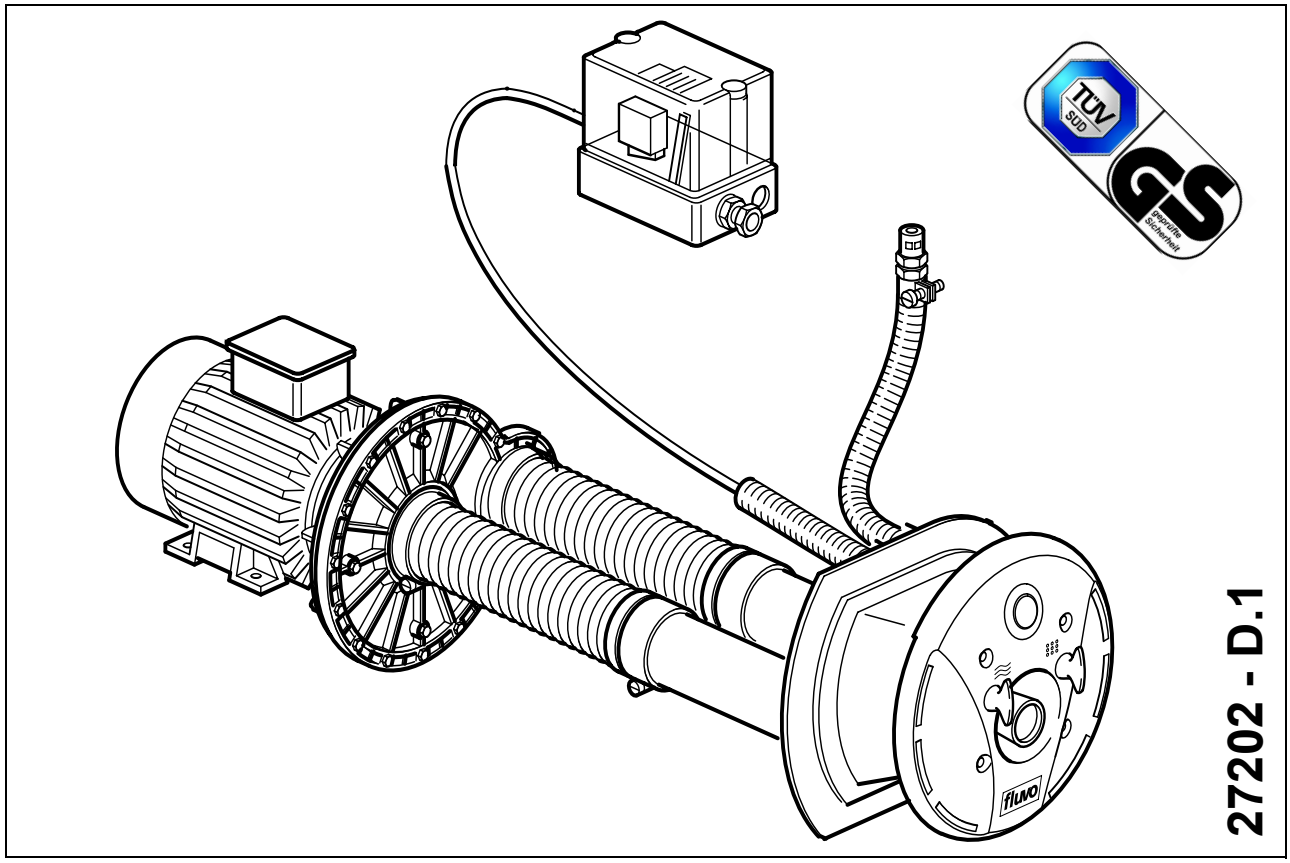
fluvo®
innovative schwimmbadtechnik

schmalenberger
strömungstechnologie

# CG700 rondo

## GB Operating Instructions

Translation of the original



# Contents

# 1 General

## 1.1 Guarantee notice

If the instructions contained in this operator's manual are not observed then any claims under guarantee shall be void.

## 1.2 General

All parts coming into contact with media are designed for water quality to **DIN 19643**.
The counter-current swimming unit (counter-current unit) is of state-of-the-art technology. It has been manufactured with great care and is subject to constant quality checks. It has been approved by the German Technical Inspectorate (TÜV) and awarded the TÜV-GS (safety standard) mark.
The operator's manual contains important instructions on how to use the counter-current unit safely, properly and economically. The instructions must be strictly adhered to in order to avoid danger and to ensure that the counter-current unit has a long useful life.
This manual does not take into account local regulations, the observance of which is the responsibility of the operator – also on behalf of installation personnel that may be involved.
The performance label specifies the machine series, the frame size, the most important operating data and the serial number. Please be sure to quote it in case you require more information and also when placing subsequent orders or ordering spare parts.

## 1.3 Usage Instructions

The counter-current unit was designed for use in private swimming pools. Consequently it must not be installed in public swimming pools. Neither the entire unit nor parts thereof must be used in other systems. You are expressly directed to use it only in accordance with these instructions.
The counter-current unit must not be operated beyond the parameters stated in the technical data (3.1) . In case of doubt, please contact your customer service or the manufacturer.

# 2 Safety Instructions

## 2.1 General

- Make sure that the relevant safety regulations and laws are observed in the operating company and / or country where the counter-current systems are to be used.
- Use the counter-current system only if it is in perfect technical condition, in accordance with the regulations, observing safety requirements and danger conditions and strictly adhering to all the instructions in the operator's manual!
- Promptly remedy any faults that could influence safety.
- The details on the type plate must correspond to the electrical supply being connected to.
- Prior to carrying out repairs to the counter-current system it must be isolated from the electrical supply and protected from unintentional switching on.
- Regardless of what nature they may be, repairs must only be carried out by qualified persons and the counter-current system must be emptied first.

- The operator must ensure that
  - the operator's manual is always available for users to read,
  - instructions in the operator's manual are being observed,
  - the counter-current system is immediately stopped if abnormal electrical voltages, temperatures, noises, vibrations, leakages or other faults should arise.

For more details of safety instructions please see the operator´s manual WK (27220).

### 2.2 Symbols

In these operating instructions the following symbols are used to draw your special attention to dangers:

**Warning! Risk of injury! / Warning! Risk of damage!**
This symbol warns you of dangers through mechanical effects and also warns of handling that could damage the product.

**Warning! Mortal danger!**
This sign warns you of the danger from electric shocks.

Notices attached directly to the counter-current system , e.g. the arrow indicating the direction of rotation, must always be observed and maintained in a clearly legible condition.

## 3 Unit Description / General Technical Data

- The *fluvo* counter-current system CG700 rondo complies with VDE (Association of German Engineers) regulations.
- The electric motor and the water conducting plastic pump are electrically separated.
- The electric motor complies with protection class IP 55.
- The entire counter-current system complies with protection class I.

The counter-current system is delivered as 3 assemblies:
1. Pump kit 2. Assembly kit 3. Installation kit

### 3.1 Technical Data

| System type: | CG700 1.5 | CG700 1.5 WS* | CG700 1.9 | CG700 1.9 WS* | CG700 3.0 |
|---|---|---|---|---|---|
| Capacity | 1.5 kW | 1.5 kW | 1.9 kW | 1.9 kW | 3 kW |
| Voltage [V] | 400 V Y / 230 V Δ | 230 V ~ | 400 V Y / 230 V Δ | 230 V ~ | 400 V Y / 230 V Δ |
| Frequency | 50 Hz | 50 Hz | 50 Hz | 50 Hz | 50 Hz |
| Current | 2,86 A | 9.5 A | 3.6 A | 11.5 A | 5,75 A |
| Speed | 2840 rpm | 2790 rpm | 2850 rpm | 2820 rpm | 2810 rpm |
| Delivery capacity | 42 m³/h | 42 m³/h | 48 m³/h | 48 m³/h | 60 m³/h |
| Delivery pressure | 1.2 bar | 1.2 bar | 1.4 bar | 1.4 bar | 1.9 bar |
| Max. speed 2 m from the nozzle | 1.15 m/sec. | 1.15 m/sec. | 1.3 m/sec. | 1.3 m/sec. | 1.6 m/sec. |
| Max. water temperature | 50 °C | 50 °C | 50 °C | 50 °C | 50 °C |
| Expected sound pressure level | 65 + 2 dB (A) | 65 + 2 dB (A) | 67 + 2 dB (A) | 67 + 2 dB (A) | 70 + 2 dB (A) |
| Weight | 26 kg | 26 kg | 27 kg | 27 kg | 39 kg |

*__WS = AC__ = Alternating current

## 3.2 Device Units

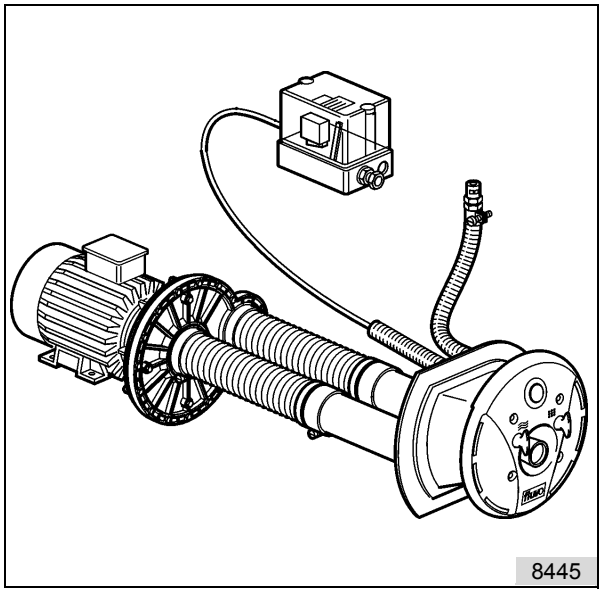



fig. 1

**Overview of the Counter-current unit**

**The counter-current unit consists of:**

1. Pump kit
2. Assembly kit (face plate assembly)
3. Installation kit
   The installation kit is always different depending on the pool type.
   There are 4 kinds of pool:
   - Concrete-tile pool
   - Concrete-liner pool
   - Pre-fabricated pool
     (steel, plastic or similar)
   - Wooden-liner pool

***** The item numbers correspond to the numbers in the parts list.

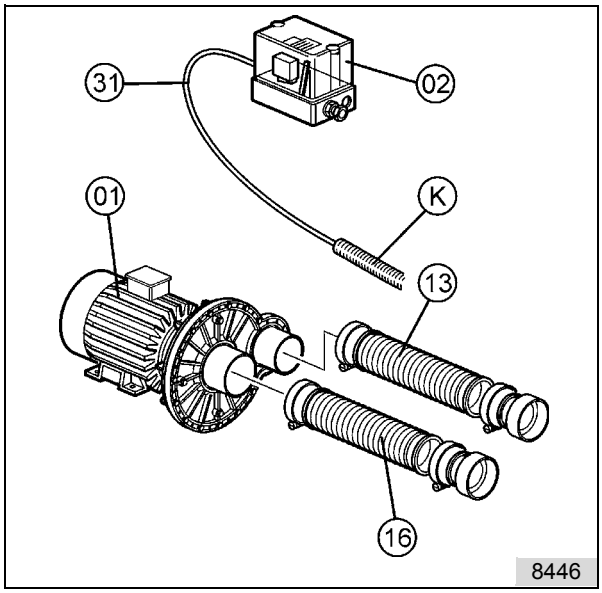



fig. 2

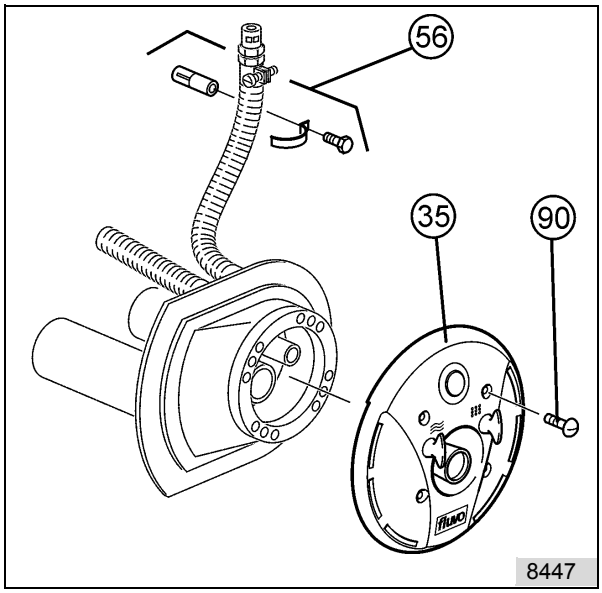



fig. 3

**I - Pump kit**

**The pump kit consists of:**

| | |
|---|---|
| 1. Pump assembly | Item 01* |
| 2. Suction hose | Item 16 |
| 3. Pressure hose | Item 13 |
| 4. Switching tube ø 4 mm | Item 31 |
| 5. Switchgear cabinet | Item 02 |
| 6. Protective hose | Item K |

*The pump kit is always identical no matter what sort of pool it is intended for.

