



SIP INDUSTRIAL

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SIP Tempest PH600/140 Hot Electric Pressure Washer

Code: 08941

SIP Tempest PH600/140 T4 Hot Electric Pressure Washer

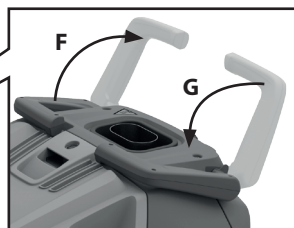
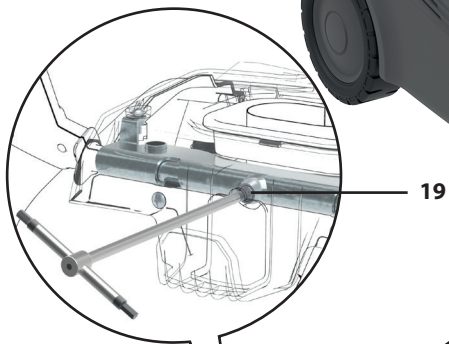
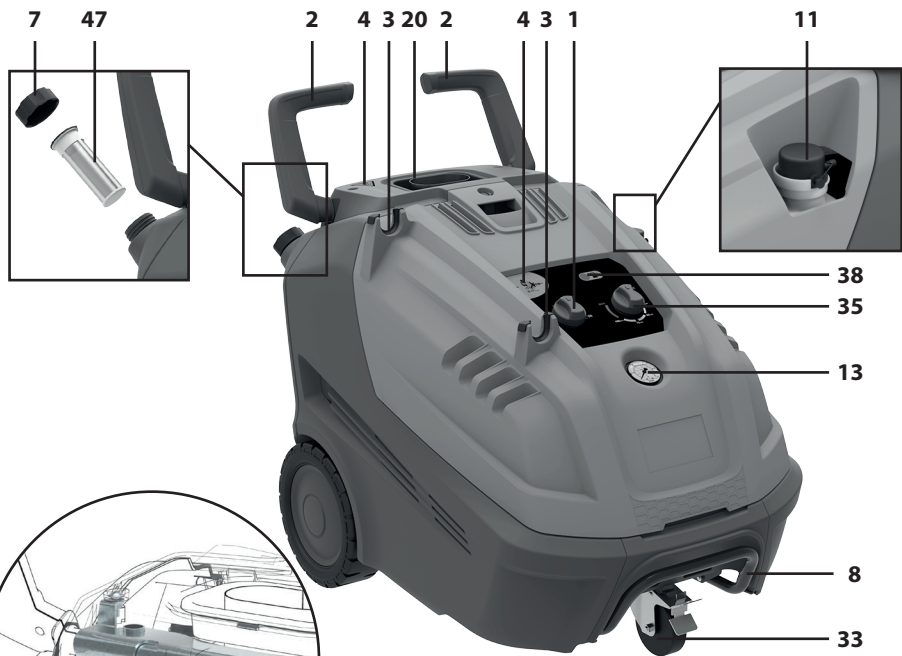
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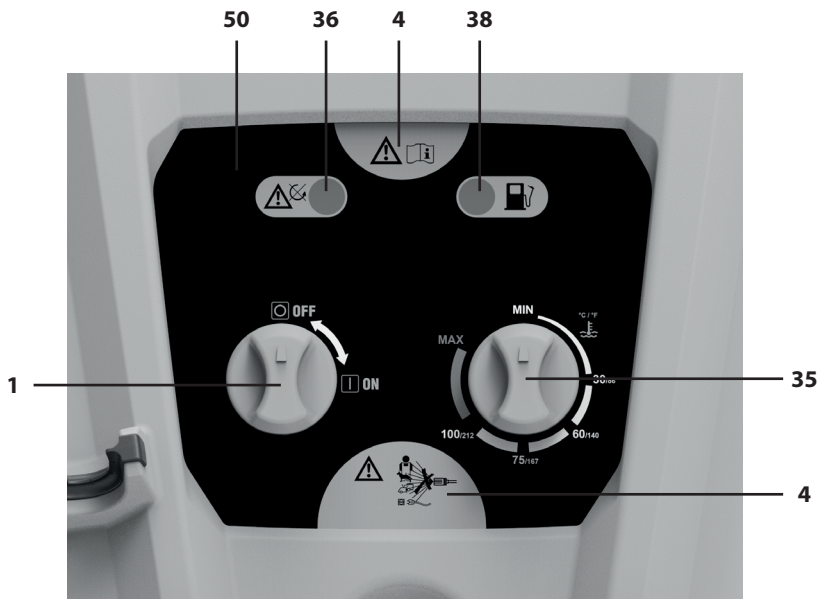
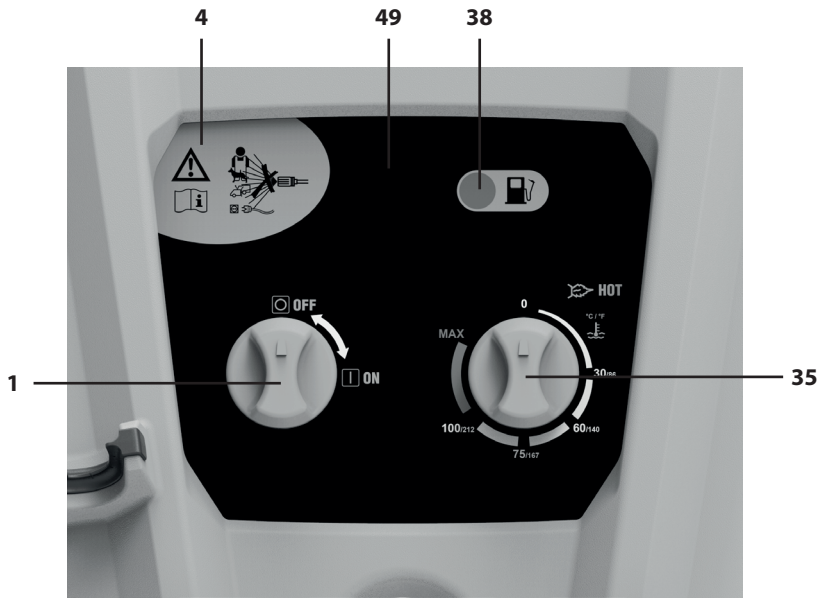


