



CE-20 WATER BLASTER
350 Bar
3X 400 V 50 Hz
3X 440 V 60 Hz
UNLOADER & SAFETY VALVE

USER GUIDE &
SPARE-PART BOOK



RTH Renders Technischer Handel
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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:	CE20-350
Technical details:	
50 Hz Version W.P. Bar / Psi Flow Lpm / Gpm	350 / 5070 21 / 5.5
60 Hz Version W.P. Bar / Psi Flow Lpm / Gpm	350 / 5070 23 / 6
Electrical Spec. Motor Hp/ Kw Voltage 50/60Hz Amperage A	20 / 14,7 400 / 440 21 / 19
Dimensions L x W x H mm Weight Kg	1060 x 760 x 850 275

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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 electrical driven high-pressure water blaster machines:

CE-20-350 50/60 Hz

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: December 2016

Benny S. Jensen

Managing Director.

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.

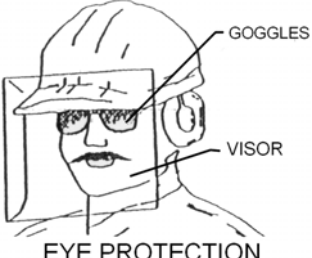
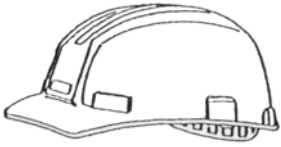

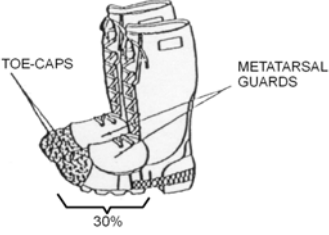
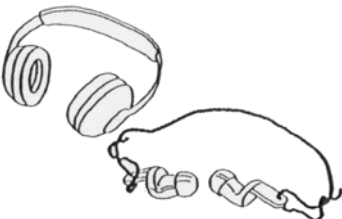
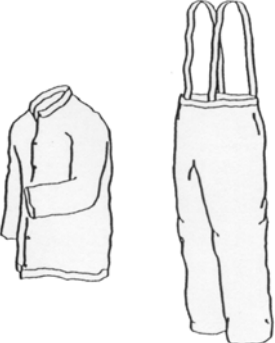
NEVER direct the jet at yourself. Do not attempt to clean your clothes or footwear with the machine.

Precautions must be made to keep bystanders away from the working range.
NEVER spray-jet on humans or live animals, the high pressure jet can cause severe injury.

NEVER spray at electrical equipment, or at the machine itself.
Make sure the machine is turned off and disconnected from the main power supply before service or repair.

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.

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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Preparing the machine for operation:

1) Place the machine in a safe location and secure the unit with lashing belts.

2) Freshwater Connection.

Prepare the water supply for the blaster, by attaching a 3/4" hose to the supplied low pressure inlet coupling on the side of the water tank. Connect the other end to the **fresh water** supply from the vessel. Open for the water supply and fill up the water tank before starting the machine. Always use the inlet connection on the tank for supplying water.

3) High Pressure Hose Connection

Mount the 1/2" high pressure hose to the blaster by attaching the swivel of the hose to the outlet fitting of the pump head. Please use 2 x 27mm spanners / wrenches to tighten the connection. Additional high pressure hoses supplied with the machine should be mounted now by using the supplied 1/2" nipples male-male to connect the hoses together. Please use 2 x 27mm spanners / wrenches to tighten the connection.

4) Trigger Gun Connection

Mount the trigger gun with lance to the high pressure hose. Please use 2 x 27mm spanners / wrenches to tighten the connection. Mount the correct nozzle at the end of the lance.

5) Electrical Power Connection

Connect the power cable CEE plug to an earthed 3 phase 32 Amp power socket. Should the CEE plug provided with the machine not fit your electrical system, replace the plug with one that fits.

6) Machine is now ready for operation.

Operation of the Machine:

- A) Ensure that the water supply is open.
- B) Turn the main power switch to ON. Press the green START button – machine starts. Allow the machine a few seconds for the automatic star – delta switch to turn over.
- C) Get a firm grip with both hands on the trigger gun handle and lance handle. Press the trigger and start blasting. Always be aware of other crew members in your working area – Safety is first priority.

Note: Do NOT let the machine run idle for more than 10 minutes, as it may cause damage to the pump. (Water heats up).

Shut-down of the Machine:

- A) Press the red STOP button – machine stops.
- B) Squeeze the trigger gun to release the pressure inside the high pressure hose.
- C) Turn off the water supply.

Storage of machine during Winter time.

Store the machine in a frost free location.

Drain the water from the machine and flush the pump with anti-freeze fluid.

The machine is equipped with the following safety devices:

- a) Stop button. The stop button (pos. 18 Electrical spare-parts assembly) stops the machine when pushed in.
- b) Main switch. The main switch (pos. 19 Electrical spare-parts assembly) disconnects the main supply. UN-PLUG MACHINE WHEN REPAIRING!!!
- c) Over load relay. The overload relay protects the motor against overloading (pos. 27 Electrical spare-parts assembly)
- d) Safety valve. The safety valve built onto the top of the pump is protecting against over-pressure (pos. 57 -350 Bar Pump assembly)

Check & Inspection:

Check	Task
Daily Inspection	<p><i>Check the strainer in the water-tank.</i> Clean if necessary. <i>Check the oil level on the crankcase of the pump.</i> Fill up if necessary. <i>Check for air-bubbles in the suction hose between tank and 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 power cord for wear and cracks.</i> Replace if necessary. <i>Check the air intake grill of the electric motor.</i> Clean for dust if necessary.</p>
	<p>Notice: To prevent damage to hoses and electrical cord, 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>

Maintenance:

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 a good industrial / automotive quality SAE 30 or 10W-40 Oil (part number:83600870)</i></p> <p><i>Quantity: 1,04 Liter (0,27 US Gallon)</i></p> <p><i>Fill up until the oil level is visible in the sight glass.</i></p>
Renewal of oil	<p>Switch off the machine. Loosen the oil drain screw on the lower back 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>

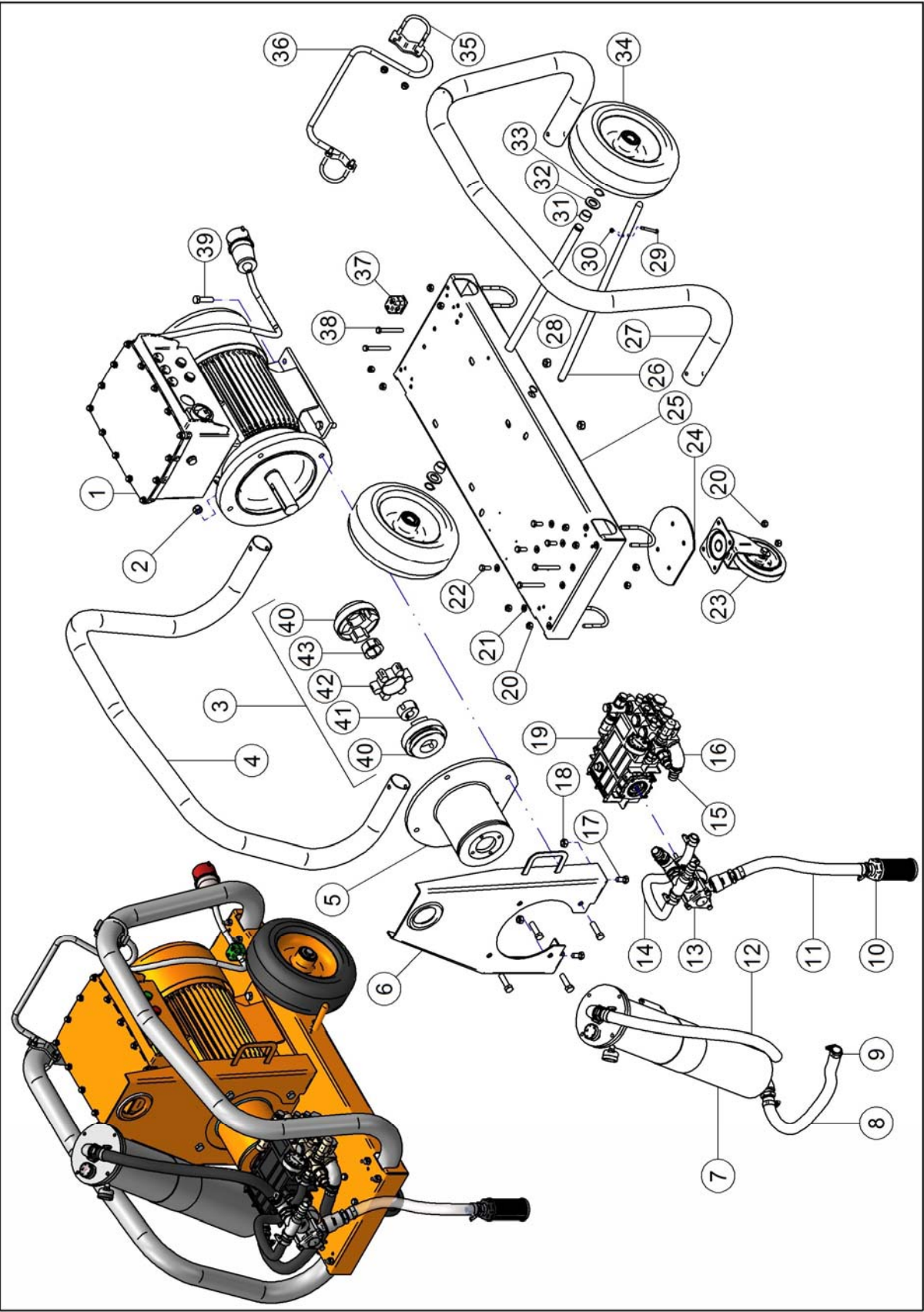
Trouble shooting and repair:

