xylem
Let's Solve Water

Additional Installation, Operation
and Maintenance Instructions



e-SVI Series

Pump unit / Immersed body multi-stage vertical pump

LOWARA
a xylem brand

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1 Introduction and Safety

1.1 Introduction

Purpose of this manual

This manual provides information on how to do the following in the correct manner:

- Installation
- Operation
- Maintenance.



CAUTION:

This manual is an integral part of the unit. Be sure to read and understand the manual before installing the unit and putting it to use. The manual must always be made available to the user, stored in the proximity of the unit, and well kept.

Supplementary instructions

The instructions and warnings of this manual apply to the standard unit as described in the sale documentation. Special version pumps may be supplied with supplementary instruction manuals. For situations not considered in the manual or in the commercial documentation, contact Xylem or the Authorised Distributor.

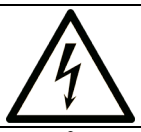
Before using the unit, the user must read, understand and comply with the indications of the danger warnings in order to avoid the following risks:

- Injuries and health hazards
- Damage to the product
- Unit malfunction.

Hazard levels

Hazard level	Indication
 DANGER:	It identifies a dangerous situation which, if not avoided, causes serious injury, or even death.
 WARNING:	It identifies a dangerous situation which, if not avoided, may cause serious injury, or even death.
 CAUTION:	It identifies a dangerous situation which, if not avoided, may cause small or medium level injuries.
NOTE:	It identifies a situation which, if not avoided, may cause damage to property but not to people.

Complementary symbols

Symbol	Description
	Electrical hazard
	Hot surface hazard
	Danger, pressurized system
	Explosive atmosphere hazard
	Do not use flammable liquids
	Do not use corrosive liquids
	Read the instruction manual

1.3 User safety

Strictly comply with current health and safety regulations.

Qualified personnel

This unit must be used only by qualified users. Qualified users are people able to recognise the risks and avoid hazards during installation, use and maintenance of the unit.

Inexperienced users



WARNING:

- For EU countries: this product may be used by children aged 8 years and above and persons with reduced physical, sensory or mental capabilities, or who lack experience and knowledge, provided that they are being supervised and have been instructed on how to use it safely, and understand the hazards involved. Children must not play with the product. Cleaning and maintenance must not be carried out by children without supervision.
- For countries outside the EU: this product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or who lack experience and knowledge, unless they are being supervised and have been instructed on how to use it by a person responsible for their safety. Children should be supervised to ensure that they do not play with the product.

1.4 Protection of the environment

Disposal of packaging and product

Comply with the current regulations on sorted waste disposal.

Leaking of fluid

If the unit contains lubricating fluid, take appropriate measures to prevent the dispersion of leaks into the environment.

Sites exposed to ionizing radiations



WARNING: Ionizing radiation hazard

If the unit has been exposed to ionizing radiations, implement the necessary safety measures for the protection of people. If the unit needs to be dispatched, inform the carrier and the recipient accordingly, so that appropriate safety measures can be put in place.

2 Handling and Storage

2.1 Unit inspection upon delivery

2.1.1 Package inspection

1. Check that quantity, descriptions and product codes match the order.
2. Check the packaging for any damage or missing components.
3. In case of immediately detectable damage or missing parts:
   - Accept the goods with reserve, indicating any findings on the transport document, or
   - Reject the goods, indicating the reason on the transport document.

   In both cases, promptly contact Xylem or the Authorised Distributor from whom the product was purchased.

2.1.2 Unpacking and inspection of the unit



CAUTION: Cut and abrasion hazard

Always wear personal protective equipment.

1. Remove the packaging.
2. Ensure sorting of all packaging materials in accordance with the applicable regulations.
3. Release the unit by removing the screws and/or cutting the straps, if fitted.
4. Check the unit for integrity and to make sure that there are no missing components.
5. In case of damage or missing components, promptly contact Xylem or the Authorised Distributor.

2.2 Guidelines for transport

Precautions



WARNING: Crushing hazard

The unit and components are heavy: risk of crushing.



WARNING:

Always wear personal protective equipment.



WARNING:

Check the gross weight marked on the packaging.



WARNING:

Handle the unit in compliance with the current regulations on "manual load handling", to avoid undesirable ergonomic conditions causing risks of back-spine injury.



WARNING:

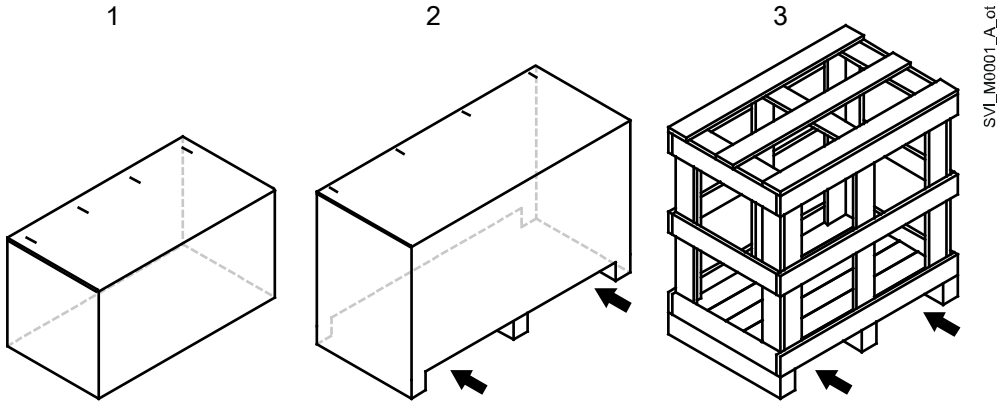
Take appropriate measures during transport, installation and storage to prevent contamination from external substances.

2.2.1 Handling of the packed unit using a forklift truck

NOTE:

Do not lift the cardboard packaging with the forklift.

The Figure shows the types of packaging and the lifting points.



1. Cardboard box
2. Cardboard box with wooden base
3. Wooden crate

2.2.2 Lifting with a crane



WARNING:

Use ropes, chains and/or slings (hereinafter referred to as "ropes"), hooks and/or clasps (hereinafter referred to as "hooks"), shackles or eyebolts that comply with the applicable directives and are suitable for use.

NOTE:

Make sure that the harnessing does not hit and/or damage the unit.



WARNING:

Lift and handle the unit slowly to avoid stability issues.



WARNING:

During handling, make sure to avoid injury to people and animals, and/or damage to property.



WARNING:

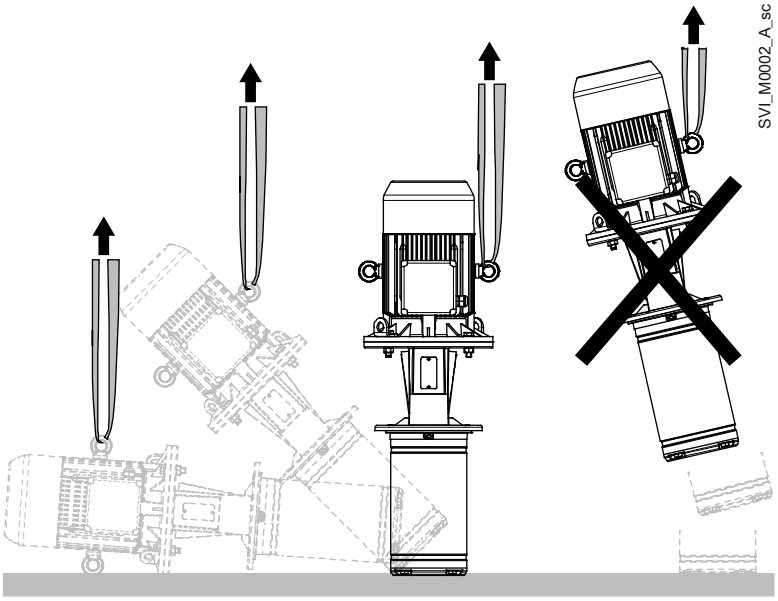
Do not use eyebolts screwed on the motor for handling the unit.

NOTE:

The pump is shipped by the Manufacturer with two shims to block the shaft and the impeller stack; always handle the pump with the shims installed to prevent damage.

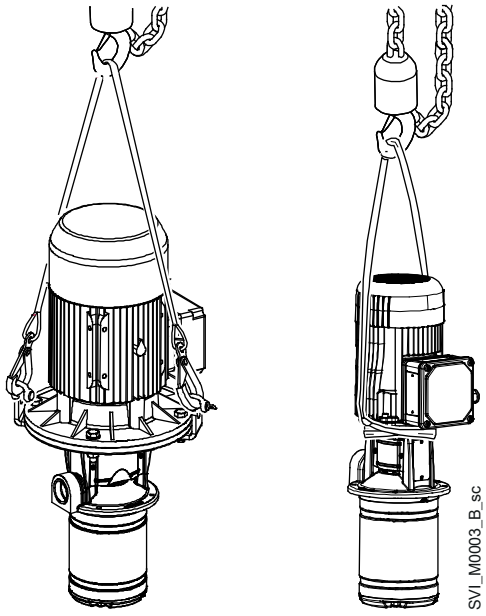
Preparing the unit for lifting

1. Move the unit from the horizontal to the vertical position, only using the motor eyebolts if necessary.



2. Depending on the model:
   - Attach the shackles to all the eyelets, if any, and attach the ropes to the shackles, or
   - Use the ropes to make a tie harness.

   The figure shows how to harness and lift the different models.



3. Fix the ropes to the crane.
4. Lift the crane and tension the ropes without lifting the unit.

Lifting and positioning

1. Lift and move the unit slowly
2. Set the unit down slowly.
3. Depending on the model:
   - Release the ropes from the shackles, or
   - Release the harness.

2.3 Storage

Storage of the packed unit

The unit must be stored:

- In a covered and dry place
- Away from heat sources
- Protected from dirt
- Protected from vibrations
- At an ambient temperature between -5°C and +40°C (23°F and 140°F), and relative humidity between 5% and 95%.

NOTE:

Do not place heavy loads on top of the unit.

NOTE:

Protect the unit from collisions.

Long-term storage of the unit

1. Remove the unit from the tank.
2. Lift and empty the unit.
3. Follow the same instructions for the storage of the packed unit.

Alternatively:

1. Empty the tank.
2. Follow the same instructions for the storage of the packed unit.

Note
This operation is essential in environments with cold temperatures. Otherwise, any residual liquid in the unit could have an adverse effect on its condition and performance.

For more information on long-term storage contact the Xylem sales company or Authorised Distributor.

3 Description of the Product

3.1 Features

The product is an immersed body multi-stage vertical pump unit.
The product can be supplied as an pump unit (pump with electric motor), or as a pump only.

Intended use

- Pressure boosting systems
- Transfer and pressure boosting of liquids in machine tools
- Transfer of condensation
- Industrial washing systems
- Filtering systems
- Similar applications.



DANGER: Potentially explosive atmosphere hazard

It is prohibited to start the unit in environments with potentially explosive atmospheres or with combustible dusts.

