

Nilfisk

E130.3 & E130.3 X-TRA E140.3 X-TRA & E145.3 X-TRA



Repair Manual

Nilfisk

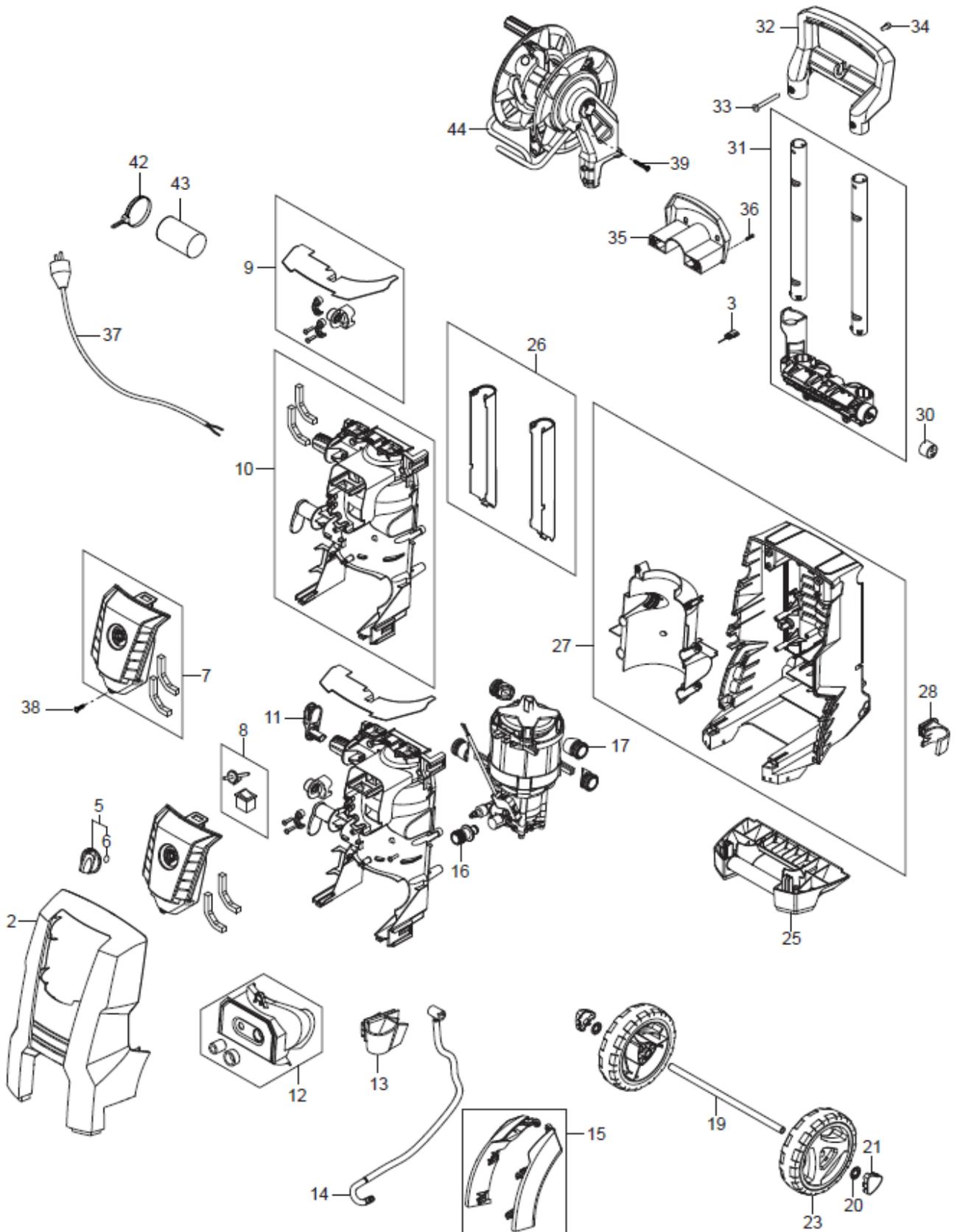
A. Safety Precautions	3
B. Technical data	4
C. Structure	5-7
D. Service / Repair	8-24
E. Tools	25
F. Function	26-27
G. Electric diagrams	28-29

Warning!

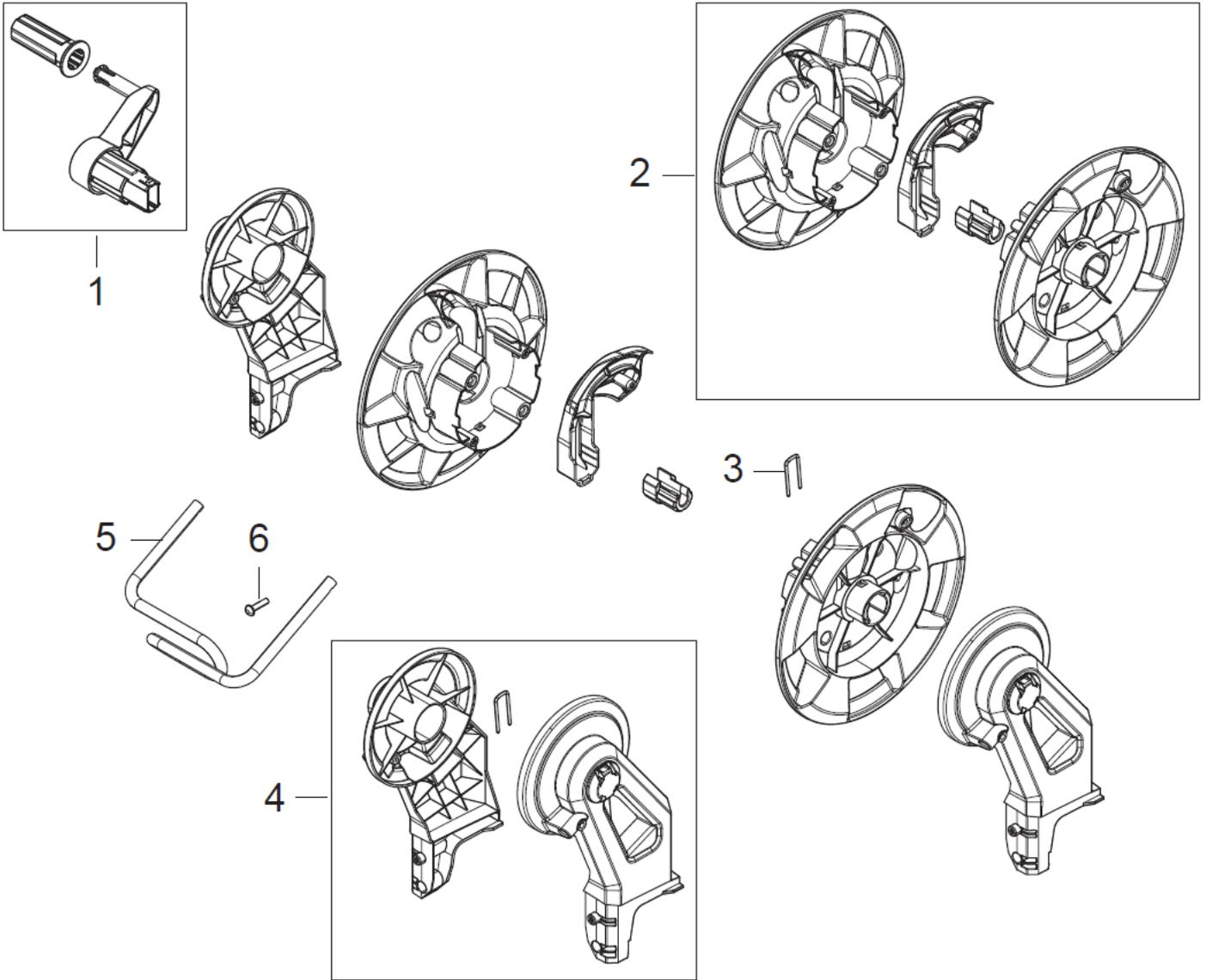
- Inhalation of aerosols can be hazardous to health. Where applicable use a device in order to avoid or reduce aerosols production, e.g., a shield covering the nozzle. For protection against aerosols use a respiratory mask of class FFP 2 or higher.
- Always unplug the power plug before cleaning or maintenance and when replacing parts or converting the machine to another function.
- Observe the national safety regulations issued, for example, by the employers liability insurance association, social security institutions, occupational safety and health authorities or other organizations.
- Hold the spray lance firmly with both hands. The spray lance is affected by a thrust of up to 16,4N during operation.
- The operator and anyone in the immediate vicinity of the site of cleaning should take action to protect themselves from being struck by debris dislodged during operation. Wear goggles during operation.
- Disconnect from electrical power supply before carrying out user maintenance.
- To ensure the appliance safety only use original spare parts from the manufacturer or approved by the manufacturer.
- High pressure hoses, fittings and couplings are important for the safety of the appliance. Only use hoses, fittings and couplings recommended by the manufacturer.
- Do not use the appliance if a supply cord or important parts of appliance are damaged, e.g. safety device, high pressure hose and trigger gun.
- The appliance is only intended for cleaning outdoors.
- Appropriate ear protection must be used.
- Never use the machine in an environment where there could be a danger of explosion. If any doubt arises, please contact the local authorities.
- It is not allowed to clean asbestos containing surfaces with high pressure.
- This high pressure washer must not be used at temperatures below 0°C.
- Voltage and frequency of the machine (see rating plate) must match the voltage of and frequency of the mains supply.
- Only connect the machine to electrical installation made by a certified electrician and comply with IEC 60364-1.
- It is recommended that the electrical supply to the machine should include a residual current device that will interrupt the supply if the leakage current to earth exceeds 30 mA for 30 ms.

