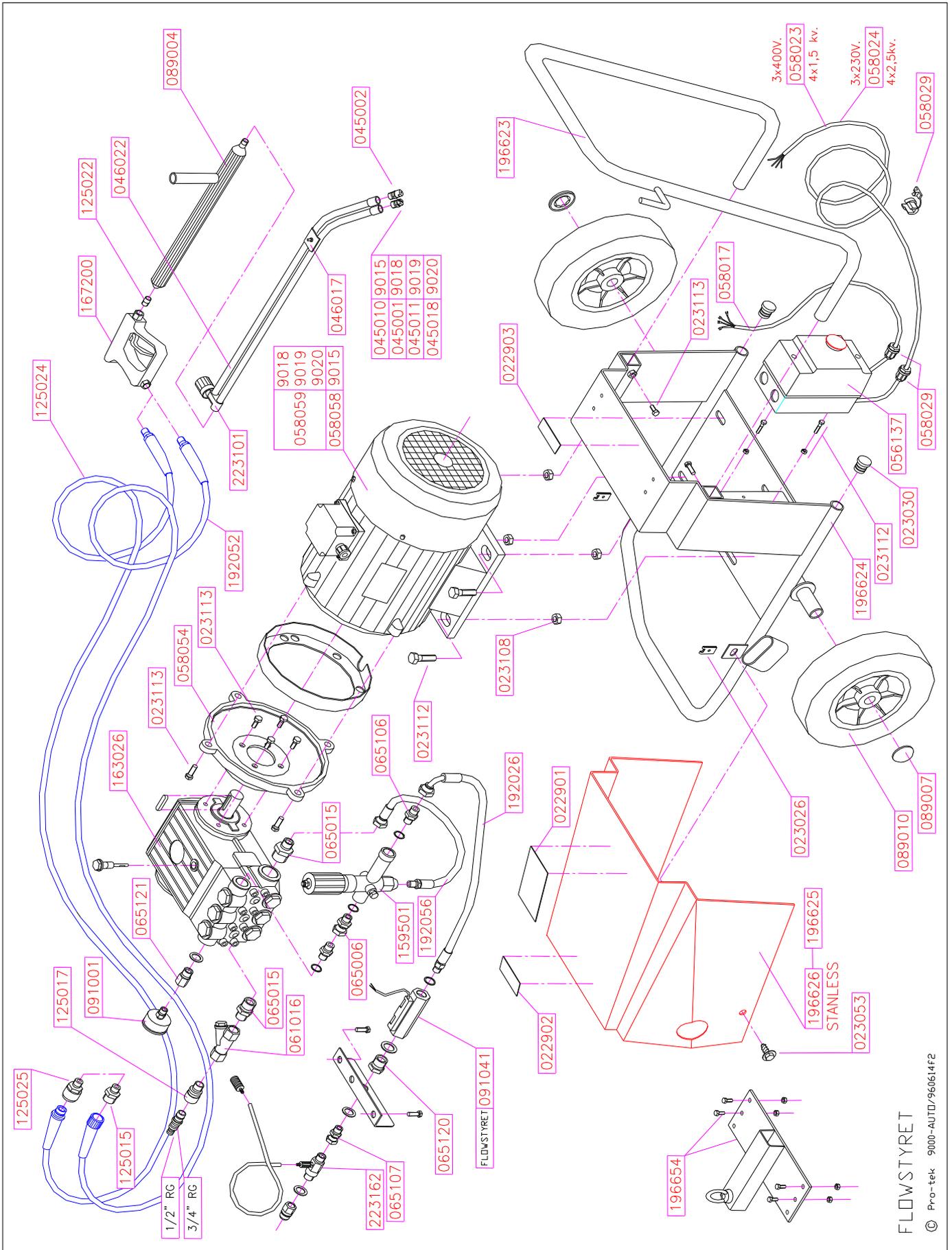
### 3.3 Spare parts

Note model number and name-plate on the high-pressure cleaner so that we can deliver the ordered spare parts to your machine. Always use original spare parts.



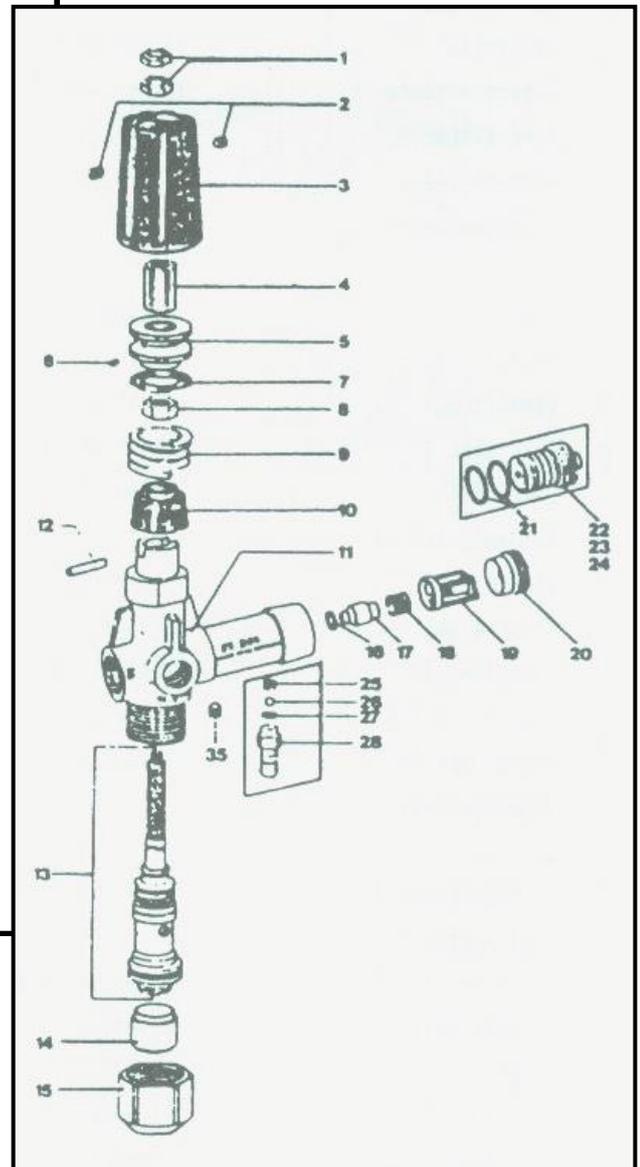
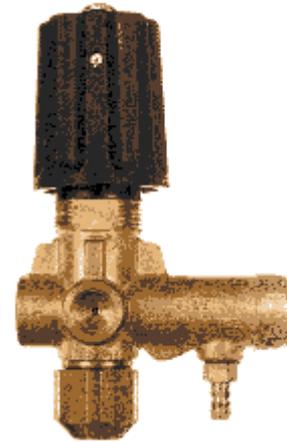
Overleaf the high-pressure cleaner is shown with part numbers on all spare parts.