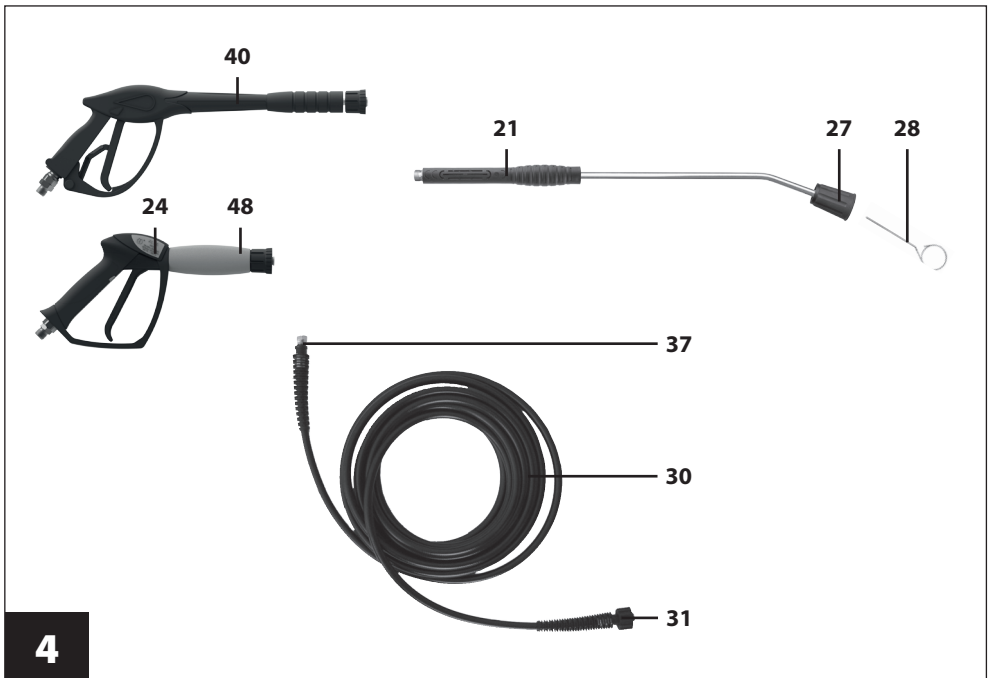
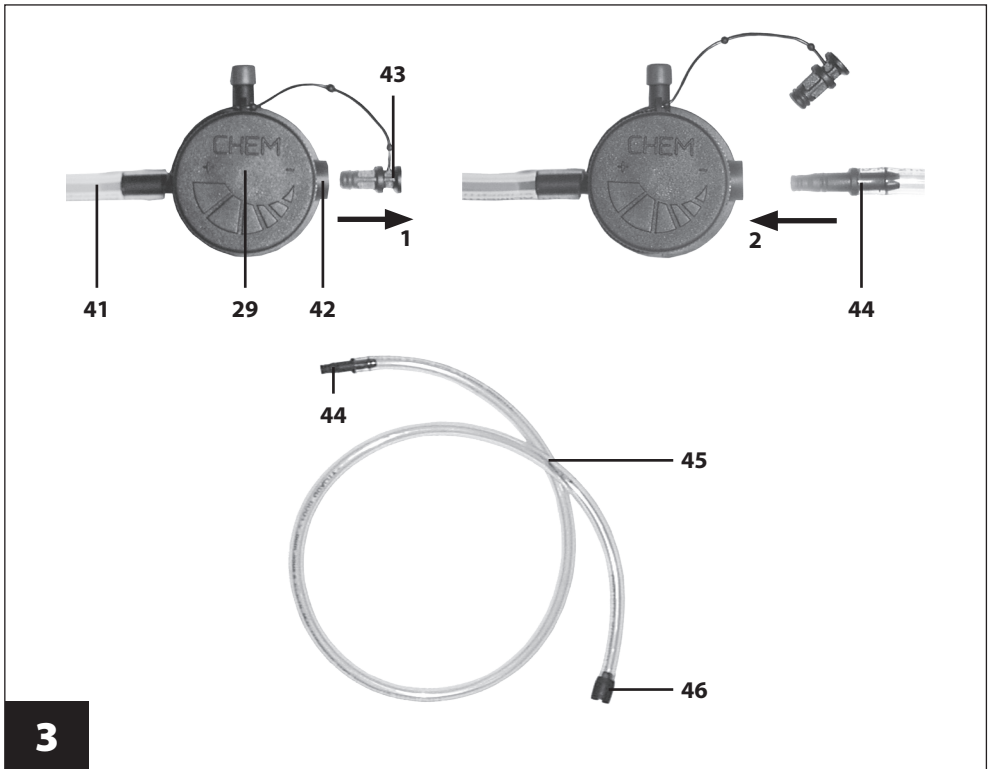
WARNING. Read the instructions before using the machine

