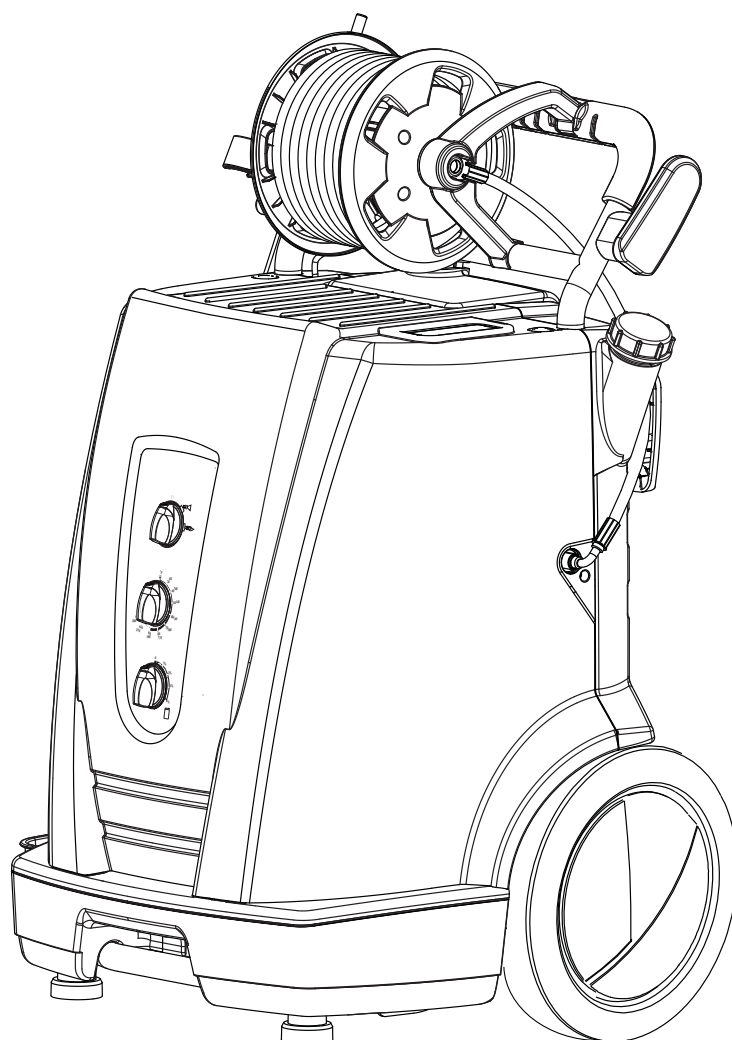
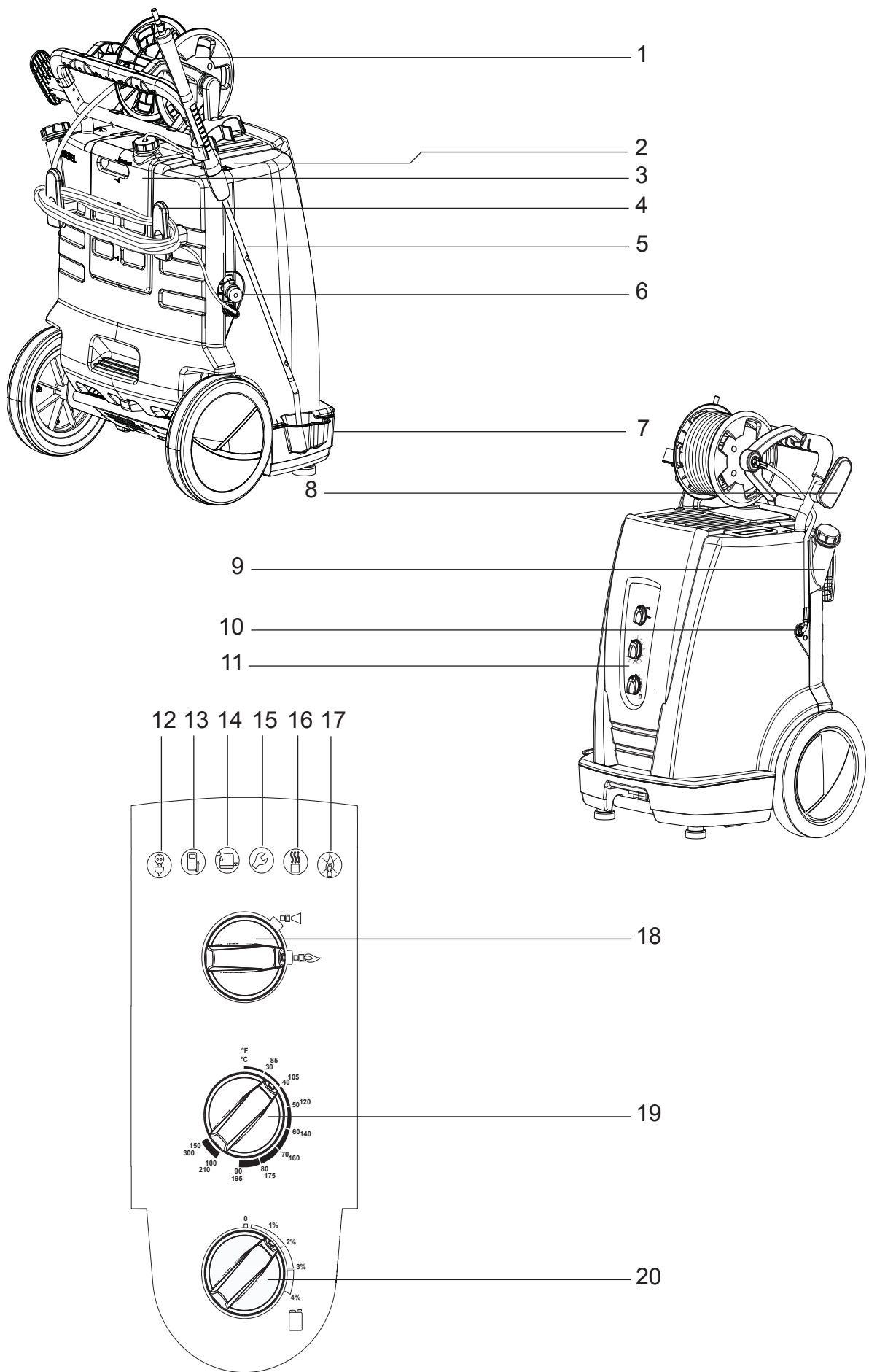


MH 1C - MH 2C - MH 2M - Instructions for use





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Symbols used to mark instructions



Safety instructions in these operating instructions which must be observed to prevent risks to persons are marked with this danger symbol.



