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STIHL®

1. FOREWORD

This Repair Manual contains a detailed description of the fundamental repair work on STIHL high-pressure cleaners of series STIHL RE 140 K, 160 K.

A test bed with the necessary water and power supplies should be provided for the repair work. The unit must be connected to the pressurized water supply and the fault described by the customer reproduced, with the customer demonstrating the fault if necessary. The customer's attention must be drawn to the User Manual if the machine is operated incorrectly.

Faults may be due to several causes. The "Summary of possible faults" should therefore be consulted see 4.

The illustrated spare parts lists must also be used for all repair work. These lists show the installation position and order in which the individual assemblies should be assembled. Microfilms are more up-to-date than printed spare parts lists.

Note the "Technical Information" bulletins! They contain information on technical changes implemented after publication of this Repair Manual. The Technical Information bulletins also supplement the spare parts list until a new edition is printed!

Repair Manuals and Technical Information bulletins should always be kept on hand wherever repairs are carried out.

They must not be passed on to third parties.

Only original STIHL spare parts may be used!

1.1 Note on RE 160 K

Please refer to the preceding Repair Manual for the RE 160 K if the procedures described and illustrated in this Repair Manual do not correspond with your machine.

2. Safety regulations

High-pressure cleaners may only be repaired by qualified electricians (in accordance with DIN VDE 0701 and accident prevention regulations VBG 4 in Germany) with due regard for national safety regulations and the provisions of the User Manual.

3. TECHNICAL SPECIFICATIONS

	RE 140 K	RE 160 K
3.1 Motor		
Voltage:	230 V / 240 V *)	230 V / 240 V *)
Frequency:	50 Hz / 60 Hz *)	50 Hz / 60 Hz *)
Power output:	2.3 - 2.9 kW *)	2.2 - 3.3 kW *)
Fuse:	16 A **)	16 A **)
Protection class:	I	I
Type of protection:	IP X5	IP X5
3.2 Pump		
Max. working pressure:	140 bar	150 bar
Permissible excess pressure:	150 bar	160 bar
Flow rate:	500 l/h	500 - 550 l/h *)
Suction lift:	0.5 m	0.5 m
Max. water feed temperature:		
- Pressurized water supply:	50 °C	50 °C
- In suction operation:	40 °C	40 °C
3.3 Weights and dimensions		
Length approx.:	370 mm	370 mm
Width approx.:	270 mm	270 mm
Height approx.:	860 mm	860 mm
Weight approx.:	20.0 kg	25.0 kg
3.4 Capacities		
High-pressure pump:	100 ml	100 ml
Oil grade:	SAE 15 W 40	SAE 15 W 40

*) Depends on country concerned

**) Australia / New Zealand: 10 A
GB / N. Ireland / Malaysia: 13 A

3.5 Tightening torques

Assembly	Connecting element	Thread size	Tightening torque Nm	Remarks
Safety control block to valve block	Socket-head screw	M5x30	7	1)
Valve block to pump housing	Socket-head screw	M6x35	15	1)
Pump housing to drive housing	Socket-head screw	M6x30	10	1)
Drive housing to stator housing	Socket-head screw	M5x25	7	1) 2)
Bearing cover and drive housing to stator housing	Hex bolt	M6x25	7	1) 3)
Screw plug, drive housing	Hexagonal socket-head bolt	R1/4"	7	3)

Remarks

1) Thread must be clean and dry
2) RE 140 K only
3) RE 160 K only

4. SUMMARY OF POSSIBLE FAULTS
4.1 High-pressure pump

Problem	Cause	Remedy
Pump runs, but does not build up the specified pressure	Pressure control sleeve not set correctly	Set required working pressure
	Nozzle in spray head worn	Replace nozzle
	Air in system	Vent system; briefly operate machine without high-pressure hose
	Leak in high-pressure system	Seal high-pressure system
Pressure fluctuates or drops	Shortage of water	Turn on water tap, keep within maximum suction head (max. 0.5 m)
	Water feed hose too long or cross-section too small	Use specified water feed hose
	Water filter clogged	Clean water filter in pick-up body and pump inlet
	Pump draws air	Check intake line for leaks and replace if necessary
	High-pressure cups worn	Replace high-pressure cups
Pump does not run smoothly	Water feed temperature is too high	Reduce water feed temperature (see technical specifications)
	Intake line is damaged, pump draws air	Replace intake line
	Intake / delivery valves of high-pressure pump soiled or worn	Clean or replace valves
Safety control block cycles after switching off the spray gun (constant audible switching sound), pump becomes hot	Leak in high-pressure system so that safety control block does not switch over correctly and the bypass does not open completely	Seal, clean and grease the safety control block
Oil contains water	High-pressure cups worn	Replace high-pressure cups
Oil leak	Gaskets in high-pressure pump worn	Replace gaskets

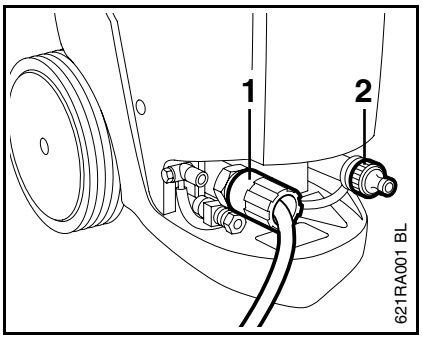
Problem	Cause	Remedy
No supply of detergents	Detergent tank is empty	Fill detergent tank
	Detergent metering valve is closed	Set required detergent quantity on metering valve
	Pressure control sleeve not set to "CHEM."	Set pressure control sleeve to "CHEM."
	High-pressure hose coupling is not screwed tight	Tighten screw coupling
	Detergent intake hose clogged	Clean
	Injector clogged	Clean
	Gasket on high-pressure hose connection defective or missing	Replace or fit gasket
Weak, ragged, unclean jet	High-pressure nozzle in spray head is soiled or worn	Clean high-pressure nozzle with nozzle-cleaning needle or replace if necessary

4.2 Electric motor

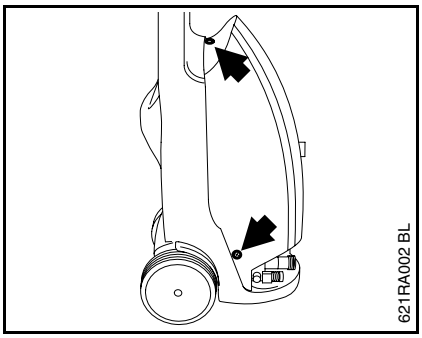
Problem	Cause	Remedy
Motor hums but does not run when switched on	Mains voltage too low	Check electrical connection
	Spray gun closed	Actuate spray gun
	Pump stiff (blocked or frozen)	Turn motor by hand as described for "Starting up after prolonged storage" (User Manual)
	Extension lead with wrong cross-section	Use correct cable cross-section (see User Manual)
Motor does not start when switched on	Connector has not been plugged in correctly, break in power supply	Check plug, cable and switch
	Mains fuse has been tripped	Refit mains fuse
Motor stops	Overload protection (in winding) tripped because motor overheating or overloaded	Check that supply voltage matches specified machine voltage. Switch off machine and allow to cool for at least 3 minutes.
	Spray head soiled	Clean nozzle in spray head

Note: A correct power supply is essential if the machines are to operate faultlessly. The voltage drop in the motor during operation must not be excessive, otherwise the motor will turn too slowly and take up too much power. This causes the windings to heat up and the overload switch cuts out the machine after only a short period of operation. Moreover, the machine cannot build up the rated power output and problems may arise during the starting phase, i.e. between switching on the motor and reaching the nominal speed.

5. HOUSING
5.1 Removing / fitting the



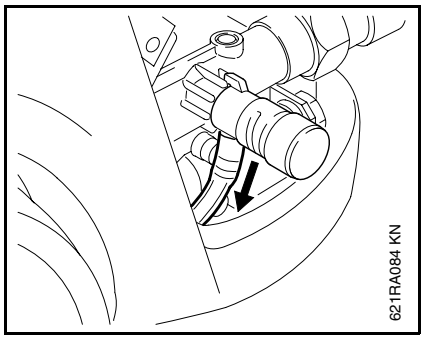
- Unscrew high-pressure hose (1).
- Unscrew hose connector (2) from water inlet.



- Undo fastening screws (rear screw not shown).
- Remove shroud.
  Ensure that spring nuts and power cable are not lost.

Reassemble parts in reverse order.

5.2 Removing / installing motor / pump unit

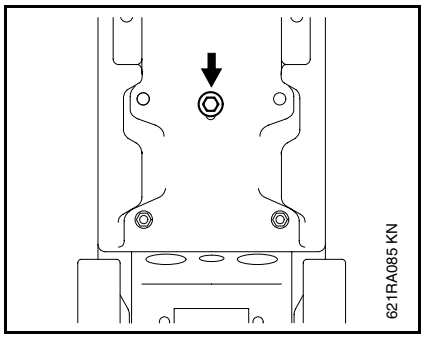


- Disconnect detergent intake hose from metering valve.

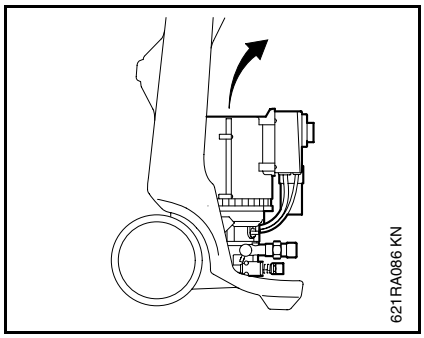
- Remove shroud (see 5.1).

- Stand machine upright.

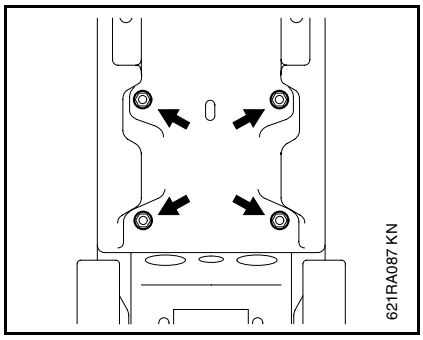
RE 140 K



- Undo fastening screw on motor / pump unit, steadying the machine with the other hand at the same time.

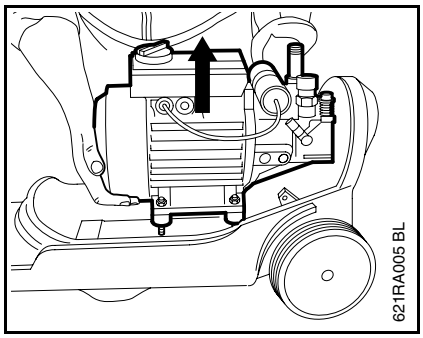


- Lift motor / pump unit out of frame.



RE 160 K

- Undo fastening nuts on motor / pump unit, steadying the bolts at the same time if necessary. Hold the machine steady and ensure that washers are not lost.
- Lay machine in a horizontal position.

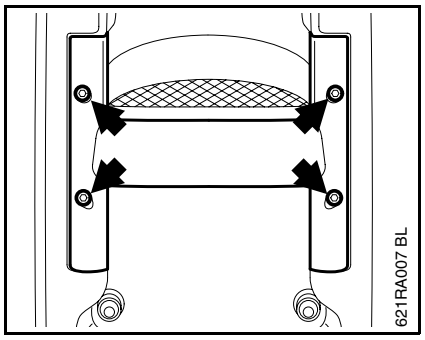


- Lift motor / pump unit out of frame. Ensure that rubber buffers, screws and washers are not lost.

All models

Reassemble parts in reverse order.