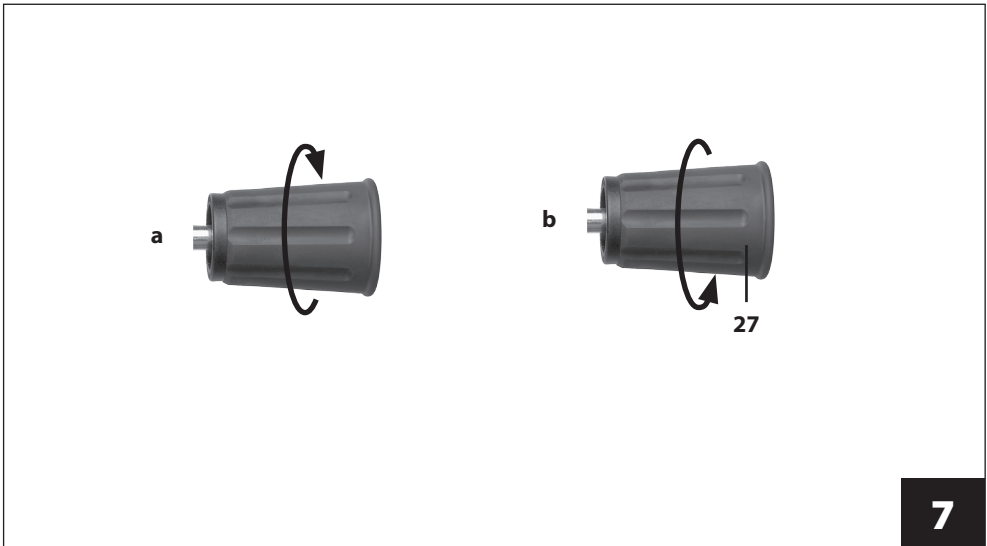
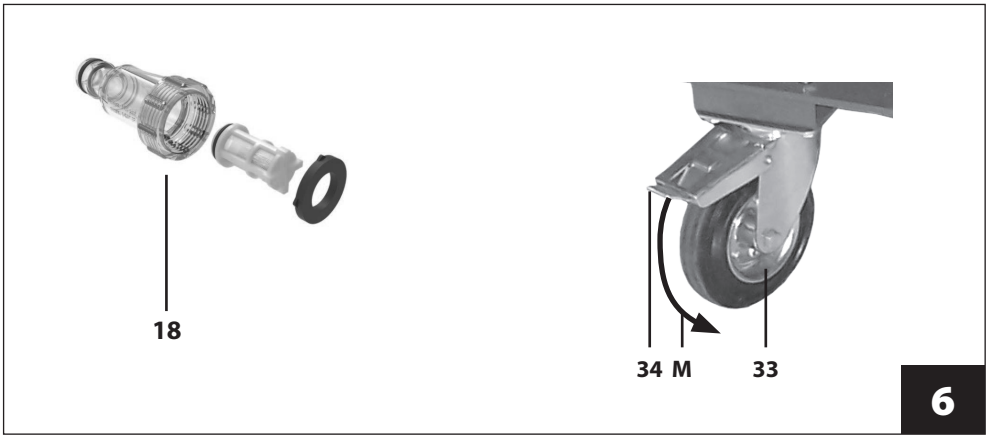
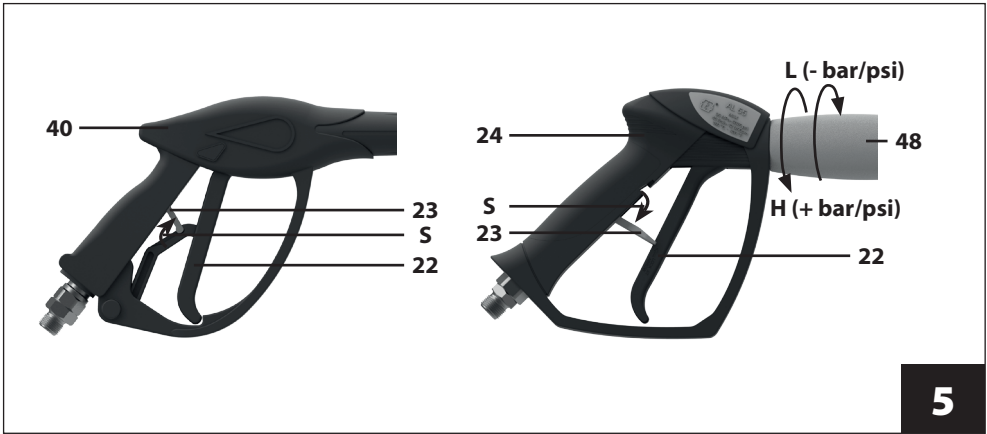