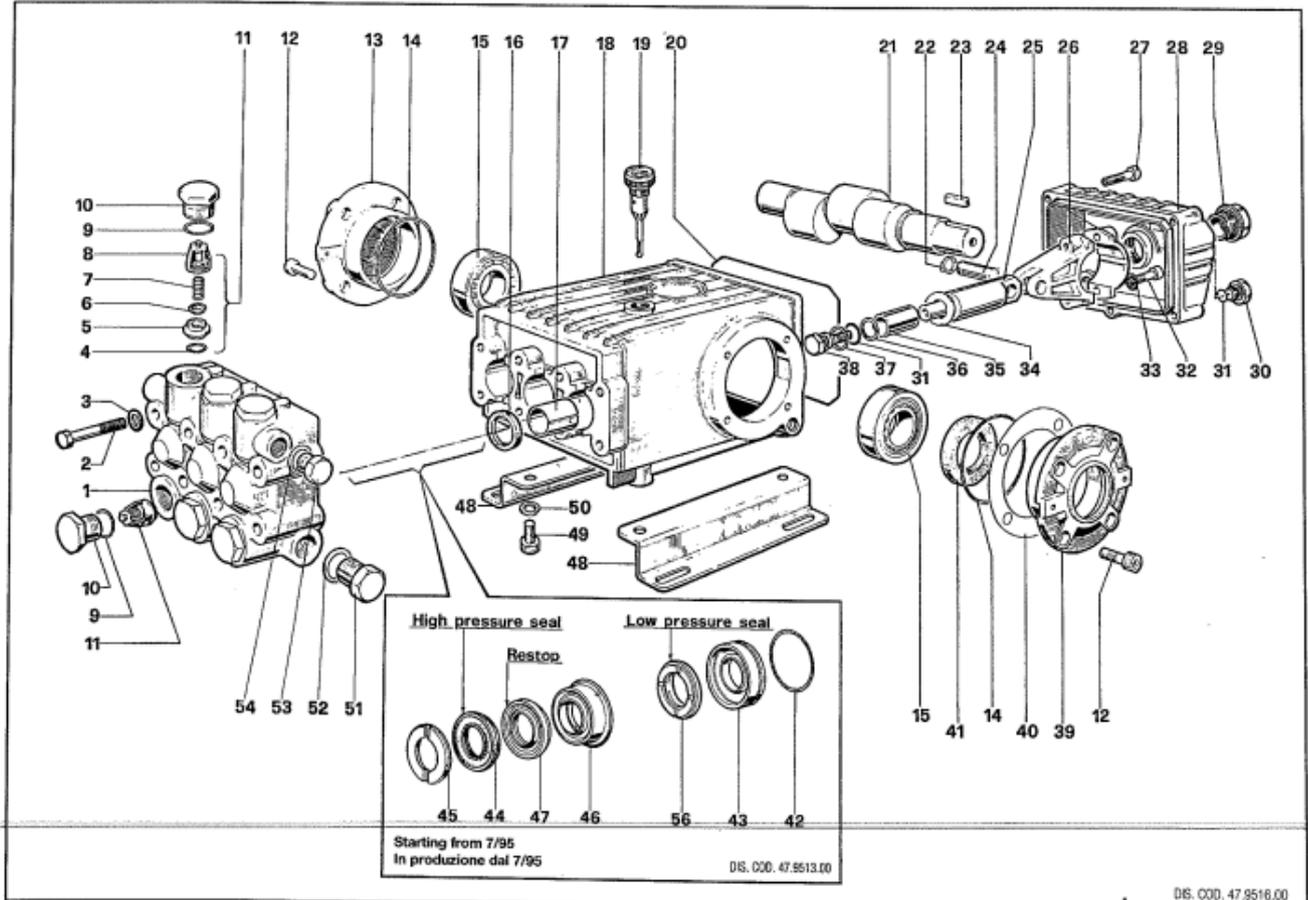




Pos	Pos nr.	Emne	Part
0	159500	ST. 261 Komplet	ST. 261 complete
0	159501	ST. 261 m/ injektor 2,4	ST. 261 W/ injector 2,4
1	159511	Møtrik	Nut
2	159212	Pinolskrue	Set screw
3	159213	Håndhjul	Hand wheel
4	159214	Gevindstykke	Threaded insert
5	159215	Justeringskrue	Adj. Screw
6	159216	Pinolskrue	Set screw
7	159217	Glideskive	Slide ring
8	159218	Møtrik	Nut
9	159219	Fjeder	Spring
10	159220	Hylse	Bushing
11	159221	Ventilhus	Valve housing
12	159222	Cylinder stift	Cylinder pin
13	159223	Reparations KIT	Repair-KIT
14	159224	Afstandshylse	Distance piece
15	159225	Muffe	Socket
16	159226	O-ring (KIT-A)	O-ring (KIT-A)
17	159227	Ventildel (KIT-A)	Valve part (KIT-A)
18	159228	Fjeder (KIT-A)	Spring (KIT-A)
19	159229	Ventilhus (KIT-A)	Valve housing (KIT-A)