Problem	<i>Repair</i>
When the main switch is turned on And the green start button is pushed in, the Water-blaster will not start.	<i>Fault somewhere in the power supply.</i> Is the Power light on? Make sure the main supply cable is connected correctly. Inspect cord for cracks and wears.
The motor is humming but the pump does not run.	<i>Too low voltage, one phase is missing. High-pressure pump is blocked.</i> Check the mains voltage. Check the main connection voltage with a meter. With the machine turned off, hand turn the motor, at the fan, if it remains blocked, check the pump.
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 is running at high pressure when trigger is released.	<i>The check valve in the un-loader out-let fitting is stuck or leaking.</i> 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. The un-loader valve or safety valve is not correctly adjusted, or is worn. Plunger packings are worn.</i> Turn of the water-blaster. Inspect for leakage. Replace the nozzle. Set the un-loader, repair if necessary. 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:

Problem	<i>Repair</i>
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.

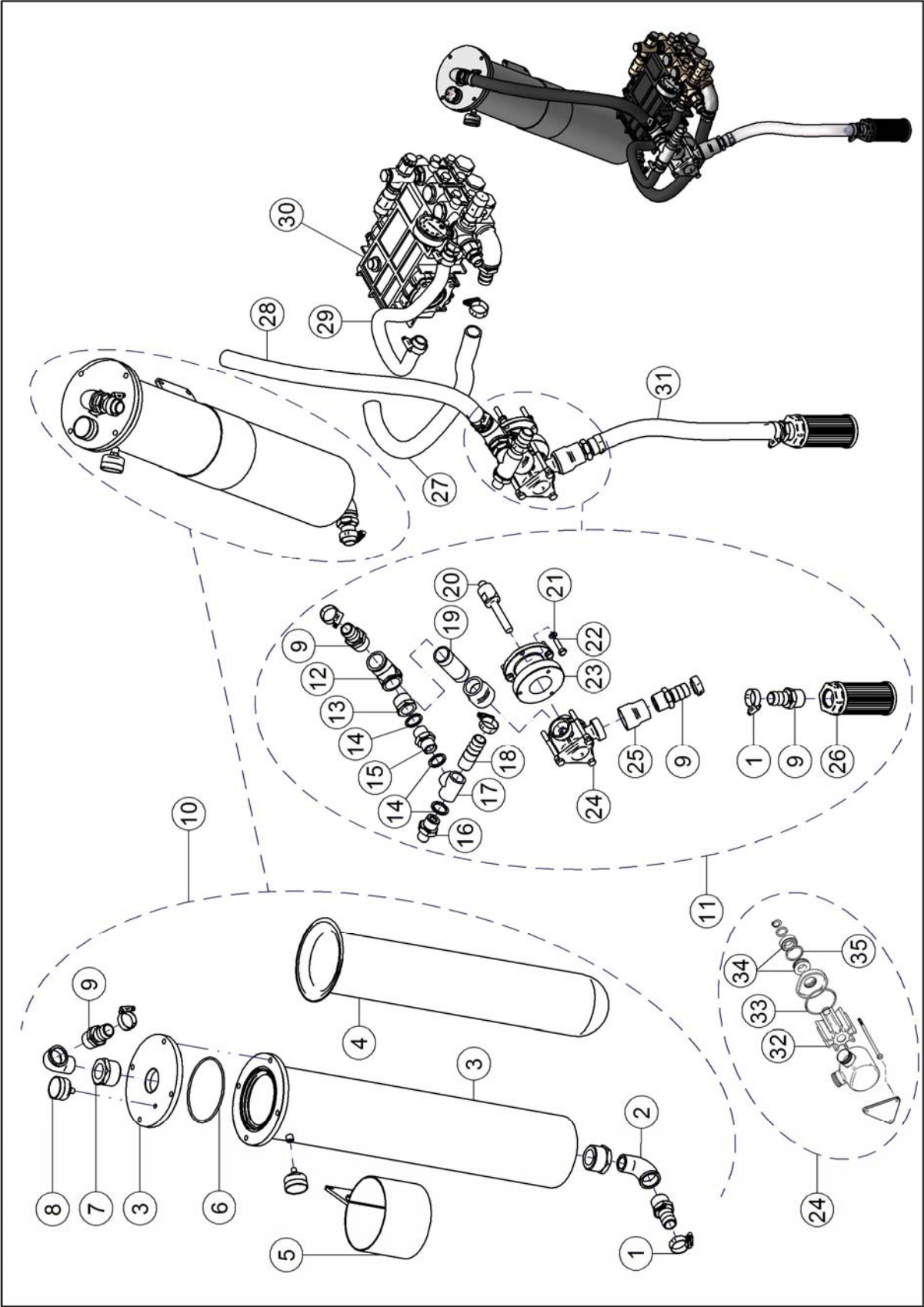
**CE20-350 WATER- BLASTER
MAIN SPARE-PARTS ASSEMBLY**



**CE20-350 WATER- BLASTER
MAIN SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	N/A	1	EL SYSTEM COMPLETE C20
2	80100847	8	LOCK NUT
3	81000244	1	COUPLING COMPLETE
4	81000249	1	RIGHT FRAME
5	81000240	1	BELL HOUSING
6	81000250	1	LIFT PLATE
7	N/A	1	SEA WATER FILTER
8	83400681	½m	HOSE RUBBER
9	80100527	8	HOSE CLIP
10	81000902	1	FILTER STRAINER
11	83400524	10m	HOSE SUCTION
12	83400681	1m	HOSE RUBBER
13	N/A	1	BOOSTER PUMP
14	83400599	1m	HOSE RUBBER
15	80500695	1	HOSE NIPPLE
16	80500437	1	ELBOW
17	80100628	2	SCREW
18	80100381	2	LOCK NUT
19	81201528	1	PUMP 350 BAR
20	80100259	20	LOCK NUT
21	80100310	10	WASHER
22	80100258	4	SCREW
23	81000235	1	CASTOR WHEEL
24	81000445	1	SUPPORT CASTOR WHEEL
25	81000242	1	BASE PLATE
26	81000251	1	MECHANICAL BRAKE
27	81000248	1	LEFT FRAME
28	81000621	1	AXLE FOR WHEELS
29	80100254	1	SCREW
30	80100053	1	LOCK NUT
31	81000623	2	BUSHING FOR WHEEL-AXLE
32	80100668	2	WASHER
33	80100669	2	CIRCLIP
34	81000618	2	WHEEL PNEUMATIC
35	80100617	6	U-BOLT
36	81000447	1	HOLDER CABLE
37	80100597	1	CABLE CLAMP
38	80100379	4	SCREW
39	80101084	8	SCREW
40	81000592	2	COUPLING HALF
41	81000595	1	TAPER BUSH
42	81000594	1	RUBBER ELEMENT
43	81000268	1	TAPER BUSH

