

Vertical multi-stage in-line pumps

MXV, MXVL, MXV4, MXVL4**OPERATING INSTRUCTIONS****Table of contents**

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READ AND FOLLOW ALL INSTRUCTIONS**1. Operating conditions****Standard construction**

- For clean liquids: non-explosive and non-flammable, non-hazardous for health or the environment, non-aggressive for pump materials, not containing abrasives, solid or fibrous particles.
- With seal rings in EPDM the pump is not suitable for use with oil.
- Maximum final pressure in the pump casing: 25 bar.
- Liquid temperature: -15° to +110°C.
- Installation in well-ventilated locations protected against the weather, with maximum environment temperature of 40°C.

Rated motor power

MXV, MXVL (2900 1/min)	up to kW:	0,75	2,2	4	7,5
MXV4, MXVL4 (1450 1/min)	up to kW:	1,1			
Sound pressure	dB (A) max:	60	68	69	74
Starts per hour	max:	35	30	20	15

The electric data marked on the label are referred to the nominal power of the motor.

When a non-standard motor is installed, refer to the rated operating conditions and noise-level values in the instructions for the motor.

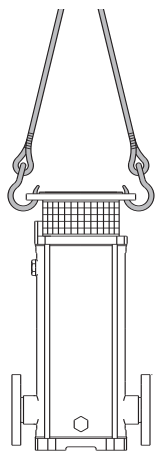


Fig.1a Raising pump without the motor

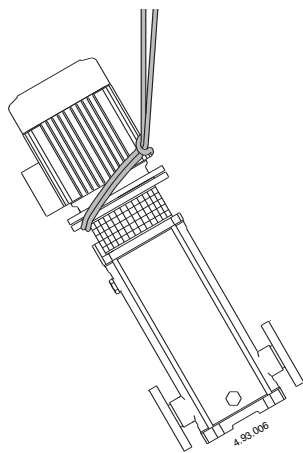


Fig.1b Raising pump with motor

2. Transportation

The safe movement of the equipment is on the user responsibility and any lifting operation must be carried out by a suitably trained and qualified personnel.

Raise and transport the pump and pump-motor unit (without packaging) as indicated in **fig. 1**. Raise the pump-motor unit slowly (**fig.1b**), making sure it does not move from side to side in an uncontrolled way, to avoid the risk of imbalance and tipping up.

3. Installation

The **MXV, MXVL, MXV4, MXVL4** pumps must be installed with the rotor axis in the vertical position and with the base under the pump. Install the pump as close as possible to the suction source (with consideration given to the NPSH value).

Provide space around the pump for motor ventilation, to allow for checking of shaft rotation, for filling and draining the pump and to allow for collection of the liquid to be removed (especially for draining liquids which are harmful or have to be removed at temperatures higher than 60 °C).



Make sure prolonged accidental leakage of liquid does not cause damage to persons or property.

Leakage may develop as a result of surge pressure or water hammer, erroneous operations (such as failing to close a plug or valve) or other functional disorders. Allow for the possibility of channeling away any leaked liquid or for an automatic drainage system against flooding.

Mount the pump on a flat horizontal surface (using a level gauge) such as a solid cement base or a rigid supporting structure in metal. To ensure stability, insert, if necessary, small pieces of calibrated metal plate next to the 4 anchoring screws.

4. Connecting the motor

The **MXV, MXVL, MXV4, MXVL4** pumps are designed for use with standard electric motors with (IEC 34-7) IM V1 construction form and dimensions and output ratings in accordance with IEC 72.

If a pump is supplied without the motor, check the rated power and rpm indicated on the name plate and technical data given in the data sheet.

Before installation clean the motor shaft extension, the key and contact surfaces of the flanges to remove any protective paint, dirt or oxydation.

Lubricate the motor shaft extension with a graphite-base, dripfree, anti-friction product.

Do not use oil as it can harm the mechanical seal below (see **section 9.1.**).

With the pump in the vertical position, insert the motor shaft in the coupling, aligning the key with the key slot and resting the motor flange on the lantern flange.

Turn the motor, adjusting the position of the terminal box as required and aligning the holes on the flanges.

ATTENTION: the 4 flange screws (70.18) with nut must be uniformly tightened with alternated crossover tightening procedure in diametrically opposite positions (see **section 10.1.**).

Before and after tightening the screws (70.18), **make sure the coupling with pump shaft and motor shaft can be freely turned by hand** (remove and then replace the guard 32.30).

ATTENTION: for removing or replacing the motor see **section 9.**

5. Pipes

Provide a diameter assuring a liquid flow velocity not higher than 1.5 m/s for suction, and 3 m/s for delivery.

The pipe diameters must never be smaller than the pump connection ports.

The arrows on the base of the pump (61.00) indicate the inlet (suction) and outlet (delivery) ports.

Ensure the internal pipe surface is clean before connection.

ATTENTION: secure all pipes to their rests close to the pump and connect them so that they are not subjected to stress and do not transmit vibration or flexion strain to the pump (see **fig.2**).

Provide for the possibility of draining the pump without having to drain the entire system.

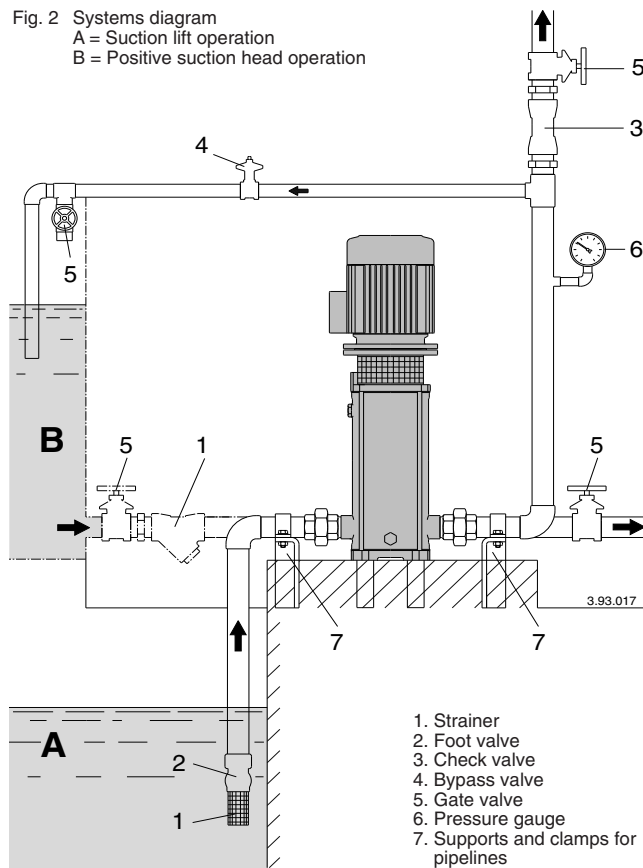
Install correctly any compensators for absorption of expansion or impeding noise transmission.

Screw the union couplings or the flanges into the **threaded ports** (ISO 228) by inserting in the joint a suitable sealing material.

Tighten the pipes or union couplings only to the extent sufficient to ensure a tight seal. Excessive torque may damage the pump.

With **flanged ports** make sure the gaskets do not protrude inside the pipes.

Fig. 2 Systems diagram
 A = Suction lift operation
 B = Positive suction head operation



5.1. Suction pipe

When a pump is located above the water level (suction lift operation, **fig. 2 A**), fit a foot valve with a strainer, which must always remain immersed. The suction pipe must be perfectly airtight and be led upwards in order to avoid air pockets.

When the liquid level on the suction side is above the pump (inflow under positive suction head, **fig. 2 B**), fit a gate valve. Follow local specifications if increasing network pressure.

Install a strainer on the suction side of the pump to prevent foreign particles from entering the pump.

5.2 Delivery pipe

Install a gate valve in the delivery pipe to regulate flow-rate, head and absorbed power. Install a pressure gauge between the pump and the gate valve.

ATTENTION: install a check valve between the pump and the gate valve in order to avoid reverse flow after switching off the pump unit and to protect the pump from water hammering.

With servo-operated shut-off devices, provide an air vessel or other protection device against surge of pressure in the case of sudden changes of flow rate.

6. Electrical connection

Electrical connection must be carried out only by a qualified electrician in accordance with local regulations. Follow all safety standards.

The unit must be properly earthed (grounded). Connect the earthing (grounding) conductor to the terminal with the \perp marking. Compare the frequency and mains voltage with the name-plate motor data and connect the supply conductors to the terminals in accordance with the corresponding diagram inside the terminal box.

ATTENTION: with motor power rating ≥ 5.5 kW avoid direct starting. Provide a control panel with star-delta starting or an other starting device.

The motors with supply current directly switched by thermally sensitive switches can start automatically.

Install a **device for disconnection from the mains** (switch) with a contact separation of at least 3 mm in all poles. Install a suitable overload cutout in accordance with the rated current. Refer to any other instructions (if supplied) for use of the motor.

7. Starting

7.1. Preliminary checks

Make sure the coupling with the pump shaft turns freely when rotated by hand (see **section 4.**). Make sure the screws (64.25) of the coupling are tightened (see **section 10.2.**).

Make sure the coupling guard (32.30) is fastened on the lantern bracket.

7.2. Filling

ATTENTION: never run the pump dry, not even for a short trial run. Start the pump after filling it completely with liquid.

When the pump is located above the water level (suction lift operation, **fig. 2A**) or with a positive suction head which is too low (less than 1 m) to open the non-return valve, fill the suction pipe and the pump through the priming hole (**fig. 3**). To facilitate this operation use a flexible tube (or elbow) and a funnel.

During filling, the needle screw (14.17) in the drainage plug (14.12) has to be kept loosened to allow for communication between the pressure chamber and the suction chamber (**Fig.3a**).

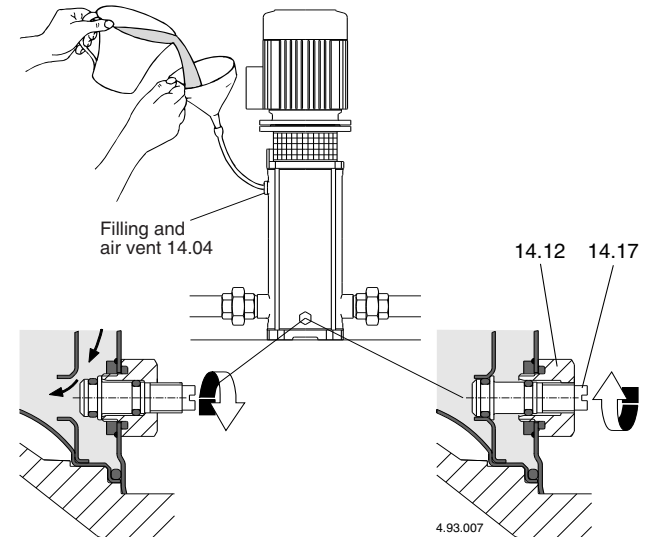


Fig.3a Filling: internal passage open

Fig.3b Operating: internal passage closed

When the liquid level on the suction side is above the pump (inflow under positive suction head, **fig. 2B**), fill the pump by slowly and completely opening the inflow gate valve while keeping the delivery gate valve and air vent hole open to release the air.

During filling, keep the air vent hole open only if the inflowing liquid presents no possible danger on account of its nature, temperature or pressure.

With a delivery pipe arranged horizontally, or lower than the pump, keep the delivery gate valve closed during the filling operation.