Pumped liquids

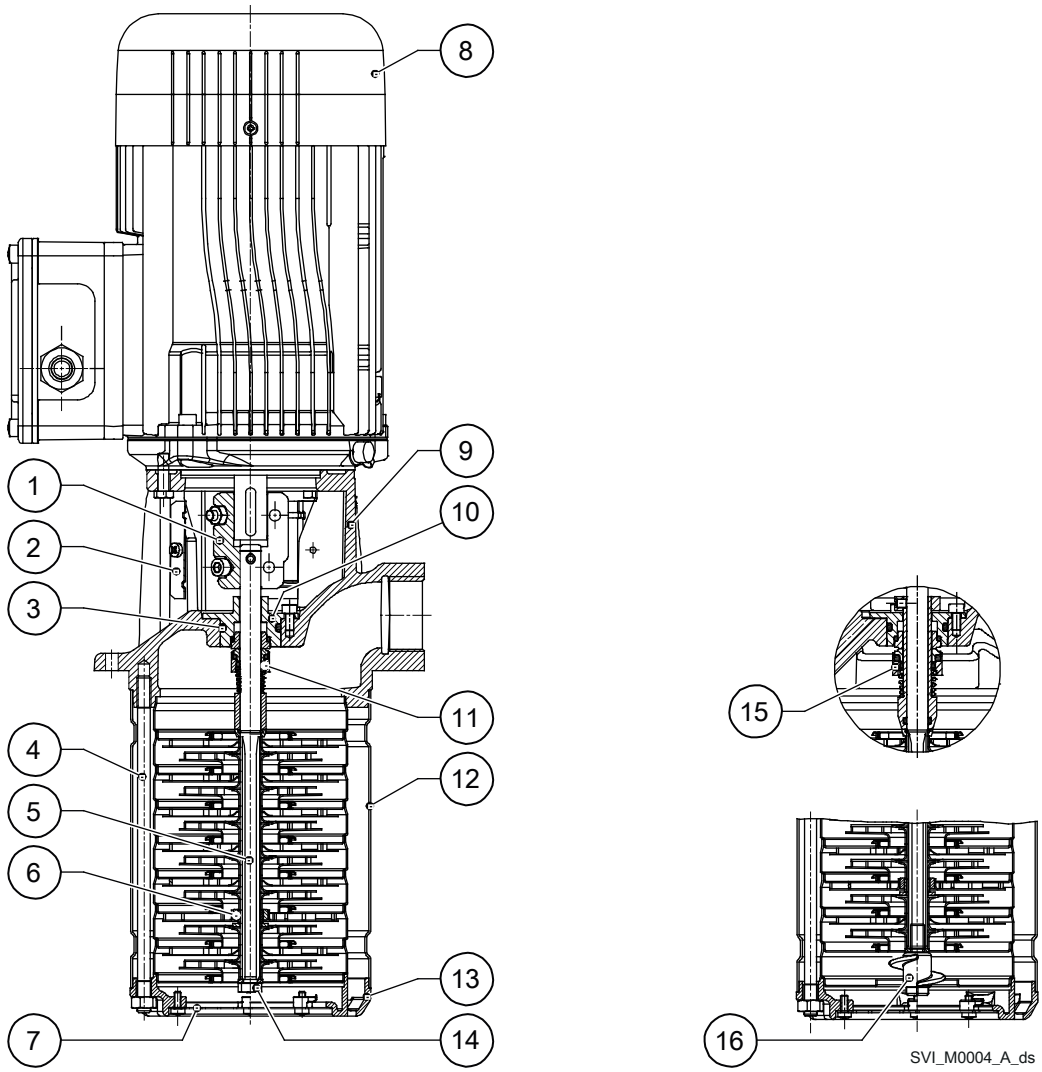
- Condensation
- Coolants
- Emulsions
- Liquids:
  - Clean
  - Cold or hot
  - Non-explosive
  - Free of solid particles or fibres
  - Chemically and mechanically non aggressive.



DANGER:

It is prohibited to use this unit to pump flammable and/or explosive liquids.

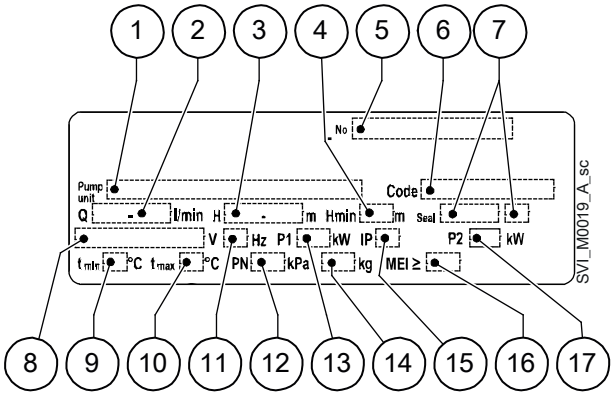
3.1.1 Part names



1. Coupling
2. Coupling protection
3. Elastomers
4. Tie rod
5. Shaft
6. Shaft sleeve and bush
7. Filter
8. Motor
9. Motor adapter
10. Seal housing
11. Mechanical seal
12. Outer sleeve
13. Suction bottom
14. Screw
15. Cartridge mechanical seal
16. Inducer

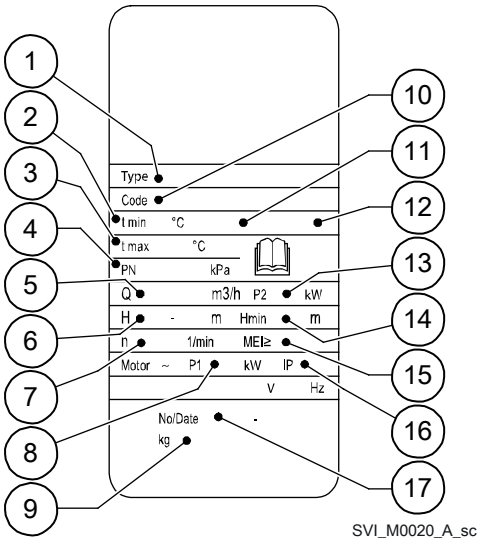
3.2 Data plates

Models 1, 3, 5SVI (E) - 1~



1. Pump or pump unit type
2. Flow rate range
3. Head range
4. Minimum head
5. Serial number + manufacturing date
6. Product code
7. Mechanical seal and O-ring materials identification codes
8. Rated voltage range
9. Minimum liquid operating temperature
10. Maximum liquid operating temperature
11. Frequency
12. Maximum operating pressure
13. Pump rated power
14. Weight
15. Protection class
16. Minimum efficiency index
17. Pump unit absorbed power

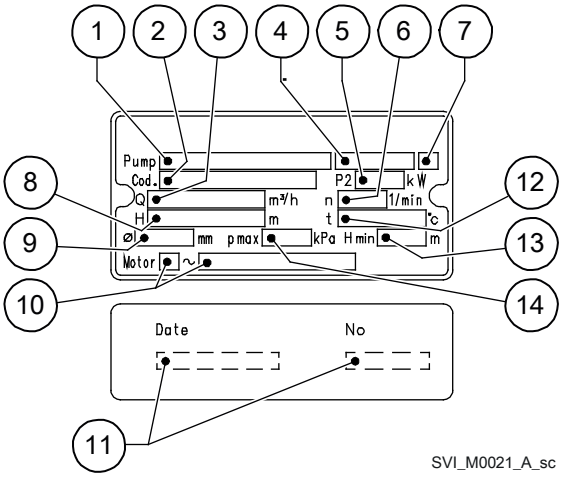
Models 1, 3, 5SVI (E) - 3~ / 1, 3, 5, 10, 15, 22SVI (C, M)



1. Pump or pump unit type
2. Minimum liquid operating temperature
3. Maximum liquid operating temperature
4. Maximum operating pressure
5. Flow rate range
6. Head range
7. Rotation speed
8. Pump rated power
9. Weight
10. Product code
11. Mechanical seal materials identification code
12. O-ring materials identification code

13. Pump unit absorbed power
14. Minimum head
15. Minimum efficiency index
16. Protection class
17. Serial number + manufacturing date

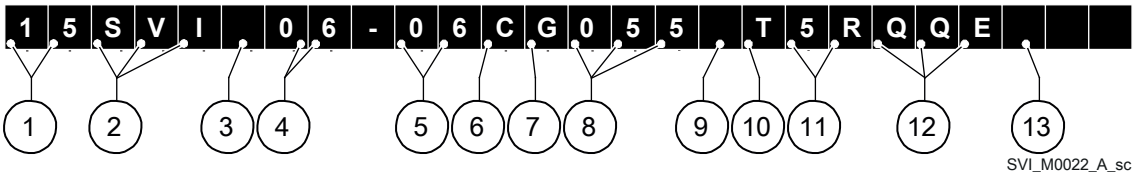
Models 33, 46, 55, 92 (S, N)



1. Pump unit type
2. Product code
3. Flow rate range
4. Mechanical seal materials identification code
5. Pump unit absorbed power
6. Rotation speed
7. O-ring materials identification code
8. Head range
9. -
10. Type of motor
11. Manufacturing date + serial number
12. Maximum liquid operating temperature
13. Minimum head
14. Maximum operating pressure

3.3 Identification code

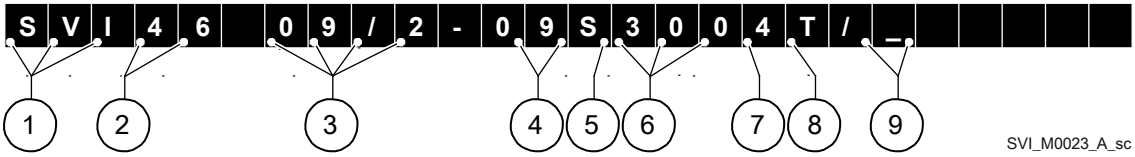
Models 1, 3, 5, 10, 15 and 22



1. Flow rate in m^3/h
2. Series name
3. Standard asynchronous motor [ ], with Hydrovar® [H] or with e-SM Drive [E]
4. Number of impeller
5. Number of stages
6. Version with extended shaft [E], with cartridge seal [C], standard [M] or special [X] seal
7. Material: AISI 304 [G] or AISI 316 [N]
8. Rated motor power in kWx10
9. 2-pole [2], 4-pole [4] or e-SM Drive [P] motor
10. Single-phase motor [M], three-phase motor [T] or bare shaft pump [ ]
11. Electrical voltage with:
    - Frequency 50 Hz: 1x220-240 V [5H], 3x220-240/380-415 V [5R], 3x380-415/660-690 V [5V], 3x200-208/346-360 V [5P], 3x255-265/440-460 V [5S], 3x290-300/500-525 V [5T] or 3x440-460/- V [5W]
    - Frequency 60 Hz: 1x220-230 V [6F], 1x200-210 V [6E], 3x220-230/380-400 V [6P], 3x255-277/440-480 V [6R], 3x440-480/- V [6V], 3x380-400/660-690 V [6U], 3x200-208/346-360 V [6N] or 3x330-346/575-600 V [6T]
    - Double frequency: 3x230/400 V 50 Hz, 3x265/460 V 60 Hz [BR] or 3x400/690 V 50 Hz 3x460/- V 60 Hz [BV]
    - e-SM Drive: 1x208-240 V [02], 3x380-460 V [04] or 3x208-240/380-460 V [05]
    - Bare shaft pump: to be coupled with 60 Hz [6-] or 50 Hz [5-] motor
    - Hydrovar®: HVL2.015 1~ 208-240 V (50/60 Hz) [02], HVL3.015 3~ 208-240 V (50/60 Hz) [03] or HVL4.015 3~ 380-460 V (50/60 Hz) [04]

12. Mechanical seal and elastomers
13. Other information: standard [ ], PTC [P], motor heater [S], UL approved (cURus) [U], other specifications [Z] or Hydrovar® Premium Card [C]

Models 33, 46, 66 and 92



1. Series name
2. Flow rate in m^3/h
3. Number of impeller
4. Number of stages
5. Version with coupling [S] or AISI 316 with coupling [N]
6. Rated motor power in kWx10
7. 2-pole [ ] or 4-pole [4] motor
8. Single-phase motor [M], three-phase motor [T] or bare shaft pump [ ]
9. Other information

3.4 Approval marks

For products with a mark of electrical-related safety approval, the approval refers exclusively to the pump unit.

4 Installation

4.1 Precautions

General precautions

Before starting, make sure that the safety instructions shown in **Introduction and Safety** on page 4 have been fully read and understood.



DANGER:

All the hydraulic and electrical connections must be completed by a technician possessing the technical-professional requirements outlined in the current regulations.