Product segment: Consumer		E130.3 E130.3 X-TRA	E140.3 X-TRA	E145.3 X-TRA
Max pressure	bar	130	140	145
Voltage	V	230	230	230
Frequency	Hz	50	50	50
Rated current	A	9	9,5	10
Power consumption	kW	2	2,1	2,1
Motor speed	min ⁻¹	2800	2800	2800
Flow rate, HP	l / min.	7,5	7	6,7
Pump pressure	bar	113 ±9	122 ±9	126 ±9
Nozzle pressure	bar	106 ±9	115 ±9	119 ±9
Standby pressure	bar	15-35	15-35	15-35
Retaining time	min.	5	5	5
Oil contents	ml	60	60	60
Oil type		LHM32	LHM32	LHM32
Max inlet water temperature	°C	60	60	60
Max inlet water pressure	bar	10	10	10
High pressure hose length	m	8-10m	9-10m	9-10m
Suction height	m	1	1	1
Supply cable length	m	5m	5m	5m
Insulation class (Motor)		F	F	F
Ingress protection class		IPX5	IPX5	IPX5

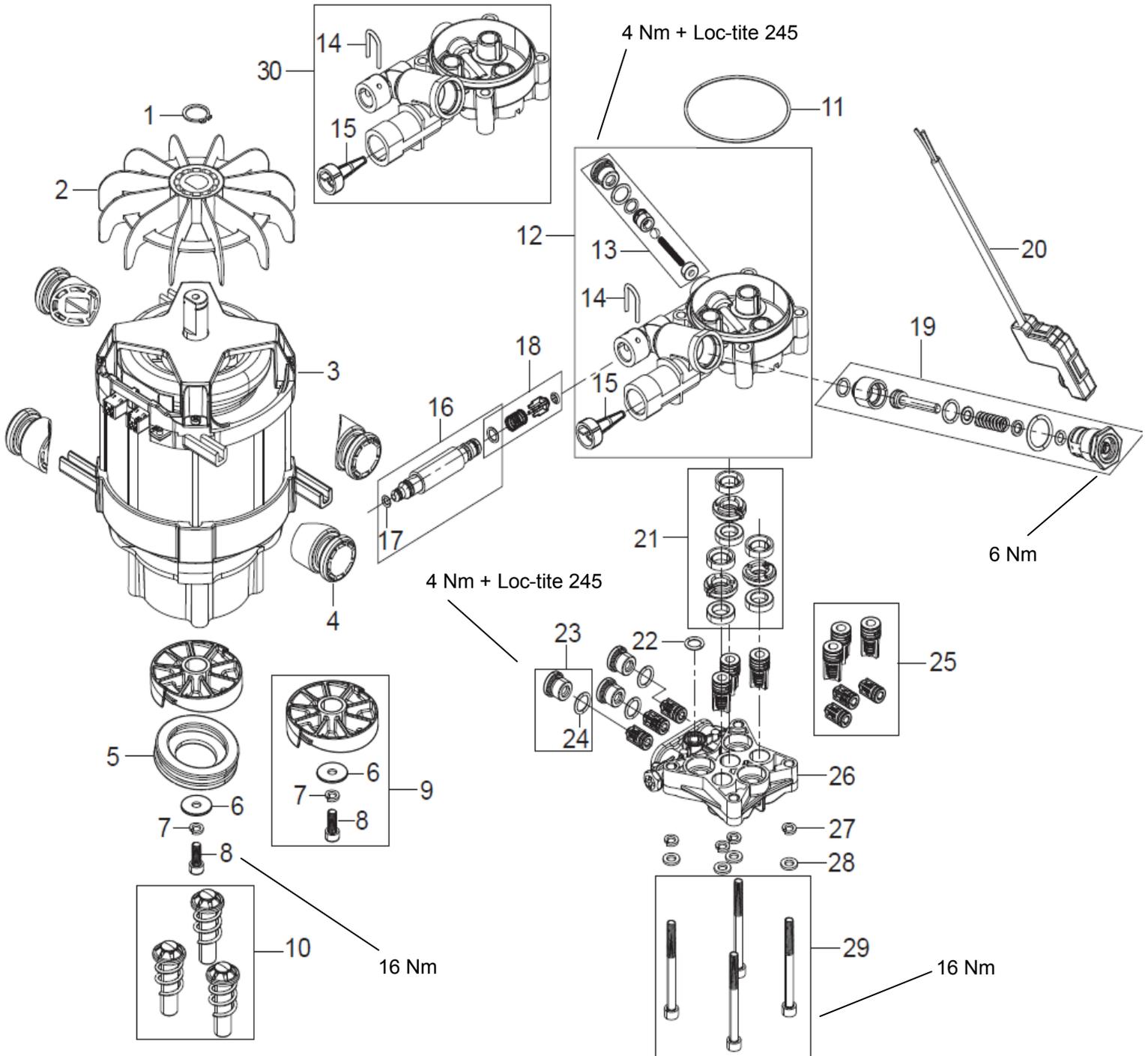
Cabinet parts overview.
Max. Torque for plastic screws: 2,0 Nm



Hose reel overview.



Motor / pump unit overview including assembly torque and glue specification.



Dismounting / mounting of front cabinet.

1. Remove the 2 TORX 20 screws from the bottom side, then remove the feet. (Fig 1)
2. Remove the styling cover by hand. (Fig 2)

Note: The 2 hooks in the top of the cabinet must be in correct position. (Fig 3)

Fig. 1**Fig. 2****Fig. 3**

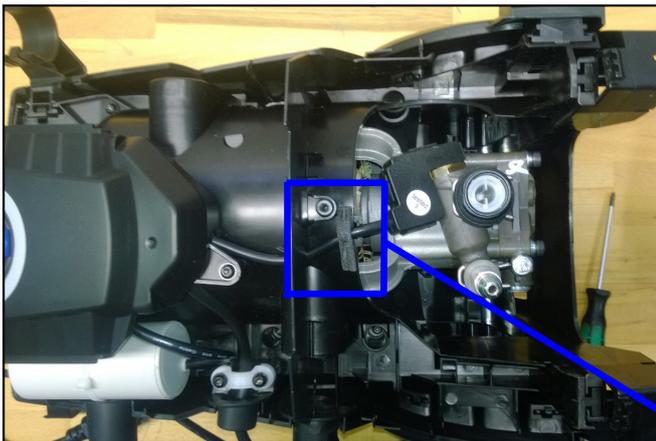
Disassembly / assembly of pump cover.

