



## **Right and wrong**

### **Trouble shooting guide for water hydraulic systems**

# Design

**1. Choice of material**

- Rubber
- Plastic
- Stainless steel

Always use system components made of corrosion proof materials

- Iron
- Copper
- Brass
- Aluminium

Non-corrosion proof materials may cause damage

**2. Choice of filter**

< 10 µm abs.

> 10 µm

Install a 10 micron absolute filter with pressure switch

Return filter with bypass valve and poorer filterability than 10 µm will damage the system

**3. Filter location**

Locate the return filter in the return line immediately before the tank

Placing the return filter upstream of the final load may damage the pump

**4. Pump location**

Pump always to be placed below water surface level

Pump location above water surface level will cause damage

**5. Suction conditions**

System to be dimensioned to provide a suction pressure of the pump inlet of max. 0.1 bar vacuum

Poor suction conditions will cause malfunction and damage the pump

**6. Pressure Relief valve**

Pressure relief valve to be mounted vertically or with vertical outlet and connected to return hose or tank

Coupling the pressure relief valve outlet directly to the pump inlet may damage the pump

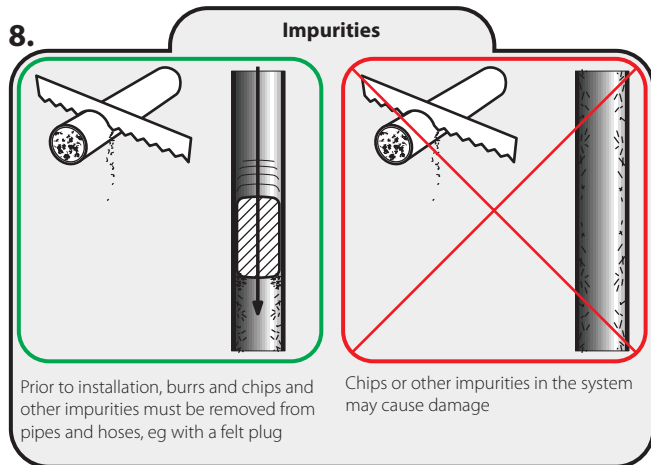
**7. Water supply**

System to be filled via filter

Filling system with unfiltered water causes damage

# Installation

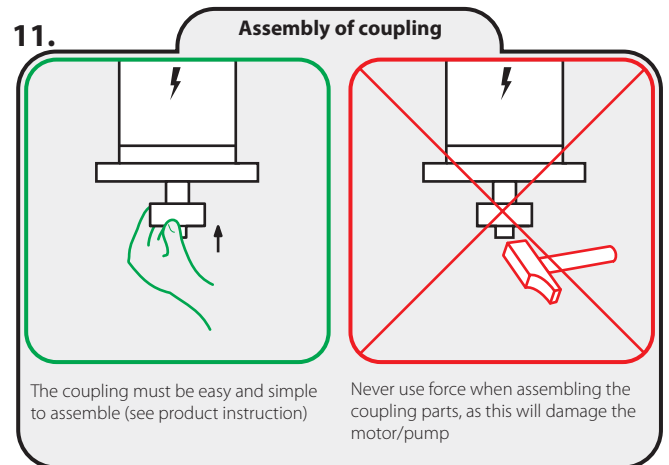
**8. Impurities**



Prior to installation, burrs and chips and other impurities must be removed from pipes and hoses, eg with a felt plug

Chips or other impurities in the system may cause damage

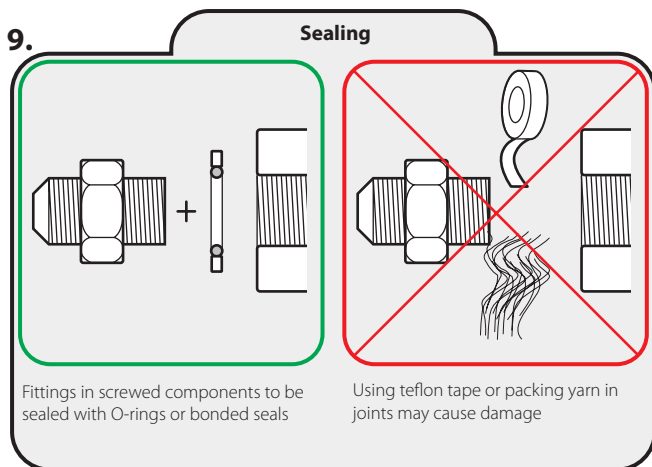
**11. Assembly of coupling**



The coupling must be easy and simple to assemble (see product instruction)