7.3. Starting and checking operations

Tighten the needle screw (14.17) in the drainage plug (14.12) (**fig. 3b**) and close the air vent hole (14.04). Start the pump with the delivery gate valve closed and with the suction gate valve fully open. Immediately afterwards, gradually open the delivery gate valve, adjusting the point of operation within the limits indicated on the name plate.

With a three-phase motor, check that the direction of rotation is as shown by the arrow on the lantern bracket (32.00): i.e. clockwise when viewing the motor from the fan end. Otherwise disconnect electrical power and reverse the connections of two phases.

Check that the pump works within its field of performance and that the absorbed current shown on the name-plate is not exceeded. Otherwise adjust the delivery gate valve or the setting of any pressure switches.

If a priming loss occurs (interruption of delivery flow, despite opened gate valves) or if a pressure oscillation is indicated on the pressure gauge, make sure all the suction pipe couplings are perfectly sealed and tighten the needle screw in the drainage plug (fig. 3b).

ATTENTION: when the pump is located above the water level (suction lift operation, fig. 2A), after a long idle period, before restarting the unit, check that the pump is still filled with liquid and vented.

Otherwise, check for proper operation (opening and closing) of the foot valve and fill the pump with liquid (see section 7.2.).

Never run the pump for more than five minutes with a closed gate valve.

Prolonged operation without a change of water in the pump causes dangerous increases of temperature and pressure.

In systems in which it may be possible to operate with a closed delivery gate valve, install a bypass valve (fig. 2) to ensure a minimum flow of about: 0.3 m³/h for MXV.. 25-2; 0.5 m³/h for MXV.. 32-4; 1 m³/h for MXV.. 40-8.

When the water is overheated due to prolonged operation with a closed port, stop the pump before opening the gate valve.

To avoid any risk of danger to users and the creation of harmful thermal stress in the pump and system due to large temperature differentials, wait until the water has cooled inside the pump before starting again or before opening the drainage and filling plugs.

Care must be taken when the pumped fluid has a high temperature. Do not touch the fluid when its temperature is higher than 60 °C. Do not touch the pump or motor when their surface temperature is higher than 80 °C.

8. Maintenance and monitoring pump operation

Under normal operating conditions the pump-motor unit will not require maintenance.

Conduct routine inspection on the pump and connected parts to check for a perfect seal.

Check the seal on the shaft from the outside through the coupling guard.

The special funnel-shaped lantern bracket is designed to contain any small initial leaks.

Keep the pump and surrounding part clean so as to be able to immediately detect any outward leakage.

Clean the filter in the suction pipe and/or foot valve at regular intervals; check performance and absorbed current.

The ball bearings in the motor and the ball bearing in the pump (66.00 - see section 9.2) have permanent lubrication.

No regreasing is necessary.

See the operating instructions of the motor (if supplied).

Remove any excess grease expelled from the ball-bearing (66.00) after the first period of operation.

In the case of water containing chloride (chlorine or sea water) the risk of corrosion increases in stagnant water conditions (also with an increase in temperature and decrease of pH value). In these cases, if the pump remains inactive for long periods, it must be emptied completely.

For good measure, as for temporary operation with dirty liquids, run the pump briefly with clean water to remove deposits.

When the pump remains inactive it must be emptied completely if there is a risk of freezing (fig.4).

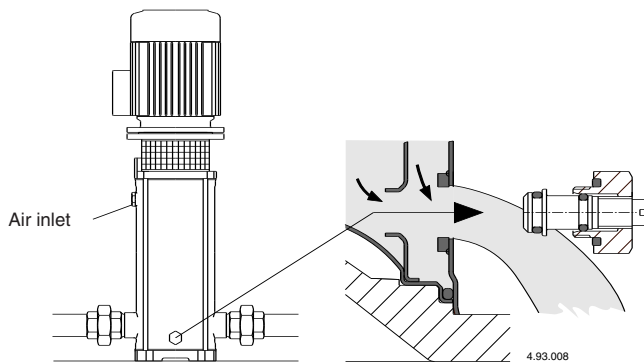


Fig. 4 Drainage

Before starting the motor again fill the pump completely with liquid (see section 7.2.) and make sure the shaft is not jammed by encrustation, sticking of the faces of the mechanical seal or other causes. In the event that the shaft cannot be moved by hand, the pump has to be dismantled and cleaned.



Disconnect electrical power before any servicing operation and make sure the pump cannot be accidentally switched on.

9. Dismantling

Before dismantling, close the gate valves in the suction and delivery pipes and empty the pump casing (fig. 4).

For dismantling and re-assembly refer to the section drawing (section 12.) and figures 5 and 6.

Dismantling and inspection of all internal parts can be carried out without removing the pump casing (external jacket 14.02) from the pipeline.

Sequence for dismantling:

1. Mark the position of the motor on the lantern bracket (32.00) and the position of the lantern bracket on the external jacket (14.02).
2. Remove the screw (32.32) with the washer (32.31) and the coupling guard (32.30).
3. Loosen the screws (64.25) of the coupling (64.22).

ATTENTION: to avoid compressing the spring of the mechanical seal (36.00) because of axial shifting of the shaft (64.00), we recommend to loosen the screws (64.25) of the coupling (64.22) even only for removing or replacing the motor. Afterward reposition the shaft (64.00) as indicated in section 10.2.

4. Disconnect the power cable from the terminal box, remove the screws (70.18) with the nuts (70.19) and **remove the motor** away from the coupling (64.22).
 5. Remove the nuts (61.04) from the tiebolts (61.02).
 6. **Remove the lantern bracket** (32.00), complete with bearing (66.00) and coupling (64.22) from the shaft (64.00) and from the external jacket (14.02).
- Once the lantern bracket (32.00) has been removed, all the internal parts can be extracted with the shaft (64.00) from the external jacket (14.02).
7. Remove the upper cover (34.02) with the o-ring (14.20) and then the delivery casing (20.00).

9.1 Replacing the mechanical seal

Remove the mechanical seal (36.00), the rotating part from the shaft (64.00), making sure the shaft is not scratched, and then the fixed part from the upper cover (34.02).

Make sure the spring of the new mechanical seal is set with the direction of the winding suitable for the direction of rotation of the shaft: i.e. clockwise when seen from the stationary ring.

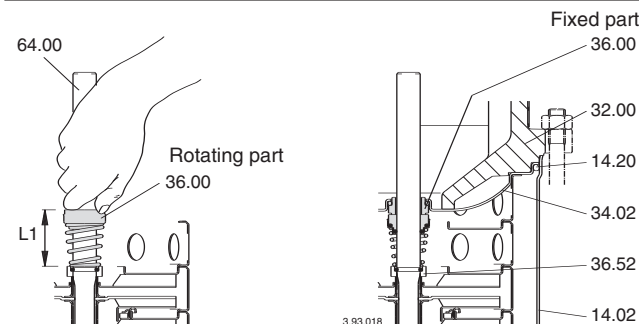


Fig.5 Inserting the mechanical seal

Make sure that all parts with which the mechanical seal comes into contact are perfectly clean and free from any burr or cutting edges.

The seal rings in EPDM (Ethylene-Propylene) must never come into contact with oil or grease. To facilitate the mounting of the mechanical seal, lubricate the shaft, the seating of the stationary part and the seal rings with clean water or any other lubricant compatible with the material in which the seal rings are made.

Push the rotating part as far as the shoulder ring (36.52) on the shaft (64.00), without compressing the spring. Check the length before and after insertion and raise the rotating ring as far as the initial length (L1 in fig.5).

In this way, correct compression of the spring will be ensured when the fixed part is mounted and after the shaft is locked in the coupling (L2 in fig.6b).

Use every precaution so as not to damage the seal surfaces with blows or angular impact.

9.2. Replacing the ball bearing

If the ball bearing (66.00) has to be replaced, use a 2Z C3-type, of the size marked on the ball bearing to be replaced and containing grease lubricant suitable for the operating temperature.

The size of the bearing depends on the size of the motor:

motor size	ball bearing
80	6206, 2Z, C3
90	6207, 2Z, C3
100-112	6208, 2Z, C3
132	6310, 2Z, C3

9.3. Bearing in the second stage and intermediate bearing

The MXV.. 25-2, 32-4, 40-8 pumps have a bearing sleeve (64.10) on the shaft (64.00) and a bearing in the stage casing (25.03) behind the second impeller (according to the order of suction).

Starting with the MXV.. 25-212, MXV.. 32-412 and MXV.. 40-811 units, there are also one or two intermediate bearings (see section 12.1.).

If they are to be dismantled, first number the position of each stage casing and the single spacer sleeves (see lengths and positions of sleeves in section 12.1.) so as to be able to re-mount the components correctly.

10. Remounting

To remount the components follow the dismantling procedure in inverse order (see section 9.).

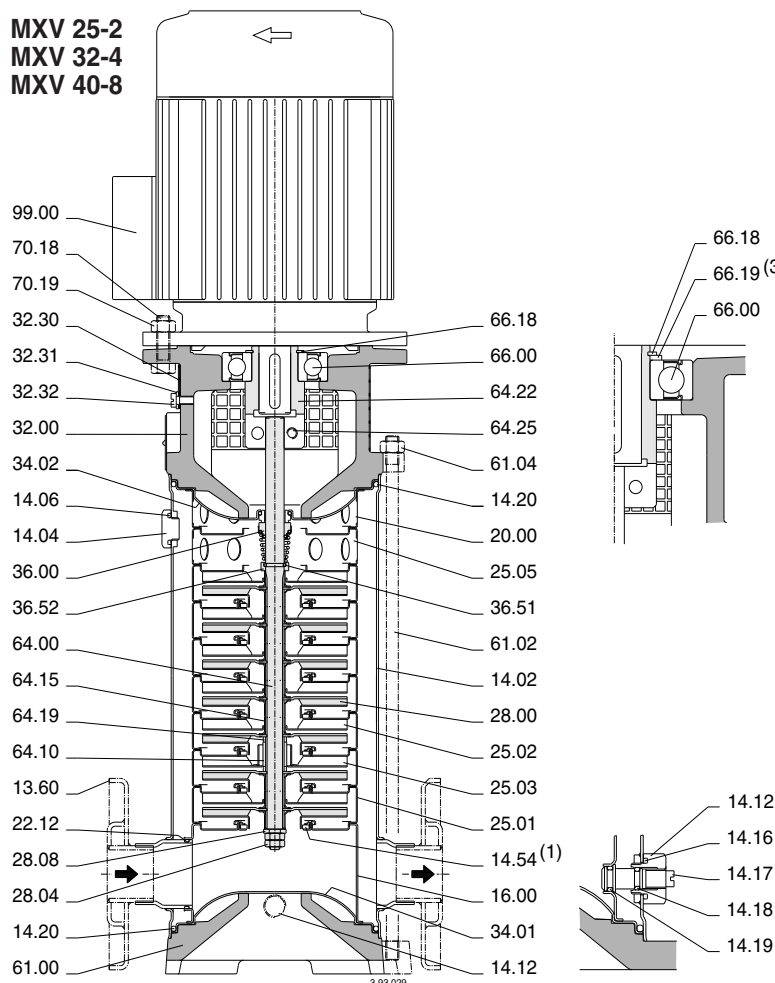
When inserting the shaft (64.00) with the internal parts of the pump into the external jacket (14.02), make sure that the first stage casing (25.01) in the suction casing (16.00) and the stage casing with bearing (25.03) in the first stage casing (25.01) are correctly inserted.

