



Assembly manual

**High-pressure cleaner (1139.10)
for Citymaster 600**

Introduction

Foreword

Dear customer,

We are certain that the excellent qualities of the device will justify the faith you have shown in us by your purchase.

To guarantee you safe working with the device, please read the Safety instructions chapter before putting it into service.

Your own safety, as well as the safety of others, depends essentially on your ability to control the device.

This assembly manual may be used only in conjunction with the machine's original operating manual.

The assembly manual contains all important information for operation, maintenance and care. The installation procedures described in this assembly manual may only be undertaken by a Hako service centre or a workshop authorised by Hako. Members of staff with the required level of training and expertise are only guaranteed in the said workshops.

We would expressly advise you that no legal claims may be asserted based on the contents of this manual. In the case of necessary repair work, please make sure that only original spare parts are used. Only original spare parts guarantee constant and reliable operational readiness of the machine. We reserve the right to make changes in the interests of further technical development.

Valid as from: October 2013

Hako GmbH
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Notes on warranty

The terms defined in the purchase agreement apply. Claims for compensation in relation to damage are excluded from the terms of the warranty when the damage is the result of the failure to observe rules concerning servicing and maintenance. Maintenance work must be carried out by an authorised Hako service centre and confirmed in the "Maintenance Report", which serves as a warranty logbook.

The following are excluded from the terms of warranty: wear and tear through overuse, defective fuses, improper handling and use and unauthorised modifications. Claims under the terms of the warranty are also annulled when damage occurs to the machine resulting from the use of parts or accessories not explicitly approved of by us or from failure to observe maintenance rules.

Introduction

Intended use

The high-pressure cleaner is an attachment for the Citymaster 600. This device is intended exclusively for performing all of the customary cleaning of stairs, steps, corners, edges and small elevated surfaces that cannot be reached with the machine.

Any use extending beyond this is not intended use. The manufacturer is not liable for any damage resulting from this and the operator alone bears the risk. Intended use also includes compliance with the operating, maintenance and servicing conditions specified by the manufacturer.

The high-pressure cleaner may be used, maintained and repaired only by persons who are familiar with this work and instructed about the dangers.

The relevant accident prevention regulations as well as the other generally recognised safety engineering and occupational medical rules must be complied with.

The manufacturer is not deemed liable for any damage resulting from unauthorised modifications to the machine and the high-pressure cleaner.

Acceptance of the device




Inspect the device immediately on delivery for signs of transport damage. You will be compensated if the damage is immediately confirmed by the haulage contractor and the damage report is sent to our authorised Hako dealer together with the consignment note.

Safety information

1 Safety information

1.1 Safety and warning symbols

All places concerning your safety, the safety of the device and of the environment are provided with these warning symbols in the operating manual.

Symbol	Damage for ...	Definition
Safety instructions 	Persons or things	Safety instructions for avoiding dangerous situations due to inaccurate or omitted compliance with instructions or specified work sequences.
Note 	The machine	Important notes for handling the device for maintaining its suitability for use.
Environmental hazard 	The environment	Environmental hazard due to using materials from which a health and environmental risk proceed.

Safety information

1.2 General notes

- Apart from the instructions in this operating manual, the general safety and accident prevention regulations of the legislation must be taken into account.
- Before the machine is put into service, please read carefully the operating manual you receive as well as further separate instructions for additional implements or attachments and observe them in all aspects in your work.
- The device may be used, maintained and repaired only by persons who have been instructed by Hako experts.
- You should pay special attention to the safety instructions. For errors in operating the device can be avoided and its trouble-free operation can be guaranteed only with precise factual knowledge.
- The operating manual must be available constantly at the place of use of the device and should therefore be kept carefully on the device.
- Please hand over these documents to the new owner/operator on sale or rental of the device. Have the hand-

over confirmed!

- Spare parts must correspond to the original parts with regard to safety.

1.3 Operating instructions

- Check the device for operating safety before every start-up! Remove faults immediately!
- Before starting work, the operator must familiarize himself with all equipment, operating and actuating elements as well as with their function. It is too late to do this during operation!
- Personal protective equipment must be worn when working with the Citymaster 600.
- The jet of the high-pressure cleaner must not be directed to persons. There is danger of injury! Do not use high-pressure cleaners for cleaning electrical/electronic components and the engine compartment!
- If an extension hose is used, the plug and coupling must be water-tight.
- Use the high-pressure lance only when standing on a firm surface, e.g. not on ladders or from the cab.
- The maximum operating pressure set by the manufacturer may not be

increased.

- When taking out of service, relieve the pressure of parts under pressure (hoses, etc.)
- Work only with the machine at standstill and the parking brake applied.

1.4 Maintenance instructions

- Daily and weekly maintenance work must be done by the operating staff. In all other maintenance work, please contact your nearest Hako service centre.
- The maintenance work and maintenance intervals specified in the operating manual must be complied with.
- Use suitable tools for the cleaning and maintenance work.
- Have the device checked for safe condition by an expert in accordance with the accident prevention regulations at appropriate intervals (we recommend at least once yearly).
- Spare parts must at least comply with the technical requirements specified by the manufacturer. This is guaranteed by original spare parts.
- Switch the device off for cleaning and maintaining the machine as well

Safety information

- as before replacing parts.
- Cleaning the machine with a high-pressure cleaner or steam jet is not allowed.

1.5 Special risks

- Risk of injury! Hydraulic oil issuing under high pressure can penetrate the skin and cause severe injuries. Therefore, even with the smallest wounds, immediately consult a doctor since otherwise severe infections can arise!
- Hydraulic pipes must be correctly run and fitted! The work may be done only by authorised trained personnel! Make sure that no connections are swapped over! Fitting, length and quality, especially pressure and temperature resistance, of hydraulic pipes must comply with the requirements!
- Do not use the device when other persons are in range, unless they are wearing protective clothing.
- Unsuitable extension hoses can be dangerous.
- The jet of the high-pressure cleaner must not be directed to persons. There is danger of injury! Do not use

high-pressure cleaners for cleaning electrical/electronic components and the engine compartment!

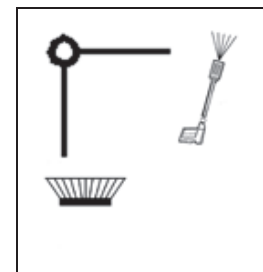
1.6 Environmental protection instructions

- Ensure safe and environment-conserving disposal of operating and auxiliary materials. Collect escaping or spilled operating materials in suitable containers and dispose of them in an environmentally friendly manner.

1.7 Labels on the unit

The following safety and instruction labels are affixed well legibly to the device.

Symbol for changeover valve on the high-pressure cleaner



2 High-pressure cleaner

2.1 Parts list

- High-pressure pump (1)
- High-pressure hose (2)
- Holder for high-pressure hose (3)
- Hand valve (4) with holder
- Water hose (5) with standard parts
- Lance holder with high-pressure lance (6)
- Hydraulic hose hand valve (7) with standard parts
- Hydraulic hoses suction fan (8) with standard parts
- Hydraulic hoses hydraulic circuit II (9) with standard parts