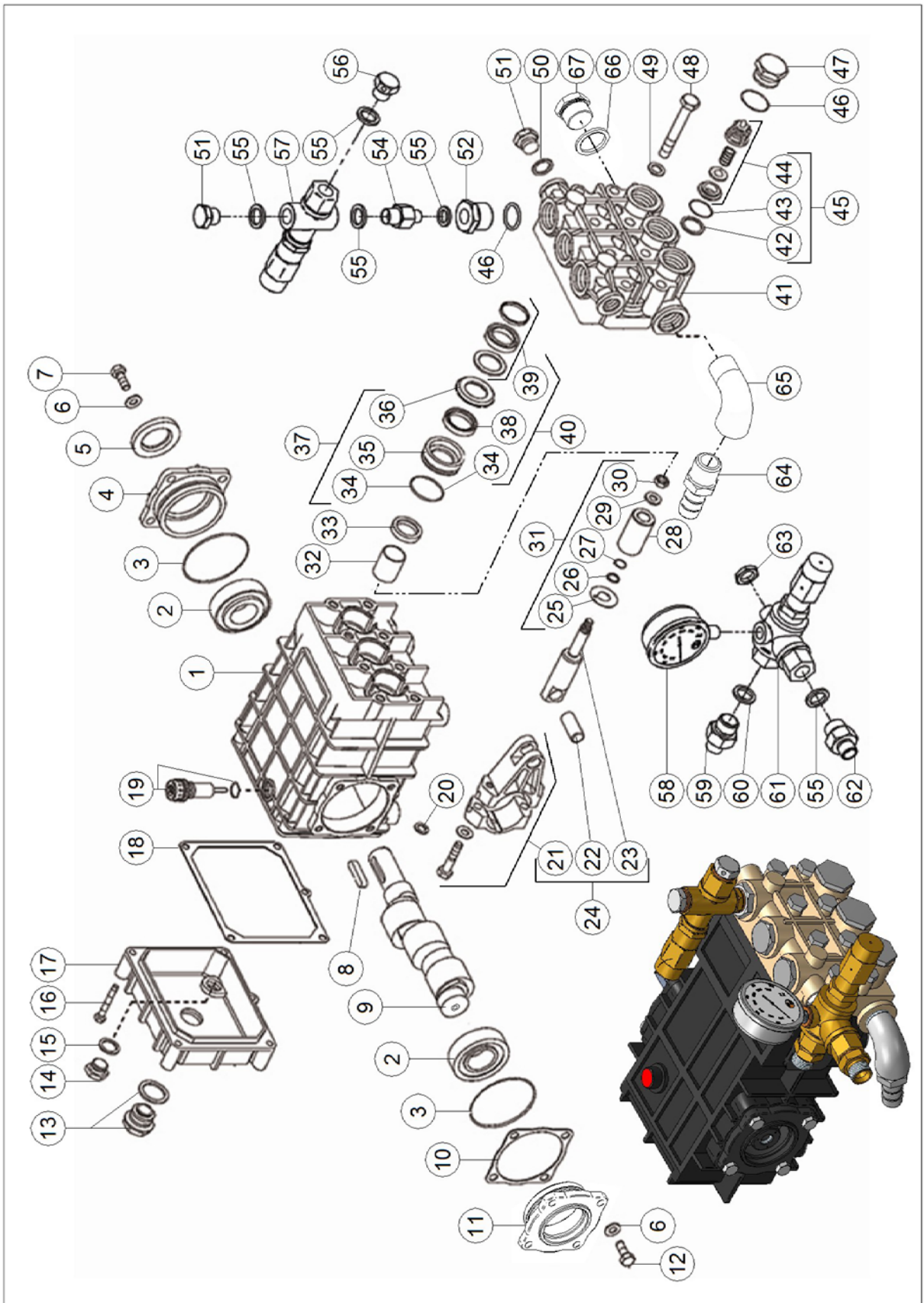
**CE20-350 WATER- BLASTER
WATER SYSTEM SPARE-PARTS ASSEMBLY**



**CE20-350 WATER- BLASTER
WATER SYSTEM SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	80100527	8	HOSE CLIP
2	80500237	2	ELBOW
3	81000813	1	FILTER HOUSING
4	81000821	1	FILTER BAG
5	81000837	1	BRACKET
6	80200653	1	O-RING
7	80500854	2	BUSHING
8	81300631	2	GAUGE
9	80500227	5	HOSE NIPPLE
10	N/A	1	SEA WATER FILTER ASSEMBLY
11	N/A	1	BOOSTER PUMP ASSEMBLY
12	80501030	1	TEE
13	80500308	1	BUSHING
14	80500600	3	BONDED SEAL
15	80500931	1	NIPPLE WITH RESTRICTOR
16	80500797	1	NIPPLE
17	80500673	1	TEE
18	80500684	1	HOSE NIPPLE
19	80500908	1	NIPPLE
20	81001112	1	AXLE ADAPTOR
21	80100606	4	WASHER
22	80100171	4	SCREW
23	81001111	1	BELL HOUSING
24	81201250	1	BOOSTER PUMP
25	80501199	2	SOCKET
26	81000902	1	FILTER STRAINER
27	83400681	½m	HOSE RUBBER
28	83400681	1m	HOSE RUBBER
29	83400599	1m	HOSE RUBBER
30	81201528	1	PUMP 350 BAR
31	83400524	10m	HOSE SUCTION
32	81201339	1	RUBBER IMPELLER
33	80200843	1	SEAL (O-RING)
34	80200841	1	MECHANICAL SEAL
35	80101060	1	CIRCLIP
N/A	80100848	4	SCREW
N/A	80100710	4	LOCK NUT
N/A	81100844	1	PRESSURE SWITCH (FILTER)