Check the state of the o-rings (14.20) and replace them if they are damaged. Make sure that the o-rings (14.20) are correctly inserted on their seats on the pump casing (14.00) and upper cover (34.02). Lubricate the seal rings with clean water or any other compatible lubricant.

10.1. Tightening torque

impeller nuts (28.04)	nuts (61.04) on tie-bolts	screws (64.25) in the coupling	screws (70.18) with nuts (70.19)
8 Nm	50 Nm	22 Nm	40 Nm

MXV 25-2
MXV 32-4
MXV 40-8



When tightening the nuts (28.04), be careful not to scratch the shaft with the second wrench used on the opposite side.

ATTENTION: the nuts (61.04) on the tie-bolts (61.02) and the screws (70.18) with the nuts (70.19) on the lantern bracket must be uniformly tightened with alternated crossover tightening procedure in diametrically opposite positions.

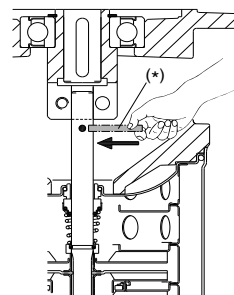


Fig. 6a
Rotor rested, with shaft not locked in the coupling.
(*) Pin for raising the shaft.

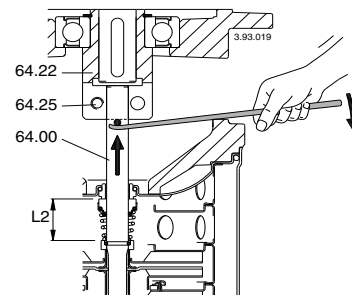


Fig. 6b
Rotor raised, position for locking the shaft in the coupling.

10.2. Axial position of the pump rotor

In the vertical position and from the resting position (fig.6a), raise the rotor, levering on a pin inserted in the hole in the shaft, until the pin can be rested under the coupling (64.22).

In this position (fig. 6b), by tightening the screws (64.25) uniformly, the shaft (64.00) is locked tight in the coupling.

Remove the pin.

Mount the motor as indicated in section 4.

11. Spare parts

When ordering spare parts please quote their designation, position number in the cross section drawing (section 12.) and rated data from the pump name plate (type, date and serial number).



Any pumps that require inspection/repair must be drained and carefully cleaned inside and outside before dispatch/submission.


12. Cross section drawing and designation of parts


Nr.	Designation
13.60	Flange with adapter
14.02	External jacket
14.04	Plug
14.06	O-ring
14.12	Plug
14.16	O-ring
14.17	Screw
14.18	O-ring
14.19	O-ring
14.20	O-ring
14.54	Wear ring (1)
16.00	Suction casing
20.00	Delivery casing
22.12	O-ring, suction side
25.01	First stage casing
25.02	Stage casing
25.03	Stage casing with bearing
25.05	Last stage casing
28.00	Impeller
28.04	Impeller nut
28.08	Washer
32.00	Lantern bracket
32.30	Guard
32.31	Washer
32.32	Screw
34.01	Lower cover
34.02	Upper cover
36.00	Mechanical seal
36.51	Retaining ring, split
36.52	Shoulder ring
61.00	Base
61.02	Tie-bolt
61.04	Nut
64.00	Shaft
64.10	Bearing sleeve
64.15	Spacer sleeve
64.19	Spacer sleeve, bearing stage
64.22	Coupling
64.25	Screw
66.00	Ball bearing
66.18	Circlip
66.19	Shoulder ring (3)
70.18	Screw
70.19	Nut
99.00	Motor, complete


(1) Inserted in the stage casing (cannot be supplied separately)
(2) See section 12.1.
(3) Only for motor size 132


Changes reserved.


12.1. Composizione stadi, giranti e bussole
Stages, impellers and sleeves composition
Stufen-, Laufräder- und Hülsenzusammensetzung
Composition des étages, roues et entretoises
Composición elementos, rodetes y distanciadores
Mellandelarnas, pumphjulen och slitringarnas sammansättning
Trappen-, waaiers-, en bussensamenstelling
Οδηγά πτερύγια, πτερωτές και χιτώνια σύνθεσης
Состав ступеней, Рабочее колесо и втулок


20.00  Corpo premente
 Delivery casing
 Druckgehäuse
 Corps de refoulement
 Cuerpo impulsión
 Pumphus, trycksida
 Pershuis
 Σώμα κατάθλιψης
 Корпус подающей части

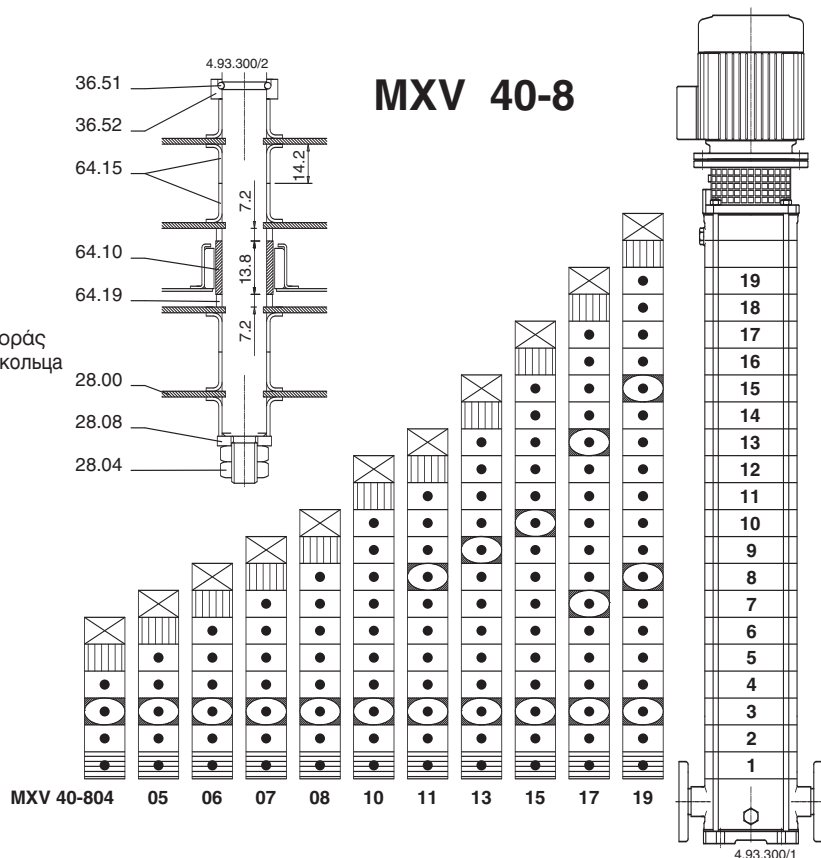
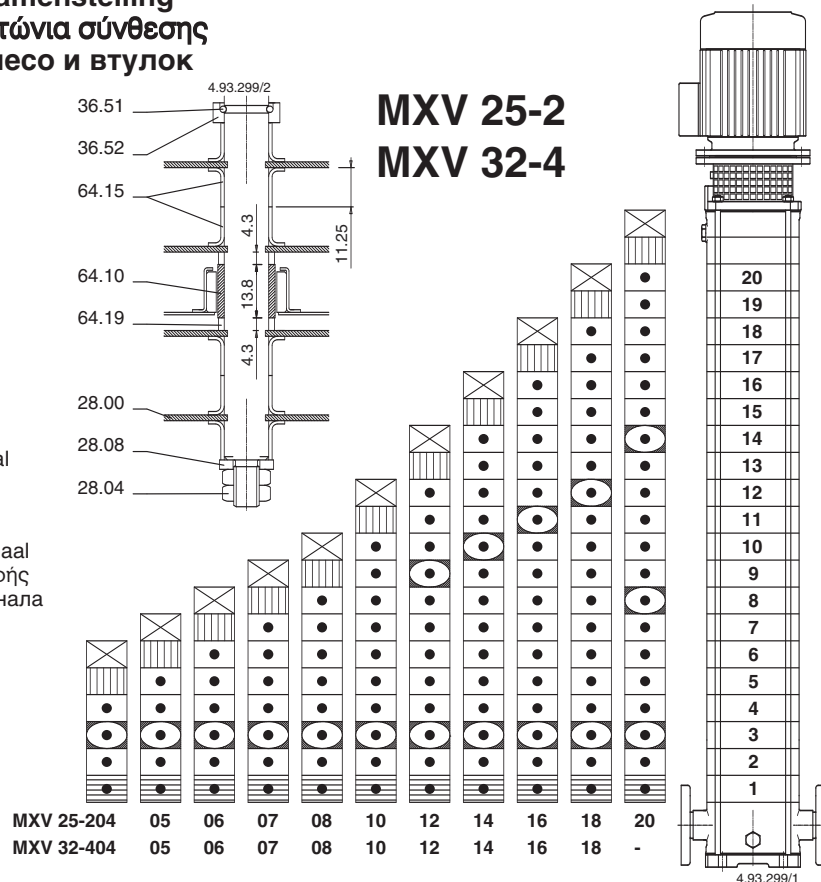
25.01  Corpo primo stadio, senza canale di ritorno
 First stage casing, without return channel
 Stufengehäuse erste Stufe, ohne Rückführkanal
 Corps premier étage, sans canal de retour
 Cuerpo primera etapa, sin canal de retorno
 Mellandel första steget, utan returkanal
 Waaierhuis eerste trap, zonder terugstroomkanaal
 Πρώτο οδηγό πτερύγιο χωρίς κανάλι επιστροφής
 Корпус первой ступени, без возвратного канала

25.02  Corpo stadio con canale di ritorno
 Stage casing with return channel
 Stufengehäuse mit Rückführkanal
 Corps d'étage avec canal de retour
 Cuerpo elemento con canal de retorno
 Mellandel med returkanal
 Waaierhuis, met terugstroomkanaal
 Οδηγό πτερύγιο με κανάλι επιστροφής
 Корпус ступени с возвратным каналом

25.03  Corpo stadio con cuscinetto
 Stage casing with bearing
 Stufengehäuse mit Lager
 Corps d'étage avec coussinet
 Cuerpo elemento con cojinete
 Mellandel med lager
 Waaierhuis met lager
 Οδηγό πτερύγιο με τριβείς
 Корпус ступени с подшипником

25.05  Corpo ultimo stadio senza anello di tenuta
 Last stage casing without wear ring
 Stufengehäuse letzte Stufe ohne Spaltring
 Corps dernier étage sans bague d'usure
 Cuerpo ultimo elemento sin anillo cierre
 Mellandel sista steget utan slitring
 Waaierhuis laatste trap, zonder slijtring
 Τελευταίο οδηγό πτερύγιο χωρίς δακτύλιο θφοράς
 Корпус последней ступени без уплотнительного кольца

28.00  Girante
 Impeller
 Laufrad
 Roue
 Rodete
 Pumphjul
 Waaier
 Πτερωτή
 Рабочее колесо



I**DICHIARAZIONE DI CONFORMITÀ**

Noi CALPEDA S.p.A. dichiariamo sotto la nostra esclusiva responsabilità che le Pompe MXV, MXVL, MXV4, MXVL4, tipo e numero di serie riportati in targa, sono conformi a quanto prescritto dalle Direttive 2004/108/CE, 2006/42/CE, 2006/95/CE e dalle relative norme armonizzate.