This indicates tips and instructions to simplify work and to ensure safe operation.

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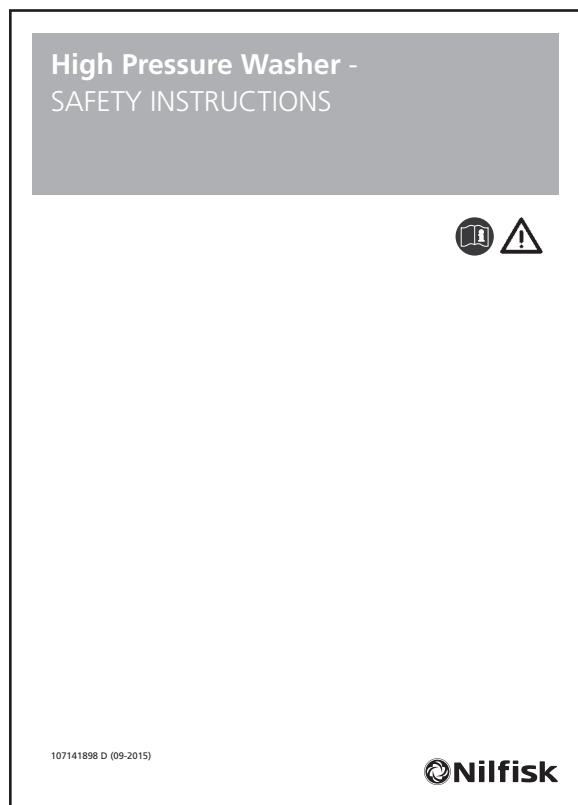


Before using the high-pressure cleaner, be sure to also read the enclosed operating instructions and keep them within reach at all times.



This symbol is used to mark safety instructions that must be observed to prevent damage to the machine and its performance.

1 Safety instructions



2 Description

2.1 Purpose

This high-pressure cleaner has been designed for professional use. It can be used for cleaning agricultural and construction equipment, stables, vehicles, rusty surfaces, etc.

The cleaner has not been approved for cleaning surfaces which comes into contact with food.

Chapter 5 describes the use of the high-pressure cleaner for various cleaning jobs.

Always use the cleaner as described in these operating instructions. Any other use may damage the cleaner or the surface to be cleaned or may result in severe injury to persons.

MH 1C is for light professional use only.

2.2 Operating elements



See illustration at front of these operating instructions.

- | | |
|--|---|
| 1. High pressure hose reel ¹⁾ | 11. Control panel |
| 2. Top cover release | 12. Power ON |
| 3. Cannister for detergent | 13. Fuel low |
| 4. Cable hook | 14. Nilfisk AntiStone low ¹⁾ |
| 5. Spray lance | 15. Service interval due/expired |
| 6. Supply water connection | 16. Boiler overheated |
| 7. Spray lance storage | 17. Flame sensor is sooted |
| 8. Hose hook | 18. Main switch |
| 9. Tank filler for fuel | 19. Temperature controller |
| 10. High pressure hose connection for machines without hose reel | 20. Detergent metering knob ¹⁾ |

3 Before starting the cleaner

3.1 Setting up the cleaner

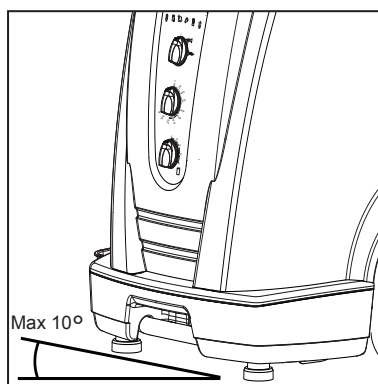
Every fuel-burning appliance, such as pressure washers, depends upon a proper mix of fuel and air (by weight) for proper combustion. Therefore some adjustment of the air regulation to the burner may be necessary to take account of altitude and the resulting air pressure. This is true whether your fuel is Kerosene or Diesel.

Your Nilfisk hot water pressure washer was thoroughly tested and adjusted for optimum per-

formance before it left our factory. The factory is located at approximately 140m (450 ft) above sea level, and the combustion settings are optimal for that elevation.

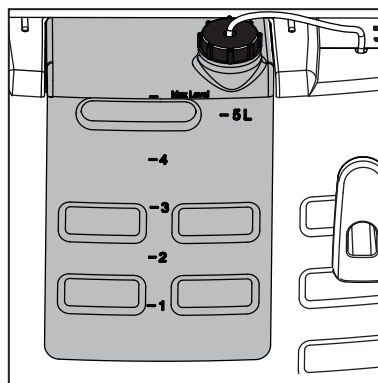
If your location is higher than 1200m (3900 ft) above sea level, your burner may require re-adjustment for proper performance and best fuel economy. Contact your Dealer or Nilfisk for assistance.

3.2 Before use



1. Before using the cleaner for the first time, check it carefully to detect any faults or damage.
2. Run the machine only when it is in perfect condition.
3. The slope on which the high pressure cleaner is placed must not exceed more than 10° in any direction.

3.3 Fill up detergent tank¹⁾



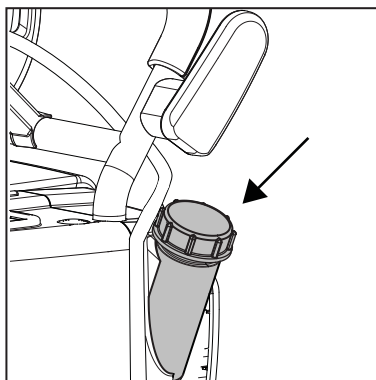
1. Fill up detergent tank with prediluted detergent.