WARNING:

Always wear personal protective equipment.



WARNING:

Always use suitable working tools.



WARNING:

Piping must be sized to ensure safety at the maximum operating pressure.



WARNING:

Install appropriate gaskets between the unit and the piping system.

Electrical measures



DANGER: Electrical hazard

Before starting work, check that the electric power supply is disconnected and locked out, to avoid unintentional restart of the unit, the control panel and the auxiliary control circuit.



WARNING: Injuries hazard

The unit, equipped with a single-phase motor with automatic reset thermal overload protection, could restart inadvertently after it has cooled down: risk of physical injury.



WARNING:

The use of units with single-phase motors with automatic reset thermal protection for extinguishing fires and in pulverised water firefighting systems is forbidden.

NOTE:

If using a single-phase motor other than the standard motor, check that a thermal protection device has been installed.

NOTE:

Only use dynamically balanced motors with half-sized key at the shaft end (IEC 60034-14), and with normal vibration rate (N).

NOTE:

Only use single-phase or three-phase motors with sizes and powers in compliance with European standards.

NOTE:

The mains voltage and frequency must match the specifications on the data plates.

Ground

DANGER: Electrical hazard

Always connect the external protection conductor (ground) to the ground terminal before attempting to make any other electrical connections.

DANGER: Electrical hazard

Connect all the electrical accessories of the unit to the ground.

DANGER: Electrical hazard

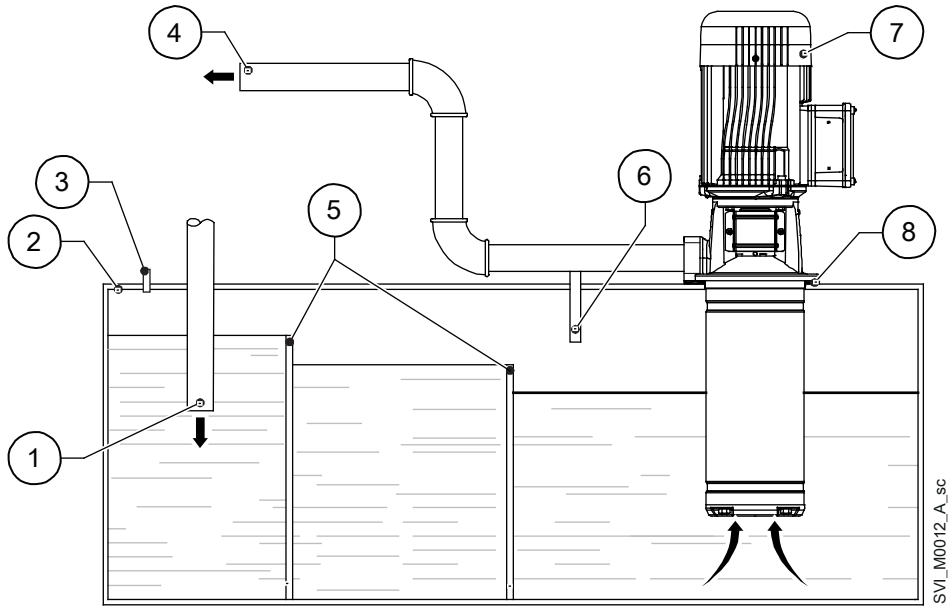
Check that the external protection conductor (ground) is longer than the phase conductors. In case of accidental disconnection of the unit from the phase conductors, the protection conductor must be the last one to detach itself from the terminal.

DANGER: Electrical hazard

Install suitable systems for protection against indirect contact, in order to prevent lethal electric shocks.

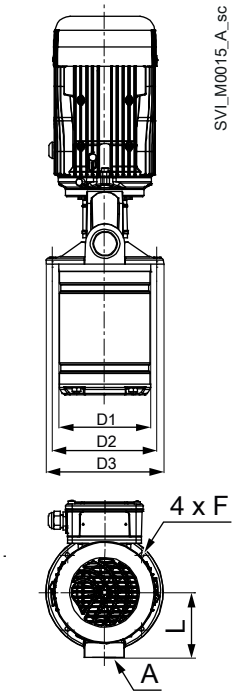
4.2 Mechanical installation

Tank or basin



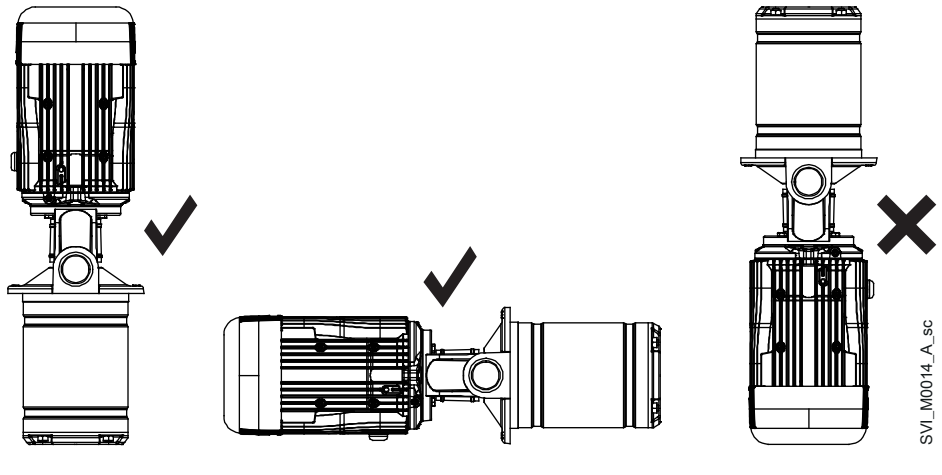
1. Return piping system
2. Tank
3. Air vent, to maintain the atmospheric pressure inside the tank
4. Discharge pipe
5. Bulkheads, to allow the unit to suck liquid in a quiet state
6. Bypass pipe, to reduce the risk of water hammer effects
7. Unit
8. Seal

Dimension of the mounting flanges

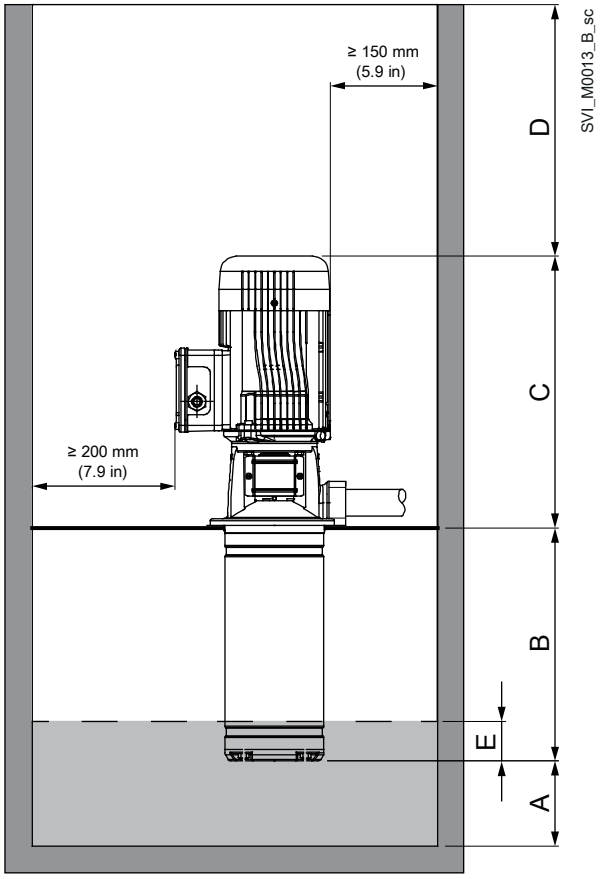


Model	D1, mm (in)	D2, mm (in)	D3, mm (in)	L, mm (in)	A	F, mm (in)
1, 3 and 5 SVI	140 (5.51)	160 (6.30)	180 (7.09)	100 (3.94)	Rp 1 1/4	Ø 7.5 (2.95)
10, 15 and 22 SVI	200 (7.87)	225 (8.86)	250 (9.84)	125 (4.92)	Rp 2	Ø 9.5 (3.74)
1, 3 and 5 SVIE	140 (5.51)	160 (6.30)	180 (7.09)	120 (4.72)	Rp 3/4	Ø 7.5 (2.95)
33, 46, 66 and 92 SVI	240 (9.44)	265 (10.43)	300 (11.81)	210 (8.27)	DN80	Ø 14 (0.55)

Permitted positions



Positioning measurements



Model	A, mm (in)	B, mm (in)	C, mm (in)	D, mm (in)	E, mm (in)	
					With inducer	Without inducer
1, 3 and 5	> 20 (0.8)	Depending on pump type, see the catalogue	Depending on motor type, see the catalogue	> 30 (1.2) + B	≥ 20 (0.8)	≥ 30 (1.2)
10, 15 and 22	> 25 (1.0)					
33, 46, 66 and 92					-	≥ 60 (2.4)

Unit assembly

1. Place the gasket at the bottom of the tank.
2. Remove the discharge port plug.
3. Remove all welding residues, deposits and impurities from the tank.
4. Insert the unit in the hole.
5. Check that the minimum distance from the bottom of the tank is maintained.
6. Secure the unit with bolts.

4.3 Hydraulic connection

1. Support the piping system independently to prevent them from weighing on the unit.
2. On the discharge pipes install:
   - An anti-vibration joint to reduce the transmission of vibrations from the unit to the system and vice versa
   - A check valve to prevent the liquid from flowing back into the unit when this is at a standstill
   - A pressure gauge with intercept valve for checking the actual operating pressure of the unit
   - An on-off valve, downstream the check valve and pressure gauge, to regulate the flow rate and disconnect the unit from the system during maintenance
   - An automatic relief valve at the highest point of the system to eliminate air bubbles
   - A minimum pressure device to prevent dry run, or a float or level probes inside the tank.

3. Remove any welding residues, deposits and impurities in the pipes that could damage the unit; install a filter if necessary.
4. Connect the piping system to the unit port.
5. Install the return piping system as far as possible from the suction, immersed in the liquid, to prevent turbulence and air bubbles.

4.4 Electrical connection

4.4.1 Guidelines for electrical connection

1. Check that the electrical leads are protected against:
   - High temperature
   - Vibrations
   - Collisions
   - Liquids.
2. Check that the power supply line is provided with:
   - A short circuit protection device of appropriate size
   - A mains disconnection device with contact opening distance ensuring complete disconnection for overvoltage III category conditions.

4.4.2 Guidelines for the control panel

1. Install appropriate devices for protecting the motor from overloads and short circuits:

Motor	Safety features
Single-phase	• Automatic reset thermal-ampere protection, in-built (motor protector) • From short circuit, by the installer: aM fuses (motor start-up), or thermal magnetic switch with C curve and Icn ≥ 4.5 kA, or other similar device.
Three-phase	• Thermal, by the installer: trip class 10 A overload thermal relay + aM fuses (motor start-up), or start class 10 A motor protection thermal magnetic switch • From short circuit, by the installer: aM fuses (motor start-up), or thermal magnetic switch with C curve and Icn ≥ 4.5 kA, or other similar device.