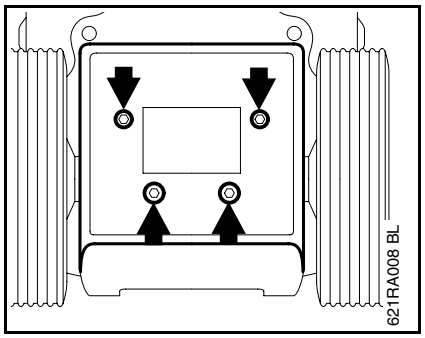
5.3 Chassis



- Remove handle:

- Undo fastening screws with size 5 hexagon socket wrench.

- Remove handle and replace if necessary.



Remove retainer and shaft:

- Undo fastening screws with size 5 hexagon socket wrench.

- Remove retainer and shaft.

Proceed as described for the high-pressure cleaners of series STIHL RE 310 K, 340 K and 440 K for changing wheels.

Replace faulty parts.

Reassemble parts in reverse order.

6. SAFETY CONTROL BLOCK

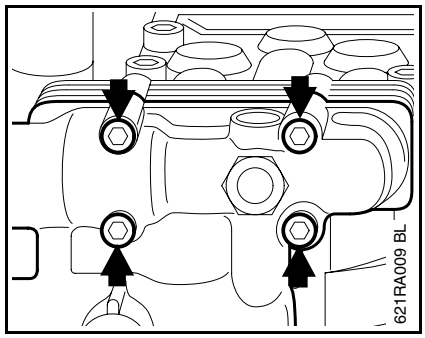
Important: The O-rings must always be replaced when carrying out repair work.
Before assembling the parts, all moving parts, sealing rings and screw threads must be thinly coated with special grease for high-pressure cleaners 0781 145 3516. Exceptions to this rule are mentioned where appropriate.

Note: The permissible working pressure of the machine has been set on the safety control block by the manufacturer and must not be changed. A lead seal is fitted to the safety control block for this reason.
The permissible working pressure must be reset after all repairs and a new lead seal fitted to the safety control block.

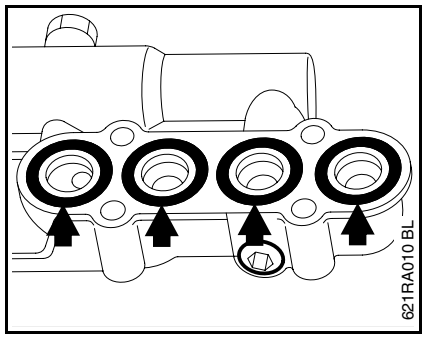
6.1 Removing / installing the safety control block

- Remove shroud (see 5.1) and motor / pump unit (see 5.2).

Note: The screw plug should only be removed if leaking.



- Undo fastening screws.



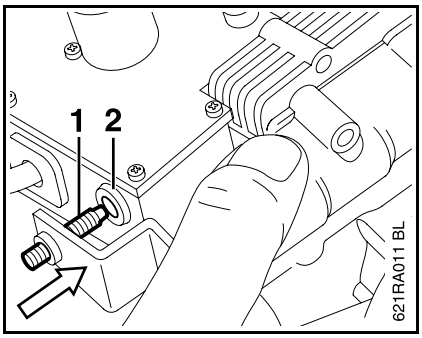
- Carefully remove the safety control block. Ensure that the adjusting screw for the micro-switch, O-rings and delivery valves are not lost.

- Replace O-rings.

6.2 Removing / installing the control piston

To replace the safety control block housing:
Remove
- control piston (see 6.2),
- injector (see 6.4),
- non-return valve (see 6.5) and
- detergent metering valve (see 6.6).

Reassemble parts in reverse order and ensure that O-rings are fitted.

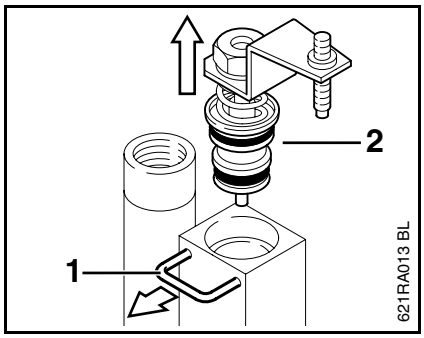


- Carefully insert adjusting screw (1) into opening (2) in microswitch.

- Turn in fastening screws and tighten down crosswise with a torque of 7 Nm.

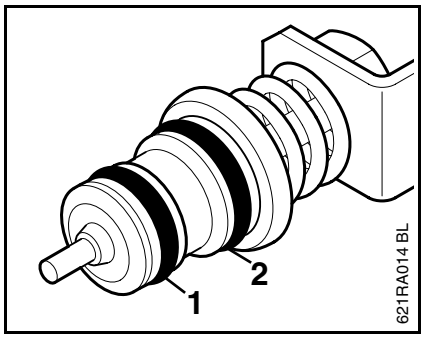
- Then set the working and cutout pressure (see 6.3) and refit the lead seal on the safety control block.

- Remove shroud (see 5.1).

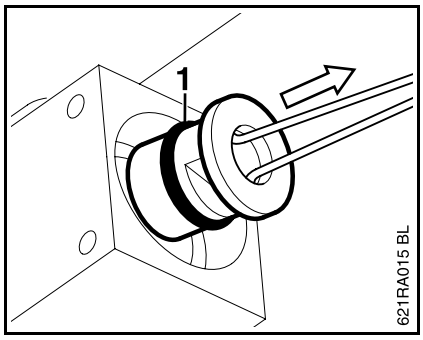


- Carefully prise off U-bar (1) with a screwdriver if necessary and pull it out.

- Draw control piston (2) out of safety control block housing.



- O-rings (1, 2) on control piston must always be replaced.
- Examine control piston for signs of damage and replace completely if necessary. Ensure that correct control piston is fitted (spare parts list).



- Draw valve body out of safety control block with hook 5910 890 2900. Remove ball and valve-seat insert from safety control block.

- Replace O-ring (1) in valve body.

- Examine valve body, ball and valve-seat insert; replace if necessary.

- Clean valve seat in safety control block.

Reassemble parts in reverse order.

Note: Thinly coat valve-seat insert, valve body and O-ring with special grease for high-pressure cleaners 0781 145 3516 before fitting them.

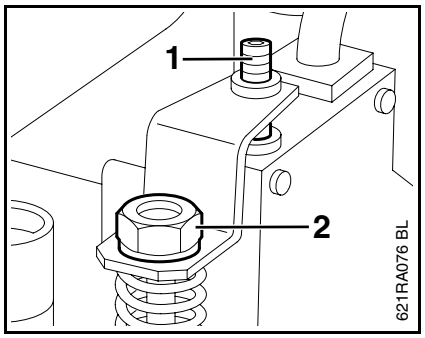
- Fit control piston and secure with U-bar.

- Then set pressure control system (see 6.3).

6.3 Set pressure control system

- Connect test pressure gauge 5910 850 3205 between high-pressure port and high-pressure hose.

- Connect water inlet and high-pressure hose.



- Completely unscrew the micro-switch adjusting screw (1) with a size 2.5 hexagon socket wrench.

- Switch on machine.

- Open spray gun.

- Set maximum working pressure on spray lance.

- Back off adjusting nut (2) until pressure has dropped completely.

- Screw adjusting nut in again until reading on pressure gauge no longer increases (maximum working pressure).

- The setting is adjusted precisely by slowly backing off and screwing in the adjusting nut.

The bypass valve is set correctly when the adjusting nut is screwed in precisely to the point necessary for the maximum pressure (reading on pressure gauge) to be barely reached.

- Let machine run for approx. 10 seconds. Operate the spray gun two or three times.

Note: The maximum pressure and cutout pressure settings are determined by the adjusting nut. Ensure that the cutout pressure does not become too high by screwing the nut in further.

The cutout pressure (= pressure at which the bypass valve opens) must be 5 bar higher than the maximum working pressure (see 3.2).

To check the setting:

- Close spray gun and read off cutout pressure value on pressure gauge.

If the value is too high:

- Open spray gun.

- Back off adjusting nut slightly.

- Close spray gun.

- Check cutout pressure.

Repeat this procedure until the specified cutout pressure (see above) has been reached. The working pressure must not decrease at the same time (reading on pressure gauge when spray gun is open).

The cutout pressure must also remain constant. If necessary, the setting must be repeated or the high-pressure cleaner examined for leaks.

The microswitch is set with the aid of the adjusting screw when the motor is running and with the spray gun closed:

- Turn adjusting screw in until motor cuts out.

- Then turn on another half-turn.

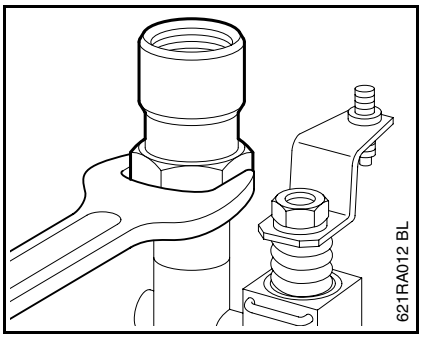
- Check setting at minimum pressure and correct if necessary.

- Actuate spray gun several times. The motor must switch on when the spray gun is opened and off when it closes; repeat adjustment if necessary.

- Seal setting of locknut and adjusting screw with locking paint.

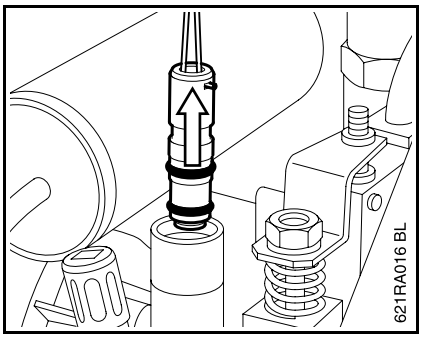
- Remove test pressure gauge.

- Unscrew high-pressure hose, remove shroud if necessary (see 5.1).



- Unscrew high-pressure hose connection with size 30 fork wrench.

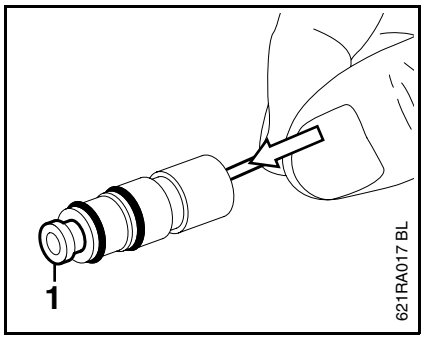
- Replace O-ring in high-pressure port.



- Pull injector out of safety control block housing with hook 5910 890 2900.
  Engage hook in two holes in injector housing.

- Remove safety control block (see 6.1).

- Remove injector (see 6.4).



- Drive injector nozzle (1) out of injector housing with a pin (dia. 2 mm).

- Replace O-rings in injector.

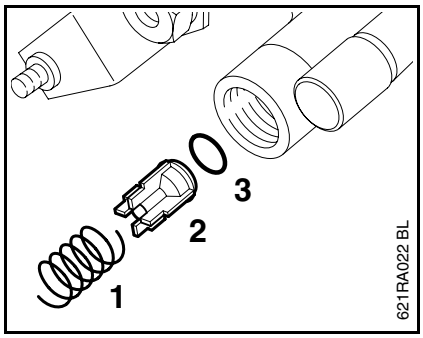
- Examine injector nozzle and housing; replace if necessary.

- Clean valve seat in safety control block housing.

Reassemble parts in reverse order.

- Thoroughly grease injector and O-rings before refitting them (special grease 0781 145 3516).