GB**DECLARATION OF CONFORMITY**

We CALPEDA S.p.A. declare that our Pumps MXV, MXVL, MXV4, MXVL4, with pump type and serial number as shown on the name plate, are constructed in accordance with Directives 2004/108/EC, 2006/42/EC, 2006/95/EC and assume full responsibility for conformity with the standards laid down therein.

D**KONFORMITÄTSERKLÄRUNG**

Wir, das Unternehmen CALPEDA S.p.A., erklären hiermit verbindlich, daß die Pumpen MXV, MXVL, MXV4, MXVL4, Typbezeichnung und Fabrik-Nr. nach Leistungsschild den EG-Vorschriften 2004/108/EG, 2006/42/EG, 2006/95/EG entsprechen.

F**DECLARATION DE CONFORMITE**

Nous, CALPEDA S.p.A., déclarons que les Pompes MXV, MXVL, MXV4, MXVL4, modèle et numero de série marqués sur la plaque signalétique sont conformes aux Directives 2004/108/CE, 2006/42/CE, 2006/95/CE.

E**DECLARACION DE CONFORMIDAD**

En CALPEDA S.p.A. declaramos bajo nuestra exclusiva responsabilidad que las Bombas MXV, MXVL, MXV4, MXVL4, modelo y numero de serie marcados en la placa de características son conformes a las disposiciones de las Directivas 2004/108/CE, 2006/42/CE, 2006/95/CE.

DK**OVERENSSTEMMELSESERKLÆRING**

Vi CALPEDA S.p.A. erklærer hermed at vore pumper MXV, MXVL, MXV4, MXVL4, pumpe type og serie nummer vist på typeskiltet er fremstillet i overensstemmelse med bestemmelserne i Direktiv 2004/108/EC, 2006/42/EC, 2006/95/EC og er i overensstemmelse med de heri indeholdte standarder.

P**DECLARAÇÃO DE CONFORMIDADE**

Nós, CALPEDA S.p.A., declaramos que as nossas Bombas MXV, MXVL, MXV4, MXVL4, modelo e número de série indicado na placa identificadora são construídas de acordo com as Directivas 2004/108/CE, 2006/42/CE, 2006/95/CE e somos inteiramente responsáveis pela conformidade das respectivas normas.

NL**CONFORMITEITSVERKLARING**

Wij CALPEDA S.p.A. verklaren hiermede dat onze pompen MXV, MXVL, MXV4, MXVL4, pomptype en serienummer zoals vermeld op de typeplaat aan de EG-voorschriften 2004/108/EU, 2006/42/EU, 2006/95/EU voldoen.

SF**VAKUUTUS**

Me CALPEDA S.p.A. vakuutamme että pumppumme MXV, MXVL, MXV4, MXVL4, malli ja valmistusnumero tyypikilvcsstä, ovat valmistettu 2004/108/EU, 2006/42/EU, 2006/95/EU direktiivien mukaisesti ja CALPEDA ottaa täyden vastuun siitä, että tuotteet vastaavat näitä standardeja.

S**EU NORM CERTIFIKAT**

CALPEDA S.p.A. intygar att pumpar MXV, MXVL, MXV4, MXVL4, pumptyp och serienummer, visade på namnplåten är konstruerade enligt direktiv 2004/108/EC, 2006/42/EC, 2006/95/EC. Calpeda åtar sig fullt ansvar för överensstämmelse med standard som fastställts i dessa avtal.

GR**ΔΗΛΩΣΗ ΣΥΜΦΩΝΙΑΣ**

Εμείς ως CALPEDA S.p.A. δηλώνουμε ότι οι αντλίες μας αυτές MXV, MXVL, MXV4, MXVL4, με τύπο και αριθμό σειράς κατασκευής όπου αναγράφεται στην πινακίδα της αντλίας, κατασκευάζονται σύμφωνα με τις οδηγίες 2004/108/ΕΟΚ, 2006/42/ΕΟΚ, 2006/95/ΕΟΚ, και αναλαμβάνουμε πλήρη υπευθυνότητα για συμφωνία (συμμόρφωση), με τα στάνταρς των προδιαγραφών αυτών.

TR**UYGUNLUK BEYANI**

Bizler CALPEDA S.p.A. firması olarak MXV, MXVL, MXV4, MXVL4, Pompalarımızın, 2004/108/EC, 2006/42/EC, 2006/95/EC, direktiflerine uygun olarak imal edildiklerini beyan eder ve bu standartlara uygunluğuna dair tüm sorumluluğu üstleniriz.

RU**Декларация соответствия**

Компания "Calpeda S.p.A." заявляет с полной ответственностью, что насосы серий MXV, MXVL, MXV4, MXVL4, тип и серийный номер которых указывается на заводской табличке соответствуют требованиям нормативов 2004/108/CE, 2006/42/CE, 2006/95/CE.

Montorso Vicentino, 01.2010

Il Presidente

Licia Mettito

MXV 50-16, 65-32, 80-48

OPERATING INSTRUCTIONS

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READ AND FOLLOW ALL INSTRUCTIONS

1. Operating conditions

Standard construction

- For clean liquids: non-explosive and non-flammable, non-hazardous for health or the environment, non-aggressive for pump materials, not containing abrasives, solid or fibrous particles.
- With seal rings in EPDM the pump is not suitable for use with oil.
- Maximum final pressure in the pump casing: 25 bar.
- Liquid temperature: -15°C to +110°C.
- Installation in well-ventilated locations protected against the weather, with maximum environment temperature of 40°C.

2900 1/min

Rated motor power	up to kW:	4	7,5	22
Sound pressure	dB (A) max:	69	74	76
Starts/hour	max:	30	24	15

When a non-standard motor is installed, refer to the rated operating conditions and noise-level values in the instructions for the motor.

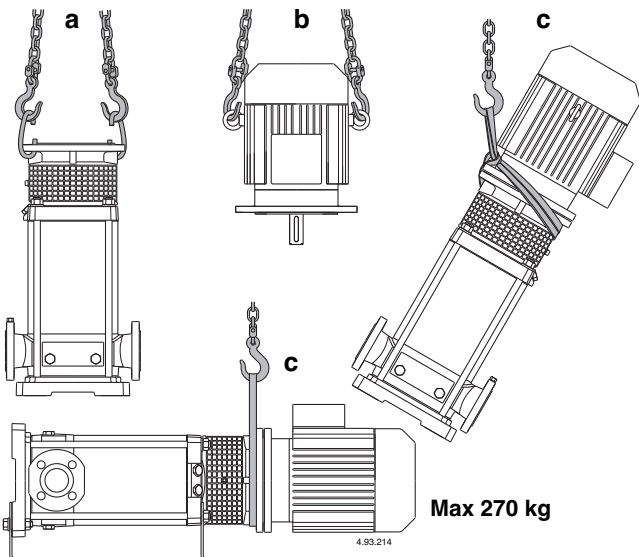


Fig.1 a Raising pump without the motor
b Raising motor without the pump
c Raising pump with motor

2. Transportation

Raise and transport the pump and pump-motor unit (without packaging) as indicated in **fig. 1**. Raise the pump-motor unit slowly (**fig.1c**), making sure it does not move from side to side in an uncontrolled way, to avoid the risk of imbalance and tipping up. For horizontal raising, brace the pump in a sling close to the centre of gravity.

3. Installation

The MXV 50-16, 65-32 and 80-48 standard version pumps must be installed with the rotor axis in the vertical position and with the base under the pump.

They can also be installed in the horizontal position, using the appropriate support feet, which are supplied on request (see **section 11.**).

Install the pump as close as possible to the suction source (with consideration given to the NPSH value).

Provide space around the pump for motor ventilation, to allow for checking of shaft rotation, for filling and draining the pump and to allow for collection of the liquid to be removed (especially for draining liquids which are harmful or have to be removed at temperatures higher than 60 °C).



Make sure prolonged accidental leakage of liquid does not cause damage to persons or property.

Leakage may develop as a result of surge pressure or water hammer, erroneous operations (such as failing to close a plug or valve) or other functional disorders. Allow for the possibility of channeling away any leaked liquid or for an automatic drainage system against flooding.

Mount the pump on a flat horizontal surface (using a level gauge) such as a solid cement base or a rigid supporting structure in metal. To ensure stability, insert, if necessary, small pieces of calibrated metal plate next to the 4 anchoring screws.

4. Connecting the motor

The MXV pumps are designed for use with standard electric motors with (IEC 34-7) IM V1 construction form and dimensions and output ratings in accordance with IEC 72.

If a pump is supplied without the motor, check the rated power and rpm indicated on the name plate and technical data given in the data sheet.

ATTENTION: the motors must have two lifting points in diametrically opposite positions for vertical lifting with the shaft end downwards (**fig.1 b**)

Before installation clean the motor shaft extension, the key and contact surfaces of the flanges to remove any protective paint, dirt or oxydation.

Lubricate the motor shaft extension with a graphite-base, dripfree, anti-friction product.

Do not use oil as it can harm the mechanical seal below (see **section 9.1.**).

With the pump in the vertical position, insert the motor shaft in the coupling, aligning the key with the key slot and resting the motor flange on the lantern flange.

Turn the motor, adjusting the position of the terminal box as required and aligning the holes on the flanges.

ATTENTION: the 4 flange screws (70.18) with nut must be uniformly tightened with alternated crossover tightening procedure in diametrically opposite positions (see **section 10.1.**).

Before and after tightening the screws (70.18), **make sure the coupling with pump shaft and motor shaft can be freely turned by hand** (remove and then replace the guard 32.30).

ATTENTION: for removing or replacing the motor see **section 9.**

5. Pipes

Provide a diameter assuring a liquid flow velocity not higher than 1.5 m/s for suction, and 3 m/s for delivery.

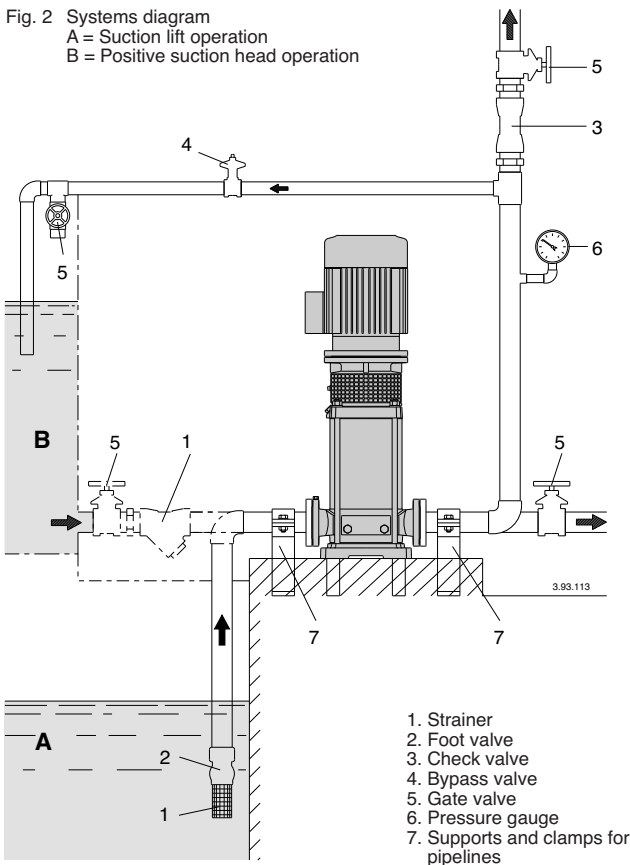
The pipe diameters must never be smaller than the pump connection ports.