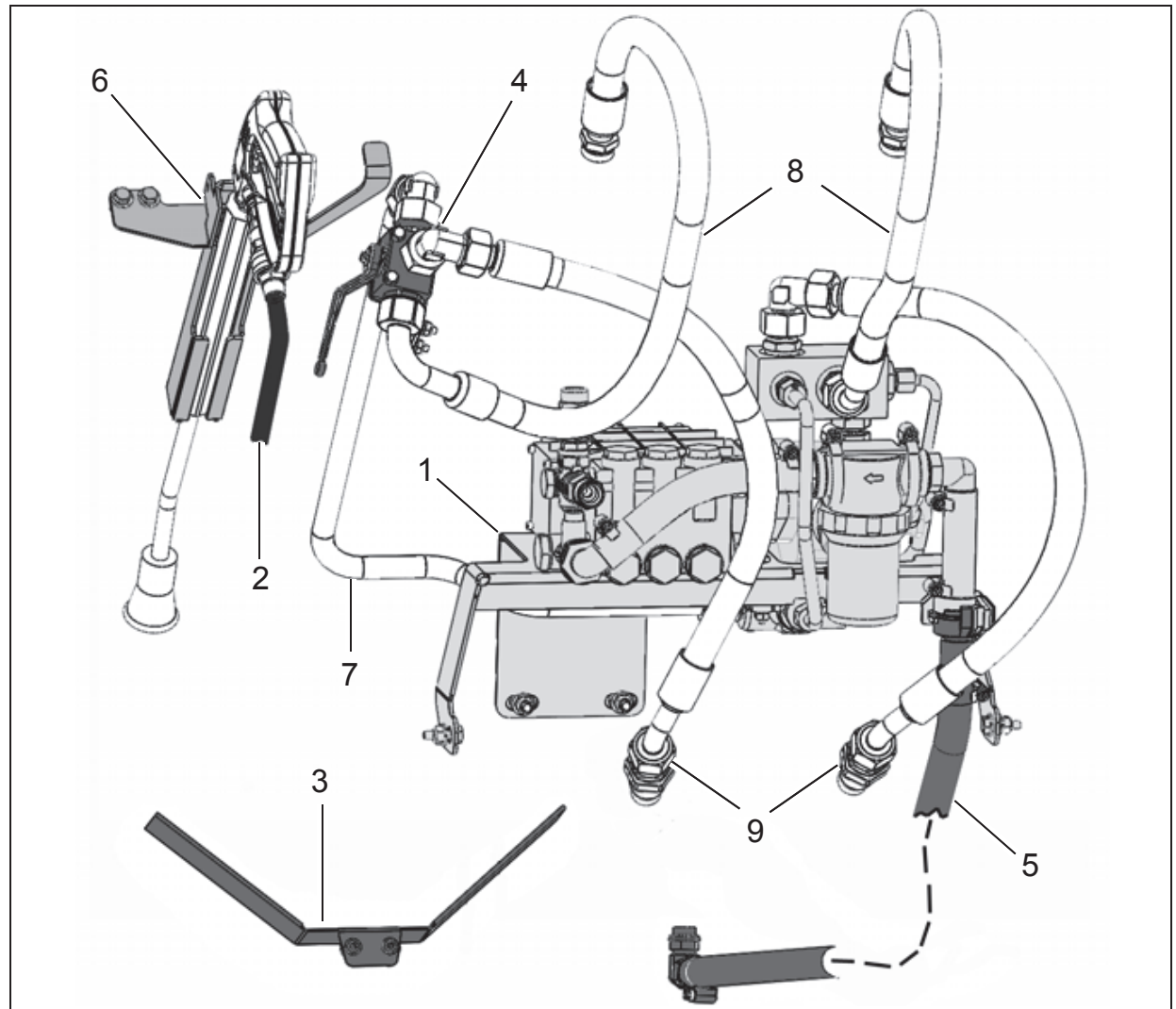


Fig.1

High-pressure cleaner

2.2 Assembling the high-pressure cleaner



Danger!

Hydraulic pipes must be correctly run and fitted! The work may be done only by authorised trained personnel! Make sure that no connections are swapped over! Fitting, length and quality, especially pressure and temperature resistance, of hydraulic pipes must comply with the requirements! Always relieve the hydraulic pipes of pressure in assembly work.

2.2.1 Preparations

1. Place the machine on a level surface and secure it with the parking brake.
2. Switch the engine off and pull out the ignition key.
3. Open the rear flap (Fig. 2/1) with the square key and swing it up.

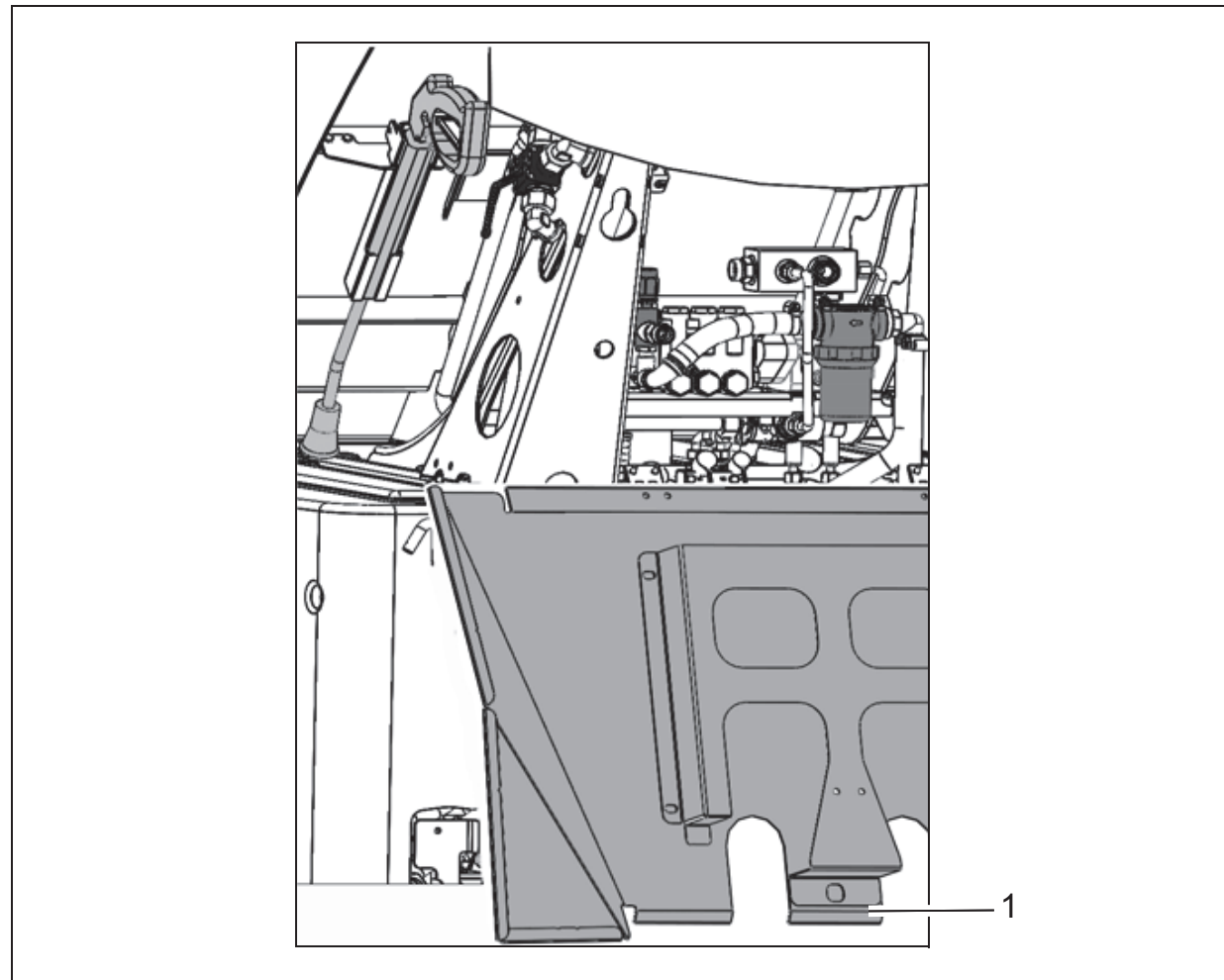


Fig.2

High-pressure cleaner

2.2.2 Mounting the high-pressure pump

Fasten the high-pressure pump (Fig. 3/1) with four M8x25 hexagon head bolts to the frame (Fig. 3/2) of the dirt hopper.

2.2.3 Installing the hand valve

Attach the holder (Fig. 3/3) to the side of the cross-beam with two M6x20 hexagon head bolts. Attach the hand valve (Fig. 3/4) to the holder with two M6x50 hexagon head bolts.

2.2.4 Mounting the holder for the high-pressure hose

Fasten the holder (Fig. 3/5) with two M6x20 flanged button head bolts to the rear flap (Fig. 3/6) of the dirt hopper.

