



**CD160-1000
WATER BLASTER**

**Sisu Diesel Driven
Motor Pump Unit
MECHANICAL BOOSTER PUMP**

**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:	CD160-1000
Data:	
Pressure [Bar]	1000
[Psi]	14500
Flow [L/min]	60
US Gpm	15,8
Power [Hp]	160
[Kw]	115
Fuel	Diesel
Engine Speed [Rpm min ⁻¹]	1800
Dimensions LxWxH [mm]	1700 x 2100 x 1700 (Depending on Frame Build)
Weight [Kg]	2000 (Depending on Frame Build)

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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 machine:

CD160-1000 standard & sea water

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: August 2017

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

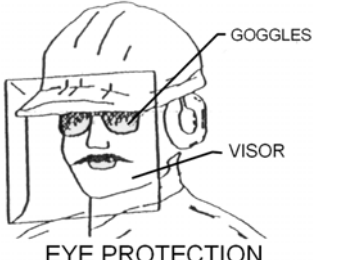
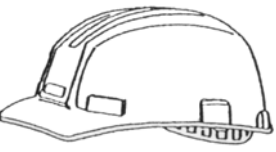

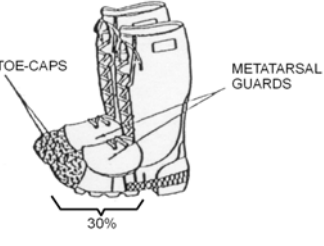

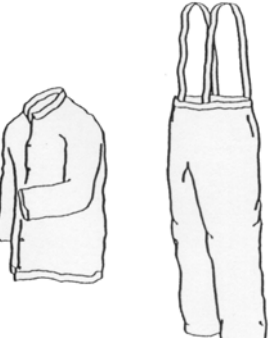
Precautions must be made to keep bystanders away from the working range. Especially when pulling the trigger as sudden reaction forces can make changes in the direction of the jet. NEVER spray-jet on humans or live animals, the high pressure jet can cause severe injury and/or death.

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 them selves 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.

<p>MEDICAL ALERT</p> <p>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.</p> 
<p>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.</p>  <p>DEN-JET Nordic A/S Terndrupvej 7, Astrup, DK-9510 Arden, Denmark Tel: +45 98 55 88 68 Fax: +45 98 55 88 18 www.denjet.com</p>

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 cylinder-head. 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 back of the water tank. 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:

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



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 (+20°C to 65°C Ambient temp.) Examples: Shell Tellus 220, Esso Nuto 220, Texaco Regal EP220 Statoil: Loadway XA220</i></p> <p><i>Use an Industrial purpose 150 Oil (+5°C to 30°C Ambient temp.) Use an Industrial purpose 100 Oil (-20°C to 5°C Ambient temp.)</i></p> <p><i>Quantity: 10 Liter including reduction gearbox.</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 non-alcoholic antifreeze fluid.</i></p> <p><i>Take of minus pole on battery for long time storage.</i></p> <p><i>Maintenance charge battery regularly.</i></p>

Trouble shooting and repair, unit:

Problem	<i>Repair</i>
When the key is turned the engine will not crank	<i>Start battery not charged enough to crank engine.</i> Charge battery (12 Volt)
The engine cranks but will not start.	<i>Empty diesel tank, clogged diesel fuel filter.</i> Fill diesel tank Change fuel filter. 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
The pressure drops and the Water-blaster works irregularly.	<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> 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.
The Water-blaster continues jetting at high pressure when trigger is released. The Water-blaster is running at high pressure when trigger is released and no jetting.	<i>The Gun valve is stuck by dirt and indicate That the filter or hoses has not been clean before assembly</i> Replace gun rep kit and ensure that system is flushed at low pressure before mounting nozzle <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.
The Water-blaster does not reach the right working pressure when the trigger handle is activated.	<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> Turn of the water-blaster. Inspect for leakage. Replace the nozzle. Set the safety valve, repair if necessary. Change rupture disc. Change packings.
The Water-blaster works with approximately 2/3 of the maximum pressure, and the high-pressure hose is vibrating.	<i>There are dirt in the valves.</i> 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.

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 / cleaning the bag filter cartridge:

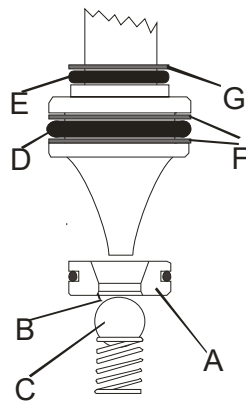
Drain the water from the tank as described above. Unscrew the 4 hexagon screws on top of the round filter cartridge located beneath the water tank.

Take out the filter bag cartridge. Empty and clean the bag. Discard the bag if damaged. Flush the filter housing with water. Refit cleaned or new filter bag into the filter housing, ensure the length of the filter is correct, measured against the discarded bag. Clean and put O-ring back in place. Mount the filter housing and tighten the hexagon screws.

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

Overhauling and adjusting safety valve:

Dismantle the 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 safety valve again.

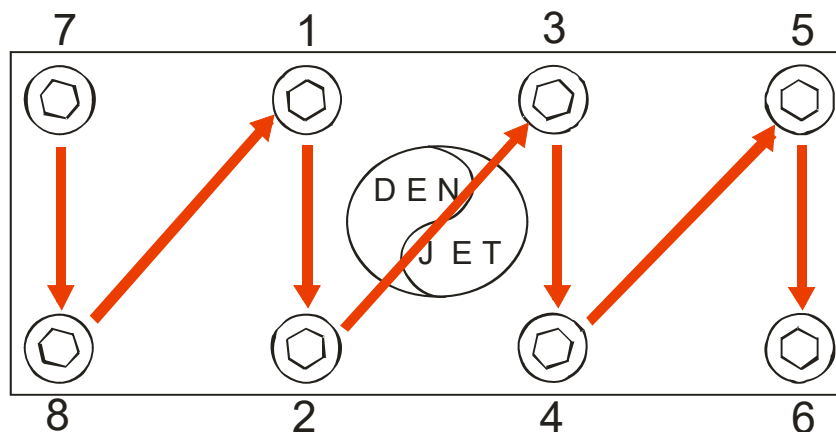


Re-adjust the safety valve by running the machine with a correctly sized nozzle. Pull the trigger and start tighten the nut for the thick black spring, until there is no leak from the safety valve.

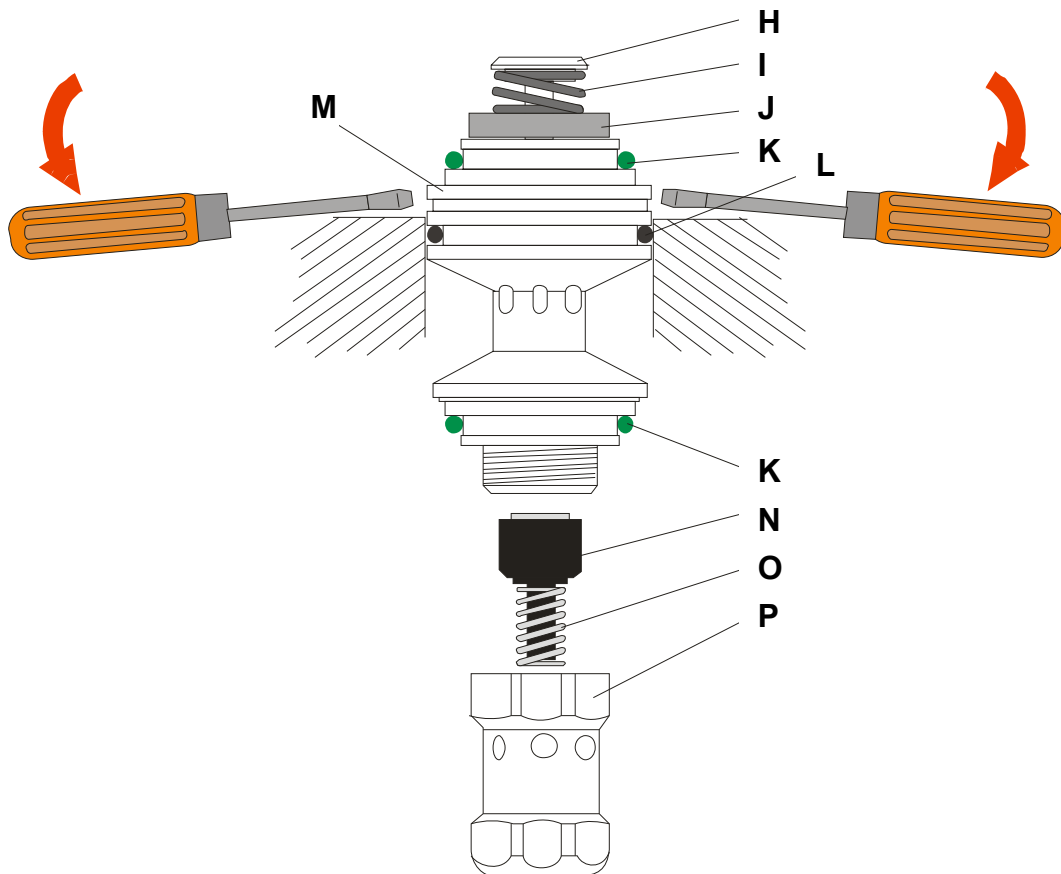
Make sure the black spring still has movement allowance after setting the correct pressure. The correct working pressure is regulated by the size of the nozzle, and the nozzle should never be too small.

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:

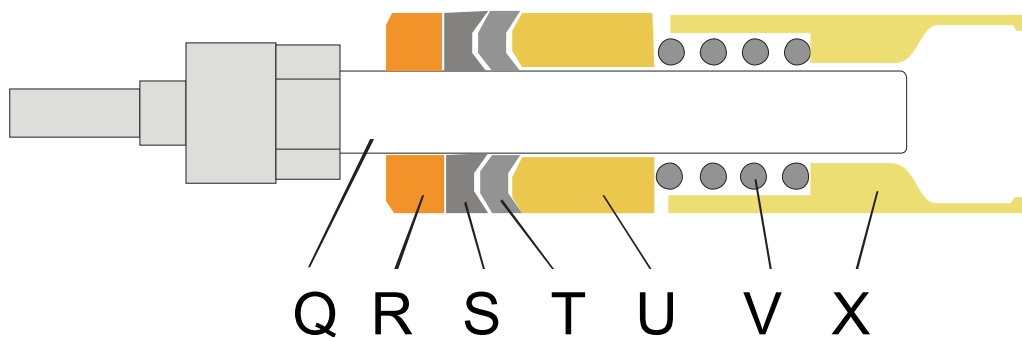


Dismantle the valve assembly by clamping on the spanner face of the valve-body M And unscrewing H and P.

Check the mating surfaces of the inlet valve disc J and the body M, and the outlet valve N and the body M. 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 is too severe for touch up, replace items. Ensure O-rings and packings K and L are in good condition, replace if worn. Re-assemble the valve, be careful not to over-tighten the screw H. Push the assembled valve back into the cylinder-head.

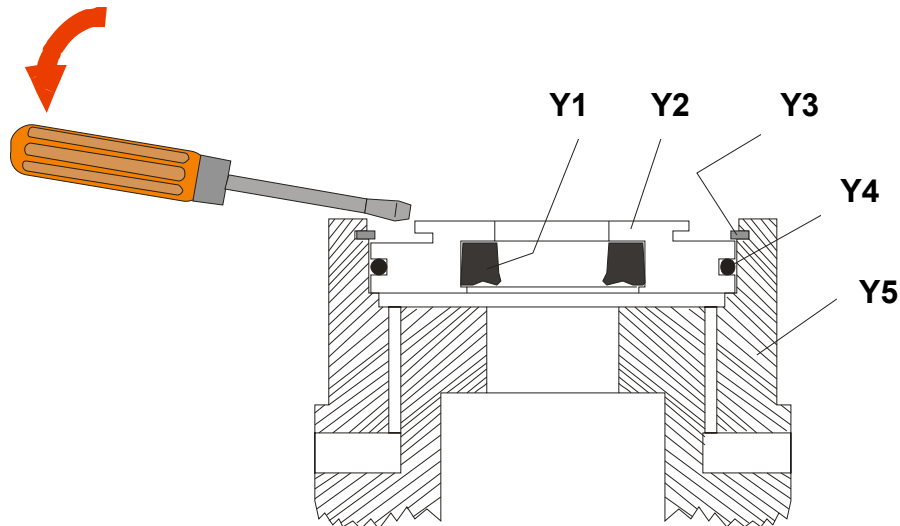
Changing Packing and Plungers:

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 R until X will follow inside each cylinder. The plungers will remain on the crossheads extensions.