20	159230	Sikringsmørtik	Safety-nut
21	159231	O-ring	O-ring
22	159232	Injektionsdyse 1,8	Injector nozzle 1,8
23	159233	Injektionsdyse 2,1	Injector nozzle 2,1
24	159234	Injektionsdyse 2,4	Injector nozzle 2,4
25	159235	Fjeder (KIT-F)	Spring (KIT-F)
26	159236	Kugle (KIT-F)	Ball (KIT-F)
27	159237	O-ring (KIT-F)	O-ring (KIT-F)
28	159238	Ventilhus (KIT-F)	Valve housing (KIT-F)
	159239	Rep. (KIT-A)	Repair-KIT-A
	159240	Rep. (KIT-F)	Repair-KIT-F

### Unloader ST 261





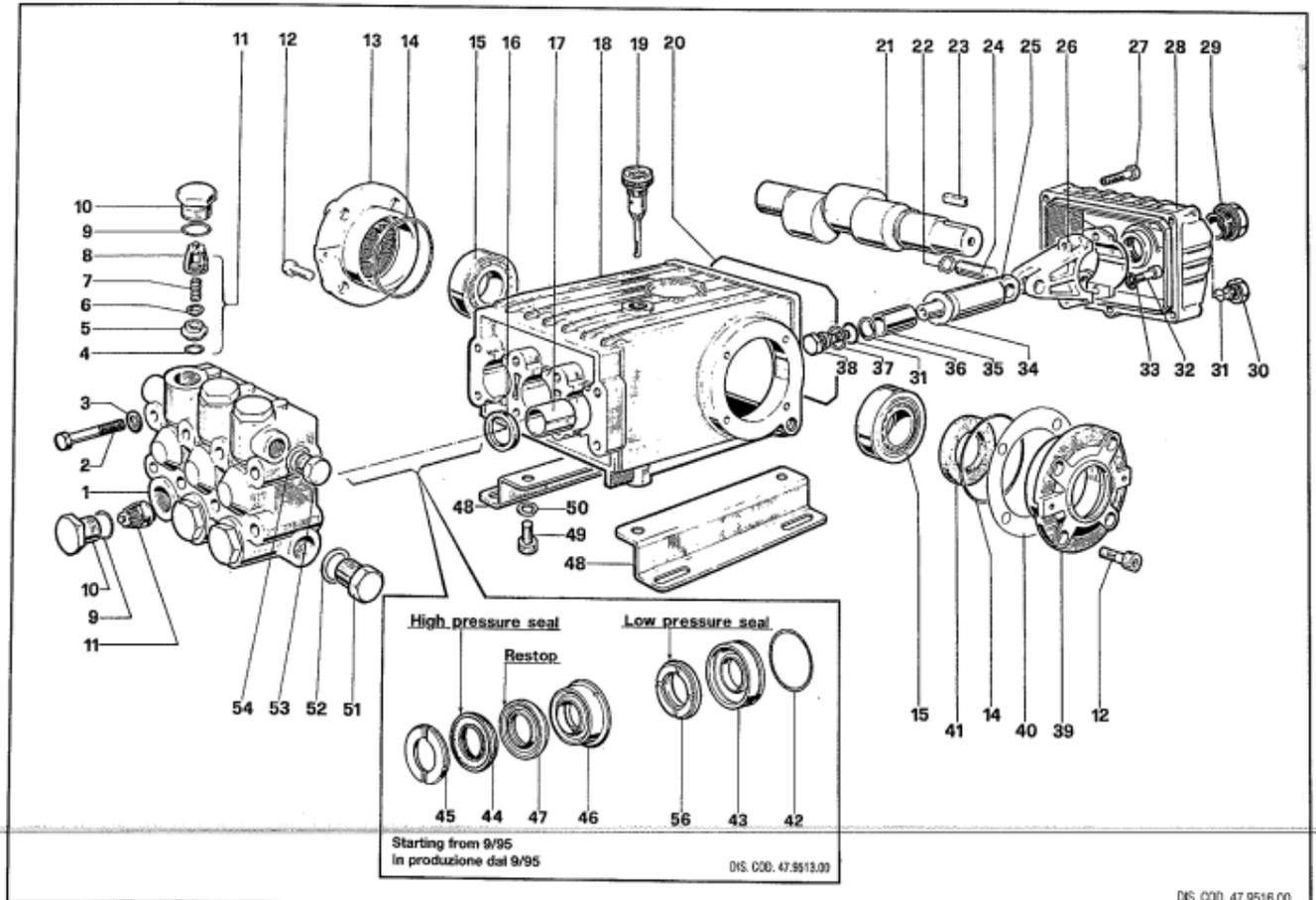
DIS. COD. 47.9516.00

KIT 0	KIT 1	KIT 2	KIT 3	KIT 4	KIT 6	KIT 7	KIT 69	KIT 71	KIT 10	KIT 28
Positions Included	4-5-6-7-8-(11)	16	41	9-10	31-34-36-37-38	45	44-47-56	46-47	42-43	42-43-44-45-46-47-56
Posizioni Incluse										
N. pcs.	6	3	2	6	3	6	3	3	3	1