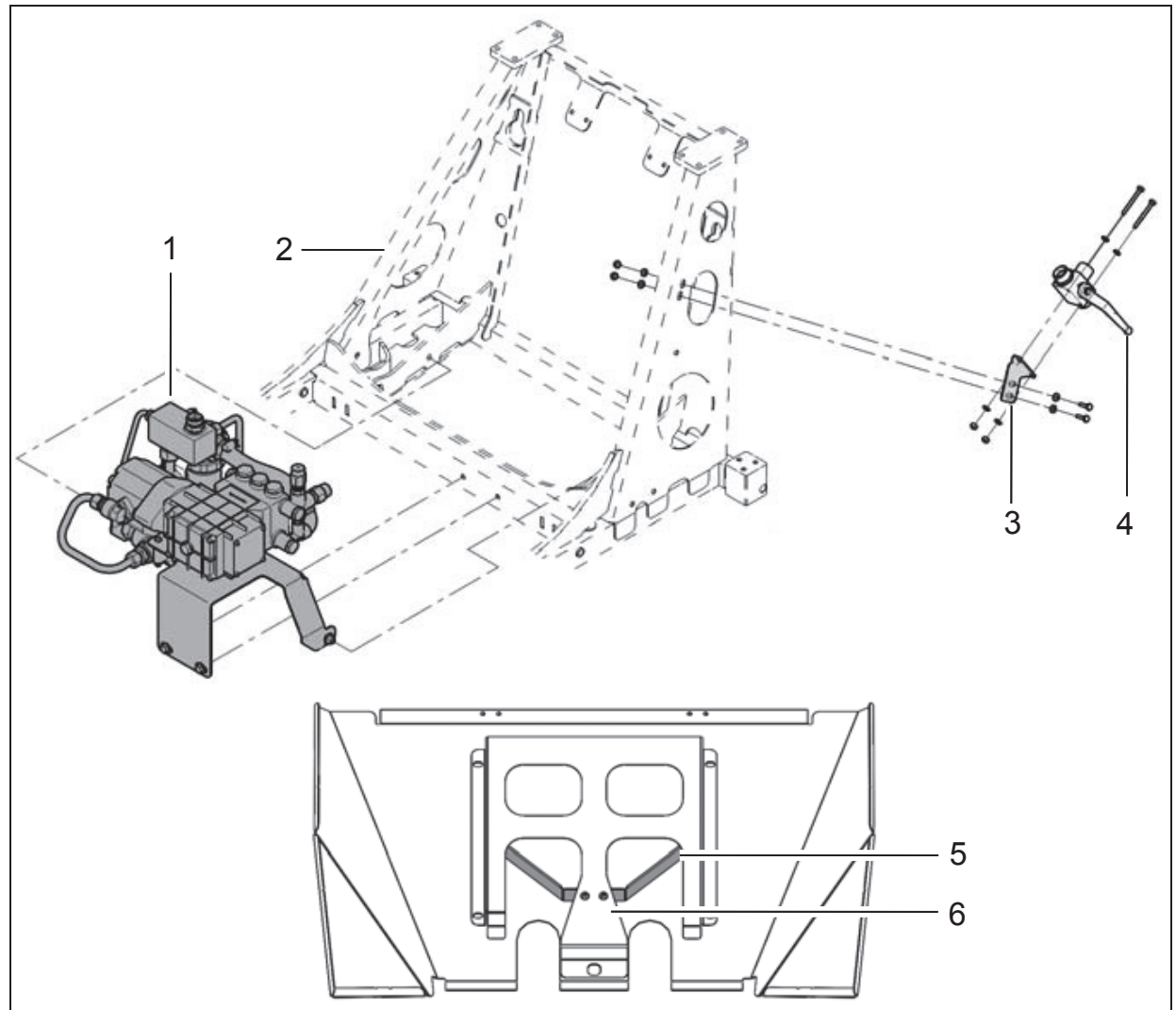


Fig.3

High-pressure cleaner

2.2.5 Fastening the label

Affix the label (Fig. 4/1) to the side of the frame (Fig. 4/2).

The position of the label corresponds to the lever positions of the hand valve (Fig. 4/3).

2.2.6 Fastening the lance holder

Fasten the lance holder (Fig. 4/4) with two M6x20 hexagon head bolts to the cross-beam (Fig. 4/5) of the dirt hopper.

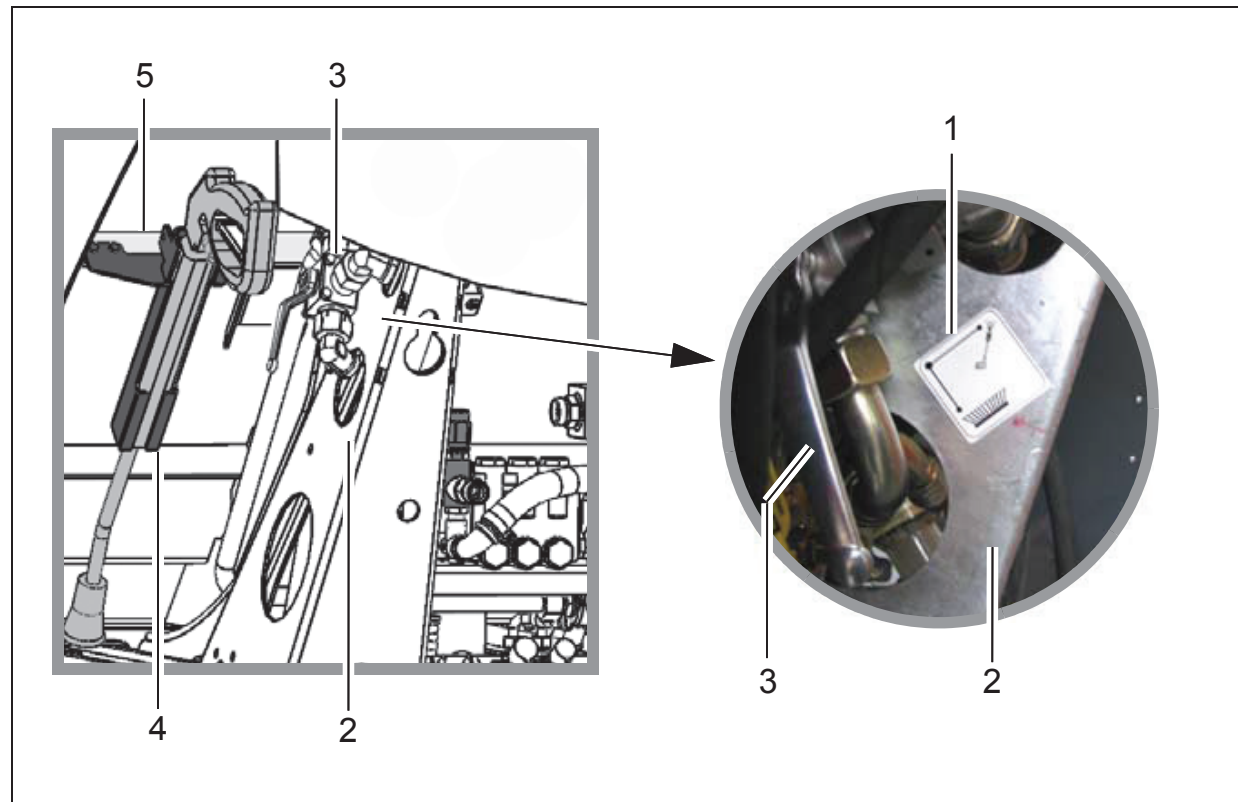


Fig.4

High-pressure cleaner

2.2.7 Running the fresh water hose

1. Attach the hose nozzle and the elbow union to the fresh water hose (Fig. 5/1) and secure them with hose clamps.
2. Run the fresh water hose from the water connection of the high-pressure pump (Fig. 5/A) to the right connection of the fresh water tank (Fig. 5/G).
3. Through the engine cover (Fig. 5/B) to the electric box (Fig. 5/C).
4. From the electric box to the battery (Fig. 5/D).
5. From the battery to the left vehicle frame (Fig. 5/E).
6. Along the left vehicle frame underneath the articulated joint (Fig. 5/F) to the right connection of the fresh water tank (Fig. 5/G).