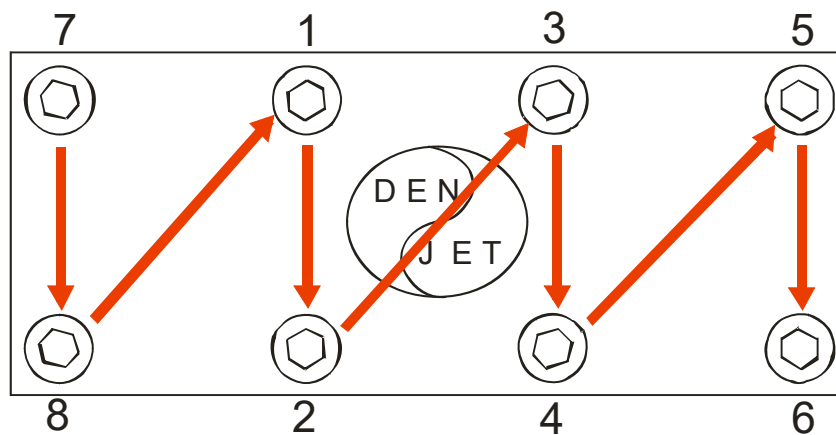
Unscrew the big retainer nut Y3 at the back of the cylinder Y 5. Remove cooling plate Y 2. Gently knock out all the internal parts in the cylinder R until X. Inspect the wear parts R, S and T replace if necessary.

Unscrew the plunger Q using the supplied orange “Z” shaped spanner. Inspect plunger surface and replace if necessary. Ensure the low pressure cooling seal Y1 is in good condition, replace both Y1 and Y4 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

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 SAE10W/30 or SAE 10W/40(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 Quantity: 10 Liter</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: 81000853)</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: 81000865)</i></p>
Diesel Fuel filter	<p><i>Diesel fuel filter should be changed every 400 Hours (Part number: 81000852)</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 15 Liters of fluids.</i></p>

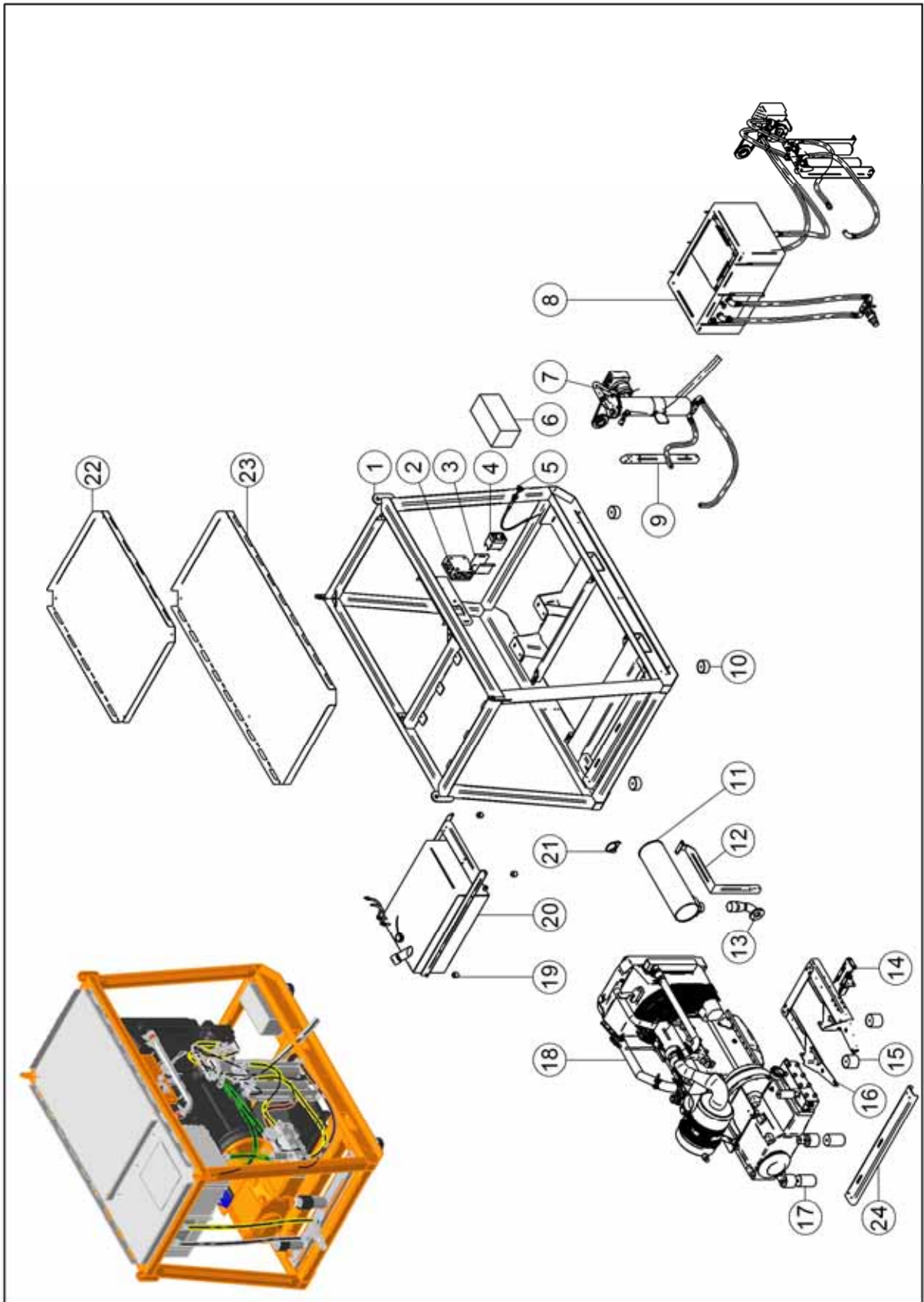
Trouble shooting / Repair, Diesel Engine:

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>
Engine temperature too High.	<p><i>Low level in radiator / cooling system.</i> CAUTION when opening. Steam boiling water may escape. Fill up radiator.</p> <p><i>Blocked air intake outlet grille.</i> Remove obstruction.</p> <p><i>Engine is overloaded.</i> Reduce Load.</p> <p><i>Fan belt (water pump belt) is broken.</i> Replace fan belt.</p> <p><i>Electric fan is not running.</i> Fault in electric circuit</p> <p><i>Faulty thermostat in lower cooling hose.</i></p> <p><i>Fuel injection timing wrong (Retarded)</i> Set correct timing.</p> <p><i>Water cooling system pump faulty.</i> Replace pump.</p>

Trouble shooting / Repair, Diesel Engine:

Problem	<i>Cause / Repair</i>
Engine is not charging the battery	<i>Fault in the alternator / Alternator circuit</i> Find fault and rectify. Battery is faulty.
Engine stops suddenly	<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>
Abnormal noise	<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>

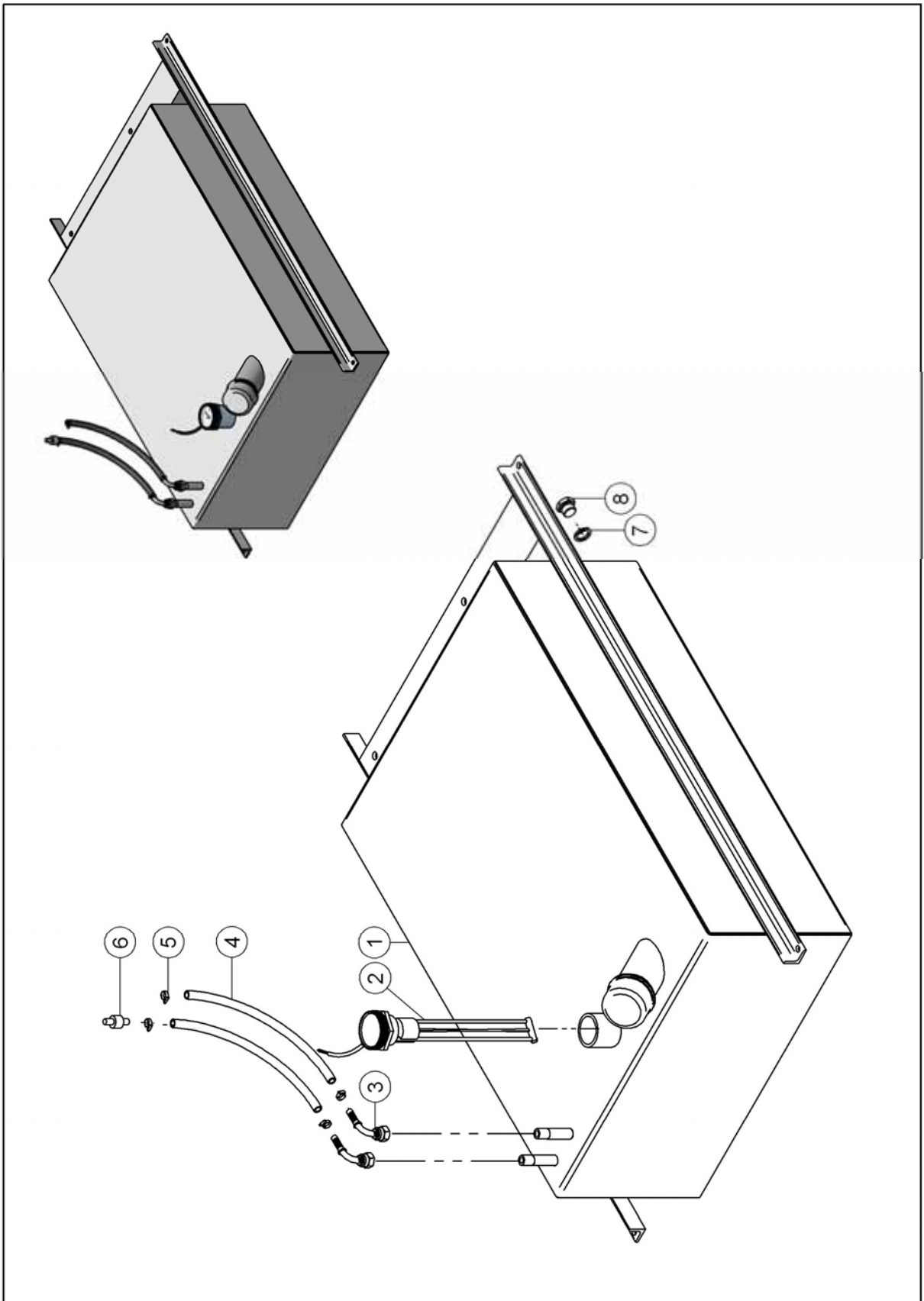
CD160-1000 SERIES WATER-BLASTER MAIN SPARE-PARTS ASSEMBLY



**CD160-1000 SERIES WATER-BLASTER
MAIN SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81001363	1	FRAME
2	81100864	1	JUNCTION EL-BOX (optional)
3	81000765	1	BRACKET ENGINE CONTROL
4	81100845	1	ENGINE CONTROLLER
5	81100846	1	THROTTLE CABLE
6	81101015	1	BATTERY
7	N/A	1	WATER SYSTEM SEA WATER (rubber impeller booster pump – bag filter)
8	N/A	1	WATER STANDARD SYSTEM (centrifugal booster pump - cartridge filter)
9	81001335	1	HOLDER SQUARE ROD for pos.7
10	81000935	4	RUBBER FOOT
11	81000929	1	MUFFLER
12	81001289	1	BRACKET FOR ENGINE EXHAUST
13	81001549	1	EXHAUST FLEX CONNECTOR
14	81001200	1	BRACKET UNIVERSAL BOOSTER PUMP
15	81000934	2	RUBBER FOOT
16	81001267	1	BRACKET HOLDER FOR RADIATOR
17	81001080	2	DISTANCE BUSHING RUBBER MOUNT
18	N/A	1	CD160-1000 MOTOR PUMP UNIT
19	81000857	4	RUBBER DAMPENER
20	81000886	1	FUEL TANK
21	80100938	2	CLAMP EXHAUST
22	81000892	1	ROOF PLATE (used with pos.8)
23	81001301	1	ROOF PLATE FULL COVERAGE (used with pos.7)
24	81001544	1	FRAME - PUMP SUPPORT
N/A	81101272	1	EMERGENCY STOP