The arrows on the pump casing (14.00) indicate the inlet (suction) and outlet (delivery) ports.

Ensure the internal pipe surface is clean before connection.

Secure all pipes to their rests close to the pump and connect them so that they are not subjected to stress and do not transmit vibration or flexion strain to the pump (see **fig.2**).

Fig. 2 Systems diagram
 A = Suction lift operation
 B = Positive suction head operation



1. Strainer
2. Foot valve
3. Check valve
4. Bypass valve
5. Gate valve
6. Pressure gauge
7. Supports and clamps for pipelines

Provide for the possibility of draining the pump without having to drain the entire system.

Install correctly any compensators for absorption of expansion or impeding noise transmission.
 Make sure gaskets do not protrude inside the pipes.

5.1. Suction pipe

When a pump is located above the water level (suction lift operation, **fig. 2 A**), fit a foot valve with a strainer, which must always remain immersed.

The suction pipe must be perfectly airtight and be led upwards in order to avoid air pockets.

When the liquid level on the suction side is above the pump (inflow under positive suction head, **fig. 2 B**), fit a gate valve.
 Follow local specifications if increasing network pressure.

Install a strainer on the suction side of the pump to prevent foreign particles from entering the pump.

5.2 Delivery pipe

Install a gate valve in the delivery pipe to regulate flow-rate, head and absorbed power.

Install a pressure gauge between the pump and the gate valve.

ATTENTION: install a check valve between the pump and the gate valve in order to avoid reverse flow after switching off the pump unit and to protect the pump from water hammering.

With servo-operated shut-off devices, provide an air vessel or other protection device against surge of pressure in the case of sudden changes of flow rate.

6. Electrical connection



Electrical connection must be carried out only by a qualified electrician in accordance with local regulations.

Follow all safety standards.

The unit must be properly earthed (grounded).

Connect the earthing (grounding) conductor to the terminal with the \equiv marking.

Compare the frequency and mains voltage with the name-plate motor data and connect the supply conductors to the terminals in accordance with the corresponding diagram inside the terminal box.

ATTENTION: with motor power rating ≥ 5.5 kW avoid direct starting. Provide a control panel with star-delta starting or an other starting device.



The motors with supply current directly switched by thermally sensitive switches can start automatically.

Install a **device for disconnection from the mains** (switch) with a contact separation of at least 3 mm in all poles.

Install a suitable overload cutout in accordance with the rated current.

Refer to any other instructions (if supplied) for use of the motor.

7. Starting

7.1. Preliminary checks

Make sure the coupling with the pump shaft turns freely when rotated by hand (see **section 4.**).

Make sure the screws (64.25) of the coupling are tightened (see **section 10.2.**).



Make sure the coupling guard (32.30) is fastened on the lantern bracket.

7.2. Filling

ATTENTION: never run the pump dry, not even for a short trial run.
 Start the pump after filling it completely with liquid.

When the pump is located above the water level (suction lift operation, **fig. 2A**) or with a positive suction head which is too low (less than 1 m) to open the non-return valve, fill the suction pipe and the pump through the priming hole (1) (**fig. 3**).

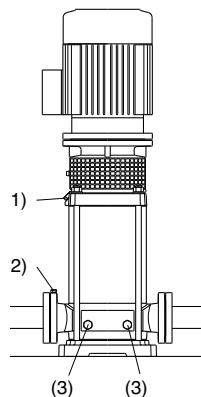
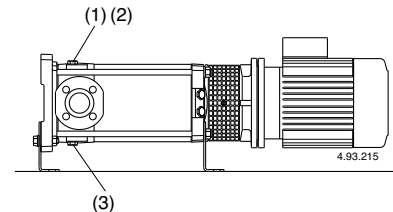


Fig.3 (1) Filling and air vent
 (2) Suction side air vent
 (3) Draining



In the case of vertical installation, remove the plug (2) during the filling operation to vent the suction side. After the liquid has been released, replace the plug (2). Proceed with filling until the liquid spills out of the venting hole (1) in the upper cover. Top up until the pump is completely vented before replacing the plugs (1). In the case of horizontal installation, fill and vent through the holes (1) in the pump casing (14.00).

When the liquid level on the suction side is above the pump (inflow under positive suction head, **fig. 2B**), fill the pump by slowly and completely opening the inflow gate valve while keeping the delivery gate valve and air vent holes (1), (2) (**fig.3**) open to release the air.



During filling, keep the air vent holes (1)(2) open only if the inflowing liquid presents no possible danger on account of its nature, temperature or pressure.

If necessary, install joints with a tap/valve device to holes 1 and 2, to control the outflow of the liquid and its direction of flow.

With a delivery pipe arranged horizontally, or lower than the pump, keep the delivery gate valve closed during the filling operation.

7.3. Starting and checking operations

Close the air vent holes (1), (2) (**fig.3**).

Start the pump with the delivery gate valve closed and with the suction gate valve fully open. Immediately afterwards, gradually open the delivery gate valve, adjusting the point of operation within the limits indicated on the name plate.

Check that the direction of rotation is as shown by the arrow on the upper cover (34.02): i.e. counter-clockwise when viewing the motor from the fan end. Otherwise disconnect electrical power and reverse the connections of two phases.

Check that the pump works within its field of performance and that the absorbed current shown on the name-plate is not exceeded. Otherwise adjust the delivery gate valve or the setting of any pressure switches.

If a priming loss occurs (interruption of delivery flow, despite opened gate valves) or if a pressure oscillation is indicated on the pressure gauge, repeat the venting operation on the suction side (2), make sure all the suction pipe couplings are perfectly sealed and tighten the air vent plug (2) and the draining plugs (3) on the suction side (fig.3).

ATTENTION: when the pump is located above the water level (suction lift operation, fig. 2A), after a long idle period, before restarting the unit, check that the pump is still filled with liquid and vented.

Otherwise, check for proper operation (opening and closing) of the foot valve and fill the pump with liquid (see section 7.2.).



Never run the pump for more than five minutes with a closed gate valve.

Prolonged operation without a change of water in the pump causes dangerous increases of temperature and pressure.

In systems in which it may be possible to operate with a closed delivery gate valve, install a bypass valve (fig. 2) to ensure a **minimum flow** of about: 1.6 m³/h for MXV 50-16; 3 m³/h for MXV 65-32; 5 m³/h for MXV 80-48.

When the water is overheated due to prolonged operation with a closed port, stop the pump before opening the gate valve.

To avoid any risk of danger to users and the creation of harmful thermal stress in the pump and system due to large temperature differentials, wait until the water has cooled inside the pump before starting again or before opening the drainage and filling plugs.



Care must be taken when the pumped fluid has a high temperature. Do not touch the fluid when its temperature is higher than 60 °C. Do not touch the pump or motor when their surface temperature is higher than 80 °C.

8. Maintenance and monitoring pump operation

Under normal operating conditions the pump-motor unit will not require maintenance.

Conduct routine inspection on the pump and connected parts to check for a perfect seal.

Check the seal on the shaft from the outside through the coupling guard.

The special funnel-shaped upper cover is designed to contain any small initial leaks.

Keep the pump and surrounding part clean so as to be able to immediately detect any outward leakage.

Clean the filter in the suction pipe and/or foot valve at regular intervals; check performance and absorbed current.

The ball bearings in the motor and the ball bearing in the pump (66.00 - see section 9.2) have permanent lubrication.

No regreasing is necessary.

See the operating instructions of the motor (if supplied).

Remove any excess grease expelled from the ball-bearing (66.00) after the first period of operation.

In the case of water containing chloride (chlorine or sea water) the risk of corrosion increases in stagnant water conditions (also with an increase in temperature and decrease of pH value). In these cases, if the pump remains inactive for long periods, it must be emptied completely.

For good measure, as for temporary operation with dirty liquids, run the pump briefly with clean water to remove deposits.

Or, after draining, perform the washing operation, inserting clean water (at least 40 litres) into the filling hole (1) on the delivery side and allowing it to come out of the draining hole (3) on the suction side (fig.3).

When the pump remains inactive it must be emptied completely if there is a risk of freezing. Remove both plugs (14.12), (position 3, fig.3).

Before starting the motor again fill the pump completely with liquid (see section 7.2.) and make sure the shaft is not jammed by encrustation, sticking of the faces of the mechanical seal or other causes. In the event that the shaft cannot be moved by hand, the pump has to be dismantled and cleaned.



Disconnect electrical power before any servicing operation and make sure the pump cannot be accidentally switched on.

9. Dismantling

Before dismantling, close the gate valves in the suction and delivery pipes and empty the pump casing (fig. 3).

For dismantling and re-assembly refer to the section drawing (section 13.) and figures 4, 5, 6.

Dismantling and inspection of all internal parts can be carried out without removing the pump casing (14.00) from the pipeline.

Sequence for dismantling:

1. Mark the position of the motor on the lantern bracket (32.00), and the position of the lantern bracket on the upper cover (34.02), ... on the external jacket (14.02), ... on the pump casing (14.00).
2. Remove the screw (32.32) with the washer (32.31) and the coupling guard (32.30).
3. Loosen the screws (64.25) of the coupling (64.22).

ATTENTION: to avoid compressing the spring of the mechanical seal (36.00) because of axial shifting of the shaft (64.00), we recommend to loosen the screws (64.25) of the coupling (64.22) even only for **removing or replacing the motor**. Afterward reposition the shaft (64.00) as indicated in section 10.2.

4. Disconnect the power cable from the terminal box, remove the screws (70.18) with the nuts (70.19) and **remove the motor** away from the coupling (64.22) (fig.4a).
5. Remove the screws (61.07) and **remove the lantern bracket** (32.00), complete with bearing (66.00) and coupling (64.22) from the upper cover (34.02) and from the shaft (64.00) (fig.4b).
6. Remove the nuts (61.04) and washers (61.03) from the tiebolts (61.02).
7. **Remove the upper cover** (34.02) from the shaft (64.00) and from the external jacket (14.02) - or with the external jacket from the pump casing (14.00) - with the aid of a mallet or lever, exercising pressure in alternate operations, from diametrically opposite positions (fig.4c).

Once the upper cover (34.02) has been removed, all the internal parts can be extracted from the pump casing (14.00).