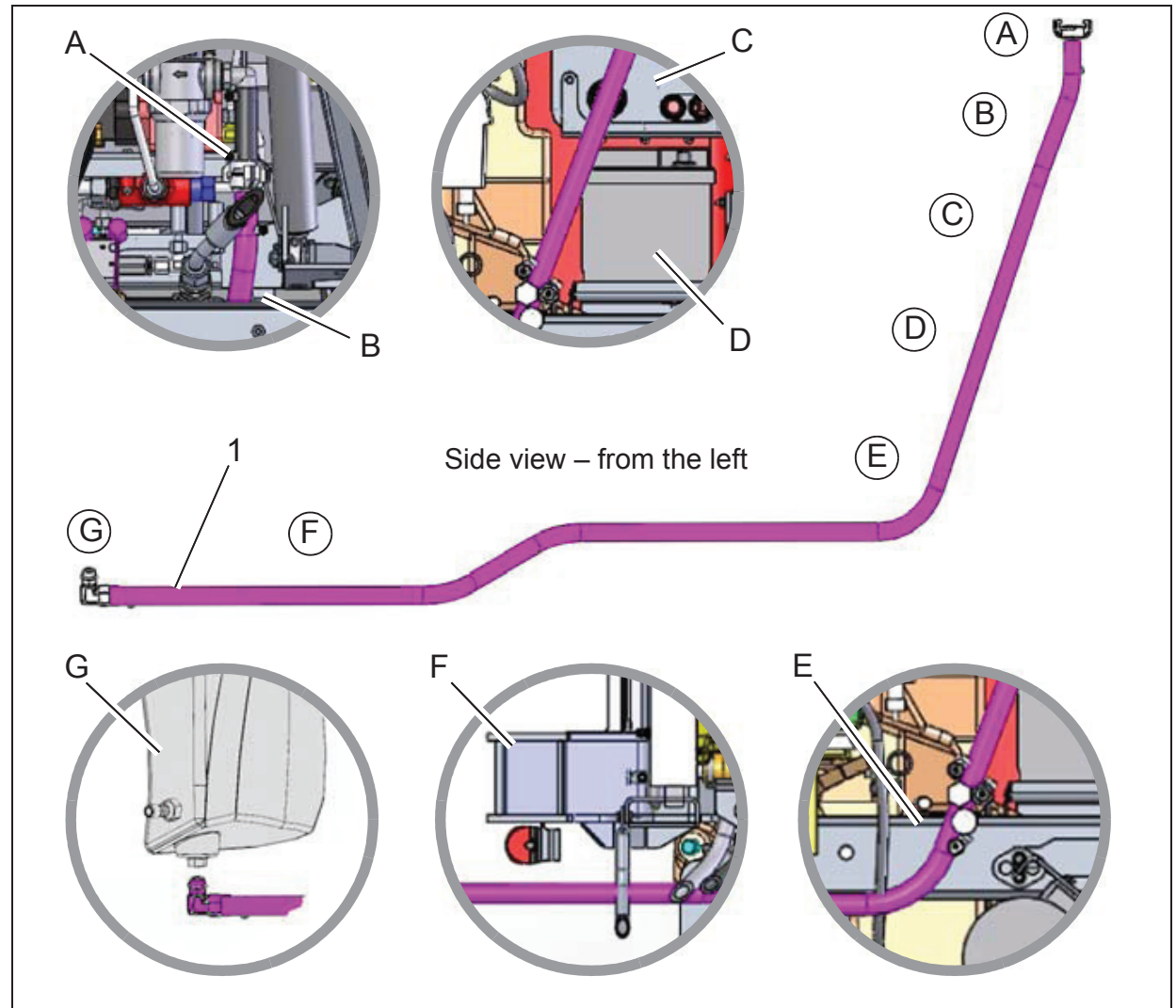


Fig.5

High-pressure cleaner

2.2.8 Connecting the hydraulics

Danger! Observe the safety and environment protection instructions!

1. Remove the existing hydraulic hoses (Fig. 6/1) and (Fig. 6/2) from the screwed pipe fitting (Fig. 6/3) and (Fig. 6/4).
2. Complement all hydraulic hoses (Fig. 6/A-D) and the hydraulic pipe (Fig. 6/E) with standard parts as shown.
3. Fit the hydraulic hose (Fig. 6/A) between the hand valve (Fig. 6/6) and the screwed pipe fitting (Fig. 6/3).
4. Fit the hydraulic hose (Fig. 6/B) between the distributor (Fig. 6/7) and the screwed pipe fitting (Fig. 6/4).
5. Secure the hydraulic hoses with clamps (Fig. 6/5).
6. Fit the hydraulic hose (Fig. 6/C) between the hand valve (Fig. 6/6) and the supply (Fig. 6/8).
7. Fit the hydraulic hose (Fig. 6/D) between the distributor (Fig. 6/7) and the return (Fig. 6/9).
8. Fit the hydraulic pipe (Fig. 6/E) between the hand valve (Fig. 6/6) and the hydraulic pump.

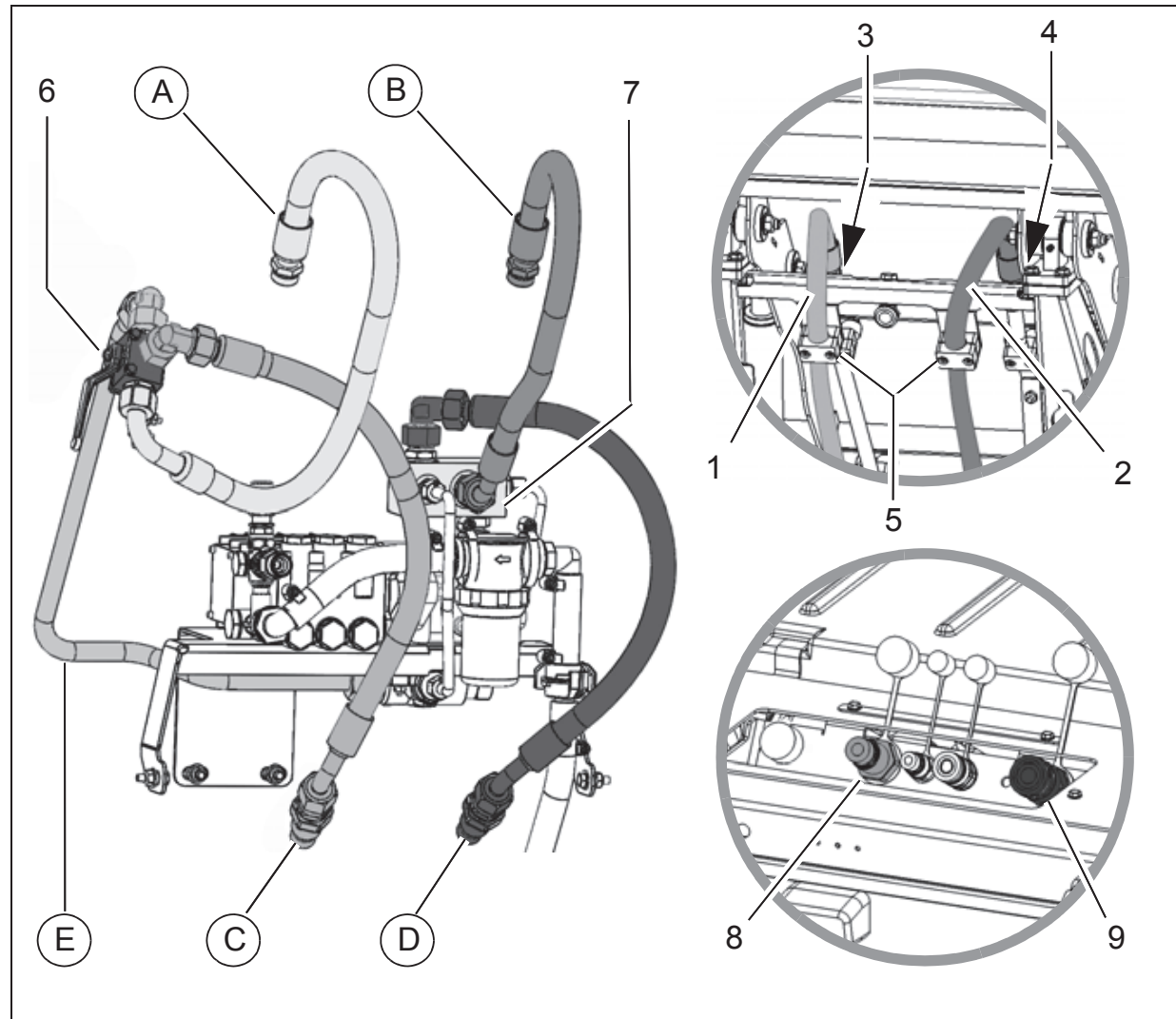


Fig.6

High-pressure cleaner

2.3 Operation

2.3.1 Before putting into service

1. Fill the fresh water tank (Fig. 7/1).
2. Check and if necessary clean the water filter (Fig. 7/2) of the high-pressure cleaner.
3. Drive the vehicle to the work site.
4. Engage the parking brake.



Danger!
The jet of the high-pressure cleaner must not be directed to persons. There is danger of injury!
Do not use high-pressure cleaners for cleaning electrical/ electronic components and the engine compartment!