**II - Assembly kit**

**The assembly kit includes:**

| | |
|---|---|
| 1. Face plate assembly | Item 35 |
| 2. Mounting screws | Item 90 |
| 3. Air line fixing bracket | Item 56 |

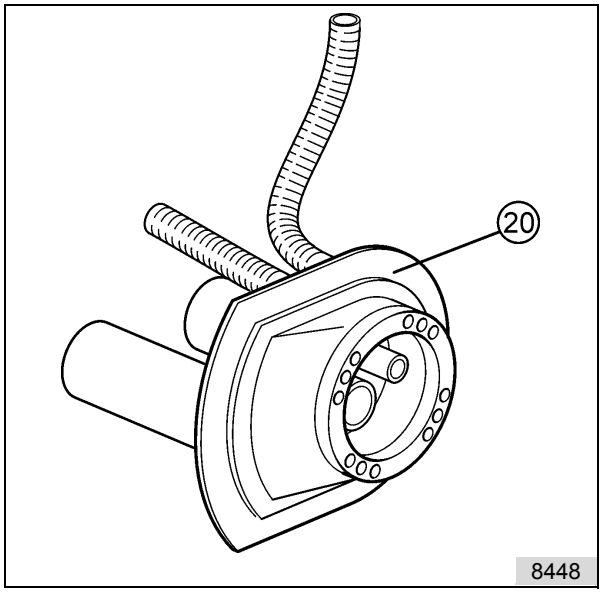



fig. 4

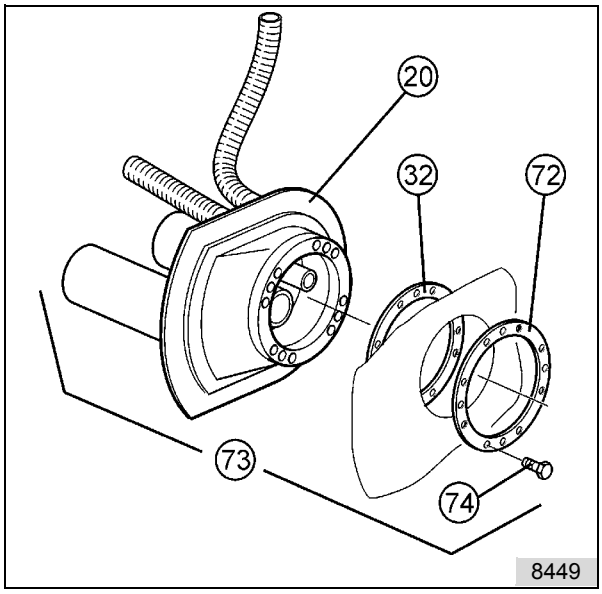



fig. 5

**III - Installation kit for concrete-tile pools**

**The installation kit + assembly components (Item 73) consists of:**

1. Installation kit Item 20

**Note**: The housing is concreted into the concrete wall of the pool. Details of this can be found in section 4 of this manual.

2. Clamp ring Item 72
3. Clamp gasket Item 32
4. Mounting screws Item 74

**Note**: Parts 2 to 4 are delivered with the face plate assembly.

**III - Installation kit for concrete-tile pools**

**The installation kit consists of:**

1. Housing Item 20

**Note**: The housing is concreted into the concrete wall of the pool. Details of this can be found in section 4 of this manual.

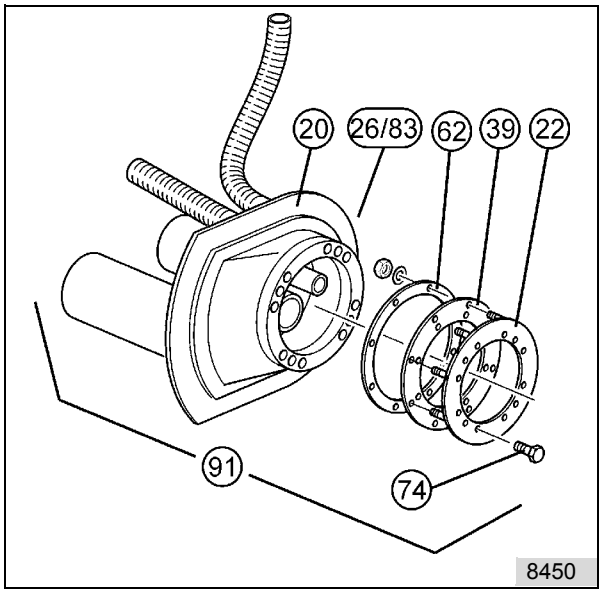



fig. 6

**III - Installation kit for pre-fabricated pools**

**The installation kit (Item 91) consists of:**

1. Housing Item 20
2. Clamp ring Item 22
3. Clamp gasket Item 39
4. Hold-ring Item 62
5. Mounting screws Item 74
6. Nuts and washers Items 26+83

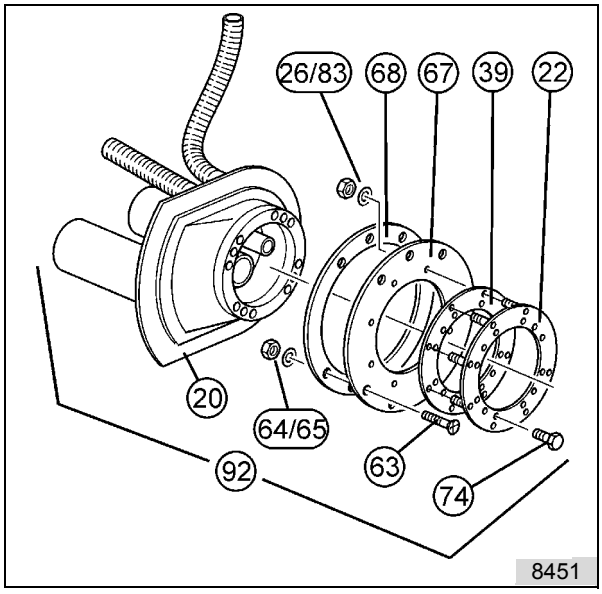



fig. 7

### III - Installation kit for wooden-liner pool

**The installation kit (Item 92) consists of:**

| | |
|---|---|
| 1. Housing | Item 20 |
| 2. Clamp ring | Item 22 |
| 3. Clamp gasket | Item 39 |
| 4. Hold-ring | Item 68 |
| 5. Hold-ring | Item 67 |
| 6. Mounting screws | Items 63+74 |
| 7. Nuts and washers | Items 64/65 + 26/83 |

## 4 Installation Site Specifications / Installation

**Warning! Risk of damage!**
As the pumps are not self-priming, the installation must be under water level. Make sure you take this into account during the installation planning phase.

### 4.1 Base frames for the installation

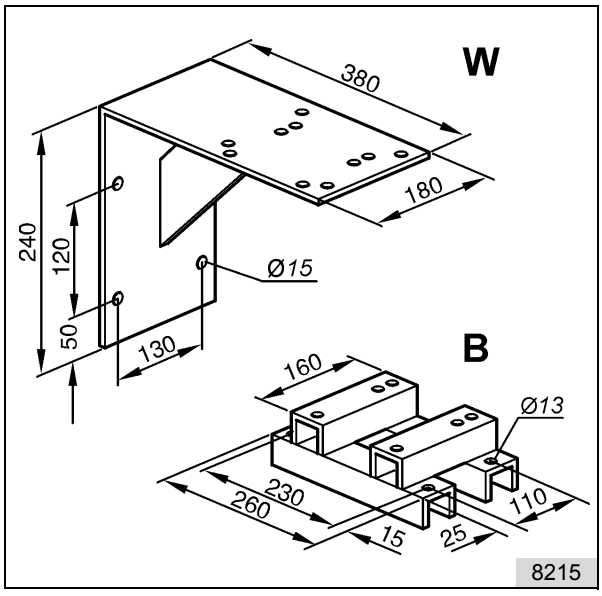



fig. 8:

There are two base frames available that must be ordered separately to suit local circumstances.

**1. W** = for wall mounting
**2. B** = for floor mounting

## 4.2 Planning the pump pit

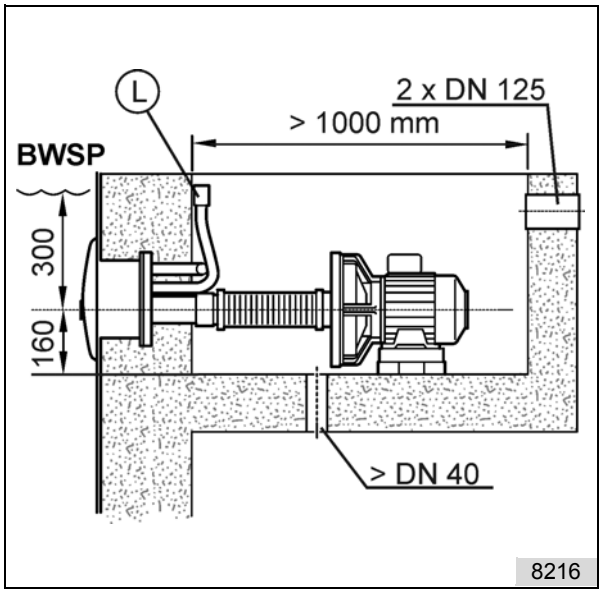



fig. 9: Cross-sectional view of the pump pit

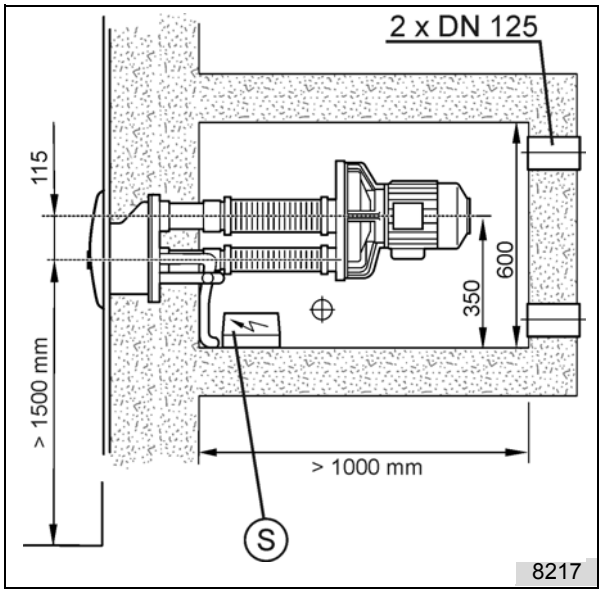



fig. 10: Top view of the pump pit

*BWSP* *Pool water level*
*L* *Air valve*
*S* *Switchgear cabinet*

**When planning a pump duct take into account:**

1. Clear dimensions min. 1000 x 600 x 600
2. Return connection min. 300 mm under the pool water level
3. Leakage water discharge pipe-end min. DN 40
4. Cooling air supply for the motor min. 2x DN 125. Minimum clearance of the motor cooling air inlet to the wall = 200 mm.
5. Be sure to cover the pump pit if it is installed in the open air.

**Warning! Mortal danger!**
The mains power supply cable must be equipped with an all-pole separator with a contact opening of 3 mm.

6. The position of the non-return air valve (L) must always be over the pool water level (BWSP).
7. The position of the switchgear cabinet (S) must always be over the pool water level (BWSP).
8. In case of leakage from the pump, a suitable water drainage must be provided!