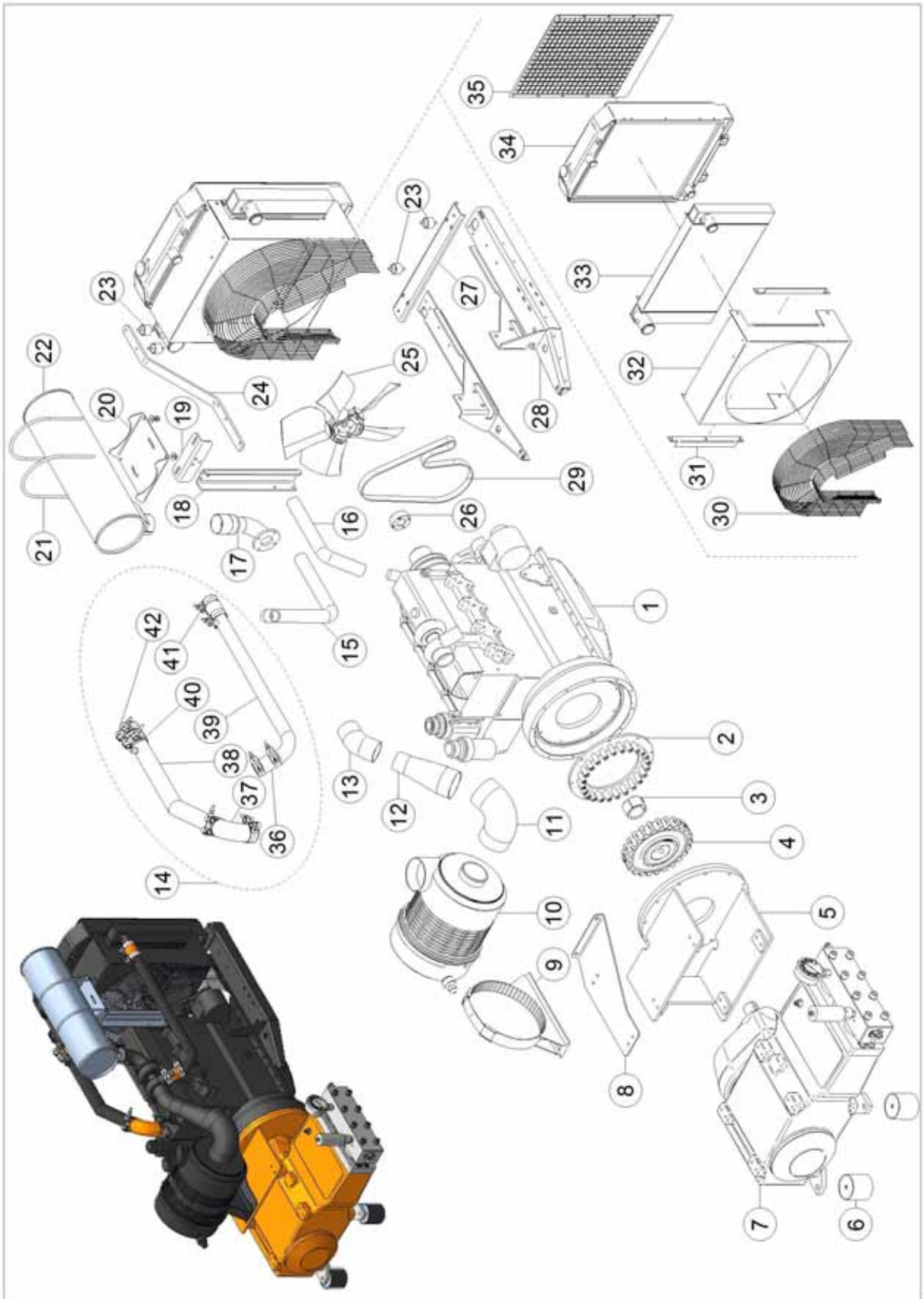
**CD160-1000 SERIES WATER-BLASTER
FUEL TANK SPARE-PARTS ASSEMBLY**



**CD160-1000 SERIES WATER-BLASTER
FUEL TANK SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81000886	1	FUEL TANK
2	81101187	1	LEVEL GAUGE
3	84000601	2	HOSE END
4	83400623	3m	RUBBER HOSE
5	80100904	6	HOSE CLIP
6	81100906	1	CONTRA VALVE
7	80500429	1	BONDED SEAL
8	80500617	1	PLUG

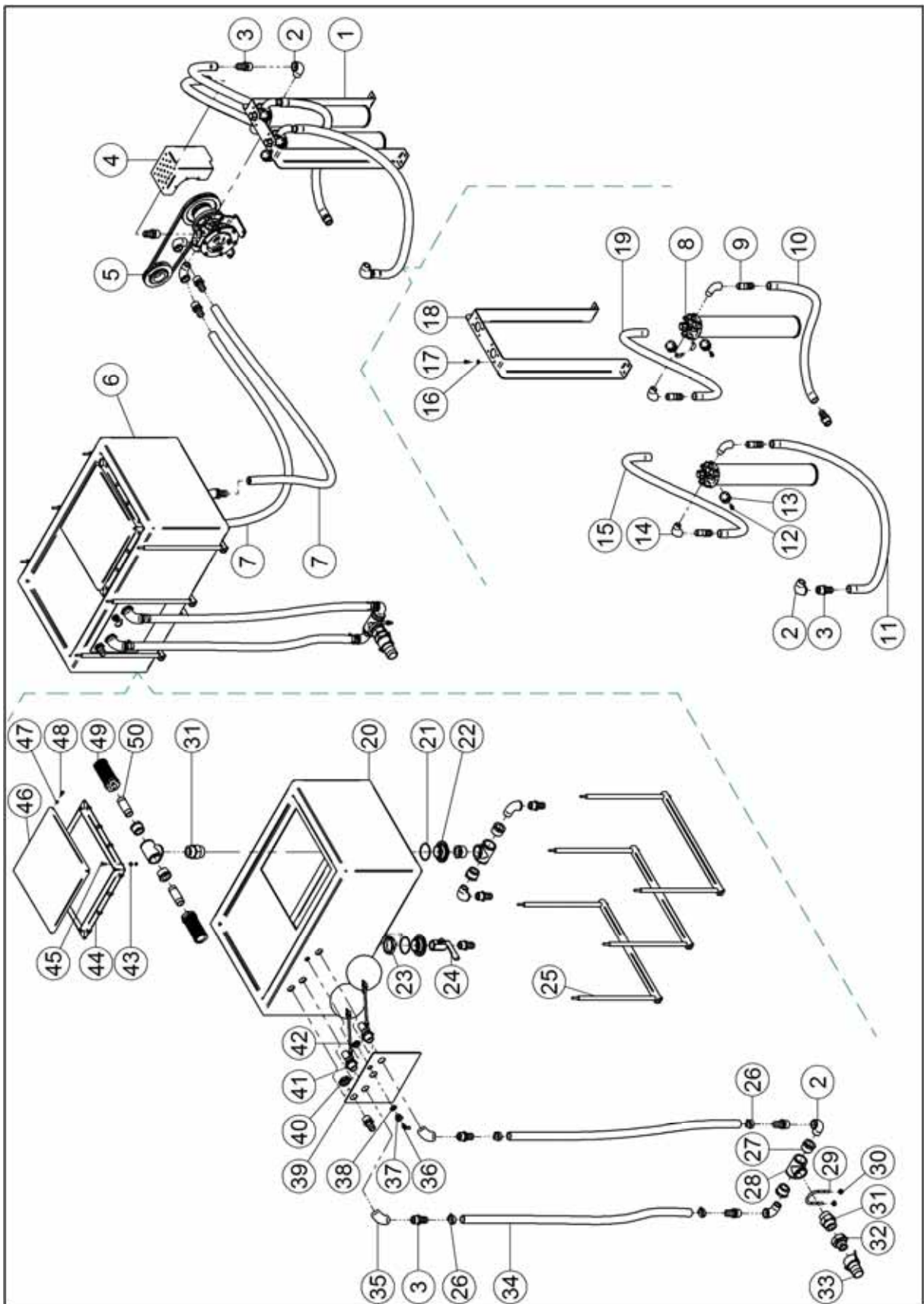
CD160-1000 SERIES WATER-BLASTER ENGINE SPARE-PARTS ASSEMBLY



**CD160-1000 SERIES WATER-BLASTER
ENGINE SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81101175	1	ENGINE 4 CYLINDER SISU DTAG49
2	81001650	1	COUPLING FLANGE COMPLETE
3	81000884	1	TAPER BUSH
4	81001649	1	RUBBER ELEMENT COUPLING
5	81000883	1	BELL HOUSING
6	81000934	2	RUBBER FOOT
7	81201086	1	PUMP
8	81001199	1	BRACKET AIR FILTER HOLDER
9	N/A	1	AIR FILTER HOLDER
10	81000865	1	AIR FILTER COMPLETE
11	81001318	1	ELBOW RUBBER
12	81001337	1	REDUCER CONE
13	81001316	1	ELBOW RUBBER
14	81001450	1	AIR PIPE TURBO SET
15	81001227	1	RUBBER HOSE RADIATOR - MOTOR
16	81001228	1	RUBBER HOSE MOTOR - RADIATOR
17	81001549	1	EXHAUST CONNECTOR
18	81001756	1	BRACKET FOR UPRIGHT MUFLER
19	81001757	1	TOP BRACKET FOR UPRIGHT MUFLER
20	81001758	1	SUPPORT BRACKET FOR MUFLER
21	80101151	2	U-BOLT SS M10 Ø210
22	81000929	1	EXHAUST
23	81000857	4	RUBBER DAMPENER
24	81001755	1	RADIATOR SUPPORT
25	81101219	1	FAN
26	81001298	1	BUSHING FOR FAN
27	81001709	1	TRAVERSE BRACKET FOR RADIATOR CD100/160
28	81001267	1	BRACKET- RADIATOR
29	81001361	1	MULTI RIB FAN BELT
30	81001224	1	RADIATOR NET
31	81001332	2	WASHER PLATE BETWEEN RADIATORS
32	81001225	1	RADIATOR GUARD
33	81001218	1	INTERCOOLER
34	81001217	1	RADIATOR
35	81001334	1	RADIATOR GUARD NET
36	83400666	1	RUBBER CONNECTOR MOTOR - INTERCOOLER
37	81001202	1	ELBOW RUBBER
38	81001668	1	PIPE INTERCOOLER - MOTOR
39	81001667	1	PIPE MOTOR - INTERCOOLER
40	83400667	1	RUBBER CONNECTOR INTERCOOLER - MOTOR
41	83400665	1	RUBBER CONNECTOR MOTOR - INTERCOOLER
42	80100891	8	CLIP
n/a	80100938	2	CLAMP- EXHAUST
n/a	N/A		FILTER INSERT AIR INTAKE
n/a	81001210	1	OIL FILTER
n/a	81001212	1	DIESEL FUEL PRE. FILTER
n/a	81001213	1	DIESEL FUEL MAIN FILTER
n/a	81101229	1	WIRING HARNESS 4 CYL (set)
n/a	81101211	1	OIL PRESSURE SWITCH
n/a	81101193	1	TEMPERATURE SENSOR
n/a	81100968	1	BATTERY POLE POSITIVE
n/a	81100969	1	BATTERY POLE NEGATIVE
n/a	81001027	2	RUBBER ELEMENT