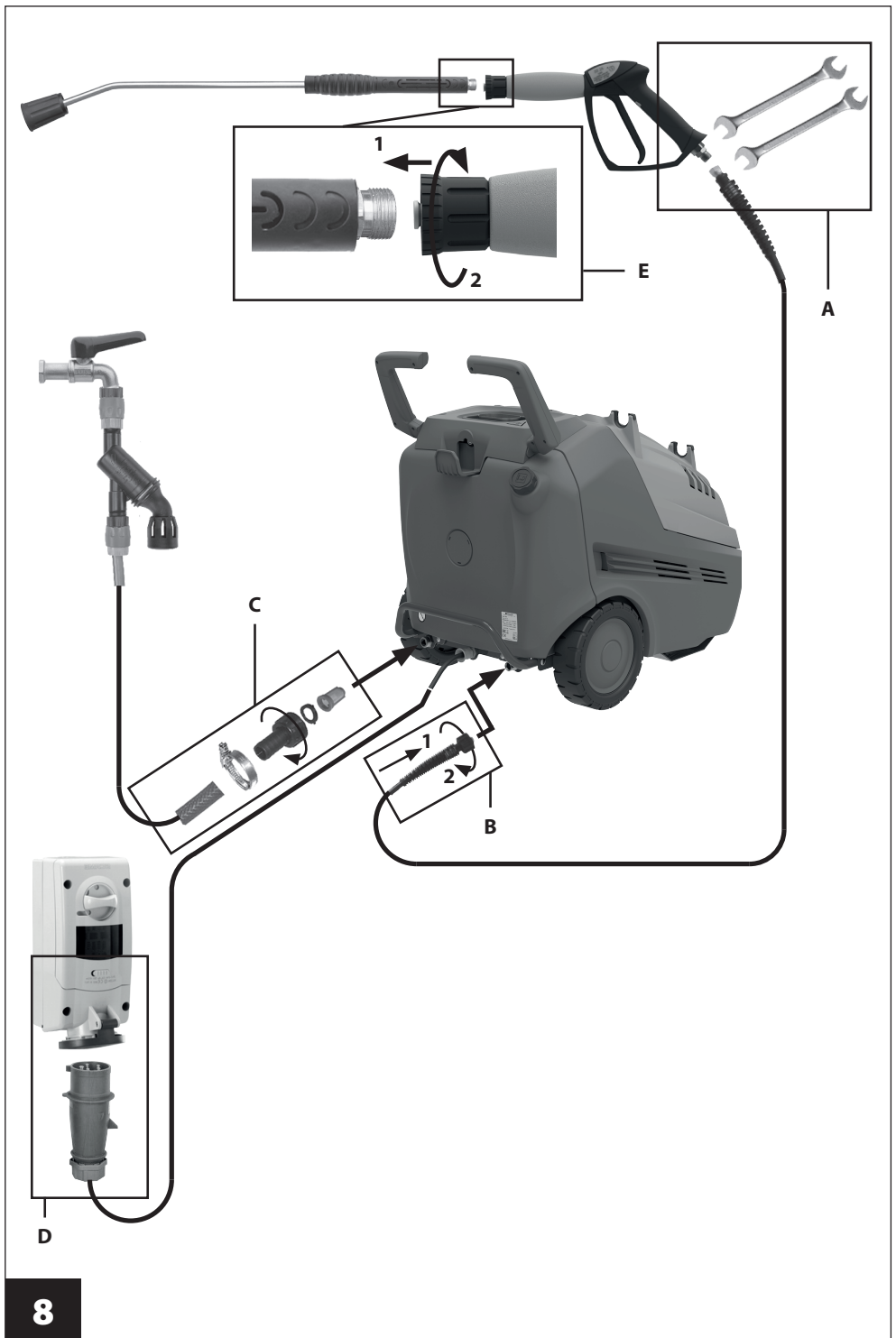
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**WARNING**

TRANSLATION OF THE ORIGINAL INSTRUCTIONS
 Read and keep in mind that indicated in the INSTRUCTION
 MANUAL - SAFETY WARNINGS.