## 4.3 Installation preparations / Concrete pool

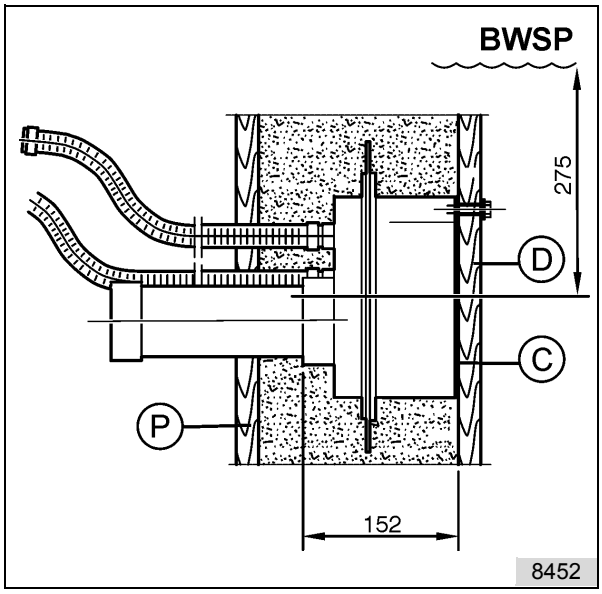



fig. 11

*BWSP* *Pool water level*
*C* *Mounting protection film*
*D* *Pool-side formwork board*
*P* *Outer formwork board*

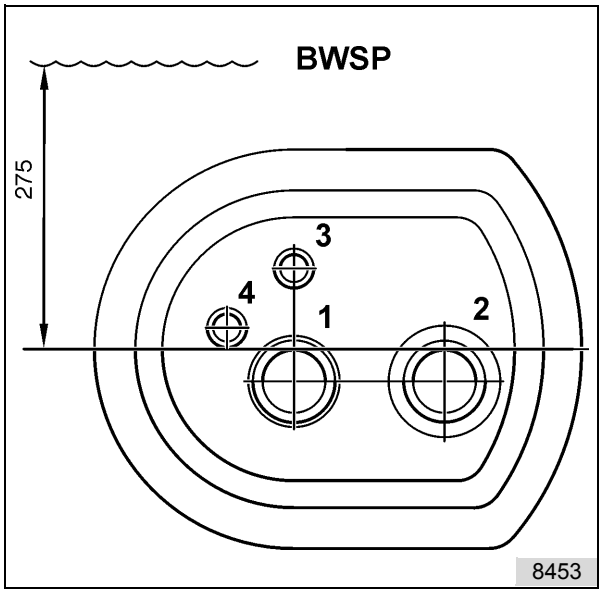



fig. 12: Rear view of the installation kit

*1* *Pressure pipe DN 50*
*2* *Suction pipe DN 65*
*3* *Switching tube*
*4* *Air supply to the non-return air valve*

**Tailor the installation kit:**

Place the installation kit on the formwork board and transfer the bore holes. Bore the holes into the pool-side formwork board (D). Mark out and cut holes into the outer formwork board (P) for the suction and pressure supplies and the two hoses.

Screw the installation kit complete with the mounting protection film (C) tightly to the pool-side formwork board.

**Warning! Risk of damage!**

- The installation kit must be horizontal.
- The distance between the centre of the installation kit and the water level (**BWSP**) must be 275 mm.

## 4.4 Installation preparations / Pre-fabricated pool

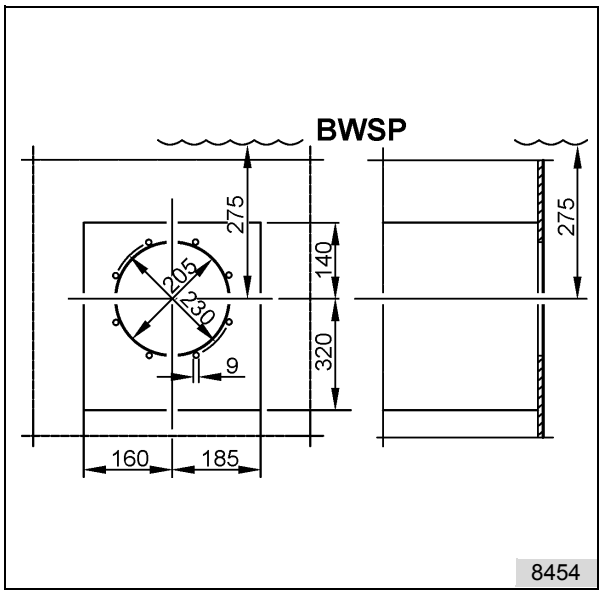



fig. 13: Boring diagram

**Tailor the installation kit:**

Cut the cavity **Ø 205** and the mounting holes **Ø 9** into the pool wall.

**Warning! Risk of damage!**

The hold-ring (62) must be used as a template.

For rear filling the pool ensure that there is a cavity at least the size of the dotted lines.

## 4.5 Installation preparations / Wooden-liner pool

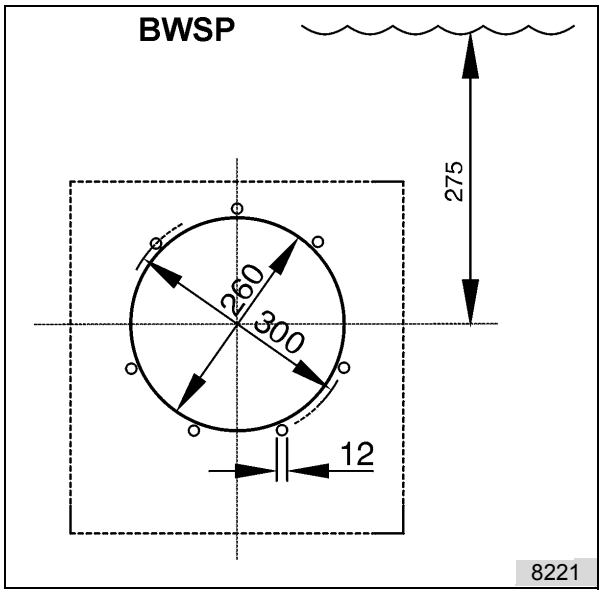



fig. 14: Boring diagram

**Tailor the installation kit:**

Cut the cavity **Ø 260** and the mounting holes **Ø 12** into the pool wall.

**Warning! Risk of damage!**

The hold-ring (68) must be used as a template.

Take note of the asymmetrical position of the holes!

## 4.6 Installation - general

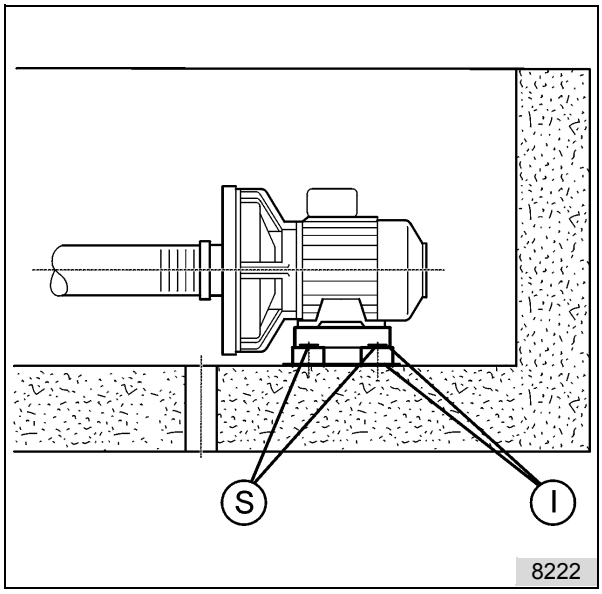



fig. 15

Place the base frame in the desired position. Fasten the base frame with 4 screws (S).

**Warning!**

The base frame should be installed in such a way that it is insulated from the floor and the wall (I) to avoid the possibility of external voltage transmissions.

*I* *Insulation*
*S* *Screw*

## 4.7 Mounting the installation kit / Pre-fabricated pool

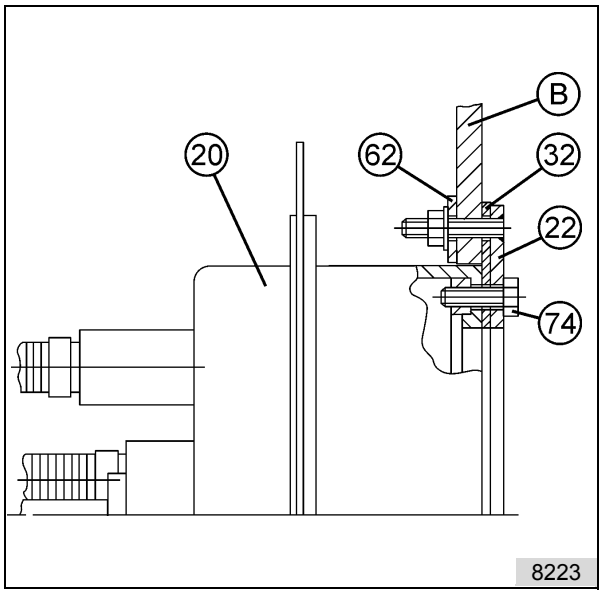



fig. 16

*B* *Pool wall*
*20* *Housing*
*22* *Clamp ring*
*32* *Clamp gasket*
*62* *Hold-ring*
*74* *Hexagon screw*

Mount the clamp ring (22) with the clamp gasket (32) and the hold-ring (62) to the pool wall. The sealing contact faces must be clean and smooth.
Then mount the housing (20) on the clamp ring (22) with the screws (74).

**Warning!**

The housing (20) must be mounted so that the connection for the membrane switch (MS) is at the top.

## 4.8 Mounting the installation kit / Wooden-liner pool

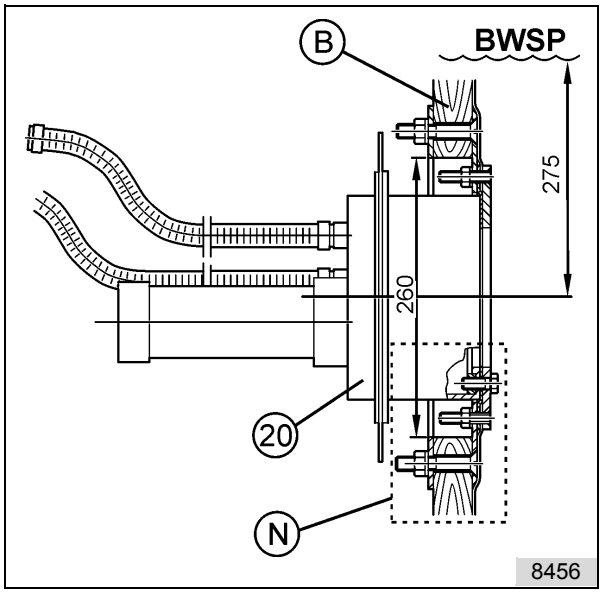



fig. 17

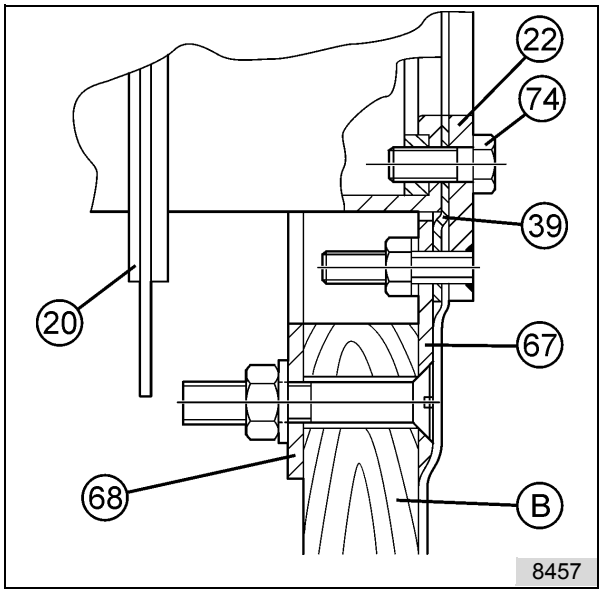



fig. 18: Detail from fig. 17

| | |
|---|---|
| *B* | *Pool wall* |
| *N* | *For details see fig. 18* |
| *BWSP* | *Pool water level* |
| *20* | *Housing* |
| *22* | *Clamp ring* |
| *39* | *Clamp gasket* |
| *67* | *Hold-ring* |
| *68* | *Hold-ring* |
| *74* | *Screw* |

Mount the hold-ring (67) with the hold-ring (68) to the pool wall.
Hang in the liner. Fasten the liner and the clamp gasket (39) together with the clamp ring (22) and cut out the liner.
Then mount the housing (20) on the clamp ring (22) with the screws (74).