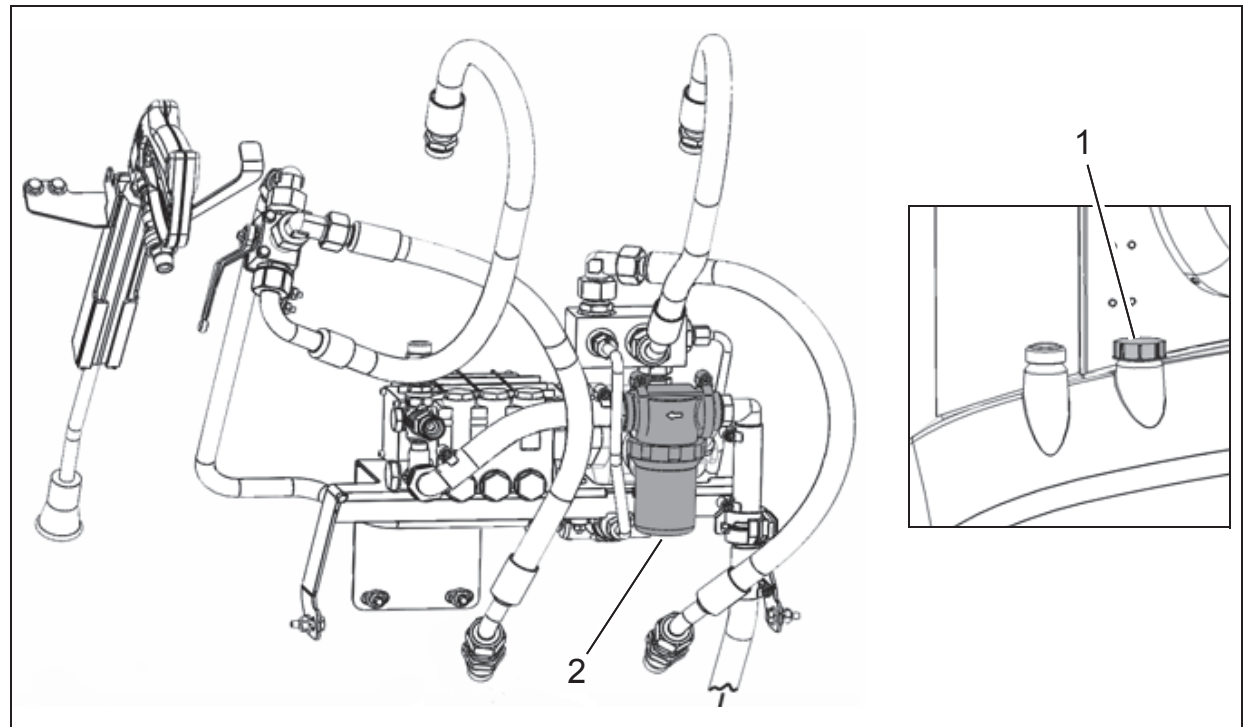


Fig.7

High-pressure cleaner

2.3.2 Working with the high-pressure cleaner

1. Open the rear flap (Fig. 8/1) of the dirt hopper.
2. Remove the pressure hose from the hose holder and plug it into the connection (Fig. 8/2).
3. Set the changeover valve (Fig. 8/3) to the high-pressure cleaner position.
 - Position I: Sweeping hydraulics
 - Position II: High-pressure cleaner hydraulics
4. Select the working menu in the multifunctional display with the turn-push knob (Fig. 8/4) and set the speed for the hydraulic supply in the suction fan menu item (Fig. 8/5)
5. The pressure controller (Fig. 8/6) is preset to 120 bar.
6. Clean the surface with the lance (Fig. 8/7).
7. Set the changeover valve back to the suction fan position and close the fresh water supply. After cleaning, relieve the lance and pressure hose of pressure and stow them in the stowage.

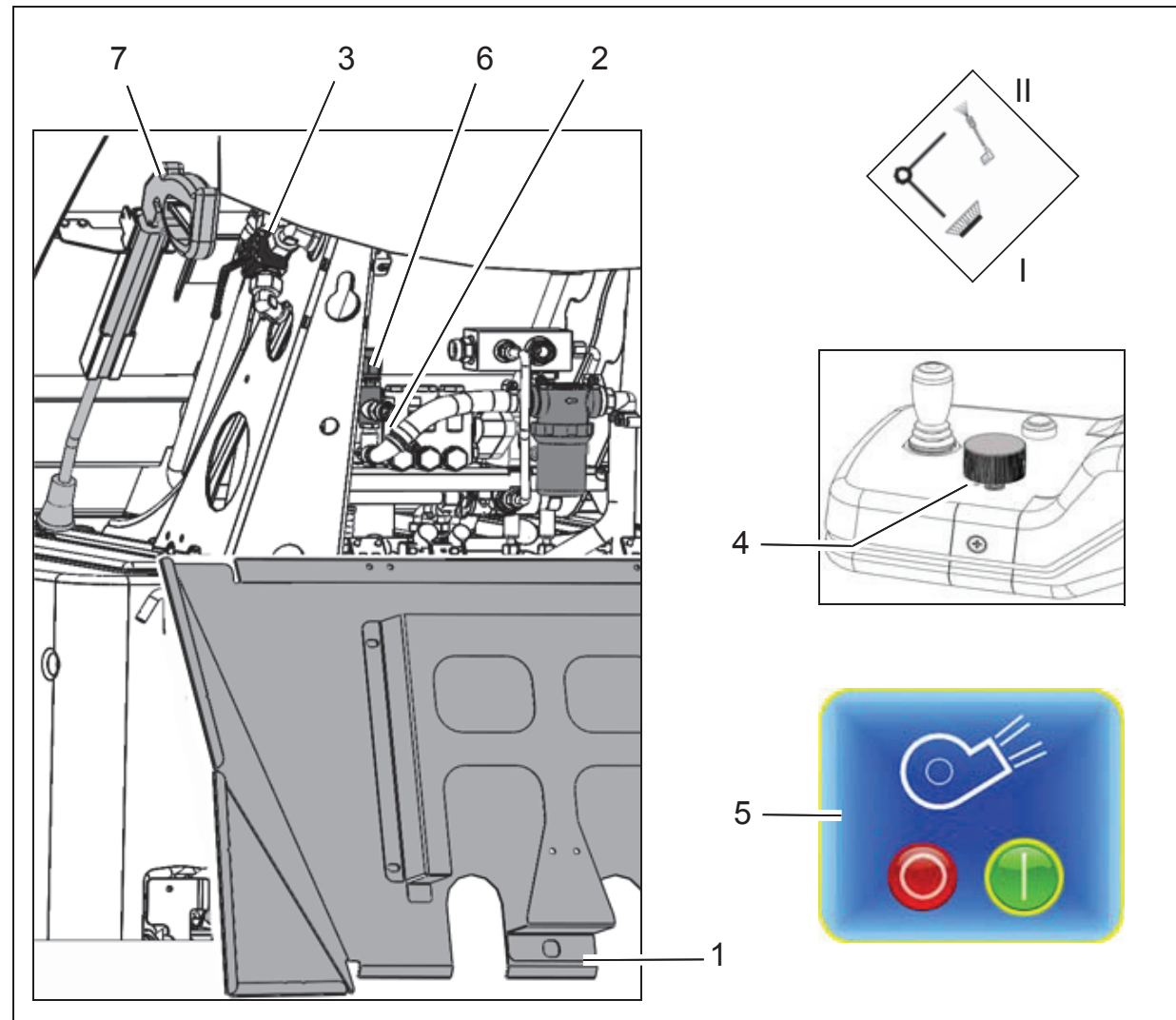


Fig.8

High-pressure cleaner

2.4 Maintenance



Caution!

In winter with danger of frost, drain the water completely out of the high-pressure cleaner.

2.4.1 Cleaning the fresh water filter

Check the fresh water filter (Fig. 9/1) weekly and clean it as required.

1. Unscrew the filter housing (Fig. 9/2).
2. The filter element (Fig. 9/3) can be cleaned by washing or blowing out.
3. Check the seal (Fig. 9/4), replace if necessary.
4. Refit the seal, filter element and filter housing and check their function.

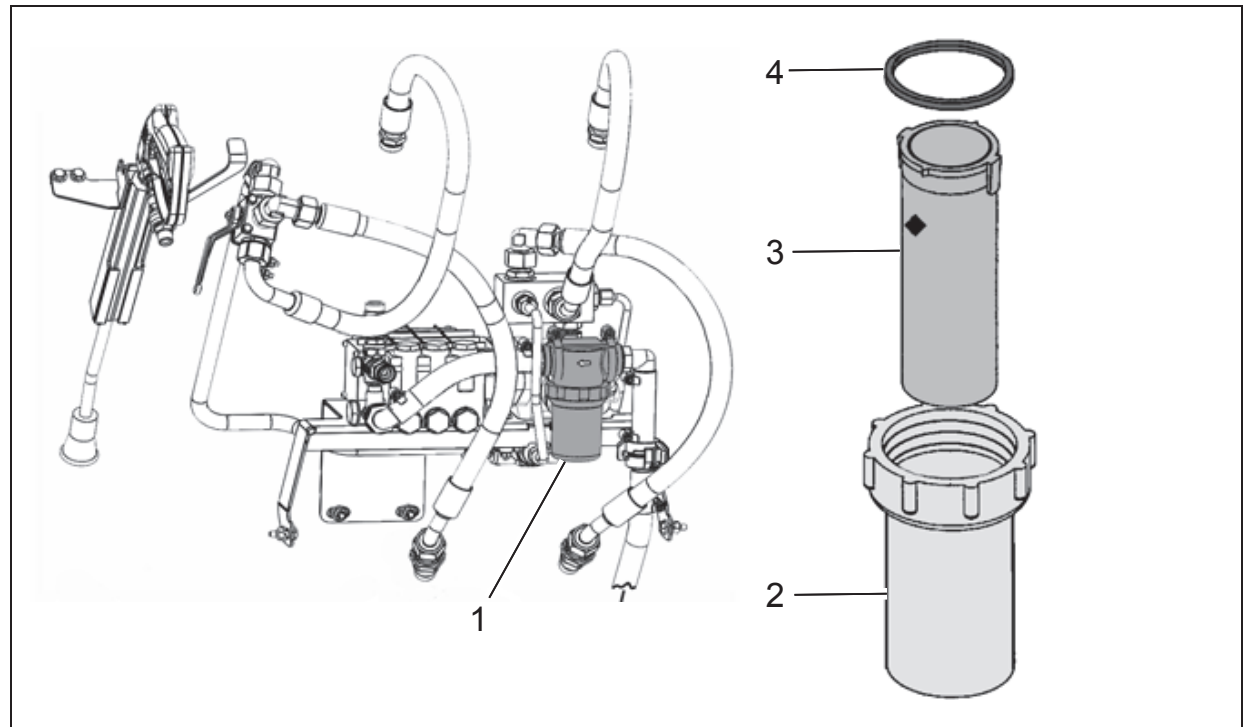


Fig.9

High-pressure cleaner

2.4.2 Checking the spray nozzle

Check the spray nozzle (Fig. 10/1) weekly and clean it as required.