TECHNICAL CHARACTERISTICS AND SPECIFICATIONS

	SIP Tempest PH600/140 Hot Electric Pressure Washer	SIP Tempest PH600/140T4 Hot Electric Pressure Washer
	08941	08956
ELECTRICAL CONNECTIONS		
Power supply	230V 1~ 50 Hz	230V 1~ 50 Hz
Input (kW - HP)	3.0 - 4.1	3.0 - 4.1
Fuse	13A	13A
HYDRAULIC CIRCUIT		
Maximum supply water temperature (°C - °F)	60 - 140	60 - 140
Minimum supply water temperature (°C - °F)	5 - 41	5 - 41
Minimum supply water flow rate (l/min - USgpm)	12 - 3,2	12 - 3,2
Maximum supply water pressure (bar - psi)	8 - 116	8 - 116
Maximum priming depth (m - ft)	1.5 - 4.9	1.5 - 4.9
PERFORMANCE		
Maximum flow rate (l/min - USgpm)	10 - 2.6	10 - 2.6
Nominal flow rate (l/min - USgpm)	8.5 - 2.2	9 - 2.4
Maximum pressure (bar - psi)	140 - 2030	150 - 2175
Nominal pressure (bar - psi)	130 - 1885	140 - 2030
Maximum water outlet temperature (°C - °F)	110 - 230	110 - 230
Maximum reaction force on the spray gun (N)	22	24
Sound pressure level - Uncertainty (dB(A))	78.7 - 0.7 ⁽¹⁾	84.9 - 0.7 ⁽¹⁾
Sound power level (dB(A))	93 ⁽¹⁾	92 ⁽¹⁾
Operator hand-arm vibration - Uncertainty (m/s ²)	0.9 - 0.24 ⁽¹⁾	0.9 - 0.24 ⁽¹⁾
PUMP OIL	ENI MULTITECH THT ⁽²⁾	ENI MULTITECH THT ⁽²⁾
WEIGHT AND DIMENSIONS		
Length x width x height (mm - in)	950 x 620 x 850 - 37,4 x 24,4 x 33,5	950 x 620 x 850 - 37,4 x 24,4 x 33,5
Weight (kg - lb)	95 - 209	100 - 220
Diesel tank (l - USgal)	15 - 4,0	15 - 4,0
Detergent tank (l - USgal)	3.5 - 0.9	3.5 - 0.9

⁽¹⁾ Measurements in agreement with 60335-2-79.

⁽²⁾ Also see the corresponding oils table.

ENI MULTITECH THT corresponding oils:





Mobil Mobilfluid 424	Mobil Mobilfluid 426	Petronas Arbor MTF Special 10W-30
Shell Spirax S4 TXM	Total Dynatrans MPV	Elf Tractelf BF16
Castrol Agri Trans Plus 80W	Chevron Textran THD Premium	Q8 Roloil Multivariax 35 HP

PARTS IDENTIFICATION

Refer to **figures 1 to 7**.

1. Main switch
2. Foldable handle
3. Lance rest
4. Warning plates. Inform on residual risks and PPE to be used
5. Identification plate. Indicates the serial number, guaranteed sound power value (in compliance with Directive 2000/14/EC) and main technical characteristics
6. Electric power cable
7. Fuel tank cap
8. Front bumper
9. Rear bumper
10. Support for the power cord
11. Detergent tank cap
12. N/A
13. Pressure gauge
14. N/A
15. N/A
16. Water outlet connector
17. N/A
18. Water inlet filter
19. Screw for locking/releasing the handle
20. Exhaust
21. Lance
22. Pistol gun lever
23. Safety catch on pistol gun lever
24. Pistol gun with pressure regulator 08956
25. N/A
26. N/A
27. Nozzle support head
28. Nozzle cleaning pin
29. Knob for adjusting detergent
30. High pressure hose
31. High pressure hose quick fit connector
32. N/A
33. Swivel wheel
34. Swivel wheel brake
35. Knob for temperature adjustment
36. Phase control warning light (**three-phase models** only)
37. High pressure hose connector
38. Low fuel warning light
39. N/A
40. Pistol gun 08941
41. Detergent suction hose
42. External detergent tank suction coupling
43. External detergent tank suction cap
44. External detergent tank suction hose fitting
45. External detergent tank suction hose
46. External detergent tank suction hose filter
47. Fuel fill up filter
48. Pressure regulator 08956
49. Control panel for **single-phase models**
50. Control panel for **three-phase models**

MEANING OF GRAPHIC SYMBOLS USED

	"0" position (off) of main switch (1).
	"I" position (on) of main switch (1).
	Wrong connection between the phases. If the warning light (36) is flashing, you need to contact a Specialized Technician to reverse the connection of two phases in the high pressure cleaner plug or in the socket it is connected to (three-phase models only).
	Low fuel level. If the warning light (38) is on, you need to supply the high pressure cleaner with fuel.

SAFETY DEVICES

- **Thermal or amperometric protector (depending on model).**

This safety device stops the high pressure cleaner in the event of overheating and/or electrical over-current.

If it trips, follow the instructions below:

- turn the main switch (1) to “0” and take the plug out of the mains socket;
- press the cleaner gun lever (22) to discharge any remaining pressure;
- wait 10 to 15 minutes for the high pressure cleaner to cool down;
- check that the requirements for the mains power connections have been followed correctly (see the **INSTRUCTIONS MANUAL – SAFETY INSTRUCTIONS**), paying particular attention to the extension lead used;
- reconnect the plug and repeat the start-up procedure described in “**OPERATION**”.

- **Safety valve.**

This duly calibrated maximum pressure valve discharges any excess pressure should an anomaly develop in the pressure adjustment system.

- **Boiler safety device.**

This stops the burner working should the hydraulic circuit overheat as a result of an anomaly in the temperature adjustment system.

- **Burner Control (optional).**

This stops the burner working should the combustion flame go out.

- **Pressure control/ adjustment valve**

This valve, calibrated by the Manufacturer, permits to adjust the operating pressure (job pertaining to the **Specialized Technician**) and the pumped fluid to return to the pump’s suction unit, avoiding dangerous pressure levels, when the gun is closed or when a pressure value is set over the maximum level allowed.

- **Dry-running control.**

This prevents the possibility of the burner running without water.

- **Pistol Lever Blocking Device.**

This safety device (23) allows to lock the lever (22) on the cleaner gun (24) or (40) in the closed position, preventing accidental activation (**Fig. 5, position 5**).