INTERPUMP GROUP	
9015	
1515	
9020	
9020s	
1520	
1520s	

POS.	CODE CODICE	DESCRIPTION DESCRIZIONE	N. PCS.
1	47.1201.41	Testata - 0T58 - Brass	1
2	99.3206.00	Vite M8x70 UNI 5737	8
3	96.7020.00	Rosetta Ø 8 UNI 1736	8
4	90.3841.00	OR Ø 17,13x2,62	KIT 1 6
5	36.2003.66	Sede valvola	KIT 1 6
6	36.2001.76	Valvola	KIT 1 6
7	94.7376.00	Molla Ø 9,4x14,8	KIT 1 6
8	36.2002.51	Guida valvola	KIT 1 6
9	90.3847.00	OR Ø 20,24x2,62	KIT 4 6
10	98.2220.00	Tappo M 24x2x16	KIT 4 6
11	36.7032.01	Gruppo valvola	KIT 1 6
12	99.3039.00	Vite M8x16 UNI 5931	8
13	47.1501.22	Coperchio carter	1
14	90.3913.00	OR Ø 67,95x2,62	2
15	91.8375.00	Cuscinetto a rulli 32206	2
16	90.1625.00	Anello radiale Ø 22x32x5,5	KIT 2 3
17	90.9126.00	Boccola Ø 22x25x30	3
18	47.0100.22	Carter	1
19	98.2106.00	Tappo carico olio G 3/8	1
20	90.3922.00	OR Ø 133,02x2,62	1
21	47.0204.35	Albero semplice P. di F. WS102	1
21	47.0210.35	Albero semplice P. di F. WS131	1
21	47.0206.35	Albero semplice P. di F. WS151	1
21	47.0215.35	Albero semplice P. di F. WS171	1
22	90.0557.00	Anello di fermo	6
23	91.4878.00	Linguetta	1
24	97.7380.00	Spinotto Ø 13x35	3
25	47.0505.54	Guida pistone	3
26	47.0300.01	Biella completa	3
27	99.1912.00	Vite M6x30 UNI 5931	5
28	47.1601.22	Coperchio carter	1
29	97.5968.00	Spia olio G 3/4	1

POS.	CODE CODICE	DESCRIPTION DESCRIZIONE	N. PCS.
30	98.2041.00	Tappo G 1/4x9	1
31	90.3585.00	OR Ø 10,82x1,78	KIT 6 4
32	99.3099.00	Vite M8x35 UNI 5931	6
33	96.7014.00	Rosetta Ø 8,4x13x0,8	6
34	96.7286.00	Rosetta Ø 14x28x0,5	KIT 6 3
35	47.0404.09	Pistone Ø 20	3
36	90.5067.00	Anello per OR	KIT 6 3
37	96.7280.00	Rosetta Ø 14x18,5x0,5	KIT 6 3
38	47.2195.66	Vite fissaggio pistone	KIT 6 3
39	47.1500.22	Coperchio carter	1
40	97.5678.00	Spessore	2
41	90.1648.00	Anello radiale Ø 30x55x7	KIT 3 1
42	90.3616.00	OR Ø 34,65x1,78	KIT 10-28 3
43	47.0805.70	Anello di fondo Ø 20	KIT 10-28 3
44	90.2705.00	Anello tenuta Ø 20 H.P. seal	KIT 28-69 3
45	47.1000.51	Anello testa Ø 20	KIT 7-28 3
46	47.2169.70	Anello intermedio Ø 20	KIT 28-71 3
47	90.2704.00	Anello "RESTOP" Ø 20	KIT 28-69-71 3
48	47.2000.74	Piedino	2
49	99.3644.00	Vite M10x18 UNI 5931	4
50	96.7106.00	Rosetta Ø 10 DIN 7980	4
51	98.2176.00	Tappo G 1/2x10	1
52	96.7514.00	Rosetta Ø 21,5x27x1,5	1
53	98.2100.00	Tappo G 3/8x13	1
54	96.7380.00	Rosetta Ø 17,5x23x1,5	1
56	90.2710.00	Anello tenuta Ø 20 L.P. seal	KIT 28-69 3