**Warning!**
The housing (20) must be mounted so that the connection for the membrane switch (MS) is at the top.

## 4.9 Pump Kit Installation

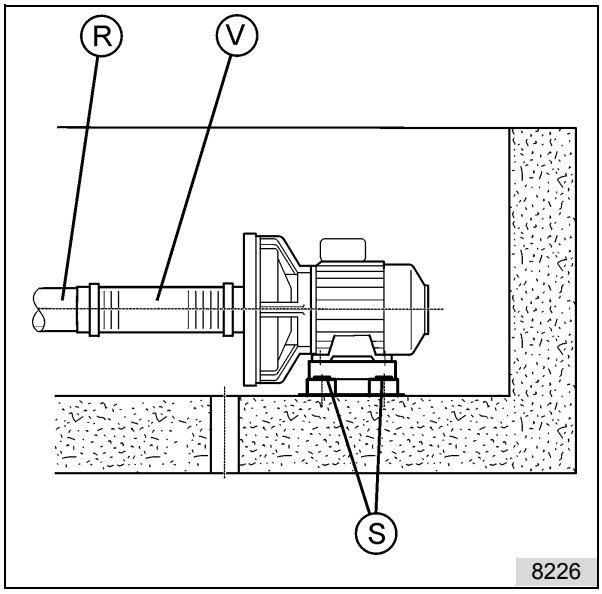



fig. 19

*R* *Pipework*
*S* *Hexagon screws*
*V* *Adaptor*

Mount the pump free of all tension with the hexagon screws M8 (S) on the base frame.

**Warning!**

1. Do not use any vibration dampers between the pump and the base frame.
2. If the pipework (R) to the pump is longer than 6 m then the nominal width must be increased.
   - Suction side from DN 65 to a min. of DN 80
   - Pressure side from DN 50 to a min. of DN 65.
3. Then always mount the adaptors (V) on the pump body.

## 4.10 Connection to the pool

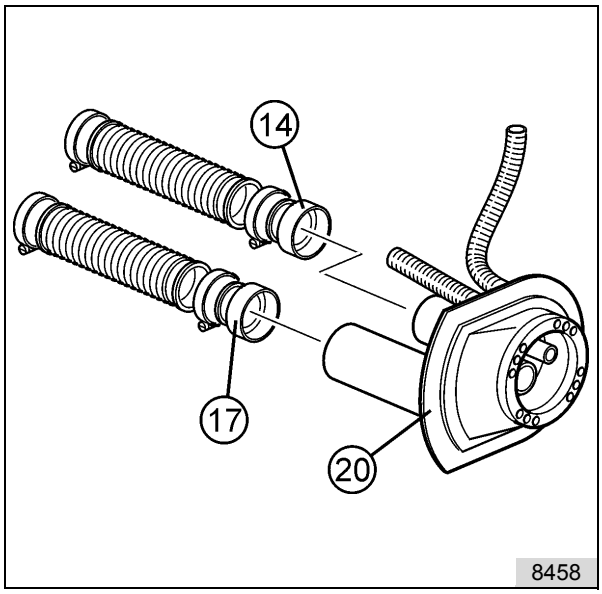



fig. 20

*14* *Return connection DN 50*
*17* *Suction connection DN 65*
*20* *Housing*

Stick the adaptors (14+17) onto the pipe connections on the housing (20). Alternatively, by using pipework, stick to the pump-side end of the pipework.

**Warning!**

Always be sure to lay the pipework using bends and not angles to keep the pipe resistance to a minimum.

## 4.11 Connection to the pump

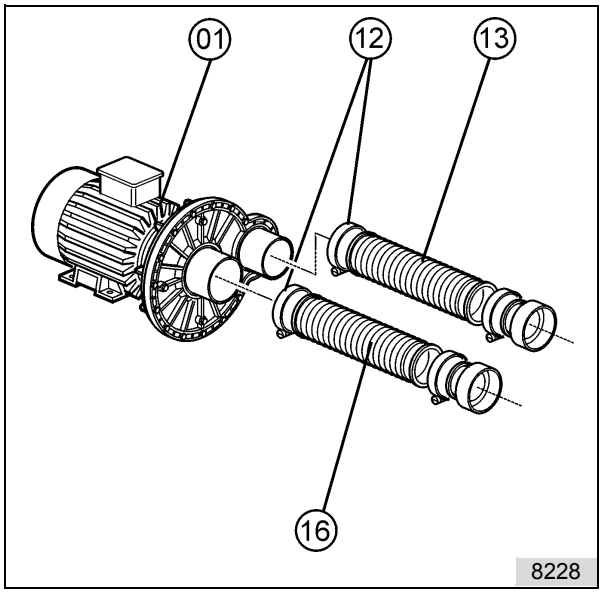



fig. 21

*01 Motor*
*12 Air pipe clamp*
*13 Hose line pressure side*
*16 Hose line suction side*

Connect the hose lines (13 pressure side + 16 suction side) to the pump body. Use the corresponding air pipe clamps (12) on both sides for this.

**Warning!**
Make sure that the connections from the body of the pump to the installation kit / pipework are as nearly aligned as is possible.
The hose lines must always be attached to the pump on the one side (compensator function), see diagram.

## 4.12 Installing the switchgear cabinet

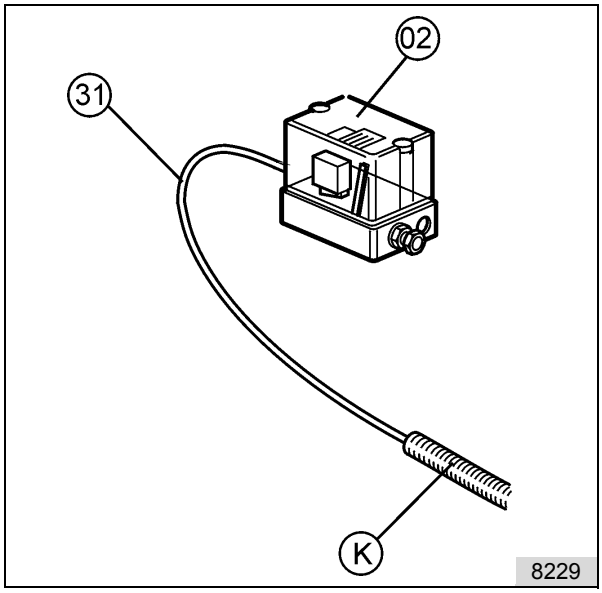



fig. 22

*K Protective hose*
*02 Switchgear cabinet*
*31 Switching tube*

Mount the switchgear cabinet (02) as close as possible to the installation kit. Also please observe the instructions in chapter 4.2.
Fix the switching tube (31) onto the nipple in the protective hose (K).

**Warning!**
Be careful not to put a kink in the switching tube and keep it as short as possible, maximum length 8 m.

## 4.13 Non-return air valve installation

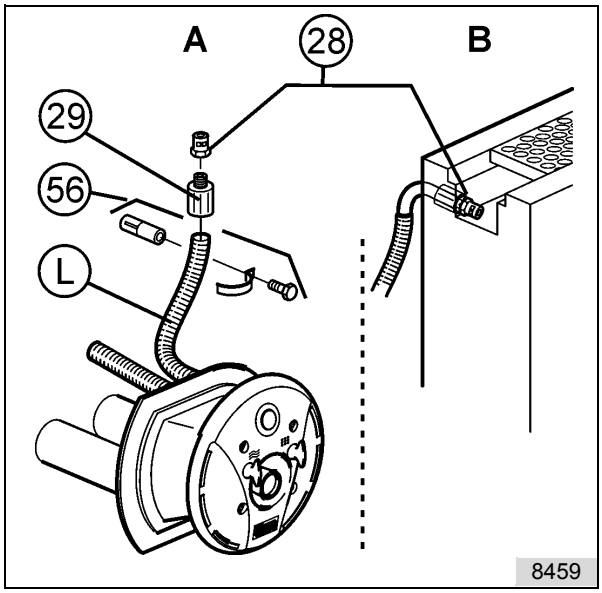



fig. 23

*28 Non-return air valve*
*29 Air line hose tail*
*56 Fixing bracket*

Stick the air line hose tail (29) to the air hose (L). Screw the non-return air valve (28) onto the air line hose tail (29).
Fasten the non-return air valve with the fixing bracket (56) to the pool wall or similar. In the case of a ground level overflow, place the non-return air valve in the duct, see detail “B”.

**Warning!**
To position the non-return air valve also please observe the information under chapter 4.2.

## 4.14 Installation of the face plate assembly - general

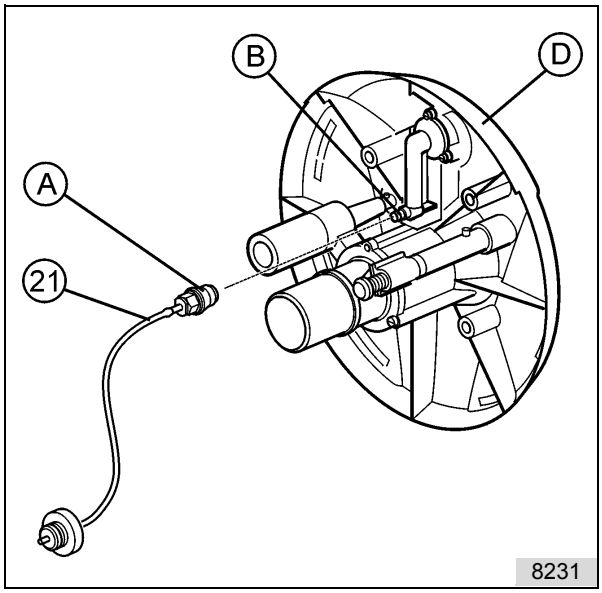



fig. 24

*A Hose coupling*
*B Plug sleeve*
*D Face plate assembly*
*21 Hose*

Drain the pool water, if already filled, to below the installation kit. Firmly place the hose (21) with the hose coupling (A) onto the plug sleeve (B) on the face plate assembly (D). With that the air button is connected to the switchgear cabinet.

### 4.14.1 Face plate assembly installation / Concrete-tile pool

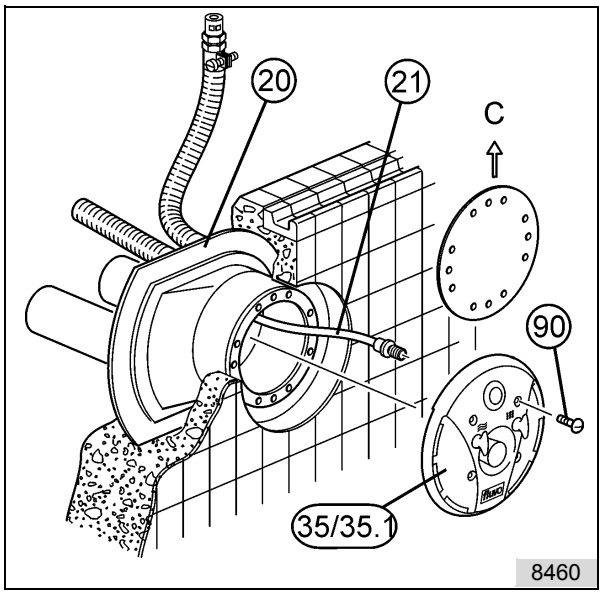



fig. 25

*C* *Mounting protection film*
*20* *Housing*
*21* *Switching tube*
*35/35.1* *Face plate assembly*
*90* *Screw*

Remove the mounting protection film (C). After connecting the air button, put on the face plate assembly (35/35.1), this allows the pressure connection and air connection to slide into one another. Fasten to the housing (20) with the screws (90.1).

**Warning!**
Make sure that there is not a kink in the switching tube (21), do not lay it in a loop and do not shorten it!

