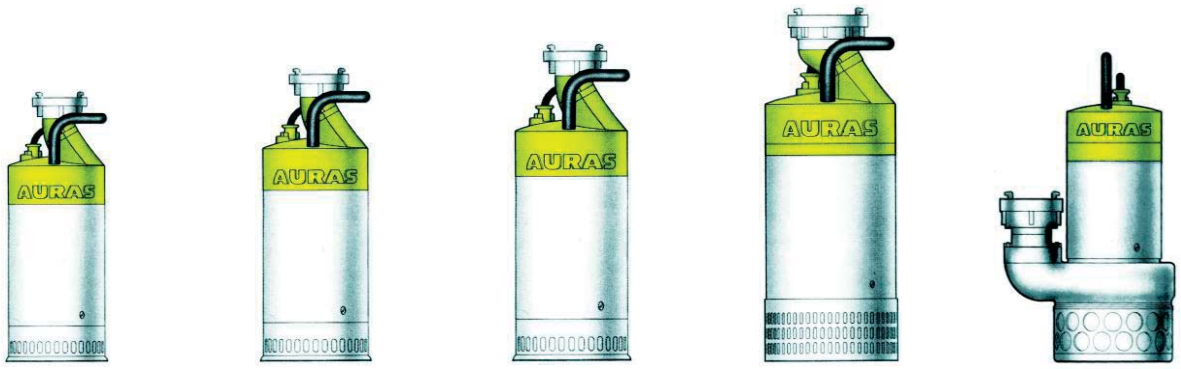
AURAS

# Operating Manual and Spare Parts Lists




**for submersible pumps:**

**P 220 P 20 P 30 P 40 ND P 40 HD P 60 ND P 40 CS**
**P 220 A P 20 A P 30 A P 40 ND A P 40 HD A P 60 ND A**

**Please read this manual and observe the information contained before starting to use the submersible pumps!**

## Introduction

We are very pleased that you have chosen a submersible pump from Auras, a high quality brand!
Please observe the information in this operating manual to ensure your submersible pump enjoys a long, trouble-free service life!


NOTE

Auras Pumpen GmbH & Co. KG is not considered liable for personal injury or property damage resulting from improper use of the submersible pump!
Only use the Auras submersible pump in accordance with the types of use described in this manual!

The Auras pump is a portable submersible pump. Prior to a fixed installation, the installation conditions must be checked and evaluated by experts. Auras Pumpen GmbH & Co. KG is not considered liable for any consequential damage (personal injury or property damage) resulting from improper installation.

# 1 Use

## 1.1 Intended Use

Auras submersible pumps are conceived for the areas of use and working conditions described below:

- Auras submersible pumps may only be used in their condition on delivery. Modifications are not permitted.
- For pumping construction trenches, cellars, ponds, swimming pools, etc. dry.
- For preventing groundwater seeping into construction trenches for a reasonable time in accordance with local regulations (groundwater maintenance).
- For use as a groundwater pump, e.g. to water gardens and agricultural areas.
- Auras submersible pumps may only operated in water within a temperature range from 0 to 35 °C.
- The maximum immersion depth is 10 meters (below the water surface).
- **Model P40 CS only:** Use in sewage containing faeces.

## 1.2 Unintended Use

Auras submersible pumps have **NOT** been conceived for the following:

- Use in potentially explosive atmospheres.
- Use in combustible liquids.
- Use in liquids such as: oil, chemicals, foodstuffs, sewage containing faeces (except Model P40 CS), liquids containing long-stranded components.

## 1.3 CE Mark

This submersible pump from Auras fulfils all the necessary requirements stipulated in the applicable EU Directives:
(DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, and amendment to Directive 95/16/EC (revised version) significant to the EEA).

CE

Conformity of the product to the above directives is confirmed by the CE Mark applied to the device. The Declaration of Conformity can be viewed in full at the following address:

Auras Pumpen GmbH & Co. KG
Ferdinand-Porsche-Str. 13
D-60386 Frankfurt / Main

## 1.4 Disposal

When your Auras submersible pump has come to the end of its service life, bring the old unit to a collection point provided by your local waste disposal authorities (e.g. recycling centre, waste disposal plant).

The adjacent symbol indicates that the old unit must be disposed of separated from household waste. According to the laws on electrical and electronic equipment, the owners of old units are legally obliged to dispose of old electronic and electrical devices in a separate waste container.
Please help and make a contribution to environmental protection by not throwing old equipment in household waste.

# 2 Safety Information on the Submersible Pump

Dear Customer,
Your safety is very important to us!

Therefore, please read the safety information carefully and thoroughly. Always observe the general information regarding safety provided in this chapter as well as the specific safety information in the following chapters.

NOTE

Auras Pumpen GmbH & Co. KG is not considered liable for damage or injury caused by any of the following reasons:

- Disregard for the safety information
- Improper handling or use
- Use with non-approved accessories / spare parts
- Failure to observe the legal inspection requirements and maintenance recommendations

## 2.1 Signs and Symbols

This operating manual contains the following signs and symbols to indicate various risks and information:

| Level of Danger | Associated Symbol | Signal Word | Definition |
|---|---|---|---|
| Risk of fatal injury |  | DANGER | Failure to observe the safety information will result in fatal or serious personal injury. |
| Serious injury |  | WARNING | Failure to observe the safety information could result in fatal or serious personal injury. |
| Serious injury through electric shock |  | | Extra indication of the basic risks from electricity. |
| Minor injury and property damage |  | CAUTION | Failure to observe the safety information could result in minor personal injury and/or property damage. |
| Information |  | INFORMA-TION | Information on preventing injuries to persons and damage to the environment and/or equipment. |
| Tip |  | TIP | Helpful information on using the submersible pump. |

## 2.2 General Safety Information

NOTE

Not all the possible risks which could occur when using the equipment can be listed in this operating manual. Always work in a cautious manner and observe the local safety regulations.

DANGER

**Risk of electric shock**

- Incorrectly repaired submersible pumps could be the source of incalculable safety risks. Always have repairs completed by authorised, skilled personnel!
- Even low electrical currents can lead to serious or even fatal injuries!
  - Never lift the submersible pump by the cable.
  - Lay the cables so that they cannot be damaged.
  - Never put a damaged submersible pump into operation.

DANGER

**Non-functional safety equipment**

- Safety equipment which has been put out of service represents a major safety risk! Never put the safety equipment on the submersible pump out of service!

**Risks for children**

- This device may be used by **children** aged 13 or over and by persons with restricted physical, sensory or mental capability or lack of experience and knowledge when they are under supervision or have received the necessary instruction regarding safe use of the device and understand the risks involved. **Children** must not play with the device. Cleaning and **user maintenance** must not be completed by **children** without the appropriate supervision.

**Risk of explosion**

- Pumps can be the cause of serious explosions! The submersible pumps are not designed for use in potentially explosive atmospheres! Never use the submersible pumps in such areas!

WARNING

**Drowning**

- Persons could be drawn under water and drown. Never operate the submersible pump in containers/bodies of water in which people are standing.

**Mutilation**

- The submersible pump could start up accidentally and cause severe injuries! Disconnect the submersible pump from the mains power supply before opening it or beginning any work on it!

**Back injuries, crushing**

- The submersible pump is heavy and could cause serious injuries, e.g. if it falls over. Always use suitable tools and aids to transport the submersible pump.

CAUTION

**Damage to the submersible pump**

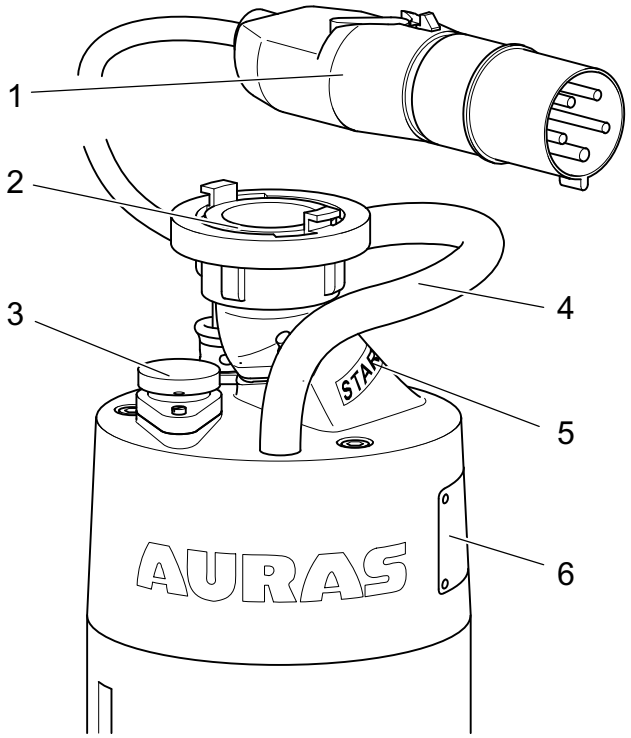
- Inappropriate electrical voltages could damage the submersible pump. Only operate the submersible pump within the specified voltage range (indicated on the respective rating plate).

# 3 Becoming Familiar with the Product

This chapter will help you become familiar with the operating elements on the submersible pump and provides information on transporting it properly.

## 3.1 Operating Elements on the Submersible Pump

Auras submersible pump are equipped with the following elements:




1. Power connector with three-phase reversing switch (models P220 and P60 ND have no three-phase reversing switch)
2. Discharge
3. In the case of a submersible pump with Auras Automatic: Selector switch with setting "A" for Automatic operation and "C" for Continuous operation
4. Handle
5. Start label
6. Rating plate

**NOTE** The submersible pump starts when it is connected to the mains power supply via the power connector.

## 3.2 Auras Automatic System

The Auras Automatic system (indicated by the "A" in the model name) operates without any moving parts.
The water level is monitored by two electrodes mounted in the pump housing. If the top and bottom electrodes are surrounded by water (Fig. 1), the submersible pump starts up. The water level sinks (Fig. 2). Pump operation is stopped when the water level has dropped below the bottom electrode (Fig. 3).

TIP

The control voltage of the electrodes is only 18 V and completely harmless for human beings.

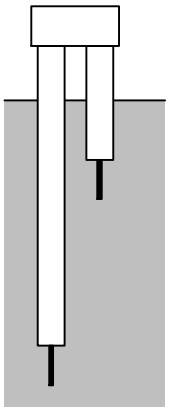


Fig. 1

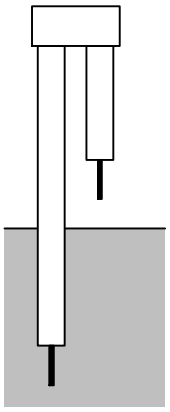


Fig. 2

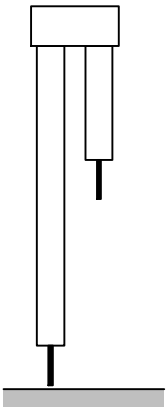


Fig. 3

### 3.2.1 Switch positions

In order to activate Auras automatic mode, move the selector switch to the position illustrated in Fig. 1.

In order to deactivate Auras automatic mode, move the selector switch to the position illustrated in Fig. 2.

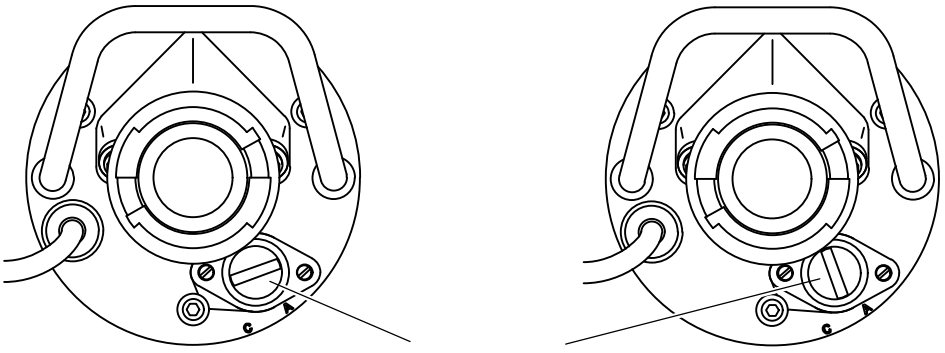



Fig. 1 Fig. 2

## 3.3 Transport and Storage


DANGER

**Electric shock**
Defective cables can lead to serious injuries and damage. Lever attempt to lift the submersible pump using the power cable or hose because the parts could be damaged as a result.
Always use the handle to transport, lift and set down the submersible pump.


WARNING

**Back injuries, crushing**
The submersible pump is heavy and could cause serious injuries, e.g. if it falls over. Always use suitable tools and aids to transport the submersible pump.

Observe the following points in the case of transport and storage:

- Always use the handle to transport the pump.
- Store the submersible pump at a location protected from frost.

## 3.4 Power Supply


DANGER

**Fatal electric shock**
Incorrectly installed power sockets could be the cause of fatal electric shocks.
Only operate the submersible pump via properly installed and approved power sockets.
Only allow properly skilled electricians to complete work on electrical lines and systems.


NOTE

- The fuse at the power source must comply with the specified values (refer to the Technical Data from Seite 22). When the pump motor is started up, it briefly requires a much higher current for a short time than for the operating current.
- The mains voltage to which the submersible pump is connected may deviate maximally +/- 5% from the voltage specified on the submersible pump's rating plate. In the case of greater deviations, the submersible pump will be damaged.
- If you operate the submersible pump via a portable power generator, pay attention that is capable of producing the higher starting current which is required briefly when the submersible pump is switched on.
- Only switch the submersible pump on when the correct mains voltage and frequency are provided (particularly when using a portable generator). Otherwise, the pump electronics could be damaged. Contact an electrician in case of doubt!
- If a portable generator is used for the power supply, always disconnect the submersible pump from the generator before switching the generator off. This prevents any possible damage to the submersible pump.
- If the electrical power is drawn from a distributor (multicontact plug), pay attention that it will not be overloaded as a result of all the other devices connected.