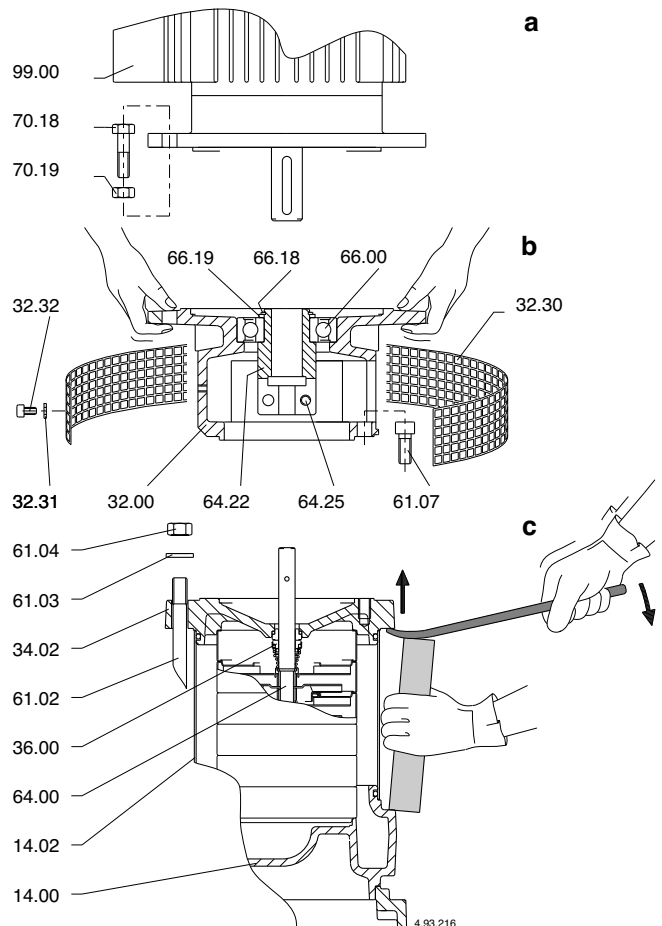


Fig. 4 a Removal of motor
b Removal of lantern bracket
c Removal of upper cover

9.1. Replacing the mechanical seal

Remove the mechanical seal (36.00), the rotating part from the shaft (64.00), making sure the shaft is not scratched, and then the fixed part from the upper cover (34.02).

Make sure the spring of the **new mechanical seal** is set with the direction of the winding suitable for the direction of rotation of the shaft: i.e. counter-clockwise when seen from the stationary ring.

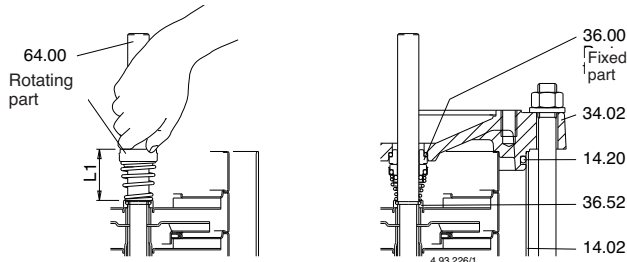


Fig.5 Inserting the mechanical seal

Make sure that all parts with which the mechanical seal comes into contact are perfectly clean and free from any burr or cutting edges.

The seal rings in EPDM (Ethylene-Propylene) must never come into contact with oil or grease. To facilitate the mounting of the mechanical seal, lubricate the shaft, the seating of the stationary part and the seal rings with clean water or any other lubricant compatible with the material in which the seal rings are made. Push the rotating part as far as the shoulder ring (36.52) on the shaft (64.00), without compressing the spring. Check the length before and after insertion and raise the rotating ring as far as the initial length (L1 in fig.5).

In this way, correct compression of the spring will be ensured when the fixed part is mounted and after the shaft is locked in the coupling (L2 in fig.6b).

Use every precaution so as not to damage the seal surfaces with blows or angular impact.

9.2. Replacing the ball bearing

If the ball bearing (66.00) has to be replaced, use a 2Z C3-type, of the size marked on the ball bearing to be replaced and containing grease lubricant suitable for the operating temperature.

The size of the bearing depends on the size of the motor:

motor size	ball bearing
100-112	6208, 2Z, C3
132	6310, 2Z, C3
160-180	6313, 2Z, C3

9.3. First-stage bearing and intermediate bearing

The **MXV 50-16, 65-32 and 80-48** pumps have a bearing sleeve (64.10) on the shaft (64.00) and a bearing in the stage casing (25.03) behind the first impeller (according to the order of suction). Starting with the **MXV 50-1611, MXV 65-3208 and MXV 80-4806** units, there is also an intermediate bearing (see **section 13.1**).

If they are to be dismantled, first number the position of each stage casing and the single spacer sleeves (see lengths and positions of sleeves in **section 13.2**.) so as to be able to re-mount the components correctly.

10. Remounting

To remount the components follow the dismantling procedure in inverse order (see **section 9**).

Check the state of the o-rings (14.20) and replace them if they are damaged.

Make sure that the o-rings (14.20) are correctly inserted on their seats on the pump casing (14.00) and upper cover (34.02). Lubricate the seal rings with clean water or any other compatible lubricant.

10.1. Tightening torque

impeller nuts (28.04)	nuts (61.04) on tie-bolts	screws (61.07) lantern - upp. cov.	screws (64.25) in the coupling	screws (70.18) with nuts (70.19)
35 Nm	50 Nm	60 Nm	50 Nm	40 Nm

When tightening the nuts (28.04), **be careful not to scratch the shaft** with the second wrench used on the opposite side.

ATTENTION: the nuts (61.04) on the tie-bolts (61.02), the screws (61.07) on the upper cover and the screws (70.18) with the nuts (70.19) on the lantern bracket must be uniformly tightened with alternated crossover tightening procedure in diametrically opposite positions.

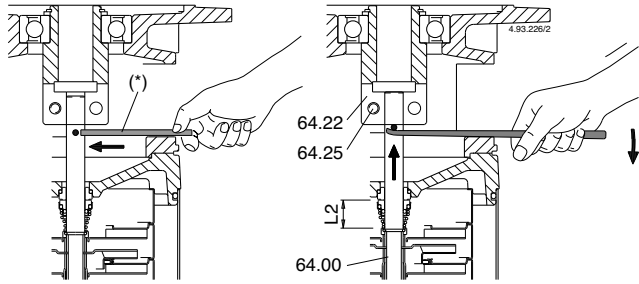


Fig. 6a Rotor rested, with shaft not locked in the coupling. (*) Pin for raising the shaft.

Fig. 6b Rotor raised, position for locking the shaft in the coupling.

10.2. Axial position of the pump rotor

In the vertical position and from the resting position (**fig.6a**), raise the rotor, levering on a pin inserted in the hole in the shaft, until the pin can be rested under the coupling (64.22).

In this position (**fig. 6b**), by tightening the screws (64.25) uniformly, the shaft (64.00) is locked tight in the coupling.

Remove the pin.

Mount the motor as indicated in **section 4**.

11. Horizontal installation

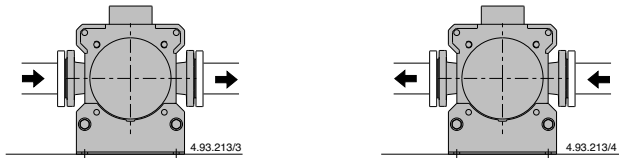
11.1 Connection of support feet

For the mounting of the support feet all four nuts (61.04) on the tie-bolts (61.02) must be removed (see cross-section drawing in **section 13**.)

ATTENTION: do not loosen only the two nuts on the side of the upper cover to which the support foot is to be attached.

To remove the 4 nuts (61.04) the lantern bracket (32.00) must be removed. With the pump in the vertical position, carry out dismantling sequences 1 - 6 in **section 9**.

Remove the washers (61.03) and attach the support foot (61.30) on the side of the upper cover (34.02) in the appropriate position depending on the directional arrangement of the pump casing (14.00) suitable for the system: suction on the left and delivery on the right, or vice-versa (**fig.7**)



Variation 1: suction on the left, delivery on the right

Variation 2: suction on the right, delivery on the left

Fig.7 Orientation of the ports in a horizontally-fitted pump

Do not insert the two washers (61.03) on the support foot when the tie-bolts (61.02) do not protrude from the nuts (61.04).

The 4 nuts must be uniformly tightened with alternated crossover tightening procedure in diametrically opposite positions. Tightening torque as per **section 10.1**.

Mount the lantern bracket (32.00) with the coupling (64.22) and position the pump shaft as indicated in **section 10.2**.

Mount the motor as indicated in **section 4**, and orientate the terminal board with respect to the support foot (61.30) in the position most suitable for the system.

After setting the pump in the horizontal position, fix the second support (61.30) to the base (61.00), with the screws (61.30), washers (61.34) and nuts (61.36), and check for accurate levelling of the installation with respect to the first foot.

12. Spare parts

When ordering spare parts please quote their designation, position number in the cross section drawing (**section 13**.) and rated data from the pump name plate (type, date and serial number).



Any pumps that require inspection/repair must be drained and carefully cleaned inside and outside before dispatch/submission.

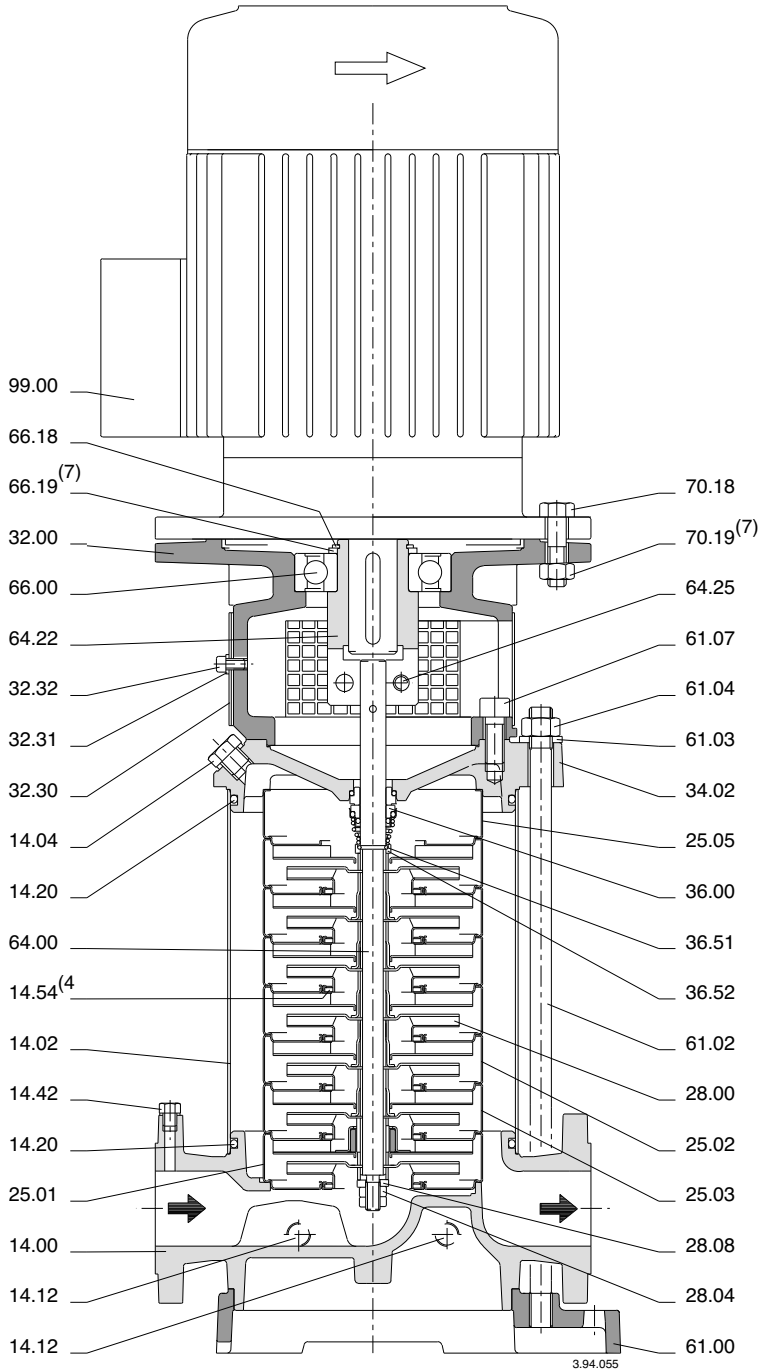
Changes reserved.