Capacity see chapter 9.4 Technical Data

3.4 Fill up fuel tank

NOTE!

At temperatures below 8° C, the fuel oil begins to solidify (paraffin precipitation). This can lead to difficulties in starting the burner. Before the winter period either add a solidification point / flow improver (available from the fuel oil trade) to the fuel or use winter diesel fuel.



With the machine cold:

Fill fuel tank from a clean container with a fresh fuel, heating oil, DIN 51603-1 (without bio diesel) or Diesel EN 590 (Diesel with a bio diesel content up to 7%).

Diesel according to EN 590 (up to 7% bio diesel) can be used with the following restrictions: Maximum storage time in high pressure cleaner diesel tank: 1 month.

Diesel stored externally for more than 6 months is not allowed to be filled into Nilfisk high pressure cleaners.

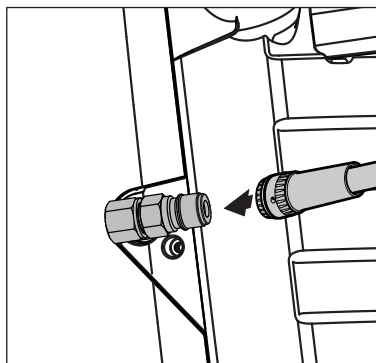
Diesel EN 590 is not recommended for use in HPW's at an ambient temperature below 0°C. Diesel EN 590 from an open container must not be used.

The fuel must be free from contamination.

Tank capacity see chapter 9.4 Technical data.

Be careful not to damage the fuel tank filter to avoid dirt entering in the tank

3.5 Connecting the high pressure hose



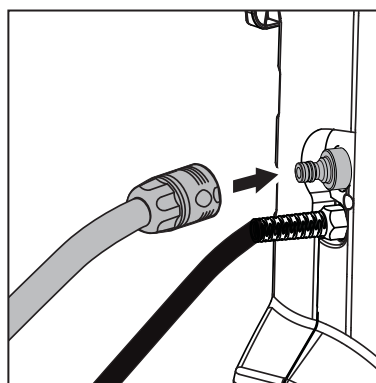
1. Put the quick connector of the high pressure hose onto the nipple on the cleaner.¹⁾

3.6 Connecting the water supply



In the case of poor water quality (sand, etc.), we recommend that a fine water filter is fitted in the water inlet.

We recommend the use of a textile-reinforced water hose with a nominal diameter of min. 3/4" (19 mm).

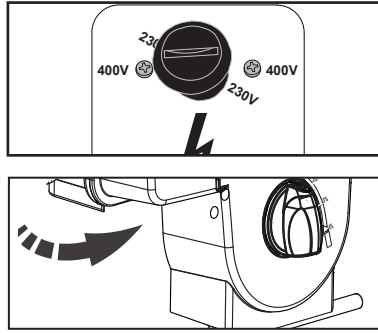


1. Rinse the water supply hose briefly in order to prevent sand and other dirt particles entering into the machine.
2. Connect water supply hose to the machine.
3. Open water tap.

NOTE!

See chapter 9.4 Technical Data for required quantity of water and water pressure.

3.7 Electrical connection



Before connecting devices with voltage changeover¹⁾: Check that the pre-selected voltage on the machine corresponds with the voltage of the electrical installation. Otherwise the electrical

devices of the machine can be destroyed.

CAUTION!

When using cable reels:

1. Due to the risk of overheating and fire, always unwind the power supply cord fully.

The cleaner may only be connected to a correctly installed electrical installation.

1. Observe safety instructions in chapter 1.
2. Put the plug into the electrical socket.

3.8 Antifreeze - before first use

The machine is protected with anti-freeze from the factory.

Catch the liquid discharging at first (approx. 5 l) for re-use in a container.

EN

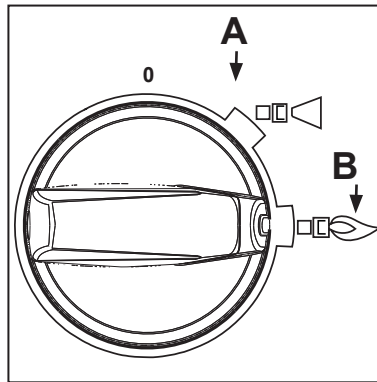
4 Control / Operation

4.1 Switching on the cleaner



NOTE!

Always remove any dirt from the nipple before connecting the spray lance to the spray gun.



1. Move the main switch into position 'Cold Water' (A)

The control electronics system performs a self-test, all the LEDs light up once.

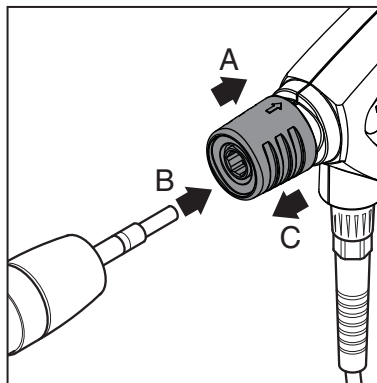
The motor starts

 lights up.

2. Ventilate the machine for air by activating the spray gun
3. When the water flow is even, continue with the following steps

4.2 Connections

4.2.1 Connecting the spray lance to the spray gun



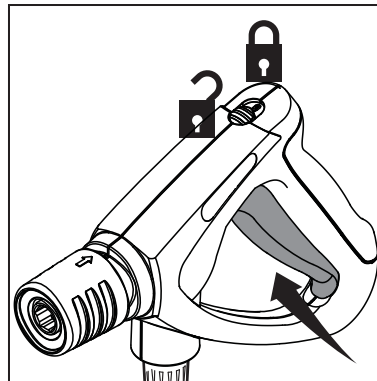
1. Pull the blue quick-release grip (A) of the spray gun backwards.
2. Insert the nipple of the spray lance (B) into the quick-release connection and release it.
3. Pull the spray lance (or other accessory) forwards to check that it is securely attached to the spray gun.

4.2.2 Hot water operation (up to 100°C)

IMPORTANT!