### 4.14.2 Face plate assembly installation / Concrete-liner pool

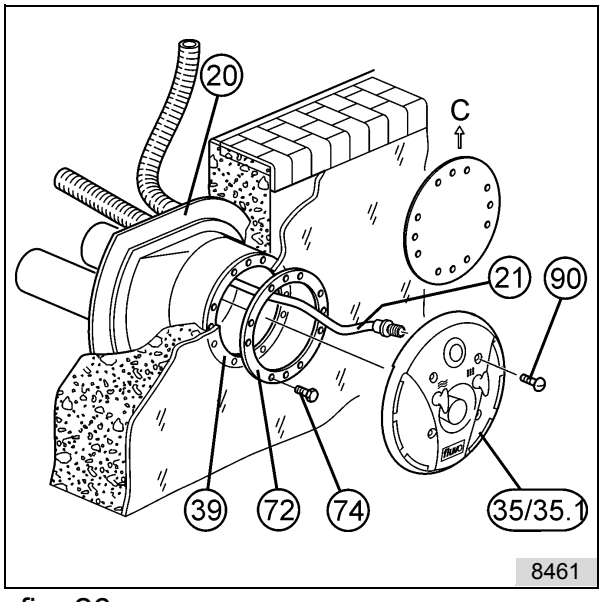



fig. 26

*C* *Mounting protection film*
*20* *Housing*
*21* *Switching tube*
*35/35.1* *Face plate assembly*
*39* *Clamp gasket*
*72* *Clamp ring*
*74* *Screw*
*90* *Screw*

Remove the mounting protection film (C). Place the clamp gasket (39) between the installation housing (20) and the liner and screw the clamp ring (72) to the installation housing using the screws (74). The sealing contact faces must be clean and smooth. Now cut out the pool liner.

After connecting the air button, put on the face plate assembly (35/35.1), this allows the pressure connection and air connection to slide into one another (refer to fig. 24). Fasten to the clamp ring (72) with the screws (90).

**Warning!**
Make sure that there is not a kink in the switching tube (21), do not lay it in a loop and do not shorten it!

### 4.14.3 Face plate assembly installation / Pre-fabricated pool and Wooden-liner pool

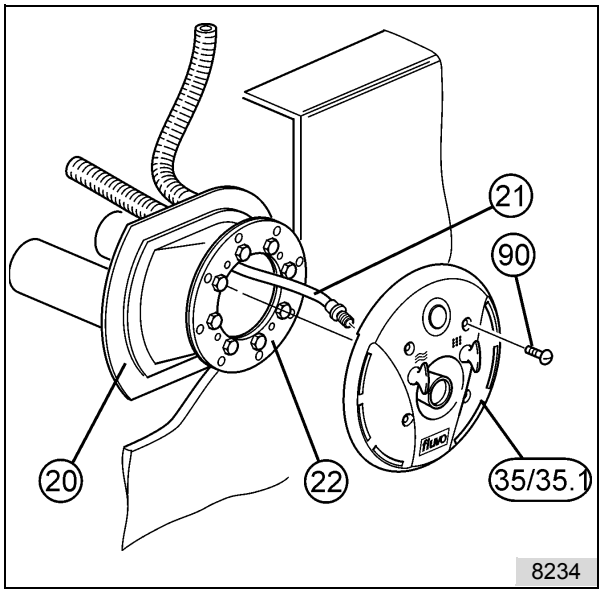



fig. 27: Pre-fabricated pool

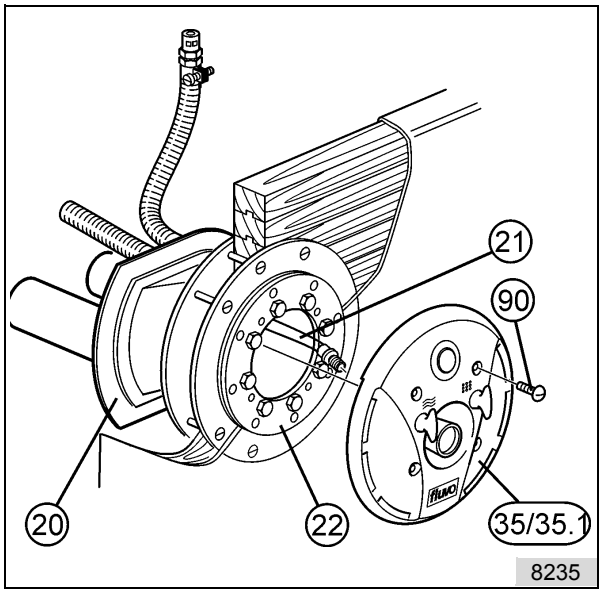



fig. 28: Wooden-liner pool

*20* *Housing*
*21* *Switching tube*
*22* *Clamp ring*
*35/35.1* *Face plate assembly*
*90* *Screw*

After connecting the air button, put on the face plate assembly (35/35.1), this allows the pressure connection and air connection to slide into one another. Fasten to the clamp ring (22) with the screws (90).

**Warning!**
Make sure that there is not a kink in the switching tube (21), do not lay it in a loop and do not shorten it!

# 5 Electrical connections

## 5.1 Electrical Connections - general

The electrical connections to the counter-current swimming system must be carried out by a specialised company in the electrical engineering branch approved by the local energy provider, taking into account the technical connection requirements.

**Warning! Mortal danger!**
The connections must be carried out by a qualified electrician. For this see for example the **Technical Connection Conditions for heavy current from the local power supply company** , the **Regulations of the Electrical Trade VBG (§3)** and **DIN VDE 1000-10 / 1995-5.** The relevant **DIN VDE directives 0100** and where there is a risk of explosion **0165** must also be observed. If the installation is not carried out properly, there is a risk of getting electric shocks!

**Warning!**
Compare the available power supply voltage with the details on the motor's factory plate and select the appropriate switching.
We recommend the use of a motor protection facility. Connect the motor in accordance with the circuit diagrams in the following chapters.

**Please observe:**

- The mains power connection must be a fixed connection.
- Under no circumstances must there be any conducting connection between the metal parts of the motor and the water.
- The mains power supply cable must be equipped with an all-pole separator with a contact opening of 3 mm.
- At the marked connection terminal (at the foot of the motor or next to the terminal box) an equalising potential with a cross-section of 10 mm² must be fitted.

## 5.2 Electrical connections AC

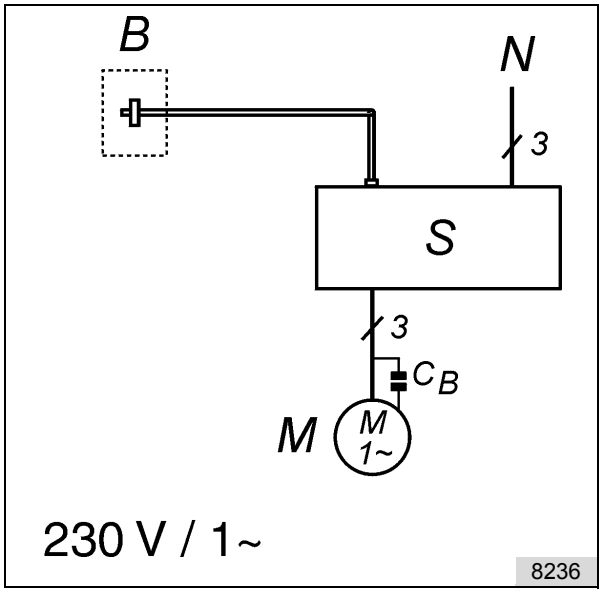



fig. 29

Mains voltage: 230 V for 1 ~ AC
Mains power supply cable: 3 x 2.5 mm²
Pump connection cable: 3 x 2.5 mm²
Fuse: 16 A passive

***B*** = *Control unit in the pool*
***M*** = *Motor of the circulation pump*
***N*** = *Mains power supply (230 V for 1~)*
***S*** = *Switchgear cabinet*
$C_B$ = *Capacitor*

Connection cable, for example, HO7RNF, all further details required for making connections can be found in chapter 3.1.

**Protective measures:**

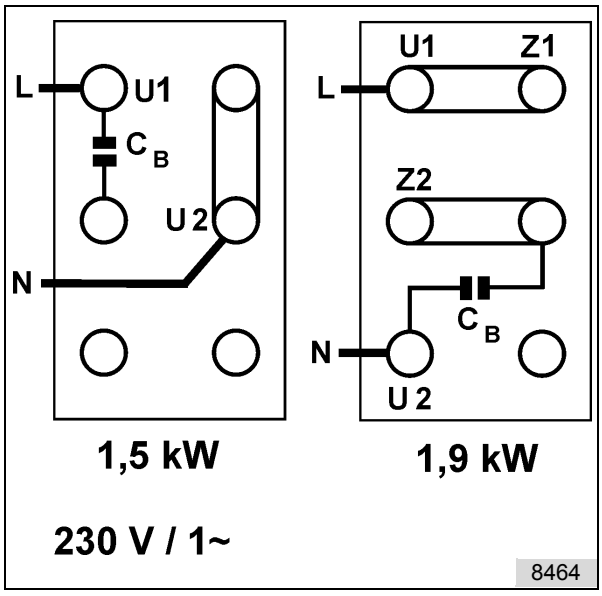



fig. 30: Basic circuit diagram for 230 V for 1 ~ AC

An earth leakage circuit breaker (nominal fault current ≤30 mA) must be fitted to the mains power supply!

**Important! Watch the order of the terminal bridges!**
See the inside of the terminal box lid or enclosed circuit diagram. Please be sure to observe instructions from the motor manufacturer!

*L* *External conductor*
*N* *Neutral conductor*

## 5.3 Electrical connections three-phase current

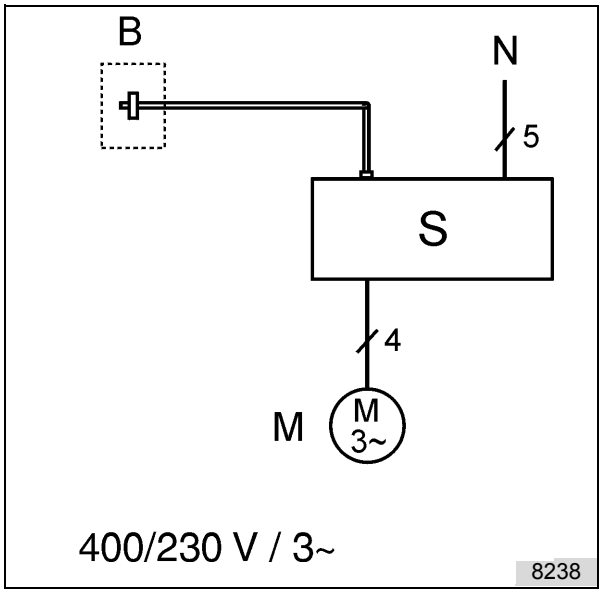



fig. 31: Basic circuit diagram for 400/ 230 V three-phase current

| | |
|---|---|
| Mains voltage: | 400/230 V for 3~ AC |
| Mains power supply connection cable: | 5 x 2.5 mm² |
| Pump connection cable: | 4 x 2.5 mm² |
| Fuse: | 16 A passive |

*B = Control unit in the pool*
*M = Motor of the circulation pump*
*N = Mains power supply (400/230 V 3 ~)*
*S = Switchgear cabinet*

Connection cable, for example, HO7RNF, all further details required for making connections can be found in chapter 3.1.

**Protective measures:**

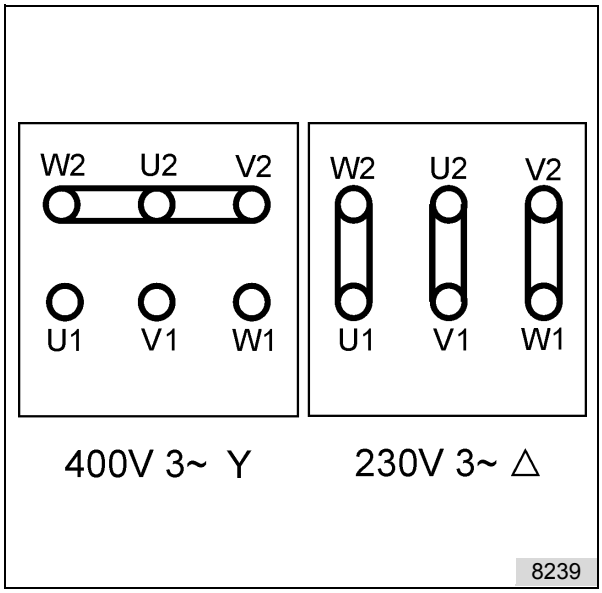



fig. 32: Basic circuit diagram for 400/ 230 V three-phase current

An earth leakage circuit breaker (nominal fault current ≤30 mA) must be fitted to the mains power supply!

**Important! Watch the order of the terminal bridges!**
See the inside of the terminal box lid or enclosed circuit diagram. Please be sure to observe instructions from the motor manufacturer!

*L External conductor*
*N Neutral conductor*

# 6 Start-up / Operating

Never carry out a trial run with the motor as long as there is no water in the pump. A dry run will destroy the mechanical seal in the pump!