1. Remove 1 TORX 20 screw (Fig 4)
2. Remove the MPU floating cover. (Fig 4)
3. Make sure that the foam and the air barrier is placed correct when mounting. (Fig 5)

Fig. 4



Fig. 5



Disassembly / assembly of start / stop system.

1. The micro-switch box can now be removed by hand, so that there is free access to the start / stop valve (Fig. 6)
2. The start / stop valve can be removed with a 25 mm spanner.
Check that all parts are correct placed before mounting. (Fig. 7)
Mounting torque: see page 7.

**Fig. 6****Fig. 7**

Disassembly / assembly of switchbox cover.

1. Remove 1 TORX 20 screw (Fig 8)
2. Note how the wires are placed. Remember to mount the foam when remount. (Fig 9)

Fig. 8

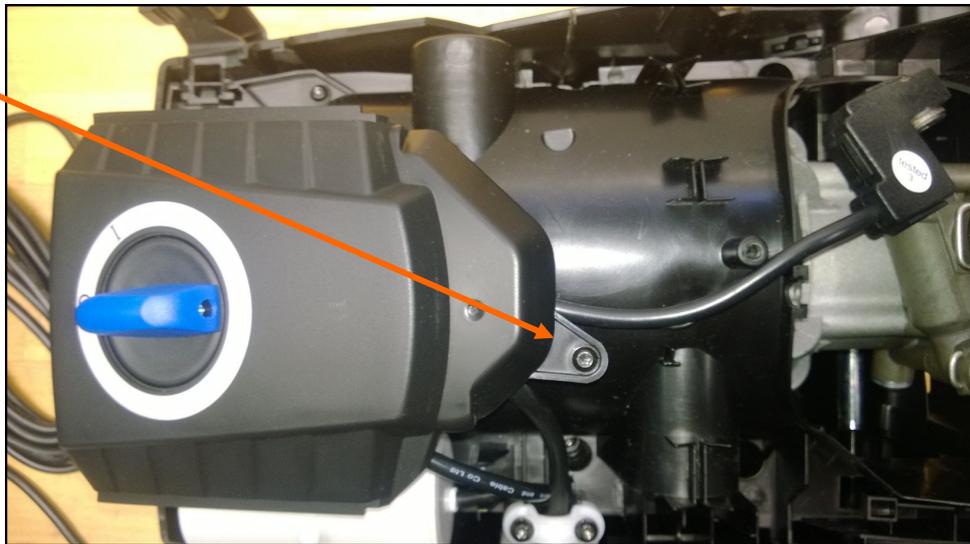
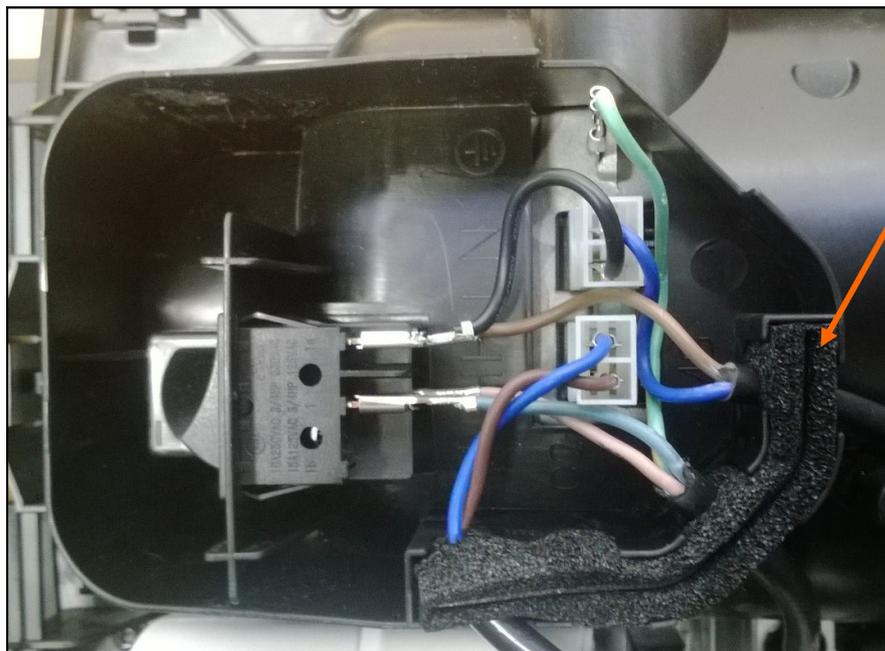


Fig. 9



Disassembly / assembly of the motor/pump unit.

1. Remove all wires from the motor - wires can stay on the switch (Fig 10)
2. Remove 8 TORX 20 screws. (Fig 11) The structural front can now be removed without dismounting the capacitor and power cable. (see next page)

Fig. 10

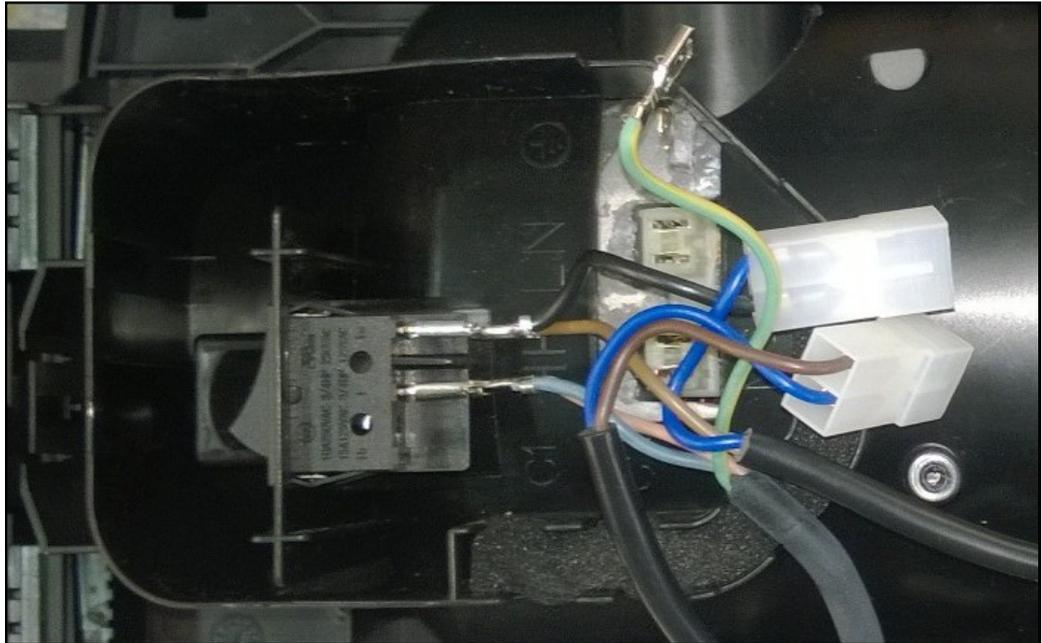
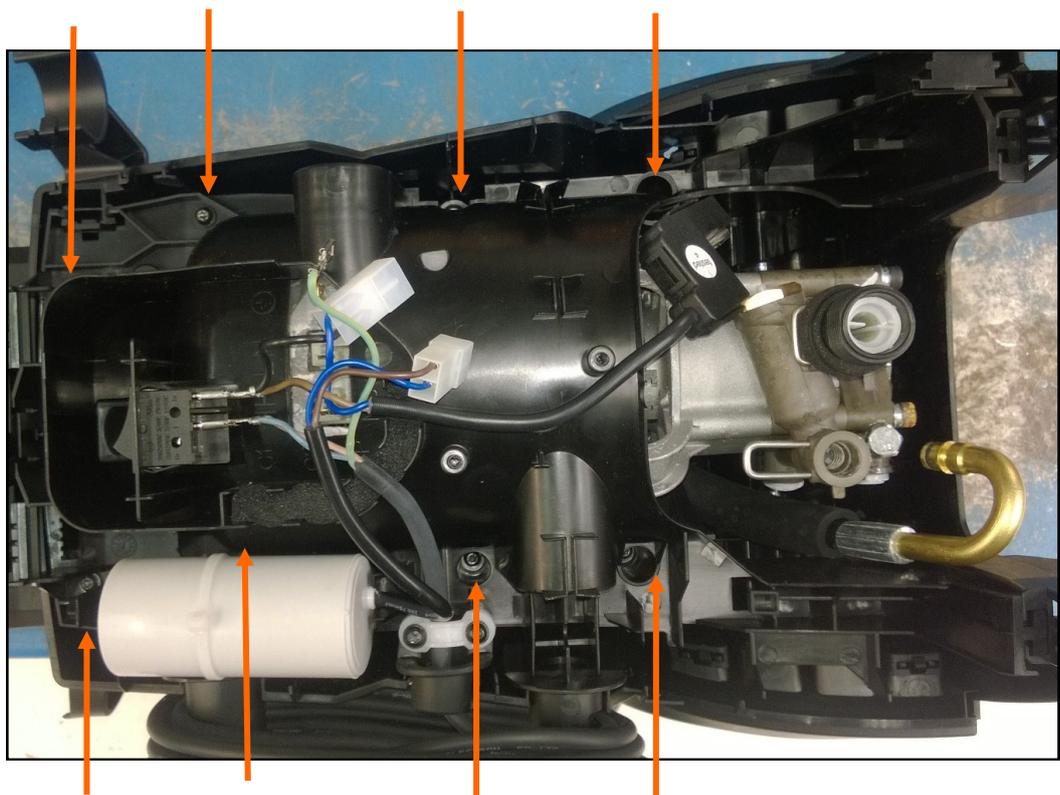