In the case of appliances with a hose reel:

In hot water mode, unwind the high-pressure hose fully from the hose reel, as otherwise the hose reel may become warped due to the effects of the heat.



1. Move main switch into the position 'Hot Water' (B) and select the required temperature on the temperature control
2. Unlock the spray gun and actuate it

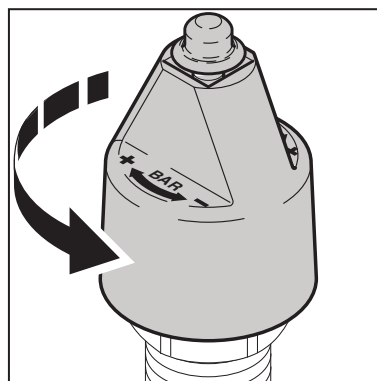
The burner switches on.

In case of interruptions in work: Also be sure to insert the safety catch even during short interruptions in work (see Fig. in section 6.1)

4.2.3 Steam operation (over 100°C)¹⁾



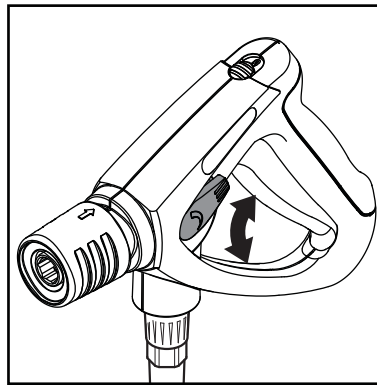
Beware of hot water and steam discharge up to 150°C when operating in steam stage.



1. Replace the standard nozzle with the steam spray nozzle (See catalogue for accessories).
2. Open cover.
3. Turn the twist grip on the safety control block completely to the left (anticlockwise direction).
4. Turn the main switch into position 'Hot Water'.
5. Select temperature (over 100°C).

4.3 Pressure regulation (Ergo Vario Press Gun)¹⁾

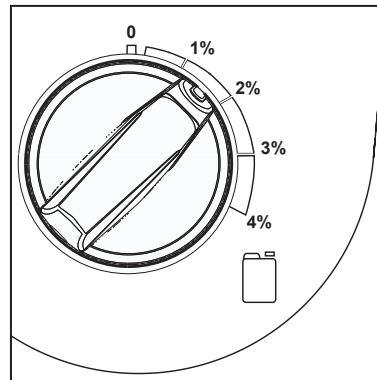
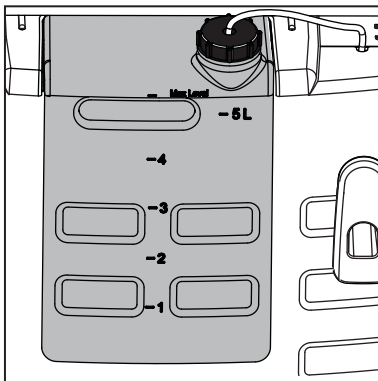
For safety reasons, never tie back or wedge open the trigger of the spray gun in open position during operation. The trigger must be free to close when released, thus interrupting the flow of the water.



1. Operate the Vario trigger in order to vary the water flow and thereby the pressure.
2. Push the trigger forwards to obtain full pressure and flow.

EN

4.4 Using cleaning agents



CAUTION!

Never allow cleaning agent to dry on the surface to be cleaned. The surface may be damaged.

For special applications (e.g. disinfection) the exact detergent concentration has to be determined by measuring cup. For water throughput of the machine see chapter 9.4 technical data.

MH 1C

Cleaning agent can be drawn in via the injector installed as standard only in low-pressure mode:

1. Dilute cleaning agent according to the manufacturer's instructions.
2. Turn cap of the FlexoPowerPlus nozzle head towards „CHEM“ up to the stop.
3. The intaken volume of cleaning agent can be regulated by turning the metering valve.
4. Main switch
Turn the switch to position "I".
5. Operate the spray gun.

MH 2C/MH 2M

1. Set the desired concentration of cleansing agent at the cleansing agent dosing facility.
2. Spray the object to be cleaned.
3. Allow the cleaning agent to work, depending on the degree of soiling. Then rinse off with the high pressure spray jet.

5 Applications and methods

5.1 Techniques

Efficient high pressure cleaning is achieved by following a few guidelines, combined with your own personal experience of specific cleaning tasks. Accessories and detergents, when correctly chosen, can increase the efficiency of your pressure washer. Here is some basic information about cleaning.

5.1.1 Soaking

Encrusted or thick layers of dirt can be loosened or softened by a period of soaking. An ideal method within agriculture – for example, within pig sties. The soaking method can be achieved by use of foam or simple alkaline detergent. Let the product lie on the dirty surfaces for around 15 minutes before pressure washing. The result will be a much quicker high pressure cleaning process.

5.1.2 Detergent and Foam

Foam or detergent should be applied onto dry surfaces (not in direct sun light) so that the chemical product is in direct contact with the dirt. Detergents are applied from bottom to top, for example on a car bodywork, in order to avoid “super clean” areas, where the detergent collects in higher concentration and streams downwards. Let the detergent work for several minutes before rinsing but never let it dry on the surface being cleaned.

5.1.3 Temperature

Detergents are more effective at higher temperatures. Greases, oils and fats can be broken down more easily at higher temperatures also. Proteins can be cleaned at temperatures of around 60°C. Oils, traffic film around 70°C, and grease can be cleaned at 80°C - 90° C.

5.1.4 Mechanical Effect

In order to break down tough layers of dirt, additional mechanical effect may be required. Special lances and rotary or wash brushes offer this supplementary effect that cuts through dirt.

5.1.5 High Water Flow or High Pressure

High pressure is not always the best solution and high pressure may damage surfaces. The cleaning effect also depends upon water flow. Pressure levels of around 100 bar may be sufficient for vehicle cleaning (in association with hot water). Higher flow levels give the possibility to rinse and flush away large amounts of dirt easily.