- Screw high-pressure hose connection in as far as possible with new sealing ring.



- Pull spring (1) and piston (2) out of safety control block housing (use pliers if necessary).

- Replace O-ring (3) on piston.

- Clean valve seat in safety control block housing.

Reassemble parts in reverse order.

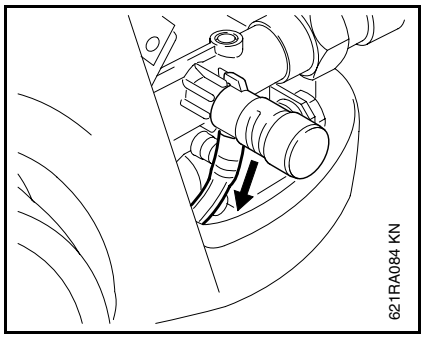
- Insert piston in housing with O-ring facing inwards.

- Ensure that piston and spring are seated correctly.

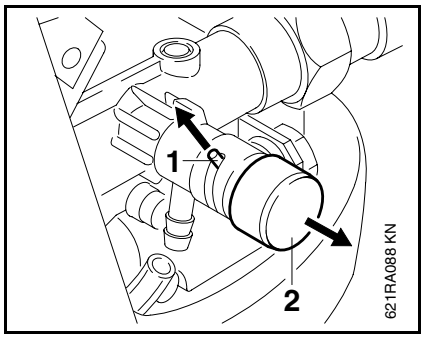
Refit injector and safety control block.

6.6 Detergent metering and non-return valve

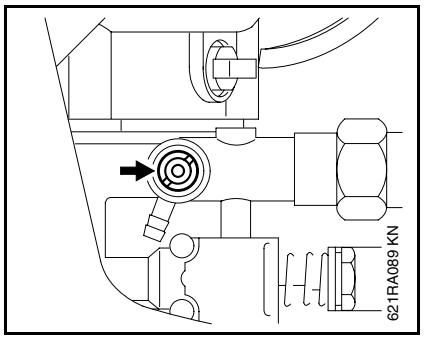
Note: The detergent intake comprises a detergent metering valve, a detergent non-return valve and an injector nozzle in the high-pressure port.
The injector must also be examined (see 6.4) if faults arise in the detergent intake.



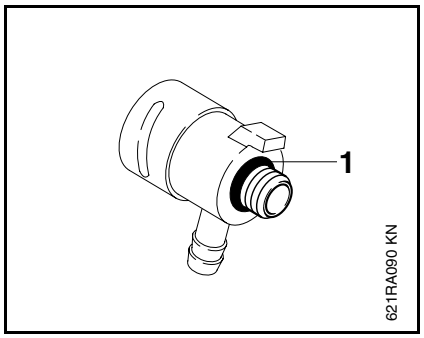
- Disconnect detergent intake hose from metering valve.



- Pull split pin (1) out of adjusting knob (2).
- Remove adjusting knob (2).



- Unscrew banjo bolt from safety control block. Ensure that the spring and ball of the non-return valve are not lost in the process.



- Remove O-ring (1) from banjo bolt.

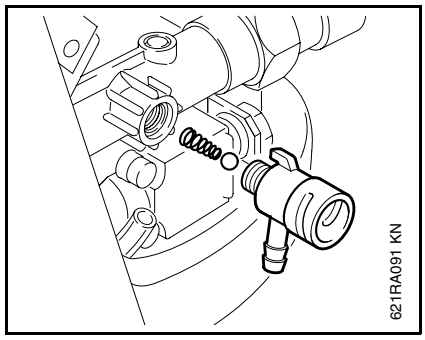
- Pull banjo bolt out of metering valve.

- Clean and examine all parts, replace if necessary.

- Clean valve seat in safety control block.

Reassemble parts in reverse order.

- Fit valve ball in banjo bolt.



- Fit valve spring with narrow end facing ball.

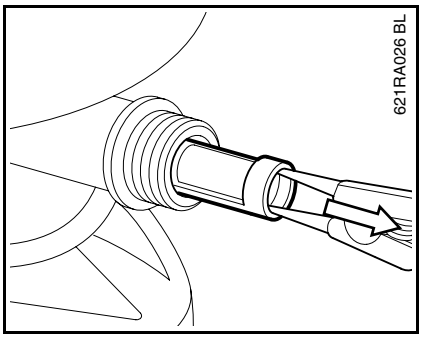
- Align metering valve so that intake connector points back to intake hose.

- Screw banjo bolt into safety control block and tighten securely.

7. HIGH-PRESSURPUMP

7.1 Screen in intake port (water inlet)

- Unscrew hose connector from water inlet (see 5.1).



- Remove screen from intake port with pliers, clean it and replace if necessary.

Reassemble parts in reverse order.

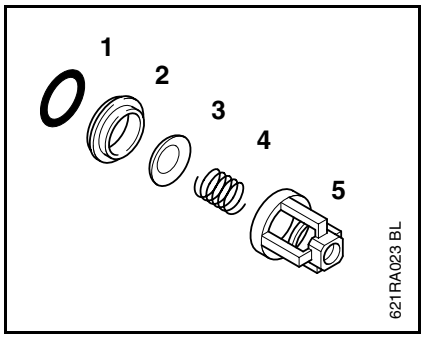
7.2 Removing / installing delivery valves

- Remove shroud (see 5.1) and motor / pump unit (see 5.2).

- Remove safety control block (see 6.1).

The delivery valves are removed and installed in the same way as on the high-pressure cleaners of series RE 102 K, 104 K and 106 K.

Important: Different valves are used in the high-pressure cleaners RE 140 K, 160 K (see spare parts list).



Note: Where possible, defective valves should only be replaced as a complete unit (O-ring (1), valve head (2), plate (3), spring (4) and cage (5)). The intake valves must also be checked (see 7.2) if delivery valves are soiled or damaged.

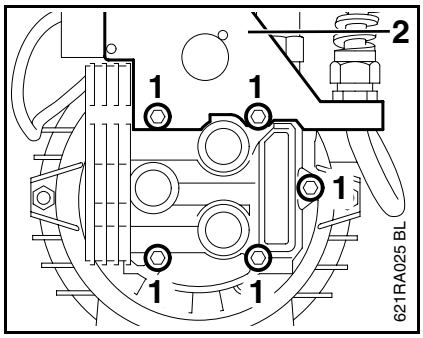
- Check correct functioning before installing valves.

7.3 Removing / installing valve block and intake valves

- Remove shroud (see 5.1) and motor / pump unit (see 5.2).

- Remove safety control block (see 6.1).

- Remove delivery valves if necessary (see 7.2).



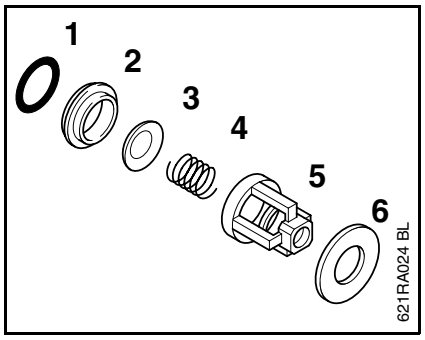
- Undo fastening screws (1).

- Remove retaining plate (2) with microswitch.

The intake valves are removed and installed in the same way as on the high-pressure cleaners of series RE 102 K, 104 K and 106 K.

Important: Different valves are used in the high-pressure cleaners RE 140 K, 160 K (see spare parts list).

- Pull valve discs out of valve block.



Note: Where possible, defective valves should only be replaced as a complete unit (O-ring (1), valve head (2), plate (3), spring (4) and cage (5)). The intake valves and delivery valves are identical.

Brass valve block only:
- Fit valve discs (6).

- Check correct functioning before installing valves.

Reassemble parts in reverse order.

Ensure that all O-rings are fitted and that the valve block is not misaligned when fitted.

- Turn in fastening screws.

- Insert microswitch and turn in fastening screws.

- Tighten fastening screws on valve block down crosswise (15 Nm).

7.4 Removing / installing pump housing and pump piston

- Remove valve block (7.3).

- Drain oil (see chapter 11).

The pump housing and pump piston are removed and installed in the same way as on the high-pressure cleaners of series RE 102 K, 104 K and 106 K.

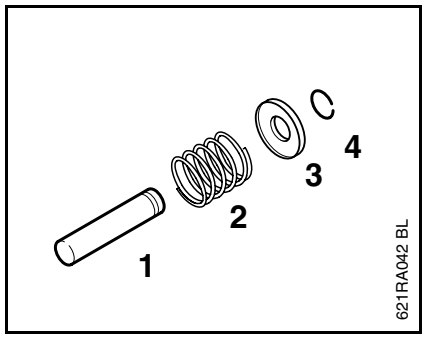
Note: Steady the pump housing when undoing the fastening screws so that it is not pushed aside by the force of the springs.

7.5 Disassembly / assembly of the pump piston

- Remove pump piston (see 7.4).

- Remove spring and washer.

- Remove circlip.



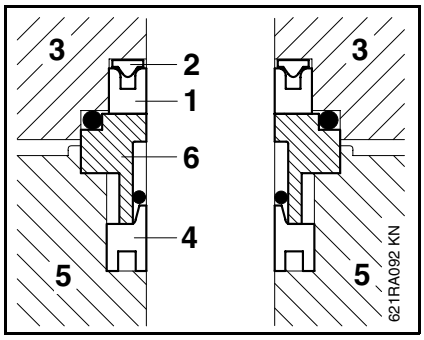
- Examine piston (1), spring (2), washer (3) and circlip (4) and replace if necessary.

Reassemble parts in reverse order. Ensure that washer is fitted correctly.

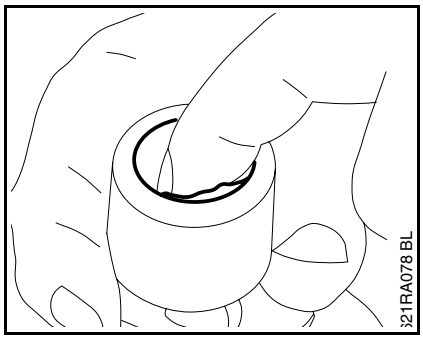
7.6 Replacing the high-pressure cups and oil seals

- Remove pump piston (see 7.4).

The high-pressure cups and oil seals are removed and installed in the same way as on the high-pressure cleaners of series RE 102 K, 104 K and 106 K, with the following additional steps:

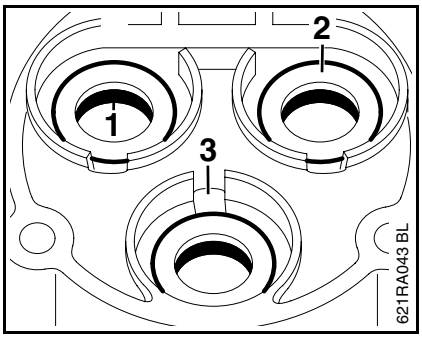


RE 140 K

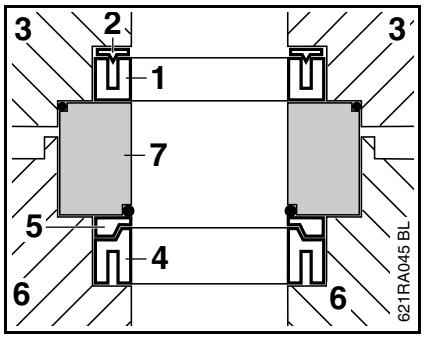


- Coat inner surface of assembly sleeve 4726 890 2200 with special grease.

