



**CDT-50
HDT-50
WATER BLASTER
Diesel Driven
MECHANICAL BOOSTER PUMP
TRAILER MODEL**

**User Guide
Maintenance Guide
Spare-parts book**



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Thank you for choosing our water blaster. For your safety and correct operation, please carefully read the information and instructions in this manual before use.

NOTE: All of the information stated in this manual is based on data available at the time of printing. DEN-JET reserves the right to modify or change its products and / or specification data at any time without prior notice.

DEN-JET has no responsibility or liability regarding misuse of the product or use of the product with third party products.

DEN-JET warranty's is limited to repair or replacement of faulty items at the time of manufacture.

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Model:	CDT50-550
Data:	
Pressure [Bar]	550
[Psi]	8000
Flow [L/min]	36
US Gpm	9.5
Plunger "Ø"	Ø18
Power [Hp]	50
[Kw]	37
Fuel	Diesel
Engine Speed [Rpm]	1900-2000
Dimensions LxWxH [mm]	1500 x 760 x 1000
Weight [Kg]	1200

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Certificate of E.U conformity:

DEN-JET Nordic A/S
Terndrupvej 7, Astrup
DK-9510 Arden
Denmark

According to E.U. Machine Directive 2006/42/EC. Appendix IIA

We hereby declare that the diesel driven high-pressure water blaster machines:

CDT50 – HDT50

Has been designed, manufactured and tested to fully comply with the health and safety requirements of the E.U. machine regulations.

ANY modification or change of the machine without our prior consent will render this declaration null and void.

Appropriate E.U. regulations: E.U. Machine Directive (2006/42/EC) Current issue.
E.U. Low Voltage Directive (2006/95/EC)
E.U. EMC Directive (2004/108/EC).

Coordinated standards

Used particularly:

EN 809	pr EN 1889
EN 292 part 1 & 2	EN 60204-1
EN 574	EN 294
	EN 50081-2
	EN 6100-6-2

Date: October 2016

Benny S. Jensen

Managing Director.

WARNING Safety Precautions:

To safeguard the operator who uses the machine and its accessories and as accident prevention and protection of bystanders and property, the following safety precautions must be observed. Always treat the water blaster in the same way as any other power driven high speed cutting tool!

Never let children or people who have not been properly instructed operate the machine.

Use the electric plug in a proper socket with ground to earth wiring. The entire electrical installation must be with earth wiring! All electrical installations must be made only by an electrician. A GFCI (Residual current device) is recommended.

Always keep the high-pressure cleaner and the belonging accessories in good working condition. Check that the machine and its accessories are free from defects, and in good working condition, with special attention to the insulation on the electric cable. In case of defect: Do NOT OPERATE THE MACHINE! Get the machine serviced.

Eye protection must be worn at all times when operating the machine to protect against repelling or ricocheting materials hitting the eyes and causing damage.

Ear protection must be worn at all times when operating the machine to protect against hear loss during operation.

Proper footwear and protective clothing must be worn at all times when using the equipment to avoid and prevent damage to the operator.

NEVER direct the jet at yourself. Do not attempt to clean your clothes or footwear with the machine. Be especially alert when pulling or releasing the trigger as sudden reaction forces will occur

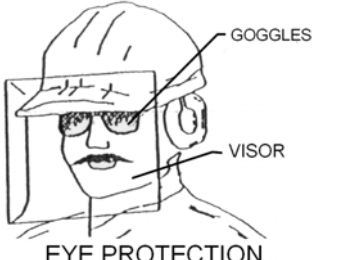
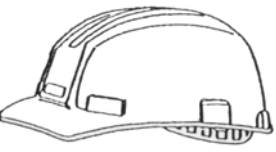

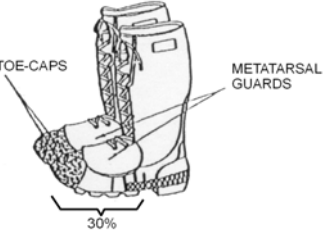

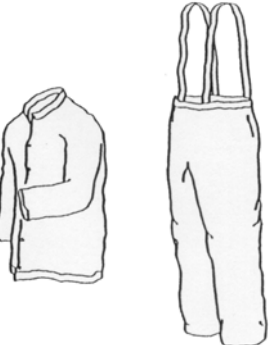
Precautions must be made to keep bystanders away from the working range. Especially when pulling the trigger as sudden reaction forces can make changes in the direction of the jet. NEVER spray-jet on humans or live animals, the high pressure jet can cause severe injury and/or death.

NEVER spray at electrical equipment, or at the machine itself.

Before service or repair: Make sure the machine is turned off, and pressure is released from the system by pulling the trigger after shutting down the machine. The machine should be disconnected from the main power supply by pulling out the electrical plug.

Safety Precautions:

The below shown protective clothing and devices should be worn both by personnel operating the water blaster system and equipment and by those working nearby:

 <p>EYE PROTECTION</p>	<p>Operators must wear visors or goggles to guard against spray and flying debris. A combination of both goggles and visor is recommended. It will protect the eyes and the face during both water-blasting as well as abrasive water-blasting.</p>
 <p>HEAD PROTECTION</p>	<p>Safety helmets must be worn at all time by personnel within the work area. Helmet material must be able to withstand mechanical shock exceeding 10G in 8ms without fracturing.</p>
 <p>HAND PROTECTION</p>	<p>Shear proof gloves must be worn by the operator at all times. A glove combination of a cloth inner lining and a water tight outer layer is preferable.</p>
 <p>FOOT PROTECTION</p>	<p>Safety boots with steel toecaps minimum 0.5mm (0.02”) thick must be worn. The toecap must cover at least 30% of the footwear length. Basic safety footwear must also be equipped with metatarsal guards to protect the instep. Safety boots are available in numerous designs.</p>
 <p>HEARING PROTECTION</p>	<p>Operators and other personnel exposed to noise levels of more than 90-dBa for more than 1 hour must wear suitable ear protection. Ear plugs or ear muffs are usually sufficient.</p>
 <p>PROTECTIVE CLOTHING</p>	<p>Waterproof clothes protect the operator only from spray and flying debris. They do NOT deflect direct jet impact. Therefore, an operator must take care never to point a water-jet either at themselves or other personnel.</p>

Medical emergency information:

Immediate medical attention should be given to personnel who sustain equipment related injuries while operating the system. In such cases, it is vital that medical personnel be apprised of all facts relevant to such injuries. Therefore, all operating personnel should be provided with waterproof emergency medical alert tags or cards, describing the nature of their work and the possibility of injury inherent in the use of water jetting equipment. The below example of a standard card can be printed out or photo copied, bend, laminated and used as medical alert tag.

MEDICAL ALERT

This card is to be carried by personnel working with high-pressure water jetting equipment. Obtain medical treatment immediately for ANY high-pressure water-jet injuries.



This person has been working with water jetting at pressures up to 55,000 psi (374Mpa, 3,740bar, 3,867 kg/cm²) with a jet velocity of up to 3,000 fps (914 mps). This should be taken into account during diagnosis. Unusual infections with microaerophilic organisms occurring at lower temperatures have been reported. These may be gram-negative pathogens such as found in sewage. Bacterial swabs and blood cultures may therefore be helpful. A local poison control centre should be contacted for additional treatment information and advise.



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Set-Up & Use:

Mount the ½” high-pressure hose on to the Water-blaster by screwing the swivel on to the 1/2” high-pressure fitting on the left side of the cabinet. Mount the trigger gun with lance to the ½” high-pressure hose. Always use two wrenches when tightening the hoses.

Prepare the water supply for the Water-blaster, by attaching a 1” hose to the supplied low pressure inlet coupling on the front of the cabinet. Connect the other end of the water supply hose to a fresh water tap. Open the tap. To prevent water spill always use the float valve inlet on the lower front of the machine.

Fill the diesel tank with clean diesel fuel.

Turn on the unit by turning the key to the preheating stage, wait a few seconds then turn key to start. Throttle up the engine by pulling or turning the throttle cable.

Get a firm grip with both hands on the gun handle and the lance handle. Press the trigger and start blasting. Pay special attention to the fact that energizing the gun causes reaction forces that can cause the jet to change direction.

After shut down of the Water-blaster, always release the pressure inside the high-pressure hoses by pulling the trigger on the spray-gun before dismantling the high-pressure hoses. Trapped high-pressure can cause severe injury.

Notice:

The machine is equipped with the following safety devices:

- a) Key switch for normal shut down (and start up) behind the glass door, turn key counter clockwise to stop.
- b) Emergency Stop Button, at upper corner of unit, stops the machine when pushed in. Twist to reset.
- c) Low engine oil-pressure shut down.



REMOTE CONTROL SENDER/RECIEVER (Optional)

JUNCTION BOX	REMOTE CONTROL	FUNCTION
A	-	Left: Manual Control (Junction box) Right: Remote control
Turn Key clockwise	GREEN BUTTON	Start
Turn Key counter clockwise	RED BUTTON	Stop, rotate red button to release/reset it after use
B	1	Increase rpm
C	2	Decrease rpm
D	3	Extract hose
E	4	Rewind hose
-	5	Optional
-	6	Optional

This page: Remote control, before using the remote control; make sure the junction box (next page) is set to remote control, and not manual control.

The green button starts the machine. 1 and 2 respectively increases and decreases the engines rpm.

The engine should be running with high rpm to achieve maximum pressure.

Buttons 3 and 4 is used to roll off the hose before use and for winding it in afterwards.

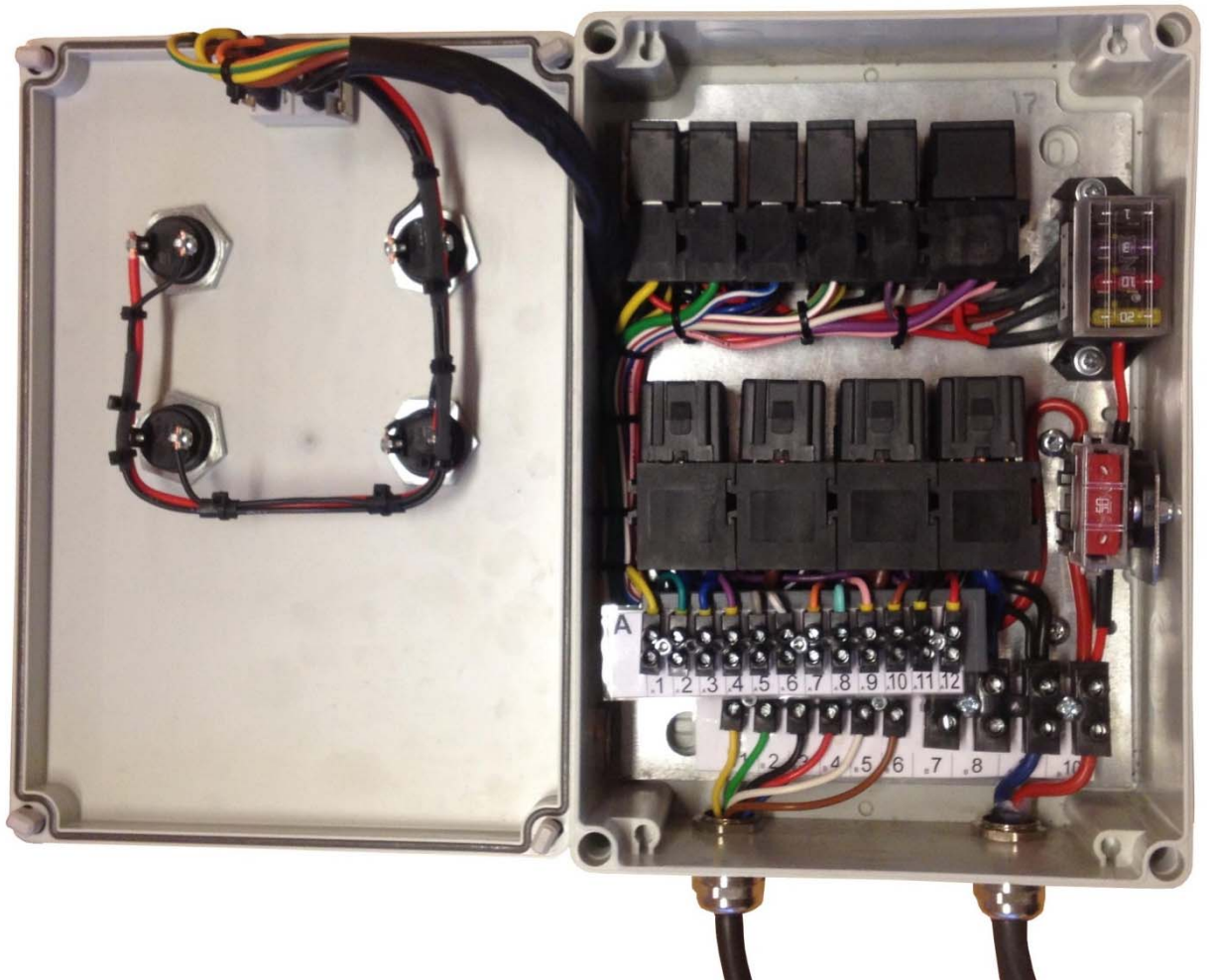
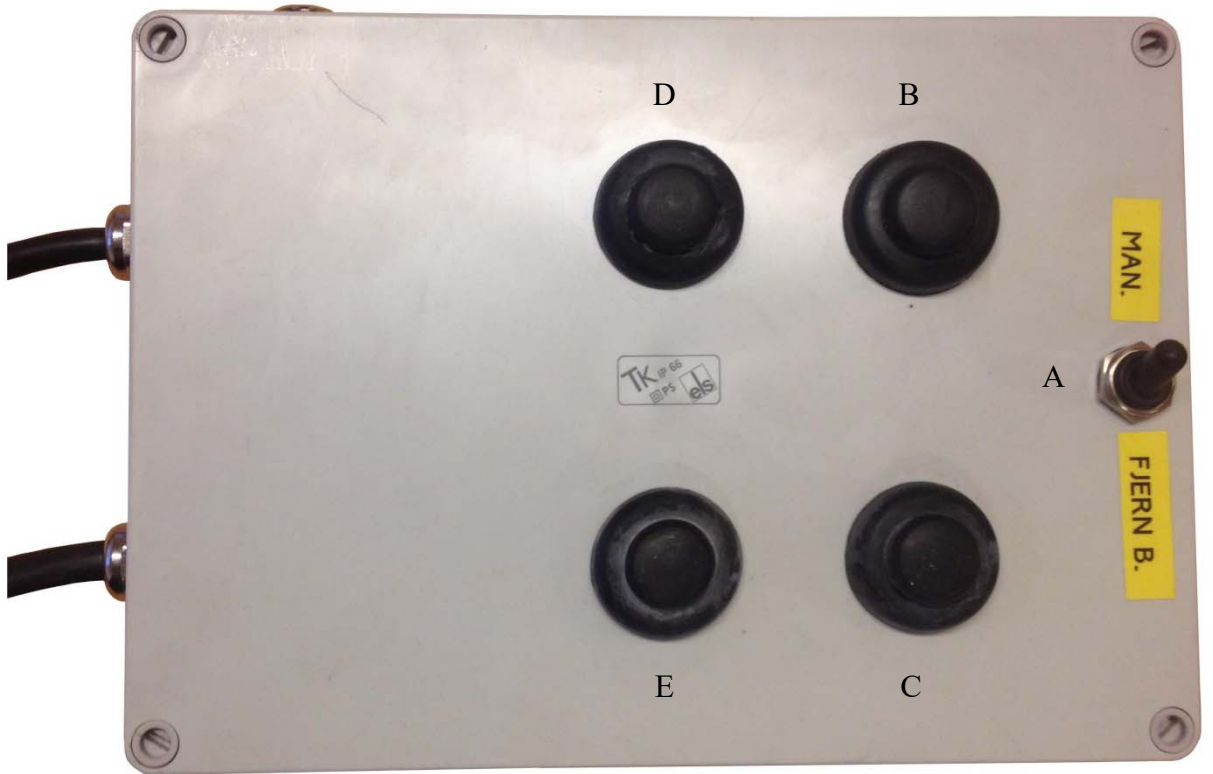
The buttons 5 and 6 is normally inactive but can be assigned to a specific task in some cases.