13. Cross section drawing and designation of parts

MXV 50-16

MXV 65-32

MXV 80-48



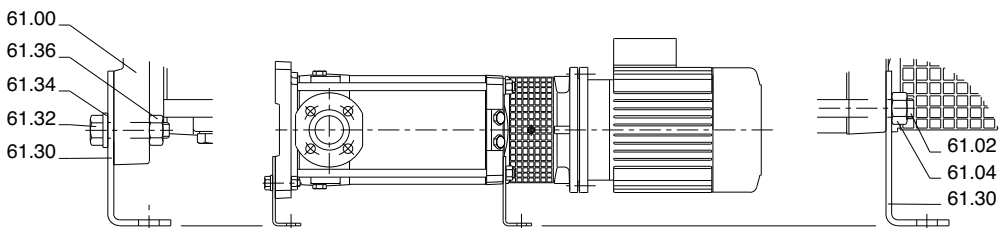
Nr.	Designation
14.00	Pump casing
14.02	External jacket
14.04	Plug with washer
14.12	Plug with washer
14.20	O-ring
14.42	Plug with washer
14.54	Wear ring (4)
25.01	First stage casing
25.02	Stage casing
25.03	Stage casing with bearing
25.05	Last stage casing
28.00	Impeller
28.04	Impeller nut
28.08	Washer
32.00	Lantern bracket
32.30	Guard
32.31	Washer
32.32	Screw
34.02	Upper cover
36.00	Mechanical seal
36.51	Retaining ring, split
36.52	Shoulder ring
61.00	Base
61.02	Tie-bolt
61.03	Washer
61.04	Nut
61.07	Screw
61.30	Support foot
61.32	Screw
61.34	Washer
61.36	Nut
64.00	Shaft
64.10	Bearing sleeve
64.13	Upper spacer sleeve
64.14	Lower spacer sleeve
64.15	Spacer sleeve
64.18	bearing spacer sleeve (upper)
64.19	bearing spacer sleeve (lower)
64.22	Coupling
64.25	Screw
66.00	Ball bearing
66.18	Circlip
66.19	Shoulder ring (7)
70.18	Screw
70.19	Nut (7)
99.00	Motor, complete

(4) Inserted in the stage casing (cannot be supplied separately)

(5) See **section 13.1.**






(6) See **section 13.2.**

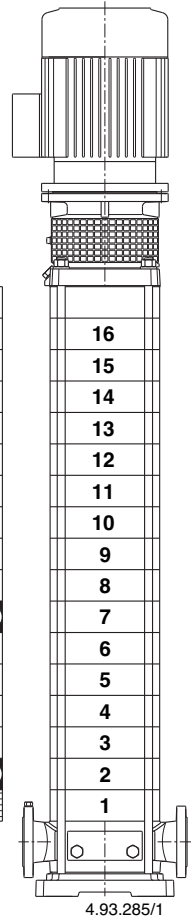
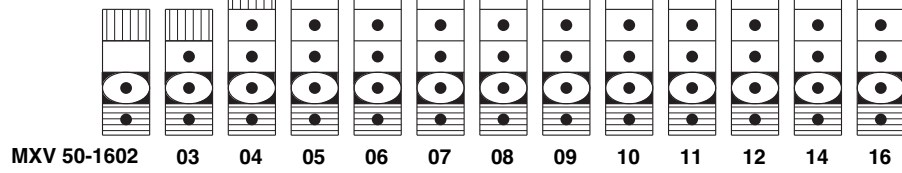
(7) Not installed in motors 100-112



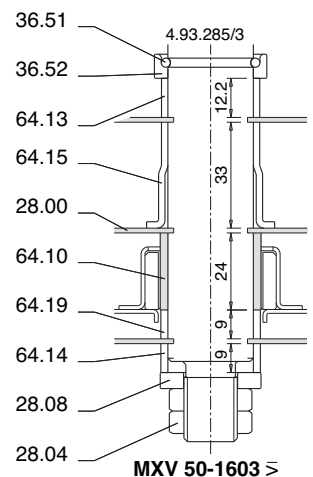
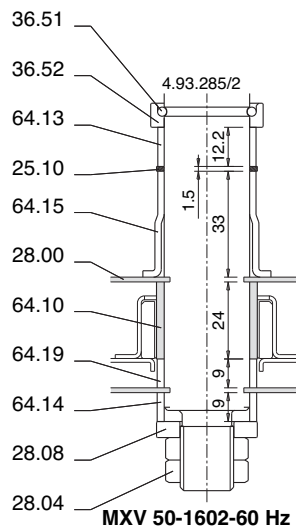
MXV 50-16

13.1. Composizione stadi Stages composition Stufenzusammensetzung Composition des étages Composición elementos Mellandelarnas sammansättning Состав ступеней

- 25.01  Corpo primo stadio, senza canale di ritorno
First stage casing, without return channel
Stufengehäuse erste Stufe, ohne Rückführkanal
Corps premier étage, sans canal de retour
Cuerpo primera etapa, sin canal de retorno
Mellandel första steget, utan returkanal
Корпус первой ступени, без возвратного канала
- 25.02  Corpo stadio con canale di ritorno
Stage casing with return channel
Stufengehäuse mit Rückführkanal
Corps d'étage avec canal de retour
Cuerpo elemento con canal de retorno
Mellandel med returkanal
Корпус ступени с возвратным каналом
- 25.03  Corpo stadio con cuscinetto
Stage casing with bearing
Stufengehäuse mit Lager
Corps d'étage avec coussinet
Cuerpo elemento con cojinete
Mellandel med lager
Корпус ступени с подшипником
- 25.05  Corpo ultimo stadio senza anello di tenuta
Last stage casing without wear ring
Stufengehäuse letzte Stufe ohne Spaltring
Corps dernier étage sans bague d'usure
Cuerpo ultimo elemento sin anillo cierre
Mellandel sista steget utan slitring
Корпус последней ступени без уплотнительного кольца
- 28.00  Girante
Impeller
Laufrad
Roue
Rodete
Pumphjul
Рабочее колесо



13.2. Composizione giranti e bussole Impellers and sleeves composition Laufräder und Hülsenzusammensetzung Composition des Roues et entretoises Composición rodetes y distanciadores Pumphjulen och slitringarnas sammansättning Состав Рабочее колесо и втулок



MXV 65-32

13.1. Composizione stadi Stages composition Stufenzusammensetzung Composition des étages Composición elementos Mellandelarnas sammansättning Состав ступеней

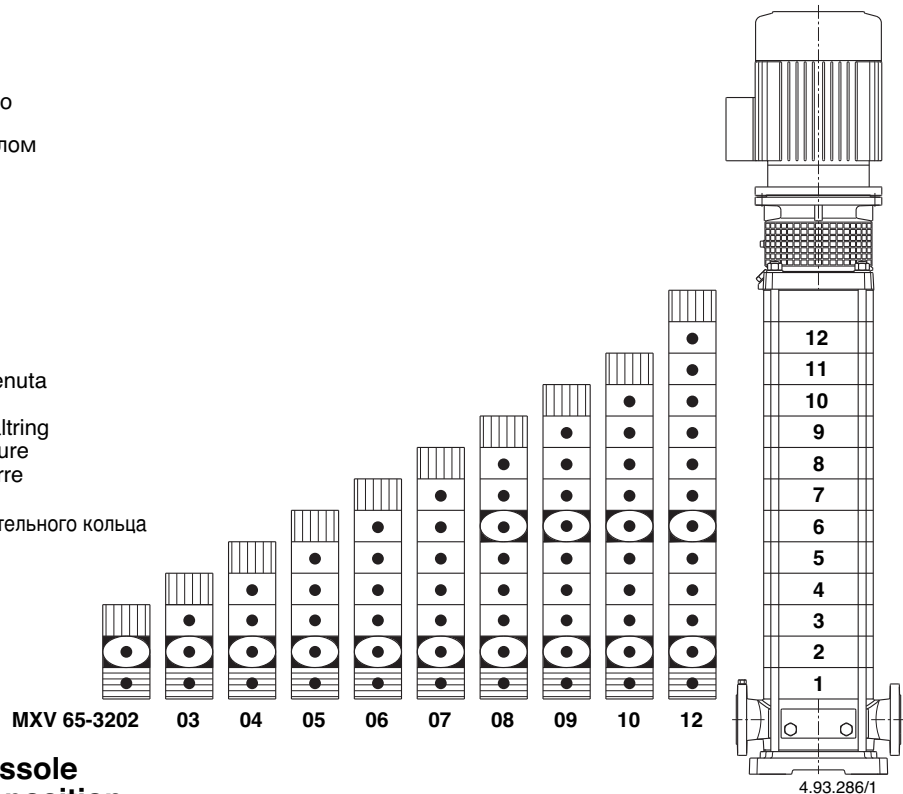
25.01 Corpo primo stadio, senza canale di ritorno
First stage casing, without return channel
Stufengehäuse erste Stufe, ohne Rückführkanal
Corps premier étage, sans canal de retour
Cuerpo primera etapa, sin canal de retorno
Mellandel första steget, utan returkanal
Корпус первой ступени, без возвратного канала

25.02 Corpo stadio con canale di ritorno
Stage casing with return channel
Stufengehäuse mit Rückführkanal
Corps d'étage avec canal de retour
Cuerpo elemento con canal de retorno
Mellandel med returkanal
Корпус ступени с возвратным каналом

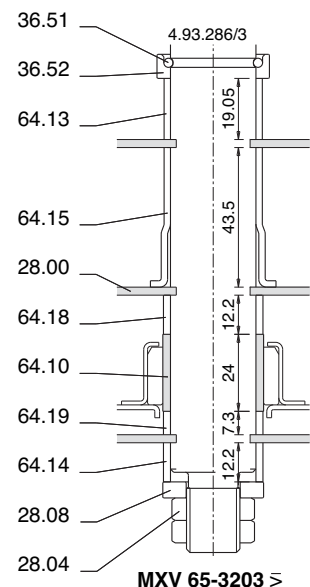
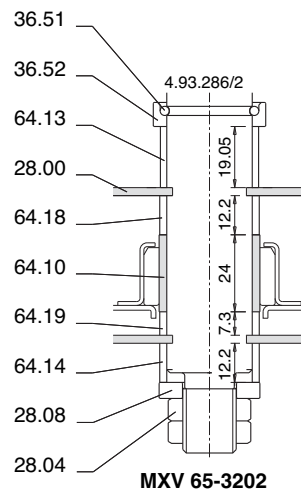
25.03 Corpo stadio con cuscinetto
Stage casing with bearing
Stufengehäuse mit Lager
Corps d'étage avec coussinet
Cuerpo elemento con cojinete
Mellandel med lager
Корпус ступени с подшипником

25.05 Corpo ultimo stadio senza anello di tenuta
Last stage casing without wear ring
Stufengehäuse letzte Stufe ohne Spaltring
Corps dernier étage sans bague d'usure
Cuerpo ultimo elemento sin anillo cierre
Mellandel sista steget utan slitring
Корпус последней ступени без уплотнительного кольца