Fig. 11



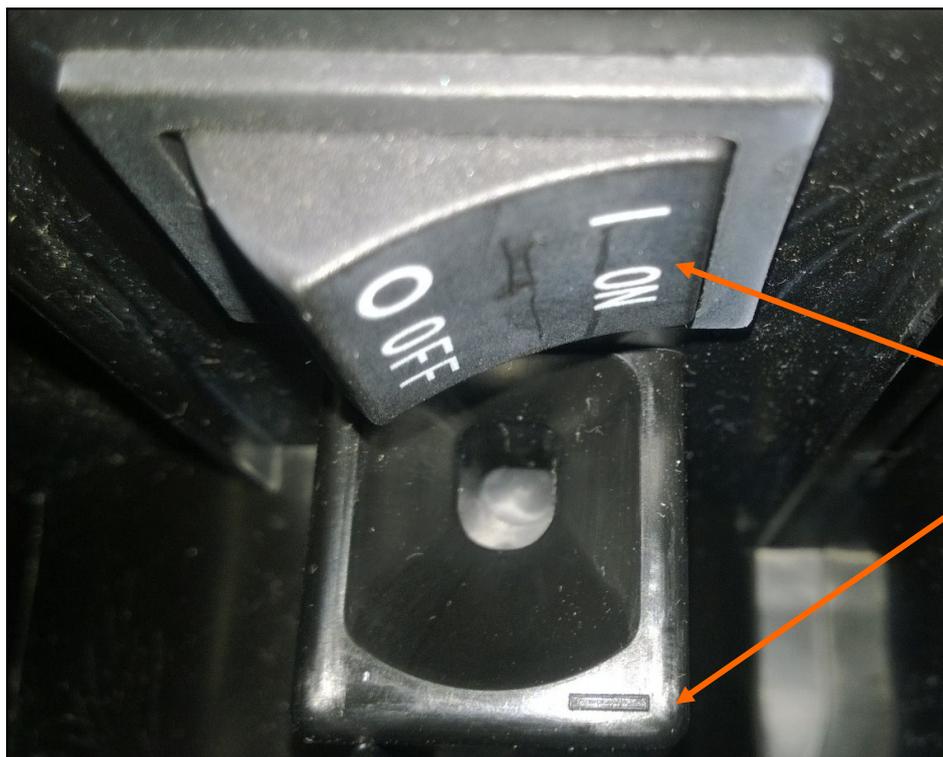
Disassembly / assembly of the switch.

1. Remove all wires from the switch (Fig 12)
2. Note that the on / 1 position on the switch is placed over the "1" marking inside the switch box. (Fig 13).

Fig. 12

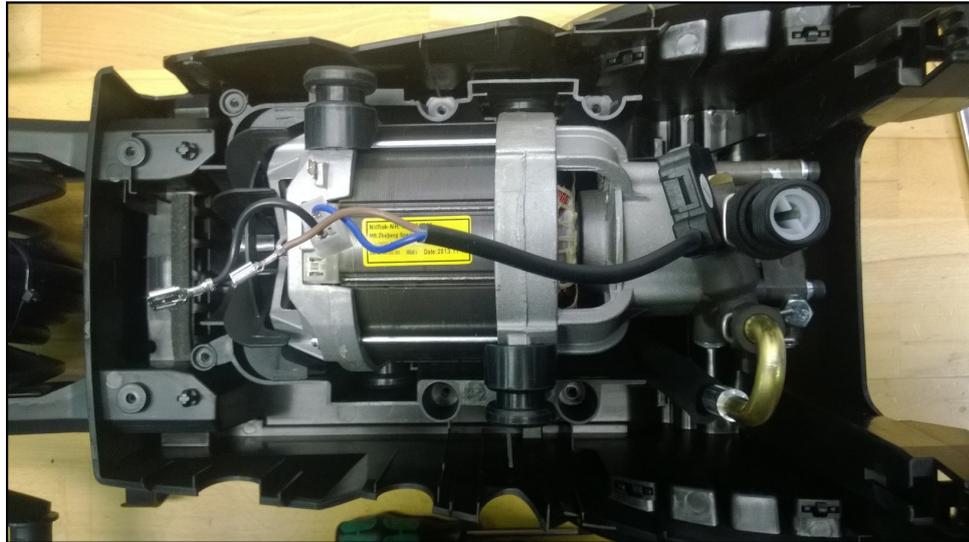


Fig. 13



Disassembly / assembly of the motor / pump unit.

1. Now there is free access to the motor / pump unit. (Fig 14)
2. X-TRA: Remove the internal hose from the pump by removing the U-pin (Fig 15)
Be careful not to loose the spring and the Non Return Valve (NRV) from the water outlet.

Fig. 14**Fig. 15**

Disassembly / assembly of the hose reel / internal hose - X-TRA models.