Next page: Junction box, the A switch should be switched to the left in order to use the junction box. To start the machine turn the key and wait a few seconds before increasing the rpm using the B button. C button is used to decrease the rpm.

Buttons D and E are used to extract and rewind the hose, if you have a model with automatic hose reel.



REMOTE JUNCTION BOX



Set-Up & Use / Daily inspection:

Check	Task
Daily Inspection	<p><i>Check the oil level on the crankcase of the pump, sight glass.</i> Fill up if necessary. <i>Check for air-bubbles in the suction hose between tank and feed pump.</i> If there are bubbles then tighten the hose-clips. <i>Check high pressure connections for leakage.</i> NEVER tighten connections under pressure. <i>Check high pressure hoses for wear and cracks.</i> Replace if necessary. <i>Check the oil level on the crankcase of the engine.</i> Replenish if low. <i>Check the air intake grill.</i> Clean for dust if necessary. Do NOT Cover. <i>Check fan belts.</i> Tighten / Exchange if loose or damaged. <i>Check fuel and cooling system hoses.</i> Replace if damaged.</p>
	<p>Notice: To prevent damage to hoses, avoid letting the high-pressure hoses rub against sharp edges for example manholes or getting squeezed in door openings etc. Replace if necessary.</p>
	<p>Inlet water temperature must be below 60°C (140°F)</p>

Check	Task
Daily inspection of water filter	<p><i>To check if the fine water-filter cartridge are clogged and needs changing: Notice the two small pressure gauges on top of the round stainless steel filter. If the gauges shows the same pressure over 1 bar the filter should be OK, if the gauge on the left side shows a lower pressure than the right side gauge, filter must be changed.</i> <i>Filter change interval depends on water quality.</i></p>

Maintenance, pump:

Maintenance	Task
Lubrication	<p><i>Oil renewal on the pump crankcase is to be completed the first time after no more than 50 hours of use. Oil renewal is hereafter to be completed in every 400 hours of use. Or at least one time a year.</i></p> <p><i>Use an Industrial purpose 220 Oil</i> <i>Examples: Shell Tellus 220, Esso Nuto 220, Texaco Regal EP220</i> <i>Statoil: Loadway XA220</i> <i>Quantity: 4 Liter</i></p> <p><i>Fill up until the oil level is visible in the middle of the sight glass.</i></p>
Renewal of oil	<p>Switch off the machine. Loosen the oil drain screw on the lower side of the pump crank-case. Let the oil drain out into a waste oil-tray. Remount the oil drain screw and pour in new oil through the oil inlet on top of the pump until visible in the oil sight glass.</p> <p>Notice: Always dispose of the used oil in a proper manner.</p>
Cleaning	<p><i>A part of keeping the machine and its accessories in good working condition is keeping it clean. But NEVER clean the machine itself with high-pressure. Do not use solvents.</i></p>
Storage	<p><i>Keep the unit frost free, or flush the pump thoroughly with nonalcoholic antifreeze fluid.</i> <i>Take of minus pole on battery for long time storage.</i> <i>Maintenance charge battery regularly.</i></p>

Trouble shooting and repair, unit:

Problem	Repair
When the key is turned the engine will not crank	<p><i>Start battery not charged enough to crank engine.</i></p> <p>Charge battery (12 Volt)</p>
The engine cranks but will not start.	<p><i>Empty diesel tank, clogged diesel fuel filter.</i></p> <p>Fill diesel tank Change fuel filter.</p> <p>If fuel supply has been stopped, manually pump fuel through to engine by means of the hand push pump on top of the diesel filter before attempting to start engine</p>
The pressure drops and the Water-blaster works irregularly.	<p><i>The strain filter in the water tank is blocked or dirty or the water supply from the tap is insufficient. Air in the Suction hose.</i></p> <p>Clean the strain water filter. The machine should always suck from the water-tank. Open fresh water tap fully. Tighten the hose clamps on the suction hose.</p>
<p>The Water-blaster continues jetting at high pressure when trigger is released.</p> <p>The Water-blaster is running at high pressure when trigger is released and no jetting.</p>	<p><i>The Gun valve is stuck by dirt and indicate That the filter or hoses has not been clean before assembly</i></p> <p>Replace gun rep kit and ensure that system is flushed at low pressure before mounting nozzle</p> <p><i>The check valve in the un-loader out-let fitting is stuck or leaking.</i> The hose may still contain pressure so loosen hose and bleed pressure slowly before opening fully. Clean the check-valve in the un-loader out-let fitting. Replace the O-ring.</p>
The Water-blaster does not reach the right working pressure when the trigger handle is activated.	<p><i>Leakage from: Safety valve, hose connections, trigger-gun. The pump sucks air. The high-pressure nozzle is worn or too big in size. or safety valve is not correctly adjusted, or is worn. Rupture disc is burst. Plunger packings are worn.</i></p> <p>Turn of the water-blaster. Inspect for leakage. Replace the nozzle. Set the safety valve, repair if necessary. Change rupture disc. Change packings.</p>
The Water-blaster works with approximately 2/3 of the maximum pressure, and the high-pressure hose is vibrating.	<p><i>There is dirt in the valves.</i></p> <p>Turn off the Water-blaster. Dismantle the pump head and the valves, remove the dirt and check to ensure the valve discs are moving freely and fits tight and smooth to their seats.</p>

Trouble shooting and repair, unit:

Problem	Repair
Excessive water leakage from under the pump	<i>Packing is worn</i> Replace packings. (Always replace O-ring as-well)
Noisiness	<i>The pump sucks air. One or more valve springs are broken or stuck. Dirt in the valves. No or too little oil in the crankcase or motor bearings worn out.</i> Inspect the low-pressure water supply. Tighten hose clips. Replace springs. Clean the valves. Replace the bearings.
Water in the oil	<i>The Oil-seal is worn out. High moisture in the air (condensing inside the crankcase) The high pressure seals are completely worn out.</i> Check or replace the oil-seals. Renewal of the crankcase oil more often. Replace the high pressure seals.

Nozzle change:

Change the nozzle when it is worn, (spray pattern becomes irregular and/or a drop in pressure occurs. Use 2 wrenches when changing nozzle. Only change to a correctly sized new nozzle. Repack nozzle thread with PTFE packing tape (if using threaded nozzles). Please notice that the size rating for one particular nozzle may differ from another, for example: The same sizes fan and straight jet may differ in pressure.

Using optional Nozzle types:

The gun can be used with different types of nozzles: Straight-jet, fan-jet and self-rotating types.

The gun is also suitable for using with wet sand-blasting.

Overhauling gun:

If the gun starts to leak or parts become damaged it can be repaired. Please refer to the main spare-parts assembly for correct position of parts during repair.

Changing the micro filter cartridge:

Drain the water from the tank as described above. Unscrew the hexagon nut on top of the round filter cartridge located beneath the water tank.

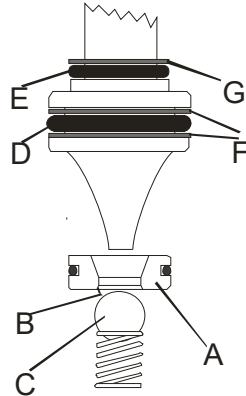
Take out the corrugated filter cartridge. Discard the cartridge. The filter cartridge absorbs dirt particles, **THE CARTRIDGE IS DISPOSABLE AND CANNOT BE CLEANED.**

Flush the filter housing with water. Refit a new filter cartridge into the filter housing, ensure the length of the filter is correct, measured against the discarded cartridge. Clean and put O-rings back in place. Mount the filter housing and tighten the hexagon top nut.

Remember to tighten the drain screw at the bottom of the filter housing.

Overhauling and adjusting safety / un-loader valve:

Dismantle the un-loader / safety valve and overhaul by refitting the parts supplied in the repair kit(s). Ensure the parts are put in place as shown below. Pay attention to the orientation of the valve seat A, the short seat edge B, should be facing the ball C. Assemble the un-loader / safety valve again.

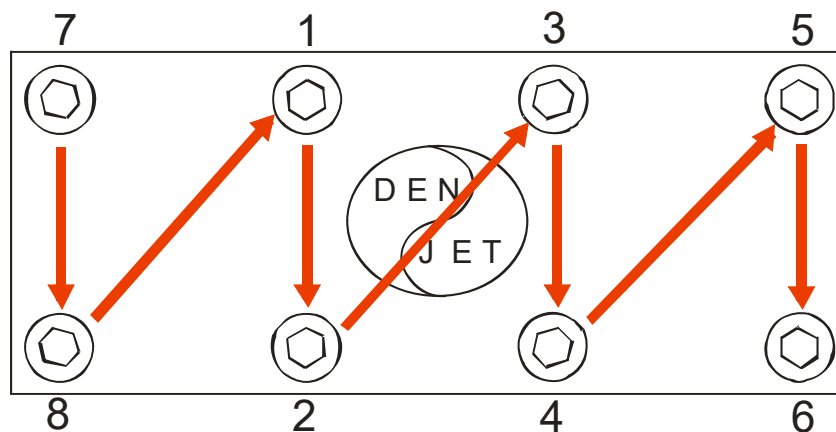


Re-adjust the safety valve by running the machine with a correctly sized nozzle. Pull the trigger and start tighten the nut for the thick black spring, until there is no leak from the safety valve.

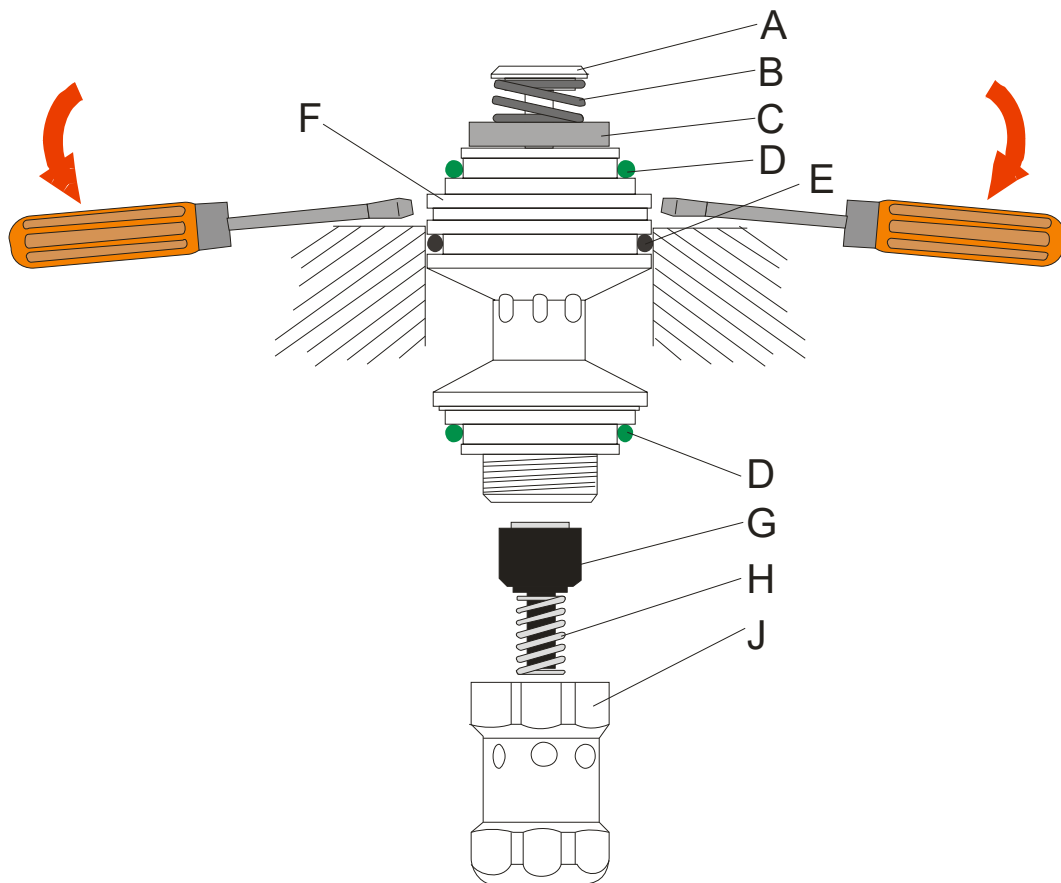
Make sure that the black spring still has movement allowance after setting the correct pressure. The correct working pressure is regulated by the size of the nozzle, and the nozzle should never be too small.