## 3.5 Frost

CAUTION

**Clogging of the hose**
The pump could be overloaded and damaged as a result of clogging. If the hose has frozen and/or there is ice in the hose, thaw it or change it before starting the pump.

NOTE

The submersible pump is conceived for use at water temperatures from 0 - 35 °C. If the submersible pump is frozen, do not thaw the submersible pump by exposing it to extreme temperatures (e.g. naked flames or hot air guns). The material from which the pump is made may not be able to withstand such extreme temperature fluctuations and be damaged.
Let the pump thaw slowly at moderate temperatures.

Use of the submersible pump at temperatures under 0 °C is only permitted when the submersible pump is fully immersed in water or under the frozen surface.

## 3.6 Overheating/Overloading

The thermal sensors in the submersible pumps are switched to the motor contactor in such a way that the submersible pump is automatically switched off in the event of overheating or overloading.

# 4 Preparatory Measures

This section provides information on preparing the submersible pump for use.

## 4.1 Controlling the Direction of Rotation (only for models with a three-phase current supply)

DANGER

**Fatal electric shocks**
Electric shocks possible if the phases are swapped.
The AC phases may only be altered by correspondingly skilled personnel. Disconnect the submersible pump from the mains power supply beforehand and lock it against being connected/switched on again without authorisation.

WARNING

**Fire and short circuit**
Cable fires and short circuits possible due to incorrect extension cables.
Only use extension cables with appropriate dimensioning. Pay attention that the plug connections are splashproof.
Always wind the cable up fully to prevent a so called coil effect which could lead to a cable fire.

NOTE

In the event of incorrect direction of rotation, the submersible pump motor could overload and be damaged as a result.

Submersible pumps are switched to rotate clockwise at the factory in accordance with VDE directives.
Despite this, incorrect rotation is possible as a result of three-phase AC. Therefore, check the direction of rotation each time before the pump is put into operation.

Proceed as follows to check the direction of rotation:

1. **Only in the case of automatic pumps:** Set the selector switch to Position "C" for continuous operation.
2. Tip the pump to a slight angle.
3. Switch on the mains power supply briefly (approx. 1 second) (refer to Switching On/Off on Page 15).
4. If the pump motor rotates in the right direction, the submersible pump jolts visibly and perceptibly in the direction of the mark (arrow on the start label).
5. If the submersible pump jolts in the opposite direction to the mark (arrow on the start label), actuate the three-phase reversing switch on the power connector, if available, or call a properly qualified electrician to swap the corresponding phases.

## 4.2 Connecting and Securing the Discharge Hose

WARNING

**Flailing of the discharge hose**
The discharge hose can flail around when under extreme pressure causing serious injuries and/or property damage. Hold the hose firmly or fix it adequately.

CAUTION

**Risk of flooding**
The hose could loosen from the discharge if it is not tightened properly.
Ensure that the discharge hose is tightened correctly and sufficiently and that the area in which the pumped water will be drained can take the water without any risk.

NOTE

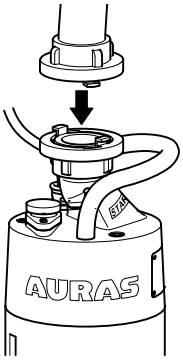
- The pumped water could contain pollutants which represent a risk to the environment. Ensure that water containing pollutants is collected and disposed of properly, according to the applicable regulations.
- When laying the hose, pay attention there are no kinks in it.
- Lay the hose so that there is no risk of tripping over it.
- Protect the hose from being driven over.
- Do not lay the hose over sharp edges or on surfaces which could damage it.

TIP

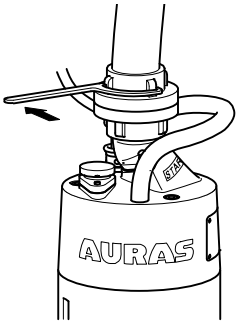
If the submersible pump is to be used in confined shafts in which the hose will run vertically upwards, we recommend use of a non-return valve (particularly for Automatic operation). This prevents an unwanted return flow of the water if the submersible pump is switched off.

Proceed as follows to connect the corresponding discharge hose to the discharge of the submersible pump:

1. Fit the hose connection on the discharge of the submersible pump.
   When doing so, pay attention that the surfaces are clean and the seals are in good condition. The hose connection must make full contact.




2. Turn the hose connection clockwise to tighten it. Use a coupling wrench, if necessary.




3. The discharge hose must be laid to a location which can take the quantity and type of water pumped without any risks. Secure the end of the hose from flailing, unauthorised access and slipping.

# 5 Using the Submersible Pump

This section explains how to operate the submersible pump safely, considerately and efficiently.

## 5.1 Correct Positioning

DANGER

**Fatal electric shocks**
Never attempt to lift the submersible pump by the power cable or hose.
Always use the handle to transport, lift and set down the submersible pump.

NOTE

**Information on positioning:**

- The diffuser and impeller could be subject to extreme wear if the pump is positioned incorrectly. Do not place the submersible pump on clay or sandy ground. Hang the submersible pump in such pump sumps by the handle so its base is 2 - 3 cm above the ground.
- The impeller could become blocked in bodies of water in which a great deal of foliage etc. has collected. Place the submersible pump inside an additional cage in such circumstances. This also helps to filter out foliage and such.
- If you use the Auras automatic system, set the pump up as vertically as possible. If placed in a lying position, automatic mode cannot operate correctly and the submersible pump could run dry.

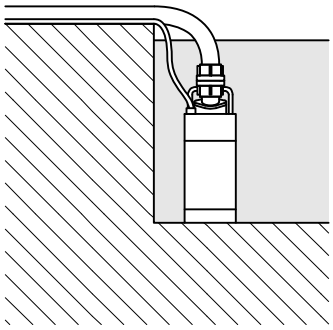
Proceed as follows to position the submersible pump:

1. If the pump is to be lowered into a shaft, attach a sufficiently strong rope or such to the handle and lower the submersible pump carefully. Do not lower the submersible pump by the cable or hose.

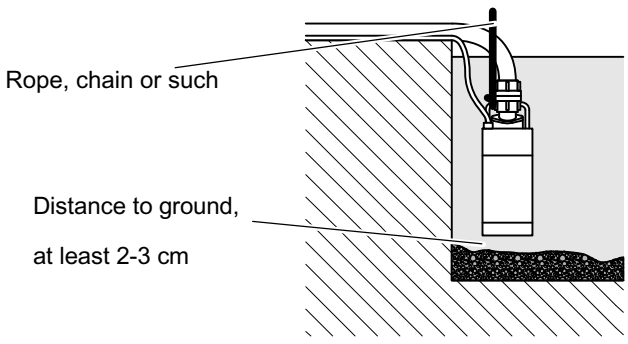
TIP

If you want to use the Auras pump in automatic mode, do not forget to set the selector switch to the necessary position.

2. Pay attention that the submersible pump stands firmly in the water. Secure it from tipping over, if necessary.
3. Set the submersible pump down in the water on a firm piece of ground or suspend it in the water from a sufficiently strong rope, 2 - 3 cm from the ground.



Positioning on firm ground




Positioning on loose ground

## 5.2 Switching On/Off

CAUTION

Never leave the submersible pump unattended when in operation. Remain on site to prevent any accidents etc.

When you have positioned and set up the submersible pump as described, connect the power connector to the power socket.

The submersible pump starts operation automatically or begins operation when the Auras automatic system is activated.

To switch the submersible pump off, simply disconnect the power connector from the power socket.

## 5.3 After Use/Cleaning

Elements pumped up with the water, e.g. cement, plaster or mud, could dry and block moving parts of the submersible pump. Flush the submersible pump thoroughly with clean water after use.

# 6 Useful Accessories

Our homepage at www.tauchpumpen.de provides a wide range of useful accessories. This chapter describes the installation of the most frequently used accessories:

## 6.1 Base Suckers

If you want to pump your cellar practically dry, for example, a base sucker from Auras can be used. The Auras base suckers pump the water practically to floor level.

### 6.1.1 Installing the base sucker

1. Disconnect the submersible pump from the power supply.
2. Lay the submersible pump on its side.
3. Loosen the three nuts in the base plate on the underside of the submersible pump.
4. Remove the base plate.
5. Mount the base sucker on the underside of the submersible pump. The collar must point to the air intake of the submersible pump.
6. Tighten the three nuts in the base plate on the underside of the submersible pump.

### 6.1.2 Using the base sucker

- Position the submersible pump with Auras base sucker installed at the lowest possible point of the area to be pumped.
- If you use a submersible pump with the Auras automatic system, switch to Continuous operation.
- Plug the power connector of the submersible pump in a power socket. The submersible pump starts its pumping operation.

## 6.2 External Float Switch

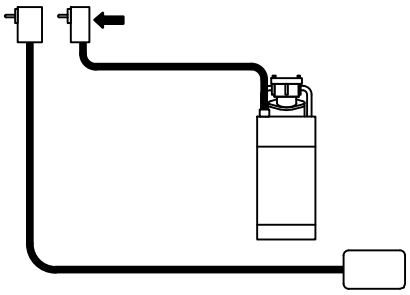
If your pump is not equipped with the Auras automatic system but you need an automatic operation option despite this, we recommend the float switch from Auras.

### 6.2.1 Connecting the float switch

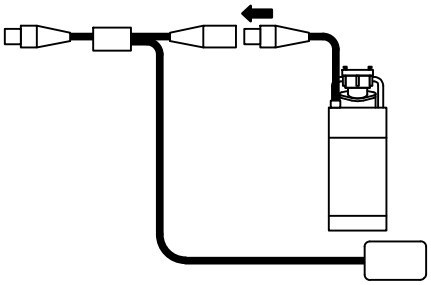
NOTE

Running dry could damage the submersible pump. Ensure the float switch switches the submersible pump off in good time. Fix the cable of the float switch so that the float hangs vertically down when the water level is low and, as a result, switches the pump off.

1. Plug the power connector of the submersible pump in the connection on the float switch (see below).

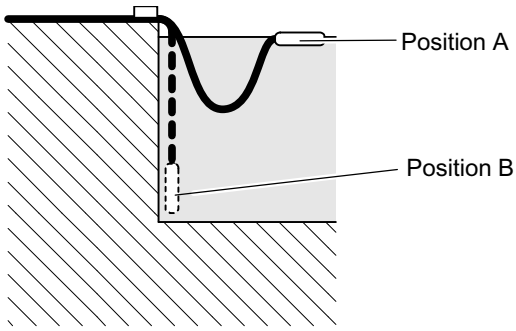


Float switch connection with 230 V submersible pump



Float switch connection with 400 V submersible pump

2. Set-up the submersible pump as described.
3. Position the float in the area/container to be pumped dry so that it can move freely (Position A). Fix the cable of the float switch so that when the water level is low, the float hangs above the ground/base (Position B) and does not make contact with it.




4. Plug the float switch power connector in the power socket to switch the submersible pump on.

## 6.3 Non-return Valve

If the submersible pump is to be used in narrow shafts in which the discharge hose is fed vertically upwards, we recommend the installation of a non-return valve. This ensures that the water still in the hose after the pump has stopped does not flow back into the sump. It is of particular advantage when using a submersible pump with automatic system or a float switch because the submersible pump is not reactivated due to water flowing back.

### 6.3.1 Installing a non-return valve

1. Assemble the non-return valve directly on the discharge of the submersible pump.
2. Connect the discharge hose to the non-return valve and lay it as described.

## 6.4 Hose Diameter Enlargement/Reduction

Auras has a wide range of solutions in cases where hose diameters must be enlarged or reduced.

TIP

Please note that the pressure increases when the diameter is reduced and decreases when the diameter is enlarged.
If the hose diameter is reduced, the end of the hose must be particularly well fixed.

# 7 Maintenance and Service

DANGER

**Fatal electric shocks**
Incorrectly serviced submersible pumps represent a risk of fatal injury!
Always have maintenance and service work completed by skilled personnel trained for the tasks.

Follow the information in this chapter to ensure your submersible pump enjoys a long, trouble-free service life.

## 7.1 Checks

WARNING

**Mutilation**
The submersible pump could start up accidentally and cause severe injuries! Disconnect the submersible pump from the mains power supply and lock it against being switched on without authorisation before opening or working on it!

CAUTION

**Risk of slipping**
Escaping oil represents a risk of slipping and, thus, to bad falls. Clear it up immediately and properly.

NOTE

**Information on maintenance**

- When completing checks, pay attention that escaping oil is always cleaned up properly, according to the appropriate regulations. Otherwise, it could lead to environmental damage. Clear up escaping oil immediately and properly!
- Observe local inspection requirements (e.g. for Germany: the BGV A3).

### 7.1.1 Inspection intervals

| Period | Condition |
|---|---|
| After two weeks | • Submersible pump is new<br>• New seals have been installed |
| Monthly | • Operation in very dirty water |
| Every two months | • Operation in clean water |

### 7.1.2 Checking seals and oil

The seals should be checked in a protected room with sealed floor.

Proceed as follows to check the seals:

1. Disconnect the submersible pump from the mains power supply and lock it against being switched on again without authorisation.
2. Lay the submersible pump on its side so that an oil sump can be placed under the oil drain plug. Secure the pump from moving its position inadvertently.
3. Place a sufficiently large oil sump under the oil drain plug (for oil quantity, refer to Technical Data Seite 22).
4. Remove the oil drain plug, including the sealing ring, from the submersible pump housing. The oil flows into the oil sump provided.
5. Check the sealing ring and replace with a new one, if necessary.