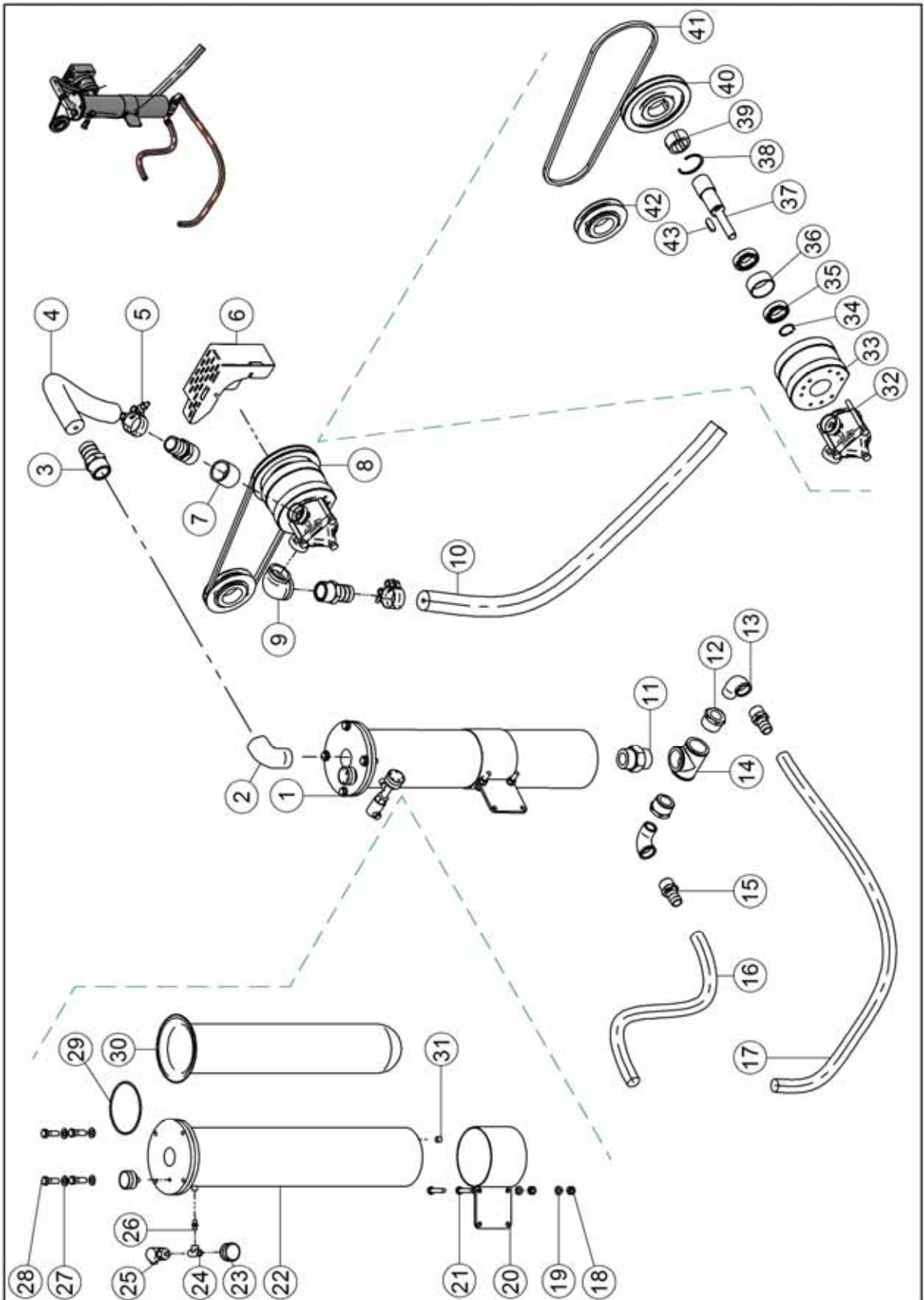
**CD160-1000 SERIES WATER-BLASTER
WATER STANDARD SYSTEM SPARE-PARTS ASSEMBLY**



**CD160-1000 SERIES WATER-BLASTER
WATER STANDARD SYSTEM SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	N/A	1	FILTER SYSTEM
2	80500237	8	ELBOW M
3	80500227	14	HOSE NIPPLE
4	81001389	1	GUARD BOOSTER PUMP
5	N/A	1	BOOSTER PUMP SYSTEM
6	N/A	1	WATER SYSTEM
7	83400524	2 x 1,5m	HOSE SUCTION
8	81000648	2	FILTER
9	80500684	4	HOSE NIPPLE
10	83400658	1m	HOSE
11	83400658	1m	HOSE
12	80500685	4	ELBOW
13	81300631	3	GAUGE
14	80500437	4	ELBOW
15	83400658	1m	HOSE
16	80100606	8	WASHER
17	80100703	8	SCREW
18	81000840	1	BRACKET
19	83400658	1m	HOSE
20	81000790	1	WATER TANK
21	80200677	2	O-RING
22	80500882	2	ADAPTOR
23	80500875	2	CONTRA NUT
24	80500660	1	BALL VALVE
25	N/A	3	HOLDER WATER TANK
26	80100527	16	HOSE CLIPS
27	80500854	8	BUSHING
28	80500943	3	TEE
29	80100617	1	U-BOLT
30	80100259	2	LOCK NUT
31	80500944	2	NIPPLE
32	80500847	1	QUICK COUPLING MALE 1 1/2 BSPP F-EVERTITE
33	80500848	1	QUICK COUPLING 1.5" HOSE EVERTITE
34	83400658	2 x 1,5m	HOSE
35	80500808	2	ELBOW
36	80500279	1	ELBOW SWIVEL
37	80500606	1	BUSHING
38	80500429	1	BONDED SEAL
39	81001079	1	BRACKET-HOLDER BALL VALVE
40	80100405	1	CONTRA NUT
41	81000428	2	FLOAT VALVE
42	80100632	1	CONTRA NUT
43	80100884	16	WASHER SS 6.4x18x1.6
44	81001220	4	BRACKET FOR LID PLASTIC TANK
45	80100965	16	SCREW CARRIAGE BOLT SS M6x20
46	81001220	1	LID FOR PLASTIC TANK
47	80100053	18	LOCK NUT M6
48	80100052	2	SCREW
49	81000199	2	FILTER STRAINER
50	80500908	2	NIPPLE

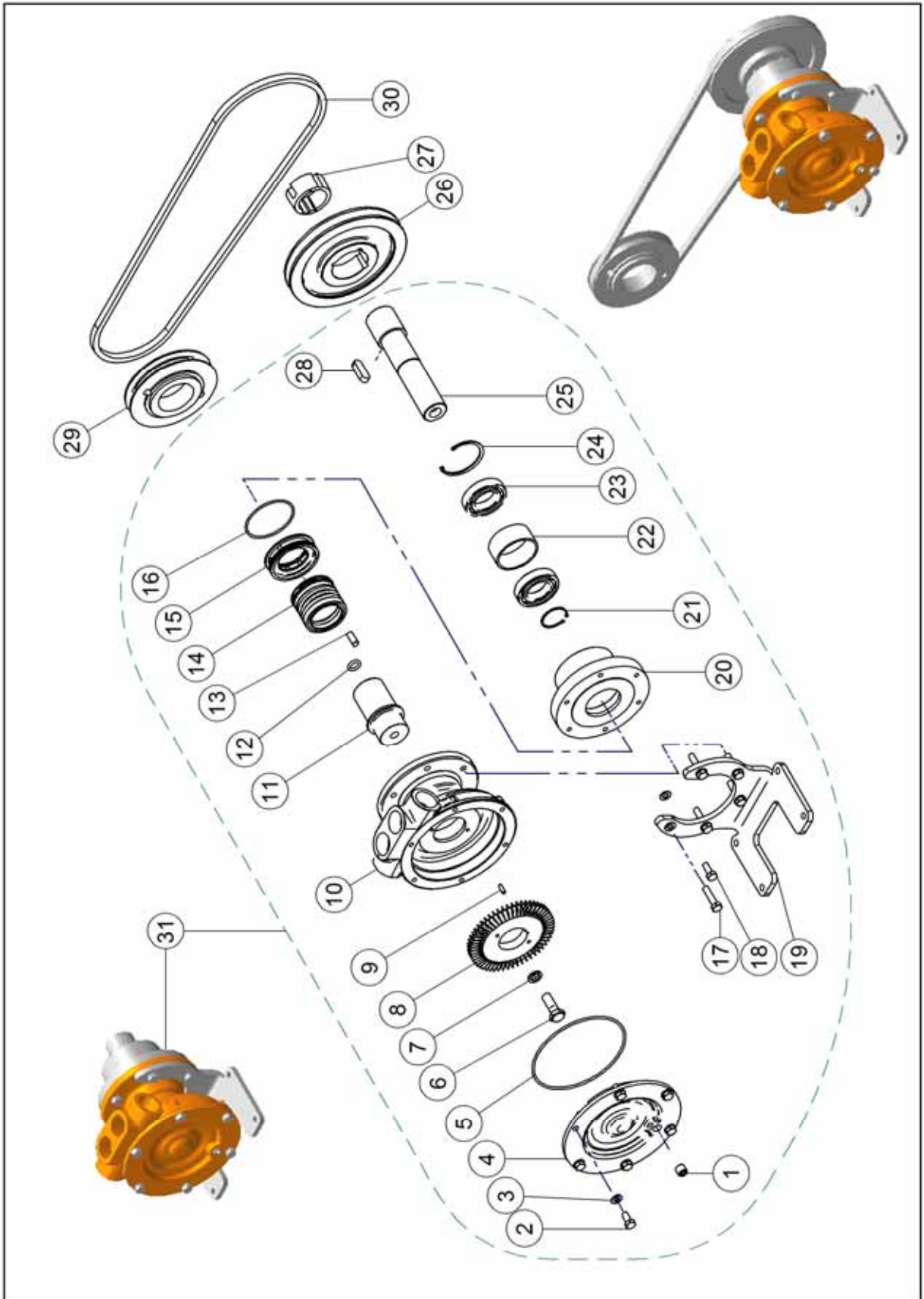
**CD160-1000 SERIES WATER-BLASTER
WATER SYSTEM SEA WATER SPARE-PARTS ASSEMBLY**



**CD160-1000 SERIES WATER-BLASTER
WATER SYSTEM SEA WATER SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	N/A	1	FILTER ASSY.
2	80500672	1	ELBOW
3	80500729	3	HOSE NIPPLE
4	83400618	1	HOSE SUCTION
5	80100756	2	HOSE CLIP
6	81001399	1	GUARD
7	80500805	1	SOCKET
8	N/A	1	BOOSTER PUMP SYSTEM
9	80500728	1	ELBOW
10	83400618	1	HOSE SUCTION
11	80500944	1	NIPPLE
12	80500854	2	BUSHING
13	80500237	2	ELBOW
14	80500943	1	TEE
15	80500227	2	HOSE NIPPLE
16	83400658	1	HOSE
17	83400658	1	HOSE
18	80100710	2	LOCK NUT
19	80100310	2	WASHER
20	81000837	1	BRACKET FOR FILTER
21	80100871	2	SCREW
22	81000813	1	FILTER HOUSING
23	81300631	2	GAUGE
24	80501029	1	TEE
25	81100844	1	PRESSURE SWITCH
26	80500675	1	NIPPLE
27	80100799	4	WASHER
28	80100168	4	SCREW
29	80200653	1	O-RING
30	81000821	1	FILTER BAG
31	80500341	1	PLUG ALLEN
32	81201251	1	BOOSTER PUMP RUBBER IMPELLER
33	81001107	1	HOUSING FOR RUBBER IMPELLER
34	80100764	1	CIRCLIP
35	80400604	2	BEARING
36	81000833	1	BUSHING
37	81001106	1	AXLE ADAPTOR
38	80100765	1	CIRCLIP
39	81000268	1	TAPER BUSH
40	81000808	1	PULLY
41	81000809	1	V-BELT
42	81000807	1	PULLY
43	81100602	1	KEY