Never use force when assembling the coupling parts, as this will damage the motor/pump

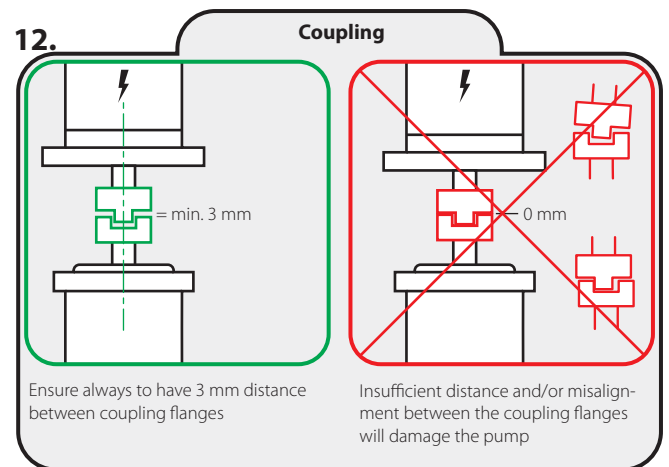
**9. Sealing**



Fittings in screwed components to be sealed with O-rings or bonded seals

Using teflon tape or packing yarn in joints may cause damage

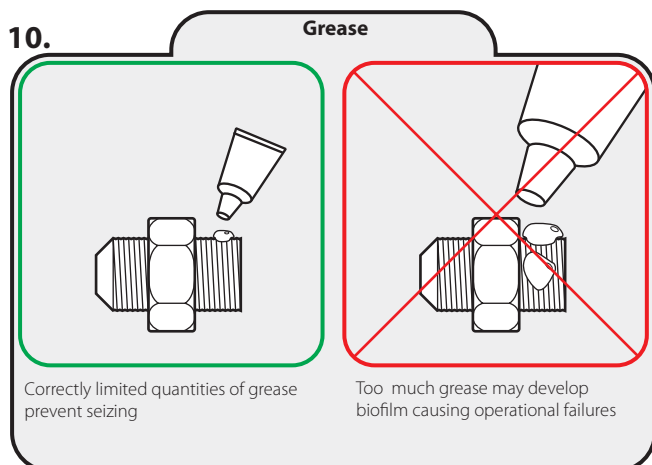
**12. Coupling**



Ensure always to have 3 mm distance between coupling flanges

Insufficient distance and/or misalignment between the coupling flanges will damage the pump