Overhauling pump, valves:

Start dismantling the front of the pump by removing water supply and cooling hoses. Loosen the cylinder head bolts in reverse order as shown:



Do not loosen one bolt entirely, loosen them bit by bit and alternate according to the pattern. Pull out the valve by applying pressure in the extraction groove with 2 flat-face screwdrivers as shown below:

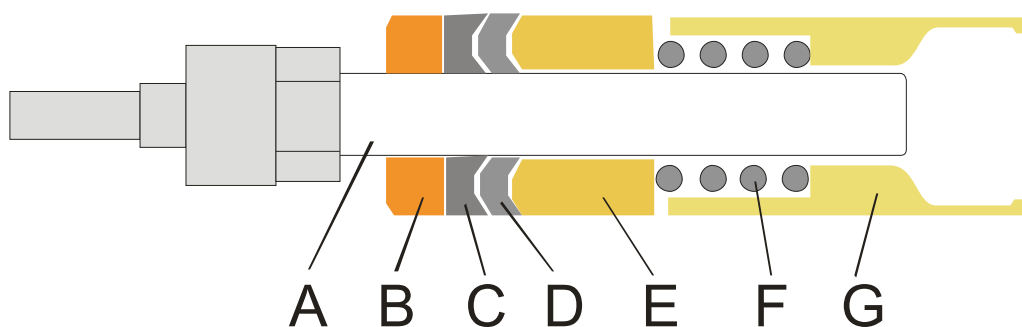


Dismantle the valve assembly by clamping on the spanner face of the valve-body F And unscrewing A and J.

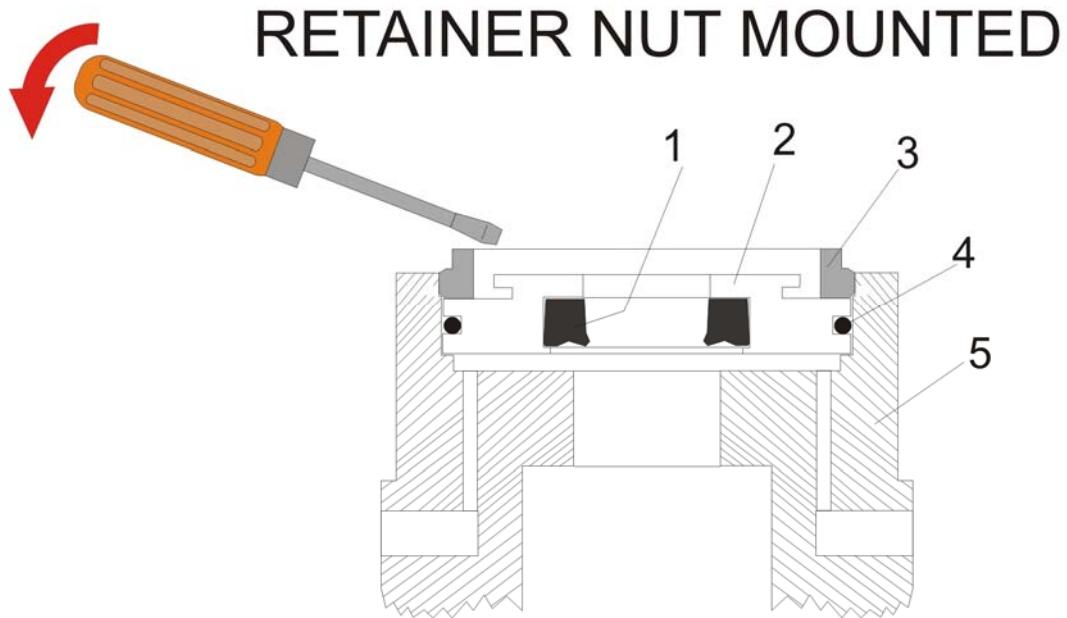
Check the mating surfaces of the inlet valve disc C and the body F, and the outlet valve G and the body F. The mating surfaces should be free from wear and tear. It is possible to touch up the mating surfaces by lapping the parts on a piece of very fine sand-paper laid out on an absolutely flat surface. If wear and tear are too severe for touch up, replace items. Ensure O-rings and packings D and E are in good condition, replace if worn. Re-assemble the valve, be careful not to over-tighten the screw A. Push the assembled valve back into the cylinder-head.

Changing Packing and Plungers:

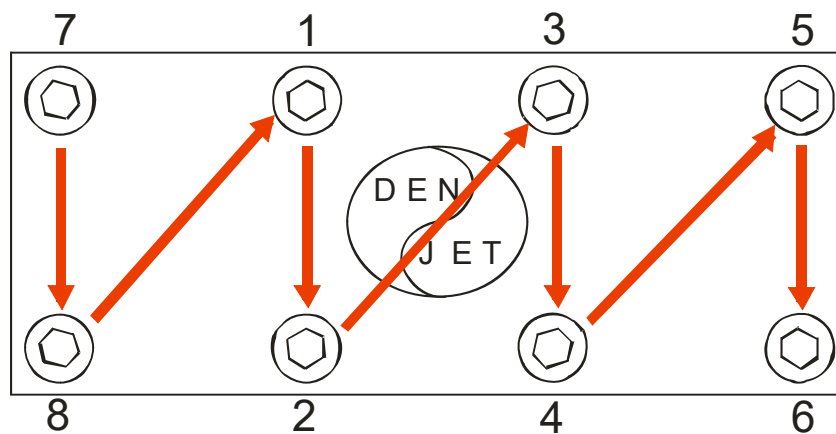
Take of the cylinder-head as explained earlier. Remove the cooling pipes on top and below on the cylinders. Gently, to prevent plunger damage, pull out the cylinders one by one, the parts B until G will follow inside each cylinder. The plungers will remain on the crossheads extensions.



Unscrew the big hexagon retainer nut “3” at the back of the cylinder support “5”. Use a screw driver to gently pry out the cooling plate assembly “2” Seal assembly “C” needs replacement every time when the pump has been disassembled after running. Unscrew the plunger “A” using the supplied orange –Z- shaped spanner. Inspect plunger surface and replace if necessary. Ensure the low pressure cooling seal “1” is in good condition, replace both seal “1” and o-ring “4” if worn.

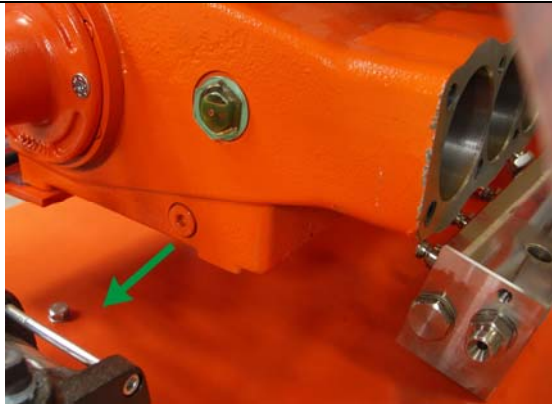


Assemble parts, paying attention to place position and orientation.
Remember to put back cooling pipes and cover plate before tightening the cylinder head



Tighten the bolts in the above shown pattern in steps of torque.
(20Nm - 60Nm - 80Nm – and finally 120Nm) alternating between bolts

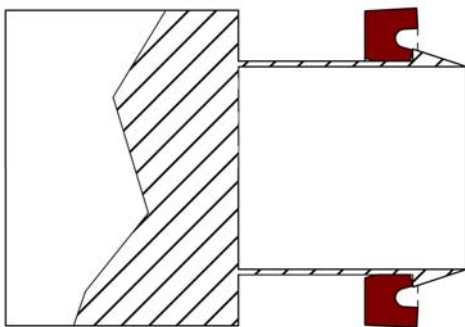
Procedure for Seal Extraction



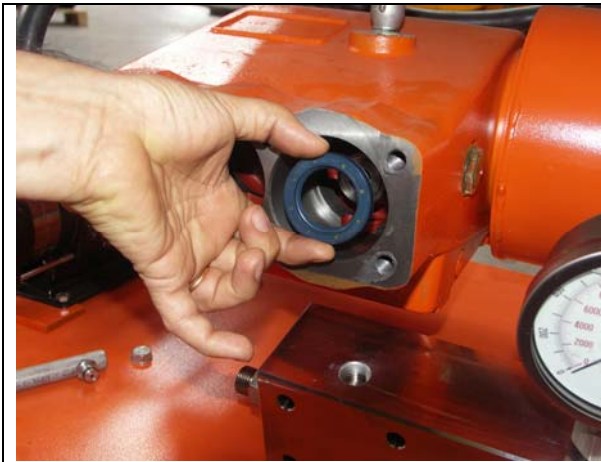
Take the oil out



Turn to get the right position



Take the seal off



Put the new seal in place using just fingers



Hammer it gently and equally

Maintenance / Service, Diesel Engine:

Maintenance	Task
Lubrication	<p><i>Oil renewal on the engine crankcase is to be completed the first time after no more than 50 hours of use. Oil renewal is hereafter to be completed in every 200 hours of use. Or at least one time a year.</i></p> <p><i>Use a CC or CD Grade oil (API classification) Under normal operating temperatures -30°C to 30°C use multigrade SAE 30 or 10W40(part number: 83600870) Under cold operating temperature below -30°C use multigrade SAE 5W/20 or SAE 5W/30 Under warm operating temperature over 30°C use multigrade SAE 10W/40</i></p> <p><i>Quantity: fill up with oil until oil level is just below the “full” mark on the dip stick</i></p> <p><i>Remember to refit oil drain plug. Fill up until the oil level is visible at the full mark on the oil dip stick.</i></p>
Oil Filter	<p><i>Change the oil filter when changing the oil. (Part number: 81001047)</i></p>
Renewal of oil	<p><i>Switch off the machine. Loosen the oil drain screw on the lower side of the pump crank-case. Let the oil drain out into a waste oil-tray. Remount the oil drain screw and pour in new oil through the oil inlet on top of the pump until visible in the oil sight glass.</i></p> <p>Notice: Always dispose of the used oil in a proper manner.</p>
Diesel Fuel	<p><i>Use fresh clean automotive quality diesel fuel. When operating in cold environments, make sure the diesel fuel are suitable for the temperature.</i></p>
Air intake filter	<p><i>Clean air intake filter every 50-100 hours, Exchange every 200-400 Hours. (Depending on running environment. (Part number: 81001034)</i></p>
Diesel Fuel filter	<p><i>Diesel fuel filter should be changed every 400 Hours (Part number: 81001048)</i></p>
Cleaning	<p><i>A part of keeping the machine and its accessories in good working condition is keeping it clean. But NEVER clean the machine itself with high-pressure. Do not use solvents.</i></p>
Storage /Antifreeze	<p><i>Always run the engine with glycol based antifreeze mixture in the cooling system, also in hot weather. Mix accordingly with manufactures specifications to obtain the desired antifreeze temperature. Change every 2 years. The unit is protected to -30°C at delivery. The cooling system contains approximately 10 Liters of fluids.</i></p>

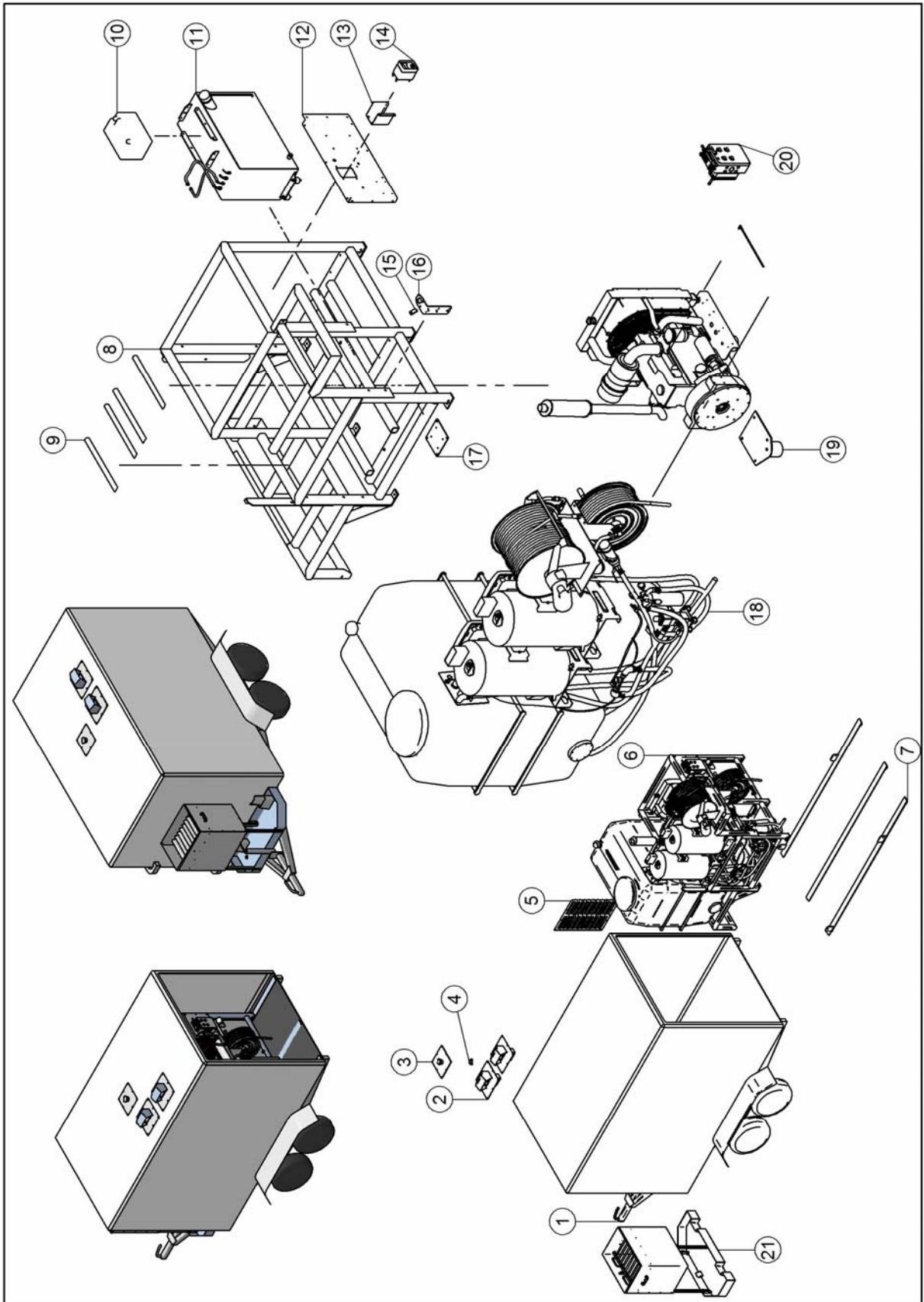
Trouble shooting / Repair, Diesel Engine:

Problem	Cause / Repair
Exhaust smoke is black	<p><i>The load is too heavy for the engine.</i> Reduce load.</p> <p><i>Air intake filter dirty.</i> Clean or replace air filter.</p> <p><i>Bad fuel injector nozzle(s)</i> Check nozzles, replace if spray pattern is faulty.</p> <p><i>Intake/exhaust valves needs adjusting.</i></p> <p><i>Motor is worn.</i></p>
Exhaust smoke is white	<p><i>When running in cold weather and before the engine is warm white smoke is normal.</i></p> <p><i>Cylinder head gasket leaking.</i> Check cause of cooling water leak into engine.</p> <p><i>Wrong injection timing.</i> Set timing correctly.</p> <p><i>Air intake filter dirty.</i> Clean or replace filter.</p> <p><i>Dirty fuel filter.</i> Change filter.</p> <p><i>Air in fuel line, leak in fuel pipe.</i> Tighten or replace faulty fuel line.</p> <p><i>Leakage around injectors.</i> Tighten or replace seal.</p>
Exhaust smoke is blue	<p><i>Oil level in crankcase to high.</i> Drain oil until correct level.</p> <p><i>Too much oil fog in air breather / crankcase ventilation.</i> Check breather valve/ Valve seal. Replace breather valve and / or tube.</p>
Engine is not running smoothly	<p><i>Air somewhere in fuel line</i> Tighten or replace faulty fuel line.</p> <p><i>Fault in speed-regulating governor.</i></p> <p><i>Faulty injector nozzle(s)</i></p> <p><i>Faulty Diesel distributor pump.</i></p>

Trouble shooting / Repair, Diesel Engine:

Problem	Cause / Repair
Engine temperature too High.	<p><i>Low level in radiator / cooling system.</i> CAUTION when opening. Steam boiling water may escape. Fill up radiator. <i>Blocked air intake outlet grille.</i> Remove obstruction. <i>Engine is overloaded.</i> Reduce Load. <i>Fan belt (water pump belt) is broken.</i> Replace fan belt. <i>Electric fan is not running.</i> Fault in electric circuit Faulty thermostat in lower cooling hose. <i>Fuel injection timing wrong (Retarded)</i> Set correct timing. <i>Water cooling system pump faulty.</i> Replace pump.</p>
Engine is not charging the battery	<p><i>Fault in the alternator / Alternator circuit</i> Find fault and rectify. Battery is faulty.</p>
Engine stops suddenly	<p><i>Run out of fuel</i> Fill up with fuel, hand pump to prime. <i>Air in fuel line.</i> Bleed air. Hand pump to prime. <i>Fuel filter clogged.</i> Change fuel filter. <i>Fuel feed pump faulty</i> <i>Check pump, replace if faulty.</i> <i>Engine is stuck.</i></p>
Abnormal noise	<p><i>Fan is touching metal.</i> Make clearance. <i>Valve clearance too big.</i> Adjust valves. <i>Injection timing wrong (too advanced).</i> Adjust timing. <i>Badly worn engine bearings.</i></p>

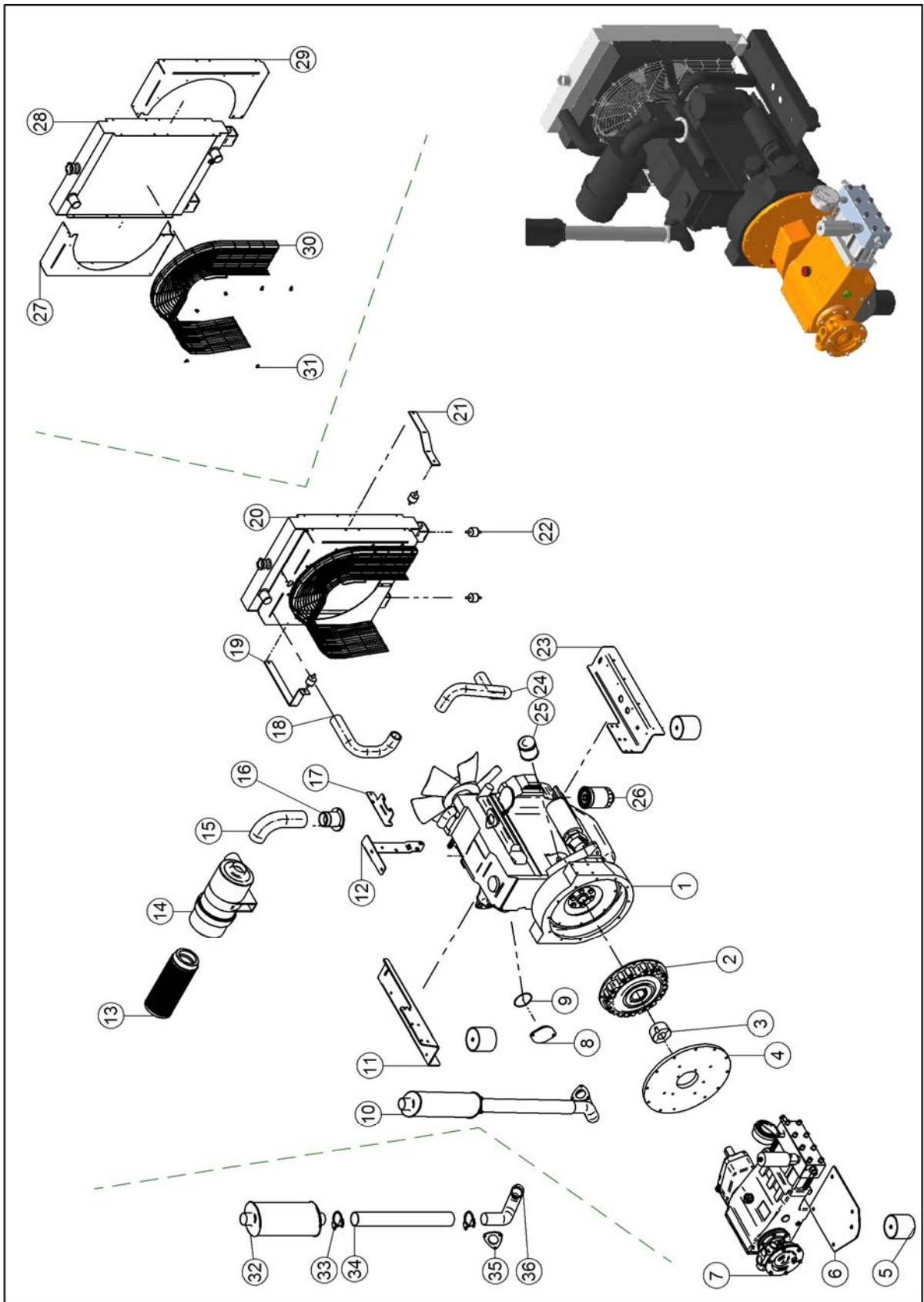
CD50-HD50 TRAILER SERIES WATER-BLASTER MAIN SPARE-PARTS ASSEMBLY



**CD50-HD50 TRAILER SERIES WATER-BLASTER
MAIN SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	87000593	1	TRAILER VARIANT
2	81001276	2	BOILER EXHAUST
3	81001699	1	EXHAUST BRACKET
4	81000969	1	U-CLAMP FOR EXHAUST
5	81001090	1	LOUVER
6	N/A	1	CD50 TRAILER MODEL COMPLETE UNIT (POS.8-POS.20)
7	81001459	1	RAILS CD50 TRAILER MODEL
8	N/A	1	FRAME COMPLETE - TRAILER
9	83000718	4	SQUARE PIPE
10	81100990	1	ACCUMULATOR BATTERY
11	81001126	1	DIESEL TANK COMPLETE
12	81000767	1	CONTROL PANEL
13	81000765	1	BRACKET ENGINE CONTROL- DEEP
14	81100845	1	ENGINE CONTROLLER
15	81001482	1	MOUNTING WELDED BRACKET
16	81001235	1	BRACKET FILTER HOLDER
17	81001057	1	WELD AND SCREW BRACKET BKX
18	N/A	1	WATER SYSTEM CD50 IN TRAILER
19	N/A	1	MOTOR PUMP UNIT CD50
20	N/A	1	REMOTE CONTROL SYSTEM (optional)
21	81001156	1	FILTER HOUSING TRAILER MOUNTED
N/A	81401349	1	FILTER BAG (disposable)
N/A	81101272	1	EMERGENCY STOP
N/A	81001557	N/A	EXHAUST RAIN CAP (part of pos. 3)

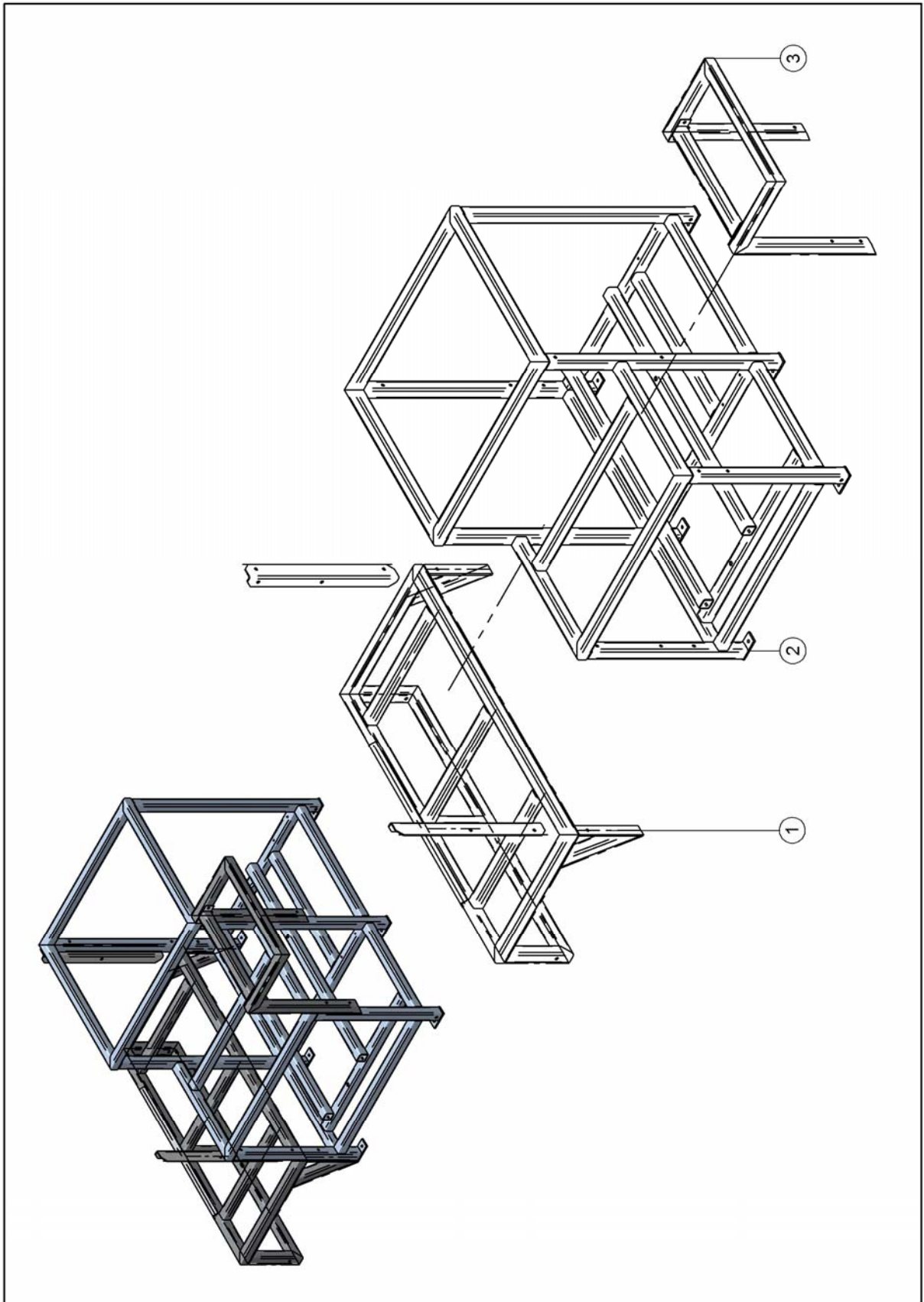
CD50-HD50 TRAILER SERIES WATER-BLASTER MOTOR-PUMP UNIT SPARE-PARTS ASSEMBLY



**CD50-HD50 TRAILER SERIES WATER-BLASTER
MOTOR-PUMP UNIT SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81100954	1	ENGINE TOYOTA
2	81001272	1	COUPLING COMPLETE
3	81000269	1	TAPER BUSH
4	81000842	1	BELL HOUSING
5	81000934	3	RUBBER FOOT
6	81001012	1	HOLDER BRACKET PUMP
7	N/A	1	PUMP UNIT
8	81001751	1	BLIND COVER PTO ENGINE
9	80200695	1	O-RING
10	N/A	1	EXHAUST
11	81001011	1	HOLDER BRACKET RIGHT
12	81001058	1	HOLDER BRACKET AIR FILTER
13	81001034	1	FILTER INSERT AIR INTAKE
14	81000861	1	AIR INTAKE FILTER
15	81001071	1	RUBBER ELBOW
16	81000966	1	AIR INLET PIPE FLANGE
17	81001059	1	HOLDER BRACKET DIESEL FILTER
18	81001073	1	RUBBER HOSE MOTOR-RADIATOR
19	81001074	1	BRACKET RADIATOR SUPPORT P1
20	N/A	1	RADIATOR COMPLETE
21	81001074	1	BRACKET RADIATOR SUPPORT P2
22	81000857	4	RUBBER DAMPENER
23	81001010	1	HOLDER BRACKET LEFT
24	81001072	1	RUBBER HOSE RADIATOR-MOTOR
25	81001047	1	OIL FILTER
26	81001048	1	FUEL FILTER
27	81000972	1	RADIATOR GUARD RIGHT
28	81000981	1	RADIATOR
29	81000971	1	RADIATOR GUARD LEFT
30	81000982	1	RADIATOR NET
31	81100993	7	WIRE CLAMP RUBBER
32	81001017	1	EXHAUST MUFFLER
33	81000969	2	U-CLAMP FOR EXHAUST
34	81001115	1	PIPE OUTLET EXHAUST
35	81001018	1	FLANGE TOYOTA EXHAUST
36	N/A	1	EXHAUST BENDING COMPLETE