1. Remove 1 TORX 20 screw to remove the MPU back cover. (Fig 16)
2. There is now access to the internal hose. (Fig 17)

Fig. 16

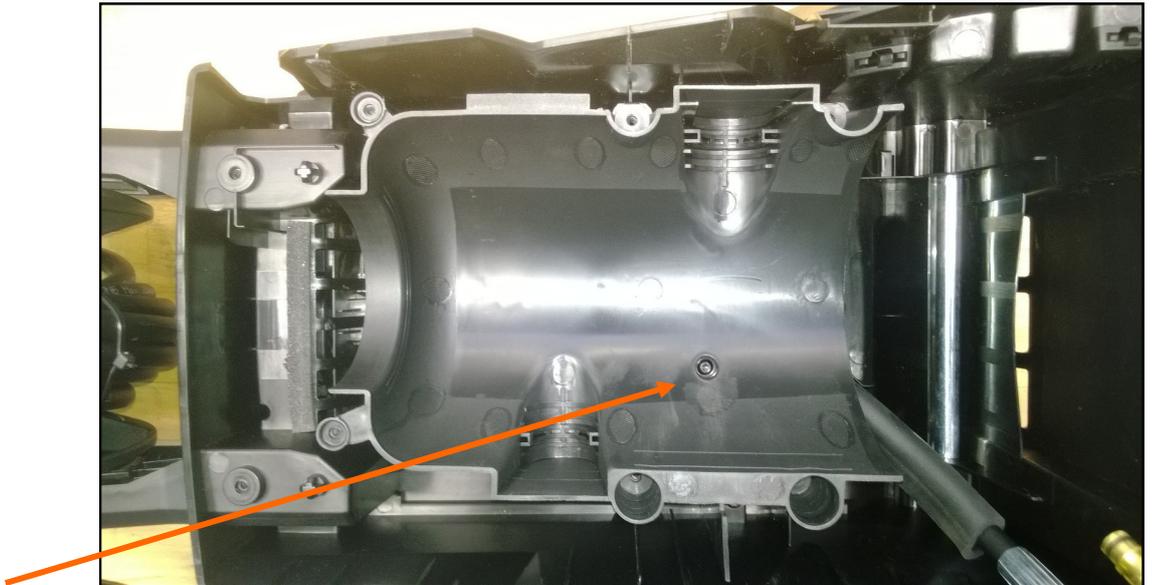
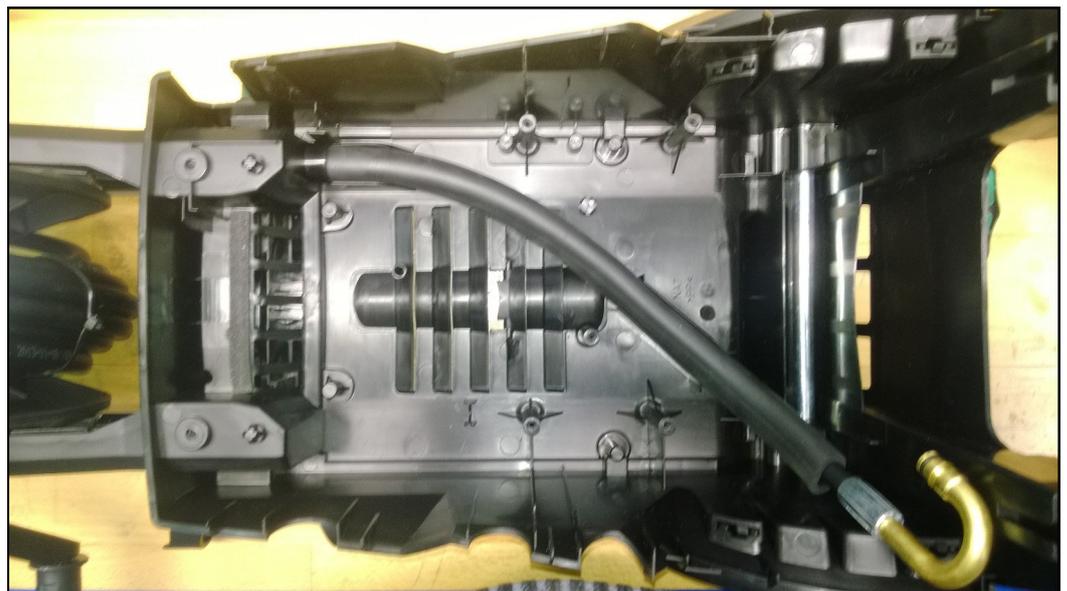


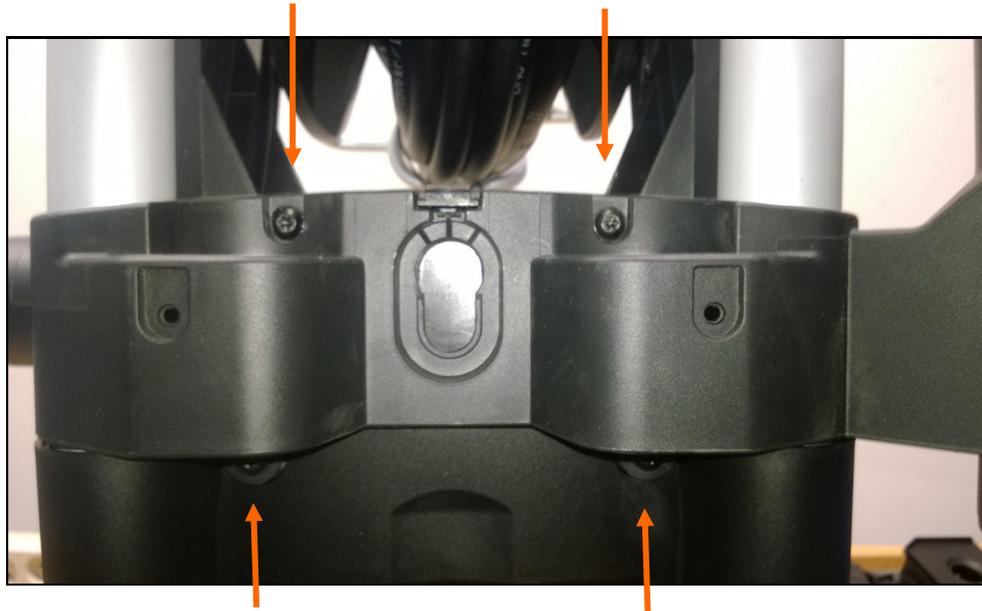
Fig. 17



Disassembly / assembly of the hose reel.- X-TRA models.

Remove the telescopic handle by removing the 4 TORX 20 screws (Fig 18)

1. Loosen the hose reel by removing the 2 TORX 20 screws from the back side. (Fig 19)
The hose reel can be dismantled from the cabinet.

Fig. 18**Fig. 19**

Disassembly / assembly of the high pressure hose - X-TRA models.