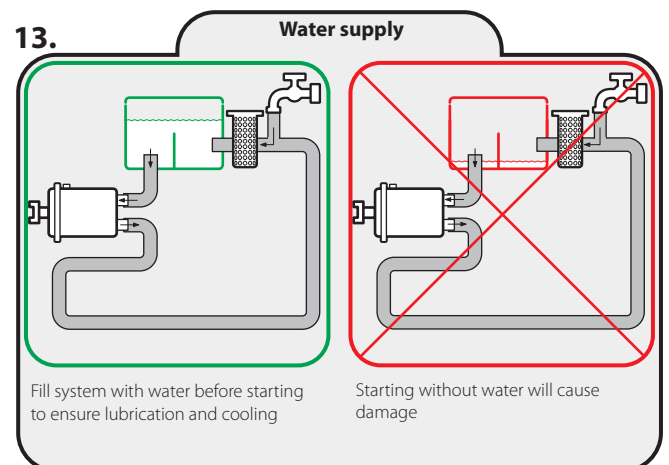
**10. Grease**



Correctly limited quantities of grease prevent seizing

Too much grease may develop biofilm causing operational failures

**13. Water supply**



Fill system with water before starting to ensure lubrication and cooling

Starting without water will cause damage

# Wiring

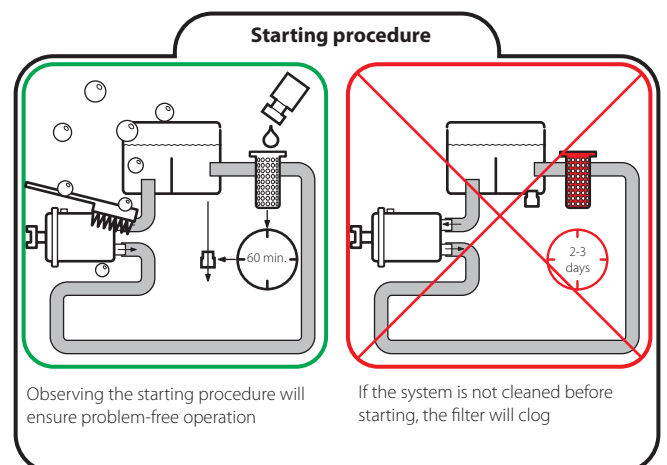
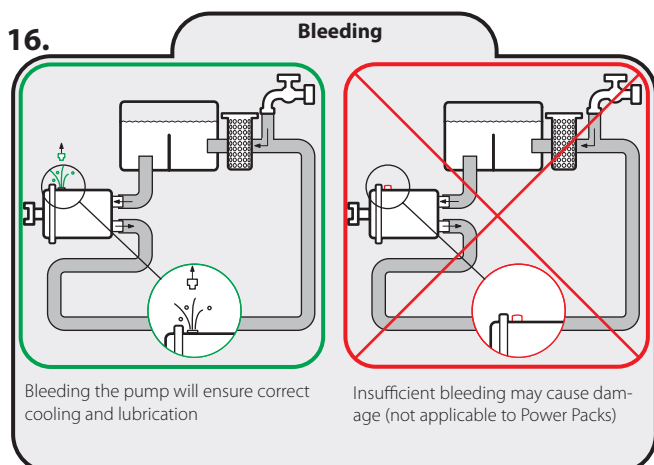
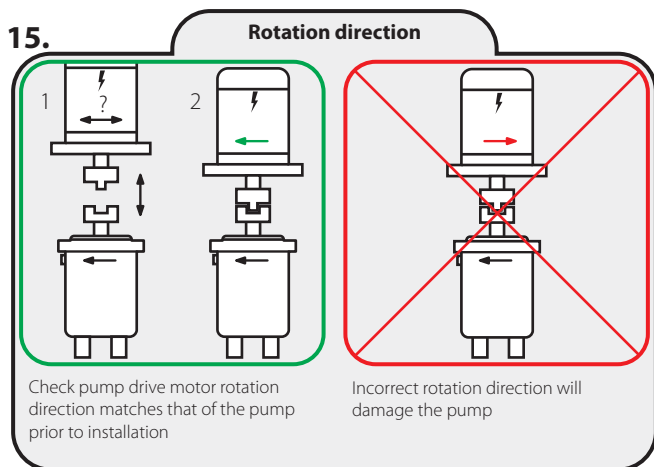
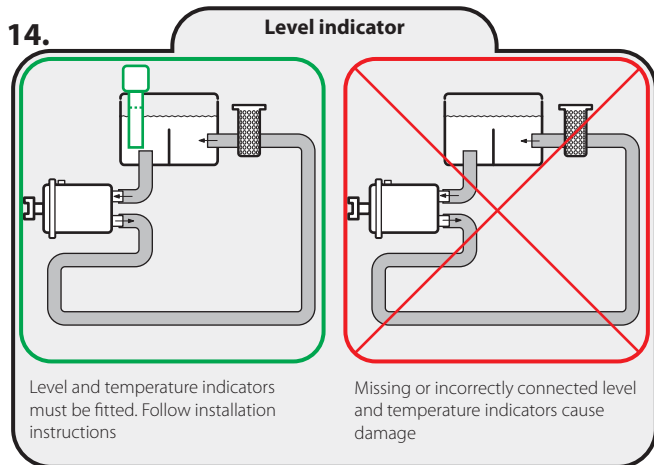
## Starting procedure

### Cleaning procedure

1. Fill cold water into the system via the return filter and bleed the pump (Power Packs PPH 4 - 6.3 - 10 and 12.5 are self-bleeding)
2. Start and bleed the system -without pressure by opening the bypass valve
3. Add the cleaning agent to give 3% agent/water solution
4. Run the system for 60 min. and activate all components as often as possible to ensure effective flushing with the cleaning agent
5. Empty the system of the cleaning agent solution