6. Check the seals and oil:

☑ **Seals and oil are correct when ONLY oil flows out of the submersible pump.**

☒ **Seals and oil must be renewed when:**

- the oil quantity has dropped appreciably,
- the oil has a light, yellow-brown colouration,
- the oil is viscous,
- there is a distinct water separation in the oil.

7. Complete the necessary repairs:
   - replace the seals,
   - refill/change the oil (for details, refer to the Technical Data Seite 22).
8. Insert and tighten the oil drain plug including the sealing ring again.

## 7.2 Controlling and Minimising Wear

**WARNING** **Mutilation**

The submersible pump could start up accidentally and cause severe injuries! Disconnect the submersible pump from the mains power supply and lock it against being switched on without authorisation before opening or working on it!

Check the level of wear to the impeller, diffuser, wearing lining and impeller cover at regular intervals.

Too much slack between the impeller and diffuser results in a considerable increase in wear.

Regular fine adjustment of the diffuser and impeller by skilled personnel can lengthen the service life of these parts considerably.

# 8 First Aid for the Submersible Pump

This chapter explains how to recognise and clear faults.

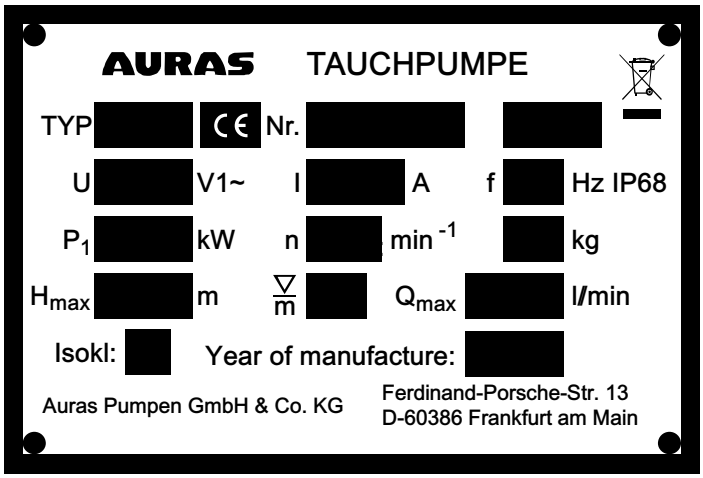
DANGER

**Fatal electric shocks**
Always disconnect the power connector before starting to locate faults!
Always have electrical faults checked and cleared by an appropriately skilled electrician.

| Fault / Problem | Possible Cause | Solution |
|---|---|---|
| Too little power | • Diffuser and/or impeller worn<br>• Incorrect direction of rotation of motor<br>• Discharge hose kinked<br>• Discharge hose too long<br>• Motor cable longer than standard length<br>• Current fluctuations too extreme | • Change the components concerned<br>• Actuate the three-phase reversing switch<br>• Re-lay the discharge hose and secure<br>• Use shorter discharge hose<br>• Use shorter motor cable<br>• Current fluctuations, see Page 10 |
| Pump motor does not start | • Power cable is defective<br>• Cable inside the submersible pump is defective<br>• Loose connections of cables/ connectors | • Always have these faults cleared by an appropriately skilled electrician! |
| Automatic mode is not activated | • Electrode slot in the motor housing is blocked<br>• Electrode is damaged<br>• Electrode is stuck | • Clean the electrode slot<br>• Have the electrode changed by skilled personnel<br>• Clean the electrode |
| Pump does not start and there is water in the cover | • Cable is damage<br>• Cable inlet is defective<br>• O-ring between the motor housing and cover is defective | • Have the cable replaced by a skilled electrician<br>• Have the cable inlet replaced by a skilled electrician<br>• Change the O-ring |
| Pump does not start and there is water or oil in the motor housing | • Seal(s) defective<br>• Sealing ring between the oil housing and motor compartment | • Change the seal(s)<br>• Change the sealing ring |
| There is water in the oil | • Seal(s) defective | • Change the seal(s) |

## 8.1 Rating Plate

The rating plate serves for the unique identification of the submersible pump. It is located at the top of the submersible pump. If you contact us by telephone in respect of queries, please have the information on the rating plate close to hand.




Sample rating plate (also applicable for three-phase pumps; 400V V3~)

# 9 Contact

If you have any queries with regard to your submersible pump, please do not hesitate to contact us. Our service team can provide all the help you need.

Auras Pumpen GmbH & Co. KG

Ferdinand-Porsche-Str. 13

D-60386 Frankfurt / Main

Tel. 069 678 307-190

Fax 069 678 307-199

E-mail: info@auras-pumpen.de

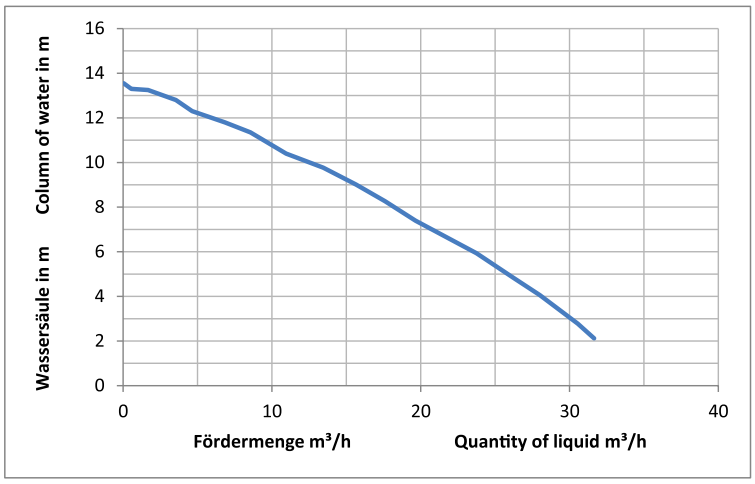
Internet: www.tauchpumpen.de

Office hours:

| | |
|---|---|
| Monday - Thursday | 7:00 a.m. to 4:00 p.m. continuously |
| Friday | 7:00 a.m. to 3:00 p.m. continuously |

# 10 Performance Curves & Technical Data

## P 220/P 220 A + P 20/P 20 A
## Contaminated water submersible pump



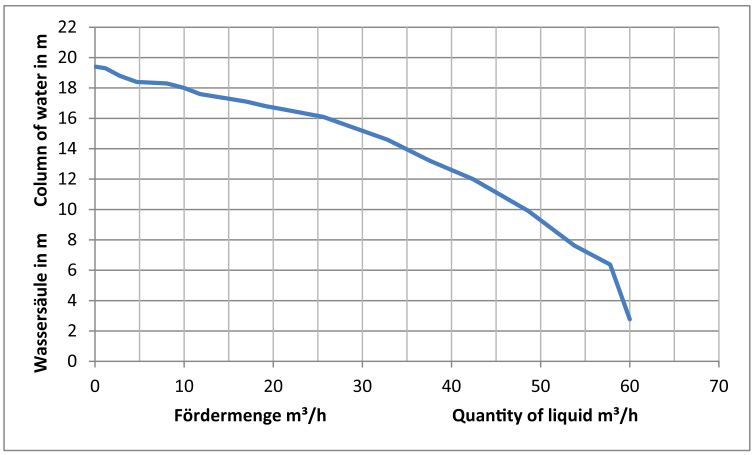

### Technical Data, P 220/P 220 A

| | |
|---|---|
| Weight | 22 kg |
| Diameter | 210 mm |
| Height | 510 mm |
| Hose connection | 2 inch |
| Impeller | Chromium-nickel steel |
| Wearing parts | Synthetic rubber |
| Nominal voltage | 230 Volt |
| Frequency | 50 Hz |
| Fuses, required inert | 16 A |
| Nominal current | 6.4 A |
| Power input P1 | 1.45 kW |
| Cable 15 m | 3 x 1.5 mm² |
| Oil quantity | 0.25 litre |
| Oil quality | 10W 40 |
| Emission sound pressure level | < 70 dB (A) |

### Technical Data, P 20/P 20 A

| | |
|---|---|
| Weight | 23 kg |
| Diameter | 210 mm |
| Height | 510 mm |
| Hose connection | 2 inch |
| Impeller | Chromium-nickel steel |
| Wearing parts | Synthetic rubber |
| Nominal voltage | 400 Volt |
| Frequency | 50 Hz |
| Fuses, required inert | 10 A |
| Nominal current | 2.6 A |
| Power input P1 | 1.3 kW |
| Cable 15 m | 4 x 1.5 mm² |
| Oil quantity | 0.25 litre |
| Oil quality | 10W 40 |
| Emission sound pressure level | < 70 dB (A) |

## P 30/P 30 A
## Contaminated water submersible pump

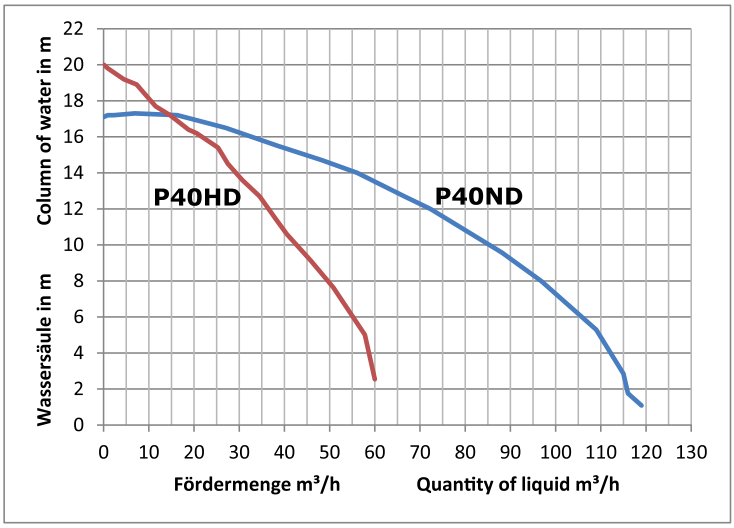



### Technical Data, P 30/P 30 A

| | |
|---|---|
| Weight | 37 kg |
| Diameter | 246 mm |
| Height | 540 mm |
| Hose connection | 3 inch |
| Impeller | Chromium-nickel steel |
| Wearing parts | Synthetic rubber |
| Nominal voltage | 400 Volt |
| Frequency | 50 Hz |
| Fuses, required inert | 16 A |
| Nominal current | 5.7 A |
| Power input P1 | 3.5 kW |
| Cable 15 m | 4 x 1.5 mm² |
| Oil quantity | 0.30 litre |
| Oil quality | 10W 40 |
| Emission sound pressure level | < 70 dB (A) |

The values stipulated in the curves are maximum values. Numerous factors can contribute to a reduction of the output specified when in operation (e.g. loss of friction due to the properties of the interior of the hose, etc.).

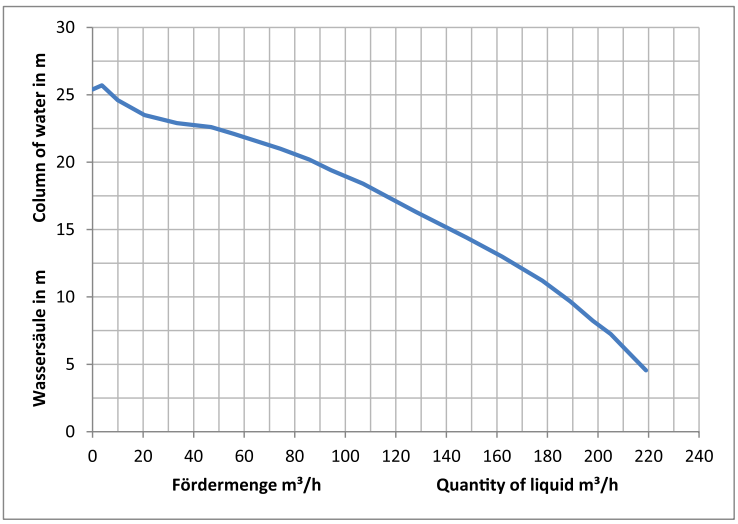
## P 40 ND/P 40 ND A + P 40 HD/P 40 HD A
## Contaminated water submersible pump




### Technical Data, P 40 ND/P 40 ND A + P 40 HD/P 40 HD A

| | |
|---|---|
| Weight | 44 kg |
| Diameter | 246 mm |
| Height | 620 mm |
| Hose connection ND | 4 inch |
| Hose connection HD | 3 inch |
| Impeller | Chromium-nickel steel |
| Wearing parts | Synthetic rubber |
| Nominal voltage | 400 Volt |
| Frequency | 50 Hz |
| Fuses, required inert | 25 A |
| Nominal current | 7.7 A |
| Power input P1 | 4.7 kW |
| Cable 15 m | 4 x 2.5 mm² |
| Oil quantity | 0.30 litre |
| Oil quality | 10W 40 |
| Emission sound pressure level | < 70 dB (A) |

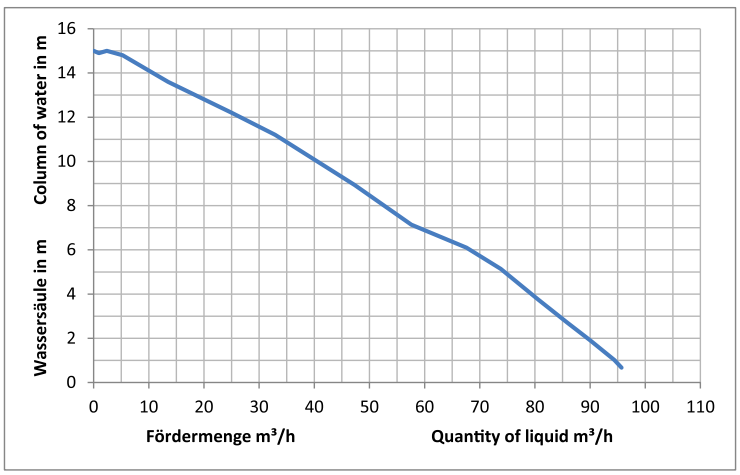
## P 60 ND/P 60 ND A
## Contaminated water submersible pump