28.00 Girante
Impeller
Lauftrad
Roue
Rodete
Pumphjul
Рабочее колесо








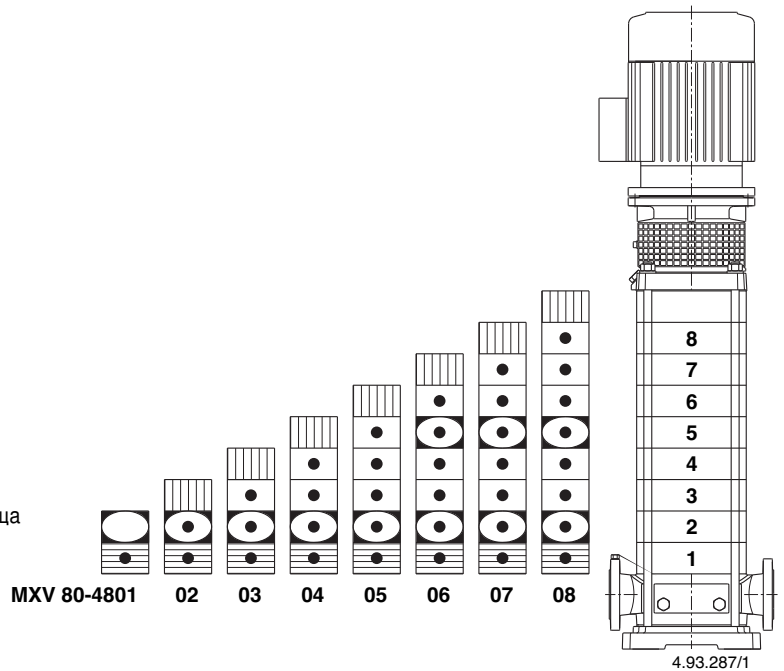
13.2. Composizione giranti e bussole Impellers and sleeves composition Laufräder und Hülsenzusammensetzung Composition des Roues et entretoises Composición rodetes y distanciadores Pumphjulen och slitringarnas sammansättning Состав Рабочее колесо и втулок



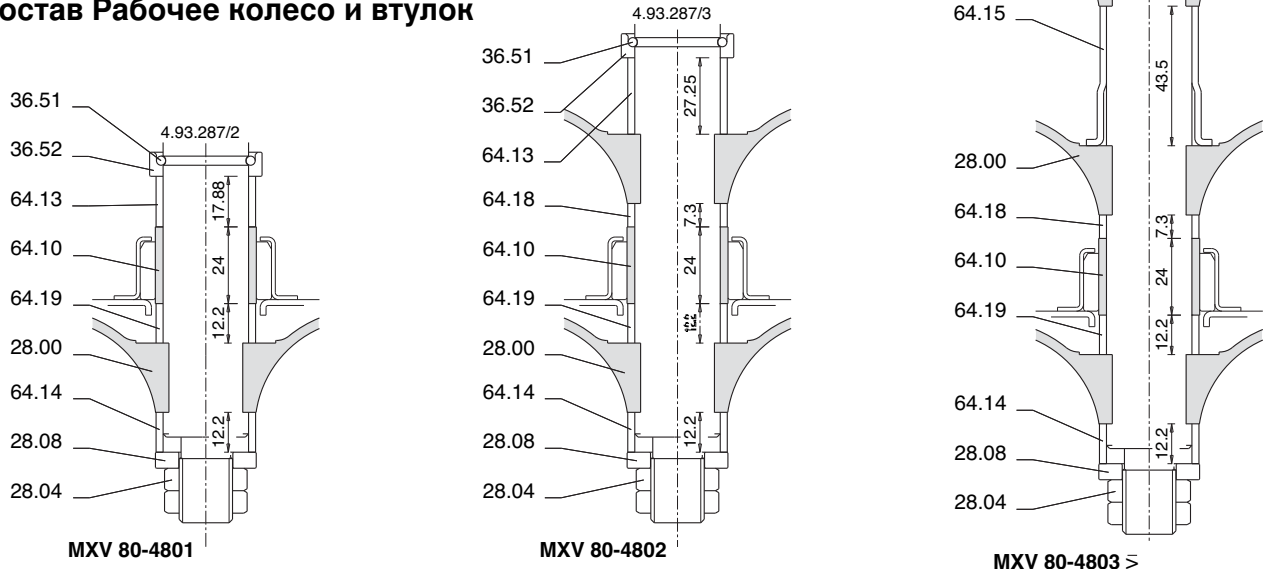
MXV 80-48

13.1. Composizione stadi Stages composition Stufenzusammensetzung Composition des étages Composición elementos Mellandelarnas sammansättning Состав ступеней

- 25.01  Corpo primo stadio, senza canale di ritorno
First stage casing, without return channel
Stufengehäuse erste Stufe, ohne Rückführkanal
Corps premier étage, sans canal de retour
Cuerpo primera etapa, sin canal de retorno
Mellandel första steget, utan returkanal
Корпус первой ступени, без возвратного канала
- 25.02  Corpo stadio con canale di ritorno
Stage casing with return channel
Stufengehäuse mit Rückführkanal
Corps d'étage avec canal de retour
Cuerpo elemento con canal de retorno
Mellandel med returkanal
Корпус ступени с возвратным каналом
- 25.03  Corpo stadio con cuscinetto
Stage casing with bearing
Stufengehäuse mit Lager
Corps d'étage avec coussinet
Cuerpo elemento con cojinete
Mellandel med lager
Корпус ступени с подшипником
- 25.05  Corpo ultimo stadio senza anello di tenuta
Last stage casing without wear ring
Stufengehäuse letzte Stufe ohne Spaltring
Corps dernier étage sans bague d'usure
Cuerpo ultimo elemento sin anillo cierre
Mellandel sista steget utan slitring
Корпус последней ступени без уплотнительного кольца
- 28.00  Girante
Impeller
Laufrad
Roue
Rodete
Pumphjul
Рабочее колесо



13.2. Composizione giranti e bussole Impellers and sleeves composition Laufräder und Hülsenzusammensetzung Composition des Roues et entretoises Composición rodetes y distanciadores Pumphjulen och slitringarnas sammansättning Состав Рабочее колесо и втулок



I**DICHIARAZIONE DI CONFORMITÀ**

Noi CALPEDA S.p.A. dichiariamo sotto la nostra esclusiva responsabilità che le Pompe MXV, MXVL, MXV4, MXVL4, tipo e numero di serie riportati in targa, sono conformi a quanto prescritto dalle Direttive 2004/108/CE, 2006/42/CE, 2006/95/CE e dalle relative norme armonizzate.

GB**DECLARATION OF CONFORMITY**

We CALPEDA S.p.A. declare that our Pumps MXV, MXVL, MXV4, MXVL4, with pump type and serial number as shown on the name plate, are constructed in accordance with Directives 2004/108/EC, 2006/42/EC, 2006/95/EC and assume full responsibility for conformity with the standards laid down therein.

D**KONFORMITÄTSERKLÄRUNG**

Wir, das Unternehmen CALPEDA S.p.A., erklären hiermit verbindlich, daß die Pumpen MXV, MXVL, MXV4, MXVL4, Typbezeichnung und Fabrik-Nr. nach Leistungsschild den EG-Vorschriften 2004/108/EG, 2006/42/EG, 2006/95/EG entsprechen.

F**DECLARATION DE CONFORMITE**

Nous, CALPEDA S.p.A., déclarons que les Pompes MXV, MXVL, MXV4, MXVL4, modèle et numero de série marqués sur la plaque signalétique sont conformes aux Directives 2004/108/CE, 2006/42/CE, 2006/95/CE.

E**DECLARACION DE CONFORMIDAD**

En CALPEDA S.p.A. declaramos bajo nuestra exclusiva responsabilidad que las Bombas MXV, MXVL, MXV4, MXVL4, modelo y numero de serie marcados en la placa de características son conformes a las disposiciones de las Directivas 2004/108/CE, 2006/42/CE, 2006/95/CE.

DK**OVERENSSTEMMELSESERKLÆRING**

Vi CALPEDA S.p.A. erklærer hermed at vore pumper MXV, MXVL, MXV4, MXVL4, pumpe type og serie nummer vist på typeskiltet er fremstillet i overensstemmelse med bestemmelserne i Direktiv 2004/108/EC, 2006/42/EC, 2006/95/EC og er i overensstemmelse med de heri indeholdte standarder.

P**DECLARAÇÃO DE CONFORMIDADE**

Nós, CALPEDA S.p.A., declaramos que as nossas Bombas MXV, MXVL, MXV4, MXVL4, modelo e número de série indicado na placa identificadora são construídas de acordo com as Directivas 2004/108/CE, 2006/42/CE, 2006/95/CE e somos inteiramente responsáveis pela conformidade das respectivas normas.

NL**CONFORMITEITSVERKLARING**

Wij CALPEDA S.p.A. verklaren hiermede dat onze pompen MXV, MXVL, MXV4, MXVL4, pomptype en serienummer zoals vermeld op de typeplaat aan de EG-voorschriften 2004/108/EU, 2006/42/EU, 2006/95/EU voldoen.

SF**VAKUUTUS**

Me CALPEDA S.p.A. vakuutamme että pumppumme MXV, MXVL, MXV4, MXVL4, malli ja valmistusnumero tyypikilvcsstä, ovat valmistettu 2004/108/EU, 2006/42/EU, 2006/95/EU direktiivien mukaisesti ja CALPEDA ottaa täyden vastuun siitä, että tuotteet vastaavat näitä standardeja.

S**EU NORM CERTIFIKAT**

CALPEDA S.p.A. intygar att pumpar MXV, MXVL, MXV4, MXVL4, pumptyp och serienummer, visade på namnplåten är konstruerade enligt direktiv 2004/108/EC, 2006/42/EC, 2006/95/EC. Calpeda åtar sig fullt ansvar för överensstämmelse med standard som fastställts i dessa avtal.

GR**ΔΗΛΩΣΗ ΣΥΜΦΩΝΙΑΣ**

Εμείς ως CALPEDA S.p.A. δηλώνουμε ότι οι αντλίες μας αυτές MXV, MXVL, MXV4, MXVL4, με τύπο και αριθμό σειράς κατασκευής όπου αναγράφεται στην πινακίδα της αντλίας, κατασκευάζονται σύμφωνα με τις οδηγίες 2004/108/ΕΟΚ, 2006/42/ΕΟΚ, 2006/95/ΕΟΚ, και αναλαμβάνουμε πλήρη υπευθυνότητα για συμφωνία (συμμόρφωση), με τα στάνταρς των προδιαγραφών αυτών.

TR**UYGUNLUK BEYANI**

Bizler CALPEDA S.p.A. firması olarak MXV, MXVL, MXV4, MXVL4, Pompalarımızın, 2004/108/EC, 2006/42/EC, 2006/95/EC, direktiflerine uygun olarak imal edildiklerini beyan eder ve bu standartlara uygunluğuna dair tüm sorumluluğu üstleniriz.

RU**Декларация соответствия**

Компания "Calpeda S.p.A." заявляет с полной ответственностью, что насосы серий MXV, MXVL, MXV4, MXVL4, тип и серийный номер которых указывается на заводской табличке соответствуют требованиям нормативов 2004/108/CE, 2006/42/CE, 2006/95/CE.

Montorso Vicentino, 01.2010

Il Presidente

Licia Mettifofo