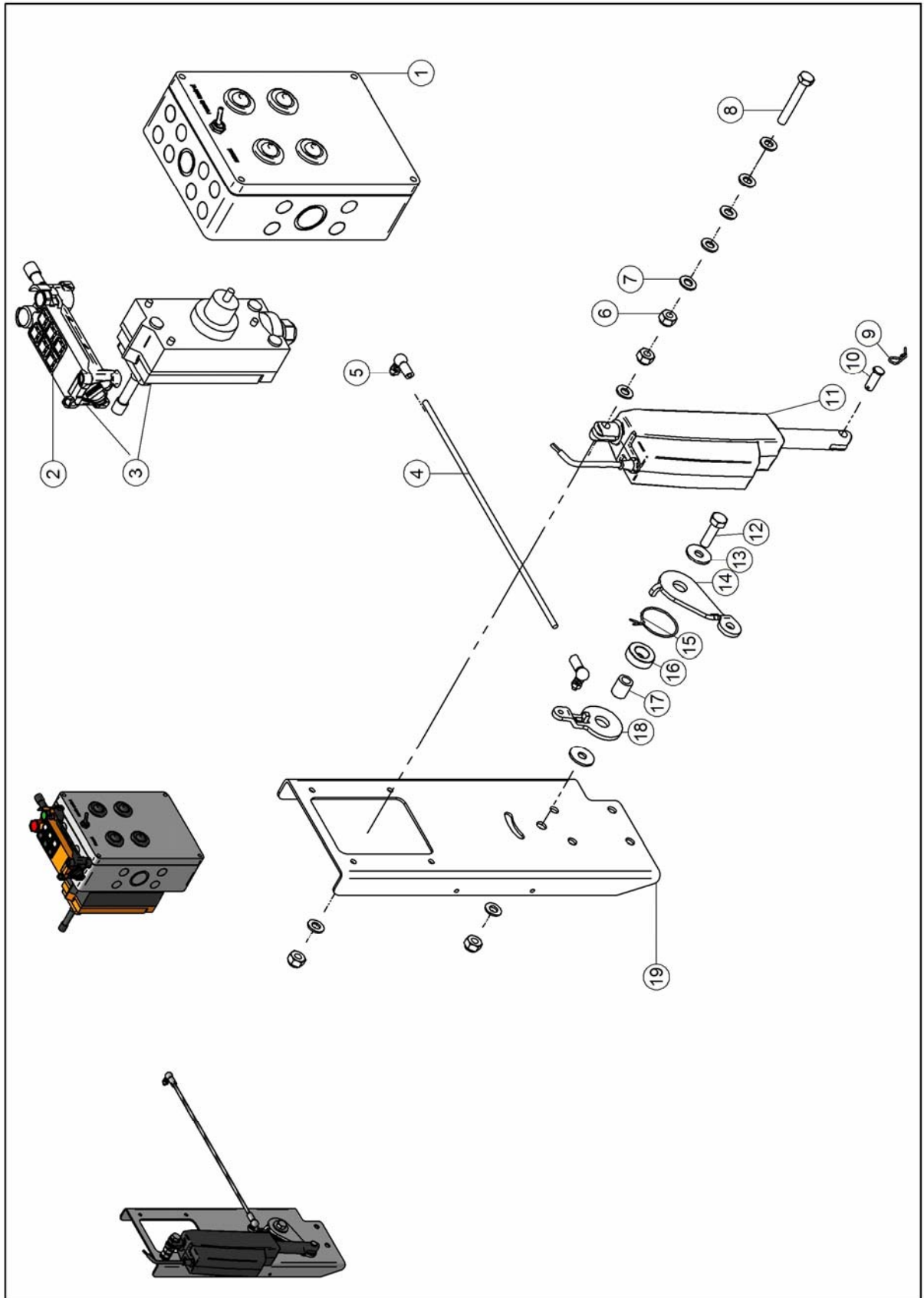
**CD50-HD50 TRAILER SERIES WATER-BLASTER
FRAME SPARE-PARTS ASSEMBLY**



**CD50-HD50 TRAILER SERIES WATER-BLASTER
FRAME SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81001458	1	FRAME WATER TANK 1100 L
2	81001083	1	FRAME CD 50 TRAILER
3	81001453	1	HOLDER HOSE REEL

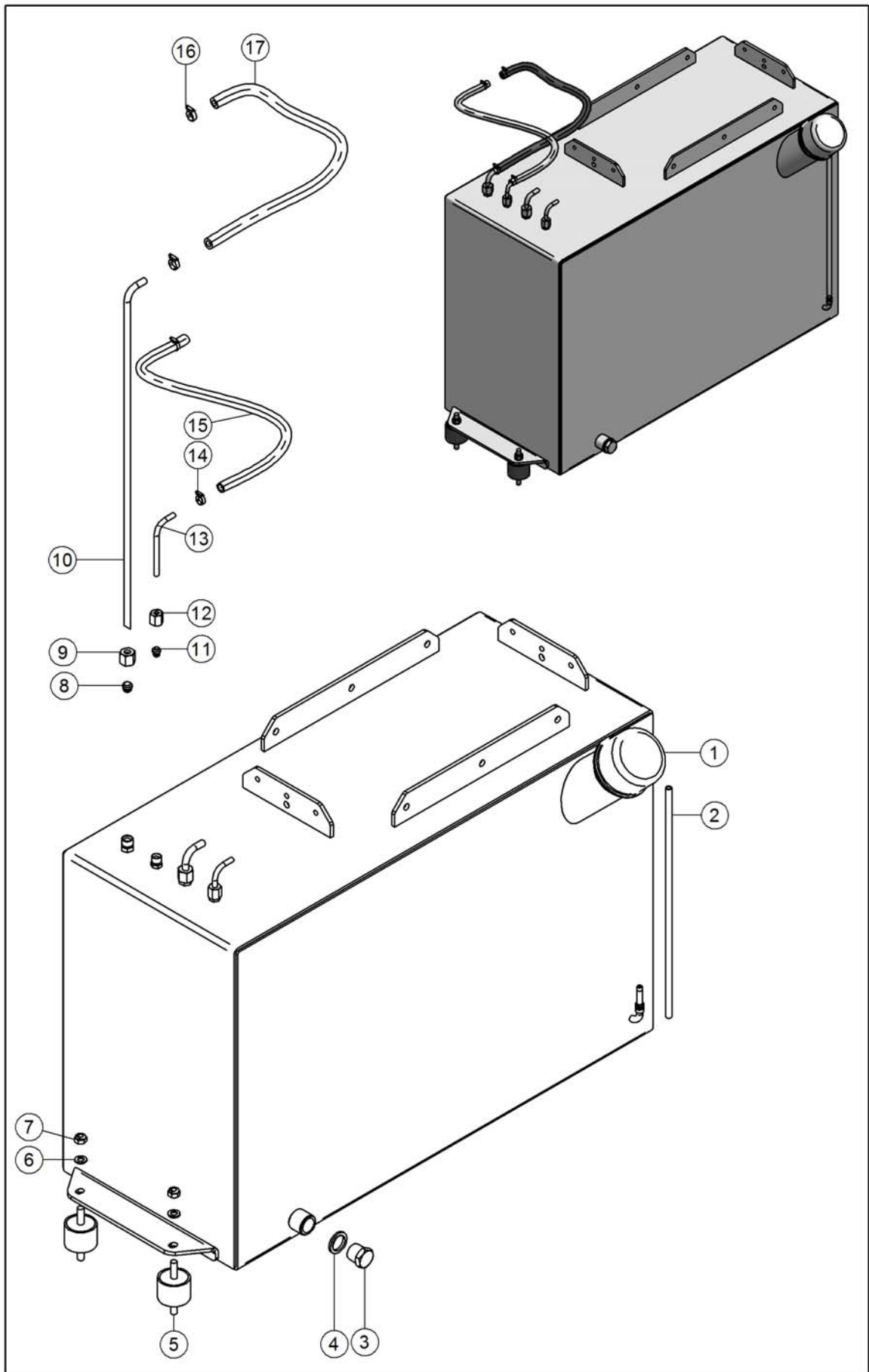
CD50-HD50 TRAILER SERIES WATER-BLASTER REMOTE CONTROL SYSTEM SPARE-PARTS ASSEMBLY



**CD50-HD50 TRAILER SERIES WATER-BLASTER
REMOTE CONTROL SYSTEM SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81101350	1	REMOTE CONTROL BOX
2	81100997	1	REMOTE CONTROL SENDER
3	81100997	1	REMOTE CONTROL SENDER/RECIEVER
4	80100864	1	THREADED ROD SS M6
5	80100870	2	ANGULAR BALL CONNECTION
6	80100710	4	LOCK NUT
7	80100310	8	WASHER
8	80100707	1	SCREW
9	80100881	1	HAIR PIN
10	81101013	1	PIN
11	81101003	1	LINEAR ACTUATOR
12	80100952	1	SCREW
13	80100906	2	WASHER
14	81101008	1	ARM LINEAR ACTUATOR ACTIVE
15	80300639	1	SPRING
16	81101011	1	BUSHING
17	81101010	1	SHAFT
18	81101009	1	ARM LINEAR ACTUATOR PASSIVE
19	81000962	1	BRACKET
N/A	81101278	1	WIRE HARNESS

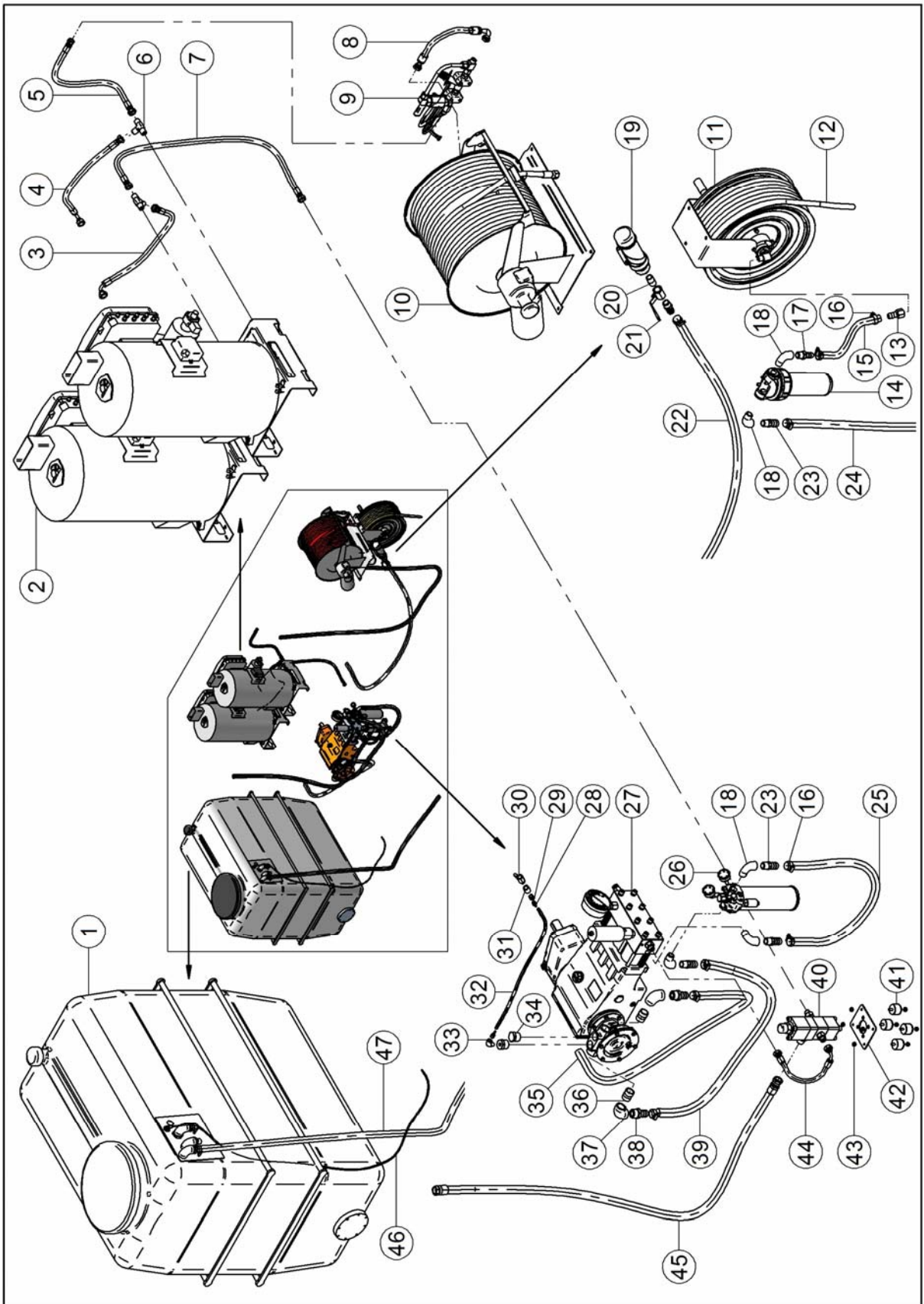
**CD50-HD50 TRAILER SERIES WATER-BLASTER
DIESEL TANK SPARE-PARTS ASSEMBLY**



**CD50-HD50 TRAILER SERIES WATER-BLASTER
DIESEL TANK SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81001211	1	DIESEL TANK
2	83400647	1	HOSE CLEAR
3	80500617	1	PLUG
4	80500429	1	BONDED SEAL
5	81000857	4	RUBBER FOOT
6	80100732	4	WASHER
7	80100697	4	LOCK NUT
8	80501076	1	FERRULE
9	80501077	2	SWIVEL NUT
10	83100648	2	HYDRAULIC PIPE
11	80501074	1	FERRULE
12	80501075	2	SWIVEL NUT
13	83100647	2	HYDRAULIC PIPE
14	80100905	2	HOSE CLIP
15	83400625	1	RUBBER HOSE
16	80100904	2	HOSE CLIP
17	83400624	1	RUBBER HOSE