STANDARD EQUIPMENT

Check the following parts are included in the packaging of the purchased product:

- high pressure cleaner
- high pressure delivery hose with the quick fit connector
- Pistol 08941
- Pistol with pressure regulator 08956
- lance
- suction unit connections kit;
- hose for detergent suction from an external tank;
- Instructions manual - safety notifications;
- instructions manual - operation and maintenance
- the declaration of conformity
- nozzle cleaning pin

If you encounter any difficulties, please get in touch with your dealer or an authorized customer service centre.

OPTIONAL ACCESSORIES

The following range of accessories can be added to the standard equipment supplied with the high pressure cleaner:

- hose reel;
- cleaner gun with pressure regulator;
- ion acceleration limescale remover;
- sandblasting lance: designed for sanding surfaces, removing rust, paint and lime scale deposits, etc;
- pipe flushing probe: designed for unblocking pipes and ducts;
- rotating nozzle lance: designed for the removal of stubborn dirt;
- foaming lance: designed for a more efficient distribution of detergent;
- various types of lances and nozzles;
- back-flow preventer: designed to comply with the standards relative to connecting to the drinking water mains;
- rotating brush: conceived for delicately and effectively cleaning large surfaces such as the bodywork of vehicles;
- exhausted fumes conveyor.

INSTALLATION – FITTING THE ACCESSORIES

- Connect the quick fit connector (31) on the hose (30) to the water outlet connector (16) and secure the ring nut tightly by hand. **Step B in Fig. 8.**
- Screw the connector (37) on the high pressure hose onto the thread of the cleaner gun (24) or (40) and tighten it using two 22 mm spanners (not supplied). **Step A in Fig. 8.**
- Insert the filter (18) in the connector (17) and the seal (26) in the hose support (25); screw the hose support (25) onto the connector (17). **Step C in Fig. 8.**

PRELIMINARY OPERATIONS

- Unscrew the screw (19) using an allen wrench (6 mm / 0,23") not supplied, move the handle as in **Step F in Fig. 1**, then tighten the screw again to keep the handle in place.
- Use the handles (2) to move the high pressure cleaner to the area where it is to be used.
- Engage the brake (34) on the swivel wheel (33).
- Unwind the high pressure hose completely (30).
- Using the collar clamp (39), secure a supply pipe to the water inlet hose support (25) that has an inside diameter of 19 mm/0.75 in. **Step C in Fig. 8.**
- Connect the water supply hose to a tap.
- Open the water tap (if connecting to the mains water supply, you must use a backflow hydraulic device: please refer to the relative instruction manual), making sure that there is no dripping (or place the suction pipe in a draft tank).
- Check the detergent adjustment knob (29) is closed properly.
- Check the master switch (1) is set at "0" and connect the plug. **Step D in Fig. 8.**
- Turn the master switch (1) to "I".

- NOTE (three-phase models only):** if the warning light (36) is flashing it means you need to contact a **Specialized Technician** to reverse the connection of two phases of the high pressure water cleaner plug or of the socket it is connected to.
- Press the cleaner gun lever (22) and wait for an even stream of water to be produced.
 - Turn the master switch (1) to "0" and connect the lance pipe (21) to the cleaner gun (24) or (40), securing it firmly. **Step E in Fig. 8.**

STANDARD OPERATION WITH COLD WATER (AT HIGH PRESSURE)

- Check if the knob for temperature adjustment (35) is in “0” position.
- Check the nozzle support head (27) is not set for the distribution of detergent. Also refer to “**OPERATING THE CLEANER WITH DETERGENT**”.
- Turn the high pressure cleaner on again by turning the master switch (1) to “I”.
- Press the cleaner gun lever (22) and check the nozzle spray is even without dripping.
- The high pressure cleaner is set to operate at the maximum permissible pressure, if lower pressure values are to be used, contact a **Specialized Technician**, who will reset the pressure control/adjustment valve (08941)

The pressure can be adjusted by using the pressure regulator (48) of the pistol gun (24), as in **Step H in Fig. 5** to increase the pressure, or as in **Step L in Fig. 5** to decrease the pressure (08956 only).

- You can check the pressure level on the pressure gauge (13).

NOTE: If the level of fuel in the tank is below the minimum mark, the warning light (38) will remain lit, even if you are operating the cleaner with cold water.

STANDARD OPERATION WITH HOT WATER (AT HIGH PRESSURE)

- Check if the knob for temperature adjustment (35) is in “0” position.
- Check the nozzle support head (27) is not set for the distribution of detergent. Also refer to “**OPERATING THE CLEANER WITH DETERGENT**”.
- Unscrew the cap (7) and fill the tank with automotive gas oil, making sure the fuel does not spill over. We recommend using a funnel reserved exclusively for this purpose (maximum tank capacity 15 l / 4,0 US gal). Replace the cap.
- Turn the high pressure cleaner on again by turning the master switch (1) to “I”.
- Select the temperature required using the temperature adjustment knob (35).
- Press the cleaner gun lever (22) and check the nozzle spray is even without dripping.
- The high pressure cleaner is set to operate at the maximum permissible pressure, if lower pressure values are to be used, contact a **Specialized Technician**, who will reset the pressure control/adjustment valve (08941).