5.2 Some typical cleaning tasks

5.2.1 Agriculture

Task	Accessories	Method
Stables Pig Pens, Sties Cleaning of walls, floors and equipment Disinfectant	Chemical Foam Injectors Foam lance Powerspeed lance Floor Cleaner Detergents Universal Alkafoam Disinfectant DES 3000	<ol style="list-style-type: none"> 1. Soaking – apply foam to all surfaces (bottom to top) and wait for approx. 15 minutes. 2. Remove the dirt from surfaces with the high pressure lance or chosen accessory. Again, clean from bottom to top on vertical surfaces. 3. To flush away large quantities of dirt, change to low pressure mode and use the higher flow to push away the dirt. 4. Use recommended disinfectant products and methods to ensure hygiene. Apply DES 3000 disinfectant once the surfaces are perfectly clean.
Machinery Tractors ploughs etc.	Detergent injection Powerspeed lances Curved lances and underchassis washers Brushes	<ol style="list-style-type: none"> 1. Apply detergent to vehicle or equipment surfaces in order to soften up dirt and grime. Apply from bottom to top. 2. Proceed with cleaning using the high pressure lance. Clean again from bottom to top. Use accessories to clean in difficult to reach places. 3. Clean fragile areas such as motors, rubber at lower pressure levels to avoid damage.

5.2.2 Vehicle

Task	Accessories	Method
Vehicle bodywork	<p>Standard lance Detergent injection Curved lances and underchassis washers brushes</p> <p>Detergents Aktive Shampoo Aktive Foam Sapphire Super Plus Aktive Wax Allosil RimTop</p>	<ol style="list-style-type: none"> 1. Apply detergent to vehicle or equipment surfaces in order to soften up dirt and grime. Apply from bottom to top. In cases of particularly dirty vehicles, pre-spray with a product such as Allosil in order to remove traces of insects etc, then rinse at low pressure and apply normal car cleaning detergent. Let detergents settle for 5 minutes before cleaning off. Metallic surfaces can be cleaned using RimTop. 2. Proceed with cleaning using the high pressure lance. Clean again from bottom to top. Use accessories to clean in difficult to reach places. Use brushes in order to add a mechanical cleaning effect. Short lances can help for cleaning of motors and wheel arches. Curved lances or undercarriage washers can be valuable for the cleaning of car underchassis and wheel arches. 3. Clean fragile areas such as motors, rubber at lower pressure levels to avoid damage. 4. Apply a liquid wax using the pressure washer in order to protect the bodywork from pollution.

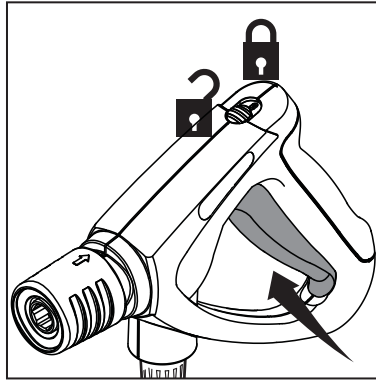
5.2.3 Buildings and Equipment

Task	Accessories	Method
<p>General surfaces</p> <p>Metallic equipment</p>	<p>Foam injectors Standard lance Curved lances Tank cleaning head</p> <p>Detergents Intensive J25 Multi Combi Aktive Alkafoam</p> <p>Disinfectant DES 3000</p>	<ol style="list-style-type: none"> 1. Apply thick foam over the surfaces to be cleaned. Apply on dry surfaces. Apply from top to bottom on vertical surfaces. Let the foam act for up to 30 minutes for the optimal effect. 2. Proceed with cleaning using the high pressure lance. Use applicable accessories. Use high pressure to dislodge large amounts of incrustated dirt or grime. Use lower pressure and high water volume in order to rapidly flush away loose dirt and rinse surfaces. 3. Apply DES 3000 disinfectant once the surfaces are perfectly clean. <p>Areas covered by amounts of loose dirt, such as animal remains in slaughterhouses, can be cleaned by using high water flow to flush away the dirt to evacuation pits or drains.</p> <p>Tank cleaning heads can be used to clean barrels, vats, mixing tanks etc. Cleaning heads may be hydraulically or electrically powered and give the possibility for automatic cleaning without a constant user.</p>
Rusted or damages surfaces prior to treatment	Wet Sandblasting equipment	<ol style="list-style-type: none"> 1. Connect the sandblasting lance to the pressure washer and place the suction tube in the sand. 2. Always wear protective equipment during sandblasting. 3. Spray the surfaces to be treated with the mix of water and sand. Rust, paint etc will be stripped off.

These are merely several examples of cleaning tasks that can be solved by a pressure washer in association with accessories and detergents. Each cleaning task is different. Please consult your local dealer or Nilfisk representative in order to discuss the best solution for your own cleaning tasks.

6 After using the cleaner

6.1 Switching off the cleaner and disconnecting supply lines



1. Close water tap.
2. Activate spray gun without lance in order to empty all residual water in the system.
3. Turn the main switch to position „OFF“.
4. Pull out the plug from the electrical socket.
5. Squeeze the spray gun handle until the cleaner is depressurised.
6. Lock the safety catch on the spray gun.
7. Remove the water hose from the cleaner.

6.2 Rolling up the electrical lead and storing accessories

To prevent accidents, always carefully roll up the electrical lead and the high pressure hose.

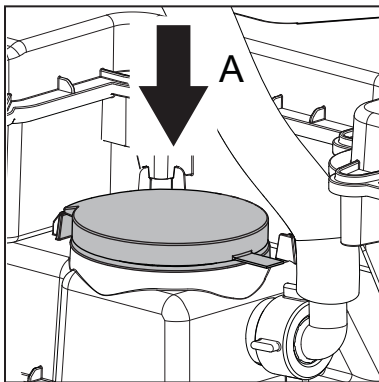
Place the spray lance into the storage position.

6.3 MH 1C Storing the cleaner (below 0°C)

Store the cleaner in a dry room without danger of frost or protect as below:

1. Remove the water inlet hose from the water supply.
2. Place the water inlet hose in a bucket containing an antifreeze.
3. Remove the spray lance.
4. Switch on the cleaner with the main switch in position "Cold Water".
5. Operate the spray gun.
6. During suction operate the spray gun two or three times.
7. The machine is protected against frost when antifreeze solution emerges from the spray gun.
8. Lock the safety catch on the spray gun.
9. Remove the water inlet hose from the bucket
10. Switch off the cleaner and store it in upright position.
11. When the machine is put into service again, the antifreeze solution must be collected and stored for future or proper disposal.