RE 160 K

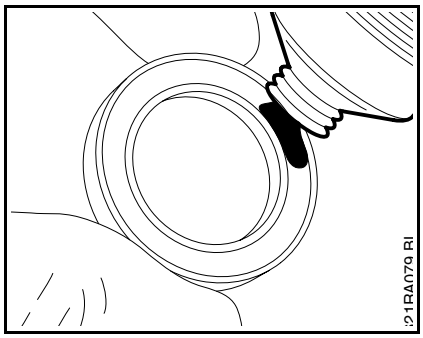


- The oil seals (1) in the pump housing are mounted on support rings (2).
- The oil seals can be prised out by applying an implement in the recesses (3) in the pump housing.

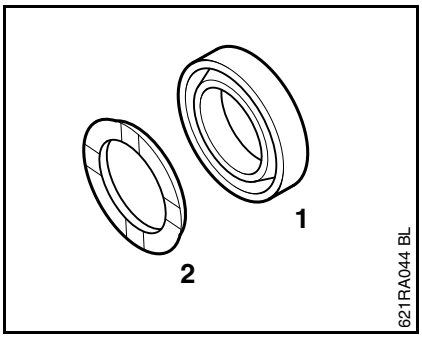


Installation position of the oil seals and high-pressure cups:

1 High-pressure cup
2 Support ring
3 Valve block
4 Oil seal
5 Support ring
6 Pump housing
7 Guide bushing



- Fill the grooves of the high-pressure cups and oil seals with special grease 0781 145 3516.



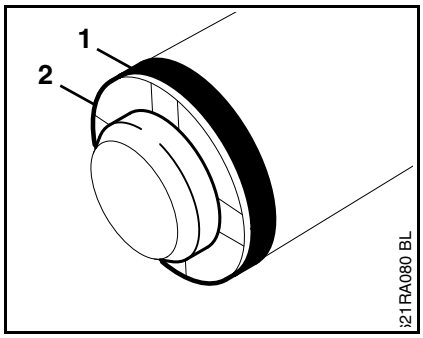
RE 160 K

- The high-pressure cups (1) in the valve block are likewise mounted on a support ring (2).

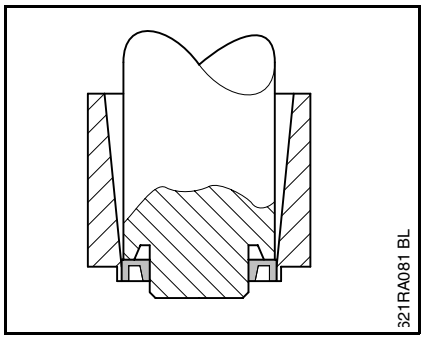
All models

Note: Use assembly device 4726 890 2200 (assembly arbor and sleeve) to fit the high-pressure cups and oil seals.

Proceed as follows:



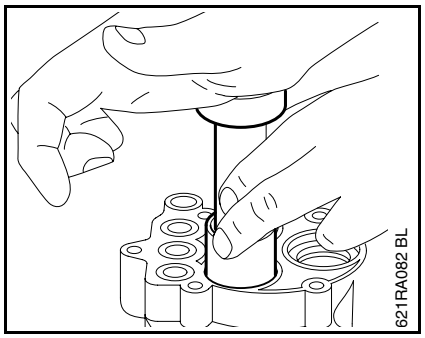
- Coat the new high-pressure cup (1) with special grease 0781 145 3516 and press onto assembly arbor 4726 890 2200 together with support ring (2).



- Slide assembly arbor with high-pressure cup into the larger opening in the assembly sleeve (interior of sleeve is tapered).

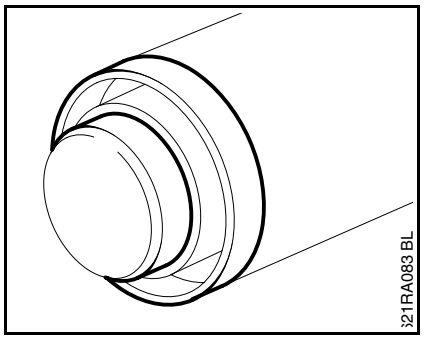
- Press sleeve against a soft, level and clean surface and adjust arbor until cup is flush with end of sleeve.

- Position complete assembly device on valve block. The collar fits into the seat of the high-pressure cup.



- Drive high-pressure cup into seat in valve block with the assembly arbor.

- Fill grooves of oil seals with special grease 0781 145 3516.



- Slide oil seal onto assembly arbor with the groove facing upwards. The sealing lip of the oil seal fits into the recess on the assembly arbor.

- Press oil seal into pump housing with assembly tool 4726 890 2200 in the same way as the high-pressure cups. Do not damage the sealing lip.

- Insert support rings in pump housing and press in with assembly arbor.

Reassemble remaining parts in reverse order.

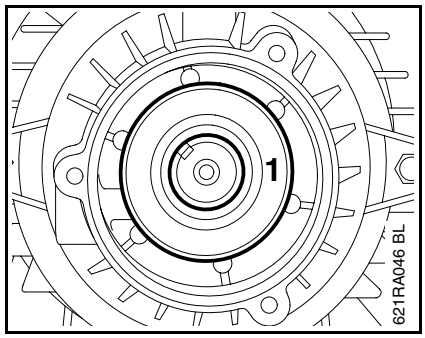
- Installation position of guide bushing: see diagram.

- Remove shroud (see 5.1) and motor / pump unit (see 5.2).

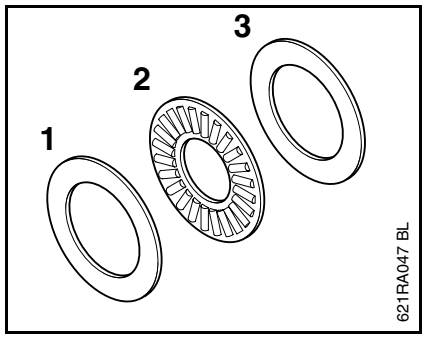
- Remove safety control block (see 6.1), valve block (see 7.3) and pump housing (see 7.4).

The outer thrust bearing is removed and installed in the same way as on the high-pressure cleaners of series RE 102 K, 104 K and 106 K.

RE 160 K only



- Pull swashplate (1) and inner thrust bearing off the drive shaft.



Examine the various parts of the outer (see RE 102/104/106 K) and inner thrust bearing and replace if necessary: upper washer (1), cage with bearing rollers (2) and bottom washer (3).

8. ELECTRIC MOTOR
8.1 Removal

All models

Reassemble parts in reverse order.

Note: All parts of the thrust bearing and the swashplate must be well oiled before being installed.

- Remove shroud (see 5.1).

- Remove switch housing (see 9.2.1) and microswitch (see 9.2.5).

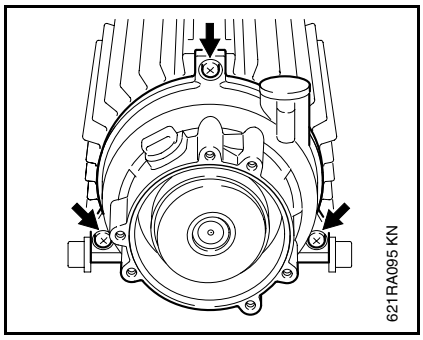
RE 160 K only

- Remove power cable (see 9.2.3) and capacitor (see 9.2.4).

All models

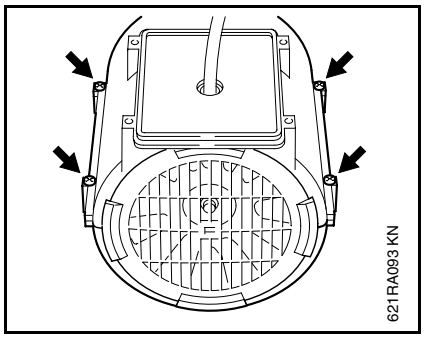
- Drain oil (see chapter 11).

- Remove valve block (see 7.3) and pump housing (see 7.4).



- Undo fastening screws on drive housing.

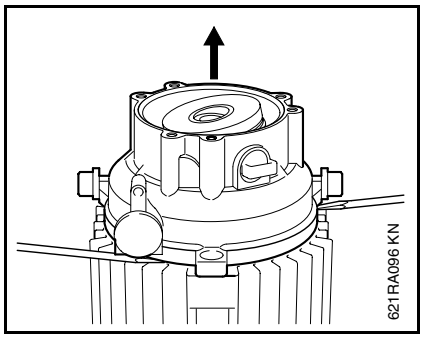
RE 140 K



- Undo fastening screws in cover.

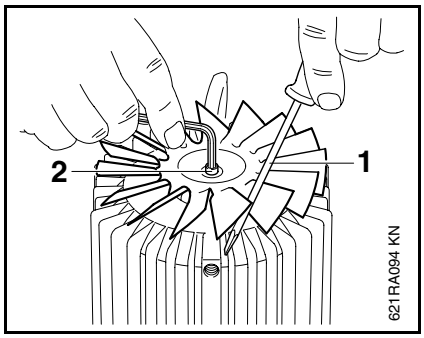
- Remove cover and fan shroud.

Note: The fastening screw is secured with Loctite.



- Carefully prise drive housing off stator housing with two screwdrivers:
  - alternately, working crosswise,
  - in small steps.

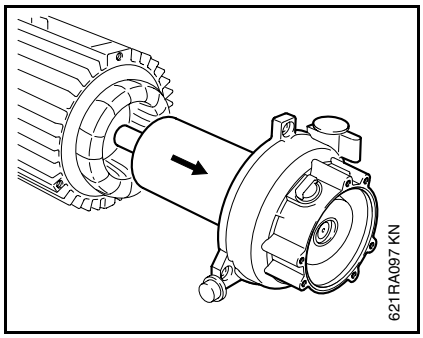
  Do not damage the housing.



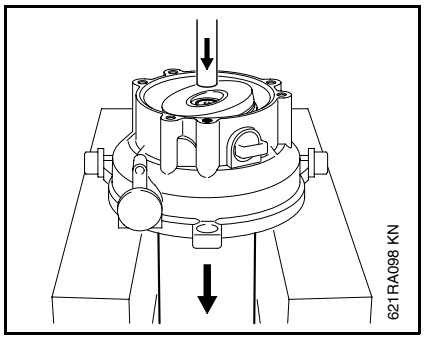
- Block the fanwheel with a screwdriver (1), but without damaging it.

- Undo fastening screw (2).

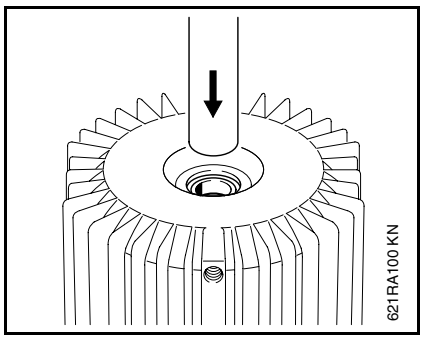
- Examine fanwheel and replace if necessary.



- Draw drive housing off stator with rotor.



• Press rotor out of drive housing and swashplate with suitable arbor.

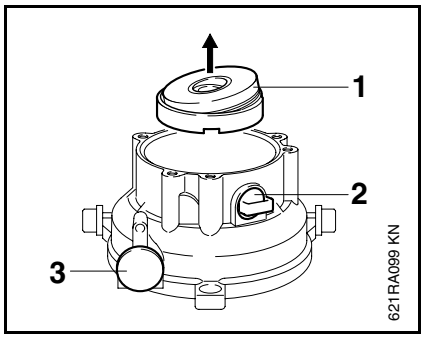


• Press ball bearing out of stator with suitable arbor.

Important! Oil seals, shoulder bearings and ball bearings which have been removed must always be replaced by new parts.