DIS. COD. 47.9516.00

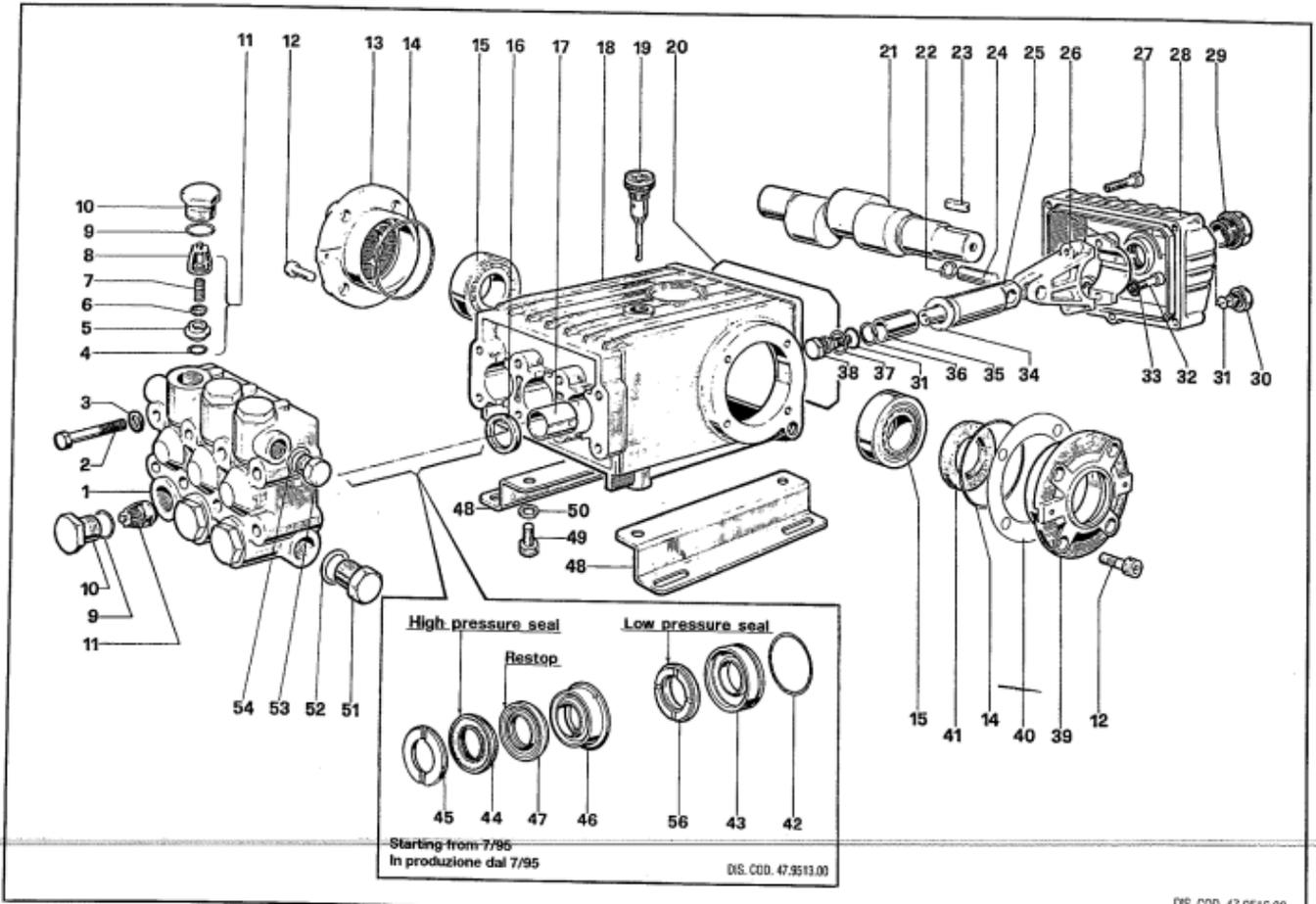
KIT N.	KIT 1	KIT 2	KIT 3	KIT 5	KIT 6	KIT 11	KIT 148	KIT 149	KIT 14	KIT 29
Positions Included	4-5-6-7 8-(11)	16	41	9-10	31-34-36 37-38	45	44-47 56	46-47	42-43	42-43 44-45 46-47 56
Posizioni Include										
N. pcs.	6	3	2	6	3	6	3	3	3	1

**INTERPUMP GROUP**

**9018**  
**9018S**  
**1518**  
**1518S**

POS.	CODE CODICE	DESCRIPTION DESCRIZIONE	N. PCS.
1	47.1202.41	Testata Nickel	1
2	99.3206.00	Vite M8x70 UNI 5737	8
3	96.7020.00	Rosetta Ø 8 UNI 1736	8
4	90.3841.00	OR Ø 17,13x2,62	KIT 1 6
5	36.2003.66	Sede valvola	KIT 1 6
6	36.2001.76	Valvola	KIT 1 6
7	94.7376.00	Molla Ø 9,4x14,8	KIT 1 6
8	36.2002.51	Guida valvola	KIT 1 6
9	90.3847.00	OR Ø 20,24x2,62	KIT 5 6
10	98.2222.00	Tappo M 24x2x16 spec. NK	KIT 5 6
11	36.7032.01	Gruppo valvola	KIT 1 6
12	99.3039.00	Vite M8x16 UNI 5931	8
13	47.1501.22	Coperchio carter	1
14	90.3913.00	OR Ø 67,95x2,62	2
15	91.8375.00	Cuscinetto a rulli 32206	2
16	90.1625.00	Anello radiale Ø 22x32x5,5	KIT 2 3
17	90.9126.00	Boccola Ø 22x25x30	3
18	47.0100.22	Carter	1
19	98.2106.00	Tappo carico olio G 3/8	1
20	90.3922.00	OR Ø 133,02x2,62	1
21	47.0206.35	Albero semplice P. di F.	1
22	90.0557.00	Anello di fermo	6
23	91.4878.00	Linguetta	1
24	97.7380.00	Spinotto Ø 13x35	3
25	47.0503.56	Guida pistone	3
26	47.0300.01	Biella completa	3
27	99.1912.00	Vite M6x30 UNI 5931	5
28	47.1601.22	Coperchio carter	1
29	97.5968.00	Spia olio G 3/4	1
30	98.2041.00	Tappo G 1/4x9	1
31	90.3585.00	OR Ø 10,82x1,78	KIT 6 4
32	99.3099.00	Vite M8x35 UNI 5931	6

POS.	CODE CODICE	DESCRIPTION DESCRIZIONE	N. PCS.
33	96.7014.00	Rosetta Ø 8,4x13x0,8	6
34	96.7286.00	Rosetta Ø 14x28x0,5	KIT 6 3
35	47.0405.09	Pistone Ø 22	3
36	90.5067.00	Anello per OR	KIT 6 3
37	96.7280.00	Rosetta Ø 14x18,5x0,5	KIT 6 3
38	47.2195.66	Vite fissaggio pistone	KIT 6 3
39	47.1500.22	Coperchio carter	1
40	97.5678.00	Spessore	2
41	90.1648.00	Anello radiale Ø 30x55x7	KIT 3 1
42	90.3616.00	OR Ø 34,65x1,78	KIT 14-29 3
43	47.0806.70	Anello di fondo Ø 22	KIT 14-29 3
44	90.2725.00	Anello tenuta Ø 22 H.P. seal	KIT 29-148 3
45	46.1000.51	Anello testa Ø 22	KIT 11-29 3
46	47.2170.70	Anello intermedio Ø 22	KIT 29-149 3
47	90.2730.00	Anello "RESTOP" Ø 22	KIT 29-148-149 3
48	47.2000.74	Piedino	2
49	99.3644.00	Vite M10x18 UNI 5931	4
50	96.7106.00	Rosetta Ø 10 DIN 7980	4
51	98.2176.00	Tappo G 1/2x10	1
52	96.7514.00	Rosetta Ø 21,5x27x1,5	1
53	98.2100.00	Tappo G 3/8x13	1
54	96.7380.00	Rosetta Ø 17,5x23x1,5	1
56	90.2728.00	Anello tenuta Ø 22 L.P. seal	KIT 29-148 3