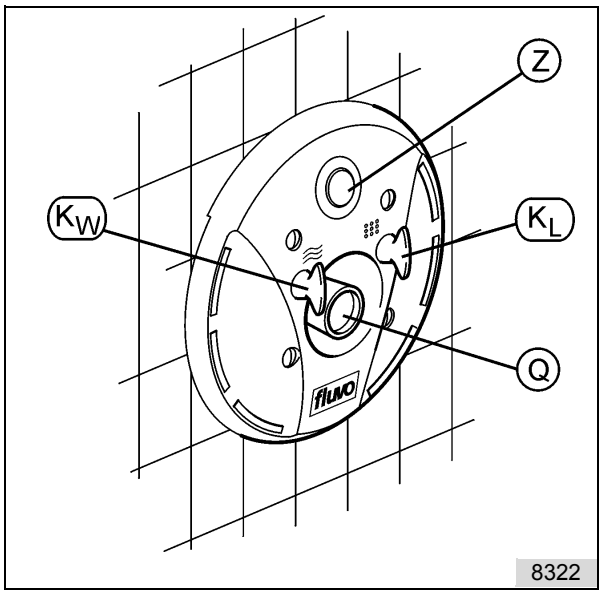



fig. 33

*$K_L$ Air supply regulator knob*
*$K_W$ Water supply regulatorknob*
*Q Nozzle*
*Z Switching button*

- **Switching the pump on and off**

The pump is switched on by pressing the switching button (Z). After 2 seconds the pump can be switched off by pressing the button again or a signal can be sent to the pump (on-off function).

- **Water supply control**

By turning the knob ($K_W$) clockwise the water supply decreases, anti-clockwise it increases.

- **Air supply control / Air bubble bath**

By turning the knob ($K_L$) clockwise the air supply decreases, anti-clockwise it increases. The air supply to the water causes the water jet to become softer (air bubble bath).

- **Direction of jet**

The nozzle can be turned in any direction.

- **Counter-current swimming**

Set the maximum jet speed. Swing the nozzle (Q) so that the water layer just under the surface of the water begins to flow quickly.

- **Attaching the massage set**

Switch off the counter-current swimming system prior to attaching the impulse-massage nozzle.
Pull back the sliding sleeve (V), push the hose coupling (F) into the nozzle (D), press the sliding sleeve (V) against the nozzle (D) and pull back on the hose coupling (F). That causes the hose coupling to be locked in place.

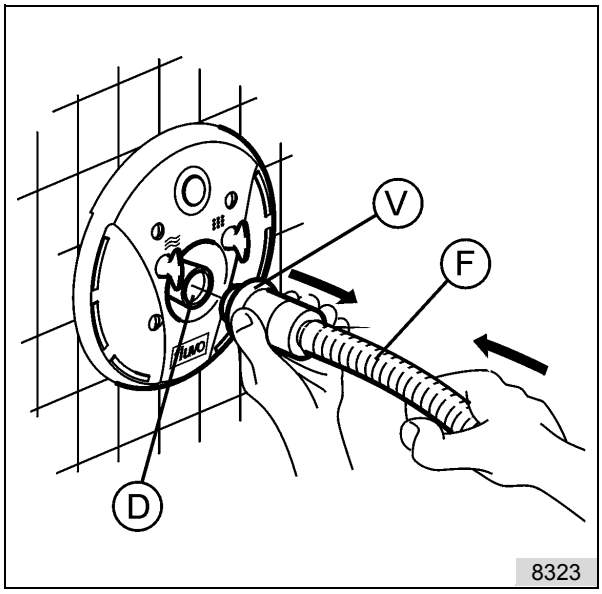



fig. 34: Attaching the massage set

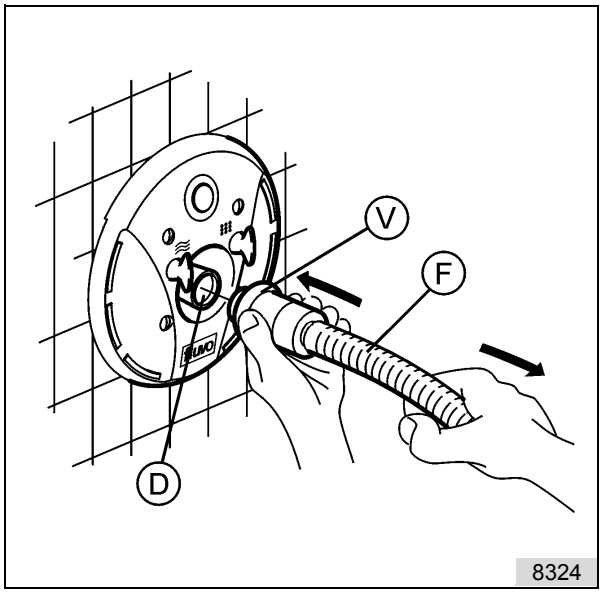



fig. 35: Detaching the massage set

*D Nozzle*
*F Hose coupling*
*V Sliding sleeve*

- **Detaching the massage set**

Switch off the counter-current swimming system prior to detaching the impulse-massage nozzle.
Press the hose coupling (F) against the sliding sleeve (V), take a hold of it and pull it back, pull out the hose coupling.

## 7 Fault Assistance

**Warning!**
In accordance with UVV (Accident Prevention Regulations) all repairs and intervention to the unit must be carried out exclusively by qualified persons otherwise damage (accidents) could result to the user / operator.

The functional faults listed in the table are the most frequent causes of defects. If the corrective measures described are not successful, then the specialist that is called in individual cases will have to investigate the cause of the fault.

| Functional fault | Possible cause | Remedy |
|---|---|---|
| 1. Pump runs very loudly and lacks performance | Motor rotating in the wrong direction | Re-pole the motor in the terminal box and reverse the direction |
| | Motor blower brushes against the blower cover | Fasten the blower cover properly |
| 2. Pump starts up heavily and slowly | A current phase is missing | Check supplies and fuses |

| Functional fault | Possible cause | Remedy |
|---|---|---|
| 3. The fuses jump out when the pump is switched on | Wrong or too nimble fuses | Insert passive fuses with the correct current rating. |
| 4. Motor protection switch trips | Wrong setting | Set correct current value +10% (see Technical Data) |
| 5. Centrifugal pump cannot be switched on from the pool | - Switching tube has a kink in it<br>- Fuse / power supply<br>- Motor protection switch<br>- Switching tube too long<br>- Water in the switching tube | Check whether the pump can be switched from the switchgear box. - Eliminate causes in accordance with chapter 4 .<br>- Shorten switching tube, if possible.<br>- Blow through the switching tube from the swimming pool end |
| 6. Air valve leaks | dirty | Screw the air valve off and wash it out during normal operation. Replace it, if necessary.<br>**Note:** The air valve must be located above the water surface. |

# 8 Shutdown / Overwintering

**Warning! Risk of damage!**
If there is a risk of freezing, then the facility must be made winterproof. For this observe the following recommendations:

## 8.1 Empty the pool

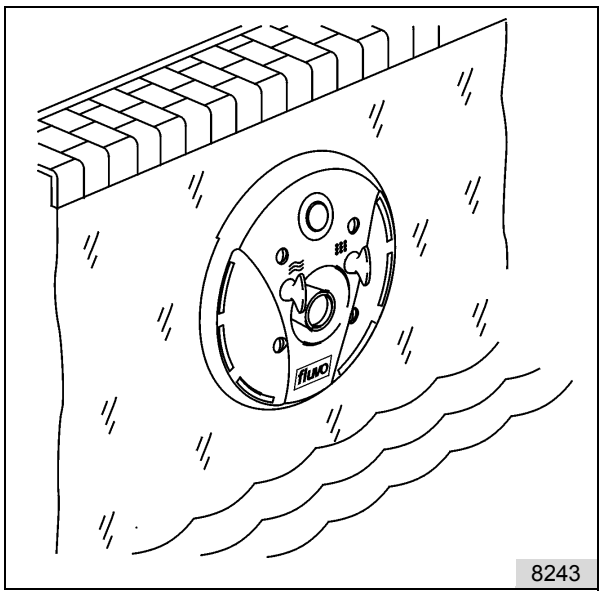


fig. 36

**Warning! Risk of damage!**
Make sure you have protected the whole swimming complex adequately against frost. Observe the instructions issued by the manufacturer of the pool!

- Empty all the water out of the pool,
- or let the water out at least until it is 15-20cm below the level of the jet head.
- Switch off the master switch!

## 8.2 Face plate assembly overwintering

Remove the face plate assembly and store at room temperature.

### 8.3 Draining the pump

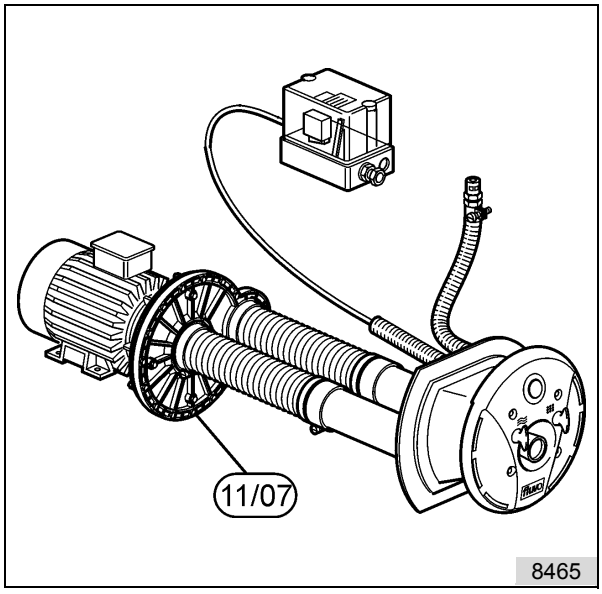



fig. 37

*07 O-Ring*
*11 Plug screw*

Screw out the plug screw (11) and drain the water.

**Warning! Risk of damage!**
Make sure that all the water runs off! Also drain the pipework connected to the pump, if any!

Then screw the plug screw (11) back in again with a new O-ring (07).
When restarting please observe the instructions in section 6.

## 9 Maintenance and Repair

### 9.1 General

All work on the counter-current unit must be carried out only if the pump has been drained and the control unit and pump motor have been disconnected from the mains and secured against unintentional reconnection.

### 9.2 Maintenance

- The counter-current unit is largely maintenance-free.
- Make sure that all the parts of the counter-current unit are kept clean.
- The gaskets on the motor shaft must be checked at regular intervals (at least once a year) by a trained engineer. If necessary, they must be replaced by original spare parts.

### 9.3 Repairs

- For any necessary repairs to the counter-current unit please observe the instructions for installation and start-up in this manual.
- Use exclusively original spare parts when carrying out repairs to the counter-current unit.

## 10 Spare parts

In the following spare parts list there are all the parts required for your counter-current unit. When ordering spare parts please specify the pump number and the order number of the individual part(s) in this list.