### Technical Data, P 60 ND/P 60 ND A

| | |
|---|---|
| Weight | 120 kg |
| Diameter | 350 mm |
| Height | 910 mm |
| Hose connection | 6 inch |
| Impeller | Chromium-nickel steel |
| Wearing parts | Synthetic rubber |
| Nominal voltage | 400 Volt |
| Frequency | 50 Hz |
| Fuses, required inert | 63 A |
| Nominal current | 20.9 A |
| Power input P1 | 13.5 kW |
| Cable 15 m | 4 x 6 mm² |
| Oil quantity | 2.50 litre |
| Oil quality | 10W 40 |
| Emission sound pressure level | < 70 dB (A) |

## P 40 CS
## Submersible waste water pump

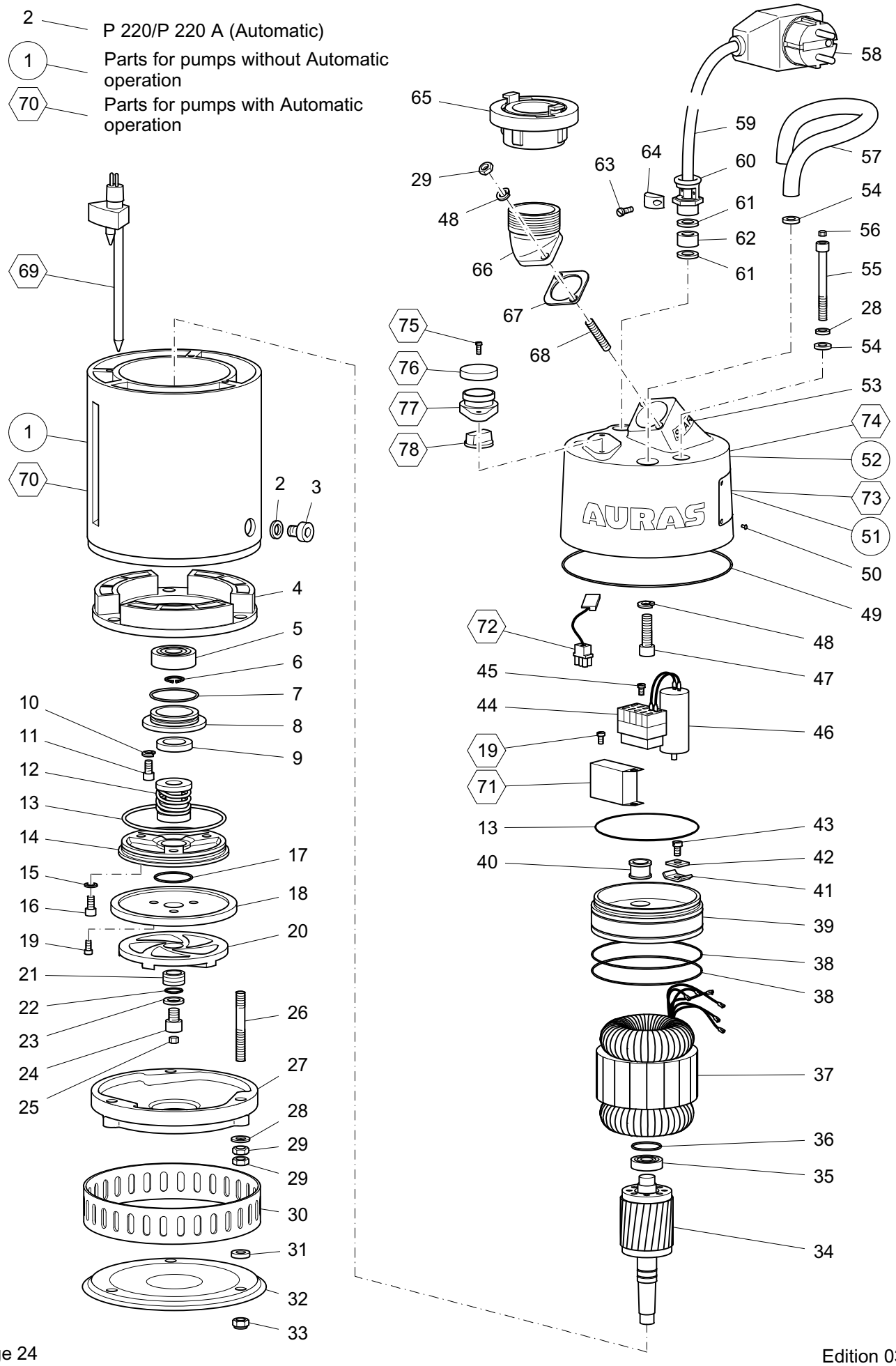



### Technical Data, P 40 CS

| | |
|---|---|
| Weight | 61.5 kg |
| Diameter | 420 mm |
| Height | 670 mm |
| Hose connection | 4 inch |
| Impeller | Chromium-nickel steel |
| Wearing parts | Synthetic rubber |
| Nominal voltage | 400 Volt |
| Frequency | 50 Hz |
| Fuses, required inert | 25 A |
| Nominal current | 5.2 A |
| Power input P1 | 2.8 kW |
| Cable 15 m | 4 x 2.5 mm² |
| Oil quantity | 0.50 litre |
| Oil quality | 10W 40 |
| Emission sound pressure level | < 70 dB (A) |

The values stipulated in the curves are maximum values. Numerous factors can contribute to a reduction of the output specified when in operation (e.g. loss of friction due to the properties of the interior of the hose, etc.).

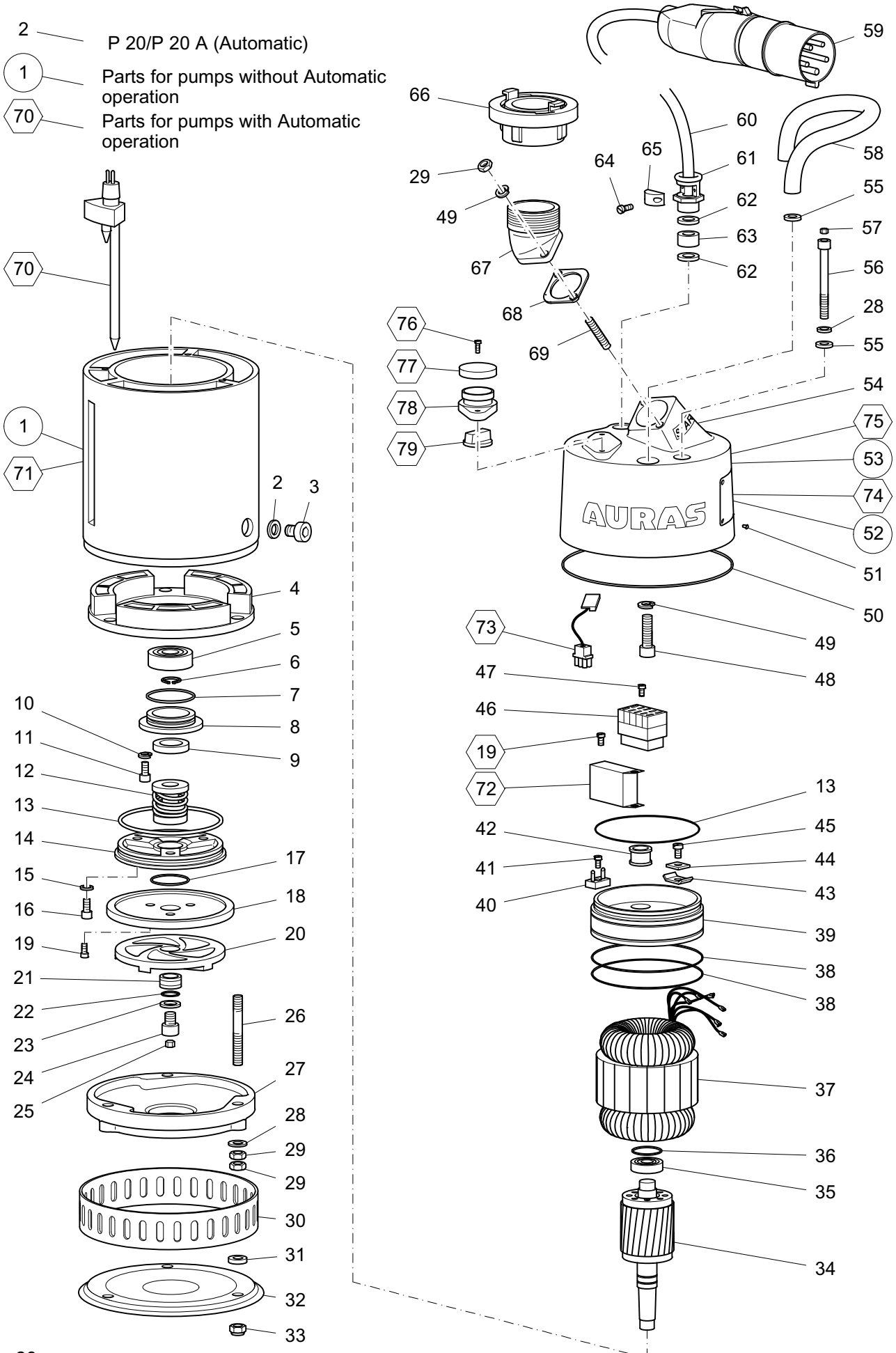
## 11.1 Exploded Diagram, P 220 - P 220 A



## 11.2 Parts List, P 220 - P 220 A

| Pos. | Art. No. | Designation | Quantity | Unit |
|---|---|---|---|---|
| 1 | 601003 | Motor housing | 1 | Piece |
| 2 | 601069 | Dubo ring | 1 | Piece |
| 3 | 601077 | Screw | 1 | Piece |
| 4 | 601007 | Wearing lining | 1 | Piece |
| 5 | 601042 | Ball bearing | 1 | Piece |
| 6 | 601049 | Seeger ring | 1 | Piece |
| 7 | 601021 | O-ring | 1 | Piece |
| 8 | 601020 | Seal casing | 1 | Piece |
| 9 | 601043 | Sealing ring | 1 | Piece |
| 10 | 601023 | Lock washer | 3 | Piece |
| 11 | 601022 | Screw | 3 | Piece |
| 12 | 601044 | Sealing unit | 1 | Piece |
| 13 | 601064 | O-ring | 2 | Piece |
| 14 | 601008 | Oil housing cover | 1 | Piece |
| 15 | 601067 | Dubo ring | 3 | Piece |
| 16 | 601085 | Screw | 3 | Piece |
| 17 | 601063 | O-ring | 1 | Piece |
| 18 | 601009 | Impeller cover | 1 | Piece |
| 19 | 601078 | Screw | 5 | Piece |
| 20 | 601011 | Impeller | 1 | Piece |
| 21 | 601050 | Clamping sleeve | 1 | Piece |
| 22 | 601058 | O-ring | 1 | Piece |
| 23 | 601071 | Washer | 1 | Piece |
| 24 | 601081 | Screw | 1 | Piece |
| 25 | 601098 | Rubber plugs | 1 | Piece |
| 26 | 601074 | Setscrew | 3 | Piece |
| 27 | 601010 | Diffuser | 1 | Piece |
| 28 | 601073 | Washer | 6 | Piece |
| 29 | 601086 | Nut | 8 | Piece |
| 30 | 601012 | Sieve | 1 | Piece |
| 31 | 601054 | Rubber sleeve | 3 | Piece |
| 32 | 601013 | Base plate | 1 | Piece |
| 33 | 601084 | Nut | 3 | Piece |
| 34 | 601006 | Motor shaft unit | 1 | Piece |
| 35 | 601041 | Ball bearing | 1 | Piece |
| 36 | 601059 | O-ring | 1 | Piece |
| 37 | 601005 | Stator | 1 | Piece |
| 38 | 601065 | O-ring | 2 | Piece |
| 39 | 601004 | Bearing housing | 1 | Piece |
| 40 | 601055 | Rubber sleeve | 1 | Piece |
| 41 | 601105 | Grounding washer | 1 | Piece |
| 42 | 601101 | Grounding washer | 1 | Piece |
| 43 | 601087 | Screw | 1 | Piece |
| 44 | 601142 | Contactor | 1 | Piece |
| 45 | 601143 | Screw | 2 | Piece |
| 46 | 601032 | Capacitor | 1 | Piece |
| 47 | 601080 | Screw | 2 | Piece |
| 48 | 601072 | Lock washer | 4 | Piece |
| 49 | 601066 | O-ring | 1 | Piece |
| 50 | 601088 | Rivet | 4 | Piece |
| 51 | 601091 | Data label | 1 | Piece |
| 52 | 601002 | Cover | 1 | Piece |
| 53 | 601093 | Start label) | 1 | Piece |
| 54 | 601068 | Dubo ring | 5 | Piece |
| 55 | 601082 | Screw | 3 | Piece |
| 56 | 601056 | Rubber plugs | 3 | Piece |
| 57 | 601028 | Mounting bracket | 1 | Piece |
| 58 | 601001 | Motor circuit breaker | 1 | Piece |
| 59 | 601017 | Motor cable | 15 | Metre |
| 60 | 601016 | Cable inlet | 1 | Piece |
| 61 | 601019 | Washer | 2 | Piece |
| 62 | 601018 | Rubber sleeve | 1 | Piece |
| 63 | 601104 | Screw | 2 | Piece |
| 64 | 601103 | Cable clamp | 1 | Piece |
| 65 | 92Z3I02C | LM adapter | 1 | Piece |
| 66 | 601014 | Pressure outlet | 1 | Piece |
| 67 | 601015 | Gasket | 1 | Piece |
| 68 | 601075 | Setscrew | 2 | Piece |
| 69 | 601132 | Electrode | 1 | Piece |
| 70 | 601130 | Motor housing | 1 | Piece |
| 71 | 601133 | Switch unit | 1 | Piece |
| 72 | 601137 | Magnetic switch | 1 | Piece |
| 73 | 601144 | Data label | 1 | Piece |
| 74 | 601131 | Cover | 1 | Piece |
| 75 | 601136 | Screw | 2 | Piece |
| 76 | 601138 | Rubber cap | 1 | Piece |
| 77 | 601135 | Rotary knob holder | 1 | Piece |
| 78 | 601134 | Rotary knob | 1 | Piece |
| | 601100 | Oil | 0.25 | Litre |
| | | **Accessories** | | |
| | 601113 | Binding tape | 2 | Piece |
| | 601119 | Mounting sleeve | 1 | Piece |
| | 601120 | Base sucker | 1 | Piece |
| | 601121 | O ring set | 1 | Piece |