CE20-350 WATER- BLASTER PUMP SPARE-PARTS ASSEMBLY



**CE20-350 WATER- BLASTER
PUMP SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81200631	1	CRANK CASE
2	80400506	2	BEARING
3	80200407	2	O-RING
4	81200633	1	FLANGE OPEN
5	81200635	1	OIL SEAL
6	80100170	8	WASHER
7	80100171	4	SCREW Torque: 25Nm / 19 lbf·ft
8	81200629	1	KEY
9	81200640	1	CRANK SHAFT 50Hz.
10	81200632	1	SHIM
11	81200633	1	FLANGE OPEN
12	80100603	4	SCREW Torque: 25Nm / 19 lbf·ft
13	81200626	1	OIL LEVEL GLASS
14	81200625	1	DRAIN PLUG Torque: 11Nm / 8 lbf·ft
15	81200624	1	GASKET
16	80100604	5	SCREW Torque: 11Nm / 8 lbf·ft
17	81200623	1	CRANK CASE COVER
18	81200622	1	GASKET
19	81200621	1	OIL BREATHER
20	80100879	6	WASHER
21	81200636	3	CONNECTING ROD Torque: 30Nm / 22 lbf·ft Part of con. rod kit 81200645 (pos.24)
22	81200637	3	WRIST PIN Part of con. rod kit 81200645 (pos.24)
23	81200641	3	CROSS HEAD Part of con. rod kit 81200645 (pos.24)
24	81200645	NEXT PAGE	CONNECTING ROD ASSEMBLY
25	81200642	3	PLUNGER DISC Part of plunger rep. kit 81200705 (pos.31)
26	81200643	3	RING Part of plunger rep. kit 81200705 (pos. 31)
27	80200487	3	O-RING Part of plunger rep. kit 81200705 (pos. 31)
28	81200644	3	PLUNGER SLEEVE
29	80100606	3	WASHER Part of plunger rep. kit 81200705 (pos. 31)
30	80100607	3	PLUNGER NUT Torque: 15Nm / 11 lbf·ft Part of plunger rep. kit 81200705 (pos. 31)
31	81200705	NEXT PAGE	PLUNGER REP KIT W/O PLUNGER SLEEVE
32	N/A	N/A	GUIDE BEARING part of crank case pos.1 cannot be ordered separately
33	81200603	3	OIL SEAL
34	80200607	3	O-RING Part of back up ring rep. kit 81200647 (pos.37) Part of seal rep. kit 81200650 (pos.40)
35	81200646	3	BRASS RING Part of back up ring rep. kit 81200647 (pos.37)
36	81200606	3	BACK UP RING Part of back up ring rep. kit 81200647 (pos.37)
37	81200647	NEXT PAGE	BACK UP RING KIT
38	81200648	3	LOW PRESSURE SEAL Part of seal rep. kit 81200650 (pos.40)
39	81200649	3	HIGH PRESSURE SEAL KIT Part of seal rep. kit 81200650 (pos.40)
40	81200650	NEXT PAGE	SEAL KIT COMPLETE
41	81201520	1	PUMP HEAD
42	80200896	6	RING Part of valve rep. kit 81201522 (pos.45)
43	80200897	6	O-RING Part of valve rep. kit 81201522 (pos.45)
44	81201521	6	VALVE SUCTION & DISCHARGE Part of valve rep. kit 81201522 (pos.45)
45	81201522	1	VALVE ASSEMBLY rep. kit
46	80200898	6	O-RING
47	81201523	5	VALVE PLUG Torque: 120Nm / 88 lbf·ft
48	80100608	8	SCREW Torque: 50Nm / 37 lbf·ft

**CE20-350/400 WATER BLASTER
PUMP SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
49	80100506	8	WASHER
50	81200655	1	WASHER
51	80500598	2	PLUG Torque: 80Nm / 60 lbf-ft
52	81201499	1	PLUG SAFETY VALVE
54	80500615	1	NIPPLE
55	80500972	5	BONDED SEAL
56	81300609	1	DUMP PLUG
57	81300599	1	SAFETY VALVE 350/400 BAR
58	81300621	1	GAUGE
59	80501451	1	NIPPLE
60	80500973	1	BONDED SEAL
61	81300600	1	UNLOADER 350/400 BAR
62	80500716	1	NIPPLE
63	80100609	1	CONTRA NUT
64	80500436	1	HOSE NIPPLE Torque: 140Nm / 103 lbf-ft
65	80500437	1	ELBOW
66	80500974	1	BONDED SEAL
67	80500496	1	PLUG Torque: 140Nm / 103 lbf-ft

Item No./Kit Description	Pos.	Item No.	Qty.	Description
Pos. 24 81200645 / CONNECTING ROD KIT	21	81200636	3	CONNECTING ROD
	22	81200637	3	WRIST PIN
	23	81200641	3	CROSS HEAD

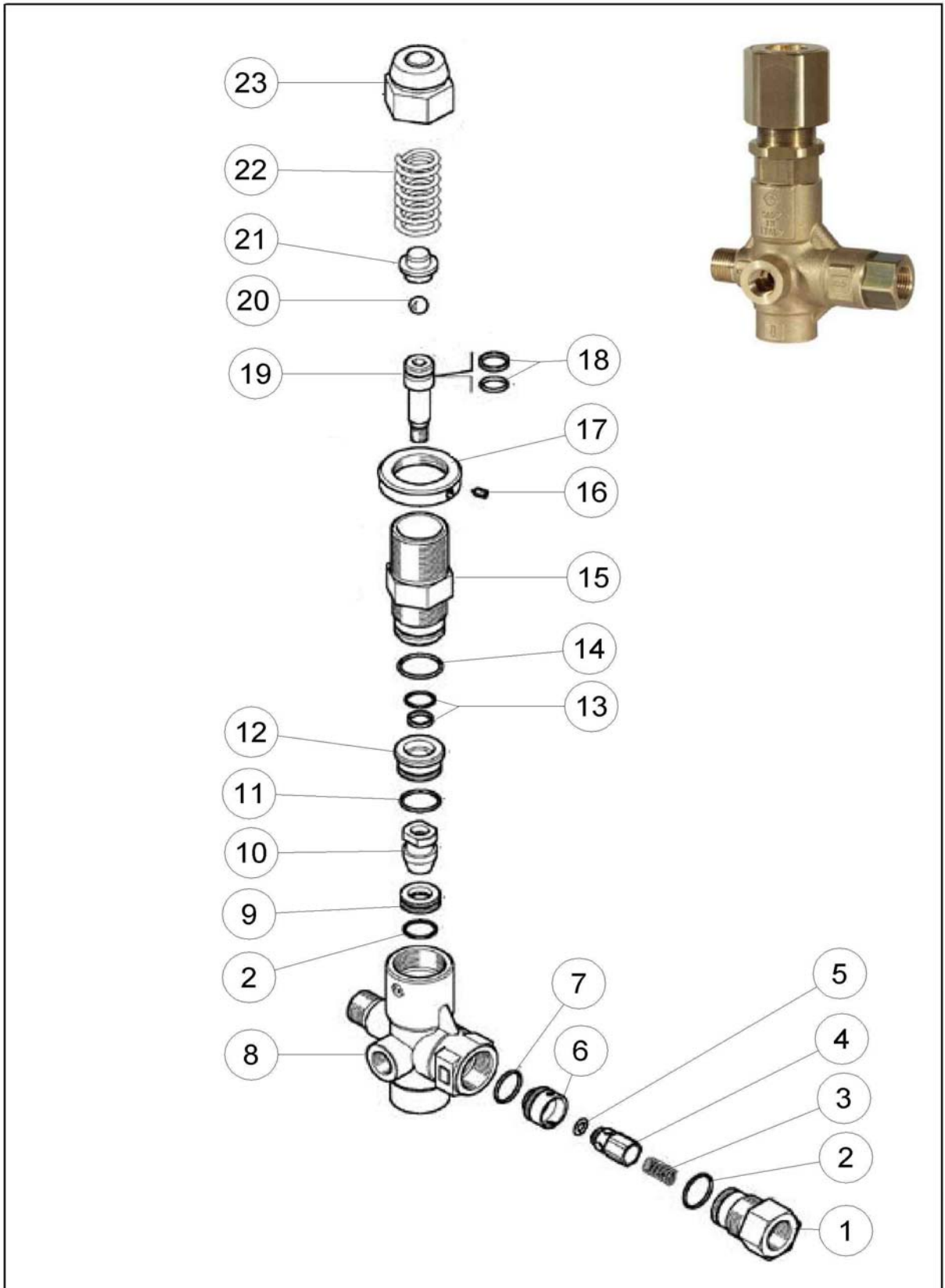
Item No./Kit Description	Pos.	Item No.	Qty.	Description
Pos. 31 81200705 PLUNGER REP. KIT W/O PLUNGER SLEEVE	25	81200642	3	PLUNGER DISC
	26	81200643	3	RING
	27	80200487	3	O-RING
	29	80100606	3	WASHER
	30	80100607	3	PLUNGER NUT

Item No./Kit Description	Pos.	Item No.	Qty.	Description
Pos. 37 81200647 / BACK UP RING REP. KIT	34	80200607	3	O-RING
	35	81200646	3	BRASS RING
	36	81200606	3	BACK UP RING

Item No./Kit Description	Pos.	Item No.	Qty.	Description
Pos. 40 81200650 / SEAL REP. KIT	34	80200607	3	O-RING
	38	81200648	3	LOW PRESSURE SEAL
	39	81200649	3	HIGH PRESSURE SEAL KIT