1. Remove the spray nozzle from the lance.
2. The spray nozzle can be cleaned by washing or blowing out.
3. Refit the spray nozzle and check its function.

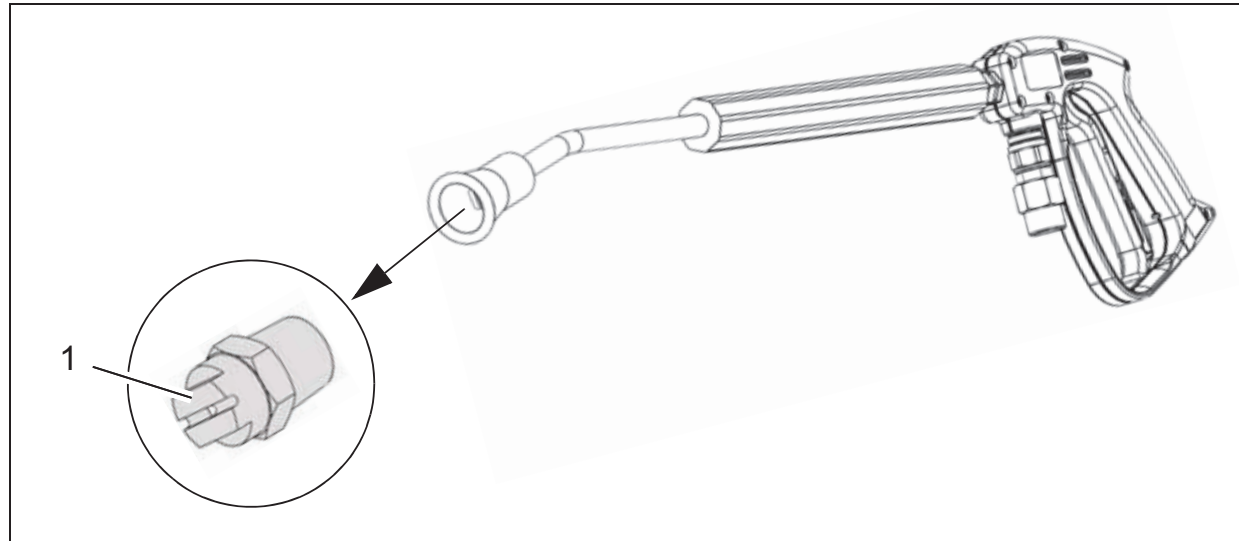


Fig.10

High-pressure cleaner

2.4.3 Checking the gearbox oil

Check the oil level every 500 operating hours and refill gearbox oil as required.

1. Unscrew the dip stick (Fig. 11/1).
2. Check the oil level on the sight glass (Fig. 11/2), if necessary refill a little oil.
3. If the oil is milky (water in the oil) contact an authorised workshop.

2.4.4 Troubleshooting

No pressure present

- Check the fresh water filter.
- Check the nozzle in the lance.
- Vent the device.
- Check the water supply volume.
- Check the high-pressure pump, water hoses, high-pressure lance and all screwed connections for leaks.