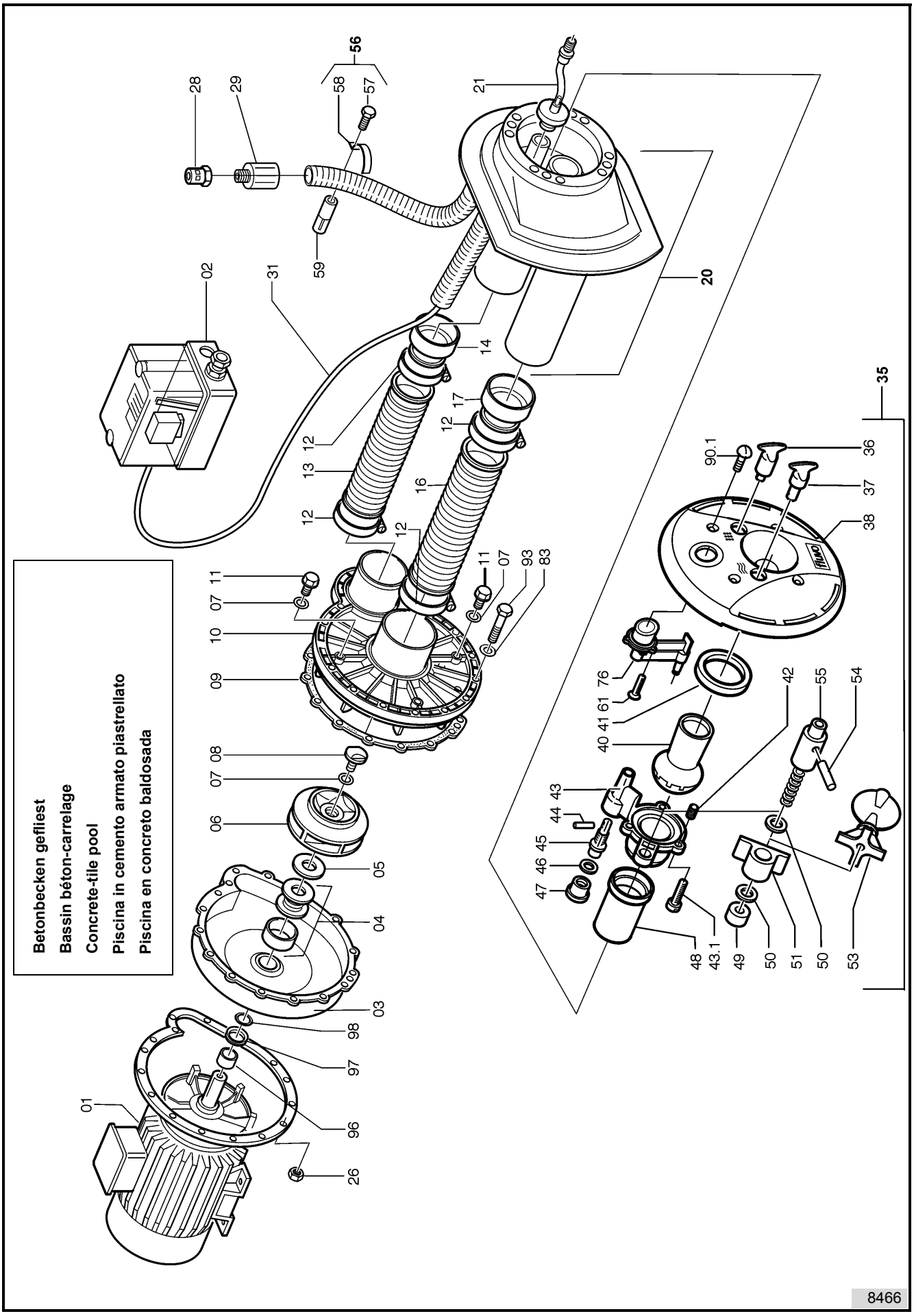
# 11 Spare Parts List and Drawing

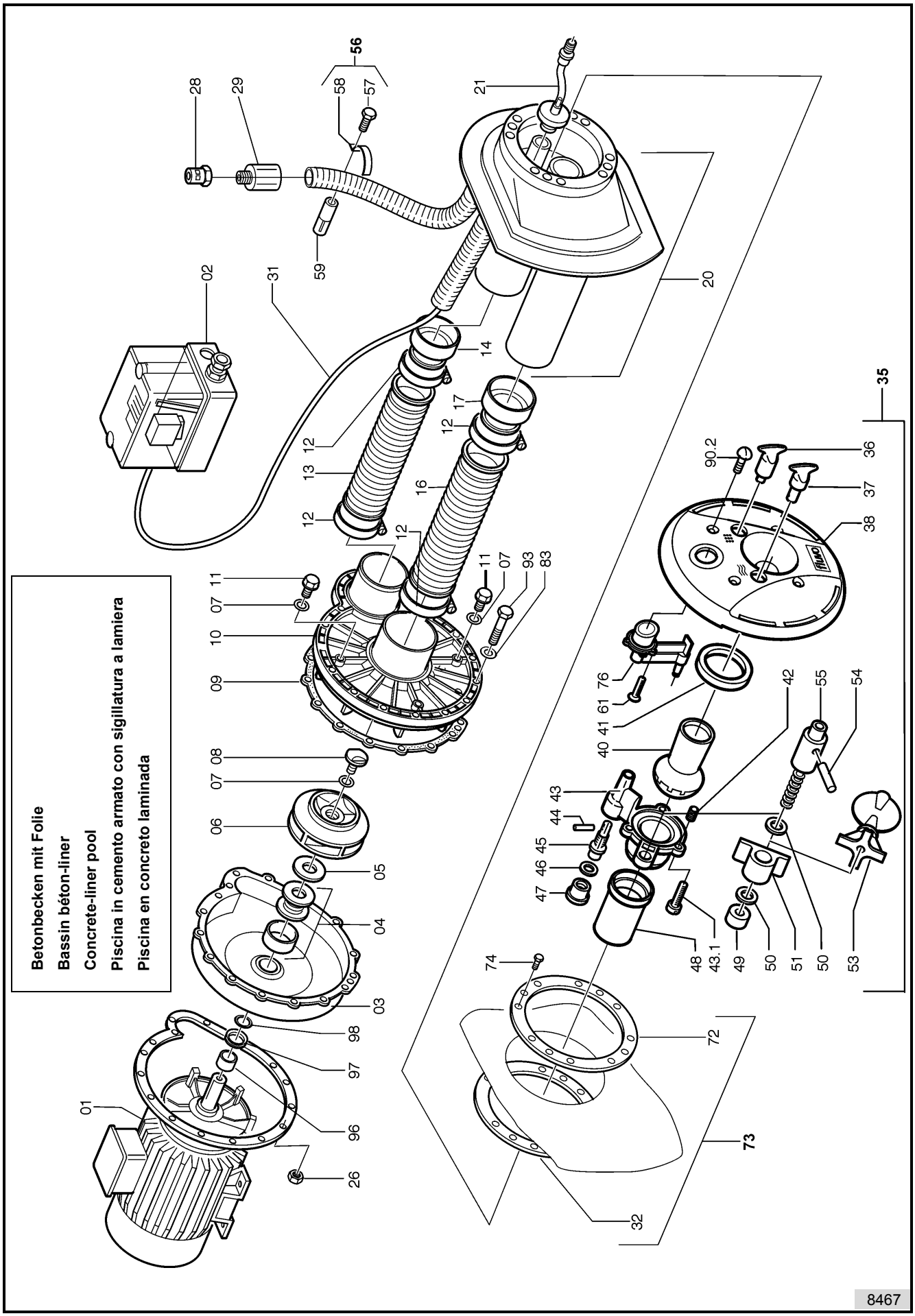
## 11.1 Spare Parts List

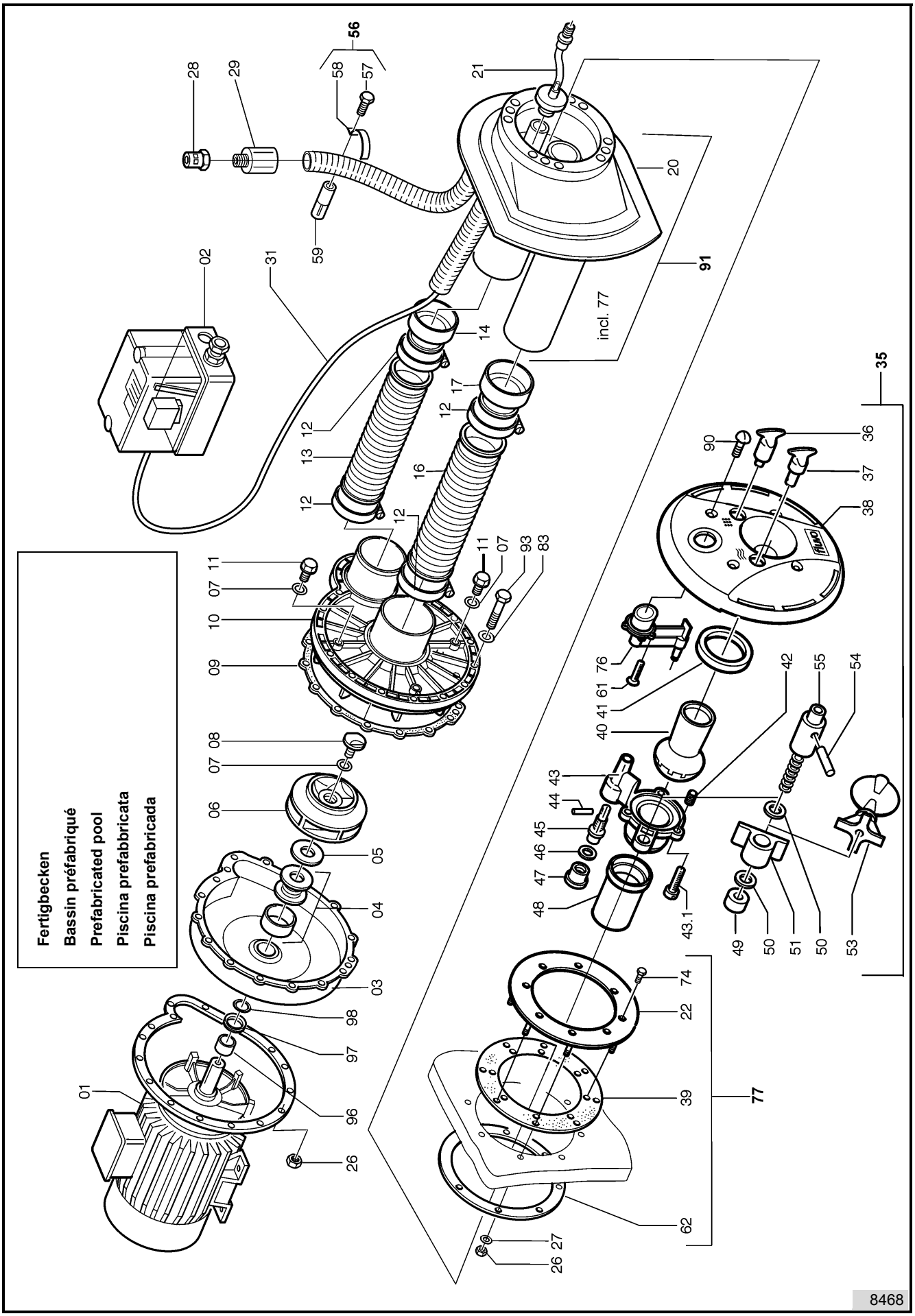
| Pos. | Best. Nr. No. de réf. Order No. | Bezeichnung | Désignation | Description | Stck. Nbre. Qty. | Bemerkung Remarque Remark |
|---|---|---|---|---|---|---|
| 01.1 | 365445 | Wechselstrom-Motor | Moteur à courant alternatif | 1-phase AC motor | 1 | 1,5 kW IEC 38 230V |
| 01.7 | 360966 | Drehstrom-Motor | Moteur à courant triphasé | 3-phase AC motor | 1 | 1,5 kW IEC 38 400/230V |
| 01.3 | 365449 | Wechselstrom-Motor | Moteur à courant alternatif | 1-phase AC motor | 1 | 1,9 kW IEC 38 230V |
| 01.9 | 362185 | Drehstrom-Motor | Moteur à courant triphasé | 3-phase AC motor | 1 | 1,9 kW IEC 38 400/230V |
| 01.15 | 365447 | Drehstrom-Motor | Moteur à courant triphasé | 3-phase AC motor | 1 | 3 kW IEC 38 400/230V |
| 02.1 | 89083 | Schaltkasten Wechselstrom | Coffret électrique courant alternatif | Switch cabinet 1-phase AC | 1 | 1,5 kW IEC 38 230V |
| 02.3 | 89075 | Schaltkasten Drehstrom | Coffret électrique courant triphasé | Switch cabinet 3-phase AC | 1 | 1,5 kW IEC 38 400/230V |
| 02.2 | 89096 | Schaltkasten Wechselstrom | Coffret électrique courant alternatif | Switch cabinet 1-phase AC | 1 | 1,9 kW IEC 38 230V |
| 02.4 | 89088 | Schaltkasten Drehstrom | Coffret électrique courant triphasé | Switch cabinet 3-phase AC | 1 | 1,9 kW IEC 38 400/230V |
| 02.5 | 89125 | Schaltkasten Drehstrom | Coffret électrique courant triphasé | Switch cabinet 3-phase AC | 1 | 3 kW IEC 38 400/230V |
| 03 | R47505 | Spiralgehäuse | Carter spiralé | Spiral housing | 1 | |
| 04 | 21140 | Gleitringdichtung | Joint mécanique | Mechanical seal | 1 | |
| 05 | 51066 | Unterlegscheibe | Rondelle | Distance washer | 1 | |
| 06.1 | 51047 | Laufrad | Turbine | Impeller | | 1,5 kW Ø 105 |
| 06.3 | 51021 | Laufrad | Turbine | Impeller | | 1,9 kW Ø 110 |
| 06.4 | 51022 | Laufrad | Turbine | Impeller | | 3 kW Ø 125 |
| 07 | 24133 | O-Ring | Joint torique | O-ring | 3 | 10,0 x 2,0 |
| 08.1 | 56033 | Laufradschraube | Vis turbine | Impeller screw | 1 | |
| 09 | 22113 | Flachdichtung | Joint plat | Clamp gasket | 1 | |
| 10.1 | 51007 | Saugdeckel | Carter aspiration | Suction cover | 1 | |
| 11 | 11104 | Verschlusschraube | Bouchon fileté | Plug screw | 2 | G1/4“ |
| 12.1 | 16144 | Schlauchschelle | Collier de serrage | Pipe clamp | 2 | S70/25 SKZ |