## 11.3 Exploded Diagram, P 20 - P 20 A



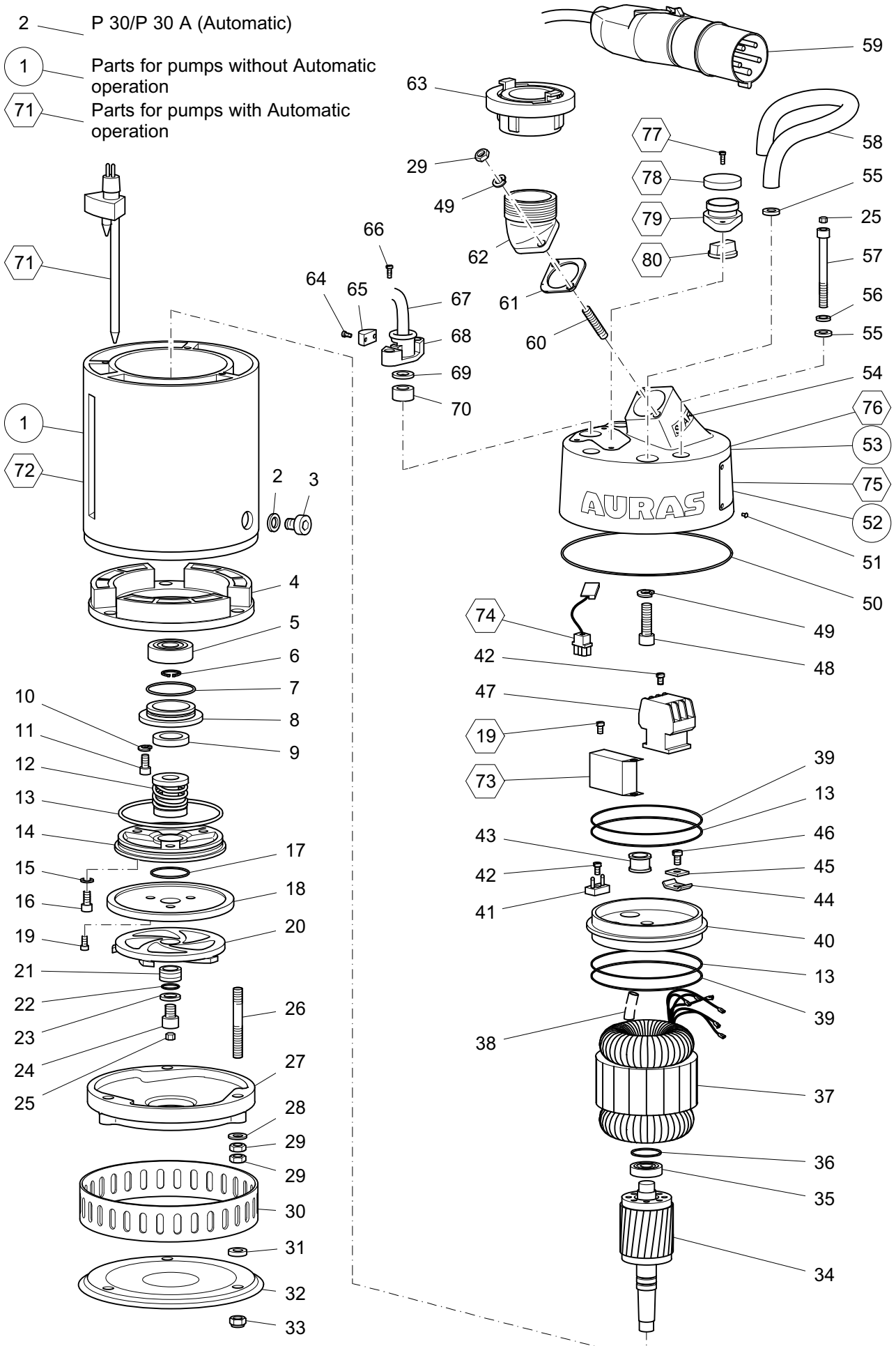
## 11.4 Parts List, P 20 - P 20 A

| Pos. | Art. No. | Designation | Quantity | Unit |
|---|---|---|---|---|
| 1 | 601003 | Motor housing | 1 | Piece |
| 2 | 601069 | Dubo ring | 1 | Piece |
| 3 | 601077 | Screw | 1 | Piece |
| 4 | 601007 | Wearing lining | 1 | Piece |
| 5 | 601042 | Ball bearing | 1 | Piece |
| 6 | 601049 | Seeger ring | 1 | Piece |
| 7 | 601021 | O-ring | 1 | Piece |
| 8 | 601020 | Seal casing | 1 | Piece |
| 9 | 601043 | Sealing ring | 1 | Piece |
| 10 | 601023 | Lock washer | 3 | Piece |
| 11 | 601022 | Screw | 3 | Piece |
| 12 | 601044 | Sealing unit | 1 | Piece |
| 13 | 601064 | O-ring | 2 | Piece |
| 14 | 601008 | Oil housing cover | 1 | Piece |
| 15 | 601067 | Dubo ring | 3 | Piece |
| 16 | 601085 | Screw | 3 | Piece |
| 17 | 601063 | O-ring | 1 | Piece |
| 18 | 601009 | Impeller cover | 1 | Piece |
| 19 | 601078 | Screw | 5 | Piece |
| 20 | 601011 | Impeller | 1 | Piece |
| 21 | 601050 | Clamping sleeve | 1 | Piece |
| 22 | 601058 | O-ring | 1 | Piece |
| 23 | 601071 | Washer | 1 | Piece |
| 24 | 601081 | Screw | 1 | Piece |
| 25 | 601098 | Rubber plugs | 1 | Piece |
| 26 | 601074 | Setscrew | 3 | Piece |
| 27 | 601010 | Diffuser | 1 | Piece |
| 28 | 601073 | Washer | 6 | Piece |
| 29 | 601086 | Nut | 8 | Piece |
| 30 | 601012 | Sieve | 1 | Piece |
| 31 | 601054 | Rubber sleeve | 3 | Piece |
| 32 | 601013 | Base plate | 1 | Piece |
| 33 | 601084 | Nut | 3 | Piece |
| 34 | 602006 | Motor shaft unit | 1 | Piece |
| 35 | 601041 | Ball bearing | 1 | Piece |
| 36 | 601059 | O-ring | 1 | Piece |
| 37 | 602005 | Stator | 1 | Piece |
| 38 | 601065 | O-ring | 2 | Piece |
| 39 | 601004 | Bearing housing | 1 | Piece |
| 40 | 602034 | Switchboard | 1 | Piece |
| 41 | 601076 | Screw | 1 | Piece |
| 42 | 601055 | Rubber sleeve | 1 | Piece |
| 43 | 601105 | Grounding washer | 1 | Piece |
| 44 | 601101 | Grounding washer | 1 | Piece |
| 45 | 601087 | Screw | 1 | Piece |
| 46 | 602033 | Air-break contactor | 1 | Piece |
| 47 | 601143 | Screw | 2 | Piece |
| 48 | 601080 | Screw | 2 | Piece |
| 49 | 601072 | Lock washer | 4 | Piece |
| 50 | 601066 | O-ring | 1 | Piece |
| 51 | 601088 | Rivet | 4 | Piece |
| 52 | 602091 | Data label | 1 | Piece |
| 53 | 601002 | Cover | 1 | Piece |
| 54 | 601093 | Start label | 1 | Piece |
| 55 | 601068 | Dubo ring | 5 | Piece |
| 56 | 601082 | Screw | 3 | Piece |
| 57 | 601056 | Rubber plugs | 3 | Piece |
| 58 | 601028 | Mounting bracket | 1 | Piece |
| 59 | 602001 | Reversing switch | 1 | Piece |
| 60 | 602017 | Motor cable | 15 | Metre |
| 61 | 601016 | Cable inlet | 1 | Piece |
| 62 | 601019 | Washer | 2 | Piece |
| 63 | 601018 | Rubber sleeve | 1 | Piece |
| 64 | 601104 | Screw | 2 | Piece |
| 65 | 601103 | Cable clamp | 1 | Piece |
| 66 | 92Z3I02C | LM adapter | 1 | Piece |
| 67 | 601014 | Pressure outlet | 1 | Piece |
| 68 | 601015 | Gasket | 1 | Piece |
| 69 | 601075 | Setscrew | 2 | Piece |
| 70 | 601132 | Electrode | 1 | Piece |
| 71 | 601130 | Motor housing | 1 | Piece |
| 72 | 602133 | Switch unit | 1 | Piece |
| 73 | 601137 | Magnetic switch | 1 | Piece |
| 74 | 602144 | Data label | 1 | Piece |
| 75 | 601131 | Cover | 1 | Piece |
| 76 | 601136 | Screw | 2 | Piece |
| 77 | 601138 | Rubber cap | 1 | Piece |
| 78 | 601135 | Rotary knob holder | 1 | Piece |
| 79 | 601134 | Rotary knob | 1 | Piece |
| | 601100 | Oil | 0.25 | Litre |

**Accessories**

| | | | | |
|---|---|---|---|---|
| | 601113 | Binding tape | 2 | Piece |
| | 601119 | Mounting sleeve | 1 | Piece |
| | 601120 | Base sucker | 1 | Piece |
| | 601121 | O ring set | 1 | Piece |