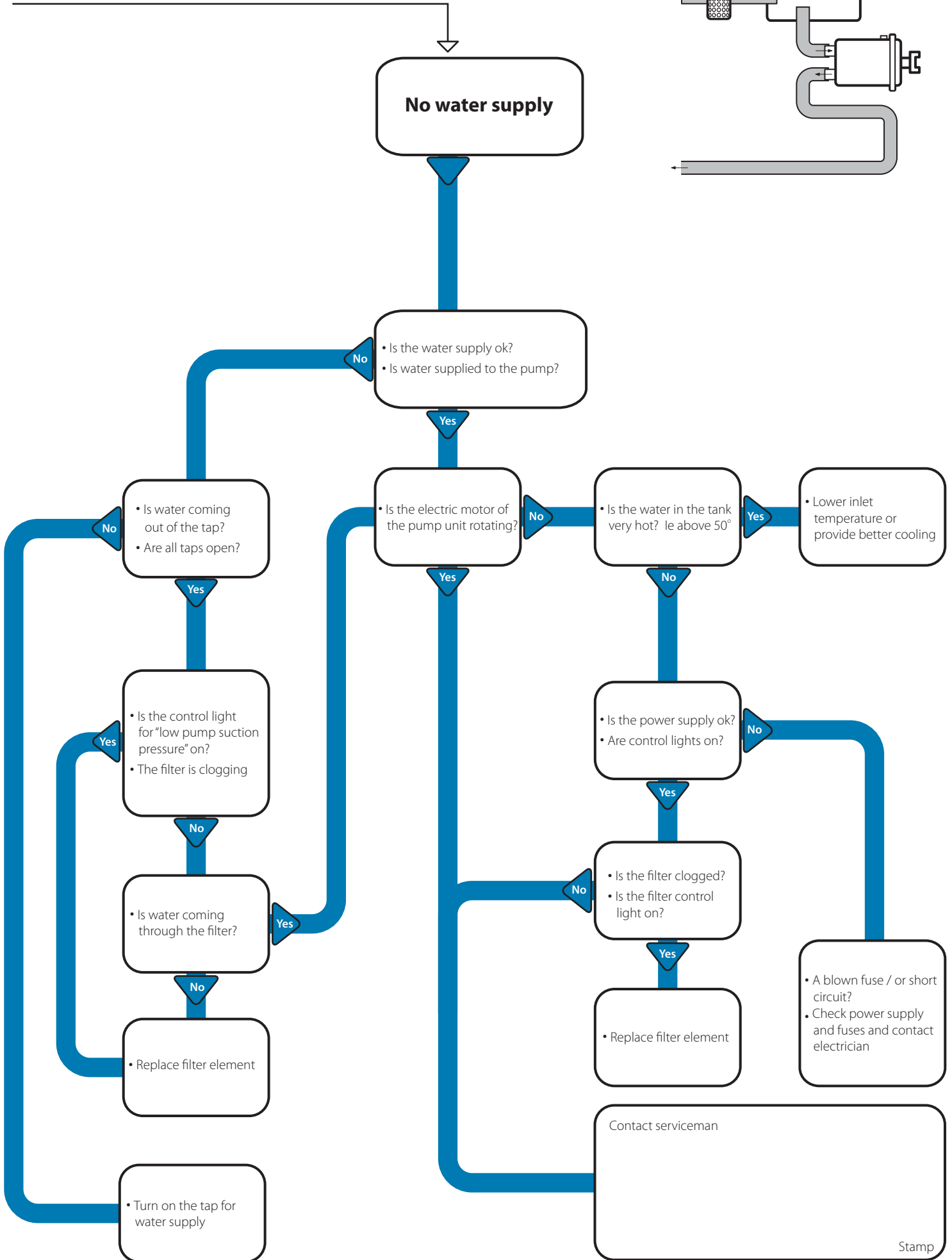
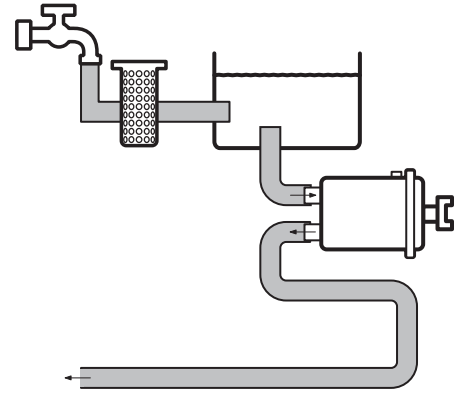
### Flushing procedure

6. Fill cold water through the return filter and bleed the pump (Power Packs PPH 4 - 6.3 - 10 and 12.5 are self-bleeding)
7. Run the system for 30 min. and activate all components as often as possible
8. Empty the system of the water
9. Alternatively the system may be flushed by running the unit without the return hose while continuously filling up water. The flushing should continue until there is no trace of cleaning agent in the return water
10. Change the return filter element, fill cold water through the return filter and bleed the pump during start up
11. The system is now ready for operation