DIS. COD. 47.9516.00

KIT N.	KIT 1	KIT 2	KIT 3	KIT 5	KIT 6	KIT 7	KIT 69	KIT 71	KIT 10	KIT 28
Positions Included	4-5-6-7 8-(11)	16	41	9-10	31-34-36 37-38	45	44-47 56	46-47	42-43	42-43 44-45 46-47 56
Posizioni Include										
N. pcs.	6	3	2	6	3	6	3	3	3	1

**INTERPUMP GROUP**

**9019**  
**9019s**  
**1519**  
**1519S**

POS.	CODE CODICE	DESCRIPTION DESCRIZIONE	N. PCS.
1	47.1202.41	Testata Nickel	1
2	99.3206.00	Vite M8x70 UNI 5737	8
3	96.7020.00	Rosetta Ø 8 UNI 1736	8
4	90.3841.00	OR Ø 17,13x2,62	
5	36.2003.66	Sede valvola	KIT 1 6
6	36.2001.76	Valvola	KIT 1 6
7	94.7376.00	Molla Ø 9,4x14,8	KIT 1 6
8	36.2002.51	Guida valvola	KIT 1 6
9	90.3847.00	OR Ø 20,24x2,62	KIT 5 6
10	98.2222.00	Tappo M 24x2x16 spec. NK	KIT 5 6
11	36.7032.01	Gruppo valvola	KIT 1 6
12	99.3039.00	Vite M8x16 UNI 5931	8
13	47.1501.22	Coperchio carter	1
14	90.3913.00	OR Ø 67,95x2,62	2
15	91.8377.00	Cuscinetto a rulli 32206	2
16	90.1625.00	Anello radiale Ø 22x32x5,5	KIT 2 3
17	90.9126.00	Boccola Ø 22x25x30	3
18	47.0102.22	Carter	1
19	98.2106.00	Tappo carico olio G 3/8	1
20	90.3922.00	OR Ø 133,02x2,62	1
21	47.0204.35	Albero semplice P. di F. WS152 - WS202	1
	47.0215.35	Albero semplice P. di F. W921	1
22	90.0557.00	Anello di fermo	6
23	91.4878.00	Linguetta	1
24	97.7380.00	Spinotto Ø 13x35	3
25	47.0503.56	Guida pistone	3
26	47.0300.01	Biella completa	3
27	99.1912.00	Vite M6x30 UNI 5931	5
28	47.1601.22	Coperchio carter	1
29	97.5968.00	Spia olio G 3/4	1
30	98.2041.00	Tappo G 1/4x9	1
31	90.3585.00	OR Ø 10,82x1,78	KIT 6 4

POS.	CODE CODICE	DESCRIPTION DESCRIZIONE	N. PCS.
32	99.3099.00	Vite M8x35 UNI 5931	6
33	96.7014.00	Rosetta Ø 8,4x13x0,8	6
34	96.7286.00	Rosetta Ø 14x28x0,5	KIT 6 3
35	47.0404.09	Pistone Ø 20	KIT 6 3
36	90.5067.00	Anello per OR	KIT 6 3
37	96.7280.00	Rosetta Ø 14x18,5x0,5	KIT 6 3
38	47.2195.66	Vite fissaggio pistone	KIT 6 3
39	47.1500.22	Coperchio carter	1
40	97.5678.00	Spessore	2
41	90.1648.00	Anello radiale Ø 30x55x7	KIT 3 1
42	90.3616.00	OR Ø 34,65x1,78	KIT 10-28 3
43	47.0805.70	Anello di fondo Ø 20	KIT 10-28 3
44	90.2705.00	Anello tenuta Ø 20 H.P. seal	KIT 28-69 3
45	47.1000.51	Anello testa Ø 20	KIT 7-28 3
46	47.2169.70	Anello intermedio Ø 20	KIT 28-71 3
47	90.2704.00	Anello "RESTOP" Ø 20	KIT 28-69-71 3
48	47.2000.74	Piedino	2
49	99.3644.00	Vite M10x18 UNI 5931	4
50	96.7106.00	Rosetta Ø 10 DIN 7980	4
51	98.2176.00	Tappo G 1/2x10	1
52	96.7514.00	Rosetta Ø 21,5x27x1,5	1
53	98.2100.00	Tappo G 3/8x13	1
54	96.7380.00	Rosetta Ø 17,5x23x1,5	1
56	90.2710.00	Anello tenuta Ø 20 L.P. seal	KIT 28-69 3



## 4 Installation and assembly

### 4.1 Unpacking:

Unpack the machine and make sure that it is complete and not damaged. In case it is not complete or damaged, do not use the machine and consult your dealer. For reasons of packaging or transport some accessory components can be supplied loose. In this case they must be assembled according to the instructions in this manual.

Make sure that the components of the packaging (bag, boxes, components for fastening) are placed out of the reach of children.

### Identifikation Label:

Before using the machine, make sure that it is provided with the identification Label. In case the identification Label is missing, do not use the machine and consult your dealer immediately. The identification Label with the technical specifications is applied on the machine.

### 4.2 Flytning:

Lifting by crane is carried out as shown with lifting bracket No. 196654.  
This can be purchased from Kent Højtryksrensere.

NEVER LIFT BY WEAK STRUCTURAL PARTS.

The lift must be carried out with unplugged power plug.

Lifting by truck must only take place if the high-pressure cleaner is secured on a transportation pallet.