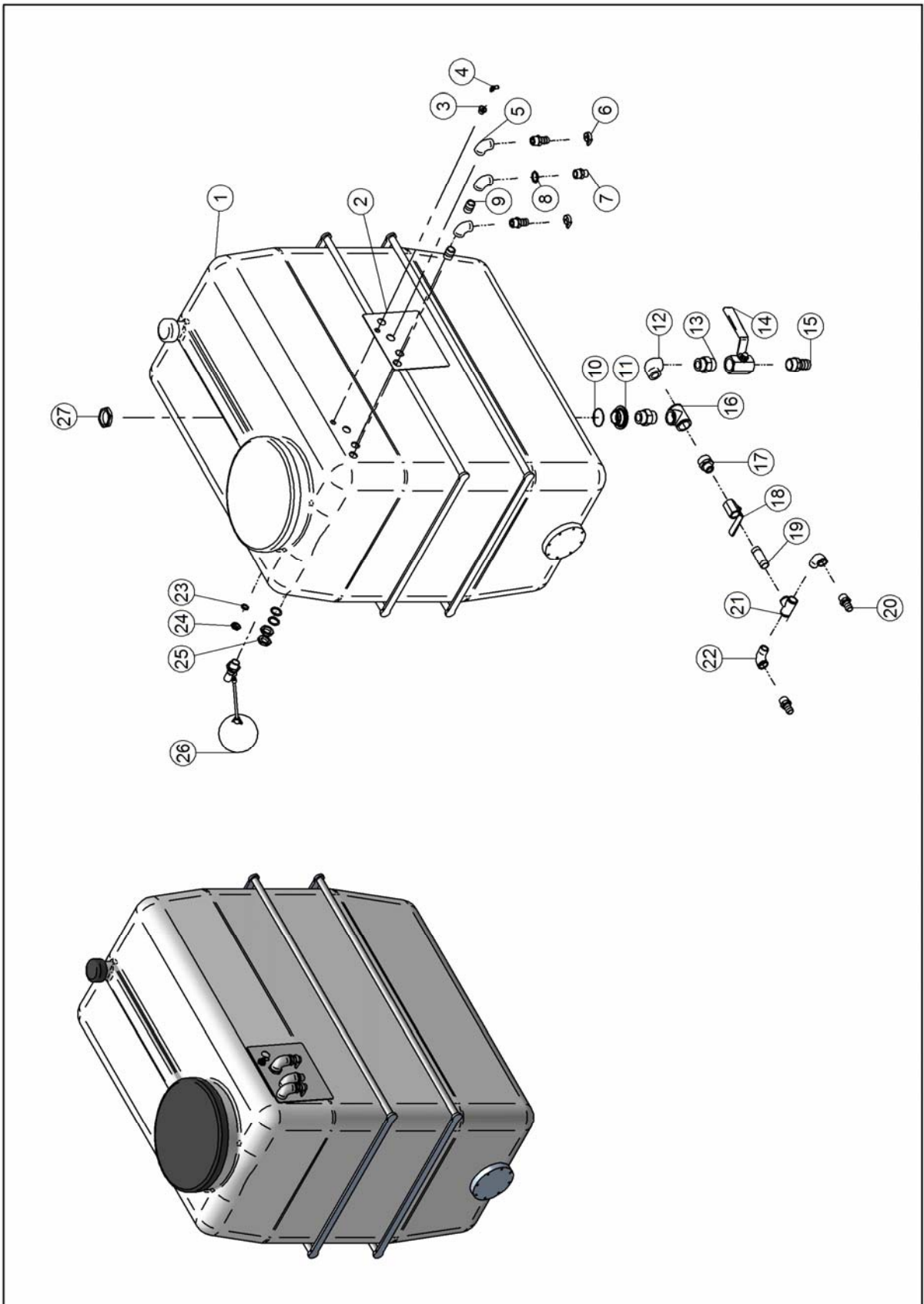
**CD50-HD50 TRAILER SERIES WATER-BLASTER
WATER SYSTEM SPARE-PARTS ASSEMBLY**



**CD50-HD50 TRAILER SERIES WATER-BLASTER
WATER SYSTEM SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1		1	WATER TANK WITH CONNECTIONS
2	81101389	2	BOILER UNIT
3	N/A	1	HOSE BOILER1-BOILER2
4	N/A	1	HOSE BOILER1-BOILER2
5	N/A	1	HOSE BOILER1-CHEMICAL INJECTOR
6	80500616	2	T JOINT
7	N/A	1	HOSE UNLOADER-BOILER1
8	N/A	1	HOSE CHEMICAL INJECTOR-HOSE REEL
9	81401558	1	CHEMICAL INJECTOR SET W. BYPAS
10	81401357	1	HOSE REEL
11	81401172	1	HOSE REEL 50 METER manual.
12	83400606	20M	HOSE LP WITH NET (optional)
13	80501407	1	HOSE NIPPLE
14	81001241	1	FILTER HOUSING PLASTIC CLEAR 10"
15	83400599	0,5M	RUBBER HOSE Ø3/4"
16	80100527	9	HOSE CLIPS FOR 1" HOSE
17	80500436	1	HOSE NIPPLE
18	80500437	5	ELBOW
19	81001692	1	FILLING INLET FOR ANTIFREEZE
20	80500881	1	NIPPLE PIPE
21	80501403	1	BALL VALVE LP 3/4"
22	83400524	4M	HOSE SUCTION Ø1"
23	80500695	5	HOSE NIPPLE
24	83400681	4M	RUBBER HOSE Ø1"
25	83400681	1M	RUBBER HOSE Ø1"
26	N/A	1	FILTER ASSY
27	81201072	1	PUMP C50 W GEARBOX,BOOST PUMP
28	80500105	2	HOSE NIPPLE
29	80500677	1	BUSHING
30	80500845	1	BALL VALVE LP
31	80500680	1	BUSHING
32	83400625	1M	RUBBER HOSE
33	80500697	1	ELBOW
34	80500607	2	PLUG
35	83400524	2M	SUCTION HOSE Ø1"
36	80501418	2	NIPPLE
37	80500808	2	ELBOW
38	80500227	2	HOSE NIPPLE
39	N/A	1,5M	RUBBER HOSE 1"
40	N/A	1	UNLOADER
41	81000857	4	RUBBER DAMPENER
42	81001056	1	MOUNTING BRACKET
43	80100697	8	LOCK NUT
44	N/A	1	HOSE PUMP-UNLOADER.
45	N/A	1	HOSE DUMP UNLOADER-WATER TANK
46	83400522	3M	HOSE PLASTIC Ø6mm
47	83400681	3M	RUBBER HOSE Ø1"
N/A	81401499	1	HOSE 3/8" BLUE (optional)

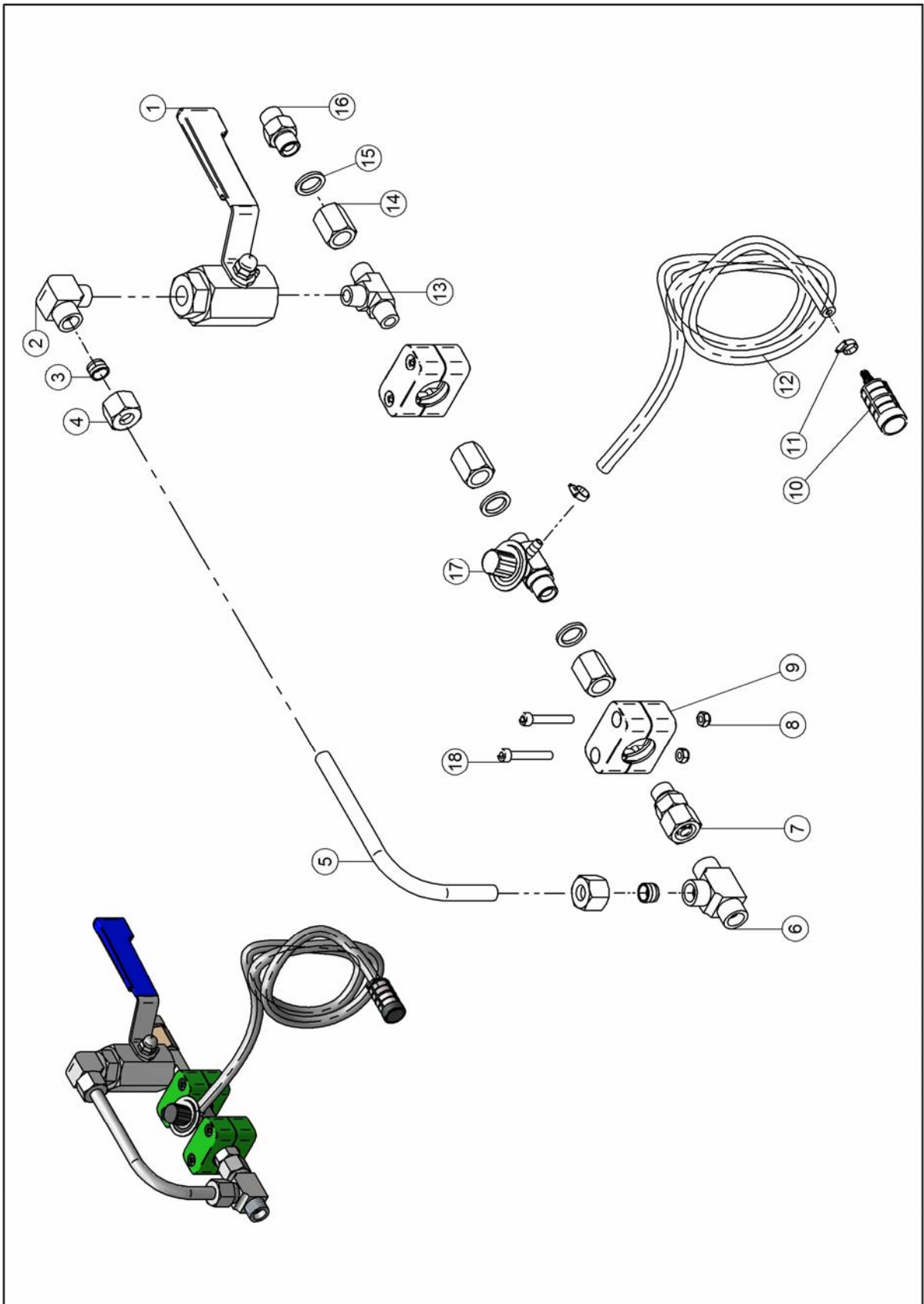
CD50-HD50 TRAILER SERIES WATER-BLASTER WATER TANK SPARE-PARTS ASSEMBLY



**CD50-HD50 TRAILER SERIES WATER-BLASTER
WATER TANK SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81001380	1	WATER TANK 1100 L PLASTIC
2	81001079	1	BRACKET HOLDER BALL VALVE
3	80500606	1	BUSHING
4	80500279	1	ELBOW SWIVEL
5	80500808	3	ELBOW
6	80100527	4	HOSE CLIPS
7	80500812	1	NIPPLE
8	80500521	3	BONDED SEAL
9	80501418	2	NIPPLE
10	80200771	1	O-RING
11	80500874	1	ADAPTOR LP
12	80500672	1	ELBOW
13	80500944	2	NIPPLE
14	80501272	1	BALL VALVE
15	80500729	1	HOSE NIPPLE
16	80500943	1	TEE
17	80500809	1	NIPPLE
18	80500660	1	BALL VALVE
19	80500908	1	NIPPLE
20	80500227	4	HOSE NIPPLE
21	80501030	1	TEE
22	80500237	2	ELBOW
23	80500973	1	BONDED SEAL
24	80100632	1	CONTRA NUT
25	80100405	2	CONTRA NUT
26	81000428	1	FLOAT VALVE
27	80500875	1	CONTRA NUT

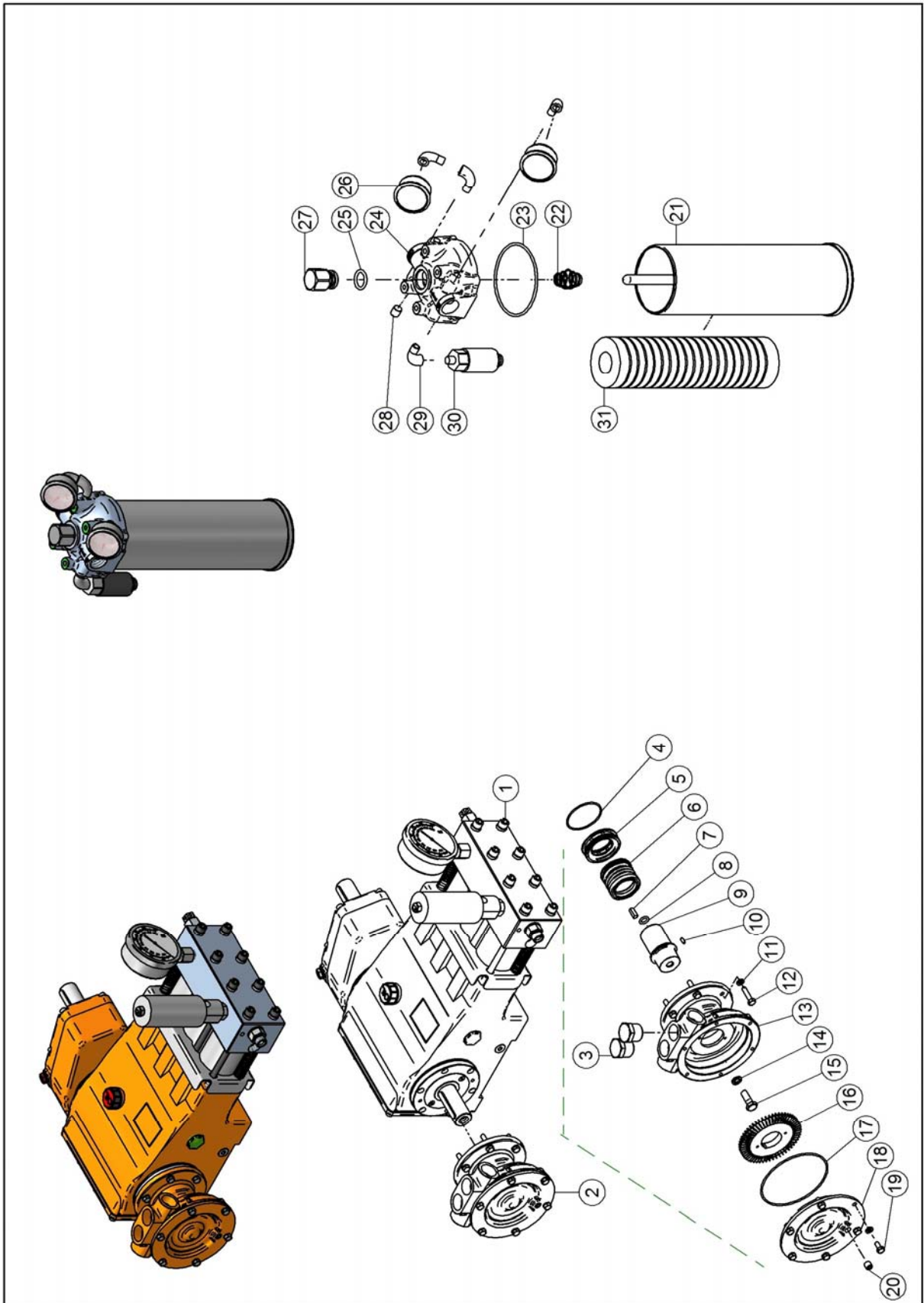
CD50-HD50 TRAILER SERIES WATER-BLASTER CHEMICAL INJECTOR SPARE-PARTS ASSEMBLY



**CD50-HD50 TRAILER SERIES WATER-BLASTER
CHEMICAL INJECTOR SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	80500636	1	BALL VALVE HP
2	80501227	1	ELBOW HP
3	80501230	2	CUTTING RING
4	80501231	2	SWIVEL NUT
5	83000721	1	PIPE
6	80501226	1	TEE
7	80501228	1	ADAPTOR SWIVEL
8	80100053	4	LOCK NUT
9	80100661	2	CABLE GLAMP
10	81300786	1	CHEMICAL STRAINER
11	80100905	2	HOSE CLIP
12	83400647	1	HOSE
13	80500638	1	TEE
14	80501196	3	SOCKET
15	80500972	3	BONDED SEAL
16	80500734	1	NIPPLE
17	81300788	1	CHEMICAL INJECTOR
18	80100645	4	SCREW