1. Dismount the TORX 20 screw and the u-pin. (Fig 20)
2. The hose router can now be removed. (Fig 21)

Fig. 20

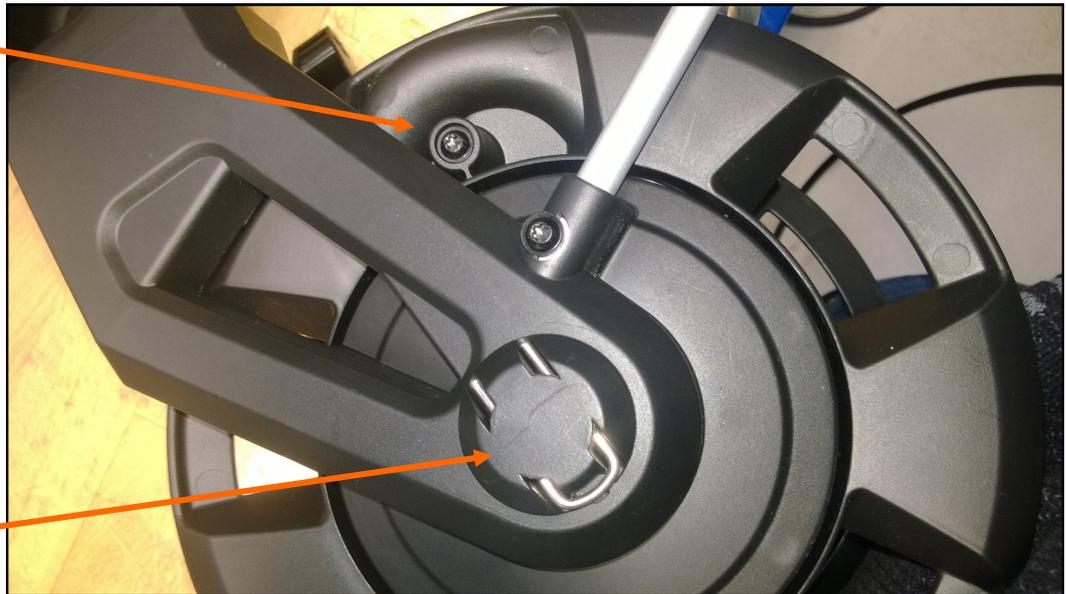


Fig. 21



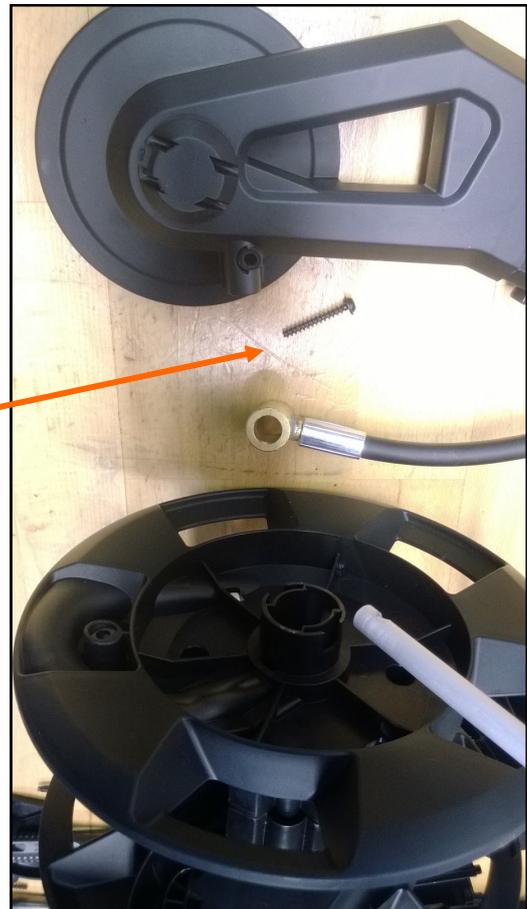
Disassembly / assembly of the hose reel - X-TRA models

1. The hose can be removed from the internal hose (Fig 22)
2. Dismount the 2 TORX screws (1 each side) from the aluminium hose guide (Fig 23)
Note the length of those 2 screws are longer than all other screws.

Fig. 22



Fig. 23



Assembly of the hose reel - X-TRA models.

1. Make sure that the hose nipple is correct greased before mounting. (Fig 24)
2. Mount the hose into hose reel and connect to the brass part from the internal hose (Fig 25)
3. Mount the hose reel holder and be sure to assemble the lock clamp correct - MUST be mounted through both the plastic hose reel holder AND the brass parts. (Fig 26)

Fig. 24



Fig. 25



Fig. 26



Disassembly / assembly of the easy start valve.

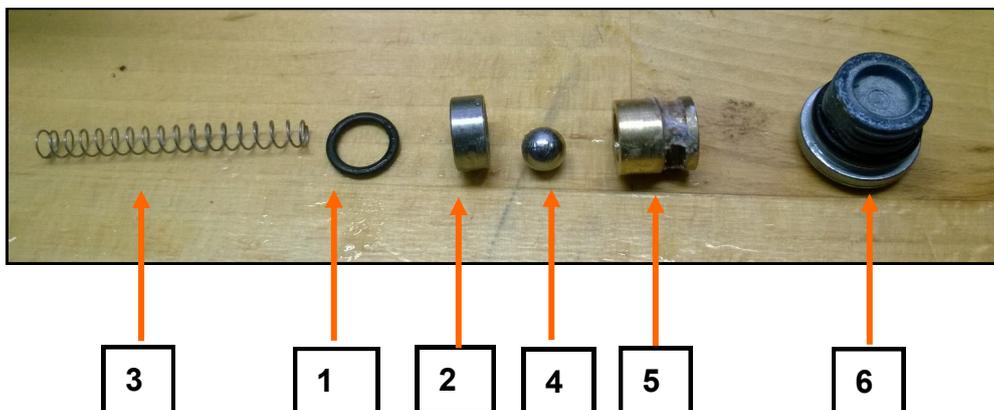
1. With the pump placed on the table, the easy start valve can be disassembled (Fig 27)
2. When mounting follow the following order (Fig 28):
 1. O-ring. 2. Easy start insert. 3. Spring. 4. Ball. 5. Ball guide. 6. Plug

Mounting torque: see page 7.

Fig. 27



Fig. 28



Disassembly / assembly of the Non Return Valve (NRV).

1. The NRV is placed behind the water outlet. (Fig 29)
2. First mount the NRV then the spring.

Note: Make sure that the spring is placed correct before to mount the water outlet.

Mounting torque: see page 7.

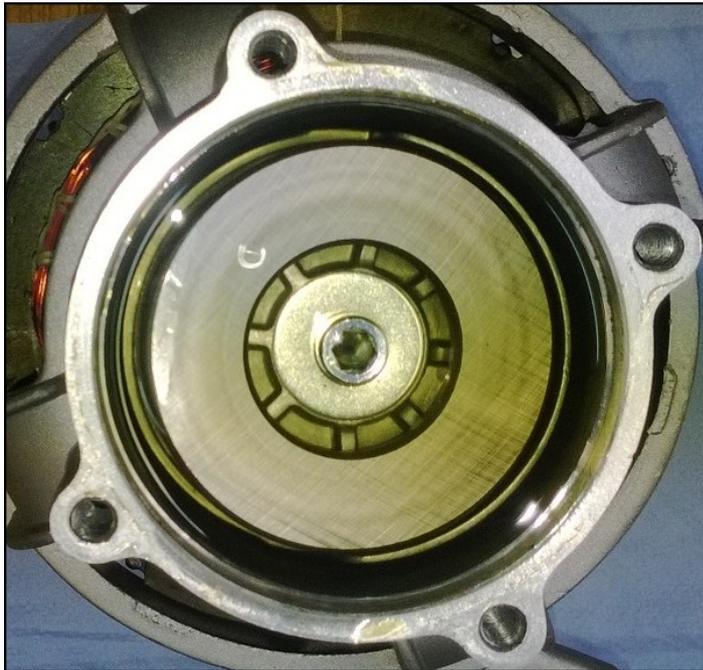
Fig. 29**Fig. 30**

Disassembly / assembly of the Pump.

1. The bearing system can only be mounted in one direction. The ball ring can be placed both directions. Oil level: 60 ml. (Fig 31)
2. Picture of open pump. (Fig 32)

Note: The pressure valves must be placed correctly (see next page)

Mounting torque: see page 7.

Fig. 31**Fig. 32**

Disassembly / assembly of the Pump.

1. In the bottom of the hole for the suction valve there is a guidance (rotation lock). The legs of the suction valves MUST be placed on each side of this guidance (Fig 33)
2. Before to assemble the pump, check that the suction valves are placed correct, by verifying the level of the valves. One O-ring must be completely under the surface. (Fig 34)