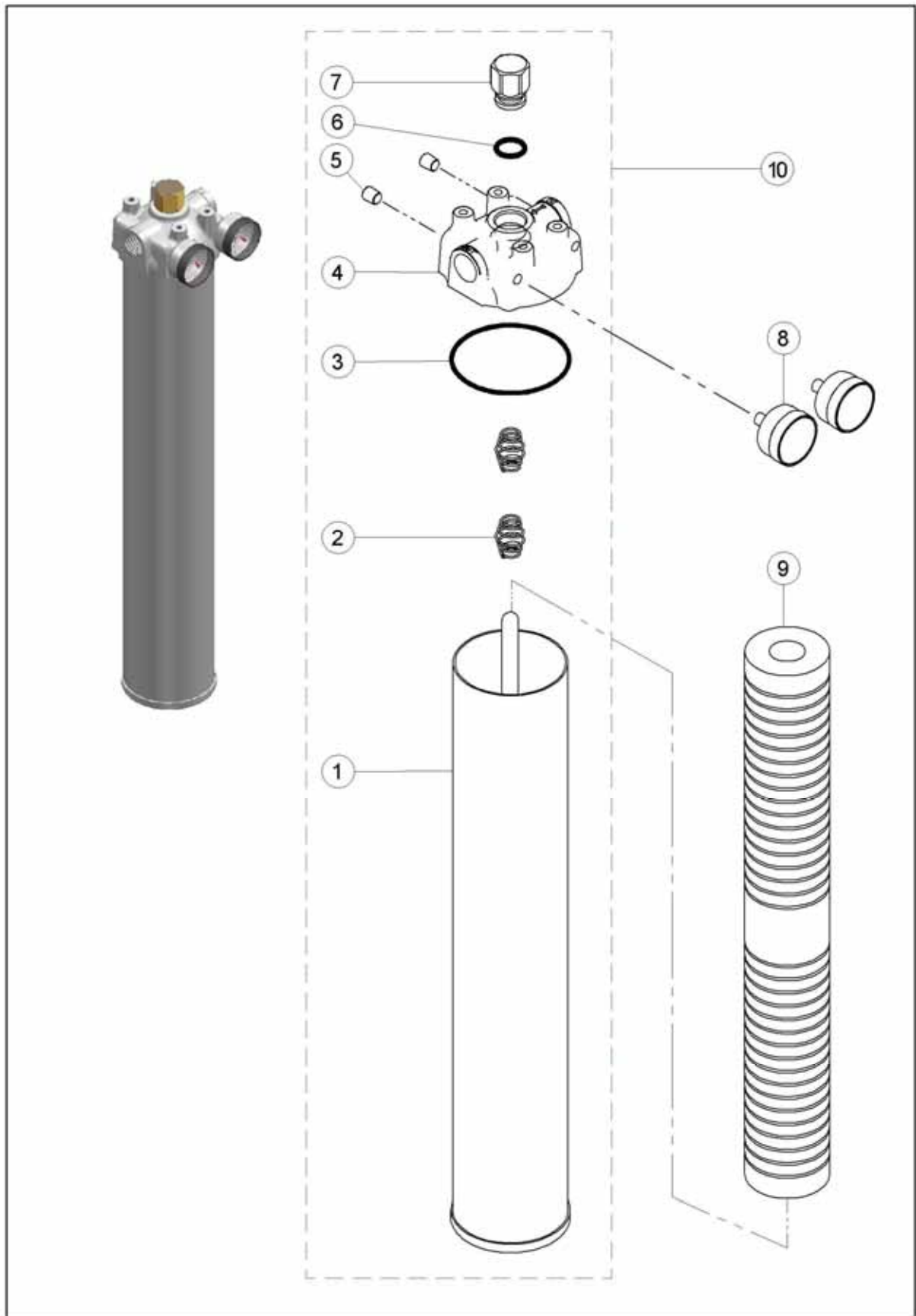
**CD160-1000 SERIES WATER-BLASTER
BOOSTER PUMP UNIT SPARE-PARTS ASSEMBLY**



**CD160-1000 SERIES WATER-BLASTER
BOOSTER PUMP UNIT SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	80500341	1	PLUG
2	80100703	6	SCREW
3	80100606	12	WASHER
4	80000162	1	END COVER
5	80200568	1	O-RING
6	80100168	1	SCREW
7	80500971	1	BONDED SEAL
8	81200172	1	IMPELLER FEED PUMP
9	81200165	1	KEY
10	81200160	1	HOUSING FEED PUMP
11	81200173	1	AXLE ADAPTOR
12	80200634	1	O-RING
13	81200164	1	KEY
14	80200157	1	MECHANICAL SEAL
15	81200163	1	DRAIN BUSHING
16	80200407	1	O-RING
17	80100704	5	SCREW
18	80100671	1	SCREW
19	81000908	1	BRACKET
20	81000832	1	BEARING HOUSING
21	80100764	1	CIRCLIP
22	81000833	1	BUSHING
23	80400604	2	BEARING
24	80100765	1	CIRCLIP
25	81000913	1	AXLE
26	81000808	1	PULLY
27	81000268	1	TAPER BUSH
28	81100602	1	KEY
29	81000807	1	PULLY
30	81001333	1	V-BELT
31	81201315	1	BOOSTER PUMP COMP. W. SHAFT

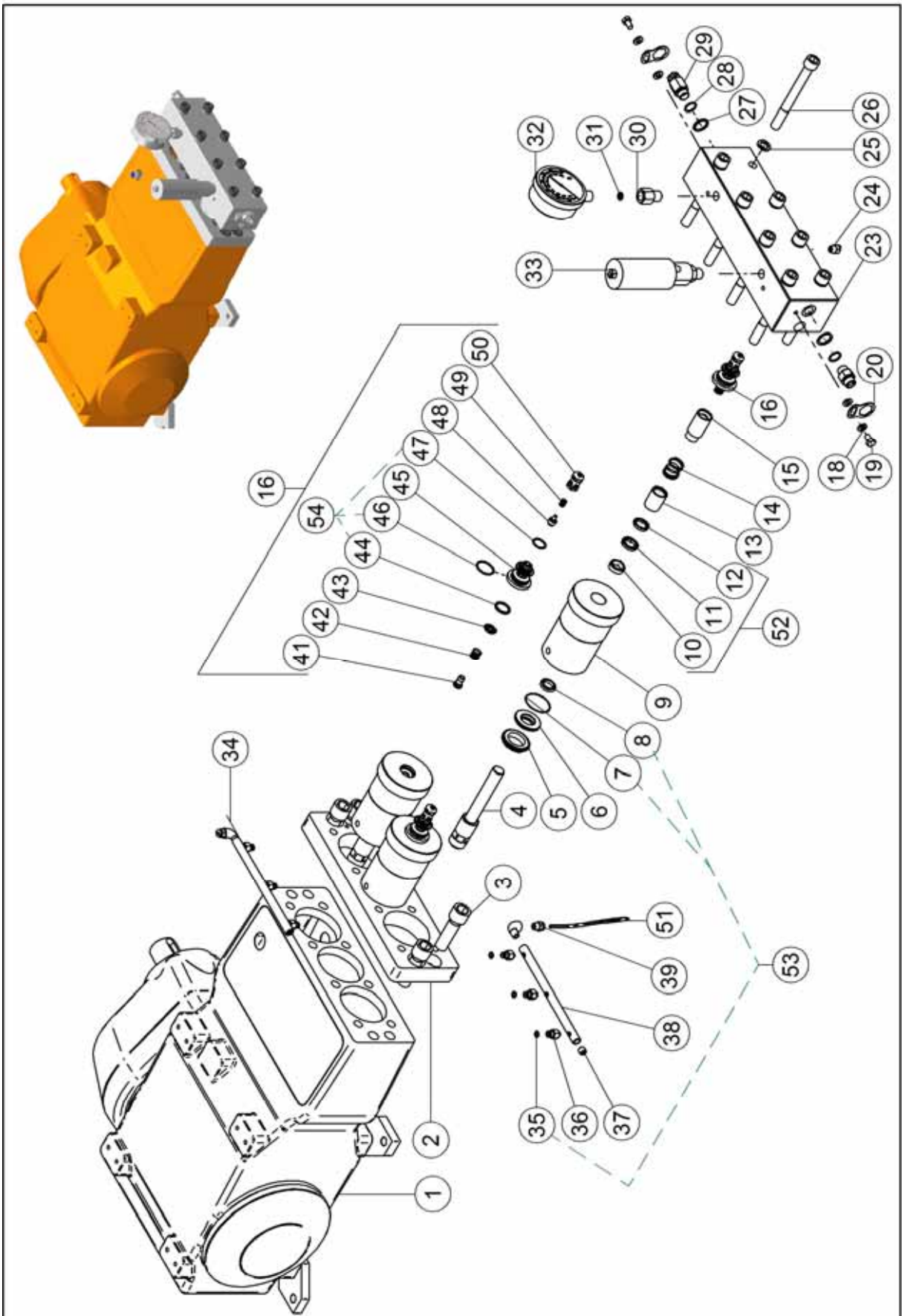
**CD160-1000 SERIES WATER-BLASTER
FILTER SPARE-PARTS ASSEMBLY**



**CD160-1000 SERIES WATER-BLASTER
FILTER SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81000638	1	HOUSING
2	80300604	2	SPRING
3	80200878	1	O-RING
4	81000650	1	TOP COVER
5	80500094	2	PLUG
6	80200491	1	O-RING
7	81000649	1	TOP SCREW
8	81300631	2	GAUGE (not included, order separate)
9	81000616	1	FILTER CARTRIDGE (not included, order separate)
10	81000648		FILTER 19.5" ASSY.

**CD160-1000 SERIES WATER-BLASTER
PUMP SPARE-PARTS ASSEMBLY**



**CD160-1000 SERIES WATER-BLASTER
PUMP SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81200962	1	POWER END
2	81201076	1	THRUST PLATE
3	80100744	4	SCREW
4	81201069	1	PLUNGER
5	81200966	1	RETAINER NUT
6	81201084	1	COOLING PLATE
7	80200222	1	O-RING Part of LP SEAL KIT 81201500 (Pos. 53)
8	80200767	1	SEAL COOLING Part of LP SEAL KIT 81201500 (Pos. 53)
9	81201079	1	CYLINDER
10	81201085	1	BACK UP RING Part of SEAL KIT 81201089 (pos. 52)
11	81201083	1	PACKING BACK Part of SEAL KIT 81201089 (pos. 52)
12	81201082	1	PACKING FRONT Part of SEAL KIT 81201089 (pos. 52)
13	81201066	1	PACKING SUPPORT
14	80300601	1	SPRING FOR PACKING HOLDER
15	81201065	1	CYLINDER BUSHING
16	81201057	1	VALVE COMPLETE
N/A	81201756	3	SHIMS SET FOR VALVE (NOT SHOWN)
17	80500904	1	NIPPLE
18	80100310	4	WASHER
19	80100706	2	SCREW
20	81200494	2	LOCK PLATE
21	80200605	1	BACK UP RING
22	80200606	1	O-RING
23	81201037	1	PUMP HEAD
24	80500095	1	QUICK COUPLING
25	80100797	8	WASHER
26	80100740	8	SCREW
27	80500696	1	BONDED SEAL RING
28	80200828	1	O-RING
29	81300644	1	RUPTURE DISC ASSEMBLY
30	81300408	1	NIPPLE ADAPTOR
31	80500413	1	COPPER SEAL
32	81300497	1	GAUGE HP
33	81300498	1	SAFETY VALVE 1000BAR COMPLETE
34	81201074	2	COOLING PIPE ASSY
35	80200340	6	O-RING Part of LP SEAL KIT 81201500 (Pos. 53)
36	81201044	6	NIPPLE FOR COOLING PIPE
37	80500341	2	PLUG
38	81201073	2	COOLING PIPE
39	80500095	2	QUICK COUPLING

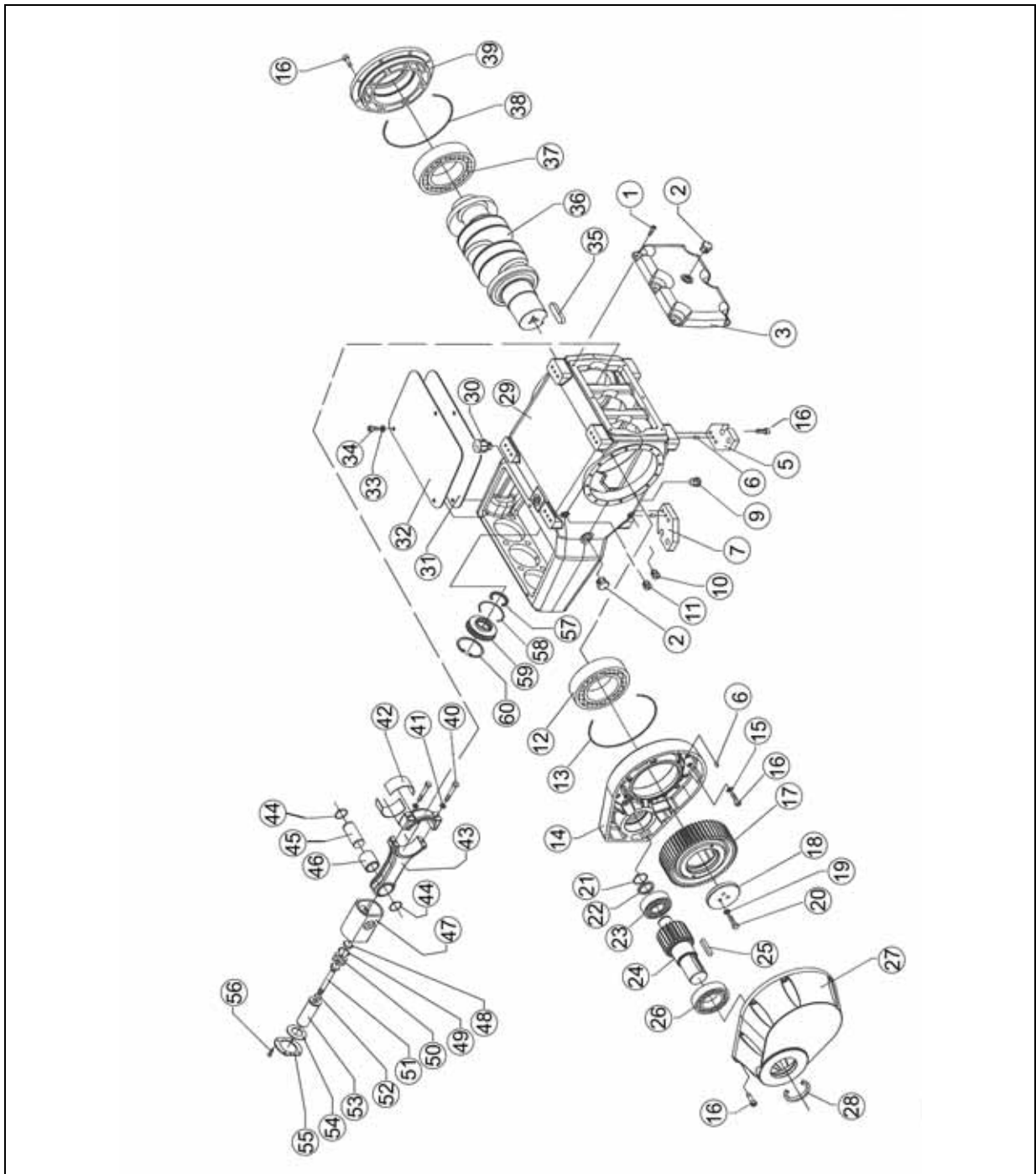
**CD160-1000 SERIES WATER-BLASTER
PUMP SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
40	80500697	1	ELBOW
41	81201060	1	SCREW SUCTION VALVE
42	81200670	1	SPRING SUCTION VALVE Part of Valve rep. kit 81201090
43	81201059	1	SUCTION VALVE DISC Part of Valve rep. kit 81201090
44	80200770	1	SEAL Part of Valve rep. kit 81201090 Part of Valve seal kit 81201501 (Pos. 54)
45	81201058	1	VALVE BODY
46	80200339	1	O-RING Part of Valve rep. kit 81201090 Part of Valve seal kit 81201501 (Pos. 54)
47	80200226	1	O-RING Part of Valve rep. kit 81201090 Part of Valve seal kit 81201501 (Pos. 54)
48	81201063	1	DISCHARGE VALVE ASSY Part of Valve rep. kit 81201090
49	80300224	1	SPRING Part of Valve rep. kit 81201090
50	81201064	1	DISCHARGE VALVE GUIDE
51	83400522	1.5m	HOSE
52	81201089	3	PLUNGER SEAL KIT
53	81201500	1	LOW PRESSURE SEAL KIT
54	81201501	1	VALVE SEAL KIT