6.4 MH 2C/MH 2M Storing the cleaner (below 0°C)



Store the cleaner in a dry room without danger of frost or protect as below:

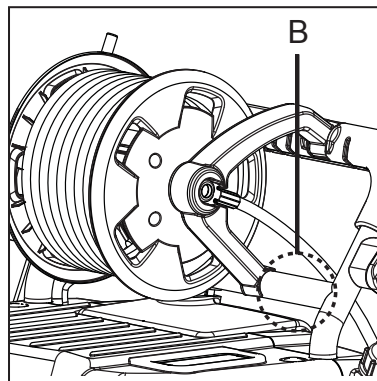
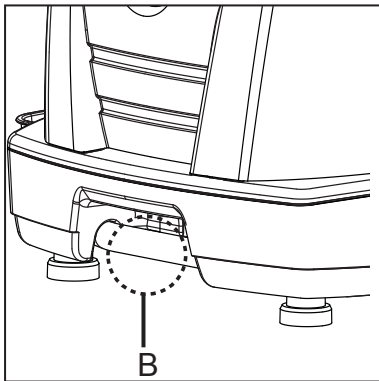
1. Remove the water inlet hose from the cleaner.
2. Remove the spray lance.
3. Switch on the cleaner with the main switch in position "Cold Water".
4. Operate the spray gun.
5. Open the cover (A)
6. Gradually pour antifreeze (approx. 5 litres) into the water tank.
7. During suction operate the spray gun two or three times.
8. The machine is protected

against frost when antifreeze solution emerges from the spray gun.

9. Lock the safety catch on the spray gun.
10. Close the cover
11. Switch off the cleaner.
12. To avoid any risks, store the cleaner temporarily in a heated room in upright position.
13. When the machine is put into service again, the antifreeze solution can be collected and stored for future use.

EN

6.5 Transporting the cleaner



The machine can be in either upright position or tilted position during transportation.

Use the fixing points (B) when securing with belts.



Notice the risk of leaking water by sudden heavy movements during transportation.

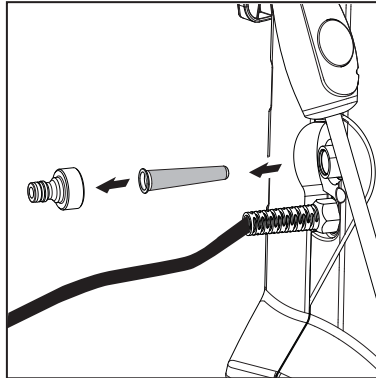
7 Maintenance

7.1 Maintenance plan

Maintain water filters and fuel filters as required.

7.2 Maintenance work

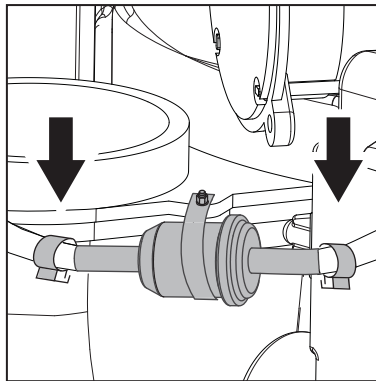
7.2.1 Water filters



A water filter is fitted on the water inlet to prevent large particles of dirt from entering into the pump.

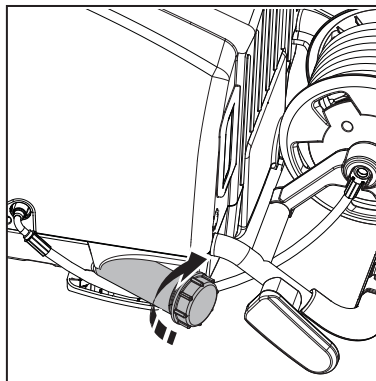
1. Unscrew quick coupling with tool.
2. Remove filter and clean it.
3. Remount the filter and quick coupling

7.2.2 Maintenance of fuel filter



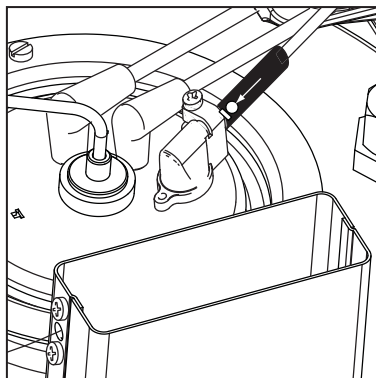
1. Open hose clips
2. Replace fuel filter
3. Close hose clips
4. Dispose the cleaning solution/damaged filter in accordance with the disposal regulations

7.2.3 Emptying the fuel tank



1. Unscrew the cap
2. Remove the strain
3. Tilt the machine to a horizontal position
4. Let the fuel pour into an empty container

7.2.4 Flame sensor¹⁾



1. Dismount the sensor and clean with a soft cloth.
2. Ensure that the sensor is correctly seated when installing again - the symbols must face upwards.
