2. If required, install phase failure sensitive thermal relays.

4.4.3 Guidelines for the motor

Terminal box positioning

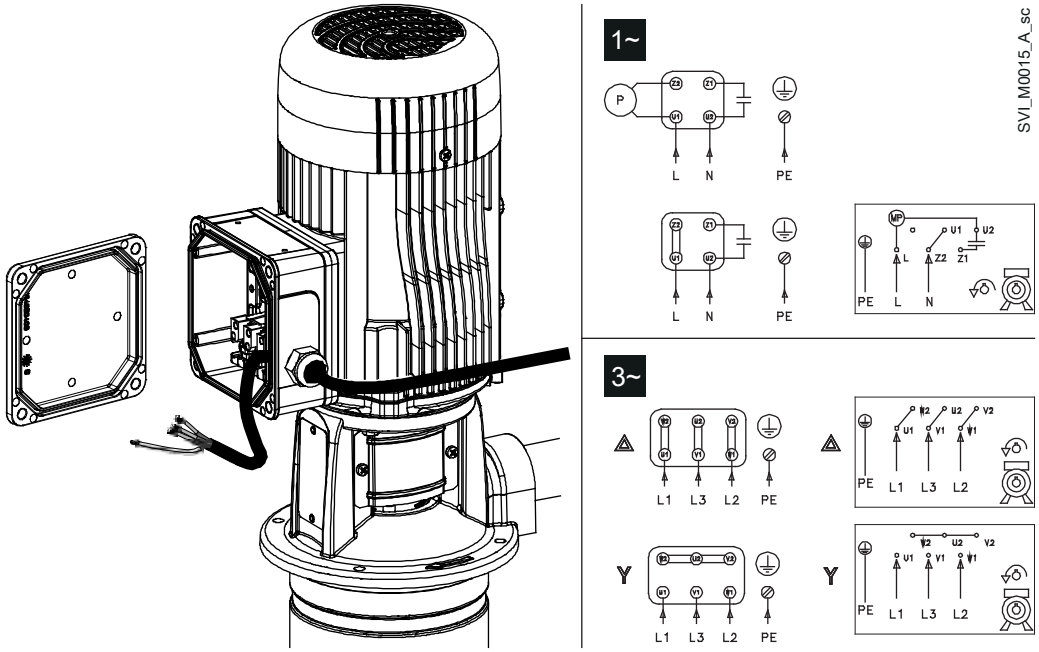
The position of the terminal box may be changed to facilitate the electric connections:

1. Remove the bolts that secure the motor to the pump.
2. Rotate the motor in the desired position without removing the couplings.
3. Reposition and tighten the bolts at the torque indicated in the table.

Motor size	Bolt size	Torque, Nm (lbf·in)
71, 80	M6	6 (53)
90, 100, 112	M8	15 (133)
132	M12	50 (443)
160, 180, 200, 225, 250	M16	75 (664)

Electrical connection of the motor

1. Open the terminal box cover.
2. Refer to the wiring diagrams in the figure or inside the cover.



3. Connect the protection conductor (ground), making sure that it is longer than the phase conductors.
4. Connect the phase leads.
5. Tighten the terminal bolts at the torque indicated in the table.

Nut	Torque, Nm (lbf·in)
M4	1.2 (11)
M5	2.5 (22)
M6	4.0 (35)
M8	8.0 (71)
M10	15.0 (133)

6. Close the terminal box cover and tighten all the screws and cable glands.

4.4.4 Overload protection

Single-phase motor unit

The unit is equipped with built-in capacitor and motor protector, and stops automatically in case of overload or overtemperature.

Three-phase motor unit

1. Install an appropriate motor protector in the control panel, with D curve in accordance with the current shown in the data plate.
2. Calibrate the motor protector depending on the use of the motor:
   - With full load, comply with the nominal current value on the data plate.
   - With partial load, comply with the value of the operating current measured with a current pincer.

4.4.5 Operation with frequency converter

The three-phase motors can be connected to a frequency converter for speed control.

- The converter exposes the insulation of the motor to a greater load, determined by the length of the connecting cable: observe the requirements of the Manufacturer of the frequency converter
- For applications requiring silent operation, install an outlet filter between the motor and the converter; a sinusoidal filter can reduce the noise even further
- The bearings of the motors, from size 315 S/M and up, are exposed to the risk of harmful currents: use electrically insulated bearings
- The conditions of installation must guarantee protection against voltage peaks between the terminals and/or dV/dt in the table:

Motor size	Voltage peak, V	dV/dt, V/µs
up to 90R (500 V)	< 650	< 2200
from 90R to 180R	< 1400	< 4600
over 180R	< 1600	< 5200

Otherwise, use a motor with reinforced insulation[1] and a sinusoidal filter.

[1] Available on request

5 Use and Operation

5.1 Precautions



WARNING: Injuries hazard

Check that the protection devices of the coupling are installed, when applicable: risk of physical injury.



WARNING: Electrical hazard

Check that the unit is properly connected to the mains power supply.



WARNING: Injuries hazard

The unit, equipped with a single-phase motor with automatic reset thermal overload protection, could restart inadvertently after it has cooled down: risk of physical injury.



WARNING: Hot surface hazard

Be aware of the extreme heat generated by the unit.



WARNING:

It is prohibited to place flammable materials near the unit.

NOTE:

Check that the shaft can turn smoothly.

NOTE:

It is prohibited to operate the unit when dry, not primed and below the rated flow rate.

NOTE:

It is prohibited to operate the unit with the on-off valves closed.

NOTE:

It is prohibited to use the unit in the case of cavitation.

NOTE:

The unit must be filled and vented properly before it can be started.

NOTE:

The maximum pressure delivered by the unit at the discharge side, determined by the pressure available on the suction side, must not exceed the maximum pressure (PN).

5.2 Start-up

Preparing the unit

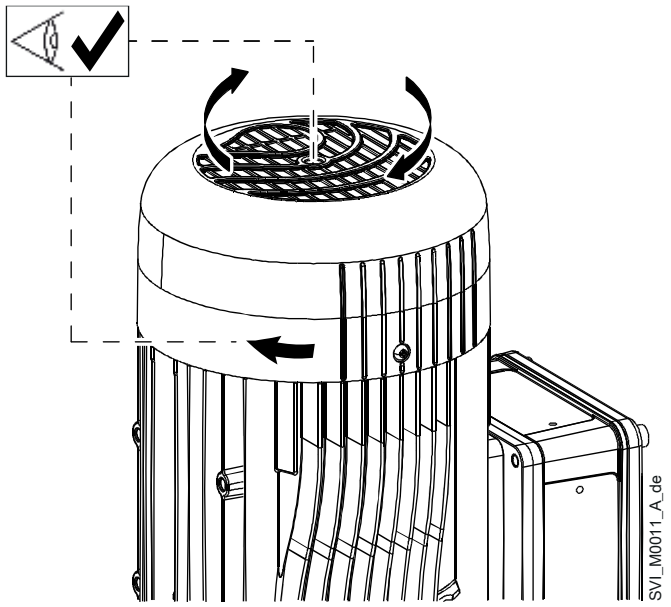
NOTE:

If there is a risk of the unit running at a flow rate below the minimum expected, install a bypass circuit.

1. Check that the level of the liquid inside the tank is above the minimum level.
2. Open the on-off valve on the discharge line.
3. If present, open the air relief valve on the unit flange.
4. Check that the shaft can turn smoothly by rotating it with the cooling fan.

Start-up and check of the rotation direction

1. Locate the arrow on the adapter, the coupling or the cover, to determine the correct direction of rotation of the motor.
2. Start the unit.
3. Check the rotation direction through the motor cover.



4. In case of incorrect rotation direction:
   - Stop the unit
   - Disconnect the power supply
   - Invert two of the three wires of the power supply cord.

Final operations

1. If installed, close the relief valve.
2. With the unit in operation, check:
   - That no liquid is leaking from the unit or piping system
   - That, at zero flow, the pressure delivered by the unit matches the pressure on the nameplate
   - That, at zero flow, the pressure delivered by the unit is not higher than the nominal pressure of the circuit
   - That there are no unwanted noise or vibrations
   - That the current absorbed is within the rated limits on the nameplate
   - The correct operation of the protection device against dry running, if present
   - That the liquid is free of:
     - Vortexes through which air could enter the unit
     - Foam that could cause unit fault
     - Turbulence caused by the return piping system or the bypass.

Settling of the mechanical seal

The pumped liquid lubricates the seal faces of the mechanical seal; under normal conditions, a small amount of liquid may leak out. When the unit is switched on for the first time, or after the seal is replaced, more liquid may temporarily leak out. To help the seal settle and to reduce leaking:

1. Close and open the on-off valve on the discharge side two or three times with the unit running.
2. Stop and start the unit two or three times.

5.3 Stopping

1. Stop the unit
2. Check that the motor stops and that it does not turn in the opposite direction.

6 Maintenance

6.1 Precautions

Before starting, make sure that the safety instructions shown in **Introduction and Safety** on page 4 have been fully read and understood.



DANGER: Electrical hazard

Before starting work, check that the electric power supply is disconnected and locked out, to avoid unintentional restart of the unit, the control panel and the auxiliary control circuit.



DANGER: Electrical hazard

If the unit is connected to the frequency converter, disconnect the mains power supply and wait at least 10 minutes for the residual current to dissipate.



WARNING:

Maintenance must be done by a technician possessing the technical-professional requirements outlined in the current regulations.



WARNING:

Always wear personal protective equipment.



WARNING:

Always use suitable working tools.



WARNING:

In the case of liquids that are excessively hot or cold, pay attention to the risk of injury.

6.2 Maintenance every 4000 hours of operation, or every year

When the first of the two limits is reached, check:

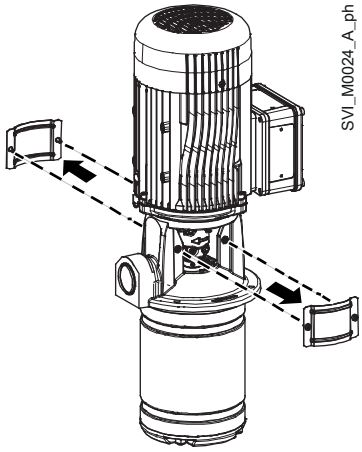
1. The pressure delivered:
   - Measure the pressure at zero flow rate.
   - Check the pressure value with the value measured at the first start: a pressure decrease exceeding 15% could indicate wear of consumable components: contact Xylem or the Authorised distributor
2. That the unit does not produce abnormal noises or vibrations.
3. That no liquid is leaking from the unit and the piping system.
4. The tightening of all bolts.
5. The status of the motor cooling fan.
6. Check that the insulation resistance of the motor is greater than 500 MΩ by applying a test voltage of 500 Vdc for 1 minute.
7. That there are no signs of overheating and electric arcs on the terminal box.
8. The integrity of the power cable.

6.3 Motor replacement

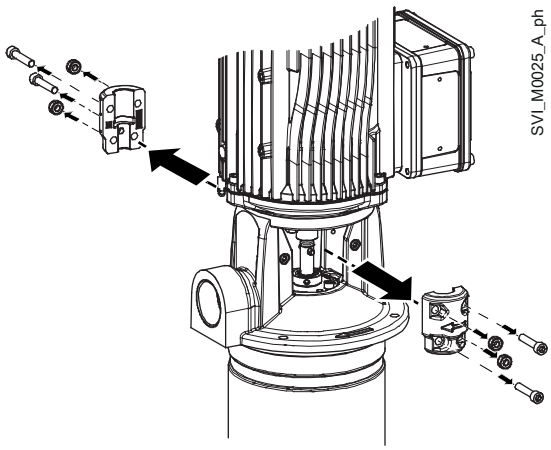
6.3.1 Models 1 to 22

Disassembly

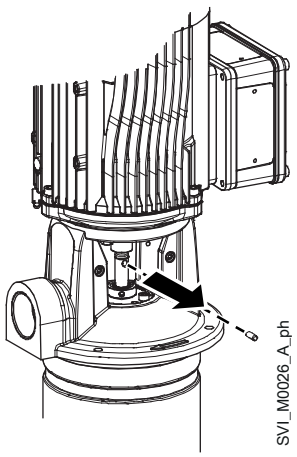
1. Remove the coupling guard.