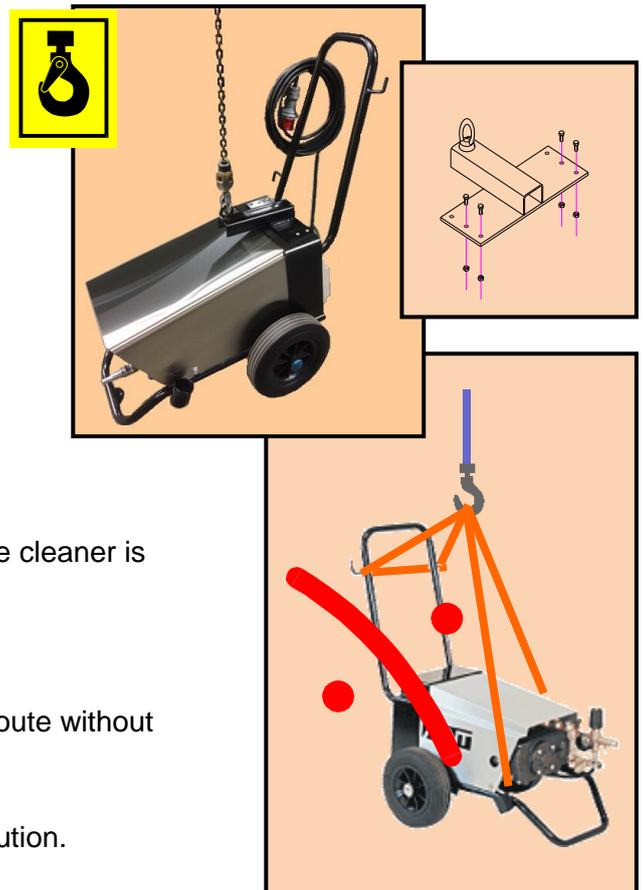
Weight: approx. 70 – 82 kg. See next page.

Ensure that there is free access on the transportation route without any persons or obstacles.

The machine must always be lowered with **extreme** caution.

### Installation:

The machine must be safely placed on a flat, levelled surface, in horizontal position.



**4.3 Technical specifications:**

High-pressure cleaners	Batch 9000	Batch 1500	Model 3016						
Model	Working pressure Bar/psi	Water-consump l/min.	Plunger pump	Motor-capacity KW/HK	Electr. Current Volt	Length mm	Width mm	Height mm	Weight kg
2008	70/1015	12	3	1,85/2,1	1x240	500	340	420	25
3010BB	100/1450	10	3	1,85/2,1	1x240	500	340	420	25
3010	130/1900	10	3	2,2/3,0	1x240	600	600	400	40
3010S	150/2200	10	3	3,0/4,0	1x240	600	600	400	40
3011	120/1750	10	3	2,2/3,0	1x240	600	600	400	40
3012	120/1750	12	3	3,0/4,0	1x240	600	600	400	40
3014	120/1750	14	3	3,0/4,0	1x240	600	600	400	40
3016	160/2320	14	3	4,0/5,5	3x230/400	600	600	400	40
9015	150/2200	15	3	4,0/5,5	3x230/400	620	520	420	70
9018	170/2600	18	3	5,5/7,5	3x230/400	620	520	420	82
9018S	200/2900	18	3	6,5/9,0	3x230/400	620	520	420	82
9019	150/2200	21	3	5,5/7,5	3x230/400	620	520	420	82
9019S	170/2600	21	3	6,5/9,0	3x230/400	620	520	420	82
9020	200/2900	15	3	5,5/7,5	3x230/400	620	520	420	82
9020S	240/3500	15	3	6,5/9,0	3x230/400	620	520	420	82
9015-ST	150/2200	15	3	4,0/5,5	3x230/400	580	400	315	70
9018-ST	170/2600	18	3	5,5/7,5	3x230/400	580	400	315	82
9018S-ST	200/2900	18	3	6,5/9,0	3x230/400	580	400	315	82
9019-ST	150/2200	21	3	5,5/7,5	3x230/400	580	400	315	82
9019S-ST	170/2600	21	3	6,5/9,0	3x230/400	580	400	315	82
9020-ST	200/2900	15	3	5,5/7,5	3x230/400	580	400	315	82
9020S-ST	240/3500	15	3	6,5/9,0	3x230/400	580	400	315	82

	<b>ELECTRICAL DATA</b>						
Model	3016/9015-ST /9015	9018-ST /9018	9018S-ST /9018S	9019-ST /9019	9019S-ST /9019S	9020-ST /9020	9020S-ST /9020S
KW/HK	4,0/5,5	5,5/7,5	6,5/9,0	5,5/7,5	6,5/9,0	5,5/7,5	6,5/9,0
Pre-fuse 230V	16 amp	25 amp	25 amp	25 amp	25 amp	25 amp	25 amp
Pre-fuse 400V	10 amp	16 amp	16 amp	16 amp	16 amp	16 amp	16 amp
Voltage 230 V	16 amp	18 amp	21 amp	18 amp	21 amp	18 amp	21 amp
Voltage 400 V	10 amp	13 amp	15 amp	13 amp	15 amp	13 amp	15 amp
Adjustment of motor protection 230V	13,6 amp	18,2 amp	21,7 amp	18,2 amp	21,7 amp	18,2 amp	21,7 amp
Adjustment of motor protection 400V	7,9 amp	10,5 amp	15,0 amp	10,5 amp	14,5 amp	10,5 amp	15,0 amp