- Examine fanwheel and replace if necessary.

RE 160 K



• Remove swashplate (1) from drive housing.

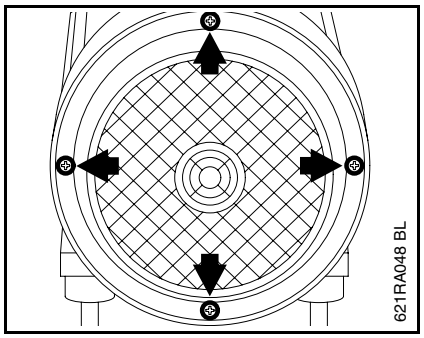
Remove shoulder bearing:

• Remove screw plug (2) and plug (3).

- Uniformly heat drive housing to approx. 80 °C on a hotplate or with a hot-air fan; the shoulder bearing will then drop out of the housing.

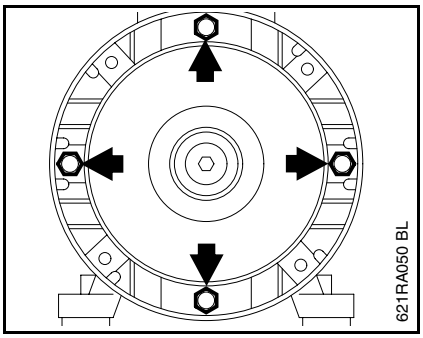
Important! Wear gloves!

- Press oil seal down and out of drive housing with a screwdriver.

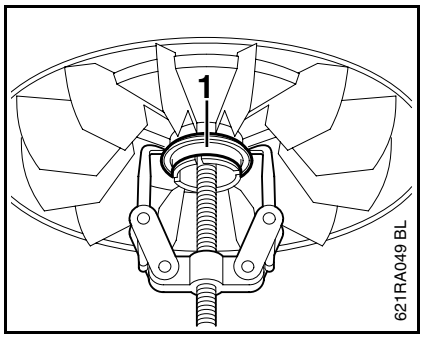


• Undo fastening screws for fan shroud.

- Remove fan shroud.

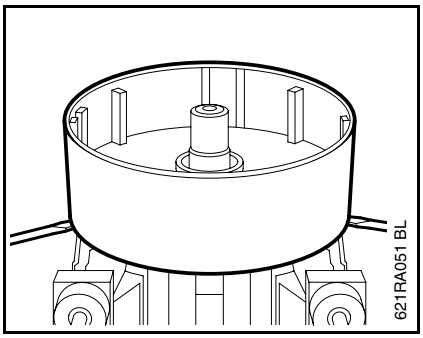


• Undo fastening screws in bearing cover.



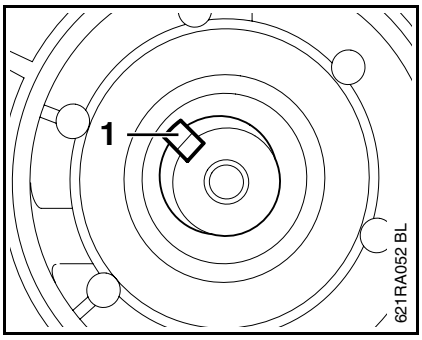
• Remove clamping ring (1) with standard extractor.

- Remove fanwheel, carefully prising it off with a screwdriver if necessary.



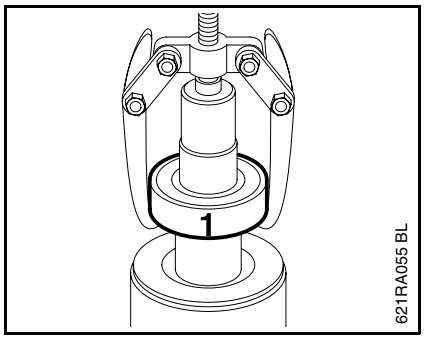
• Carefully prise bearing cover off stator with two screwdrivers. Do not damage stator housing or bearing cover.

Remove bearing cover.



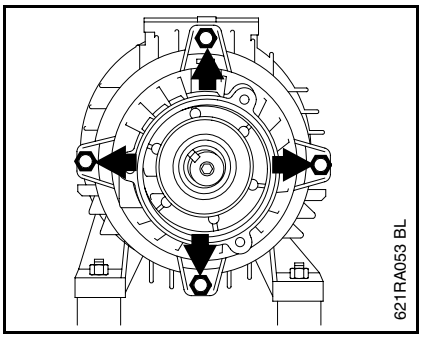
- Remove feather key (1) from drive shaft.

- Mark installation position of drive housing on stator.

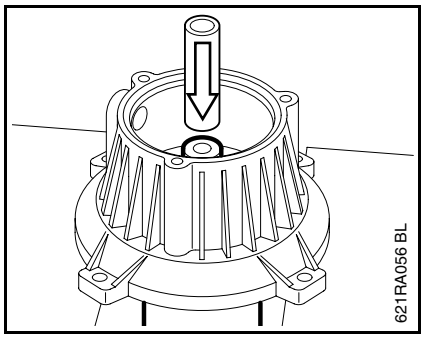


- Examine ball bearing (1) in bearing cover and replace if necessary.

- Draw ball bearing off drive shaft in order to replace it.

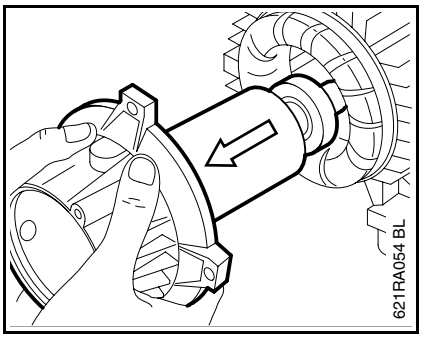


- Undo fastening screws on drive housing. Ensure that the fastening clamp for the capacitor is not lost.

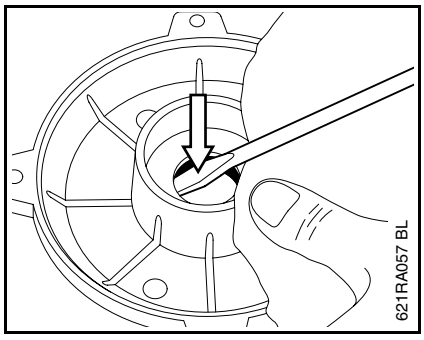


- Press rotor out of drive shaft with suitable arbor.

- Examine ball bearing of drive housing and remove as described above if necessary.



- Carefully draw drive housing out of stator with rotor. Do not damage housing.

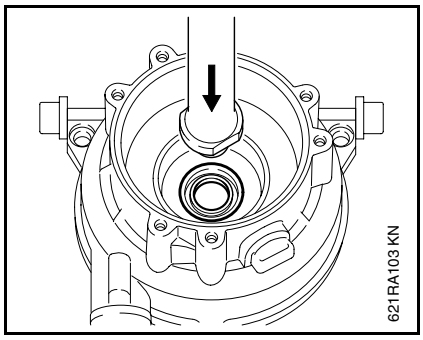


- Press oil seal down and out of drive housing with a screwdriver.

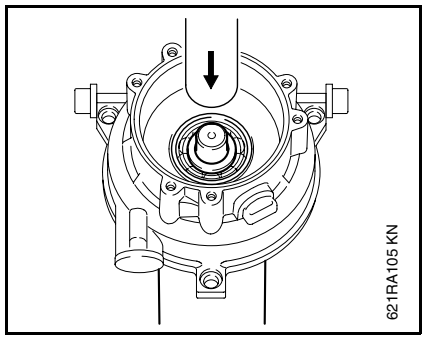
- Unscrew valve.

Important: Oil seals and ball bearings which have been removed must always be replaced by new parts.

Important: When installing the motor, ensure that the correct rotor, stator and ball bearings are used for the model to be repaired (see spare parts list).

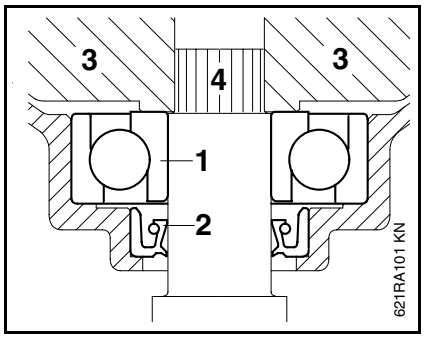


- Press oil seal into drive housing from the pump side using assembly arbor 4112 893 2401 (1). Open side faces pump.

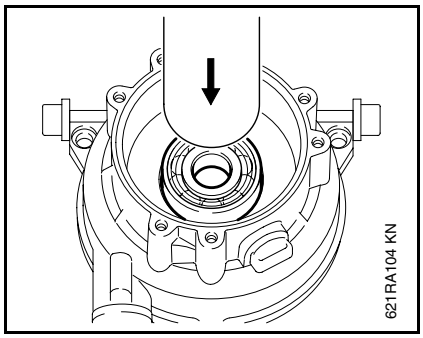


- Press inner race of shoulder bearing in drive housing onto drive shaft with suitable tubing (inside diameter slightly larger than inner bearing race) until it is flush with the shoulder.

RE 140 K



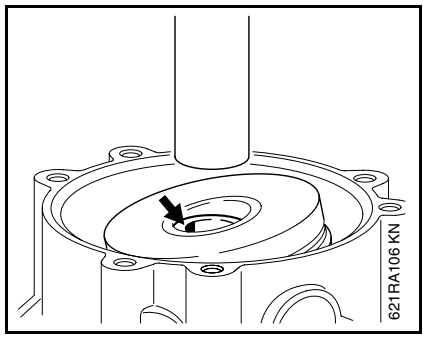
Important: Note installation position of shoulder bearing (1) and oil seal (2); refer to schematic drawing with swashplate (3) and rotor shaft (4).



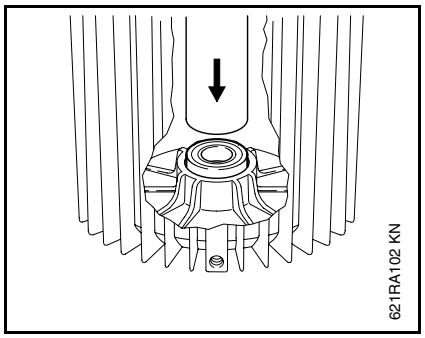
- Press new shoulder bearing into drive housing until flush with housing using suitable tubing (same outside diameter as outer bearing race).

- Oil sealing lip of oil seal.

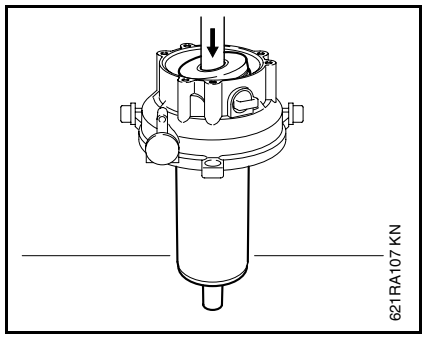
- Insert rotor in drive housing.



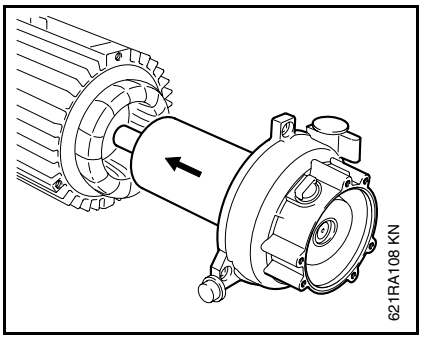
Note: The centre shaft of the swashplate is perpendicular to the axis of rotation. The tube must be positioned here when installing the swashplate.