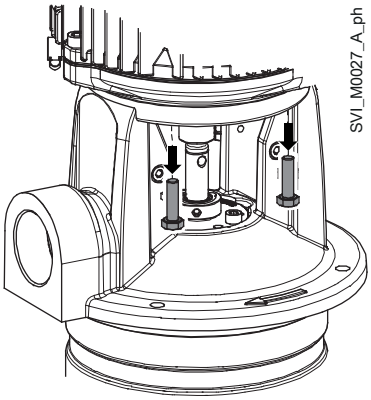
2. Remove the coupling by removing the bolts.



3. Remove the pump shaft shim.

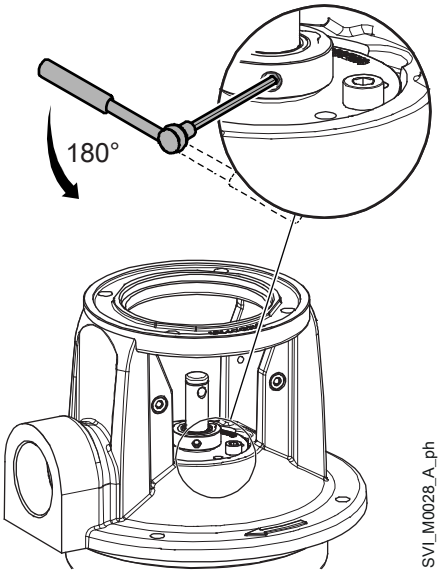


4. Unscrew the 4 motor screws and remove the motor.



Assembly

1. Loosen the 3 screws of the cartridge seal.

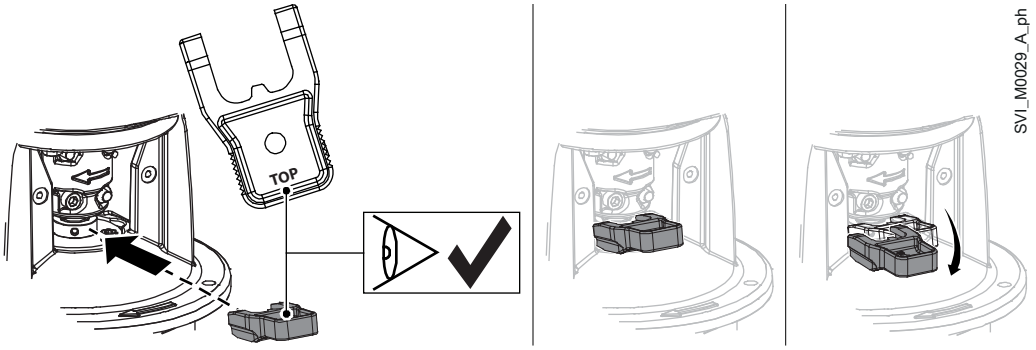


2. Install the motor using the 4 screws.

Screw	Torque, Nm (lbf·in)
M6	6 (53)
M8	15 (130)
M12	50 (440)
M16	80 (710)

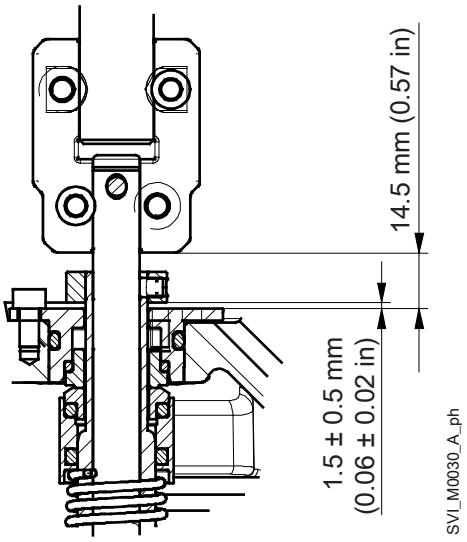
3. Insert the plug.
4. Install the coupling, tightening the bolts by hand.

5. Insert the spacer between the coupling and the seal, holding it slightly at an angle, and then moving it down, applying pressure on the coupling.



Final checks and operations

1. Check the distance between the flange and the seal ring nut, and between the flange and the coupling.



2. Tighten the bolts of the coupling.

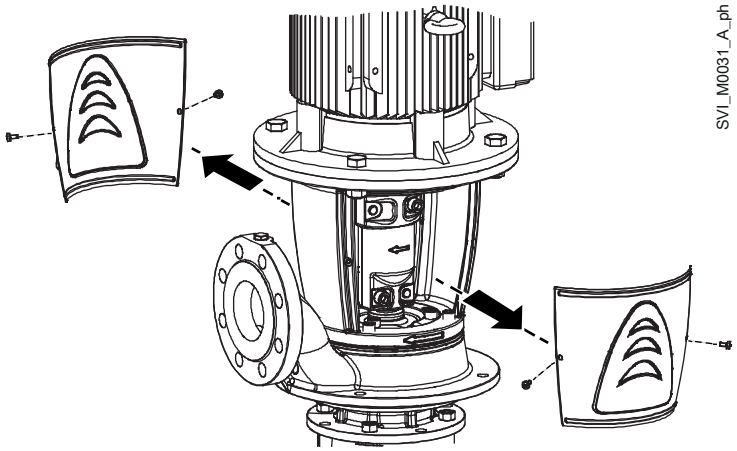
Screw	Torque, Nm (lbf·in)
M6	15 (130)
M8	25 (220)
M10	50 (440)

3. Remove the spacer.
4. Tighten the seal screws.
   Tightening torque: 1.5 Nm (13 lbf·in).
5. Check that the shaft rotates freely and without friction by turning the coupling by hand.
6. Reinstall the guards.

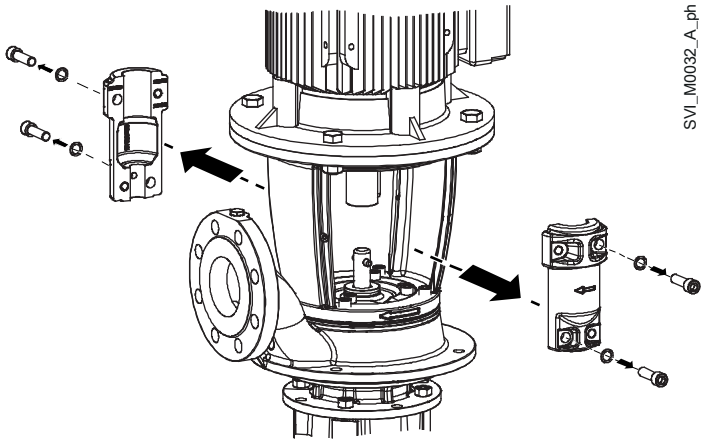
6.3.2 Models 33 to 92

Disassembly

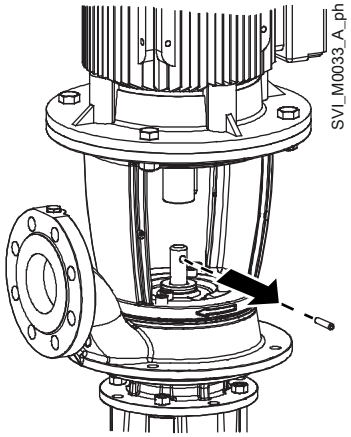
1. Remove the coupling guard.



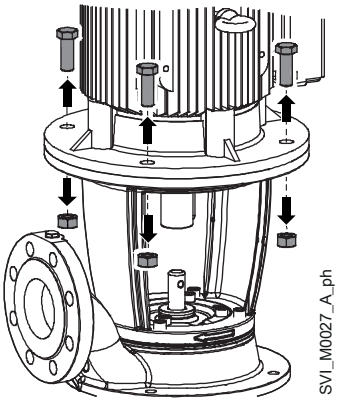
2. Remove the coupling by removing the bolts.



3. Remove the pump shaft shim.



4. Unscrew the 4 motor screws and remove the motor.

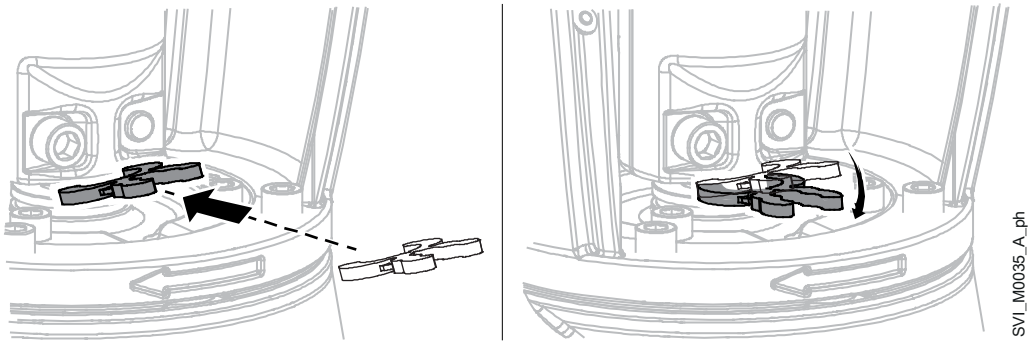


Assembly

1. Install the motor using the 4 screws.

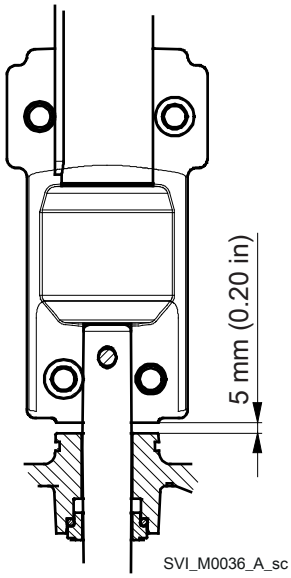
Screw	Torque, Nm (lbf·in)
M8	20 (180)
M12	50 (440)
M16	80 (710)

2. Insert the plug.
3. Install the coupling, tightening the bolts by hand.
4. Insert the spacer between the coupling and the seal, holding it slightly at an angle, and then moving it down, applying pressure on the coupling.



Final checks and operations

1. Check the distance between the flange and the coupling.



2. Tighten the bolts of the coupling.

Screw	Torque, Nm (lbf·in)
M10	50 (440)
M12	75 (660)

3. Remove the spacer.
4. Check that the shaft rotates freely and without friction by turning the coupling by hand.
5. Reinstall the guards.

6.4 Long periods of inactivity

1. Shut the on-off valve located on the discharge line.
2. Comply with the instructions on **Storage** page 10.
3. Before starting the unit:
   - Clean the filter
   - Check the status of the connections of the electric conductors on the unit and the control panel.
4. Start the unit complying with the instructions on Use and Operation page 23.

6.5 Spare parts ordering

Identify the spare parts with the product codes directly on the site www.lowara.com/spark. Contact Xylem or the Authorised Distributor for further technical information.

7 Troubleshooting

7.1 Precautions

Before starting the work, make sure that the safety instructions shown in **Introduction and Safety** on page 4, in **Use and Operation** on page 23 and in **Maintenance** on page 26 have been fully read and understood.



WARNING:

Maintenance must be done by a technician possessing the technical-professional requirements outlined in the current regulations.



WARNING:

If a fault cannot be corrected or is not mentioned, contact Xylem or the Authorised Distributor.

7.2 The unit does not start

Cause	Solution
Electric power supply cut off	Restore the electric power supply
The device for protection against the absence of liquid has tripped	• Check the liquid level in the tank and/or • Adjust the device If the problem continues, replace the device
Starter set incorrectly, or faulty	Adjust the device: if the problem continues, replace it
The motor protector on the control panel has tripped (three-phase version)	See paragraph 7.5
Power supply cord is damaged	Replace the cable
Faulty capacitor (single-phase version)	Contact Xylem or the Authorised Distributor
Control panel faulty	Check and repair or replace the control panel
Unit faulty	Contact Xylem or the Authorised Distributor

7.3 The differential protection device (RCD) has tripped

Cause	Solution
Differential of unsuitable type or faulty	Check the type of differential and/or replace it
Low insulation unit	Contact Xylem or the Authorised Distributor

7.4 The unit stops and starts cyclically

The unit with single-phase motor stops and restarts cyclically due to the activation of the internal thermal protection.