Item No./Kit Description	Pos.	Item No.	Qty.	Description
Pos. 45 81201522 / VALVE REP. KIT	42	80200896	6	RING
	43	80200897	6	O-RING
	44	81201521	6	VALVE SUCTION & DISCHARGE

**CE20-350 WATER- BLASTER
UNLOADER 350/400 BAR SPARE-PART ASSEMBLY**



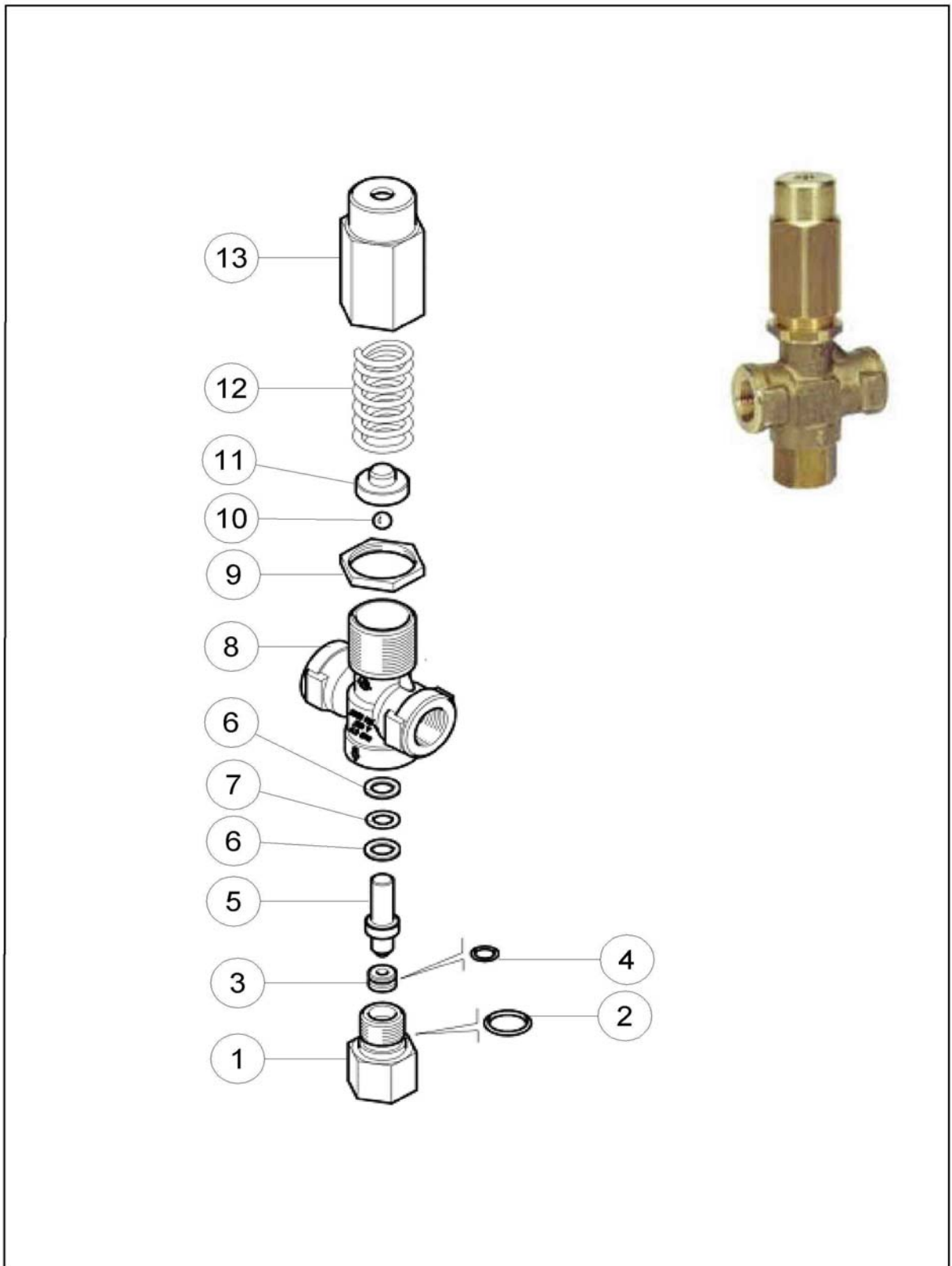
**CE20-350 WATER- BLASTER
UNLOADER BAR SPARE-PART LIST**

Pos.	Item No.	Qty.	Description
1	81300601	1	OUTLET FITTING
2	80200070	2	O-RING Part of rep. kit 81300622
3	80300592	1	SPRING
4	81300608	1	CHECK VALVE
5	80200618	1	O-RING Part of rep. kit 81300622
6	81300624	1	SEAT
7	80200100	1	O-RING Part of rep. kit 81300622
8	81300604	1	VALVE HOUSING
9	81300603	1	SEAT Part of rep. kit 81300622
10	81300602	1	SHUTTER Part of rep. kit 81300622
11	80200059	1	O-RING Part of rep. kit 81300622
12	81300625	1	SPACER
13	80200614	1	VALVE SEAL SET Part of rep. kit 81300622
14	80200599	1	O-RING Part of rep. kit 81300622
15	81300605	1	PISTON HOUSING
16	81300606	1	DOWEL SCREW
17	81300626	1	LOCK NUT
18	80200596	1	VALVE SEAL SET Part of rep. kit 81300622
19	81300607	1	PISTON
20	81300627	1	BALL Part of rep. kit 81300622
21	81300610	1	SPRING GUIDE
22	80300593	1	SPRING
23	81300611	1	BRASS CAP
	81300622	1	REPAIR KIT

UNLOADER REPAIR KIT

Item No./Kit Description	Pos.	Item No.	Qty.	Description
81300622 / REP. KIT UNLOADER 350/400 BAR	2	80200070	2	O-RING
	5	80200618	1	O-RING
	7	80200100	1	O-RING
	9	81300603	1	SEAT
	10	81300602	1	SHUTTER
	11	80200059	1	O-RING
	13	80200614	1	VALVE SEAL SET
	14	80200599	1	O-RING
	18	80200596	1	VALVE SEAL SET
	20	81300627	1	BALL