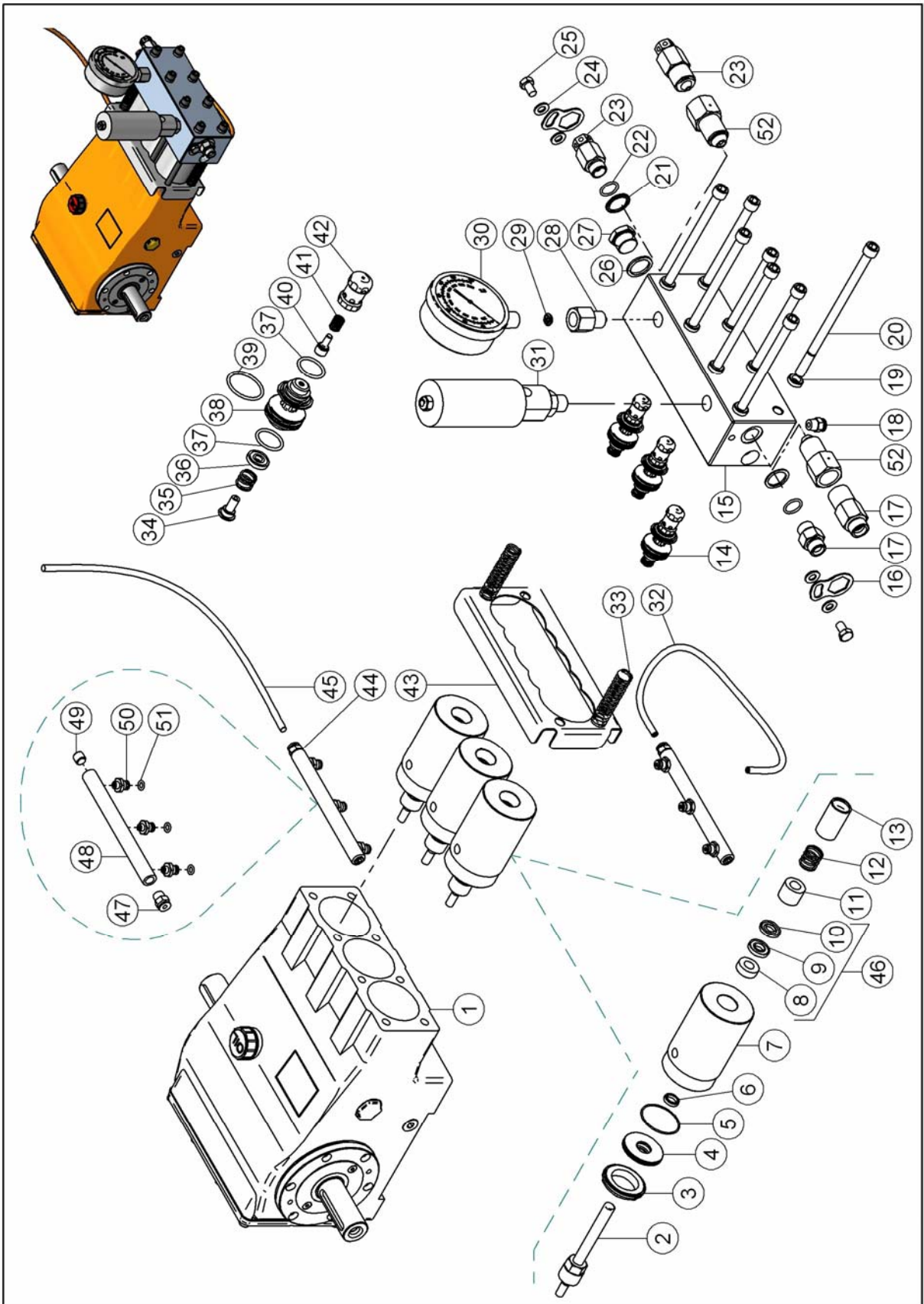
CD50-HD50 TRAILER SERIES WATER-BLASTER PUMP-FILTER UNIT SPARE-PARTS ASSEMBLY



**CD50-HD50 TRAILER SERIES WATER-BLASTER
PUMP-FILTER UNIT SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	N/A	1	PUMP COMPLETE
2	81200158	1	BOOSTER PUMP
3	80500607	2	PLUG
4	80200407	1	O-RING
5	81200163	1	DRAIN BUSHING
6	80200157	1	MECHANICAL SEAL
7	81200164	1	KEY
8	80200634	1	O-RING
9	81200173	1	AXLE ADAPTOR
10	81200165	1	KEY
11	80100732	12	WASHER
12	80100704	6	SCREW
13	81200160	1	HOUSING BOOSTER PUMP
14	80500971	1	BONDED SEAL
15	80100168	1	SCREW
16	81200172	1	IMPELLER
17	80200568	1	O-RING
18	81200162	1	END COVER
19	80100703	6	SCREW
20	80500341	1	PLUG
21	81000572	1	HOUSING FOR FILTER
22	80300604	1	DISTANCE SPRING
23	80200637	1	O-RING
24	81000650	1	COVER
25	80200491	1	O-RING
26	81300631	2	GAUGE LP
27	81000649	1	TOP SCREW
28	80500094	1	PLUG
29	80500685	4	ELBOW
30	81100844	1	PRESSURE SWITCH
31	81000523	1	FILTER INSERT

**CD50-HD50 TRAILER SERIES WATER-BLASTER
PUMP SPARE-PARTS ASSEMBLY**



CD50-HD50 TRAILER SERIES WATER-BLASTER PUMP SPARE-PARTS LIST

Pos.	Item No.	Qty.	Description	
1	81201192	1	POWER END	
2	81200304	3	PLUNGER Ø18MM CD50-550	
3	81200966	3	RETAINER NUT FOR COOLING PLATE	
4	81200328	3	COOLING PLATE Ø18 CD50-550	
5	80200222	3	O-RING	
6	80200329	3	COOLING SEAL Ø18 CD50-550	
7	81201428	3	CYLINDER	
8	81200457	3	BACK UP RING Ø18 CD50-550	Seal kit plunger 81200700 (pos. 46)
9	81200327	3	PACKING BACK Ø18 CD50-550	
10	81200326	3	PACKING FRONT Ø18 CD50-550	
11	81200325	3	PACKING SUPPORT Ø18 CD50-550	
12	80300225	3	PACKING SPRING Ø18MM	
13	81200229	3	CYLINDER BUSHING Ø18 CD50-550	
14	81200208	3	VALVE COMPLETE (pos. 34 to 42)	
15	81200210	1	PUMP HEAD	
16	81200494	2	LOCK PLATE	
17	80500375	1	NIPPLE M OUTLET	
17	80500657	1	NIPPLE OUTLET	
17	80500760	1	NIPPLE OUTLET	
18	80500095	1	QUICK COUPLING	
19	80101077	8	WASHER	
20	80101031	8	SCREW	
21	80500696	2	BONDED SEAL RING	
22	80200828	2	O-RING	
23	81300644	1	RUPTURE DISC ASSEMBLY	
24	80100310	4	WASHER	
25	80100706	2	SCREW	
26	80500974	1	BONDED SEAL	
27	80500496	1	PLUG	
28	81300408	1	NIPPLE ADAPTOR	
29	80500413	1	COPPER SEAL	
30	81300497	1	GAUGE	
31	81300498	1	SAFETY VALVE	
32	83400522	0,5m	HOSE ORANGE	
33	80300661	2	SPRING	
34	81200216	3	SCREW SUCTION VALVE	
35	80300223	3	SPRING SUCTION VALVE	Part of valve rep. kit 81200709
36	81200218	3	SUCTION VALVE DISC	Part of valve rep. kit 81200709
37	80200226	6	O-RING	Part of valve rep. kit 81200709
38	81200207	3	VALVE BODY	
39	80200339	3	O-RING	Part of valve rep. kit 81200709
40	81200464	3	DISCHARGE VALVE ASSEMBLY	Part of valve rep. kit 81200709
41	80300224	3	SPRING DISCHARGE VALVE	Part of valve rep. kit 81200709
42	81200209	3	DISCHARGE VALVE GUIDE	
43	81200335	1	COVER FOR COOLING SYSTEM	
44	81200334	2	COOLING PIPE ASSEMBLY	
45	83400522	0,5m	HOSE	
46	81200700	3	SEAL KIT PLUNGER (3 required to overhaul pump)	
47	80500095	1	QUICK COUPLING	
48	81200332	1	COOLING PIPE	

**CD50-HD50 TRAILER SERIES WATER-BLASTER
PUMP SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
49	80500341	1	PLUG
50	81200333	3	NIPPLE FOR COOLING PIPE
51	80200340	3	O-RING

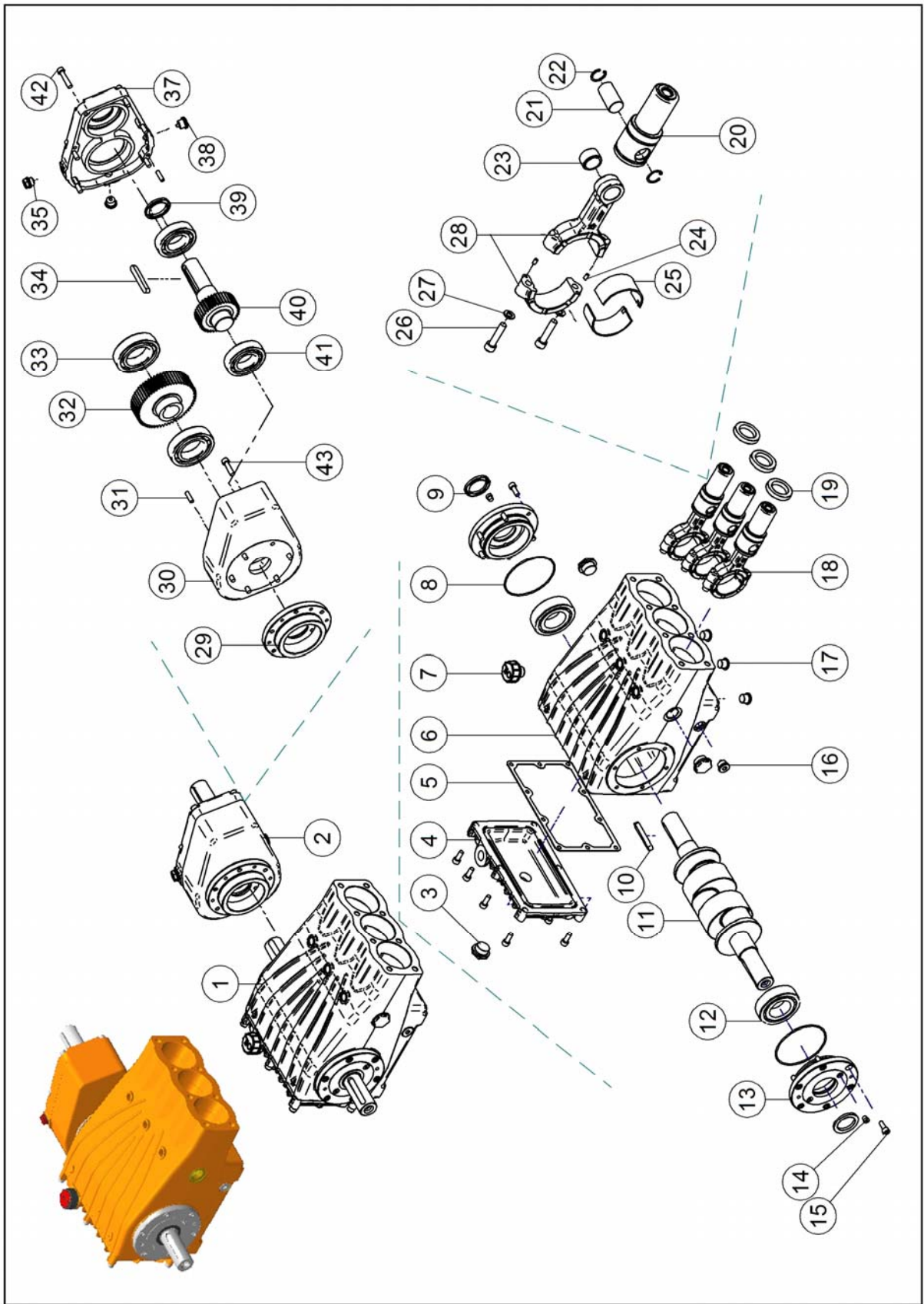
***) Part-number is applicable for machines after serial number 0400890109 and 406120109 being produced from Jan 2009.**

PUMP SPARE-PARTS KITS

Item No./Kit Description *	Pos.	Item No.	Qty.	Description
81200700 / SEAL KIT PLUNGER Ø18 CD50-500 Pos. 46	8	81200457	1	BACK UP RING
	9	81200327	1	PACKING BACK
	10	81200326	1	PACKING FRONT

Item No./Kit Description	Pos.	Item No.	Qty.	Description
81200709 / VALVE REP. KIT PUMP CD50 3 required to overhaul pump	35	80300223	1	SPRING SUCTION VALVE
	36	81200218	1	SUCTION VALVE
	37	80200226	2	O-RING
	39	80200339	1	O-RING
	40	81200464	1	DISCHARGE VALVE ASSY.
	41	80300224	1	SPRING DISCHARGE VALVE