The pressure can be adjusted by using the pressure regulator (48) of the cleaner gun (24), as in **Step H in Fig. 5** to increase the pressure, or as in **Step L in Fig. 5** to decrease the pressure (08956 only).

- You can check the pressure level on the pressure gauge (13).
- When the fuel is low, the burner will stop working and the warning light (38) will light up.
- The burner will only start working approximately 3 seconds after the cleaner gun has been opened and will stop working when the cleaner gun is closed or after it has reached the set temperature.
- If you want to switch from hot water operation to cold water operation, turn the knob for temperature adjustment (35) to “0” position.

OPERATION WITH DETERGENT

The Manufacturer recommends the use of detergents which are at least 90% biodegradable. Refer to the label on the detergent for instructions on how to use it.

- Turn the master switch (1) to “0”.
- Check if the pressure regulator (48) is set for maximum pressure. **Step H in Fig. 5 (08956 only)**.
- **Suction from the high pressure water cleaner tank:** take the cap off (11) and, being careful not to spill any of the liquid (we suggest using a funnel and keeping it for this purpose), fill the tank (maximum capacity is 3.5 l/0.9 US gal), following the dosage directions given on the detergent pack; put the cap back on.
- **Suction from an external tank:** remove the cap (43) and put the fitting (44) of the external detergent tank suctioning hose (45) in the coupling (42) (also see **Fig. 3**); put the hose (45) in the external tank containing the detergent at the strength wanted.
- Turn the detergent regulating knob (29) clockwise.

- Operate the nozzle support head (27) as shown in **Fig. 7-a** and start up the cleaner again by turning the master switch (1) to “**I**”. Now operate the lever (22): When the water is fed through, suction and mixing take place automatically. To resume work at high pressure, stop the cleaner by turning the master switch (1) to “**0**” and adjust the head (27) as shown in **Fig. 7-b** (these versions deliver the detergent at low pressure). **NOTE.** If the knob for temperature adjustment (35) is in “**0**” position, the detergent distribution will be in cold water; if it is in position “**I**”, the detergent distribution will be in hot water.
- Turn the knob (29) until the amount of product required is delivered. After you have finished using it, turn the knob (29) completely anticlockwise and, if you were using an external tank for suctioning the detergent, take the fitting (44) out of the coupling (42) and put the cap (43) back on.

STOPPING THE CLEANER – TOTAL STOP MODE

- Release the cleaner gun lever (22) to stop the high pressure jet; the high pressure cleaner moves to the by-pass operating mode and stops immediately (**08941 only; Instant Total Stop**), or after approximately 13 seconds it remains in this state (**08956 Timed Total Stop**).
- The cleaner will resume normal operation the as soon as the lever on the gun is pressed.



WARNING

- *If you stop the high pressure jet and put the gun down, enable the locking handle (23). **Step S in Fig. 5.***

STOPPING

- Run the cleaner for a few minutes with cold water.
- Close the tap on the water supply off completely (or remove the suction pipe from the draft tank).
- Drain the water out of the cleaner by running it for a few seconds with the cleaner gun lever (22) pressed.
- Turn the master switch (1) to “**0**”.
- Take the plug out of the power socket.
- Eliminate any remaining pressure in the high pressure hose (30) by keeping the cleaner gun lever (22) pressed down for a few seconds.
- Wait for the cleaner to cool down.

STORAGE

- Wind up the high pressure hose (30) with due care, making sure it is not bent; for versions without hose reel, store it carefully, without damaging it.
- Wind up the power cord (6) carefully and hang it up on its support (10).
- Store the high pressure cleaner in a clean, dry place. Make sure the power cord and the high pressure hose are not damaged.
- If necessary for space reasons, it is also possible to bend the handle (2): unscrew the screw (19) using an allen wrench (6 mm / 0,23”) not supplied, move the handle as in **Step G in Fig. 1**, then tighten the screw again to keep the handle in place.

ROUTINE MAINTENANCE

Follow the instructions for **“STOPPING WORK”** and those provided in the table below.

MAINTENANCE SCHEDULE	ACTION
Every time the cleaner is used	<ul style="list-style-type: none"> • Check the power cord, the high pressure hose, the connectors, the cleaner gun and the lance pipe. Should any of these look damaged, do not use the cleaner for any reason and contact a Qualified Technician.
Once a Week	<ul style="list-style-type: none"> • Check the water inlet filter (18) and clean it if necessary. Unscrew the hose support (25) and take the filter (18) out of the connector (17). Running water or compressed air is generally all that is needed to clean the filter. In the most difficult cases, use a limescale remover or replace it, contacting a Specialized Technician to buy the spare part. Mount the filter again, following the above steps in reverse order.
Once a Month	<ul style="list-style-type: none"> • Clean the nozzle. To clean the nozzle, it is generally sufficient to insert the pin (28) supplied into the nozzle's hole. If no appreciable results are obtained, contact a Qualified Technician to buy the spare part. The nozzle can be replaced using a 14 mm/0.55" spanner (not supplied). • Clean the detergent suction filter (46). It is normally enough to put the filter under running water or blow it with compressed air to clean it. In the more difficult cases use a water softener or replace it, contacting a Specialized Technician to buy a new one. • Cleaning the fuel fill up filter (47). Unscrew the fuel tank cap (7) to reach the fill up filter. Take the filter out and remove any impurities. In the more difficult cases replace it, contacting a Specialized Technician to buy a new one.