- Press new ball bearing into stator with the aid of suitable tubing (outside diameter 34 mm).

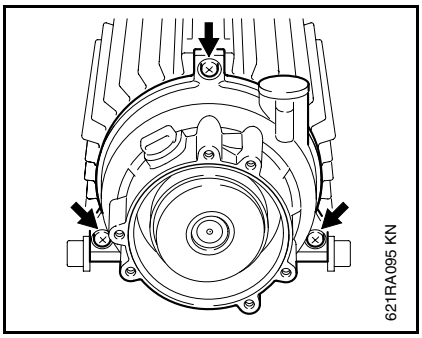


- Press swashplate onto drive shaft with suitable tubing.



- Insert rotor with drive housing in stator and align in the original installation position.

- Carefully drive the drive housing home with a rubber hammer.



- Turn in fastening screws.

Note: Tighten fastening screws down alternately to avoid stressing the housing.

- Tighten fastening screws down with a torque of 7 Nm.

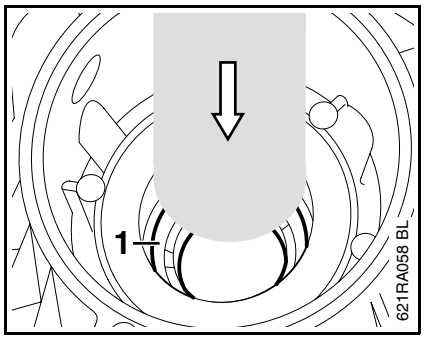
- Fit fanwheel on shaft and block it with a screwdriver.

- Wet fastening screw with Loctite 242 and tighten it securely.

- Refit pump housing (see 7.4) and valve block (see 7.3).

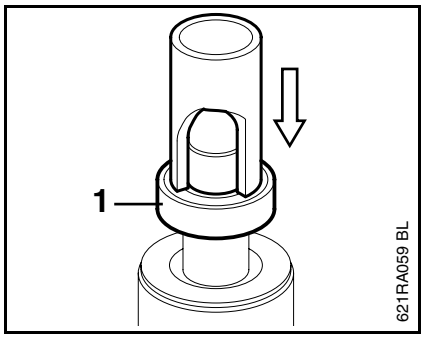
- Fill with oil (see chapter 11).

Reassemble remaining parts in reverse order.



RE 160 K

- Press oil seal (1) into drive housing from the pump side using assembly arbor 4112 893 2401. Open side faces pump.



- Press new ball bearings (1) onto drive shaft with suitable tubing (cut away in diagram).

- Oil sealing lip of oil seal.

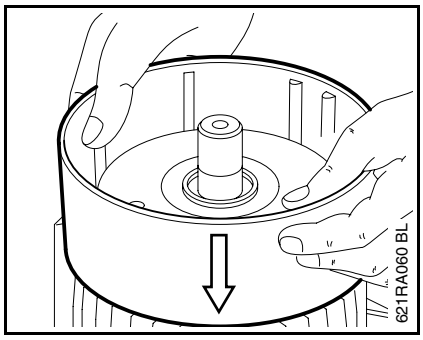
- Press drive housing onto drive-side ball bearing of rotor (drive shaft with notch for feather key).

- Insert rotor with drive housing in stator and align in original installation position (compare markings).

- Turn in fastening screws (upper screw with fastening clamp for capacitor).

Note: Tighten fastening screws alternately to avoid stressing the housing.

- Tighten fastening screws down with a torque of 7 Nm.



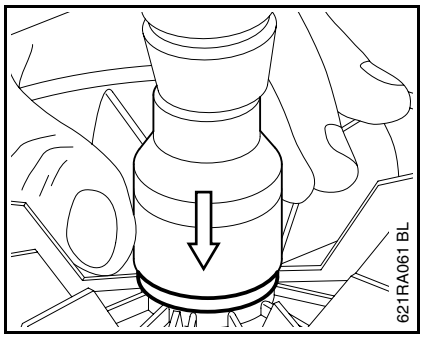
- Place bearing cover on drive shaft.

- Turn in fastening screws.

Note: Tighten fastening screws alternately to avoid stressing the housing.

- Tighten fastening screws down with a torque of 7 Nm.

- Slide fanwheel onto shaft and drive it home.

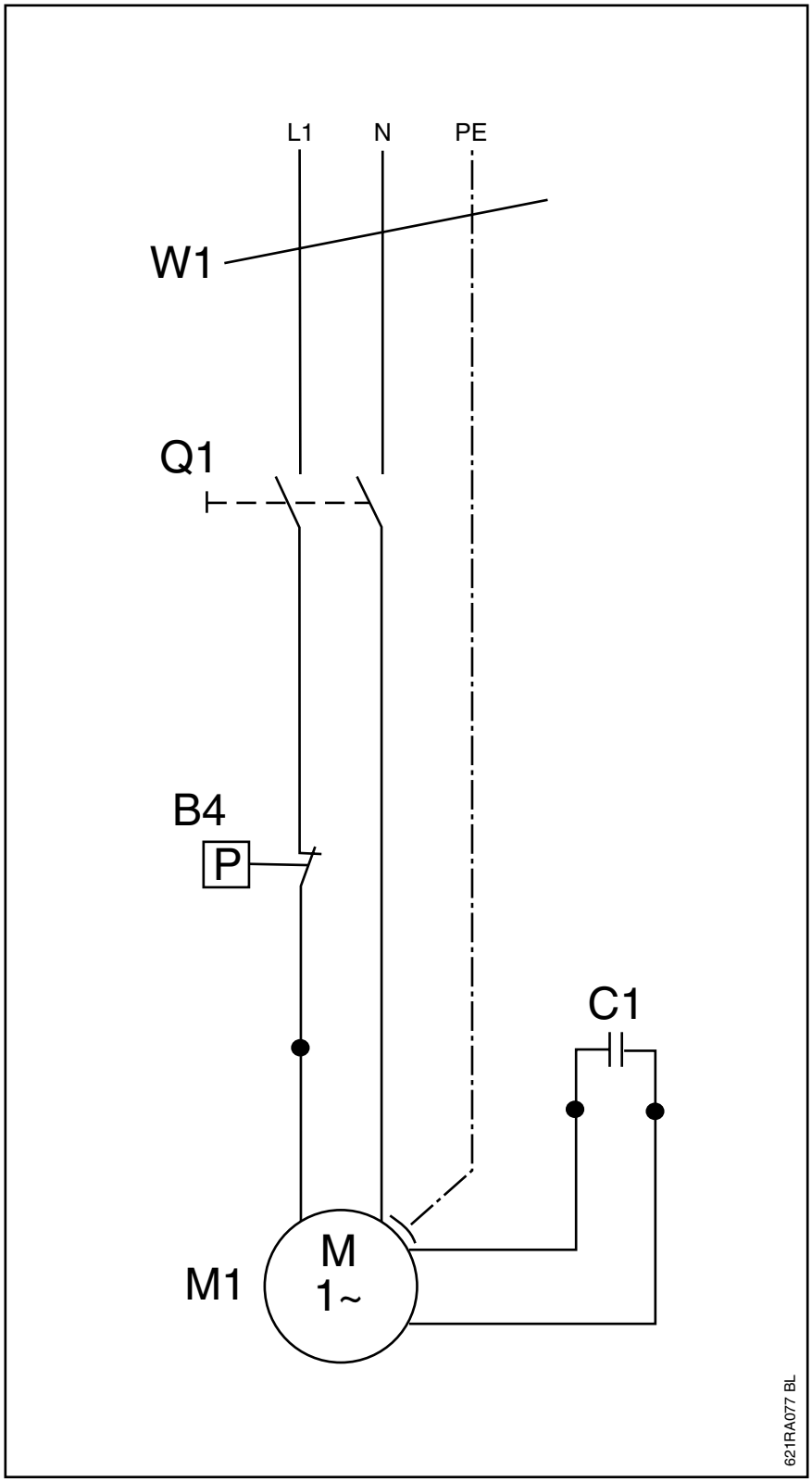


- Slide clamping ring onto fanwheel shaft and drive it home with a size 30 insert and a rubber hammer.

Reassemble remaining parts in reverse order.

Important!
The national safety regulations must be observed without fail!

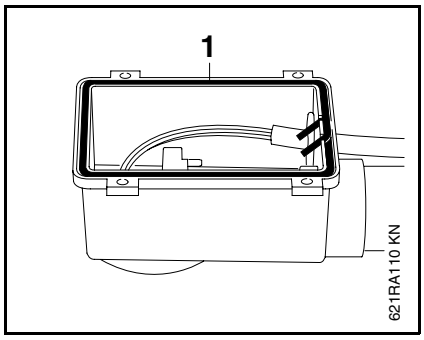
The power cable must be unplugged from the socket outlet at all times while carrying out repairs.



B4 = Microswitch
C1 = Capacitor
M1 = Motor with overload protection
Q1 = Master switch
W1 = Connecting lead

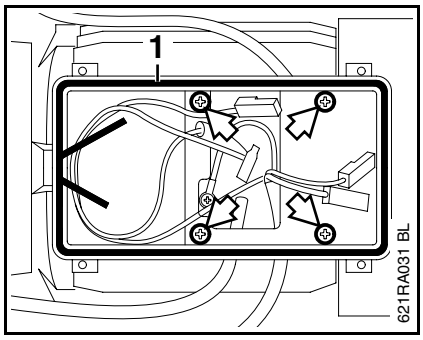
- Remove shroud (see 5.1).

Note: Note circuit diagram; if necessary, produce a drawing clearly showing which wire (note colour) is connected to the respective terminals.



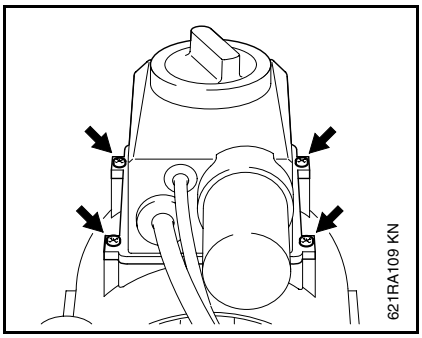
- Examine gasket (1) of switch housing and replace if necessary.

Reassemble parts in reverse order.



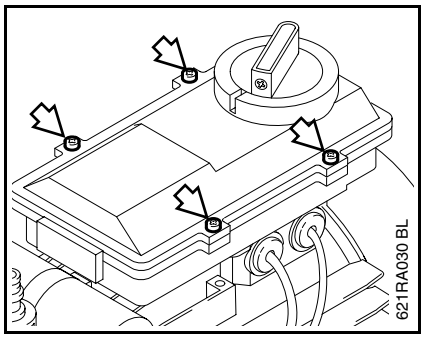
- Examine gasket (1) of switch housing and replace if necessary.
- Undo fastening screws of switch housing.

RE 140 K

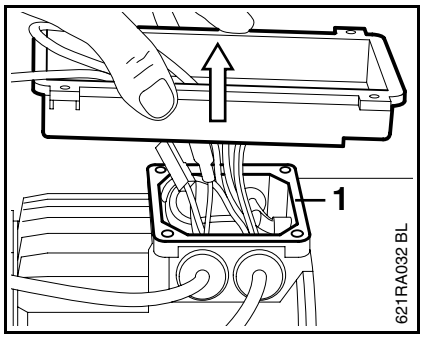


- Undo fastening screws in cover of switch housing.
- Disconnect plug connector and protective earth conductor. Ensure that the serrated washer is not lost.
- Remove switch, see 9.2.2.
- Remove cover.