8 Troubleshooting

8.1 Indications on Display


Indication lights						Cause	Remedy
						<ul style="list-style-type: none"> > The light is constant <ul style="list-style-type: none"> - The appliance is ready for operation > Flashing light <ul style="list-style-type: none"> - Flow sensor fault - Water tap closed or water shortage - Detergent tank empty - Pressure regulation on the safety control blocks or the VarioPress¹⁾ lance is set to low water volume - Machine scaled - Spray gun is leaking - High pressure hose, coupling or line system is leaking - Motor is overheated³⁾ 	<ul style="list-style-type: none"> > Refuel detergent or set SDR value to "0" <p>Turn main switch to position "OFF" - let the machine cool down Remove/disconnect extension cable</p>
						<ul style="list-style-type: none"> > Constant light <ul style="list-style-type: none"> - Low fuel level 	<ul style="list-style-type: none"> > Top up fuel > Cold water operation is possible
						<ul style="list-style-type: none"> > Flashing light <ul style="list-style-type: none"> - Low Nilfisk AntiStone level¹⁾ 	<ul style="list-style-type: none"> > Top up Nilfisk AntiStone
						<ul style="list-style-type: none"> > Constant light <ul style="list-style-type: none"> - Service interval has expired > Flashing light <ul style="list-style-type: none"> - Service interval due in 20 hours - Microprocessor error 	<ul style="list-style-type: none"> > Contact Nilfisk Service > Contact Nilfisk Service > Machine shutdown
						<ul style="list-style-type: none"> > Constant light <ul style="list-style-type: none"> - Boiler overheated. Exhaust sensor (EXT-H) has cut off fuel supply - Insufficient water flow - Machine scaled - Boiler not serviced 	<ul style="list-style-type: none"> > Machine shuts down. Cold water operation is possible. > Check water supply > Contact Nilfisk Service
						<ul style="list-style-type: none"> > Constant light <ul style="list-style-type: none"> - Flame sensor (B7) is sooted - Ignition or fuel system failure 	<ul style="list-style-type: none"> > Clean flame sensor (B7) (see chapter 7.2.4) > Contact Nilfisk Service > Cold water operation is possible

¹⁾ Options / model variants
Original instruction

³⁾ For MH 1C only. For MH 2C/MH 2M overheating warning see next page.

Indication lights						Cause	Remedy
						> Flashing light - Motor is overheated	Turn main switch to position "OFF" - let the machine cool down Remove/disconnect extension cable Possible phase failure on 3 phase variants ¹⁾ : have electrical connection checked Contact Nilfisk Service
						> Flashing light - Faulty temperature sensor (B1)	> Cold water operation is possible > Check wire to temperature sensor (B1) > Contact Nilfisk Service
						> Flashing light - Flow sensor fault	> Cold water operation is possible > Contact Nilfisk Service
						> Flashing light - Overheat error has occurred	> Cold water operation is possible > Contact Nilfisk Service
						> Visual test of lamps - When switching on, all LEDs light up for approximately 1 second	

8.2 Other Faults

Fault	Cause	Remedy
 not ON	> Plug not connected to the electrical plug socket	<ul style="list-style-type: none"> Put the plug into the electrical socket. Check fuse (see chapter 9.4 Technical Data)
Pressure too low	<ul style="list-style-type: none"> > High pressure nozzle worn out > Pressure regulation set to low pressure or VarioPress-lance¹⁾ set to low water volume¹⁾. 	<ul style="list-style-type: none"> Replace nozzle Turn the twist grip on safety control block clockwise (+) or set VarioPress-lance¹⁾ to higher water volume (see chapter 4.4)
Machine is running with pulsating pressure and makes knocking noise	> Pump has drawn in air as the detergent tank is empty	<ul style="list-style-type: none"> Close detergent valve. Remove lance from gun. Operate spray gun and let machine run until air in pump is gone and the machine is running normally again.
No detergent drawn in	<ul style="list-style-type: none"> > Detergent tank empty > Dirt in detergent tank > Suction valve at cleaning agent inlet soiled 	<ul style="list-style-type: none"> Top up detergent tank Clean detergent tank Remove suction valve and clean or replace
Burner soots up	<ul style="list-style-type: none"> > fuel contamination > Burner sooted or adjustment incorrect 	<ul style="list-style-type: none"> Contact Nilfisk Service

9 Further information

9.1 Recycling the cleaner



If the cleaner is discarded, make it unusable immediately

1. Unplug the cleaner and cut the power cord.

The cleaner contains valuable materials that should be recycled. Therefore, make use of your local waste disposal site. Contact your local authorities or your nearest dealer for further information.

9.2 Guarantee

Our general conditions of business are applicable with regard to the guarantee. Subject to change as a result of technical advances. The guarantee is invalidated if

the machine is not operated in accordance with these instructions or otherwise abused. The guarantee is invalidated if the machine is not serviced as described.

9.3 EU Declaration of Conformity

 EU Declaration of Conformity											
Product:	High Pressure Washer										
Type:	MH 1C, MH 2C, MH 2M										
The design of the unit corresponds to the following pertinent regulations:	<table border="0"> <tr> <td>EC Machine Directive</td> <td style="text-align: right;">2006/42/EC</td> </tr> <tr> <td>EC Low-voltage Directive</td> <td style="text-align: right;">2006/95/EC</td> </tr> <tr> <td>EC EMC Directive</td> <td style="text-align: right;">2004/108/EC</td> </tr> <tr> <td>EC RoHS Directive</td> <td style="text-align: right;">2011/65/EC</td> </tr> <tr> <td>EC PED Directive</td> <td style="text-align: right;">97/23/EC</td> </tr> </table>	EC Machine Directive	2006/42/EC	EC Low-voltage Directive	2006/95/EC	EC EMC Directive	2004/108/EC	EC RoHS Directive	2011/65/EC	EC PED Directive	97/23/EC
EC Machine Directive	2006/42/EC										
EC Low-voltage Directive	2006/95/EC										
EC EMC Directive	2004/108/EC										
EC RoHS Directive	2011/65/EC										
EC PED Directive	97/23/EC										
Applied harmonised standards:	EN ISO 12100-1, EN ISO 12100-2, EN 60335-2-79, EN 55014-1(2002), EN 55014-2(2001), EN 61000-3-2 (2006)										
Applied national standards and technical specifications:	IEC 60335-2-79										
Name and address of the person authorised to compile the technical file:	Anton Sørensen Senior Vice President – Global R&D Nilfisk A/S Kornmarksvej 1 DK-2605 Broendby DENMARK										
Identity and signature of the person empowered to draw up the declaration on behalf of the manufacturer:	 Anton Sørensen Senior Vice President – Global R&D Nilfisk A/S Kornmarksvej 1 DK-2605 Broendby DENMARK										
Place and date of the declaration:	Hadsund 17-08-2015										