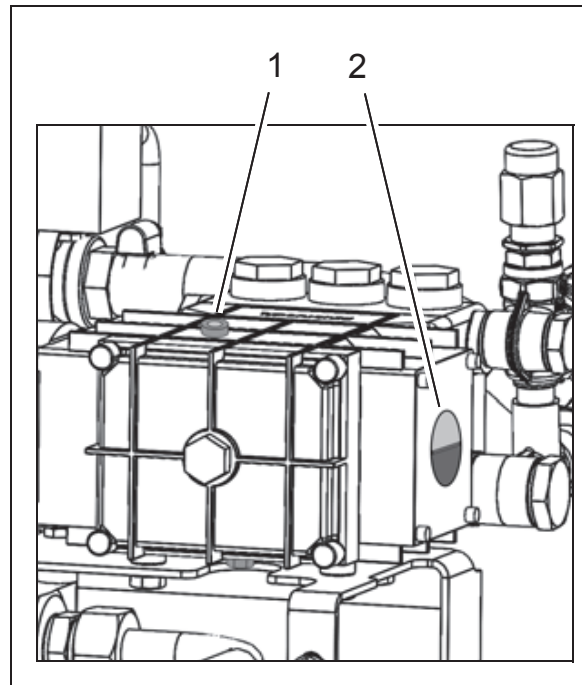


Fig.11

Hako

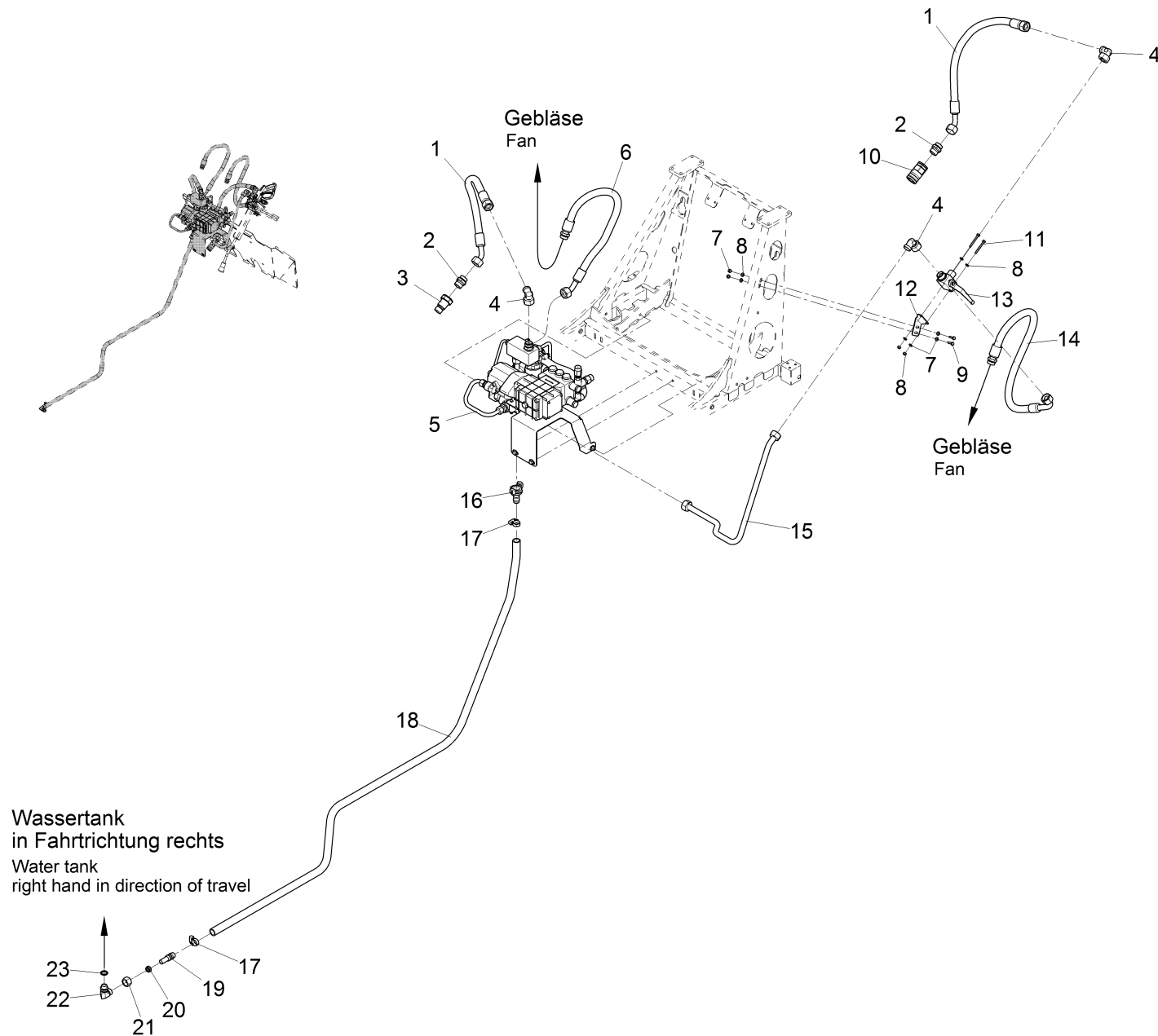
Clean ahead

Advanced Technology for a Cleaner, Better Environment



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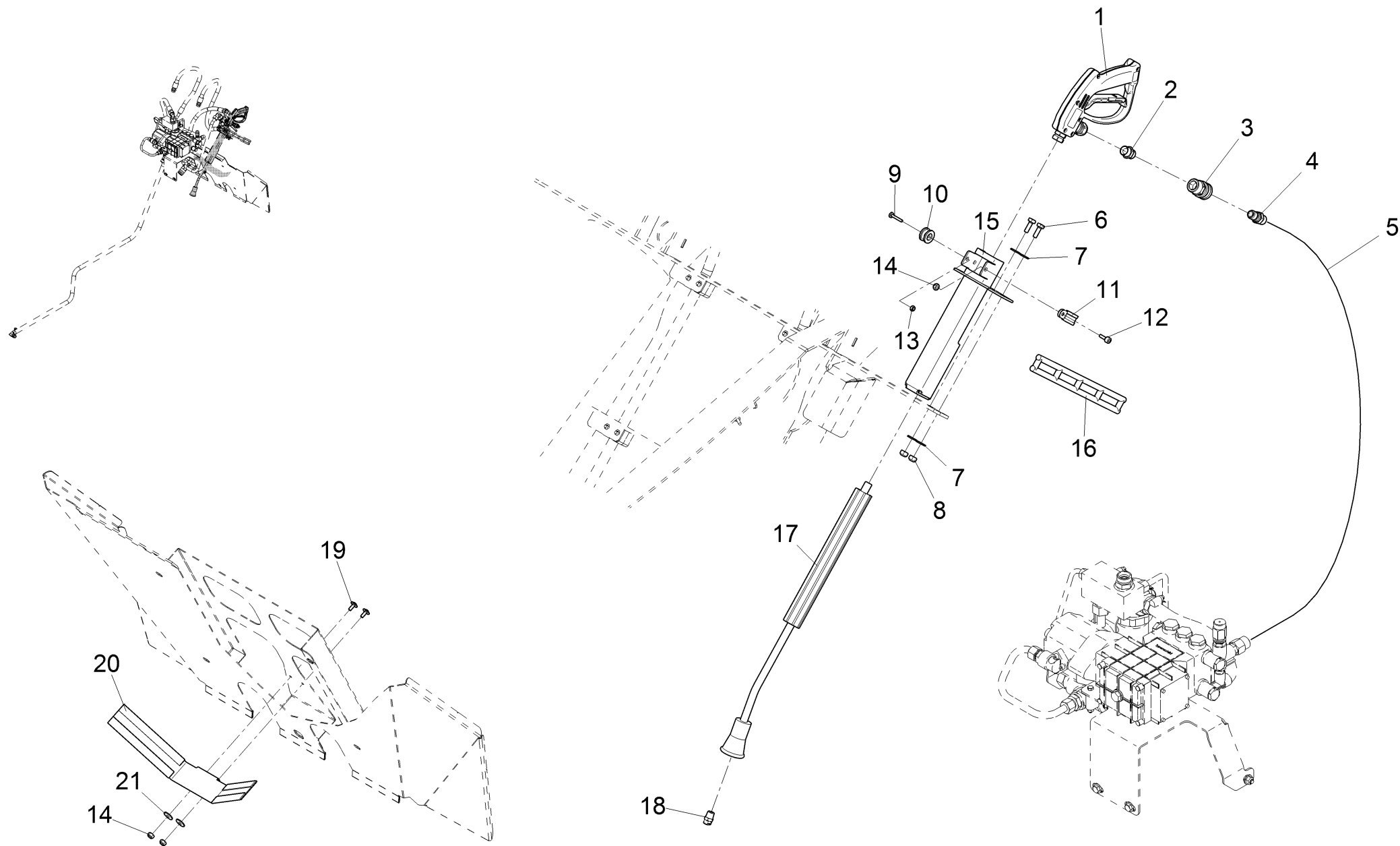


Pos.	Ersatzteilnr.	Materialnr.	Benennung	Abmessung	DIN/ISO	ab Seriennr.	bis Seriennr.	Bemerkungen	Me nge	Ei nhe it	St at us
1	01473620	90649120	Schlauch	2SC 16 NN45-600	DIN 20066				2	ST	01
2	01061870	18368506	Gerade-Verschraubung	"L18/G3/4" A"					2	ST	01
3	01221810	18820878	Kupplungsstecker	Flat-Face A13-3/4"					1	ST	01
4	01063090	18360552	Einstell W-Verschraubung	L18					3	ST	01
5	97120216		Hochdruckpumpeneinheit					Nicht bestellbar! Pos. hat Unterbaugruppen! Bitte Doppelklick auf Pos.Nr.!	1		
6	01473670	90649997	Schlauch	2SC 16 DN45-675	DIN 20066				1	ST	01
7	00051520	12040044	6kt.Mutter	M6-6 A2G	DIN 985				6	ST	01
8	00053730	12310033	Scheibe	A6,4-140HV-St A2G	DIN 125				8	ST	01
9	01140660	11039260	6kt.Schraube	M6x20-8.8	DIN 933				2	ST	01
10	01221800	18820860	Kupplungsmuffe	Flat-Face A13-3/4"					1	ST	01
11	00053060	11039021	6kt.Schraube	M6x50-8.8 A2G	DIN 933				2	ST	01
12	---		Ersatzteil auf Anfrage					90646472 Halter	1		
13	01473640	90645938	3-Wege-Kugelhahn	18L					1	ST	01
14	01473660	90649989	Schlauch	2SC16DN90-800	DIN20066				1	ST	01
15	03014210	90646019	Hydraulikrohr						1	ST	SO
16	01164700	18535120	S-Schlauchstück	"3/4" ""					1	ST	01
17	00733160	17533035	Schlauchselle	A-20-32x9-W1-2	DIN 3017				2	ST	01
18	00671820	25854134	Schlauch	Typ GE-WS7540-LW19					2,500	M	01
19	01163400	90512773	Schlauchstutzen						1	ST	01
20	00126800	18310052	Schneidring	L15-St	DIN 3861				1	ST	01
21	01010540	12055075	Überwurfmutter	AL15 A3G	DIN 3870				1	ST	01
22	01163410	18349308	Einstell-W-Verschraubung	L15-M18x1,5					1	ST	01
23	01063590	90407404	Scheibe						1	ST	01