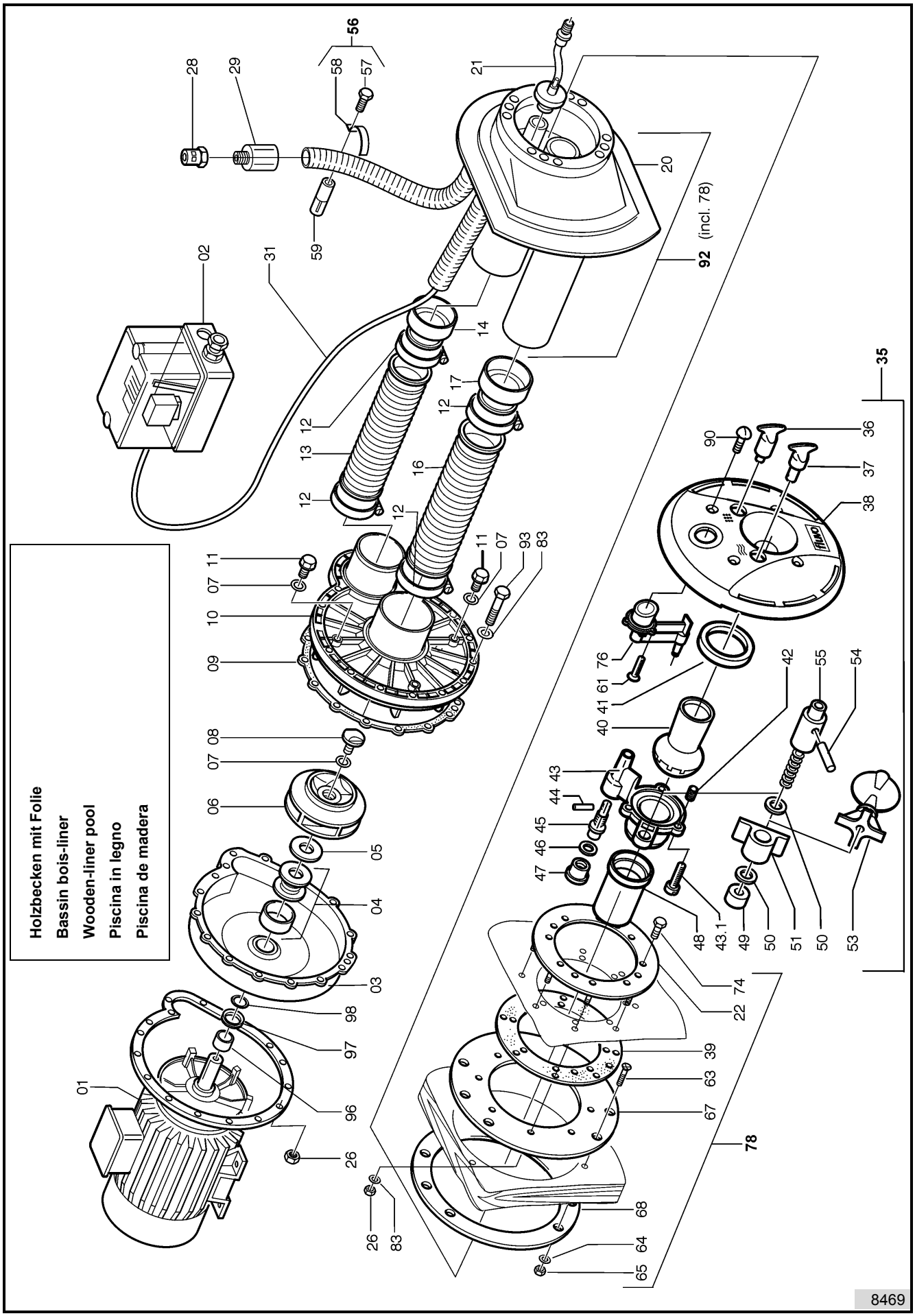
| Pos. | Best. Nr. No. de réf. Order No. | Bezeichnung | Désignation | Description | Stck. Nbre. Qty. | Bemerkung Remarque Remark |
|---|---|---|---|---|---|---|
| 12.3 | 16097 | Schlauchschelle | Collier de serrage | Pipe clamp | 2 | S86/25 SKZ |
| 13.1 | 16095 | Schlauch | Tuyau flexible | Pipe | 1 | Ø 60 x 300 mm |
| 14 | 55793 | Schlauchverb.-Stutzen | Tuyau raccord | Adapter | 1 | |
| 16.1 | 16099 | Schlauch | Tuyau flexible | Hose | 1 | Ø 75 x 300 mm |
| 20.6 | 94421 | Einbausatz | Pièce à sceller | Installation kit | 1 | |
| 21.2 | 92196 | Schlauchkupplung | Accouplement de tuyau | Hose coupling | 1 | |
| 22 | 45161 | Klemmring | Bague de serrage | Clamp ring | 1 | |
| 26 | 12181 | Sechskantmutter | Ecrou six pans | Hexagon nut | 8 | M 8 |
| 26.2 | 12192 | Sechskantmutter | Ecrou six pans | Hexagon nut | 7 | M10 |
| 28 | 56031 | Rückschlagventil | Clapet anti-retour | Non-return valve | 1 | |
| 29.2 | 56055 | Übergangsnippel | Embout de réduction mâle | | 1 | |
| 31.2 | 16220 | Schaltschlauch | Tuyau de commande | Switching tube | 1 | |
| 32 | 22235 | Flachdichtung | Joint plat | Clamp gasket | 1 | 200 x 150 x 2 mm |
| 35.1 | 92192 | Düsenkopf | Tête de buse complète | Face plate assembly | 1 | |
| 36 | 65032 | Drehgriff Luftregulier. | Bouton régulation air | Air supply regulator knob | 1 | |
| 37 | 65033 | Drehgriff Mengenreg. | Bouton régulation débit | Volume regulator knob | 1 | |
| 38 | 56232 | Düsengehäuse | Tête de buse | Face plate | 1 | |
| 39.2 | 22227 | Flachdichtung | Joint plat | Clamp gasket | 1 | 250 x 150 x 2 mm |
| 40 | 56035 | Düse | Buse | Nozzle | 1 | |
| 41 | 56050 | Kugelgleitring | Anneau de glissement à boule | Nozzle clamp seal | 1 | |
| 42 | 15103 | Druckfeder | Ressort de pression | Pressure spring | 4 | |
| 43.1 | 10401 | Schneidschraube | Vis coupante | Socket head cap screw | 3 | 5,5 x 25 |
| 43.2 | 56036 | Gehäuse | Boîtier | Housing | 1 | |
| 44 | 13154 | Zylinderkerbstift | Goupille en cochée cylindrique | Locking pin | 1 | |
| 45 | 55602 | Welle f. Luftregelung | Broche de régulation d'air | Shaft for air regulator | 1 | |
| 46 | 22008 | Flachdichtung | Joint plat | Clamp gasket | 1 | 16 x 8 x 3 |
| 47 | 56775 | Bundhülse | Douille à embase | Shaft collar | 1 | |
| 48 | 57952 | Zentrierhülse | Douille de centrage | Nozzle case sleeve | 1 | |
| 49 | 56682 | Gewindehülse | Douille filetée | Threaded sleeve | 1 | |
| 50 | 23073 | Dichtung | Joint | Gasket | 2 | |
| 51 | 56681 | Gleitmutter | Ecrou-coulisseau | Regulator nut | 1 | |
| 53 | 56070 | Drosselklappe | Vanne papillon | Regulating flap | 1 | |
| 54 | 13226 | Zylinderkerbstift | Goupille en cochée cylindrique | Locking pin | 1 | |

| Pos. | Best. Nr.<br>No. de réf.<br>Order No. | Bezeichnung | Désignation | Description | Stck.<br>Nbre.<br>Qty. | Bemerkung<br>Remarque<br>Remark |
|---|---|---|---|---|---|---|
| 55 | 56680 | Verstellspindel | Broche de réglage | Water regulator shaft | 1 | |
| 56 | 67122 | Bef. Satz Luftventil | Lot fix. pour valve à air | Air valve fixing bracket | 1 | |
| 57 | 10561 | Sechskantschraube | Vis six pans | Hexagon screw | 1 | M8 x 30 |
| 58 | 55272 | Befestigungsschelle | Collier de fixation | Clamp | 1 | |
| 59 | 67005 | Spreizdübel | Cheville d'écartement | Rawl plug | 1 | SD 8 |
| 61 | 10244 | Blechschraube | Vis parker | Tapping screw | 3 | 4,2x13 |
| 62 | 56229 | Haltering | Bague de retenue | Hold-ring | 1 | 204 x 155 x 4 |
| 63 | 10626 | Senkschraube | Vis à tête conique | Countersunk screw | 7 | M10 x 70 |
| 64 | 12397 | Unterlegscheibe | Rondelle | Distance washer | 7 | 10,5 x 21 x 2 |
| 67 | 51303 | Haltering | Bague de retenue | Hold-ring | 1 | |
| 68 | 56241 | Haltering | Bague de retenue | Hold-ring | 1 | 260 x 340 x 4 |
| 72 | 51306 | Klemmring | Bague de serrage | Clamp ring | 1 | 198 x 150 x 6 |
| 73 | 92022 | Einbauelemente | Fittings | Fittings | 1 | |
| 74 | 10518 | Sechskantschraube | Vis six pans | Hexagon screw | 8 | M8 x 25 |
| 76 | 65072 | Einschubsatz | Pièces à installer | Fittings | 1 | |
| 77.2 | 92323 | Einbauelemente | Fittings | Fittings | 1 | |
| 78.2 | 92324 | Einbauelemente | Fittings | Fittings | 1 | |
| 83 | 12392 | Unterlegscheibe | Rondelle | Distance washer | 8 | A 8 |
| 90.1 | 10880 | Linsensenkschraube | Vis à tête conique bombée | Face plate screw | 4 | M8 x 100 |
| 90.2 | 10779 | Linsensenkschraube | Vis à tête conique bombée | Face plate screw | 4 | M8 x 70 |
| 90.3 | 10539 | Linsensenkschraube | Vis à tête conique bombée | Face plate screw | 4 | M8 x 45 |
| 92.4 | 94423 | Einbausatz | Pièce à sceller | Insert set | 1 | |
| 93 | 10530 | Sechskantschraube | Vis six pans | Hexagon screw | 15 | M8 x 50 |
| 83 | 12392 | Unterlegscheibe | Rondelle | Distance washer | 15 | 8,4 x 16 x 1,6 |
| 26 | 12181 | Sechskantmutter | Ecrou six pans | Hexagon nut | 8 | M8 |
| 96 | 55539 | Abstandshülse | Douille d'écartement | Distance washer | 1 | |
| 97 | 24424 | V-Ring | Bague en V | V-ring | 1 | |
| 98 | 22213 | Flachdichtung | Joint plat | Clamp gasket | 1 | |


Betonbecken gefliest
Bassin béton-carrelage
Concrete-tile pool
Piscina in cemento armato piastrellato
Piscina en concreto baldosada
8466


Betonbecken mit Folie
Bassin béton-liner
Concrete-liner pool
Piscina in cemento armato con sigillatura a lamiera
Piscina en concreto laminada
8467


Fertigbecken
Bassin préfabriqué
Prefabricated pool
Piscina prefabbricata
Piscina prefabricada
incl. 77
8468


Holzbecken mit Folie
Bassin bois-liner
Wooden-liner pool
Piscina in legno
Piscina de madera
92 (incl. 78)
78
35
56
8469

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