9.4 Technical data

Description	General	1C-110/600		1C-110/600 X		2C-90/670 X		2C-145/600		2C-145/600 X	
		Tol. (±)	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom
Pressure Pwork @ Cylinder Head(bar)	10%	110	+11/-11	110	+11/-11	90	+9/-9	145	+15/-15	145	+15/-15
Flow. Qiec (l/h)	10%	540	+54/-54	540	+54/-54	640	+64/-64	530	+53/-53	530	+53/-53
Flow. Qmax (l/h)	10%	600	+60/-60	600	+60/-60	670	+67/-67	600	+60/-60	600	+60/-60
Temperature t max, hotwater (°C)		80		80		80		80		80	
Temperature t max, steam (°C)		NA		NA		150		150		150	
Elec. V/Ph/Hz	+/-6%	230/1~/50		230/1~/50		230/1~/50		230/1~/50		230/1~/50	
Power Consumption (kW)		2,8		2,8		2,9		3,4		3,4	
Fuel tank (l)		17		17		17		17		17	
Detergent tank (l)		5		5		5		5		5	
Noise level 1m (dBA)		74		74		76		77		77	
Recoil forces with standard lance (10deg.) (N)		17,6		17,6		18,5		20,8		20,6	
Vibration ISO 5349 (m/s ²)		≤2,5		≤2,5		≤2,5		≤2,5		≤2,5	
Weight - Machine alone (kg)		91		91		99		97		99	
Size - Machine alone (mm)		607x688x1000		607x688x1000		607x688x1071		607x688x1000		607x688x1071	
Fuse size (A)		16		13		13		16		16	
Max. inlet pressure (bar)		6		6		10		10		10	
Max. Inlet temperature (°C)		40		40		40		40		40	

Description	General	2M-140/600		2M-140/600 X		2M-155/660		2M-155/660 X		2C-170/690	
		Tol. (±)	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom
Pressure Pwork @ Cylinder Head(bar)	10%	140	+14/-14	140	+14/-14	155	+16/-16	155	+16/-16	170	+17/-17
Flow. Qiec (l/h)	10%	560	+56/-56	560	+56/-56	600	+60/-60	600	+60/-60	630	+63/-63
Flow. Qmax (l/h)	10%	600	+60/-60	600	+60/-60	660	+66/-66	660	+66/-66	690	+69/-69
Temperature t max, hotwater (°C)		80		80		80		80		80	
Temperature t max, steam (°C)		NA		NA		NA		NA		150	
Elec. V/Ph/Hz	+/-6%	230/1~/50		230/1~/50		400/3~/50		400/3~/50		400/3~/50	
Power Consumption (kW)		3,4		3,4		3,8		3,8		4,1	
Fuel tank (l)		17		17		17		17		17	
Detergent tank (l)		5		5		5		5		5	
Noise level 1m (dBA)		74		74		74		74		80	
Recoil forces with standard lance (10deg.) (N)		21,8		21,6		24,6		24,8		27,1	
Vibration ISO 5349 (m/s ²)		≤2,5		≤2,5		≤2,5		≤2,5		≤2,5	
Weight - Machine alone (kg)		97		99		97		99		97	
Size - Machine alone (mm)		607x688x1000		607x688x1071		607x688x1000		607x688x1071		607x688x1000	
Fuse size (A)		16		16		16		16		16	
Max. inlet pressure (bar)		10		10		10		10		10	
Max. Inlet temperature (°C)		40		40		40		40		40	

Description	General	2C-170/690 X		2C-170/690 X		2C-190/780		2C-190/780 X	
		Tol. (±)	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom
Pressure Pwork @ Cylinder Head(bar)	10%	170	+17/-17	170	+17/-17	190	+19/-19	190	+19/-19
Flow. Qiec (l/h)	10%	630	+63/-63	630	+63/-63	730	+73/-73	730	+73/-73
Flow. Qmax (l/h)	10%	690	+69/-69	690	+69/-69	780	+78/-78	780	+78/-78
Temperature t max, hotwater (°C)		80		80		80		80	
Temperature t max , steam (°C)		150		150		150		150	
Elec. V/Ph/Hz	+/-6%	400/3~/50		230-400/3~/50		400/3~/50		400/3~/50	
Power Consumption (kW)		4,1		4,1		5,1		5,1	
Fuel tank (l)		17		17		17		17	
Detergent tank (l)		5		5		5		5	
Noise level 1m (dBA)		80		80		81		81	
Recoil forces with standard lance (10deg.) (N)		26,3		26,3		32,9		32,0	
Vibration ISO 5349 (m/s ²)		≤2,5		≤2,5		≤2,5		≤2,5	
Weight - Machine alone (kg)		99		99		97		99	
Size - Machine alone (mm)		607x688x1071		607x688x1071		607x688x1000		607x688x1071	
Fuse size (A)		16		26/16		16		16	
Max. inlet pressure (bar)		10		10		10		10	
Max. Inlet temperature (°C)		40		40		40		40	

Description	General	2C-125/600		2C-180/780		2C-180/780	
		Tol. (±)	Nom	+ Tol/- Tol	Nom	+ Tol/- Tol	Nom
Pressure Pwork @ Cylinder Head(bar)	10%	125	+13/-13	180	+19/-19	180	+19/-19
Flow. Qiec (l/h)	10%	540	+54/-54	730	+73/-73	730	+73/-73
Flow. Qmax (l/h)	10%	600	+60/-60	780	+78/-78	780	+78/-78
Temperature t max, hotwater (°C)		80		80		80	
Temperature t max , steam (°C)		150		150		150	
Elec. V/Ph/Hz	+/-6%	220/1~/60		200/3~/50		200/3~/60	
Power Consumption (kW)		3,2		5,0		5,8	
Fuel tank (l)		17		17		17	
Detergent tank (l)		5		5		5	
Noise level 1m (dBA)		77		81		81	
Recoil forces with standard lance (10deg.) (N)		20,0		31,3		31,3	
Vibration ISO 5349 (m/s ²)		≤2,5		≤2,5		≤2,5	
Weight - Machine alone (kg)		97		97		97	
Size - Machine alone (mm)		607x688x1000		607x688x1000		607x688x1000	
Fuse size (A)		15		20		20	
Max. inlet pressure (bar)		10		10		10	
Max. Inlet temperature (°C)		40		40		40	



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