## 11.5 Exploded Diagram, P 30 - P 30 A



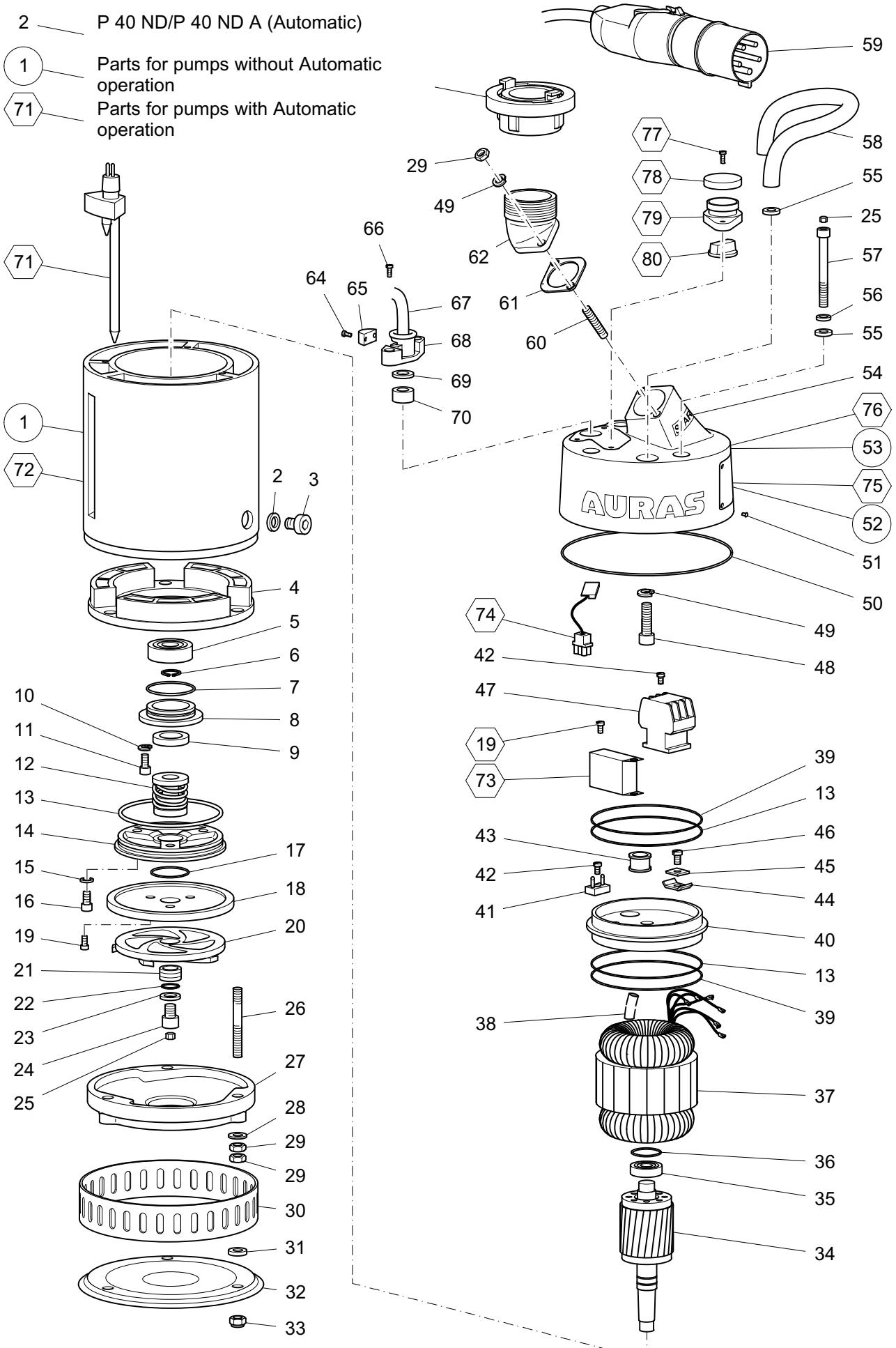
## 11.6 Parts List, P 30 - P 30 A

| Pos. | Art. No. | Designation | Quantity | Unit |
|---|---|---|---|---|
| 1 | 603003 | Motor housing | 1 | Piece |
| 2 | 601069 | Dubo ring | 1 | Piece |
| 3 | 601077 | Screw | 1 | Piece |
| 4 | 603020 | Wearing lining | 1 | Piece |
| 5 | 601042 | Ball bearing | 1 | Piece |
| 6 | 601049 | Seeger ring | 1 | Piece |
| 7 | 601021 | O-ring | 1 | Piece |
| 8 | 601020 | Seal casing | 1 | Piece |
| 9 | 601043 | Sealing ring | 1 | Piece |
| 10 | 601023 | Lock washer | 3 | Piece |
| 11 | 601022 | Screw | 3 | Piece |
| 12 | 601044 | Sealing unit | 1 | Piece |
| 13 | 603030 | O-ring | 3 | Piece |
| 14 | 603016 | Oil housing cover | 1 | Piece |
| 15 | 601068 | Dubo ring | 3 | Piece |
| 16 | 601080 | Screw | 3 | Piece |
| 17 | 601063 | O-ring | 1 | Piece |
| 18 | 603012 | Impeller cover | 1 | Piece |
| 19 | 601078 | Screw | 5 | Piece |
| 20 | 603015 | Impeller | 1 | Piece |
| 21 | 603059 | Clamping sleeve | 1 | Piece |
| 22 | 601058 | O-ring | 1 | Piece |
| 23 | 601071 | Washer | 1 | Piece |
| 24 | 601081 | Screw | 1 | Piece |
| 25 | 601098 | Rubber plugs | 4 | Piece |
| 26 | 603041 | Setscrew | 3 | Piece |
| 27 | 603019 | Diffuser | 1 | Piece |
| 28 | 603054 | Washer | 3 | Piece |
| 29 | 603053 | Nut | 8 | Piece |
| 30 | 603014 | Sieve | 1 | Piece |
| 31 | 603023 | Rubber sleeve | 9 | Piece |
| 32 | 603013 | Base plate | 1 | Piece |
| 33 | 603078 | Nut | 3 | Piece |
| 34 | 603017 | Motor shaft unit | 1 | Piece |
| 35 | 601041 | Ball bearing | 1 | Piece |
| 36 | 601059 | O-ring | 1 | Piece |
| 37 | 603018 | Stator | 1 | Piece |
| 38 | 603099 | Protective hose | 2 | Piece |
| 39 | 603089 | O-ring | 2 | Piece |
| 40 | 603010 | Bearing housing | 1 | Piece |
| 41 | 602034 | Switchboard | 1 | Piece |
| 42 | 601076 | Screw | 3 | Piece |
| 43 | 601055 | Rubber sleeve | 1 | Piece |
| 44 | 601105 | Grounding washer | 1 | Piece |
| 45 | 601101 | Grounding washer | 1 | Piece |
| 46 | 601087 | Screw | 1 | Piece |
| 47 | 603063 | Air-break contactor | 1 | Piece |
| 48 | 603080 | Screw | 2 | Piece |
| 49 | 603072 | Lock washer | 4 | Piece |
| 50 | 603029 | O-ring | 1 | Piece |
| 51 | 601088 | Rivet | 4 | Piece |
| 52 | 603084 | Data label | 1 | Piece |
| 53 | 603004 | Cover | 1 | Piece |
| 54 | 601093 | Start label | 1 | Piece |
| 55 | 603055 | Dubo ring | 5 | Piece |
| 56 | 603049 | Washer | 3 | Piece |
| 57 | 603043 | Screw | 3 | Piece |
| 58 | 603002 | Mounting bracket | 1 | Piece |
| 59 | 602001 | Reversing switch | 1 | Piece |
| 60 | 603042 | Setscrew | 2 | Piece |
| 61 | 603040 | Gasket | 1 | Piece |
| 62 | 603005 | Pressure outlet | 1 | Piece |
| 63 | 92Z3I02B | LM adapter | 1 | Piece |
| 64 | 603052 | Screw | 2 | Piece |
| 65 | 603007 | Cable clamp | 1 | Piece |
| 66 | 603045 | Screw | 2 | Piece |
| 67 | 602017 | Motor cable | 15 | Metre |
| 68 | 603006 | Cable inlet | 1 | Piece |
| 69 | 603101 | Washer | 1 | Piece |
| 70 | 603024 | Rubber sleeve | 1 | Piece |
| 71 | 603132 | Electrode | 1 | Piece |
| 72 | 603130 | Motor housing | 1 | Piece |
| 73 | 603133 | Switch unit | 1 | Piece |
| 74 | 601137 | Magnetic switch | 1 | Piece |
| 75 | 603144 | Data label | 1 | Piece |
| 76 | 603131 | Cover | 1 | Piece |
| 77 | 601136 | Screw | 2 | Piece |
| 78 | 601138 | Rubber cap | 1 | Piece |
| 79 | 601135 | Rotary knob holder | 1 | Piece |
| 80 | 601134 | Rotary knob | 1 | Piece |
| | 601100 | Oil | 0.3 | Litre |

**Accessories**

| | | | | |
|---|---|---|---|---|
| | 601113 | Binding tape | 2 | Piece |
| | 601119 | Mounting sleeve | 1 | Piece |
| | 603121 | O ring set | 1 | Piece |

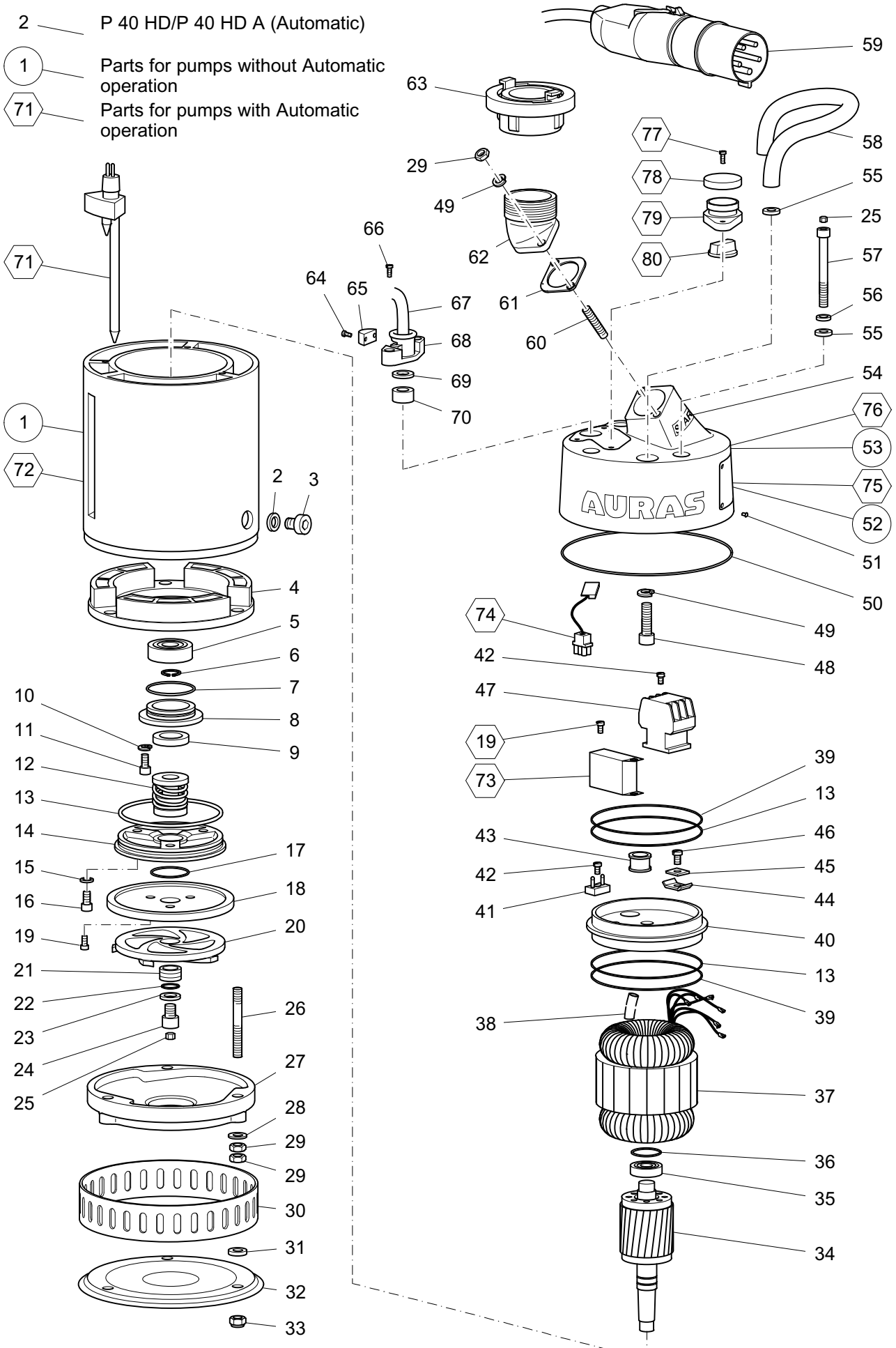
## 11.7 Exploded Diagram, P 40 ND - P 40 ND A



## 11.8 Parts List, P 40 ND - P 40 ND A

| Pos. | Art. No. | Designation | Quantity | Unit |
|---|---|---|---|---|
| 1 | 604003 | Motor housing | 1 | Piece |
| 2 | 601069 | Dubo ring | 1 | Piece |
| 3 | 601077 | Screw | 1 | Piece |
| 4 | 603020 | Wearing lining | 1 | Piece |
| 5 | 601042 | Ball bearing | 1 | Piece |
| 6 | 601049 | Seeger ring | 1 | Piece |
| 7 | 601021 | O-ring | 1 | Piece |
| 8 | 601020 | Seal casing | 1 | Piece |
| 9 | 601043 | Sealing ring | 1 | Piece |
| 10 | 601023 | Lock washer | 3 | Piece |
| 11 | 601022 | Screw | 3 | Piece |
| 12 | 601044 | Sealing unit | 1 | Piece |
| 13 | 603030 | O-ring | 3 | Piece |
| 14 | 603016 | Oil housing cover | 1 | Piece |
| 15 | 601068 | Dubo ring | 3 | Piece |
| 16 | 601080 | Screw | 3 | Piece |
| 17 | 601063 | O-ring | 1 | Piece |
| 18 | 603012 | Impeller cover | 1 | Piece |
| 19 | 601078 | Screw | 5 | Piece |
| 20 | 604015 | Impeller | 1 | Piece |
| 21 | 603059 | Clamping sleeve | 1 | Piece |
| 22 | 601058 | O-ring | 1 | Piece |
| 23 | 601071 | Washer | 1 | Piece |
| 24 | 601081 | Screw | 1 | Piece |
| 25 | 601098 | Rubber plugs | 4 | Piece |
| 26 | 603041 | Setscrew | 3 | Piece |
| 27 | 604019 | Diffuser | 1 | Piece |
| 28 | 603054 | Washer | 3 | Piece |
| 29 | 603053 | Nut | 8 | Piece |
| 30 | 603014 | Sieve | 1 | Piece |
| 31 | 603023 | Rubber sleeve | 6 | Piece |
| 32 | 603013 | Base plate | 1 | Piece |
| 33 | 603078 | Nut | 3 | Piece |
| 34 | 604017 | Motor shaft unit | 1 | Piece |
| 35 | 601041 | Ball bearing | 1 | Piece |
| 36 | 601059 | O-ring | 1 | Piece |
| 37 | 604018 | Stator | 1 | Piece |
| 38 | 603099 | Protective hose | 2 | Piece |
| 39 | 603089 | O-ring | 2 | Piece |
| 40 | 604010 | Bearing housing | 1 | Piece |
| 41 | 602034 | Switchboard | 1 | Piece |
| 42 | 601076 | Screw | 3 | Piece |
| 43 | 601055 | Rubber sleeve | 1 | Piece |
| 44 | 601105 | Grounding washer | 1 | Piece |
| 45 | 601101 | Grounding washer | 1 | Piece |
| 46 | 601087 | Screw | 1 | Piece |
| 47 | 603063 | Air-break contactor | 1 | Piece |
| 48 | 603080 | Screw | 2 | Piece |
| 49 | 603072 | Lock washer | 4 | Piece |
| 50 | 603029 | O-ring | 1 | Piece |
| 51 | 601088 | Rivet | 4 | Piece |
| 52 | 604084 | Data label | 1 | Piece |
| 53 | 603004 | Cover | 1 | Piece |
| 54 | 601093 | Start label) | 1 | Piece |
| 55 | 603055 | Dubo ring | 5 | Piece |
| 56 | 603049 | Washer | 3 | Piece |
| 57 | 603043 | Screw | 3 | Piece |
| 58 | 603002 | Mounting bracket | 1 | Piece |
| 59 | 604001 | Reversing switch | 1 | Piece |
| 60 | 603042 | Setscrew | 2 | Piece |
| 61 | 603040 | Gasket | 1 | Piece |
| 62 | 604005 | Pressure outlet | 1 | Piece |
| 63 | 92Z3I04A | LM adapter | 1 | Piece |
| 64 | 603052 | Screw | 2 | Piece |
| 65 | 603007 | Cable clamp | 1 | Piece |
| 66 | 603045 | Screw | 2 | Piece |
| 67 | 604066 | Motor cable | 15 | Metre |
| 68 | 603006 | Cable inlet | 1 | Piece |
| 69 | 603101 | Washer | 1 | Piece |
| 70 | 604024 | Rubber sleeve | 1 | Piece |
| 71 | 603132 | Electrode | 1 | Piece |
| 72 | 604130 | Motor housing | 1 | Piece |
| 73 | 603133 | Switch unit | 1 | Piece |
| 74 | 601137 | Magnetic switch | 1 | Piece |
| 75 | 604144 | Data label | 1 | Piece |
| 76 | 603131 | Cover | 1 | Piece |
| 77 | 601136 | Screw | 2 | Piece |
| 78 | 601138 | Rubber cap | 1 | Piece |
| 79 | 601135 | Rotary knob holder | 1 | Piece |
| 80 | 601134 | Rotary knob | 1 | Piece |
| | 601100 | Oil | 0.3 | Litre |
| | | **Accessories** | | |
| | 601113 | Binding tape | 2 | Piece |
| | 601119 | Mounting sleeve | 1 | Piece |
| | 603121 | O ring set | 1 | Piece |