Cause	Solution
Unit blocked or partially blocked	Contact Xylem or the Authorised Distributor
Unit mechanically seized	Contact Xylem or the Authorised Distributor
Undervoltage	Check the power supply voltage
Liquid too thick	Check the liquid
Too many starts	See paragraph 7.9
Wrong duty point, flow rate below or above the permitted limits	Bring the flow rate back within the permitted limits
Room temperature too high	Decrease the temperature
Frequency converter wrongly calibrated (if present)	See the frequency converter manual
Unit faulty	Contact Xylem or the Authorised Distributor

7.5 The motor protector on the control panel trips

The motor protector of the control panel of the unit with three-phase motor activates.

Cause	Solution
It is calibrated at a value too low in relation to the rated current of the motor	Recalibrate
Motor protector faulty or incorrectly sized	• Replace the motor protector, or • Install a correctly sized motor protector
Wrong power supply voltage	Check the power supply voltage
Missing power supply phase	Check the power supply and restore the phase
Loose and/or faulty motor protector connections	Tighten or replace the clamps and terminals
Loose and/or faulty motor terminal box connections	Tighten or replace the clamps and terminals
Unit blocked or partially blocked	Contact Xylem or the Authorised Distributor
Wrong star-triangle connection in the motor terminal box	Check the connection and correct it as required based on the intended power supply voltage
Power supply cord is damaged	Replace the cable
Frequency converter wrongly calibrated (if present)	See the frequency converter manual
Liquid too thick	Check the liquid
Room temperature too high	Decrease the temperature
Too many starts	See paragraph 7.9
Wrong duty point, flow rate below or above the permitted limits	Bring the flow rate back within the permitted limits
Unit faulty	Contact Xylem or the Authorised Distributor

7.6 The motor becomes excessively hot

Cause	Solution
Room temperature too high	Decrease the temperature
Positioning measurements of the unit not respected	Modify the mechanical installation
Motor fan cover obstructed	Clean the fan cover
Motor cooling fan damaged	Replace the cooling fan
Too many starts	See paragraph 7.9
Frequency converter wrongly calibrated (if present)	See the frequency converter manual

7.7 Little or no hydraulic performance

Cause	Solution
Three-phase motor turning in the wrong direction	Check the direction of rotation and change if necessary
Presence of air in the unit	• Bleed the unit and/or • Check the suction conditions, and/or • Increase the liquid level inside the tank, and/or • Remove the foam, and/or • Remove any turbulences in the suction area
Check valve blocked or partially clogged	Replace the check valve
Pipes, on-off valves or filter clogged with impurities	Remove the impurities
Leaks from the piping system gaskets, the unit or the bypass pipe	• Replace the gaskets, and/or • Check the flow rate of the bypass pipe If the problem continues, contact Xylem or the Authorised Distributor
Foreign bodies in the unit	Remove the foreign bodies
Frequency converter wrongly calibrated (if present)	See the frequency converter manual
Undersized unit	Contact Xylem or the Authorised Distributor
Wear of the unit components	Contact Xylem or the Authorised Distributor
Unit faulty	Contact Xylem or the Authorised Distributor

7.8 When switched off, the unit turns in the opposite direction

Cause	Solution
Check valve faulty or missing	**Replace or install the check valve**

7.9 The unit starts and stops too frequently

The unit with automatic start and stop device starts and stops too frequently.

Cause	Solution
Check valve locked in closed or partially closed position	Replace the check valve
Piping system chocked and/or obstructed	Remove all chocking and/or obstructions
Starter set incorrectly, or faulty	Adjust or replace the starter
Protection device against lack of liquid set incorrectly or faulty	Adjust the device: if the problem continues, replace it

7.10 The unit does not stop

The unit with automatic start and stop device never stops.

Cause	Solution
The required flow rate is greater than the one expected	Reduce the required flow rate
Three-phase motor turning in the wrong direction	Check the direction of rotation and change if necessary
Pipes, on-off valves or filter clogged with impurities	Remove the impurities
Starter set incorrectly, or faulty	Adjust or replace the starter
The unit runs but there is little or no flow rate	See paragraph 7.7

7.11 The unit produces excessive noise and/or vibrations

Cause	Solution
Plant resonance	Check the installation
Foreign bodies in the unit	Remove the foreign bodies
Unit mechanically seized	Contact Xylem or the Authorised Distributor
Wrong duty point, flow rate below or above the permitted limits	Bring the flow rate back within the permitted limits
Presence of air in the unit	• Bleed the unit and/or • Check the suction conditions, and/or • Increase the liquid level inside the tank, and/or • Remove the foam, and/or • Remove any turbulences in the suction area
Unit not correctly attached to the tank	Check fastening
Motor-pump coupling incorrectly adjusted	Adjust the coupling
Anti-vibration joint on the piping system not suitable or absent	Check and/or install the anti-vibration joint
Frequency converter wrongly calibrated (if present)	See the frequency converter manual
Unit faulty	Contact Xylem or the Authorised Distributor

7.12 The unit is leaking at the mechanical seal

Cause	Solution
Damaged seal due to: • wear • thermal shock • chemical incompatibility • other	Replace the seal and check it to identify the cause of the damage. Contact Xylem or the Authorised Distributor
Incorrect pump shaft height	Adjust the height using the shim supplied

8 Technical Information

8.1 Operating environment

Non-aggressive and non-explosive atmosphere.

Temperature

From 0 to 40°C (32÷104°F), unless otherwise indicated on the data plate of the electric motor.

Relative air humidity

< 50% at 40°C (104°F).

NOTE:
If the humidity exceeds the stated limits, contact Xylem or the Authorised Distributor.

Elevation

< 1000 m (3280 ft) above sea level.

NOTE: Danger of motor overheating
If the unit is exposed to temperatures or installed at an altitude greater than those stated, reduce the power output of the motor according to the coefficients reported in the table. Otherwise, replace the motor with a more powerful one.

Altitude m (ft)	Power reduction coefficient
1000÷1500 (3300÷4900)	0.97
1500÷2000 (4900÷6600)	0.95

8.2 Temperature of pumped liquid

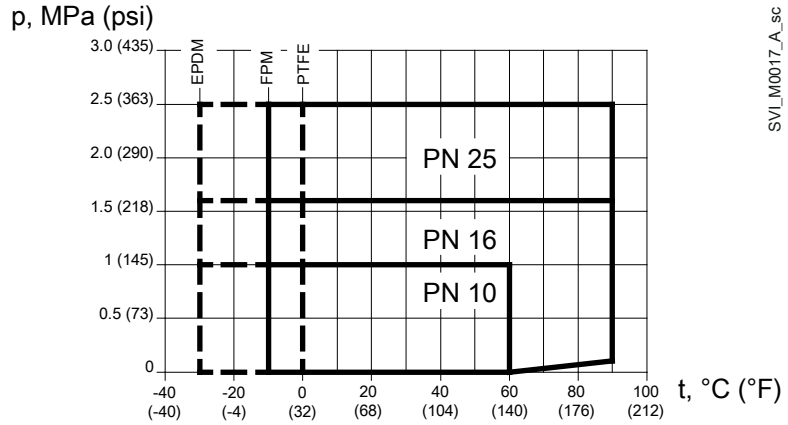
The table shows the permitted liquid temperatures according to the seal material.

Seal material	Minimum and maximum temperature, °C (°F)	
	SVI	SVIE
FPM	-10÷90 (14÷194)	-10÷60 (14÷140)
EPDM	-30÷90 (-22÷194)	-30÷60 (-22÷140)
PTFE	0÷90 (32÷194)	0÷60 (32÷140)

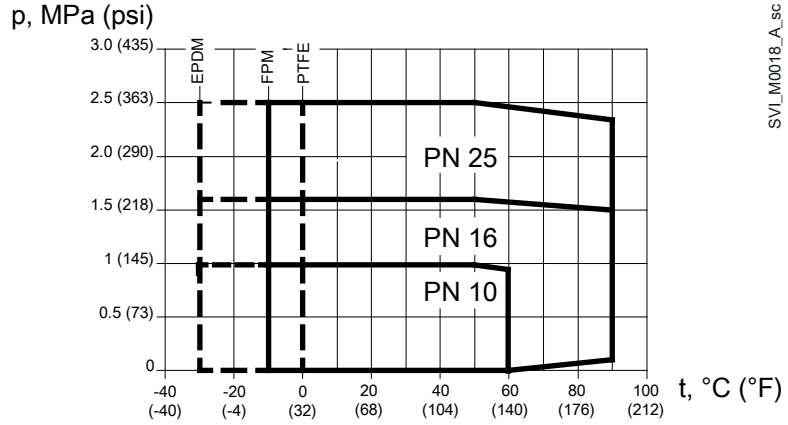
8.3 Maximum operating pressure

The chart shows the pumped liquid pressure and temperature limits permitted for the mechanical seal, based on the material of the hydraulic components.

AISI 304



AISI 316



8.4 Maximum number of starts per hour

Motor power, kW (hp)	Starts / h
0.25 – 3 (0.33 – 4)	60
4 – 7.50 (5.4 – 10)	40
11 – 15 (14.8 – 20.1)	30
18.5 – 22 (24.8 – 29.5)	24
30 – 37 (40.2 – 49.6)	16
45 – 75 (60.3 – 100)	8
90 – 160 (120 – 215)	4

NOTE:

If a motor other than the one supplied with the pump unit is used, check the maximum number of starts shown in the motor manual.

8.5 Electrical specifications

See the motor data plate.

Permitted tolerances for the supply voltage

Frequency Hz	Phase ~	No. of conductors + earth	UN, V ± %
50	1	2 + 1	220÷240 ± 6
	3	3 + 1	230/400 ± 10, 400/690 ± 10
60	1	2 + 1	220÷230 ± 6
	3	3 + 1	220/380 ± 5, 380/660 ± 10

Protection class

IP 55.

8.6 Sound pressure

Measured in free field at a distance of one metre from the unit, with standard motor operating without load.

50 Hz motors

LpA, dB ± 2

Power, kW (hp)	2 poles	4 poles
0.25 (0.33)	-	<70
0.37 (0.5) - 0.55 (0.7) - 0.75 (1) - 1 (1.3) - 1.5 (2) - 2.2 (2.9) 3 (4) - 4 (5.4) - 5.5 (7.4) - 7.5 (10)	<70	<70
11 (14.8)	73	-
15 (20) - 18.5 (25) - 22 (30)	75	-
30 (40)	74	-

60 Hz motors

LpA, dB ± 2

Power, kW (hp)	2 poles	4 poles
0.25 (0.33)	-	<70
0.37 (0.5) - 0.55 (0.7) - 0.75 (1) - 1 (1.3) - 1.5 (2) - 2.2 (2.9) 3 (4) - 4 (5.4) - 5,5 (7.4)	<70	<70
7.5 (10) - 11 (14.8) - 15 (20)	71	<70
18.5 (25)	73	-
22 (30)	70	-
30 (40)	76	-

8.7 Materials in contact with the liquid

- Stainless steel
- Cast iron.