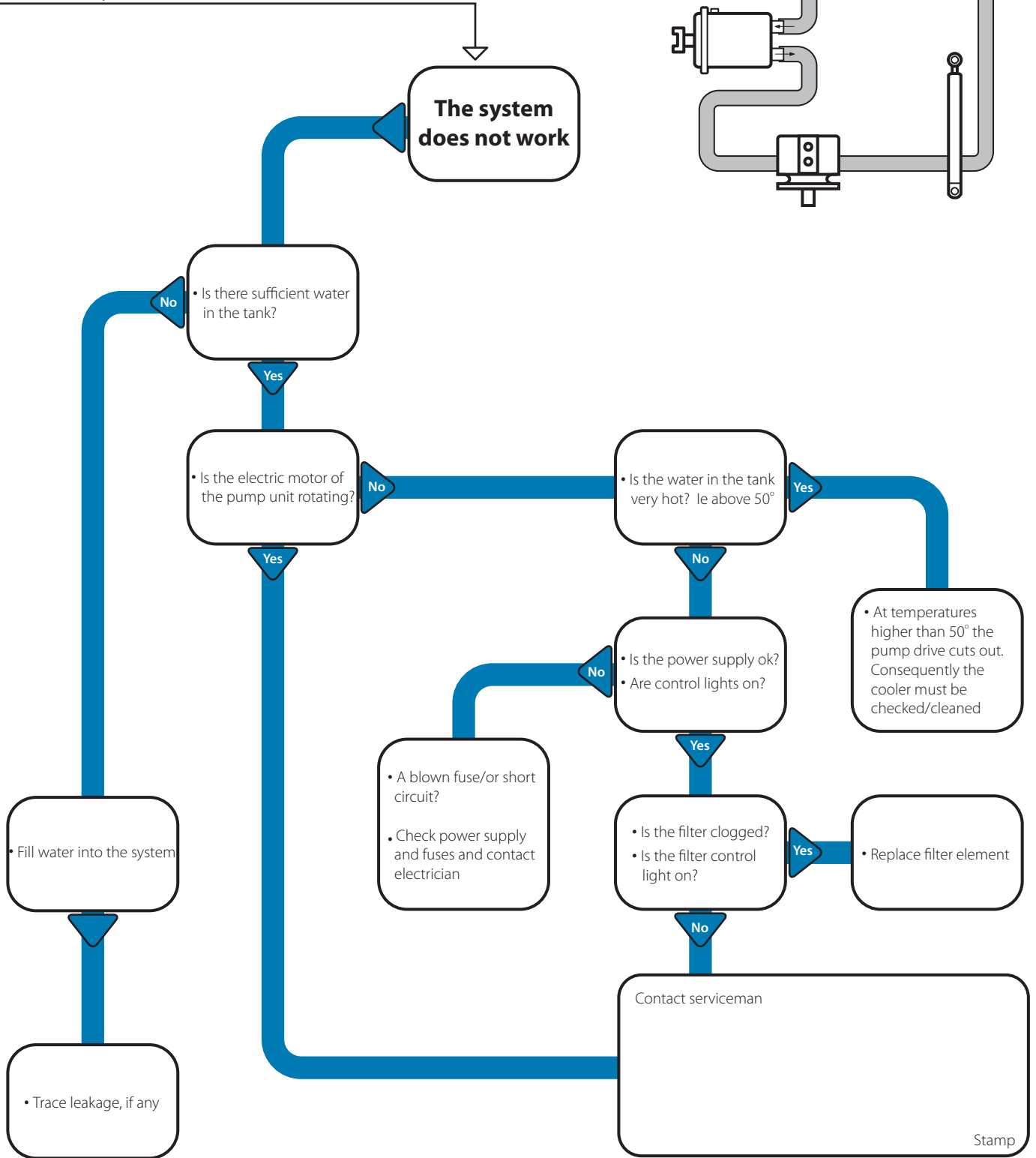
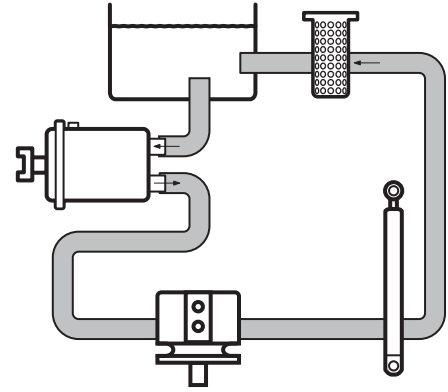
# Trouble shooting

Open ended water systems



# Trouble shooting

Closed water systems



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DK-6430 Nordborg  
Denmark