**CE20-350 WATER- BLASTER
SAFETY VALVE BAR SPARE-PART ASSEMBLY**



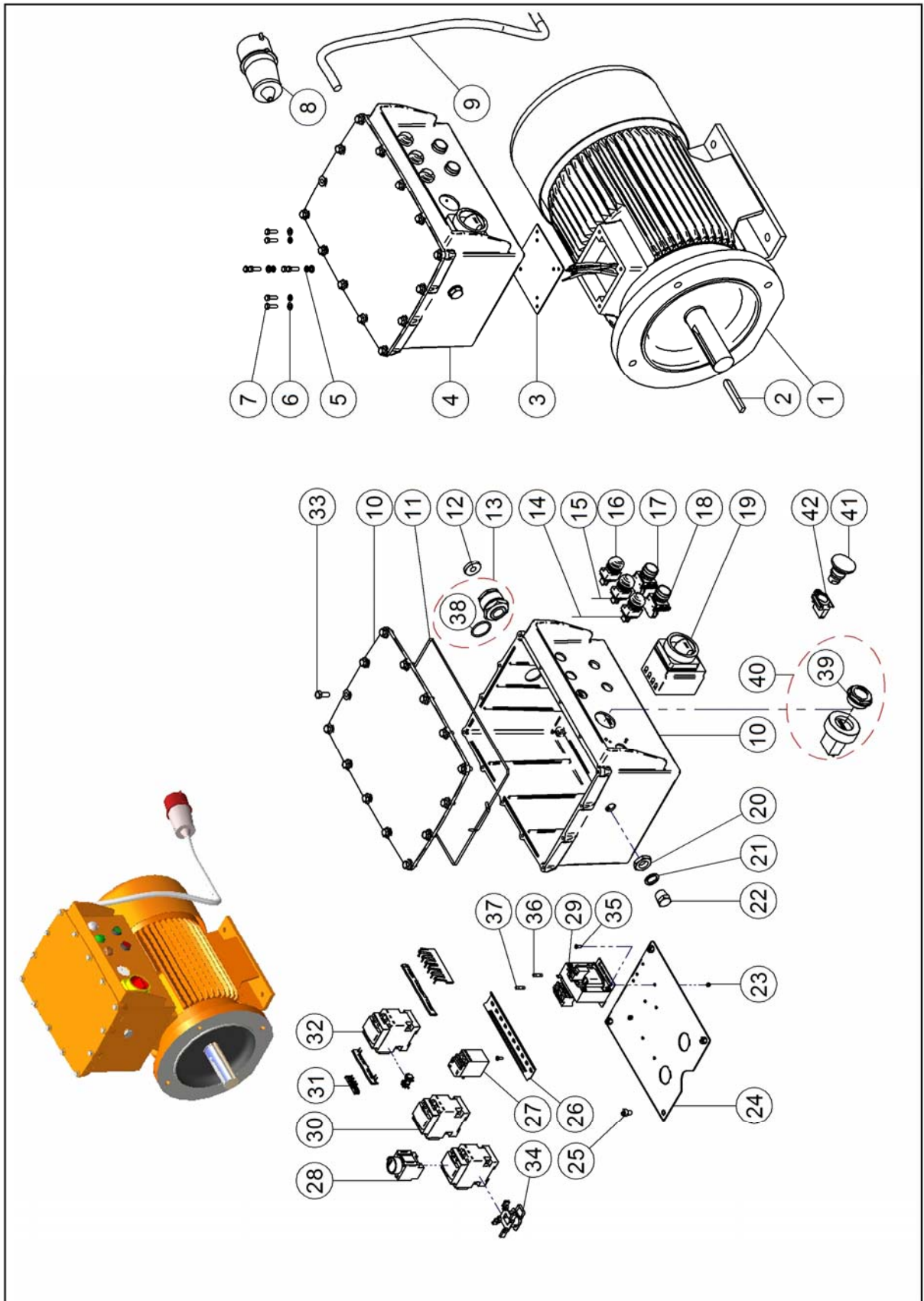
**CE20-350 WATER- BLASTER
SAFETY VALVE SPARE-PART LIST**

Pos.	Item No.	Qty.	Description
1	81300612	1	INLET FITTING
2	80200100	1	O-RING Part of rep. kit 81300623
3	81300613	1	SEAT Part of rep. kit 81300623
4	80200603	1	O-RING Part of rep. kit 81300623
5	81300614	1	PISTON
6	80200620	2	BACK UP RING Part of rep. kit 81300623
7	80200621	1	O-RING Part of rep. kit 81300623
8	81300615	1	VALVE HOUSING
9	80100612	1	CONTRA NUT
10	81300616	1	BALL
11	81300617	1	SPRING GUIDE
12	80300594	1	SPRING
13	81300618	1	CAP
	81300623	1	REPAIR KIT FOR SAFETY VALVE

SAFETY VALVE REPAIR KIT

Item No./Kit Description	Pos.	Item No.	Qty.	Description
81300623 REP.KIT SAFETY VALVE	2	80200100	1	O-RING
	3	81300613	1	SEAT
	4	80200603	1	O-RING
	6	80200620	2	BACK UP RING
	7	80200621	1	O-RING