8.8 Seals

Mechanic, e-SVI models

Model	Motor power, kW (hp)	Rated diameter, mm (in)	Balanced	Rotation	Version according to EN 12756
1, 3, 5	All	12 (0.47)	No	Right	K
10, 15, 22	< 5.5 (7.4)	16 (0.62)	No	Right	K
10, 15, 22	≥ 5.5 (7.4)	16 (0.62)	No with 50 Hz motors, yes with 60 Hz motors	Right	K
33, 46, 66, 92	All	22 (0.86)	Yes	Right	K

Mechanic, e-SVI..E models

Model	Motor power, kW (hp)	Rated diameter, mm (in)	Balanced	Rotation	Version according to EN 12756
1, 3, 5	All	14 (0.55)	No	Right	–

Cartridge, e-SVI models

Model	Motor power, kW (hp)	Shaft diameter, mm (in)	Balanced	Rotation	Version according to EN 12756
1, 3, 5	All	12 (0.47)	No	Right	K
10, 15, 22	< 5.5 (7.4)	16 (0.62)	No	Right	K
10, 15, 22	≥ 5.5 (7.4)	16 (0.62)	Yes	Right	K

8.9 Maximum head

8.9.1 50 Hz motors

The tables show the maximum head depending on the pump unit model with 50 Hz motor.

1, 3, 5 e-SVI..E

Model	m	Model	m	Model	m
1SVI02-02E	12.2	3SVI02-02E	14.9	5SVI02-02E	14.8
1SVI03-03E	18.0	3SVI03-03E	22.0	5SVI03-03E	22.8
1SVI04-04E	23.7	3SVI04-04E	28.9	5SVI04-04E	30.0
1SVI05-05E	29.3	3SVI05-05E	37.2	5SVI05-05E	38.0
1SVI06-06E	34.8	3SVI06-06E	44.4	5SVI06-06E	45.3
1SVI07-07E	40.2	3SVI07-07E	52.5	5SVI07-07E	52.7
1SVI08-08E	48.1	3SVI08-08E	60.0	5SVI08-08E	60.1
1SVI09-09E	53.7	3SVI09-09E	67.7	-	-
1SVI10-10E	59.4	3SVI10-10E	75.0	-	-
1SVI11-11E	65.1	3SVI11-11E	82.3	-	-
1SVI12-12E	73.3	3SVI12-12E	89.6	-	-
1SVI13-13E	79.2	-	-	-	-
1SVI15-15E	90.9	-	-	-	-
1SVI17-17E	105.2	-	-	-	-

1, 3, 5 e-SVI..C / ..M

Model	m	Model	m	Model	m
1SVI02-02..	12.2	3SVI02-02..	14.9	5SVI02-02..	14.8
1SVI03-03..	18.0	3SVI03-03..	22.0	5SVI03-03..	22.8
1SVI04-04..	23.7	3SVI04-04..	28.9	5SVI04-04..	30.0
1SVI05-05..	29.3	3SVI05-05..	37.2	5SVI05-05..	38.0
1SVI06-06..	34.8	3SVI06-06..	44.4	5SVI06-06..	45.3
1SVI07-07..	40.2	3SVI07-07..	52.5	5SVI07-07..	52.7
1SVI08-08..	48.1	3SVI08-08..	60.0	5SVI08-08..	60.1
1SVI09-09..	53.7	3SVI09-09..	67.7	5SVI09-09..	68.0
1SVI10-10..	59.4	3SVI10-10..	75.0	5SVI10-10..	75.5
1SVI11-11..	65.1	3SVI11-11..	82.3	5SVI11-11..	82.8
1SVI12-12..	73.3	3SVI12-12..	89.6	5SVI12-12..	90.8
1SVI13-13..	79.2	3SVI13-13..	98.1	5SVI13-13..	98.3
1SVI15-15..	90.9	3SVI14-14..	105.6	5SVI14-14..	105.7
1SVI17-17..	105.2	3SVI16-16..	119.9	5SVI15-15..	113.1
1SVI19-19..	117.0	3SVI19-19..	144.3	5SVI16-16..	120.5
1SVI22-22..	134.6	3SVI21-21..	159.3	5SVI18-18..	135.8
1SVI25-25..	152.6	3SVI23-23..	174.0	5SVI21-21..	157.9
1SVI27-27..	164.3	3SVI25-25..	188.5	5SVI23-23..	174.4
1SVI30-30..	181.7	3SVI27-27..	204.4	5SVI25-25..	189.2
1SVI32-32..	197.2	3SVI29-29..	219.3	5SVI28-28..	211.5
1SVI34-34..	209.2	3SVI31-31..	233.8	5SVI30-30..	227.0
1SVI37-37..	225.9	3SVI33-33..	248.5	5SVI33-33..	249.2

10, 15, 22 e-SVI..C / ..M

Model	m	Model	m	Model	m
10SVI02-02..	23.6	15SVI02-02..	28.7	22SVI02-02..	30.4
10SVI03-03..	35.7	15SVI03-03..	43.3	22SVI03-03..	45.4
10SVI04-04..	47.7	15SVI04-04..	58.4	22SVI04-04..	60.9
10SVI05-05..	60.0	15SVI05-05..	72.7	22SVI05-05..	76.0
10SVI06-06..	71.8	15SVI06-06..	87.6	22SVI06-06..	93.2
10SVI07-07..	83.6	15SVI07-07..	101.9	22SVI07-07..	108.5
10SVI08-08..	95.3	15SVI08-08..	117.4	22SVI08-08..	124.6
10SVI09-09..	106.3	15SVI09-09..	131.9	22SVI09-09..	140.1
10SVI10-10..	118.0	15SVI10-10..	147.7	22SVI10-10..	155.4
10SVI11-11..	129.6	15SVI11-11..	162.3	22SVI12-12..	186.1
10SVI13-13..	156.0	15SVI13-13..	191.3	22SVI14-14..	216.6
10SVI15-15..	179.5	15SVI15-15..	222.1	22SVI17-17..	263.5
10SVI17-17..	205.0	15SVI17-17..	251.6	-	-
10SVI18-18..	216.9	-	-	-	-
10SVI20-20..	240.6	-	-	-	-
10SVI21-21..	253.6	-	-	-	-

33, 46 e-SVI..S

Model	m	Model	m	Model	m
SVI 3301/1..	17.4	SVI 4601/1..	19.5	-	-
SVI 3301..	23.8	SVI 4601..	27.2	-	-
SVI 3302/2..	35.1	SVI 4602/2..	38.8	-	-
SVI 3302/1..	40.8	SVI 4602..	52.6	-	-
SVI 3303/2..	57.7	SVI 4603..	80.8	-	-
SVI 3303..	71.5	SVI 4604/2..	92.4	-	-
SVI 3304..	95.9	SVI 4605..	134.5	-	-
SVI 3305/1..	112.7	SVI 4606..	161.0	-	-
SVI 3306/2..	131.2	SVI 4607/2..	171.3	-	-
SVI 3307/2..	156.0	SVI 4608/2..	198.2	-	-
SVI 3307..	170.3	SVI 4609/2..	224.8	-	-
SVI 3308/1..	187.4	-	-	-	-
SVI 3309/1..	210.2	-	-	-	-
SVI 3310/2..	226.4	-	-	-	-
SVI 3310..	241.8	-	-	-	-

66, 92 e-SVI..S

Model	m	Model	m	Model	m
SVI 6601/1..	23.8	SVI 9201/1..	24.5	-	-
SVI 6601..	29.2	SVI 9201..	33.5	-	-
SVI 6602/2..	47.5	SVI 9202/2..	49.4	-	-
SVI 6602..	60.4	SVI 9202..	67.8	-	-
SVI 6603/2..	78.4	SVI 9203/2..	82.4	-	-
SVI 6603..	91.4	SVI 9203..	102.2	-	-
SVI 6604/1..	115.2	SVI 9204/2..	115.7	-	-
SVI 6605/1..	145.6	SVI 9204..	133.1	-	-

8.9.2 60 Hz motors

The tables show the maximum head depending on the pump unit model with 60 Hz motor.

1, 3, 5 e-SVI..E

Model	m	Model	m	Model	m
1SV02-02E	17.4	3SV02-02E	21.3	5SV02-02E	21.9
1SV03-03E	25.7	3SV03-03E	32.6	5SV03-03E	32.7
1SV04-04E	33.9	3SV04-04E	43.4	5SV04-04E	43.9
1SV05-05E	43.6	3SV05-05E	54.7	-	-
1SV06-06E	52.1	3SV06-06E	65.4	-	-
1SV07-07E	61.0	3SV07-07E	76.1	-	-
1SV08-08E	69.4	-	-	-	-
1SV09-09E	77.9	-	-	-	-
1SV10-10E	87.6	-	-	-	-
1SV11-11E	96.2	-	-	-	-
1SV12-12E	104.7	-	-	-	-

1, 3, 5 e-SVI..C / ..M

Model	m	Model	m	Model	m
1SVI02-02..	17.4	3SVI02-02..	21.3	5SVI02-02..	21.9
1SVI03-03..	25.7	3SVI03-03..	32.6	5SVI03-03..	32.7
1SVI04-04..	33.9	3SVI04-04..	43.4	5SVI04-04..	43.9
1SVI05-05..	43.6	3SVI05-05..	54.7	5SVI05-05..	55.0
1SVI06-06..	52.1	3SVI06-06..	65.4	5SVI06-06..	65.9
1SVI07-07..	61.0	3SVI07-07..	76.1	5SVI07-07..	76.5
1SVI08-08..	69.4	3SVI08-08..	87.2	5SVI08-08..	87.2
1SVI09-09..	77.9	3SVI09-09..	97.8	5SVI09-09..	97.8
1SVI10-10..	87.6	3SVI10-10..	109.5	5SVI10-10..	109.2
1SVI11-11..	96.2	3SVI11-11..	120.3	5SVI11-11..	119.9
1SVI12-12..	104.7	3SVI12-12..	131.0	5SVI12-12..	130.6
1SVI13-13..	113.2	3SVI13-13..	141.8	5SVI13-13..	142.5
1SVI15-15..	131.2	3SVI14-14..	152.5	5SVI14-14..	153.4
1SVI17-17..	148.3	3SVI15-15..	164.4	5SVI15-15..	164.2
1SVI18-18..	158.4	3SVI17-17..	185.9	5SVI16-16..	174.9
1SVI20-20..	175.7	3SVI19-19..	207.3	5SVI17-17..	186.4
1SVI22-22..	192.9	3SVI21-21..	230.9	5SVI19-19..	208.0
1SVI24-24..	210.1	3SVI23-23..	252.5	5SVI21-21..	229.6
1SVI26-26..	227.3	-	-	5SVI23-23..	251.0
1SVI28-28..	245.4	-	-	-	-

10, 15, 22 e-SVI..C / ..M

Model	m	Model	m	Model	m
10SVI01-01..	17.0	15SVI01-01..	19.9	22SVI01-01..	22.2
10SVI02-02..	34.2	15SVI02-02..	41.9	22SVI02-02..	44.5
10SVI03-03..	51.8	15SVI03-03..	63.0	22SVI03-03..	66.7
10SVI04-04..	69.2	15SVI04-04..	83.9	22SVI04-04..	89.0
10SVI05-05..	87.3	15SVI05-05..	105.4	22SVI05-05..	111.5
10SVI06-06..	104.5	15SVI06-06..	126.7	22SVI06-06..	133.5
10SVI07-07..	122.1	15SVI07-07..	147.6	22SVI07-07..	156.4
10SVI08-08..	139.2	15SVI08-08..	171.9	22SVI08-08..	178.6
10SVI09-09..	157.4	15SVI09-09..	193.2	22SVI09-09..	201.3
10SVI10-10..	174.7	15SVI10-10..	214.4	22SVI10-10..	223.5
10SVI11-11..	192.0	15SVI11-11..	236.4	-	-
10SVI13-13..	226.7	15SVI12-12..	257.8	-	-
10SVI15-15..	261.2	-	-	-	-

33, 46 e-SVI..S

Model	m	Model	m	Model	m
SVI 3301/1S6	24.5	SVI 4601/1S6	29.1	-	-
SVI 3301S6	34.5	SVI 4601S6	39.9	-	-
SVI 3302/2S6	49.6	SVI 4602/1S6	67.8	-	-
SVI 3302/1S6	59.6	SVI 4602S6	78.2	-	-
SVI 3303/2S6	86.0	SVI 4603S6	117.2	-	-
SVI 3303S6	104.2	SVI 4604/2S6	134.1	-	-
SVI 3304S6	138.3	SVI 4605/1S6	183.1	-	-
SVI 3305/1S6	163.9	-	-	-	-
SVI 3306/2S6	189.0	-	-	-	-

66, 92 e-SVI..S

Model	m	Model	m	Model	m
SVI 6601/1S6	31.4	SVI 9201/1S6	36.4	-	-
SVI 6601S6	43.8	SVI 9201S6	49.5	-	-
SVI 6602/2S6	64.5	SVI 9202/2S6	69.9	-	-
SVI 6602S6	85.4	SVI 9202/1S6	83.6	-	-
SVI 6603/2S6	106.6	SVI 9202S6	97.9	-	-
SVI 6603S6	127.8	-	-	-	-

9 Disposal

9.1 Precautions

WARNING:

The unit must be disposed of through approved companies specialised in the identification of different types of materials (steel, copper, plastic, etc.).