RE 160 K



- Undo fastening screws in cover of switch housing. Ensure that nuts are not lost.
- Remove cable lugs from switch.
- Remove switch, see 9.2.2.
- Remove cover.



- Lift switch housing up, taking care not to damage the wires.
- Examine gasket (1) and replace if necessary.

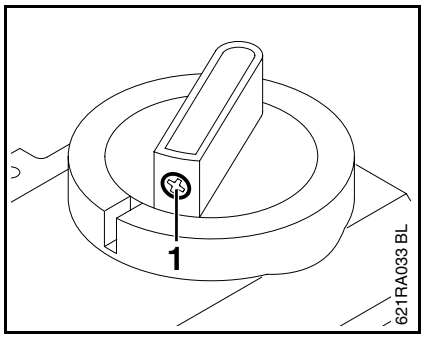
Reassemble parts in reverse order.

9.2.2 Switch

- Remove shroud (see 5.1).

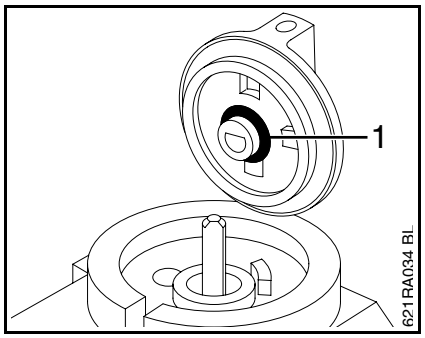
- Remove cover of switch housing (see 9.2.1).

Note: Note circuit diagram; if necessary, produce a drawing clearly showing which wire (note colour) is connected to the respective terminals.

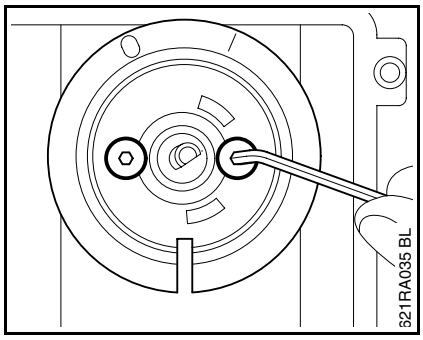


- Remove retaining screw (1) in rotary knob.

- Remove rotary knob.



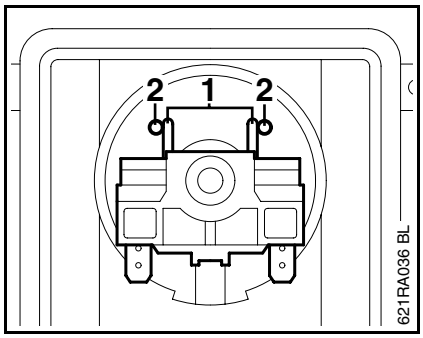
- Examine O-ring (1) in rotary knob and replace if necessary.



- Undo fastening screws on switch with size 2.5 hexagon socket wrench.

- Check the various parts and replace if necessary.

Reassemble parts in reverse order.



- Note installation position of switch: the two lugs (1) on the switch fit between the bumps (2) in the cover.

- Grease O-ring before refitting rotary knob.

9.2.3 Power cable

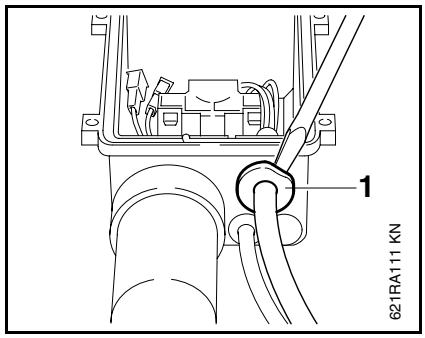
- Remove shroud (see 5.1).

- Remove cover of switch housing (see 9.2.1).

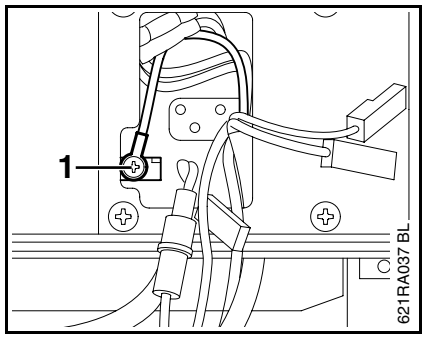
Note: Note circuit diagram; if necessary, produce a drawing clearly showing which wire (note colour) is connected to the respective terminals.

RE 140 K

- Remove lugs of power cable from switch.

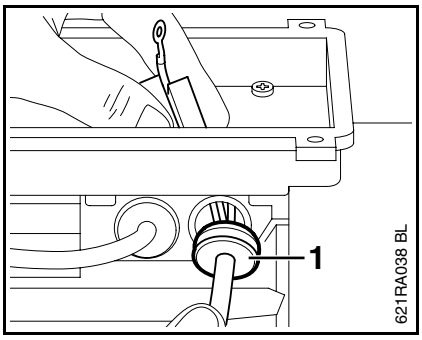


- Prise cable grommet (1) out of housing and pull it out of the housing with the power cable.

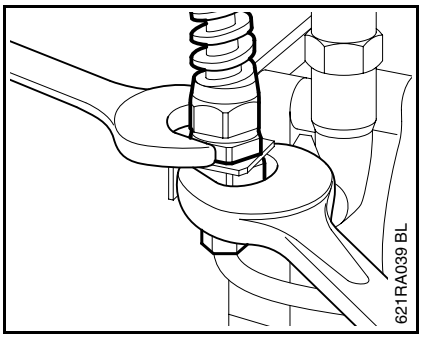


RE 160 K

- Disconnect protective earth conductor (1). Note the serrated washer.



- Press cable grommet (1) out of housing and pull it out of the housing with the power cable.



All models

- Unscrew cable gland with fork wrench:
  - Wrench size 22 for upper nut
  - Wrench size 24 for lower nut

- Check power cable, cable gland and anti-kink tube and replace if necessary.

Reassemble parts in reverse order.

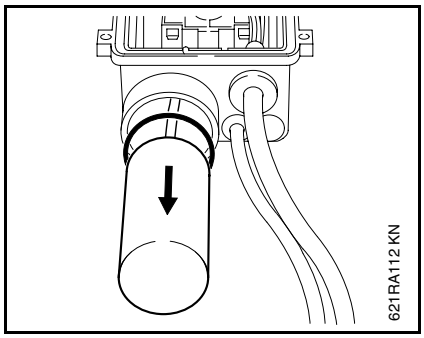
- Remove shroud (see 5.1).

- Remove cover of switch housing (see 9.2.1).

Note: Note circuit diagram; if necessary, produce a drawing clearly showing which wire (note colour) is connected to the respective terminals.

- Disconnect capacitor connecting leads.

RE 140 K



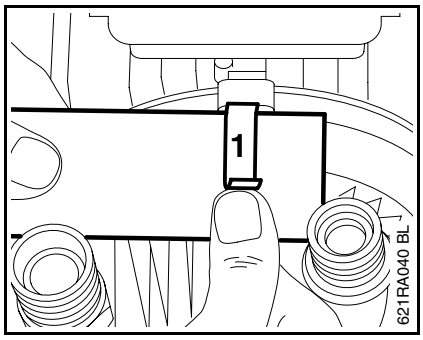
- Press capacitor out.

- Check O-ring on capacitor and replace if necessary.

- Replace defective parts.

RE 160 K

- Press cable grommet out of housing and pull out of housing with connecting lead (as for power cable, see 9.2.3).



- Release fastening clamp (1) and pull capacitor out sideways.

- Remove fastening clamp if necessary.

- Replace defective parts.

All models

Reassemble parts in reverse order.

- Ensure that O-ring and grommet are correctly seated.

- Remove shroud (see 5.1).

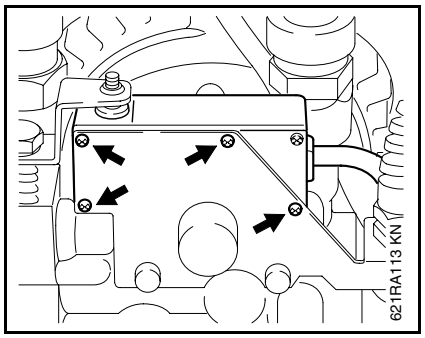
- Remove cover of switch housing (see 9.2.1).

Note: Note circuit diagram; if necessary, produce a drawing clearly showing which wire (note colour) is connected to the respective terminals.

- Disconnect connecting lead from microswitch.

- Press grommet out of housing and pull out of housing together with connecting lead (as for power cable, see 9.2.3).

- Remove safety control block (see 6.1).



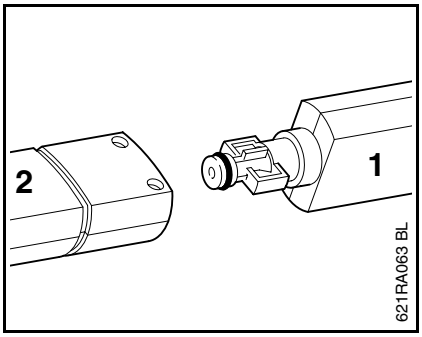
- Undo fastening screws on microswitch.

- Replace defective parts.

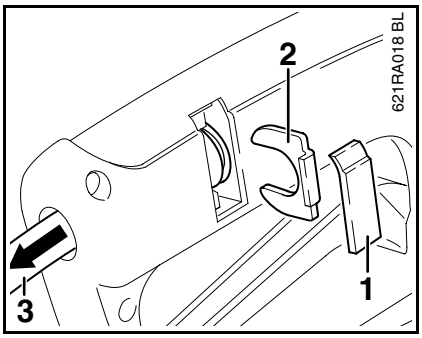
Reassemble parts in reverse order.

Ensure that grommet is seated correctly.

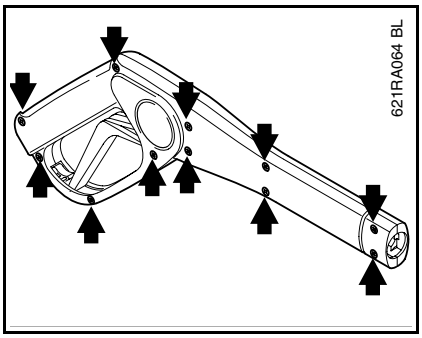
Important: O-rings must always be replaced when carrying out repairs. All moving parts and sealing rings must be thinly coated with special grease for high-pressure cleaners 0781 145 3516 before assembling the parts.



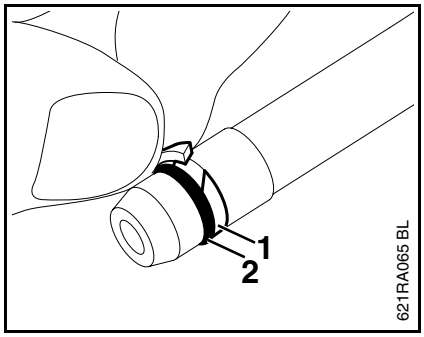
- Turn spray lance (1) 90° anti-clockwise to release from spray gun (2) and remove it.



- Prise off cover (1) with a small screwdriver.
- Prise off retainer (2) with a screwdriver and remove it.
- Pull high-pressure hose (3) out of spray gun.



- Undo fastening screws in right-hand handle moulding.
- Remove right-hand handle moulding, noting the valve, lever and high-pressure port.