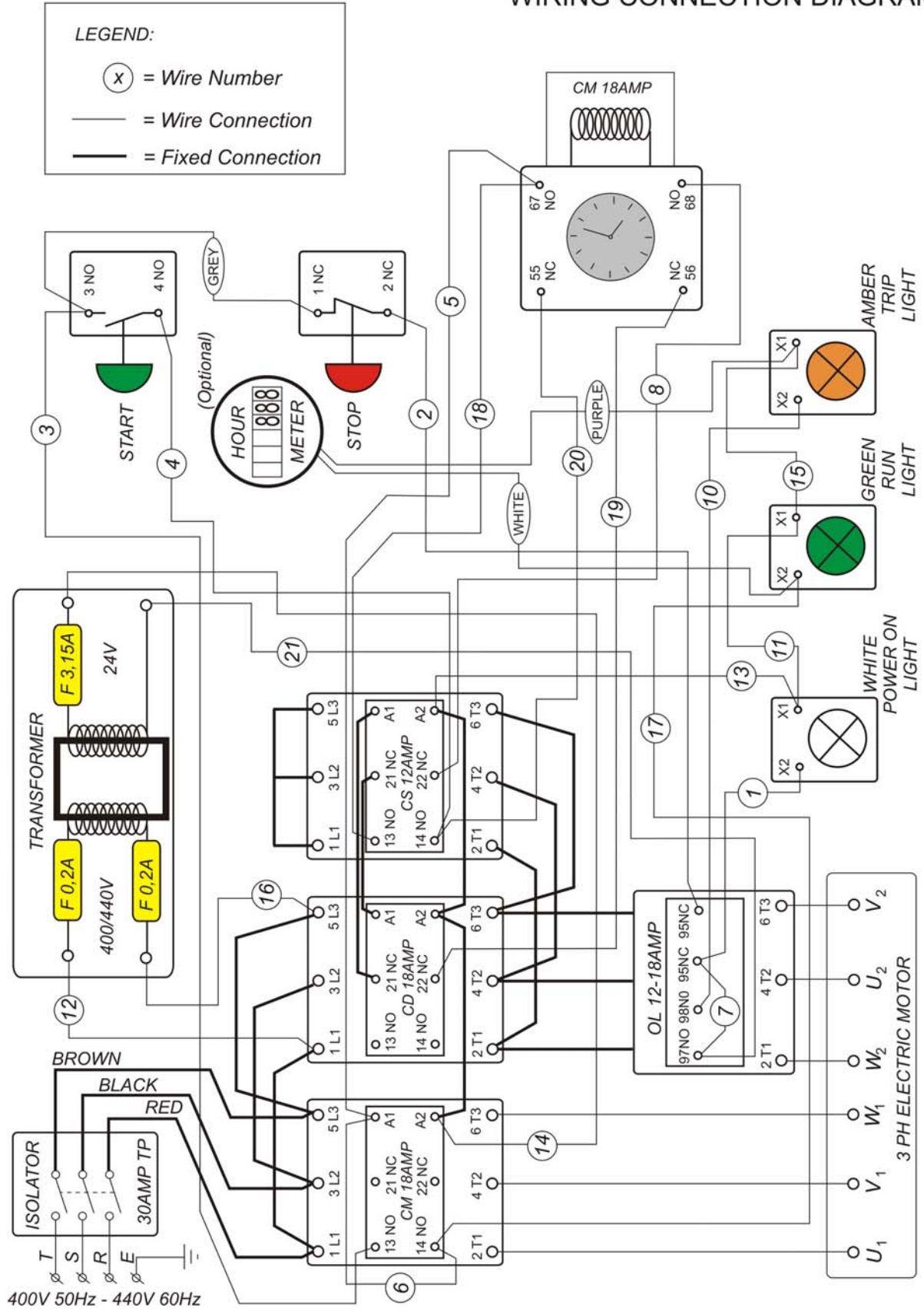
CE20-350 WATER- BLASTER ELECTRICAL SYSTEM SPARE-PARTS ASSEMBLY



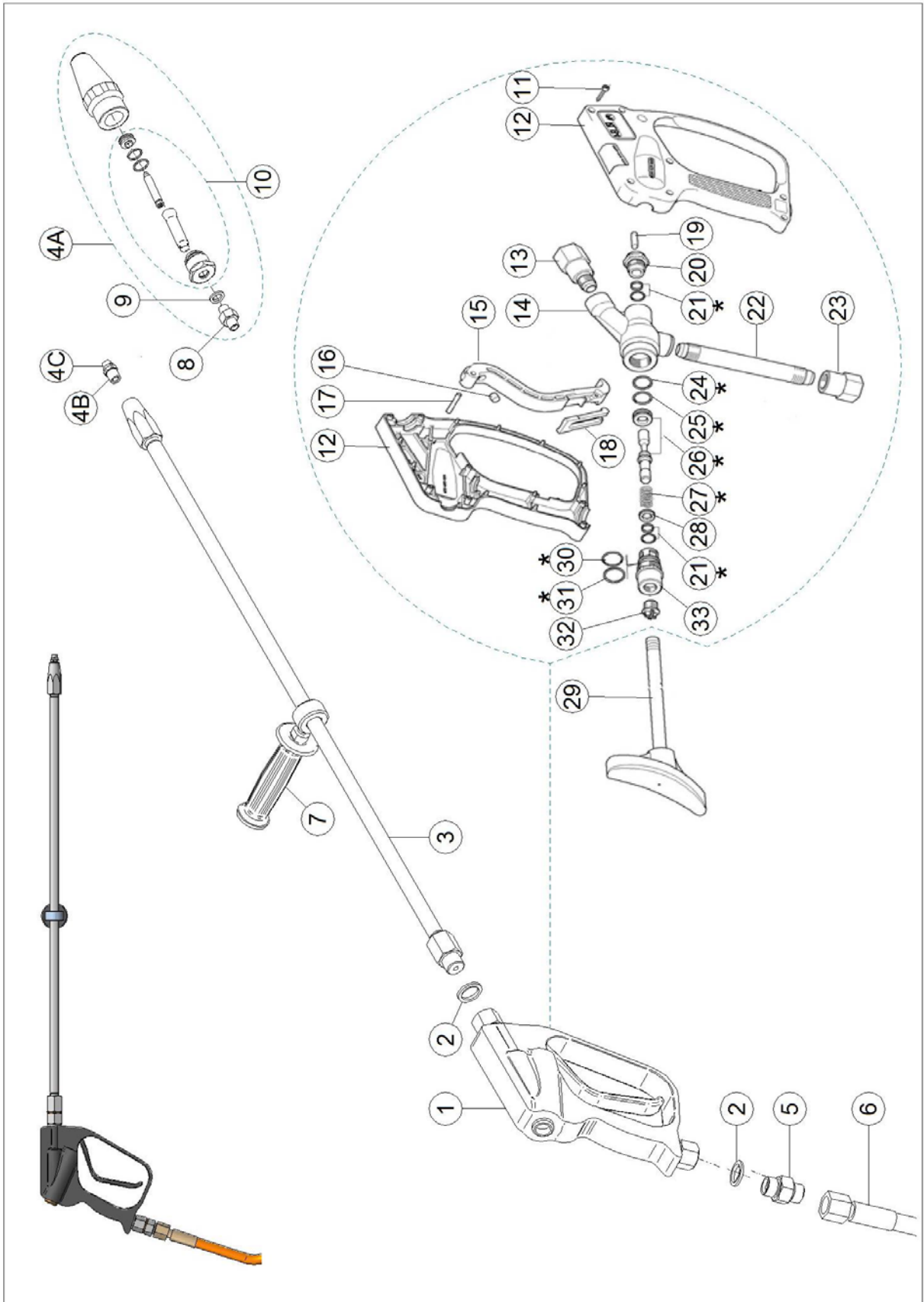
**CE20-350 WATER- BLASTER
ELECTRICAL SYSTEM SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
1	81100245	1	MOTOR 50/60HZ
2	81100602	1	KEY
3	81100600	1	RUBBER WASHER
4	81100683	1	EL-BOX ASSY. CE20
5	80100618	4	COPPER WASHER
6	80100398	4	COPPER WASHER
7	80100385	8	SCREW
8	81100630	1	PLUG CEE
9	83500592	15M	CABLE
10	81001127	1	EL-BOX (BOX+ LID)
11	83300602	1	ROPE SEAL
12	81100632	1	RUBBER SEAL
13	81000406	1	GLAND NUT COMPLETE
14	81100594	1	PILOT LIGHT AMBER
15	81100596	1	PILOT LIGHT GREEN
16	81100595	1	PILOT LIGHT WHITE
N/A	81100597	3	BULB FOR PILOT LIGHT
17	81100598	1	PUSH BOTTON ON (GREEN)
18	81100599	1	PUSH BOTTON OFF (RED)
19	81100581	1	CIRCUIT BREAKER
20	80100632	1	CONTRA NUT
21	80500429	1	BONDED SEAL
22	80500495	1	PLUG
23	80100596	4	LOCK NUT
24	81000396	1	MOUNTING PLATE
25	80100382	4	SCREW
26	81100575	1	OMEGA RAIL
27	81100577	1	OVER LOAD RELAY
28	81100580	1	TIMER
29	81100500	1	TRANSFORMER
30	81100576	2	CONTACTOR (inclusive coil)
31	81100572	1	CONNECTION SET
32	81100578	1	CONTACTOR (inclusive coil)
33	80100671	14	SCREW
34	81100579	3	COIL FOR CONTACTOR (spare part)
35	80100595	4	SCREW
36	81100574	1	FUSE 3.15 A
37	81100573	3	FUSE 0.2 A
38	80200402	1	O-RING
39	81000757	1	SIGHT GLASS OPTIONAL
40	81100857	1	HOUR METER ASSY. OPTIONAL
41	81100700	1	EMERGENCY BUTTON OPTIONAL
42	81100699	1	EMERGENCY BREAKER OPTIONAL
	81100601		WIRE HARNESS