WARNING:

It is prohibited to dispose of lubricating fluids and other hazardous substances in the environment.

9.2 WEEE (EU/EEA)

INFORMATION TO USERS pursuant to art. 14 of the Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE).



The crossed bin symbol on the appliance or on its packaging indicates that the product at the end of its useful life must be collected separately and not disposed of together with other mixed urban waste. Appropriate separate collection for the subsequent start-up of the disused equipment for recycling, treatment and environmentally compatible disposal helps to avoid possible negative effects on the environment and on health and favors the re-use and / or recycling of the materials it is composed of the equipment.

WEEE other than WEEE from private households[2]: the separate collection of this equipment at the end of its life is organized and managed by the producer[3]. The user who wants to get rid of this equipment can then contact the producer and follow the system that it has adopted to allow the separate collection of equipment at the end of life, or select a supply chain independently authorized to manage.

9.3 WEEE (UK)

INFORMATION TO USERS pursuant to art. 44 of the The Waste Electrical and Electronic Equipment Regulations 2013 (S. I. 2013 No. 3113).



The crossed bin symbol on the appliance or on its packaging indicates that the product at the end of its useful life must be collected separately and not disposed of together with other mixed urban waste. Appropriate separate collection for the subsequent start-up of the disused equipment for recycling, treatment and environmentally compatible disposal helps to avoid possible negative effects on the environment and on health and favors the re-use and / or recycling of the materials it is composed of the equipment.

[2] Classification according to product type, use and current local laws

[3] Producer of EEE as per Directive 2012/19/EU

WEEE other than WEEE from private households[4]: the separate collection of this equipment at the end of its life is organized and managed by the producer[5]. The user who wants to get rid of this equipment can then contact the producer and follow the system that it has adopted to allow the separate collection of equipment at the end of life, or select a supply chain independently authorized to manage.

4 Classification according to product type, use and current local laws

5 Producer of EEE as per WEEE Regulations 2013

10Declarations

10.1 Pump unit (electropump), CE

EC Declaration of Conformity (Original)

Xylem Service Italia S.r.l., with headquarters in Via Vittorio Lombardi 14 - 36075 Montecchio Maggiore VI - Italy, hereby declares that the product

pump unit (see the label on the Safety and Other Information manual)

fulfils the relevant provisions of the following European Directives

- Machinery 2006/42/EC and subsequent amendments (ANNEX II - natural or legal person authorised to compile the technical file: Xylem Service Italia S.r.l.)
- Eco-design 2009/125/EC and subsequent amendments, Regulation (EU) No 2019/1781 and subsequent amendments (electric motor 3 ~, 50 or 60 or 50/60 Hz) if IE2 ($P_N \geq 0,12$ and $< 0,75$ kW) or IE3 ($P_N \geq 0,75$ and ≤ 1000 kW) marked, Regulation (EU) No 547/2012 and subsequent amendments (water pump) if MEI marked

and technical standards

- EN ISO 12100:2010, EN 809:1998+A1:2009
  U_N 1 ~ ≤ 250 V, 3 ~ ≤ 480 V: EN 60335-1:2012+A11:2014+A13:2017, EN 60335-2-41:2003+A1:2004+A2:2010, EN 62233:2008.
  U_N 1 ~ > 250 V, 3 ~ > 480 V: EN 60204-1:2006+A1:2009
- EN 60034-30:2009, EN 60034-2-1:2007

Montecchio Maggiore, 26.07.2021

Marco Ferretti
Chairman of the Board of Directors



rev.00

EU Declaration of Conformity (n. 49)

1. EMC Apparatus/Product model:
   see the label on the Safety and Other Information manual
   RoHS - Unique identification of the EEE:
   SVI.
2. Name and address of the manufacturer:
   Xylem Service Italia S.r.l.
   Via Vittorio Lombardi 14
   36075 Montecchio Maggiore VI
   Italy.
3. This declaration of conformity is issued under the sole responsibility of the manufacturer.
4. Object of the declaration:
   Pump unit.
5. The object of the declaration described above is in conformity with the relevant Union harmonization legislation:
   - 2014/30/EU Directive of 26 February 2014 and subsequent amendments (electromagnetic compatibility)
   - 2011/65/EU Directive of 8 June 2011 and subsequent amendments (restriction of the use of certain hazardous substances in electrical and electronic equipment).
6. References to the relevant harmonized standards used or references to the other technical specifications, in relation to which conformity is declared:
   - U_N 1 ~ ≤ 250 V, 3 ~ ≤ 480 V: EN 55014-1:2006+A1:2009+A2:2011, EN 55014-2:1997+A1:2001+A2:2008, EN 61000-3-2:2014, EN 61000-3-3:2013
     U_N 1 ~ > 250 V, 3 ~ > 480 V: EN 61000-6-1:2007, EN 61000-6-3:2007+A1:2011
   - EN IEC 63000:2018.
7. Notified body:
   -.

8. Additional information:
   RoHS - Annex III – Applications exempt from the restrictions: lead as a binding element in steel, aluminium, copper alloys [6(a), 6(b), 6(c)].

Signed for and on behalf of:
Xylem Service Italia S.r.l.

Montecchio Maggiore, 26.07.2021



Marco Ferretti
Chairman of the Board of Directors

rev.00

Lowara is a trademark of Xylem Inc. or one of its subsidiaries.

10.2 Pump, CE

EC Declaration of Conformity (Original)

Xylem Service Italia S.r.l., with headquarters at Via Vittorio Lombardi 14 - 36075 Montecchio Maggiore VI - Italy, hereby declares that the product

pump (see the label on the Safety and Other Information manual)

fulfils the relevant provisions of the following European Directives

- Machinery 2006/42/EC and subsequent amendments (ANNEX II - natural or legal person authorised to compile the technical file: Xylem Service Italia S.r.l.)
- Eco-design 2009/125/EC and subsequent amendments, Regulation (EU) No 547/2012 and subsequent amendments (water pump) if MEI marked

and technical standards:

- EN ISO 12100:2010, EN 809:1998+A1:2009

Montecchio Maggiore, 26.07.2021



Marco Ferretti
Chairman of the Board of Directors

rev.00

Lowara is a trademark of Xylem Inc. or one of its subsidiaries.

10.3 Pump unit (electropump), UKCA

UKCA Declaration of Conformity (Original)

Xylem Service Italia S.r.l., with headquarters in Via Vittorio Lombardi 14 - 36075 Montecchio Maggiore VI - Italy, hereby declares that the product

pump unit (see the label on the Safety and Other Information manual)

fulfils the relevant provisions of the following legal acts

- S.I. 2008/1597 - Supply of Machinery (Safety) Regulations 2008 and subsequent amendments (Schedule 2 - Part 2 - Annex II - natural or legal person authorised to compile the technical file: Xylem Service Italia S.r.l.)
- S.I. 2021/745 - The Ecodesign for Energy-Related Products and Energy Information Regulations 2021 (electric motor 3 ~, 50 or 60 or 50/60 Hz) if IE2 ($P_N \geq 0{,}12$ and $< 0{,}75$ kW) or IE3 ($P_N \geq 0{,}75$ and ≤ 1000 kW) marked, S.I. 2019/539 - The Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2019 (water pump) if MEI marked

and designated standards

- EN ISO 12100:2010, EN 809:1998+A1:2009
  U_N 1 ~ ≤ 250 V, 3 ~ ≤ 480 V: EN 60335-1:2012+A11:2014+A13:2017, EN 60335-2-41:2003+A1:2004+A2:2010, EN 62233:2008
  U_N 1 ~ > 250 V, 3 ~ > 480 V: EN 60204-1:2006+A1:2009

- EN 60034-30:2009, EN 60034-2-1:2007

Montecchio Maggiore, 26.07.2021

Marco Ferretti
Chairman of the Board of Directors



rev.00

UKCA Declaration of Conformity (n. 49)

1. EMC Apparatus/Product model:
   see the label on the Safety and Other Information manual
   RoHS - Unique identification of the EEE:
   SVI.
2. Name and address of the manufacturer:
   Xylem Service Italia S.r.l.
   Via Vittorio Lombardi 14
   36075 Montecchio Maggiore VI
   Italy.
3. This declaration of conformity is issued under the sole responsibility of the manufacturer.
4. Object of the declaration:
   Pump unit.
5. The object of the declaration described above is in conformity with the relevant legal acts:
   - S.I. 2016/1091 - The Electromagnetic Compatibility Regulations 2016 and subsequent amendments
   - S.I. 2012/3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 and subsequent amendments
6. References to the relevant designated standards used or references to the other technical specifications, in relation to which conformity is declared:
   - U_N 1 ~ ≤ 250 V, 3 ~ ≤ 480 V: EN 55014-1:2006+A1:2009+A2:2011, EN 55014-2:1997+A1:2001+A2:2008, EN 61000-3-2:2014, EN 61000-3-3:2013
     U_N 1 ~ > 250 V, 3 ~ > 480 V: EN 61000-6-1:2007, EN 61000-6-3:2007+A1:2011
   - EN IEC 63000:2018.
7. Approved body:
   -.
8. Additional information:
   RoHS - Annex III of 2011/65/EU – Applications exempt from the restrictions: lead as a binding element in steel, aluminium, copper alloys [6(a), 6(b), 6(c)].

Signed for and on behalf of:
Xylem Service Italia S.r.l.

Montecchio Maggiore, 26.07.2021

Marco Ferretti
Chairman of the Board of Directors



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Lowara is a trademark of Xylem Inc. or one of its subsidiaries.

10.4 Pump, UKCA

UKCA Declaration of Conformity (Original)

Xylem Service Italia S.r.l., with headquarters at Via Vittorio Lombardi 14 - 36075 Montecchio Maggiore VI - Italy, hereby declares that the product

pump (see the label on the Safety and Other Information manual)

fulfils the relevant provisions of the following European Directives

- S.I. 2008/1597 - Supply of Machinery (Safety) Regulations 2008 and subsequent amendments (Schedule 2 - Part 2 - Annex II - natural or legal person authorised to compile the technical file: Xylem Service Italia S.r.l.)
- S.I. 2019/539 - The Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2019 (water pump) if MEI marked.

and designated standards:

- EN ISO 12100:2010, EN 809:1998+A1:2009

Montecchio Maggiore, 26.07.2021

Marco Ferretti
Chairman of the Board of Directors



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Lowara is a trademark of Xylem Inc. or one of its subsidiaries.

11Warranty

11.1 Information

For information on the warranty refer to the commercial documentation.

Xylem |'zīləm|

1) The tissue in plants that brings water upward from the roots;
2) A leading global water technology company.

We're a global team unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

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Via Vittorio Lombardi 14
36075 – Montecchio Maggiore (VI) - Italy
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