SUPPLEMENTARY MAINTENANCE

Supplementary maintenance should only be carried out by a **Qualified Technician**, following the table below (guideline only).

MAINTENANCE SCHEDULE	ACTION
Every 200 hours	<ul style="list-style-type: none"> • Check the pump's hydraulic circuit (water). • Check the pump is firmly secured • Adjust the electrodes • Check/top up the pump's oil level.
Every 500 hours	<ul style="list-style-type: none"> • Change the pump oil • Replace the electrodes • Replace the fuel nozzle. • Check the pump delivery/suction valves. • Check the tightness of pump screws.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
The cleaner does not start when the master switch (1) is turned to "I".	A safety device has been tripped on the system where the cleaner is connected (a fuse, circuit breaker, etc.).	Reset the safety device. SHOULD IT TRIP AGAIN, DO NOT USE THE CLEANER AND CONTACT A QUALIFIED TECHNICIAN.
	The plug has not been inserted properly in the power outlet	Disconnect the plug and reconnect it correctly.
The cleaner vibrates a lot and is noisy.	The water inlet filter (18) is dirty	Follow the instructions in " ROUTINE MAINTENANCE ".
	The cleaner is taking in air.	Check there are no leaks in the suction circuit.
	Not enough water supply or priming too deep	Check that the tap is fully open and the mains water flow rate and priming depth comply with the data given in the paragraph " TECHNICAL CHARACTERISTICS AND SPECIFICATIONS ".
The cleaner fails to reach maximum pressure	The pressure regulator (48) of the cleaner gun (24) is set for a lower pressure value.	Turn the regulator completely as in Step H in Fig. 5 .
	The nozzle support head (27) is set at low pressure (Fig. 7 - Position a).	Follow the indications in Fig. 7 - Position b .
	The nozzle is worn.	Replace the nozzle as instructed in " ROUTINE MAINTENANCE ".
	Not enough water supply or priming too deep	Check the tap is fully open and that the mains water pressure or the priming depth comply with the data in " TECHNICAL CHARACTERISTICS AND SPECIFICATIONS ".
	Backflow hydraulic device fault.	Refer to the relative manual.
Poor intake of detergent.	Nozzle-holder head (27) in high pressure (Fig. 7 - Position b).	Follow the indications in Fig. 7 - Position a .
	The pressure regulator (48) is set for a pressure value below the maximum one (JUPITER PRO only).	Restore the maximum pressure value. Step H in Fig. 5 . (JUPITER PRO only).
	The detergent adjustment knob (29) is not open enough.	Turn the knob clockwise.
	After use with an external tank the cap (43) was not put back properly.	Put the cap back on properly.
	Detergent suction filter (46) clogged.	Follow the instructions given in the " ROUTINE MAINTENANCE " paragraph.
	The detergent is too viscose.	Use one of the detergents recommended by the Manufacturer and dilute it as instructed on the label.

(continues on the next page)

PROBLEM	CAUSE	SOLUTION
No water comes out of the nozzle or flow rate is poor.	No water.	Check that the mains water tap is fully open or the suction pipe can prime.
	Priming too deep.	Check that the priming depth complies with the data given in the paragraph "TECHNICAL CHARACTERISTICS AND SPECIFICATIONS" .
	Clogged water nozzle.	Clean and/or replace the nozzle as instructed in "ROUTINE MAINTENANCE" .
	Backflow hydraulic device fault.	Refer to the relative manual.
Water leaking from under the high pressure cleaner.	Safety valve triggered.	IF THIS HAPPENS PERSISTENTLY DO NOT USE THE HIGH PRESSURE CLEANER BUT CONTACT A QUALIFIED TECHNICIAN.
The high pressure water cleaner stops during operation	A safety device has been tripped in the system where the cleaner is connected (a fuse, differential switch, etc.).	Reset the safety device. SHOULD IT TRIP AGAIN, DO NOT USE THE CLEANER AND CONTACT A QUALIFIED TECHNICIAN.
	The thermal or amperometric protector has tripped.	Follow the instructions given in the "SAFETY DEVICES" paragraph.
The cleaner resumes operation spontaneously when it is in Total Stop mode.	Leaks and/or drips in the delivery circuit.	Inspect the delivery circuit for leaks.
When the master switch (1) is turned on, the engine hums but does not start up.	Unsuitable electrical system and/or extension lead	Check the instructions for connecting up to the mains power supply have been followed correctly (refer to the INSTRUCTIONS MANUAL - SAFETY INSTRUCTIONS), especially as regards the use of an extension lead.
The cleaner does not deliver hot water	There is not enough fuel in the tank (warning light 38 is lit).	Top up with fuel.
	The fuel filter is dirty.	Follow the instructions in "SUPPLEMENTARY MAINTENANCE" .
	The boiler's safety thermostat has tripped.	Leave the cleaner to cool down for a few minutes so the safety device can reset. SHOULD IT TRIP AGAIN, DO NOT USE THE CLEANER AND CONTACT A QUALIFIED TECHNICIAN.
Warning light (36) flashing (three-phase models only).	Phase reversal in the plug or socket of the high pressure cleaner.	Follow the instructions given in the "PRELIMINARY OPERATIONS" paragraph.



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