## 11.9 Exploded Diagram, P 40 HD - P 40 HD A



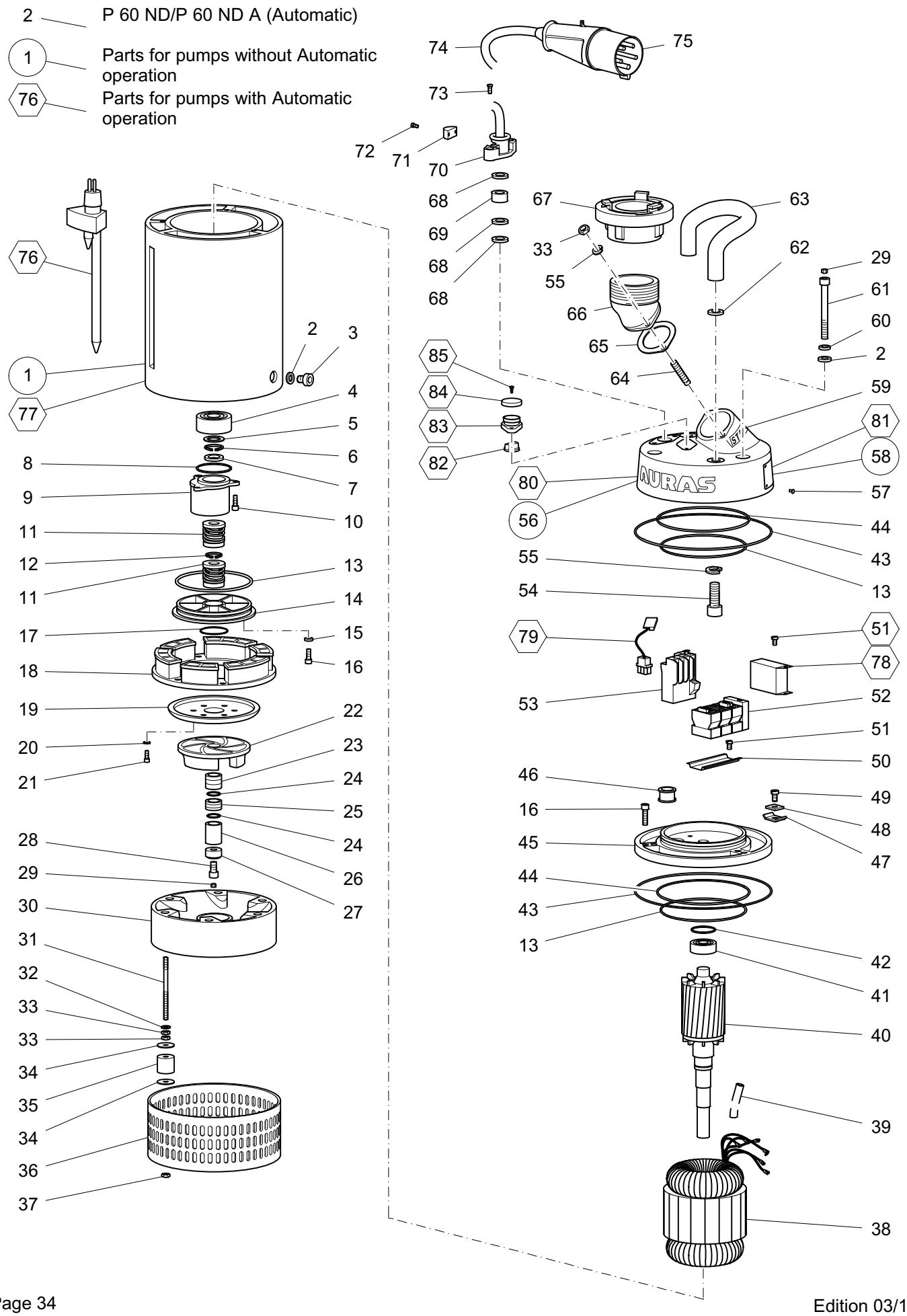
## 11.10 Parts List, P 40 HD - P 40 HD A

| Pos. | Art. No. | Designation | Quantity | Unit |
|---|---|---|---|---|
| 1 | 604003 | Motor housing | 1 | Piece |
| 2 | 601069 | Dubo ring | 1 | Piece |
| 3 | 601077 | Screw | 1 | Piece |
| 4 | 603020 | Wearing lining | 1 | Piece |
| 5 | 601042 | Ball bearing | 1 | Piece |
| 6 | 601049 | Seeger ring | 1 | Piece |
| 7 | 601021 | O-ring | 1 | Piece |
| 8 | 601020 | Seal casing | 1 | Piece |
| 9 | 601043 | Sealing ring | 1 | Piece |
| 10 | 601023 | Lock washer | 3 | Piece |
| 11 | 601022 | Screw | 3 | Piece |
| 12 | 601044 | Sealing unit | 1 | Piece |
| 13 | 603030 | O-ring | 3 | Piece |
| 14 | 603016 | Oil housing cover | 1 | Piece |
| 15 | 601068 | Dubo ring | 3 | Piece |
| 16 | 601080 | Screw | 3 | Piece |
| 17 | 601063 | O-ring | 1 | Piece |
| 18 | 603012 | Impeller cover | 1 | Piece |
| 19 | 601078 | Screw | 5 | Piece |
| 20 | 604114 | Impeller | 1 | Piece |
| 21 | 603059 | Clamping sleeve | 1 | Piece |
| 22 | 601058 | O-ring | 1 | Piece |
| 23 | 601071 | Washer | 1 | Piece |
| 24 | 601081 | Screw | 1 | Piece |
| 25 | 601098 | Rubber plugs | 4 | Piece |
| 26 | 603041 | Setscrew | 3 | Piece |
| 27 | 604019 | Diffuser | 1 | Piece |
| 28 | 603054 | Washer | 3 | Piece |
| 29 | 603053 | Nut | 8 | Piece |
| 30 | 603014 | Sieve | 1 | Piece |
| 31 | 603023 | Rubber sleeve | 6 | Piece |
| 32 | 603013 | Base plate | 1 | Piece |
| 33 | 603078 | Nut | 3 | Piece |
| 34 | 604017 | Motor shaft unit | 1 | Piece |
| 35 | 601041 | Ball bearing | 1 | Piece |
| 36 | 601059 | O-ring | 1 | Piece |
| 37 | 604018 | Stator | 1 | Piece |
| 38 | 603099 | Protective hose | 2 | Piece |
| 39 | 603089 | O-ring | 2 | Piece |
| 40 | 604010 | Bearing housing | 1 | Piece |
| 41 | 602034 | Switchboard | 1 | Piece |
| 42 | 601076 | Screw | 3 | Piece |
| 43 | 601055 | Rubber sleeve | 1 | Piece |
| 44 | 601105 | Grounding washer | 1 | Piece |
| 45 | 601101 | Grounding washer | 1 | Piece |
| 46 | 601087 | Screw | 1 | Piece |
| 47 | 603063 | Air-break contactor | 1 | Piece |
| 48 | 603080 | Screw | 2 | Piece |
| 49 | 603072 | Lock washer | 4 | Piece |
| 50 | 603029 | O-ring | 1 | Piece |
| 51 | 601088 | Rivet | 4 | Piece |
| 52 | 614084 | Data label | 1 | Piece |
| 53 | 603004 | Cover | 1 | Piece |
| 54 | 601093 | Start label | 1 | Piece |
| 55 | 603055 | Dubo ring | 5 | Piece |
| 56 | 603049 | Washer | 3 | Piece |
| 57 | 603043 | Screw | 3 | Piece |
| 58 | 603002 | Mounting bracket | 1 | Piece |
| 59 | 604001 | Reversing switch | 1 | Piece |
| 60 | 603042 | Setscrew | 2 | Piece |
| 61 | 603040 | Gasket | 1 | Piece |
| 62 | 603005 | Pressure outlet | 1 | Piece |
| 63 | 92Z3I02B | LM adapter | 1 | Piece |
| 64 | 603052 | Screw | 2 | Piece |
| 65 | 603007 | Cable clamp | 1 | Piece |
| 66 | 603045 | Screw | 2 | Piece |
| 67 | 604066 | Motor cable | 15 | Metre |
| 68 | 603006 | Cable inlet | 1 | Piece |
| 69 | 603101 | Washer | 1 | Piece |
| 70 | 604024 | Rubber sleeve | 1 | Piece |
| 71 | 603132 | Electrode | 1 | Piece |
| 72 | 604130 | Motor housing | 1 | Piece |
| 73 | 603133 | Switch unit | 1 | Piece |
| 74 | 601137 | Magnetic switch | 1 | Piece |
| 75 | 614144 | Data label | 1 | Piece |
| 76 | 603131 | Cover | 1 | Piece |
| 77 | 601136 | Screw | 2 | Piece |
| 78 | 601138 | Rubber cap | 1 | Piece |
| 79 | 601135 | Rotary knob holder | 1 | Piece |
| 80 | 601134 | Rotary knob | 1 | Piece |
| | 601100 | Oil | 0.3 | Litre |

**Accessories**

| | | | | |
|---|---|---|---|---|
| | 601113 | Binding tape | 2 | Piece |
| | 601119 | Mounting sleeve | 1 | Piece |
| | 603121 | O ring set | 1 | Piece |

# 11.11 Exploded Diagram, P 60 ND - P 60 ND A



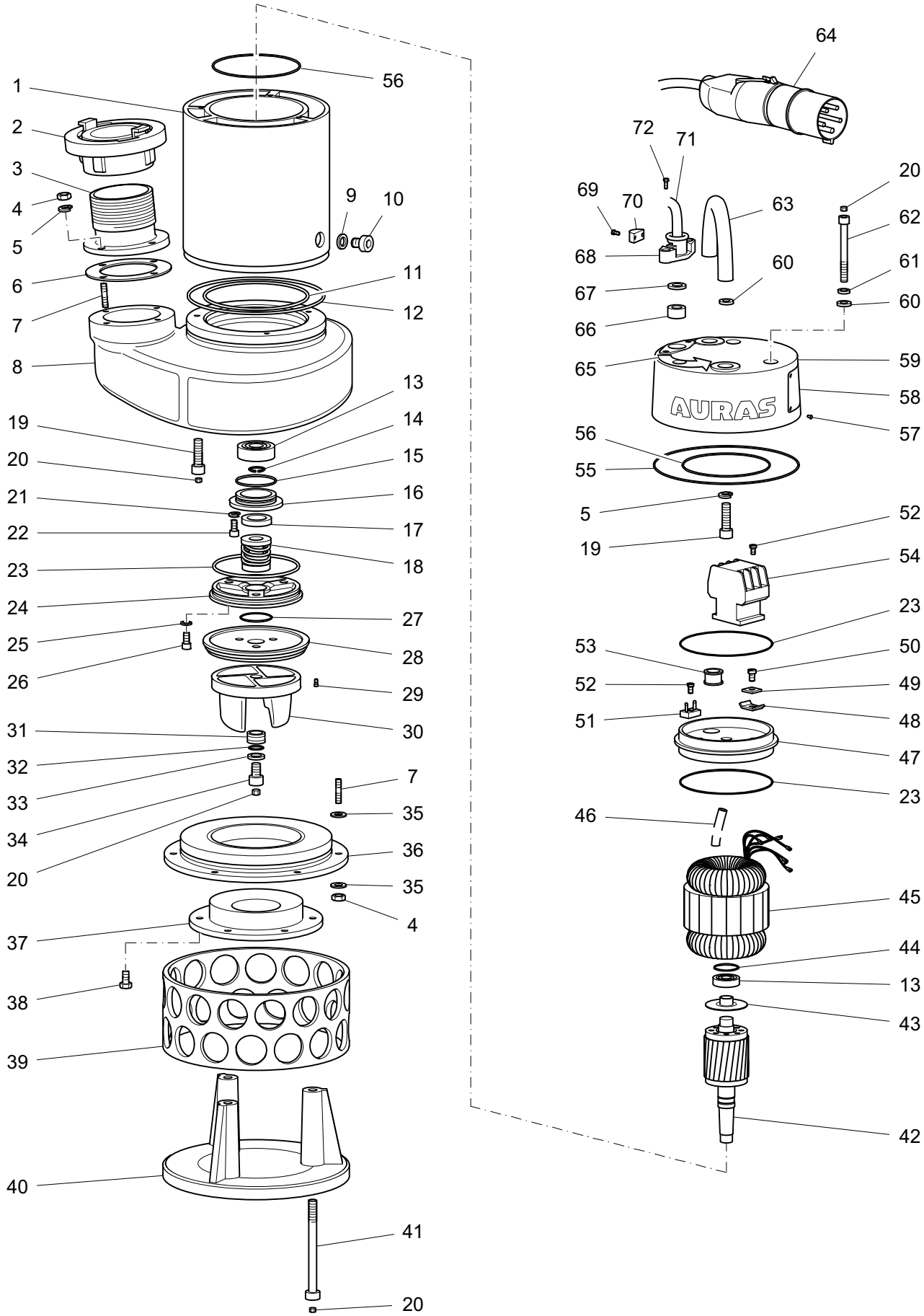
## 11.12 Parts List, P 60 ND - P 60 ND A