Fig. 33

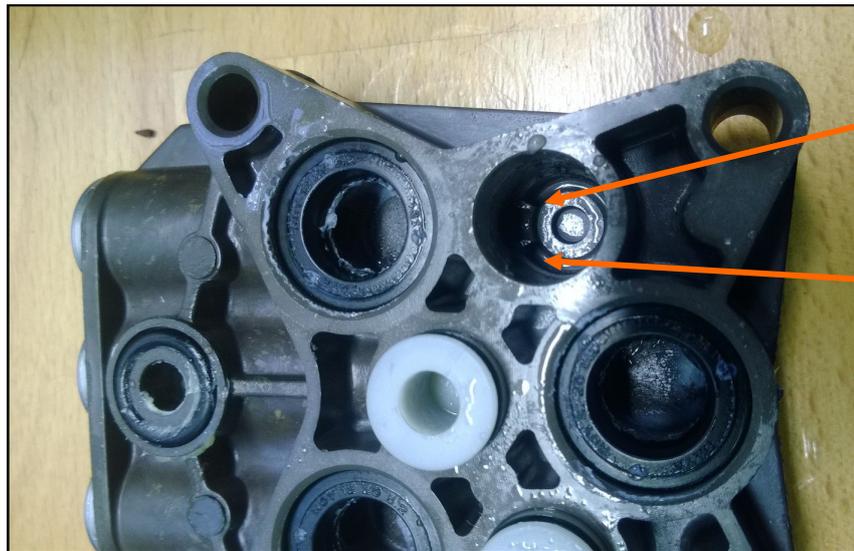
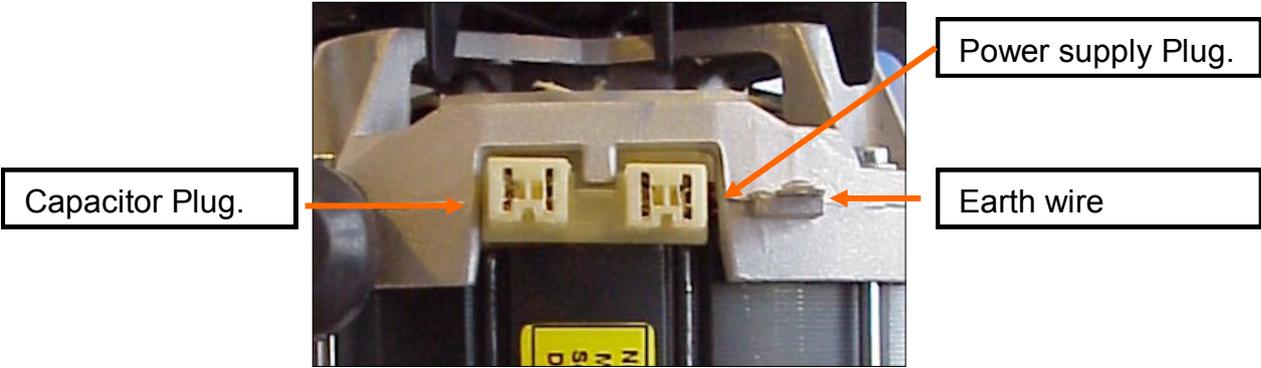
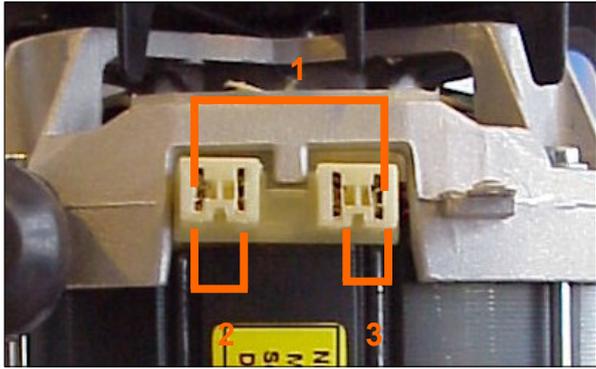


Fig. 34



Guidance of measuring the resistance of electrical motor.

- 2,1 KW Motor**
- 1. 7,0 ohm +- 10 %
 - 2. 8,8 ohm +- 10 %
 - 3. 1,74 ohm +- 10 %



Recommended oil types:

The pump is filled with 60 ml LHM 32 from the production.

In case of service where the oil must be changed Nilfisk-Advance recommends to use 60 ml Bartram HV 46.

Alternative oil types that are allowed:

BP, Bartram HV 46

Shell, Tellus T 46

Exxon, Statoil Univis N 46

Mobil Oil Mobil DTE 25

Recommended lubrication:

White grease for o-rings, sealing etc.:

Silicone grease (Unisilikon L250) - All moveable parts and O-rings.

DOW CORNING(R) M 55 O-RING LUBRICANT - All stationary O-rings

Recommended glue:

Loctite 245, alternatively Loctite 243 (to lock the 4 pcs. Aluminum plugs in the pump)

Tools:

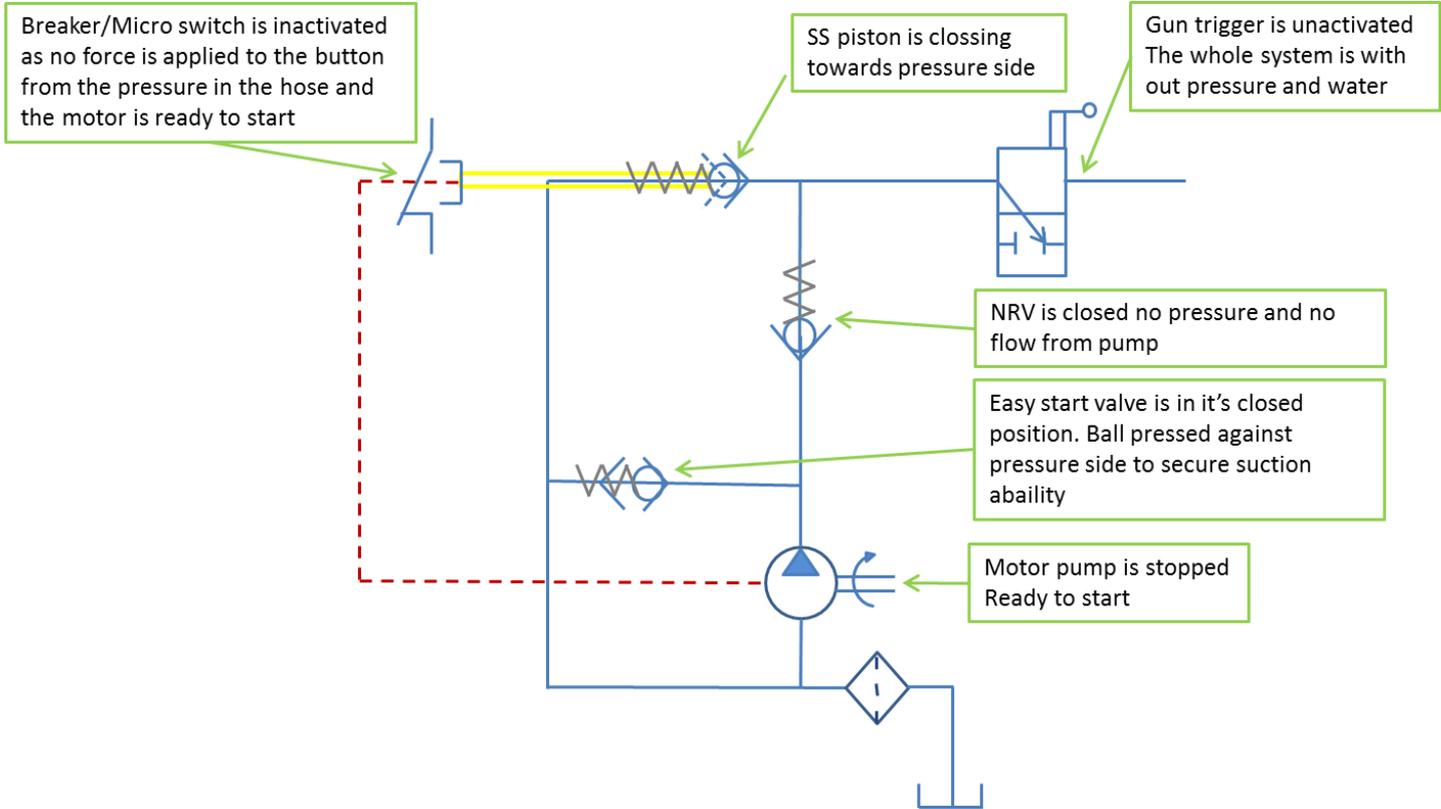
Straight (flat) screwdriver (For lock clamps)

Torx 20 screwdriver (for all screws)