WATER BLASTER CE20 WIRING CONNECTION DIAGRAM



**DRY SHUT GUN 8KPSI
SPARE-PARTS ASSEMBLY**



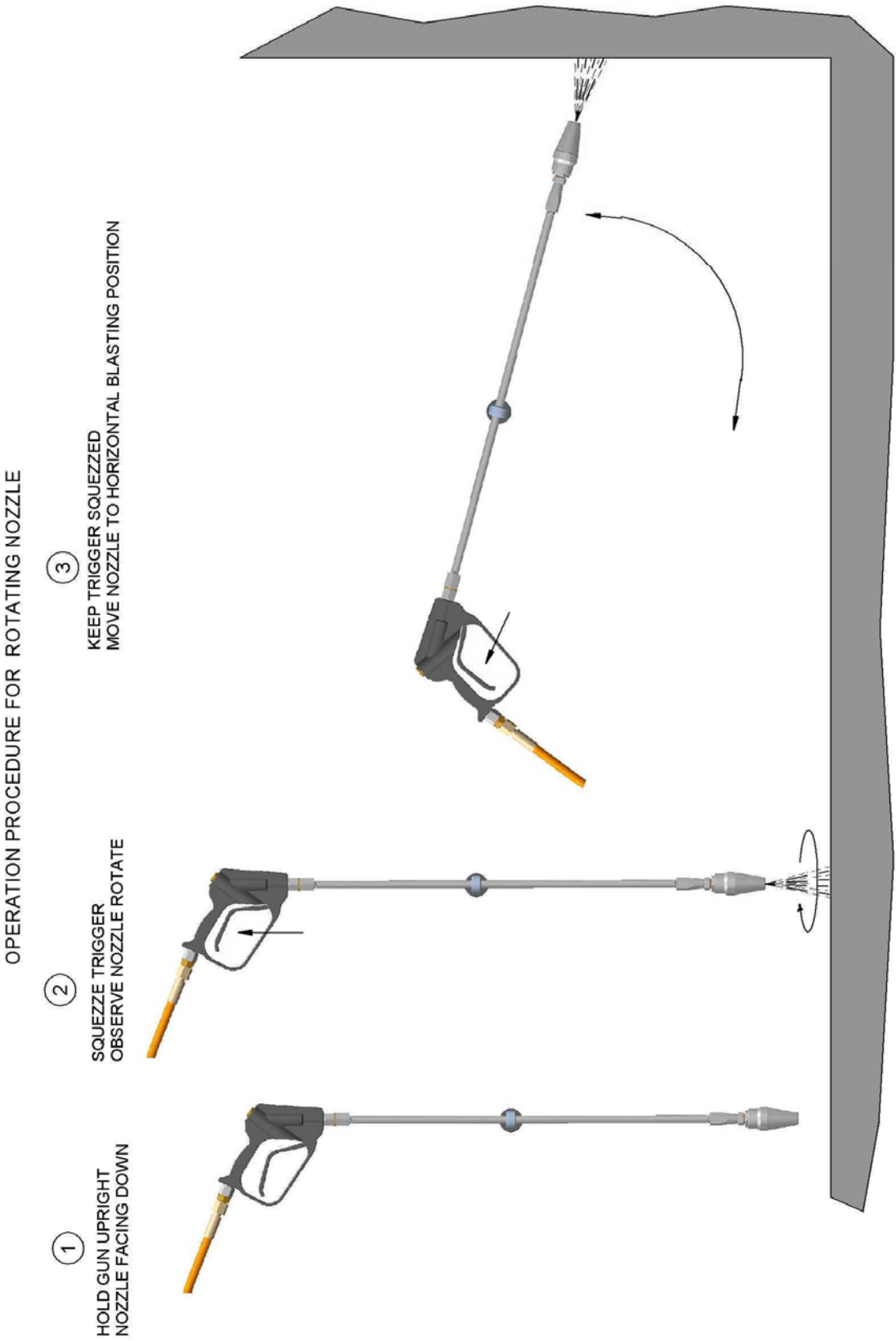
**DRY SHUT GUN 8KPSI
SPARE-PARTS LIST**

Pos.	Item No.	Qty.	Description
	81400895		GUN DRY SHUT WO (NOZZLE ,HOSE ,NIPPLE, SHOULDER REST)
1	81400860	1	TRIGGER HANDLE
2	80500973	2	BONDED SEAL
3	81400644	1	LANCE LONG 560BAR 1000mm
4	N/A	N/A	A or B or C See nozzle list below
5	80500375	1	NIPPLE
6	81400962		HOSE (H.P) 20m 500 BAR W 1/2"BSPP SWIVEL
7	81400075	1	SIDE HANDLE
8	80500654	1	NIPPLE
9	80500971	2	BONDED SEAL
10	N/A	N/A	REP. KIT ROT. NOZZLE
11	80100594	7	SCREW (Not available separately)
12	81400903	1	HOUSING SET (Not available separately)
13	81400902	1	OUTLET FITTING (Not available separately)
14	81400901	1	VALVE HOUSING (Not available separately)
15	81400906	1	TRIGGER (Not available separately)
16	81400905	1	STRIKER (Not available separately)
17	81400904	1	PIN (Not available separately)
18	81400907	1	SAFETY LATCH (Not available separately)
19	81400864	1	ACTUATOR ROD (Not available separately)
20	81400863	1	PLUG (Not available separately)
21	80200694	2	SEAL ASSY. Part of rep. kit 81400861
22	81400900	1	BACK PIPE (Not available separately)
23	81400899	1	INLET FITTING (Not available separately)
24	80200074	1	BACK UP RING Part of rep. kit 81400861
25	80200070	1	O-RING Part of rep. kit 81400861
26	81400898	1	PISTON-SEAT Part of rep. kit 81400861
27	80300613	1	SPRING Part of rep. kit 81400861
28	81400897	1	SPACER (Not available separately)
29	81400231	1	SHOULDER REST
30	80200691	1	O-RING Part of rep. kit 81400861
31	80200693	1	BACK UP RING Part of rep. kit 81400861
32	81400896	1	PLUG (Not available separately)
33	81400862	1	SPRING HOLDER (Not available separately)
*	81400861		REP. KIT FOR GUN 560BAR (Pos.21,24,25,26,27,30,31)

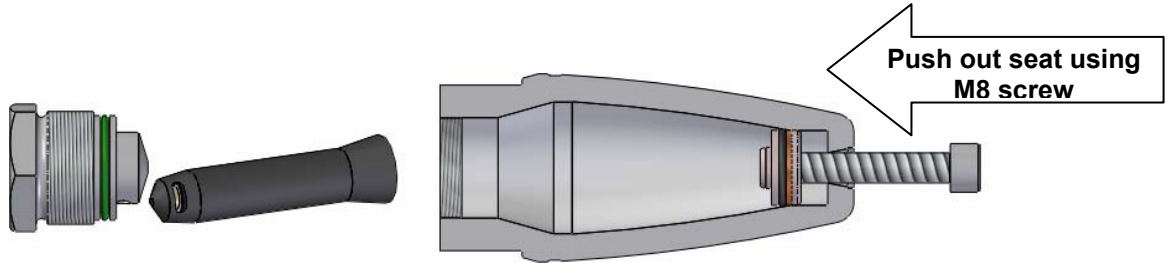
NOZZLE LIST

Pos.	Item No.	Qty.	Description
A4	81500964	1	ROTATING NOZZLE 055 CE20-350 60 Hz
10	81500965	1	REP. KIT ROT. NOZZLE 055 CE20-350 60 Hz
B4	81500635	1	NOZZLE STRAIGHT JET 055 CE20-350 60 Hz
C4	81500636	1	NOZZLE FAN JET 055/15° CE20-350 60 Hz
A4	81500692	1	ROTATING NOZZLE 045 CE20-400 50 Hz
10	81500693	1	REP. KIT ROT. NOZZLE 045 CE20-400 50 Hz
B4	81500633	1	NOZZLE STRAIGHT JET 045 CE20-400 50 Hz
C4	81500637	1	NOZZLE FAN JET 045/15° CE20-400 50 Hz

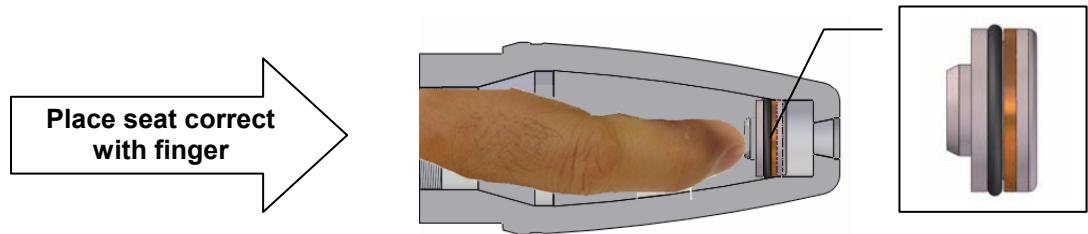
OPERATION PROCEDURE FOR ROTATING NOZZLE



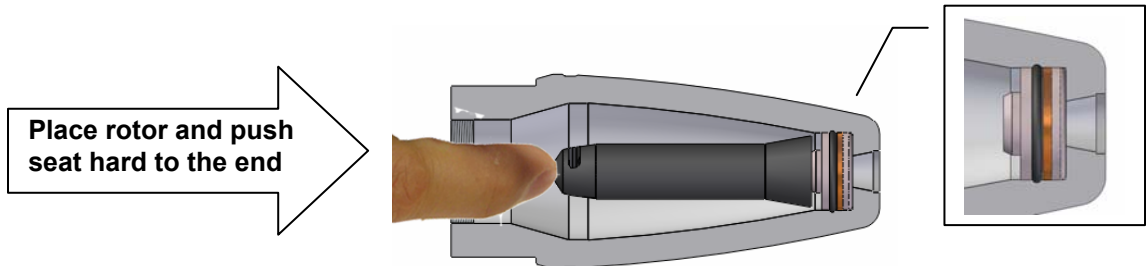
Rotating Nozzle Replacement Procedure Repair Kit



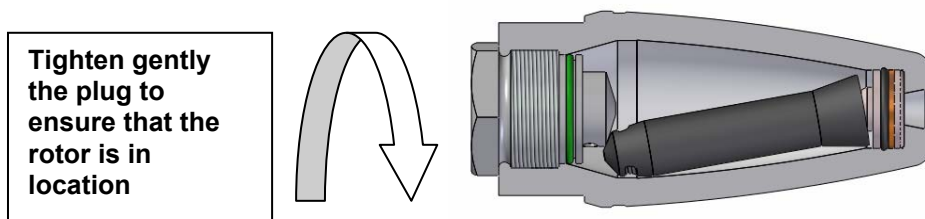
step-1



step-2



step-3



step-4



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