**Pressure regulation:**

Working pressure adjustable from 30 bar to max. pressure at the lance

**Noise level:**

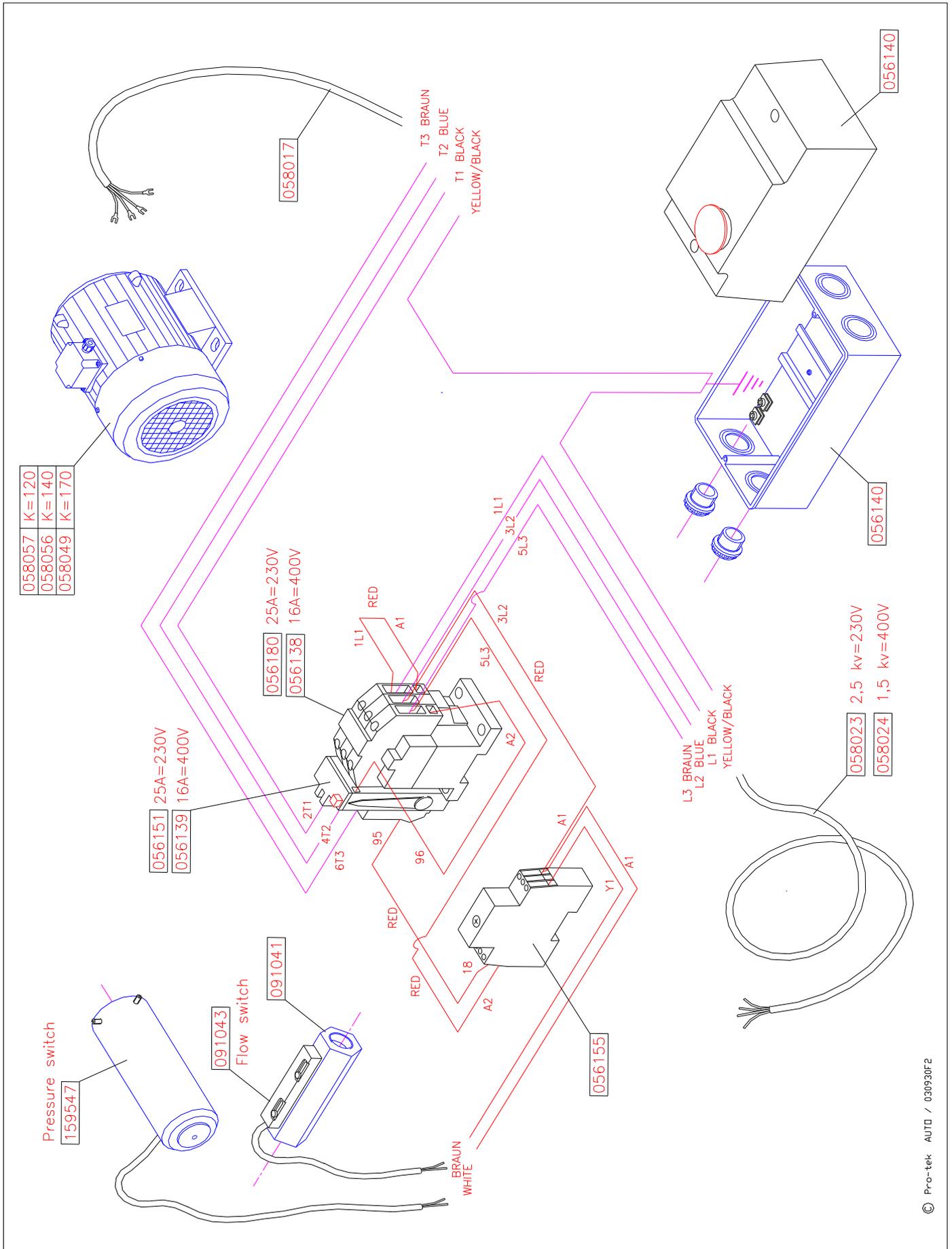
Under 70 dB

**Warning:**

Never let the machine be idle for more than 3 minutes at a time as this will cause serious damage to the pump.



**4.4 Eldiagram.**

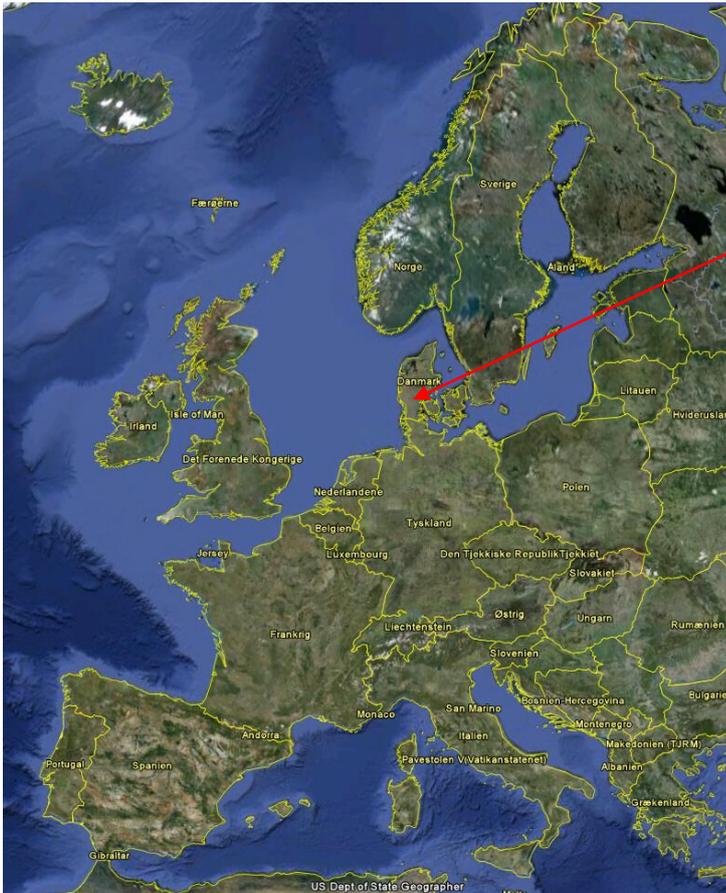






## 5 Notes:

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