PUMP SPARE-PARTS KITS

Item No./Kit Description *	Pos.	Item No.	Qty.	Description
81201089 SEAL KIT PLUNGER Pos. 52 3 set required to overhaul pump	10	81201085	1	BACK UP RING
	11	81201083	1	PACKING BACK
	12	81201082	1	PACKING FRONT
Item No./Kit Description	Pos.	Item No.	Qty.	Description
81201090 VALVE REP. KIT PUMP 3 required to overhaul pump	42	81200670	1	VALVE SPRING
	43	81201059	1	SUCTION VALVE DISC
	44	80200770	1	VALVE SEAL
	46	80200339	1	O-RING
	47	80200226	1	O-RING
	48	81201063	1	DICHARGE VALVE ASSY
	49	80300224	1	SPRING
Item No./Kit Description *	Pos.	Item No.	Qty.	Description
81201500 LOW PRESSURE SEAL KIT Pos. 53	7	80200222	3	O-RING
	8	80200767	3	SEAL COOLING
	35	80200340	6	O-RING
Item No./Kit Description *	Pos.	Item No.	Qty.	Description
81201501 VALVE SEAL KIT Pos. 54	44	80200770	3	SEAL
	46	80200339	3	O-RING
	47	80200226	3	O-RING

**CD160-1000 WATER-BLASTER
POWER END SPARE-PARTS ASSEMBLY**



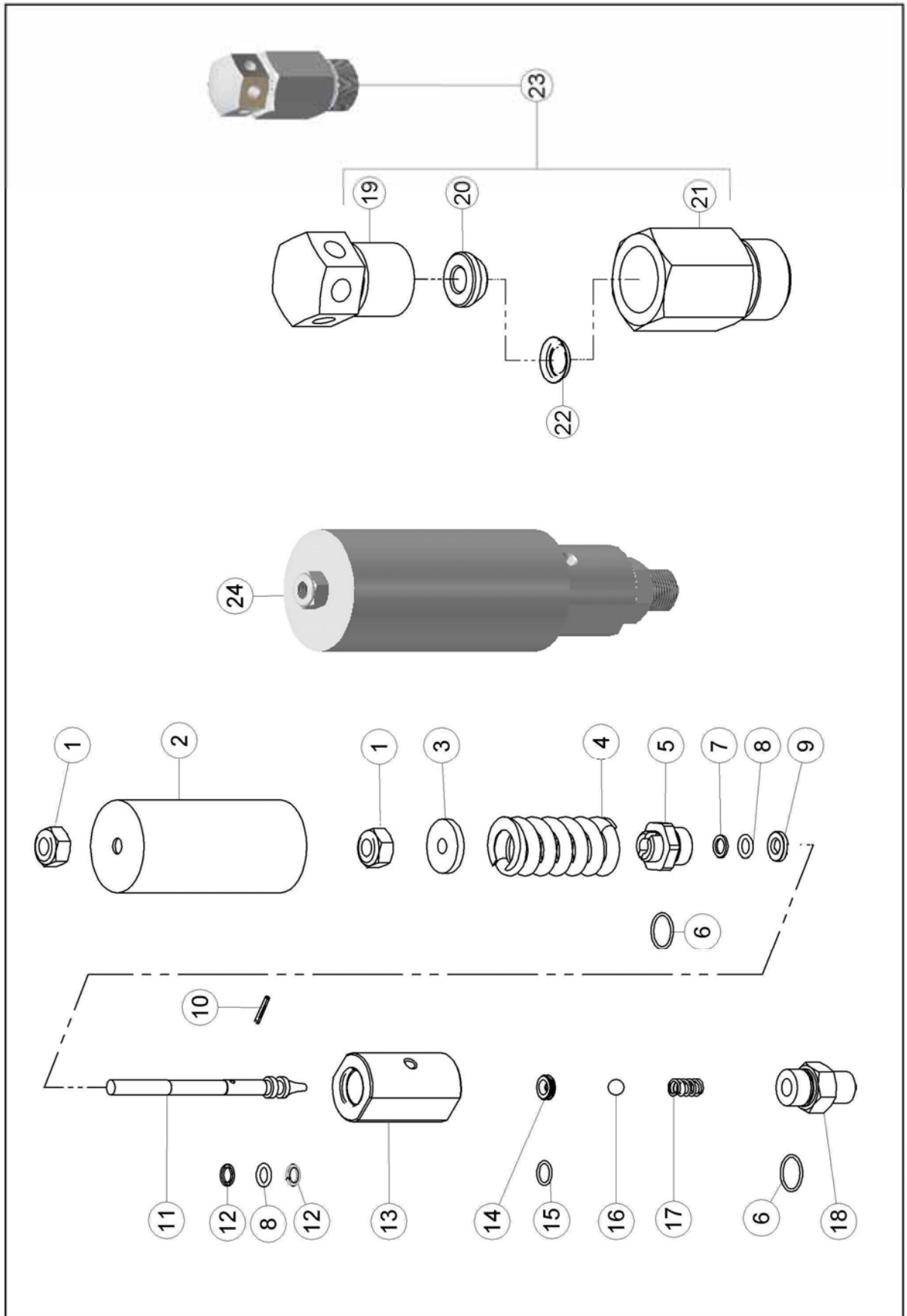
**CD160-1000 SERIES WATER-BLASTER
PUMP UNIT SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	80100383	6	SCREW
2	81200365	3	OIL LEVEL GLASS
3	81201091	1	BACK COVER
5	81201007	1	FOOT PLATE REAR
6	81201011	4	GUIDE PIN
7	81201005	1	FOOT PLATE FRONT
9	80500912	1	DRAIN PLUG
10	81200350	2	PLUG
11	80500893	2	PLUG

**CD160-1000 SERIES WATER-BLASTER
PUMP UNIT SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
12	80400616	1	BEARING
13	80200772	1	O-RING
14	81201096	1	HOUSING GEAR BOX
15	80100599	15	WASHER
16	80100591	35	SCREW
17	81201097	1	GEAR WHEEL
18	81201098	1	RETAINER FLANGE
19	80100807	3	WASHER
20	80100808	3	SCREW
21	80100809	1	CIR CLIP
22	81201099	1	RETAINER RING
23	80400617	1	BEARING
24	81201100	1	PINION GEAR
25	81201114	1	KEY FOR PINION GEAR
26	80400618	1	BEARING
27	81201101	1	COVER GEARBOX
28	80200773	1	OIL SEAL
29	81201102	1	CRANK CASE
30	81201106	1	OIL FILLER CAP
31	81000894	1	BOTTOM COVER COOLING SYSTEM
32	81000894	1	TOP COVER COOLING SYSTEM
33	80100599	6	WASHER
34	80100810	4	SCREW
35	81201115	1	KEY FOR CRANK SHAFT
36	81201103	1	CRANK SHAFT
37	80400611	1	BEARING
38	80200774	1	O-RING
39	81201117	1	COVER FOR SIDE BEARING
40	80100811	6	SCREW FOR CONNECTING ROD
41	80100812	6	WASHER
42	81201104	3	BEARING SHELL SET (FOR 1 CONNECTING ROD)
43	81201105	3	CONNECTING ROD
44	80100813	3	CIR CLIP
45	81201106	3	GUDEON PIN
46	81201107	3	GUDEON PIN BEARING BUSHING
47	81201108	3	CROSS HEAD
48	81201109	3	DISC
49	80200775	3	O-RING
50	81201110	3	FIFTH WHEEL RETAINER
51	80100814	3	SCREW
52	80200776	3	O-RING
53	81201111	3	PONY ROD
54	80300629	3	BELVILLE WASHER
55	81201112	3	RETAINER FLANGE
56	80100815	12	SCREW
57	80200777	3	OIL SEAL
58	80200778	3	O-RING
59	81201113	3	OIL SEAL HOLDER
60	80100816	3	CIR CLIP
1-60	81200962	1	POWER END COMPLETE

**CD160-1000 SERIES WATER-BLASTER
SAFETY VALVE & RUPTURE DISC SPARE-PARTS ASSEMBLY**



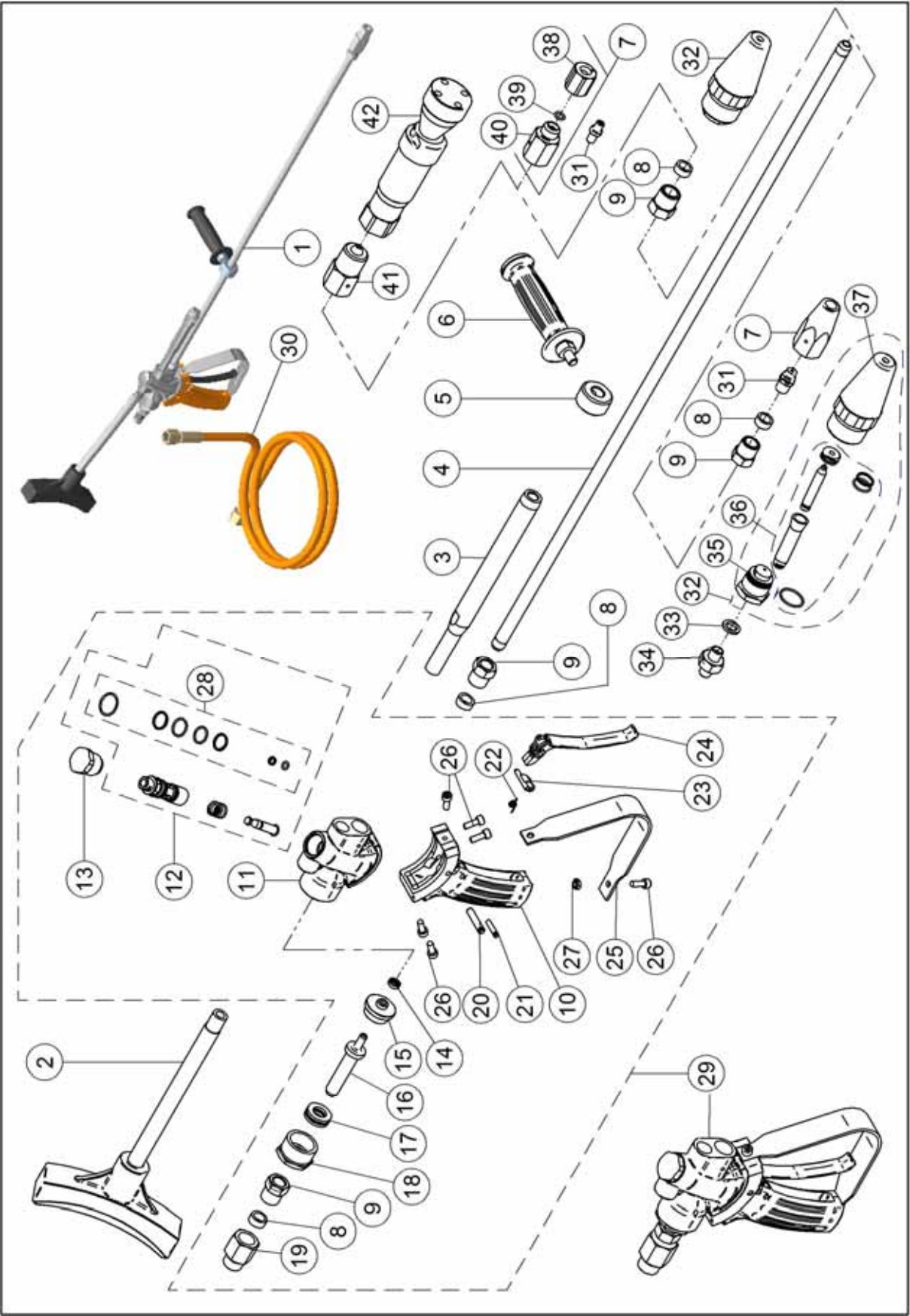
**CD160-1000 SERIES WATER-BLASTER
SAFETY VALVE SPARE-PARTS LIST**