| Pos. | Art. No. | Designation | Quantity | Unit |
|---|---|---|---|---|
| 1 | 605003 | Motor housing | 1 | Piece |
| 2 | 601069 | Dubo ring | 5 | Piece |
| 3 | 601077 | Screw | 2 | Piece |
| 4 | 605038 | Ball bearing | 1 | Piece |
| 5 | 605074 | Washer | 1 | Piece |
| 6 | 605060 | Seeger ring | 1 | Piece |
| 7 | 605112 | Sealing ring | 1 | Piece |
| 8 | 605031 | O-ring | 1 | Piece |
| 9 | 605011 | Bearing housing | 1 | Piece |
| 10 | 601080 | Screw | 3 | Piece |
| 11 | 605067 | Sealing unit | 2 | Piece |
| 12 | 605113 | Seeger ring | 1 | Piece |
| 13 | 605030 | O-ring | 3 | Piece |
| 14 | 605016 | Oil housing cover | 1 | Piece |
| 15 | 601068 | Dubo ring | 3 | Piece |
| 16 | 605044 | Screw | 6 | Piece |
| 17 | 605028 | O-ring | 1 | Piece |
| 18 | 605020 | Wearing lining | 1 | Piece |
| 19 | 605012 | Impeller cover | 1 | Piece |
| 20 | 605080 | Washer | 6 | Piece |
| 21 | 601076 | Screw | 6 | Piece |
| 22 | 605015 | Impeller | 1 | Piece |
| 23 | 605059 | Clamping sleeve | 1 | Piece |
| 24 | 601059 | O-ring | 5 | Piece |
| 25 | 605072 | Clamping sleeve | 1 | Piece |
| 26 | 605083 | Sleeve | 1 | Piece |
| 27 | 605071 | Washer | 1 | Piece |
| 28 | 605077 | Screw | 1 | Piece |
| 29 | 605075 | Rubber plugs | 4 | Piece |
| 30 | 605019 | Diffuser | 1 | Piece |
| 31 | 605041 | Setscrew | 6 | Piece |
| 32 | 605054 | Washer | 6 | Piece |
| 33 | 605053 | Nut | 14 | Piece |
| 34 | 605108 | Washer | 12 | Piece |
| 35 | 605107 | Spacer sleeve | 6 | Piece |
| 36 | 605014 | Sieve | 1 | Piece |
| 37 | 605023 | Nut | 6 | Piece |
| 38 | 605018 | Stator | 1 | Piece |
| 39 | 603099 | Protective hose | 2 | Piece |
| 40 | 605017 | Motor shaft unit | 1 | Piece |
| 41 | 605039 | Ball bearing | 1 | Piece |
| 42 | 605032 | O-ring | 1 | Piece |
| 43 | 605029 | O-ring | 2 | Piece |
| 44 | 603029 | O-ring | 2 | Piece |
| 45 | 605010 | Spacer | 1 | Piece |
| 46 | 605088 | Rubber sleeve | 1 | Piece |
| 47 | 601105 | Grounding washer | 1 | Piece |
| 48 | 601101 | Grounding washer | 1 | Piece |
| 49 | 601087 | Screw | 1 | Piece |
| 50 | 605064 | Fastening rail | 1 | Piece |
| 51 | 601078 | Screw | 2 | Piece |
| 52 | 605063 | Star-delta switching | 1 | Piece |
| 53 | 605092 | Overload relay | 1 | Piece |
| 54 | /FAPBT6 05002-1 | Screw | 2 | Piece |
| 55 | 605070 | Lock washer | 4 | Piece |
| 56 | 605004 | Cover | 1 | Piece |
| 57 | 601088 | Rivet | 4 | Piece |
| 58 | 605084 | Data label | 1 | Piece |
| 59 | 601093 | Start label | 1 | Piece |
| 60 | 605050 | Washer | 2 | Piece |
| 61 | 605043 | Screw | 3 | Piece |
| 62 | 601019 | Washer | 2 | Piece |
| 63 | 605002 | Mounting bracket | 1 | Piece |
| 64 | 605042 | Setscrew | 2 | Piece |
| 65 | 605040 | Gasket | 1 | Piece |
| 66 | 605005 | Pressure outlet | 1 | Piece |
| 67 | 92Z3I06F | LM adapter | 1 | Piece |
| 68 | 605101 | Washer | 3 | Piece |
| 69 | 605024 | Rubber sleeve | 1 | Piece |
| 70 | 605006 | Cable inlet | 1 | Piece |
| 71 | 605007 | Cable clamp | 1 | Piece |
| 72 | 603052 | Screw | 2 | Piece |
| 73 | 601080 | Screw | 2 | Piece |
| 74 | 605066 | Motor cable | 15 | Metre |
| 75 | 605001 | Connector | 1 | Piece |
| 76 | 605132 | Electrode | 1 | Piece |
| 77 | 605130 | Motor housing | 1 | Piece |
| 78 | 603133 | Switch unit | 1 | Piece |
| 79 | 601137 | Magnetic switch | 1 | Piece |
| 80 | 605131 | Cover | 1 | Piece |
| 81 | 605144 | Data label | 1 | Piece |
| 82 | 601134 | Rotary knob | 1 | Piece |
| 83 | 605135 | Rotary knob holder | 1 | Piece |
| 84 | 601138 | Rubber cap | 1 | Piece |
| 85 | 601136 | Screw | 2 | Piece |
| | 601100 | Oil | 2.5 | Litre |

**Accessories**

| | | | |
|---|---|---|---|
| 601113 | Binding tape | 2 | Piece |
| 605119 | Mounting sleeve | 1 | Piece |
| 605121 | O ring set | 1 | Piece |

## 11.13 Exploded Diagram, P 40 CS



## 11.14 Parts List, P 40 CS

| Pos. | Art. No. | Designation | Quantity | Unit |
|---|---|---|---|---|
| 1 | 604003 | Motor housing | 1 | Piece |
| 2 | 92Z3I04A | LM adapter | 1 | Piece |
| 3 | 606005 | Pressure outlet | 1 | Piece |
| 4 | 603053 | Nut | 10 | Piece |
| 5 | 603072 | Lock washer | 6 | Piece |
| 6 | 606040 | Gasket | 1 | Piece |
| 7 | 603042 | Setscrew | 10 | Piece |
| 8 | 606096 | Pump housing | 1 | Piece |
| 9 | 601069 | Dubo ring | 1 | Piece |
| 10 | 601077 | Screw | 1 | Piece |
| 11 | 606108 | O-ring | 1 | Piece |
| 12 | 606109 | O-ring | 1 | Piece |
| 13 | 601042 | Ball bearing | 2 | Piece |
| 14 | 601049 | Seeger ring | 1 | Piece |
| 15 | 601021 | O-ring | 1 | Piece |
| 16 | 601020 | Seal casing | 1 | Piece |
| 17 | 601043 | Sealing ring | 1 | Piece |
| 18 | 601044 | Sealing unit | 1 | Piece |
| 19 | 603080 | Screw | 5 | Piece |
| 20 | 601098 | Rubber plugs | 10 | Piece |
| 21 | 601023 | Lock washer | 3 | Piece |
| 22 | 601022 | Screw | 3 | Piece |
| 23 | 603030 | O-ring | 3 | Piece |
| 24 | 603016 | Oil housing cover | 1 | Piece |
| 25 | 601068 | Dubo ring | 3 | Piece |
| 26 | 601080 | Screw | 3 | Piece |
| 27 | 601063 | O-ring | 1 | Piece |
| 28 | 603012 | Impeller cover | 1 | Piece |
| 29 | 601078 | Screw | 3 | Piece |
| 30 | 606015 | Impeller | 1 | Piece |
| 31 | 603059 | Clamping sleeve | 1 | Piece |
| 32 | 601058 | O-ring | 1 | Piece |
| 33 | 601071 | Washer | 1 | Piece |
| 34 | 601081 | Screw | 1 | Piece |
| 35 | 603054 | Washer | 12 | Piece |
| 36 | 606020 | Wearing lining | 1 | Piece |
| 37 | 606019 | Wearing plate | 1 | Piece |
| 38 | 606118 | Screw | 3 | Piece |
| 39 | 606014 | Sieve | 1 | Piece |
| 40 | 606013 | Foot | 1 | Piece |
| 41 | 606050 | Screw | 3 | Piece |
| 42 | 604017 | Motor shaft unit | 1 | Piece |
| 43 | 606106 | Bearing bush | 1 | Piece |
| 44 | 606032 | O-ring | 1 | Piece |
| 45 | 604018 | Stator | 1 | Piece |
| 46 | 603099 | Protective hose | 2 | Piece |
| 47 | 606010 | Bearing housing | 1 | Piece |
| 48 | 601105 | Grounding washer | 1 | Piece |
| 49 | 601101 | Grounding washer | 1 | Piece |
| 50 | 601087 | Screw | 1 | Piece |
| 51 | 602034 | Switchboard | 1 | Piece |
| 52 | 601076 | Screw | 3 | Piece |
| 53 | 601055 | Rubber sleeve | 1 | Piece |
| 54 | 603063 | Air-break contactor | 1 | Piece |
| 55 | 603029 | O-ring | 1 | Piece |
| 56 | 603089 | O-ring | 2 | Piece |
| 57 | 601088 | Rivet | 4 | Piece |
| 58 | 606084 | Data label | 1 | Piece |
| 59 | 606004 | Cover | 1 | Piece |
| 60 | 603055 | Dubo ring | 5 | Piece |
| 61 | 603049 | Washer | 3 | Piece |
| 62 | 603043 | Screw | 3 | Piece |
| 63 | 606002 | Mounting bracket | 1 | Piece |
| 64 | 604001 | Reversing switch | 1 | Piece |
| 65 | 601093 | Start label | 1 | Piece |
| 66 | 604024 | Rubber sleeve | 1 | Piece |
| 67 | 603101 | Washer | 1 | Piece |
| 68 | 603006 | Cable inlet | 1 | Piece |
| 69 | 603052 | Screw | 2 | Piece |
| 70 | 603007 | Cable clamp | 1 | Piece |
| 71 | 604066 | Motor cable | 15 | Metre |
| 72 | 603045 | Screw | 2 | Piece |
| | 601100 | Oil | 0.5 | Litre |

**Accessories**

| | | | | |
|---|---|---|---|---|
| | 601113 | Binding tape | 2 | Piece |
| | 601119 | Mounting sleeve | 1 | Piece |
| | 606121 | O ring set | 1 | Piece |

# EG-Konformitätserklärung (Original)

*EC Declaration of Conformity*

Der Hersteller
*The manufacturer*

**Auras Pumpen GmbH & Co. KG**
**Ferdinand-Porsche-Str. 13**
**D-60386 Frankfurt am Main**

erklärt hiermit,
*herewith declares*

dass die nachstehend bezeichnete Maschine
*that the machinery described below*

**AURAS Tauchpumpen**
*AURAS submersible pumps*
**Type** */ type* **P 220, P 220 A**
**Type** */ type* **P 20, P 20 A**
**Type** */ type* **P 30, P 30 A**
**Type** */ type* **P 40 ND, P 40 ND A**
**Type** */ type* **P 40 HD, P 40 HD A**
**Type** */ type* **P 60 ND, P 60 ND A**
**Type** */ type* **P 40 CS**

hergestellt im Werk
*manufactured in the plant*

Auras Pumpen GmbH & Co. KG
Ferdinand-Porsche-Str. 13
D-60386 Frankfurt am Main

**Einschlägigen EG-Richtlinien**
*Correspond to Relevant EC directives*
2006/95/EG
2006/42/EG (+2009/127/EG)
2004/108/EG
entsprechen.

**Angewandte harmonisierte Normen**
*Applied harmonized standards*
EN 55014-1/ A1:2009
EN 55014-2/A2:2008
EN 61000-3-2/A2:2009
EN 61000-3-3:2008
EN 60335-1:2012
EN 60335-2-41/A2:2010
EN 62233:2008

Das CE-Kennzeichnen befindet sich auf dem Datenschild an der Pumpe.
Bei einer mit dem Hersteller nicht abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit.
*CE-marking is on the identification plate at the pump. The declaration is no more valid, if the product is modified without agreement.*

Frankfurt am Main

Christina Zemke
Geschäftsführerin */ managing director*

Auras Pumpen GmbH & Co. KG
Ferdinand-Porsche-Str. 13
D-60386 Frankfurt / Main
Tel. 069 678 307-190
Fax 069 678 307-199
E-mail: info@auras-pumpen.de
Internet: www.tauchpumpen.de



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