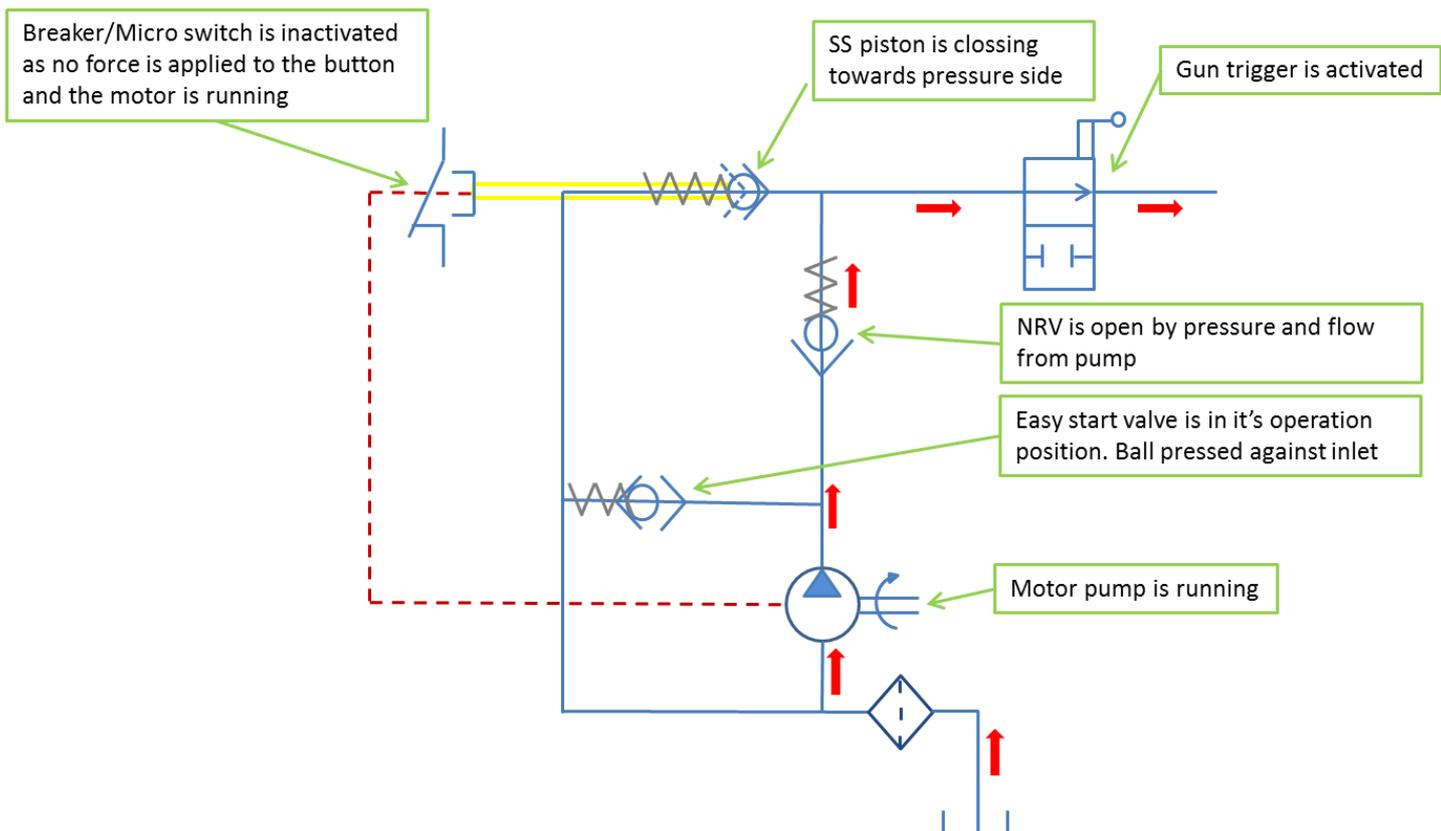
25 mm spanner (for the start / stop valve)

5 & 6 mm hex wrench (for pump bolts and nuts)

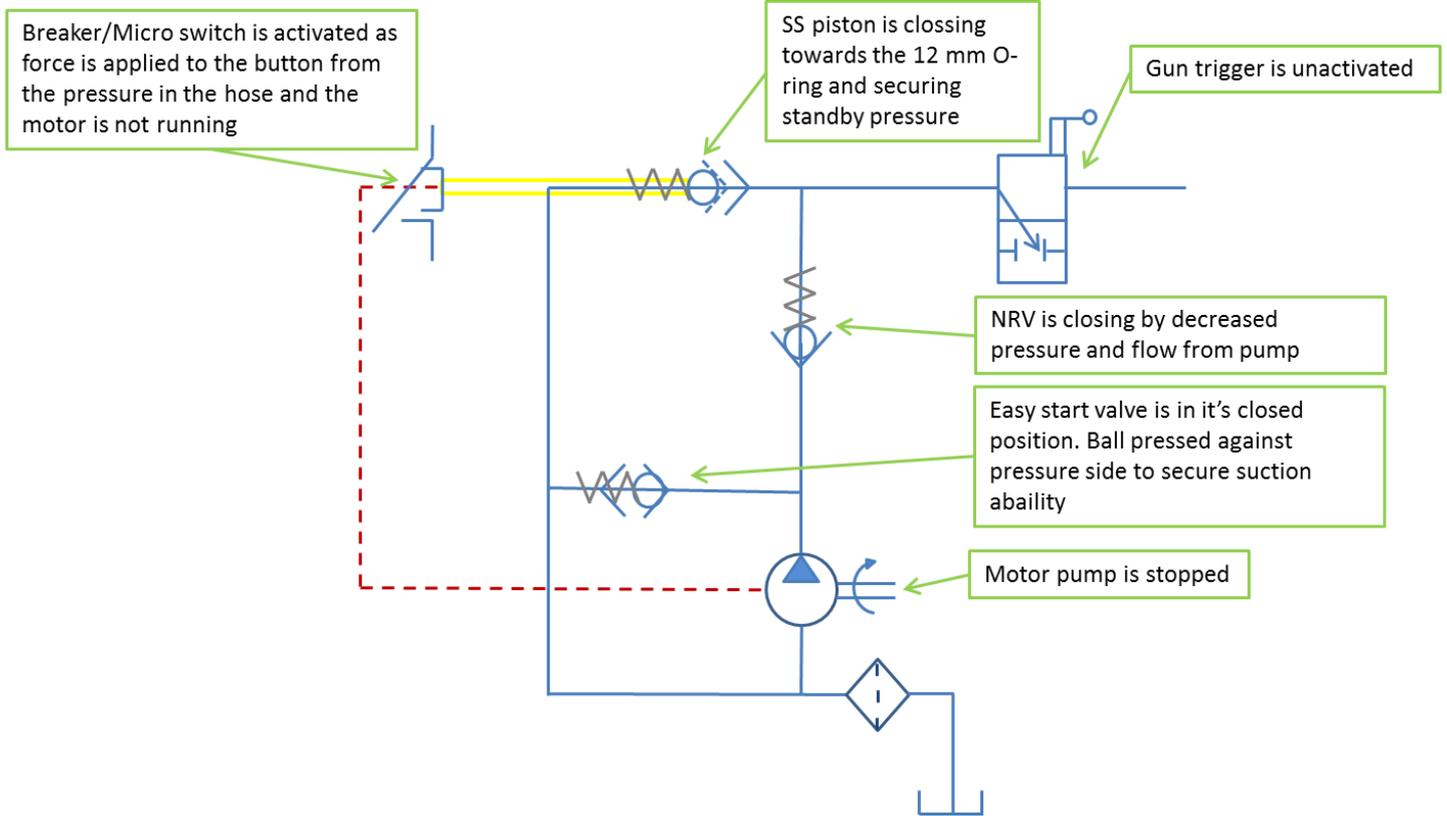
Motor pump function of New Excellent <Machine stopped and hose emptied>



Motor pump function of New Excellent <Machine operation>



Motor pump function of New Excellent <Machine standby>



Wiring diagram