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 SAFETY VALVE 81300630
7	80200604	1	BACK UP RING Part of REP. KIT SAFETY VALVE 81300630
8	80200598	2	O-RING Part of REP. KIT SAFETY VALVE 81300630
9	81300415	1	WASHER
10	81300551	1	PIN
11	81300450	1	PISTON
12	80200452	2	BACK-UP RING Part of REP. KIT SAFETY VALVE 81300630
13	81300410	1	SAFETY VALVE HOUSING
14	81300414	1	SEAT Part of REP. KIT SAFETY VALVE 81300630
15	80200597	1	O-RING Part of REP. KIT SAFETY VALVE 81300630
16	81300559	1	BALL Part of REP. KIT SAFETY VALVE 81300630
17	80300555	1	SPRING
18	81300409	1	NIPPLE ADAPTOR
	81300630	1	REP. KIT SAFETY VALVE
19	81300641	1	RUPTURE DISC THRUST SCREW
20	81300642	1	RUPTURE DISC SEAT
21	81300640	1	RUPTURE DISC HOLDER
22	81300677	1	RUPTURE DISC 18000 PSI GREEN WB 1000 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

**DUMP GUN 15 KPSI
SPARE-PARTS ASSEMBLY**



**DUMP GUN 15 KPSI
SPARE-PARTS LIST**

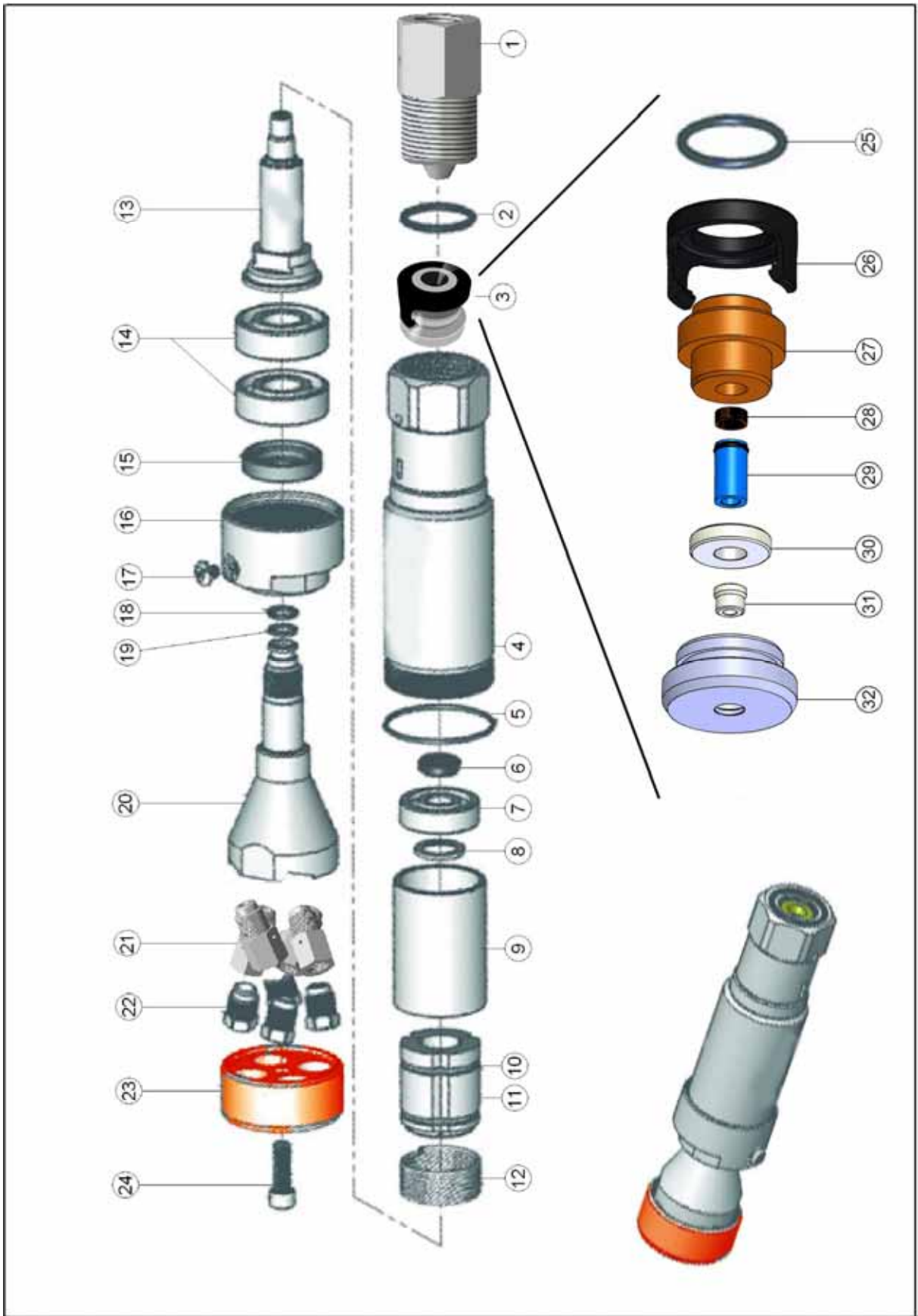
Pos.	Item No.	Qty.	Description
1	81400669		DUMP GUN 15KPSI W/O NOZZLE HOLDER
2	81400231	1	SHOULDER SUPPORT
3	81400136	1	DUMP TUBE
4	81400042	1	BARREL TUBE
5	81400076	1	HOLDER FOR SIDE HANDLE
6	81400075	1	SIDE HANDLE
7	81500129	1	NOZZLE HOLDER FOR ¼"NPT NOZZLE
7	81500128	1	NOZZLE HOLDER FOR ¼"BSP NOZZLE
7	81500046	1	NOZZLE HOLDER ASSY. FOR NOZZLE FORM 4,19 Pos. (37,38,39)
8	80500040	3	COLLAR
9	80500041	3	GLAND NUT
10	81400036	1	HANDLE
11	81400638	1	VALVE HOUSING 15 KPSI
12	81400056	1	VALVE KIT
13	81400055	1	VALVE PLUG
14	80200627	1	SWIVEL SEAL COMPLETE
15	81400152	1	BACK-UP RING INLET SWIVEL
16	81400149	1	INLET SWIVEL SPINDLE
17	80400143	1	THRUST BEARING
18	81400151	1	RETAINER NUT INLET SWIVEL
19	81400416	1	ADAPTOR FOR HOSE END ½" BSPP
20	81400050	1	PIN FOR TRIGGER LATCH
21	81400049	1	PIN FOR SAFETY LATCH
22	80300051	1	SPRING FOR SAFETY LATCH
23	81400048	1	SAFETY LATCH
24	81400047	1	TRIGGER LATCH
25	81400058	1	TRIGGER GUARD
26	80100052	6	SCREW ALLEN
27	80100053	1	LOCK NUT
28	81400296	1	O-RING & PACKING REP KIT
29	81400668	1	TRIGGER GUN HANDLE 15KPSI
30	81400963		HOSE (H.P)
31	81500769	1	NOZZLE FAN JET 2.10mm
31	81500764	1	NOZZLE STRAIGHT JET 1.70mm
32	81501237	1	ROTATING NOZZLE Size 10, Gives 750 Bar
33	80500971	2	BONDED SEAL
34	80500651	1	NIPPLE
35	81400622	1	INLET PLUG
36	81501528	1	REP. KIT ROTATING NOZZLE, Size 10
37	81400617	1	HOUSING FOR ROTATING NOZZLE
38	81500127	1	RETAINER NUT NOZZLE HOLDER
39	80200623	1	O-RING
40	81500027	1	NOZZLE HOLDER
41	80500891	1	ADAPTOR
42	81501030	1	ULTRA IMPACT NOZZLE 2800 R

**DUMP GUN
REPAIR KITS**

Item No./Kit Description	Item No.	Qty.	Description
Pos. 28 81400296 O-RING & PACKING REP. KIT DUMP GUN	80200060	1	BACK-UP RING
	80200059	1	O-RING
	80200610	1	O-RING
	80200232	1	BACK UP RING
	80200070	1	O-RING
	80200074	1	BACK-UP RING
	80200057	1	O-RING

Item No./Kit Description	Item No.	Qty.	Description
Pos. 12 81400056 VALVE KIT DUMP GUN	80200060	1	BACK-UP RING
	80200059	1	O-RING
	80200610	1	O-RING
	80200232	1	BACK UP RING
	80200070	1	O-RING
	80200074	1	BACK-UP RING
	81400064	1	VALVE PIN
	81400065	1	VALVE SEAT
80300115	1	SPRING	

**ULTRA IMPACT NOZZLE 2800R
SPARE-PART ASSEMBLY**



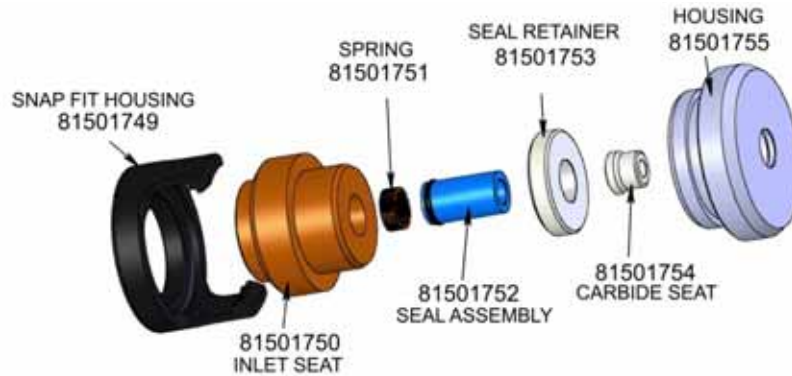
**ULTRA IMPACT NOZZLE 2800R
SPARE-PART LIST**

Pos.	Item No.	Qty.	Description
	81501030		ULTRA IMPACT 2800 ROTATING NOZZLE STANDARD pos.2-21,23,24
2	80200779	1	O-RING
3	81501748	1	OVERHAUL REP.KIT ULTRA IMPACT NOZ. NEW IMPROVED TYPE
4	81501020	1	BODY
5	80200702	1	O-RING
6	81500982	1	SHAFT SEAL
7	80400610	1	BEARING
8	81500971	1	WASHER
9	81500993	1	SLEEVE
10	81500980	1	GARTER SPRING
11	81500979	1	WEIGHTS
12	80300626	1	SPRING
13	81500992	1	SHAFT
14	80400609	2	BEARING
15	80200749	1	OIL SEAL WITH DUST LIP
16	81501019	1	CAP
17	81501018	1	PORT SCREW
18	80200487	1	O-RING
19	80200754	1	BACK-UP RING
20	81501022	1	NOZZLE HEAD STANDARD
20	81501021	1	NOZZLE HEAD LOW FLOW
21	81500944	4	NOZZLE ADAPTOR 3/8"-7/16" UNF
22	81500788	2	NOZZLE 0.031" (0,80) 3/8" Sapphire
22	81500645	2	NOZZLE 0.036" (0,90) 3/8" Sapphire
23	81500945	1	WEAR CAP FOR EXTENDED NOZZLES
23	81501451	1	WEAR CAP FOR EXTENDED NOZZLES ALUMINIUM (optional)
24	80100776	1	SCREW
25	80200059	1	O-RING (Not used for Rep. Kit 81501748)
26	81501749	1	SNAP FIT HOUSING
27	81501750	1	INLET SEAT
28	81501751	1	SPRING
29	81501752	1	SEAL ASSEMBLY
30	81501753	1	SEAL RETAINER
31	81501754	1	CARBIDE SEAT
32	81501755	1	HOUSING

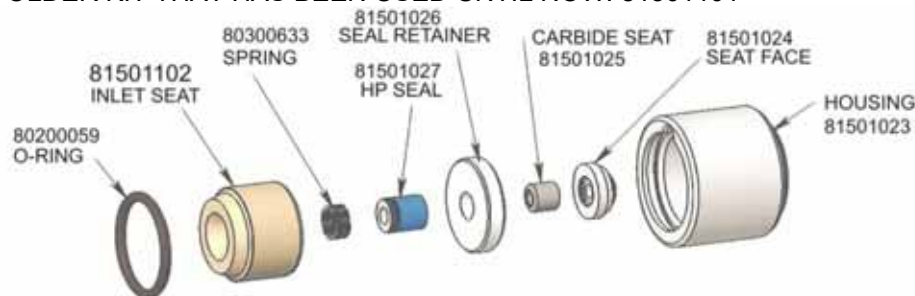
ULTRA IMPACT NOZZLE 2800R OVERHAUL KIT 81501748 ORIENTATION OF PARTS