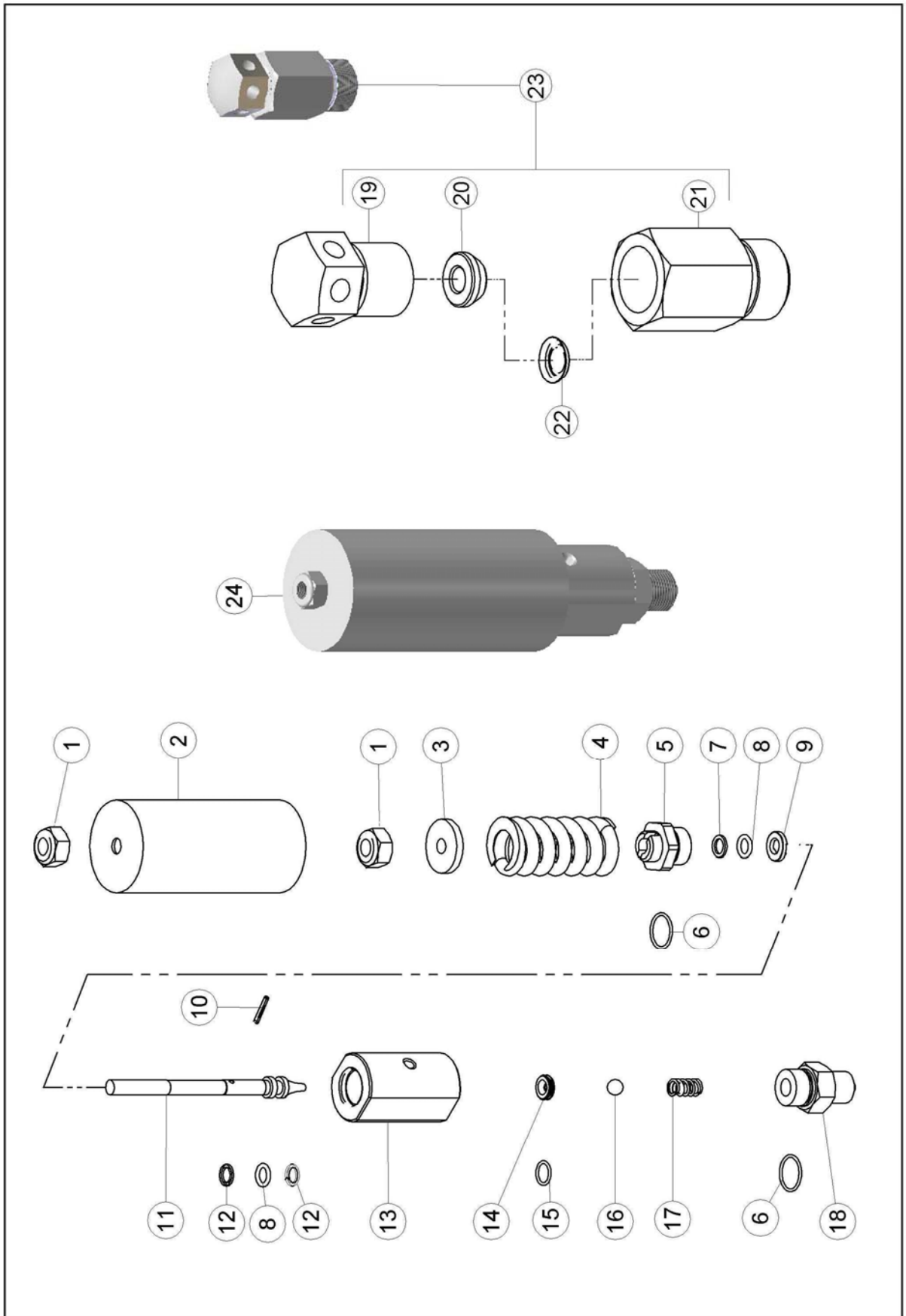
CD50-HD50 TRAILER SERIES WATER-BLASTER POWER END SPARE-PARTS ASSEMBLY



**CD50-HD50 TRAILER SERIES WATER-BLASTER
POWER END SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81200202	1	POWER END
2	81201463	1	GEAR BOX COMPLETE
3	81200365	3	OIL LEVEL GLASS
4	81200369	1	OIL COVER
5	81200371	1	PACKING
6	81200348	1	BODY
7	81200349	1	OIL FILL
8	80200354	2	O-RING
9	80200353	2	SEAL
10	81200368	1	KEY
11	81200359	1	CRANK SHAFT
12	80400355	2	BEARING
13	81200352	2	COVER
14	81200358	4	PLUG
15	80100194	22	SCREW
16	81200350	2	PLUG OIL DRAIN
17	81200351	3	PLUG
18		3	ARM (see details)
19	80200595	3	SEAL
20	81200360	3	GUIDE PISTON
21	81200361	3	PIN
22	80300363	6	SNAP RING
23	81200362	3	BUSHING
24	81200370	6	PIN
25	81200364	6	BEARING SHELL
26	80100367	6	SCREW
27	80100170	6	WASHER
28	81200366	3	CONNECTING ROD
29	81200352	1	FLANGE FOR GEAR BOX
30	81201458	1	HOUSING FOR GEAR BOX
31	81201459	2	PIN
32	81201460	1	CROWN GEAR WHEEL
33	80400627	2	BEARING
34	81200368	1	KEY PUMP C40
35	81201461	1	PLUG
37	81201464	1	COVER FOR GEAR BOX HOUSING
38	81200350	2	PLUG OIL DRAIN
39	80200353	1	SEAL POWER END
40	81201462	1	PINION
41	80400628	2	BEARING
42	80100746	6	SCREW
43	80100860	6	SCREW

**CD50-HD50 TRAILER SERIES WATER-BLASTER
SAFETY VALVE & RUPTURE DISC SPARE-PARTS ASSEMBLY**



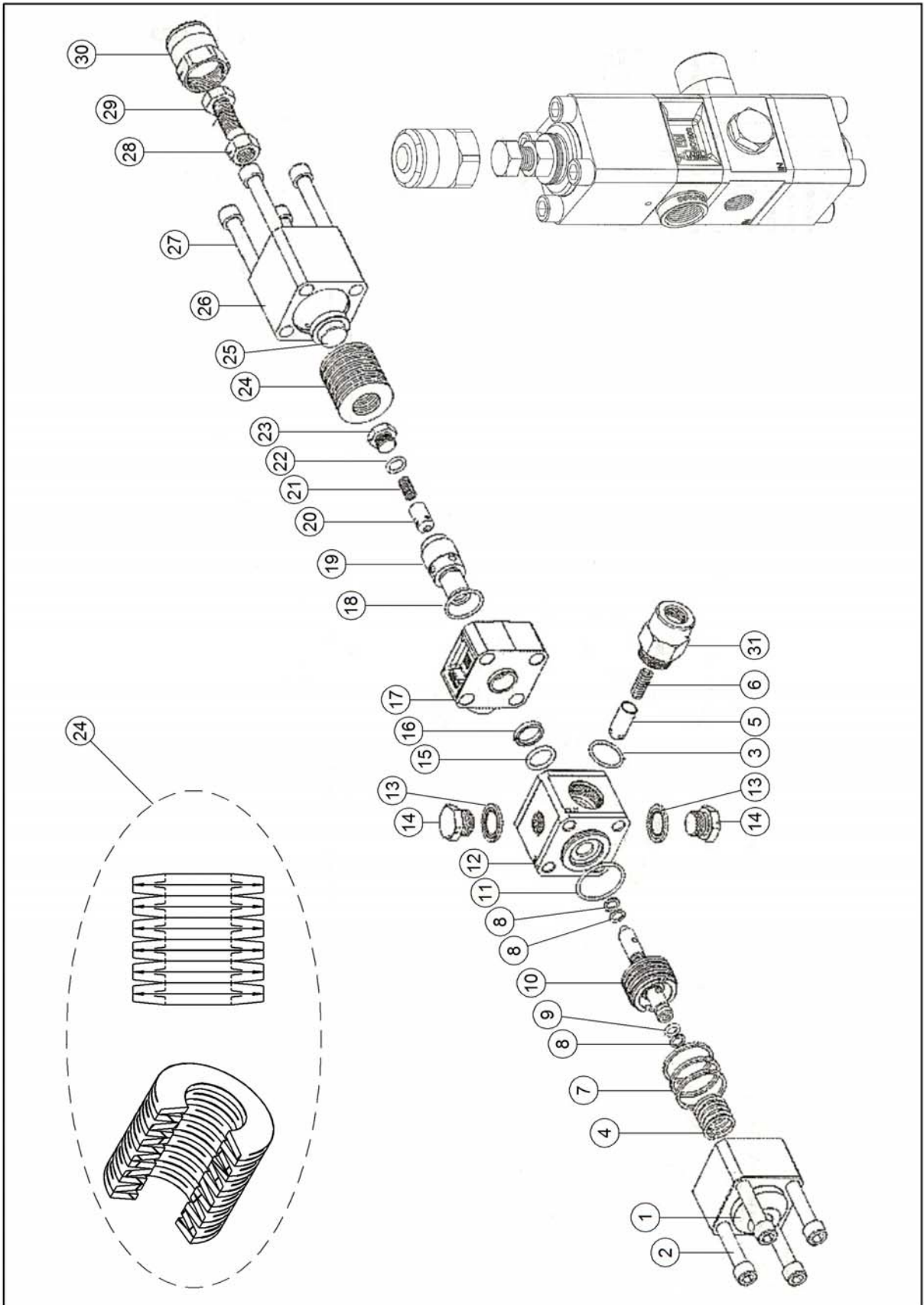
**CD50-HD50 TRAILER SERIES WATER-BLASTER
SAFETY VALVE SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	80100449	2	NUT
2	81300453	1	COVER
3	81300550	1	SPRING GUIDE
4	80300549	1	SPRING BLACK
5	81300451	1	PISTON HOUSING
6	80200599	2	O-RING Part of rep. kit 81300630
7	80200604	1	BACK UP RING Part of rep. kit 81300630
8	80200598	2	O-RING Part of rep. kit 81300630
9	81300415	1	WASHER
10	81300551	1	PIN
11	81300450	1	PISTON
12	80200452	2	BACK-UP RING Part of rep. kit 81300630
13	81300410	1	SAFETY VALVE HOUSING
14	81300414	1	SEAT Part of rep. kit 81300630
15	80200597	1	O-RING Part of rep. kit 81300630
16	81300559	1	BALL Part of rep. kit 81300630
17	80300555	1	SPRING
18	81300409	1	NIPPLE ADAPTOR
19	81300641	1	RUPTURE DISC THRUST SCREW
20	81300642	1	RUPTURE DISC SEAT
21	81300640	1	RUPTURE DISC HOLDER
22	81300645	1	RUPTURE DISC 11000 PSI WHITE W.P. 500 BAR
22	81300646	1	RUPTURE DISC 15000 PSI BLANK W.P. 800 BAR
22	81300677	1	RUPTURE DISC 18000 PSI GREEN W.P. 1000 BAR
22	81300647	1	RUPTURE DISC 21000 PSI YELLOW W.P. 1250 BAR
22	81300702	1	RUPTURE DISC 25000 PSI PURPLE W.P. 1380 BAR
23	81300644	1	RUPTURE DISC ASSEMBLY W/O RUPTURE DISC
24	81300498	1	SAFETY VALVE COMPLETE

SAFETY VALVE REPAIR KIT

Item No./Kit Description	Pos.	Item No.	Qty.	Description
81300630 REP. KIT SAFETY VALVE	6	80200599	2	O-RING
	7	80200604	1	BACK UP RING
	8	80200598	2	O-RING
	12	80200452	2	BACK-UP RING
	14	81300414	1	SEAT
	15	80200597	1	O-RING
	16	81300559	1	BALL

CD50-HD50 TRAILER SERIES WATER-BLASTER UNLOADER SPARE-PARTS ASSEMBLY



**CD50-HD50 TRAILER SERIES WATER-BLASTER
UNLOADER SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81300806	1	VALVE BODY – LOWER
2	80100892	4	SCREW
3	80200807	1	O-RING Part of rep. kit 81300790
4	80300634	1	SPRING Part of rep. kit 81300790
5	81300796	1	CHECK VALVE Part of rep. kit 81300790
6	80300636	1	SPRING Part of rep. kit 81300790
7	81300792	3	PISTON RING Part of rep. kit 81300790
8	80200452	3	BACK UP RING Part of rep. kit 81300790
9	80200725	1	O-RING Part of rep. kit 81300790
10	81300793	1	PISTON Part of rep. kit 81300790
11	80200805	1	O-RING Part of rep. kit 81300790
12	81300807	1	CHECK VALVE HOUSING
13	80500429	2	BONDED SEAL
14	80500617	2	PLUG
15	80200804	1	O-RING Part of rep. kit 81300790
16	80200797	1	ANTIEXTRUSION RING Part of rep. kit 81300790
17	81300808	1	VALVE BODY – INTERMEDIATE
18	80200806	1	O-RING Part of rep. kit 81300790
19	81300794	1	VALVE SEAT Part of rep. kit 81300790
20	81300795	1	VALVE STEM Part of rep. kit 81300790
21	80300637	1	SPRING Part of rep. kit 81300790
22	80200606	1	O-RING Part of rep. kit 81300790
23	80501064	1	PLUG
24	80100896	12	BELLEVILLE WASHER
25	81300809	1	SPRING PLATE
26	81300810	1	VALVE BODY – TOP
27	80100893	4	SCREW
28	80100968	1	NUT
29	80100913	1	SCREW
30	81300811	1	PLUG
31	81300812	1	NIPPLE REDUCTION

**CD50-HD50 TRAILER SERIES WATER-BLASTER
UNLOADER REP. KIT SPARE-PARTS LIST**

Item No./Kit Description	Pos.	Item No.	Qty.	Description
81300790 REP. KIT UNLOADER BKX 600	3	80200807	1	O-RING
	4	80300634	1	SPRING
	5	81300796	1	CHECK VALVE
	6	80300636	1	SPRING
	7	81300792	3	PISTON RING
	8	80200452	3	BACK UP RING
	9	80200725	1	O-RING
	10	81300793	1	PISTON
	11	80200805	1	O-RING
	15	80200804	1	O-RING
	16	80200797	1	ANTIEXTRUSION RING
	18	80200806	1	O-RING
	19	81300794	1	VALVE SEAT
	20	81300795	1	VALVE STEM
	21	80300637	1	SPRING
22	80200606	1	O-RING	

WIRING DIAGRAM