High pressure cleaner, part 1 (97126338-1) ->

81-60-1993 aktueller Stand

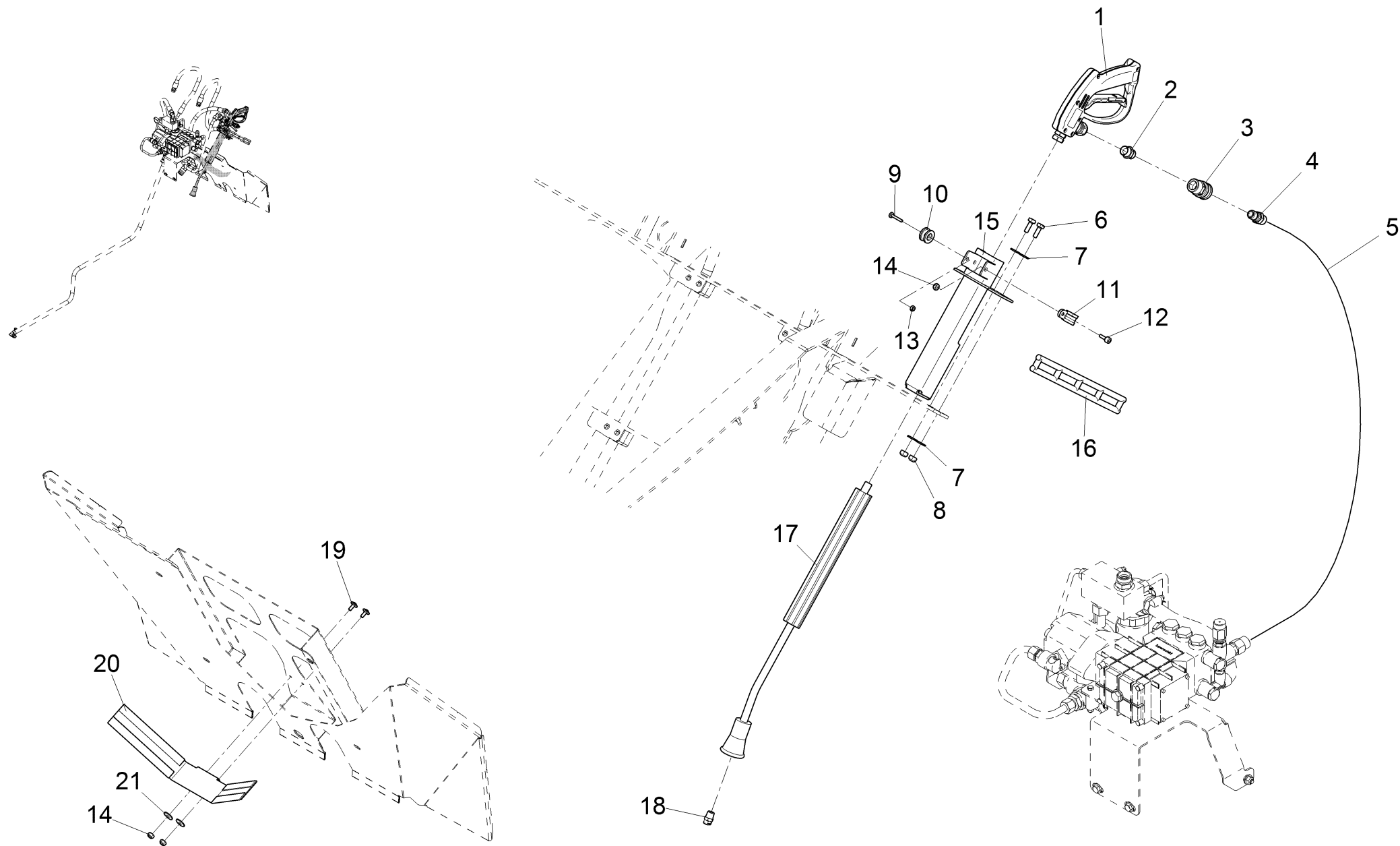
Pos.	Part-No.	Material-No.	Description	Measurement	DIN/ISO	Serial No. begin	Serial No. end	Remarks	Qty.	Unit	Status
1	01473620	90649120	Hose	2SC 16 NN45-600	DIN 20066				2	PC	01
2	01061870	18368506	Straight coupling	"L18/G3/4" A"					2	PC	01
3	01221810	18820878	Connector plug	Flat-Face A13-3/4"					1	PC	01
4	01063090	18360552	Adjustment angle screw connection	L18					3	PC	01
5	97120216		High pressure pump unit					Not available! Pos. has sub-assemblies! Please take double click on pos.no.!	1		
6	01473670	90649997	Hose	2SC 16 DN45-675	DIN 20066				1	PC	01
7	00051520	12040044	Hex. Nut	M6-6 A2G	DIN 985				6	PC	01
8	00053730	12310033	Washer	A6,4-140HV-St A2G	DIN 125				8	PC	01
9	01140660	11039260	Hexagon screw	M6x20-8.8	DIN 933				2	PC	01
10	01221800	18820860	Coupling sleeve	Flat-Face A13-3/4"					1	PC	01
11	00053060	11039021	Hex.bolt	M6x50-8.8 A2G	DIN 933				2	PC	01
12	---		Spare part on request					90646472 Retainer	1		
13	01473640	90645938	Ball valve	18L					1	PC	01
14	01473660	90649989	Hose	2SC16DN90-800	DIN20066				1	PC	01
15	03014210	90646019	Hydraulic pipe						1	PC	SO
16	01164700	18535120	Piece of hose	"3/4"''''					1	PC	01
17	00733160	17533035	Hose clamp	A-20-32x9-W1-2	DIN 3017				2	PC	01
18	00671820	25854134	Hose	Typ GE-WS7540-LW19					2,500	M	01
19	01163400	90512773	Hose connection						1	PC	01
20	00126800	18310052	Cutting ring	L15-St	DIN 3861				1	PC	01
21	01010540	12055075	Sleeve nut	AL15 A3G	DIN 3870				1	PC	01
22	01163410	18349308	Adjustment angle screw connection	L15-M18x1,5					1	PC	01
23	01063590	90407404	Washer						1	PC	01



Hochdruckreiniger, Teil 2 (97126338-2) ->

81-60-1993 aktueller Stand

Pos.	Ersatzteilnr.	Materialnr.	Benennung	Abmessung	DIN/ISO	ab Seriennr.	bis Seriennr.	Bemerkungen	Me nge	Ei n he it	St at us
1	01473680	90645813	Griff Hochdruckreiniger						1	ST	01
2	01473700	90602236	Doppelnippel	"3/8""					1	ST	01
3	01473710	90648957	Kugelschnellkupplung	ARS 250 bar-B					1	ST	01
4	01473650	90648965	Kugelschnellkupplung	ARS 250 bar-A					1	ST	01
5	01473630	90645714	Hochdruckschlauch	10m 140bar					1	ST	01
6	00053090	11038213	6kt.Schraube	M8x20-8.8 A2G	DIN 933				2	ST	01
7	00740090	12520053	Sperrkantscheibe	SKM-8-8.8 dac					4	ST	01
8	00051510	12040051	6kt.Mutter	M8-8 A2G	DIN 985				2	ST	01
9	00506950	11175213	Linsenschraube	M5x25-4.8-H A2G	DIN 7985				1	ST	01
10	01472920	90839259	Rundknopf 6-8mm						1	ST	01
11	00109470	17529058	Rohrschelle	RSGU 1 10/15 A2G					1	ST	01
12	00136910	11126166	Zylinderschraube	M6x16-8.8 A2G	DIN 912				1	ST	01
13	00051340	12040036	6kt.Mutter	M5-6 A2G	DIN 985				1	ST	01
14	00051520	12040044	6kt.Mutter	M6-6 A2G	DIN 985				1	ST	01
15	01474010	96143037	Halter, vollst.						1	ST	01
16	01473340	27690015	Leitergummi						0,290	M	01
17	01473690	90645698	Lanze	500mm					1	ST	01
18	01163470	90505413	Düse	05					1	ST	01
19	01000850	11177094	Linsenflanschschraube	6kt.M6x12-10.9 A2G					2	ST	01
20	01474120	90649203	Winkel						1	ST	01
21	00135120	12332011	Scheibe	6,4-140HV-St A3G	DIN 9021				2	ST	01



High pressure cleaner, part 2 (97126338-2) ->

81-60-1993 aktueller Stand

Pos.	Part-No.	Material-No.	Description	Measurement	DIN/ISO	Serial No. begin	Serial No. end	Remarks	Qty.	Unit	Status
1	01473680	90645813	Handle						1	PC	01
2	01473700	90602236	Double nibble	"3/8""					1	PC	01
3	01473710	90648957	Quick coupler	ARS 250 bar-B					1	PC	01
4	01473650	90648965	Ball quick coupler	ARS 250 bar-A					1	PC	01
5	01473630	90645714	High pressure hose	10m 140bar					1	PC	01
6	00053090	11038213	Hexagon screw	M8x20-8.8 A2G	DIN 933				2	PC	01
7	00740090	12520053	Detent edged washer	SKM-8-8.8 dac					4	PC	01
8	00051510	12040051	Hex. Nut	M8-8 A2G	DIN 985				2	PC	01
9	00506950	11175213	Fillister-head screw	M5x25-4.8-H A2G	DIN 7985				1	PC	01
10	01472920	90839259	Round head						1	PC	01
11	00109470	17529058	Tube clamp	RSGU 1 10/15 A2G					1	PC	01
12	00136910	11126166	Cylinder head screw	M6x16-8.8 A2G	DIN 912				1	PC	01
13	00051340	12040036	Hex. Nut	M5-6 A2G	DIN 985				1	PC	01
14	00051520	12040044	Hex. Nut	M6-6 A2G	DIN 985				1	PC	01
15	01474010	96143037	Retainer						1	PC	01
16	01473340	27690015	Ladder rubber						0,290	M	01
17	01473690	90645698	Lance	500mm					1	PC	01
18	01163470	90505413	Nozzle	05					1	PC	01
19	01000850	11177094	Lens flange screw	6kt.M6x12-10.9 A2G					2	PC	01
20	01474120	90649203	Angle						1	PC	01
21	00135120	12332011	Washer	6,4-140HV-St A3G	DIN 9021				2	PC	01