OVERVIEW OF THE DIFFERENT DESIGNS OF REP. KIT FOR THE ULTRA IMPACT:
THE NEWEST REP. KIT WILL SUBSTITUTE THE OLDER REP. KITS

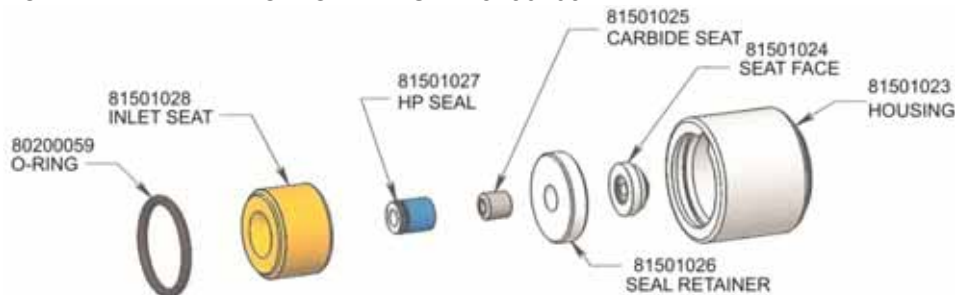
THIS IS THE NEWEST REP. KIT THAT WILL BE PUT IN TO USE AS FROM NOW: 81501748



THIS IS AN OLDER KIT THAT HAS BEEN USED UNTIL NOW: 81501101



THIS IS AN OLD KIT THAT IS NO MORE IN USE: 81501057



THIS IS AN OLD KIT THAT IS NO MORE IN USE: 81500865




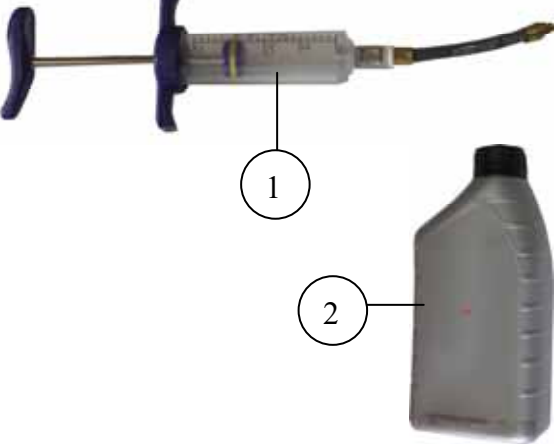
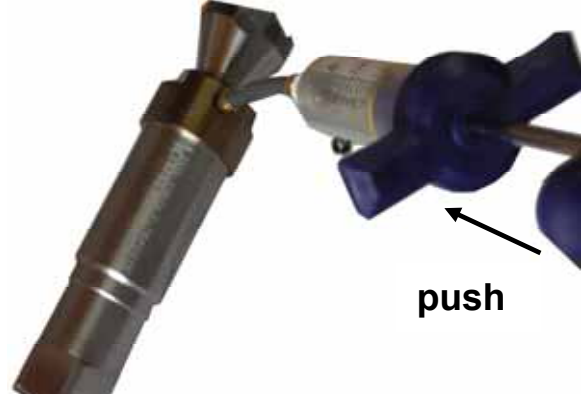



The old overhaul kit 81500896, 81501057 & 81501101 can be completely substituted with the new kit 81501748 and if a complete old rep kit is ordered, the new type kit will be delivered by default.

The internal parts of the old overhaul kit are NOT compatible or interchangeable with the new kit or vice versa. If you wish to buy internal parts to refurbish your old repair kit please refer to the above spare-parts assembly. Not all parts are available

If you are going to order almost all of the internal parts for the old repair kit, we suggest that you consider ordering a complete new repair kit 81501748, it will do a complete overhaul, as well as improve durability.

ULTRA IMPACT MAINTENANCE PROCEDURE & SPARE/PART LIST

 <p>unscrew plug</p>	
 <p>pull</p> <p>drain old oil out</p>	 <p>Discard of old oil in a proper manner fill it with new oil</p>
 <p>push</p> <p>Press new oil in</p>	 <p>Screw the plug on</p>

Pos.	Item No.	Qty.	Description
1	81501042	1	SYRINGE ULTRA IMPACT
2	83600613	1L	OIL

Recommended oil change / refill every 20 to 40 hours of operation.
Do **NOT** operate the Ultra Impact Nozzle without oil

OPERATION PROCEDURE FOR SINGLE JET ROTATING NOZZLE

OPERATION PROCEDURE FOR ROTATING NOZZLE

①

HOLD GUN UPRIGHT
NOZZLE FACING DOWN



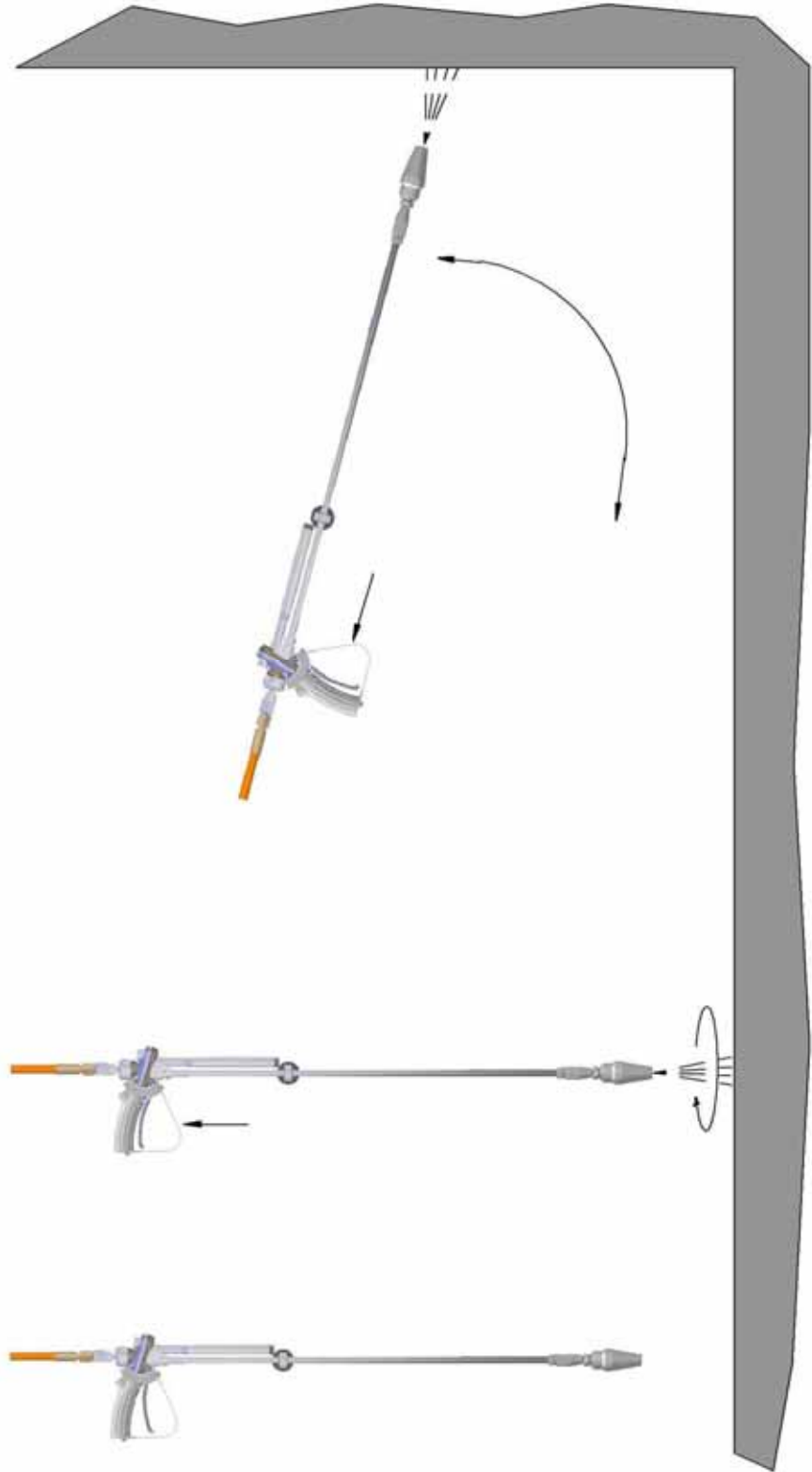
②

SQUEEZE TRIGGER
OBSERVE NOZZLE ROTATE

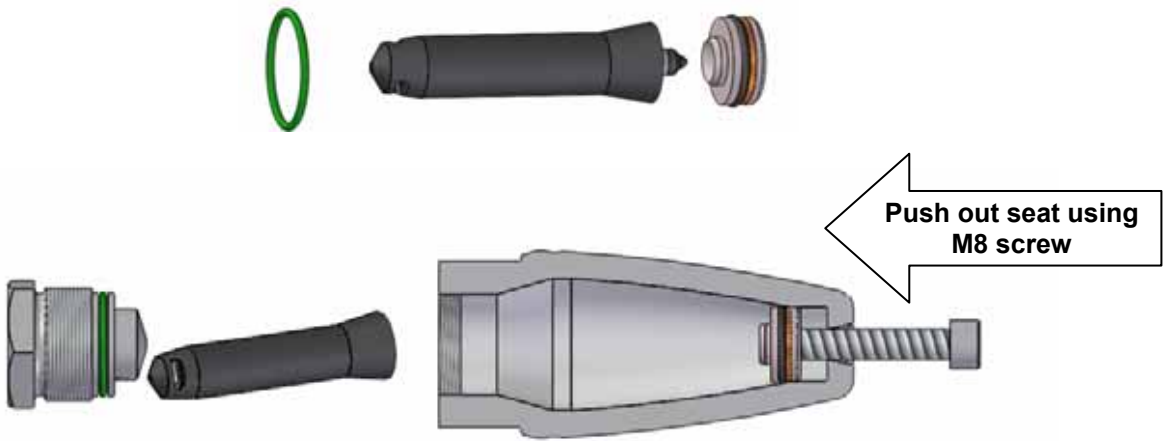


③

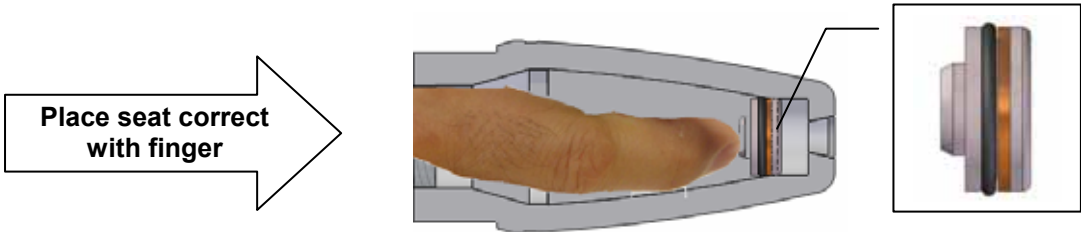
KEEP TRIGGER SQUEEZED
MOVE NOZZLE TO HORIZONTAL BLASTING POSITION



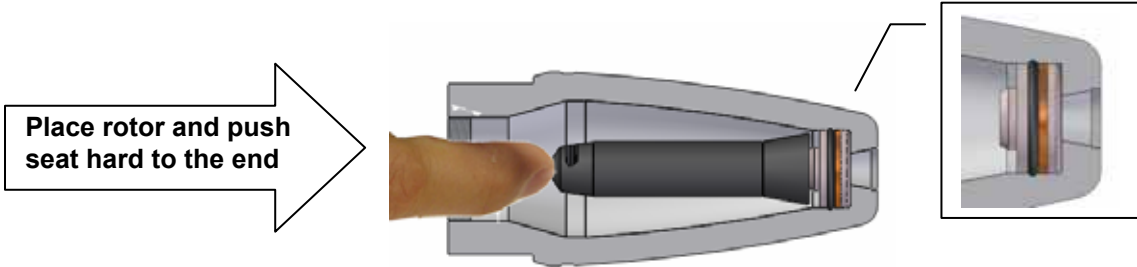
Rotating Nozzle Replacement Procedure Repair Kit



step-1

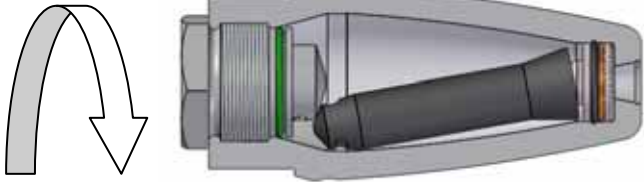


step-2



step-3

Tighten gently the plug to ensure that the rotor is in location



step-4