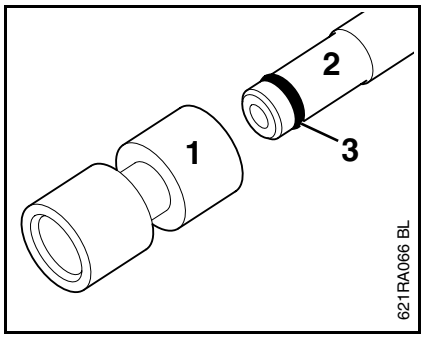


Note: A split support ring (1) is fitted on the high-pressure connection. To remove the ring, it must be pushed apart at the gap and then pulled off. The support ring must not be overextended. This is the case if it protrudes strongly from the groove.

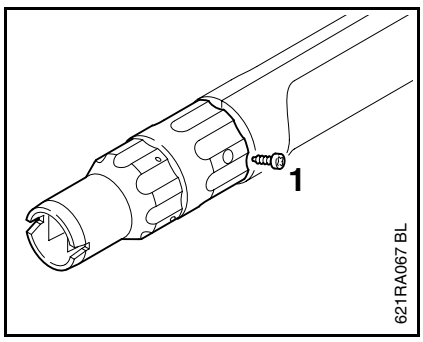
- Replace O-ring (2).

The remaining procedure for disassembling and assembling the spray gun is the same as on high-pressure cleaners of series RE 101 K.

Additional steps:

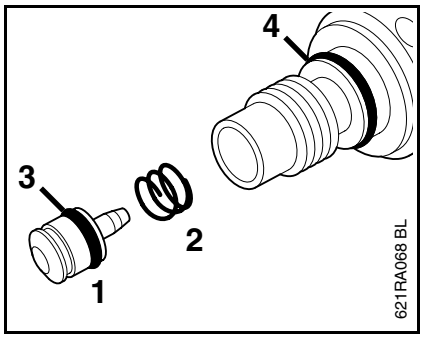


- Remove connecting elements (1) from spray lance (2).
- Replace O-rings (3).

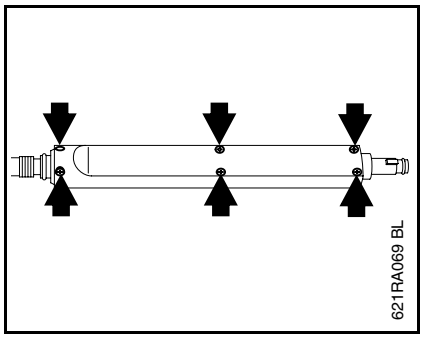


- Undo locking screw (1) on spray head.

- Unscrew spray head from spray lance, noting the nozzle and spring.

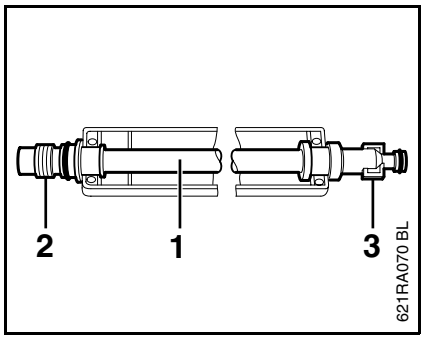


- Remove nozzle (1) and spring (2) from spray lance.
- Replace O-rings (3, 4).

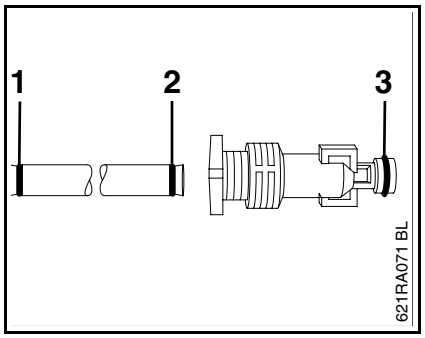


- Undo fastening screws in handle moulding of spray lance.

- Remove handle moulding.

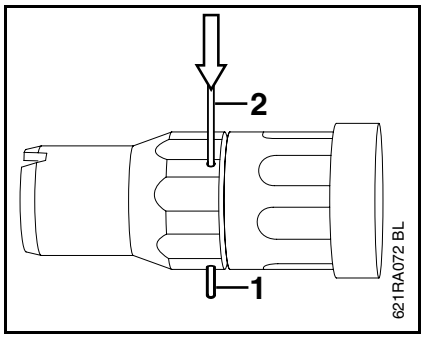


- Remove spray lance (1) from handle moulding.
- Remove spray head connecting element (2) and coupling (3).

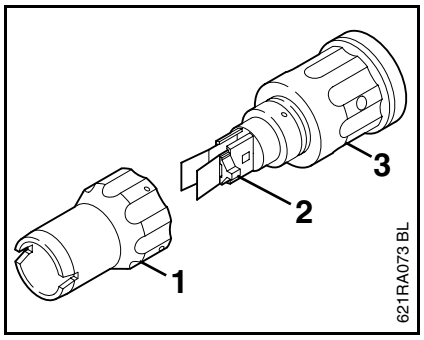


- Replace O-rings on spray lance (1, 2) and on coupling (3).

Note: All O-rings must be well greased before being fitted.

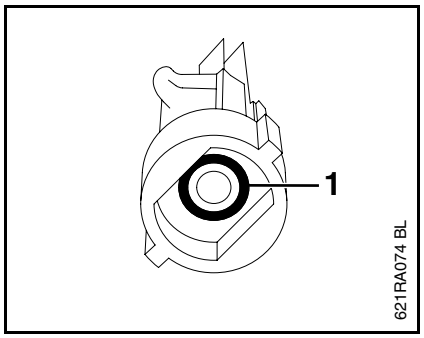


- Force both locking pins (1, second pin not shown in diagram) out of nozzle sleeve with a wire dia. 1.5 mm (2).



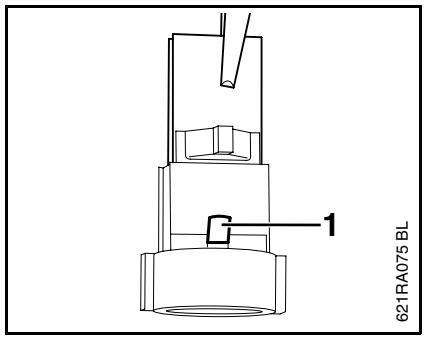
- Remove nozzle sleeve (1).
- Remove retainer (2) for leaf springs from housing (3).

Important: The leaf springs have extremely sharp edges. Beware of injuries! Always wear gloves when handling the leaf springs.



- Replace O-ring (1) in retainer for leaf springs.

Leaf springs should only be removed if damaged. Proceed as follows:



- Disengage leaf spring catch (1).
- Remove leaf spring with pliers.

Leaf springs which have been removed must always be replaced by new ones.

- Examine all parts for damage and replace if necessary. Ensure the correct nozzle is used (see spare parts list).

Reassemble parts in reverse order.

Note installation position of nozzle and springs.

Ensure that the connector and the coupling are correctly seated in the handle mouldings.

- Finally check correct functioning of nozzle sleeves with regard to jet pattern and pressure control.

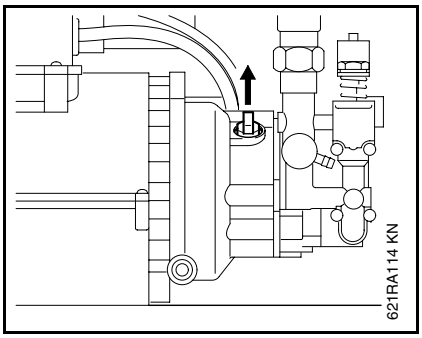
11. OIL CHANGE

The oil in this high-pressure cleaner is designed to ensure permanent lubrication of the machine in normal use and need not be changed.
If the machine is used in more demanding conditions or for commercial purposes, the oil must be changed every six months.

Oil capacity: 100 ml
Oil grade: SAE 15 W 40

- Remove shroud (see 5.1) and motor / pump unit (see 5.2) if necessary.

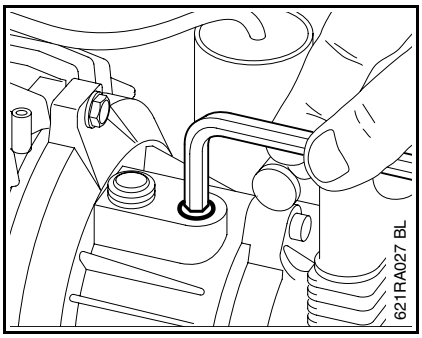
- Lay the motor / pump unit down so that the screw plug points upwards.



RE 140 K

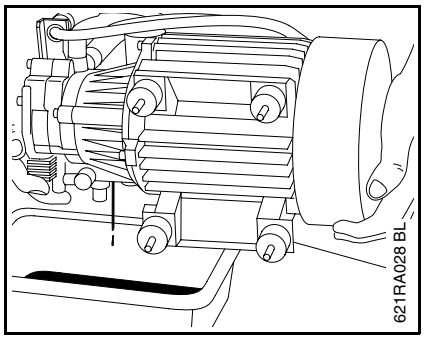
- Release and remove the screw plug.

- Replace O-ring.



RE 160 K

- Undo screw plug with 1/4" (size 7) hexagon socket wrench.

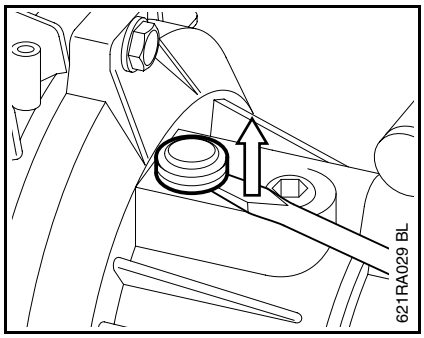


All models

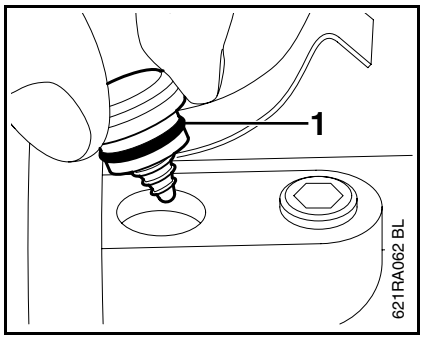
- Turn motor / pump unit on its side and let oil drain completely into a sufficiently large container.

RE 160 K

Note: The pressure compensating valve should only be removed if leaking or damaged. Proceed as follows:



- Carefully prise relief valve off with a screwdriver. Do not damage housing.
- Examine relief valve and replace if necessary.



- Replace O-ring (1).

- Grease relief valve before pressing it into place.

All models

- Fill with 100 ml oil (oil grade as specified above).

RE 140 K

- Insert and lock screw plug.

RE 160 K

- Turn in screw plug and secure with a torque of 7 Nm.

All models

Reassemble parts in reverse order.

12. SPECIAL TOOLS AND SERVICE TOOLS

12.1 Special tools

No.	Part name	Part No.	Use
1	Hook	5910 890 2900	Removing injector from safety control block housing Drawing valve body out of safety control block
2	Assembly device (assembly arbor and sleeve)	4726 890 2200	Fitting high-pressure cups in valve block with support rings Installing oil seals in pump housing
3	Assembly arbor	4112 893 2401	Forcing oil seal into drive housing
4	Extractor	4703 890 4500	Drawing ball bearings off drive shaft
5	1/4" hexagon socket wrench		Screw plug in drive housing
6	Torque wrench	5910 890 0300	
7	Torque wrench	5910 890 0310	
8	Test pressure gauge	5910 850 3205	Setting pressure control system

12.2 Service accessories

No.	Part name	Part No.	Use
1	Special grease, waterproof, 50 g tube	0781 145 3516	O-rings, high-pressure cups, sliding surfaces in contact with water
2	Locking paint, standard		Adjusting nut and adjusting screw for pressure setting on control piston